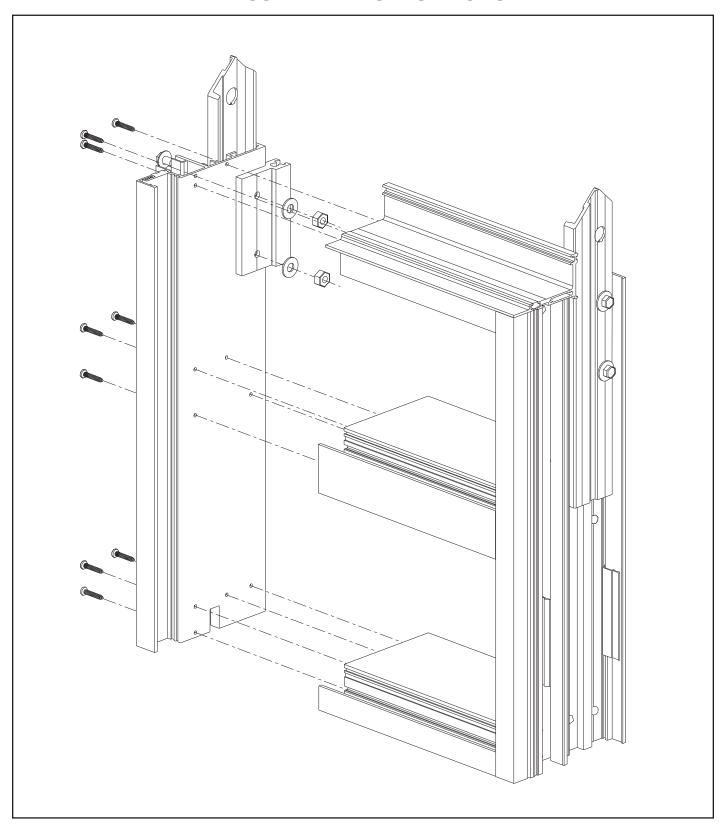


# **ASSEMBLY INSTRUCTIONS**



**Assembly 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. 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. YKK AP storefront and/or curtain wall framing is typically completed before drywall, flooring and other products which may still be in process. Take the extra time to wrap and protect the work produced.
- 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

	Intermediate Horizontal	BE9-3806		Outside Corner Mullion Female	E9-3814
	Head	E9-3803		Inside Corner Mullion Male	E9-3817
	Stacking Tray	BE9-3804		Inside Corner Mullion Female	E9-3818
	<b>Vertical Mullion</b> Male	BE9-3801		Glass Stop	E9-3807
	Vertical Mullion Female	BE9-3802		Head Glass Stop	E9-3808
	Heavy Duty Sill Starter	BE9-3834		Horizontal Glass Stop	E9-3809
CONTRACTOR OF THE CONTRACTOR O	Sill	BE9-3805		Male Mullion Adaptor	E9-3819
	Jamb	BE9-3810		Inside Corner Adaptor	BE9-3820
Ę.	Jamb Trim Use with BE9-3810	BE9-3811	1	Inside Corner Glazing Adaptor	E9-3821
	Jamb Interior Cover	E9-3812		Outside Corner Glass Stop	E9-3816
I many many many many many many many many	Outside Corner Mullion Male	E9-3813		Outside Corner Adaptor	BE9-3815



# **ACCESSORIES**

Mullion Clip	E1-3901		Jamb End Dam	E1-3913
Setting Block Chair	E1-3902		Mullion Splice Sleeve For Left Outside Corner Mullion	E1-3914
Mullion Splice Sleeve Left	E1-3903		Mullion Splice Sleeve For Right Outside Corner Mullion	E1-3915
Mullion Splice Sleeve Right	E1-3904		Outside Corner Leveling Bracket	E1-3916
Leveling Bracket	E1-3905		L Anchor For Outside Corner	E1-3917
Bracket Sleeve	E1-3906	60	Mullion End Cap For Outside Corner	E1-3918
L Anchor	E1-3907		Inside Corner Leveling Bracket	E1-3919
Lock Washer	E1-3908		Reinforcement Adaptor	E1-3920
Stopper	E1-3909		Reinforcement Adaptor For Outside Corner	E1-3921
Mullion End Cap	E1-3910		Slab Edge Anchor	E1-3922
Mullion End Cap For Inside Corner	E1-3911		Slab Edge Anchor Spacer	E1-3923
Mullion End Cap For Jamb	E1-3912		Heavy Duty Sill Starter Reinforcement Clip	E1-3924



# **ACCESSORIES**

	Top Unit Lift Bracket For Left Mullion	E1-3925		Side Block EPDM	E2-3903
	Top Unit Lift Bracket For Right Mullion	E1-3926		Side Block Silicone	E2-3913
	Top Unit Lift Bracket For Left Outside Corner Mullion	E1-3927		Side Block EPDM	E2-3914
	Top Unit Lift Bracket For Right Outside Corner Mullion	E1-3928		Side Block Silicone	E2-3915
Ę <b>O</b>	Vertical Air Tight Gasket	E2-3901		Setting Block EPDM	E2-3907
	Vertical Thermal Gasket	E2-3902		Setting Block Silicone	E2-3917
70}	Exterior Gasket	E2-3904		Side Block for 1/4" Glass at Inside Corner	E2-9907
<b>30</b>	Stacking Tray Gasket	E2-3905		Silicone Splice Sleeve	E2-0070
	Stacking Tray Spacer	E2-3906		#12 x 1" FHSMS Stainless Steel, For Attachment of Stacking Tray to Head E9-3803	FS-1216 -SS
297	Interior Gasket for Inside Corner Mullion	E2-3910		3/8" x 2 1/4" HWHMS Zinc Plt. Stl., For Attach. of Mullion Splice Sleeve and Leveling Bracket to Vertical	HM-3836
	Horizontal Thermal Gasket	E2-3911	Spannanan	#10 x 5/8" PHSMS Stainless Steel For End Cap Attachment	PC-1010 -SS
[5]	Interior Gasket	E2-3912	(Junumum)	#10 x 3/4" TEKPHS Stainless Steel, For Attachment of Corner Adaptor Assembly	PS-1012 -SS



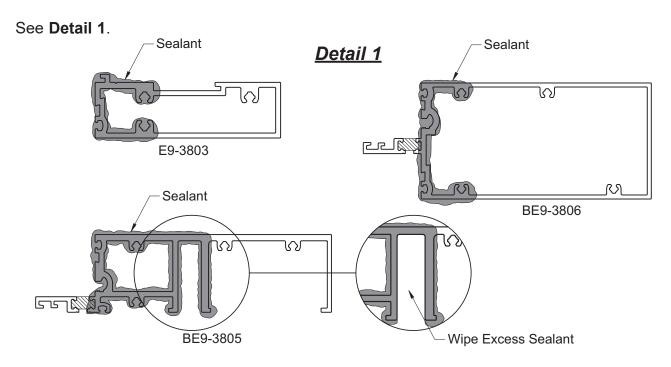
# **ACCESSORIES**

	#12 x 1 1/4" HWHS Stainless Steel For Frame Assembly	HC-1220 -SS	٥	3/8" Lock Washer Zinc Plt. Stl., For Attach. of Mullion Splice Sleeve and Leveling Bracket to Vertical	WS-3800
	#12 x 1 3/4" HWHS Stainless Steel For Corner Mullion Assembly	HC-1228 -SS		3/8" - 13 Nut HHMS Zinc Plated Steel For Anchor Attachment	HM-5000
	3/8" - 16 Nut HHMS Zinc Plt. Stl., For Attach. of Mullion Splice Sleeve and Leveling Bracket to Vertical	HM-3800		1/2" x 2 1/2" HWHMS Zinc Plated Steel For Anchor Attachment	HM-5040
	1/2"-13 x 1/2" Set Screw Zinc Plated Steel, For Leveling Bracket	YM-5008		1/2" Lock Washer Zinc Plated Steel For Anchor Attachment	WS-5000
(Ammunumus)	#10 x 1" TEKPHS Stainless Steel, For Inside Corner Adaptor Assembly	PS-1216 -SS			

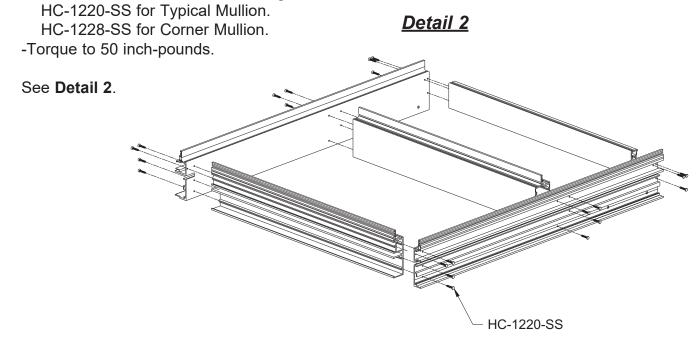


# STEP 1 ATTACH VERTICAL MULLIONS TO HORIZONTAL MULLIONS

- -Apply medium modulus silicone sealant to each end of the horizontal members prior to attaching to the vertical members.
- -Wipe away excess sealant from area indicated in BE9-3805.



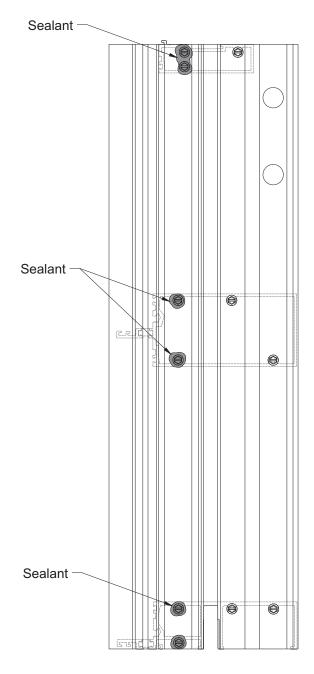
-Assemble horizontal members using #12 screws.





# STEP 2 APPLY SEALANT TO SCREW HEADS ON VERTICAL MULLION

-Apply and tool medium modulus silicone sealant to screw heads at areas shown in Detail 3.



**Detail 3** 

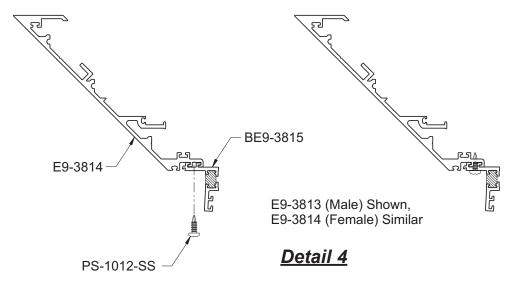


### **CORNER FRAME ASSEMBLY**

# STEP 3 OUTSIDE CORNER MULLION ASSEMBLY

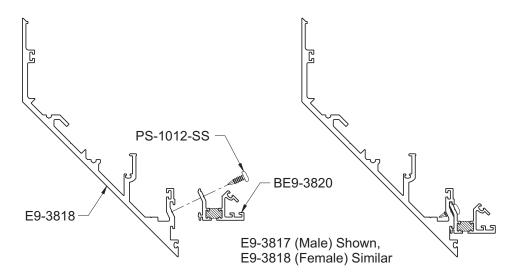
-Attach the outside corner adaptor, BE9-3815, to outside corner mullions E9-3813 and E9-3814 using PS-1012-SS screws.

#### See Detail 4.



-Attach the inside corner adaptor, BE9-3820, to inside corner mullions E9-3817 and E9-3818 with PS-1012-SS scews.

#### See Detail 5.



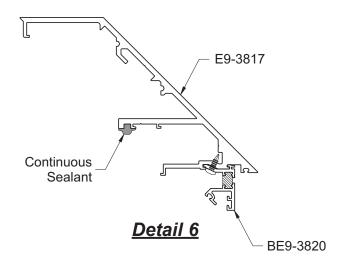
**Detail 5** 



#### **CORNER FRAME ASSEMBLY**

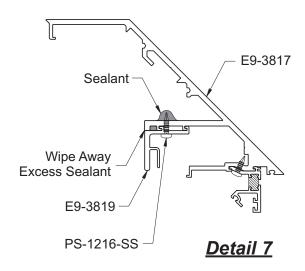
# STEP 4 INSIDE CORNER MULLION ASSEMBLY

-Apply a medium modulus silicone sealant continuously to the groove on the inside corner male mullion, E9-3817, prior to attaching the male mullion adaptor E9-3819 as shown in **Detail 6**.



- -Install the male mullion adaptor, E9-3819, using PS-1216-SS screws.
- -PS-1216-SS screw should be located 1-1/2" for each end, and 12" on center thereafter.
- -Wipe away excess sealant as shown in **Detail 7**.
- -Apply a medium modulus silicone sealant to each screw point location.

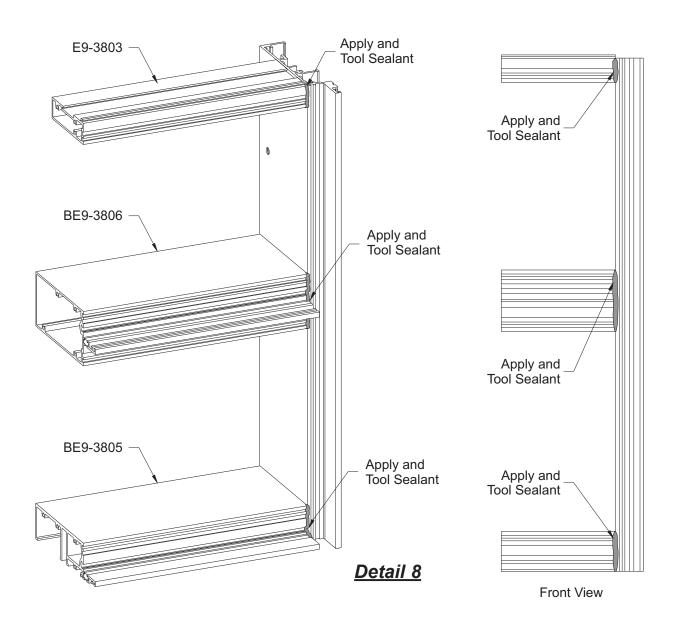
#### See Detail 7.





# STEP 5 APPLY SEALANT TO FRAME JOINTS

-Apply and tool a medium modulus silicone sealant to areas indicated in Detail 8.





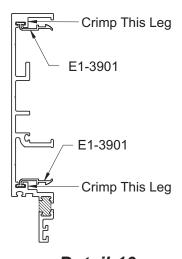
# STEP 6 SLIDE MULLION CLIPS INTO FEMALE MULLION

-Reference shop drawings for correct spacing, quantity, and location of mullion clip E1-3901.

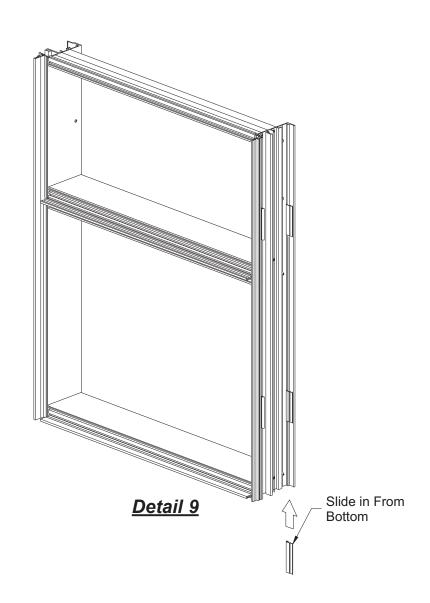
#### See Detail 9.

-Crimp the leg of the female mullion above and below each mullion clip to prevent the mullion clip from sliding out of place.

#### See Detail 10.



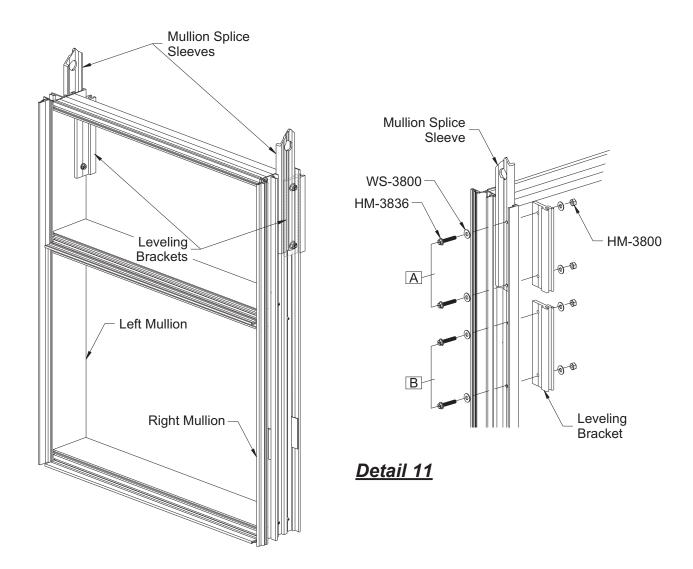
Detail 10





# STEP 7 INSTALL MULLION SPLICE SLEEVES AND LEVELING BRACKETS

- -Install the mullion splice sleeves and leveling brackets using two (2) HM-3800 nuts, four (4) WS-3800 washers, and two (2) HM-3836 bolts as shown in **Detail 11**.
- -Location "A" for typical conditions.
- -Location "B" for cantilever locations, refer to shop drawings.



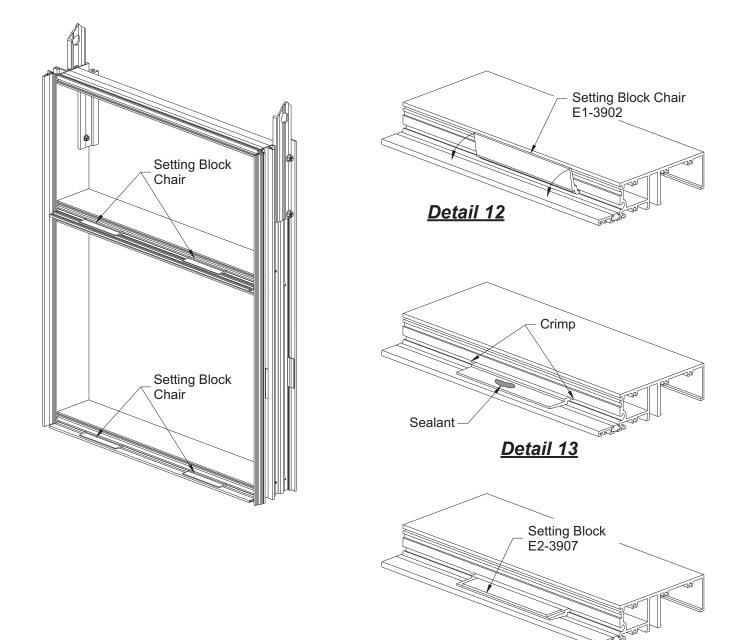
### Mullion Splice Sleeve and Leveling Bracket Chart

		TYPICAL FLOOR		TOP FLOOR		
		Mullion Splice	Leveling Bracket	Lift Bracket	Leveling Bracket	
Typical	LEFT	E1-3903	E1-3905	E1-3925	E4 2005	
Mullion	RIGHT	E1-3904	E1-3905	E1-3926	E1-3905	
Outside Corner	LEFT	E1-3914	E1-3916	E1-3927	E4 2046	
Mullion	RIGHT	E1-3915	E1-3910	E1-3928	E1-3916	
Inside Corner	LEFT	E1-3903	E1-3919	E1-3925	E1-3919	
Mullion	RIGHT	E1-3904	E1-3919	E1-3926	E1-3919	



# STEP 8 INSTALL SETTING BLOCK CHAIRS AND SETTING BLOCKS

- -Install the setting block chair, E1-3902 at 1/4 points as shown in **Detail 12**.
- -Crimp the area indicated on both sides of the setting block chair shown in Detail 13.
- -Apply a small amount of medium modulus silicone sealant to the topside of the setting block chair as shown in **Detail 13**.
- -Adhere setting block E2-3907 to the topside of the setting block chair as shown in **Detail 14**.



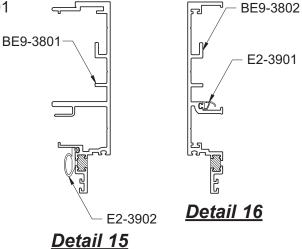
Detail 14

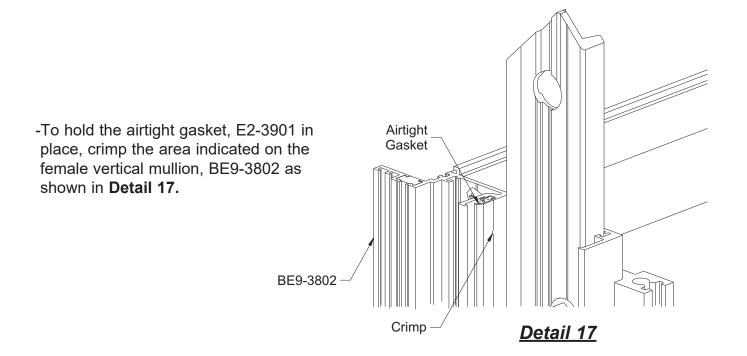


### STEP 9 **INSTALL VERTICAL MULLION GASKETS**

-Attach thermal barrier gasket, E2-3902, to BE9-3801 as shown in **Detail 15**.

-Slide in airtight gasket, E2-3901 to BE9-3802 as shown in **Detail 16**.



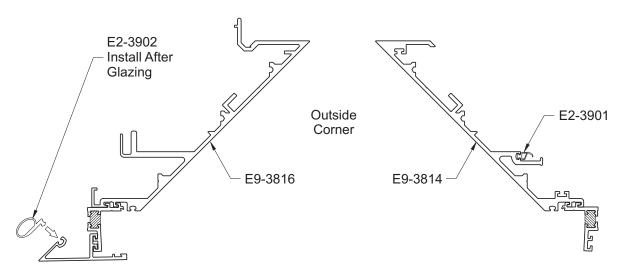




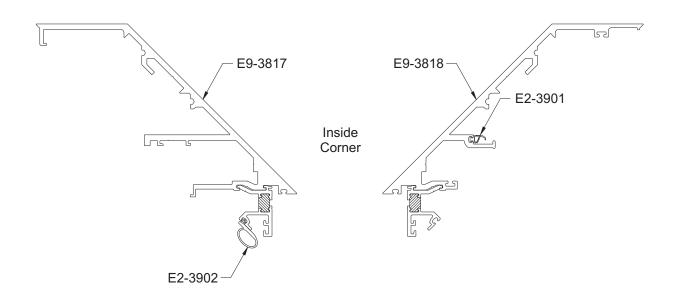
### **CORNER FRAME ASSEMBLY**

# STEP 10 INSTALL VERTICAL MULLION GASKETS

- -Install gaskets as shown in Detail 18 using the same technique as Step 9.
- **\*NOTE:** E2-3902 must be installed to the outside corner mullion glass stop E9-3816 **After** glazing.



Detail 18

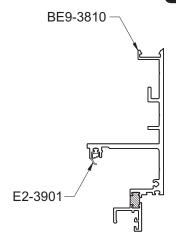


# **ap**

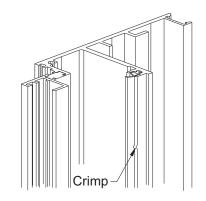
#### FRAME ASSEMBLY

# STEP 11 INSTALL JAMB GASKETS

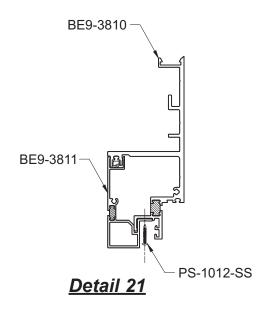
- -Slide in airtight gasket, E2-3901 to BE9-3810 as shown in **Detail 19**.
- -Crimp the area indicated on the jamb, BE9-3810 as shown in **Detail 20**.
- -Attach jamb trim, BE9-3811 to jamb BE9-3810 using PS-1012-SS screws as shown in **Detail 21**. Locations indicated on fabrication drawings.
- -At the bottom of the jamb assembly, apply a medium modulus silicone sealant to the end of the airtight gasket and run a bead of medium modulus silicone sealant 8" up the seam between the jamb and jamb trim as shown in **Detail 22**.

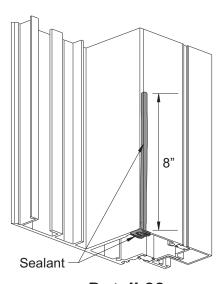


**Detail 19** 



Detail 20



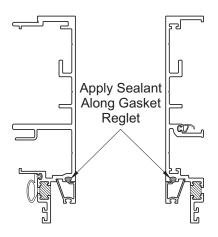


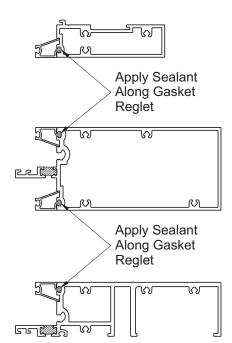
Detail 22



# STEP 12 INSTALL GLAZING ADAPTORS AS REQUIRED

- -Apply medium modulus silicone sealant continuously along gasket reglet as shown in **Detail 23**.
- -Vertical adaptors snap in first, and run through.
- -Snap in horizontal adaptors between vertical adaptors.



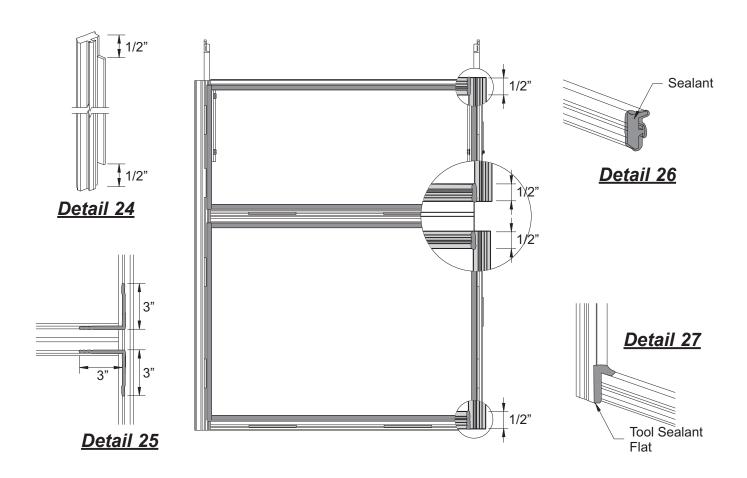


Detail 23



### STEP 13 INSTALL GLAZING GASKETS

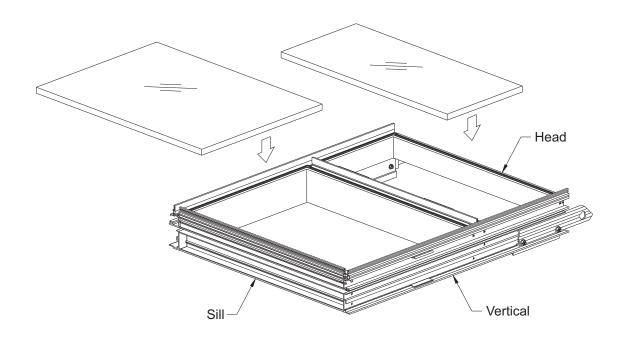
- -Cut interior glazing gaskets to size:
  - Vertical Gasket = Daylight Opening + 1".
  - Horizontal Gasket = Daylight Opening + 1/4" per each foot of opening width.
- -Install vertical gaskets first, centered along the daylight opening. Notch the lip at both ends of the vertical gasket as shown in **Detail 24**.
- -Install horizontal glazing gaskets next.
- -Insert the glazing gasket into the reglet at each end first.
- -Press the rest of the glazing gasket into the reglet starting at the center and work towards each end.
- -Pull the last 3" of each gasket away from the reglet.
- -With gasket end held out of the way, run a 3" bead of sealant into the reglet at the ends as shown in **Detail 25**.
- -Apply a medium modulus silicone sealant at the ends of the horizontal gaskets as shown in **Detail 26**.
- -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 as shown in **Detail 27**.



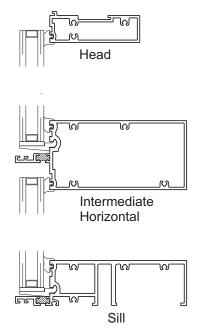


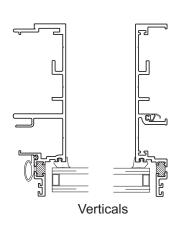
## STEP 14 INSTALL THE GLASS

-Install the glass as shown in **Detail 28**.



Detail 28



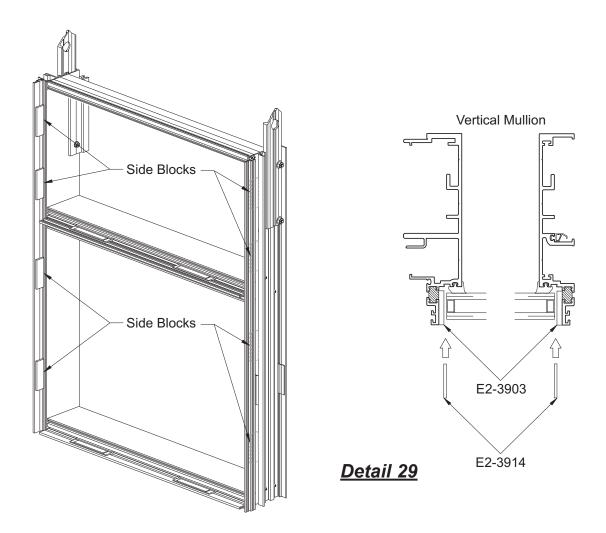




### STEP 15 INSERT SIDE BLOCKS

- -Insert E2-3903 side blocks at 1/4 points of the daylight opening.
- -To ensure a tight fit between the glass and side block, the addition of side block E2-3914 may be used.

#### See Detail 29.

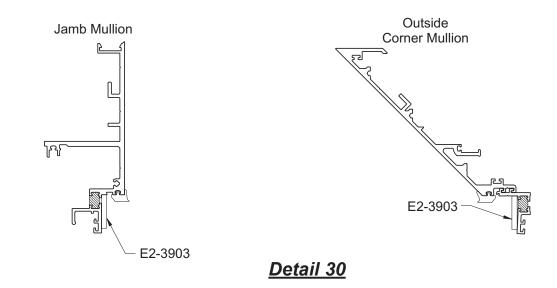


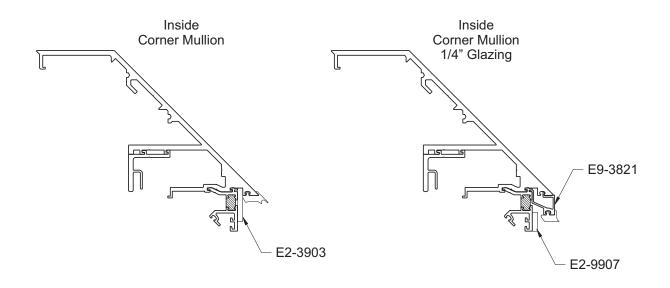


# STEP 15 Continued INSERT SIDE BLOCKS

- -Insert E2-3903 side blocks at 1/4 points of the D.L.O. to jamb mullion BE9-3810.
- -Insert E2-3903 side blocks at 1/4 points of the D.L.O. to outside corner mullion E9-3814.
- -Insert E2-3903 side blocks for 1" glazing, and E2-9907 side blocks for 1/4" glazing at 1/4 points of the D.L.O. to inside corner mullion E9-3817.

#### See Detail 30.

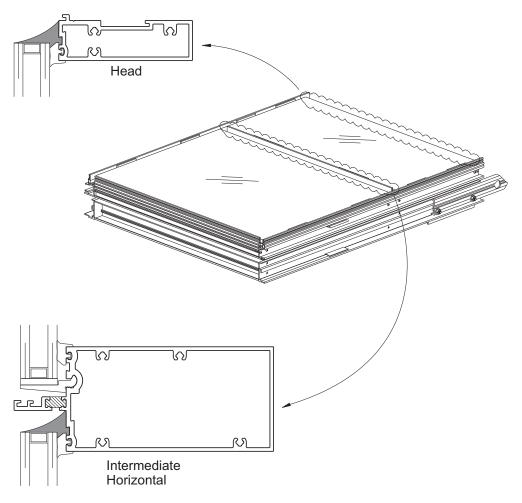






### STEP 16 APPLY SEALANT

-Apply a medium modulus silicone sealant to the edge of the glass and mullions at the head and intermediate horizontal locations as shown in **Detail 31**.

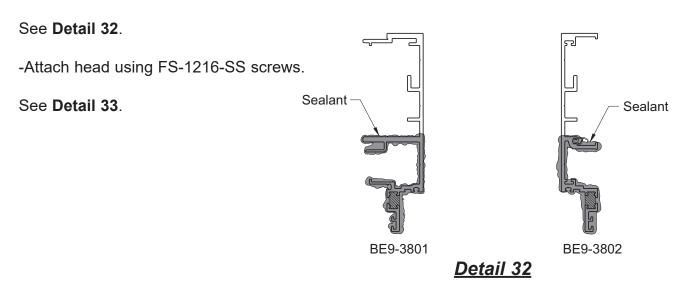


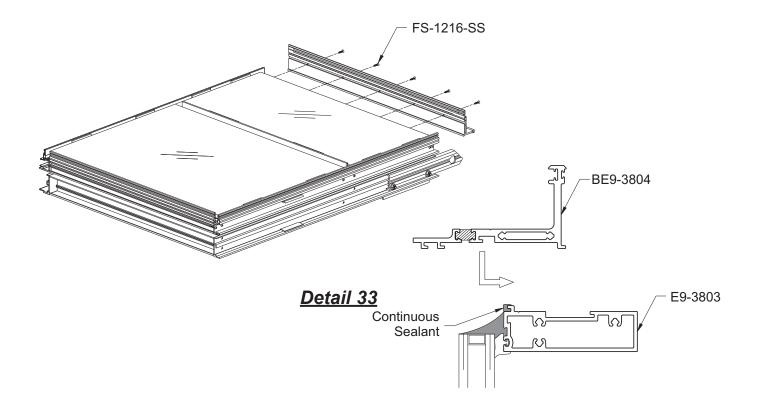
**Detail 31** 



### STEP 17 ATTACH STACKING TRAY

-Apply a medium modulus silicone sealant continuously to the top edge of the vertical mullions prior to head attachment.

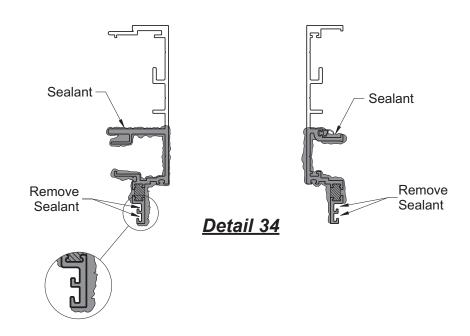




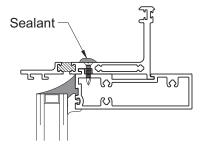


# STEP 17 Continued ATTACH STACKING TRAY

-Wipe away excess sealant at areas indicated in **Detail 34** for glass stop installation.



-Seal all screw heads with a medium modulus silicone sealant as shown in **Detail 35**.

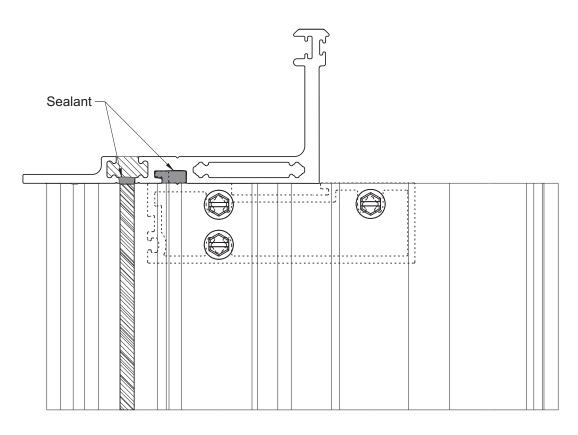


**Detail 35** 



# STEP 18 APPLY SEALANT TO THE FRAME CONNECTIONS

-The spaces at the ends of the head attachment and verticals need to be sealed with a medium modulus silicone sealant as shown in **Detail 36**.



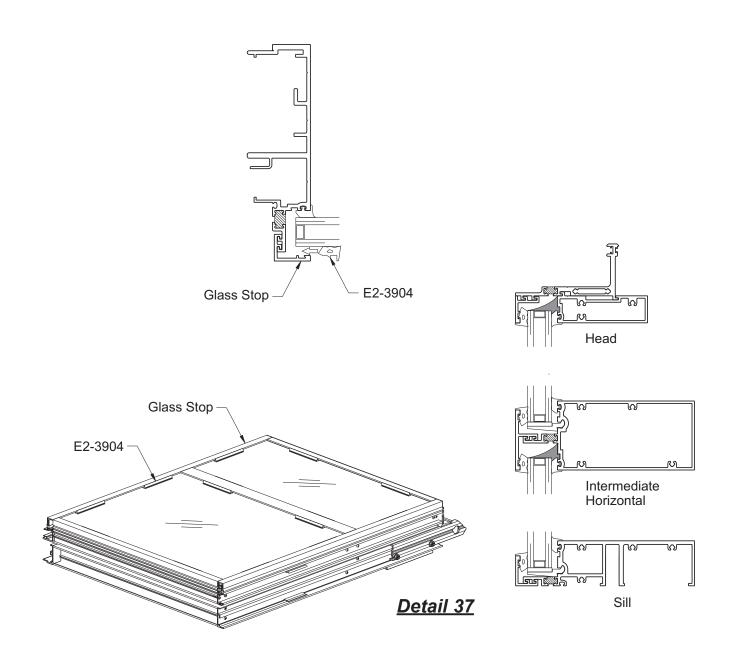
**Detail 36** 



## STEP 19 INSTALL GLASS STOPS

-Install glass stops. Use a piece of gasket E2-3904 temporarily to hold glass stop in place.

### See Detail 37.



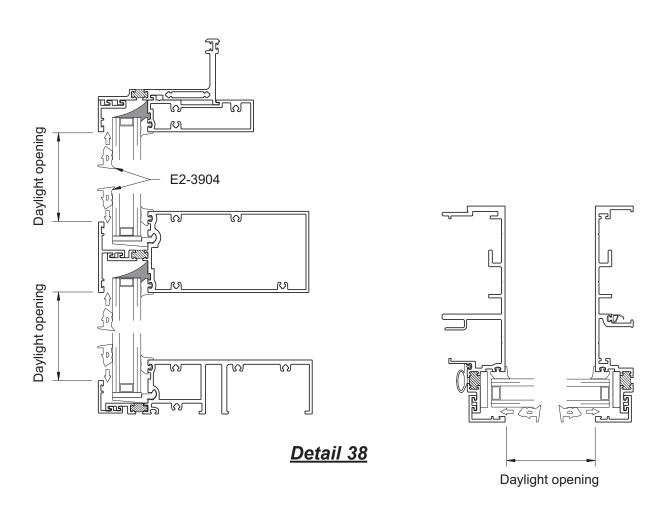


# STEP 20 INSTALL EXTERIOR GLAZING GASKETS

- -Cut exterior vertical glazing gaskets, E2-3904 to the same length as the daylight opening plus 1/4" per foot of daylight opening height.
- -Cut exterior horizontal glazing gaskets, E2-3904 to the same length as the daylight opening plus 1/4" per foot of daylight opening width.

Caution: Do not stretch the gaskets.

See Detail 38.

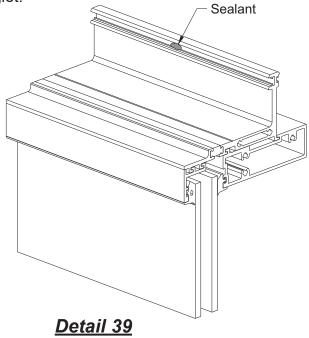


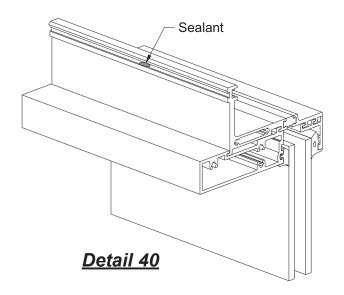


# STEP 21 INSTALL STACKING TRAY GASKET AND SPACER

-To hold the gaskets in place, apply a small amount of medium modulus silicone sealant to the stacking tray gasket reglet and the stacking tray spacer reglet.

See Details 39 & 40.

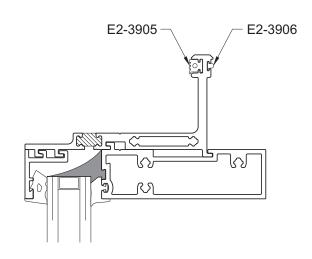


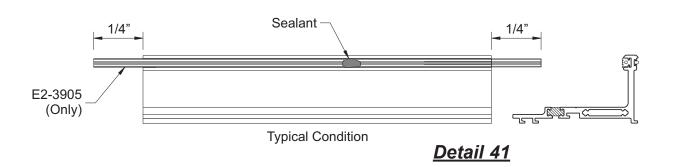


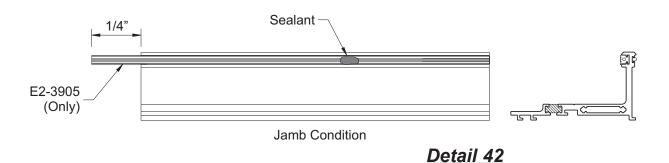


# STEP 21 Continued INSTALL STACKING TRAY GASKET AND SPACER

- -For typical conditions, cut the stacking tray gasket E2-3905 to the stacking tray length plus 1/2".
- -For jamb conditions, cut the stacking tray gasket E2-3905 to the stacking tray length plus 1/4".
- -Cut stacking tray spacer E2-3906 to the stacking tray length.
- -For typical conditions, install stacking tray gasket E2-3905 to the stacking tray leaving 1/4" protruding off each end of the stacking tray as shown in **Detail 41**.
- -For jamb conditions, install stacking tray gasket E2-3905 to the stacking tray leaving 1/4" protruding off the non-jamb end of the stacking tray as shown in **Detail 42**.
- -Install stacking tray spacer E2-3906 flush with the ends of the stacking tray.







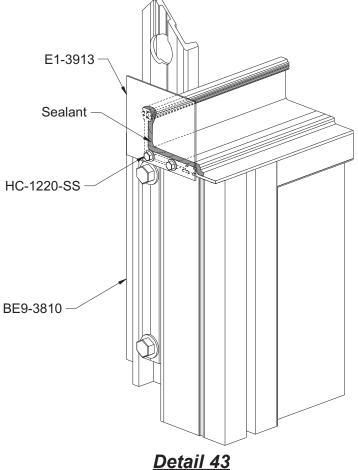


## STEP 22 SEAL AND ATTACH END DAM TO THE STACKING TRAY AT PERIMETER END JAM

**Note:** Apply medium modulus silicone sealant to the profile of the stacking tray. Attach the end dam to the stacking tray, and tool sealant.

-Use two (2) HC-1220-SS screws to fasten E1-3913 end dam to BE9-3804 stacking tray.

See Detail 43.

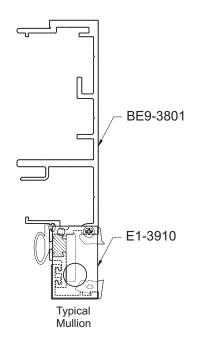


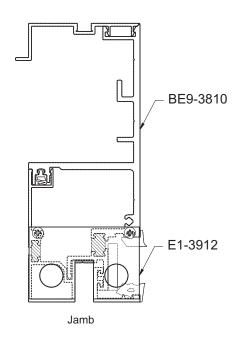


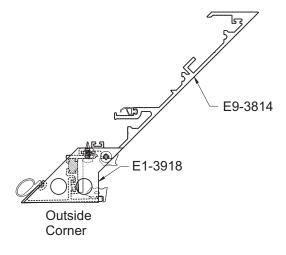
### STEP 23 ATTACH MULLION END CAPS

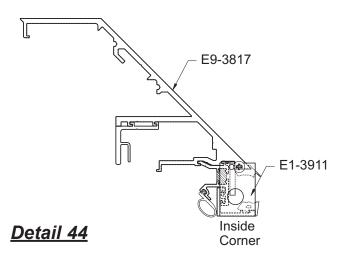
-Attach mullion end caps using PC-1010-SS screws.

#### See Detail 44.





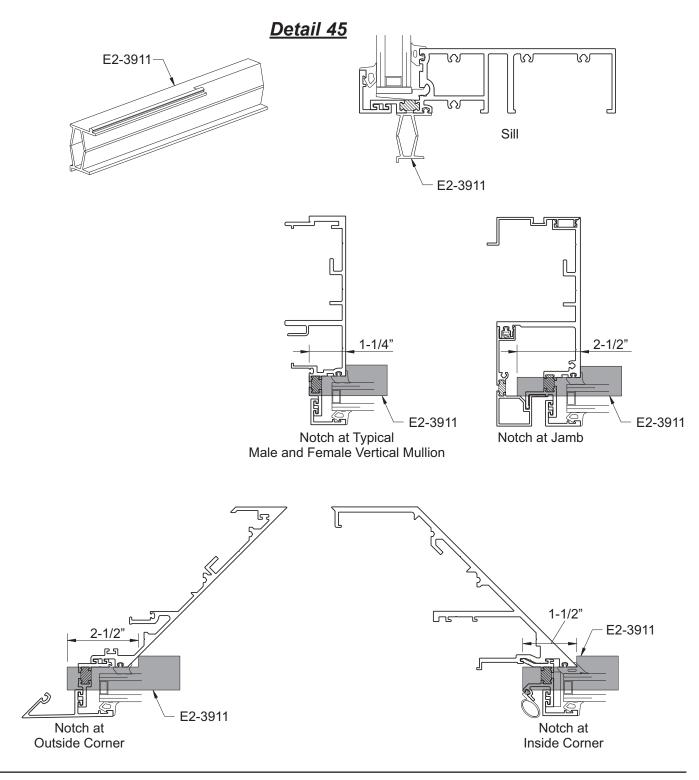






# STEP 24 INSTALL HORIZONTAL THERMAL GASKET

-Cut and Notch horizontal thermal gasket E2-3911, per condition, as shown in **Detail 45**.



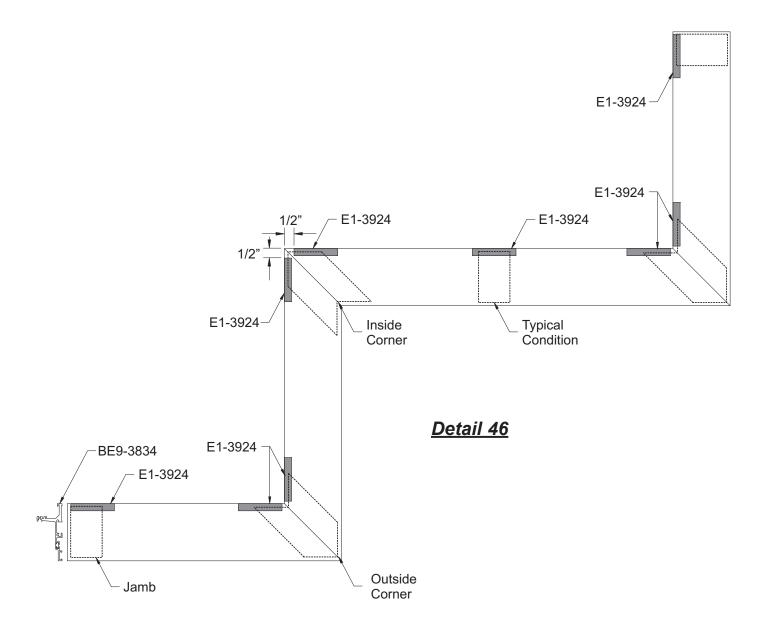


# STEP 25 ASSEMBLE SILL STARTER

-Sill starter reinforcement clip E1-3924 must be placed at all vertical mullion locations.

#### See Detail 46.

**Note:** If the vertical mullion is located directly on top of the sill starter splice, then two reinforcement clips must be used located 1/2" of each side of splice joint.





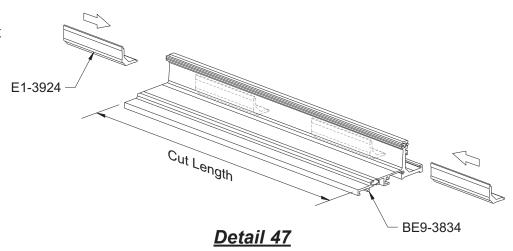
# STEP 25 Continued ASSEMBLE SILL STARTER

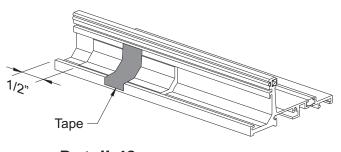
-Slide in sill starter reinforcement clip E1-3924 from the end of sill starter BE9-3834.

#### See Detail 47.

-Tape the reinforcement clip to the sill starter to hold in place.

See Detail 48.





**Detail 48** 

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