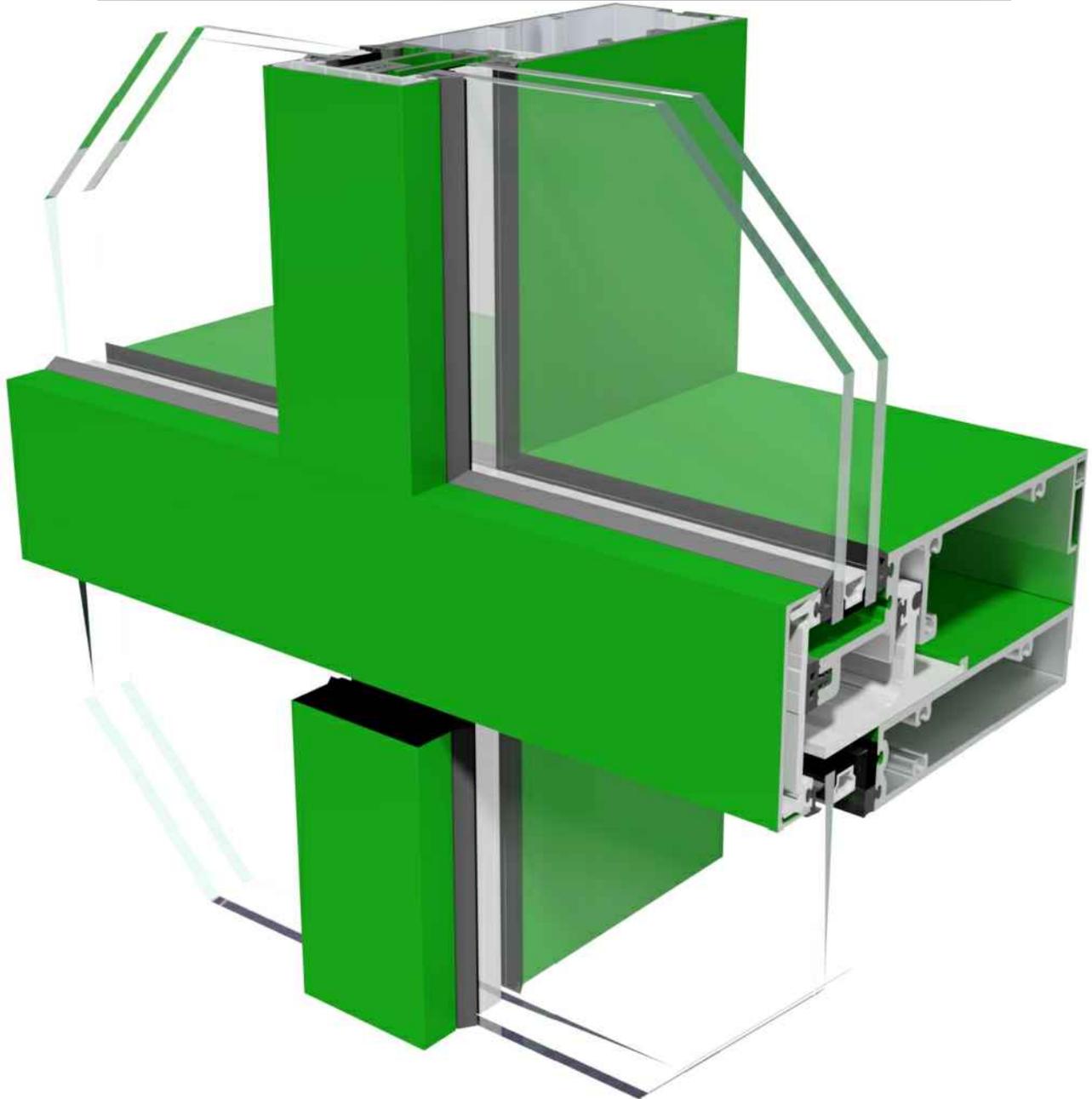


TUBELITE®

DEPENDABLE

**LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS**

F I E L D G L A Z E D



400SS SERIES SCREW SPLINE CURTAIN WALL

INSTALLATION INSTRUCTIONS

3056 Walker Ridge Dr. NW, Suite G • Walker, MI 49544 • 800-866-2227

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GENERAL CONSTRUCTION NOTES

1. These instructions cover typical product application, fabrication, installation and standard conditions and are general in nature. They provide useful guidelines, but the final shop drawings may include additional details specific to the project. Any conflict or discrepancies must be clarified prior to execution.
2. Materials stored at the job site must be kept in a safe place protected from possible damage by other trades. Stack with adequate separation so materials will not rub together and store off the ground. Cardboard or paper wrapped materials must be kept dry. Check arriving materials for quantity and keep a record of where various materials are stored.
3. All field welding must be done in accordance with AISC guidelines. All aluminum and glass should be shielded from field welding to avoid damage from weld splatter. Results will be unsightly and may be structurally unsound. Advise general contractor and other trades accordingly.
4. Coordinate protection of installed work with general contractor and/or other trades.
5. Coordinate sequence of other trades which affect framing installation with the general contractor (e.g. fire proofing, back up walls, partitions, ceilings, mechanical ducts, HVAC, etc.).
6. General contractor should furnish and guarantee bench marks, offset lines and opening dimensions. These items should be checked for accuracy before proceeding with erection. Make certain that all adjacent substrate construction is in accordance with the contract documents and/or approved shop drawings. If not, notify the general contractor in writing before proceeding with installation because this could constitute acceptance of adjacent substrate construction by others.
7. Isolate all aluminum to be placed directly in contact with masonry or other incompatible materials with a heavy coat of zinc chromate or bituminous paint. Fasteners attaching framing to building structure are typically not provided by Tubelite.
8. Sealant selection is the responsibility of the erector, installer and/or glazing contractor and must be approved by the sealant manufacturer with regard to application and compatibility for its intended use. All sealants must be used in strict accordance with the manufacturer's instructions and applied only by trained personnel to surfaces that have been properly prepared.
9. Sealant must be compatible with all materials with which they have contact, including other sealant surfaces. Consult the sealant manufacturer for recommendations relative to shelf life, compatibility, cleaning of substrate, priming, tooling adhesion, etc. Recommend sealant manufacturer perform adhesion "pull test" at "wet" glazing for quality assurance.
10. Drainage gutters and weep holes must be kept clean at all times. Tubelite will not accept responsibility for improper drainage as a result of clogged gutters and weep holes.
11. This product requires clearances at the head, sill and jambs to allow for thermal expansion and contraction as well as construction tolerances. Refer to final distribution drawings for joint sizes. Joints smaller than 1/2" may be subject to failure. Consult the sealant manufacturer for proper sizing of joints.
12. All framing members, entrances and other materials are to be installed plumb, level and true with regard to established bench marks, column center lines or other working points established by the general contractor and checked by the erector, installer and/or glazing contractor.
13. After sealant is set and a representative amount of the wall has been glazed (500 square feet or more), run a water hose test to check installation. On large projects, a hose test should be repeated during glazing operation. This testing should be conducted in accordance with AAMA 501.2 specifications.
14. Cleaning of exposed aluminum surfaces should be done per AAMA recommendations.
15. Care must be taken when assembling aluminum framing components. Over tightening any fastener may cause stripping or fastener failure. Tubelite recommends the use of drill motors with clutches engaged to provide satisfactory tightening of the screw while preventing over torque. The use of impact drill motors is not recommended due to the absence of a clutch device.
16. Check www.tubeliteinc.com for any installation instruction updates.

GENERAL CONSTRUCTION NOTES

ALTERNATE PRESSURE PLATE INSTALLATION

Tubelite's POLYAMIDE (P4633) and THERMAL (PTB120) pressure plates can be used in place of the standard aluminum pressure plate for improved thermal performance. Please note the following important information while planning your project.

- Tubelite offers one standard polyamide pressure plate as noted above. The polyamide pressure plate is extruded in black and the Thermal pressure plates are extruded in white with both available at 24'-2".
- Polyamide and Thermal pressure plate anchor screw holes are pre-machined. Weep holes must be drilled in the shop. Anchor holes are 8" o/c and weeps are 5/16" diameter holes. When installing screws in the polyamide pressure plate, use S437 washer under screw head.
- ALL anchor holes must be utilized for proper load distribution.
- Polyamide pressure plates do not require special tooling for cutting and drilling, however, carbide tipped blades are recommended for cutting or diamond tip blades for better longevity.
- Tubelite offers one typical vertical and horizontal face cover (E031TU) that is specifically designed to
- The same protective wear (i.e. gloves, safety goggles, etc.) worn to fabricate aluminum pressure plates can be worn to fabricate polyamide and Thermal pressure plates. Protective wear guidelines for PTB120 thermal pressure plates can be found online in the MSDS.
- Tubelite offers one typical vertical and horizontal face cover (E031TU) that is specifically designed to engage with the polyamide pressure plates. Nominal dimension from face of glass to face of cover
- measures 13/16". Typical face covers can be used with the Thermal pressure plates.
- Tubelite offers one typical aluminum corner cover (E4TB57) that is designed for the corner aluminum pressure plate. Nominal dimension from face of glass to face of cover measures 3/4".
- A PVC pocket filler (P3967) has been designed to be used at perimeter members where a return leg pressure plate is not available.

QUICK REFERENCE CHECKLIST

1. Make sure the opening is square and the caulk joints are 1/2" minimum around the frame.
2. Ensure surfaces that will be sealed are free of contaminants that can lead to adhesion issues.
3. Check that all weeps and baffles (optional, if required) conform to the locations and sizes called out in these instructions.
4. Butter seal ends of horizontal frame members that are joined to vertical members.
5. Water dam installation and sealing is critical to system performance. Check installation against instructions to ensure conformity.
6. Apply sealant between all corner gasket joints.
7. Glass bites must be equal on all sides except as noted below.
8. Double check anchor size and location against installation instructions or approved shop drawings.
9. Ensure aluminum pressure plate fasteners are torqued to 90 in-lbs. Do not overtorque Thermal pressure plate fasteners (78 in-lbs required).
10. When polyamide pressure plates are used add two additional fasteners on each side of a vertical/horizontal intersection. See Fig. 64.1.

GLASS SIZE CALCULATION

Condition	Field Glaze
Captured Mullions	D.L.O. + 1" (1/2" glass bite)
SSG Vertical Mullions	D.L.O. + 2" (1" glass bite)
SSG Horizontal Mullions	D.L.O. + 1-3/4" (7/8" bite)
SSG Vertical Mullion Adjacent to Captured Jamb	D.L.O. + 1-1/2" (width only)
Sunshade Brackets at Captured Mullions	D.L.O. + 1" (1/2" glass bite)
Sunshade Brackets at SSG Vertical Mullions	D.L.O. + 1-1/2" (3/4" glass bite)
Corner Mullions	See Approved Shop Drawings

CAUTION

Mandatory Installer Requirements for Structural Glazed Applications

The performance and structural integrity of a structural sealant glazed (SSG) framing system is dependent upon proper sealant selection and installation procedures.

Structural sealant selection and application is the responsibility of the erector, installer and/or glazing contractor and must be approved by the sealant manufacturer with regard to application and compatibility for its intended use. All sealants must be used in strict accordance with the sealant manufacturer's instructions and applied only by trained personnel to surfaces that have been properly prepared.

The structural sealant affixes the glazing infill to the framing system and must not experience adhesive or cohesive failures from structural or environmental project design requirements. The sealant's ability to perform depends on many factors including but not limited to proper sealant selection, surface preparation, infill type, frame finish type, environmental conditions at application and curing, horizontal and vertical system movements, sealant shelf life, cure time, handling, and compatibility of other materials in contact.

Proper adhesion to infill and framing is critical. Structural sealant must be compatible with all materials in contact, including frame finish (paint, anodize, power coating, etc.), glazing materials (gaskets, tapes, sealants, etc.), infill surface (glass, panel, etc.), and cleaning materials. Consult the sealant manufacturer for compatibility assessment, application instructions, and adhesion testing. Special surface preparations such as priming may be required by the sealant manufacturer.

It is the responsibility of the installer to ensure all glazing infills be reviewed and approved by the infill manufacturer for use in SSG applications. Infills include but are not limited to glass, metal panels, stone, etc. Design modifications of the infill may be required for use in SSG applications.

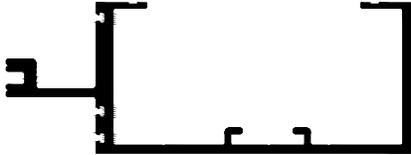
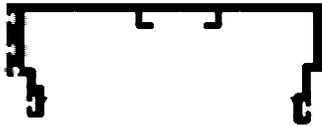
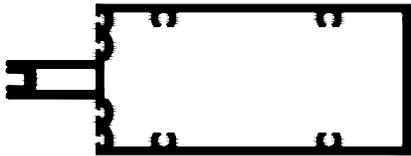
Mandatory Installer Certification Required for 3M VHB Tape Applications

The performance and structural integrity of a VHB tape glazed framing system is dependent upon proper VHB tape selection and installation procedures.

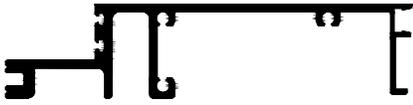
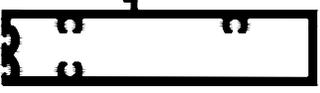
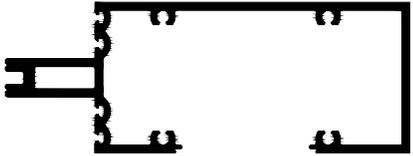
Installers are required to be trained and certified by qualified 3M personnel prior to VHB tape procurement, application, and glass installation. See 3M website (<https://www.3m.com/>) for contact information.

In addition to training and certification, approved shop drawings including design loads, infill type, frame finish, frame sizes, frame installation, and finished sections of the framing must be sent to 3M for approval.

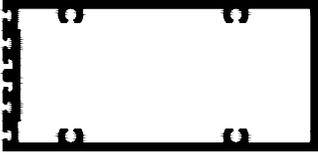
TYPICAL FRAMING EXTRUSIONS

SHAPE	DESCRIPTION	Part No.	Back Member
	Male Captured Vertical	E4140	3-3/4"
		E4150	5-1/4"
		E4170	7-3/4"
	Female Captured Field Glaze Vertical	E4141	3-3/4"
		E4151	5-1/4"
		E4171	7-3/4"
	Jamb	E4143	3-3/4"
		E4153	5-1/4"
		E4173	7-3/4"
	SSG Vertical - Male	E4244	3-3/4"
		E4254	5-1/4"
		E4274	7-3/4"
	SSG Vertical - Female	E4245	3-3/4"
		E4255	5-1/4"
		E4275	7-3/4"
	Horizontal	E4144	3-3/4"
		E4154	5-1/4"
		E4174	7-3/4"

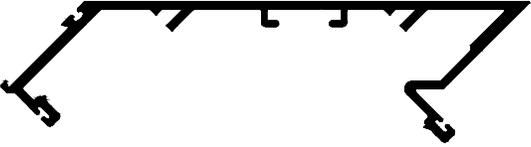
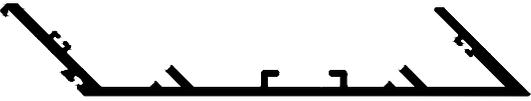
TYPICAL FRAMING EXTRUSIONS

SHAPE	DESCRIPTION	Part No.	Back Member
	Head / Sill	E4145	3-3/4"
		E4155	5-1/4"
		E4175	7-3/4"
	Head / Sill Cover	E4164	3-3/4"
		E4165	5-1/4"
		E4167	7-3/4"
	Upper Expansion Horizontal	E4103	3-3/4"
		E4116	5-1/4"
		E4107	7-3/4"
	Expansion Plate (Chicken Head)	E4200	3-3/4"
		E4200	5-1/4"
		E4200	7-3/4"
	Lower Expansion Horizontal	E4193	3-3/4"
		E4196	5-1/4"
		E4197	7-3/4"
	Shadow Box Horizontal	E4147	3-3/4"
		E4157	5-1/4"
		E4177	7-3/4"

TYPICAL FRAMING EXTRUSIONS

SHAPE	DESCRIPTION	Part No.	Back Member
	Shadow Box Horizontal Closer	E4162	3-3/4"
		E4162	5-1/4"
		E4163	7-3/4"
	SSG Horizontal	E468TU	3-3/4"
		E568TU	5-1/4"
		E868TU	7-3/4"

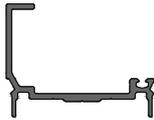
CORNER EXTRUSIONS

	OS 90 Half - Male	E4240	3-3/4"
		E4250	5-1/4"
	OS 90 Half - Female	E4241	3-3/4"
		E4251	5-1/4"
	OS 90 SSG 7-3/4" Corner Adaptor - Attach to back of 5-1/4" Back Member	E4270	5-1/4"

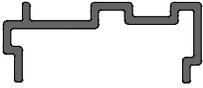
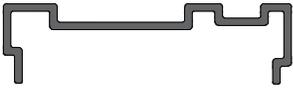
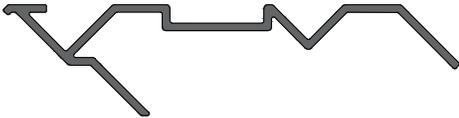
CORNER EXTRUSIONS

SHAPE	DESCRIPTION	Part No.	Back Member
	IS 90 Half - Male	E4242	3-3/4"
		E4252	5-1/4"
	IS 90 Half - Female	E4243	3-3/4"
		E4253	5-1/4"
	IS 90 SSG 7-3/4" Corner Adaptor - Attach to back of 5-1/4" Back Member	E4272	5-1/4"
	OS 90 SSG Corner Adaptor	E147TU	3-3/4"
		E147TU	5-1/4"
		E147TU	7-3/4"

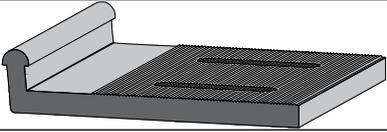
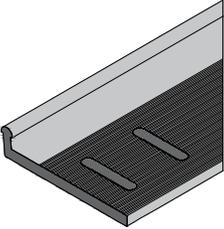
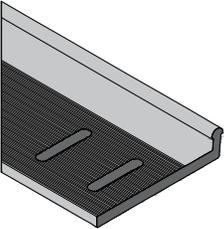
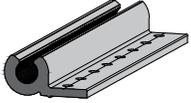
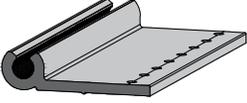
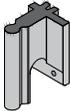
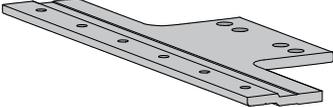
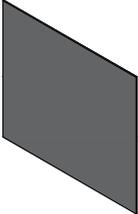
PRESSURE PLATES AND COVERS

SHAPE	DESCRIPTION	PART No.
	Typical Pressure Plate	M300TU
	Perimeter Pressure Plate	M301TU
	Pressure Plate for Alternate Infills	M4TB224
	Polyamide Pressure Plate	P4633
	Thermal Pressure Plate	PTB120
	Expansion Horizontal Pressure Plate	M4106
	Typical Face Cover	E4TB64
	Face Cover for OS 90 Corner	E4205
	Face Cover For Polyamide Pressure Plate	E031TU
	Face Cover For Expansion Horizontal Pressure Plate	E4133

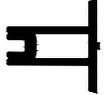
SPLICE SLEEVES and MULLION ANCHORS

SHAPE	DESCRIPTION	PART No.	
 <p>3-3/4" Sleeve</p>  <p>5-1/4" & 7-3/4" Sleeves</p>	Splice Sleeve Half - Male Vertical	3-3/4"	P4796
		5-1/4"	P4791
		7-3/4"	P4801
	Splice Sleeve Half - Female Vertical	3-3/4"	P4797
		5-1/4"	P4792
		7-3/4"	P4802
	Splice Sleeve - OS 90 Corner	3-3/4"	P4798
		5-1/4"	P4793
		7-3/4"	P4793
	Splice Sleeve - IS 90 Corner	3-3/4"	P4799
		5-1/4"	P4794
		7-3/4"	P4794
	Splice Sleeve - Jamb	3-3/4"	P4800
		5-1/4"	P4795
		7-3/4"	P4803

SPLICE SLEEVES and MULLION ANCHORS

SHAPE	DESCRIPTION	PART No.
	Top of Slab Anchor Lug	P4762
	Top of Slab Anchor Plate (Optional)	P4763
	Top of Slab OS 90 Anchor Plate - Right (Optional)	P4773
	Top of Slab OS 90 Anchor Plate - Left (Optional)	P4774
	Top of Slab Vertical/IS 90 Anchor Clip	P4764
	Top of Slab OS 90 Anchor Clip	P4775
	Top of Slab Anchor Shoe	P4765
	Sunshade Anchor Bracket	P4776
	Nylatron Slip Pad at Mid-Span Steel Anchors (Not used at top of slab anchors)	P4608

MISCELLANEOUS EXTRUSIONS

SHAPE	DESCRIPTION	PART No.
	Pocket Filler (use with E4TB11 and E4TB111)	E4011
	Captured Glazing Adaptor, OS 90	E4148
	Glazing Horn, SSG Vertical	E4149
	1/4" Glazing Reducer	E4161
	Glazing Reducer OS 90 Corner	E4181
	Glazing Reducer IS 90 Corner	E4191
	Expansion Horizontal Interior Trim	E4201
	Vertical Reinforcement Adapter	E4207
	1/2" Door Stop (use with P1098A weathering)	E4531
	Door Jamb Sub-Frame	E4TB11
	Door Header Sub-Frame	E4TB111
	1-3/4" X 4-1/2" Tube (Door Header for OHCC)	E0041

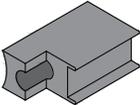
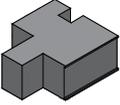
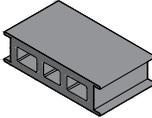
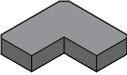
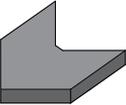
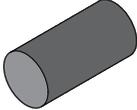
ACCESSORIES

SHAPE	DESCRIPTION	PART No.
	Typical Glazing Gasket	P4606
	SSG Gasket	P4631
	Pressure Plate Isolator	P4605
	1/4" Glazing Reducer Gasket	P4718
	Wiper Gasket	P4730
	Air Seal Gasket	P4788
	Sweep Gasket at 3" Aluminum Pressure Plate	PTB115
	Chicken Head Gasket	PTB116
	PVC Rod Interior Chicken Head - 120" Length (Optional)	PTB117C
	Alternate Gasket	PTB28
	Alternate Gasket	PTB31
	Alternate Gasket	PTB33

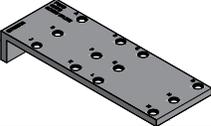
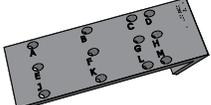
ACCESSORIES

SHAPE	DESCRIPTION	PART No.
	1/4" x 1" Glazing Tape	P4648
	1/4" X 1/2" Glazing Tape	P4725
	Silicone Setting Block at SSG Horizontal	P4603
	Silicone Edge Block	P4629
	Setting Chair at SSG Horizontal - For 1" Infill	P4623
	Silicone Setting Block, 1-5/16"	P4731
	Silicone Setting Block, 1/4"	P4737
	Field Glaze Silicone Setting Block, 1"	P4734
	Field Glaze Silicone Setting Block, Over 1"	P4735
	EPDM Edge Block	P4628
	EPDM Setting Block, 1-5/16"	P4719

ACCESSORIES

SHAPE	DESCRIPTION	PART No.
	Field Glaze EPDM Setting Block, 1"	P4722
	Field Glaze EPDM Setting Block, Over 1" Infill	P4723
	EPDM Setting Block, 1/4"	P4736
	Captured Water Dam - Male Vertical	P4601
	Captured Water Dam - Female Field Glaze Vertical	P4727
	SSG Water Dam	P4602
	IS 90° SSG Corner Water Dam	P4614
	OS 90° SSG Corner Water Dam	P4711
	Anti-Buckling Clip	P4615
	Reticulated Foam - 3" Length	P4810

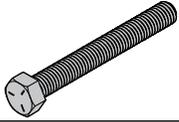
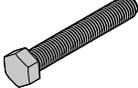
ACCESSORIES

SHAPE	DESCRIPTION	PART No.
	Lifting/Alignment Lug	P4789
	Lifting Lug 3 3/4" Corner	P4806
	Temporary Glazing Retainer - Field Glaze	P4634
	1 3/4" X 1 3/8" Applied Door Stop (use with P1098A weathering)	E2298
	Pile Weathering with Vinyl Fin (use with E4531 & E2298 stops)	P1098A
	1" X 1" X 24'2" PVC Perimeter Tube	P4607
	Head/Sill Reinforcement (Optional)	P4766
	Drill Fixture	P4645
	Corner Drill Fixture	P4729

FASTENERS

SHAPE	DESCRIPTION	Part No.
	#10-16 X 5/8" Phillips Pan Head Corner Adaptor Assembly Screw	S017
	#10 X 5/8" Phillips Flat Head SSG Corner Adaptor Assembly Screw	S192
	#12-24 X 1" Hex Washer Head Door Frame Attachment Screw	S204
	1/4-20 X 1-1/2" HWH Frame Assembly Screw at Corners & 3-3/4" Back Members at Lifting Lug	S359
	#12-14 x 1-1/2" HWH 18-8 Self-Drill #4 PT - Aluminum Pressure Plate Fastener	S400
	#12-14 x 1-1/2" Hex Head Washer Faced 18-8 Self-Drill #4 PT - Polyamide Pressure Plate Fastener	S401
	1/4-20 X 1" HWH Frame Assembly Screw	S403
	1/4" X 1" HWH TEK	S457
	#12 X 3/8" U-Drive	S458
	3/8"-16 Hex Head Bolt Lifting Lug Bolt (use with S301)	S6502
	3/8"-16 Hex Nut	S301
	3/8" Flat Washer	S302

FASTENERS

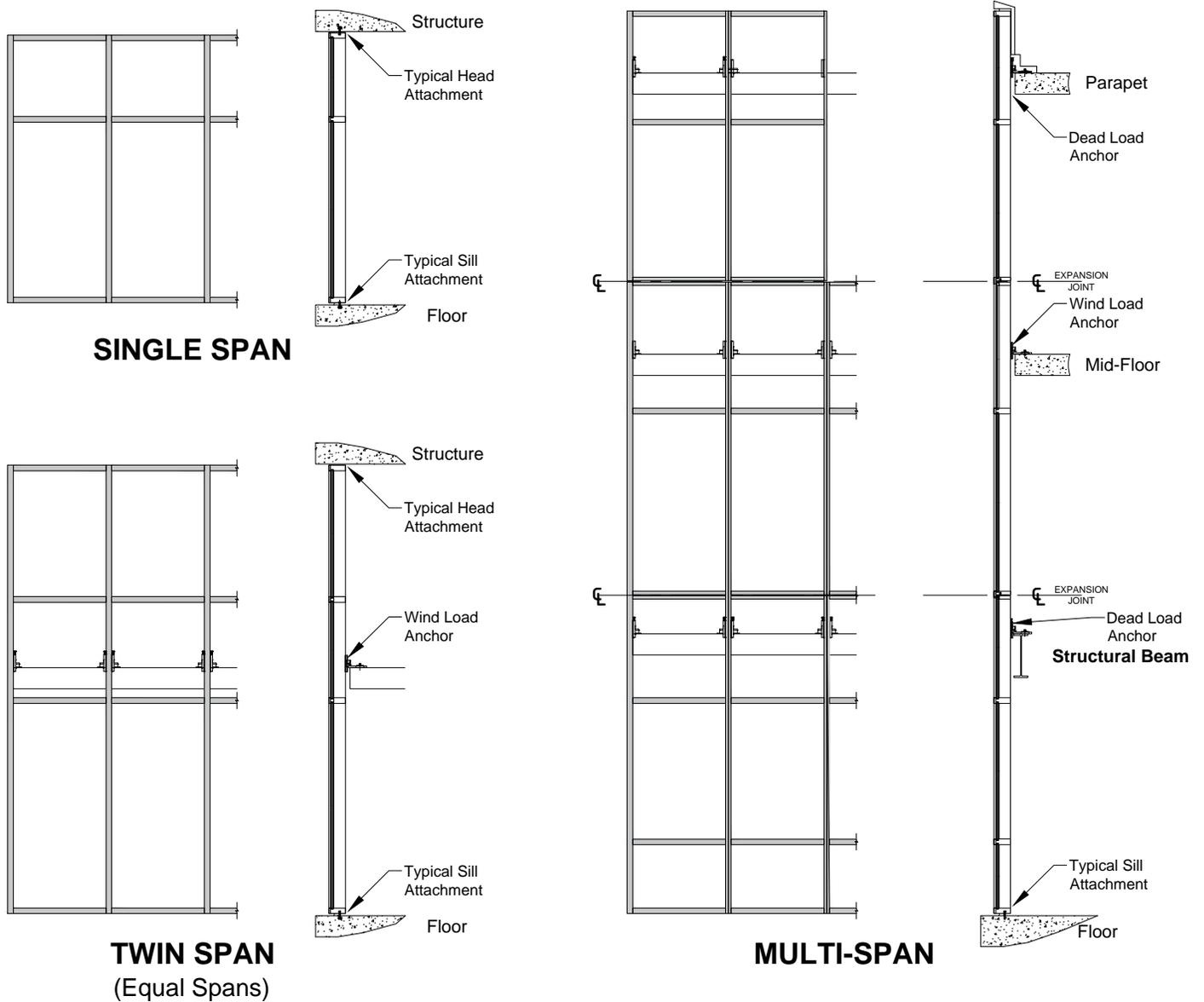
SHAPE	DESCRIPTION	Part No.
	1/2-13 X 4" GR-5 HH Bolt	S460
	1/2-13 X 1-1/2" GR-5 HH Bolt	S461
	9/16-12 Hex Nut	S477
	1/2" Flat Washer	S463
	1/2" Lock Washer	S464
	#10 X 2 1/2" Phillips FH Glazing Horn Screw	S465
	9/16-12 X 3-1/2" Hex Bolt Jack Screw - Top of Slab Deadload Anchor	S468

ELEVATION TYPES

TYPES OF CURTAIN WALL INSTALLATION

The 400SS Series Screw Spline curtain wall system can be constructed and glazed in a variety of ways. For erecting the frame the most common installations are single span, twin span or multi-span as illustrated below. Refer to approved shop drawings for specific guidance on splicing and anchoring.

The frames can be assembled and pre-sealed as frame units for erection on the jobsite. See illustrations below.

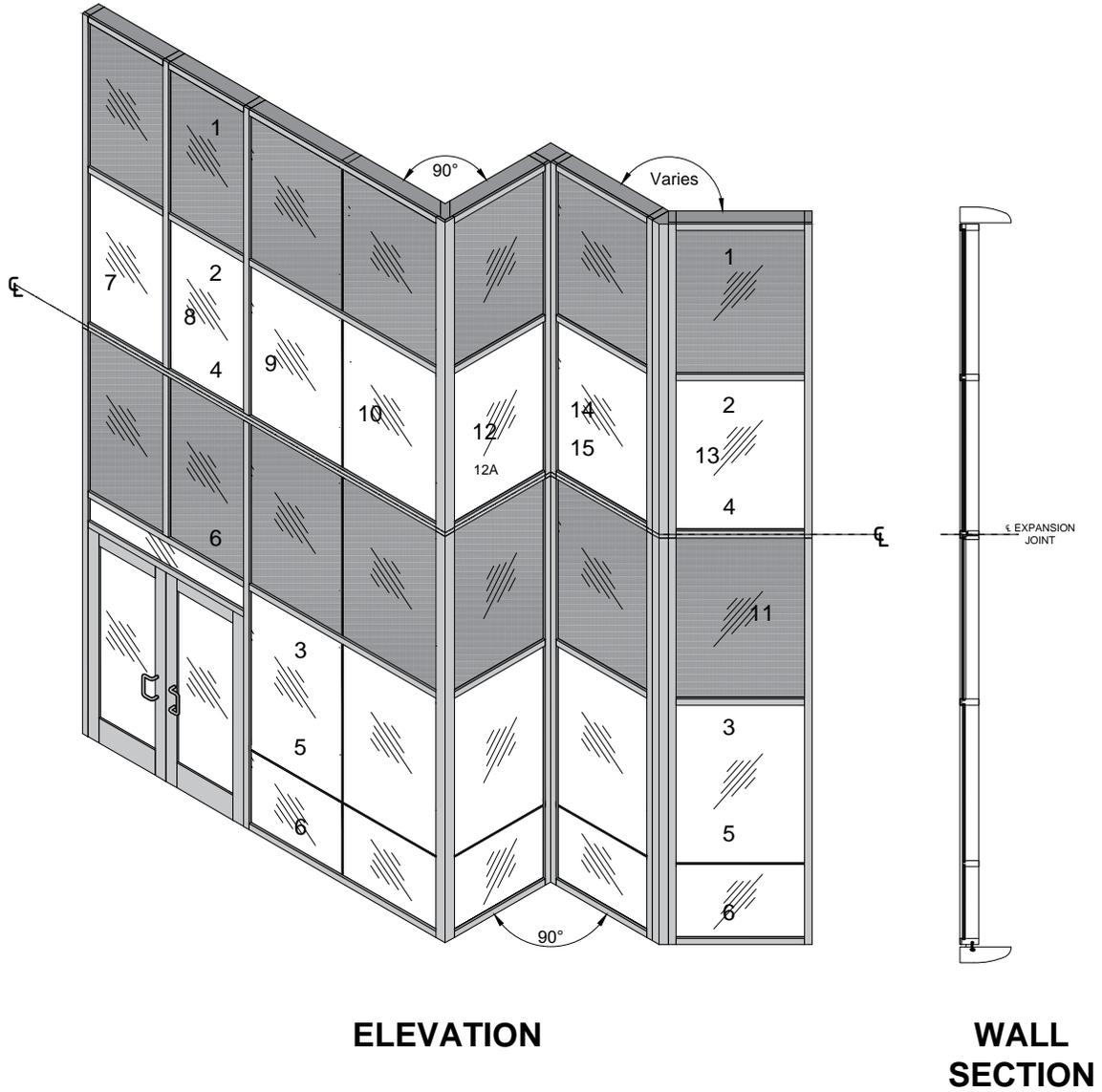


Span configurations will vary per project requirements.
Conditions must be approved by engineers calculations.

Fig. 21.1

ELEVATION and WALL SECTION

For shadow box installations please refer to approved shop drawings for proper venting and sealing.



ELEVATION

WALL SECTION

Fig. 22.1

HORIZONTAL DETAILS

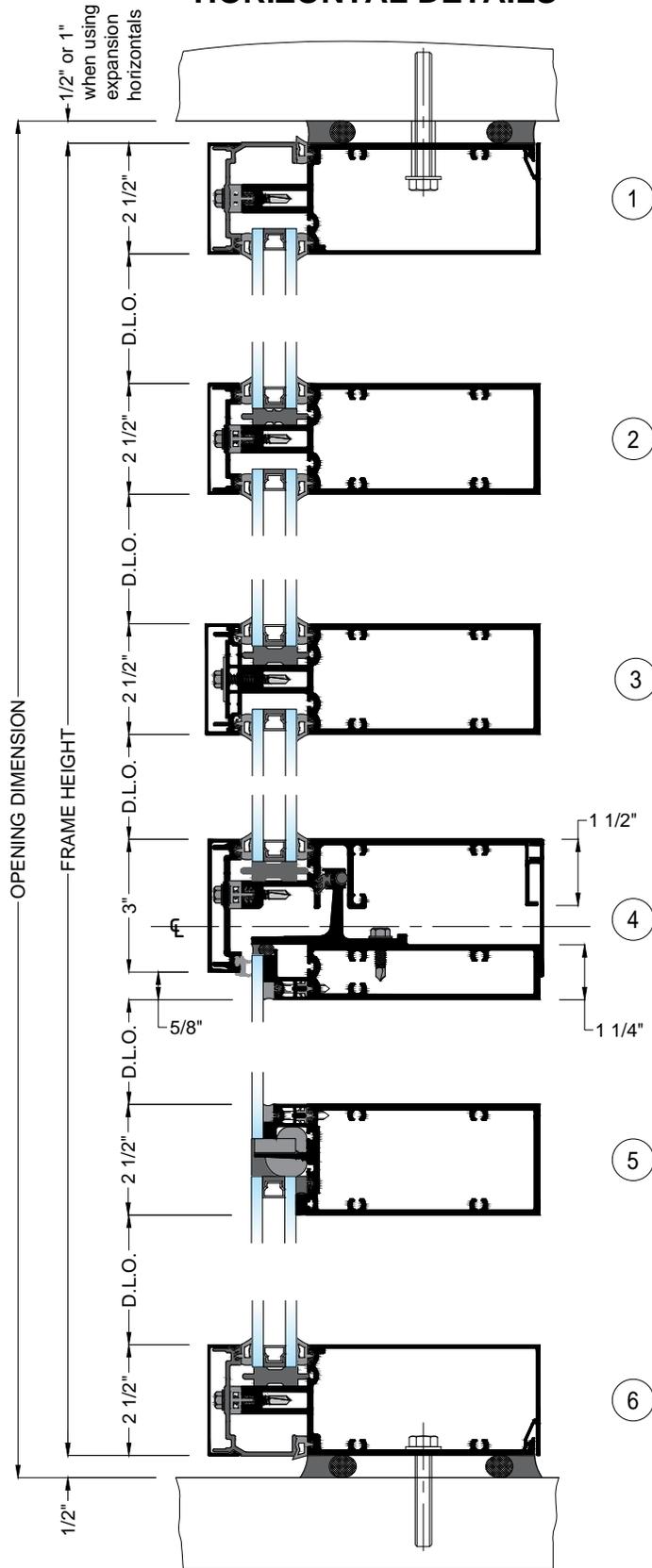


Fig. 23.1

VERTICAL DETAILS

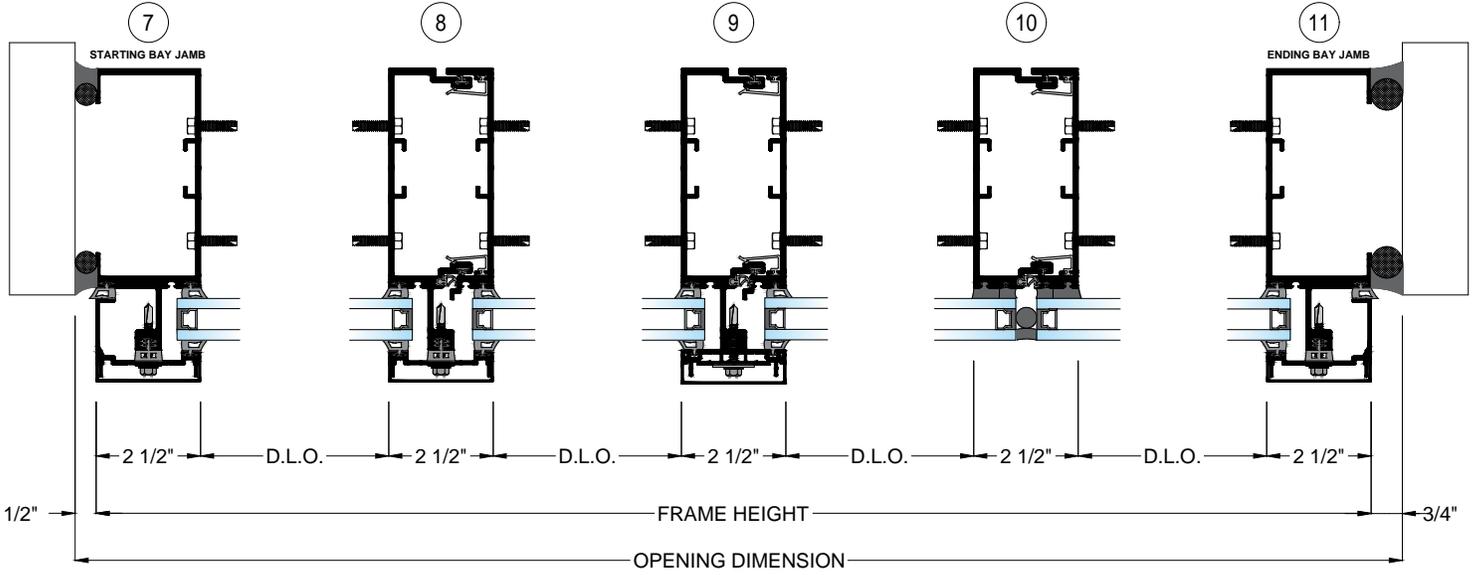


Fig. 24.1

CORNER DETAILS

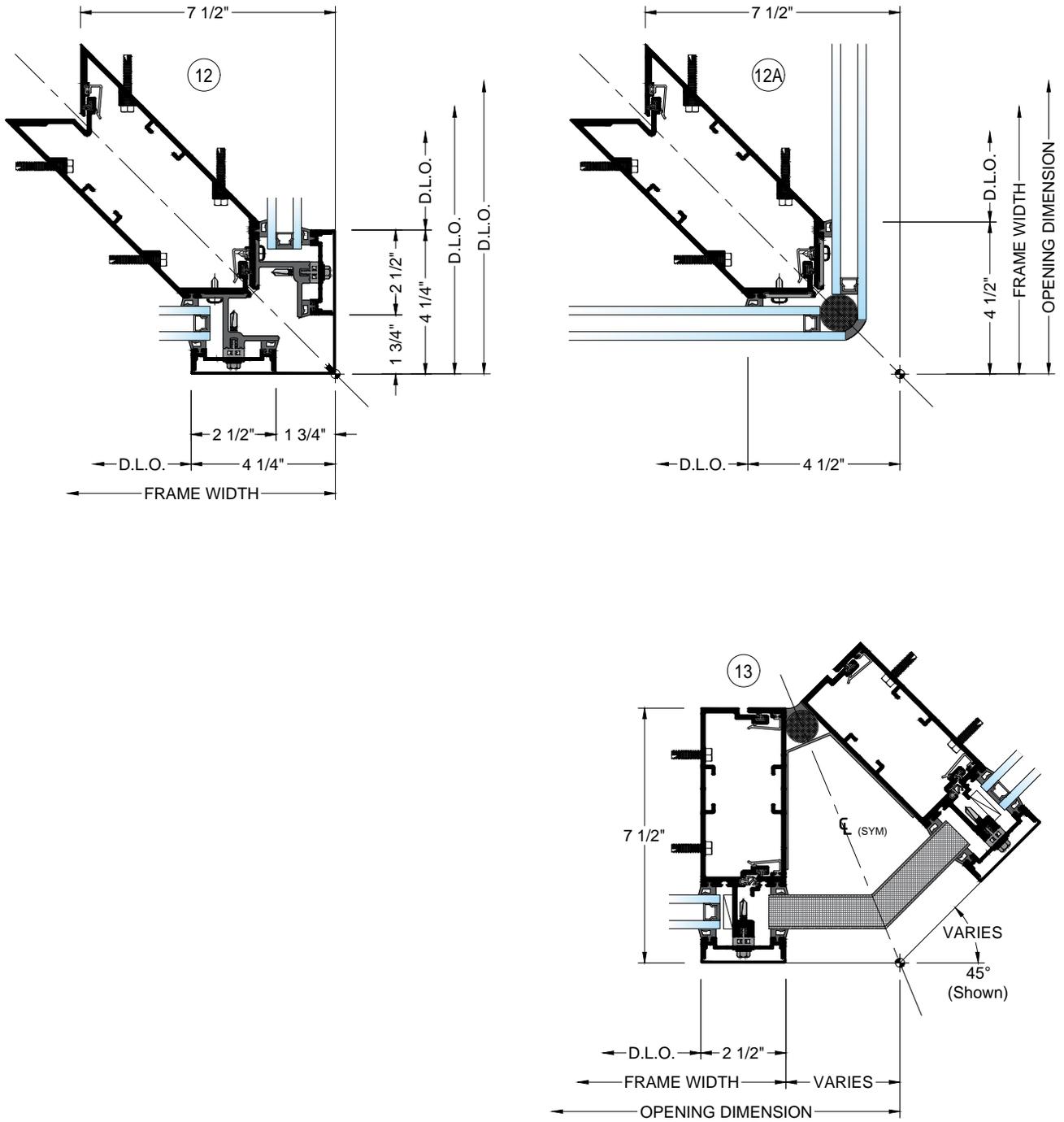


Fig. 25.1

CORNER DETAILS

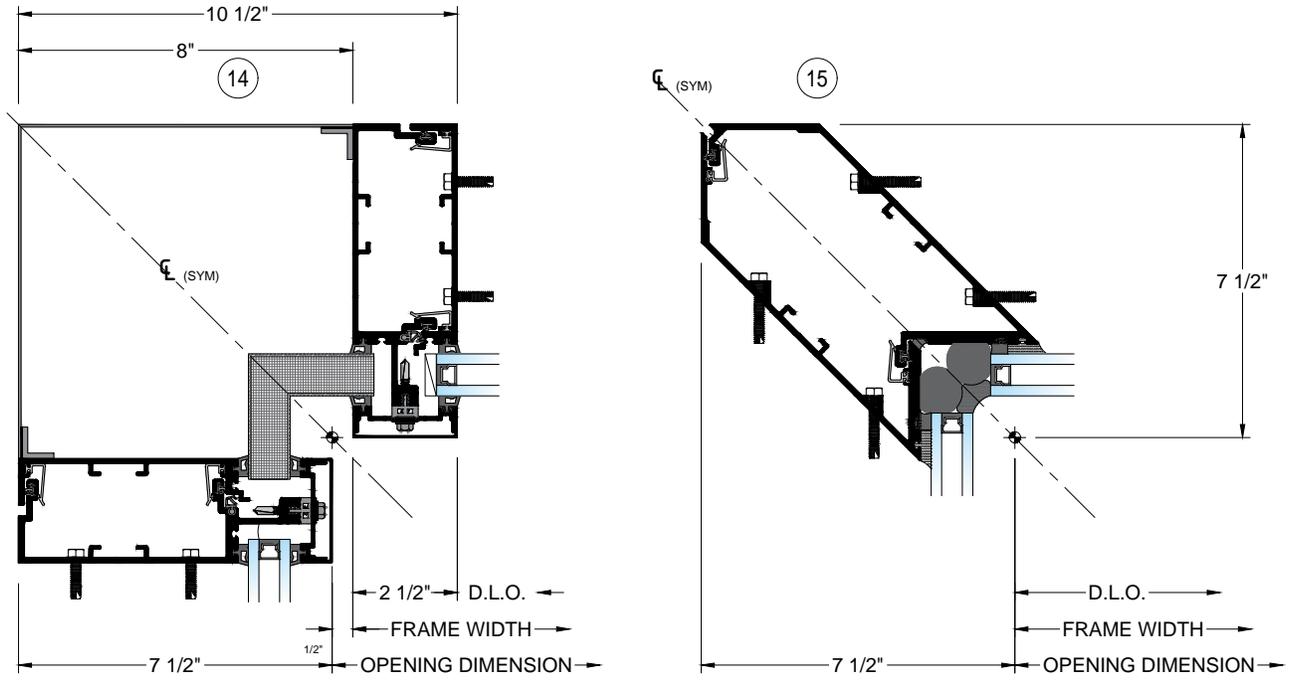


Fig. 26.1

MID-SPAN ANCHOR DETAILS

Anchor details on pages 26 through 28 represent some of several methods of anchoring. Refer to approved shop drawings for job specific applications.

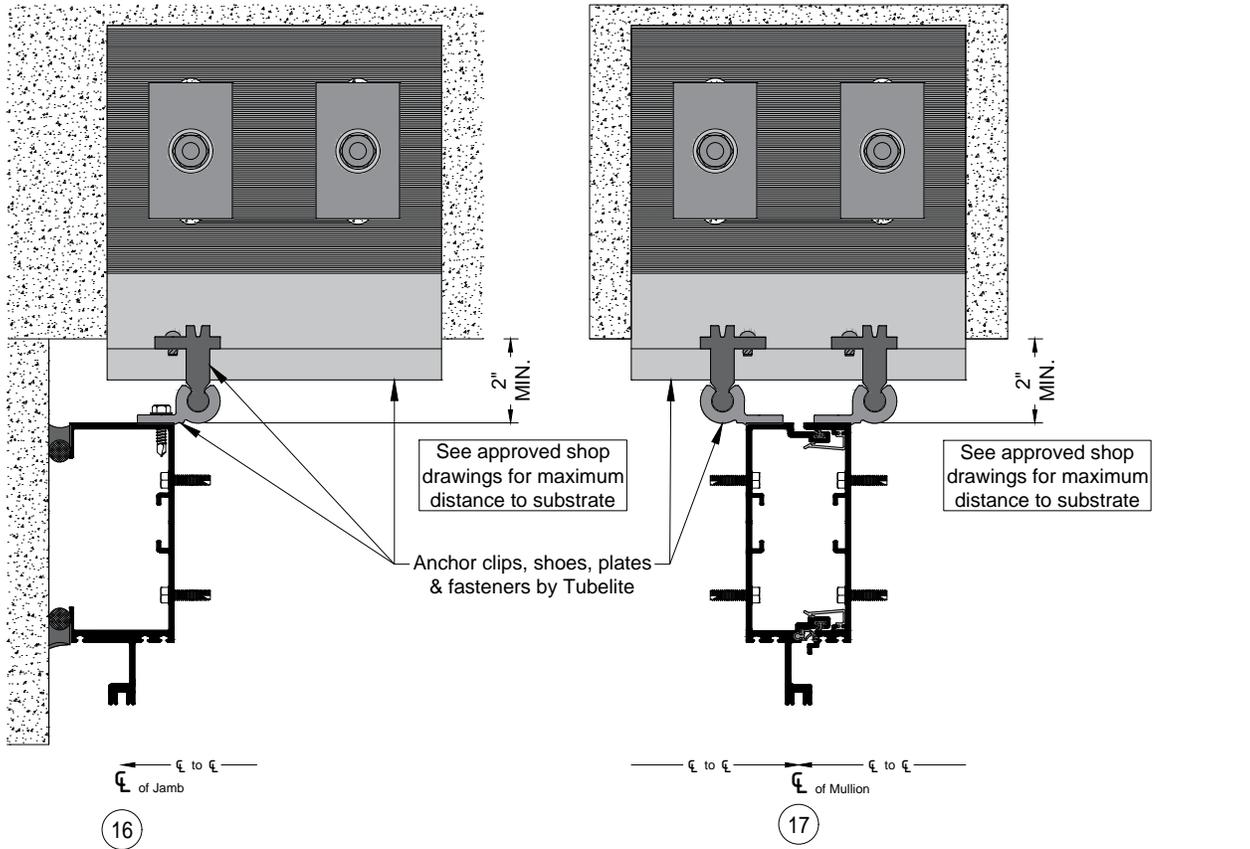


Fig. 27.1

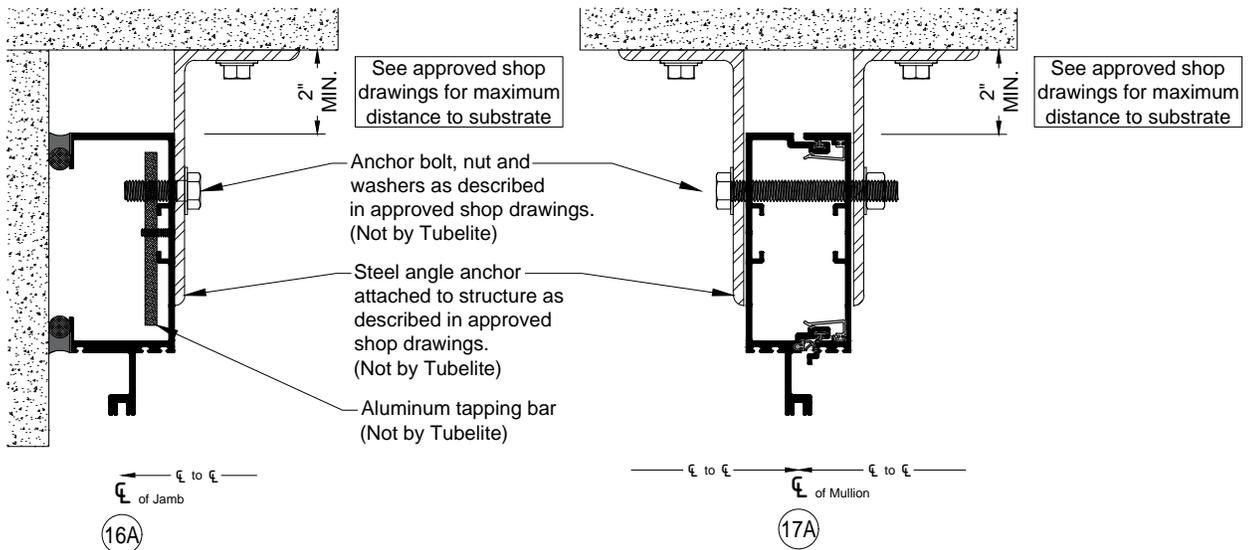


Fig. 27.2

MID-SPAN ANCHOR DETAILS

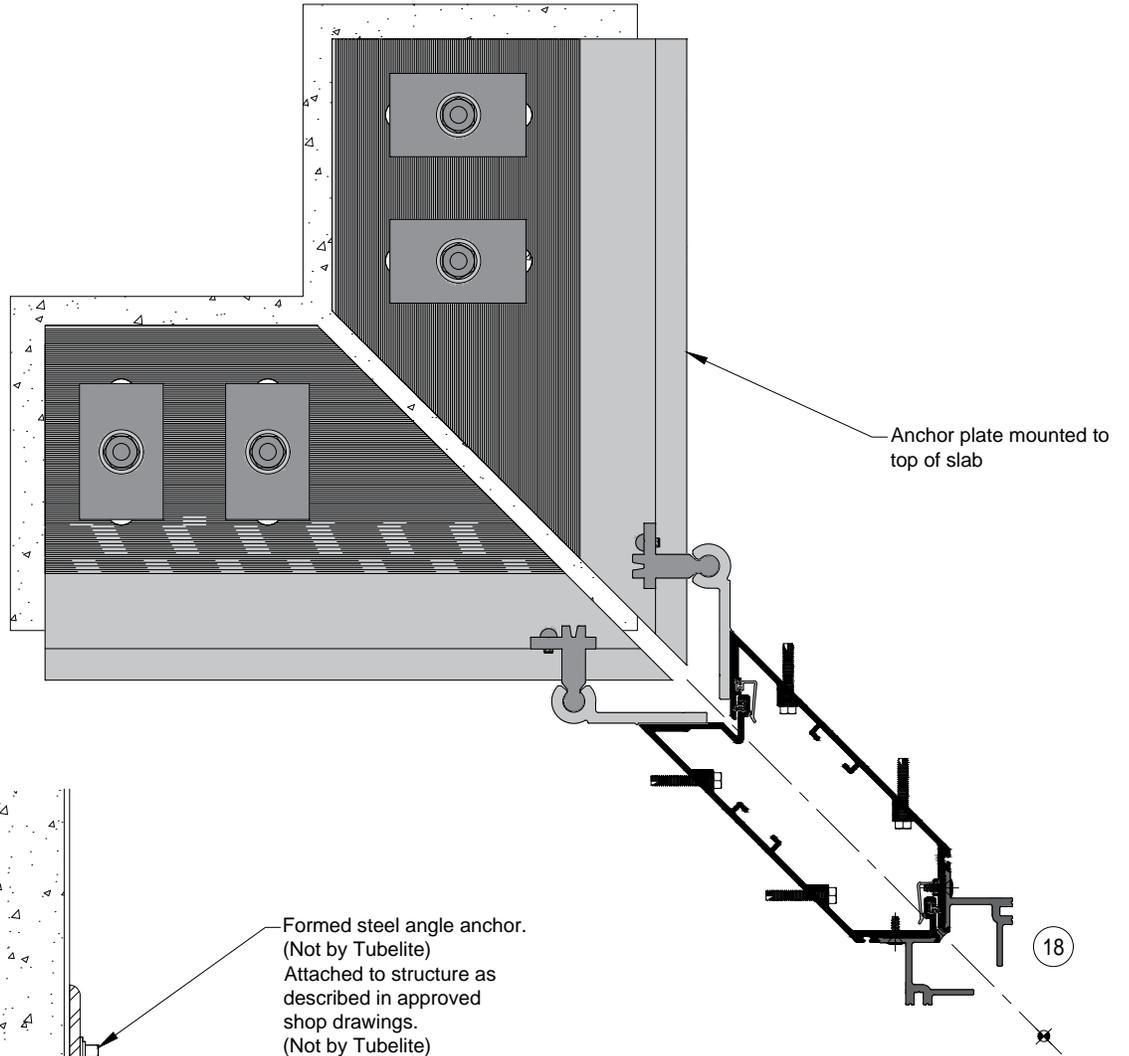


Fig. 28.1

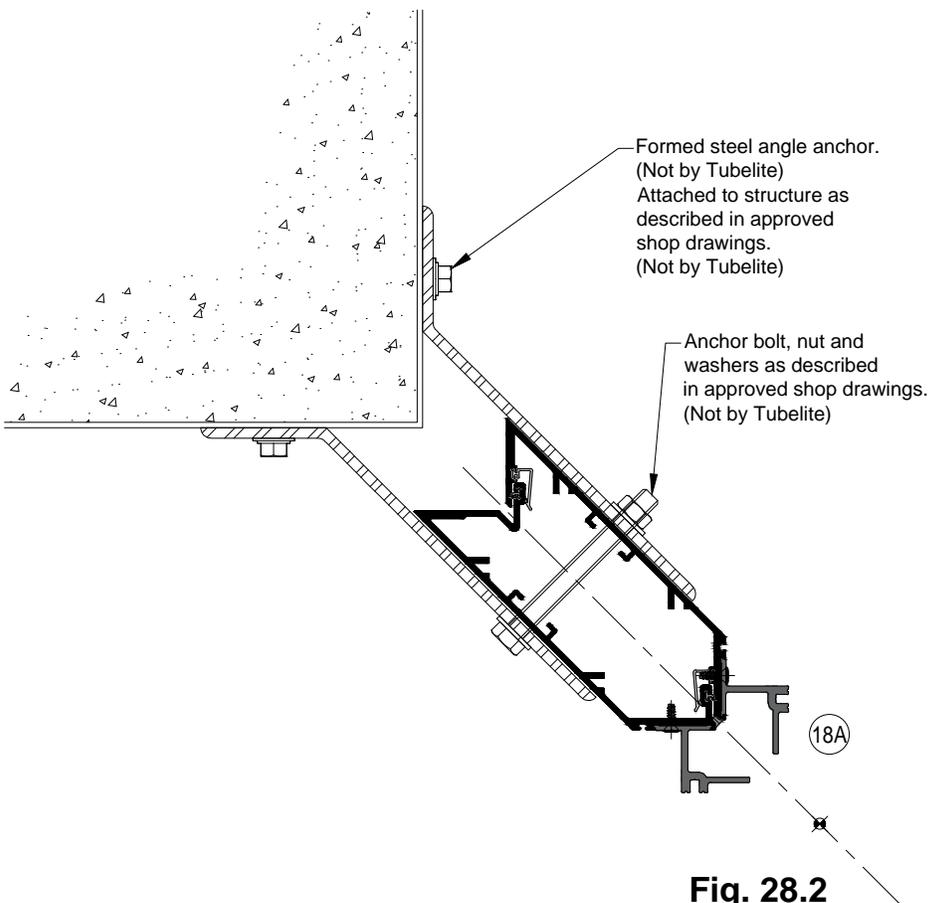


Fig. 28.2

MID-SPAN ANCHOR DETAILS

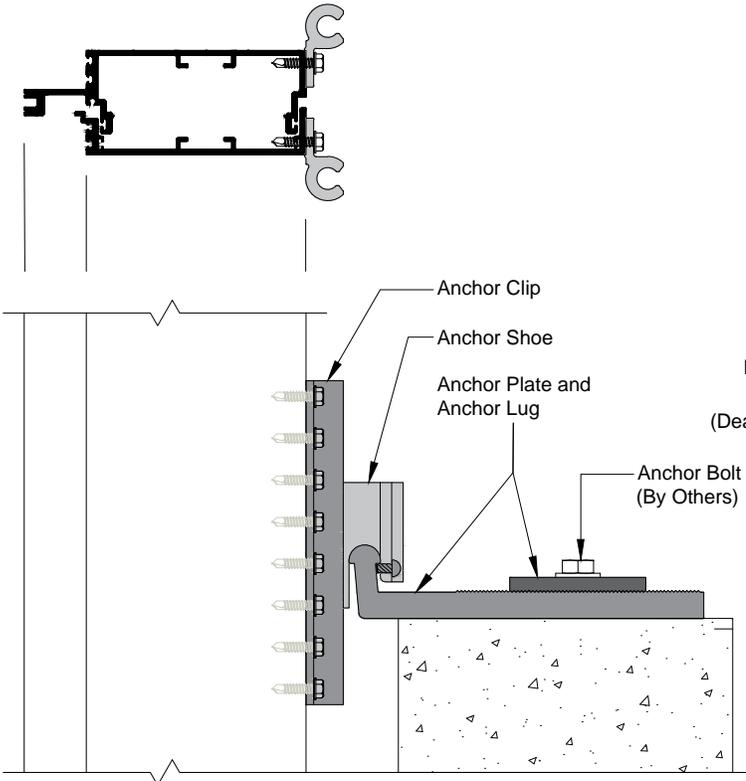


Fig. 29.1

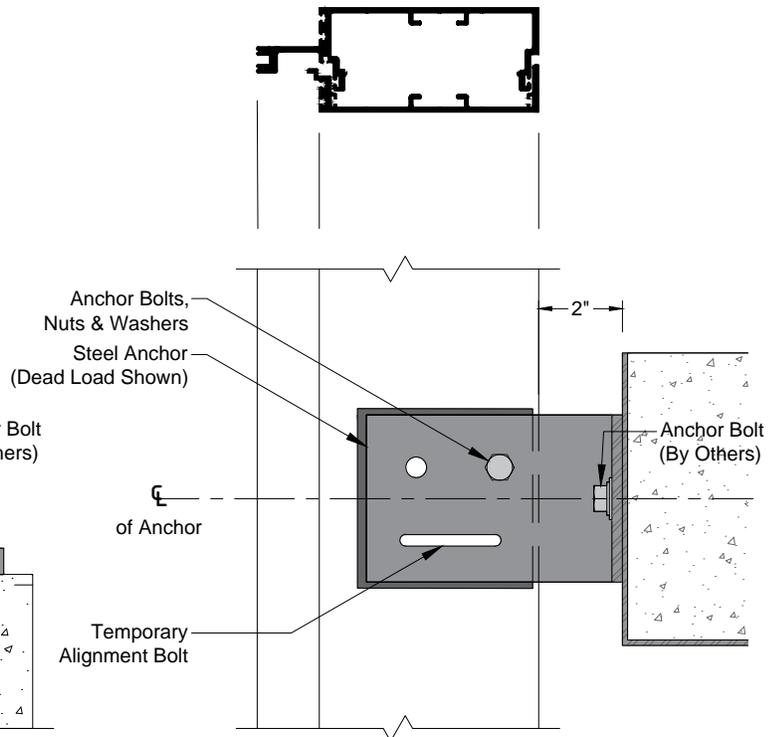


Fig. 29.1A

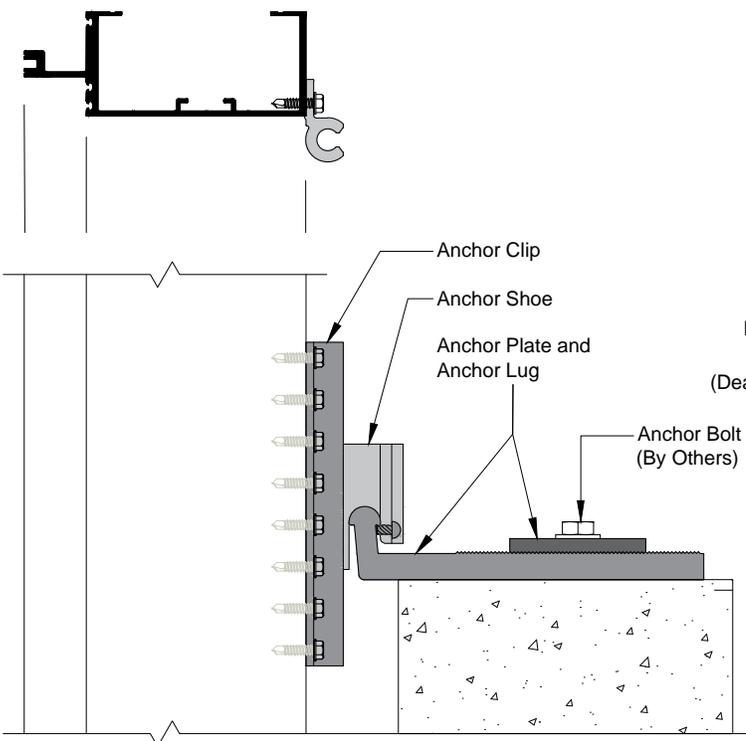


Fig. 29.2 (Ref. Pg. 26)

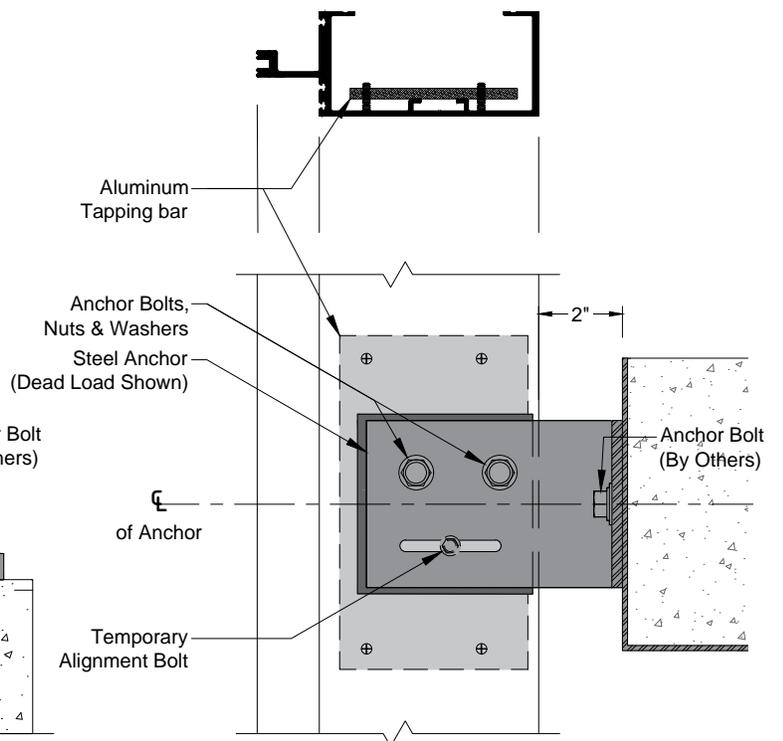


Fig. 29.2A

FRAME UNIT FABRICATION

Step 1: Determine Frame Size

Frame Width

- Make sure the opening is square and plumb. Measure each diagonal of the opening. **SEE Fig. 30.1.**
- Measure the width of the opening (Rough Opening) at the top, middle and bottom. Select the smallest of these dimensions and subtract the left and right caulk joint width per approved shop drawing (1/2" minimum caulk joint starting bay jamb, 3/4" minimum at last bay jamb). **SEE Fig. 30.2.**
- Allow a larger clearance to accommodate building tolerances, an out-of-square opening, anticipated thermal expansion within the unit or as required by shop drawings.

Frame Height

- Measure the height of the opening (Rough Opening) at several points along the entire width of the opening. When using an expansion horizontal select the smallest of these dimensions and subtract 1-1/2" to allow a minimum of 1/2" at the sill and 1" at the head for shim and caulking. For typical installations select the smallest of these dimensions subtract 1" to allow a minimum of 1/2" at sill and head for shim and caulking. **SEE Fig. 30.3.**
- Allow a larger clearance to accommodate building tolerances, an out-of-square opening, anticipated thermal expansion within the unit or as required by shop drawings.

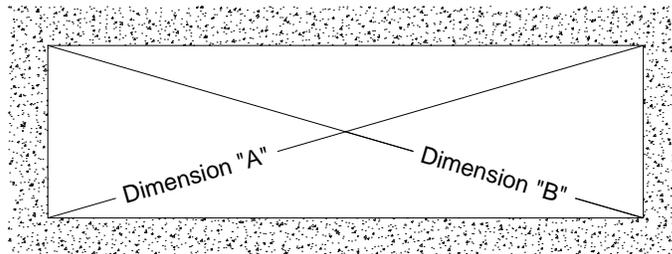


Fig. 30.1

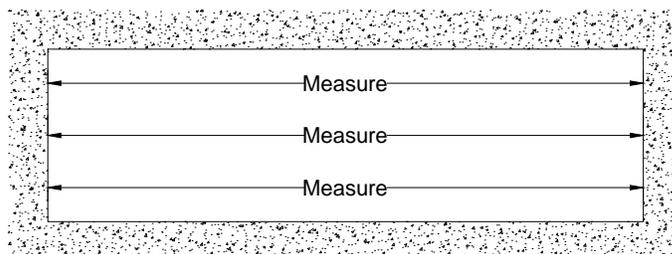


Fig. 30.2

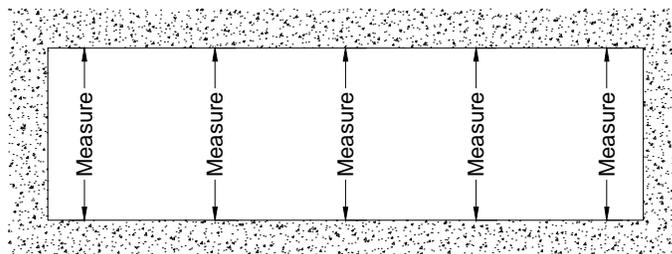


Fig. 30.3

DEPENDABLE

LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS

FRAME UNIT FABRICATION

Step 2: Cut Materials to Size

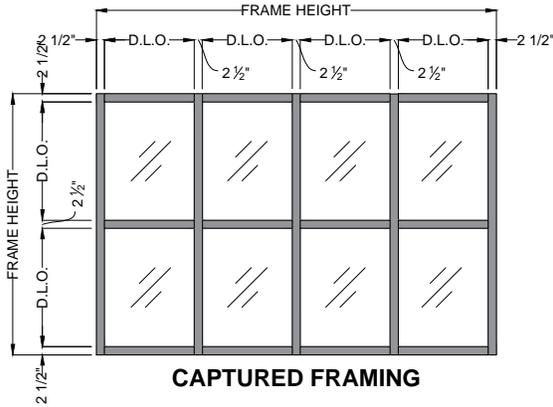


Fig. 31.1

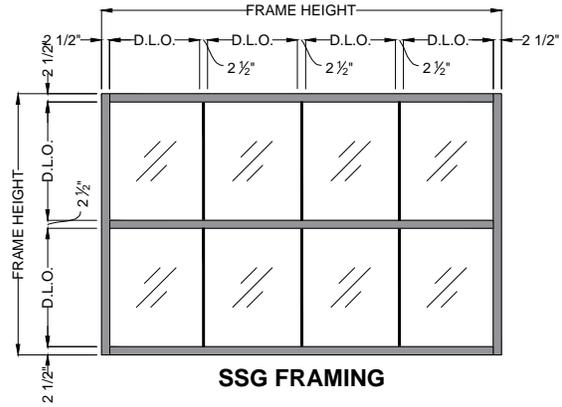


Fig. 31.2

Framing Members

- Verticals
- Head, Horizontal & Sill
- Vertical Pressure Plates

Cut Size

- Frame Height *
- D.L.O.
- Frame Height *

Note: At the vertical pressure plates below an expansion horizontal joint, cut the pressure plate so that it starts 13/16" below the D.L.O. See page 32. At the vertical pressure plates above an expansion horizontal joint, cut the pressure plate to be 1/4" above the D.L.O. (top of horizontal) of the upper horizontal. See page 32.

Vertical Face Covers

Frame Height *

Note: At the vertical pressure plates below an expansion horizontal joint, cut the pressure plate so that it starts 13/16" below the D.L.O. See page X. At the vertical pressure plates above an expansion horizontal joint, cut the pressure plate to be 1/4" above the D.L.O. (top of horizontal) bottom of the upper horizontal. See page 32.

- Horizontal Pressure Plates
- Horizontal Pressure Plates @ SSG Vert
- Horizontal Face Covers
- Horizontal Face Covers @ SSG Vert
- Expansion Horizontal Trim
- Horizontal Glazing Adaptors
- Vertical Glazing Adaptors

- D.L.O. – 3/8"
- 3 Lites Wide Maximum *
- D.L.O. – 1/16"
- 3 Lites Wide Maximum *
- CL-to-CL of Verticals - 1/4" (Splice as Needed)
- D.L.O. – 1/16"
- D.L.O. + 1"

Accessories

- Exterior Vertical Gasket
- Interior Vertical Gasket
- Interior Horizontal Gasket
- Silicone Spacer Gasket (SSG Vert)
- Chicken Head Gasket

Pressure Plate Length + Allowance**

- D.L.O.+ 1" + Allowance**
- D.L.O.+ Allowance**
- D.L.O.+ 1" + Allowance**

Chicken Head PVC Rod

Frame Width

Note: Run gasket through a chicken head splice. If gasket splice is required, locate at least 1" from a chicken head splice joint and apply grease.

Chicken Head Length

Note: Splice rod at chicken head splice location

**Allowance = 1/8" extra length per foot of D.L.O.

***Note: For splicing and cutting allowances see: step 10, page 41: step 17, page 68.**

Note: Door framing material is cut to size from the factory

FRAME UNIT FABRICATION

Step 3: Drill Holes in Vertical Members for Assembly Screws

- A. Drill .258" diameter clear holes for 1/4" screws in the vertical members according to holes labeled on the P4645 drill fixture:
- a. Head & Sill members - A, J for sill and G, L for head at 3-3/4" back members
A, B for sill and G, H for head at 5-1/4" back members
A, C for sill and G, I for head at 7-3/4" back members
 - b. Intermediate Horizontals - A, J, G, L at 3-3/4" back members
A, B, G, H for 5-1/4" back members
A, C, G, I for 7-3/4" back members
 - c. Expansion Horizontals - A, J, D, K for 3-3/4" back members
A, B, D, E for 5-1/4" back members
A, C, D, F for 7-3/4" back members

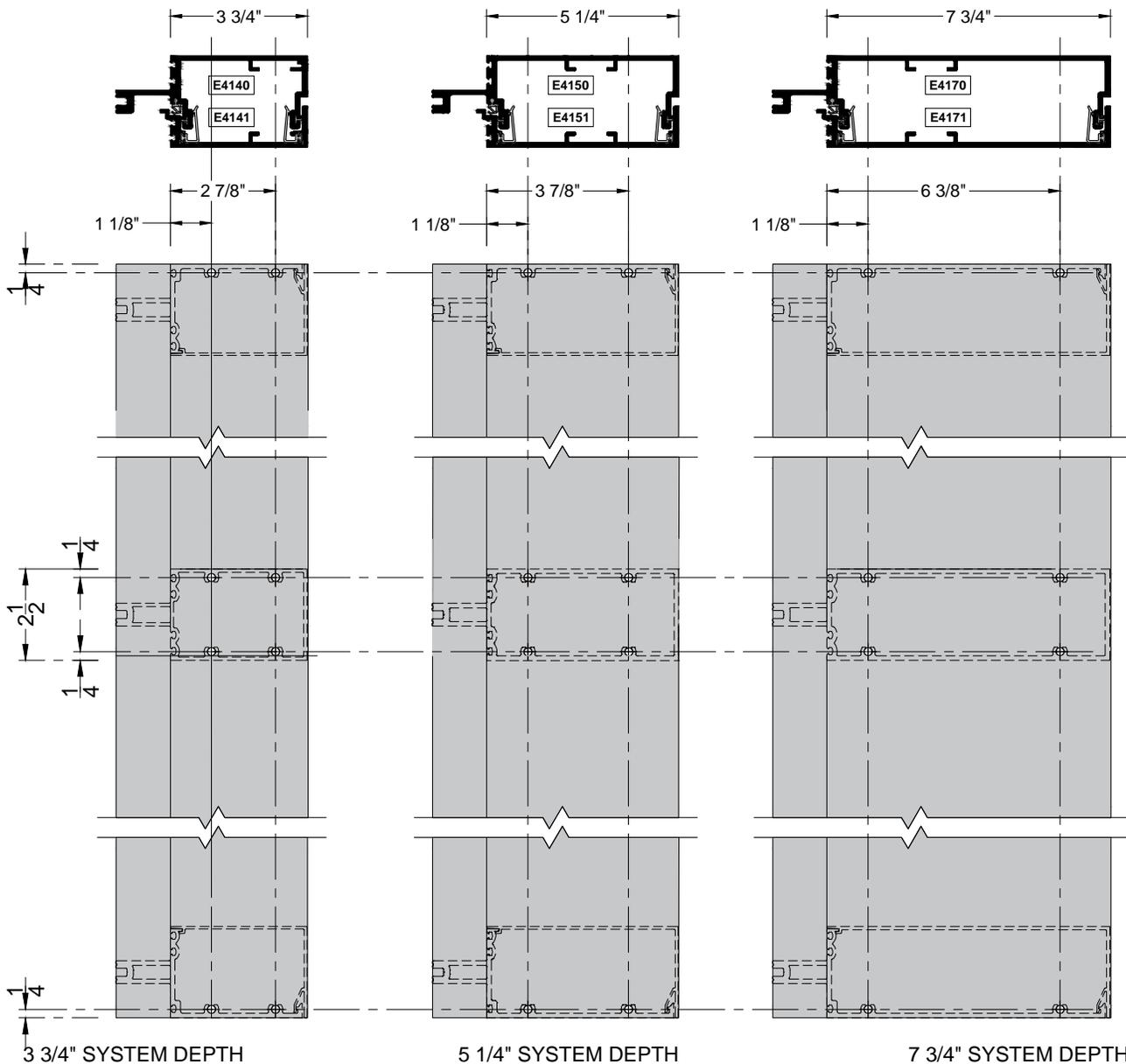


Fig. 32.1

FRAME UNIT FABRICATION

Step 3: Drill Holes in Vertical Members for Assembly Screws (continued)

- B. At an expansion joint using E4200 the top mullion needs to be notched to fit over the expansion plate. See Fig. 33.2 for notching dimensions.

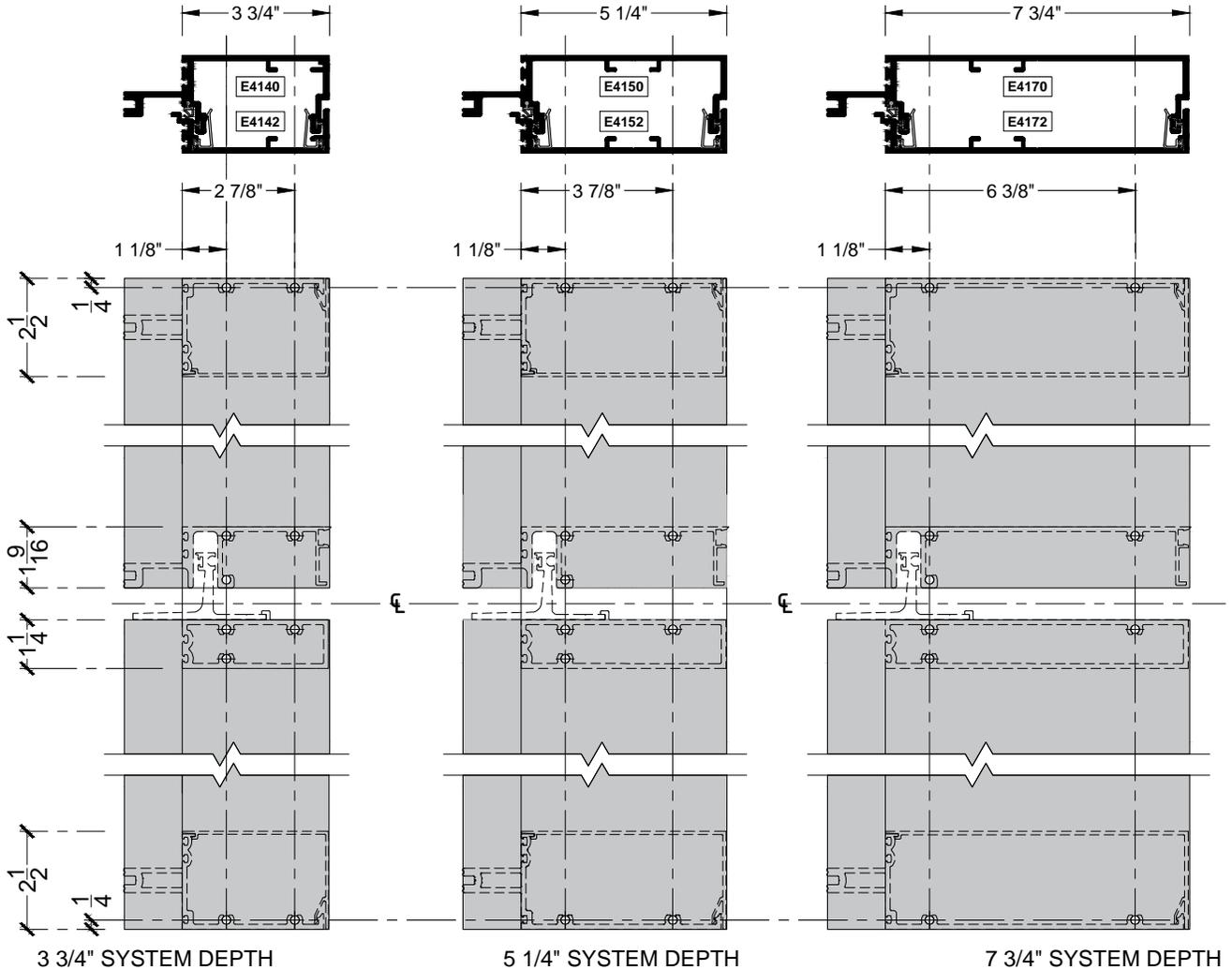


Fig. 33.1

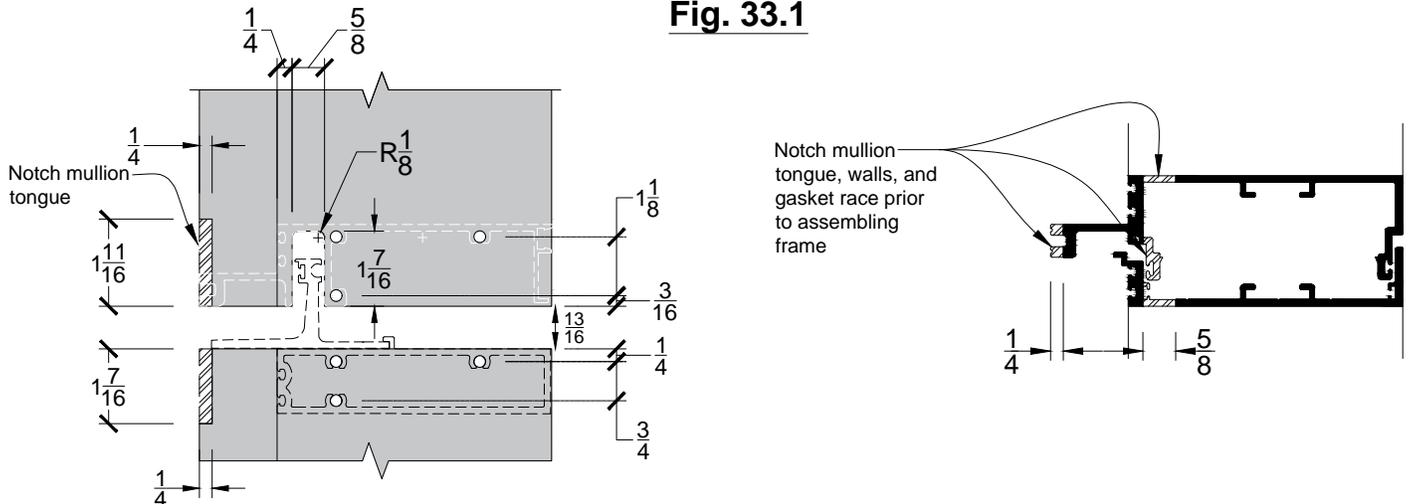


Fig. 33.2

EXPANSION PLATE NOTCHES

FRAME UNIT FABRICATION

Step 4: Fabricate Horizontal Pressure Plates

- A. Drill two 5/16" diameter weep holes per horizontal pressure plate at 4" from each end. Locate the holes on the V-groove above the center line of the pressure plate.
- B. Aluminum pressure plates are factory punched on center for pressure plate screws. POLYAMIDE PRESSURE PLATES DO NOT COME FROM THE FACTORY PRE-PUNCHED. Prepare holes for pressure plate screws at 8" O.C.. Drill additional hole(s) as required to ensure a maximum of 2" from the ends of the plates and at horizontal/vertical intersections. See Fig. 63.1 for instructions regarding polyamide pressure plate anchor holes at these intersections.
- C. When SSG verticals are used in the elevation, horizontal pressure plates can run up to 3 lites wide maximum. Additional weep holes must be drilled in these cases.

Step 5: Fabricate Weep Holes in Horizontal Face Covers

- A. Fabricate (1) 5/16" weep hole on the bottom center of each horizontal face cover.
- B. Aluminum, Polyamide, and Thermal pressure plates are factory punched on center for pressure plate screws. Drill additional hole(s) as required to ensure a maximum of 2" from the ends of the plates and at horizontal/vertical intersections. See Fig. 63.1 for instructions regarding polyamide pressure plate anchor holes at these intersections.

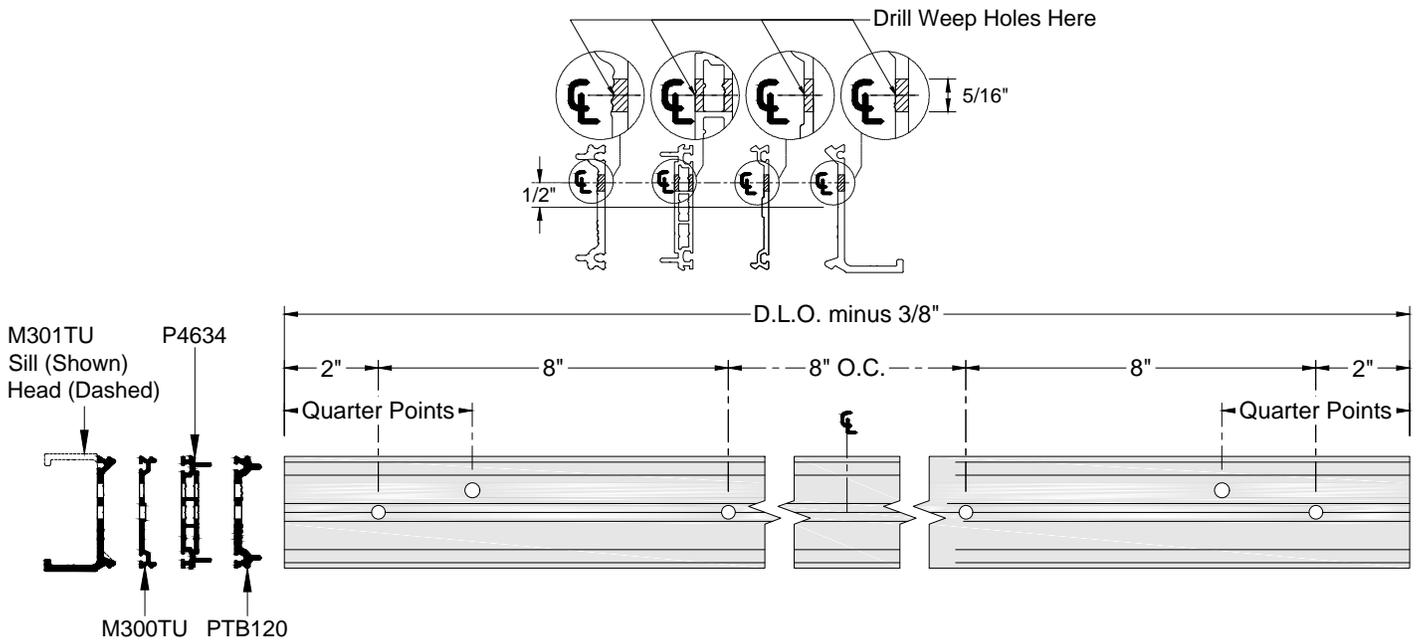


Fig. 34.1

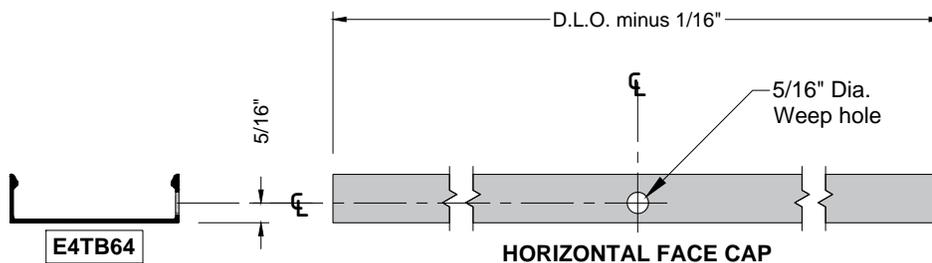


Fig. 34.2

FRAME UNIT FABRICATION

Step 6: Attach Anti-Buckling Clips to Verticals

- A. Slide P4615 anti-buckling clips into location on the female verticals. Refer to approved shop drawings for correct number and location. Note that it is best to locate clips at the top, bottom and mid-point of each frame unit for best results. Crimp clips into place. See Fig. 35.1.

NOTE: The 400SS system can be anchored to the building at mid-spans with either a traditional angle clip on each side of the vertical (Fig. 26.2) or the top-of-slab anchor design which allow for a better range of adjustment in the field (Fig. 26.1). If your installation uses the top-of-slab anchor system, proceed to Step 7. If not, proceed to Step 9.

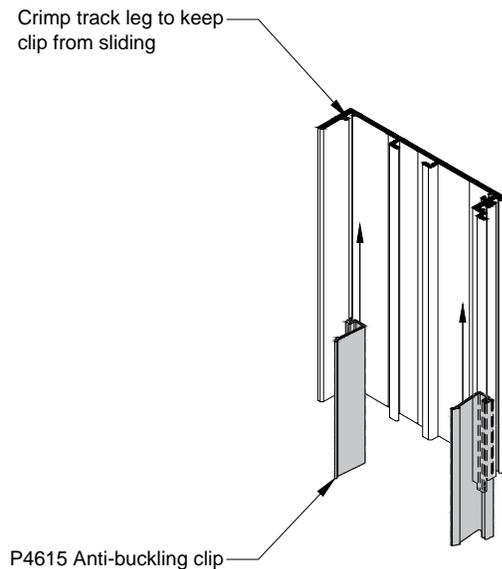


Fig. 35.1

FRAME UNIT FABRICATION

Step 7: Attach Anchor Clips to Verticals

- A. Locate the anchor clips for each vertical so the center line of the clip aligns with the top of the anchor plate ball. Attach to the vertical with (8) S457 ¼" x 1" HWH self-drilling screw per approved shop drawings. See Fig. 36.1.

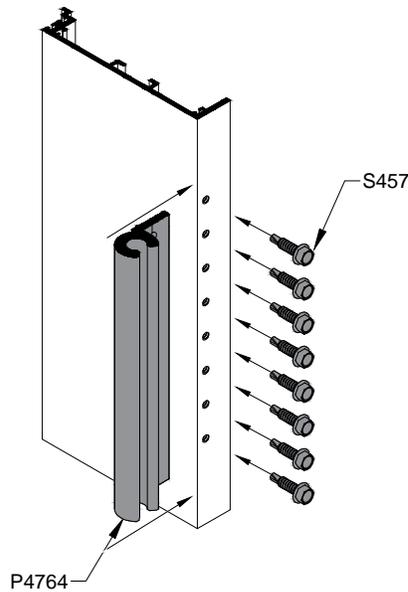
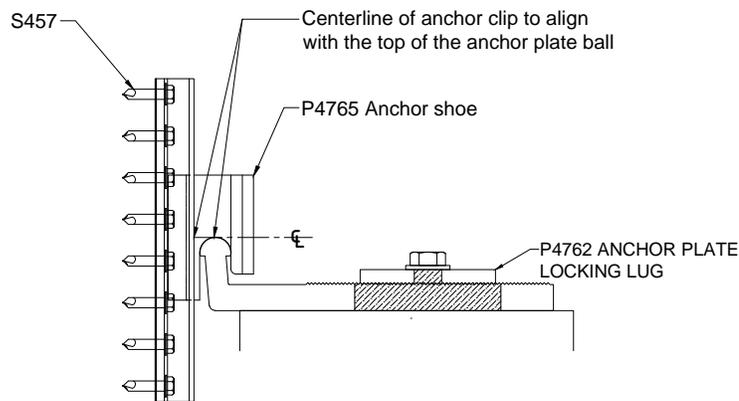
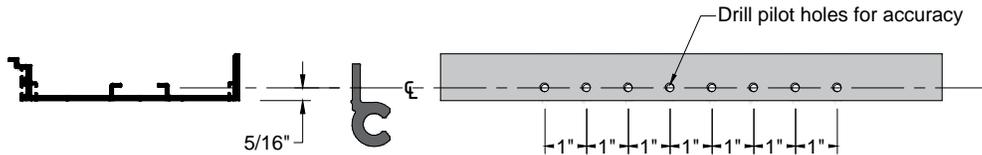


Fig. 36.1

FRAME UNIT FABRICATION

Step 8: Attach Lifting (Alignment) Lugs to Verticals

- A. For multi-span applications or shop glazed frames requiring lifting lugs, attach the lifting (alignment) lugs to the tops of the verticals on each side per approved shop drawings. See Fig. 37.1 & 37..1

Note: Each project must be reviewed by an Engineer to determine loading limits on the lugs for job specific conditions. Glass and frame sizes as well as the method of installing frames can affect loading limitations on the lugs. Clearances in the building opening also need to be factored in as well.

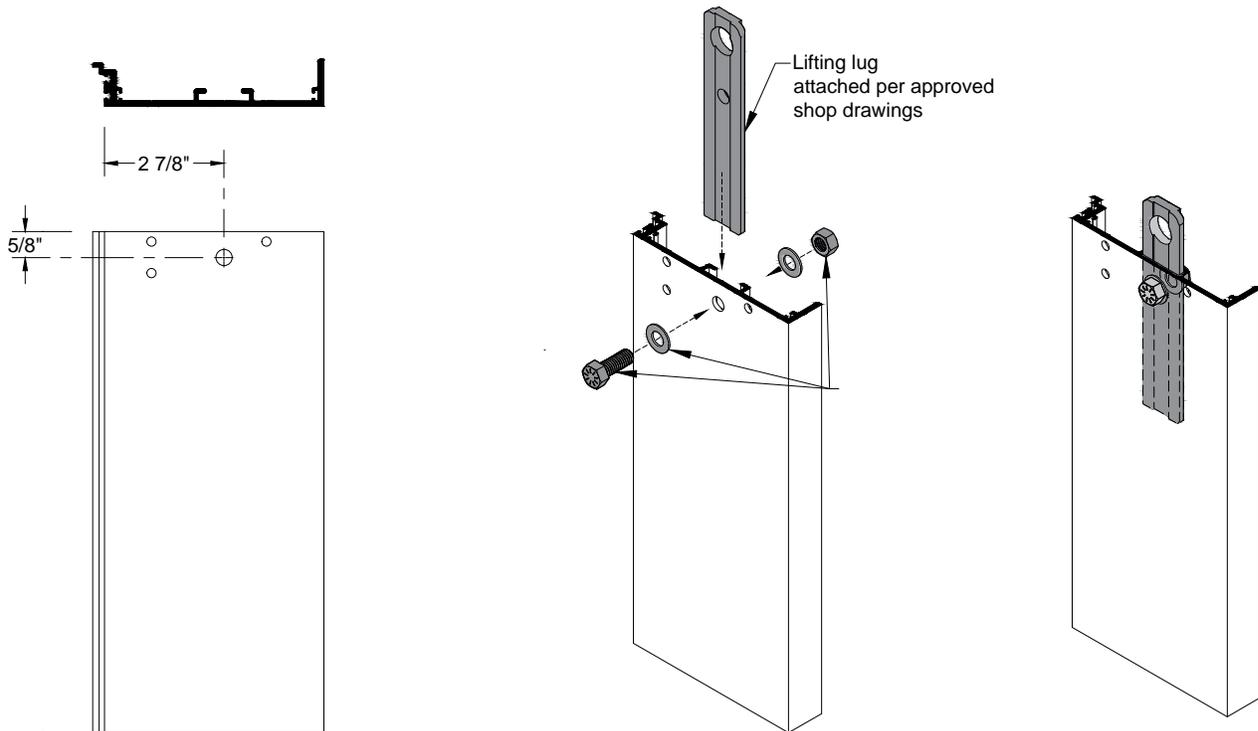


Fig. 37.1

5-1/4" Back Member Shown, 7-3/4" similar

FRAME UNIT FABRICATION

Step 8: Attach Lifting (Alignment) Lugs to Verticals (continued)

Note: Each project must be reviewed by an Engineer to determine loading limits on the lugs for job specific conditions. Glass and frame sizes as well as the method of installing frames can affect loading limitations on the lugs. Clearances in the building opening also need to be factored in as well.

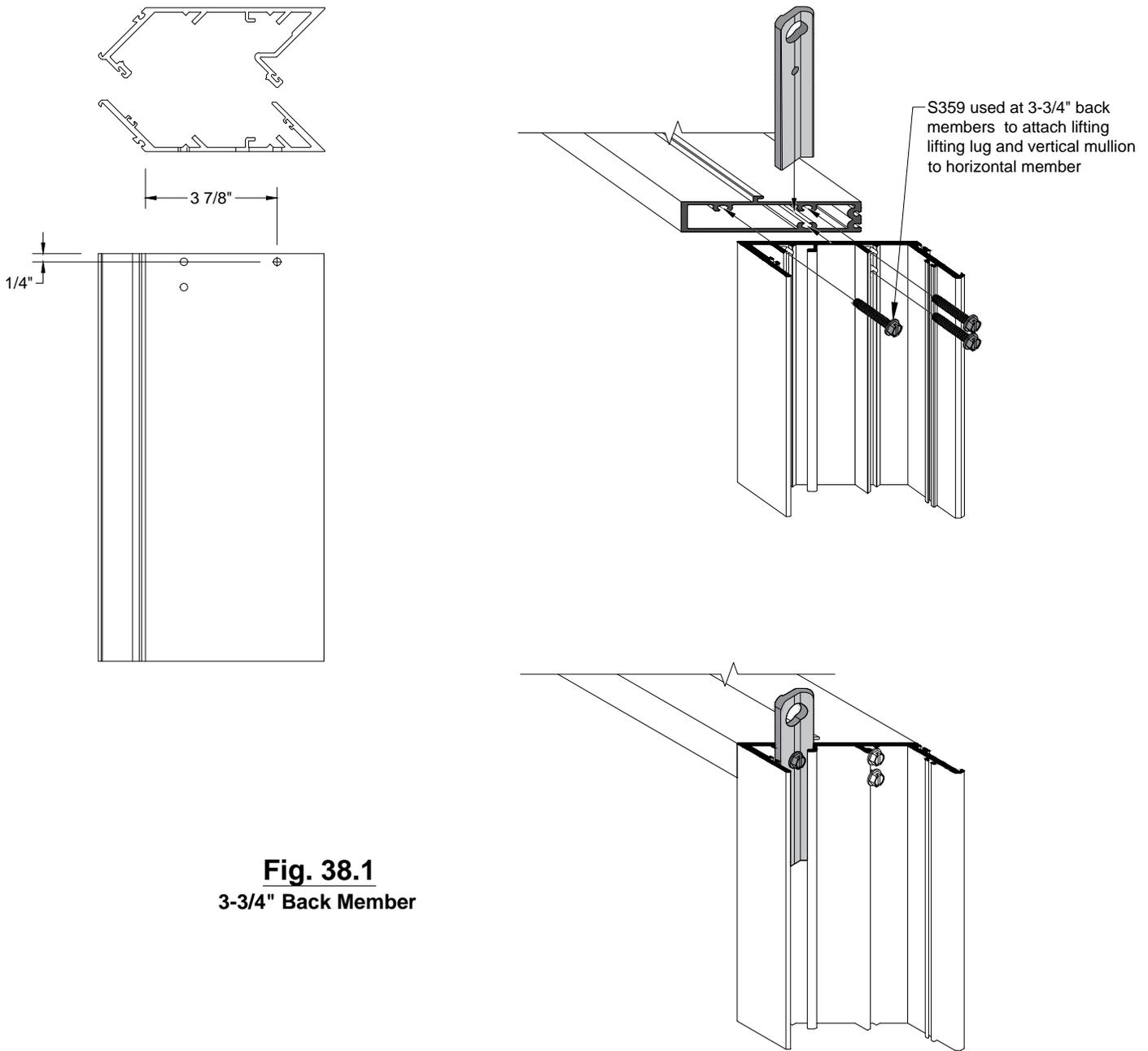


Fig. 38.1
3-3/4" Back Member

FRAME UNIT ASSEMBLY

Step 9: Assemble Bays

- A. Starting at the jamb of the opening, lay out the verticals and horizontals for correct assembly of each bay.
NOTE: The orientation of the corner mullions will determine the direction of installation (left-to-right or right-to-left).
- B. De-bur and clean the ends of all horizontals with IPA to ensure a tight joint with good sealant adhesion. Seal ends of horizontal prior to attaching to the verticals. See Fig. 39.1 for sealant locations.
- C. Assemble the horizontals to the verticals with S403, 1/4-20 x 1" HWH, or S359 at 3-3/4" back members. Tool excess sealant at the joints. At all two-piece corner mullions, use S359 to assemble the horizontals to the corner mullions

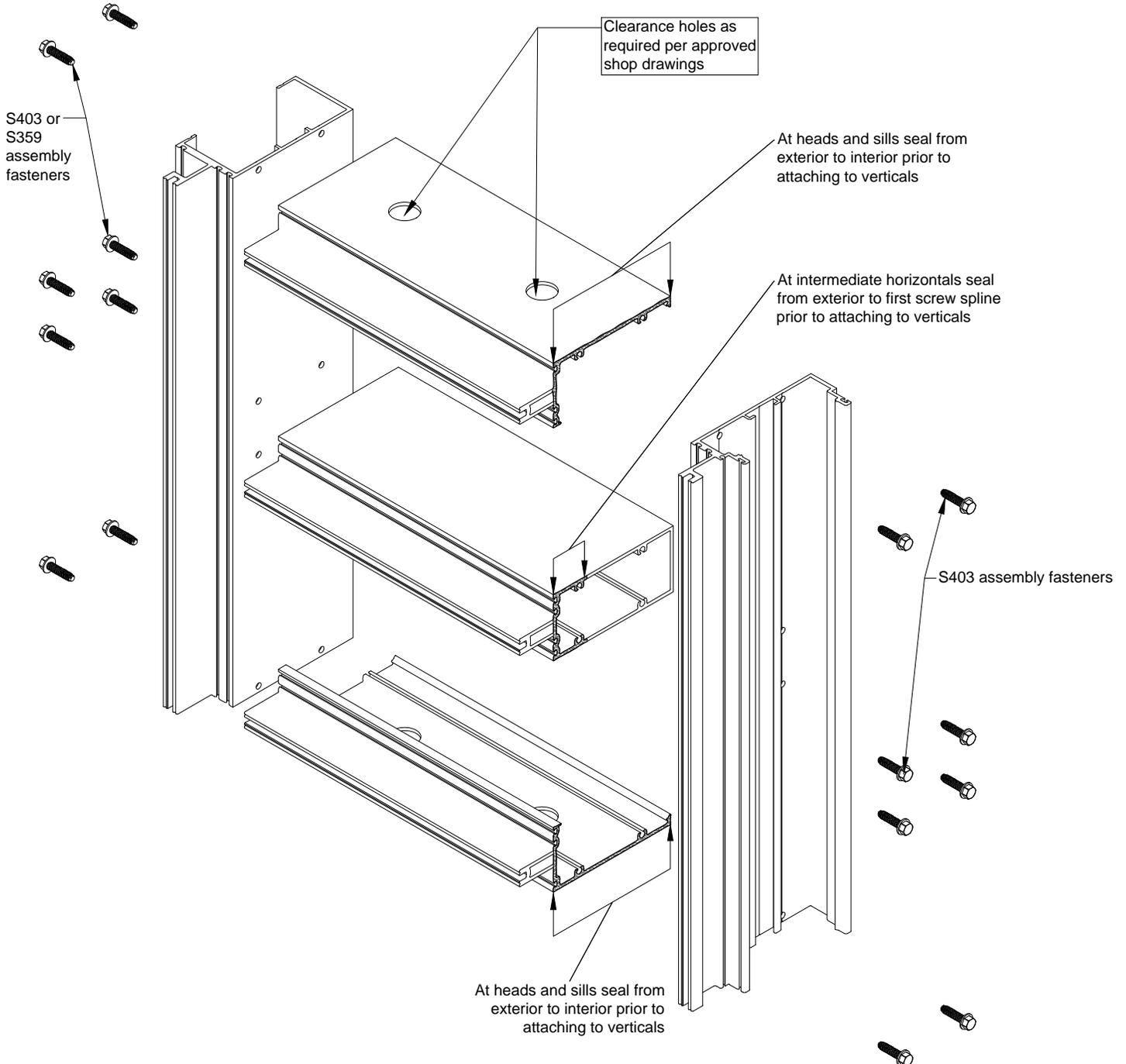


Fig. 39.1

FRAME UNIT ASSEMBLY

Step 9: Assemble Bays (continued)

- A. Install P4730 wiper gasket continuous into the front and back of each male vertical member. Crimp the ends of the mullion to lock the wiper gasket in place. See Fig. 40.1.
- B. Install P4788 air seal gasket continuous in the front of each male intermediate vertical. 'Ping' metal to crimp gasket in place. See Fig. 40.1.
- C. If steel reinforcing is required, install per approved shop drawings. Steel reinforcing can be attached to frame units in different ways. See Fig. 40.2 for examples at 5-1/4" and 7-3/4" back members. See Fig 40.3 for 3-3/4" back members.
- D. For conditions requiring 1/4" spandrel glass, install the P4718 reducer gasket into the pocket reducer.

Note: Tubelite offers three (3) pocket reducers: A typical vertical/horizontal reducer, a reducer for an outside corner and a reducer for an inside corner. Reference parts list for part numbers.
- E. Position reducers in the pocket (vertical reducers run beyond horizontal reducers) and engage in back member reglet. See Fig. 40.1. For glass that is structurally glazed, attach the pocket reducer to the mullion 2" from each end and at the mid-point with S207 #10-24 x 1-1/4" FH.

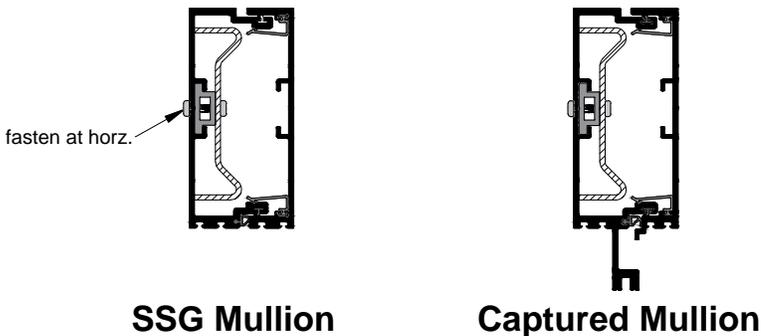
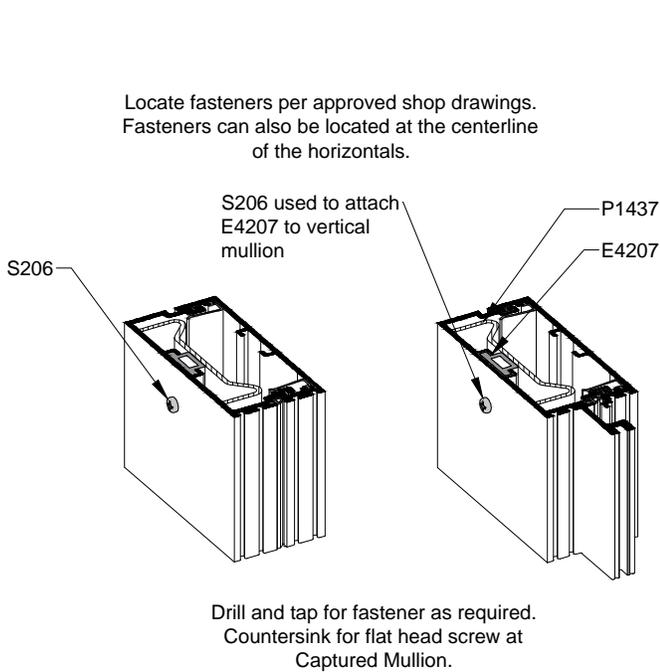


Fig. 40.2
 TYPICAL APPLICATION AT
 5-1/4" & 7-3/4" BACK MEMBERS

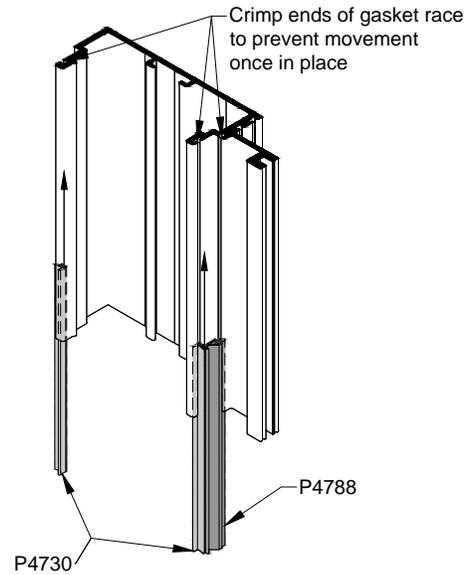


Fig. 40.1

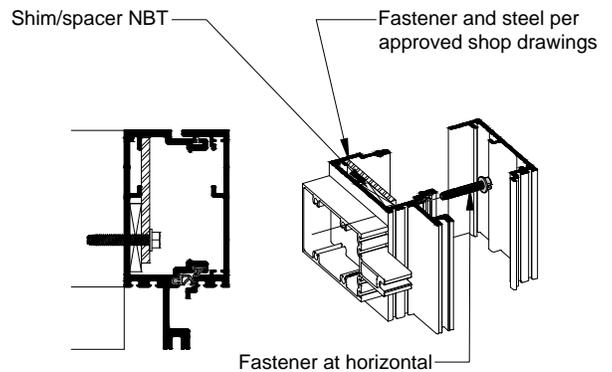


Fig. 40.3
 TYPICAL APPLICATION AT
 3-3/4" BACK MEMBERS

FRAME UNIT ASSEMBLY

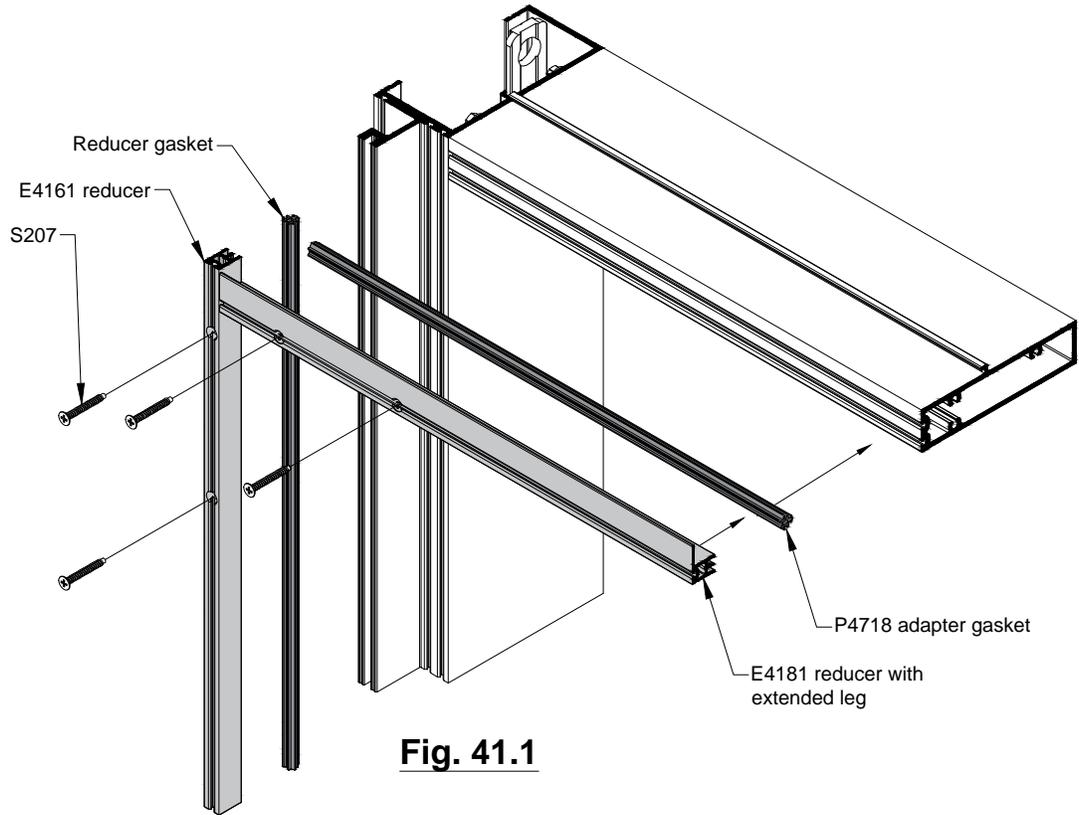
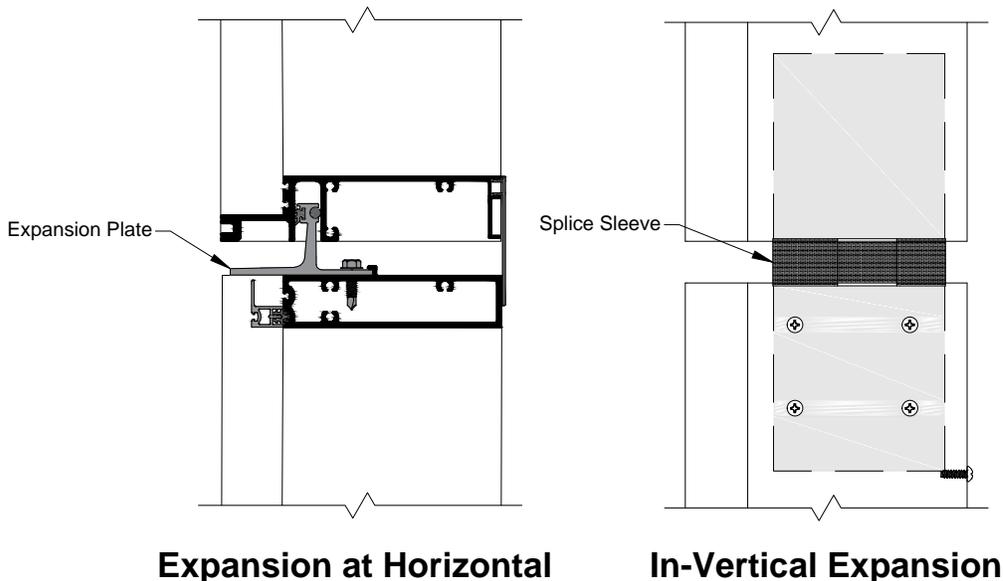


Fig. 41.1

NOTE: The 410SS system can be spliced in two different ways. Traditional in-vertical splice sleeves can be used for elevations with anticipated live load/thermal movement of +/- 1/4" maximum movement*, or a specially designed expansion horizontal can be used for live load/thermal movement of +/- 1/2" maximum movement*. See Fig. 41.2. Refer to Step 10 for traditional mullion splicing and Step 13 for expansion horizontals.

*Live load/thermal movement based on standard shapes. Consult Tubelite Engineering for job specific requirements out of this range.



Expansion at Horizontal

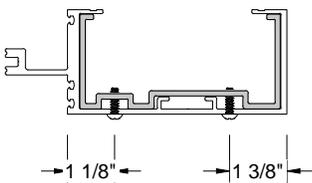
In-Vertical Expansion

Fig. 41.2

FRAME UNIT ASSEMBLY

Step 10: Splice Sleeve Attachment

- Consult approved shop drawings for number and size of fasteners required to attach the splice sleeves to the verticals.
- Drill holes on both sides of the lower frame vertical in the locations shown on approved shop drawings. Install a positioning screw at the lower verticals to act as a splice sleeve stop. See Fig. 42.1.
- Slide the splice sleeves into the upper frame vertical. Tape the sleeve into position temporarily until verticals are erected. See Fig. 42.2.
- When verticals are in place, remove the tape to allow splice sleeves to drop into position inside the lower verticals. Fasten in place on both sides of mullion. See Fig. 42.3.



Note: Locate anti-buckling clips so as not to interfere with the splice sleeves

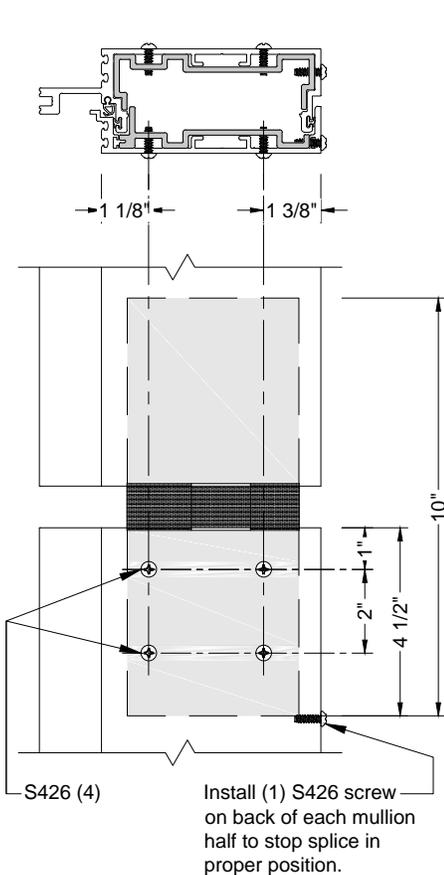


Fig. 42.1

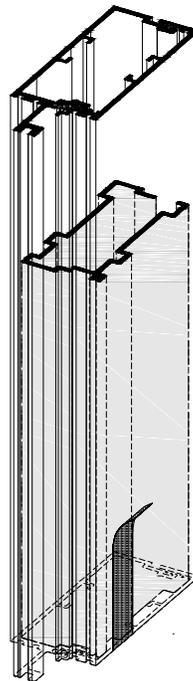


Fig. 42.2

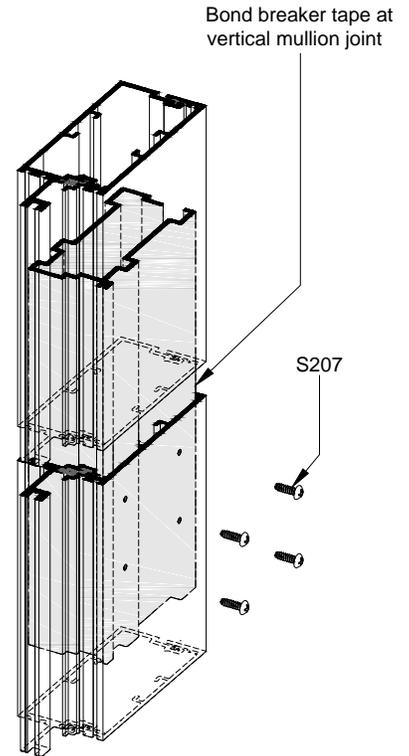


Fig. 42.3

Note: All fasteners are mill finish

FRAME UNIT ASSEMBLY

Step 10: Splice Sleeve Attachment

- E. Apply bond breaker tape to the exposed section of the splice sleeves. Apply sealant over bond breaker tape and tool. See Fig. 43.2.

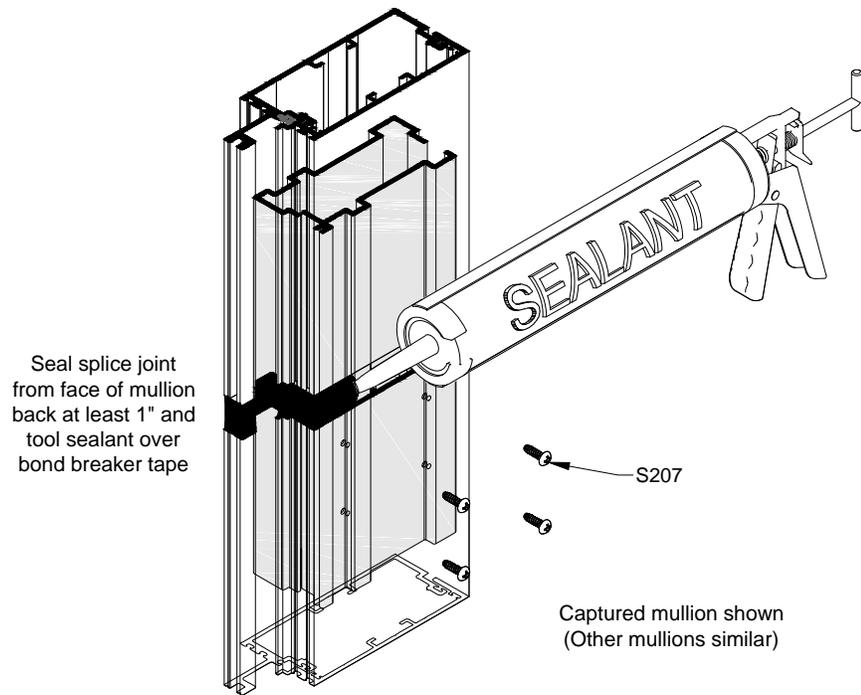
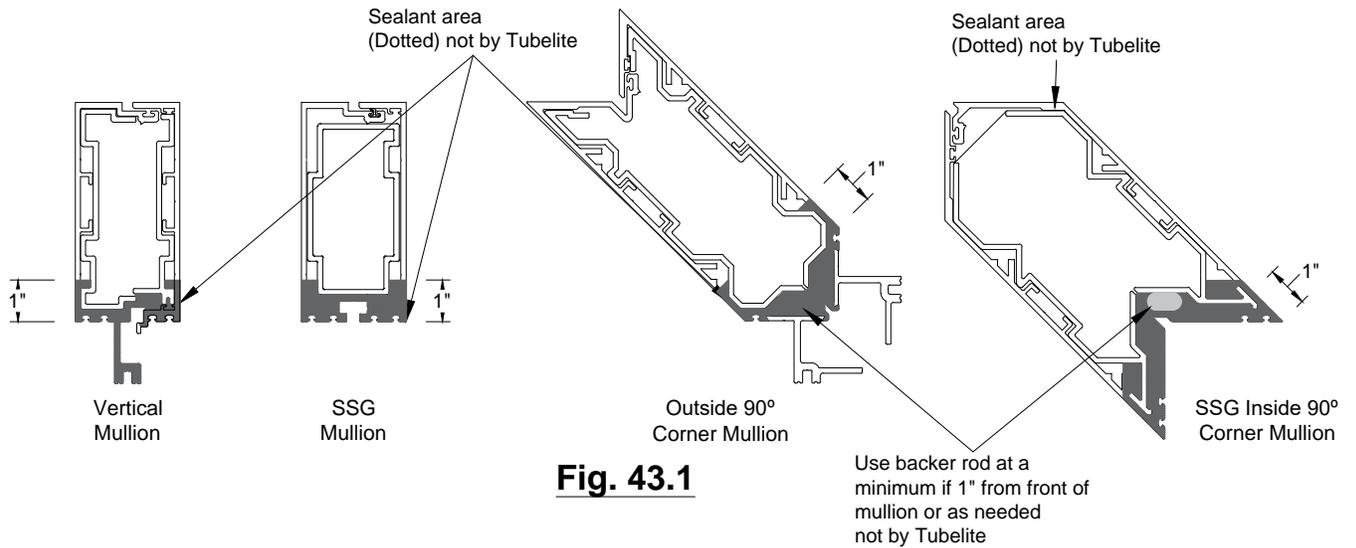


Fig. 43.2

FRAME UNIT ASSEMBLY

Step 11: Install Water Dams

- Pre-seal the cavity where the water dam is to be installed. Sealant should be applied liberally. See Fig. 44.1 and 44.2. When expansion horizontals are used, only the upper horizontal (sill of upper frame unit) will receive a water dam.
- Push the water dam into the cavity between the end of the horizontal and the vertical tongue. This is a pressure fit.
- After the water dam is in place, apply silicone between the top of the dam and end of the horizontal, tooling over the end dam for a water tight seal. Seal over the top of the water dam onto the horizontal tongue, damming the end of the horizontals. **THIS IS A CRITICAL SEAL.**
- For vertical SSG applications, water dams must be installed after the frame units are erected. Follow the same sealing procedures as with a captured system noted above. See Fig. 44.2.

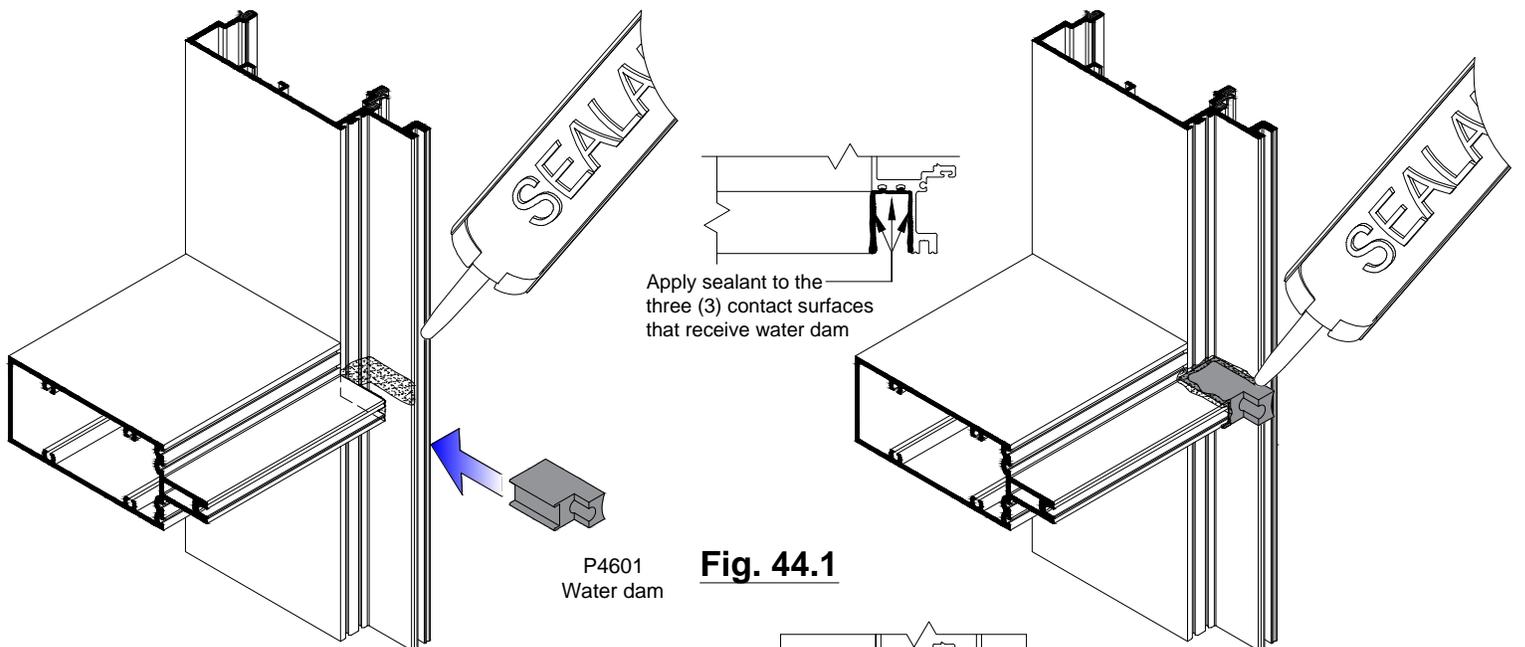


Fig. 44.1

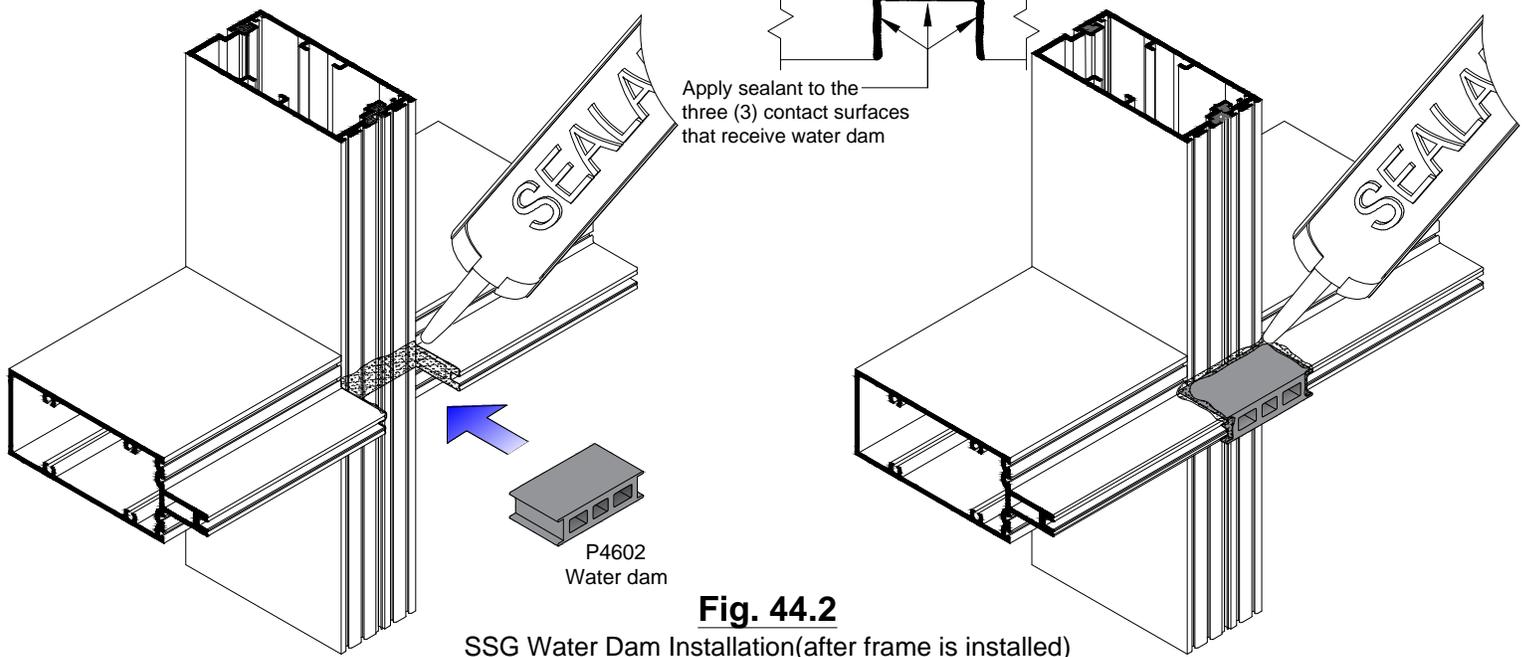


Fig. 44.2

SSG Water Dam Installation(after frame is installed)

FRAME UNIT ASSEMBLY

Step 12: Installing Gaskets

Note: Crowd gaskets toward the center of the member during installation to avoid gaps caused by relaxation of the gasket material.

- A. Remove any debris from the glazing pockets and reglets.
- B. Install P4606 gasket into vertical mullions. See Fig. 45.2 and 45.1. Vertical mullion gaskets run beyond the horizontals. The vertical gasket will run through a traditional splice joint (refer to Fig. 41.3) and is set in fresh sealant at the splice.
- C. Install P4606 gasket into the horizontal members.
- D. Install P4605 isolator gasket into the vertical and horizontal tongues. The isolator will run through a traditional splice joint (refer to Fig. 67.2).

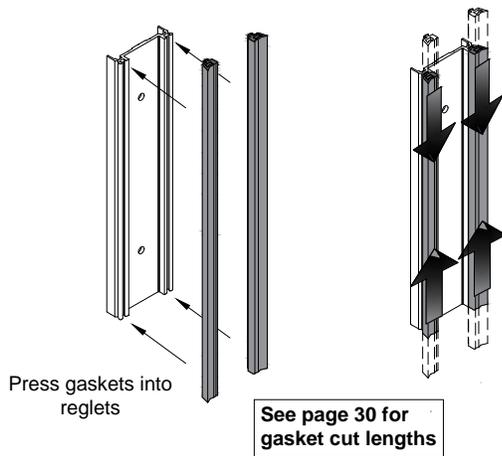


Fig. 45.1

Typical with vertical and horizontal gaskets.

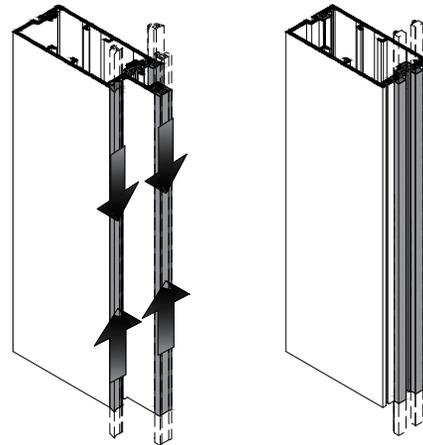


Fig. 45.2

FRAME UNIT ASSEMBLY

Step 12: Installing Gaskets (continued)

- A. For SSG applications, install the P4631 SSG spacer gasket into the mullion (vertical gasket runs beyond horizontal). See Fig. 44.1 and 46.1.

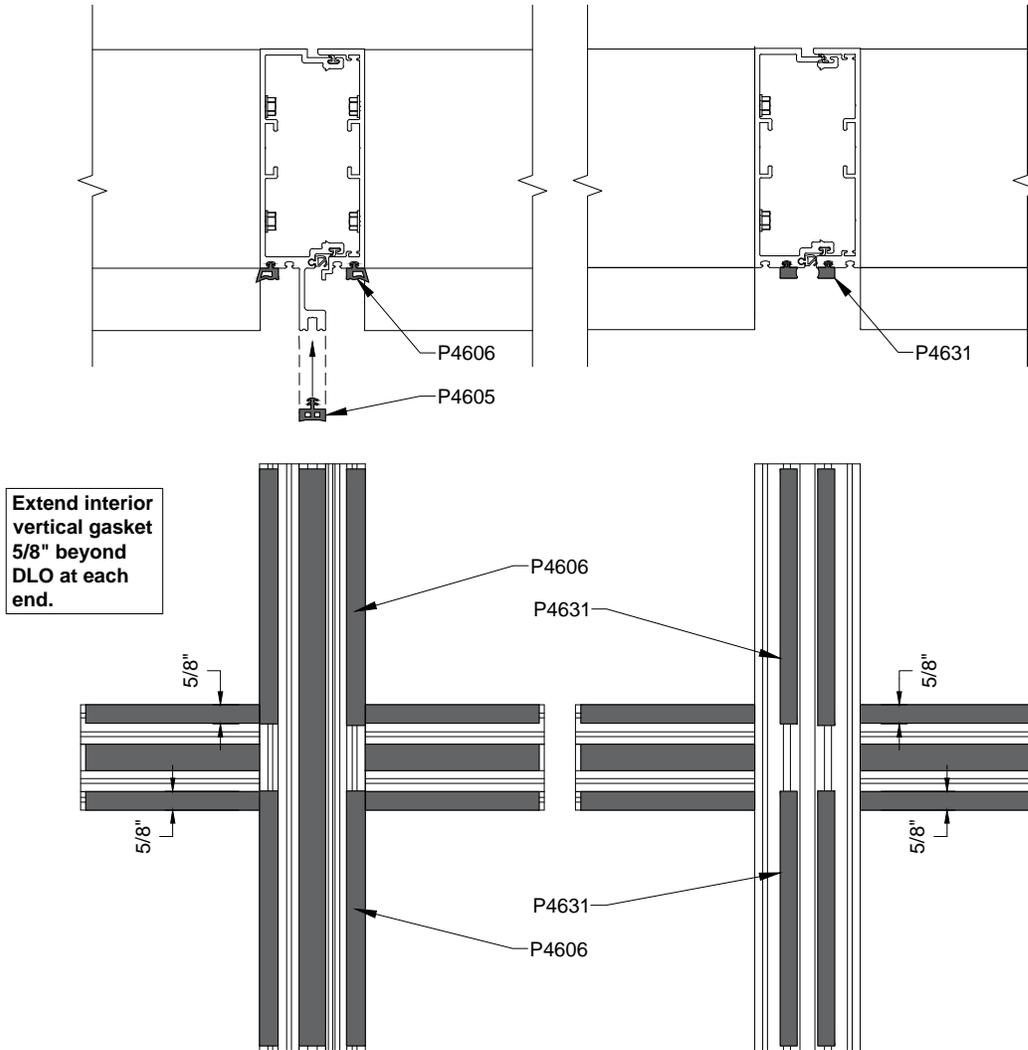


Fig. 46.1

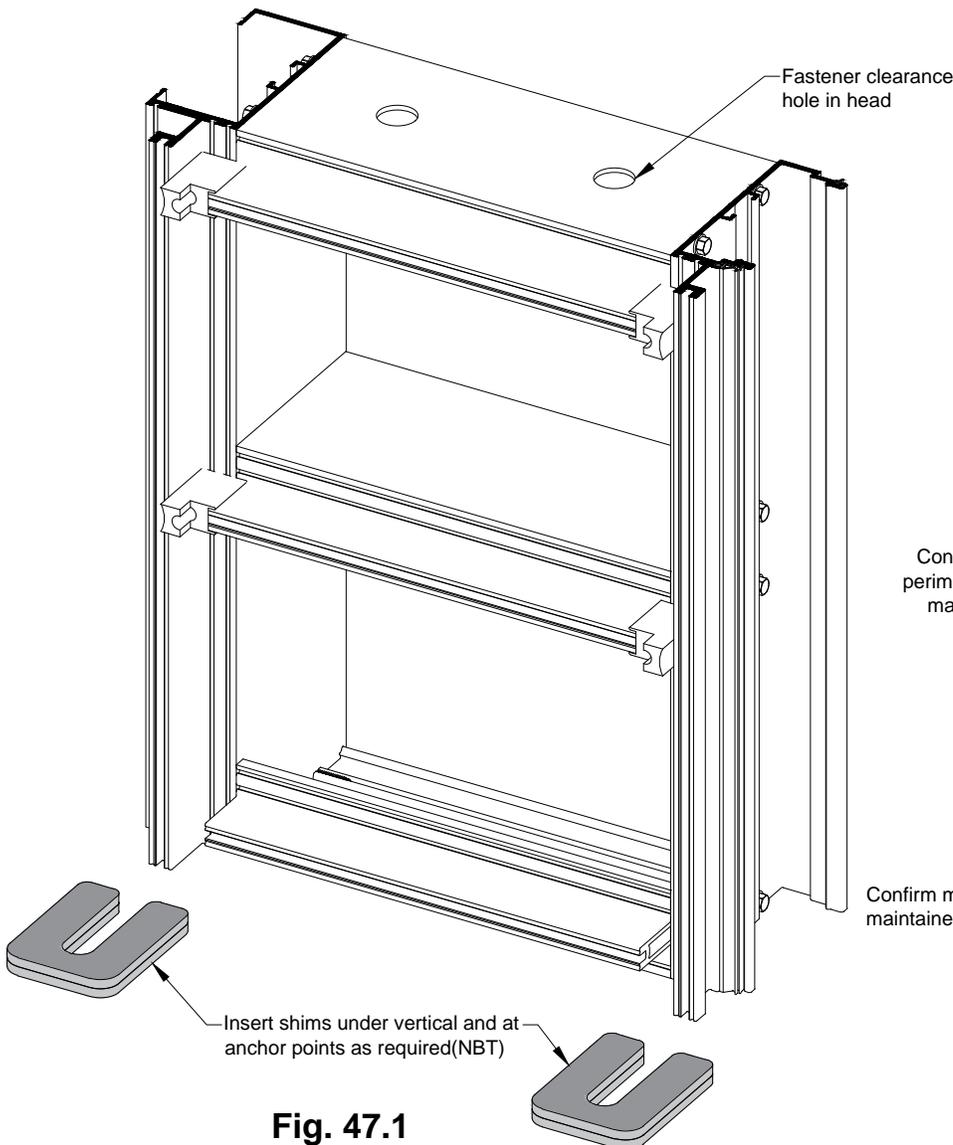
FRAME UNIT INSTALLATION

Step 13: Installing Frame Units

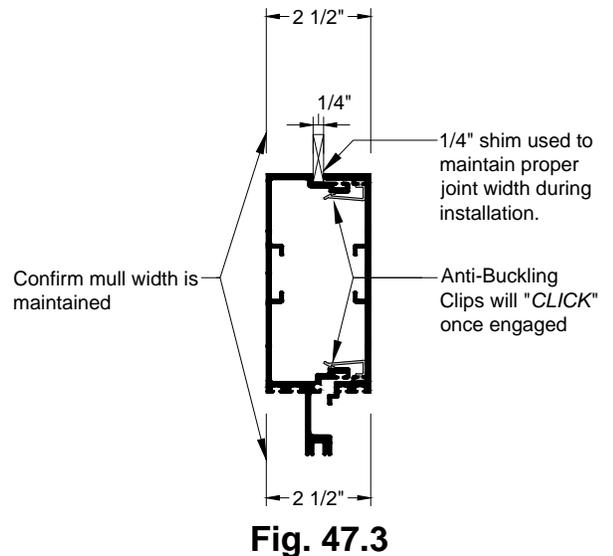
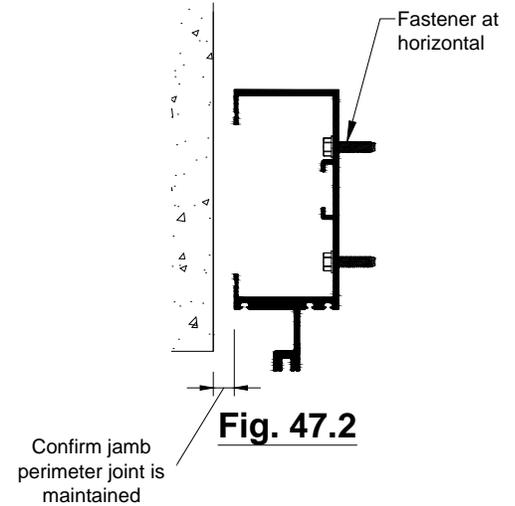
Note: Check frame unit diagonal dimensions and vertical mullion sightlines after units are assembled together to ensure frames are square and properly mated together.

Single Span Installations

- i. Set first frame unit in opening, shimming at the sill according to approved shop drawings. See Fig. 47.1. Make sure the shim extends under the vertical mullion for proper dead load support. Check the jamb joint width prior to anchoring the frame unit to the building at the head and sill. See Fig. 47.2. Note: Do not shim the top of the frame unit to allow for thermal and live load movement.
- ii. Install the next frame unit by engaging the mullion halves together. A click will be heard when the anti-buckling clips are properly engaged. Check to see that the bottoms of the adjacent frame units align and the width of the intermediate verticals are consistently 2-1/2". Shims should be used at the interior in between the mating verticals to maintain a consistent 1/4" joint. See Fig. 47.3. Repeat steps i. and ii. above until all frame units are installed.



Note: Refer to approved shop drawings for head and sill anchor locations.



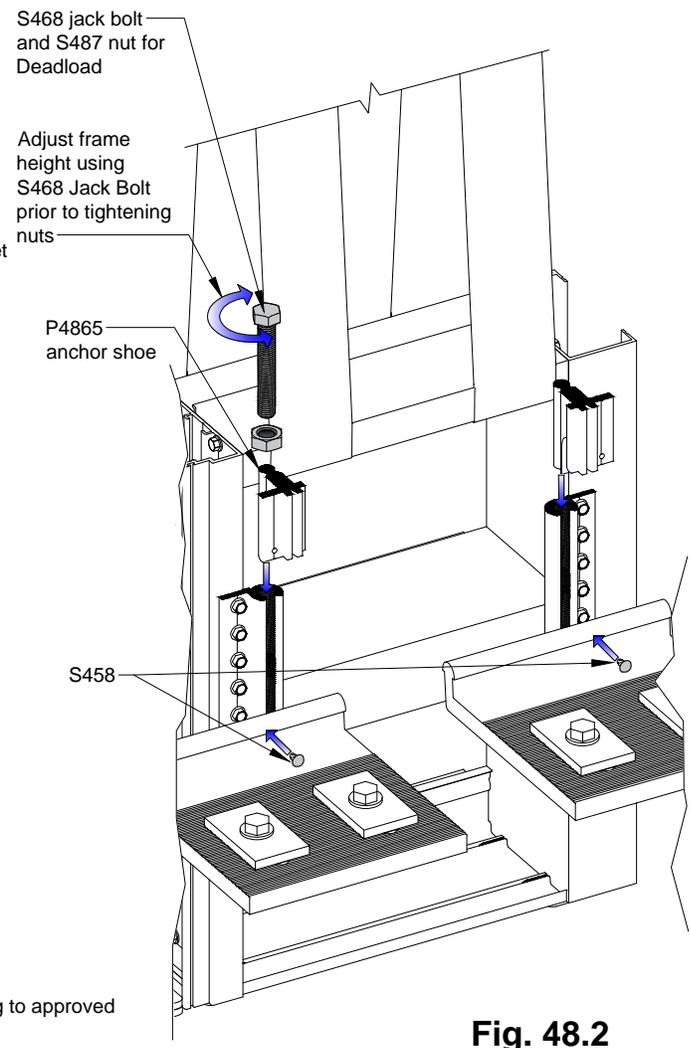
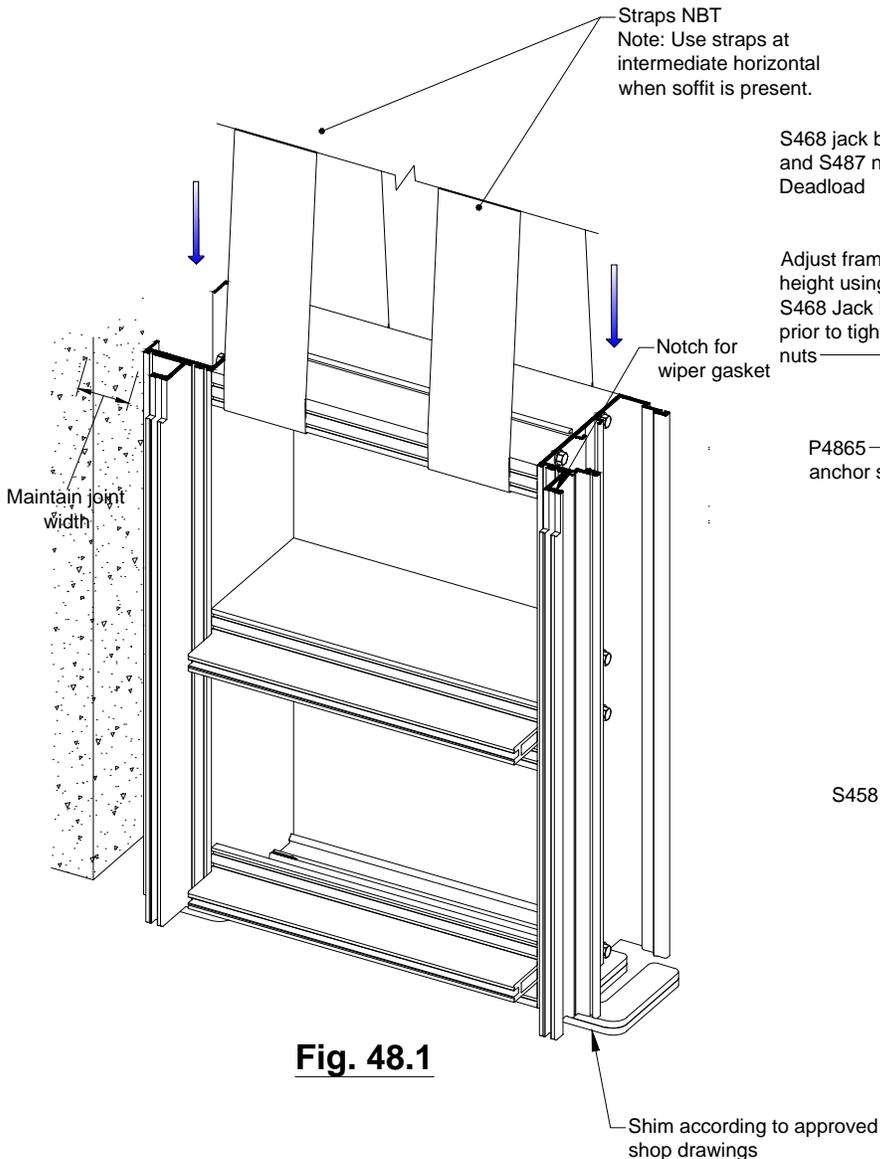
FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Note: Check frame unit diagonal dimensions and vertical mullion sightlines after units are assembled together to ensure frames are square and properly mated together.

Multi-Span Installations Using Expansion Horizontal

- i. Set first frame unit in opening from the floor above, shimming at the sill according to approved shop drawings. Make sure the shim extends under the vertical mullion for proper dead load support. Check the jamb joint width prior to anchoring the frame unit to the building at the anchor point. See Fig. 48.1.
- ii. Anchoring frame unit
 - a.a. **Angle Clip:** Temp the verticals in place, ensuring the frame is plumb and level and all joints are per approved shop drawings.
 - a.b. **Top of Slab Anchor:** Slide P4865 anchor shoe into anchor clip that is attached to the back of the vertical mullion. Set over the anchor plate ball and secure with S458 #12 x 3/8" U-drive setting screw. For dead load anchors, install S468 9/16-12 x 3-1/2" HH jack bolt and nut at the top of the anchor clip. Adjust jack bolt and anchor plate as necessary for proper sill joint, frame unit squareness and offset distance from edge of slab. See Fig. 48.2.



FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

- iii. From the floor above, install the next frame unit by engaging the mullion halves together. A click will be heard when the anti-buckling clips are properly engaged. Check to see that the bottoms and tops of the adjacent frame units align and the width of the intermediate verticals are consistently 2-1/2". Shims should be used at the interior in between the mating verticals to maintain a consistent 1/4" joint. See Fig. 49.1 & 49.2. Repeat steps i., ii. on previous page, and iii. until all lower frame units are installed.
 - a.a. Install the next adjacent frame
- iv. Finish anchoring the frame units
- v. Angle Clip: Install anchor bolts per approved shop drawings. Remove temp for wind load anchors. Back off anchor bolt 1/4 turn and stake the bolt. For wind load anchors remove temp and back off anchor bolt 1/4 turn and stake the bolt

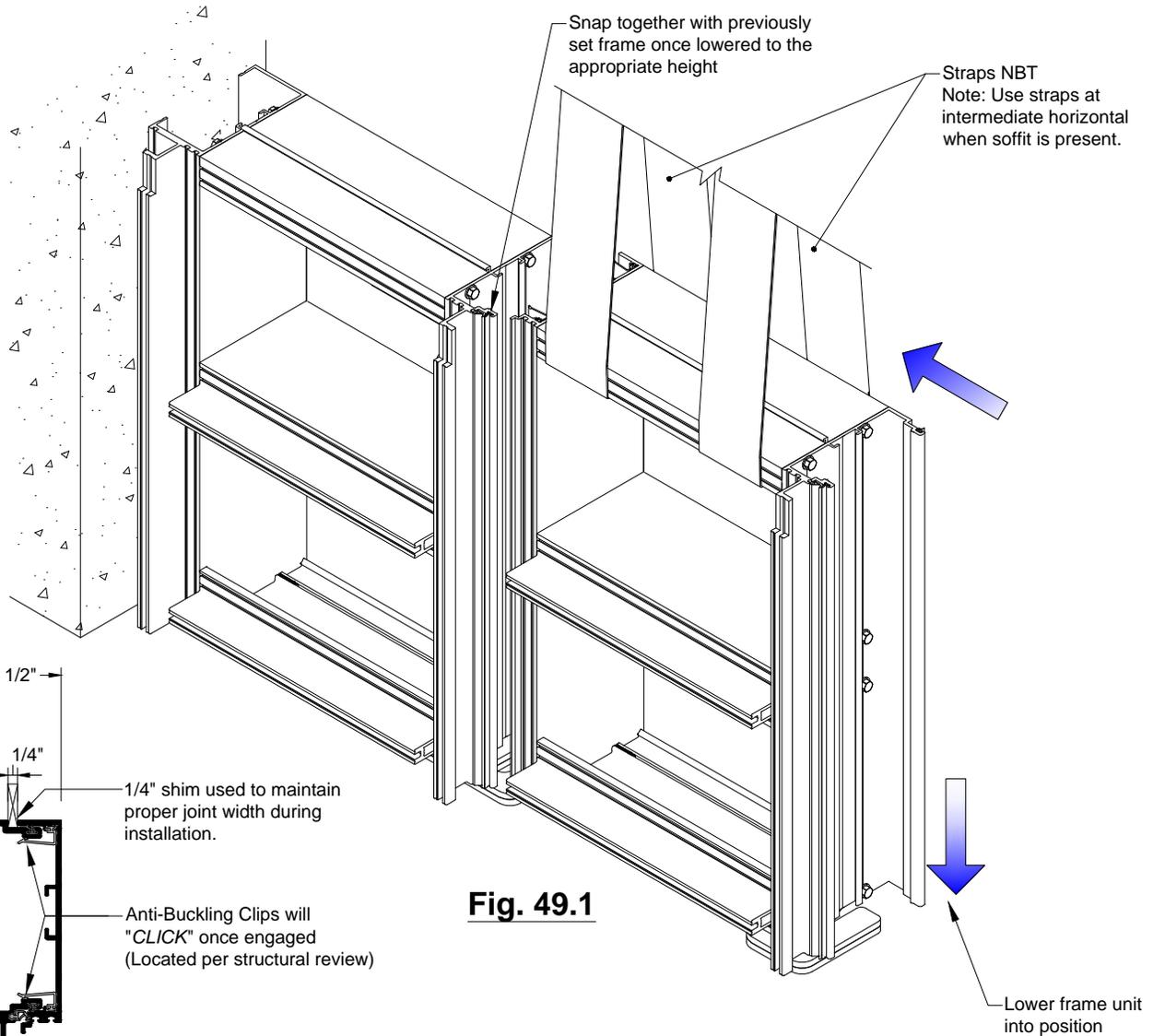


Fig. 49.1

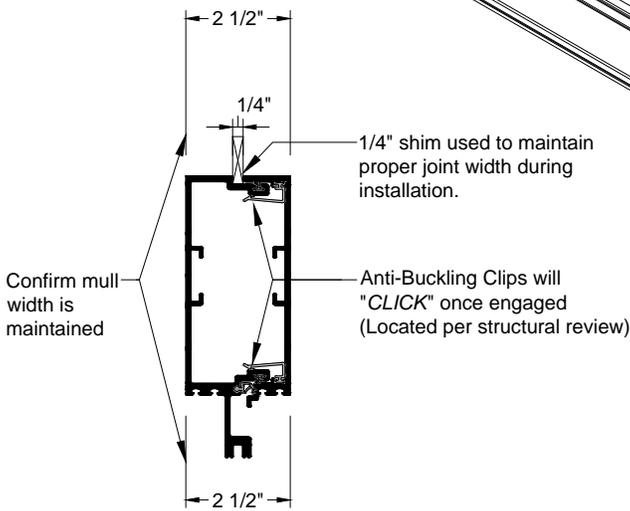


Fig. 49.2

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Multi-Span Installations Using Expansion Horizontal

- a. **Top of Slab Anchor:** When all adjustments have been made, install E0199 1" x 1" x 1" channel between P4765 anchor shoes to lock in place. Cut length should be snug and is determined by field conditions. Attach channel to anchor plate ball with S017 #10 x 5/8" PH. See Fig. 50.1.

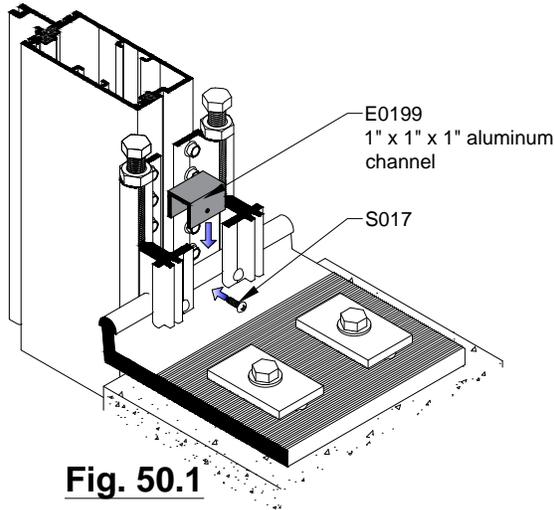


Fig. 50.1

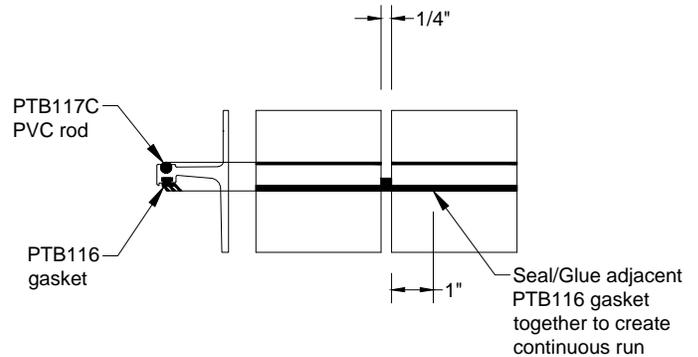


Fig. 50.2

- v. After the lower units are installed and anchored in place, set the E4200 chicken head on each bay in a bead of sealant then attach to head with S457 1/4" x 1" HWH self-drilling screws at spacing per approved shop drawings. Cut length will equal vertical centerline-to-centerline - 1/4". See Fig. 50.3. Note that the PVC rod and gasket need to be installed into the expansion plate and sealed. See Fig. 50.2

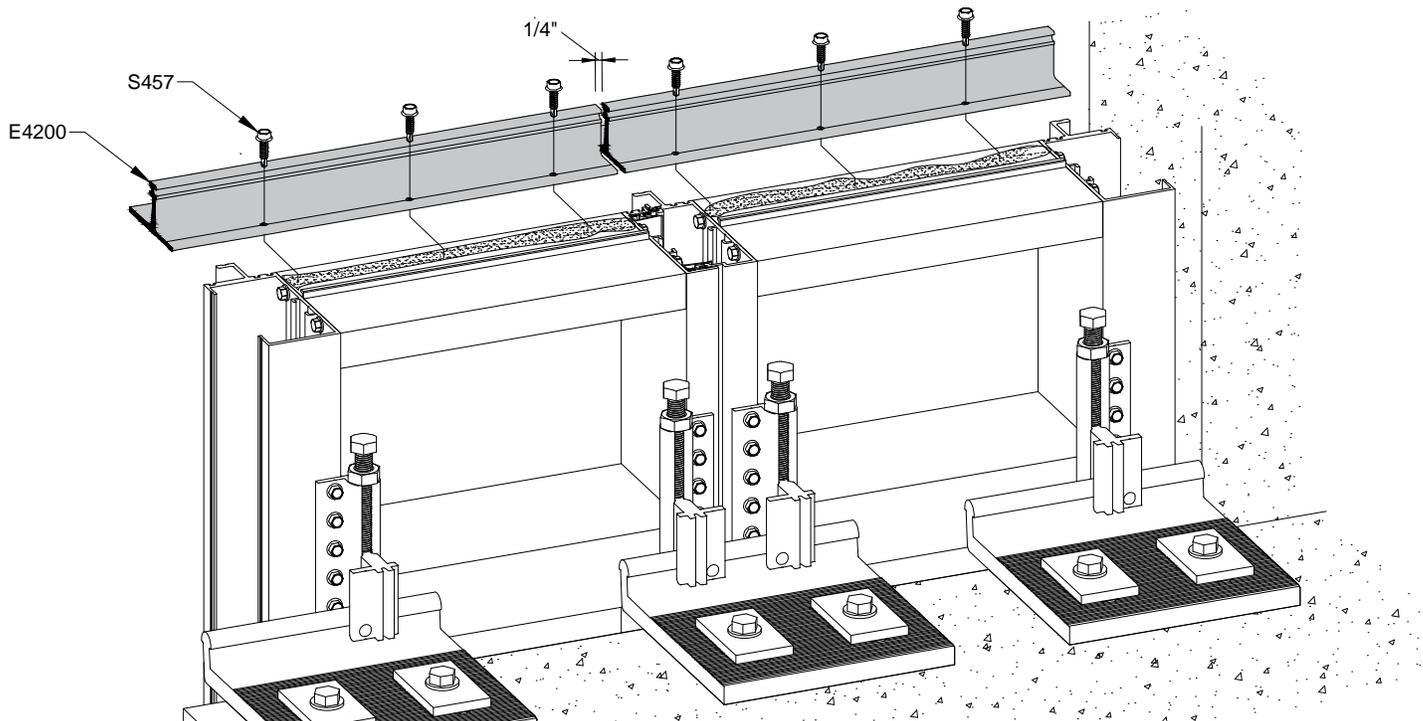


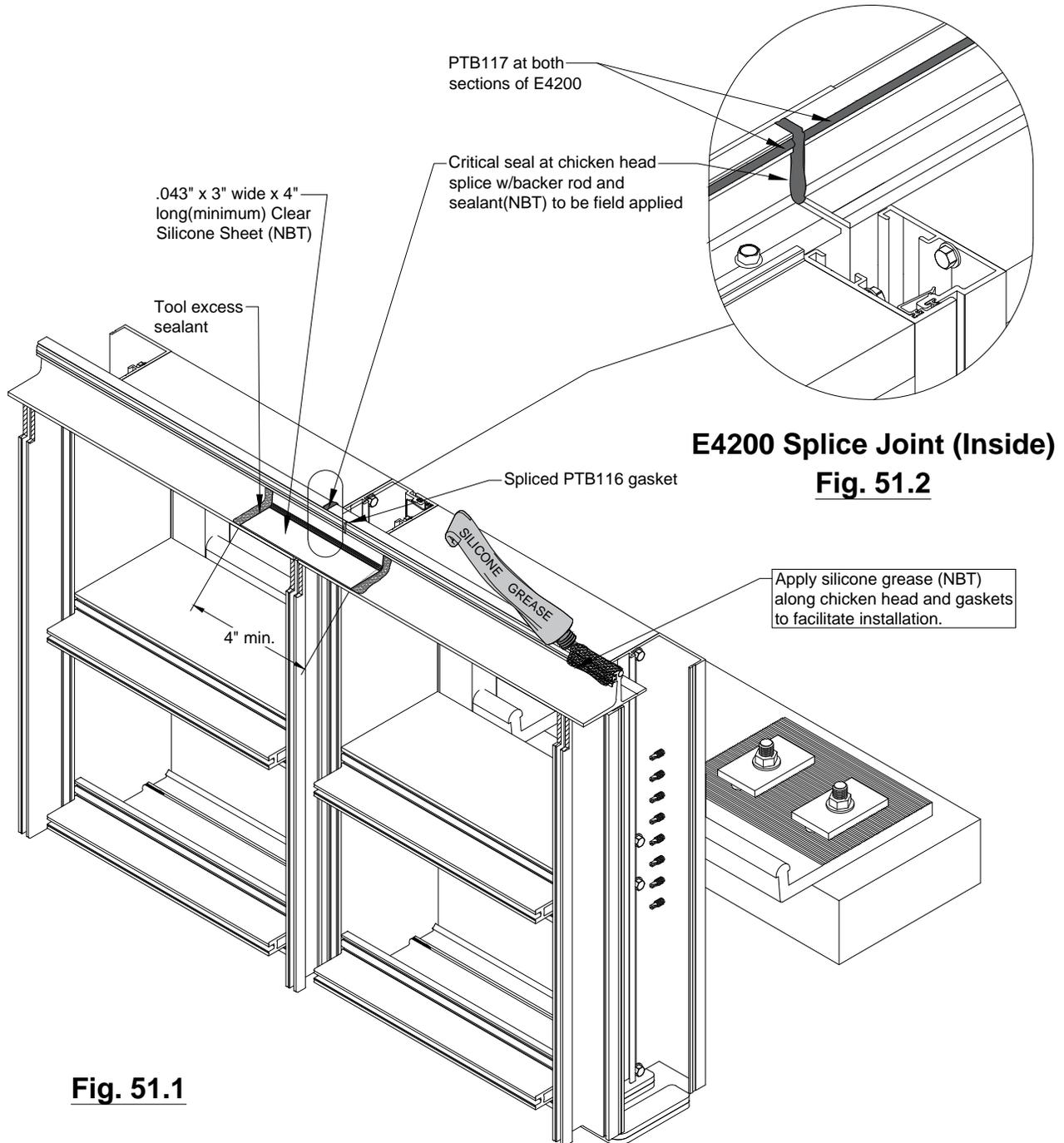
Fig. 50.3

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Multi-Span Installations Using Expansion Horizontal

- vi. Install PTB116 gasket and PTB117C PVC rod onto the chicken head. PTB117C rod should be cut to the chicken head length. The PTB116 gasket runs continuous. If a splice is required, make sure it is offset at least 1" from the chicken head splice joint. See Fig. 51.1.
- vii. At chicken head splice locations, set a .045" x 3" wide (min) clear silicone sheet in a bed of silicone over the splice joint. Press sheet into the silicone and tool excess around perimeter. See Fig. 51.1. Use backer rod and sealant on the interior side of the E4200 splice. See Fig. 51.2.



FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Multi-Span Installations Using Expansion Horizontal

- viii. Set the next row of frame units above the first row from the floor above, aligning mullion notch over the chicken head. Set the frame expansion joint to the correct height before anchoring the upper frame unit per step ii. above. See Fig. 52.1.

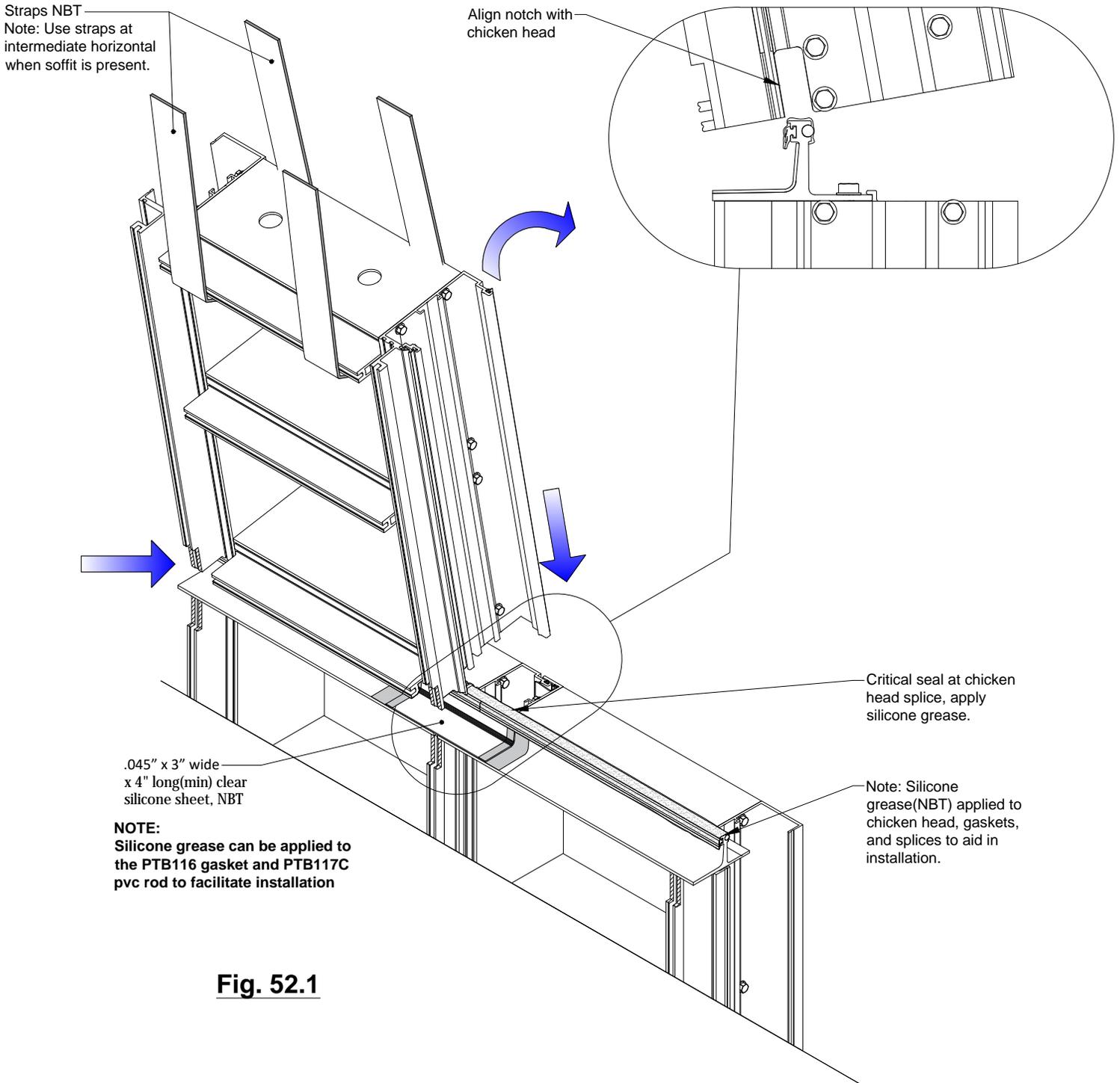


Fig. 52.1

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Multi-Span Installations Using Expansion Horizontal

- ix. At chicken head splice joints, apply a liberal amount of DOW 111 or equivalent to cover the top of the splice joint prior to setting the upper frame unit into position. Where there are chicken head gasket splices, apply seal here as well. See Fig. 53.1.

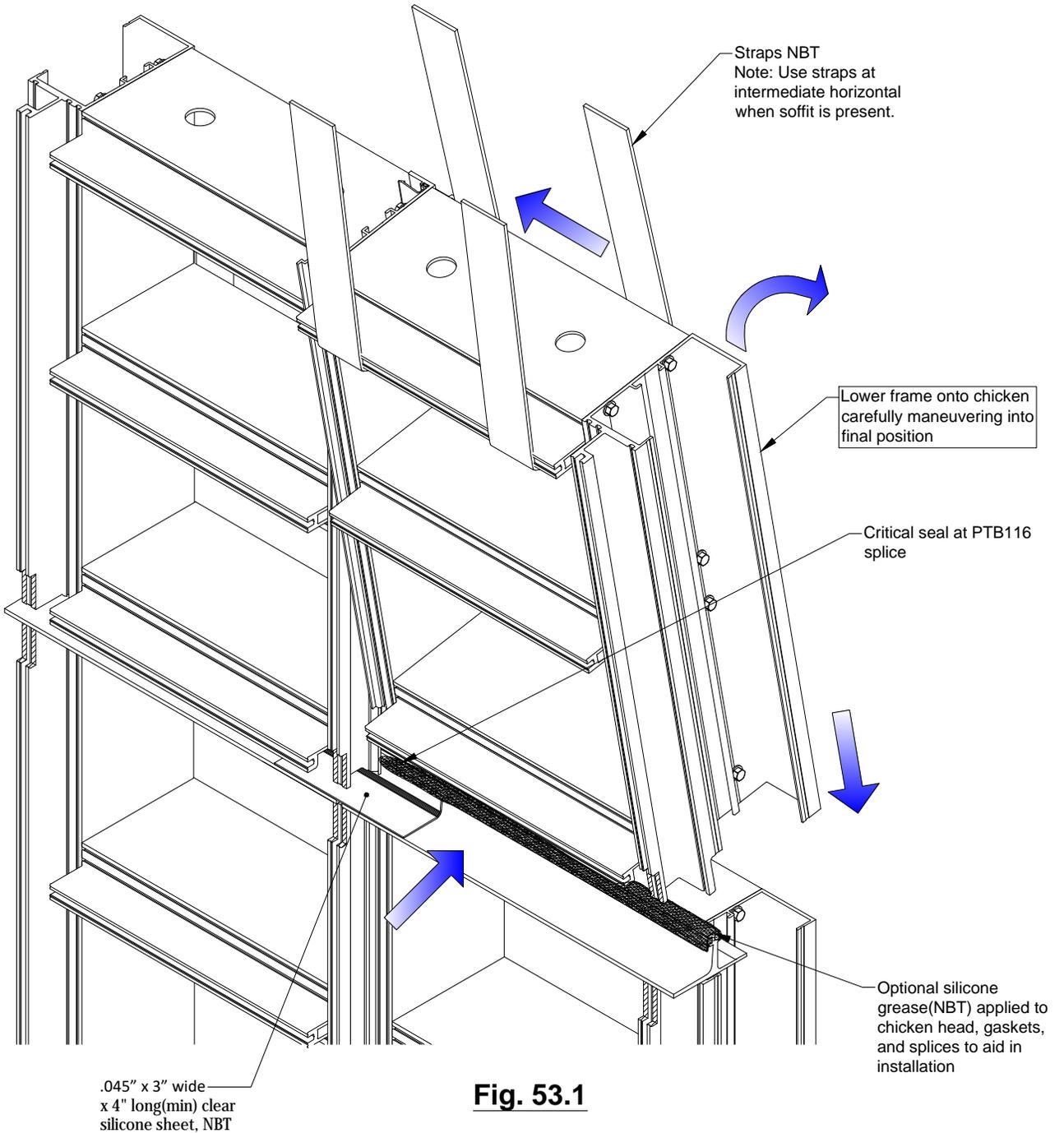


Fig. 53.1

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Multi-Span Installations Using Expansion Horizontal

- x. At corner mullions, miter the chicken head gasket for a tight fit. Seal together with Dow 791. See Fig. 54.1.
- xi. Repeat step iv.(Pg. 48)to anchor the frame units.
- xii. If more rows of frame units are to be installed, repeat steps v. through x.
- xiii. Seal the seam at the front of all outside and inside corner mullions per Fig. 54.2.
- xiv. After all frame units are in place, anchor the top row of frame units at the head per approved shop drawings.
- xv. At SSG verticals, refer to Step 11 to apply the water dams.
- xvi. Install P4810 reticulated foam under each vertical mullion at the chicken head. Hold in place with a dab of silicone. See Fig. 54.3.

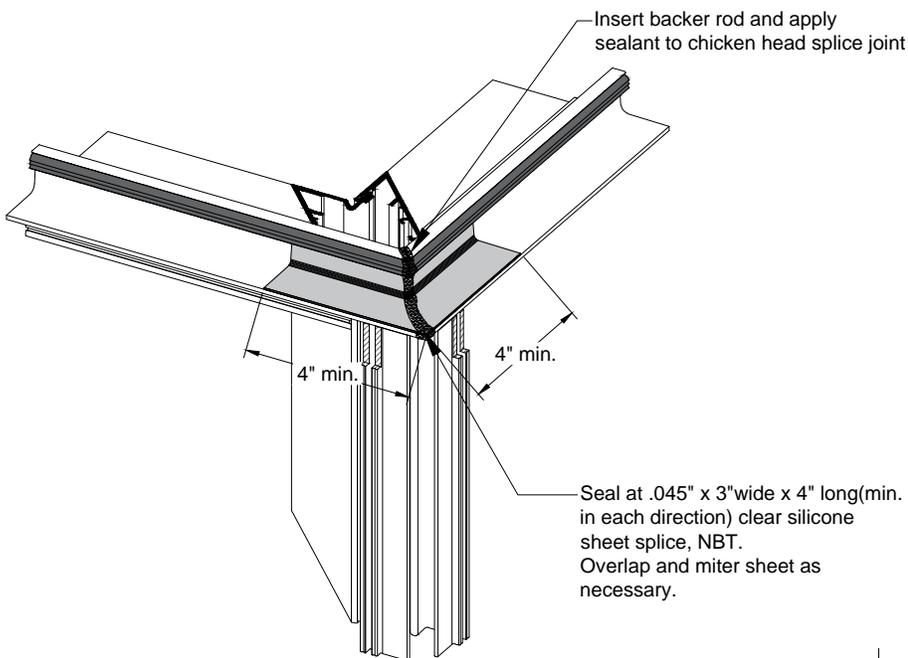


Fig. 54.1

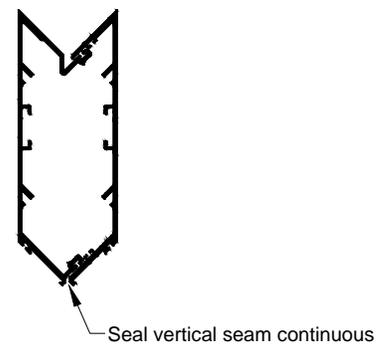


Fig. 54.2

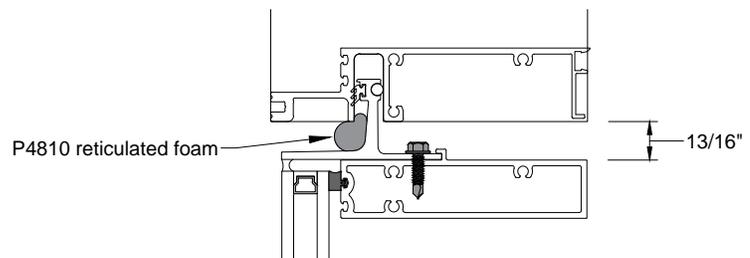


Fig. 54.3

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

Note: Check frame unit diagonal dimensions and vertical mullion sightlines after units are assembled together to ensure frames are square and properly mated together.

Multi-Span Installations Using Traditional In-Vertical Splice Sleeves

- i. Set first frame unit in opening, shimming at the sill according to approved shop drawings. Make sure the shim extends under the vertical mullion for proper dead load support. Check the jamb joint width prior to anchoring the frame unit to the building at the anchor point. See Fig. 54.1.
- ii. Anchoring frame unit
 - a.a. Angle Clip: Temp the verticals in place, ensuring the frame is plumb and level and all joints are per approved shop drawings.
 - a.b. Top of Slab Anchor: Slide P4765 anchor shoe into anchor clip that is attached to the back of the vertical mullion. Set over the anchor plate ball and secure with S458 #12 x 3/8" U-drive setting screw. For dead load anchors, install S468 9/16-12 x 3-1/2" HH jack bolt at the top of the anchor clip. Adjust jack bolt and anchor plate as necessary for proper sill joint, frame unit squareness and offset distance from edge of slab. See Fig. 26.1, Fig. 47.2 & Fig. 54.1.

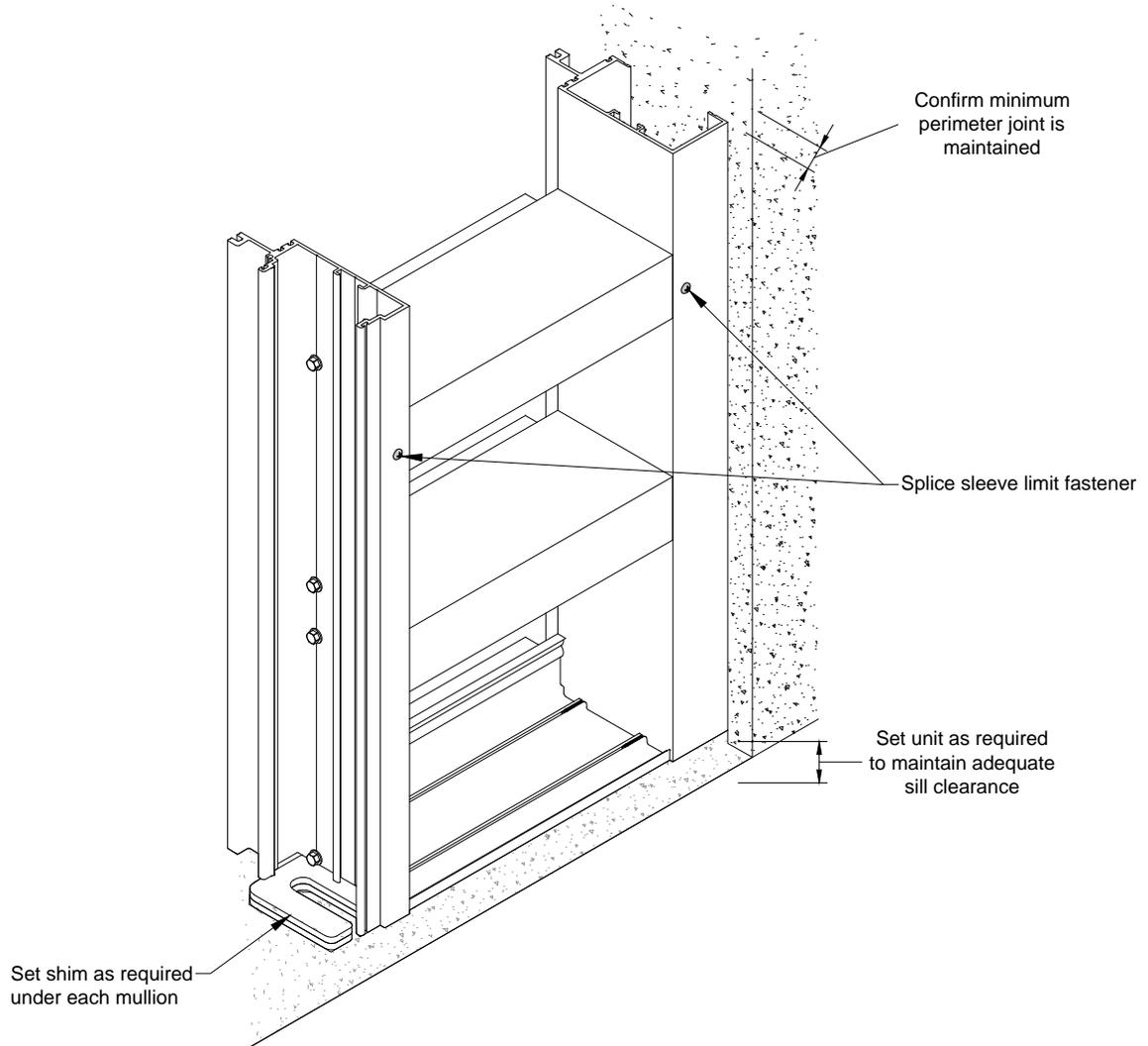
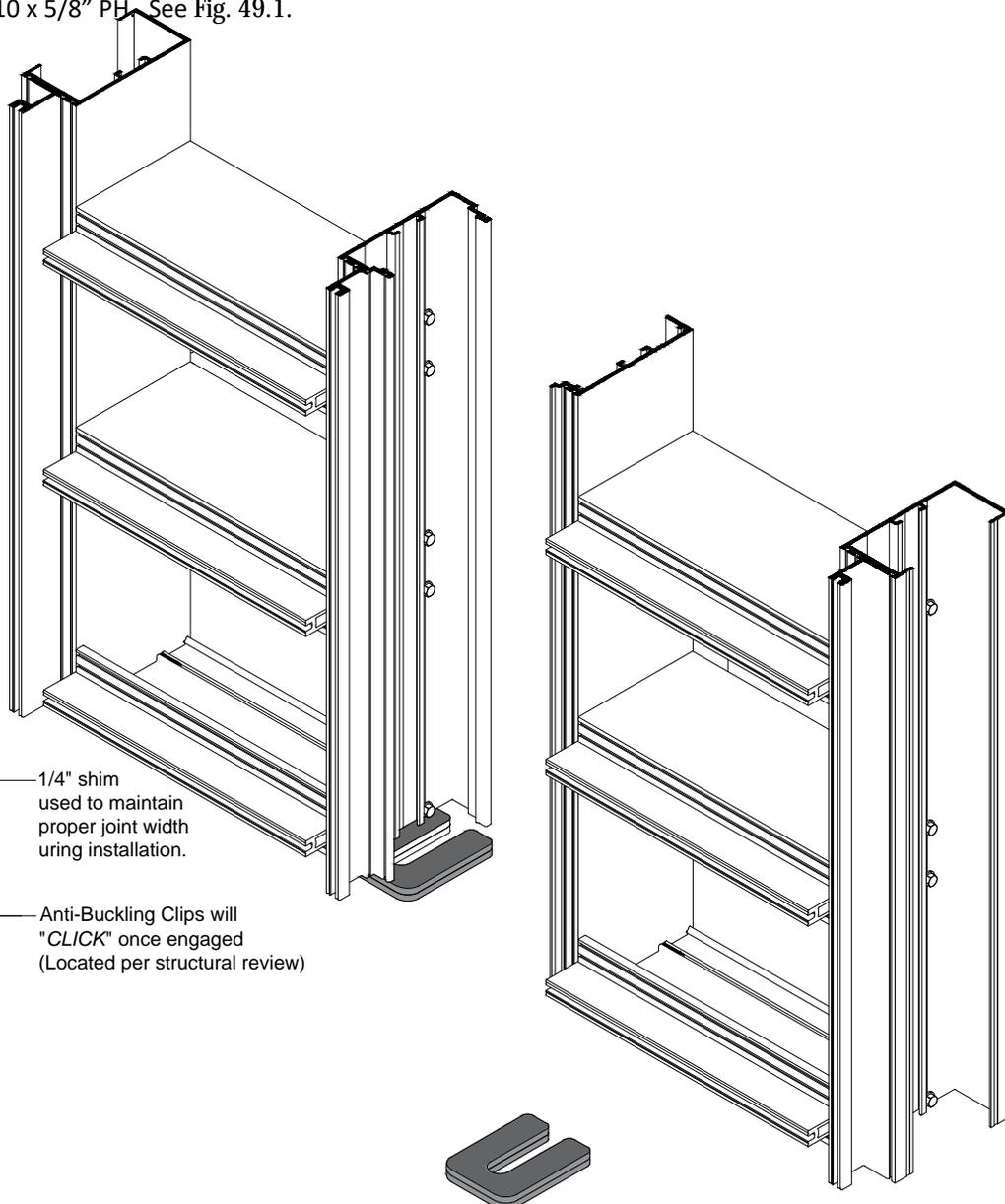
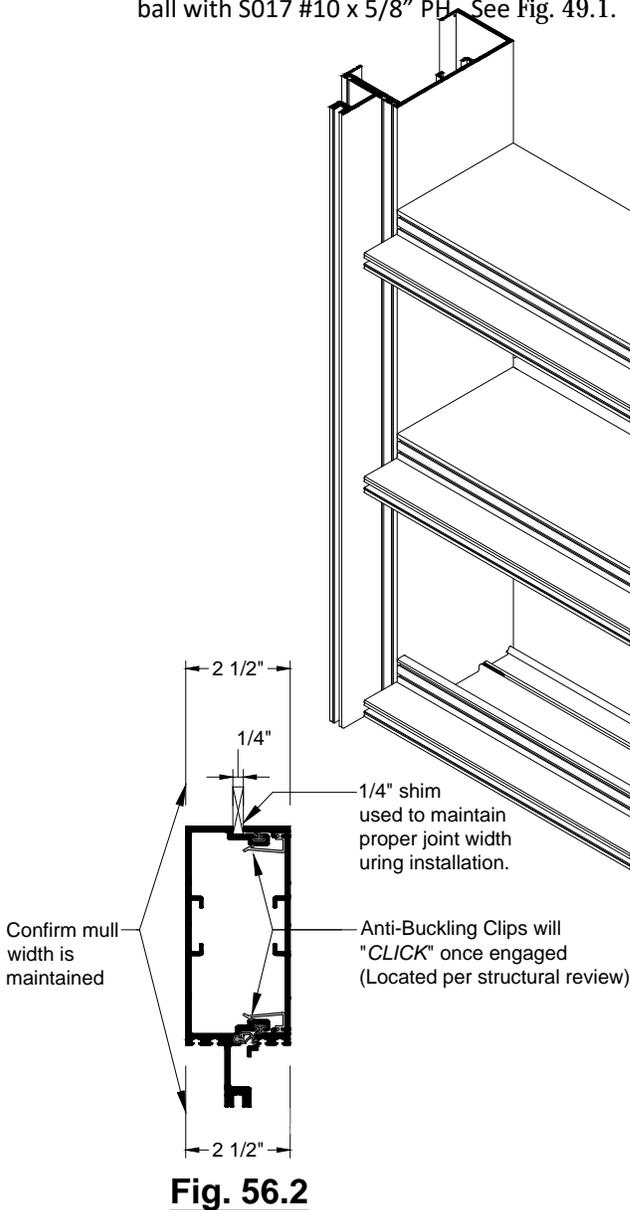


Fig. 55.1

FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

- iii. Install the next frame unit by engaging the mullion halves together. A click will be heard when the anti-buckling clips are properly engaged. Check to see that the bottoms and tops of the adjacent frame units align and the width of the intermediate verticals are consistently 2-1/2". Shims should be used at the interior in between the mating verticals to maintain a consistent 1/4" joint. See Fig. 56.2. Repeat steps i., ii. and iii. above until all lower frame units are installed.
- iv. Finish anchoring the frame units
 - a.a. **Angle Clip:** Install anchor bolts per approved shop drawings. Remove temp for wind load anchors. Back off anchor bolt 1/4 turn and stake the bolt.
 - a.b. **Top of Slab Anchor:** When all adjustments have been made, install E0199 1" x 1" x 1" channel between P4765 anchor shoes to lock in place. Cut length should be snug and is determined by field conditions. Attach channel to anchor plate ball with S017 #10 x 5/8" PH. See Fig. 49.1.



FRAME UNIT INSTALLATION

Step 13: Installing Frame Units (continued)

- v. After the lower units are installed and anchored in place, set the splice sleeves into the bottom of the vertical mullions of the frame units above. Tape the sleeves in place temporarily. See Fig. 57.1.
- vi. Set the next row of frame units in the opening above the first row. Remove the tape holding the splice sleeve and slide into place in the lower frame unit stop screw. Secure the sleeve to the lower frame unit mullion per approved shop drawings.
- vii. Set the frame expansion joint to the correct height before anchoring the upper frame unit per step ii. on previous pages. See Fig. 47.2.
- viii. Apply bond breaker tape to the face of the splice sleeve between the lower and upper frame units. Apply sealant over the tape at these joints and tool. See page 42.
- ix. Repeat step iv. to anchor the frame units.
- x. If more rows of frame units are to be installed, repeat steps v. through ix.
- xi. Seal the seam at the front of all outside and inside corner mullions per Fig. 43.2.
- xii. After all frame units are in place, anchor the top row of frame units at the head per approved shop drawings.
- xiii. At SSG verticals, refer to Step 11 to apply the water dams. See Fig. 43.2.

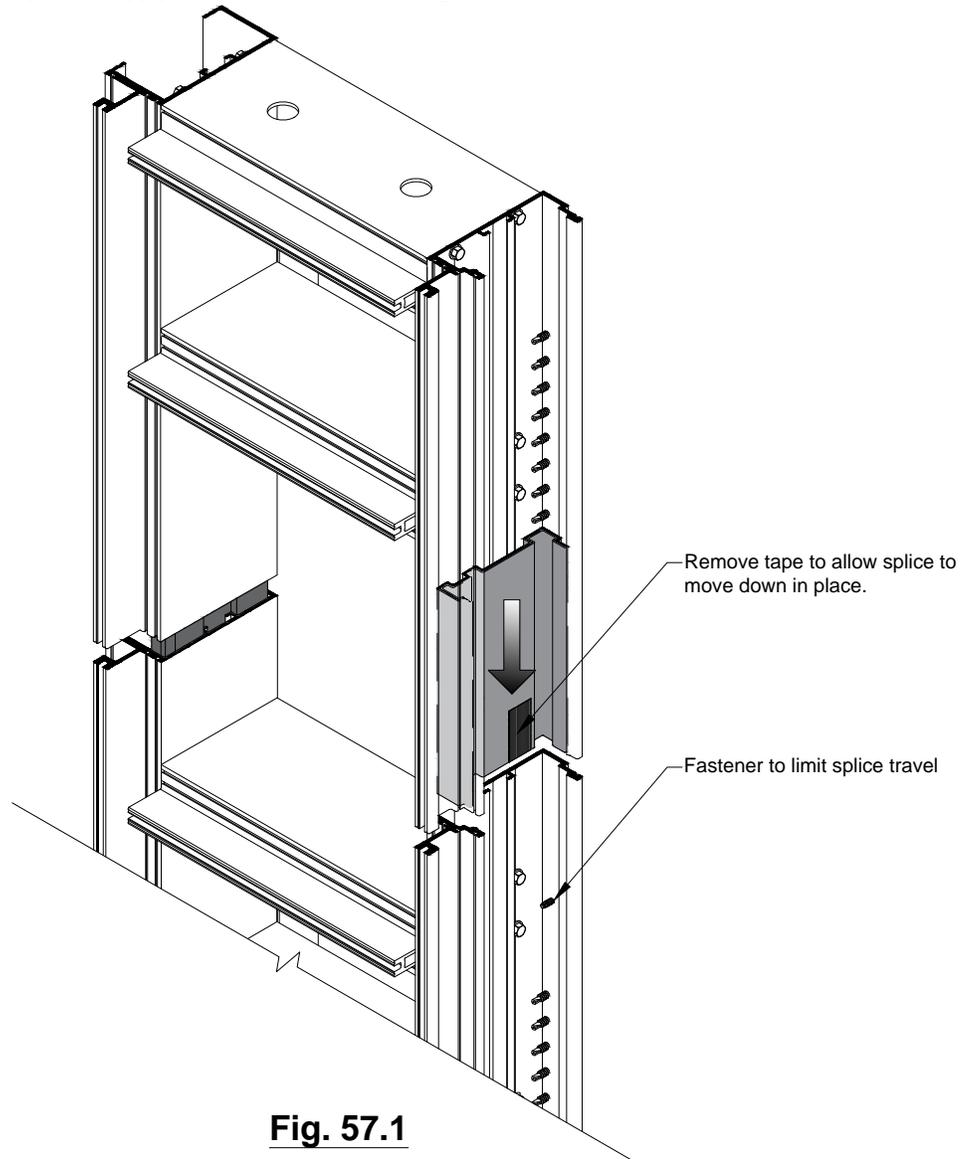
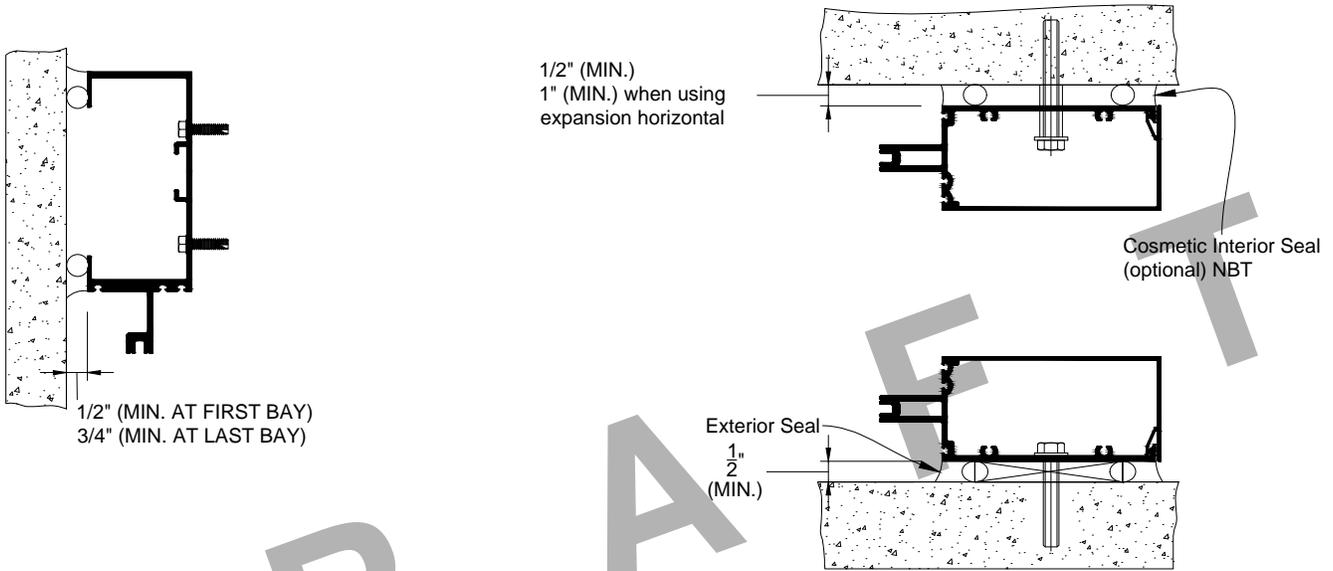


Fig. 57.1

FRAME UNIT INSTALLATION

Step 14: Seal Perimeter of Installation

- A. Insert backer rod into the gap between the building substrate and curtain wall frame.
- B. Apply sealant around the perimeter of the frame and tool the sealant.
- C. See Fig. 58.1 for perimeter sealing.
- D. For Polyamide and Thermal pressure plates use the P4607 PVC tube at the perimeter. See Fig. 58.2



NOTE: Exterior and Interior perimeter seals must run continuous full perimeter of framing.

Fig. 58.1

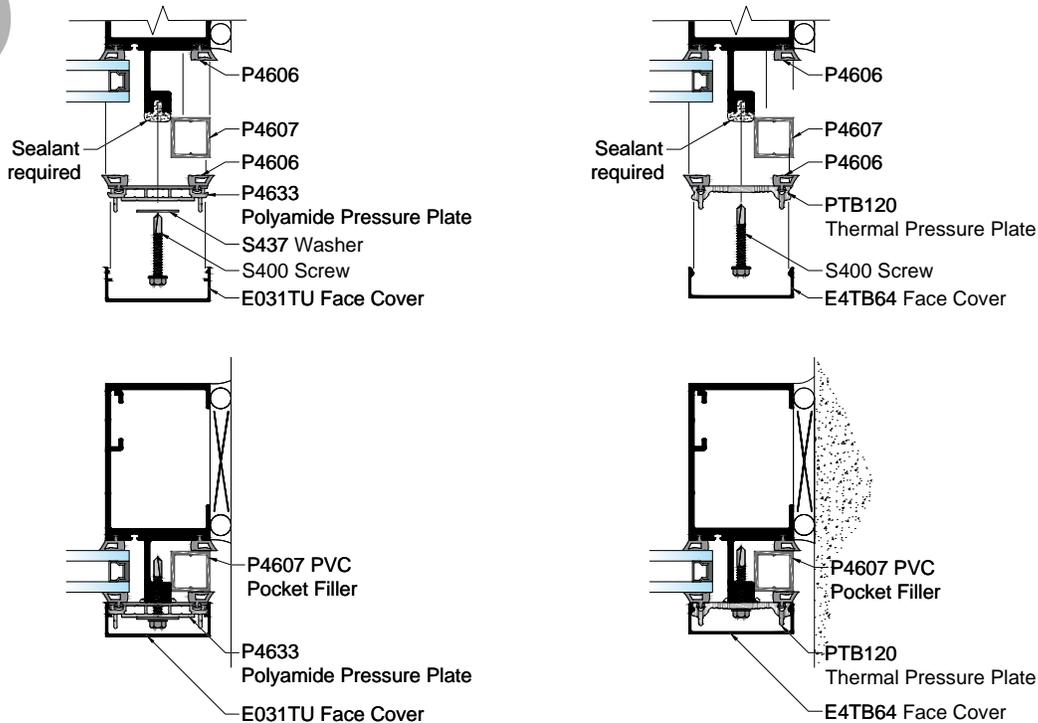


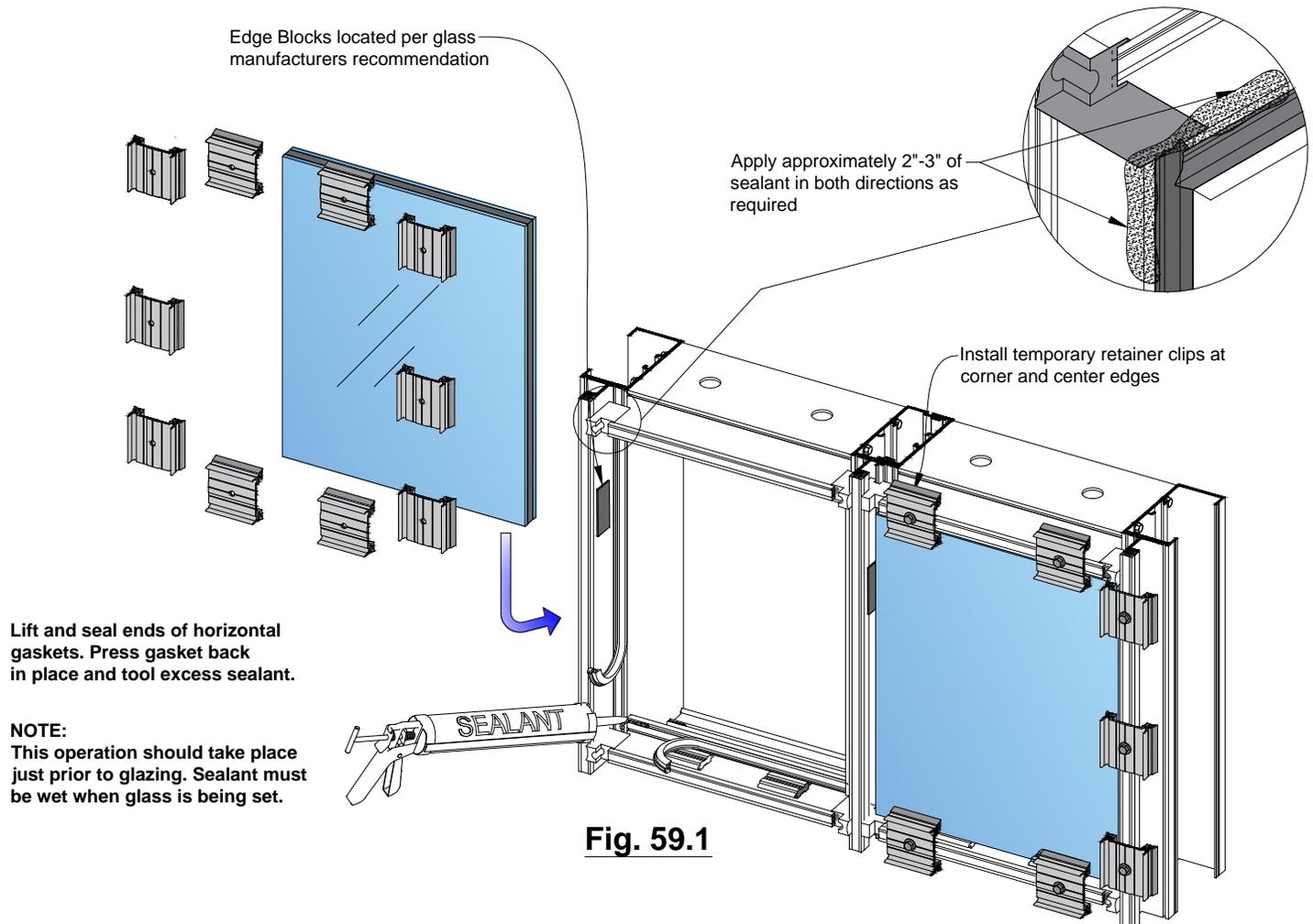
Fig. 58.2

GLAZING

Step 15: Installing Glass (Field Glazing)

Note: Pre-seal gaskets only in the opening to be glazed to avoid sealant curing and becoming contaminated before glass is set in place.

- A. Trim excess silicone from edges of glazing units to allow for maximum glazing clearance.
- B. Pull interior horizontal gaskets away from the vertical gaskets and seal corners where the gaskets abut. Release horizontal gasket back to its original position. See Fig. 59.1.
- C. When seismic and/or interstory horizontal movement is anticipated, place a safety seal around the outside corners of the gaskets prior to setting glass. See Fig. 59.1..
- D. Install two setting blocks onto the sill member of the framing unit at quarter points or per approved shop drawings. See Fig. 59.1. Note: Consult glass manufacturer for correct length and location for glass size over 40 sq.ft.
- E. Install optional edge blocks per glass manufacturers recommendation as required.
- F. Set glass onto setting blocks, positioning glass for proper glass bite into the vertical mullions. Make sure the glass is firmly against the interior gaskets before installing temporary glazing clips or pressure plates.
- G. Make sure sealant is not bridging or blocking the water flow area between the edges of the glass and the framing system.
- H. Hold the glass in place with P4634 temporary glazing retainers at SSG and captured applications. Locate retainers near each corner of the glass and at mid points. See Fig. 59.1 and Fig. 59.1. Temporary glazing retainers are intended for short term use only. Additional retainers or full length pressure plates may be required if high wind load pressures are anticipated before the installation is complete.



GLAZING

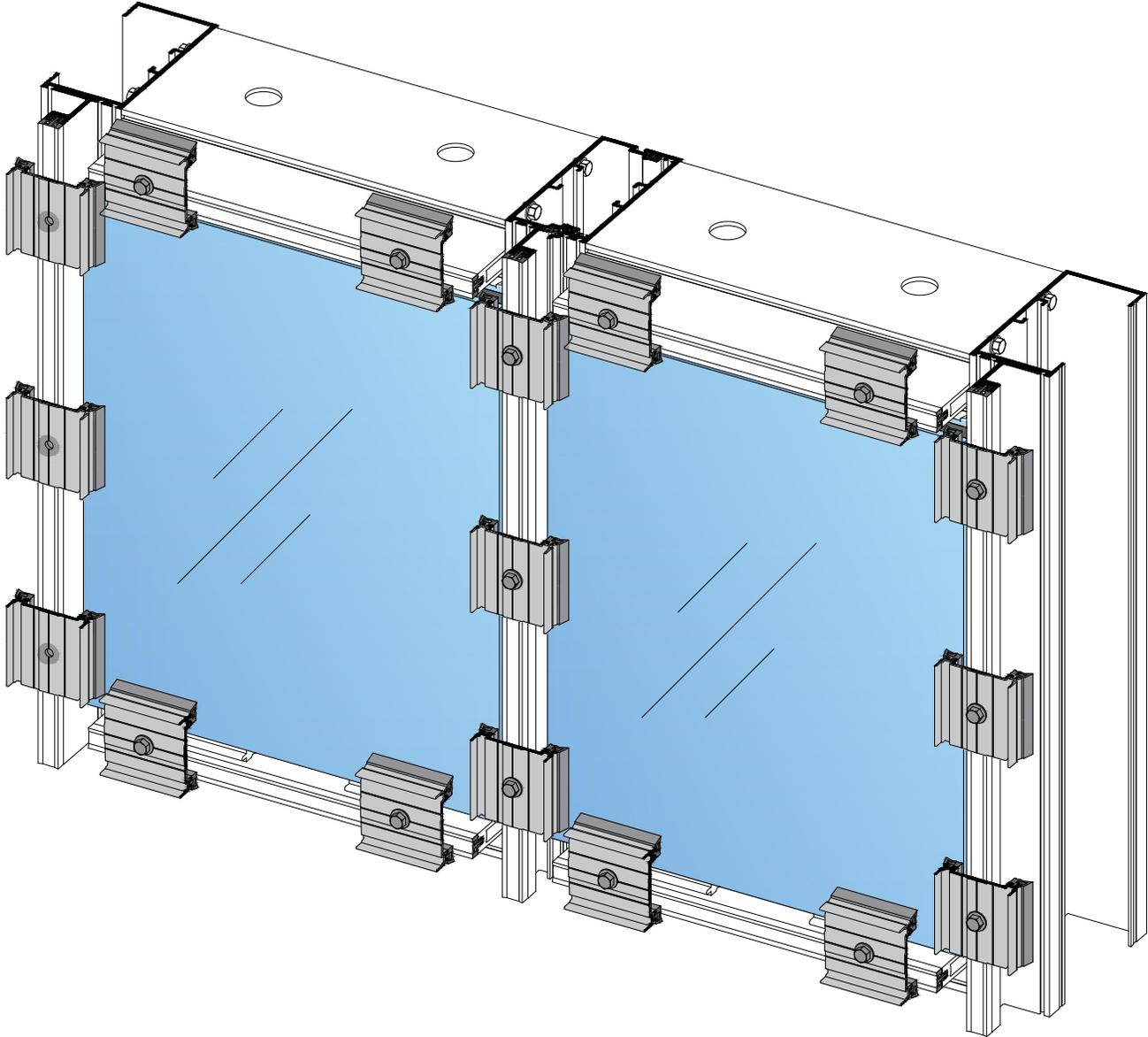


Fig. 60.1

GLAZING

Step 15: Installing Glass (Field Glazing)

- I. For SSG applications, tape off the side of SSG mullion and glass prior to applying structural silicone. See Fig. 60.1. After structural silicone has cured per silicone manufacturer's recommendations, remove the temporary glazing retainers and apply a weather seal between the lites of glass. See Fig. 60.2.

Trim edges of structural silicone area with masking tape for clean lines. Apply silicone and tool.

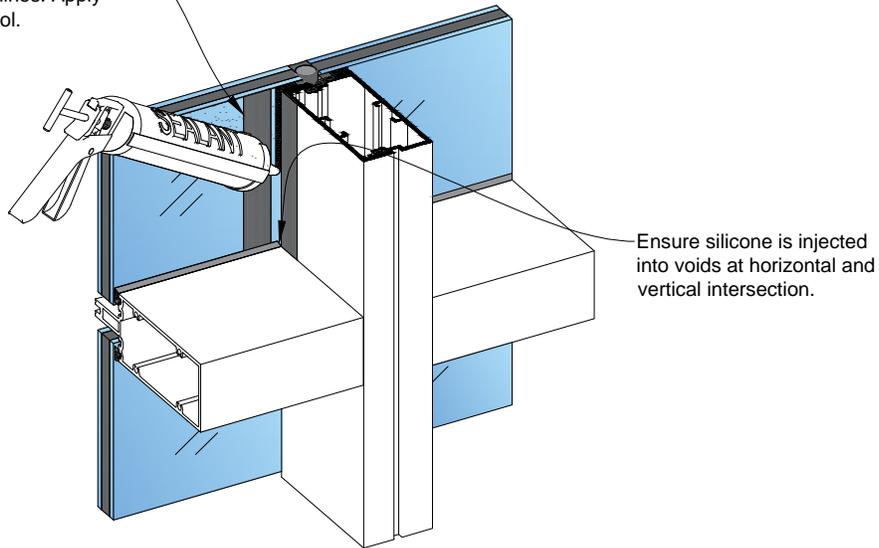


Fig. 61.1

Remove temporary clips and seal voids

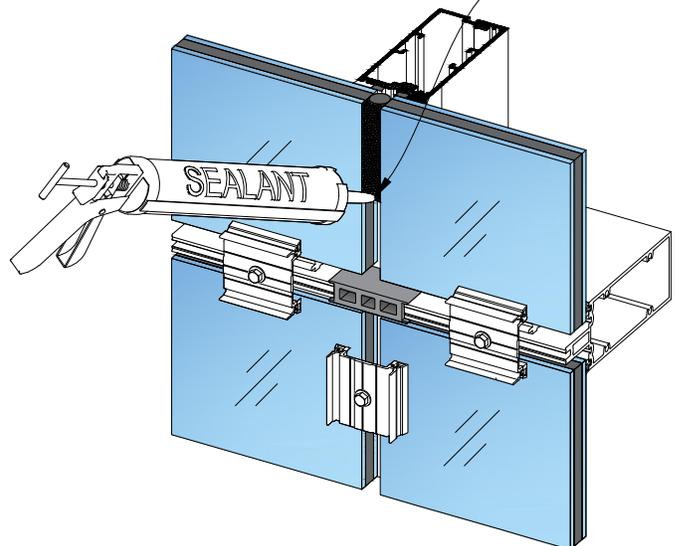


Fig. 61.2

GLAZING

Step 16: Install Pressure Plates & Face Covers

- A. Remove temporary glazing retainers from verticals as required.
- B. Vertical pressure plates must be installed first. Prior to installing, apply sealant to the face of each water dam. See Fig. 62.1. For vertical pressure plates below expansion horizontals, maintain a 13/16" joint between the bottom of the expansion horizontal and the pressure plate. At the vertical pressure plates above expansion horizontals, locate 1/4" above the top of the upper horizontal. See Fig. 69.1.

Note: Polyamide and Thermal pressure plates require sealant to be applied to the glazing horn prior to the pressure plate being installed.

- C. Anchor the pressure plates to the vertical mullion using the required fasteners.
- D. Remove temporary glazing retainers from horizontals as required.
- E. Anchor the pressure plates to the horizontal mullion using the required fastener, ensuring that weep holes are on the top side of the pressure plate:

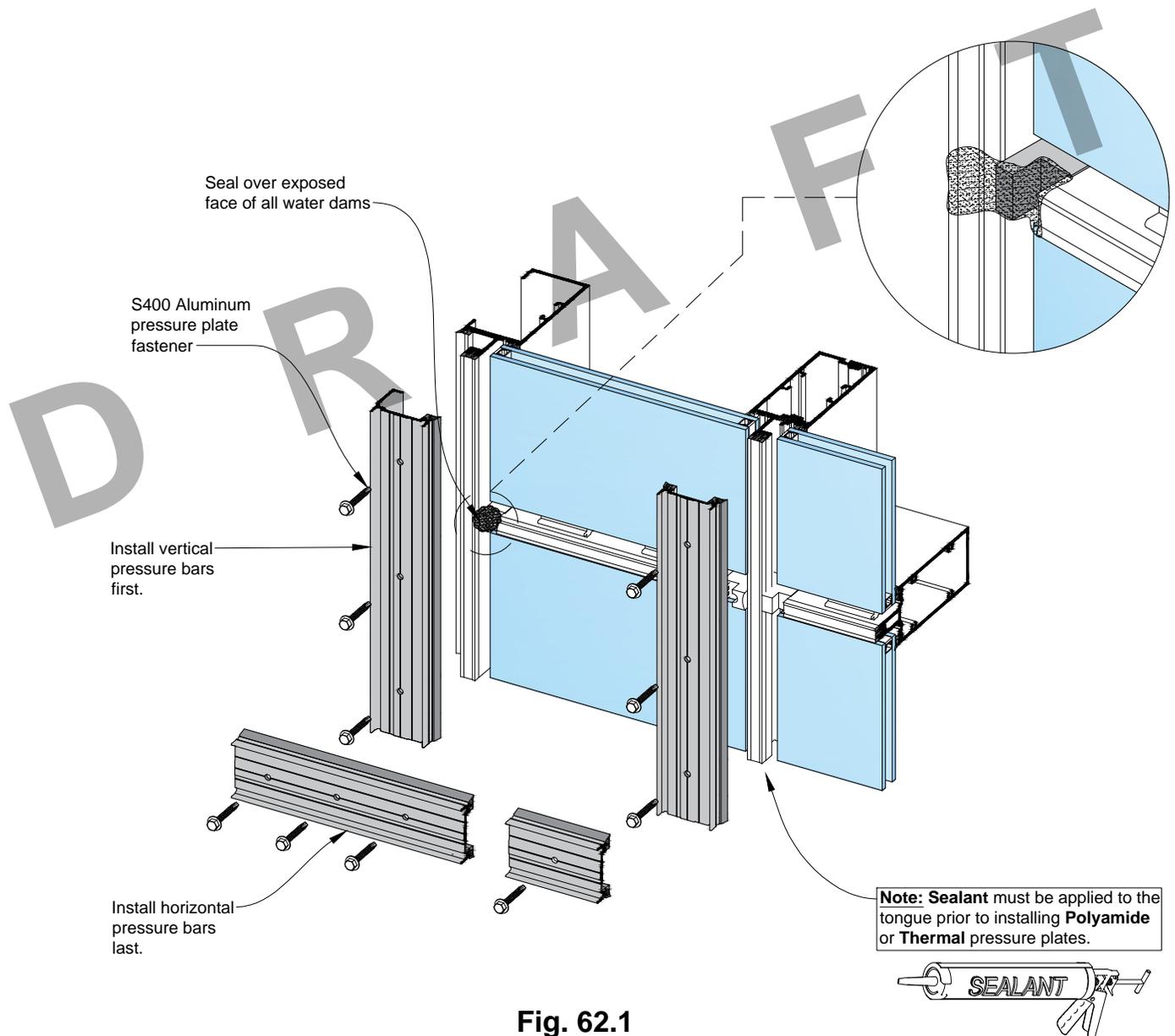


Fig. 62.1

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)

- F. When expansion horizontals are used, ensure that the horizontal pressure plate and face cover run continuously over the intermediate verticals and the PTB115 wiper gasket is installed continuously into the pressure plate and crimped in place at each end.
- G. As required, drill additional anchor holes in vertical and horizontal pressure plates so that there are anchor holes 2" max from the ends and 2" max from each horizontal/vertical intersection to maintain proper compression on the glass.
- H. Torque all pressure plate fasteners to 90 in-lbs. When using a cordless drill with a torque limiter, check torque periodically against a torque wrench. Do not over-torque polyamide pressure plate fasteners.

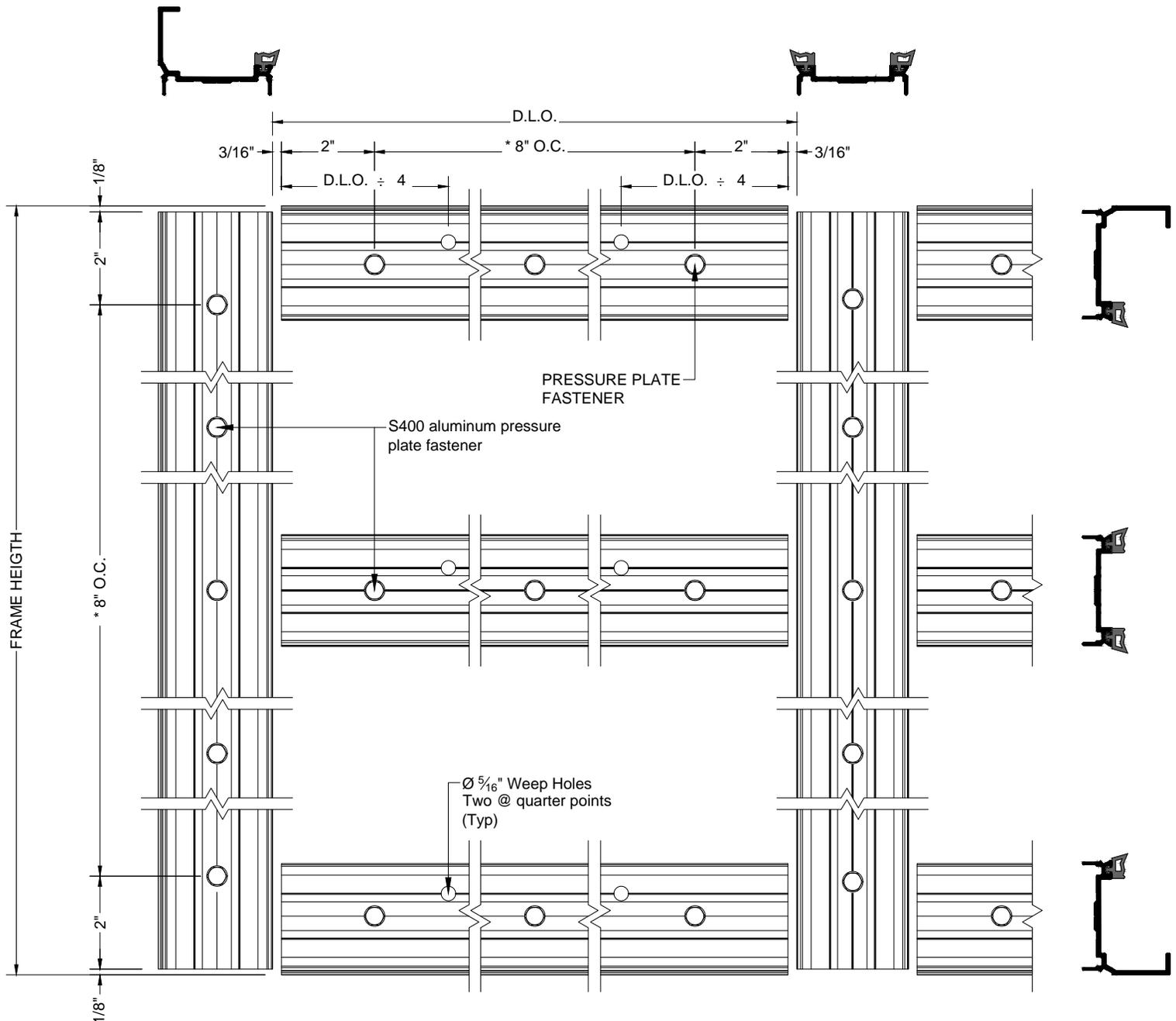


Fig. 63.1

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)

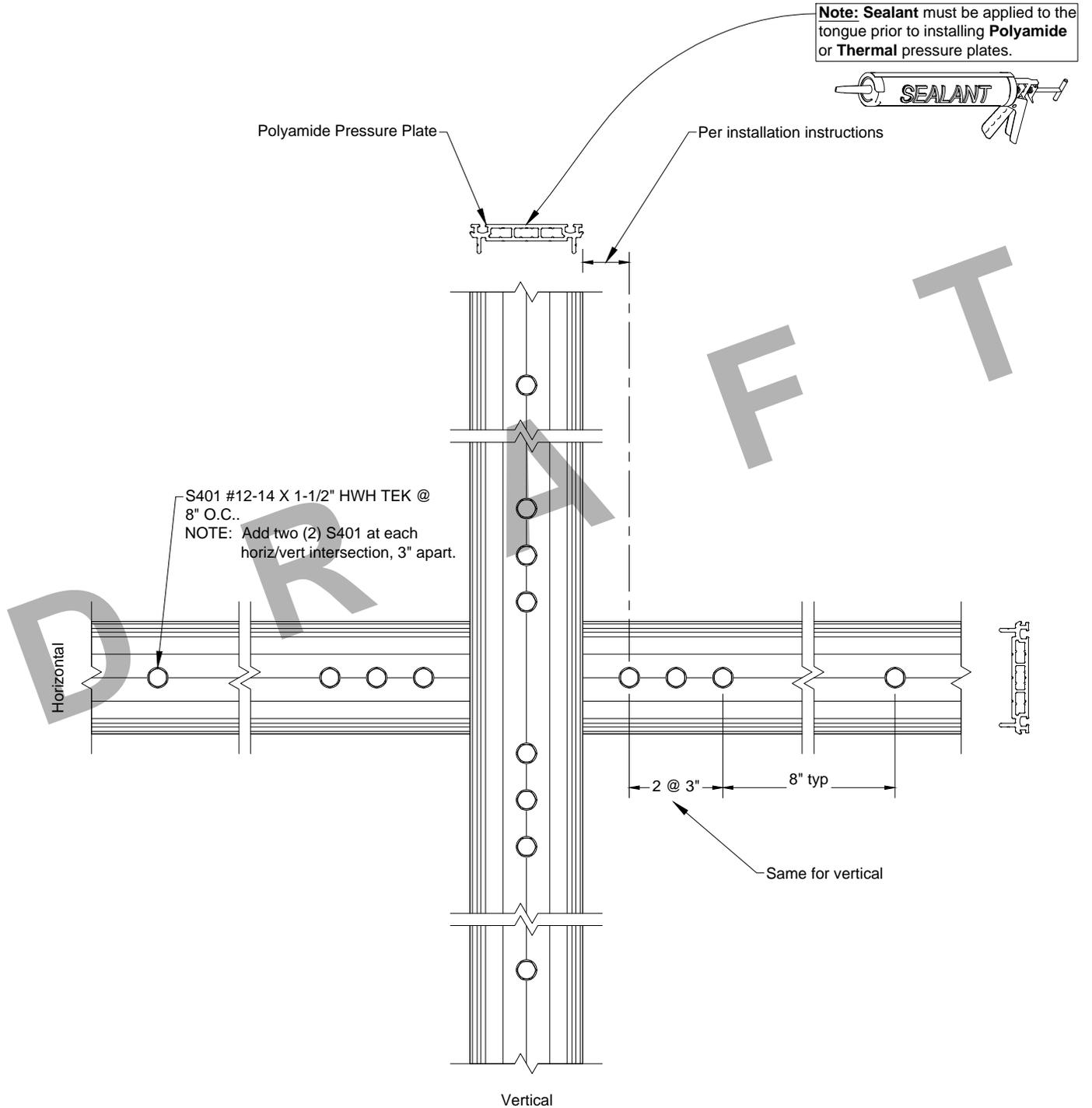
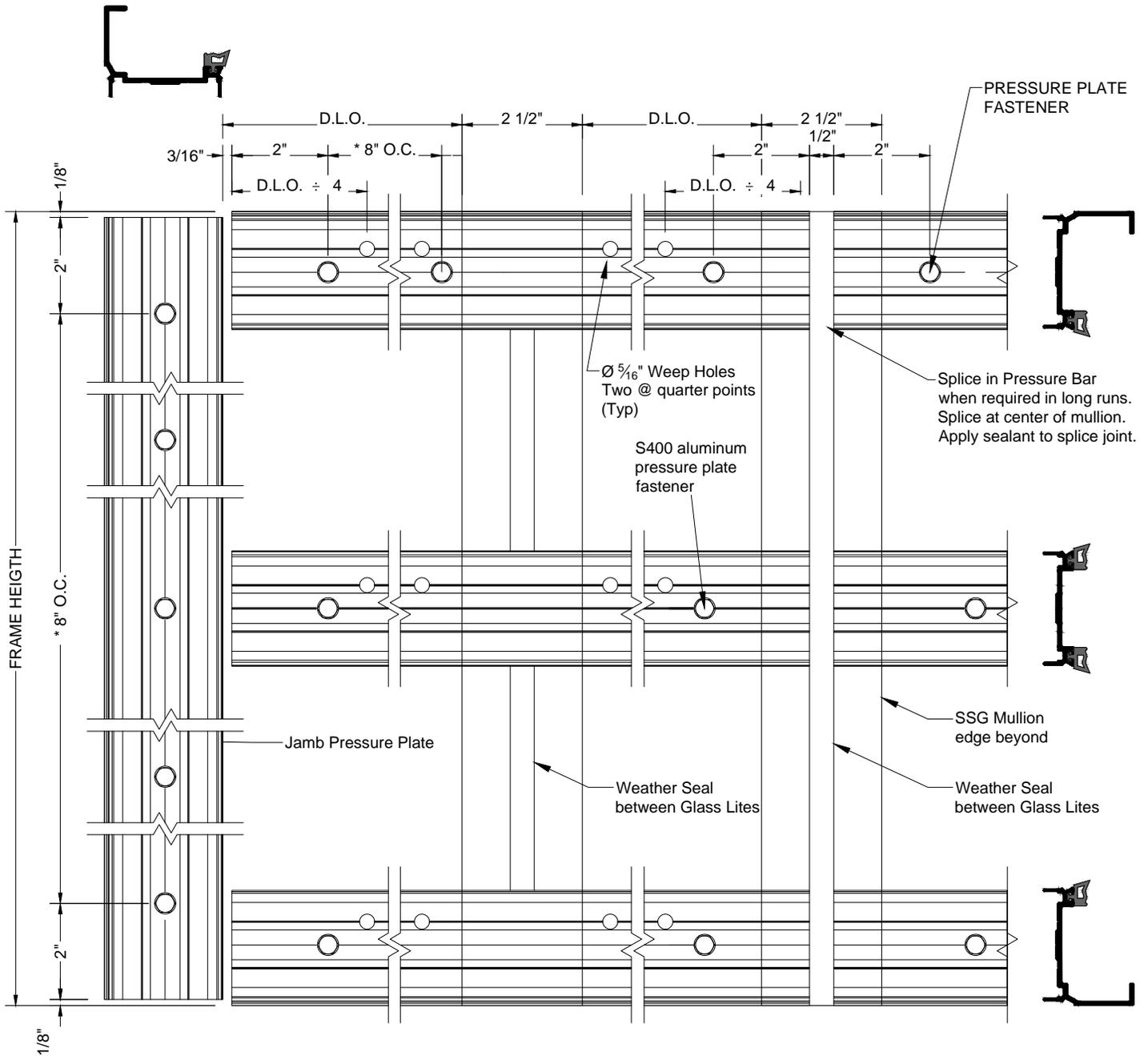


Fig. 64.1

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)



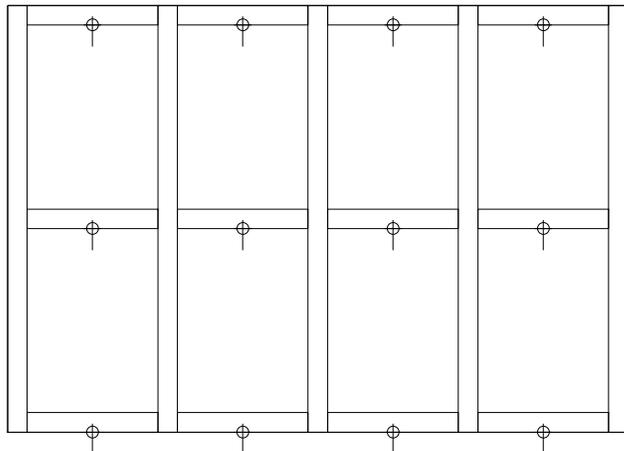
SSG Verticals

Fig. 65.1

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)

- I. Install the vertical face covers first by using a wood block to protect the finish.
- J. Seal the top termination point of all vertical face covers per Fig. 66.4 (below an expansion horizontal) and Fig. 67.4(top of frame).
- K. Pinning requirements for pressure plates:
 - Cover depth less than 1": Pin to pressure plates as required
 - Cover depth 2" or more:
 - Less than 6 ft long: Pin to pressure plate at center on each side
 - Greater than 6 ft long: Pin to pressure plate on each end and 3 ft O.C.
 - Building Specific conditions may require spacing different than this. Consult Tubelite Engineering for recommendations.
- L. Seal the horizontal pressure plates to the vertical face covers, tooling the sealant into the joint. See Fig. 66.1 and 66.2.
- M. Install the horizontal face covers leaving equal gaps on each end. Make sure the weep holes are pointing down.
- N. See Fig. 66.2.



TYPICAL WEEP HOLE
 (Located at bottom of
 horizontal Face Caps)

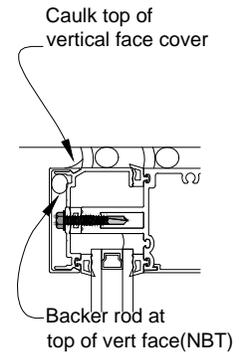
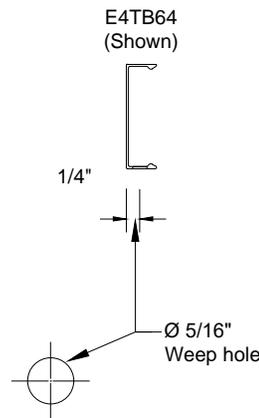


Fig. 66.2

Fig. 66.1

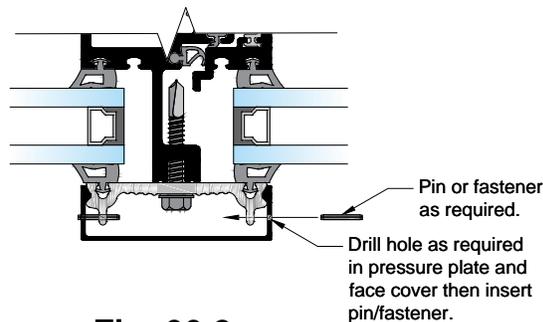
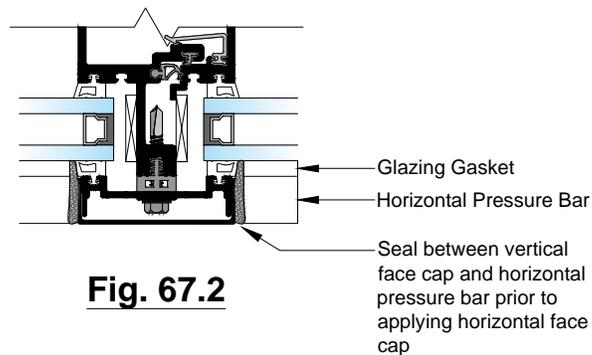
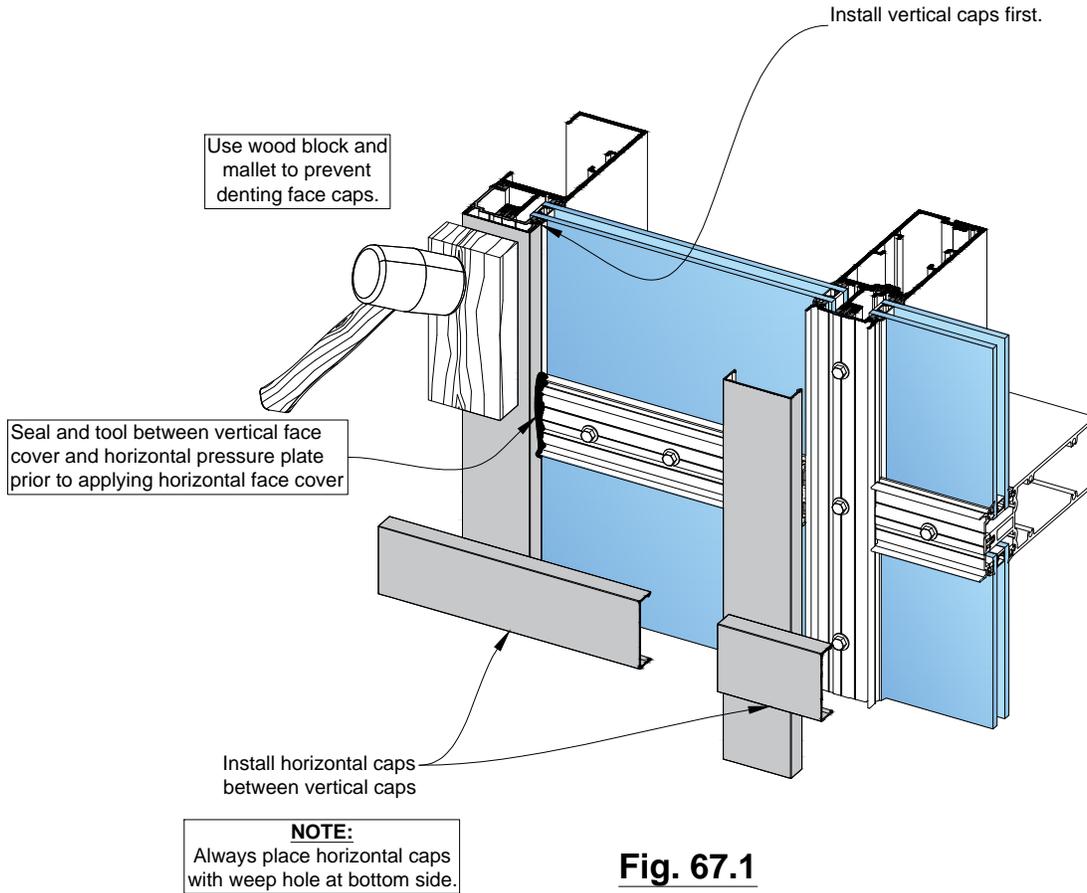


Fig. 66.2

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)



GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)

- O. At a traditional in-vertical splice condition, refer to Fig. 68.1 for offsets between the vertical pressure plate and face cover and Fig. 41.1, 41.2 and 68.2 for sealing instructions.
- P. See Fig. 68.1 for offsets at an expansion horizontal and Fig. 68.2 for sealing instructions.
- Q. At SSG vertical mullions, splice the horizontal face cover and pressure plate at the centerline of the vertical mullion, sealing between both the pressure plate and face cover. See Fig. 68.3.
- R. For installations utilizing expansion horizontals, seal the intersections of the lower horizontal and lower vertical as shown in Fig. 68.2

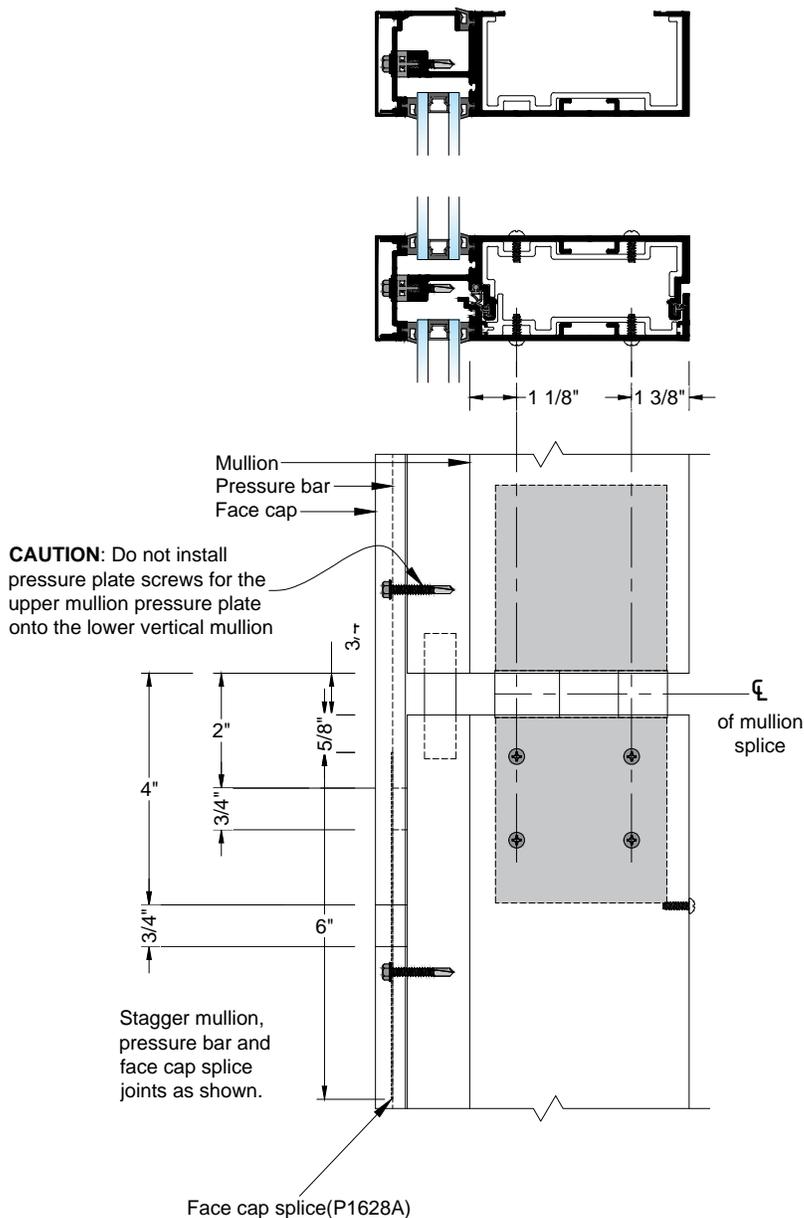


Fig. 68.1

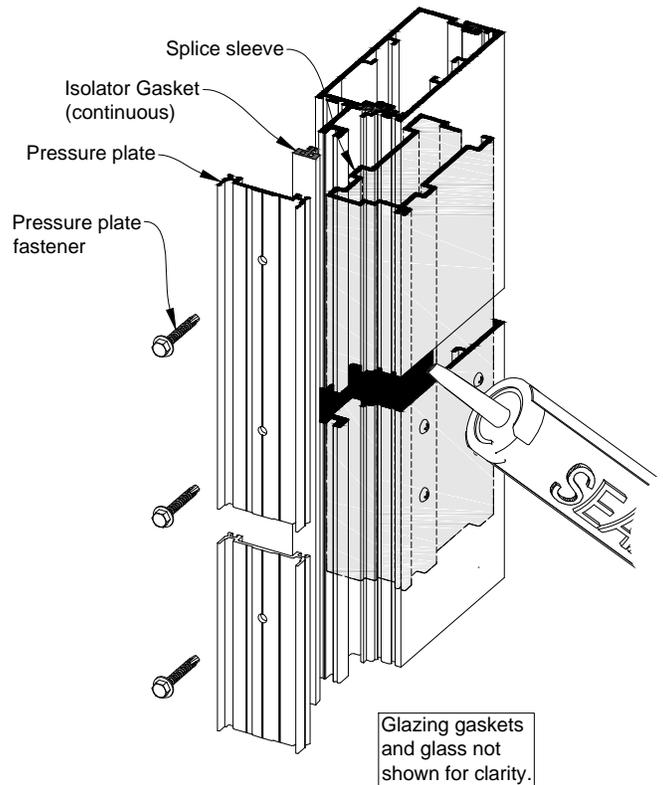


Fig. 68.2

GLAZING

Step 16: Install Pressure Plates & Face Covers (continued)

Pressure plate up $\frac{1}{4}$ "
from expansion
horizontal face cover

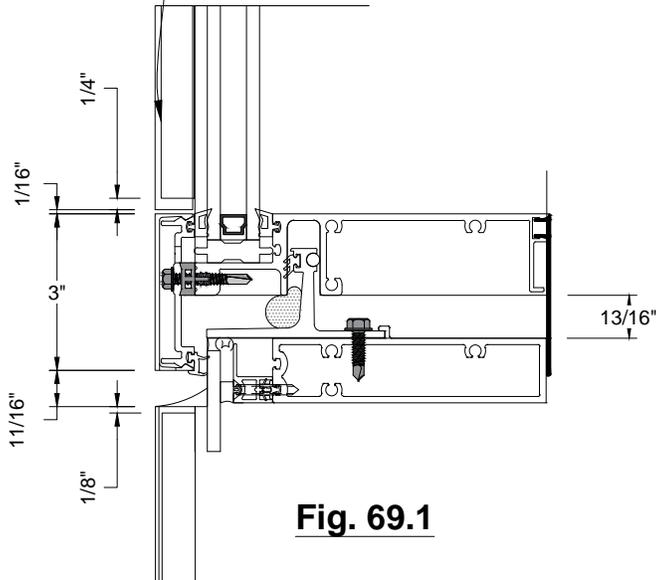


Fig. 69.1

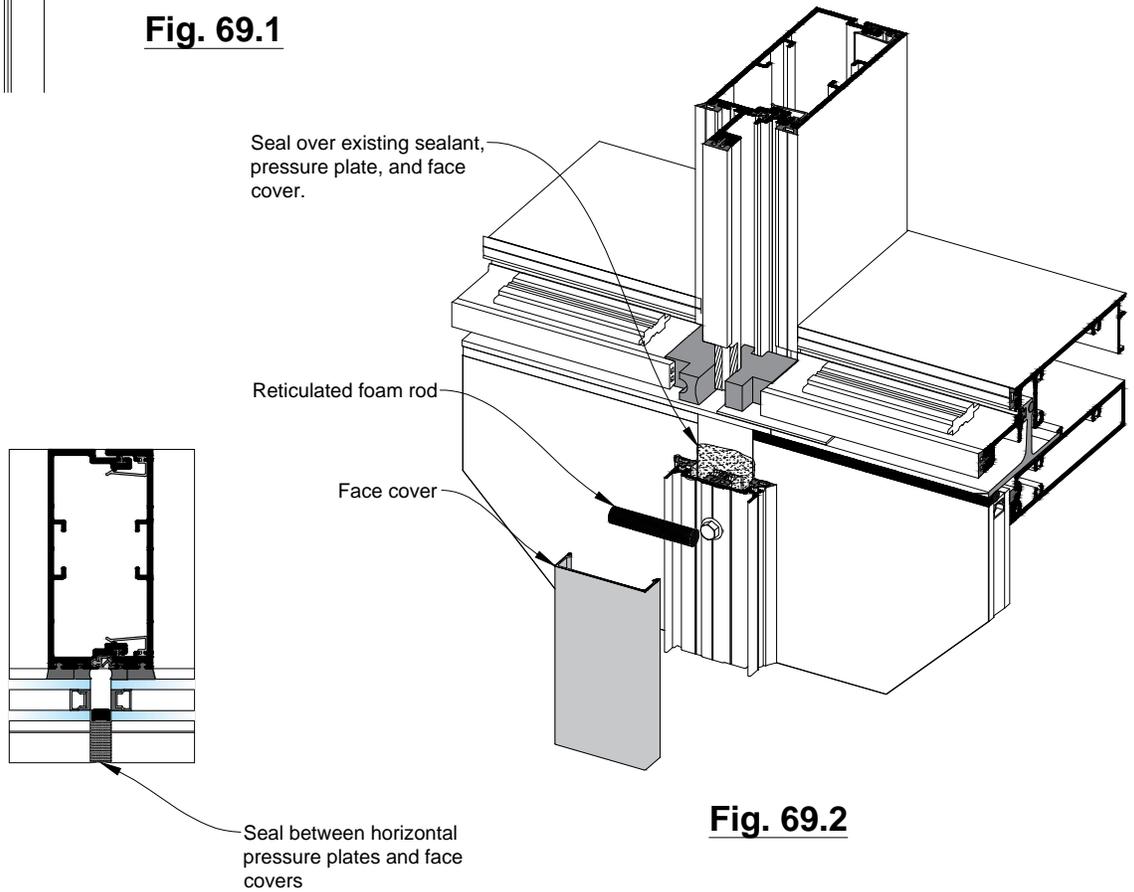


Fig. 69.2

Fig. 69.3

Seal between horizontal
pressure plates and face
covers

ENTRANCE FRAMING

ENTRANCE FRAMING

- A. All door framing is shipped fabricated from the factory. Curtain wall frames can be installed in the field prior to installing the doors.
- B. Curtain wall verticals and door sub frames run to floor. Bed verticals in sealant and anchor to building per approved shop drawings. See Fig. 70.1 for possible anchoring method.
- C. Always refer to approved shop drawings for specific requirements.

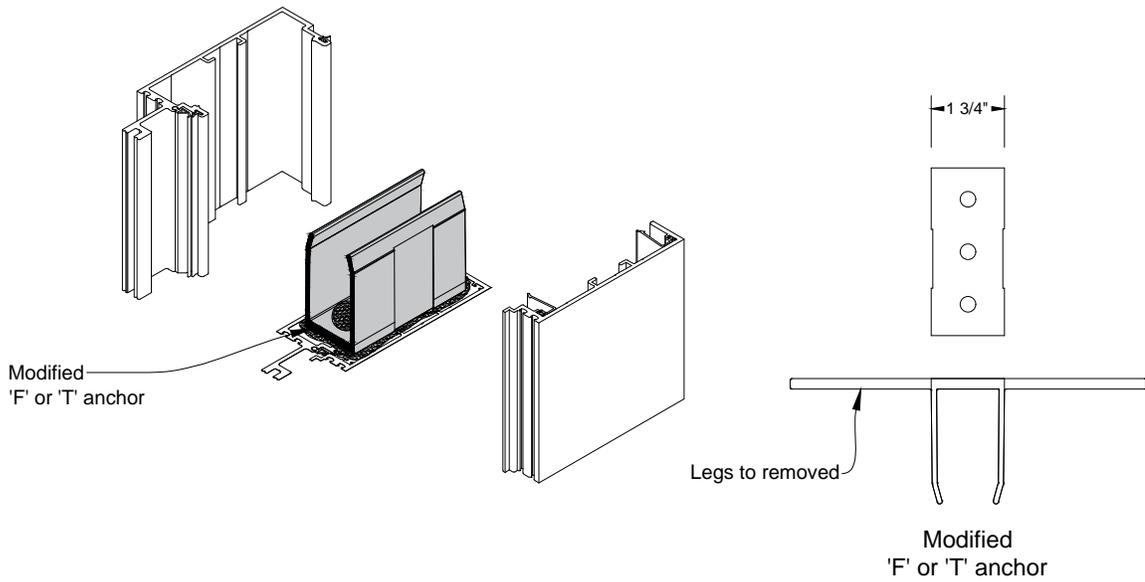


Fig. 70.1

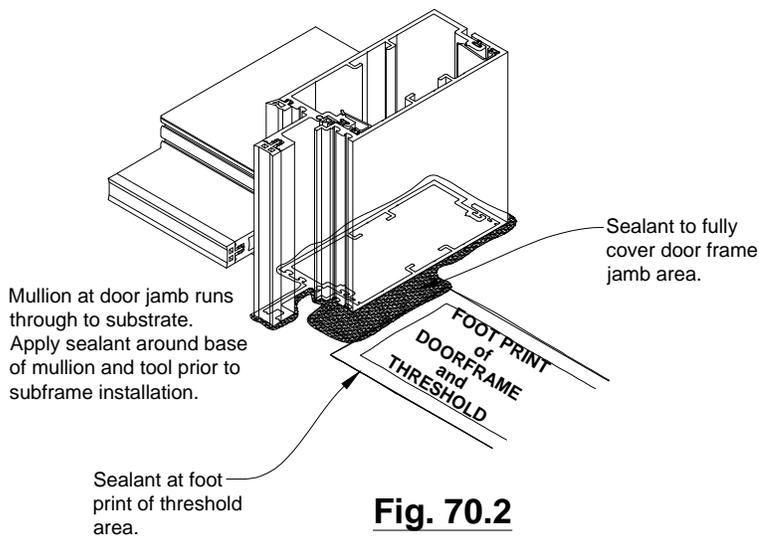


Fig. 70.2

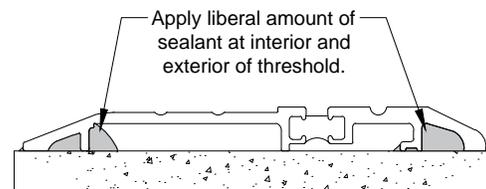


Fig. 70.3

ENTRANCE FRAMING

ENTRANCE FRAMING (Continued)

D. SUBFRAME INSTALLATION

- Prep the curtain wall frame with pocket closures or as detailed on approved shop drawings.
- Prior to installing the sub frame, lay down a bed of sealant where the threshold will be installed. See Fig. 70.2 and Fig. 70.3.
- Install sub frame onto curtain wall mullion, shimming equally from side to side. Attach sub frame per approved shop drawings. Cap seal all fasteners and seal joint between sub frame and curtain wall.
- Seal the top of the jamb sub frame as shown in Fig. 71.3.
- Attach threshold to building per approved shop drawings.
- Install door per Tubelite's Entrances and Frames Installation Manual.

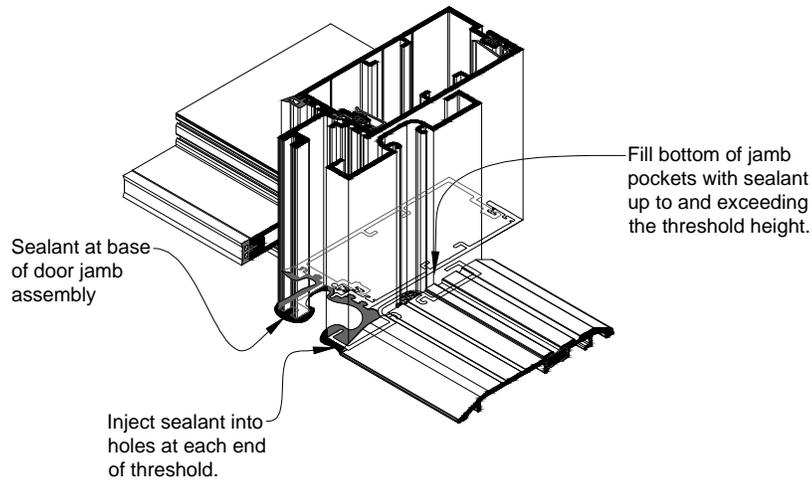


Fig. 71.1

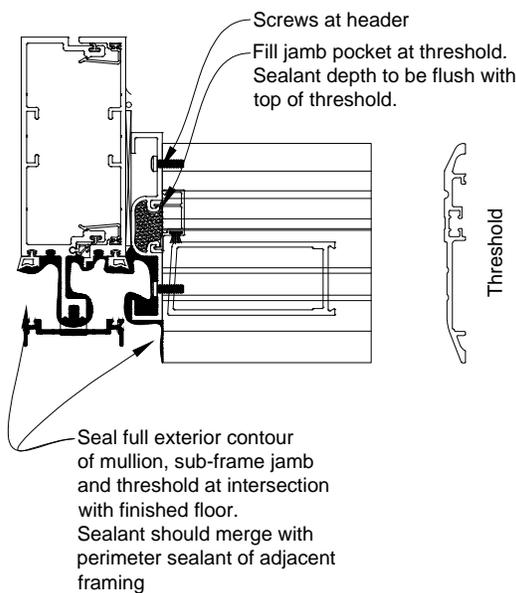


Fig. 71.2

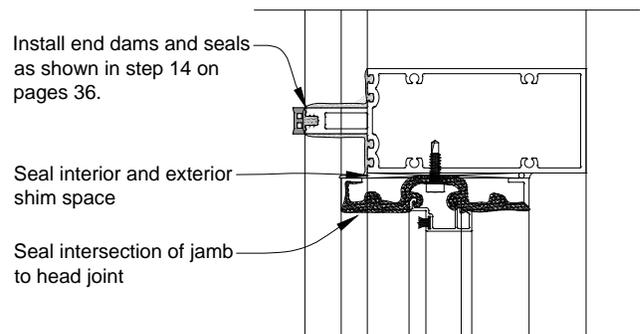


Fig. 71.3

REGLAZING

1. Reglazing is done from the exterior.
2. Carefully remove face covers surrounding the lite to be removed.
3. Remove vertical and horizontal pressure plates adjacent to affected lite.
4. Temp surrounding glass in place with P4634 temporary retainers per Step 15, page 58. Remove lite of glass and gaskets from opening. Clean debris and sealant from the glass pocket and glazing reglets.
5. Install new glass in opening per Step 15-16, pages 58 through 68.

CORNER CONDITIONS

CAPTURED OUTSIDE CORNER

- A. Captured outside corners require a special cut on the horizontal members. See Fig. 73.2 for illustration.
- B. Follow the procedures set forth in Step 6 & 8 to assemble the horizontals to the corner vertical halves and install anti-buckling clips. Water dams can be pre-installed and sealed on the captured outside 90 degree corner. Refer to Step 11 Page 43 for instructions.
- C. Install gaskets per Step 12, Page 44. Refer to Steps 10-12 to complete the installation of the corner.

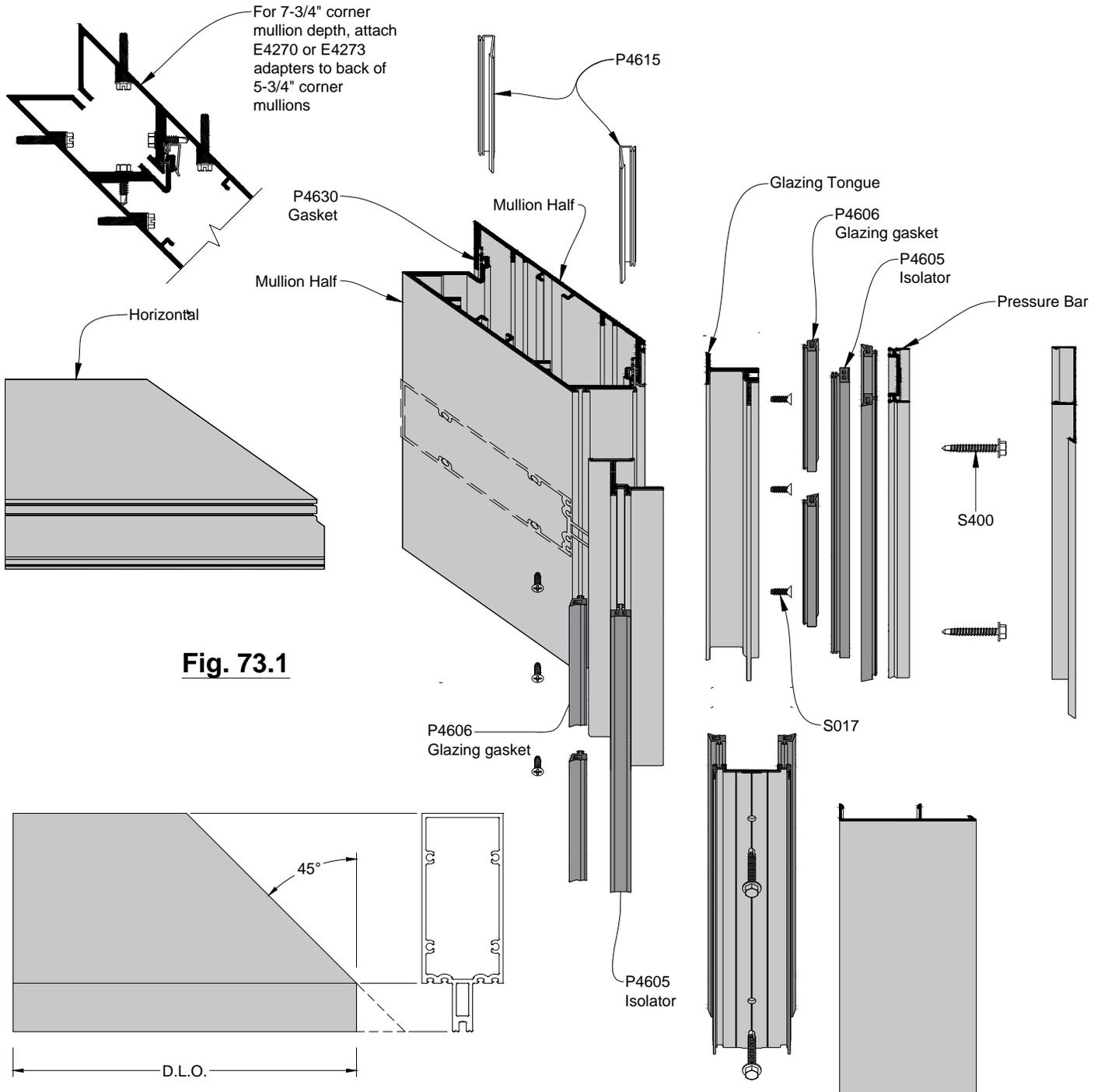


Fig. 73.1

Fig. 73.2

CORNER CONDITIONS

SSG OUTSIDE CORNER

- A. Follow the procedures set forth in Step 6 & 8 to assemble the horizontals to the corner vertical halves and install splice sleeves.
- B. Water dams must be installed and sealed after bay assembly. Refer to Step 8 for instructions.
- C. Install gaskets per Step 9.
- D. Refer to Steps 10-13 to complete the installation of the corner.

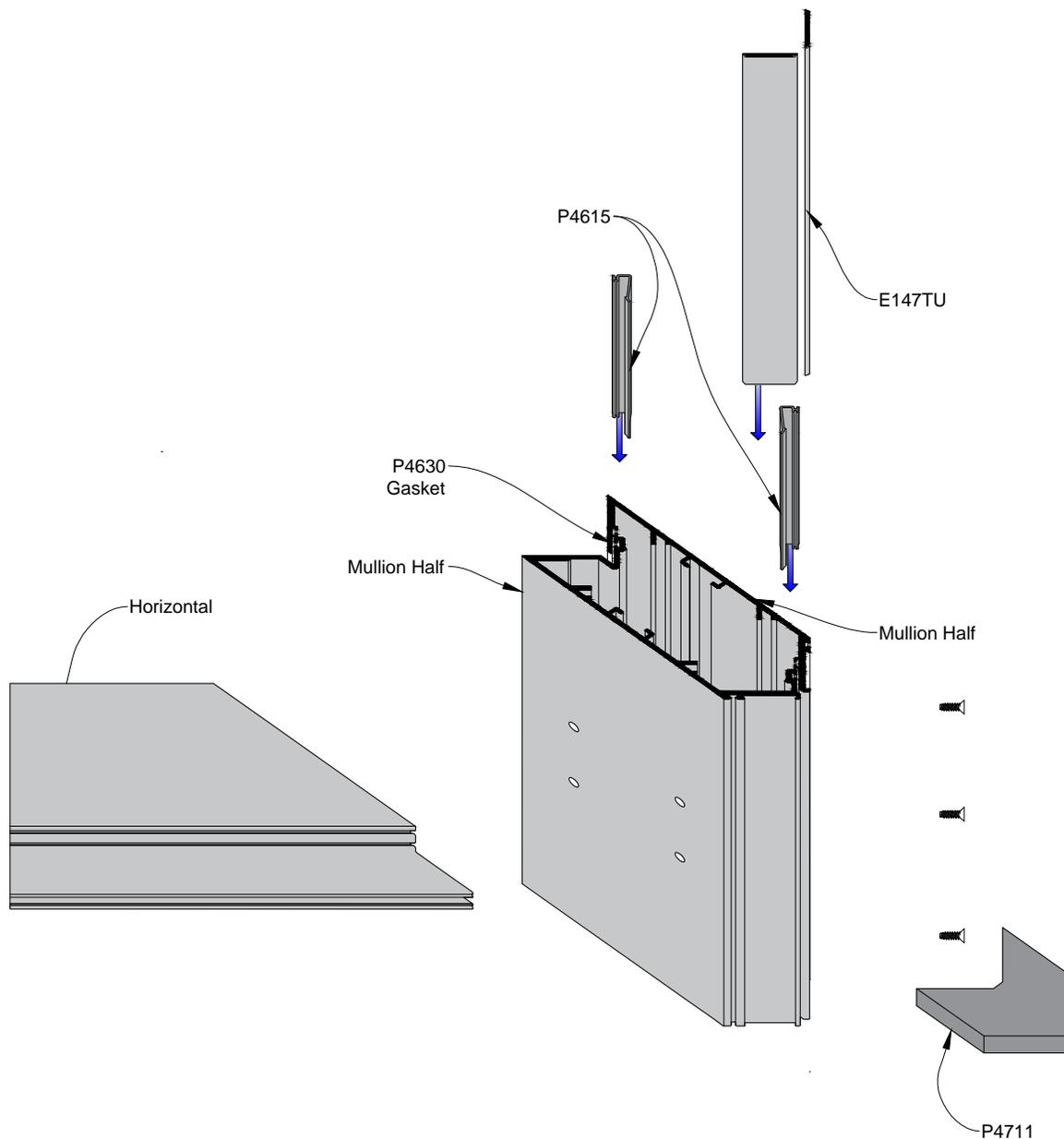


Fig. 74.1

CORNER CONDITIONS

SSG INSIDE CORNER

- A. Follow the procedures set forth in Step 6 & 8 to assemble the horizontals to the corner vertical halves and install splice sleeves.
- B. Water dams must be installed and sealed after bay assembly. Refer to Step 8 for instructions.
- C. Install gaskets per Step 9.
- D. Refer to Steps 10-13 to complete the installation of the corner.

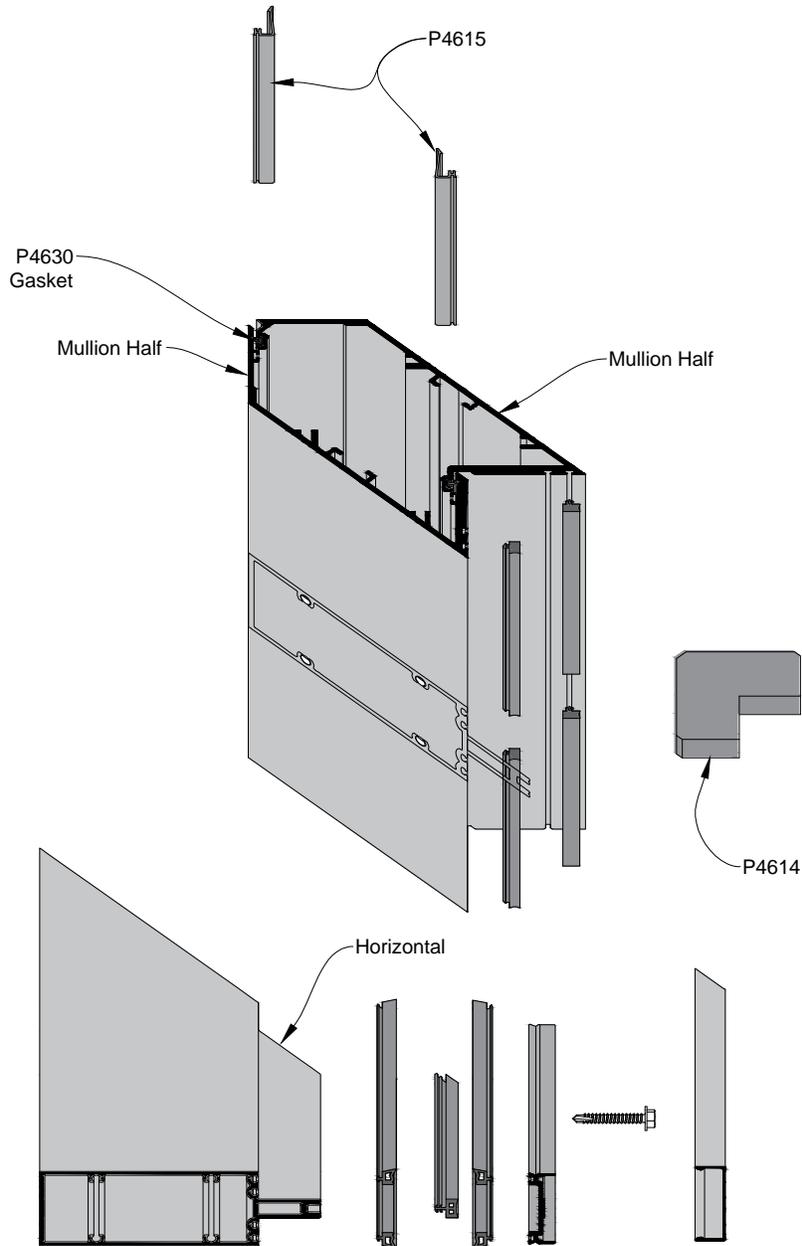


Fig. 75.1