Features:

Series SF400, SF450 is a commercial flush glazed systems for exterior glazing ground floor applications or interior glazing when used as a low rise window wall system. Framing is mechanically jointed using self-tapping screws into integral splines extruded within the body of the section. Jointing is by butt joints with applied sealant to protect against water egress and to reduce air infiltration.

System features:

- SF400 – sightline 1-3/4" x 4" for 1/4" and 3/8" glazing infill;
- SF450 – sightline 2" x 4-1/2" for 1" glazing infill;
- EPDM glazing gaskets;
- ladder assembly for transportation to job site for quicker installation;
- steel reinforcement to meet high wind velocity requirements and high spans;
- sill receptor allows for head of structural fasteners in subsill to be sealed prior to installing ladder panels.

SERIES	FACE WIDTH	DEPTH	GLAZING INFILLS	GLAZING METHOD
400	1-3/4" (44.5)	4" (101.6)	1/4" (6) or 3/8" (10)	Exterior/Interior
450	2" (50.8)	4-1/2" (114.3)	1" (25)	

I. GENERAL DESCRIPTION

Work Included: furnish all necessary materials, labor, and equipment for the complete installation of aluminum framing as shown on the drawings and specified herein.

Specifier Note: it is suggested that related items such as aluminum entrance doors, glass, and sealants be included whenever possible.

Work Not Included: structural support of the framing system, interior closures, trim. (Specifier list other exclusions).

Related Work Specified Elsewhere: (Specifier list).

PERFORMANCE REQUIREMENTS

Air Infiltration: shall be tested in accordance with ASTM E 283. Infiltration shall not exceed .06 cfm per square foot (.0003m3/sm2) of fixed area when tested at 6.24 psf (300 Pa).

Water Infiltration: shall be tested in accordance with ASTM E 331. No water penetration at test pressure of 8 psf (384 Pa).

Structural Performance: shall be tested in accordance with ASTM E 330 and based on: × Maximum deflection of L/175 of the span × Allowable stress with a safety factor of 1.65 The system shall perform to this criteria under a windload of (Specify) psf.

Testing Procedures:

ASTM 283, E 331, and E 330 – Laboratory performance testing.

AAMA 503-08 – Newly installed storefronts.

AAMA 511-08 – Installed storefronts after six months.

II. PRODUCTS MATERIALS

Extrusions shall be 6063-T6 alloy and temper (ASTM B221 alloy T6 temper).

Fasteners, where exposed, shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164.

Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum.

Glazing gaskets shall be E.P.D.M. elastomeric extrusions.

FINISH

All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum extrusions shall be given a caustic etch followed by an anodic oxide treatment to obtain.

FABRICATION

The framing system shall provide for flush glazing on all sides with no projecting stops. Vertical and horizontal framing members shall have a nominal face dimension of (Specify). Overall depth shall be (Specify). Entrance framing members shall be compatible with glass framing in appearance. Provide for internal drainage of infiltrated water into an extruded aluminum subsill channel where it is drained to the exterior through weep slots.

III. EXECUTION INSTALLATION

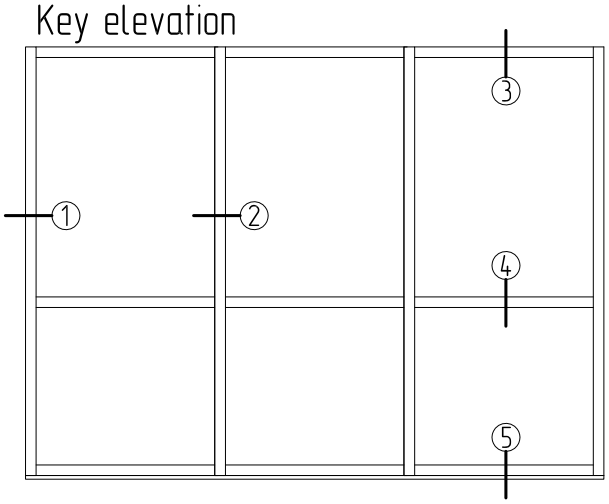
All glass framing shall be set in correct locations as shown in the details and shall be level, square, plumb, and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed in order to secure a watertight installation.

PROTECTION AND CLEANING

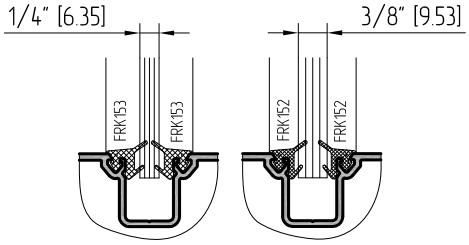
After installation the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, lime, acid, cement or other contaminants. The General Contractor shall be responsible for final cleaning.

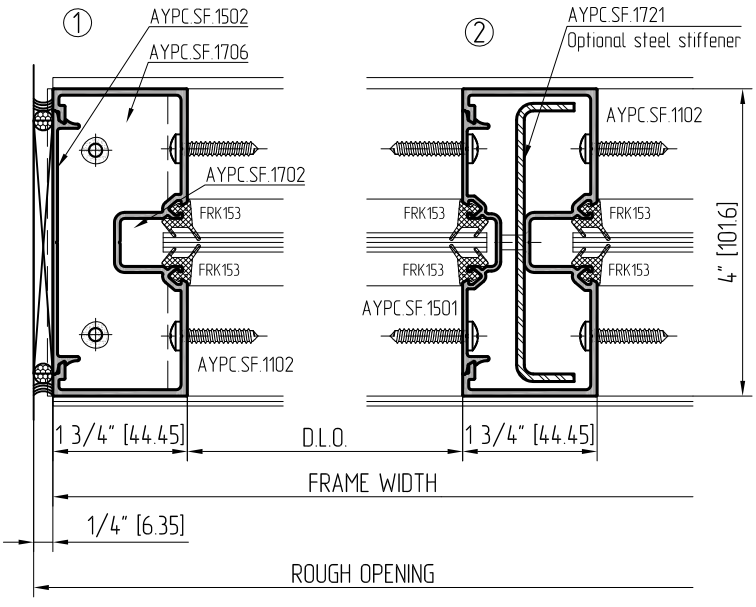
NOT TO SCALE

Key elevation

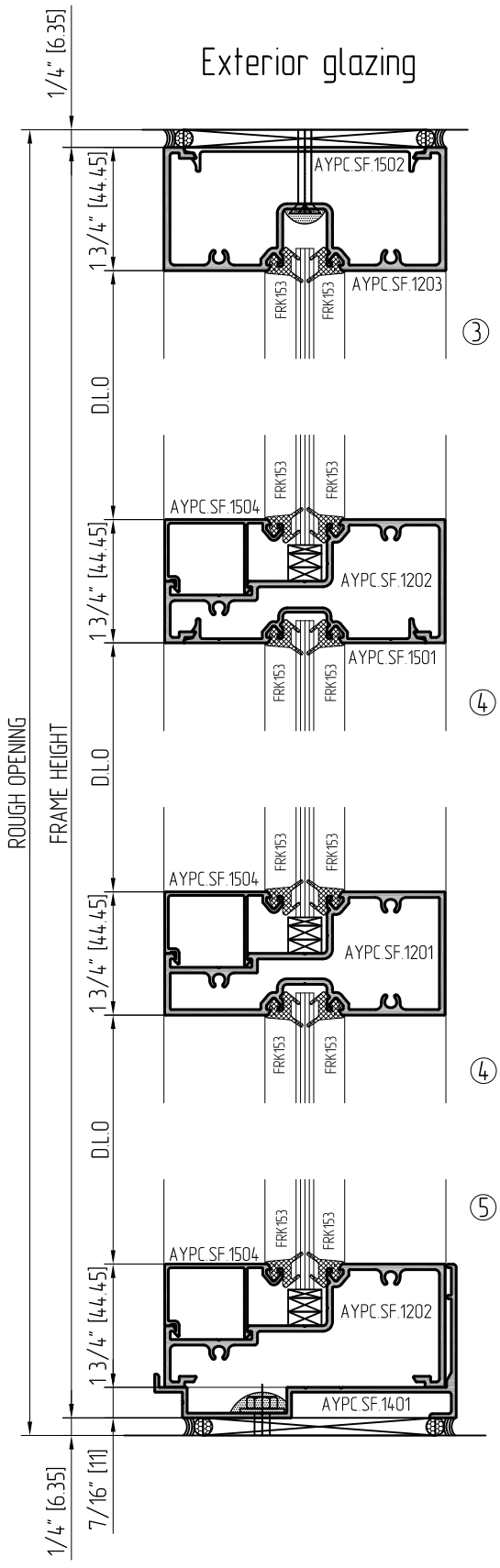


Glazing options



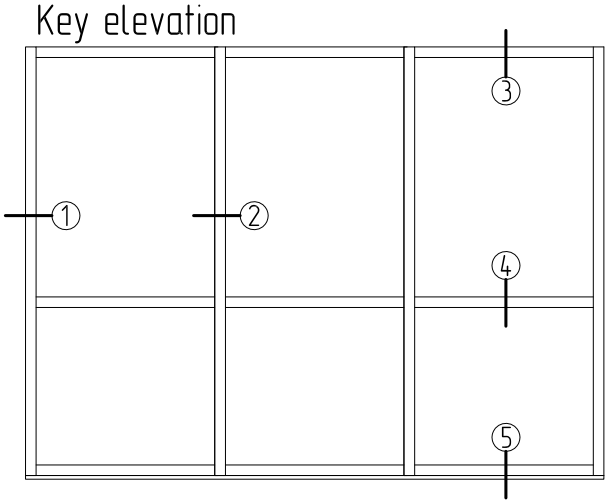


Exterior glazing

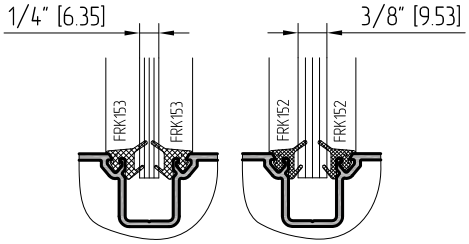


NOT TO SCALE

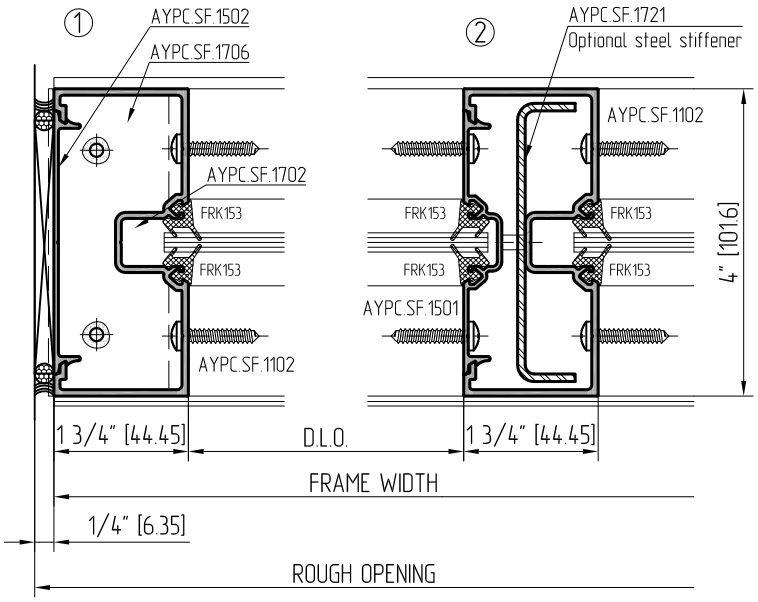
Key elevation



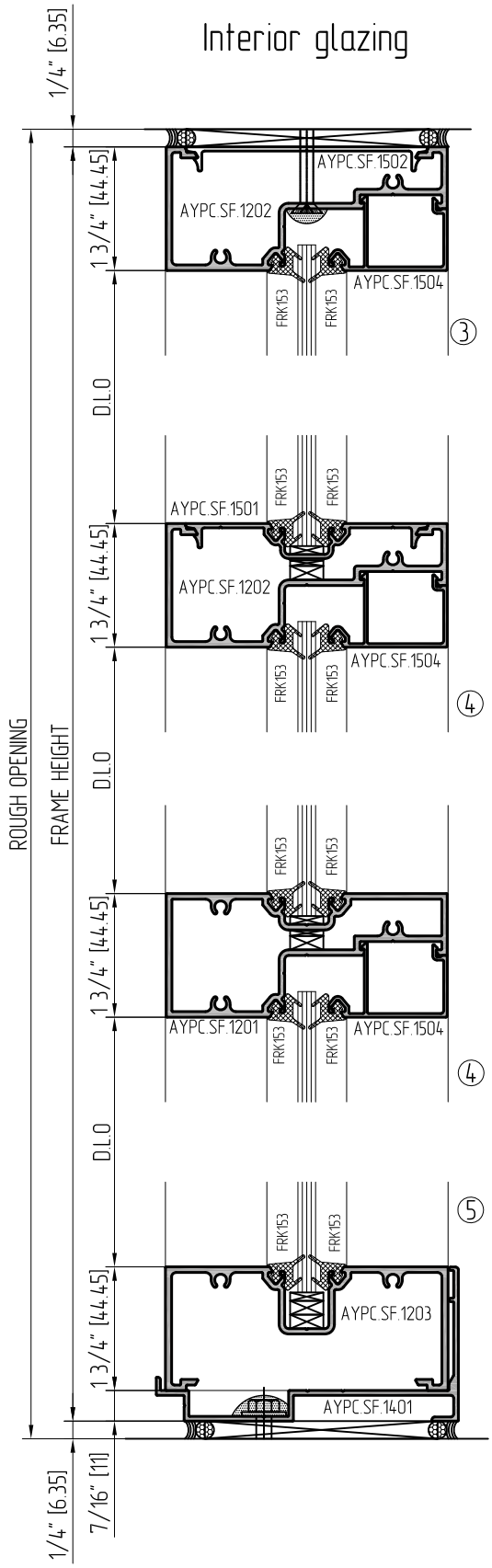
Glazing options



Typical installation

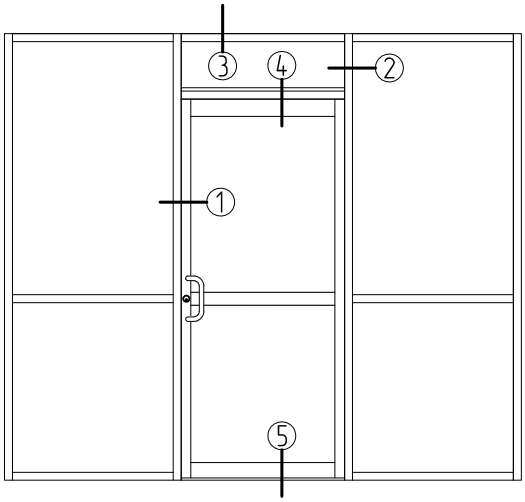


Interior glazing

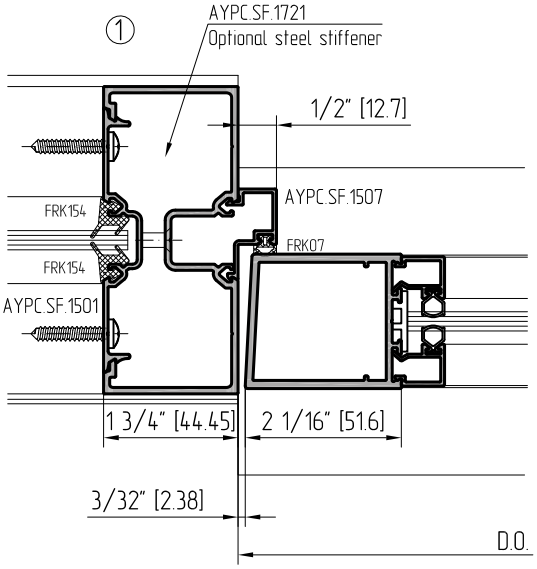


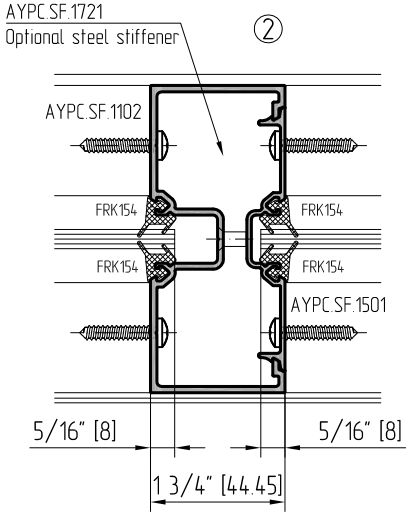
NOT TO SCALE

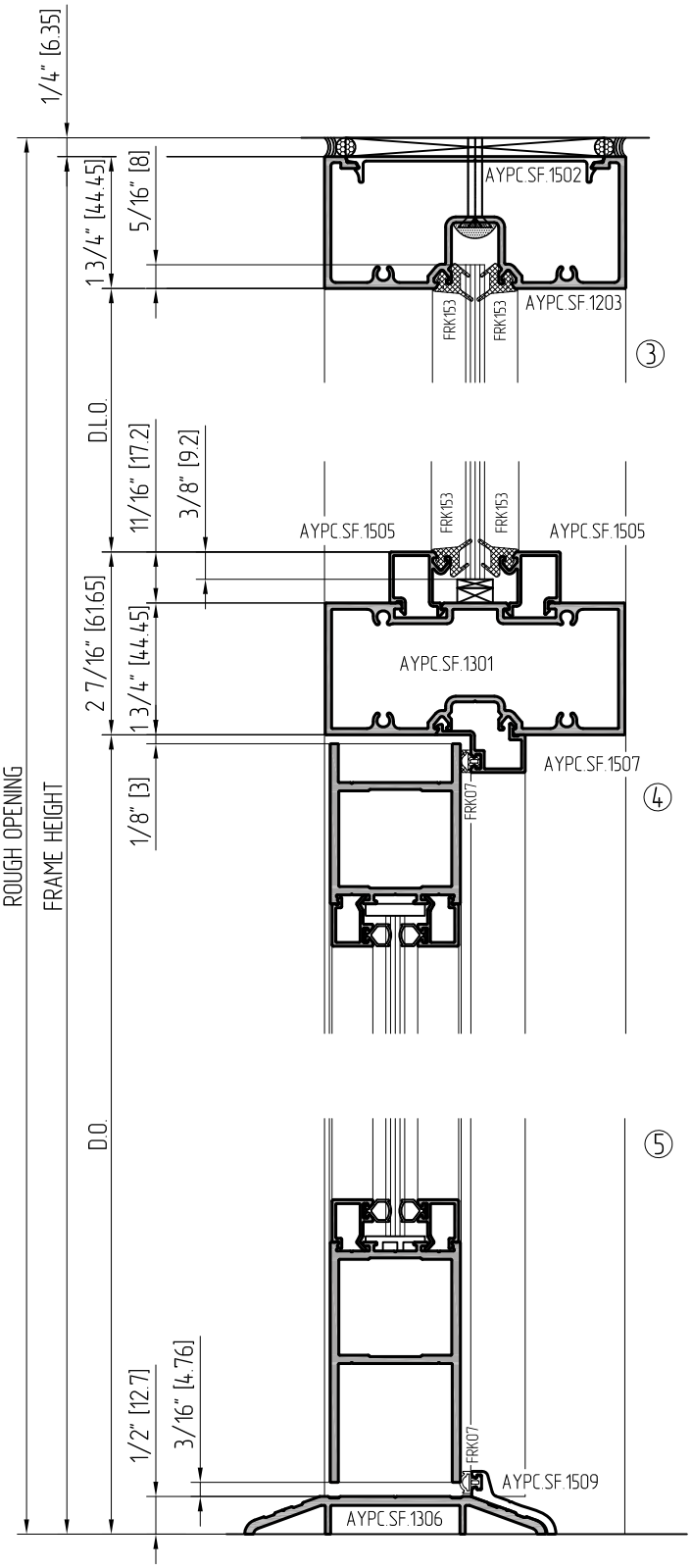
DOOR FRAME SECTIONS (1/4" GLASS). STOREFRONT SF 400



OFFSET HUNG DOORS

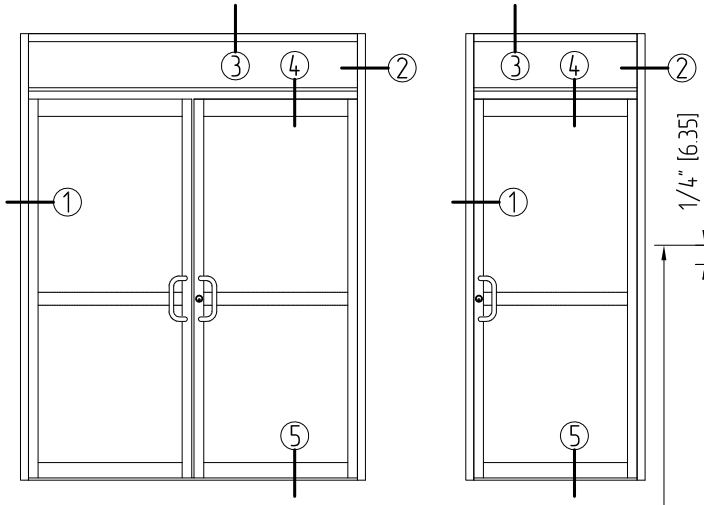




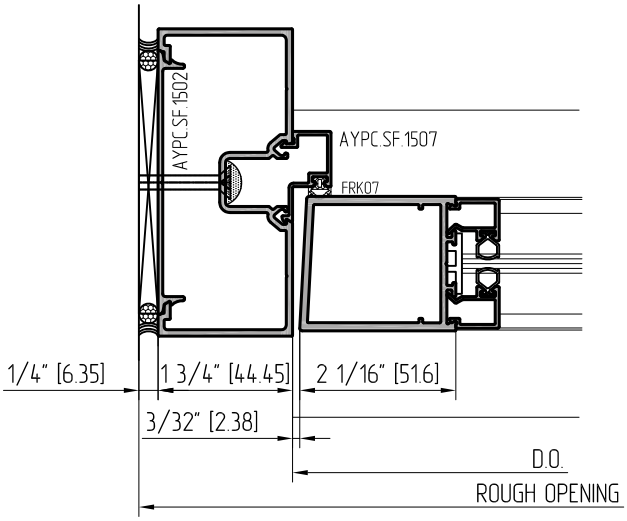


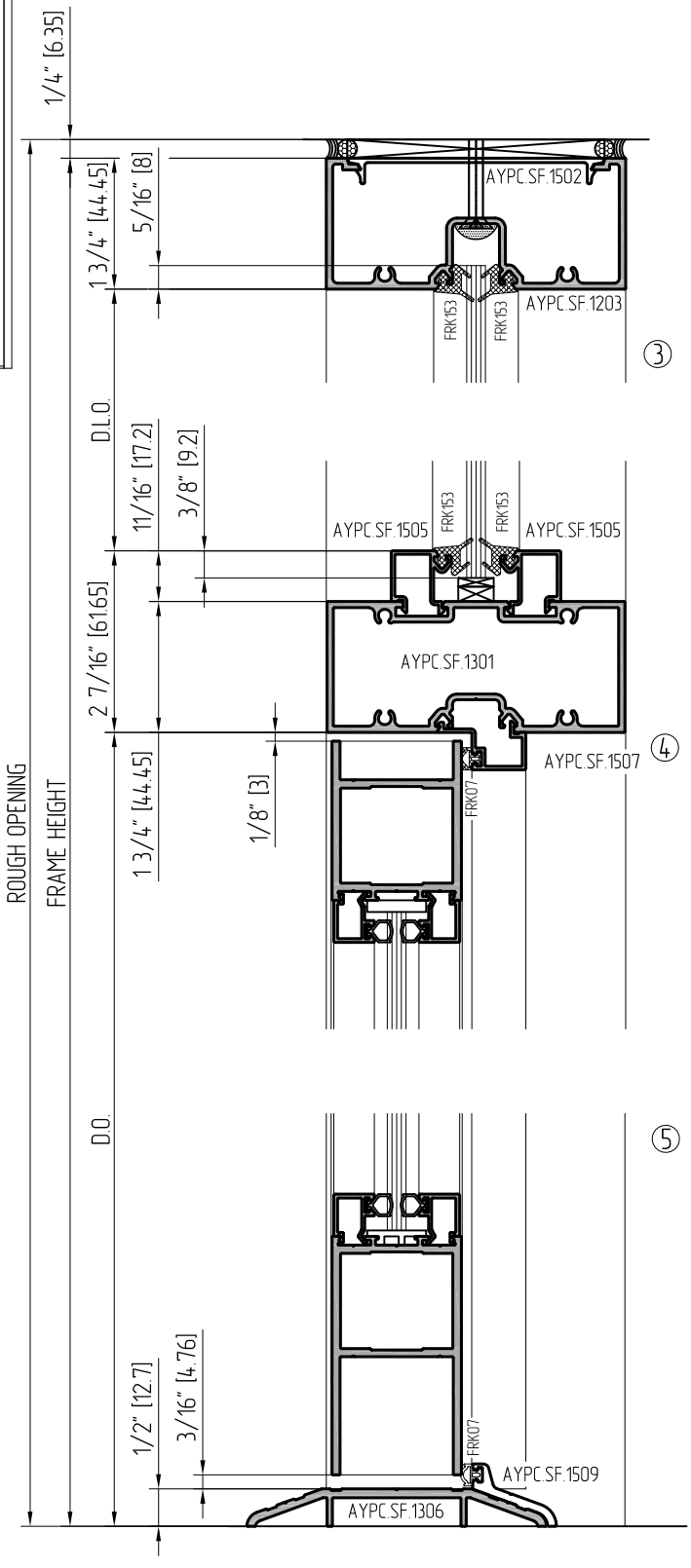
NOT TO SCALE

DOOR FRAME SECTIONS (1/4" GLASS). DOOR WITH TRANSOM. SF 400



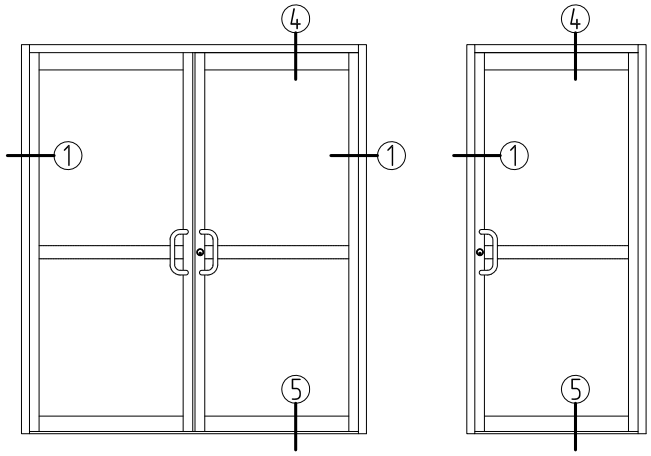
OFFSET HUNG DOORS



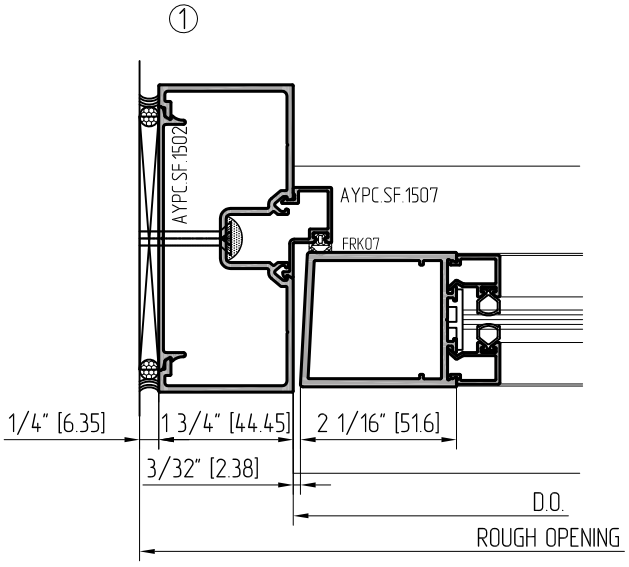


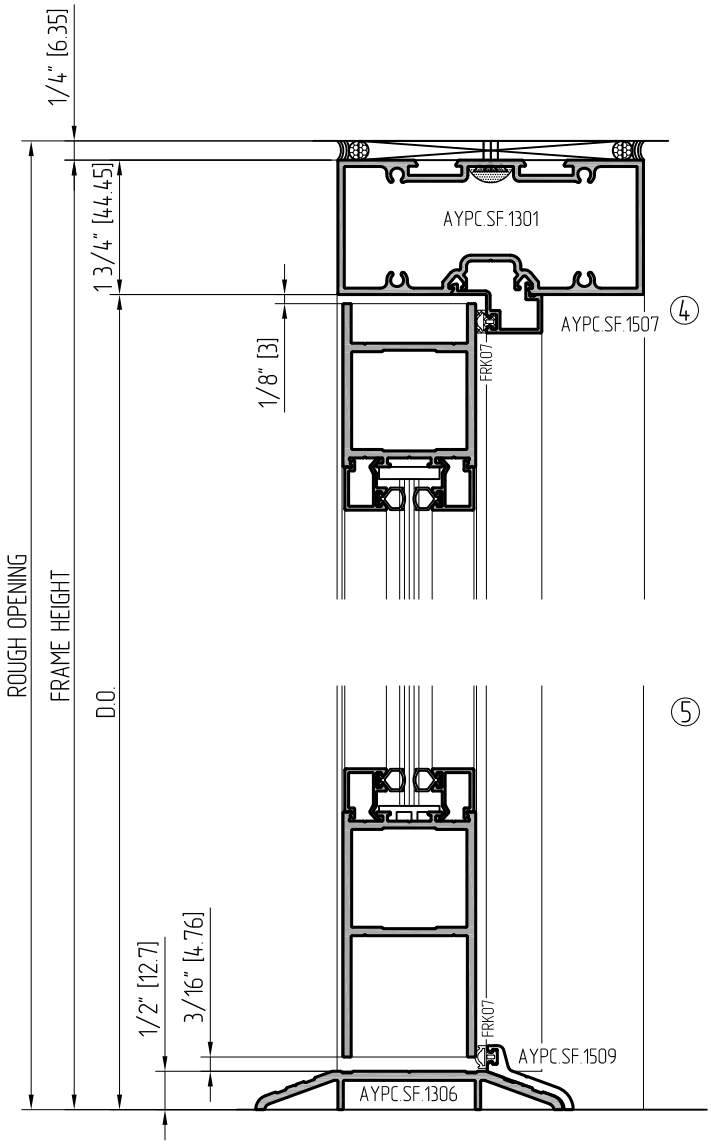
NOT TO SCALE

DOOR FRAME SECTIONS (1/4" GLASS). SF 400



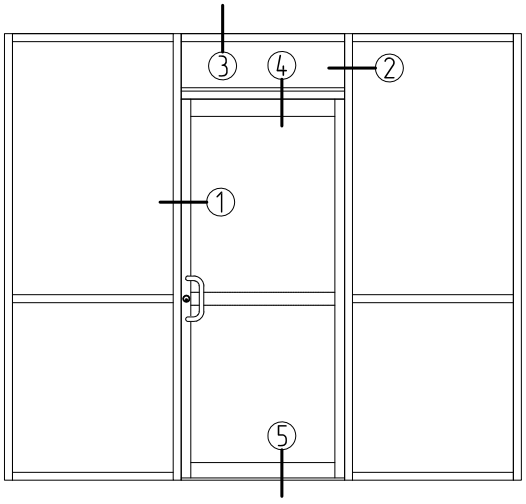
OFFSET HUNG DOORS



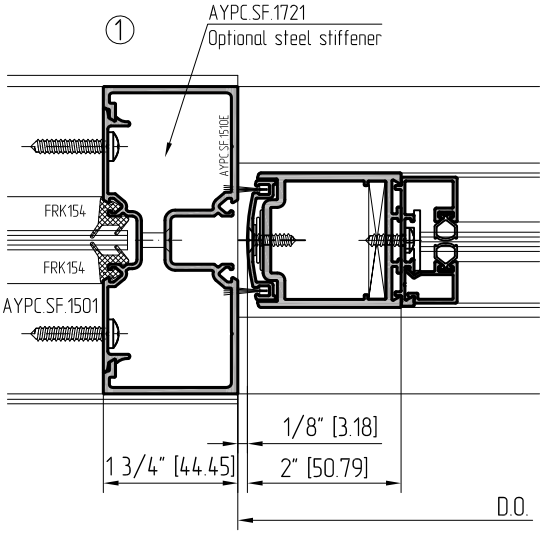


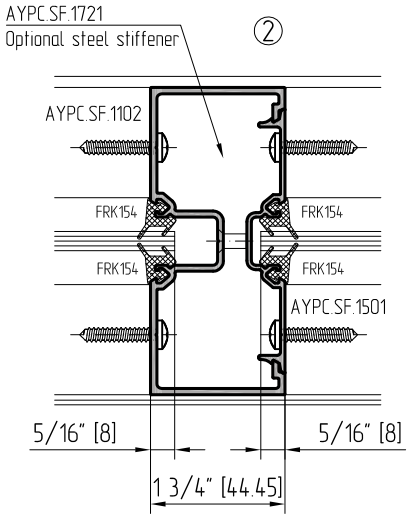
NOT TO SCALE

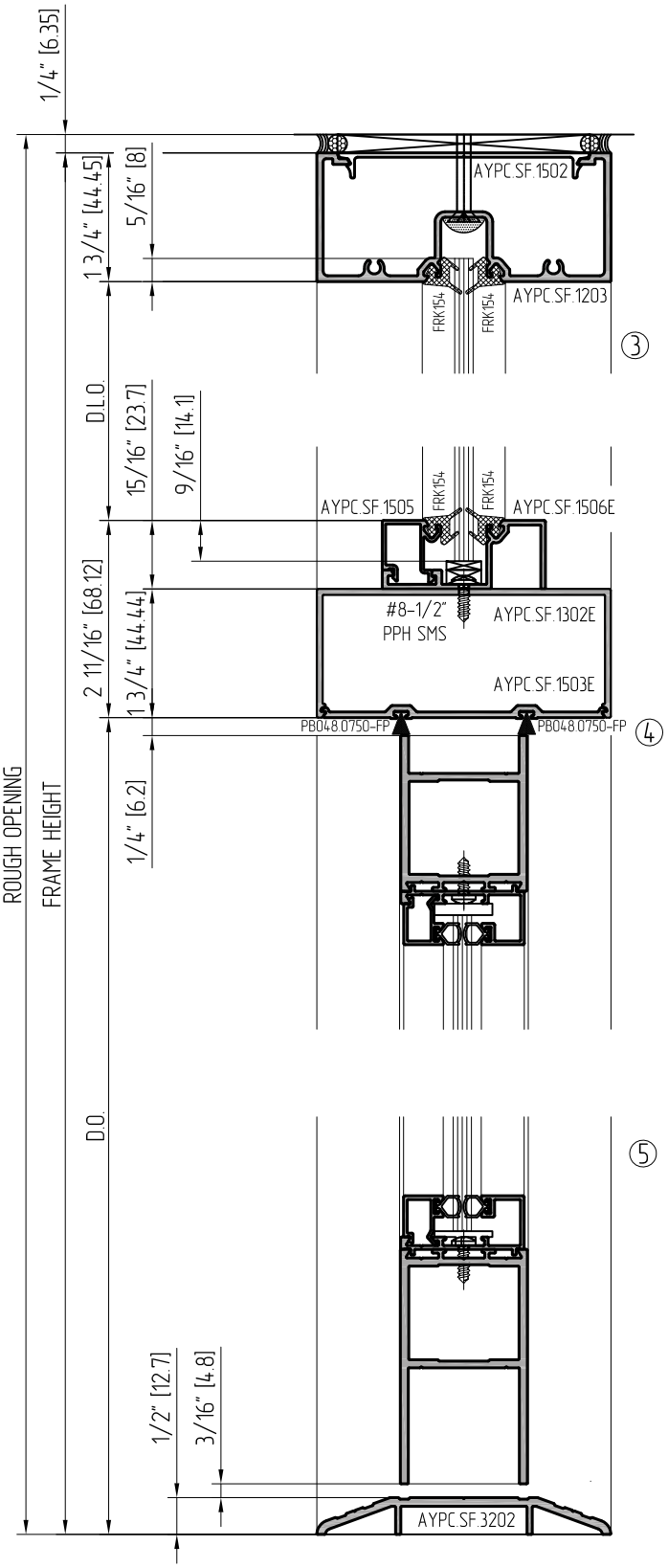
DOOR FRAME SECTIONS (1/4" GLASS). STOREFRONT SF 400



OFFSET HUNG DOORS

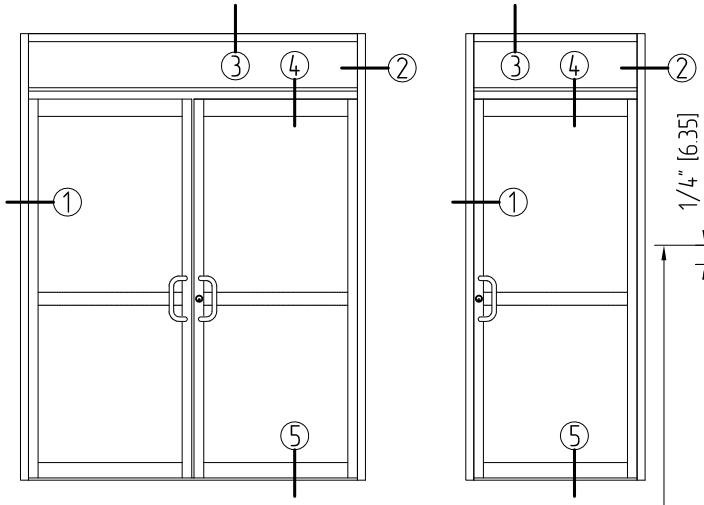




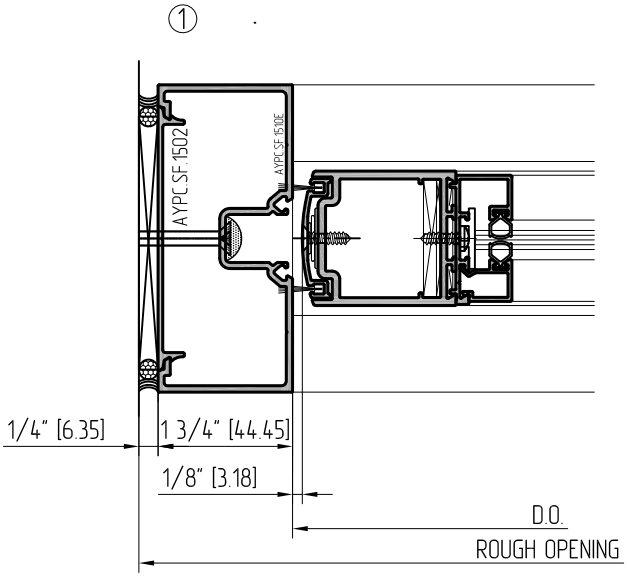


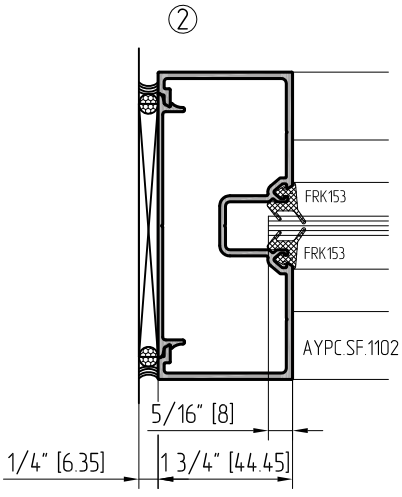
NOT TO SCALE

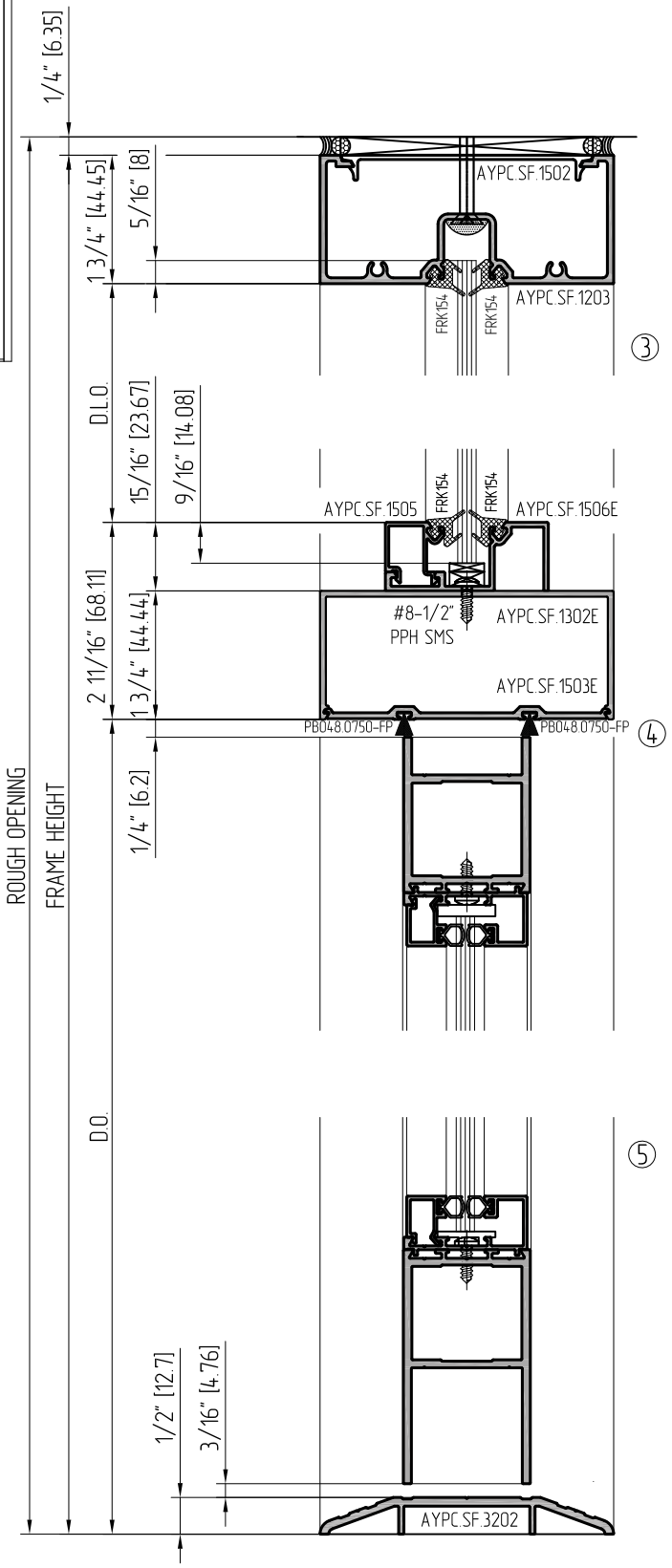
DOOR FRAME SECTIONS (1/4" GLASS). DOOR WITH TRANSOM. SF 400



OFFSET HUNG DOORS







Windload Charts

STANDART WALL VERTICAL MULLIONS

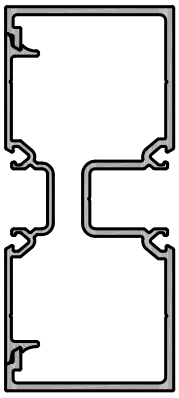
FOR 1/4" (6) OR 3/8" (10) GLAZING

Mullions designed for 1/175 deflection ratio and for the following allowable working stresses:

Aluminum alloy 6063-T6: allowable stress for widnload 12,929 psi (89 MPa).
Steel reinforcing: allowable stress for windload 26,666 psi (183 Mpa).

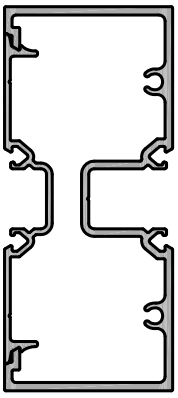
Curves represent the limit values and based on criteria for simple beam, uniformly loaded, using the distribution of wind forces on the wall with rectangular loading. Glass is not cosidered as contributing to resistance of deflection.

Limitation of vertical mullions for:
CURVES A = 15 PSF (718 Pa)
CURVES B = 20 PSF (957 Pa)
CURVES C = 25 PSF (1197 Pa)
CURVES D = 30 PSF (1436 Pa)



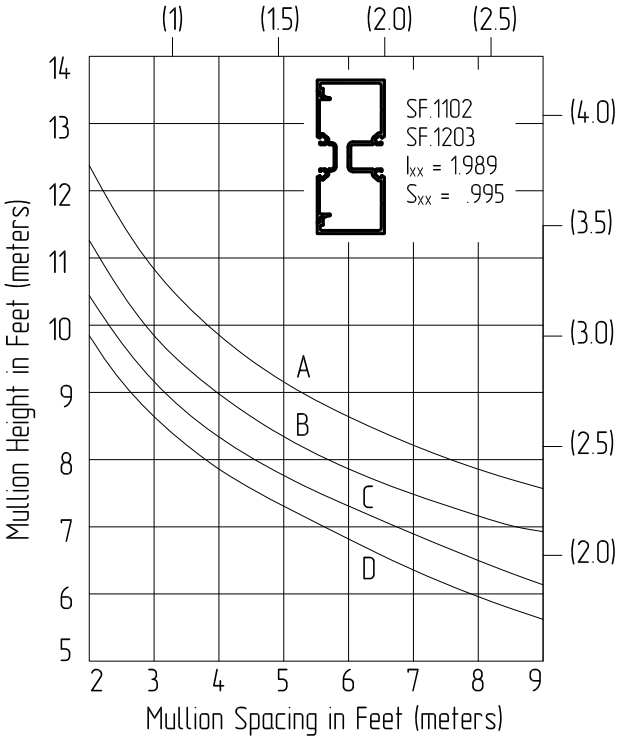
AYPC.SF.1102/AYPC.SF.1501
I=2.365 ($96.44x10^4$)
S=1.183 ($19.39x10^3$)

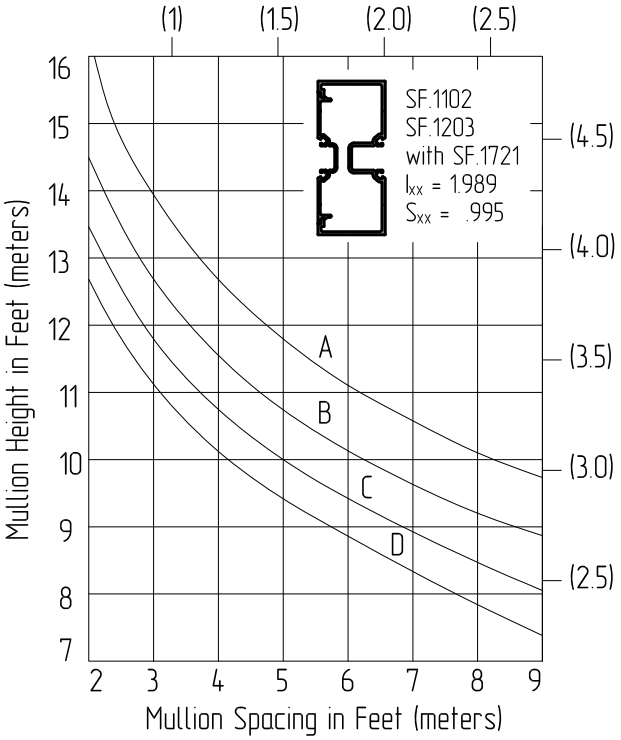
IAL+STL=4.702 ($195.71x10^4$)



AYPC.SF.1102/AYPC.SF.1501
I=2.365 ($96.44x10^4$)
S=1.183 ($19.39x10^3$)

IAL+STL=4.702 ($195.71x10^4$)



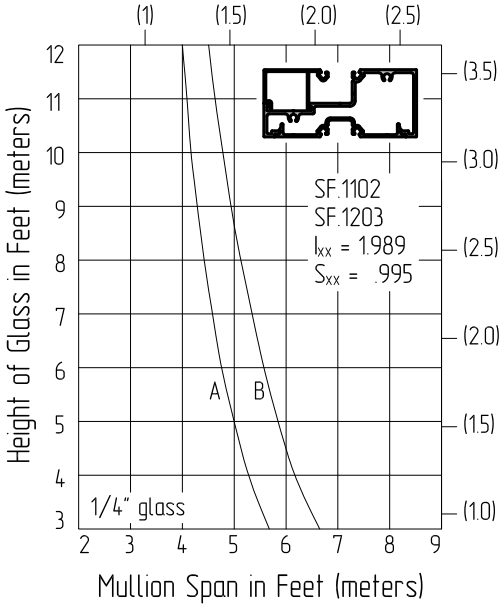


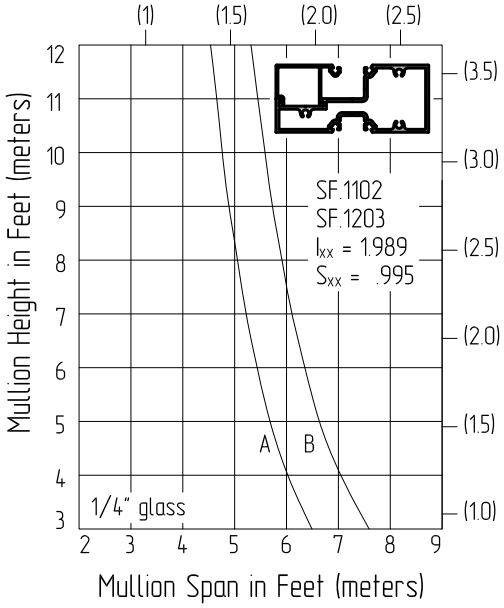
Deadload Charts

INTERMEDIATE HORIZONTAL MULLIONS

FOR 1/4" (6) OR 3/8" (10) GLAZING

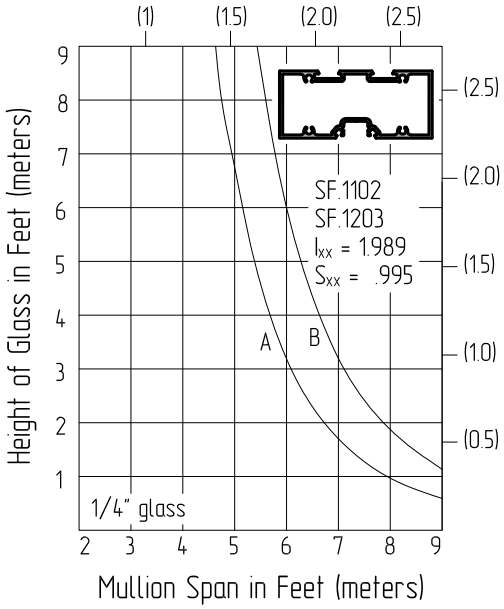
Deadload charts are based on 1/8" (3.2) maximum allowable deflection at the center point of the horizontal mullion and on a glass weight of 3.25 p.s.f. (15.87 Kg/m^2).
Glass shall rest on two setting blocks located at:
CURVES A = 1/4 points
CURVES B = 1/8 points or 8" (203.2) from corners, whichever is larger

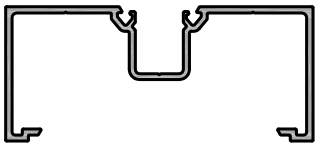
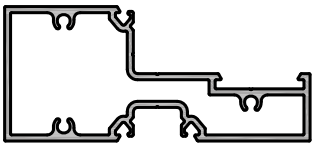
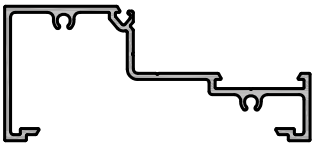
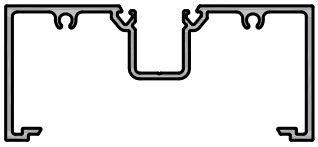
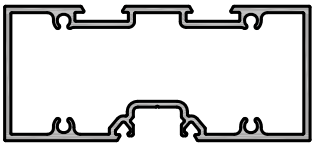


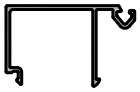
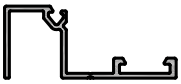


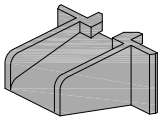
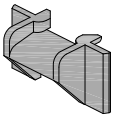
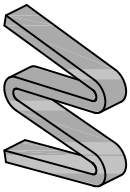
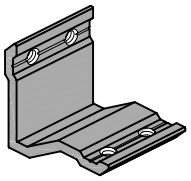
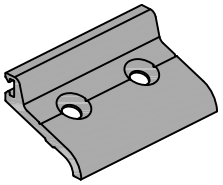
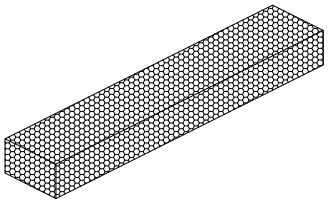
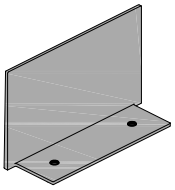
DOOR HEADERS

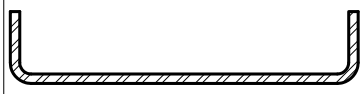
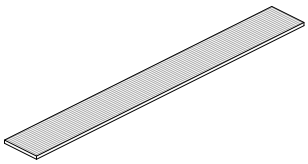
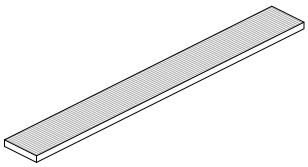
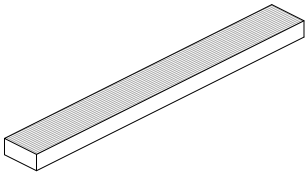
Deadload charts for door header are based on 1/8" (3.2) maximum allowable deflection at the center point of the header and on a glass weight of 3.25 p.s.f. (15.87 Kg/m^2).
Glass shall rest on two setting blocks located at:
CURVES A = 1/4 points
CURVES B = 1/8 points or 8" (203.2) from corners, whichever is larger



Part NO.	Code	Color	Detalil	Description
AYPC.SF.1102	125001808	A00-D6		Vertical mullion
AYPC.SF.1201	125002808	A00-D6		Intermediate horizontal mullion
AYPC.SF.1202	125003808	A00-D6		Sill/Horizontal mullion
AYPC.SF.1203	125004808	A00-D6		Header/Jamb mullion
AYPC.SF.1301	125005808	A00-D6		Offset Hung Door Header
AYPC.SF.1302E	12502500 125025808	00 A00-D6		Center Hung Door Header
AYPC.SF.1306	125006806	00		Threshold
AYPC.SF.1401	125007808	A00-D6		Subsill

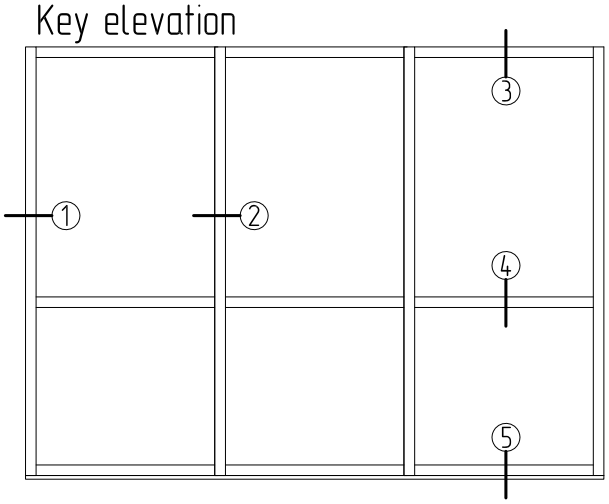
Part NO.	Code	Color	Detalil	Description
AYPC.SF.1501	125008808	A00-D6		Vertical/Horizontal Filler
AYPC.SF.1502	125009808	A00-D6		Flush Insert
AYPC.SF.1503E	12502600 125026808	00 A00-D6		Center Hung Door Header Filler
AYPC.SF.1504	125010808	A00-D6		Glass Stop
AYPC.SF.1505	125011808	A00-D6		Glass stop Door Header
AYPC.SF.1506E	12502700 125027808	00 A00-D6		Glass stop Center Hung Door Header
AYPC.SF.1507	125012808	A00-D6		Door Stop
AYPC.SF.1509	12501300	00		Threshold Door Stop
AYPC.SF.1510E	12502400 125024808	00 A00-D6		Glazing Pocket Filler

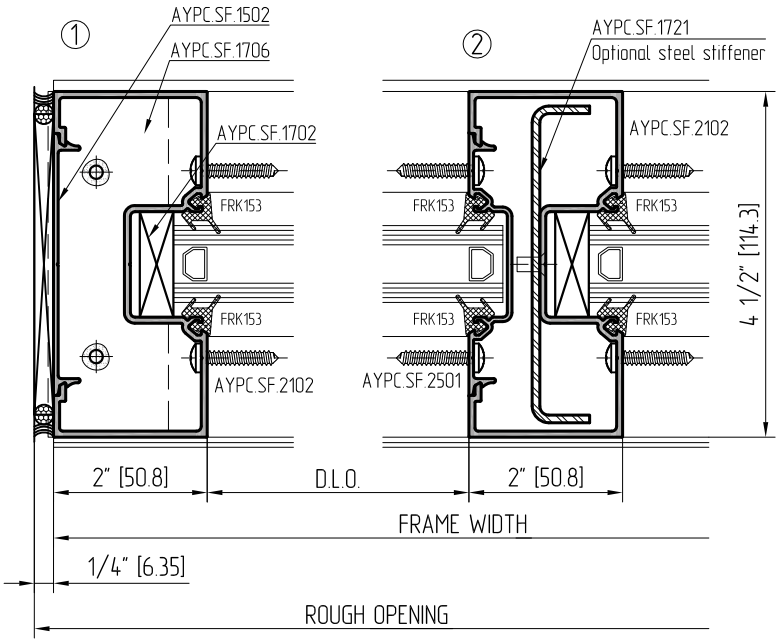
Part NO.	Code	Detalil	Description	PKG. QTY.
AYPC.SF.1701	12530100		Water Deflector for Deep Pocket	80
AYPC.SF.1701-01	12530200		Water Deflector for Shallow Pocket	80
AYPC.SF.1702	-		Edge Blocking	72
AYPC.SF.1703	12530300		Threshold clip	36
AYPC.SF.1704	12530400		Threshold Door Stop	35
AYPC.SF.1705	12530500		Weep Baffle	72
AYPC.SF.1706	12530600		End dam	40

Part NO.	Code	Detalil	Description	PKG. QTY.
AYPC.SF.1721	12530800		Subsill (use with SF 400)	16' [4.8 m]
AYPC.110.0902	10211500		Setting block (7/8"x3/32" [12x2 mm])	200
AYPC.1100903	10211600		Setting block (7/8"x1/8" [12x3 mm])	200
AYPC.110.0905	10211700		Setting block (7/8"x3/16" [12x5 mm])	200
FRK152	12520100		Gasket (3/8" glass)	820' [250 m]
FRK153	12520200		Gasket (1/4" glass)	656' [200 m]

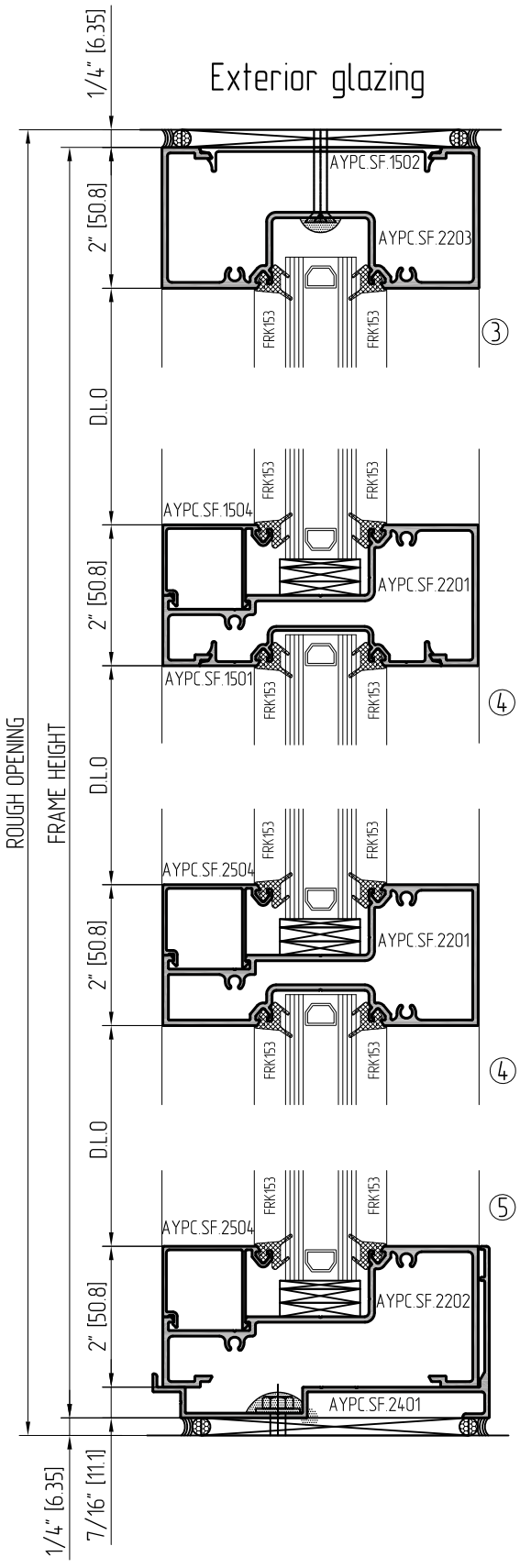
NOT TO SCALE

Key elevation



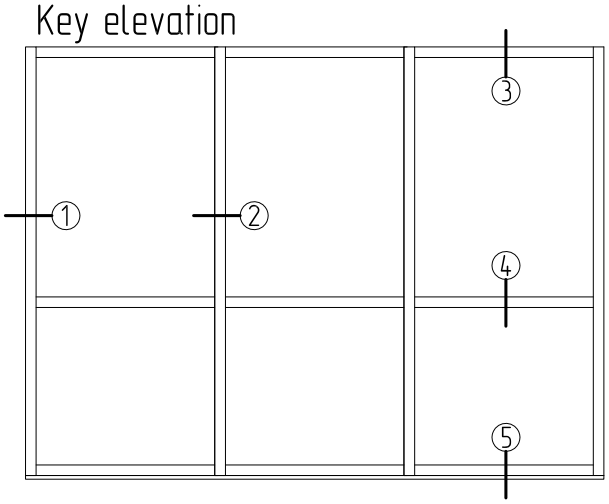


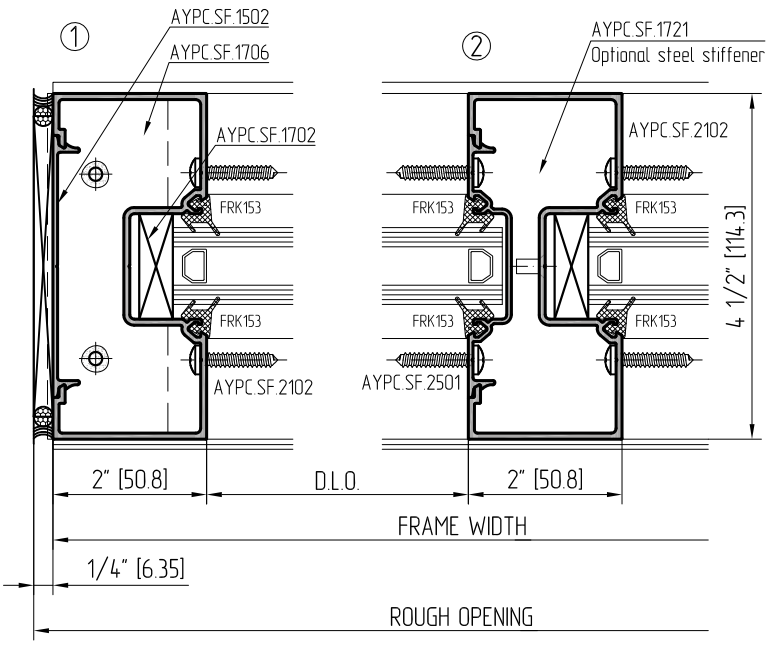
Exterior glazing



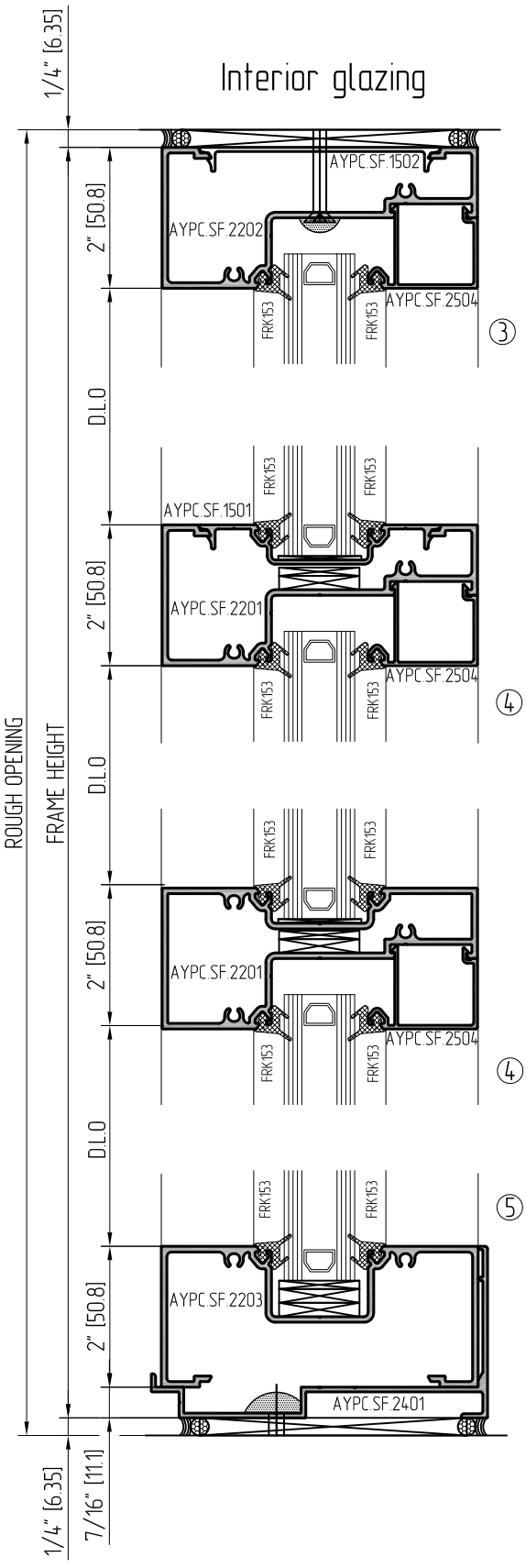
NOT TO SCALE

Key elevation



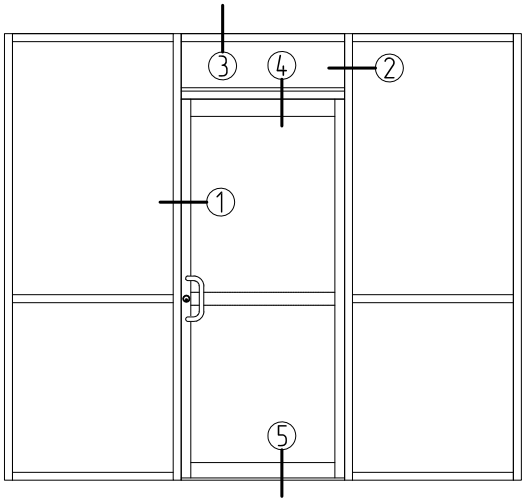


Interior glazing

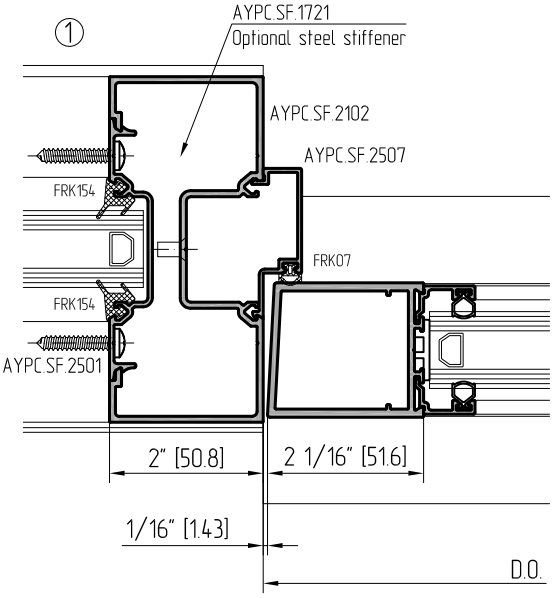


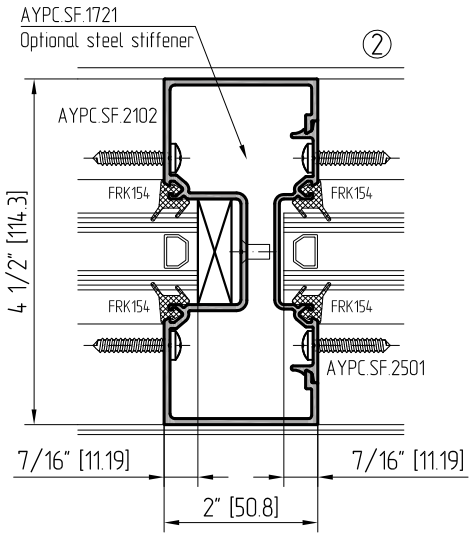
NOT TO SCALE

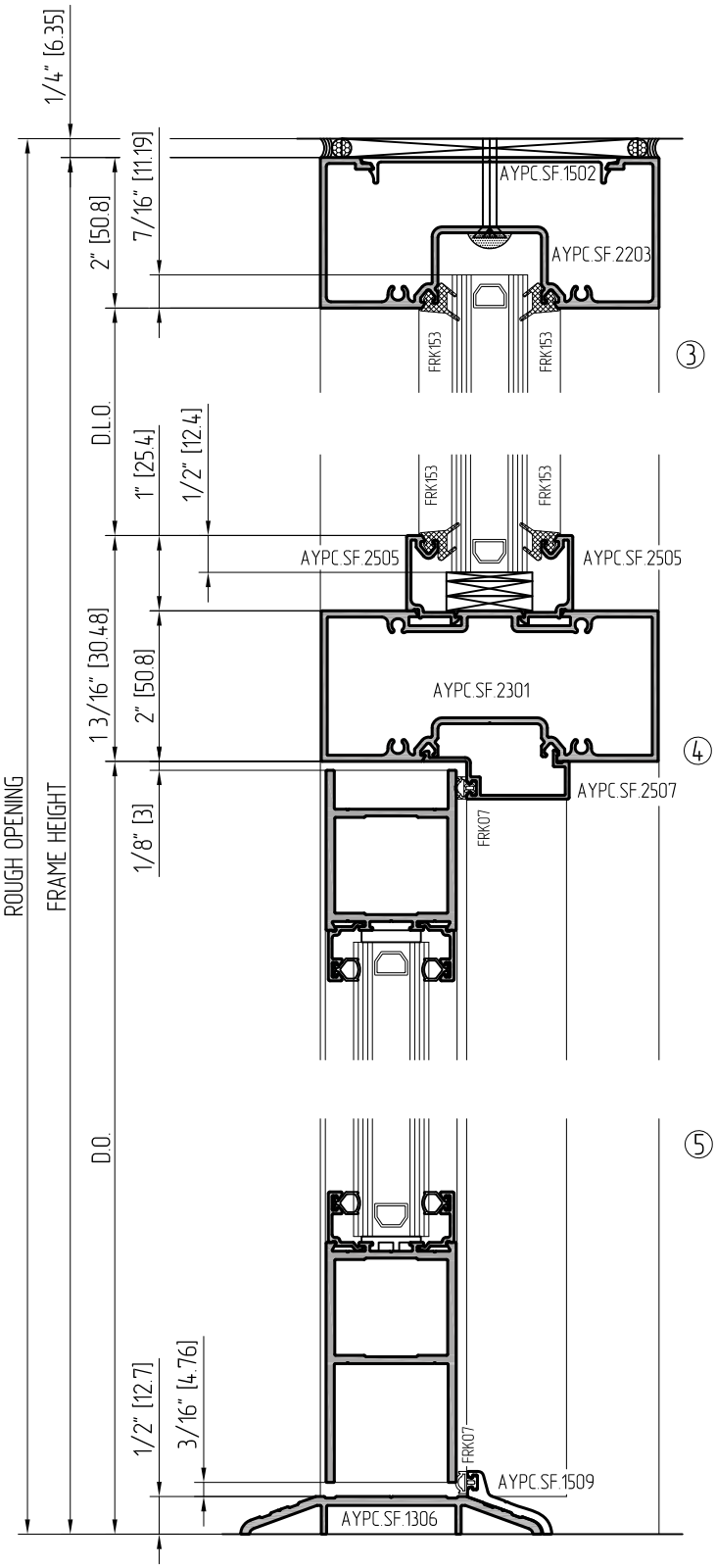
DOOR FRAME SECTIONS (1" GLASS). STOREFRONT SF 450



OFFSET HUNG DOORS

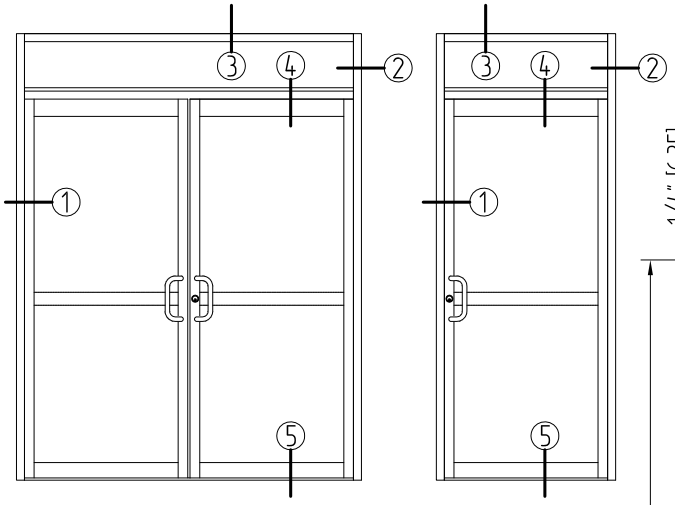




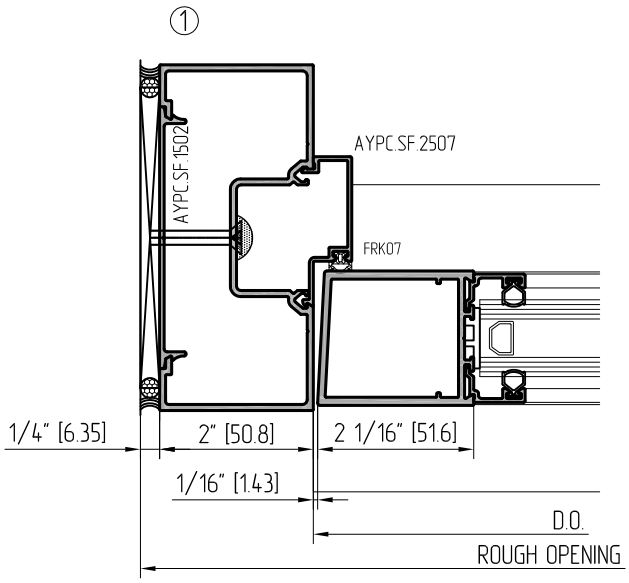


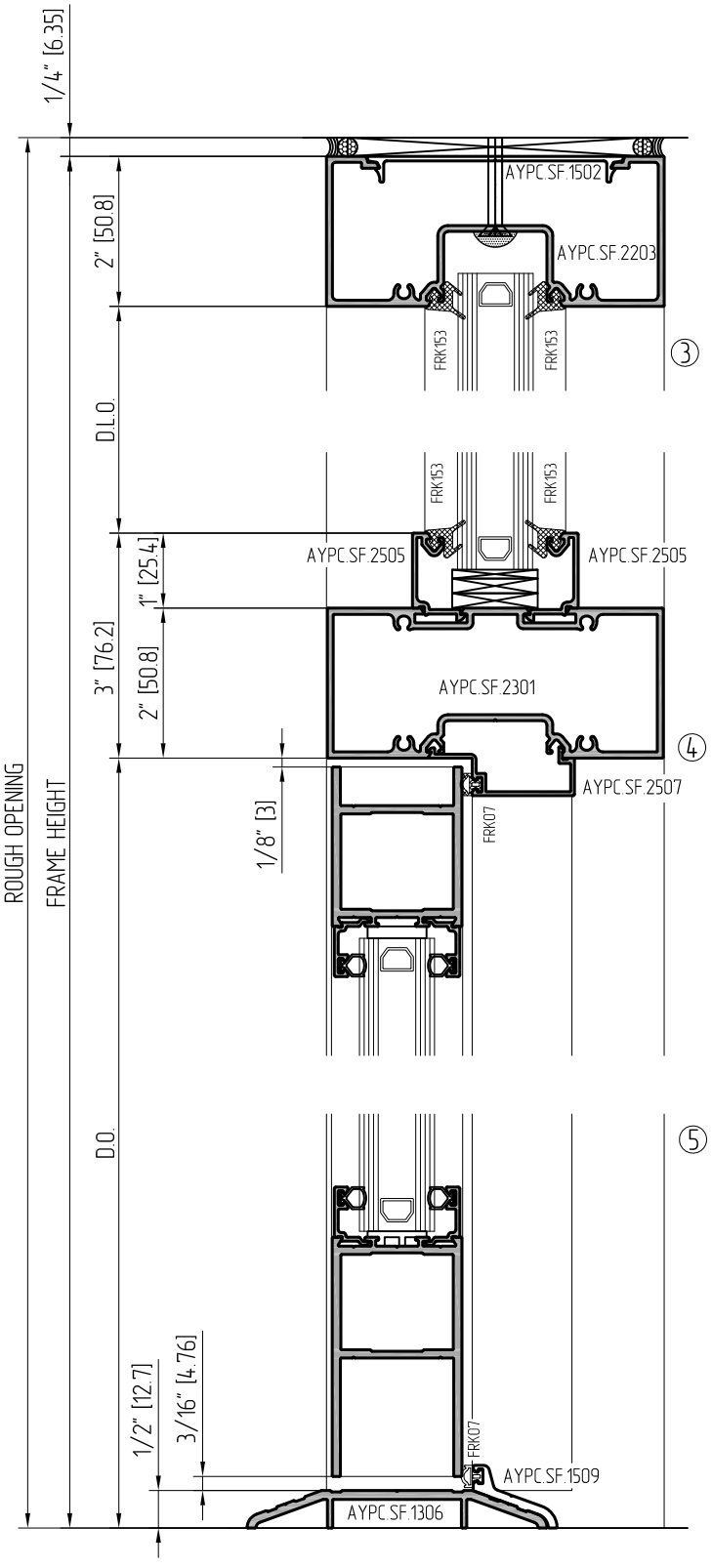
NOT TO SCALE

DOOR FRAME SECTIONS (1" GLASS). DOOR WITH TRANSOM. SF 450



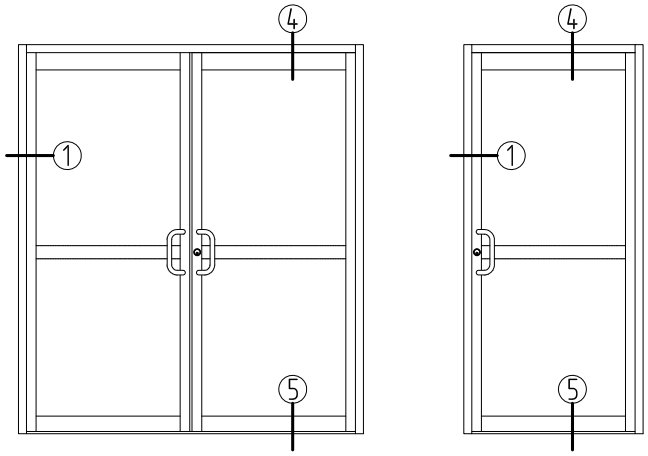
OFFSET HUNG DOORS



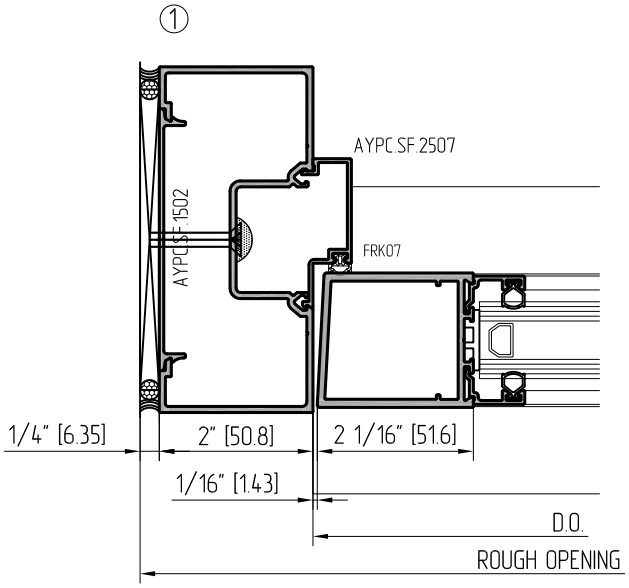


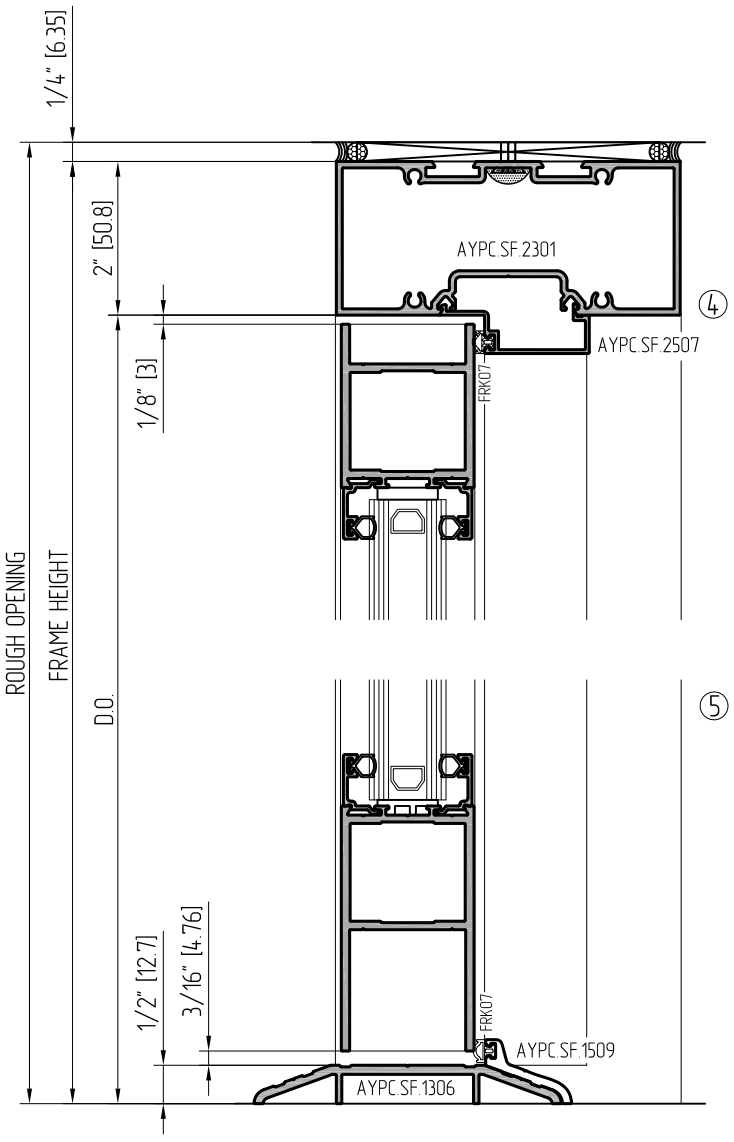
NOT TO SCALE

DOOR FRAME SECTIONS (1" GLASS). SF 450



OFFSET HUNG DOORS





Windload Charts

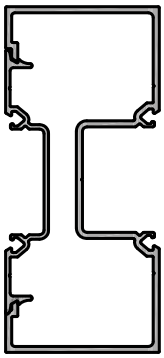
STANDART WALL VERTICAL MULLIONS FOR 1" (25)

Mullions designed for 1/175 deflection ratio and for the following allowable working stresses:

Aluminum alloy 6063-T6: allowable stress for widnload 12,929 psi (89 MPa).
Steel reinforcing: allowable stress for windload 26,666 psi (183 Mpa).

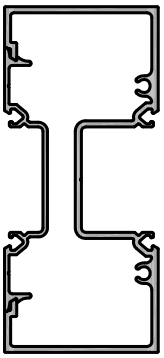
Curves represent the limit values and based on criteria for simple beam, uniformly loaded, using the distribution of wind forces on the wall with rectangular loading. Glass is not cosidered as contributing to resistance of deflection.

Limitation of vertical mullions for:
CURVES A = 15 PSF (718 Pa)
CURVES B = 20 PSF (957 Pa)
CURVES C = 25 PSF (1197 Pa)
CURVES D = 30 PSF (1436 Pa)



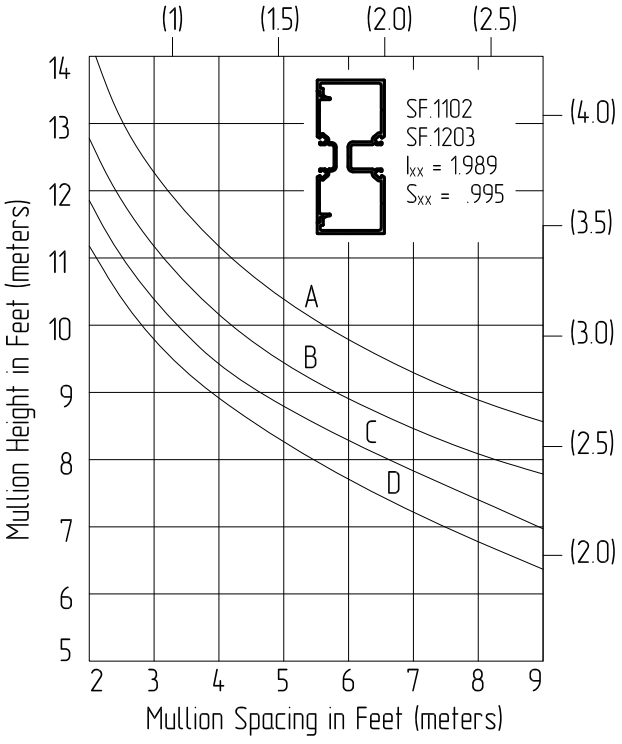
AYPC.SF.1102/AYPC.SF.1501
I=2.365 (96.44x10^4)
S=1.183 (19.39x10^3)

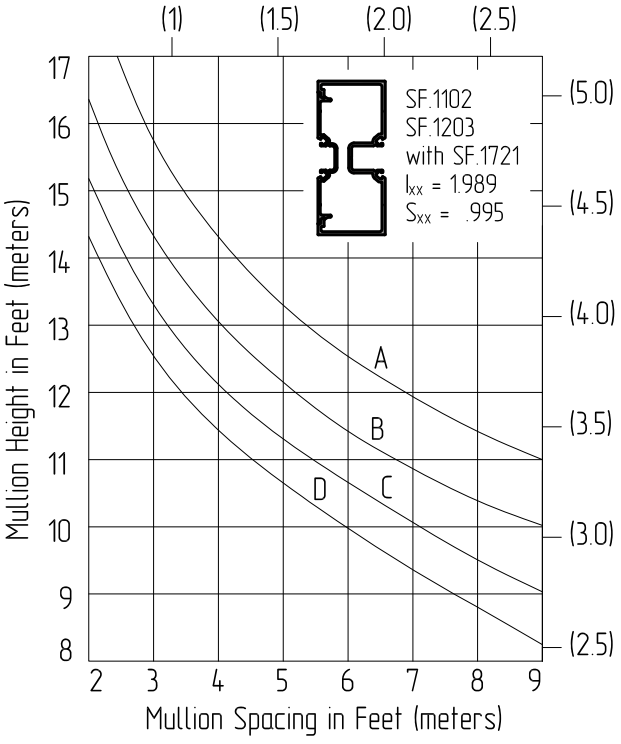
IAL+STL=4.702 (195.71x10^4)



AYPC.SF.1102/AYPC.SF.1501
I=2.365 (96.44x10^4)
S=1.183 (19.39x10^3)

IAL+STL=4.702 (195.71x10^4)



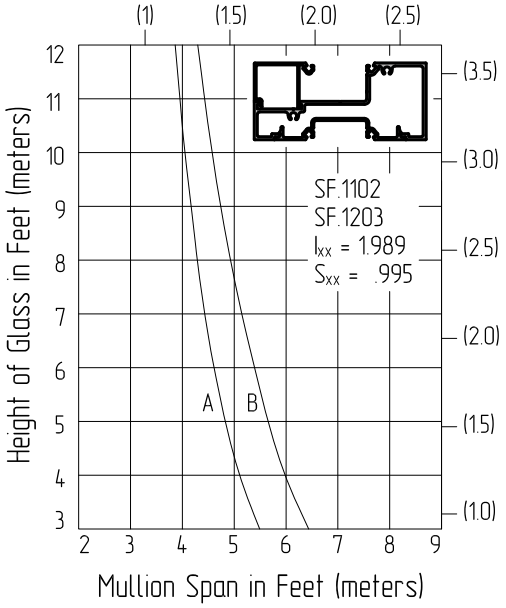


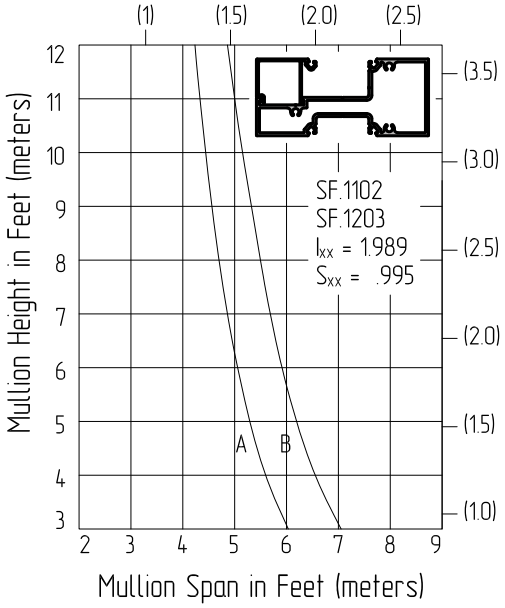
Deadload Charts

INTERMEDIATE HORIZONTAL MULLIONS

FOR 1/4" (6) OR 3/8" (10) GLAZING

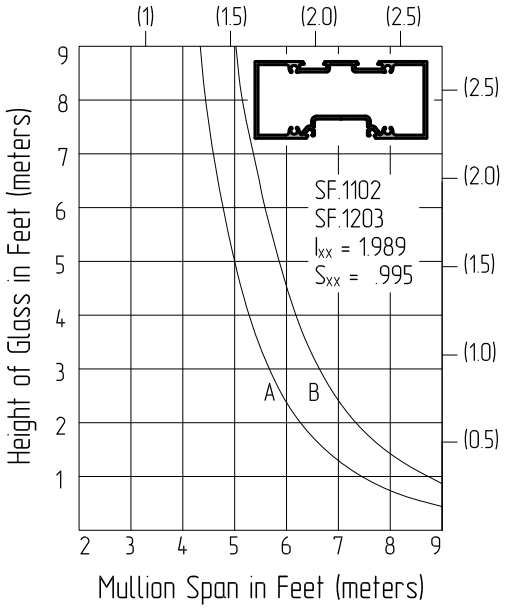
Deadload charts are based on 1/8" (3.2) maximum allowable deflection at the center point of the horizontal mullion and on a glass weight of 3.25 p.s.f. (15.87 Kg/m^2.
Glass shall rest on two setting blocks located at:
CURVES A = 1/4 points
CURVES B = 1/8 points or 8" (203.2) from corners, whichever is larger

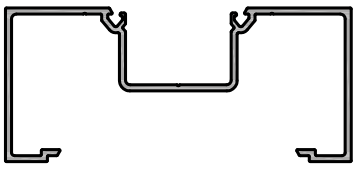
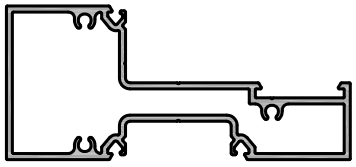
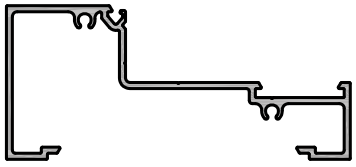
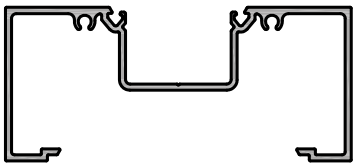
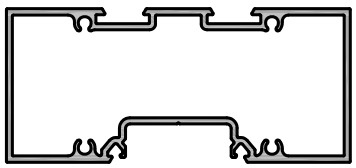
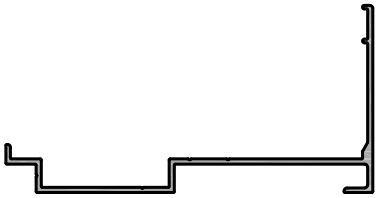
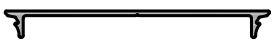


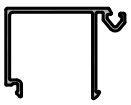


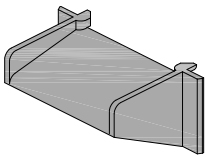
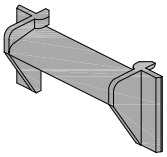
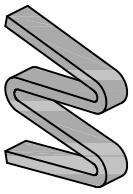
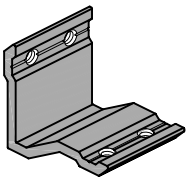
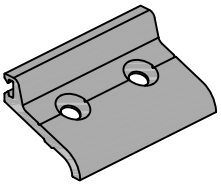
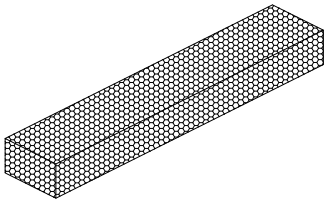
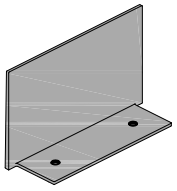
DOOR HEADERS

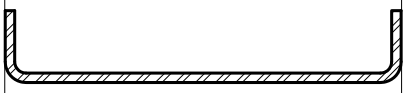
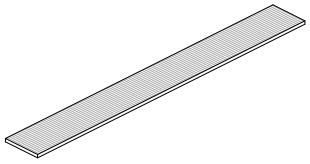
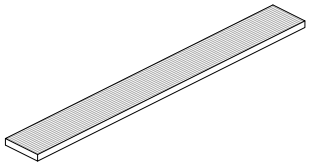
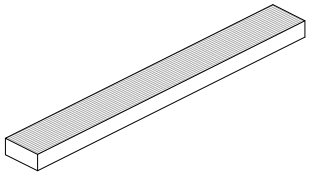
Deadload charts for door header are based on 1/8" (3.2) maximum allowable deflection at the center point of the header and on a glass weight of 3.25 p.s.f. (15.87 Kg/m^2.
Glass shall rest on two setting blocks located at:
CURVES A = 1/4 points
CURVES B = 1/8 points or 8" (203.2) from corners, whichever is larger



Part NO.	Code	Color	Detalil	Description
AYPC.SF.2102	-	A00-D6		Vertical mullion
AYPC.SF.2201	-	A00-D6		Intermediate horizontal mullion
AYPC.SF.2202	-	A00-D6		Sill/Horizontal mullion
AYPC.SF.2203	-	A00-D6		Header/Jamb mullion
AYPC.SF.2301	-	A00-D6		Offset Hung Door Header
AYPC.SF.1306	125006806	00		Threshold
AYPC.SF.2401	-	A00-D6		Subsill
AYPC.SF.2501	-	A00-D6		Vertical/Horizontal Filler
AYPC.SF.1502	125009808	A00-D6		Flush Insert

Part NO.	Code	Color	Detalil	Description
AYPC.SF.2504	-	A00-D6		Glass Stop
AYPC.SF.2505	-	A00-D6		Glass stop Door Header
AYPC.SF.2507	-	A00-D6		Door Stop
AYPC.SF.1509	12501300	00		Threshold Door Stop

Part NO.	Code	Detalil	Description	PKG. QTY.
AYPC.SF.2701	-*		Water Deflector for Deep Pocket	80
AYPC.SF.2701-01	-*		Water Deflector for Shallow Pocket	80
AYPC.SF.1702	-*		Edge Blocking	72
AYPC.SF.1703	-*		Threshold clip	36
AYPC.SF.1704	-*		Threshold Door Stop	35
AYPC.SF.1705	-*		Weep Baffle	72
AYPC.SF.2706	-*		End dam	40

Part NO.	Code	Detalil	Description	PKG. QTY.
AYPC.SF.2721	-*		Subsill (use with SF 450)	16' [4.8 m]
-	-*		Setting block (1-1/4"x3/32" [32x2 mm])	200
-	11213600		Setting block (1-1/4"x1/8" [32x5 mm])	200
-	-*		Setting block (1-1/4"x3/16" [32x5 mm])	200
FRK153	-*		Gasket (1" insulating glass)	656' [200 m]

INSTALLATION INSTRUCTIONS. GENERAL NOTES. HANDLING, STORAGE AND PROTECTION OF ALUMINUM.

The following precautions are recommended to protect the material against damage. Following these precautions will help ensure early acceptance of your products and workmanship.

1. HANDLE CAREFULLY.

All aluminum materials at job site must be stored in a safe place well removed from possible damage by other trades. Cardboard wrapped or paper interleaved materials must be kept dry.

2. CHECK ARRIVING MATERIALS.

Check for quantity and keep records of where various materials are stored.

3. KEEP MATERIAL AWAY FROM WATER, MUD AND SPRAY.

Prevent cement plaster or other materials from damaging the finish.

4. PROTECT THE MATERIALS AFTER ERECTION.

Protect erected frame with polyethylene or canvas splatter screen. Cement, plaster, terrazzo, other alkaline solutions and acid based materials used to clean masonry are harmful to the finish. If any of these materials come in contact with the aluminum, IMMEDIATELY remove with water and mild soap.

GENERAL INSTALLATION NOTES. RECOMMENDED GUIDELINES FOR ALL INSTALLATIONS:

1. REVIEW CONTRACT DOCUMENTS.

Check shop drawings, installation instructions, architectural drawings and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any field verified notes on the shop drawings prior to installing. The installation instructions are of general nature and cover most conditions.

2. INSTALLATION.

All materials are to be installed plumb, level and true.

3. BENCH MARKS.

All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Working from these datum points and lines determine:

a) The plane of the wall in reference to offset lines provided on each floor.

b) The finish floor lines in reference to bench marks on the outer building columns.

c) Mullion spacing from both ends of masonry opening to prevent dimensional build-up of daylight opening.

4. FIELD WELDING.

All field welding must be adequately shielded to avoid any splatter on glass or aluminum.
Results will be unsightly and/or structurally unsound. Advise general contractor and other trades accordingly. All field welds of steel anchors must receive touch-up paint (zinc chromate) to avoid rust.

NOTE: Dimensions in parentheses [ ] are millimeters unless otherwise noted. Other metric units shown in this manual are:
m – meter;
Kg – kilogram;
Pa – pascal; KPa – kilopascal; MPa – megapascal;
N – newton.

5. SURROUNDING CONDITIONS.

Make certain that construction which will receive your materials is in accordance with the contract documents. If not, notify the general contractor in writing and resolve differences before proceeding with work.

6. ISOLATION OF ALUMINUM.

Aluminum to be placed in direct contact with uncured masonry or incompatible materials should be isolated with a heavy coat of zinc chromate or bituminous paint.

7. SEALANTS.

Sealants must be compatible with all materials with which they have contact, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning/priming, tooling, adhesion, etc. It is the responsibility of the Glazing Contractor to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. This is required on every project.

8. FASTENING.

Within the body of these instructions "fastening" means any method of securing one part to another or to adjacent materials. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements perimeter and anchor fasteners are not specified in these instructions. For perimeter and anchor fasteners refer to the shop drawings or consult the fastener supplier.

9. BUILDING CODES.

Due to the diversity in state/provincial local and federal laws and codes that govern the design and application of architectural products it is the responsibility of the individual architect owner and installer to assure that products selected for use on projects comply with all the applicable building codes and laws. AluminTechno exercises no control over the use or application of its products, glazing materials and operating hardware and assumes no responsibility thereof.

10. WATER HOSE TEST.

As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 m^2) a water hose test should be conducted in accordance with AAMA 501.2 specifications to check the installation. On all jobs the hose test should be repeated every 500 square feet (46.5m^2) during the glazing operation.

11. COORDINATION WITH OTHER TRADES.

Coordinate with the general contractor any sequence with other trades which offset curtain wall installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters etc.).

12. CARE AND MAINTENANCE.

Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA. 609.1 for anodized aluminum and 610.1 for painted aluminum.

13. SEALANTS.

All sealants referenced in these instructions must be a one part elastomeric silicone and must be applied according to the silicone manufacturer's recommendations.

14. APPLICATION.

Structural silicone must be applied from the interior and weatherseal from the exterior after the interior structural silicone has fully cured.

16. MAXIMUM ALLOWABLE STRESS ON SILICONE.

The maximum allowable size of the glass light is controlled by the width and depth of the silicone joint combined with the specified design windload (PSF or Pa). The stress on the structural silicone must not exceed 20 PSI (137 KPa) for a 6:1 safety factor. Check Structural Silicone Chart in the Architectural Design Manual for this product series.

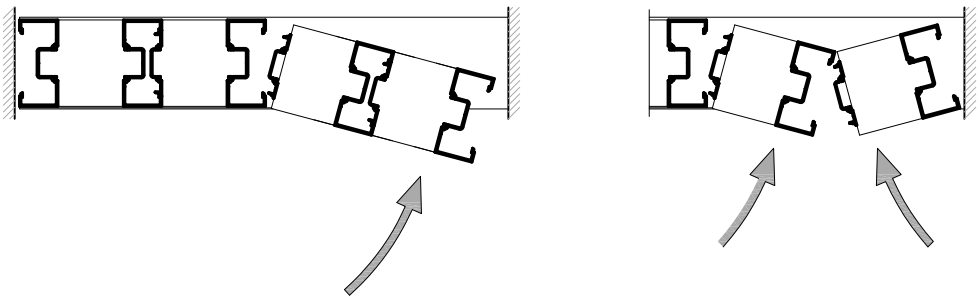
17. ARCHITECT.

It is the responsibility of the architect to secure approval of the system and request from the Glazing Contractor the compatibility and adhesion test reports described below.

18. GLAZING CONTRACTOR.

It is the responsibility of the glazing contractor to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. This is required on every project.

NOTE! Frames may be shop fabricated and shipped to job site partially or totally assembled. Systems feature screw race and allows for interior or exterior glazing. Frames are fabricated in units and snapped together. Each unit must have at least one vertical deep pocket to allow for glazing. Never allow two shallow pockets to face each other. Plan units accordingly. See DETAIL A and B.



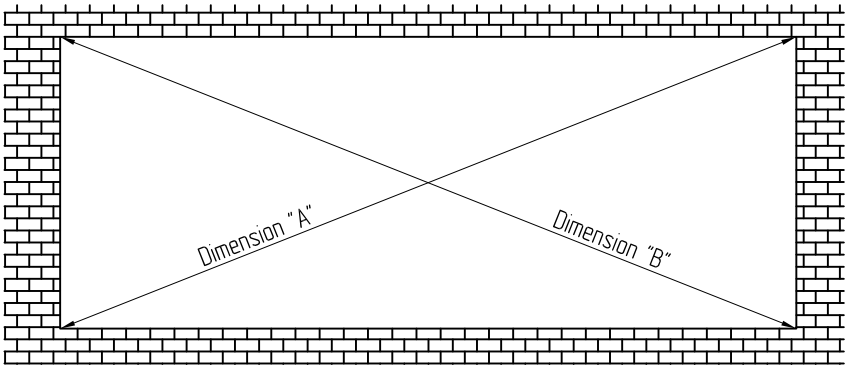
DETAIL A

FABRICATION AND ASSEMBLY

1. Measure Rough Opening to determine cut length of frame components.

1.1 **DETERMINE SQUARENESS.** Check opening for squareness to Plumb at both ends. Frames must be installed in a true rectangle.

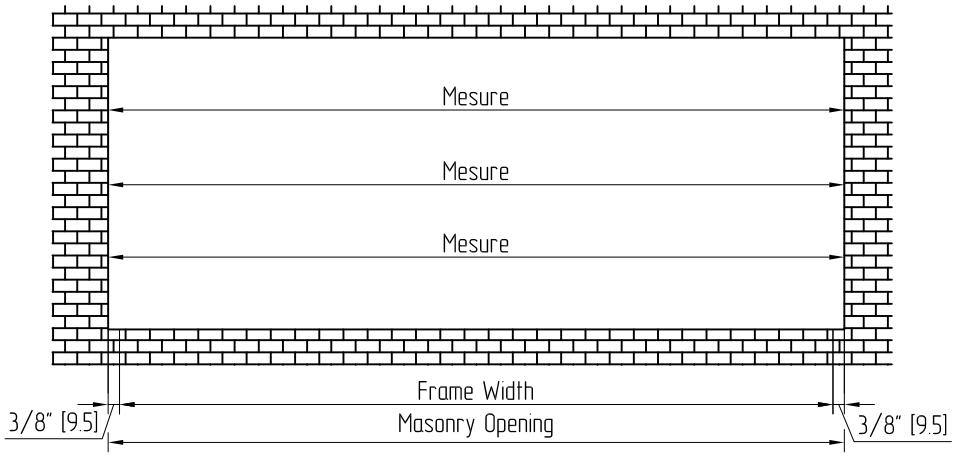
NOTE! Within any rectangular opening there should be no more than 1/8" difference between dimension **"A"** & **"B"**.



DETAIL B

1.2 **DETERMINE FRAME WIDTH.** Measure the width of the masonry opening at top, middle and bottom. Select the smallest dimension measured and subtract 1/2" to determine frame width.

NOTE! Maximum variation of mullions from plumb or horizontals from level should not exceed 1/8" in 12'-0" or 1/4" in any single run.



DETAIL C

1.3 **DETERMINE FRAME HEIGHT.** Measure the height of masonry opening several times along the entire length of opening. Select the smallest dimension for the masonry opening height.

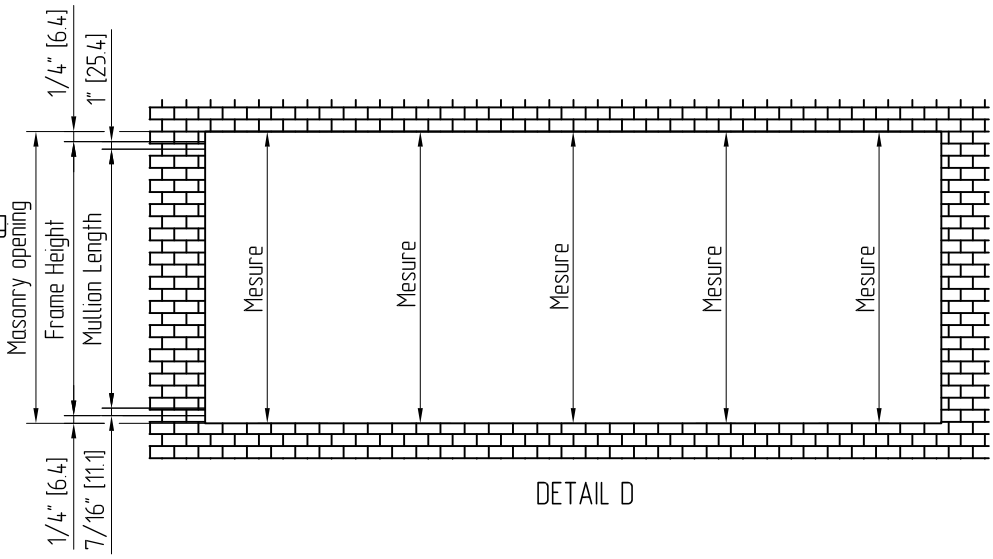
CONTINUOUS HEAD AND SILL

Subtract:

1/2" from the masonry opening height.

1/4" caulk joint at head above head.

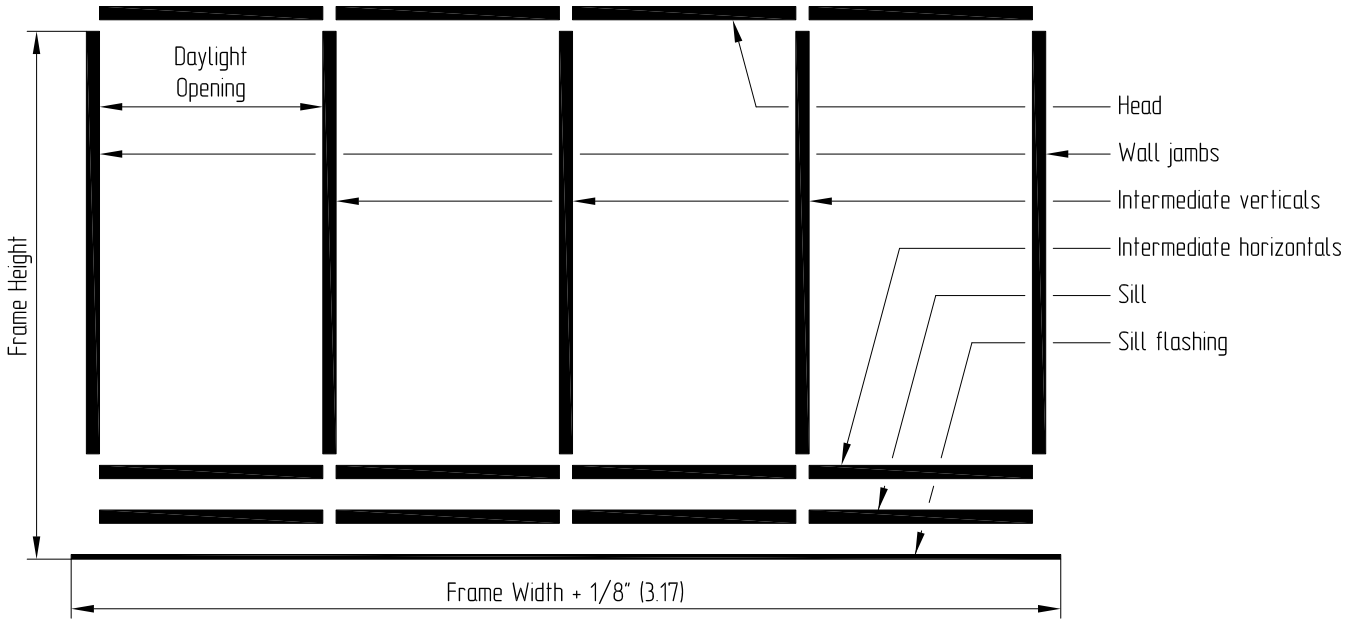
1/4" caulk joint below sill receptor.



DETAIL D

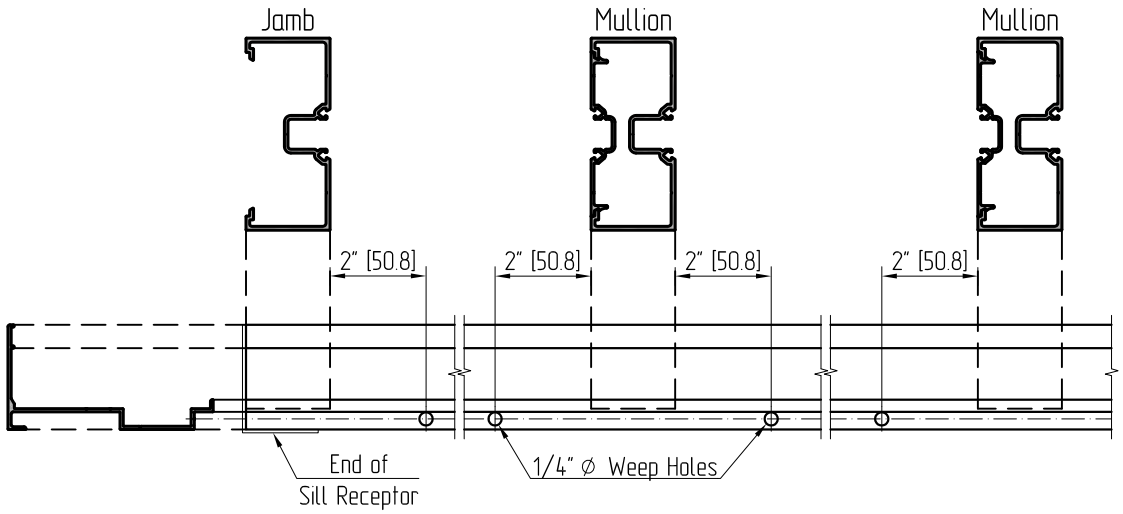
FABRICATION AND ASSEMBLY

2. Cut subsill to size: Overall Frame Width plus 1/8" (3.2). Subsill must extend 1/8" (3.2) exterior of last wall jamb to allow last panel installation. Subsill runs through. **See DETAIL E.**



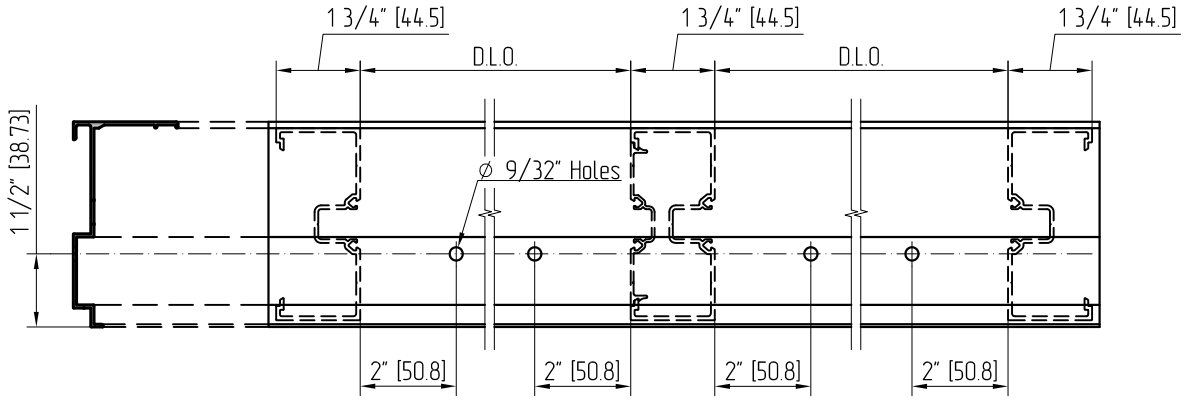
DETAIL E

2.1 Drill ∅ 1/4" in AYPC.SF.1401 for weep holes. Weep hole dimensions are located approximately 2" from edge of each vertical member. **See DETAIL F**.



DETAIL F

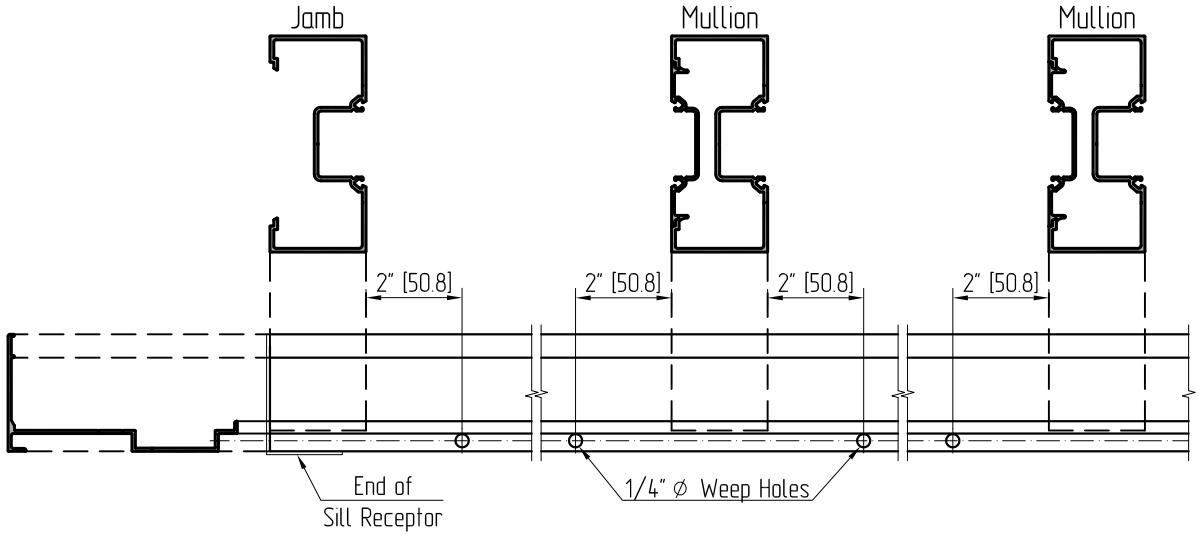
Drill ∅ 9/32" holes for anchoring AYPC.SF.1401 to substrate.
Anchoring hole dimensions are located approximately 2" each side of vertical mullion. **See DETAIL G**.



DETAIL G

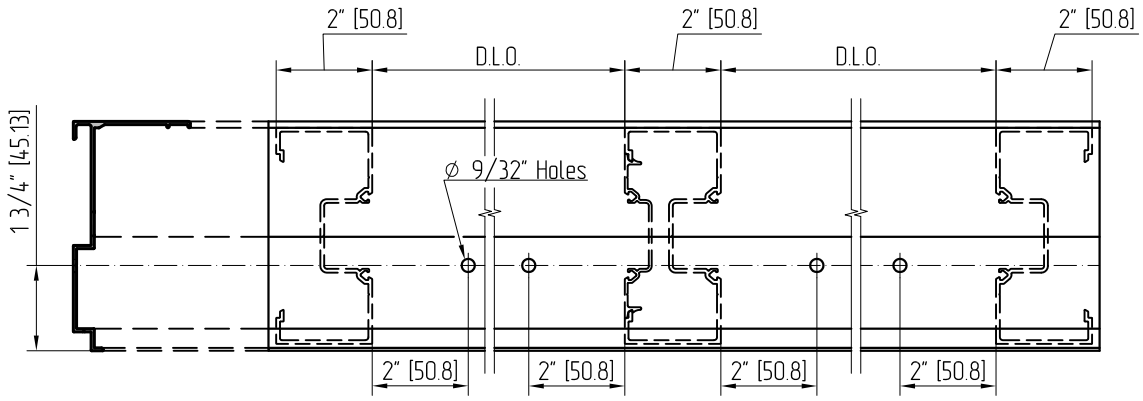
NOTE:
The anchor holes shown above are for illustration only.

2.2 Drill ∅ 1/4" in AYPC.SF.2401 for weep holes. Weep hole dimensions are located approximately 2" from edge of each vertical member. **See DETAIL H.**



DETAIL H

Drill ∅ 9/32" holes for anchoring AYPC.SF.2401 to substrate.
Anchoring hole dimensions are located approximately 2" each side of vertical mullion. **See DETAIL I.**



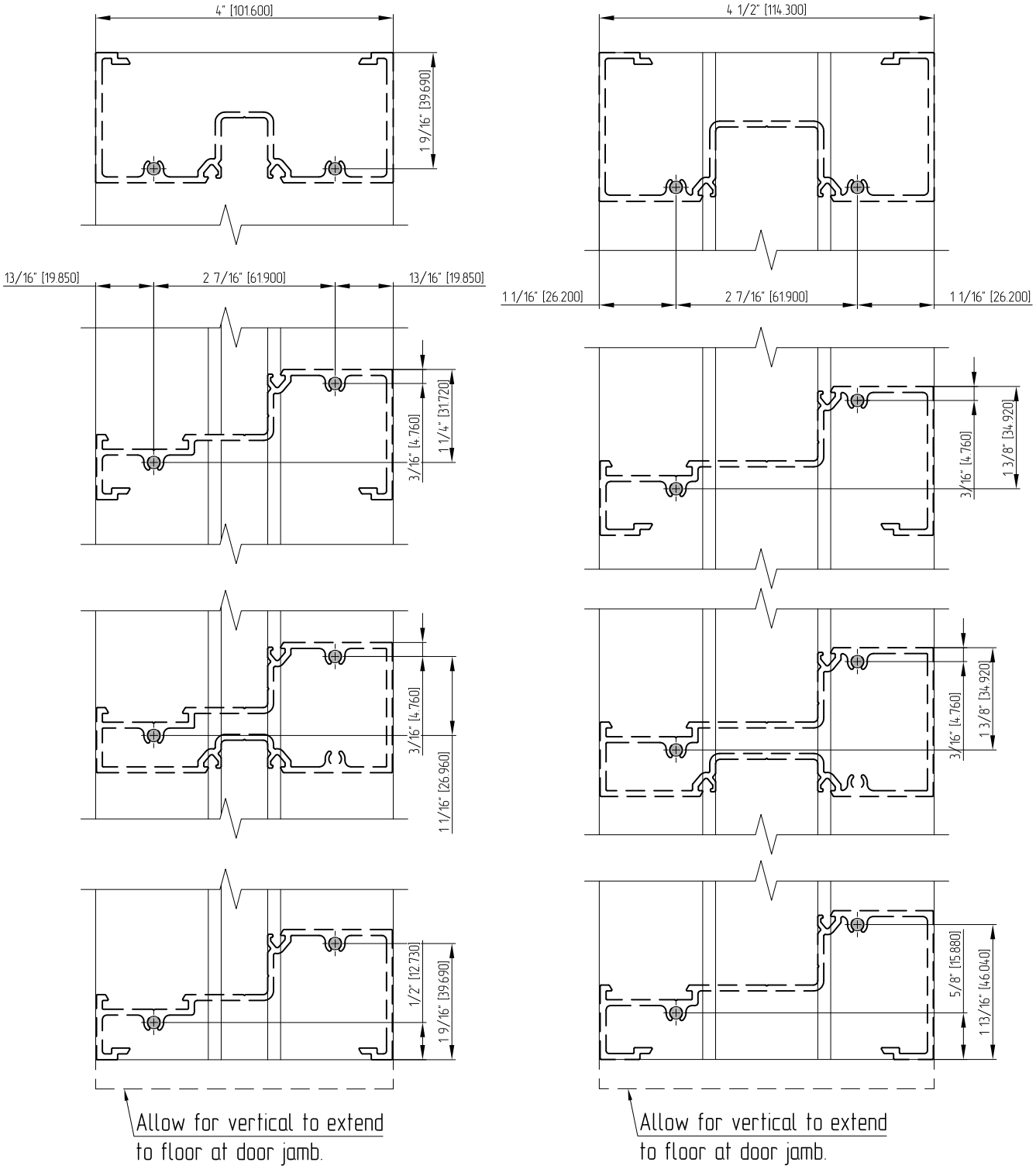
DETAIL I

NOTE:
The anchor holes shown above are for illustration only.

FABRICATION AND ASSEMBLY

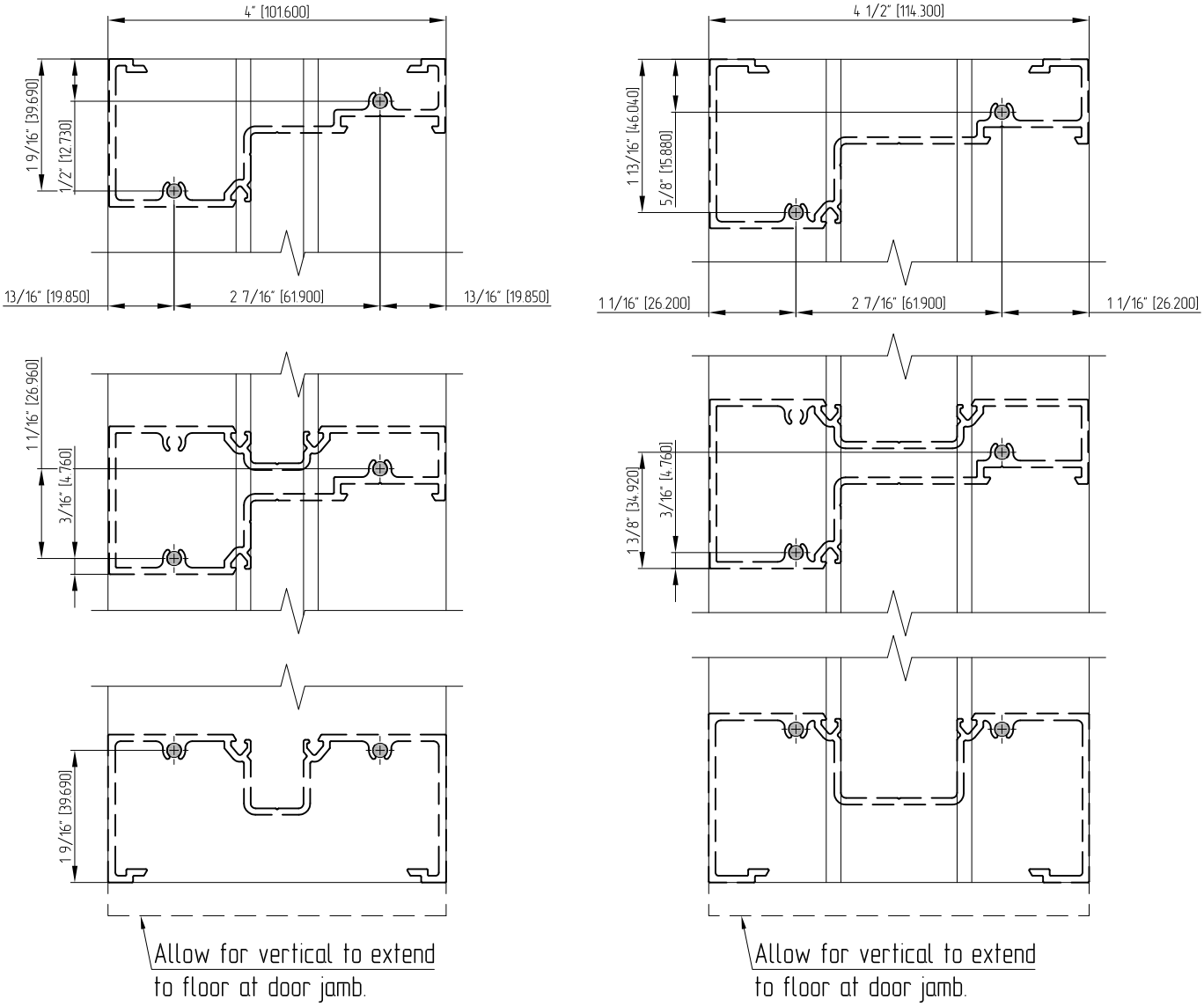
3. Cut verticals to size: Overall Frame Height minus 7/16" (11.1). Verticals run through. **See DETAIL J, K.**

3.1 Exterior glazing. Screw race application



DETAIL J

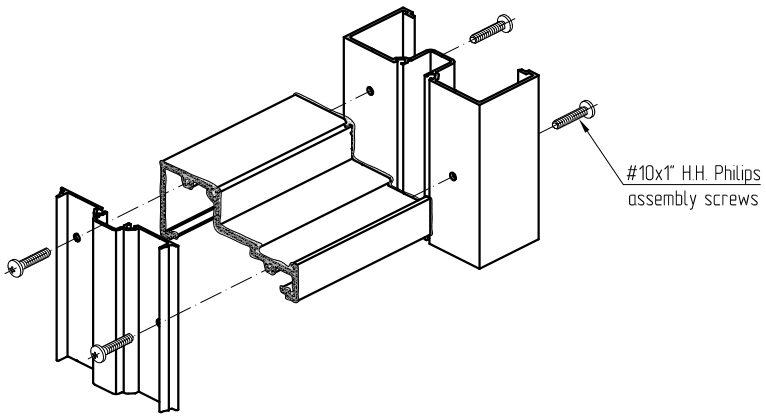
3.2 INTERIOR GLAZING. SCREW RACE APPLICATION



DETAIL K

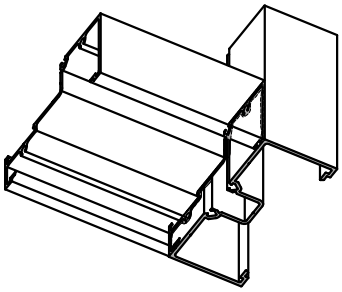
4. Cut horizontals to size: Daylight Opening. Horizontals run between verticals. Cut horizontal glazing beads 1/32" (0.8) undersize for easier installation.
5. Apply silicone to edge of all horizontal members and assemble panels using screws provided. See DETAIL L, M. Never allow two shallow pockets to face each other. Tool excess silicone.

6. Apply silicone to edge of all horizontal members and assemble panels using screws provided. See DETAIL L. Never allow two shallow pockets to face each other. Tool excess silicone.



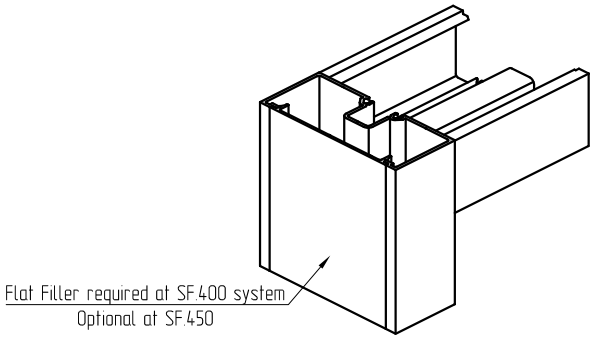
DETAIL L

7. After panels are assembled, apply and tool bead of silicone to joint between verticals and sill members from underside, to ensure a water tight installation. See DETAIL M.



DETAIL M

8. Apply jamb filler to back of wall jamb. See DETAIL N.

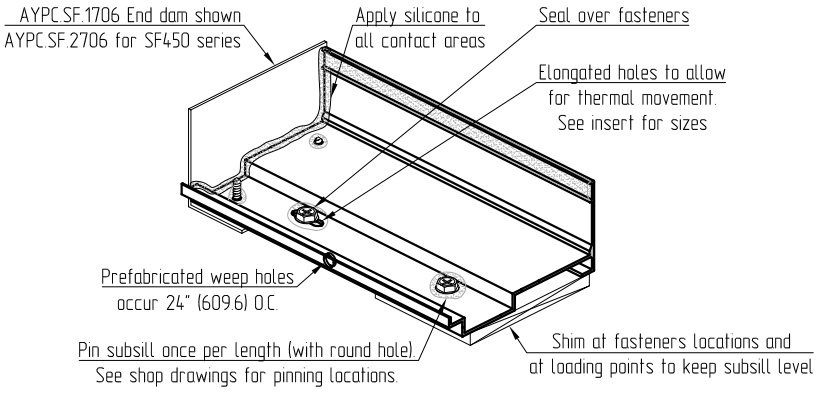


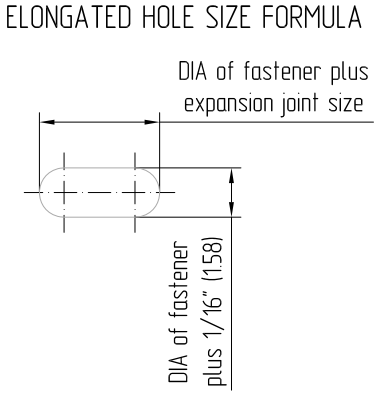
Flat Filler to be full length of jambs at SF.400.
If used at SF.450 cut 6" (152.4) long.
Place at centers of jamb anchors.

DETAIL N

When Entrances occur install Entrance Frames first. See Entrance Doors and Frame Installation Instructions.

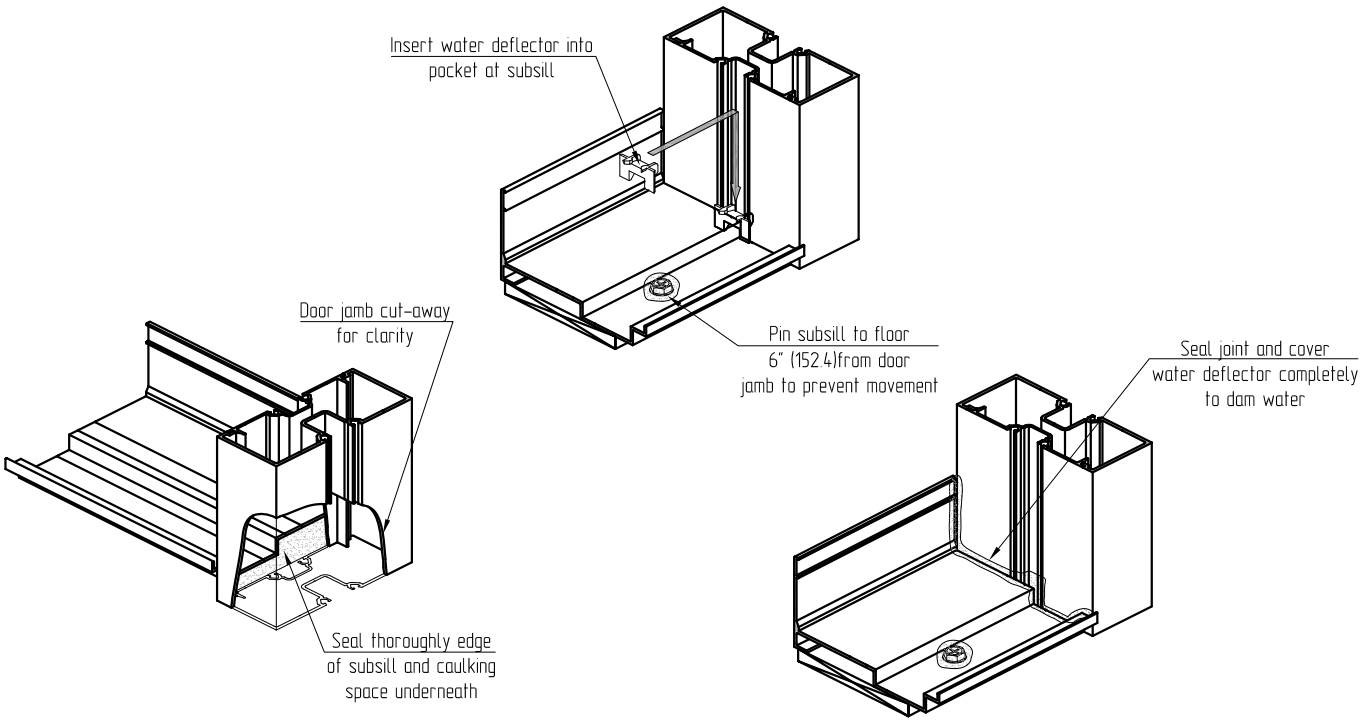
9. Set subsill into place, shimmed as required for leveling, and anchor to structure. Locate fasteners 6" (152.4) each side of vertical and 24" (609.6) O.C. or as required. Holes for fasteners should be elongated laterally to allow for thermal movement. Pin subsill to structure at one point only per cut length.
Note: See shop drawings for proper location of pinned connections. Subsill should be shimmed at fastener locations, underneath verticals and at setting block locations. Seal all joints and over heads of fasteners. See DETAIL O.





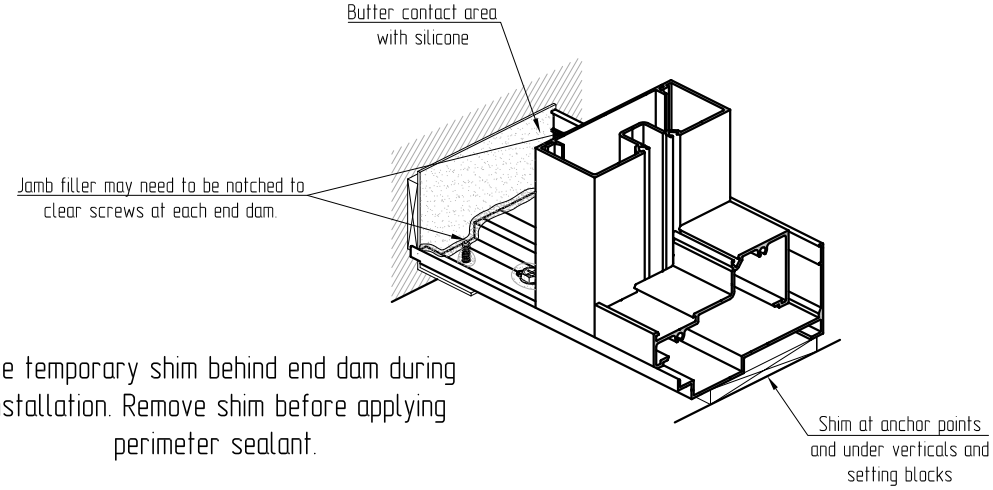
DETAIL O

Subsill butts against door jambs, where they occur.
NOTE: End of subsill that butts against door jamb cannot be dammed. Special care should be taken to control water infiltration at this point. See DETAIL P. Infiltrated water from upper lights must be kept out of jambs.



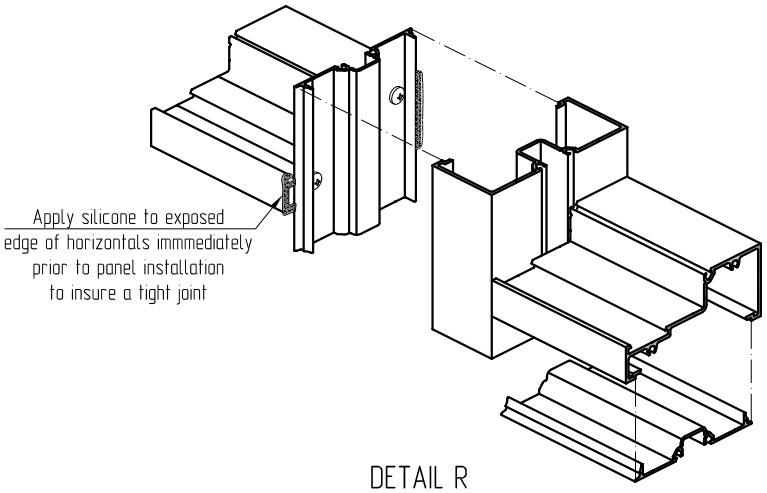
DETAIL P

10. If there are no entrances, start frame installation at wall jamb unit. Apply silicone to end dam contact areas. See DETAIL K.
Set first panel interior subsill and into place.
NOTE: Temporarily shim behind end dam to push it tight against wall jamb. See DETAIL R.
Panel must be pushed against subsill upturned back wall. See DETAIL GG, page 04.20. Plumb and shim unit and fasten it to structure. Locate header fasteners 6" (152.4) each side of verticals and no more than 24" (609.6) O.C. Secure wall jamb through glass pocket as required to limit deflection.
Always shim at anchor points.



DETAIL Q

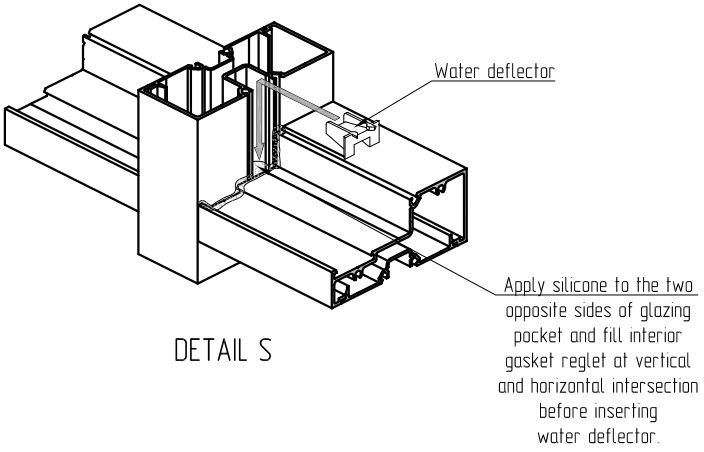
11. Install remainder of panels, one by one, snapping them together. See DETAIL R.
NOTE: The last two panels may required to be installed together as a unit to fit into opening. See Detail A, page 04.03.



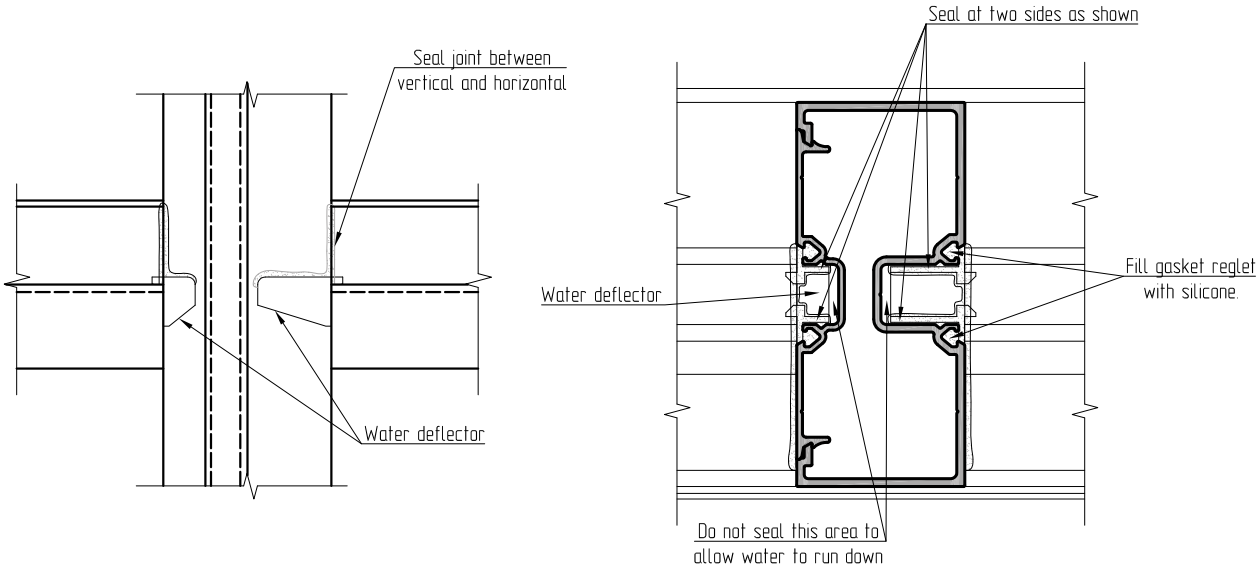
DETAIL R

12. Apply silicone to vertical glazing pocket and gasket reglet at vertical/horizontal intersection. Silicone must be applied to two opposite sides of pocket only clearance at inner wall will allow infiltrated water to run down to subsill. Insert water deflector into glazing pocket and slide it down to position. Top of deflector must be flush with horizontal glazing pocket. See DETAIL S and DETAIL T.

NOTE: Water deflectors at door jamb must be sealed all around to prevent water from running to floor (water will drain to other end).



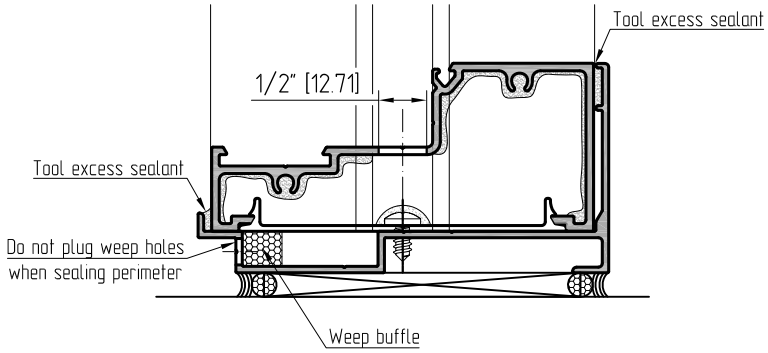
DETAIL S



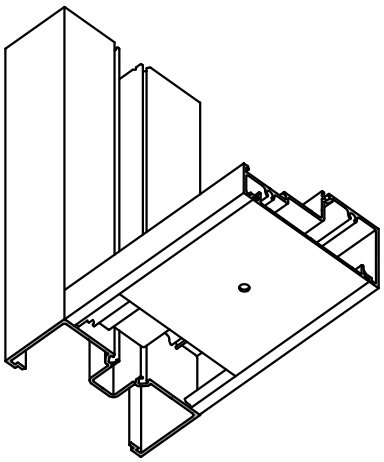
DETAIL T

13. Seal joints between panels and subsill at both interior and exterior. See DETAIL U, V, W.

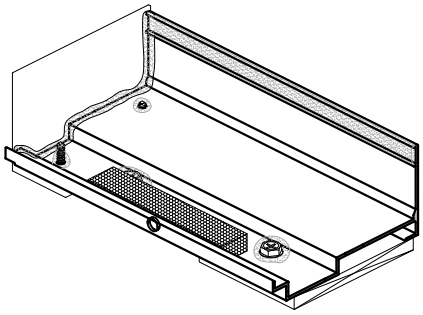
Push panels tightly
against back of
subsill prior to anchoring.



DETAIL U



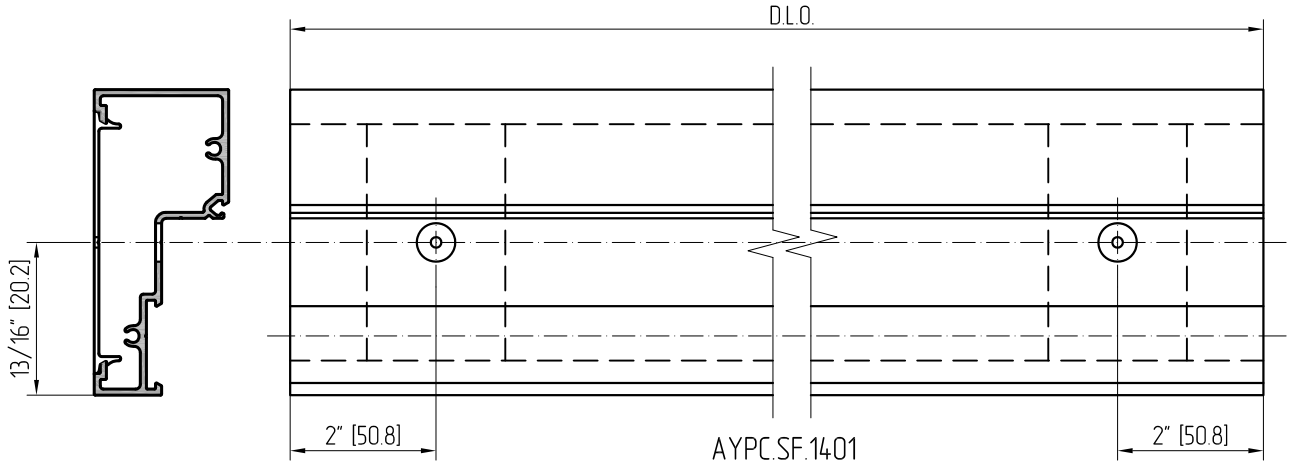
DETAIL V



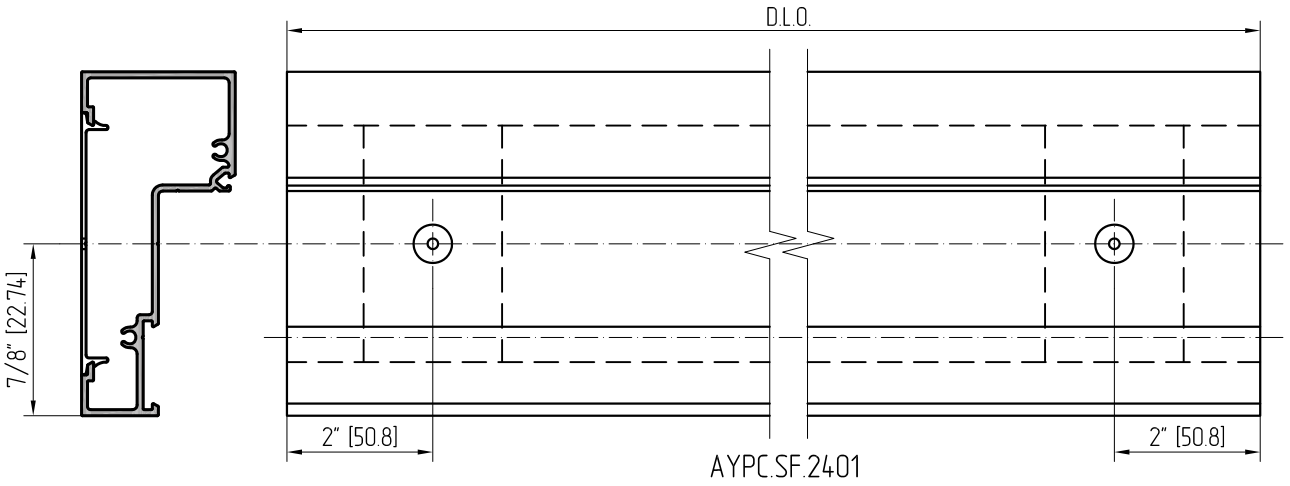
DETAIL W

14. When interior glazing a multistory building exterior perimeter sealing must be done before glazing, unless perimeter seal is to be applied from the exterior, as a secondary operation.

15. Cut sill members to length as determined in **DETAIL E**.
Drill holes for attachment to subsill. See DETAIL U.



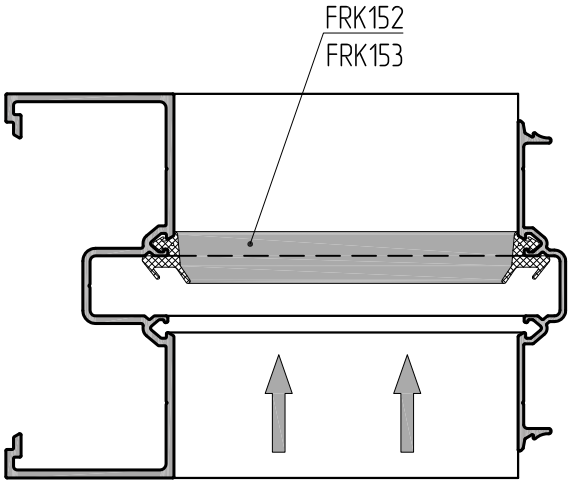
AYPC.SF.1401

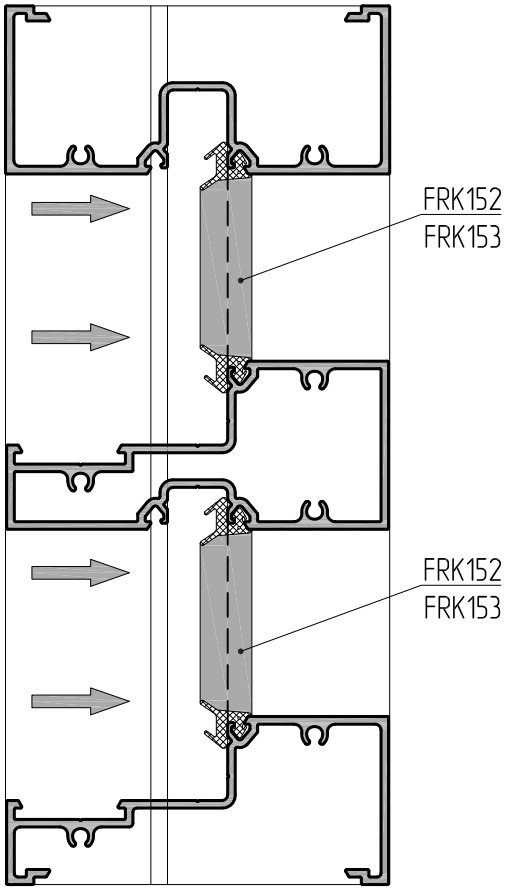


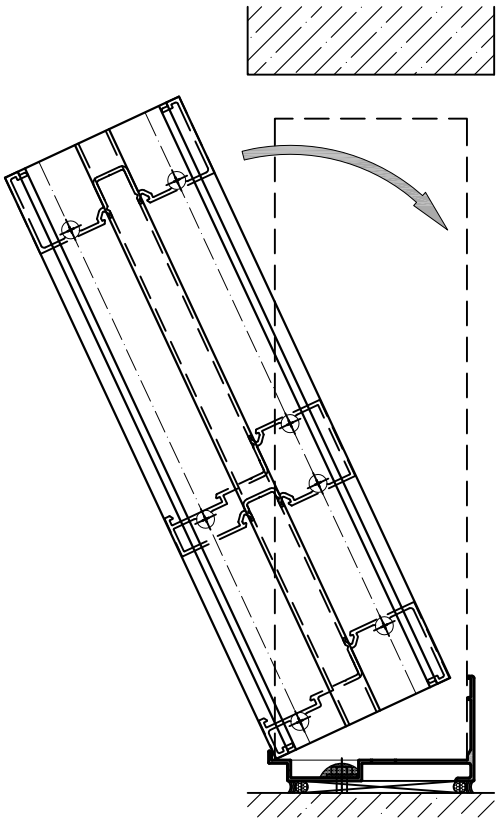
AYPC.SF.2401

DETAIL X

16. Install gaskets into assembled frames as shown in **DETAIL Y**.







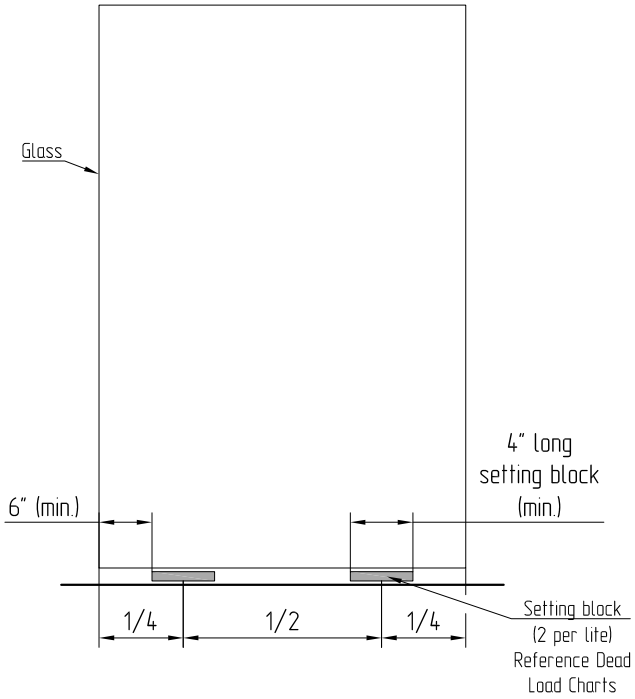
DETAIL Y

REMOVE ALL TRASH FROM GLAZING POCKETS AND REGLETS

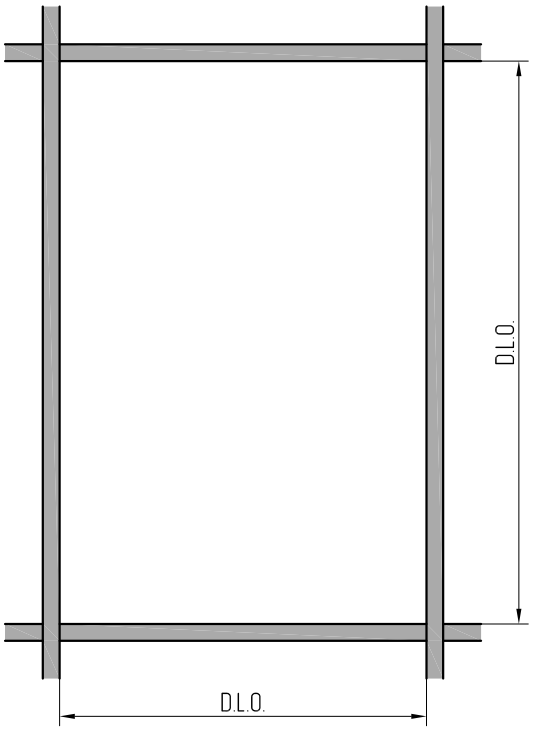
17. Set glass on setting blocks positioned at 1/4 points in opening. Reference "Dead Load Charts" for location of setting blocks at horizontal. Setting blocks should not be placed closer than 6" from the edge of glass for typical conditions.

GLASS SIZE = DAYLIGHT OPENING (D.L.O.) + 5/8"

Note: This formula does not allow for undersized or out of square daylight openings. The glass manufacturer must indicate the specific glazing requirements for the material being used.



DETAIL Z

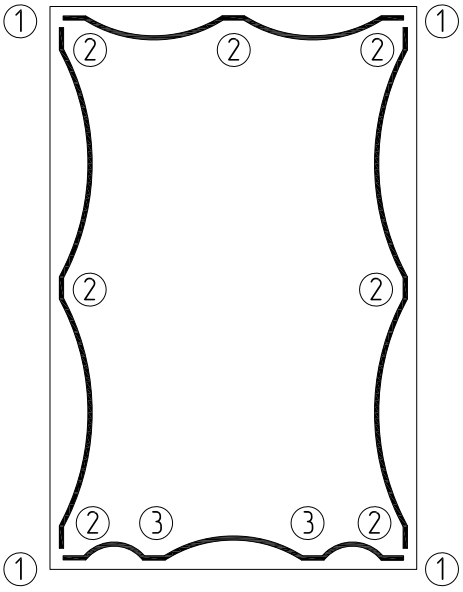


Cut horizontal and vertical gaskets D.L.O. + 1/8" per foot of D.L.O. to allow for shrinkage. (see DETAIL AA).

① Vertical gaskets run between horizontal gaskets

② Start head and jamb gaskets at center of opening and corners.

③ Start sill gasket at setting block location and corners.



DETAIL AA

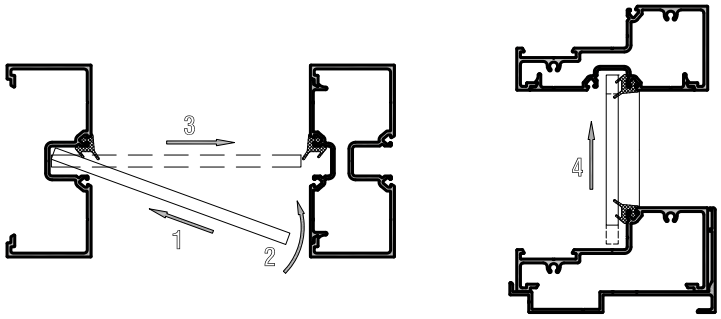
GLAZING

18. Glass Sizes *:

SF.400 for 1/4' (6.4) glass: Daylight Opening + 5/8" (15.9)

SF.450 for 1" (25) glass: Daylight Opening + 7/8" (22.2)

*These formulae do not account for glass tolerances. Consult glass manufacturer before ordering glass. See Door Frame instructions for glass size at transom.



DETAIL BB

19. EXTERIOR GLAZING

19.1 Cut glazing gaskets to size. Gaskets should be 1/8" longer per foot of aluminum member to allow for shrinkage. Same gaskets are used at interior and exterior.

19.2 Install interior gasket. Vertical gasket runs through. Start at corners and work towards center. Tight-butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to abutting to vertical gaskets.

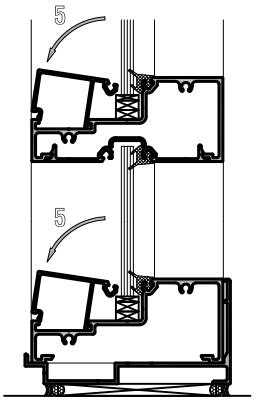
19.3 Set glass in place following the four step procedure. **See DETAIL BB**. Be careful not to disturb interior gasket while installing glass. Center glass in the opening.

19.4 Locate setting blocks in horizontal/sill member. Check deadload charts and shop drawings for correct setting block locations.

Rest glass on setting blocks pressed against installed gaskets.

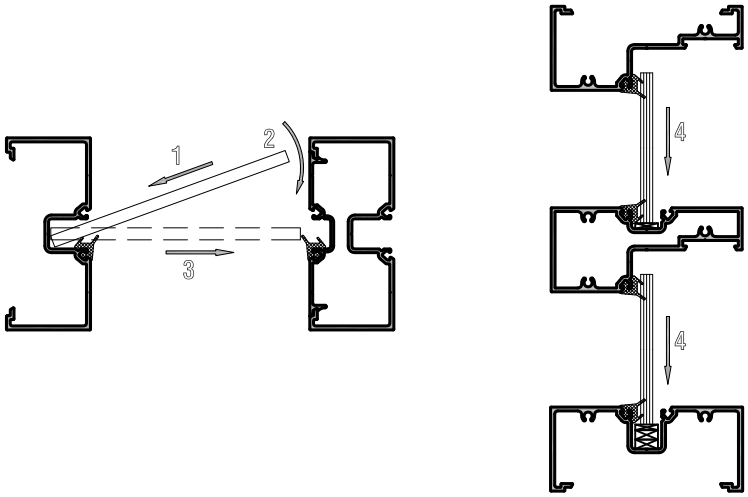
19.5 Snap-in glazing beads. **See DETAIL CC**.

19.6 To prevent glass from shifting in the opening one "W" side block should be installed into deep glass pocket of the vertical at center point or as recommended by glass manufacturer. **See DETAIL GG**.



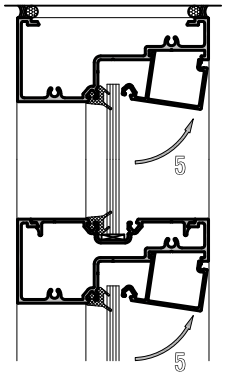
DETAIL CC

20. INTERIOR GLAZING



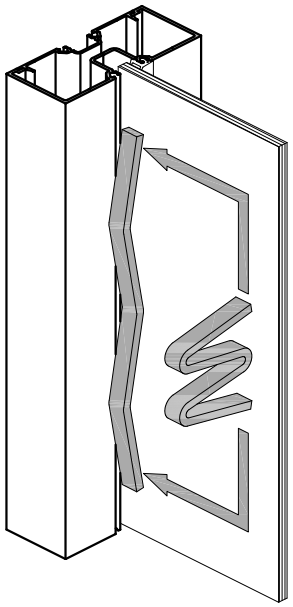
DETAIL DD

20.1 Cut glazing gaskets to size. Gaskets should be 1/8" longer per foot of aluminum member to allow for shrinkage. Same gaskets are used at interior and exterior.
20.2 Insert setting blocks, two per glass light, into horizontal and sill members. Check deadload charts and shop drawings for correct setting block locations.
20.3 Install exterior gaskets. Vertical gaskets run through. Start at corners and work towards center. Tight butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to abutting to vertical gaskets.
20.4 Set glass in place following the four step procedure. See DETAIL DD. Be careful not to disturb exterior gasket while installing glass. Center glass into opening and rest on setting blocks pressed against exterior gasket.
20.5 Snap-in glazing beads. See DETAIL FF.



DETAIL FF

21. To prevent glass from shifting in the opening one "W" side block should be installed into deep glass pocket of the vertical at center point or as recommended by glass manufacturer. Side blocking is recommended to prevent glass from shifting in pocket. See DETAIL GG.



DETAIL GG

22. Install remaining gaskets. Vertical gaskets run through. Start at corners and work toward center. Tight butt joined corners are critical to avoid leakage. Seal ends of horizontal gaskets prior to abutting to vertical gaskets.

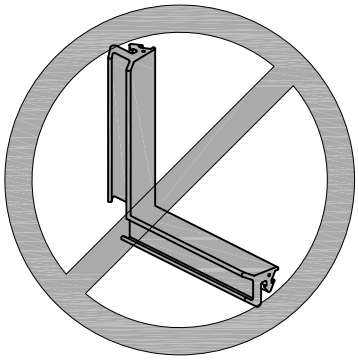
23. GLAZING

CORNER TREATMENT

Glazing gaskets are prone to shrink and pull away at the corners over a period of time allowing for excessive air and water infiltration at the corners. Standard glazing practice is to provide corner treatment to ensure tightness on the exterior and interior corner intersections.

NOT RECOMMENDED

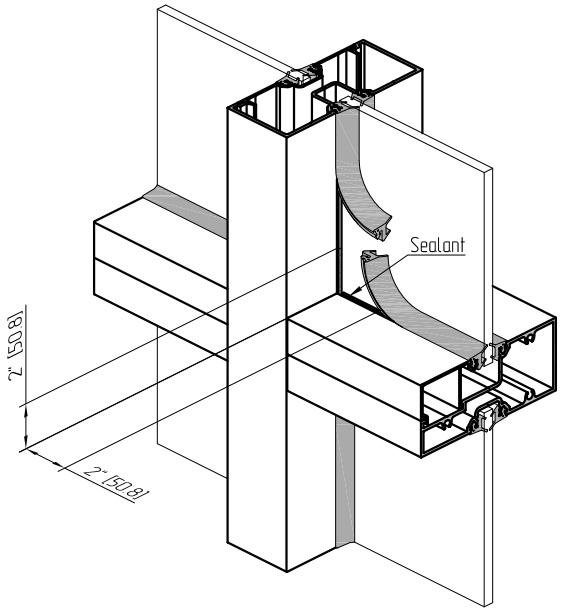
Notched Corners – The corners of the rubber gaskets are notched on the underside without cutting the nearside. The gasket is installed in one length and is butt joined in the center of horizontal section. While this method of glazing is widely used for marine glazing, residential sliding doors and shower doors, it is not recommended for commercial window wall glazing. See DETAIL GG.



DETAIL GG

RECOMMENDED WAY

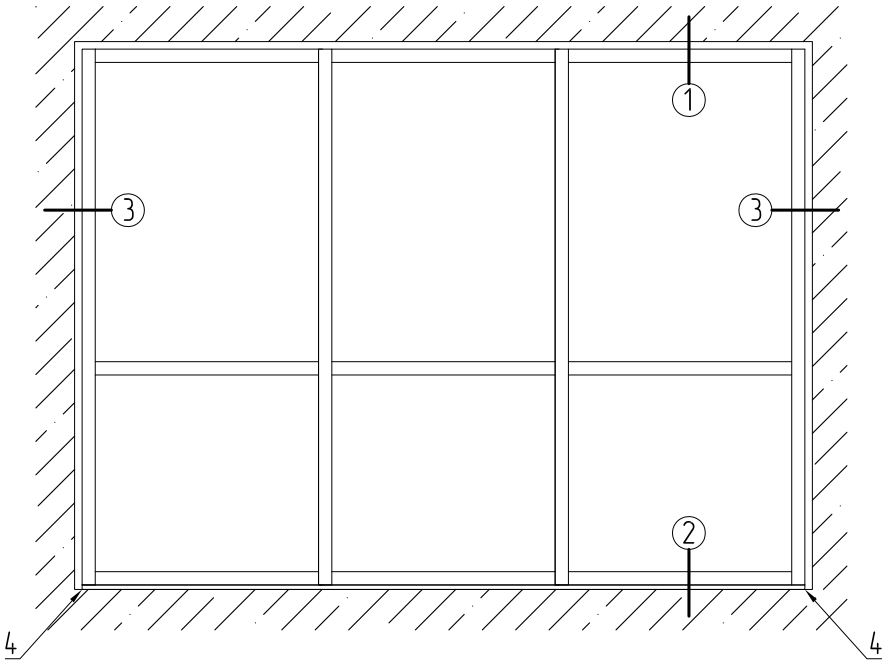
Seal Corners – Pull gaskets back 2" in both directions from interior and exterior corners as shown in (see detail HH) and apply sealant. This should be done on the interior (inside glaze) or exterior (outside glaze) for best performance. While long-term adhesion to the rubber gaskets with sealant is nor assured, historical field experience has proven this type of corner treatment to be the next best method short of vulcanized gasket corners.



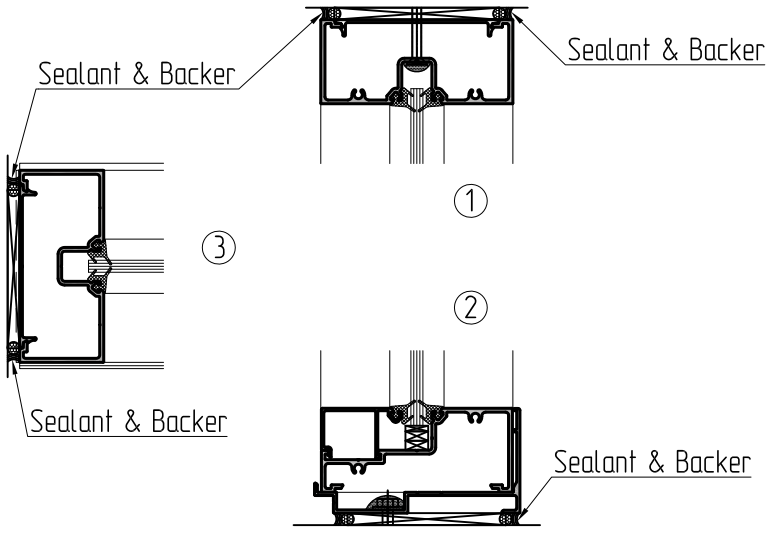
DETAIL HH

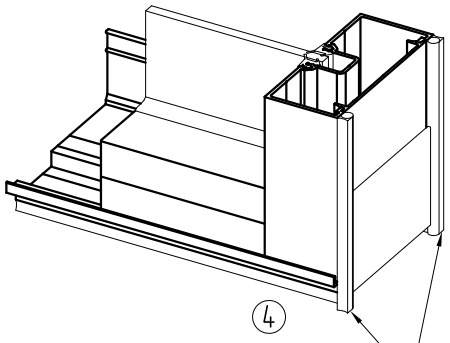
24. PERIMETER SEAL

Apply continuous exterior and interior perimeter seal to elevation. See DETAIL II.
Marry exterior and interior sealant. See DETAIL KK.



DETAIL II





Marry exterior and interior sealant to form one continuous perimeter seal as shown.

DETAIL KK

Features

- 190 narrow stile has 2-1/8" vertical stile, 2-1/4" top and 3-7/8" bottom rail;
- door is 1-3/4" deep;
- single or double acting;
- offset pivots, butt hinges, continuous geared hinge or center pivots;
- infills range from 1/4" to 1";
- adjustable astragal utilizing pile weathering with polymeric fin at meeting stiles.

Product Applications

- 190 narrow stile – engineered for moderate traffic in applications such as offices, stores and apartment buildings.

INSTALLATION INSTRUCTIONS GENERAL NOTES

HANDLING, STORAGE AND PROTECTION OF ALUMINUM

The following precautions are recommended to protect the material against damage. Following these precautions will help ensure early acceptance of your products and workmanship.

A. HANDLE CAREFULLY.

All aluminum materials at job site must be stored in a safe place well removed from possible damage by other trades. Cardboard wrapped or paper interleaved materials must be kept dry.

B. CHECK ARRIVING MATERIALS.

Check for quantity and keep records of where various materials are stored.

C. KEEP MATERIAL AWAY FROM WATER, MUD AND SPRAY.

Prevent cement plaster or other materials from damaging the finish.

D. PROTECT THE MATERIALS AFTER ERECTION.

Protect erected frame with polyethylene or canvas splatter screen. Cement, plaster, terrazzo, other alkaline solutions and acid based materials used to clean masonry are harmful to the finish. If any of these materials come in contact with the aluminum, IMMEDIATELY remove with water and mild soap.

NOTE: Dimensions in parentheses [ ] are millimeters unless otherwise noted. Other metric units shown in this manual are:
m – meter;
Kg – kilogram;
Pa – pascal; KPa – kilopascal; MPa – megapascal;
N – newton.

GENERAL INSTALLATION NOTES

RECOMMENDED GUIDELINES FOR ALL INSTALLATIONS:

1. REVIEW CONTRACT DOCUMENTS. Check shop drawings, installation instructions, architectural drawings and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any field verified notes on the shop drawings prior to installing. The installation instructions are of general nature and cover most conditions.

2. INSTALLATION. All materials are to be installed plumb, level and true.

3. BENCH MARKS. All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Working from these datum points and lines determine:

a) The plane of the wall in reference to offset lines provided on each floor.

b) The finish floor lines in reference to bench marks on the outer building columns.

c) Mullion spacing from both ends of masonry opening to prevent dimensional build-up of daylight opening.

4. FIELD WELDING. All field welding must be adequately shielded to avoid any splatter on glass or aluminum. Results will be unsightly and/or structurally unsound. Advise general contractor and other trades accordingly. All field welds of steel anchors must receive touch-up paint (zinc chromate) to avoid rust.

5. SURROUNDING CONDITIONS. Make certain that construction which will receive your materials is in accordance with the contract documents. If not, notify the general contractor in writing and resolve differences before proceeding with work.

6. ISOLATION OF ALUMINUM. Aluminum to be placed in direct contact with uncured masonry or incompatible materials should be isolated with a heavy coat of zinc chromate or bituminous paint.

7. SEALANTS. Sealants must be compatible with all materials with which they have contact, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning/priming, tooling, adhesion, etc. It is the responsibility of the Glazing Contractor to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. This is required on every project.

8. FASTENING. Within the body of these instructions “fastening” means any method of securing one part to another or to adjacent materials. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements perimeter and anchor fasteners are not specified in these instructions. For perimeter and anchor fasteners refer to the shop drawings or consult the fastener supplier.

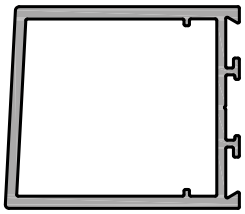
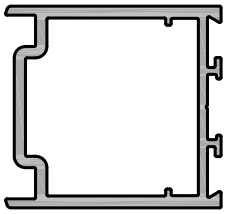
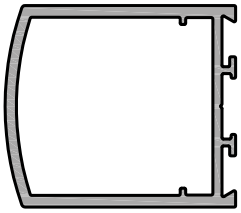
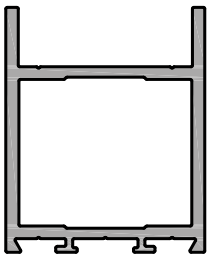
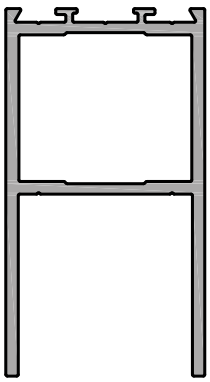
9. BUILDING CODES. Due to the diversity in state/provincial local and federal laws and codes that govern the design and application of architectural products it is the responsibility of the individual architect owner and installer to assure that products selected for use on projects comply with all the applicable building codes and laws. United States Aluminum exercises no control over the use or application of its products, glazing materials and operating hardware and assumes no responsibility thereof.

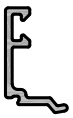
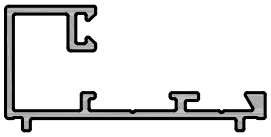
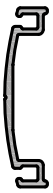
10. EXPANSION JOINTS. Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or difference in metal temperature between the time of fabrication and the time of installation. Gap between expansion members should be based on temperature at time of installation.

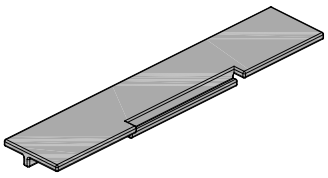
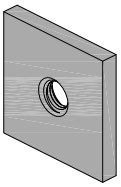
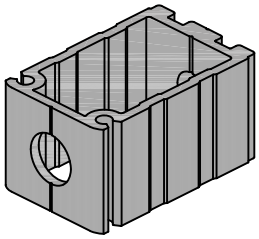
11. WATER HOSE TEST. As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 m2) a water hose test should be conducted in accordance with AAMA 501.2 specifications to check the installation. On all jobs the hose test should be repeated every 500 square feet (46.5m2) during the glazing operation.

12. COORDINATION WITH OTHER TRADES. Coordinate with the general contractor any sequence with other trades which offset curtain wall installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters etc.).

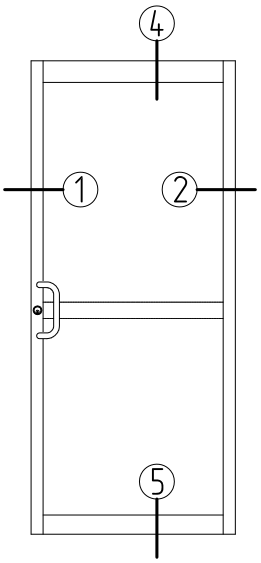
13. CARE AND MAINTENANCE. Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA. 609.1 for anodized aluminum and 610.1 for painted aluminum.

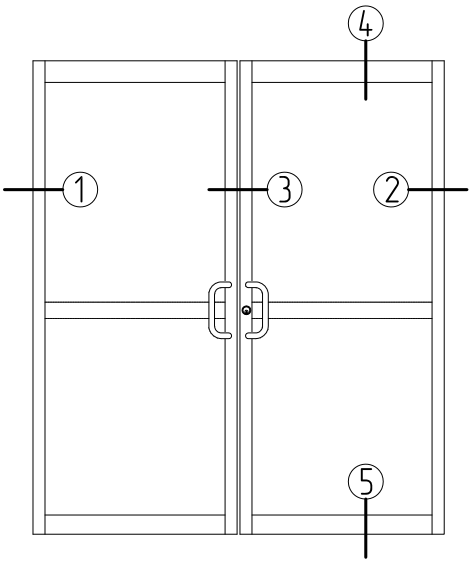
Part NO.	Code	Color	Detalil	Description
AYPC.SF.3101	125014808	A00-D6		Narrow Stile Beveled Stile
AYPC.SF.3107	125015808	A00-D6		Narrow Stile Adjustable Astragal-Stile
AYPC.SF.3110	125016808	A00-D6		Narrow Stile Radius Meeting Stile
AYPC.SF.3201	125017808	A00-D6		Narrow Stile Top Rail
AYPC.SF.3202	125018808	A00-D6		Narrow Stile Bottom Rail and Medium Stile Top Rail 3-3/16"
AYPC.SF.3401	125019808	A00-D6		Glass Stop Door 1/4" Glass

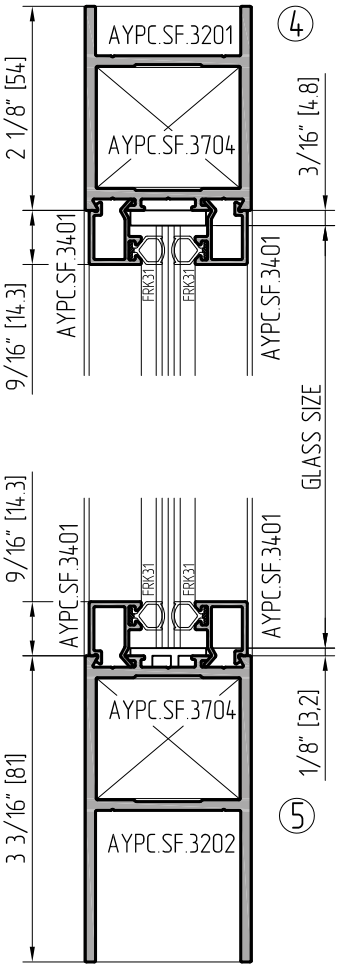
Part NO.	Code	Color	Detalil	Description
AYPC.SF.3402	–	A00-D6		Glass Stop Door 1" IGU
AYPC.SF.3403E	12502800 125028808	00 A00-D6		Anti-burglar Glass Stop Door 1/4" Glass
AYPC.SF.3601	125021808	A00-D6		Adjustable Astragal

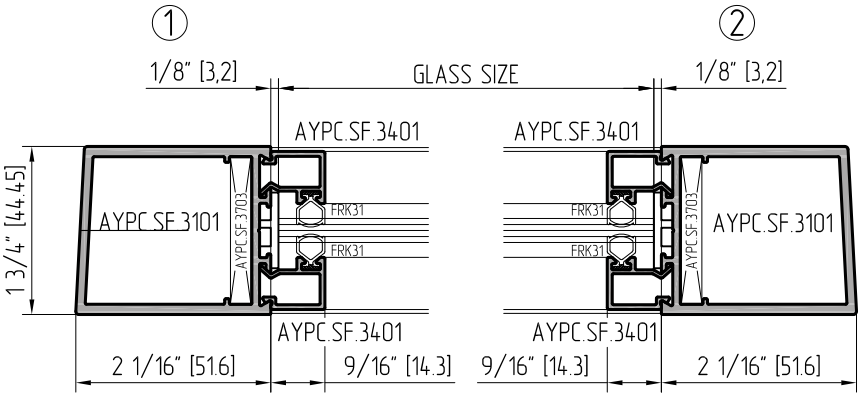
Part NO.	Code	Detalil	Description	PKG. QTY.
AYPC.SF.3701	12550100		Setting/Edge Block	100
AYPC.SF.3702	12550200		Adjustable Setting Block	50
AYPC.SF.3703	12550300		Embeded block	60
AYPC.SF.3704	12550400		Shear Block	64
ST15690	12550500		Cone spring	50
FRK07	10210600		Rabbet ledge gasket (EPDM)	1312' [400 m]
FRK31	10413500		Glass stop gasket (Co-extr. PVC)	984' [300 m]
sk10.134blk	10413800		Astragal weather strip	3280' [1000 m]

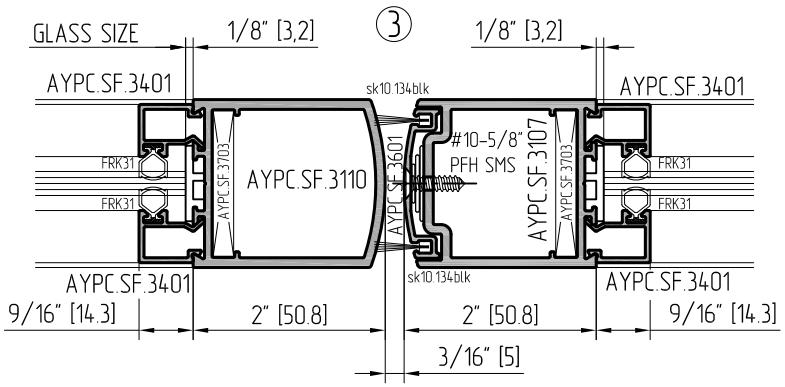
DOOR LEAF SECTIONS (1/4" GLASS)



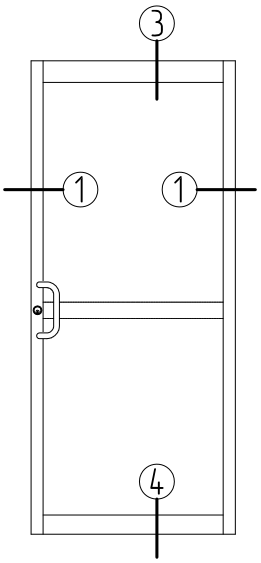


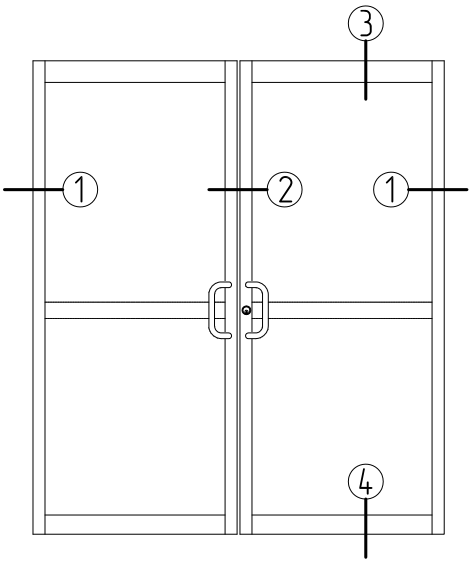


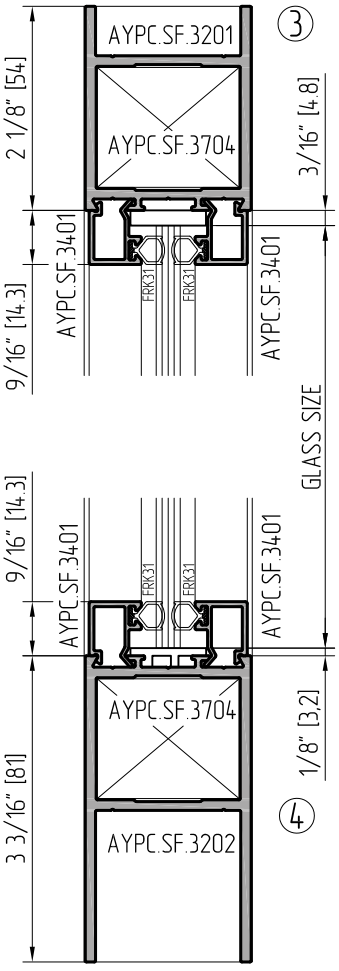


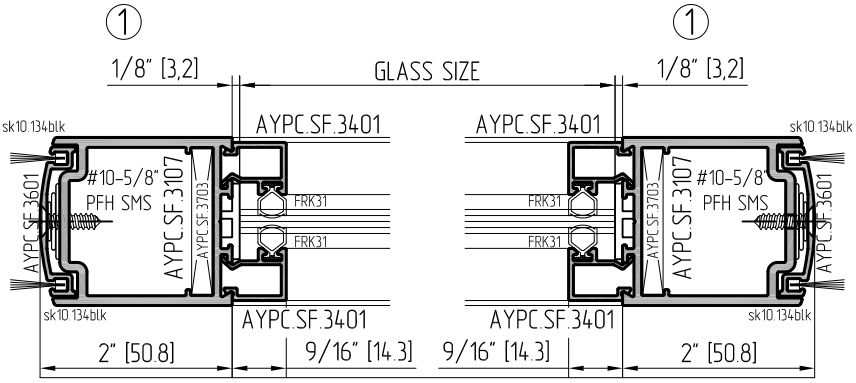


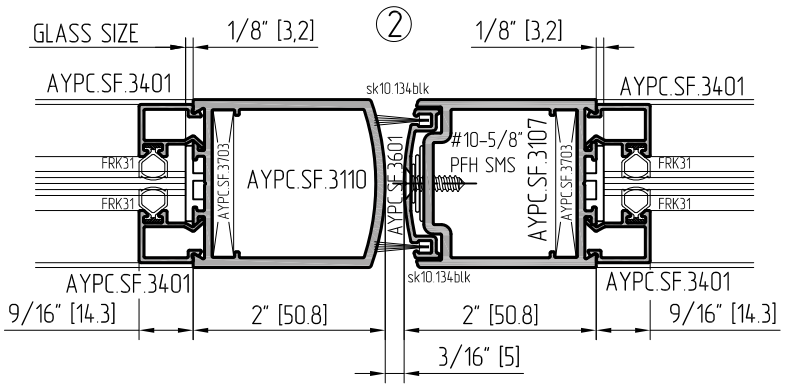
DOOR LEAF SECTIONS (SWINGING DOORS) (1/4" GLASS)



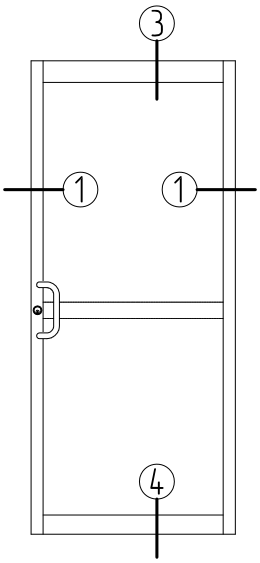


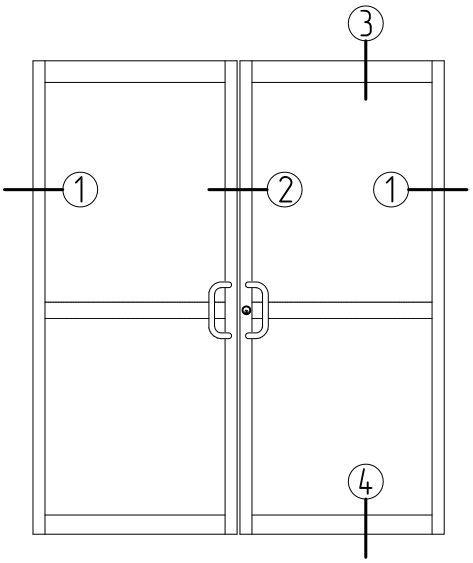


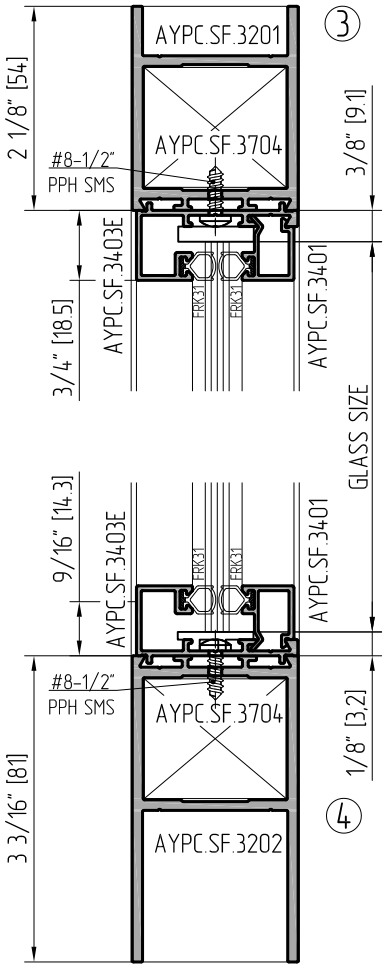


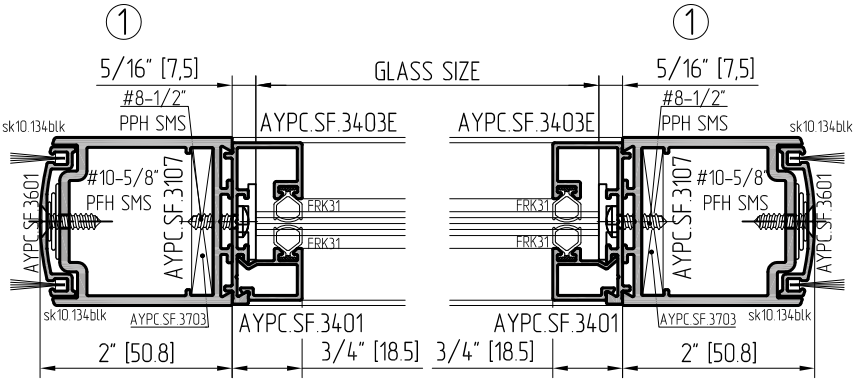


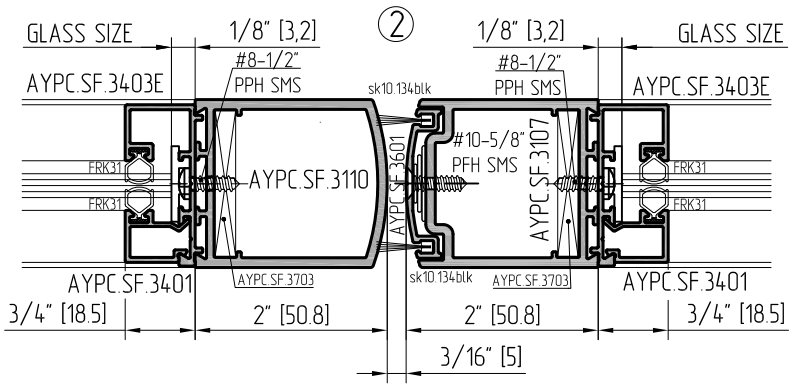
DOOR LEAF SECTIONS (SWINGING DOORS WITH THE SECURED GLASS STOPS) (1/4" GLASS)



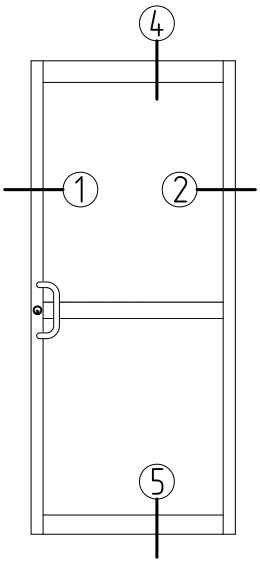


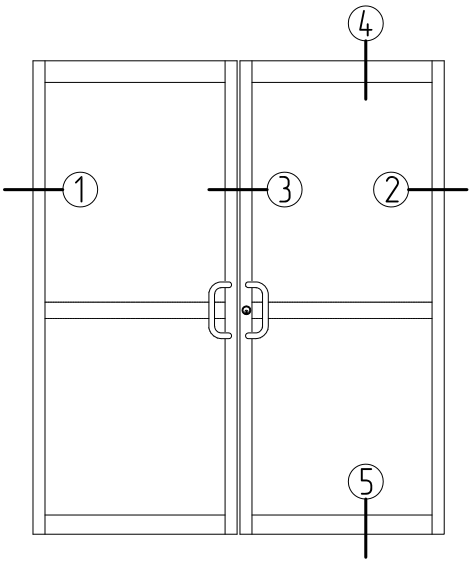


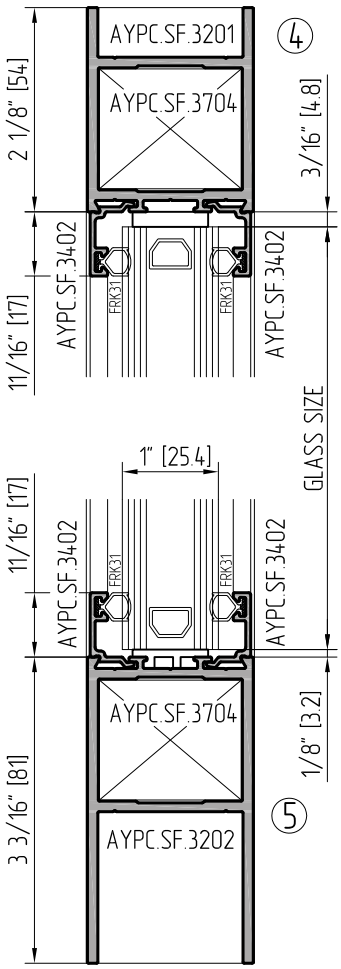


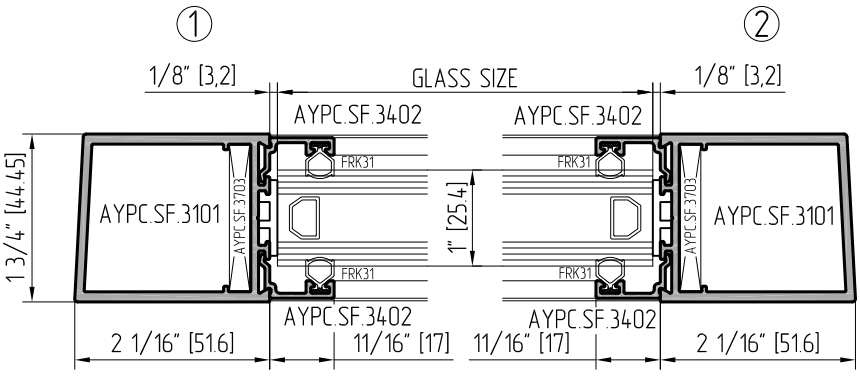


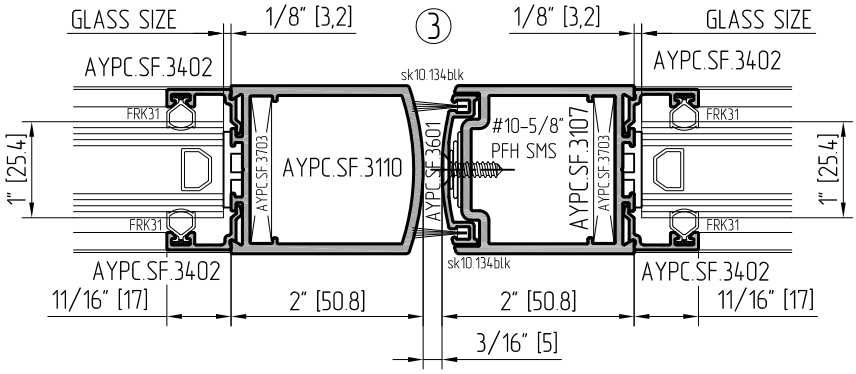
DOOR LEAF SECTIONS (1" INSULATING GLASS)





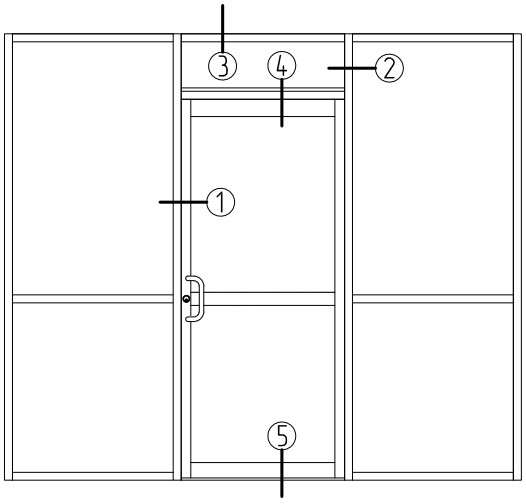




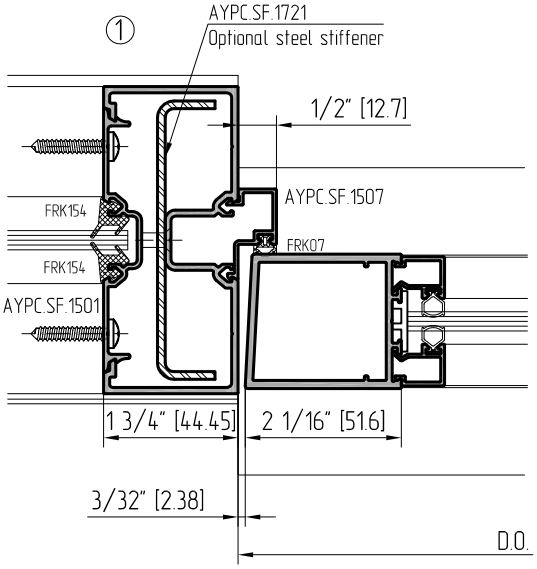


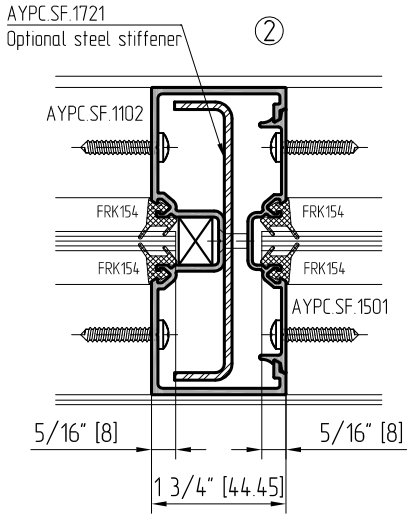
NOT TO SCALE

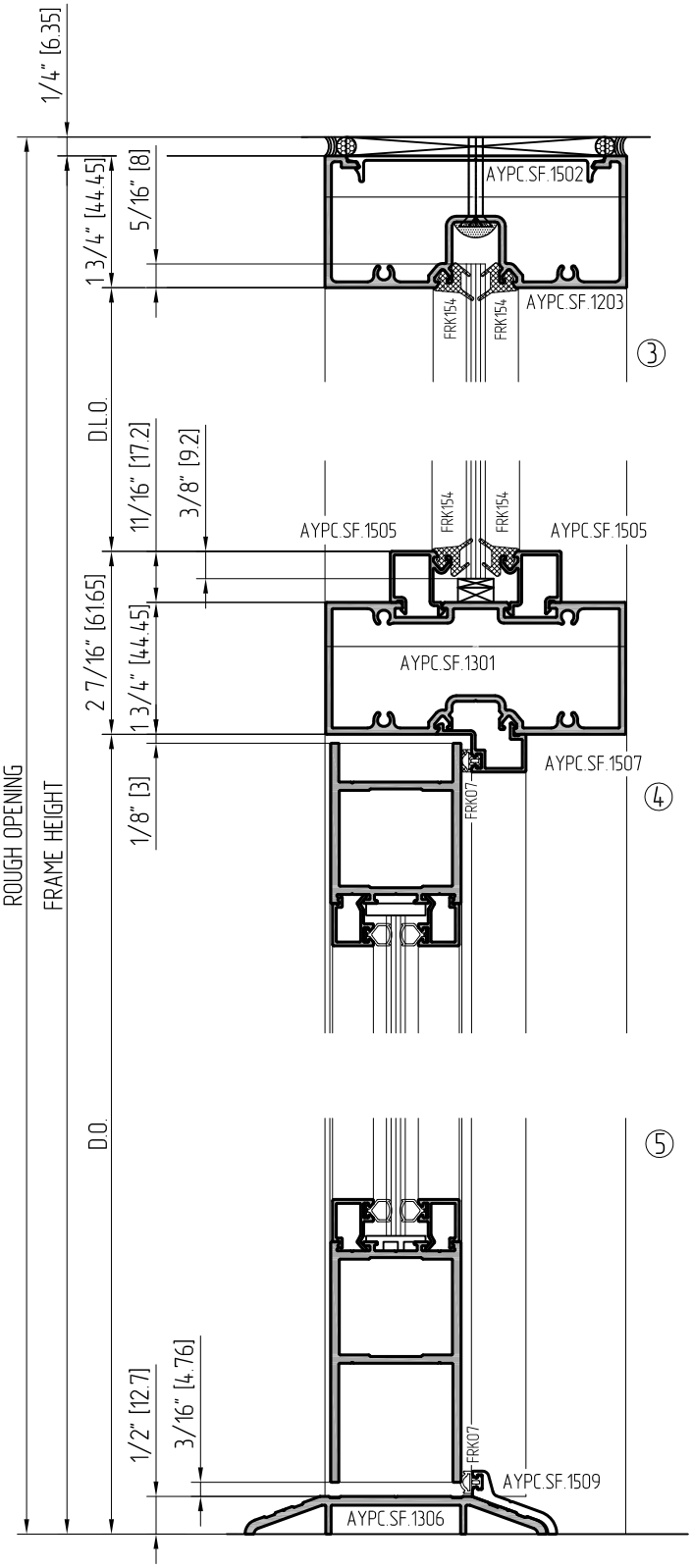
DOOR FRAME SECTIONS (1/4" GLASS). STOREFRONT SF 400



OFFSET HUNG DOORS

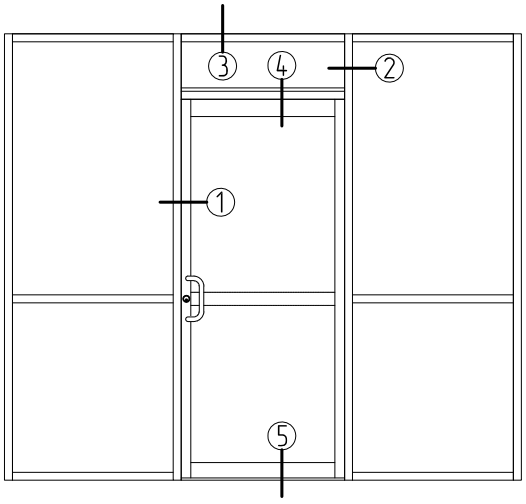




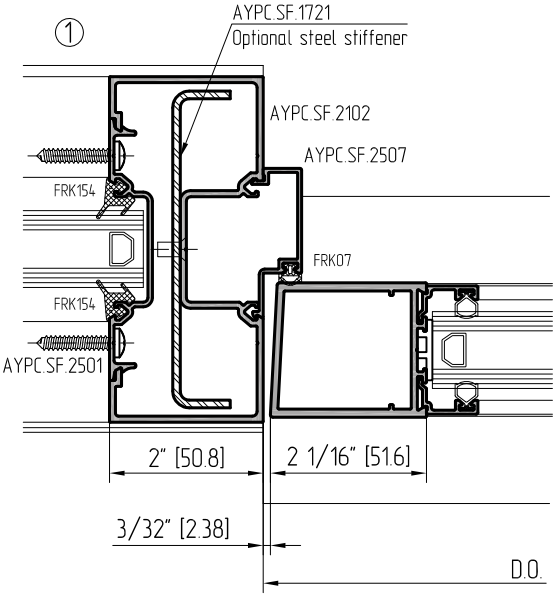


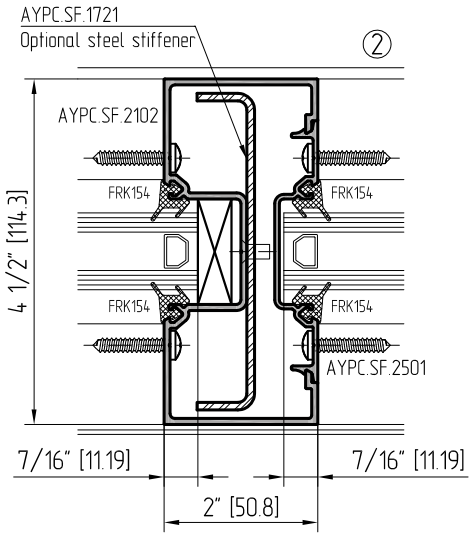
DOOR FRAME SECTIONS (1" GLASS). STOREFRONT SF 450

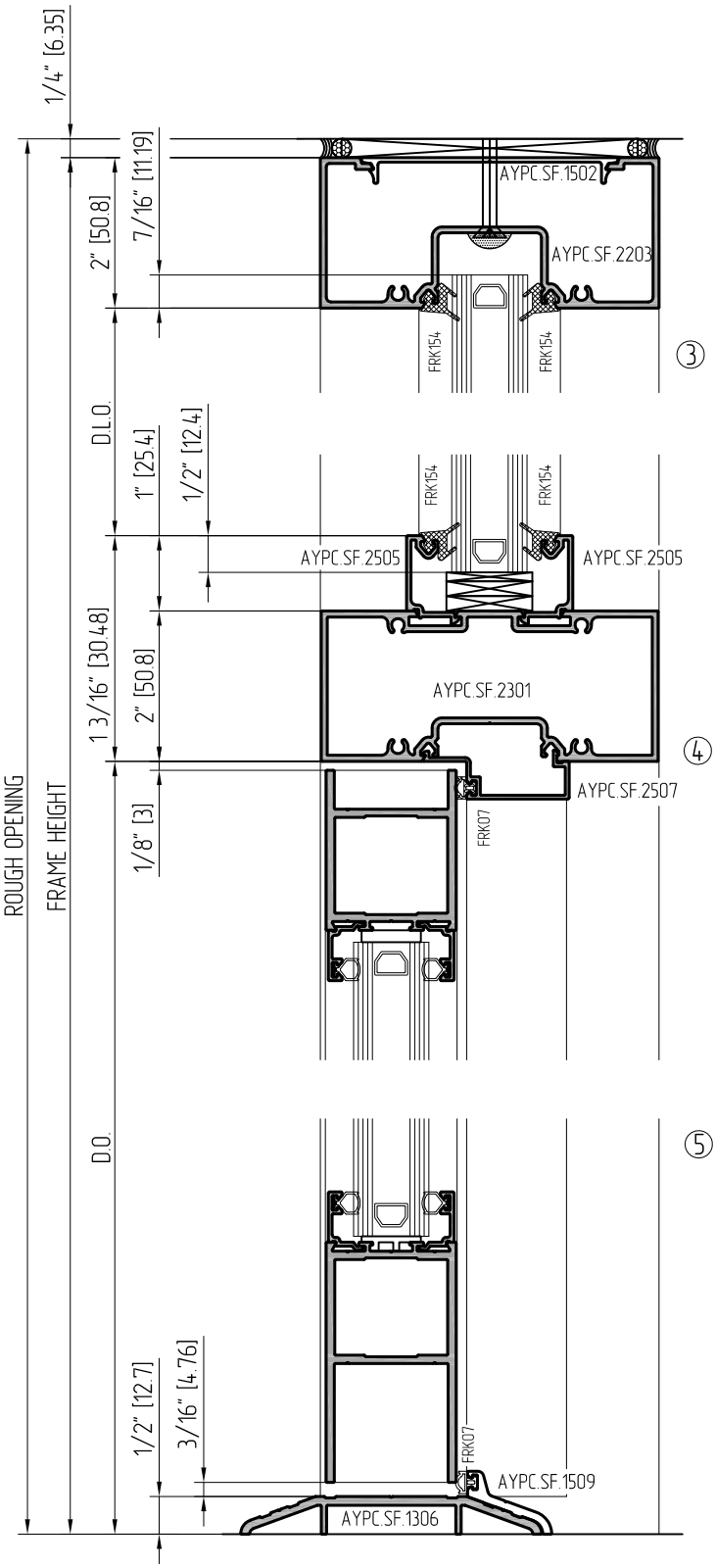
NOT TO SCALE



OFFSET HUNG DOORS

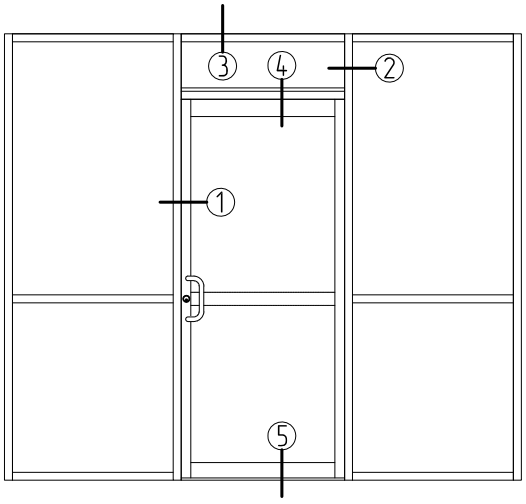




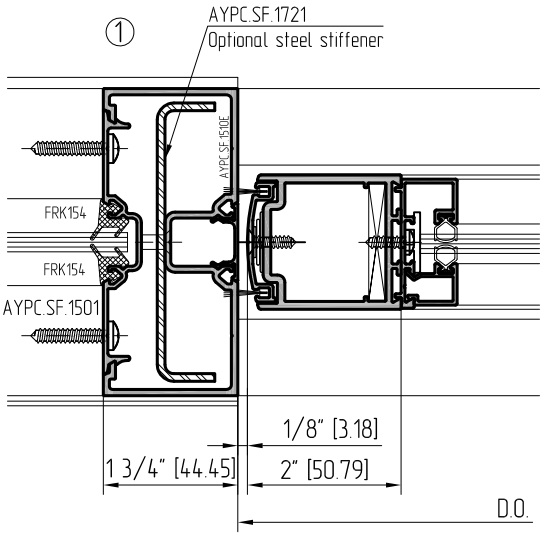


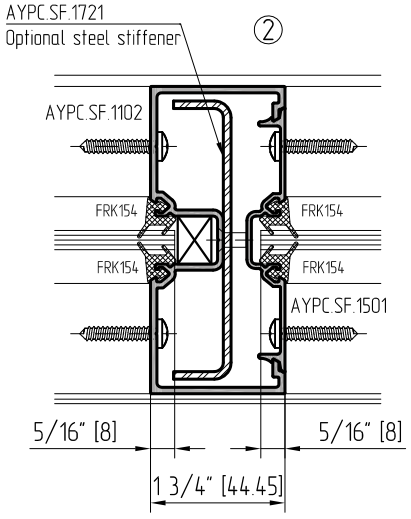
NOT TO SCALE

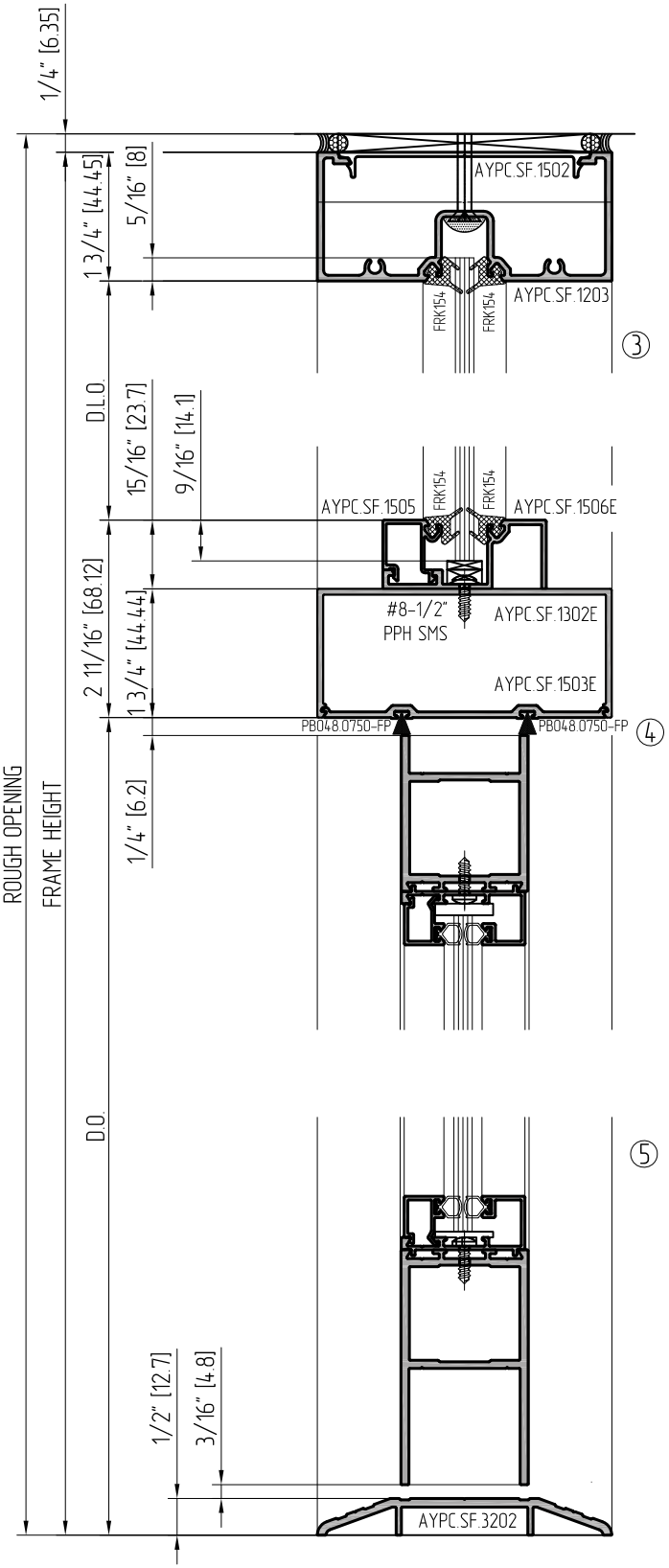
DOOR FRAME SECTIONS (1/4" GLASS). STOREFRONT SF 400



OFFSET HUNG DOORS

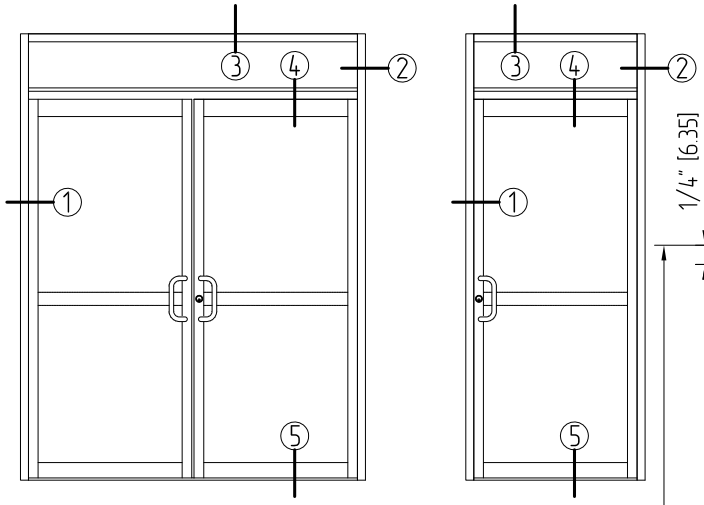




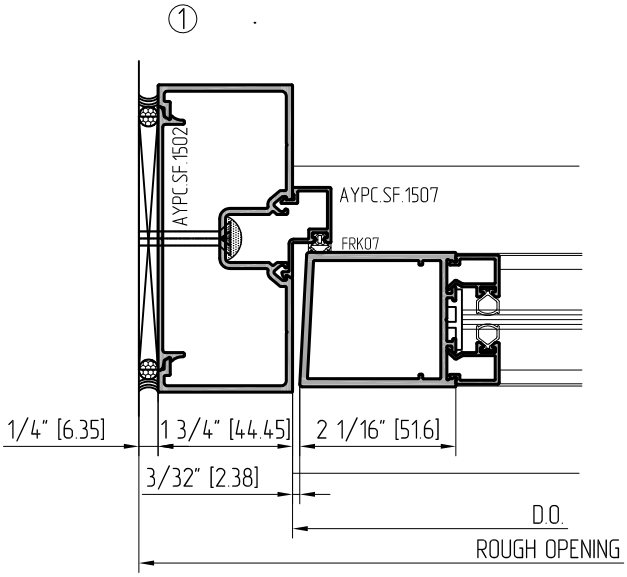


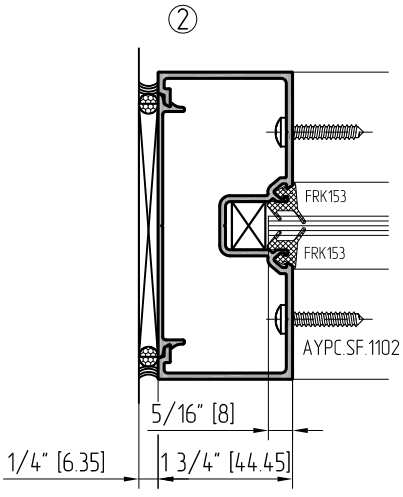
NOT TO SCALE

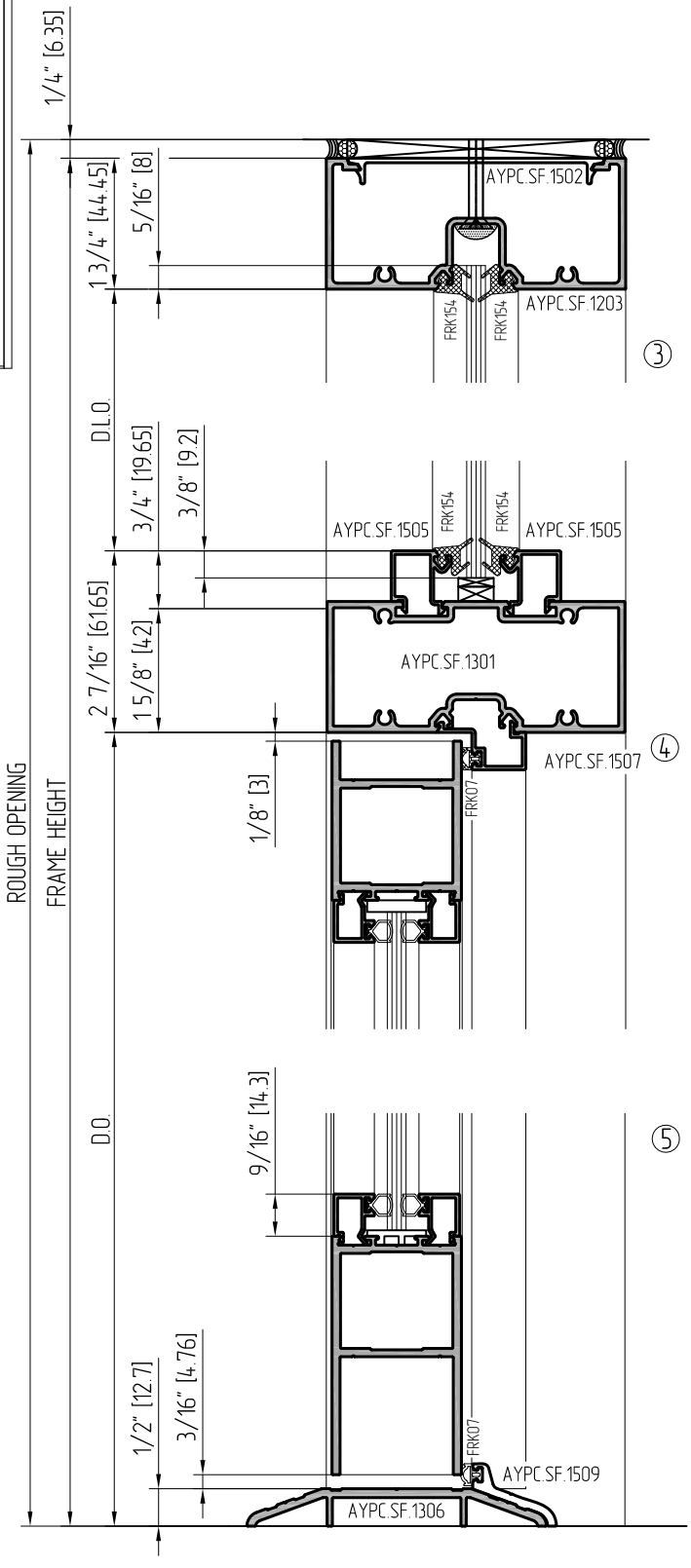
DOOR FRAME SECTIONS (1/4" GLASS). DOOR WITH TRANSOM. SF 400



OFFSET HUNG DOORS

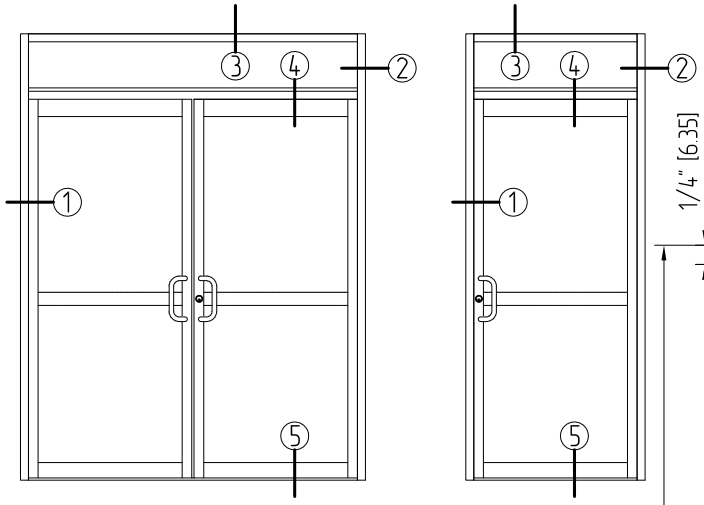




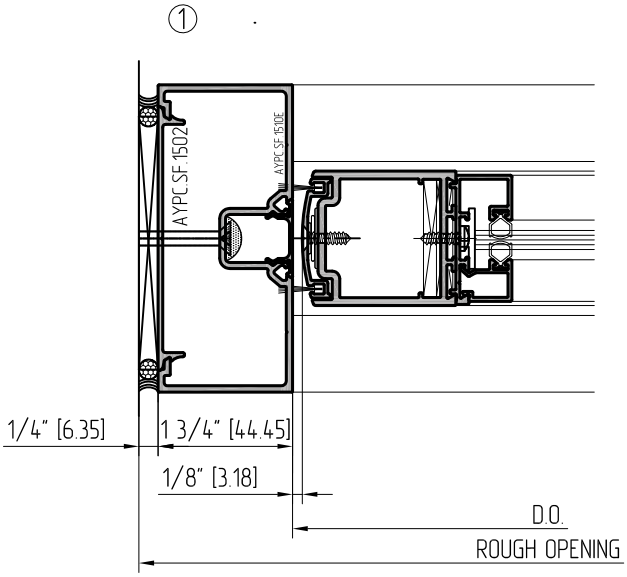


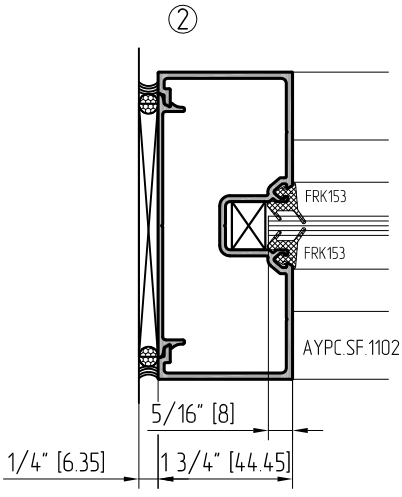
NOT TO SCALE

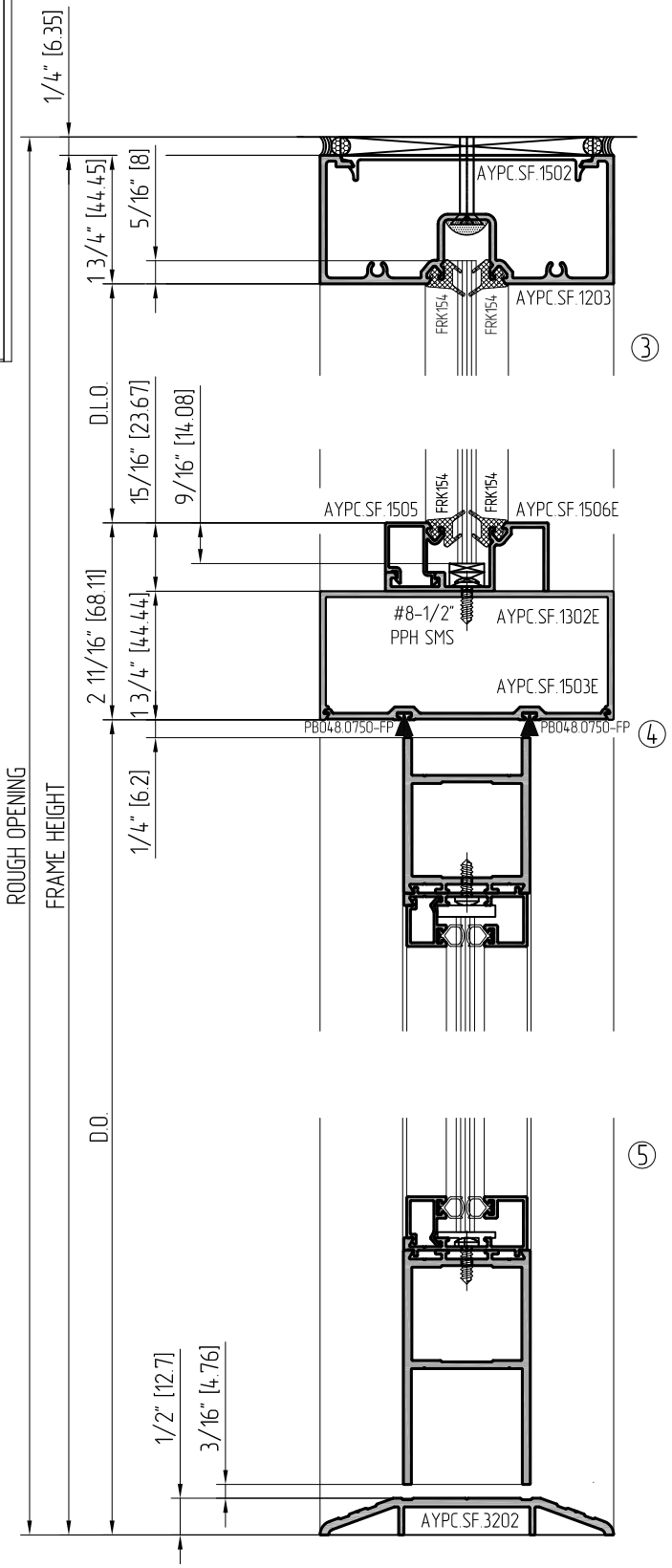
DOOR FRAME SECTIONS (1/4" GLASS). DOOR WITH TRANSOM. SF 400



OFFSET HUNG DOORS

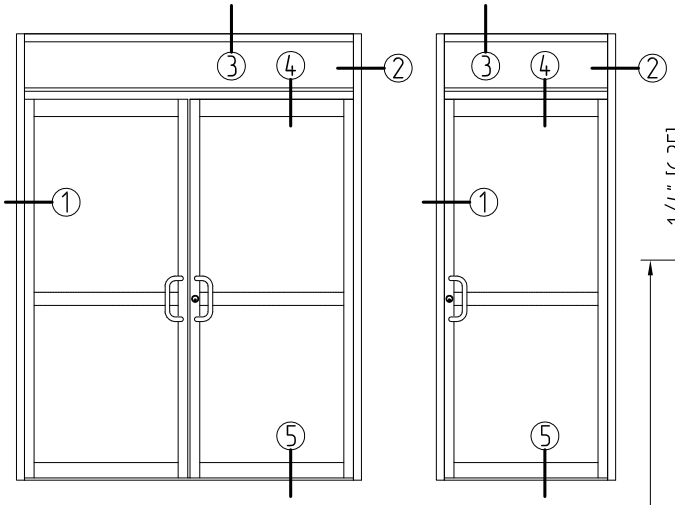




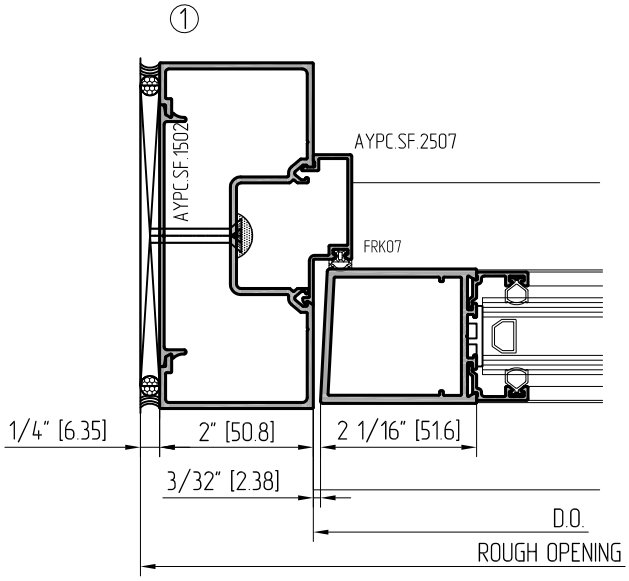


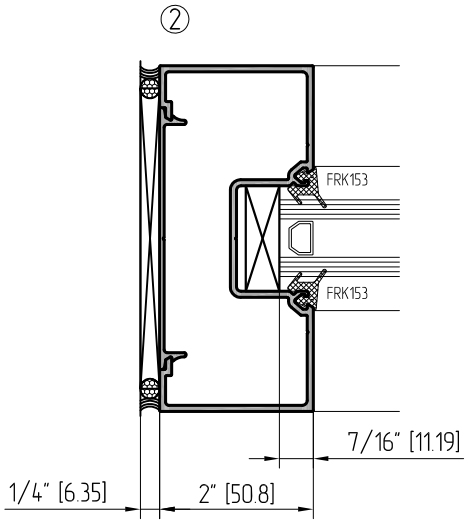
NOT TO SCALE

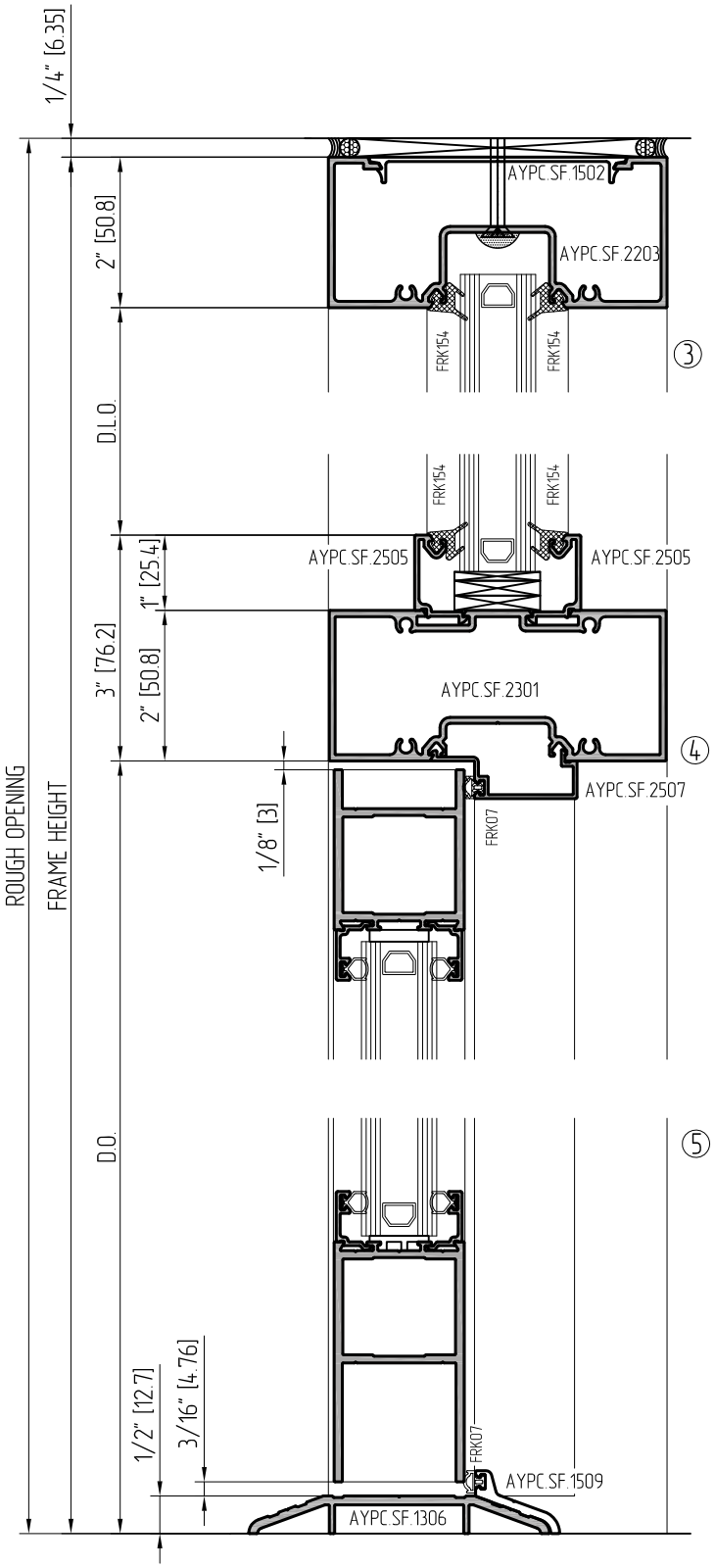
DOOR FRAME SECTIONS (1" GLASS). DOOR WITH TRANSOM. SF 450



OFFSET HUNG DOORS

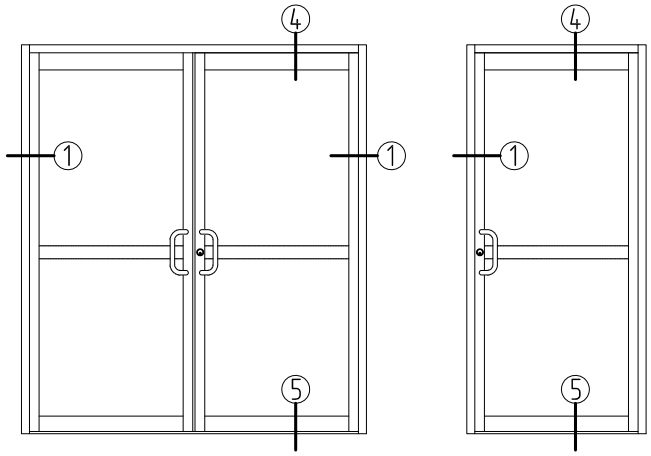




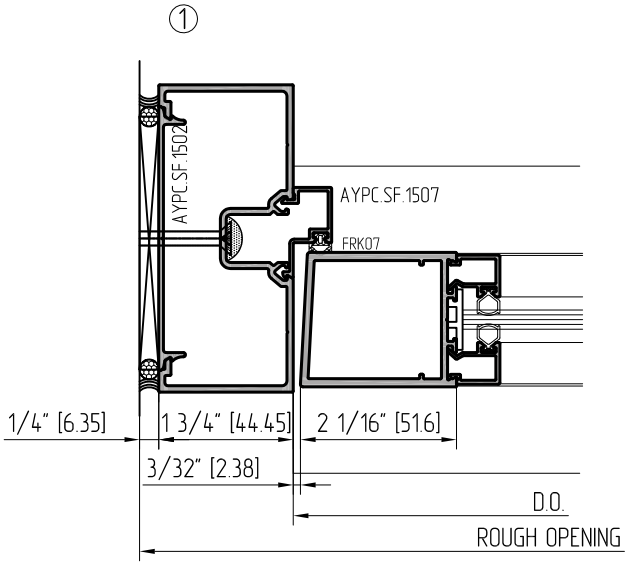


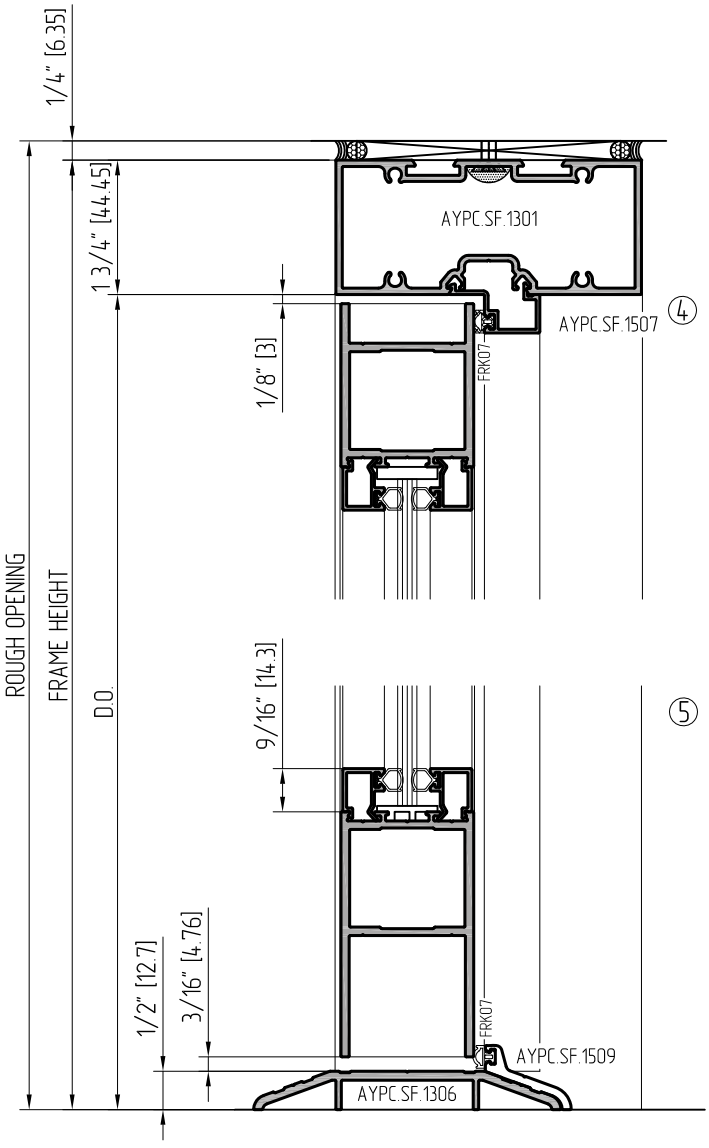
NOT TO SCALE

DOOR FRAME SECTIONS (1/4" GLASS). SF 400



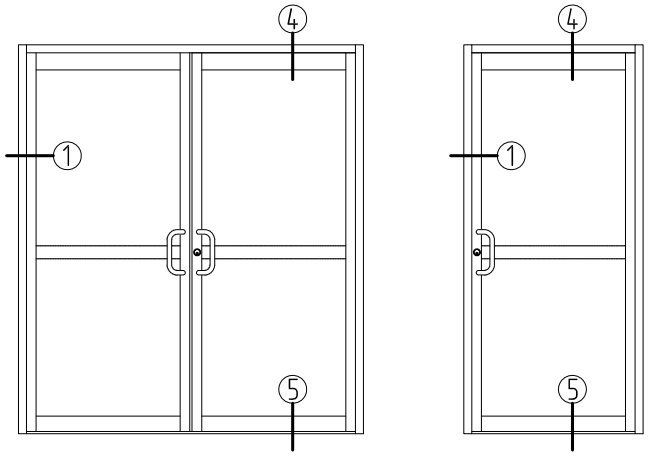
OFFSET HUNG DOORS



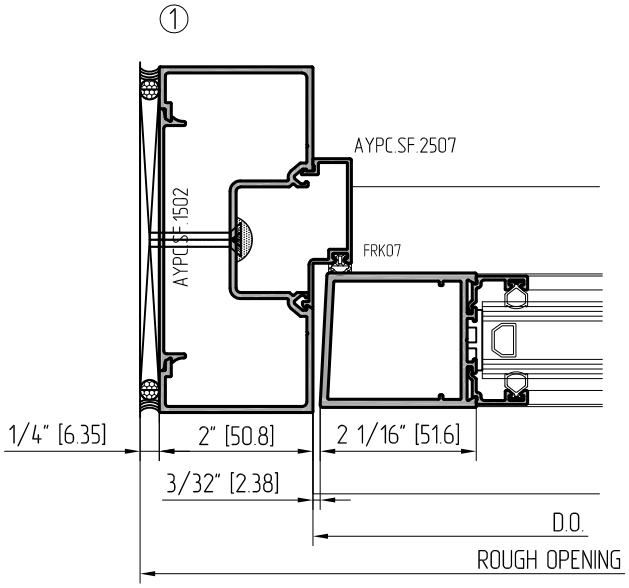


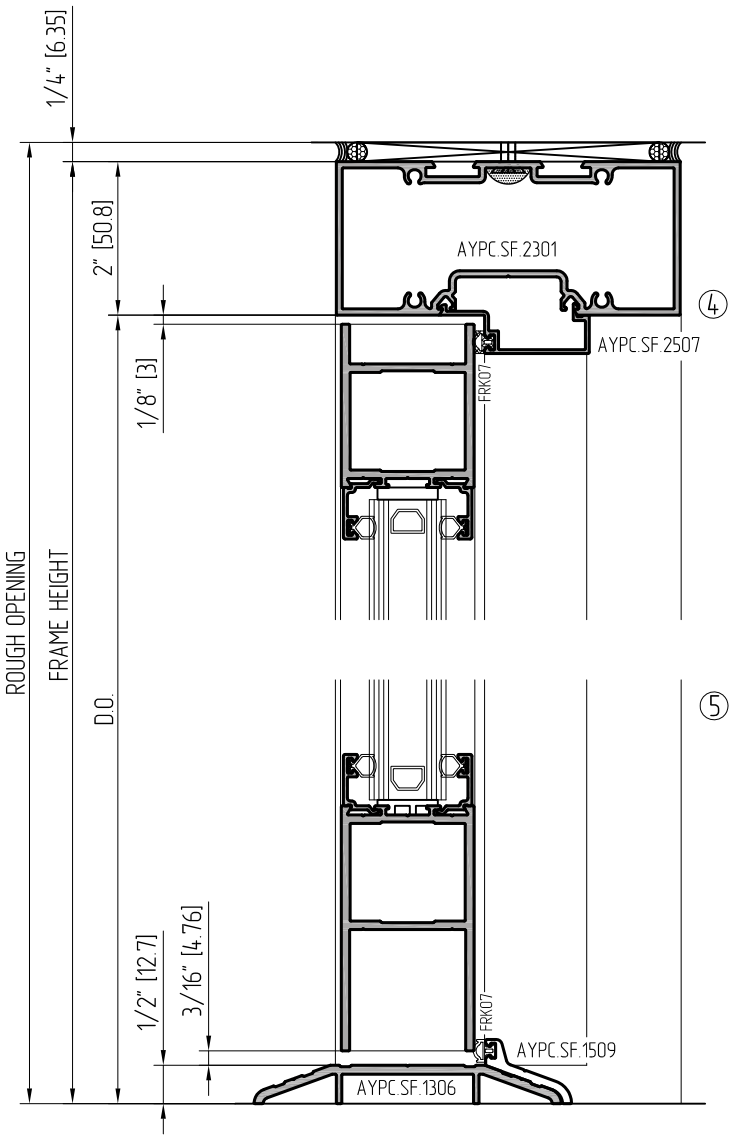
NOT TO SCALE

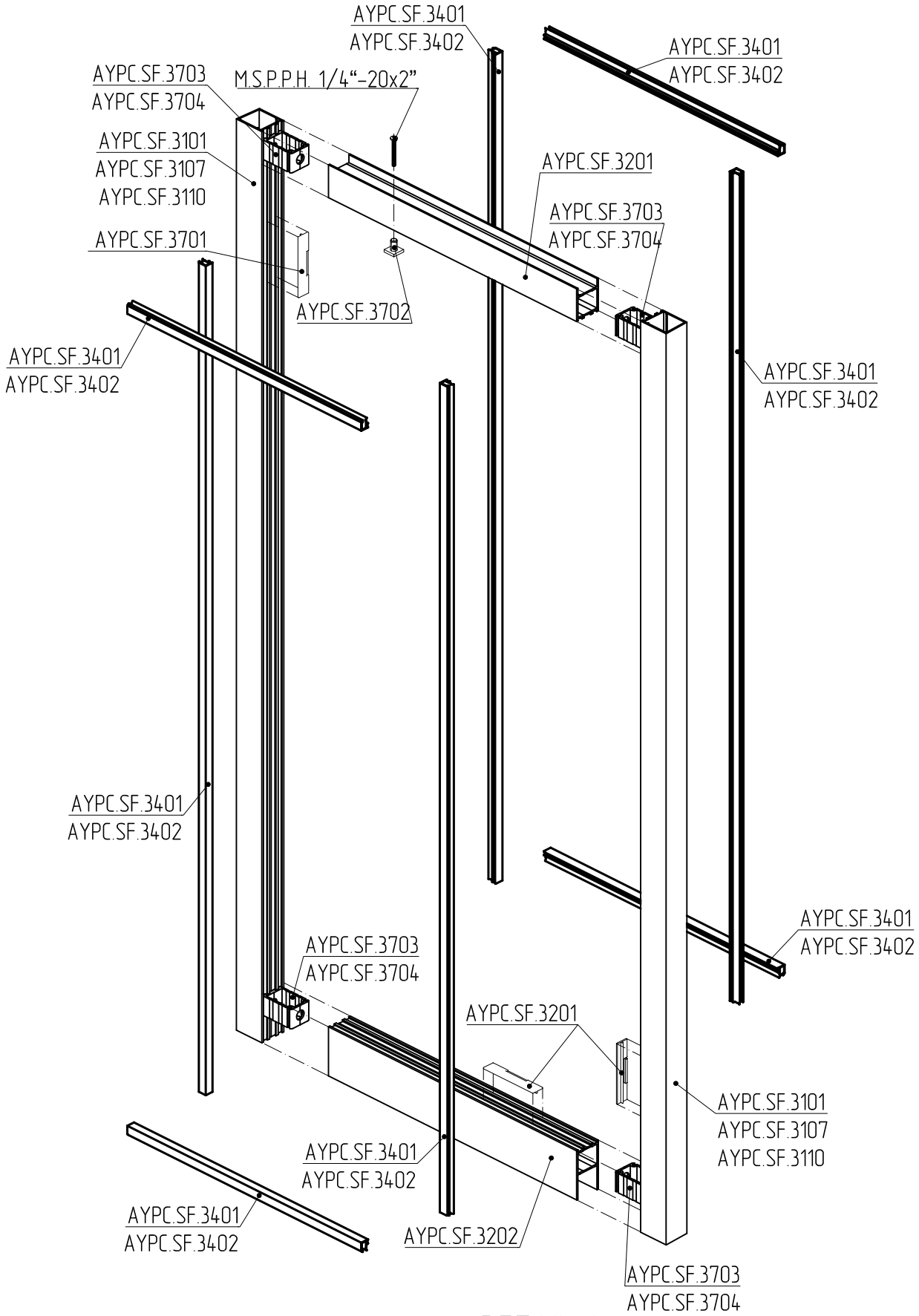
DOOR FRAME SECTIONS (1" GLASS). SF 450



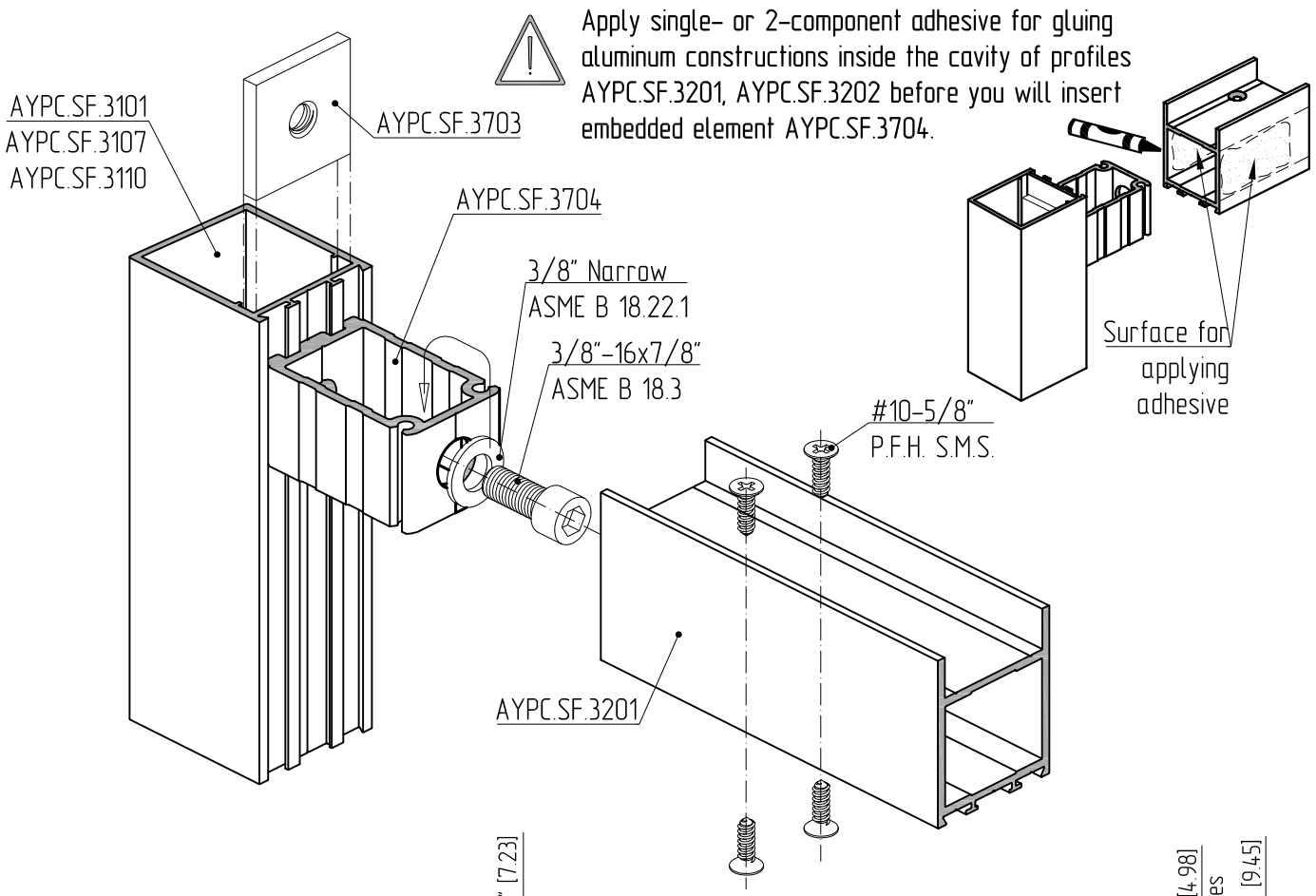
OFFSET HUNG DOORS

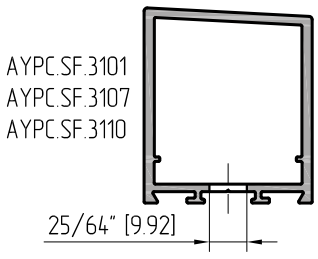


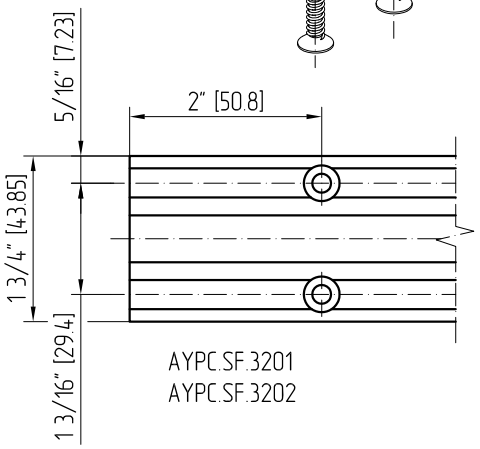


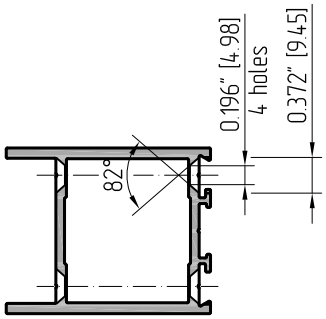

AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3703
AYPC.SF.3704
M.S.P.P.H. 1/4"-20x2"
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
AYPC.SF.3201
AYPC.SF.3703
AYPC.SF.3704
AYPC.SF.3701
AYPC.SF.3702
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3703
AYPC.SF.3704
AYPC.SF.3201
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3401
AYPC.SF.3402
AYPC.SF.3202
AYPC.SF.3703
AYPC.SF.3704

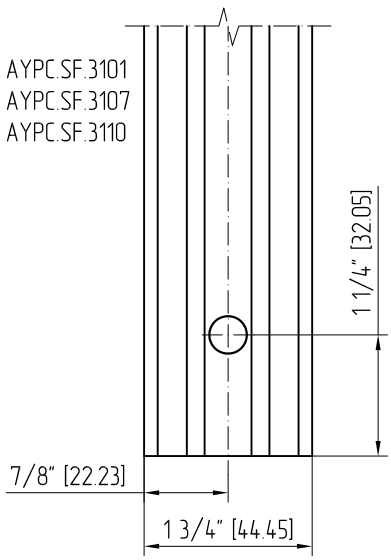
DETAIL A

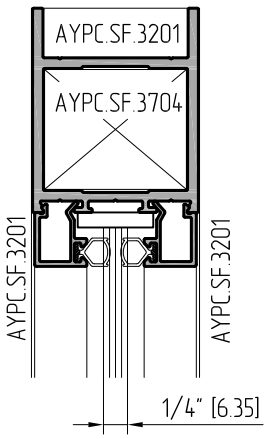

Apply single- or 2-component adhesive for gluing aluminum constructions inside the cavity of profiles AYPC.SF.3201, AYPC.SF.3202 before you will insert embedded element AYPC.SF.3704.
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
AYPC.SF.3703
AYPC.SF.3704
3/8" Narrow
ASME B 18.22.1
3/8"-16x7/8"
ASME B 18.3
#10-5/8"
P.F.H. S.M.S.
AYPC.SF.3201
Surface for applying adhesive

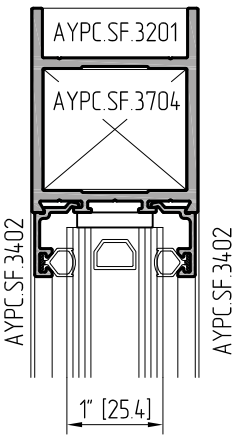

AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
25/64" [9.92]

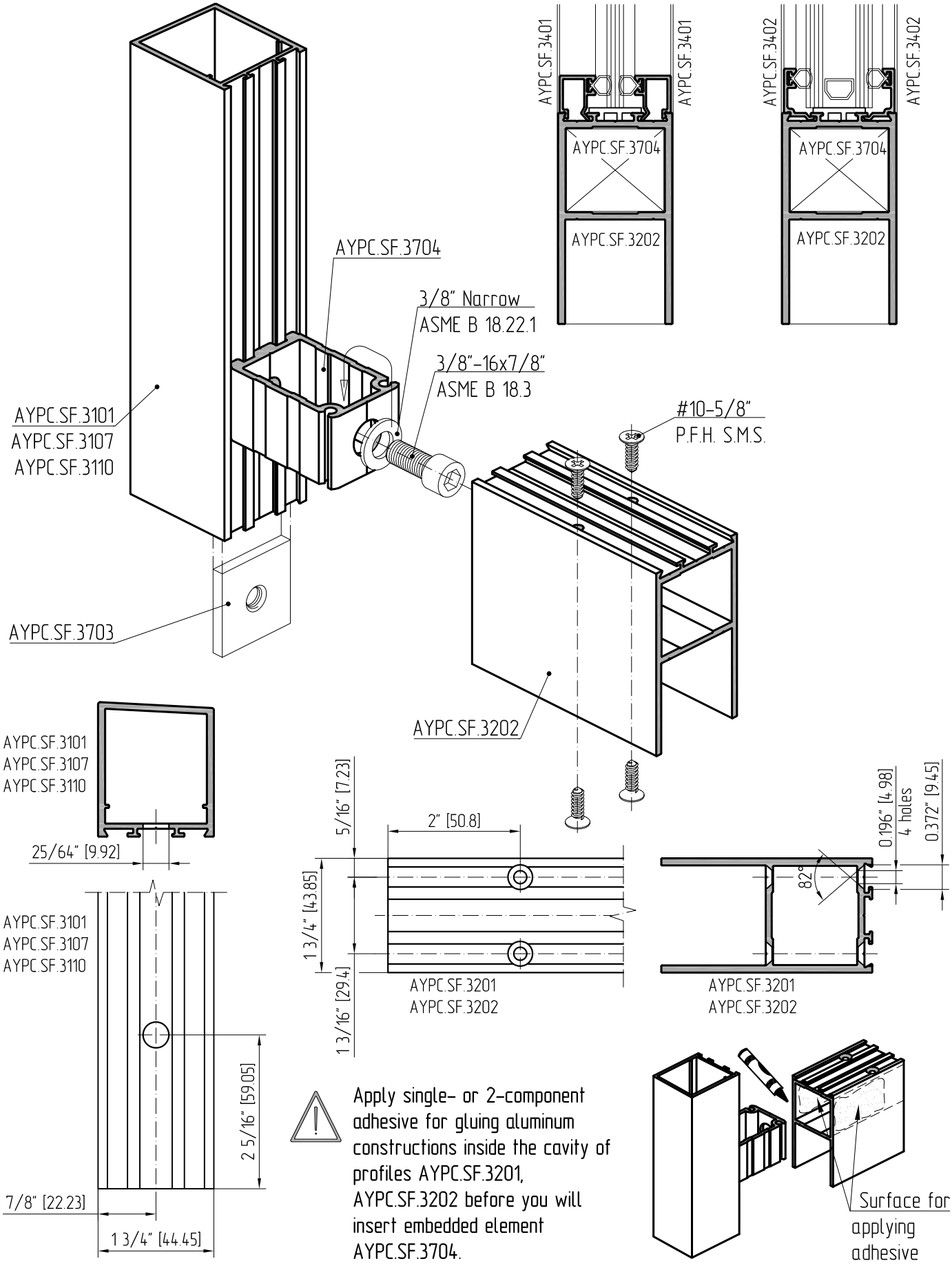

5/16" [7.23]
2" [50.8]
1 3/4" [43.85]
1 3/16" [29.4]
AYPC.SF.3201
AYPC.SF.3202


0.196" [4.98]
4 holes
0.372" [9.45]
82°
AYPC.SF.3201
AYPC.SF.3202


AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
1 1/4" [32.05]
7/8" [22.23]
1 3/4" [44.45]

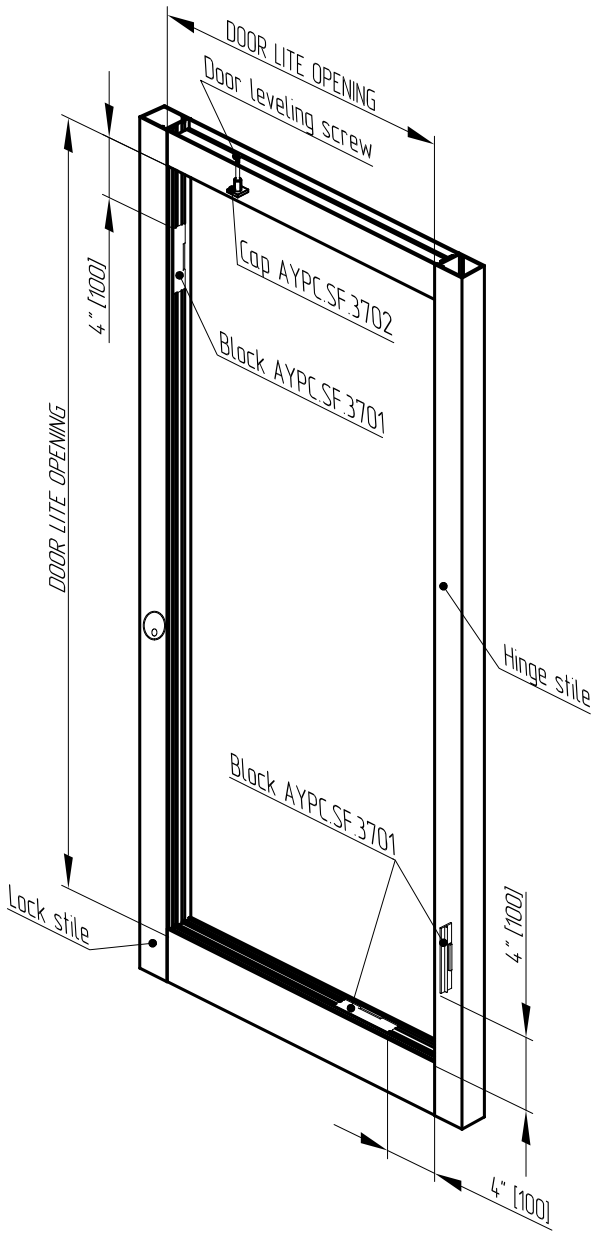

AYPC.SF.3201
AYPC.SF.3704
AYPC.SF.3201
AYPC.SF.3201
1/4" [6.35]

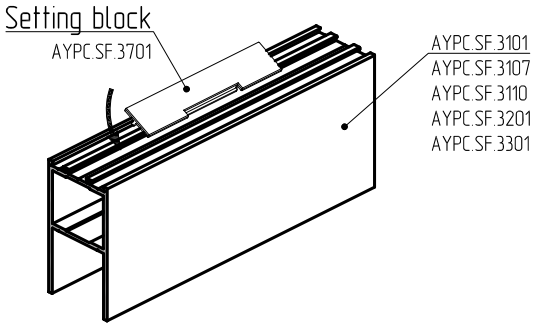

AYPC.SF.3201
AYPC.SF.3704
AYPC.SF.3402
AYPC.SF.3402
1" [25.4]

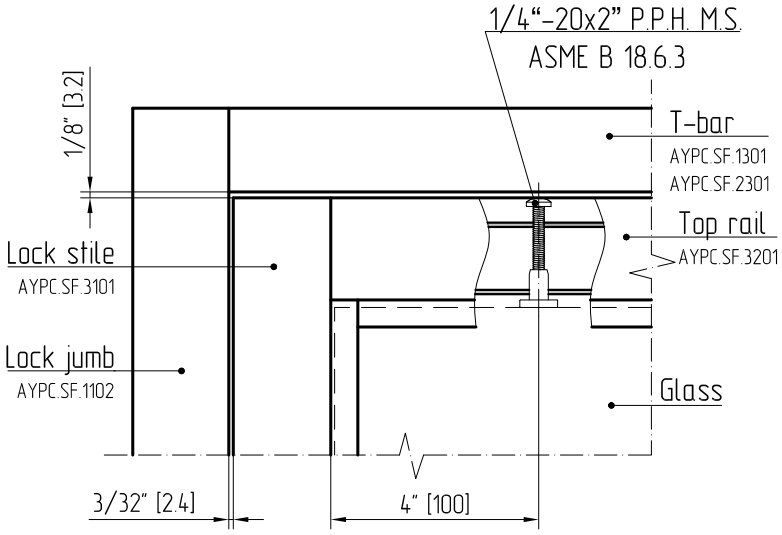

AYPC.SF.3401
AYPC.SF.3401
AYPC.SF.3704
AYPC.SF.3202
AYPC.SF.3402
AYPC.SF.3402
AYPC.SF.3704
AYPC.SF.3202
AYPC.SF.3704
3/8" Narrow
ASME B 18.22.1
3/8"-16x7/8"
ASME B 18.3
#10-5/8"
P.F.H. S.M.S.
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
AYPC.SF.3703
AYPC.SF.3202
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
25/64" [9.92]
5/16" [7.23]
2" [50.8]
0.196" [4.98]
4 holes
0.372" [9.45]
1 3/4" [43.85]
82°
AYPC.SF.3101
AYPC.SF.3107
AYPC.SF.3110
1 3/16" [29.4]
AYPC.SF.3201
AYPC.SF.3202
AYPC.SF.3201
AYPC.SF.3202
2 5/16" [59.05]
7/8" [22.23]
1 3/4" [44.45]
Apply single- or 2-component adhesive for gluing aluminum constructions inside the cavity of profiles AYPC.SF.3201, AYPC.SF.3202 before you will insert embedded element AYPC.SF.3704.
Surface for applying adhesive

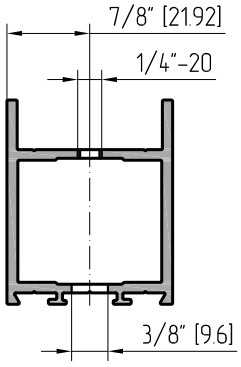
EDGE BLOCK, SETTING BLOCK LOCATIONS
and GLAZING STEPS

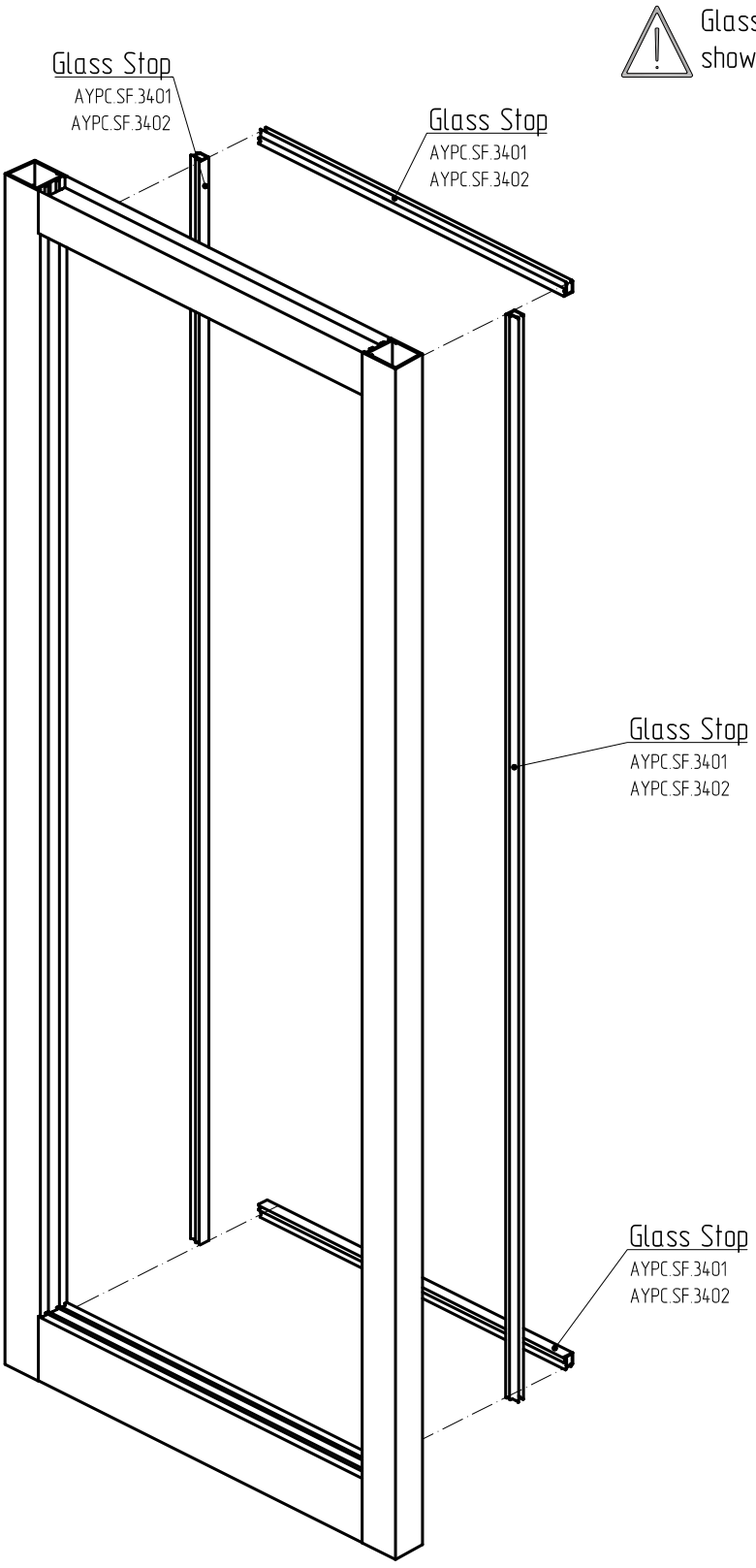
1. Install door in frame.
2. Install horizontal glass stops first, then verticals on one side of door.
3. Install three setting blocks AYPC.SF.3701.
4. Position AYPC.SF.3702.
5. Install glass in place, centered between stiles and AYPC.SF.3701 block.
6. Install remaining horizontal glass stops, then vertical glass stops.
7. Turn the door leveling screw clockwise and adjust for uniform clearance between top edge of door and doorframe.
8. On pair of doors, adjust astragal.

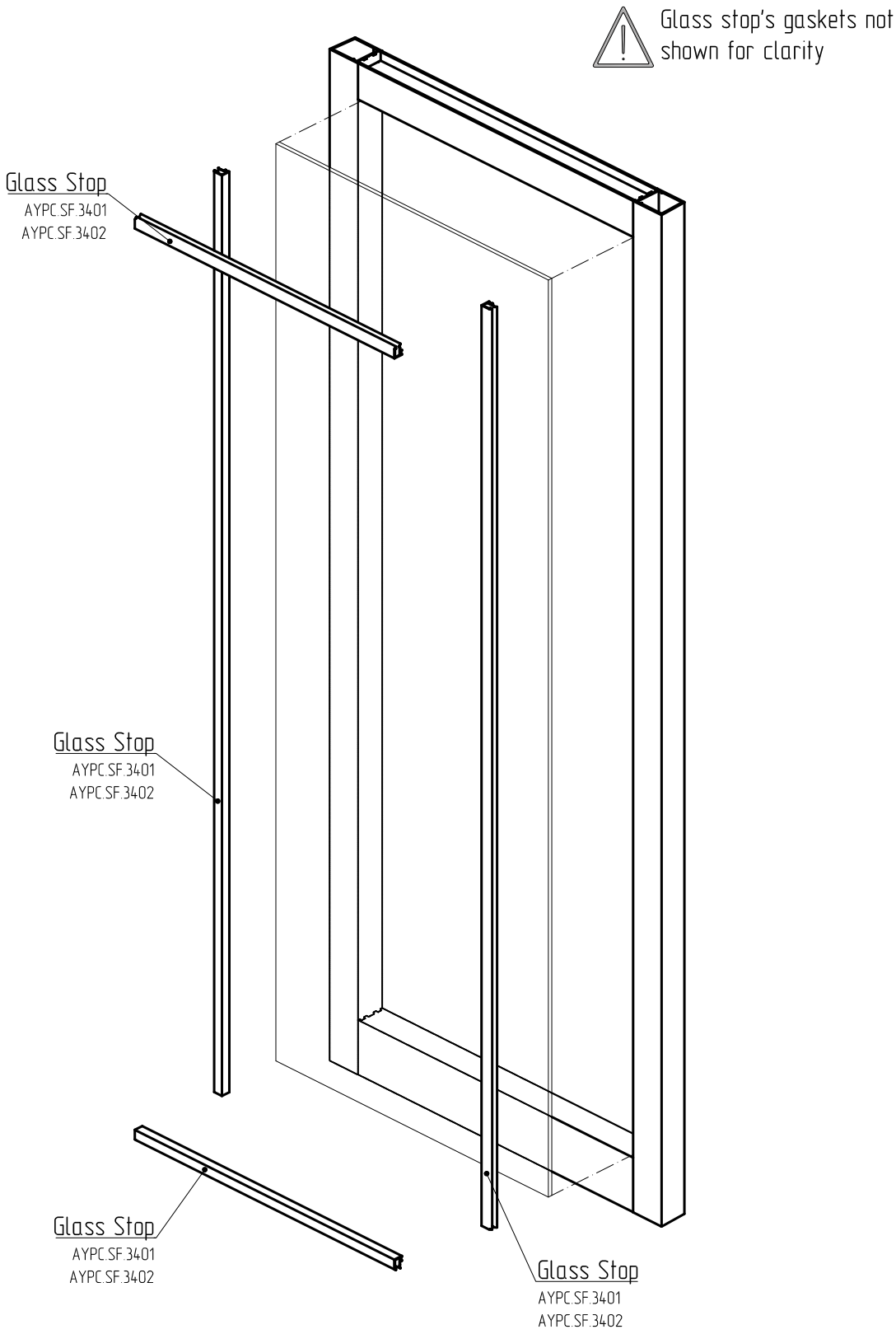




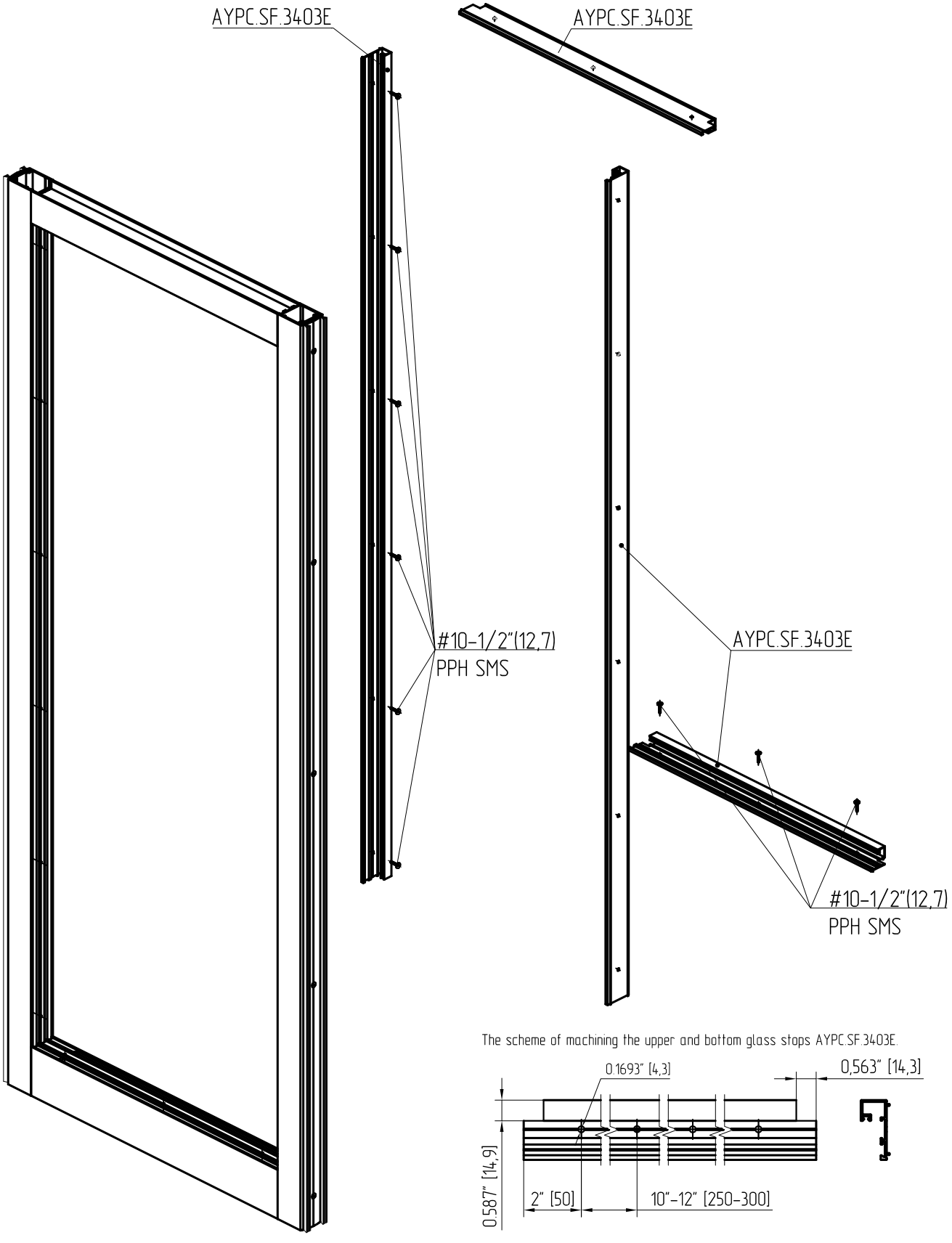





Glass stop's gaskets not shown for clarity
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402

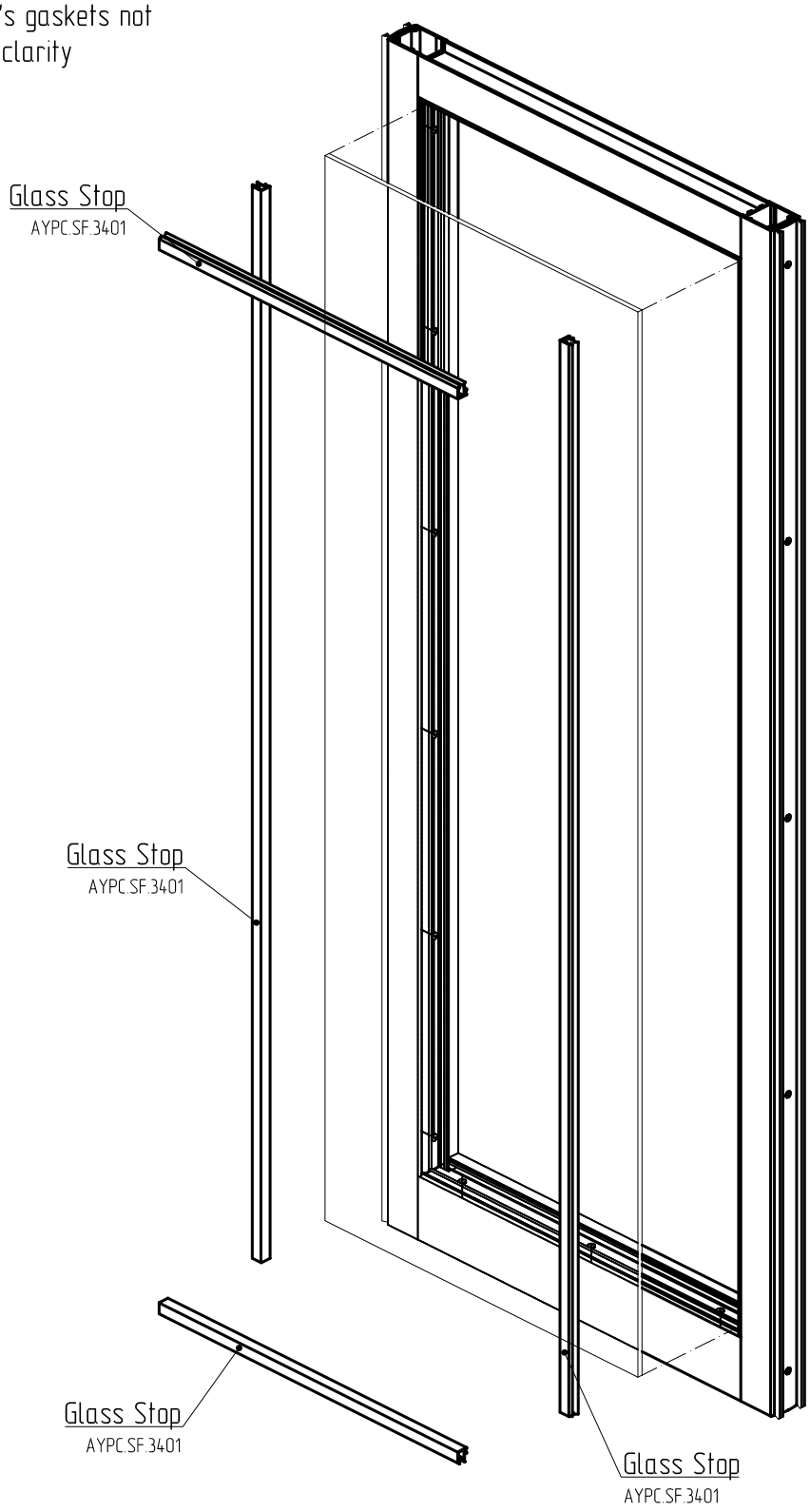

Glass stop's gaskets not shown for clarity
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402
Glass Stop
AYPC.SF.3401
AYPC.SF.3402

Glass stop's gaskets not shown for clarity



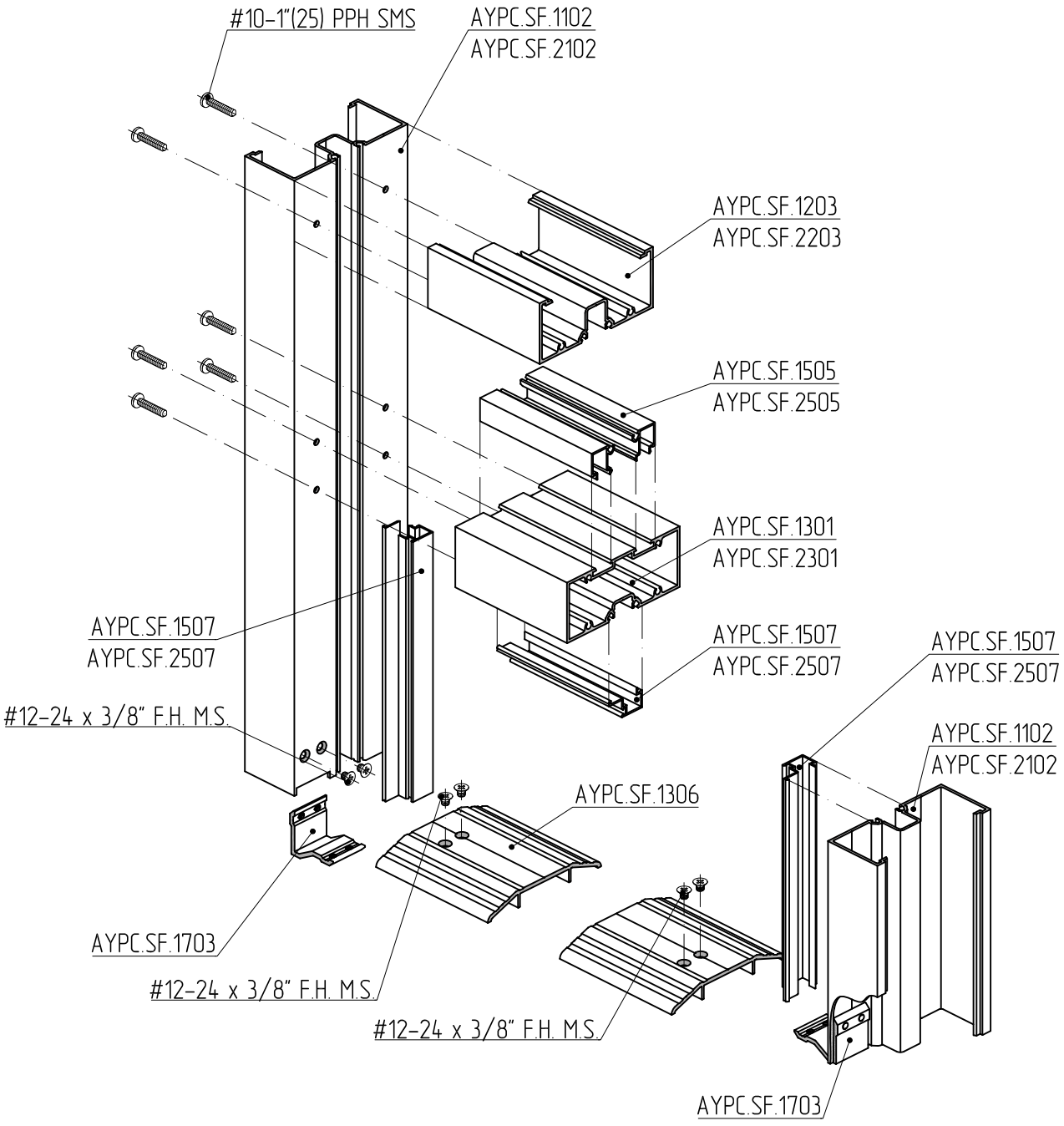
The scheme of machining the upper and bottom glass stops AYPC.SF.3403E.

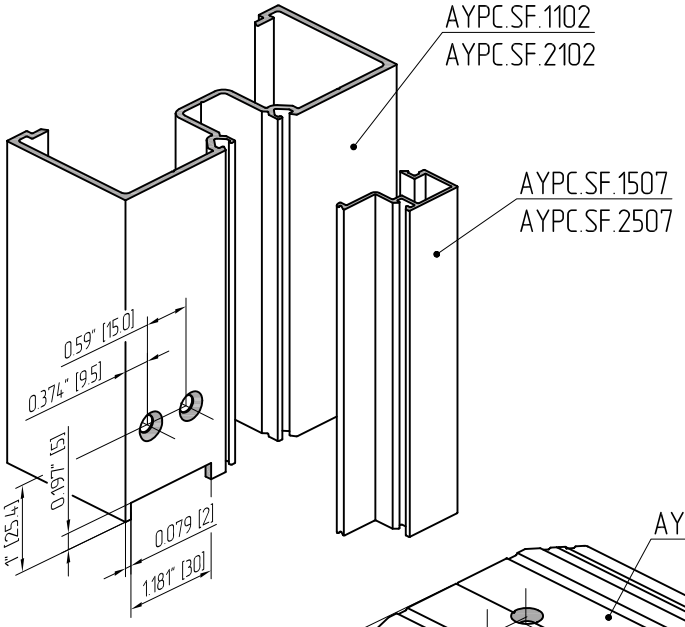
Glass stop's gaskets not shown for clarity

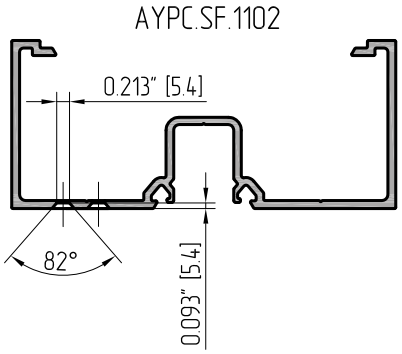


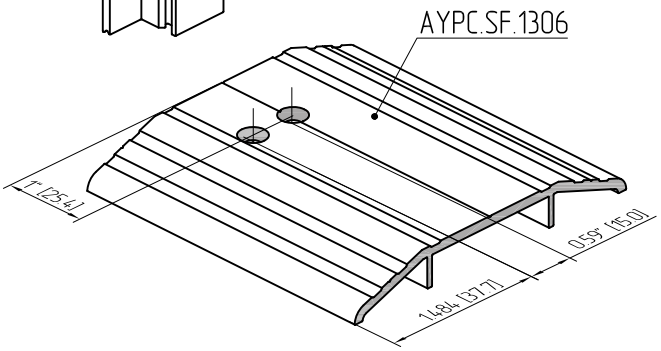
ASSEMBLY INSTRUCTIONS:

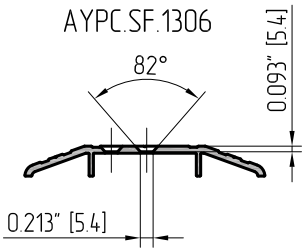
1. Verify opening size. Allow for 1/4" (6.4) shim and caulk space at sides, and 1/2" (12.7) space at top of frame.
2. If required, cut off top of vertical jambs to adjust frame to desired height.
3. Cut templates from instructions. Align edge of template with top of vertical and drill holes for head clips.
4. Attach anchor clips for head, door header, and threshold to jambs with provided screws.
5. Butter contact surface of anchor clips with sealant.
6. Assemble head and door header to jambs as shown.

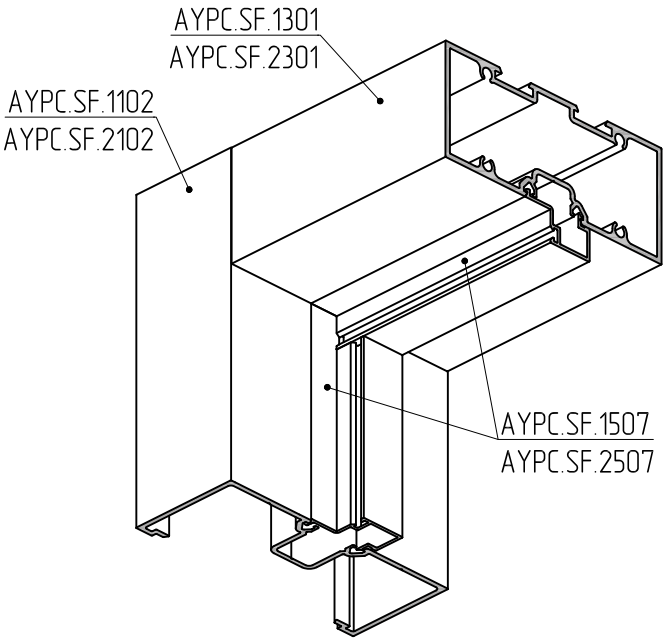




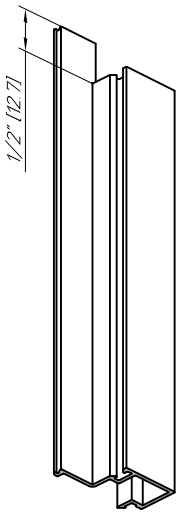






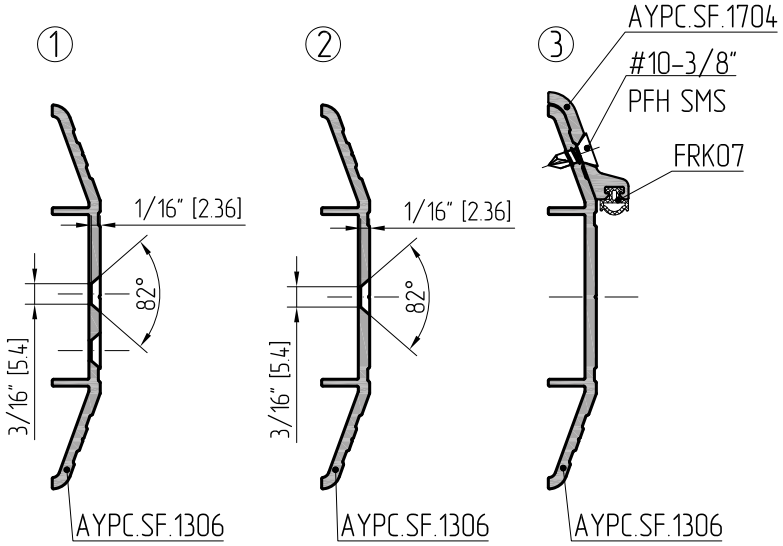


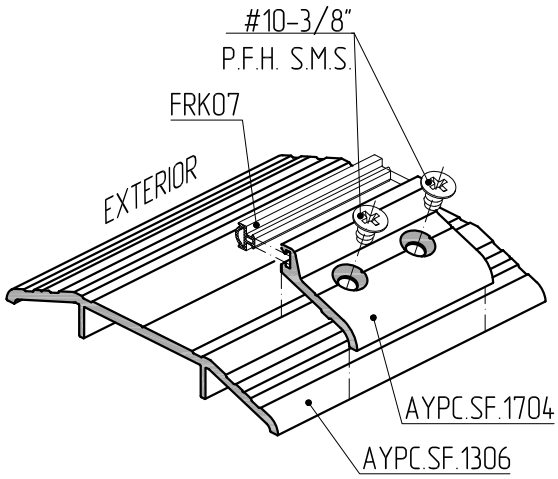
AYPC.SF.1507
AYPC.SF.2507 are similar

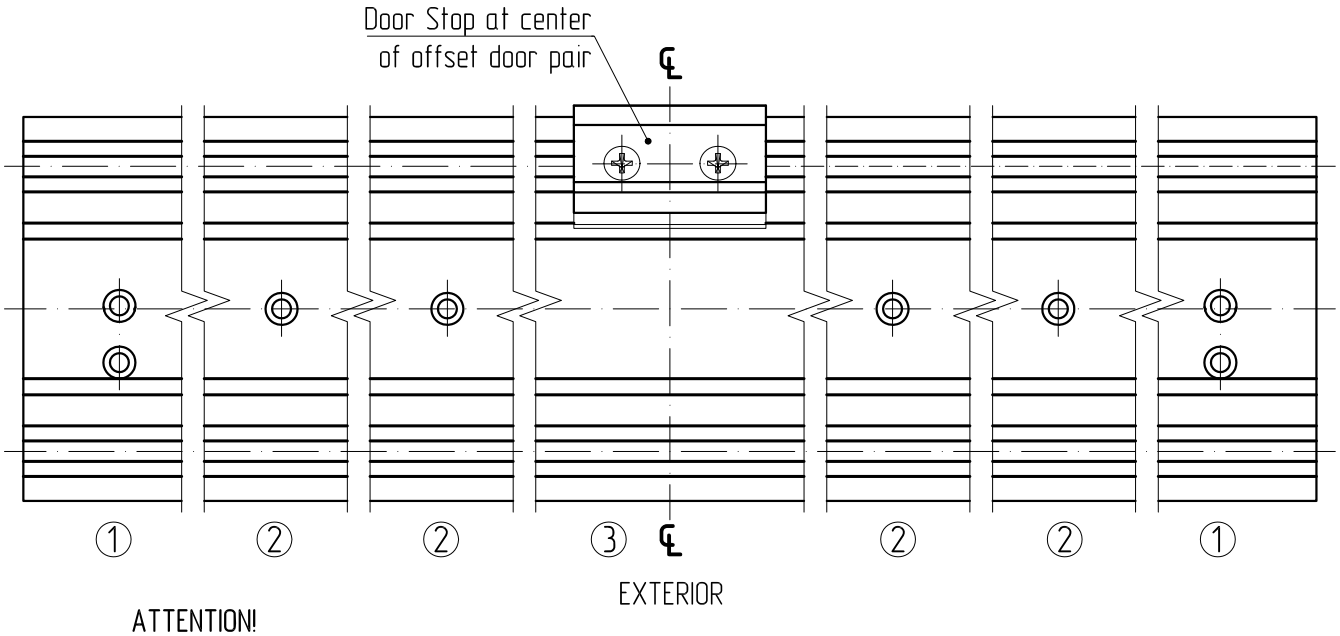


INSTALLATION INSTRUCTIONS:

1. Set frame into opening plumb and square.
2. Drill holes for #12 installation screws starting 6" (152.4) from corners and not more than 24" (609.6) O.C.
3. Secure jambs and head to opening and threshold to floor with #12 screws.
4. If pivot is not supported by finished floor, block as required.
5. Snap door stops with weatherstrip into jambs and door header. Jamb stops run through.
6. For 1" (25.4) glazing, snap jamb sash into jambs. Jamb sash runs through.
7. Place glass setting blocks in door header at quarter or eighth points as required and glaze transom.
8. Install sash glazing bead.
9. Roll-in glazing gaskets for jambs and header.



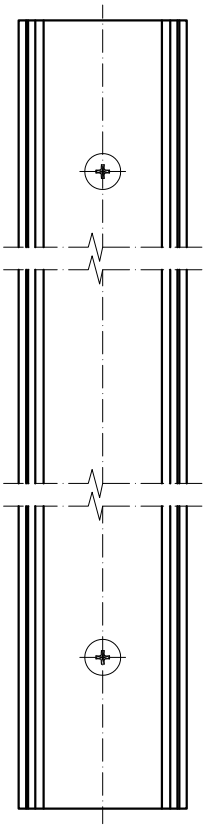


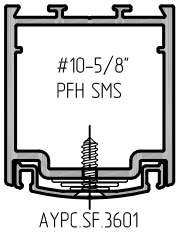


ATTENTION!

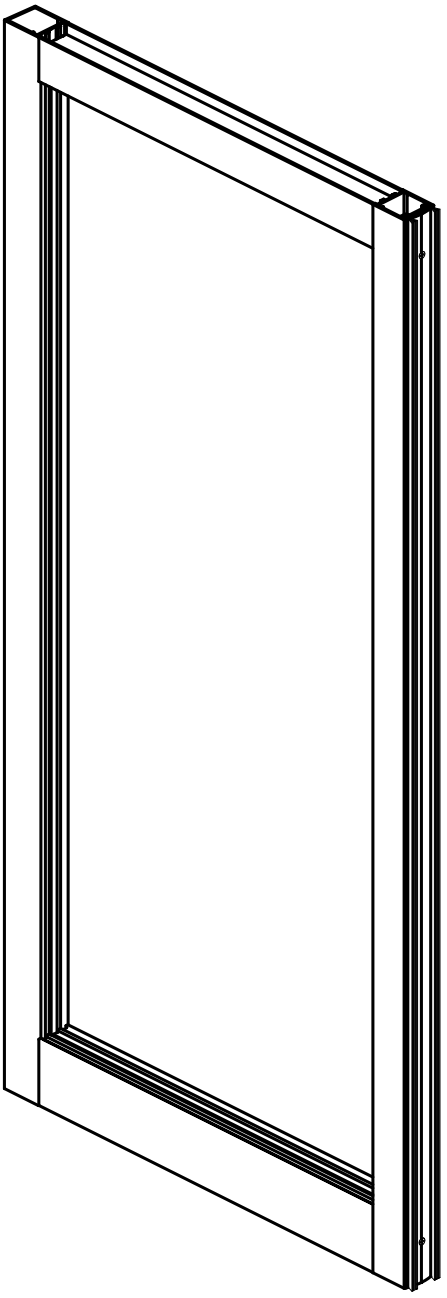
In case of additional requirements of air leakage and water penetration profile AYPC.SF.1509 (with gasket FRK07) can be used on all length of threshold AYPC.SF.1306. Profile AYPC.SF.1509 Fastening

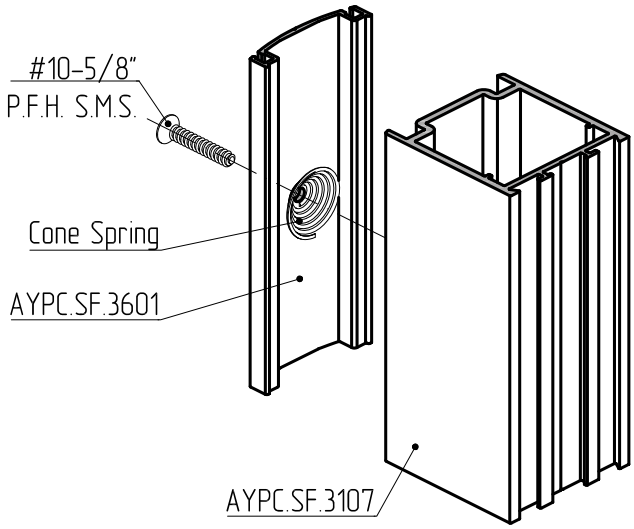
ASTRAGAL INSTALLATION INSTRUCTION:





AYPC.SF.3601





ADJUST WEATHER ASTRAGAL
FOR PAIR OF DOORS

Adjust the weather astragal by turning the adjustment screws located along the meeting stile cover of the active leaf:
Clockwise to increase the distance between leafs. Counter clockwise to reduce the clearance between leafs.

Calculate Door Glass Sizes:

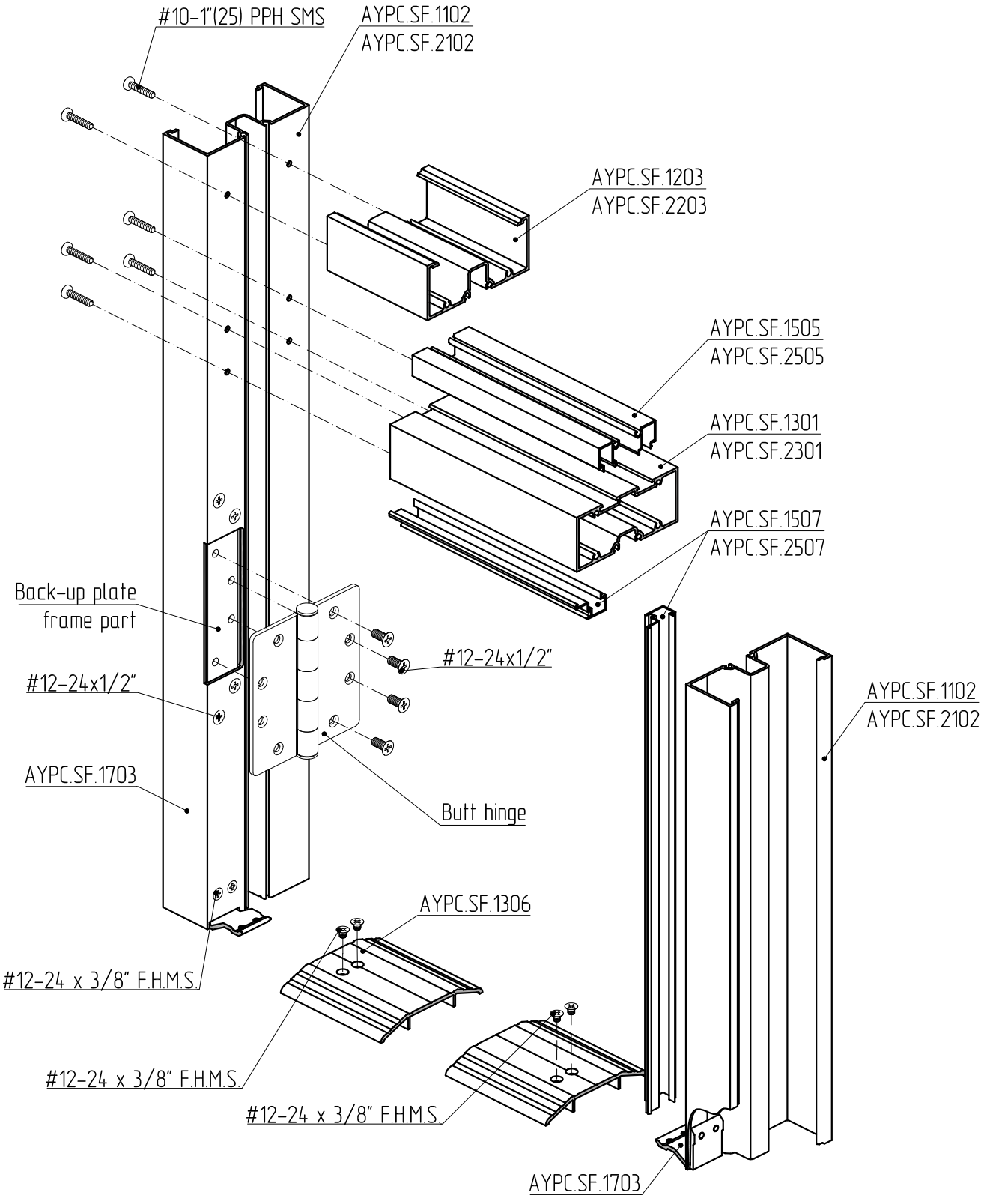
Transom glass formula

TYPE	SF400	SF450
Width for Single Glass	D.L.O.+(plus)5/8"	–
Height for Single Glass	D.L.O.+(plus)11/16"	–
Width for Insulating Glass	–	D.L.O.+(plus)7/8"
Height for Insulating Glass	–	D.L.O.+(plus)15/16"

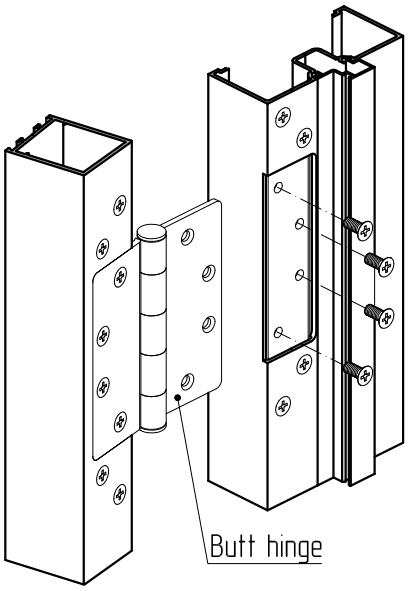
Threshold (1/2") Allowance Included

Door Opening Size	Narrow Stile	Medium Stile	Wide Stile
Height (Glass or Insulating Glass)	D.O.–(minus)8–1/8"	–	–
Width (Glass or Insulating Glass)	D.O.–(minus)4–13/32"	–	–
Width Pair (Glass or Insulating Glass)	D.O. ÷ 2–(minus)4–3/16"	–	–

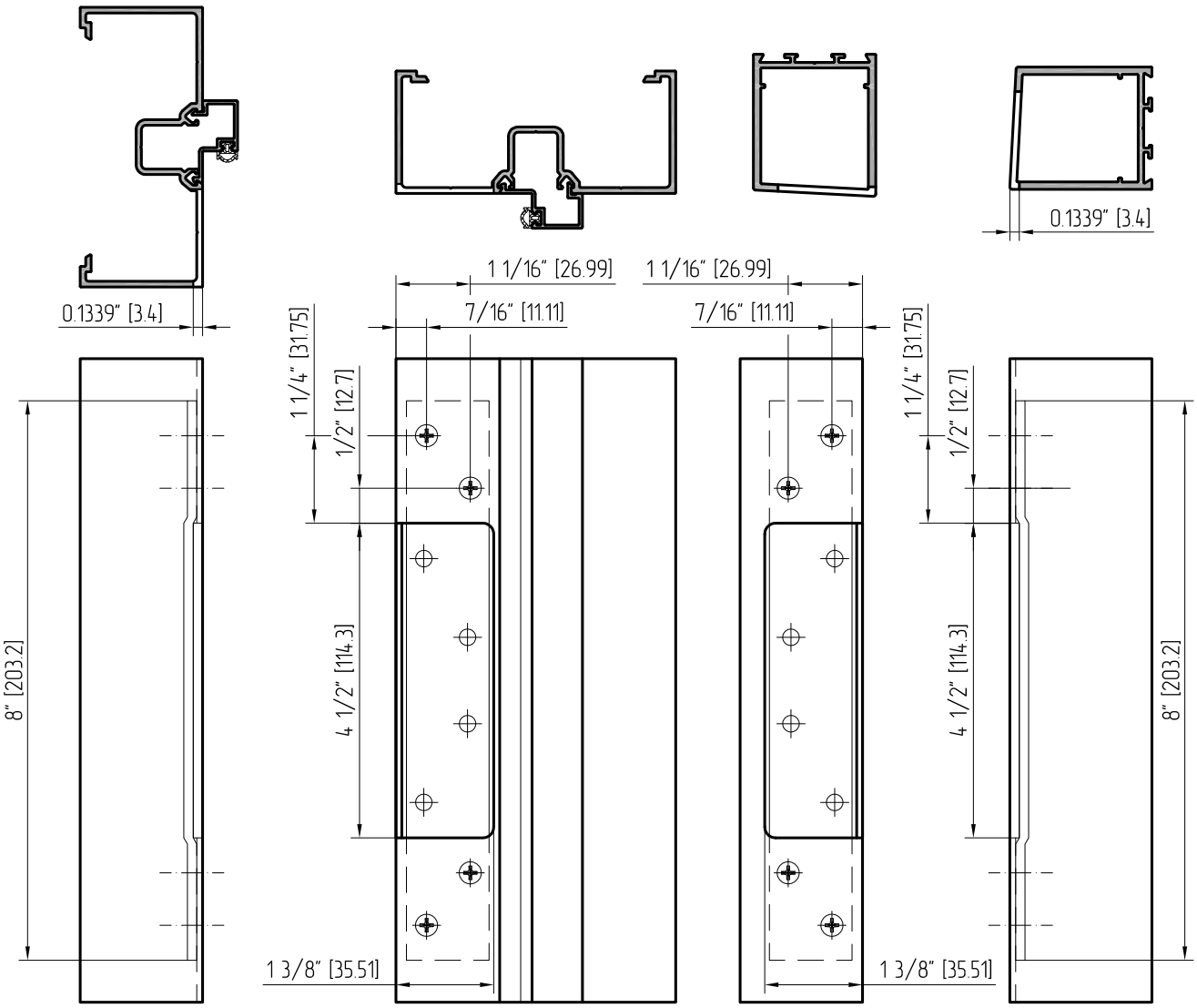
FRAME UNIT FOR BUTT HUNG DOOR (OPEN BACK FRAME)



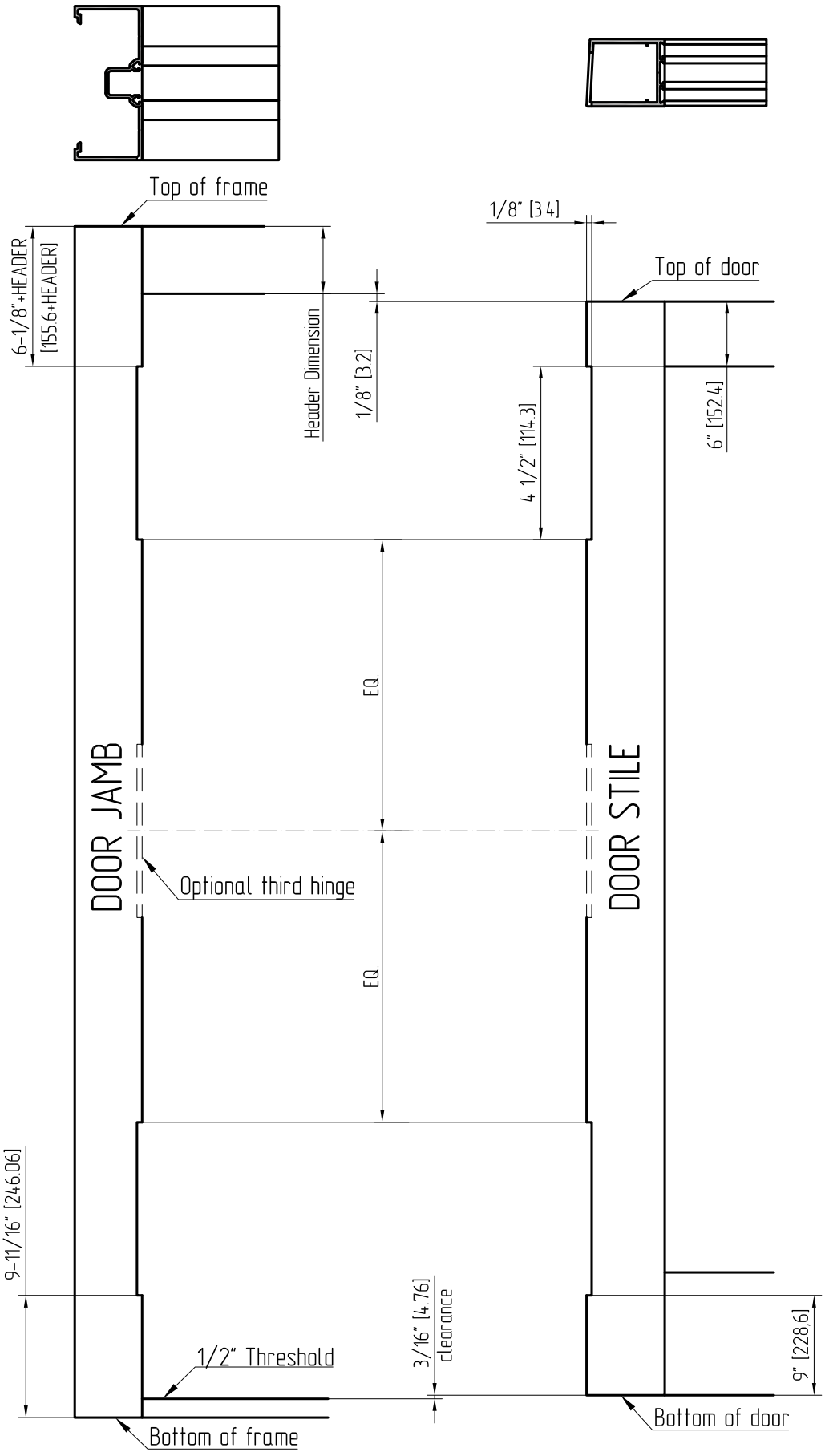
BUTT HINGE (4-1/2"x4")



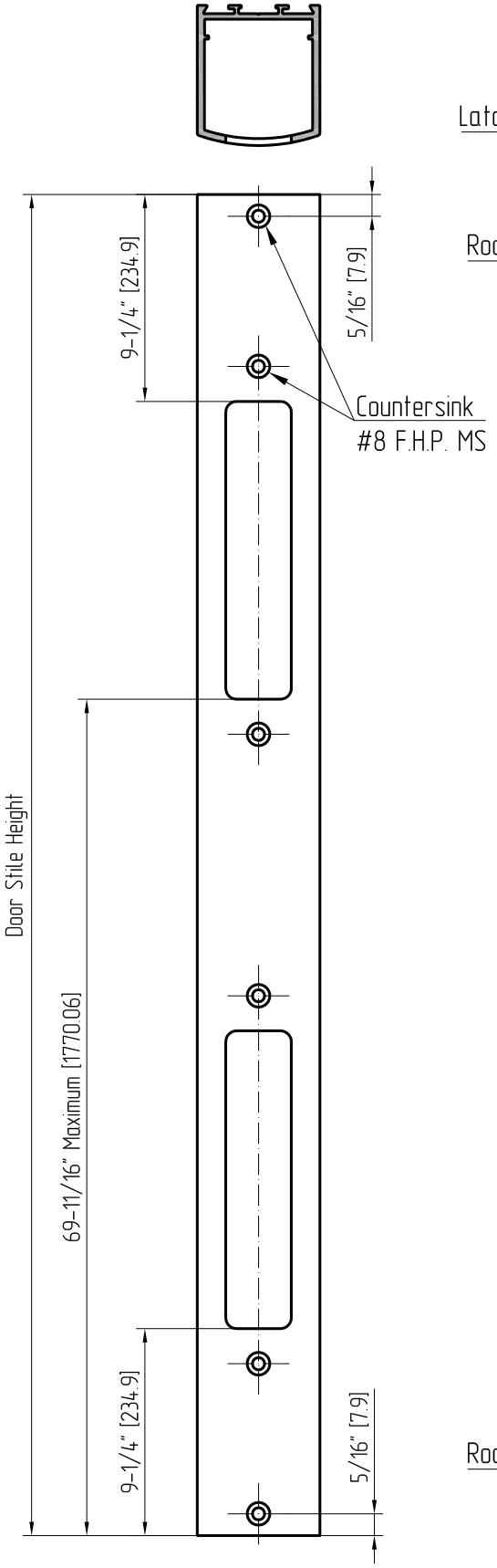
Prepare frame and door for hinges, as shown.
Install back-up plates in door and frame.
Install butt hinges in door. Set door in place and fasten hinges to frame.
For butt hinge standart location see page 05.03.

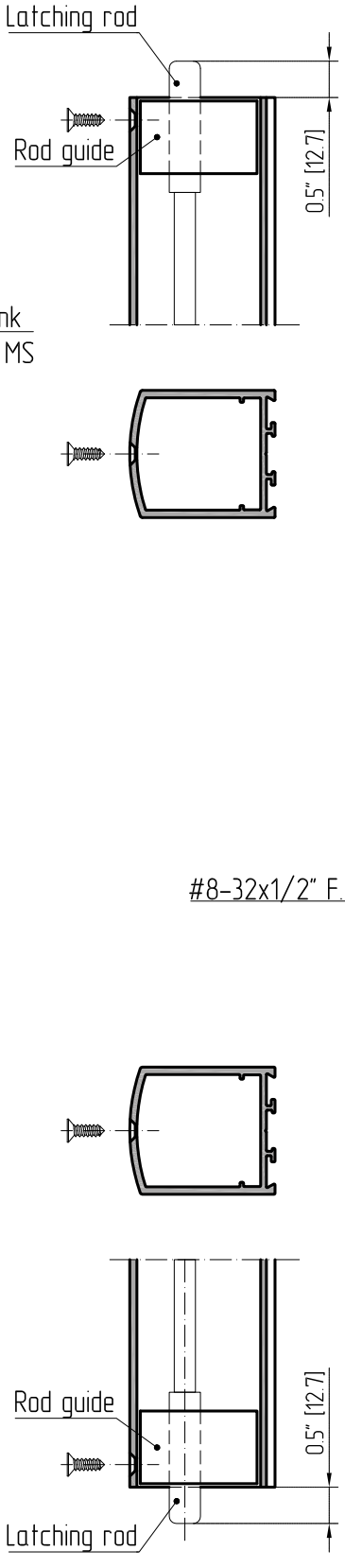


BUTT HINGE STANDARD LOCATION

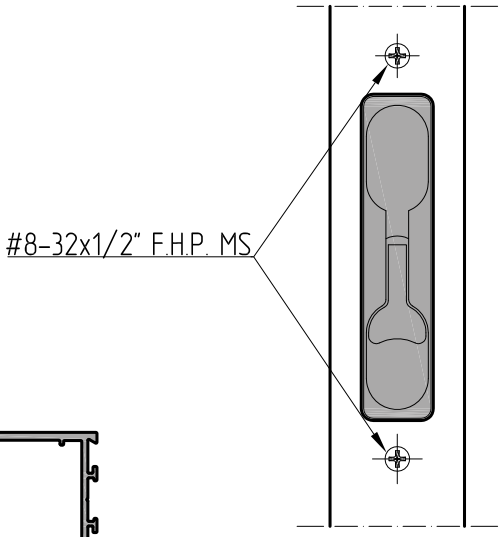


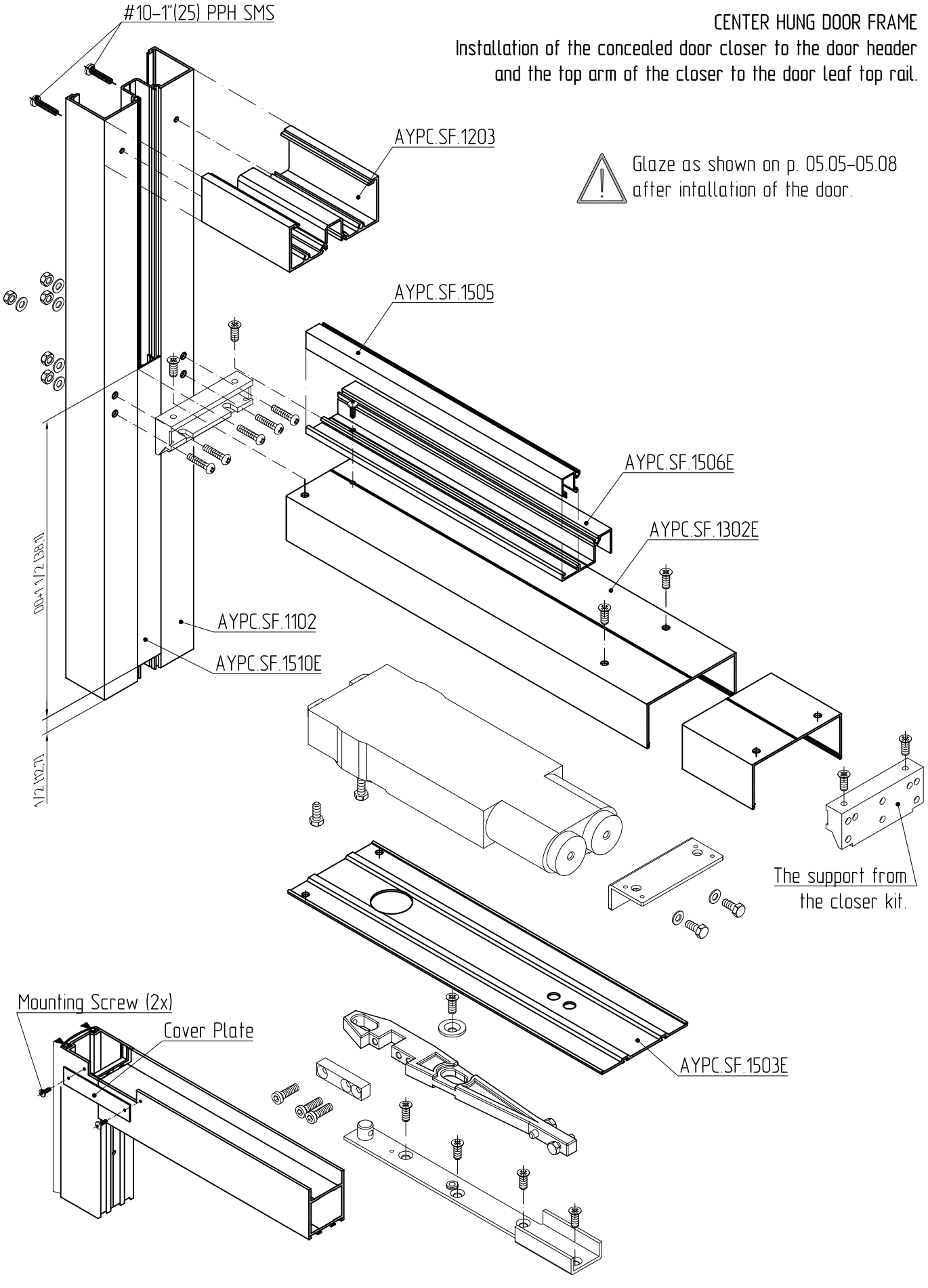
FLUSH BOLT INSTALLATION IN INACTIVE LEAF OF DOOR PAIR





1. Insert flush bolts through cutouts in door sitle and push rod through top and bottom guides.
2. Adjust flush bolt rods so tips extend 1/2" beyond ends of door stile.
3. Attach top and bottom flush bolts with #8-32x1/2" FHP MS.
4. Position each lever in the lock position.
5. Flip levers to retract flush bolts.

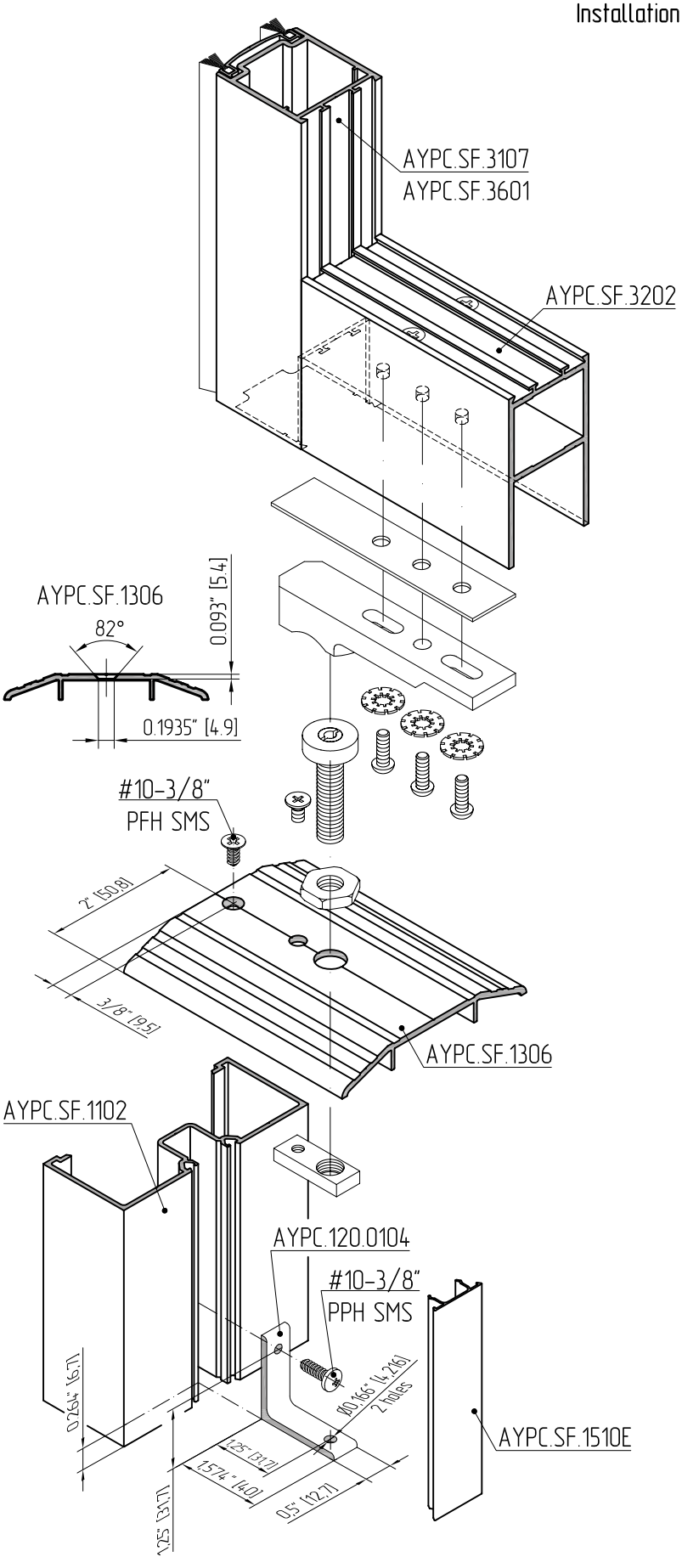




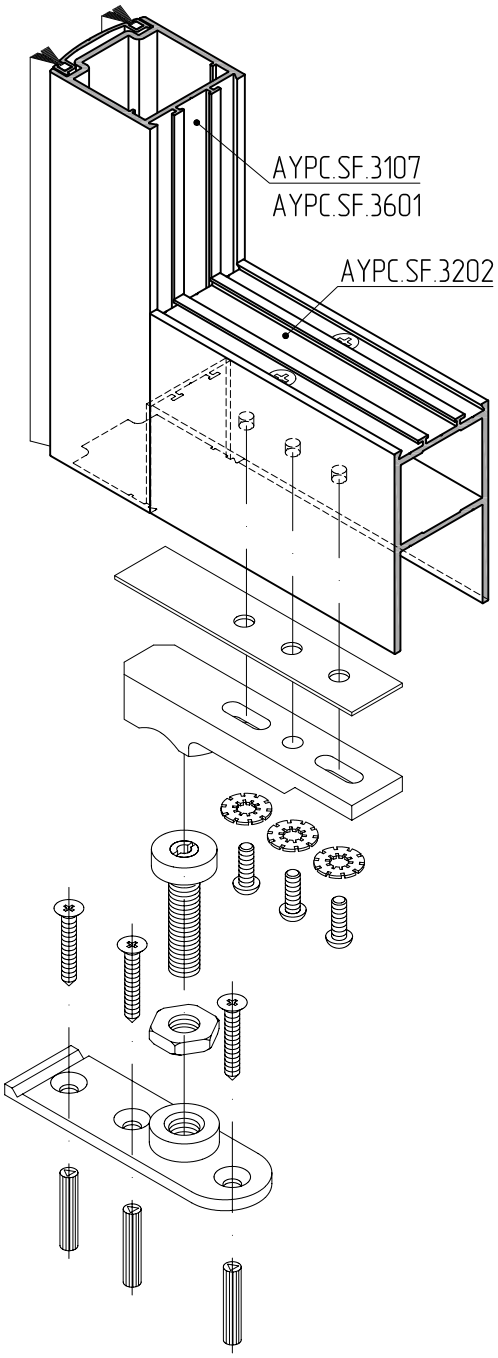
CENTER HUNG DOOR FRAME

Installation of the concealed door closer to the door header and the top arm of the closer to the door leaf top rail.

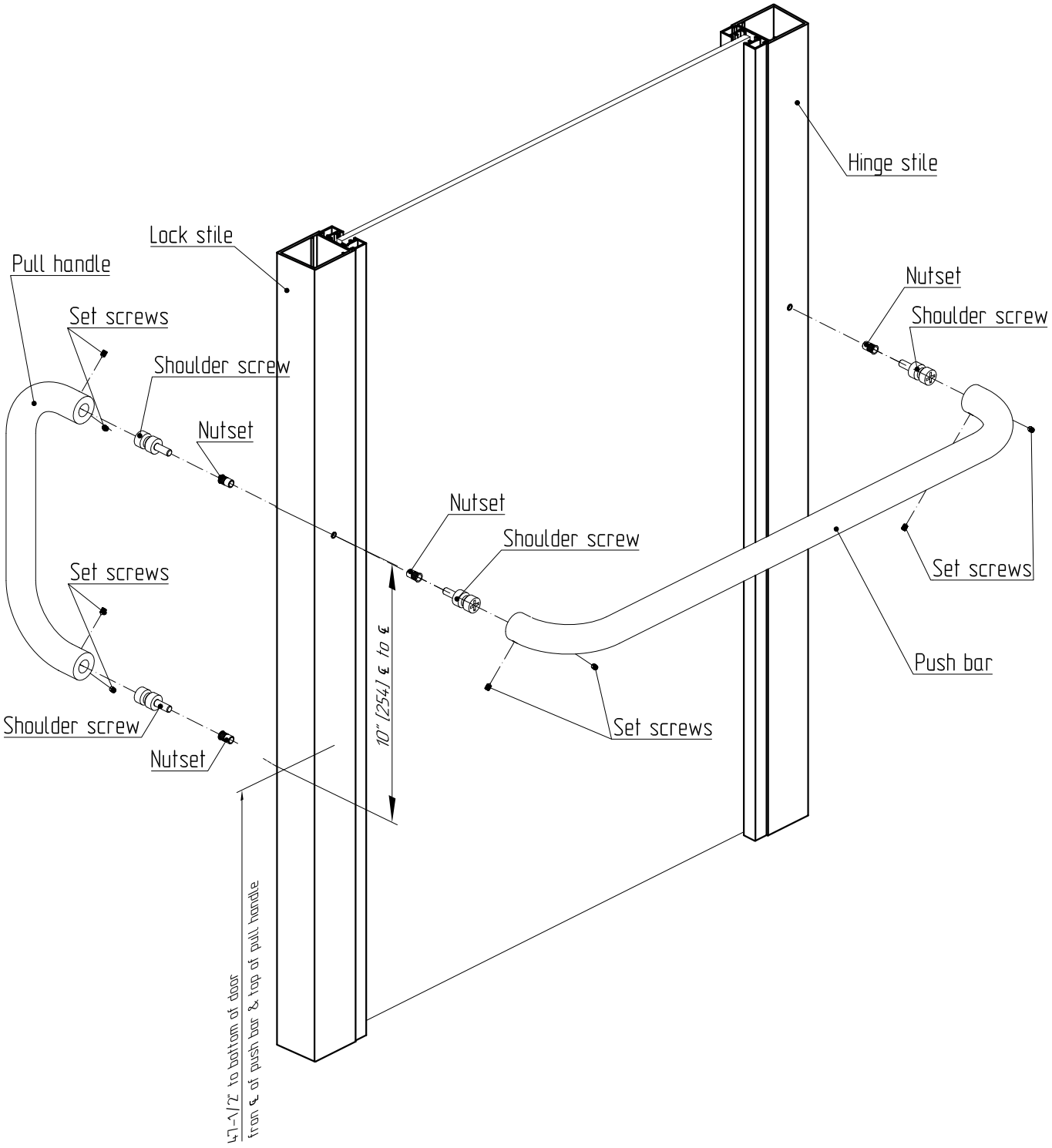
Glaze as shown on p. 05.05–05.08 after intallation of the door.



Glaze as shown on p. 05.05–05.08 after intallation of the door.



PUSH/PULL HARDWARE FOR OFFSET DOORS



PUSH/PULL HARDWARE – PANIC DOORS