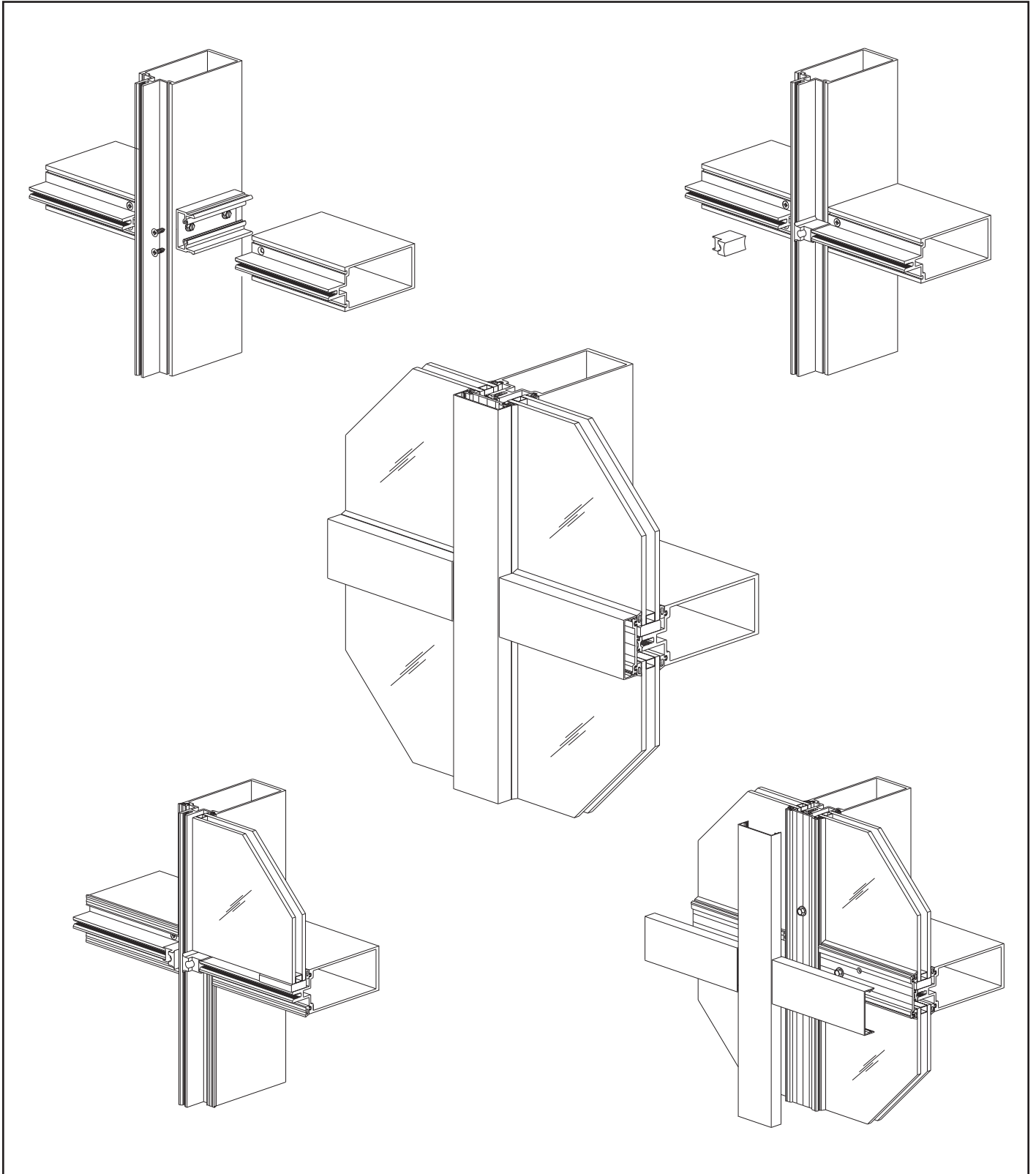


YCW 750 OG Outside Glazed Curtain Wall System



Installation Manual

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Installation Notes








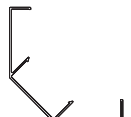










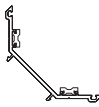





1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used, be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain aluminum finishes and paints.
3. All materials should be checked for quality and quantity upon receipt, YKK AP must be notified immediately of any discrepancies in shipment. 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. These installation instructions are of a general nature and may not cover every condition you will encounter. The shop drawings prepared should be specifically for the project.
6. Any material substitutions must be of equal or greater quality.
7. Make certain that material samples have been sent for compatibility and adhesion testing for all manufacturer's sealants involved. Make certain sealants have been installed in strict accordance with the sealant 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. YKK AP storefront and/or curtain wall framing is typically completed before drywall, flooring and other products which may still be in process. Wrap and protect the material when stored at job site.
12. Cutting tolerances are plus zero, minus one thirty second unless otherwise noted.
13. Check our website, www.ykkap.com, for the latest installation manual update prior to commencing work.

FRAMING MEMBERS

	Vertical / Horizontal 2-1/2" x 5-1/4" For 1/4" Glazing	E9-1246		Vertical / Horizontal 2-1/2" x 3-3/4" For 1" Glazing	E9-1235
	Vertical / Horizontal 2-1/2" x 3-3/4" For 1/4" Glazing	E9-1250		Vertical / Horizontal Heavy Duty 2-1/2" x 3-3/4" For 1" Glazing	E9-3537
	Jamb Open Back 2-1/2" x 5-1/4" For 1/4" Glazing	E9-3588		Vertical / Horizontal 2-1/2" x 6-3/4" For 1" Glazing	E9-1242
	Jamb Open Back 2-1/2" x 3-3/4" For 1/4" Glazing	E9-3592		Jamb Open Back 2-1/2" x 5-1/4" For 1" Glazing	E9-3580
	Head / Sill Open Back 2-1/2" x 5-1/4" For 1/4" Glazing	E9-3587		Jamb Open Back 2-1/2" x 3-3/4" For 1" Glazing	E9-3584
	Head / Sill Open Back 2-1/2" x 3-3/4" For 1/4" Glazing	E9-3591		Head / Sill Open Back 2-1/2" x 5-1/4" For 1" Glazing	E9-3579
	Optional Head For Incidental Water 2-1/2" x 5-1/4" For 1/4" Glazing	E9-3590		Head / Sill Open Back 2-1/2" x 3-3/4" For 1" Glazing	E9-3583
	Optional Head For Incidental Water 2-1/2" x 3-3/4" For 1/4" Glazing	E9-3594		Optional Head For Incidental Water 2-1/2" x 5-1/4" For 1" Glazing	E9-3582
	Horizontal Open Back 2-1/2" x 5-1/4" For 1/4" Glazing	E9-3589		Optional Head For Incidental Water 2-1/2" x 3-3/4" For 1" Glazing	E9-3586
	Horizontal Open Back 2-1/2" x 3-3/4" For 1/4" Glazing	E9-3593		Horizontal Open Back 2-1/2" x 5-1/4" For 1" Glazing	E9-3581
	Vertical / Horizontal 2-1/2" x 5-1/4" For 1" Glazing	E9-1215		Horizontal Open Back 2-1/2" x 3-3/4" For 1" Glazing	E9-3585
	Vertical / Horizontal 2-1/2" x 5-1/4" For 1" Glazing	E9-1225		Horizontal Flush Filler For 5-1/4" Depth Open Back Members	E9-3162

* Splay mullions and other face covers are available, contact YKK AP.

FRAMING MEMBERS

	Horizontal Flush Filler For 3-3/4" Depth Open Back Members	E9-3595		Horizontal Face Cover 11/16" x 2-1/2"	E9-1207
	Pressure Plate With PVC Isolator For 1/4" & 1" Glazing	AS-1216		Bull Nose Face Cover 2-1/2" x 2"	E9-1293
	Perimeter Pressure Plate With PVC Isolator For 1/4" Glazing	AS-3572		90° Outside Corner Face Cover For 1/4" Glazing	E9-1238
	Perimeter Pressure Plate With PVC Isolator For 1" Glazing	AS-3569		90° Outside Corner Face Cover For 1" Glazing	E9-1228
	Pressure Plate For Deep Covers With PVC Isolator For 1/4" & 1" Glazing	AS-3574		Interior Cover Base Use with E9-1281	E9-1280
	Perimeter Pressure Plate For Deep Covers With PVC Isolator For 1" Glazing	AS-3576		Interior Cover For 5-1/4" Back Depth 90° Outside Corner Use with E9-1280	E9-1281
	90° Outside Corner Adaptor For 1/4" Glazing	E9-1236		Interior Cover For 6-3/4" Back Depth 90° Outside Corner Use with E9-1280	E9-3548
	90° Outside Corner Pressure Plate With PVC Isolator For 1/4" Glazing	AS-1237		Glazing Adaptor For 1/4" glazing	E9-1220
	90° Outside Corner Adaptor For 1" Glazing	E9-1226		Glazing Adaptor For 1/2" Glazing	E9-1232
	90° Outside Corner Pressure Plate With PVC Isolator For 1" Glazing	AS-1227		Flush Pocket Filler For 1" glazing	E9-1253
	Face Cover 2-1/2 x 3/4"	E9-1206		Perimeter Anchor For 1/4" Glazing	E9-1248
	Face Cover 2-1/2" x 2-3/8"	E9-1219		Perimeter Anchor For 1" Glazing	E9-1223

* Splay Mullions and other face covers are available, contact YKK AP.

FRAMING MEMBERS

	Perimeter Channel For 1" Glazing	E9-1231		Snap-In Door Stop Elastomer Weathering E2-0051 Included Use with E9-1224 & E9-3513	AS-0417
	Single Acting Transom Bar Elastomer Weathering E2-0051 Included	AS-0402		Heavy Duty Door Jamb Use with AS-0441	E9-3531
	Standard Door Jamb For 1/4" Glazing Use with AS-0417	E9-1224		Heavy Duty Door Stop Elastomer Weathering E2-0051 Included Use with E9-3531	AS-0441
	Standard Door Jamb For 1" Glazing Use with AS-0417	E9-3513			

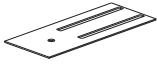

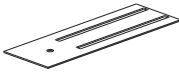
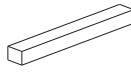
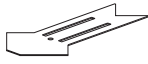
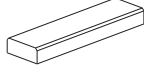
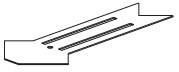
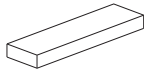
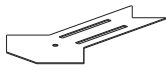

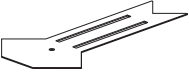

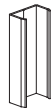

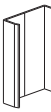

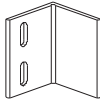

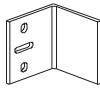
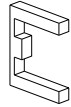
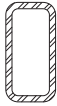

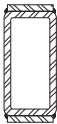

ACCESSORIES

	Standard Shear Block For 3-3/4" Back Depth 3.125" Long	E1-3503		Optional Shear Clip For 5-1/4" Back Depth Incidental Water Head	E1-3019
	Standard Shear Block For 5-1/4" Back Depth 4.375" Long	E1-3504		Shear Block (For E-Slot) For 3-3/4" Back Depth 3.125" Long	E1-1206
	Standard Shear Block For 6-3/4" Back Depth 6.000" Long	E1-3506		Shear Block (For E-Slot) For 5-1/4" Back Depth 4.375" Long	E1-1200
	"J" Anchor For 3-3/4" Back Depth 3.125" Long	E1-3501		Shear Block (For E-Slot) For 6-3/4" Back Depth 6.000" Long	E1-1236
	"J" Anchor For 5-1/4" Back Depth 4.375" Long	E1-3502		Shear Block for 90° Outside Corner For 3-3/4" Back Depth 5.794" Long	E1-3503A
	"J" Anchor For 6-3/4" Back Depth 6.000" Long	E1-3505		Shear Block for 90° Outside Corner For 5-1/4" Back Depth 7.562" Long	E1-3504A
	Optional Shear Clip For 3-3/4" Back Depth Incidental Water Head	E1-3523		Shear Block for 90° Outside Corner For 6-3/4" Back Depth 9.860" Long	E1-3506A

ACCESSORIES

	<p>“J” Anchor for 90° Outside Corner For 3-3/4” Back Depth 5.669” Long</p>	<p>E1-3501A E1-3501B</p>		<p>Mullion “T” Anchor For E9-1235, E9-1250, & E9-3537, 3.462” Long</p>	<p>E1-1207</p>
	<p>“J” Anchor for 90° Outside Corner For 5-1/4” Back Depth 7.437” Long</p>	<p>E1-3502A E1-3502B</p>		<p>Mullion “T” Anchor For E9-1215 Only 4.866” Long</p>	<p>E1-1208</p>
	<p>“J” Anchor for 90° Outside Corner For 6-3/4” Back Depth 9.375” Long</p>	<p>E1-3505A E1-3505B</p>		<p>Mullion “T” Anchor For E9-1225 & E9-1246 4.960” Long</p>	<p>E1-1209</p>
	<p>Shear Clip for 90° Outside Corner (RH) For 3-3/4” Depth Optional Incidental Water Head</p>	<p>E1-3534</p>		<p>Mullion “T” Anchor For E9-1242 6.453” Long</p>	<p>E1-1238</p>
	<p>Shear Clip for 90° Outside Corner (LH) For 3-3/4” Depth Optional Incidental Water Head</p>	<p>E1-3535</p>		<p>Mullion “F” Anchor For E9-1235, E9-1250, E9-3537, E9-3584 & E9-3592, 3.462” Long</p>	<p>E1-1232</p>
	<p>Shear Clip for 90° Outside Corner (RH) For 5-1/4” Depth Optional Incidental Water Head</p>	<p>E1-3532</p>		<p>Mullion “F” Anchor For E9-1215 4.866” Long</p>	<p>E1-1233</p>
	<p>Shear Clip for 90° Outside Corner (LH) For 5-1/4” Depth Optional Incidental Water Head</p>	<p>E1-3533</p>		<p>Mullion “F” Anchor For E9-1225, E9-1246, E9-3580 & E9-3588 4.960” Long</p>	<p>E1-1231</p>
	<p>Mullion Splice Sleeve For 3-3/4” Back Depth</p>	<p>E1-1212</p>		<p>Mullion “F” Anchor For E9-1242 6.453” Long</p>	<p>E1-1240</p>
	<p>Mullion Splice Sleeve For 5-1/4” Back Depth</p>	<p>E1-1201</p>		<p>Temporary Glass Retainer 2” Long</p>	<p>E1-1294</p>
	<p>Mullion Splice Sleeve For 6-3/4” Back Depth</p>	<p>E1-1299</p>		<p>Mullion End Cap 2.500” x 2.313” x 0.050”</p>	<p>E1-1286</p>
	<p>Mullion Splice Sleeve For 3-3/4” Back Depth Open Back Jamba</p>	<p>E1-1354</p>		<p>Mullion End Cap for 90° Outside Corner For 1/4” Glazing</p>	<p>E1-3519</p>
	<p>Face Cover Splice Sleeve For E9-1206</p>	<p>E1-1202</p>		<p>Mullion End Cap for 90° Outside Corner For 1” Glazing</p>	<p>E1-3520</p>










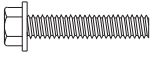

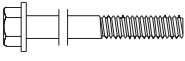








ACCESSORIES

	Mullion End Cap For 3-3/4" Depth Optional Incidental Water Head	E1-3527		Setting Block For 1/4" Glazing EPDM with Pressure Sensitive Adhesive	E2-0112
	Mullion End Cap For 5-1/4" Depth Optional Incidental Water Head	E1-3526		Side Block For 1/4" Glazing EPDM with Pressure Sensitive Adhesive	E2-0113
	90° O.C. Mullion End Cap For 1/4" Glazing 3-3/4" Depth Optional Incidental Water Head	E1-3531		Setting Block For 1" Glazing EPDM with Pressure Sensitive Adhesive	E2-0104
	90° O.C. Mullion End Cap For 1/4" Glazing 5-1/4" Depth Optional Incidental Water Head	E1-3530		Side Block For 1" Glazing EPDM with Pressure Sensitive Adhesive	E2-0105
	90° O.C. Mullion End Cap For 1" Glazing 3-3/4" Depth Optional Incidental Water Head	E1-3529		Standard Joint Plug For 1/4" Glazing EPDM Sponge	E2-0125
	90° O.C. Mullion End Cap For 1" Glazing 5-1/4" Depth Optional Incidental Water Head	E1-3528		Standard Joint Plug For 1" Glazing EPDM Sponge	E2-0102
	Optional Jamb Anchor Clip For Open Back Jambs E9-3584 & E9-3592	E1-3524		Joint Plug For Slide-In Horizontal at End Bays, 1/4" Glazing Use with E2-0123	E2-0129
	Optional Jamb Anchor Clip For Open Back Jambs E9-3580 & E9-3588	E1-3525		Joint Plug For Slide-In Horizontal at End Bays, 1" Glazing Use with E2-0123	E2-0124
	Wind Load Anchor Steel with Zinc Oxide Paint Refer to Shop Drawings for Anchor Dimensions	E1-1204* Project Specific		End Dam Plug Use with E9-1223 & E9-1231	E2-0505
	Dead Load Anchor Steel with Zinc Oxide Paint Refer to Shop Drawings for Anchor Dimensions	E1-1205* Project Specific		E-Slot Plug For Slide-In Horizontal at End Bays	E2-0123
	Steel Reinforcement 2" x 4" x 1/4" Steel Tube With Zinc Oxide Paint	E1-0162		Isolator Tape 1/8" x 7/16" Use with Perimeter Pressure Plate	E2-0239
	Steel Reinforcement 2" x 4" x 1/4" Steel Tube & (2) 1/4" x 1-3/4" Steel Bars With Zinc Oxide Paint	E1-0154		Interior/Exterior Glazing Gasket	E2-0120

* Note: Project specific part number.

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

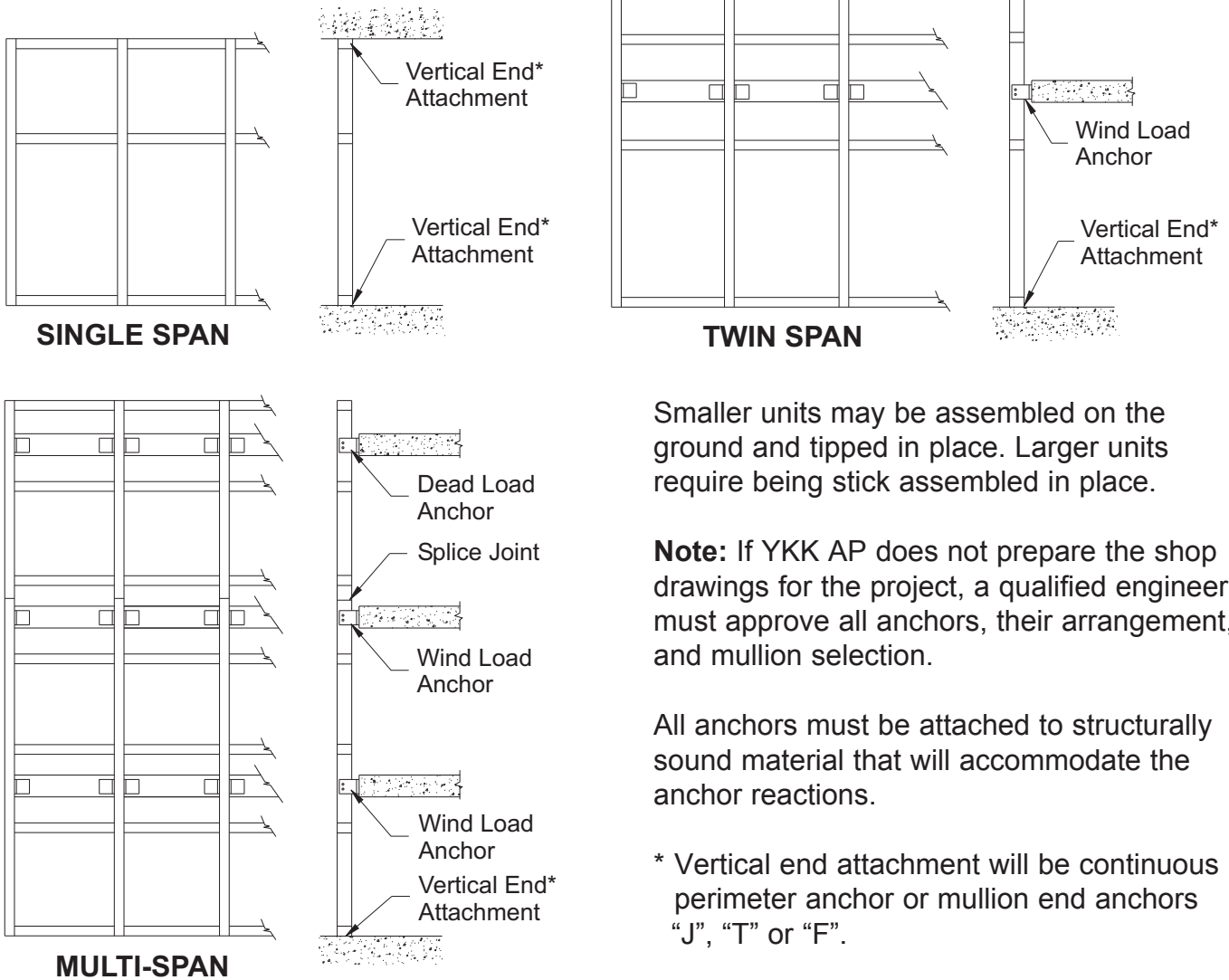
ACCESSORIES

	Weep Baffle For Optional Incidental Water Head Members	E2-0099		1/4\"-20 x 1-3/4\" HWHS Type F, For Attachment of Opt. Shear Clip to Vertical	HF-2528 -W1
	Anchor Slip Pad For Dead Load & Wind Load Anchors	E3-0103		1/4\"-20 x 1\" HWHMS Type CA, For Attachment of Pressure Plate to Mullion	HD-2516 -W3
	#8 x 3/8\" PHSMS For Attachment of Glazing Adaptors	PC-0806		1/4\"-20 x 3/4\" HWHMS For Attachment of 90° O.S. Corner Adaptor E9-1226 to Vertical (1\" Glazing)	HM-2512 -W3
	#8 x 1/2\" PHSMS Type F Stainless Steel For Attachment of Face Cover Splice Sleeves	PF-0808 -SS		1/4\"-20 x 1\" HWHMS For Attachment of \"J\" Anchor at Jamb	HM-2516 -W3
	#12 x 1/2\" PHSMS Type AB For Attachment of Optional Head to Shear Clips	PC-1208		1/4\"-20 x 1-1/4\" HWHMS For Attachment of 90° O.S. Corner Adaptor E9-1236 to Vertical (1/4\" Glazing)	HM-2520 -W3
	#12 x 3/4\" FHSMS Type AB, (Exposed Fasteners) For Attachment of Horizontal to Shear Block	FC-1212		1/4\"-20 x 3-1/2\" HWHMS For Attachment of \"J\" Anchor at Intermediate Vertical	HM-2556 -W3
	#12 x 1-1/4\" FHSMS Type AB, (Concealed Fasten.) For Attachment of Horizontal to Shear Block	FC-1220		1/4\"-20 Nut HHMS For Attachment of \"J\" Anchor at Intermediate Vertical & Jamb	HM-2500
	#14 x 5/8\" FHSMS Type AB For Attachment of Mullion End Caps	FC-1410		1/4\" Flat Washer For Attachment of \"J\" Anchor at Intermediate Vertical & Jamb	WW-2500
	1/4\"-20 x 5/8\" HWHS Type F, For Attachment of Std. Shear Block to Vertical	HF-2510 -W1		1/4\" Lock Washer For Attachment of \"J\" Anchor at Intermediate Vertical & Jamb	WS-2500
	1/4\"-20 x 1\" HWHS Type F, For Attachment of Std. Shear Block to Vertical with Steel Reinforcing	HF-2516 -W1		Drill Fixture	H-7210

FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

The following is a guideline for common types of frames. Refer to shop drawings for exact layout of frames.



Smaller units may be assembled on the ground and tipped in place. Larger units require being stick assembled in place.

Note: If YKK AP does not prepare the shop drawings for the project, a qualified engineer must approve all anchors, their arrangement, and mullion selection.

All anchors must be attached to structurally sound material that will accommodate the anchor reactions.

* Vertical end attachment will be continuous perimeter anchor or mullion end anchors "J", "T" or "F".

Fabrication of YCW 750 OG varies depending on the type of vertical end attachment required for a given project:

Perimeter Anchors are for low load anchoring conditions (maximum 500lb. end load reaction): E9-1248, E9-1223, & E9-1231

"J" Anchors are for medium to high load conditions: E1-3501, E1-3502, & E1-3505.

"T" & "F" Anchors are for high load conditions: E1-1207, E1-1208, E1-1209, E1-1231, E1-1232, E1-1233, E1-1238, & E1-1240

FRAME FABRICATION

FRAME TYPES / ANCHORING METHODS

Using Perimeter Anchors:

-Vertical mullions must be notched as shown in **Detail 1** on **Page-9**.

Using Mullion End Anchors:

YCW 750 OG has three possible end anchoring conditions: "J", "T", and "F".

- "J" anchors are used with jambs and intermediate verticals at the sill only.
- "T" anchors are used with intermediate verticals at the head and sill.
- "F" anchors are used with jamb mullions at the head and sill.
- Anchor usage depends on end reaction, stress, and attachment.

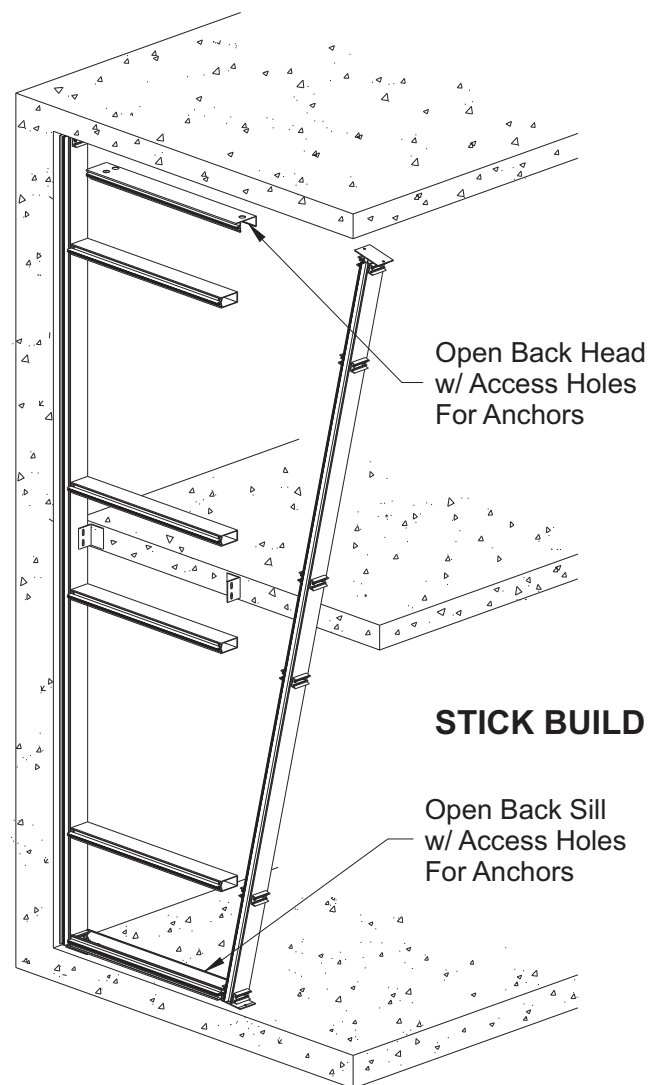
Mullions should be pre-assembled with shear blocks/clips, end anchors, and steel or aluminum reinforcing if necessary.

End anchors should be pre-drilled for anchor fasteners according to approved shop drawings or engineering calculations.

Framing Members for Stick Build:

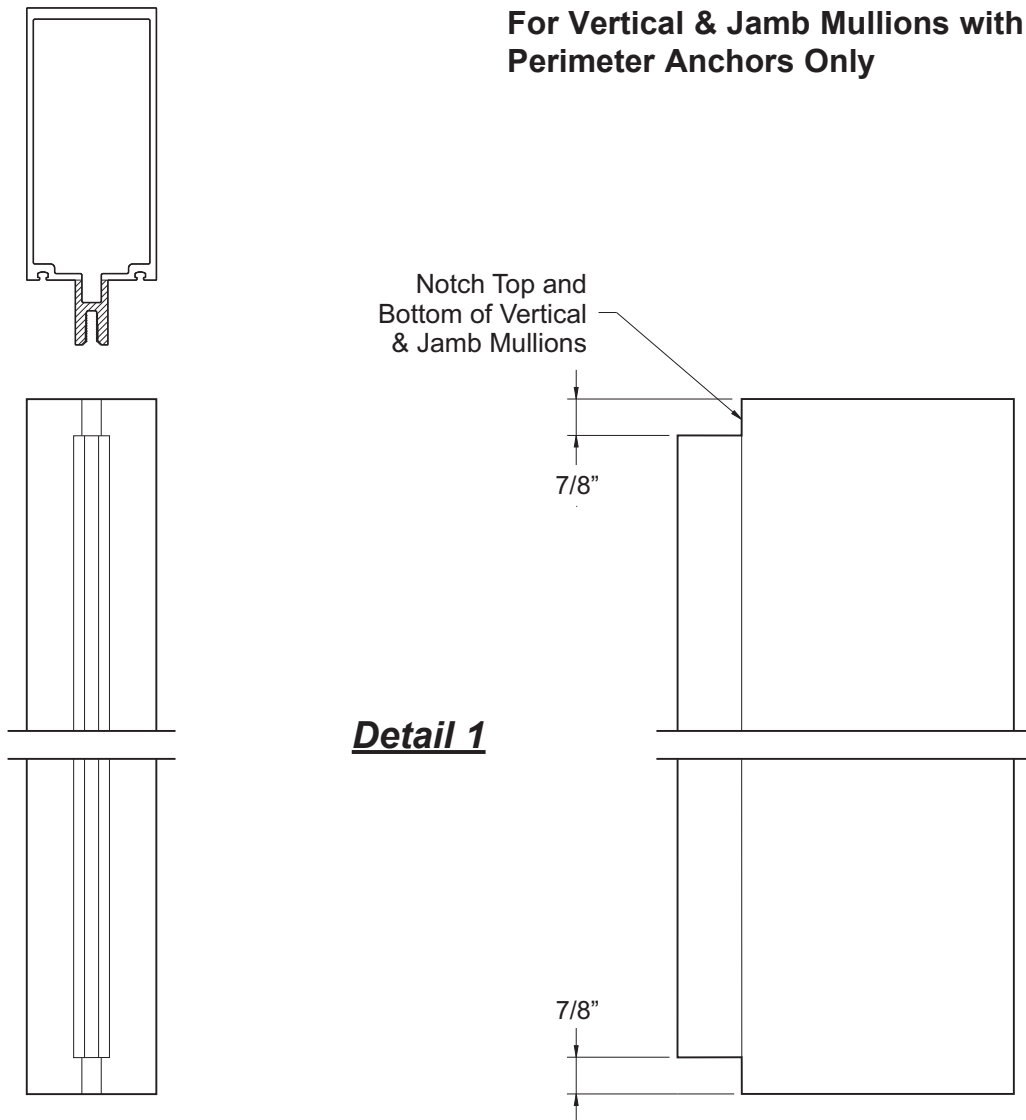
- Open back head and sill members provide easy access to end anchor bolts.
- Closed horizontal members are used at all intermediate locations except at end bays.
- Open back intermediate horizontals are used at end bays to clear the shear blocks.

Note: When using stick build construction, check overall frame width every fifth mullion as the wall is installed. A buildup of cumulative tolerance errors may occur, resulting in excessive DLO spacing.



FRAME FABRICATION

FABRICATE VERTICAL MULLIONS



Step 1

-Cut all vertical and jamb mullions to dimensions as shown on shop drawings.
Allow for 1/2" caulk joint around the frame & 1/2" joint at vertical splices.

Step 2

-When using continuous perimeter anchors, E9-1223, E9-1231 or E9-1248, the top and bottom of vertical and jamb mullions must be notched as shown in **Detail 1**, and sealed as shown on **Page 22**.

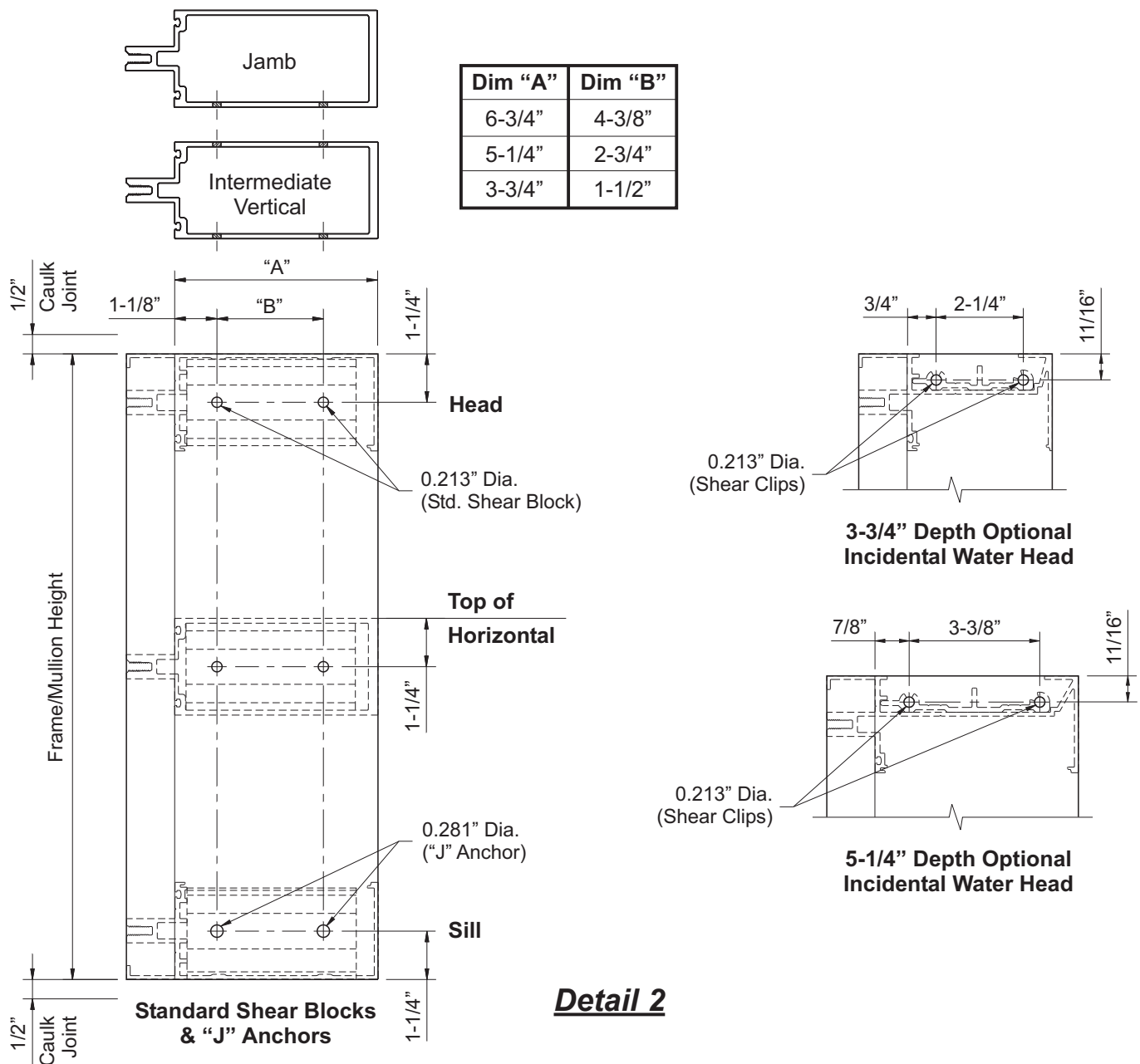
Note: Do not notch verticals when using mullion end anchors: "J", "T" or "F".

FRAME FABRICATION

**STEP 3
FABRICATE VERTICAL MULLIONS**

- Mullion hole locations for shear blocks, shear clips, and "J" anchors are shown below.
 - Drill 0.213" dia. (#3 bit) holes for shear block/clip attachment at the locations indicated.
 - Drill 0.281" dia. (#9/32 bit) holes for "J" anchor attachment at the sill at the locations indicated.
- See **Detail 2**.

Note: Hole locations for standard shear blocks are not the same as shear clips for optional incidental water head.



FRAME FABRICATION

STEP 4 (Optional) USING STEEL REINFORCING

-Steel reinforcing must be primed/coated to insulate the steel from the aluminum.

When engineering calculations require the vertical mullions to be reinforced with steel, secure the reinforcing to the vertical using the appropriate fasteners.

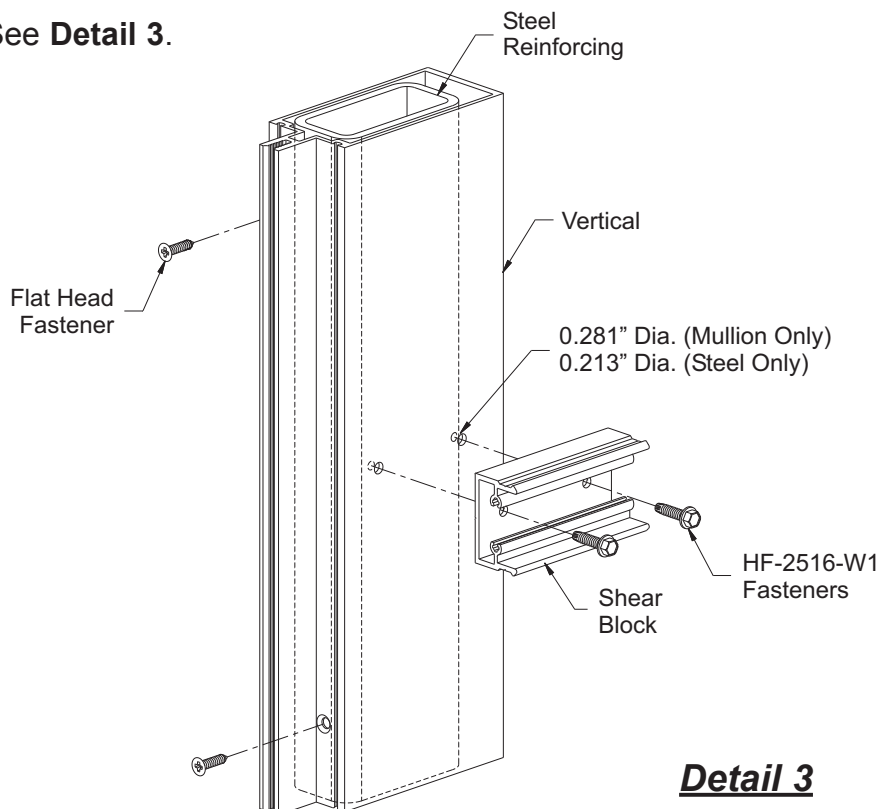
- Start 3" from both ends of the mullion and install a fastener on both sides of the mullion tongue.
- Stagger the fasteners on either side of the tongue going up the vertical.
- Seal all screw heads with sealant.

Note: Exact size of reinforcing, size and location of fasteners to be determined by a qualified engineer.

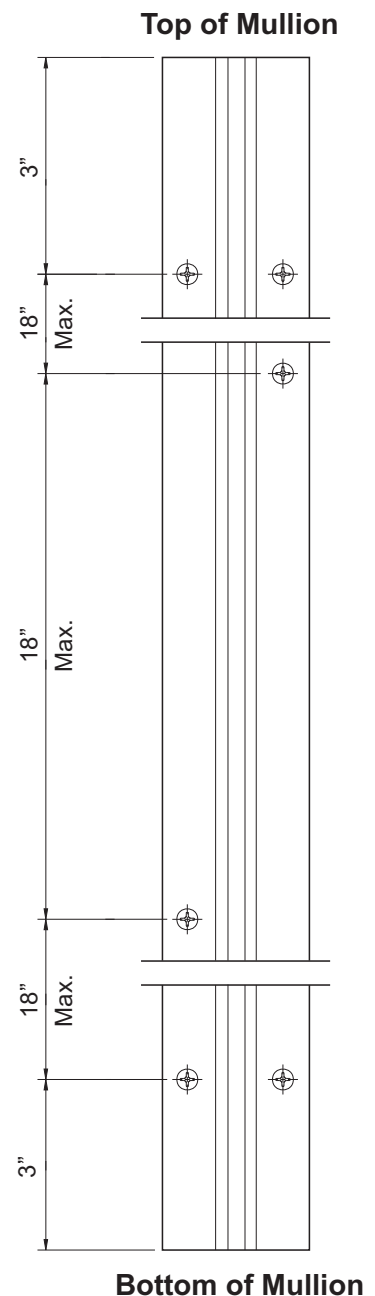
Steel reinforcing is also attached on the sides of the mullion with the attachment of shear blocks.

- Drill 0.281" dia. (9/32 bit) clear holes in the mullion only.
- Match drill 0.213 dia. (#3 bit) tap holes in the reinforcing only.
- Attach the shear blocks with HF-2516-W1 fasteners.

See **Detail 3**.



Detail 3



FRAME FABRICATION

**STEP 5
ATTACH SHEAR BLOCKS/CLIPS FOR HORIZONTALS**

Standard shear blocks are used to attach horizontal members to the jambs and verticals. Shear blocks for E-Slots (E1-1200, E1-1206 & E1-1236) are attached the same way.

E1-3503 for 3-3/4" back members.

E1-3504 for 5-1/4" back members.

E1-3506 for 6-3/4" back members.

-Attach shear blocks to jambs and verticals with (2) HF-2510-W1 fasteners per block.

Shear clips are used to attach optional incidental water head members to the jambs and verticals.

E1-3523 for 3-3/4" back members.

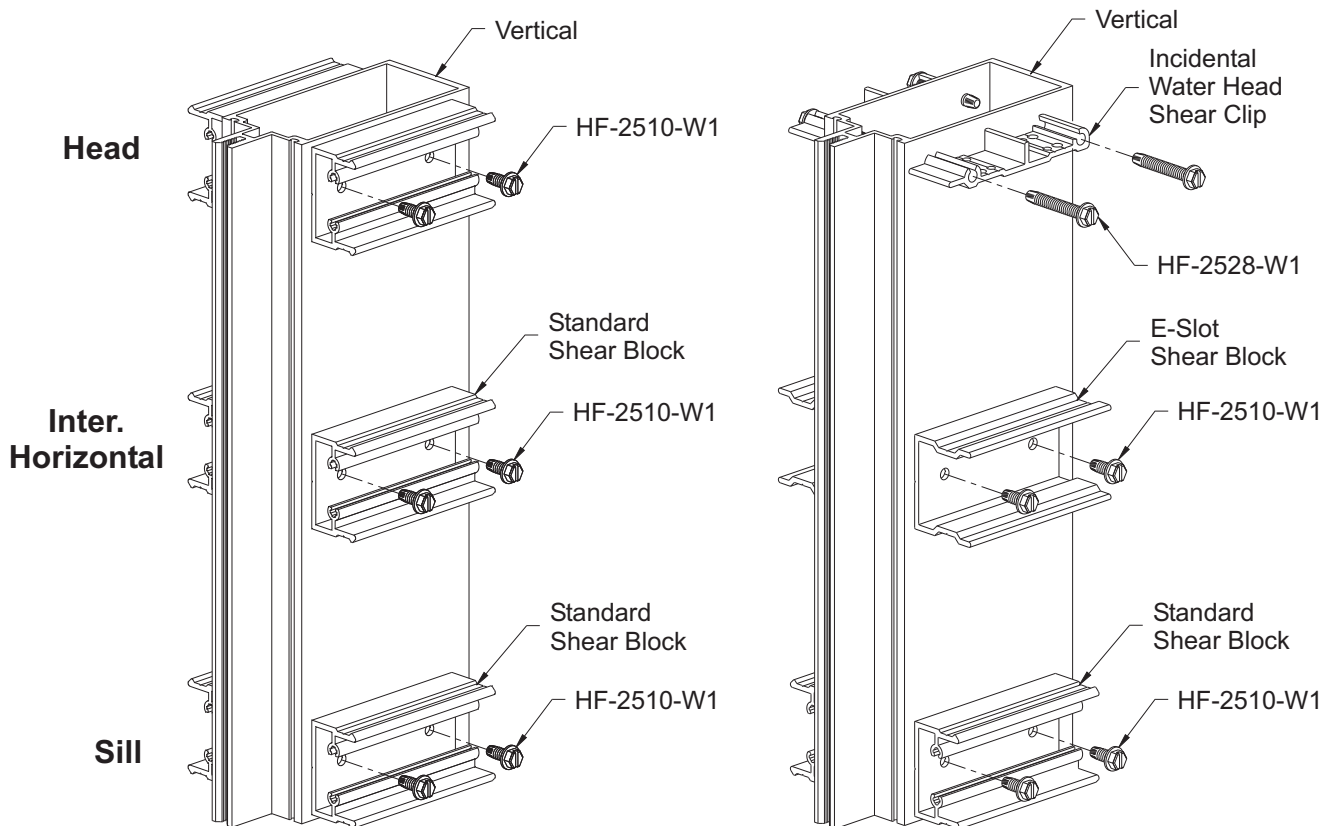
E1-3019 for 5-1/4" back members.

-Attach shear clips to jambs and verticals with (2) HF-2528-W1 fasteners per block.

See **Detail 4**.

Note: Do not attach standard shear blocks at the head and sill for end bays at this time.

See **Step 16** for head and sill end bay attachment.



Detail 4

FRAME FABRICATION

**STEP 6
ATTACH “J” ANCHORS**

In addition to anchoring the curtain wall frame to the structure, “J” anchors are used to attach sill members to jamb and vertical mullions:

E1-3501 for 3-3/4” back members.

E1-3502 for 5-1/4” back members.

E1-3505 for 6-3/4” back members.

Note: “J” anchors are used at the sill only.

Attach “J” Anchors at Jamb:

-Align the “J” anchor with the mullion and insert the HM-2516 bolts through the inside of the mullion and out the “J” anchor.

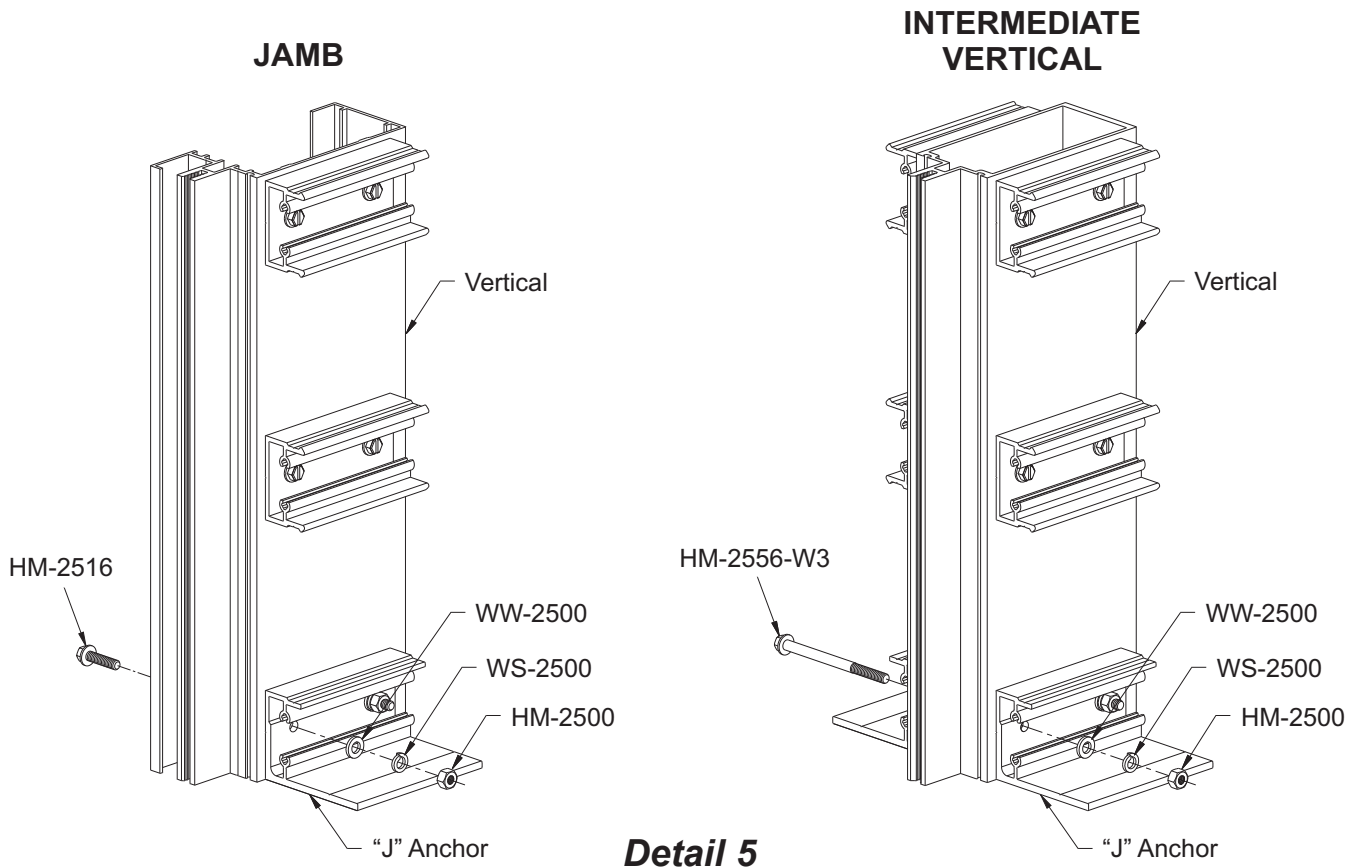
-Install 1/4” flat and lock washers between the anchor and HM-2500 hex nuts.

Attach “J” Anchors at Intermediate Verticals:

-Align the “J” anchors and insert the HM-2556 bolts through both anchors and the mullion.

-Install 1/4” flat and lock washers between the anchor and HM-2500 hex nuts.

See **Detail 5**.



Detail 5

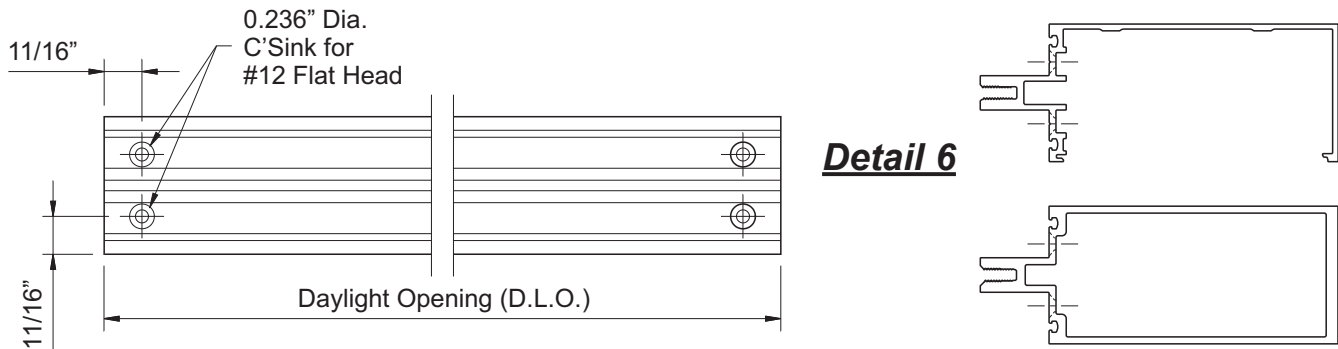
FRAME FABRICATION

STEP 7 FABRICATE HORIZONTAL MEMBERS

- Cut all horizontal members to the daylight opening as shown in shop drawings.
- Cut all horizontal flush fillers to the daylight opening minus(-) 1/32".
- Horizontal members must be fabricated for shear block/clip attachment as follows:

Horizontals with Concealed Fasteners (5-1/4" & 3-3/4" Back Depths Only):

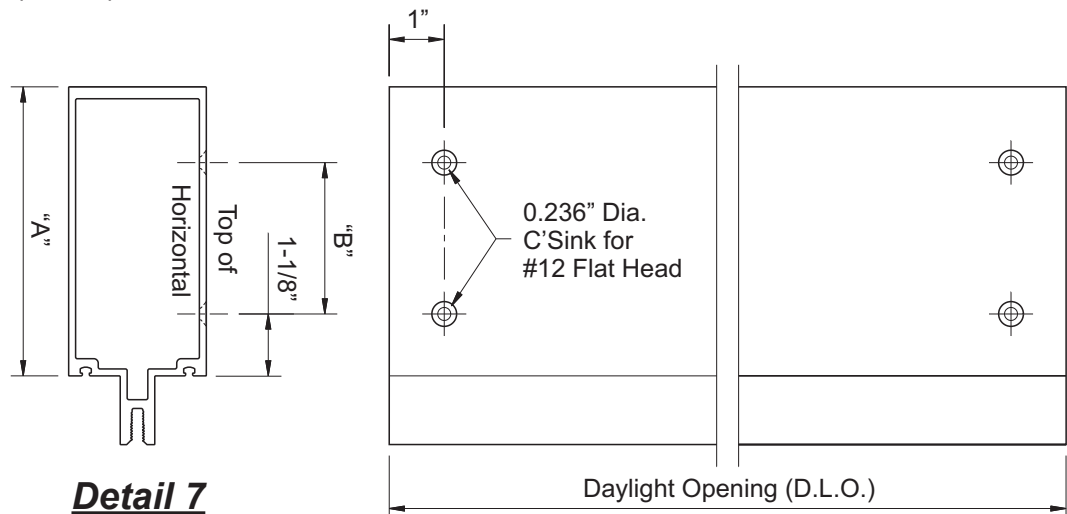
- Layout hole locations on the face of the horizontal at both ends as shown below.
 - Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners.
- See **Detail 6**.



Horizontals with Exposed Fasteners:

- Layout hole locations on the top of the horizontal at both ends as shown below.
 - Drill 0.236" diameter (#B bit) holes and countersink for #12 flat head fasteners.
- See **Detail 7**.

Dim "A"	Dim "B"
6-3/4"	4-3/8"
5-1/4"	2-3/4"
3-3/4"	1-1/2"



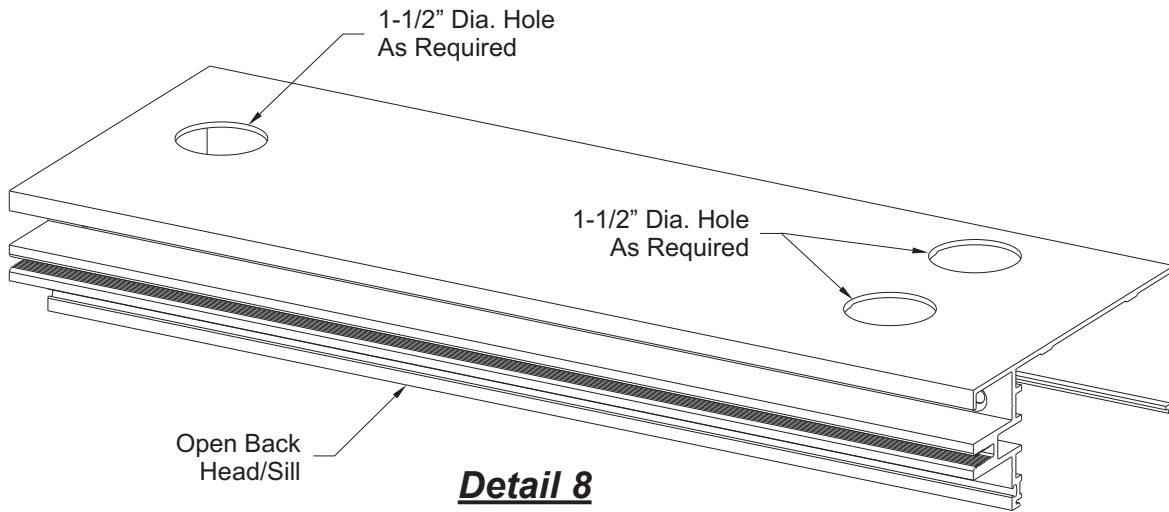
FRAME FABRICATION

**STEP 7 (Continued)
FABRICATE HORIZONTAL MEMBERS**

Open Back Head & Sill with “T” & “F” Anchors (5-1/4” & 3-3/4” Back Depths Only):

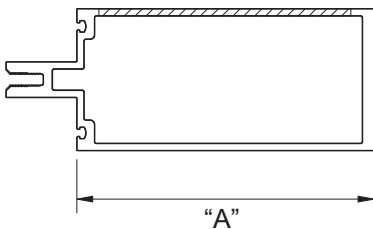
- Open back head & sill members require holes to access anchor bolts.
- Drill 1-1/2” dia. holes at anchor locations as required by approved shop drawings or engineering calculations.

See **Detail 8**.

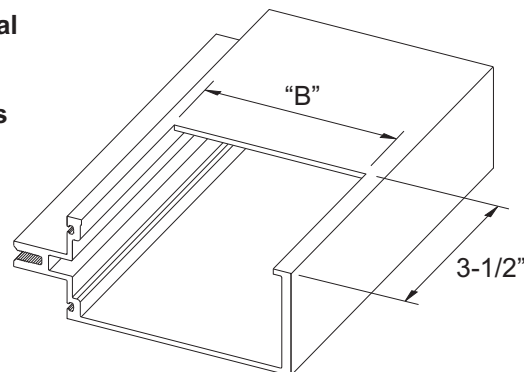


Tubular Head & Sill with “J”, “F” & “T” Anchors:

- Tubular head and sill members must be notched at each end to clear mullion end anchors and anchor bolts.
- See **Detail 9** below for notch dimensions.



Notch Horizontal Ends to Clear End Anchors & Anchor Bolts



Dim “A”	Dim “B”
6-3/4”	6-1/4”
5-1/4”	4-3/4”
3-3/4”	3-1/4”

Detail 9

FRAME FABRICATION

**STEP 7 (Continued)
FABRICATE HORIZONTAL MEMBERS**

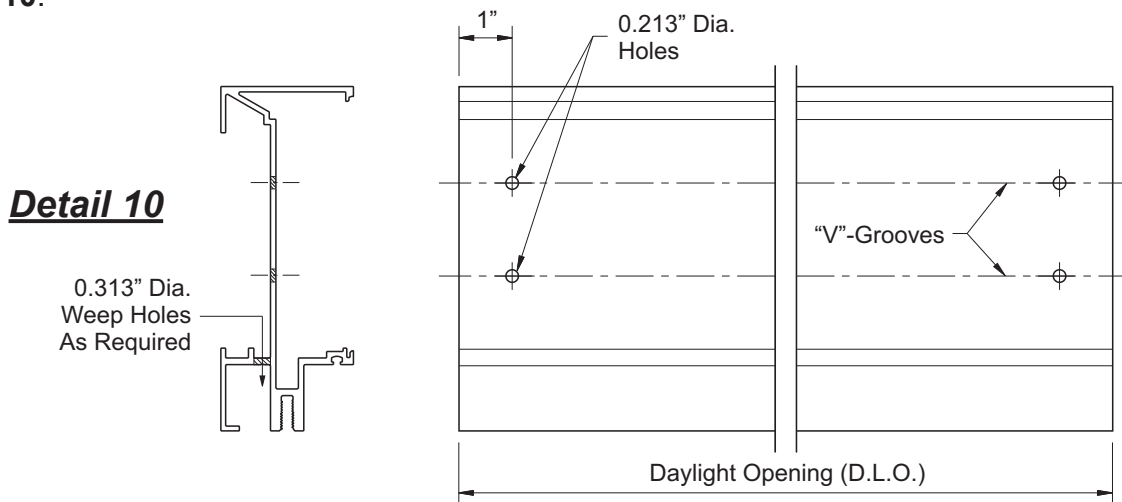
Optional Incidental Water Head (5-1/4" & 3-3/4" Back Depths Only):

- Layout hole locations on the bottom of the horizontal along the "V"-grooves at both ends.
- Drill 0.213" diameter (#3 bit) holes at each location.

Incidental water head members require weep holes along the top face of the mullion.

- Layout hole locations along the "V"-Groove of the top face as required according to approved shop drawings or engineering calculations.
- Drill 0.313" diameter weep holes at each location.

See **Detail 10**.

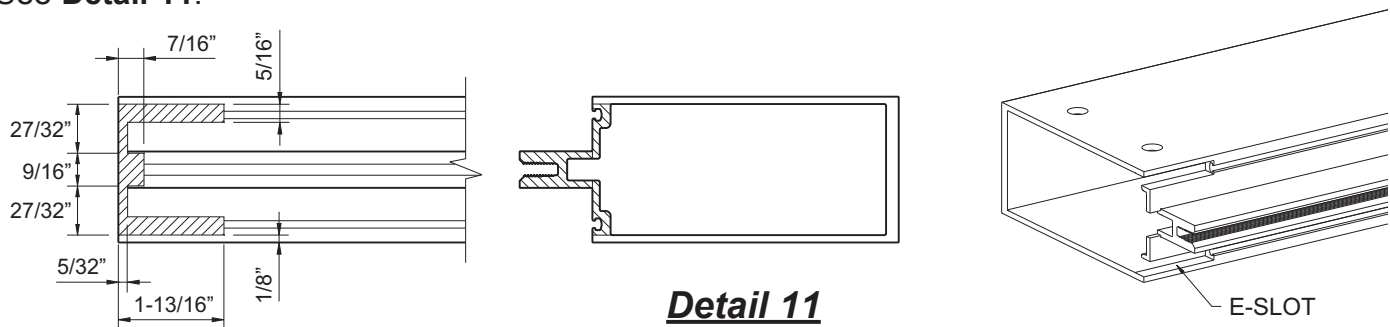


Optional Slide-In Tubular Horizontals at End Bays (E-SLOT):

When using tubular horizontals at end bays, horizontals must slide in from the interior.

- In order to clear the shear blocks on the verticals, notch the face and tongue of the horizontal at both ends as shown below.

See **Detail 11**.

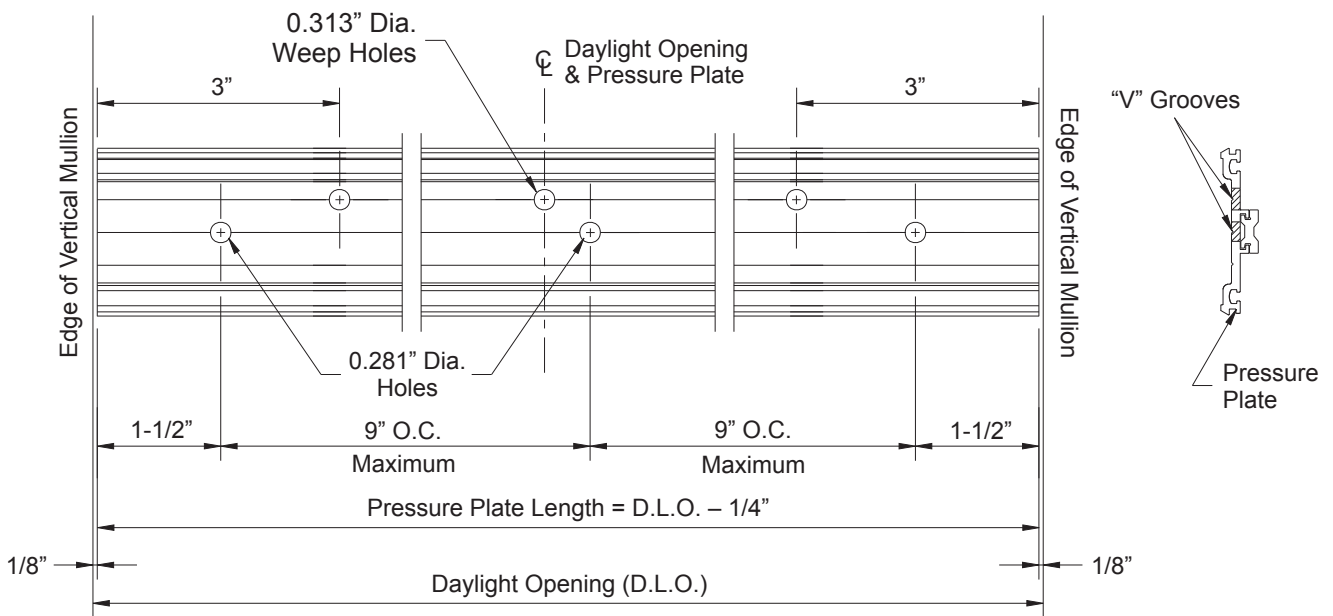


FRAME FABRICATION

STEP 8 FABRICATE PRESSURE PLATES

Horizontal Pressure Plates:

- Cut horizontal pressure plates to the daylight opening between verticals minus(-) 1/4".
 - Pressure plate stock lengths have 0.281" dia. holes factory drilled every 9".
 - After cutting, drill additional holes if required to ensure that end holes are 1-1/2" from each end.
 - If factory drilled holes are less than 1-1/2" from the ends, they must be sealed and not used.
 - Drill two 0.313" (5/16") diameter weep holes 3" from each end and one at the centerline of the pressure plate.
- See **Detail 12**.



Detail 12

Vertical Pressure Plates:

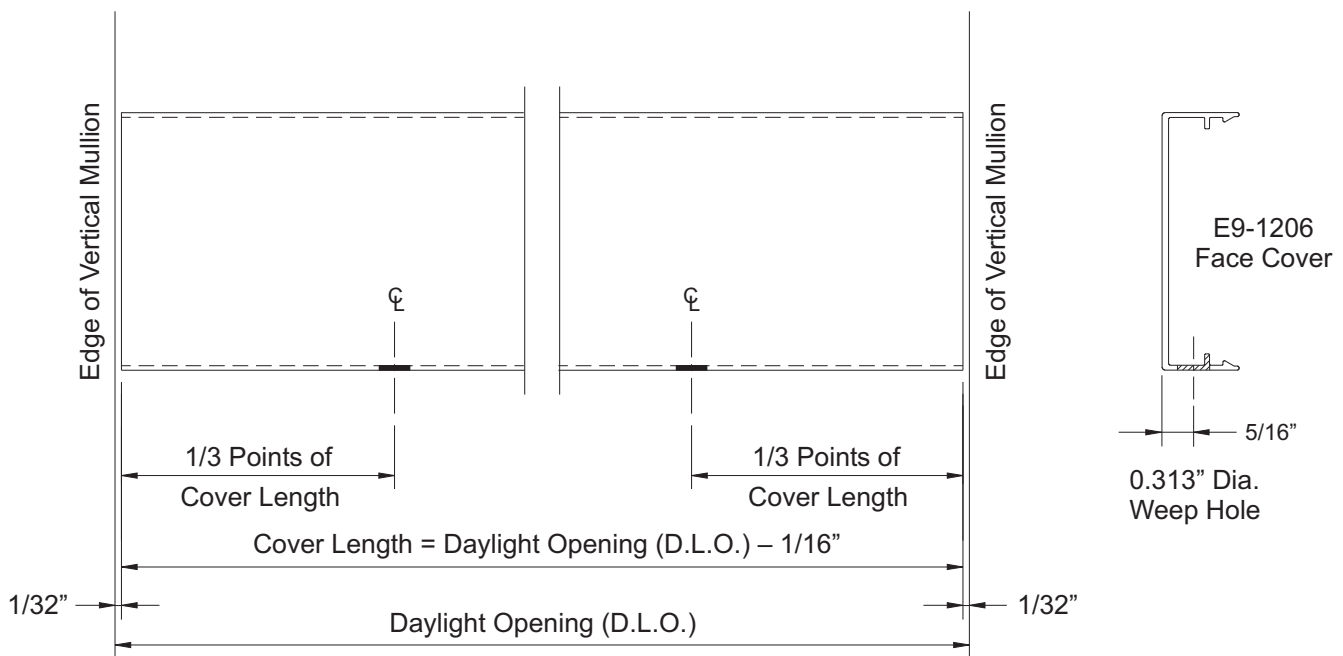
- Cut vertical and jamb pressure plates to the same length as the vertical mullions.
- If vertical mullions are spliced, cut pressure plates to accommodate for 1/2" expansion joint as shown in **Step 10** on **Pages 19 & 20**.
- Drill additional attachment holes if required to ensure that end holes are within 1-1/2" of each end.

FRAME FABRICATION

STEP 9 FABRICATE FACE COVERS

Horizontal Face Covers:

- Cut horizontal face covers to the daylight opening between verticals minus(-) 1/16".
 - Drill two 0.313" diameter weep holes at 1/3 points of cover as shown below.
- See **Detail 13**.



Detail 13

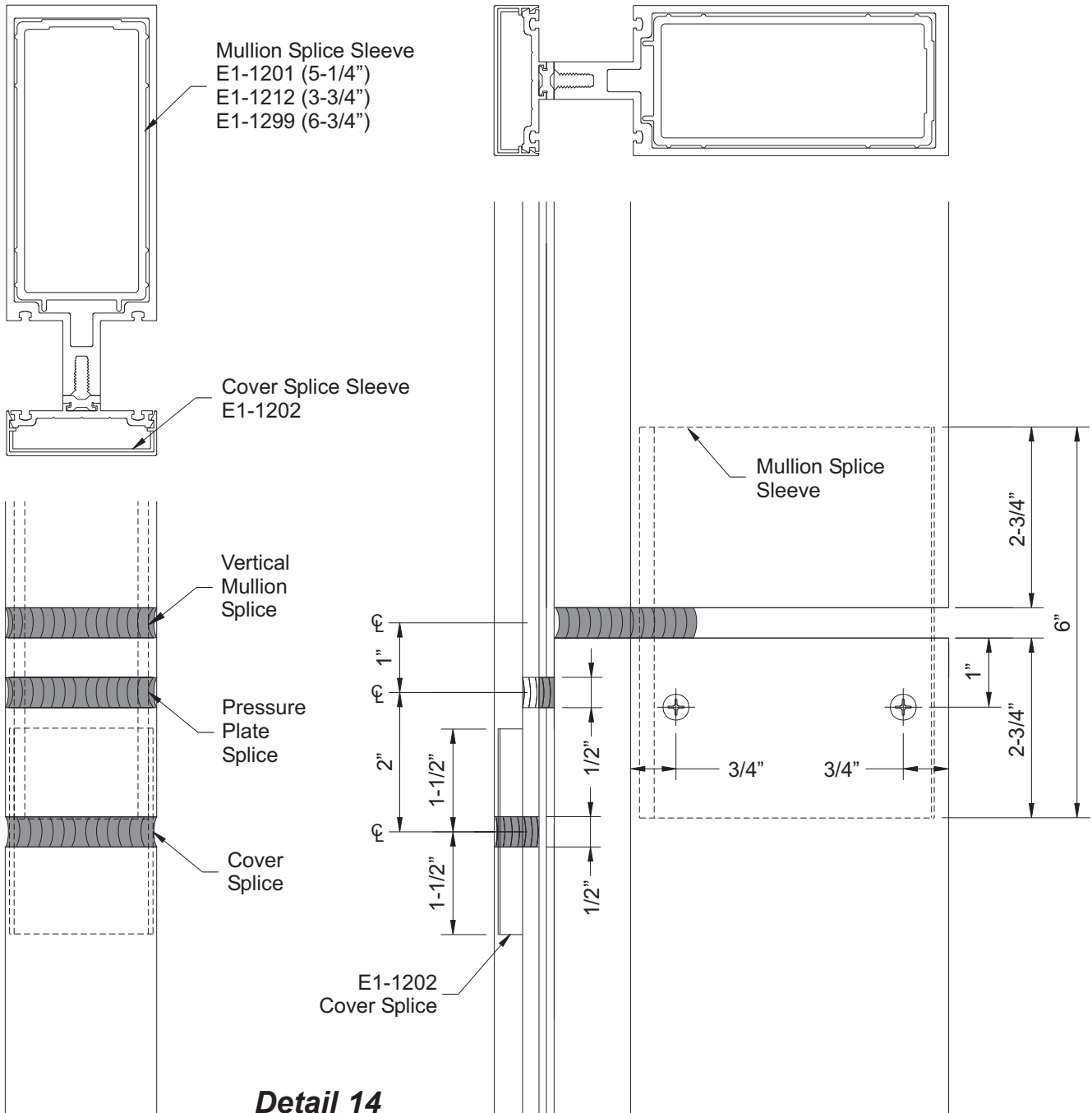
Vertical Face Covers:

- Cut vertical face covers to the same length as the vertical mullions unless the verticals are spliced.
- If vertical mullions are spliced, cut vertical covers to accommodate for the 1/2" expansion joint as shown in **Step 10**.

FRAME INSTALLATION

STEP 10
TYPICAL VERTICAL SPLICE

Stagger Mullion, Pressure Plate, and Cover Splice Joints as Shown Below.



FRAME INSTALLATION

**STEP 10 (Continued)
TYPICAL VERTICAL SPLICE**

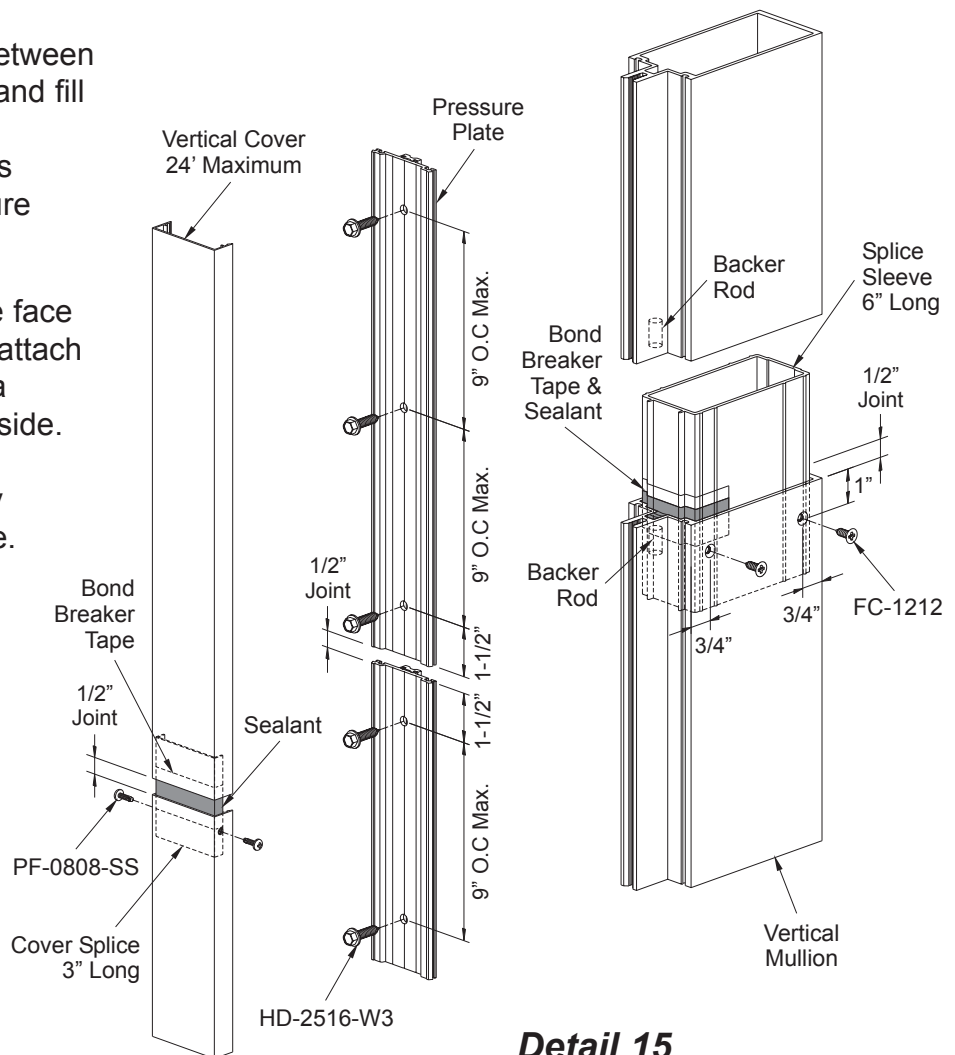
- Clean all surfaces as recommended by sealant manufacturer.
- Apply bond breaker tape to the face of the splice sleeve at its midpoint (3" from top or bottom).
- Lower the splice sleeve into top of lower mullion 2-3/4" and attach with two FC-1212 fasteners on both sides of the mullion. Screws should be installed 3/4" from the front and back of mullion and 1" down from the top.
- When using 1" glazing mullions, stuff a small piece of backer rod 1/2" down the cavity behind mullion tongue and pump in sealant to fill the cavity.
- Apply sealant to the face of splice sleeve on the upper half and carefully slide the upper mullion down onto the splice sleeve. Place a 1/2" temporary shim between the mullions to locate them.
- Secure the upper mullion to the mid anchors and remove the temporary shims.
- Apply and tool sealant to the face and sides of the splice sleeve to create a water tight joint.

- Leave a 1/2" expansion joint between vertical pressure plate splices and fill the joint with sealant.
- Locate pressure plate fasteners 1-1/2" from each end of pressure plate splice as shown.

- Apply bond breaker tape to the face of the cover splice sleeve and attach it to the lower face cover with a PF-0808-SS fastener on each side.
- Prior to snapping on the upper portion of the face cover, apply sealant to the face of the splice.
- Leave a 1/2" expansion joint between face cover splices.

See **Details 14 & 15.**

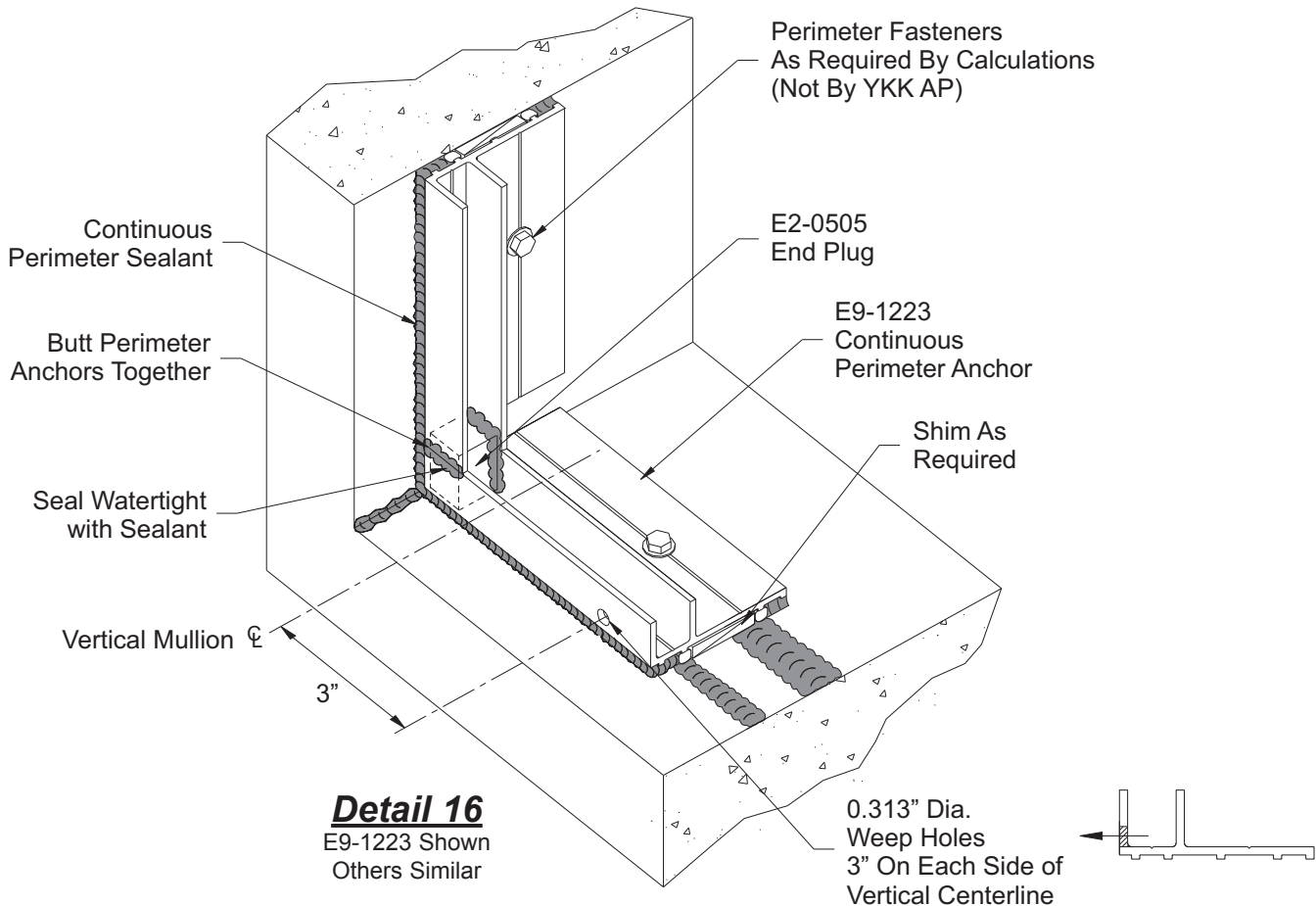
Note: Face covers, pressure plates, and mullions are staggered at splice locations.



Detail 15

FRAME INSTALLATION

STEP 11 (When Required)
INSTALL CONTINUOUS PERIMETER ANCHOR



- Cut perimeter anchors to size:
 Head and sill anchors stop 1/8" short of the structure.
 Vertical jamb anchors butt in between head and sill anchors.
- Prepare structure for anchor attachment.
- Install perimeter anchors with appropriate perimeter fasteners. Refer to shop drawings or engineering calculations for type and spacing of fasteners. Shim as required to install anchors level.
- When splicing head and sill pieces together, leave 3/8" joint for expansion and install end plug, E2-0505, that has been buttered with sealant on the front, back, and bottom at the joint.
- Run continuous sealant along the perimeter between the anchors and the substrate.
- Seal corners of butted perimeter anchors watertight with sealant.
- Butter E2-0505 end plug with sealant on all sides that touch the anchors.
 Then push end plug into place and tool excess sealant that comes through the cracks.
- Field drill 0.313" diameter weep holes in perimeter anchor (exterior face only) at sill only, 3" from center line of vertical on each side.

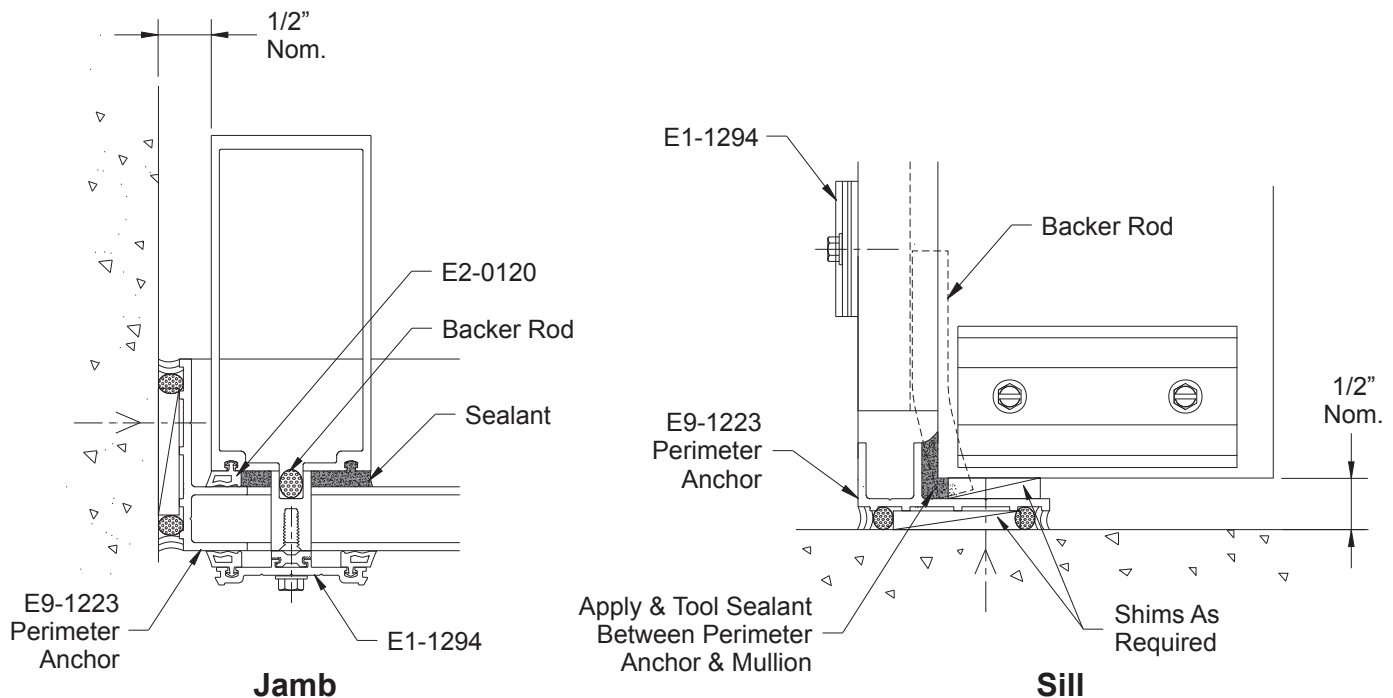
See **Detail 16**.

FRAME INSTALLATION

**STEP 12 (When Required)
JAMB/VERTICAL INSTALLATION
WITH PERIMETER ANCHORS**

- The notched ends of vertical mullions for 1" glazing leaves the interior of the mullion exposed and must be plugged prior to installation.
 - Install a small piece of backer rod into the notched out space directly behind the tongue at the top and bottom of the vertical mullions.
 - Push the backer rod into the opening at the face of the mullion.
 - Apply and tool sealant to seal off the opening made by the notch.
- Install interior gasket, E2-0120, to jamb mullion (jamb side only) the full length of the mullion.
- Position jamb into opening as shown below.
- Seal the gap between the perimeter anchor and vertical glazing pocket(s) with sealant (one side for jambs – both sides for intermediate verticals).
- Install temporary retainer clip, E1-1294, at the top and bottom of the mullion.
- Repeat this step for all jamb and vertical mullions.

See **Detail 17**.



Detail 17
E9-1223 Shown
Others Similar

FRAME INSTALLATION

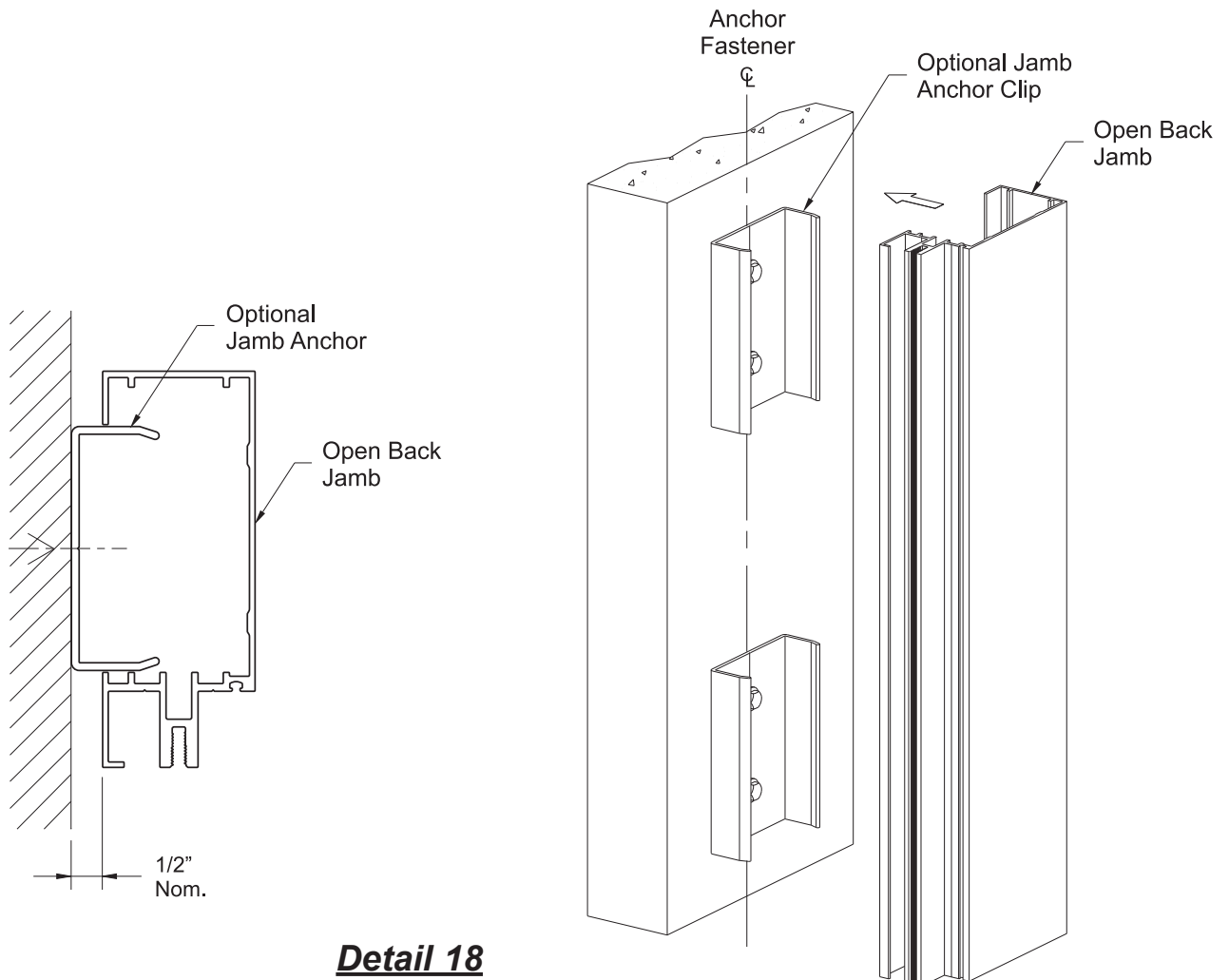
STEP 13 (Optional) JAMB INSTALLATION WITH JAMB ANCHORS

Optional jamb anchor clips, E1-3524 for 3-3/4" back depth and E1-3525 for 5-1/4" back depth, may be used with open back jamb members to reduce deflection at the jambs.

- Locate the jamb anchor locations on the structure according to approved shop drawings.
- Strike a plumb line the length of the frame height at the center line of the anchor fasteners.
- Provide anchor fasteners as per approved shop drawings or engineering calculations.
- Install the anchor fasteners as recommended by fastener manufacturer.
- Install the jamb mullions as instructed in the next step.

Note: Jamb anchor clips must be installed plumb and line up straight with each other.

See **Detail 18**.

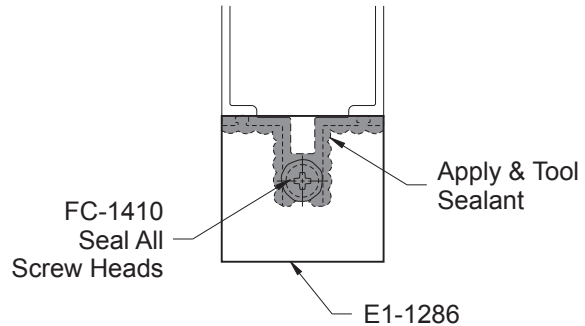


Detail 18

FRAME INSTALLATION

**STEP 14
JAMB/VERTICAL INSTALLATION
WITH MULLION END ANCHORS**

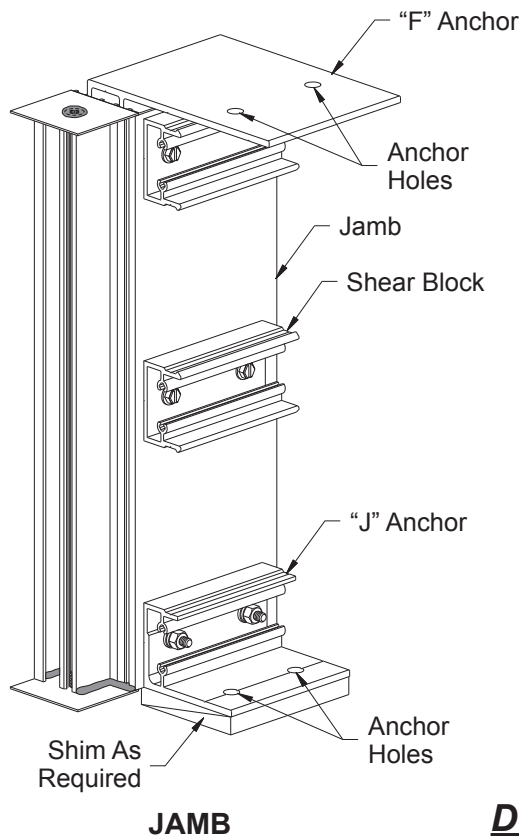
- Clean all contact surfaces as recommended by sealant manufacturer.
 - Apply sealant into the screw raceway and along the front edge of the mullion at each end.
 - Prior to erecting verticals, install mullion end caps, E1-1286, at the top and bottom of the mullions with FC-1410 fasteners.
 - Seal all screw heads with sealant.
- See **Detail 19**.



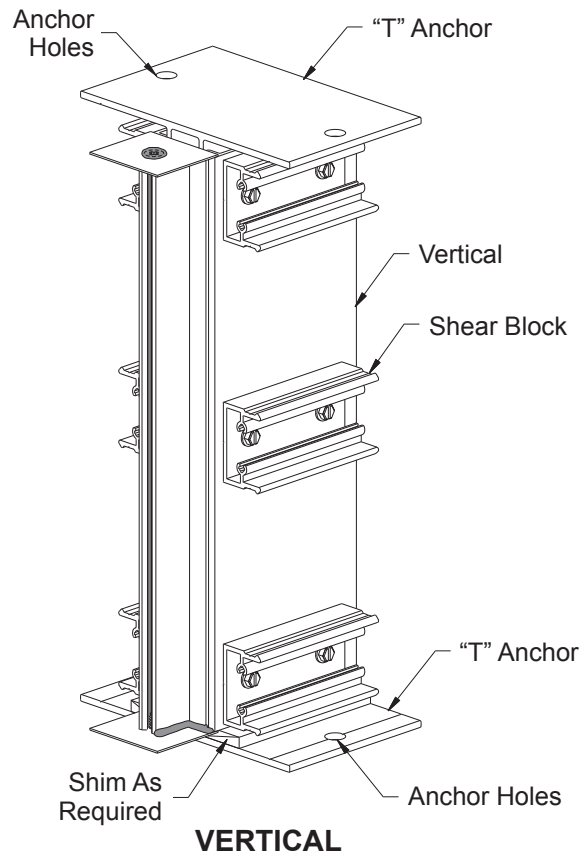
Detail 19

Standard 1" Shown
Others Similar

- Insert mullion "T" and "F" anchors into the top and bottom of the mullions before erecting them into the opening.
 - Erect and locate the jamb and vertical mullions and temporarily attach them to the structure. All mullions must be installed plumb and true.
 - Drill through the pre-drilled holes in "T", "F" and "J" anchors into the structure for the appropriate anchor fasteners according to approved shop drawings or engineering calculations.
- See **Detail 20**.



JAMB



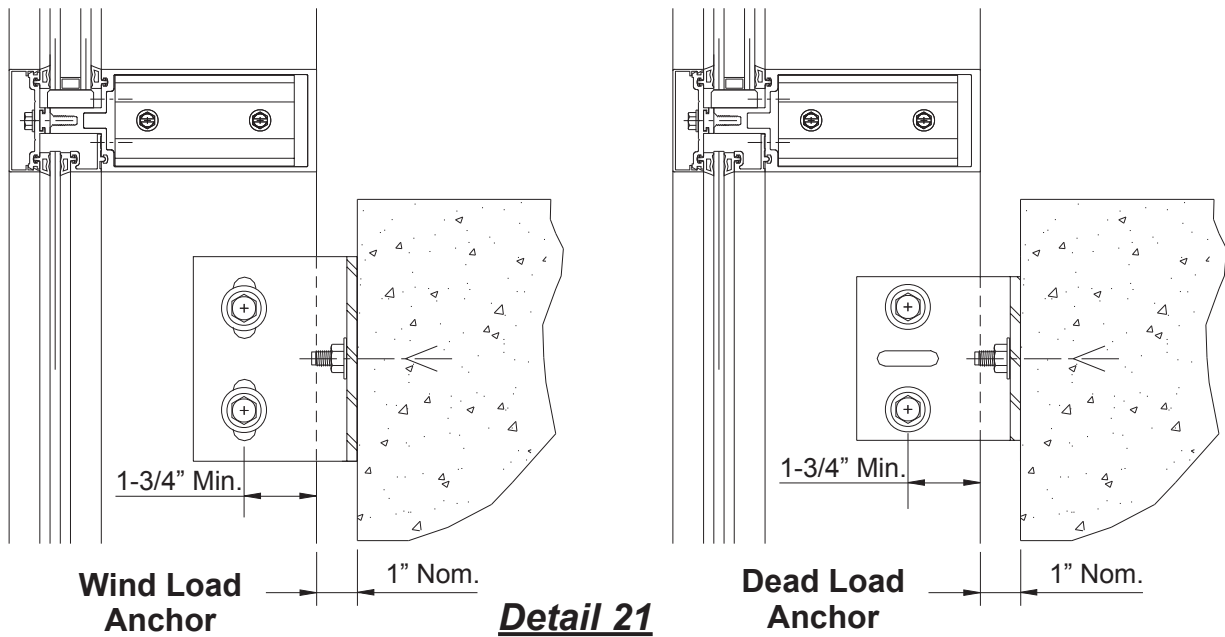
VERTICAL

Detail 20

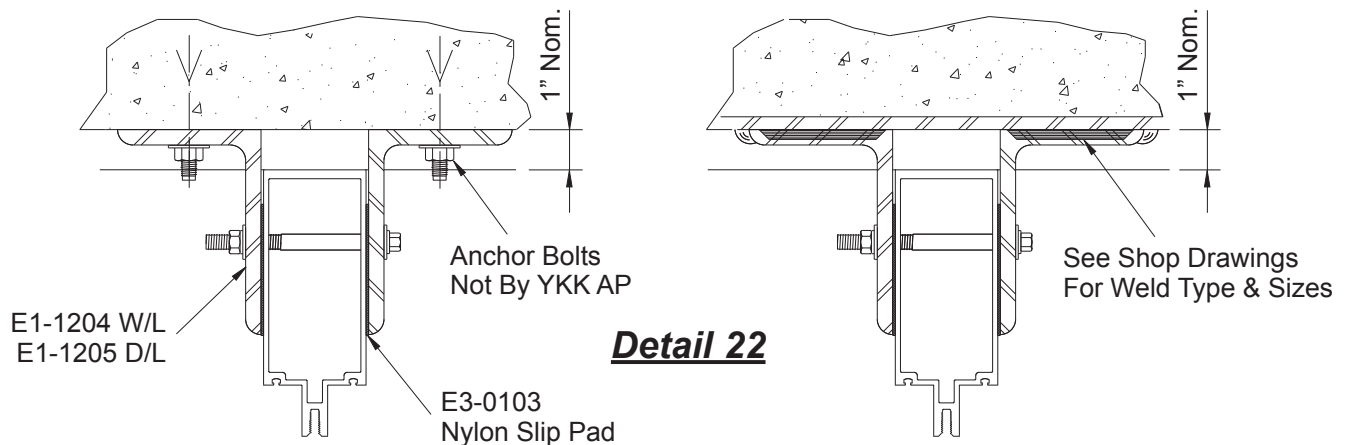
FRAME INSTALLATION

**STEP 15
INSTALL WIND LOAD/DEAD LOAD ANCHORS**

- Install steel wind load and dead load anchors. Anchor are normally template or line set before mullions are hung. Outstanding leg of anchor must be set at 90° to offset line. The back of the vertical mullion should set about 1" from the anchoring substrate.
 - Torque all anchor bolts to 90 inch pounds.
- See **Detail 21**.

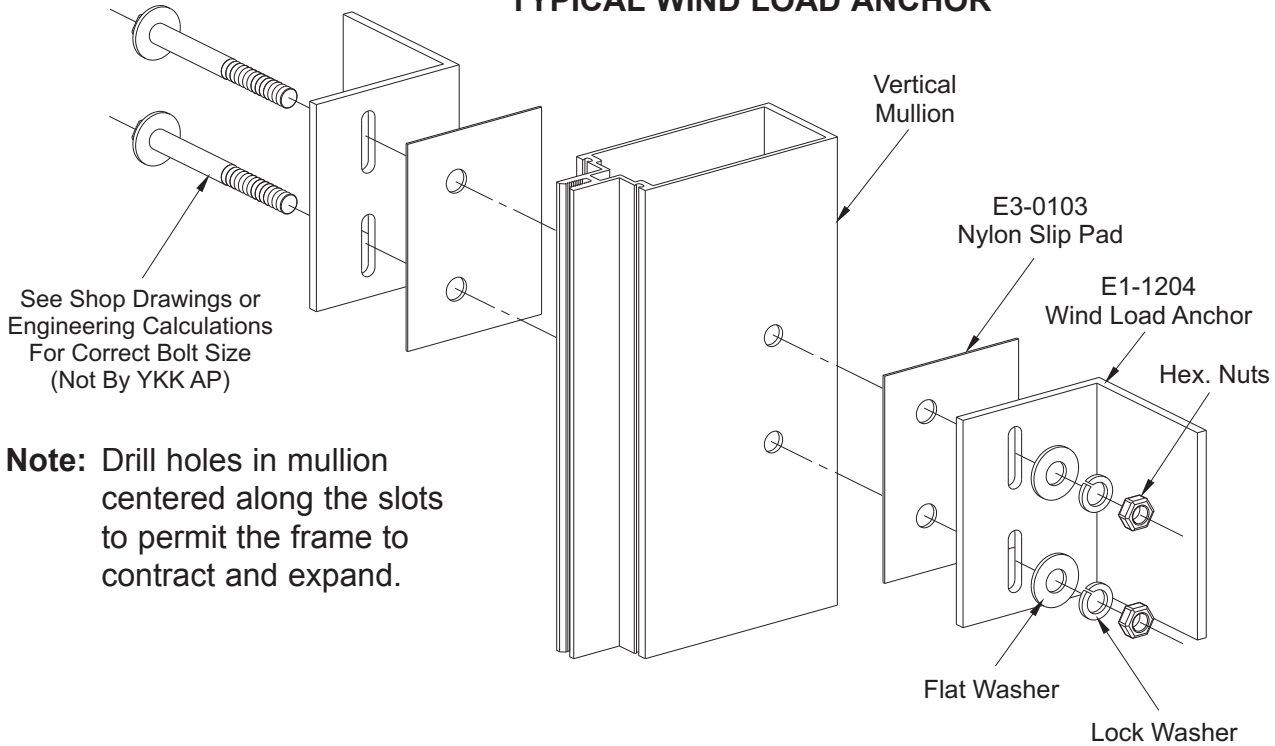


- Install, plumb, and align vertical mullions. Drill and install appropriate diameter anchor bolts per approved shop drawings or engineering calculations.
 - Nylon slip pads, E3-0103, must be installed between mullion and anchors.
- See **Detail 22**.



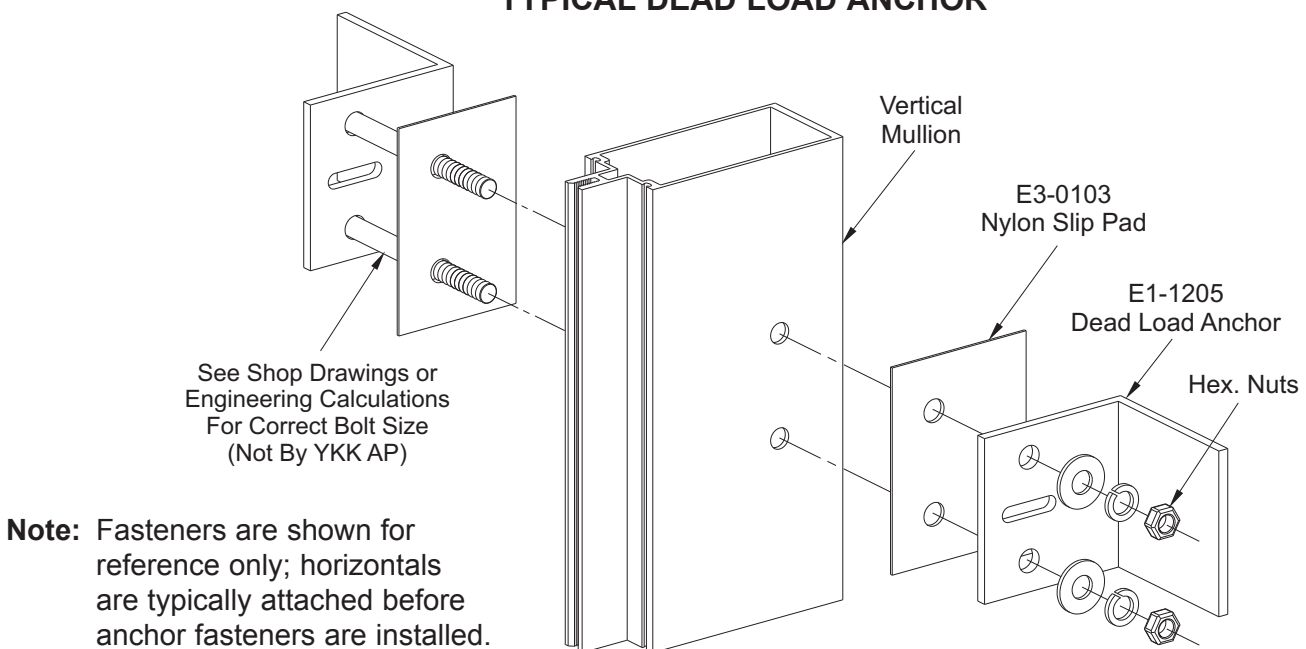
FRAME INSTALLATION

TYPICAL WIND LOAD ANCHOR



Detail 23

TYPICAL DEAD LOAD ANCHOR



FRAME INSTALLATION

STEP 16 ATTACH HORIZONTAL MEMBERS

Note: Before applying any sealant, clean aluminum surfaces using cleaner and method approved by sealant manufacturer.

-Just prior to attaching the horizontal members to the vertical, apply sealant to the front of the shear block as shown.

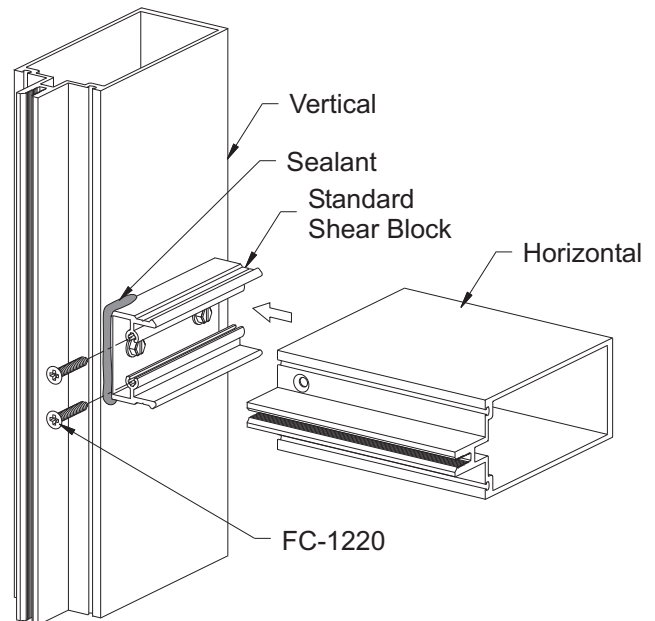
Horizontals with Concealed Fasteners:

-Slide the horizontal members towards the vertical and attach them to the shear blocks at each end with two FC-1220 fasteners.

-Tool and wipe away any excess sealant at the vertical to horizontal joints.

See **Detail 24**.

CONCEALED FASTENERS



Detail 24

Horizontals with Exposed Fasteners:

-Slide and align the horizontal members towards the vertical and transfer the hole locations on top of the horizontal to the shear block.

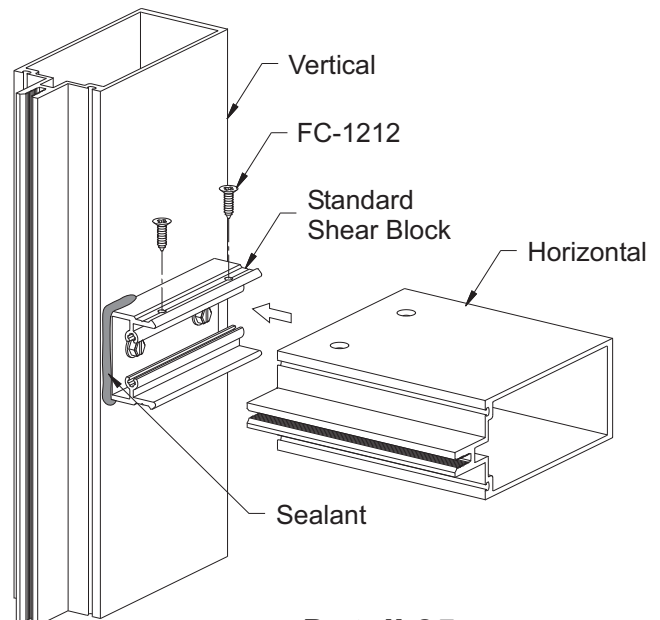
-Remove the horizontal and drill a 0.189" dia. (#12 bit) hole at each hole location.

-Slide the horizontal back against the vertical and attach it to the shear block with two FC-1212 fasteners at each end.

-Tool and wipe away any excess sealant at the vertical to horizontal joints.

See **Detail 25**.

EXPOSED FASTENERS



Detail 25

FRAME INSTALLATION

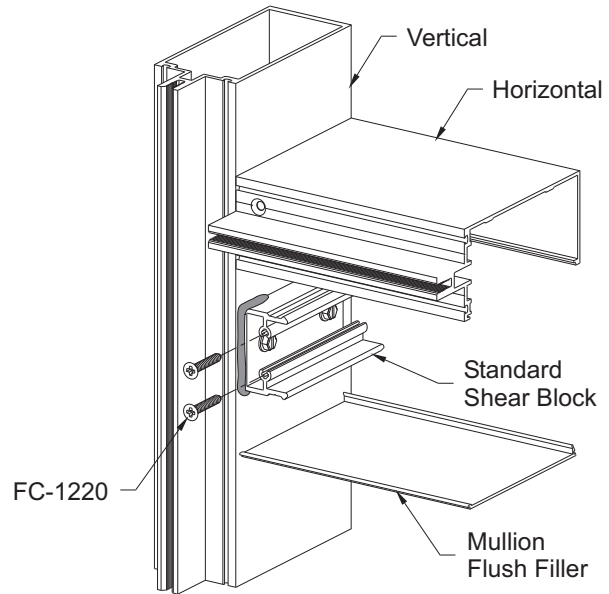
STEP 16 (Continued)

ATTACH HORIZONTAL MEMBERS

Open Back Intermediate Horizontals:

- Just prior to attaching the horizontal members to the vertical, apply sealant to the front of the shear block as shown below.
 - Lower the horizontal down onto the shear block. Make sure the horizontal and vertical glazing pockets are flush.
 - Attach the horizontal to the shear block at the face of the horizontal with two FC-1220 fasteners at each end.
 - Tool and wipe away any excess sealant at the vertical to horizontal joints.
 - Snap on the mullion flush filler.
- See **Detail 26**.

OPEN BACK HORIZONTAL

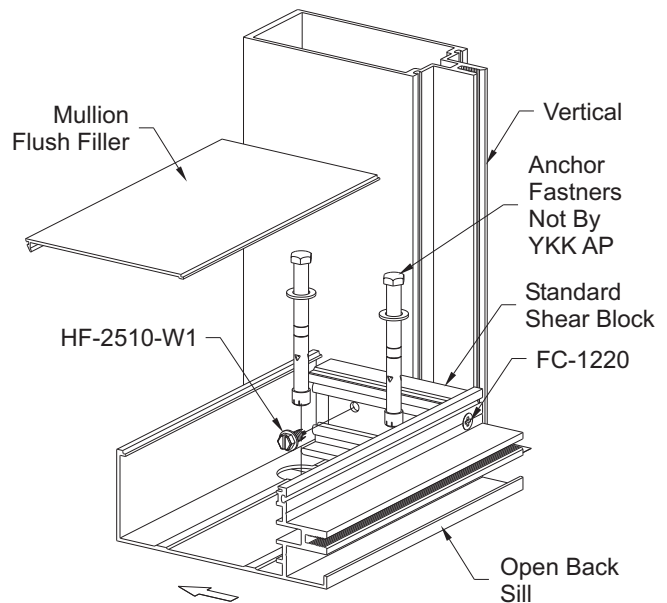


Detail 26

Open Back Head & Sill Members at End Bays:

- To clear the vertical mullions at end bays shear blocks must be pre-attached to the head and sill members through the face of the mullion with FC-1220 fasteners.
 - Position the head/sill members into place and attach the shear blocks to the verticals with two HF-2510-W1 fasteners per block.
 - Provide anchor fasteners per approved shop drawings or engineering calculations.
 - Install the anchor fasteners as recommended by fastener manufacturer.
 - Snap on the mullion flush filler.
- See **Detail 27**.

OPEN BACK HEAD/SILL AT END BAY



Detail 27

Sill Shown, Head Similar

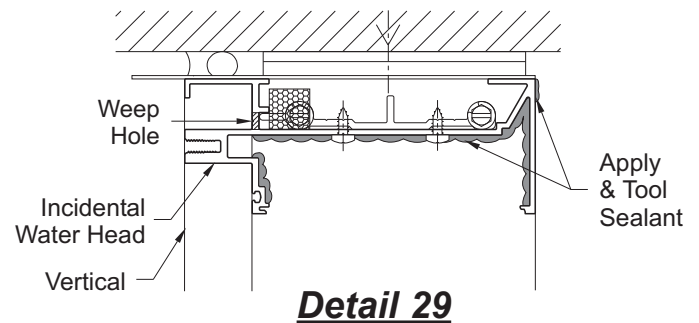
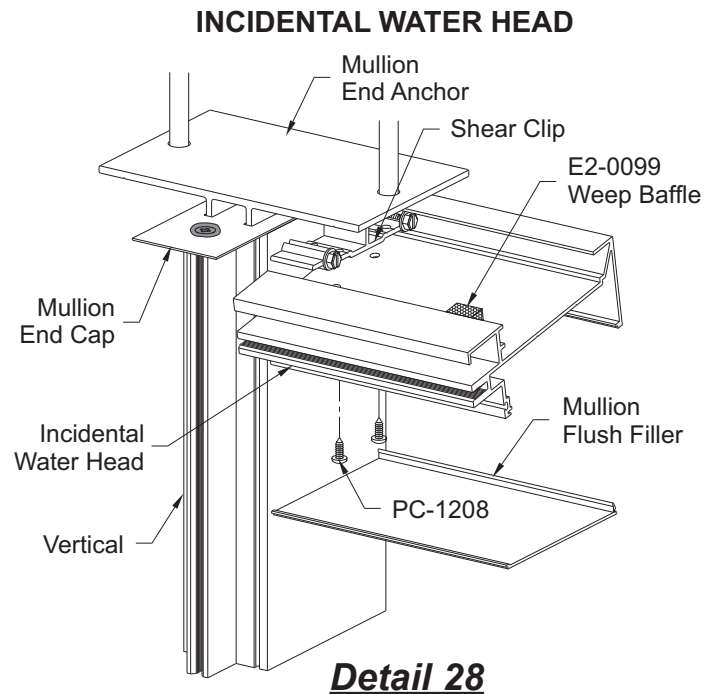
Caution: A solid shim **must** be placed under the vertical mullion to transfer glazing dead loads to the foundation.

FRAME INSTALLATION

STEP 16 (Continued) ATTACH HORIZONTAL MEMBERS

Optional Incidental Water Head Members:

- End anchors must be installed before attaching incidental water heads; install the anchor bolts according to manufacturer's recommendations.
 - Install a weep baffle, E2-0099, directly behind each weep hole. Dab a small amount of sealant on the bottom of the weep baffle to secure it.
 - Just prior to installing the the incidental water head members, apply sealant to the underside of the shear clip where it meets the vertical.
 - Incidental water head members must be joggled into place:
 - Tilt the head member towards the exterior and engage the back of the head with the back of the shear clip. Rotate the head into place and push it forward to properly seat the head member on the shear clip.
 - Attach the head member to the shear clip with two PC-1208 fasteners per clip.
 - Apply and tool sealant to the head to vertical intersection at each end as shown in **Detail 29**.
 - Snap on the mullion flush filler.
- See **Detail 28**.

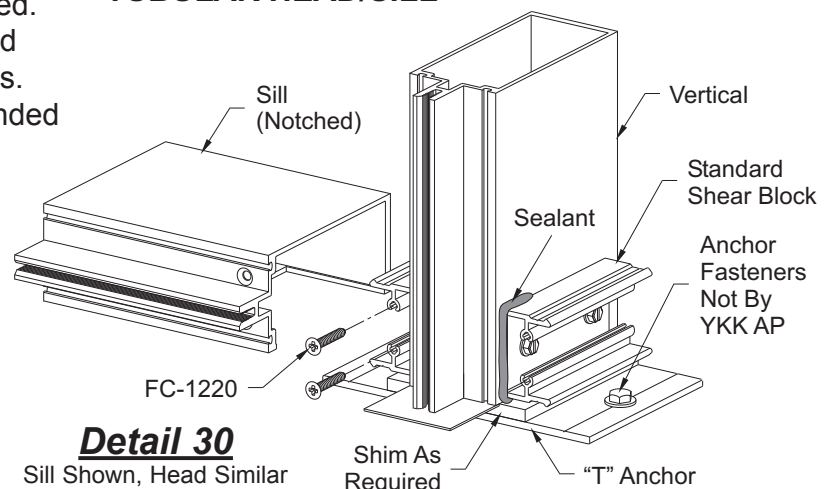


Tubular Head & Sill Members:

- Mullion end anchors must be installed before head and sill members are attached.
- Provide anchor fasteners as per approved shop drawings or engineering calculations.
- Install the anchor fasteners as recommended by fastener manufacturer. See **Detail 30**.
- Clean, seal, and attach head and sill members as previously shown on **Page-27**.

Caution: A solid shim **must** be placed under the vertical mullion to transfer glazing dead loads to the foundation.

TUBULAR HEAD/SILL



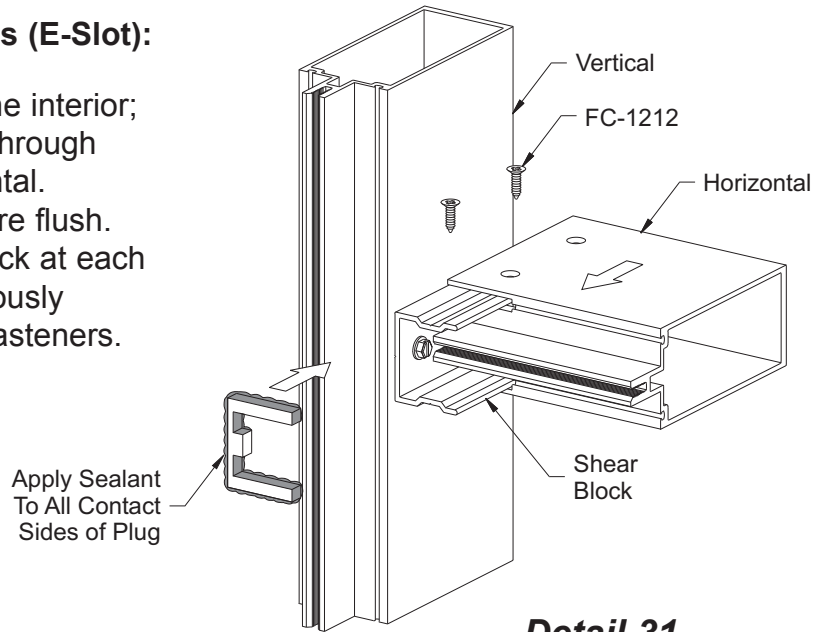
FRAME INSTALLATION

**STEP 16 (Continued)
ATTACH HORIZONTAL MEMBERS**

For Tubular Horizontals at End Bays (E-Slot):

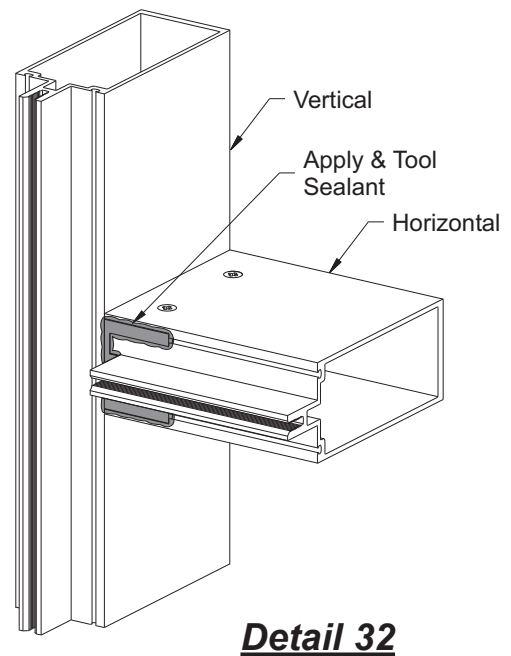
- Slide the horizontal into place from the interior; the shear blocks should easily pass through the E-Slots at the ends of the horizontal. Make sure that the glazing pockets are flush.
- Attach the horizontal to the shear block at each end with FC-1212 fasteners as previously shown for horizontals with exposed fasteners. See **Detail 31**.

TUBULAR HORIZONTALS AT END BAYS



Detail 31

- Apply sealant to all contact sides of the E-Slot plug, E2-0123.
- Insert the E-Slot plug into place and press it firmly against the shear blocks.
- Cover the entire slot with sealant and tool the sealant to ensure a watertight seal. See **Detail 32**.



Detail 32

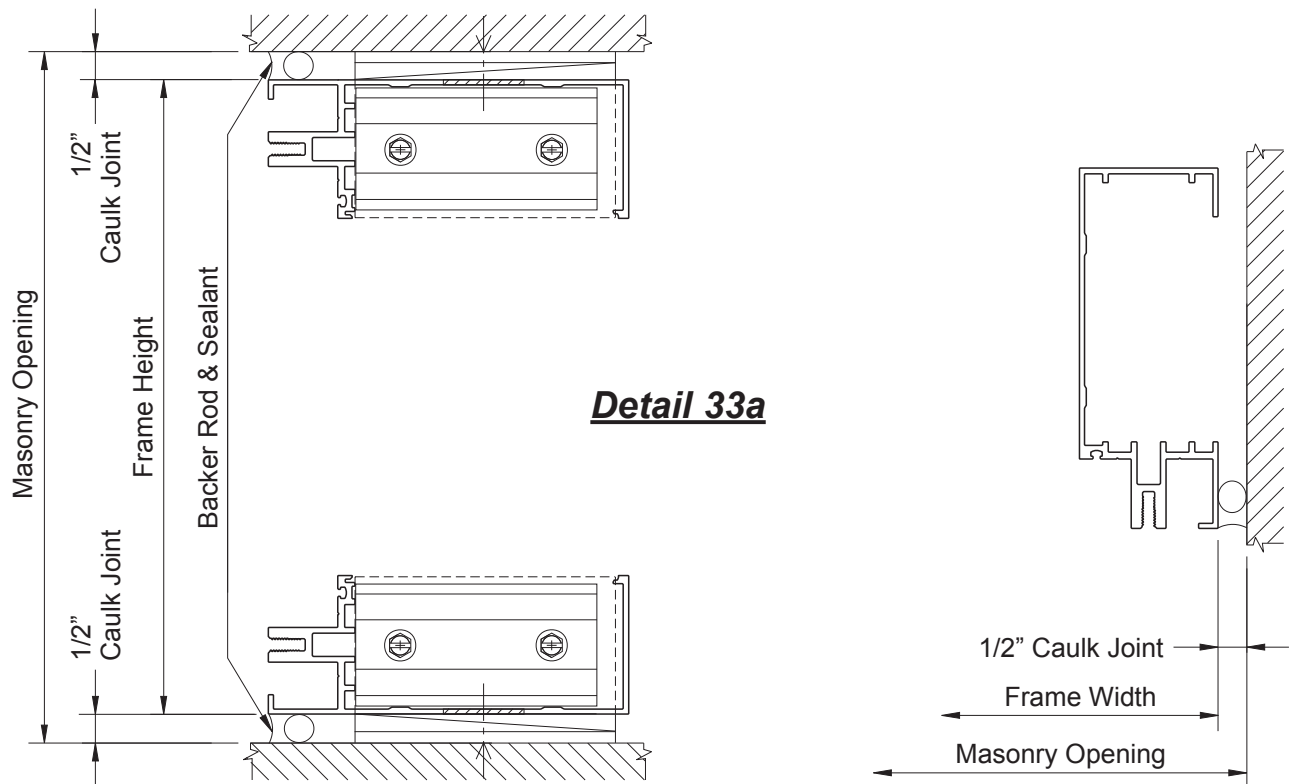
FRAME INSTALLATION

STEP 17a

APPLY PERIMETER SEALANT WHEN USING STANDARD JAMB MEMBERS

- Clean the area around the perimeter of the frame with cleaner and method approved by sealant manufacturer.
- Push in backer rod between the perimeter of the frame and the substrate about 1/4".
- Apply a quality sealant to the perimeter of the frame.
- Tool the sealant to ensure a water tight joint.

See **Detail 33a**.



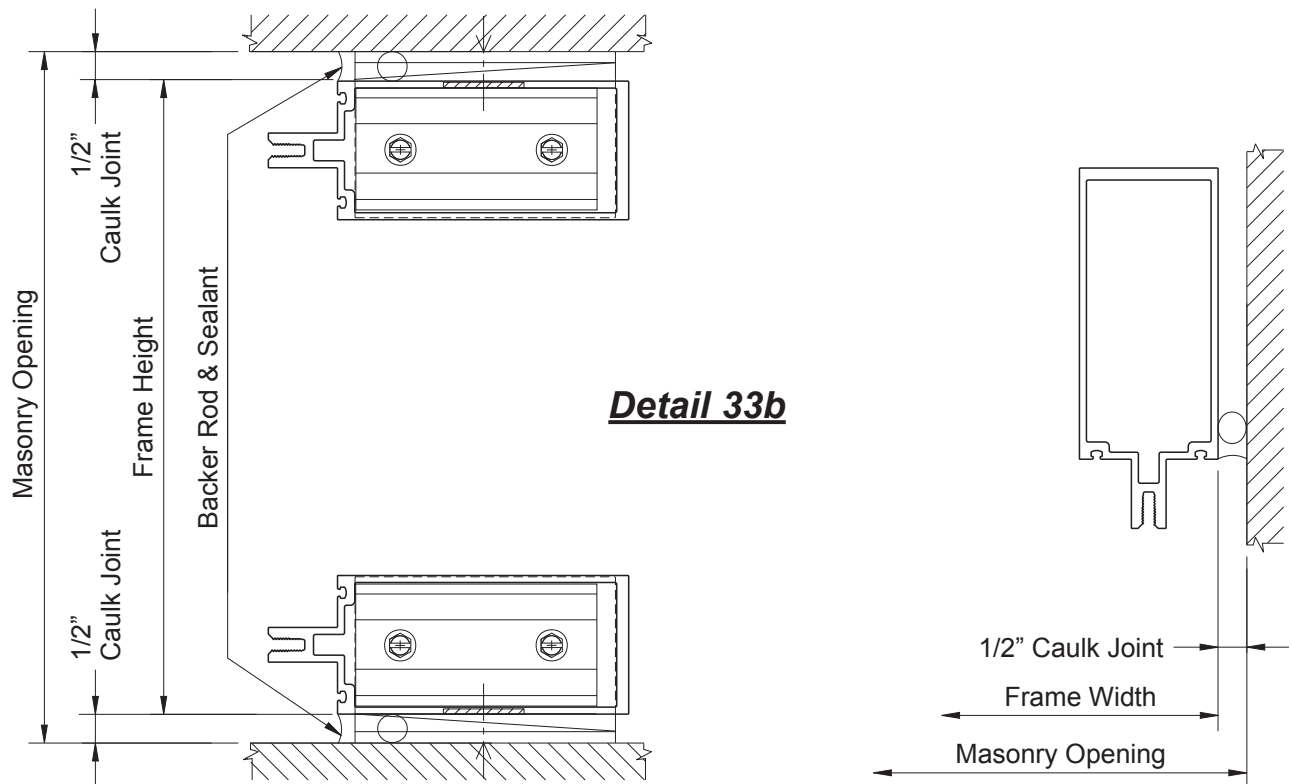
FRAME INSTALLATION

STEP 17b

APPLY PERIMETER SEALANT WHEN USING OPTIONAL JAMB MEMBERS

- Clean the area around the perimeter of the frame with cleaner and method approved by sealant manufacturer.
- Push in backer rod between the perimeter of the frame and the substrate about 1/4".
- Apply a quality sealant to the perimeter of the frame.
- Tool the sealant to ensure a water tight joint.

See **Detail 33b**.



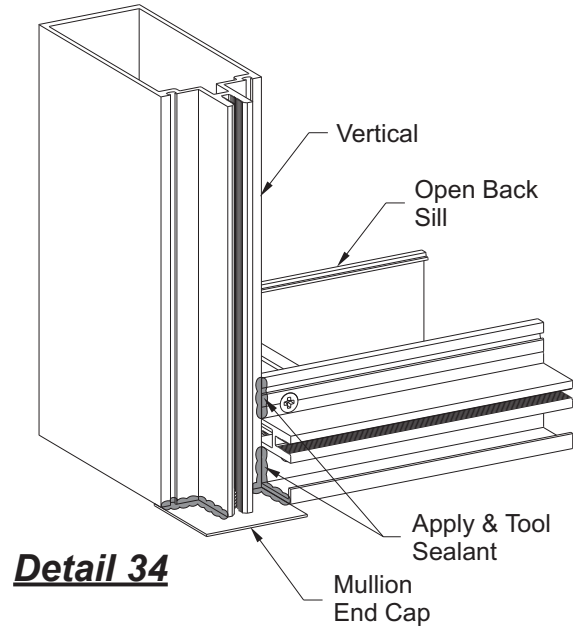
FRAME INSTALLATION

STEP 18
INSTALL JOINT PLUGS

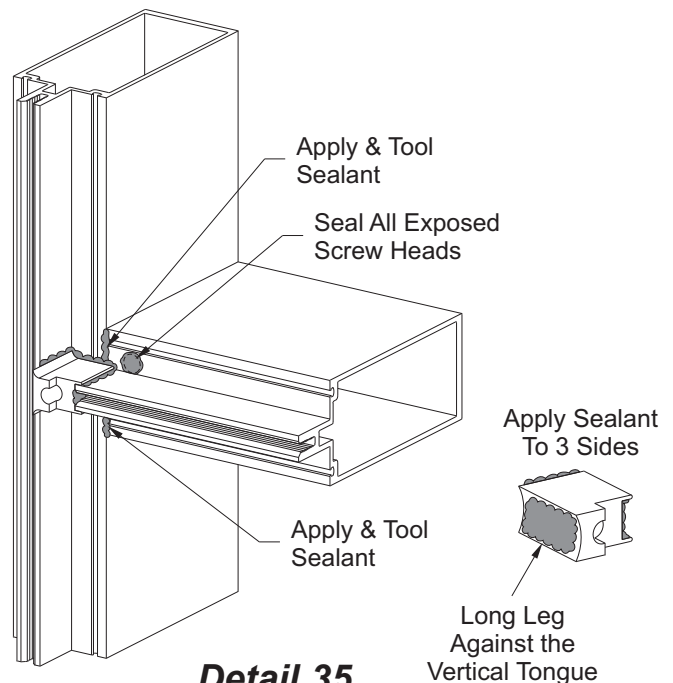
The tongue of each head, horizontal and sill must be sealed to the tongue of the vertical and jamb mullions at each end with joint plugs, E2-0102 for 1" glazing or E2-0125 for 1/4" glazing.

For Open Back Sill Members:

- Just prior to installing joint plugs, clean the area around the intersection of the vertical and the sill member with an approved cleaner.
 - Apply and tool sealant to the joint where the sill member meets the vertical and along the joint between the mullion end cap and the perimeter leg of the sill member.
- See **Detail 34**.



- Clean the area around the mullion tongue ends with an approved cleaner.
 - Apply and tool sealant to the joint where the horizontal meets the vertical.
 - Apply sealant to the three contact sides of the joint plug.
 - Install joint plug as shown with the long leg of the joint plug against the vertical tongue.
 - Press the joint plug firmly against the face of the mullion.
 - Tool the sealant to ensure a watertight seal.
 - Seal all exposed screw heads on the face of the mullion.
- See **Detail 35**.



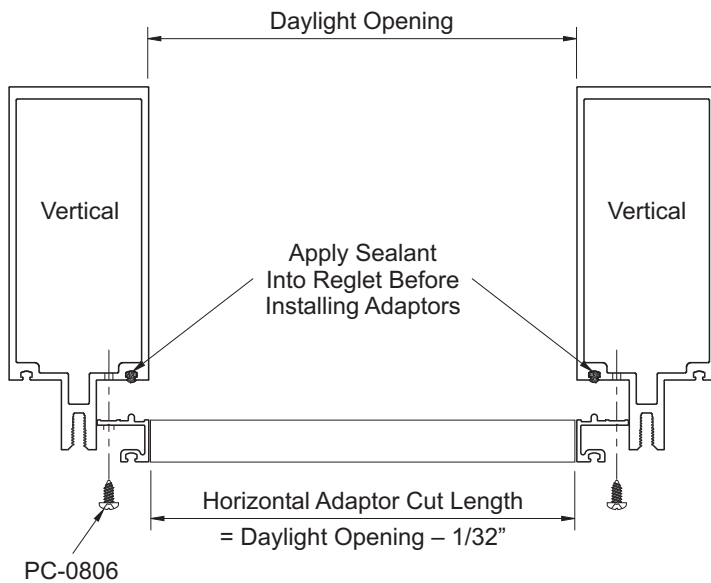
Detail 35

Int. Horizontal Shown
Head & Sill Similar

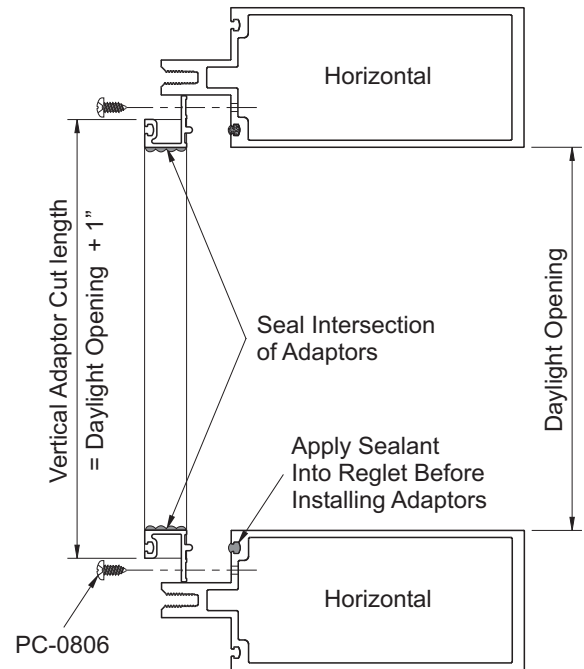
GLAZING

**STEP 19 (Optional)
INSTALL GLAZING ADAPTORS**

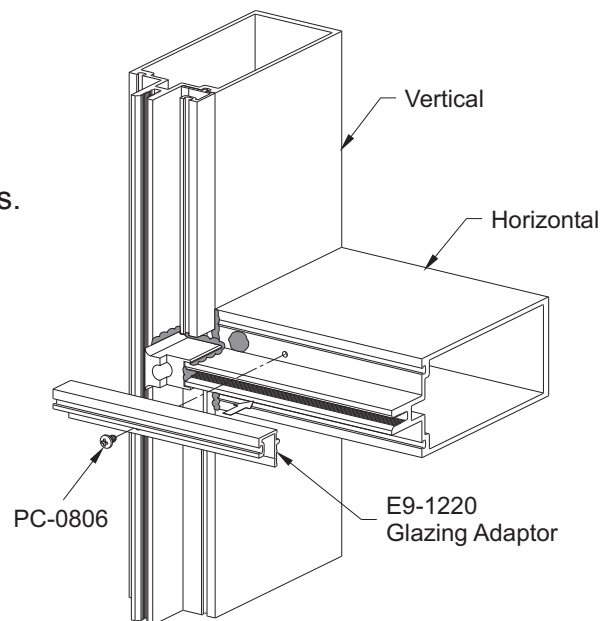
Note: 1/4" glazing adaptor, E9-1220 shown
1/2" glazing adaptor, E9-1232 similar.



Detail 36



- Cut glazing adaptors to:
Vertical Cut Length = D.L.O. plus(+) 1".
Horizontal Cut Length = D.L.O. minus(-) 1/32".
 - Pre-drill each adaptor along the "V"-groove with 0.189" dia. holes 2" from each end and 24" O.C.
 - Dry fit adaptors and match drill 0.141" dia. holes (drill #28) on the mullion to receive PC-0806 fasteners.
 - Clean the area around the mullion glazing reglet and the glazing adaptor with a cleaner approved by the sealant manufacturer.
 - Apply sealant into the glazing reglet of the mullion and the ends of the horizontal adaptors.
 - Install the adaptors with PC-0806 screws at each hole location. Install the vertical adaptors first; make sure they are centered along the day light opening.
 - Tool sealant at all adaptor intersections and seal all screw heads.
- See **Detail 36 & 37**.

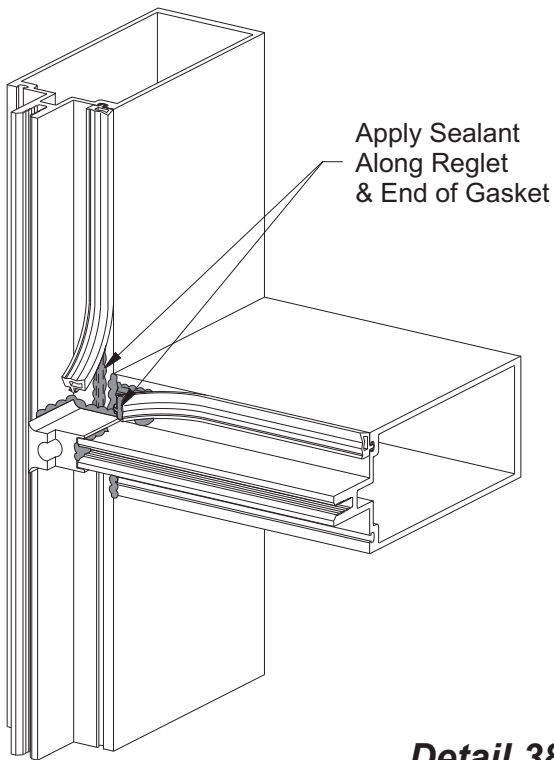


Detail 37

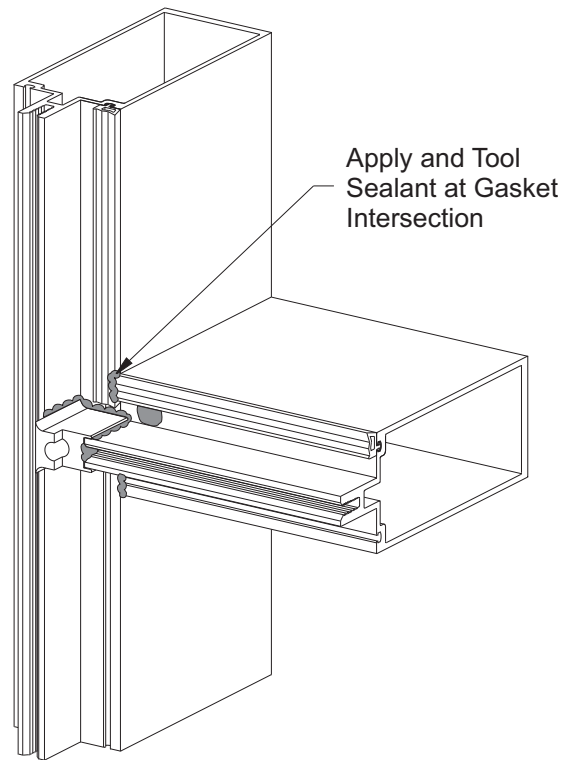
GLAZING

**STEP 20
INSTALL INTERIOR GLAZING GASKETS**

- Cut interior glazing gaskets to size:
 Vertical Gasket = Daylight Opening + 1-1/2".
 Horizontal Gasket = Daylight Opening + 1/4" per each foot of opening width.
- Install vertical gaskets first, centered along the daylight opening.
- Install horizontal glazing gaskets next.
 - Insert the glazing gasket into the reglet at each end first.
 - Snap the rest of the glazing gasket into the reglet starting at the center and work towards each end.



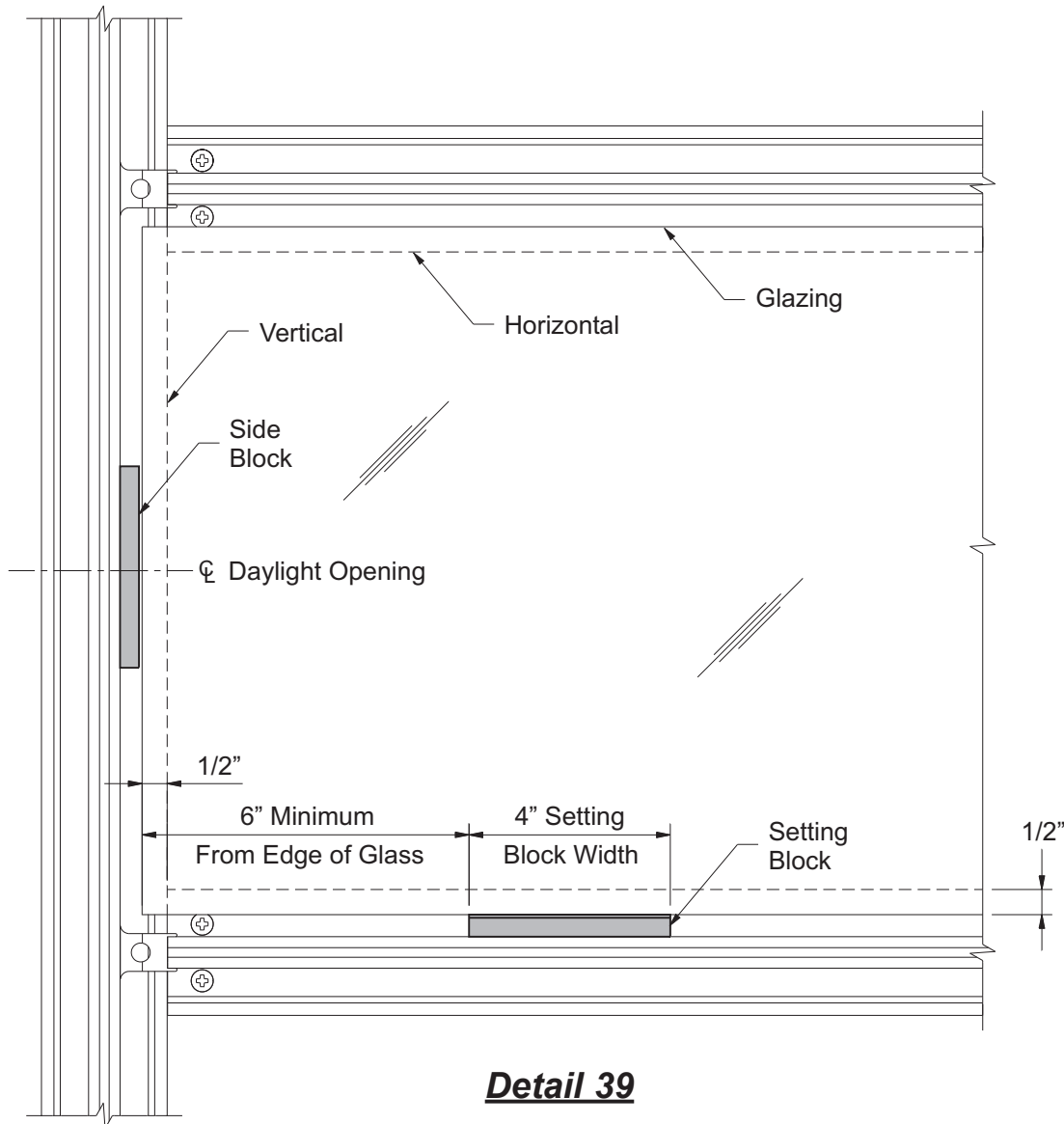
Detail 38



- Pull the last 3" of each gasket away from the reglet.
 - With gasket end held out of the way, run a 2-3" bead of sealant into the reglet at the ends.
 - Apply sealant at the ends of the horizontal gaskets.
 - Reinsert the ends of the gaskets pressing them firmly against the face of the mullions.
 - Apply and tool sealant at the intersection of the vertical and horizontal gaskets.
- See **Detail 38**.

GLAZING

**STEP 21
INSTALL SETTING & SIDE BLOCKS**



-Install setting blocks, E2-0104 for 1" glazing or E2-0112 for 1/4" glazing, at 1/4 points of D.L.O. or minimum of 6" from edge of glass, whichever is greater.

Consult YKK AP for setting block requirements on units that exceed 60" x 90" or 40 sq. ft.

-Install side blocks, E2-0105 for 1" glazing or E2-0113 for 1/4" glazing, centered along the daylight opening on both sides of glazing material.

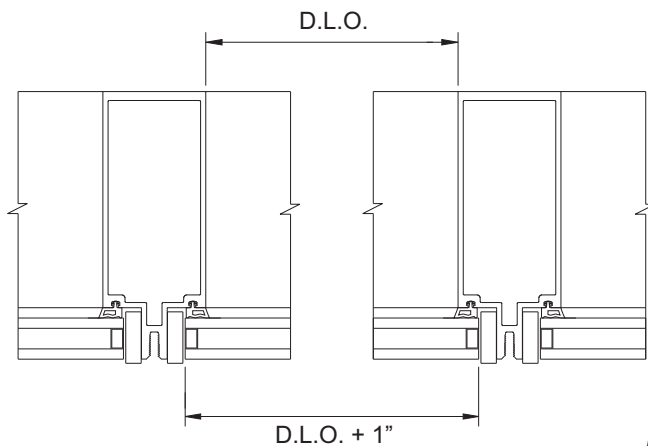
See **Detail 39**.

GLAZING

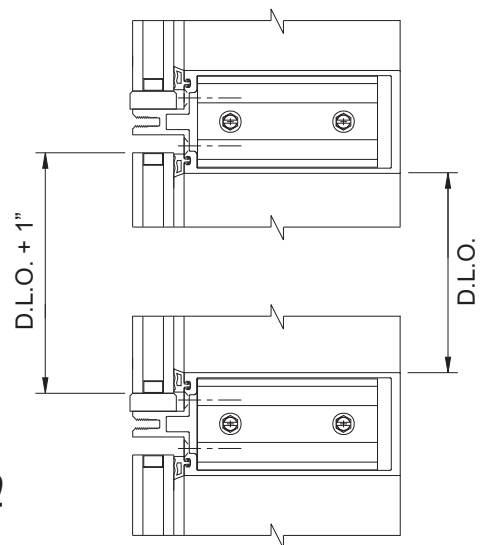
**STEP 22
INSTALL EXTERIOR GLAZING GASKETS**

- Preload exterior vertical glazing gaskets to the same length as the vertical pressure plates.
- Preload exterior horizontal glazing gaskets to daylight opening plus 1/4" per foot of opening width.
- Install vertical glazing gaskets onto the vertical pressure plates.
- Install horizontal gaskets by pushing each end into the reglet of the pressure plate. Next press center of gasket into reglet; then push gasket into reglet working from center towards the ends.

Caution: Do not stretch the gaskets.



Detail 40



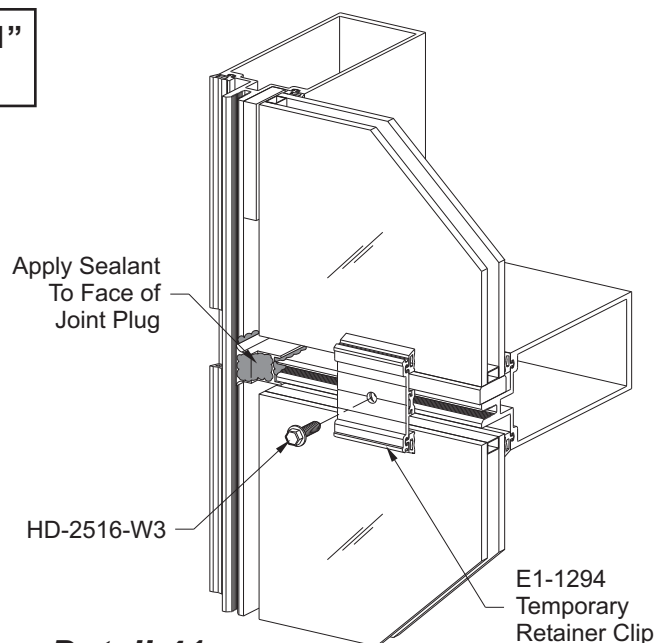
**STEP 23
INSTALL GLASS**

Glass and Spandrel Size = Daylight Opening + 1" Horizontally and Vertically.

- As each lite is installed, attach a temporary retaining clip, E1-1294, in the middle of each horizontal and 4" from glass edge at each end using HD-2516-W3 fasteners.
- Reuse the temporary retaining clips.
- Apply sealant to the face of the joint plugs just prior to installing vertical pressure plates. Do not allow sealant to skim over prior to installing pressure plates.

Note: Sealant must form a complete seal between the exterior gasket, pressure plate, thermal isolator, and the joint plug.

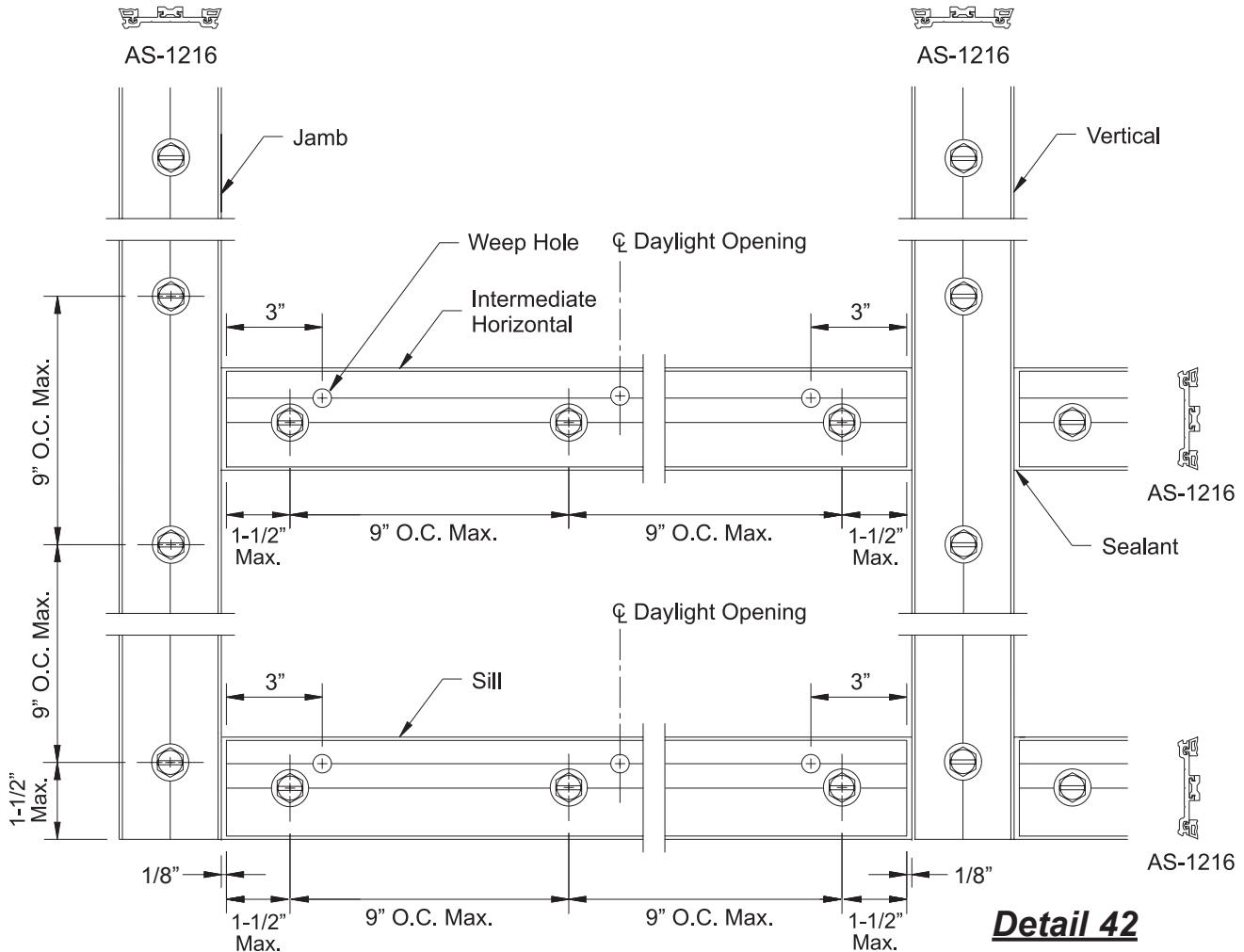
See **Detail 40 & 41.**



Detail 41

GLAZING

**STEP 24
PRESSURE PLATE LAYOUT AND ASSEMBLY**



Detail 42

-Pressure plate stock lengths are factory punched with 0.281" diameter holes at 9" O.C. maximum. After cutting, additional holes may be required to have screws 1-1/2" from each end.

See **Detail 42**.

-Install vertical pressure plates using HD-2516-W3 screws. Initially torque screws to 30 inch pounds with a speed wrench or torque limiting screw gun. Work from the bottom up.

-Torque all vertical pressure plate screws to 50 inch pounds.

-Install vertical face cover E9-1206. See **Detail 43**.

-Center and install horizontal pressure plates in opening, leaving a 1/8" gap at the ends.

-Starting at the center of each pressure plate, tighten each retainer screw to 50 inch pounds.

-Apply and tool sealant to completely seal gaps at the pressure plate ends.

-Install horizontal face cover E9-1206.

See **Detail 44**.

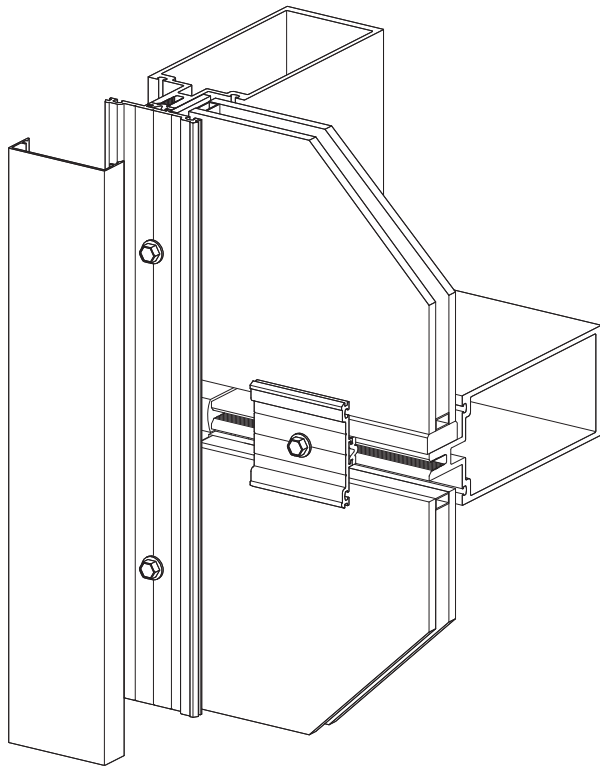
Note: Perimeter pressure plates AS-3569 (1" glazing) and AS-3572 (1/4" glazing) with isolator tape E2-0239 must be used when using tubular head and sill members.

Mullion end caps must be installed when using mullion end anchors.

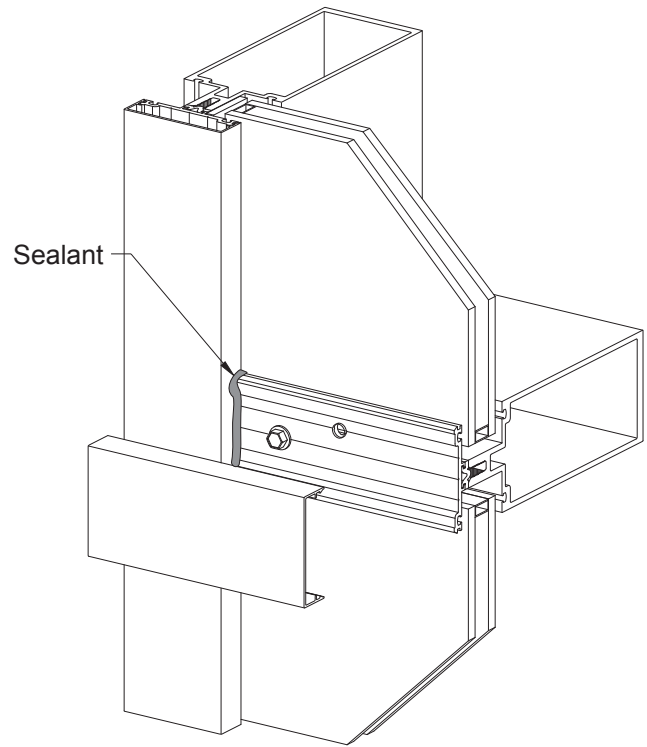
GLAZING

STEP 25
INSTALL EXTERIOR FACE COVERS

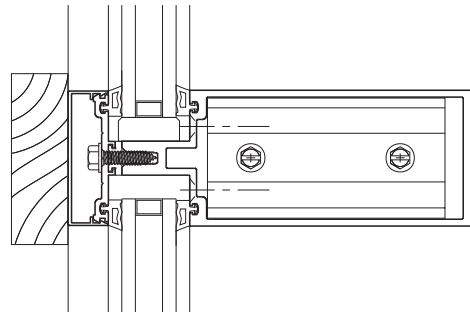
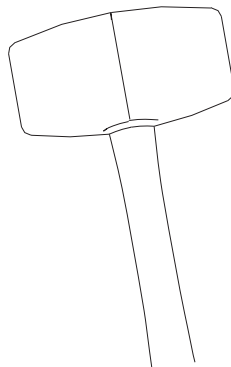
-Snap on exterior covers using a mallet and a clean scrap piece of lumber.
Start at one end and work down the vertical and across the horizontal.
See **Detail 43**.



Detail 43



Detail 44



 **YKK AP America Inc.**

270 Riverside Parkway

Suite A

Austell, Georgia 30168

www.ykkap.com