Engineering Evaluation Report # 450LM-120125-PGT

Prepared by:
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Manufacturer:
PGT Industries
3400 Precision Drive.
N. Venice, FL 34275

Product Description:
FD450 Series Impact-resistant Aluminum French Door, PW/Sidelite and Transom, (LM & SM); FL Approval #331

Compliance:
The above-mentioned product has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61 G20-3.005 method 1(d). The product listed herein complies with requirements of the current Florida Building Code.

This product has been evaluated and is in compliance with the current Florida Building Code, including the "High Velocity Hurricane Zone" (HVHZ).

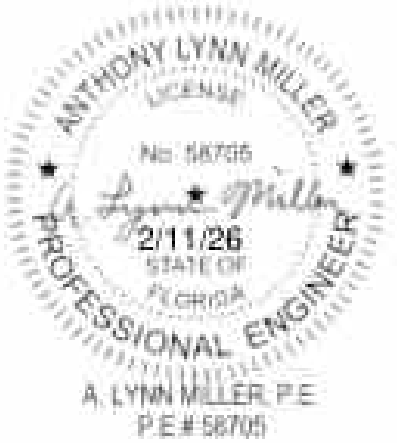
Supporting Technical Documentation:
1. Approval document: drawing number 450FPA-LM-PGT, signed and sealed by A. Lynn Miller, P.E.
2. Test Report Nos. HTL-0080-0304-11, 0080-0902-11, 0080-912-97 (97055), 0080-0402-02 (01071) signed and sealed by Vinu J. Abraham, P.E.; Hurricane Testing Laboratories
Test report Nos. CTLA-3056WA thru C signed and sealed by Ramesh C. Patel, P.E.; Certified Testing Laboratories
Test report Nos. ATI-B5234.03-450-18 signed and sealed by Vinu J. Abraham, P.E.; Architectural Testing Inc.
Test Report FTL 17-7534, signed and sealed by Idalmis Ortega, P.E.; Fenestration Testing Laboratories, Medley, FL 33166

TAS 201-94 Large Missile Impact Test
TAS 202-94 Uniform Static Air Pressure Test
TAS 203-94 Cyclic Pressure Loading Test

3. Calculations, signed and sealed by Javad Ahmad, P.E. dated 10/27/14, 8/27/15 & 6/29/12A. Calculations, signed and sealed by Lynn Miller, P.E., dated 3/26/20, 6/20/20 & 7/17/20.

4. Miami-Dade RER Product Control Section NOA's; Various interlayers as noted.

Limitations and Conditions of use:
- Units must be glazed per ASTM E1300-09, refer to approval document for glazing details.
- This product is rated to be used in the HVHZ.
- This product is impact resistant and does not require impact protection in wind borne debris regions.
- Frame and panel material to be extruded Aluminum.
- Units must be installed in accordance with approval document.



SERIES FD450 IMPACT-RESISTANT, INSWING & OUTSWING, FRENCH DOOR W/W/O TRANSOM OR SIDELITES

FLORIDA PRODUCT APPROVAL #XXX

DESIGN PRESSURE RATING	WATER PRESSURE RATING	IMPACT RATING
WHERE SUCH OPTIONS ARE SELECTED PER TABLE 2.1 - 5	TPI OF THE (+) DESIGN PRESSURE UNLESS NOTED OTHERWISE	IMPACT FOR LARGE & SMALL MISSILE IMPACT RESISTANCE

1) THIS PRODUCT HAS BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE CURRENT FLORIDA BUILDING CODE (FBC), INCLUDING THE HIGH-VELOCITY HURRICANE ZONE (HVHZ).

2) SHUTTERS ARE NOT REQUIRED WHEN USED IN HVHZ WORK (NORTH PERSPECTIVE).

3) MASONRY ANCHORS MAY BE USED INTO WOOD OR PER TABLE 4. ALL WOOD BUCKS LESS THAN 1 1/2" THICK ARE TO BE CONSIDERED TO INSTALLATIONS. 1X WOOD BUCKS ARE OPTIONAL IF UNIT IS TO BE INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS REPORTED AS 1X ARE 1 1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

4) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL OBSTACLES OR STUCCO. USE ANCHORS OF SUFFICIENT LENGTH TO ATTAIN MIN. EMBEDMENT. ATTACHMENT FOR WATER RESISTANCE OF INSTALLATION SHALL BE DONE BY OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

5) SHIMS ARE REQUIRED AT EACH ANCHOR LOCATION WHERE THE PRODUCT IS NOT FLUSH TO THE SUBSTRATE. USE SHIMS CAPABLE OF TRANSFERRING APPLIED LOADS. WOOD SHIMS BY OTHERS. SHIMS MUST BE SUFFICIENTLY ANCHORED TO RESIST LOADS IMPOSED ON THEM BY THE DOOR.

6) THE ANCHORAGE DEPICTED ON THIS DRAWING HAS BEEN DESIGNED TO RESIST THE WIND LOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. THE 33 KSI STEEL RETAINER HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT. THE 33 KSI CLIP WAS USED FOR THE EVALUATION OF ANCHORS NOT INSIDE ANCHORS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE FOR CORROSION RESISTANCE.

7) DOOR SIZES MUST BE VERIFIED FOR COMPLIANCE WITH GLAZING REQUIREMENTS OF THE FBC AS APPLICABLE. ALL CONFIGURATIONS SHOWN ARE AVAILABLE AS MULTIPLE PANELS. MAXIMUM OVERALL FRAME SQUARE FOOTAGE FOR VERTICAL SELF WEIGHING SYSTEMS IS 120 FT². FOR SYSTEMS USING A TRANSOM, SEE SHEET 4 FOR LIMITATIONS. FOR LARGER AREAS USE STRUCTURAL WALLS ONLY FROM REPORTED APPROVAL. DESIGN LOADS ARE BASED ON ALLOWABLE STRESS DESIGN (ASD).

TABLE 3

Anchor Group	Anchor Type	Substrate	Anchor Location	Min. Embedment	Min. Edge Distance
A	3/4" Diameter Lifetime	Southern Pine (SG = 0.55)	Head & Jamb	1 3/8"	3"
		Hollow or Grout-filled CMU (4,000 psi min.)		1 1/4"	3 1/2"
		Concrete (min. 3.0 ksi)		1 1/4"	3 1/2"
	#14 Screw (SS) (Lr. to Min. 1/2 inserts beyond substrate.)	Aluminum 6063-T6		7/8"	3"
		Wood, ASD		2 3/4" (3 1/2 dia)	3"
		Steel 33 ksi, AWS Sr. 20		0.071" (14 Ga.)	3"
B	1/4" Diameter Lifetime	Concrete (min. 3.0 ksi)	Head & Sill	1 3/4"	3 1/2"
C	5/16" Diameter UltraCon	Concrete (min. 3.0 ksi)	ADA Sill (Pk 9)	1 3/4"	3 1/8"
D	#14 Screw (SS) (Lr. to	Southern Pine (SG = 0.55)	Side (Pk 5 or 10)	1 3/8"	3"

1) ALL ANCHOR HEAD TYPES ARE APPLICABLE FOR NOTCHING RECOMMENDED FOR 33 KSI CLIP.

TABLE 1

Lock Design Pressure (PSF)

Lock Type	Description	Door Frame Height							
		96 1/4"		96 3/4"		108 3/4"		120 3/4"	
		(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
1	Cipher Creek with 3-Point Lock	80.0	80.0	80.0	80.0	--	--	--	--
2	Baldwin with 3-Point Lock	150.0	150.0	150.0	150.0	150.0	150.0	50.0	50.0
3	Regent Commercial with 3-Point Lock	150.0	150.0	150.0	150.0	150.0	150.0	50.0	50.0
4	Baldwin Single Point Lock	65.0	65.0	65.0	65.0	--	--	--	--
5	Cipher Creek Single Point Lock	65.0	65.0	65.0	65.0	--	--	--	--
6	Door-O-Matic, Series 1000	65.0	65.0	75.0	75.0	--	--	--	--
7	Jeldwen, Series 2000/3000	65.0	65.0	75.0	75.0	--	--	--	--
8	Surface Mounted Lock	150.0	150.0	60.0	60.0	50.0	60.0	50.0	50.0

1) DOH TYPES 1 & 7 ARE NOT AVAILABLE FOR INSWING CONFIGURATIONS.
2) LADDER ROLL HANDLE MUST BE USED WITH DOOR TYPES 2 OR 3.

INSTRUCTIONS TO USING THE TABLES:

1) FOR YOUR SPECIFIC WINDOW AND PRODUCT OPTIONS, DETERMINE THE MINIMUM DESIGN PRESSURE REQUIRED BASED ON PROVISIONS OF THE CURRENT FLORIDA BUILDING CODE (FBC).

2) CHECK THE ALLOWABLE EXTERIOR AND INTERIOR DESIGN PRESSURES FROM APPROPRIATE TABLES ON THE FOLLOWING SHEETS. THE DESIGN PRESSURE FROM INDIVIDUAL DIFFERENT PARTS MUST FIRST BE ASSESSED AND THEN THE LOWEST VALUE USED AS THE FINAL OVERALL DESIGN PRESSURE.

A) DETERMINE WATER INFILTRATION REQUIREMENTS BASED ON PROVISIONS OF THE FBC AND REQUIRED I.S.O. RATING PER SHEET FOR DOORS. DISREGARD ON YOUR CHOSEN PRODUCT THAT MEET LOWER (+) DESIGN PRESSURE.

B) FROM TABLE 1, DETERMINE THE DESIGN PRESSURE BASED ON YOUR DOOR LOCK TYPE.

C) FOR SINGLE DOORS (1) AND STAND-ALONE SIDELITES (2), DETERMINE THE DESIGN PRESSURE BASED ON YOUR GLASS PLY'S FROM TABLE 2.

D) FOR DOUBLE DOORS (2X), DETERMINE THE DESIGN PRESSURE BASED ON YOUR GLASS PLY'S FROM TABLE 3.

E) IF ATTACHING A SIDELITE (2) TO ANY DOOR, DETERMINE THE DESIGN PRESSURE FOR THE SIDELITE BASED ON GLASS PLY'S FROM TABLE 2, ANCHORAGE FROM TABLE 1 AND WALL/SILL CAPACITY FROM TABLE 4.

F) IF USING A TRANSOM, FROM TABLE 5, DETERMINE THE DESIGN PRESSURE BASED ON YOUR TRANSOM GLASS TYPE.

THE LOWEST DESIGN PRESSURE FROM ANY ABOVE SHALL CONTROL THE ENTIRE SYSTEM.

GUIDE TO SHEETS

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FIGURE 1

DH LENGTH

DOOR ASSEMBLIES WITH SILLS WHERE THE OVERHANG (DH) LENGTH IS EQUAL TO OR GREATER THAN THE OVERHANG HEIGHT MAY BE EXEMPTED FROM WATER INFILTRATION RESISTANCE.

DH HEIGHT

DOOR WATER INFILTRATION NOTES:

1) IF WATER INFILTRATION RESISTANCE IS REQUIRED, THE STANDARD (1) DOOR SILL (FIGURE 2) MUST BE USED.

2) IF WATER INFILTRATION RESISTANCE IS NOT REQUIRED (WITH EXEMPTION PER FIGURE 1), THE (1) DESIGN PRESSURES SHOWN IN THE TABLES MAY BE USED AND MAY THRESHOLD IS ACCEPTABLE.

FIGURE 2

EXTERIOR

STANDARD OUTSWING SILL

ONLY THE DOOR SILL IN AN OUTSWING CONFIGURATION MAY BE USED WHERE WATER INFILTRATION RESISTANCE IS REQUIRED.

1	10/24/19	ADDED SIDELITE	RSH
0	10/24/19	ADDED SIDELITE	RSH
REVISIONS			

ALUMINUM SWING DOOR (UM)

GENERAL NOTES

PGT

1 OF 19

RSH

10/24/19

ALLOWABLE LOAD

No. 56758

STATE OF FLORIDA

PROFESSIONAL ENGINEER

A. LYNN ALLEN, P.E.
P.E. 56758

TABLE 1:

SINGLE DOOR (1) ARROW SERIES PSF DESIGN PRESSURES - PSF DUE TO GLAZING

SELECTED (+) OR (-) DESIGN PSF	FRAME HEIGHT	GLASS TYPES 1, 2, 3, 4 & COMPOSITE PANELS		GLASS TYPES 5 & 7		GLASS TYPES 3 & 6	
		PSF (+)	PSF (-)	PSF (+)	PSF (-)	PSF (+)	PSF (-)
15.0/15"	82.5/6"	150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		108.0	135.0	75.0	75.0	95.0	95.0
44.0/15"		94.5	94.5	75.0	75.0	95.0	95.0
15.0/15"	94.5/6"	150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		108.0	135.0	75.0	75.0	95.0	95.0
44.0/15"		94.5	94.5	75.0	75.0	95.0	95.0
15.0/15"	106.5/6"	150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		108.0	135.0	75.0	75.0	95.0	95.0
44.0/15"		94.5	94.5	75.0	75.0	95.0	95.0
15.0/15"	118.5/6"	150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		150.0	150.0	75.0	75.0	95.0	95.0
15.0/15"		108.0	135.0	75.0	75.0	95.0	95.0
44.0/15"		94.5	94.5	75.0	75.0	95.0	95.0
15.0/15"	130.5/6"	150.0	150.0	75.0**	75.0**	-	-
15.0/15"		150.0	150.0	75.0**	75.0**	-	-
15.0/15"		108.0	135.0	75.0**	75.0**	-	-
44.0/15"		94.5	94.5	75.0**	75.0**	-	-
15.0/15"	142.5/6"	150.0	150.0	75.0**	75.0**	-	-
15.0/15"		150.0	150.0	75.0**	75.0**	-	-
15.0/15"		108.0	135.0	75.0**	75.0**	-	-
44.0/15"		94.5	94.5	75.0**	75.0**	-	-
15.0/15"	154.5/6"	150.0	150.0	75.0**	75.0**	-	-
15.0/15"		150.0	150.0	75.0**	75.0**	-	-
15.0/15"		108.0	135.0	75.0**	75.0**	-	-
44.0/15"		94.5	94.5	75.0**	75.0**	-	-
15.0/15"	166.5/6"	150.0	150.0	75.0**	75.0**	-	-
15.0/15"		150.0	150.0	75.0**	75.0**	-	-
15.0/15"		108.0	135.0	75.0**	75.0**	-	-
44.0/15"		94.5	94.5	75.0**	75.0**	-	-

* NARROW STILE SUBUNITS LIMITED TO 18" FRAME WIDTH OR LESS.
** GLASS HEIGHT MAY NOT EXCEED 82.5/6". TRUE DIVIDED LIGHT REQUIRED FOR GREATER HEIGHTS.

TABLE 2:

DESIGN PRESSURES - PSF AT SUBUNITS DUE TO ANCHORAGE TYPE

ANCHOR TYPE — (SEE SHEET 5 FOR LOCATIONS)		A @ HEAD			B @ HEAD, C/C SILL & MNT. SILL		B @ HEAD, C @ LOW SILL & C @ SITE & MNT. SILL	
WIDTH "W"	FRAME HEIGHT	3 ANCHORS/SIDE	4 ANCHORS/SIDE	6 ANCHORS/SIDE	3 ANCHORS/SIDE	4 ANCHORS/SIDE	3 ANCHORS/SIDE	4 ANCHORS/SIDE
24"	82.5/6"	108.7	110.0	110.0	110.0	110.0	110.0	110.0
30"		86.2	110.0	110.0	110.0	110.0	110.0	110.0
36"		72.5	96.4	110.0	108.3	110.0	101.0	110.0
42"		62.5	83.8	110.0	94.0	110.0	87.5	110.0
24"	94.5/6"	108.2	110.0	110.0	110.0	110.0	110.0	110.0
30"		84.2	110.0	110.0	110.0	110.0	104.0	110.0
36"		70.8	94.1	110.0	105.7	110.0	98.7	110.0
42"		60.8	81.1	110.0	91.0	110.0	85.0	106.7
24"	106.5/6"	97.5	110.0	110.0	110.0	110.0	110.0	110.0
30"		78.8	104.8	110.0	110.0	110.0	106.8	110.0
36"		65.8	87.8	110.0	98.7	110.0	92.1	110.0
42"		56.8	75.7	110.0	84.8	110.0	79.4	101.8
24"	118.5/6"	91.2	110.0	110.0	110.0	110.0	110.0	110.0
30"		73.7	98.4	110.0	110.0	110.0	102.9	110.0
36"		61.9	82.6	110.0	93.0	110.0	86.8	110.0
42"		53.3	71.0	106.5	80.0	107.0	74.6	95.5
24"	130.5/6"	86.9	110.0	110.0	110.0	110.0	110.0	110.0
30"		69.4	92.6	110.0	104.3	110.0	97.4	110.0
36"		58.2	77.7	110.0	88.0	110.0	81.6	104.7
42"		50.2	66.8	100.4	75.8	101.7	70.1	89.8
24"	142.5/6"	82.2	109.7	110.0	110.0	110.0	110.0	110.0
30"		65.6	87.5	110.0	98.3	110.0	91.7	110.0
36"		54.8	73.4	110.0	83.0	110.0	76.8	98.3
42"		76.9	102.5	110.0	110.0	110.0	107.3	110.0
30"	154.5/6"	62.2	82.8	110.0	94.0	110.0	86.8	110.0
36"		52.0	69.4	104.1	78.6	105.7	72.8	93.2
24"	166.5/6"	72.7	97.0	110.0	110.0	110.0	101.2	110.0
30"		58.1	77.5	110.0	88.2	110.0	82.3	105.4
36"		48.5	64.7	97.1	73.5	98.6	68.0	87.1

WIDTH "W" = PANEL WIDTH + ADJACENT PANEL WIDTH / 2 + 1.5"

NOTES:

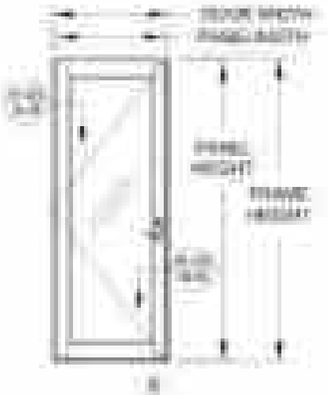
1) CHECK THE ALLOWABLE DESIGN PRESSURES FROM THE APPROPRIATE TABLES OF ALL SHEETS FOR THE BEST OPTIONS (SEE SHEET 1). THE LOWEST DESIGN PRESSURE FROM ALL SHALL CONTROL THE ENTIRE SYSTEM.

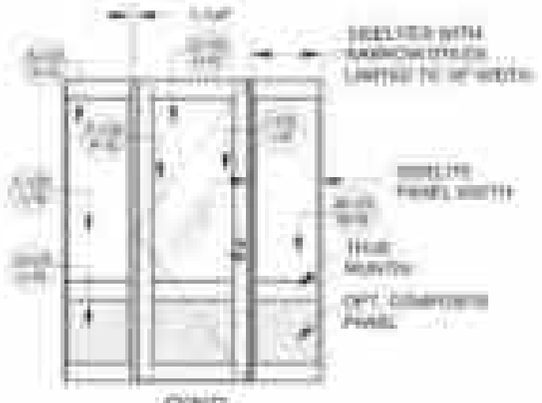
2) EXAMPLE CONFIGURATIONS SHOWN. SIMILAR CONFIGURATIONS ALLOWED. DOORS MAY BE LEFT OR RIGHT HANDED. REFERENCE ON CUTSHEET A (SEE ANY DOOR FROM PAGE 7).

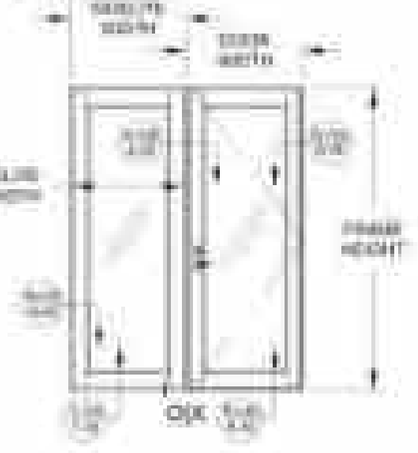
3) "DP" = CUSTOMIZING "PD" = WARRANTY. SEE DETAILS ON SHEETS 8 & 11 & 16 (CUSTOMIZING & TO BE PROVIDED).

4) AT TABLE 2 REQUIRED 3 ANCHORS, INSTALL 1 @ THE DOOR AND 2 @ THE ADJACENT OTHERWISE (4) PLUS (QUANTITY 6 SHOWN).









C	10/29/20		
B	10/29/20		
A	10/29/20		
REVISIONS			

ENGINEERING

ALUMINUM SWING DOOR (LHR)

DESIGN PRESSURE TABLES

4 OF 17

FSH01

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ARCHITECTURAL ALUMINUM MANUFACTURERS ASSOCIATION
PRODUCT DESIGN ENGINEER

TABLE 4:

DOUBLE DOOR (XX) DESIGN PRESSURES, PSF DUE TO GLAZING

DBL DOOR (XX) WIDTH	FRAME HEIGHT	GLASS TYPES 1, 2, 3, 4 & COMPOSITE PANELS		GLASS TYPES 5 & 7		GLASS TYPES 8 & 9	
		EXT. (+)	INT. (-)	EXT. (+)	INT. (-)	EXT. (+)	INT. (-)
50-1/2"	82-3/4"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
62-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
74-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
86-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50-1/2"	94-3/4"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
62-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
74-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
86-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50-1/2"	96-3/4"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
62-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
74-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
86-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
50-1/2"	98-3/4"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
62-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
74-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
86-1/2"		[illegible]	[illegible]	[illegible]	[illegible]	-	-

TABLE 4 (CONT.):

DOUBLE DOOR (XX) DESIGN PRESSURES, PSF DUE TO GLAZING

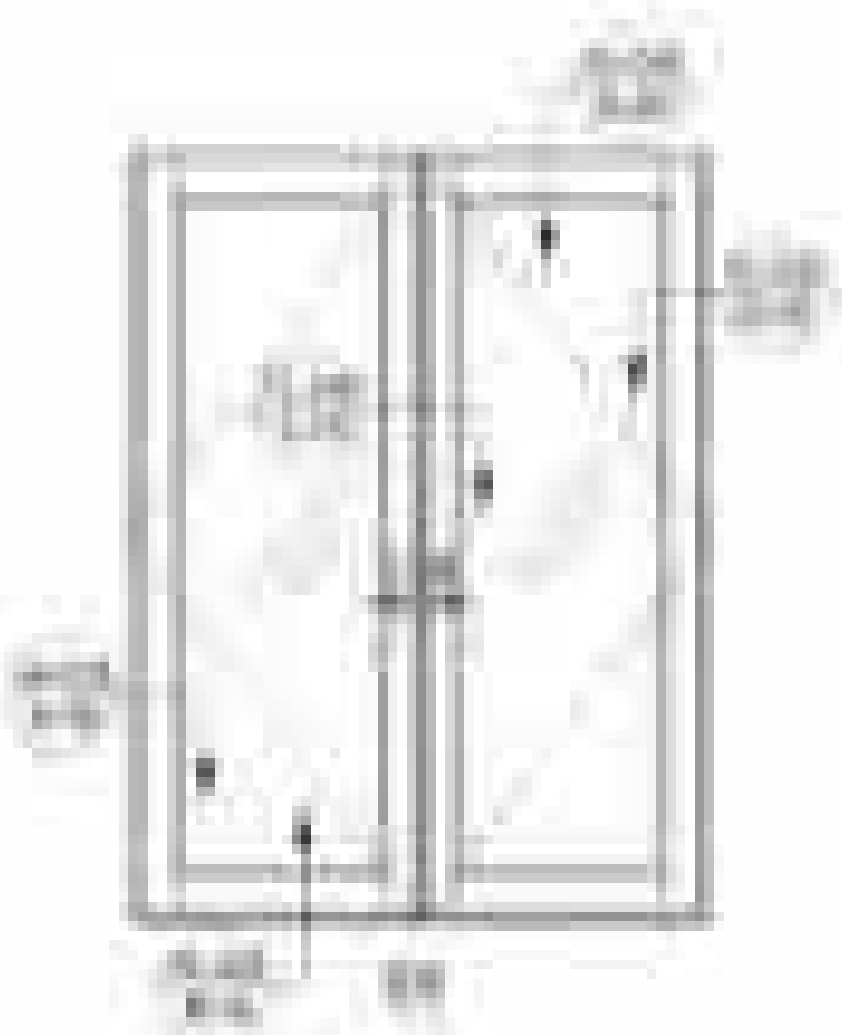
DBL DOOR (XX) WIDTH	FRAME HEIGHT	GLASS TYPES 1, 2, 3, 4 & COMPOSITE PANELS		GLASS TYPES 5 & 7		GLASS TYPES 8 & 9	
		EXT. (+)	INT. (-)	EXT. (+)	INT. (-)	EXT. (+)	INT. (-)
50-1/2"	102-3/4"	[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
62-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
74-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
86-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
50-1/2"	106-3/4"	[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
62-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
74-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
50-1/2"	114-3/4"	[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
62-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
74-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
50-1/2"	120-3/4"	[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
62-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-
74-1/2"		[illegible]	[illegible]	[illegible] **	[illegible] **	-	-

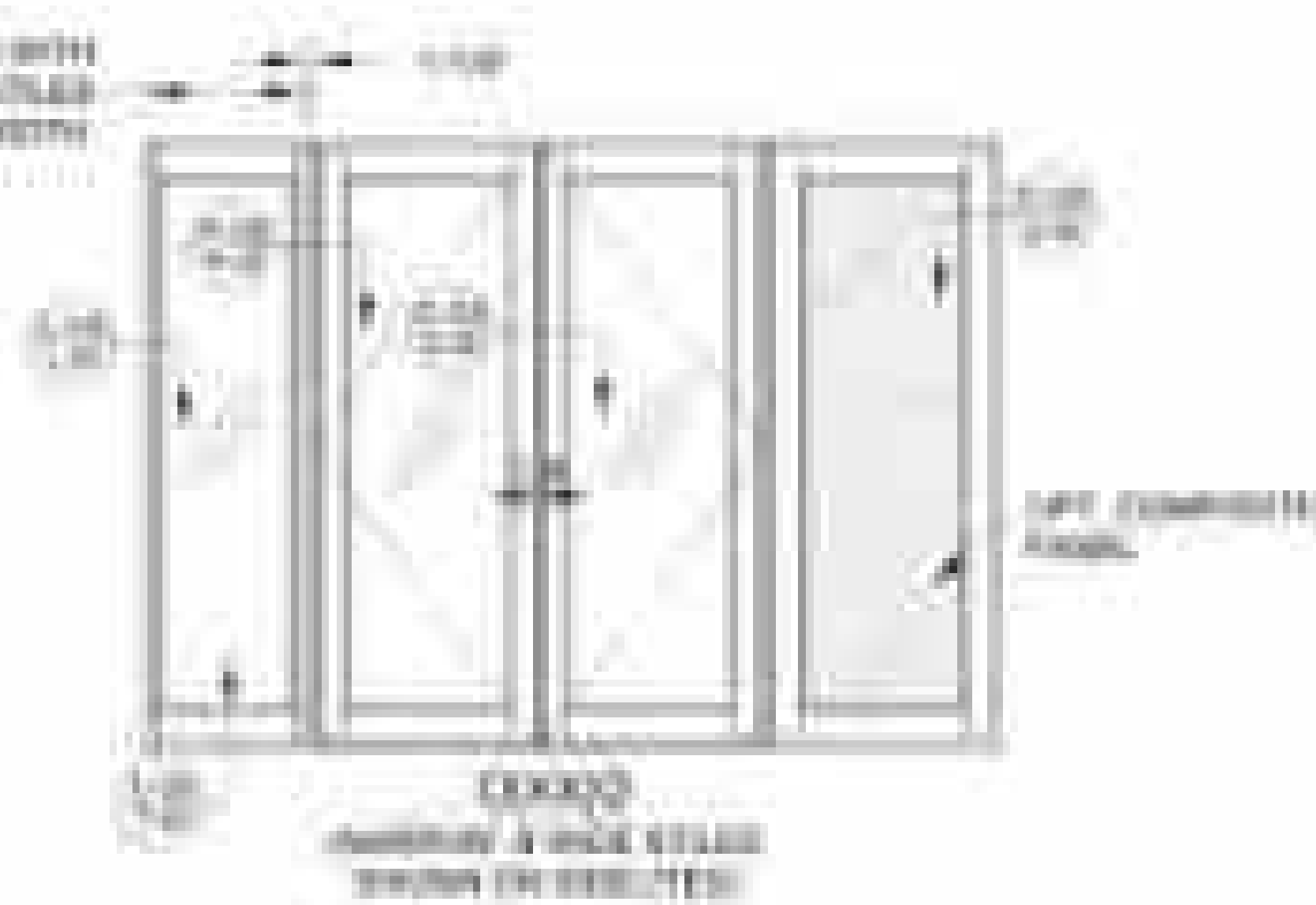
** GLASS HEIGHT MAY NOT EXCEED 92-3/8". TRUE DIVIDED LIGHT REQUIRED FOR GREATER HEIGHTS.

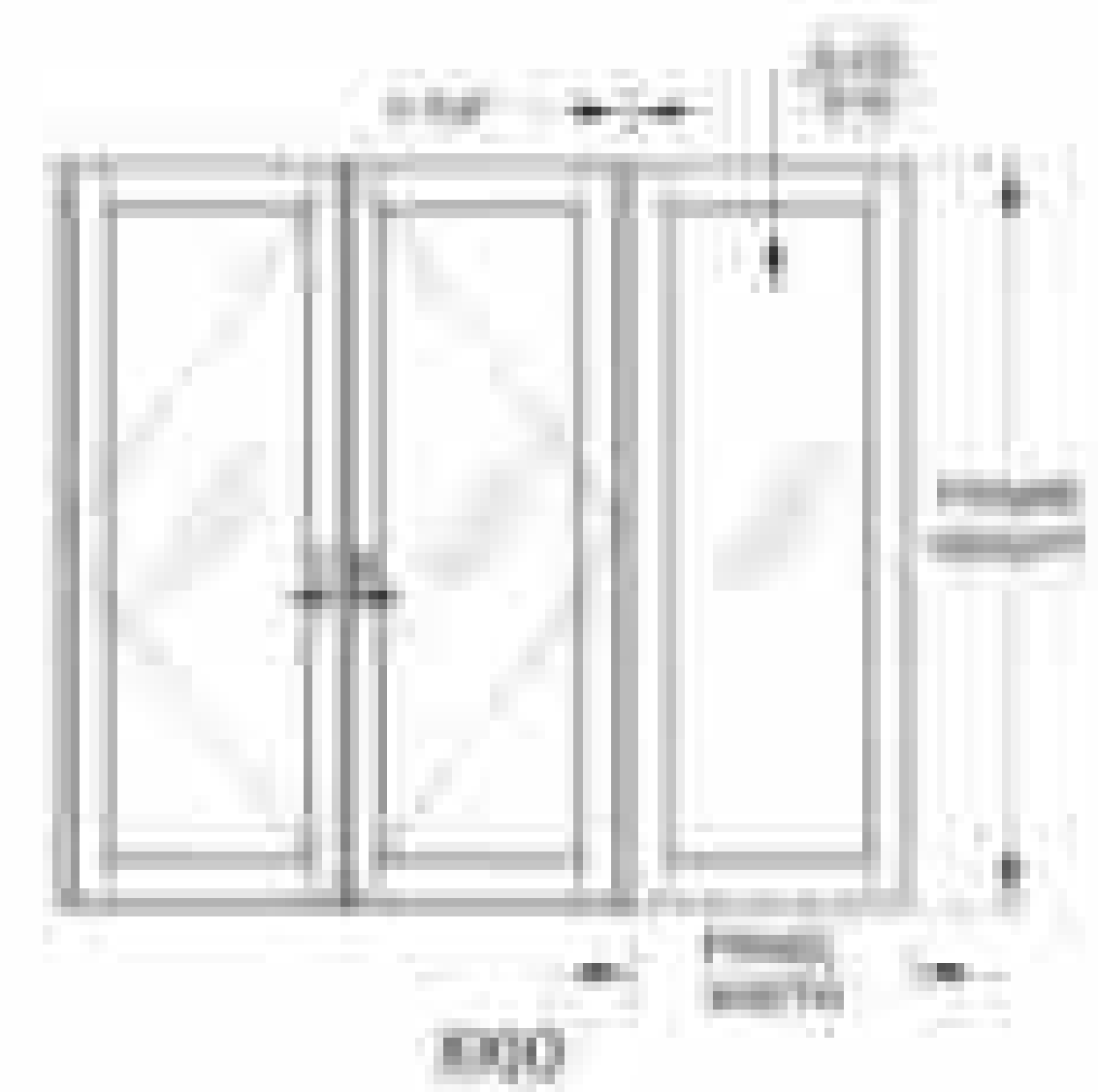
WIDTH ("W") = (PANEL WIDTH + ADJACENT PANEL WIDTH) / 2 + 1.250

4) DOUBLE (XX) DOORS TO HAVE 4 ANCHORS AT CLOSURE. SEE SHEET 8.









NOTES:

1) CHECK THE ALLOWABLE DESIGN PRESSURES FROM THE APPROPRIATE TABLES OF ALL SHEETS PER THE INSTRUCTIONS ON SHEET 1. THE LOWEST DESIGN PRESSURE FROM ALL SHALL CONTROL THE ENTIRE SYSTEM.

2) EXAMPLE CONFIGURATIONS SHOWN. SIMILAR CONFIGURATIONS ALLOWED. DOORS MAY BE LEFT OR RIGHT HANDED, INSWING OR OUTSWING & USE ANY LOCK FROM TABLE 1.

3) "OX" = OUTSWING, "XI" = INSWING; SEE DETAILS ON SHEETS 9-11 & 15 (OUTSWING) & 12-14 (INSWING).



TABLE 1:

TRANSOM PRESSURE PERFORMANCE - FOR DUAL TEMPERED GLAZING

TRANSOM FRAME WIDTH	DOOR FRAME HEIGHT	TRANSOM HEIGHT	GLASS TYPES 1, 2, 3, 4 & 5 COMPOSITE PANELS		GLASS TYPES 6 & 7		GLASS TYPES 8 & 9	
			DP7 (+)	DP7 (-)	DP7 (+)	DP7 (-)	DP7 (+)	DP7 (-)
48"	84"	24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
		42"	60.0	60.0	70.0	70.0	60.0	60.0
60"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
74-1/2"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
48"	96"	24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
		42"	60.0	60.0	70.0	70.0	60.0	60.0
60"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
74-1/2"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
48"	108"	24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
60"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
74-1/2"		24"	60.0	60.0	70.0	70.0	60.0	60.0
		32"	60.0	60.0	70.0	70.0	60.0	60.0
		36"	60.0	60.0	70.0	70.0	60.0	60.0
48"	120"	24"	60.0	60.0	70.0	70.0	60.0	60.0
60"		24"	60.0	60.0	70.0	70.0	60.0	60.0
74-1/2"		24"	60.0	60.0	70.0	70.0	60.0	60.0

NOTES:

1) CHECK THE ALLOWABLE DESIGN PRESSURES FROM THE APPROPRIATE TABLES OF ALL SHEETS PER THE INSTRUCTIONS ON SHEET 1. THE LOWEST DESIGN PRESSURE FROM ALL SHALL CONTROL THE ENTIRE SYSTEM.

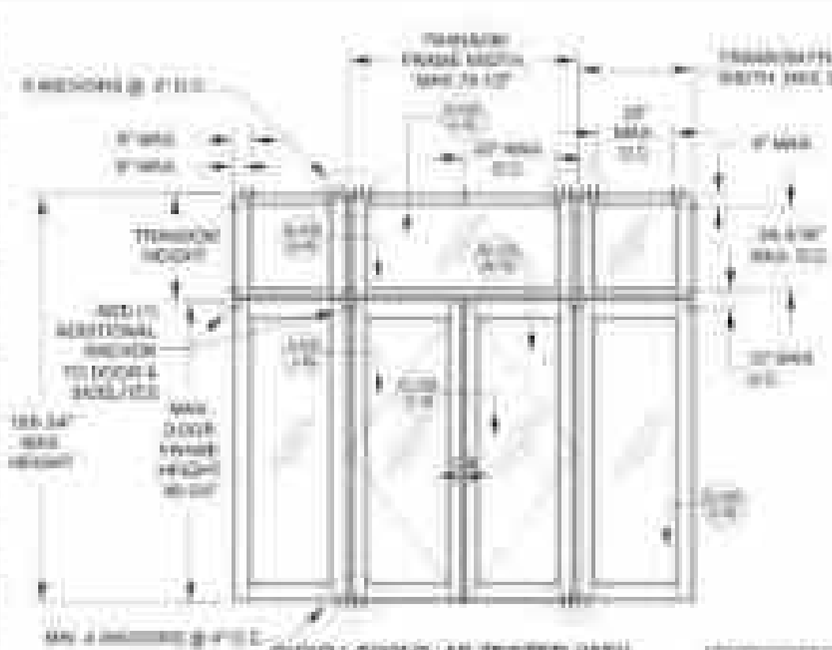
2) SHAPE & CONFIGURATIONS: DIGITAL CONFIGURATIONS ALLOWED. DOORS MAY BE LEFT OR RIGHT HANDED. REFER TO PATTERNS & LHD AND LCK FROM TABLE 7.

3) "OS" = OUTSWING, "IS" = INSWING. SEE DETAILS ON SHEETS 5.11 & 16 FOR OUTSWING & 10.16 FOR INSWING.

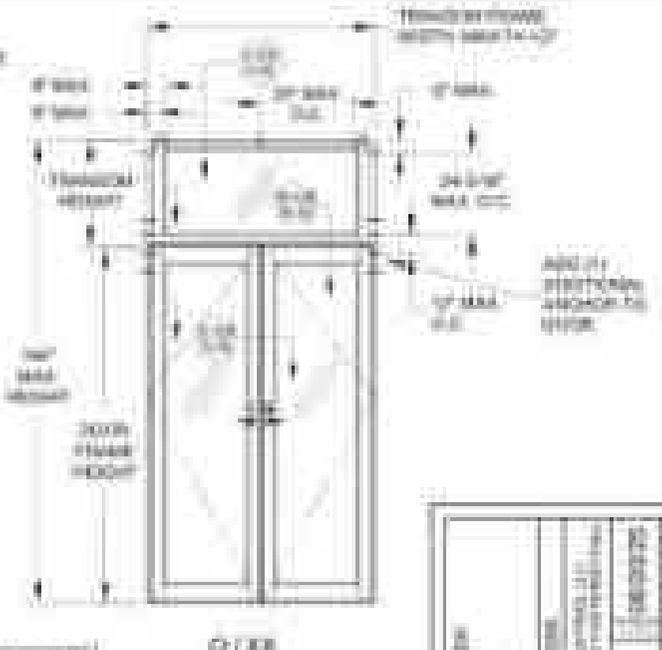
4) ANY ANCHOR TYPE FROM TABLE 6 MAY BE USED.

5) TOTAL HEIGHT OVER 108 3/4" MUST USE 4 TUBE MULLION. SEE SEPARATE MULLION APPROVAL FOR SPECIFICS.

TRANSOM OUT WIDTH = TRANSOM FRAME WIDTH - 10 5/8"
TRANSOM OUT HEIGHT = TRANSOM FRAME HEIGHT - 6 5/8"



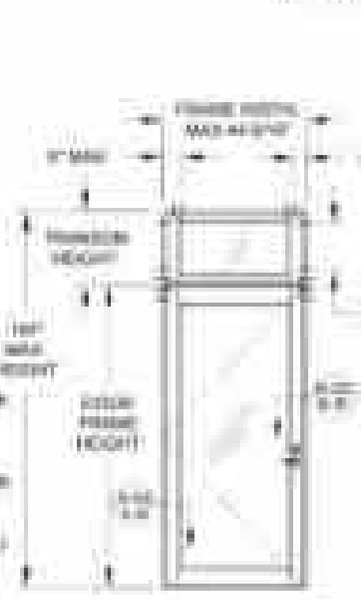
O | XX



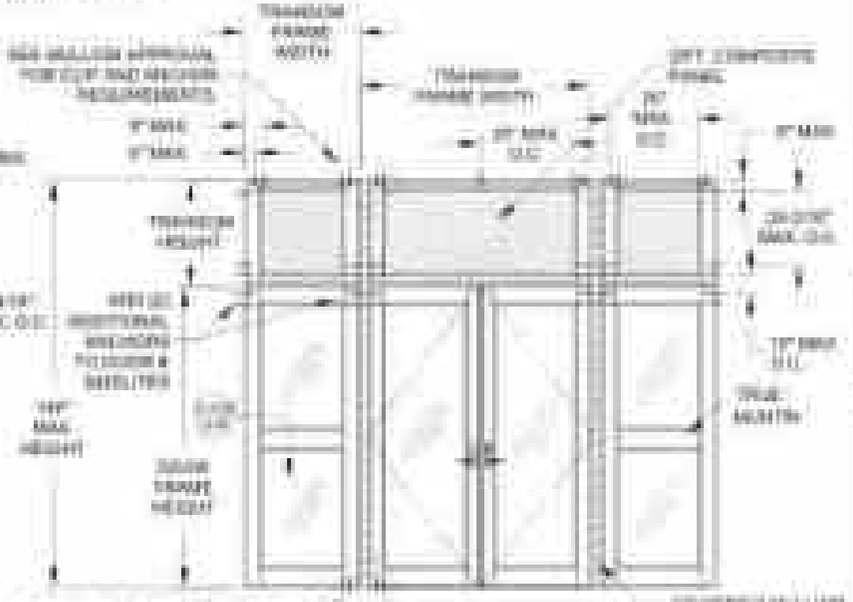
OXXO / OXXXO, ALL TESTED WITH SELF MATING, VERTICAL MULLIONS

FOR DOOR HEIGHT AND UNDER

FOR DOOR HEIGHTS BEYOND THOSE SHOWN, SEE OTHER TABLES IN THIS APPROVAL



O | X



OXXO / OXXXO

(TRANSOM OVER DOOR WITH SIDELITES) - SHEET 10.16 FOR DOOR HEIGHTS REQUIRING STRUCTURAL MULLIONS

PROJECT	ALUMINUM SWING DOOR (SAF)
DESIGN PRESSURE TABLES	
DRAWING	
SCALE	
DATE	
REVISION	

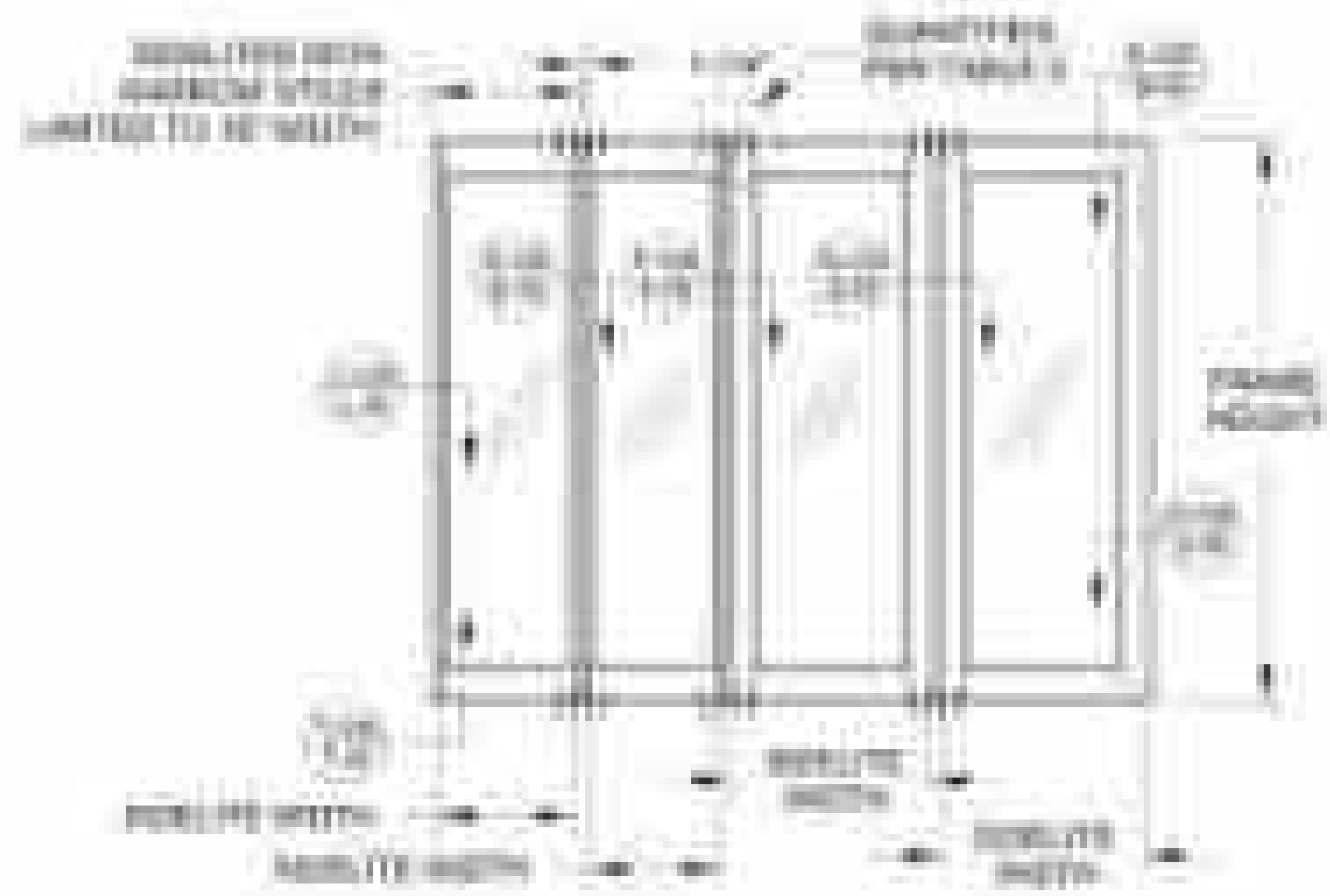
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ANTHONY LYNN MILES
LICENSED
PROFESSIONAL ENGINEER

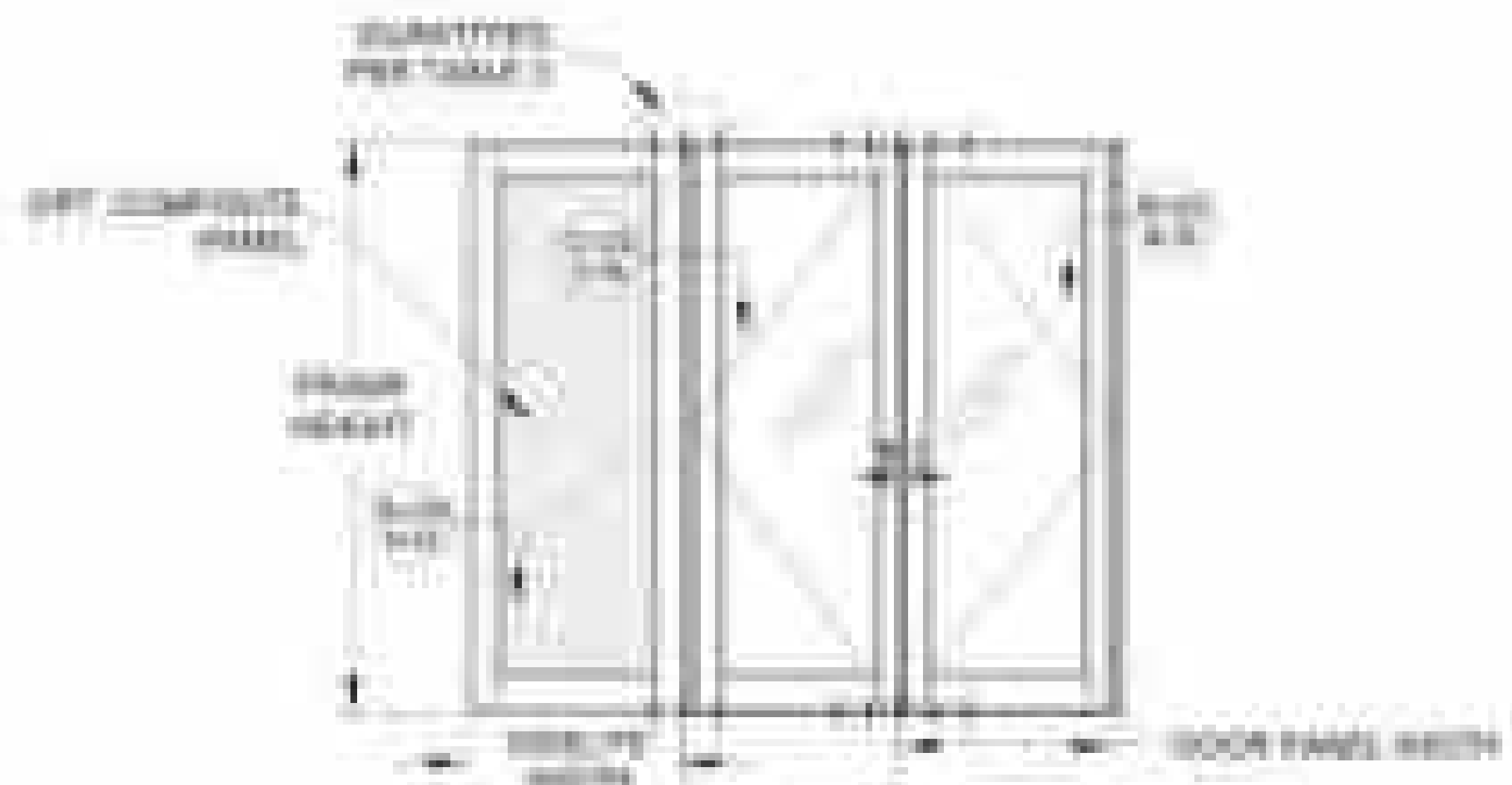
TABLE 4

WIDTH "W"	FRAME HEIGHT	WIDE TO WIDE EXT (+)	WIDE TO WIDE INT (-)	WIDE TO NARROW EXT (+)	WIDE TO NARROW INT (-)	NARROW TO NARROW EXT (+)	NARROW TO NARROW INT (-)
		MULLION DESIGN PRESSURES - PSF					
		PANEL STILE TYPES BEING MULLED TOGETHER					
18"	80-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	110.0	100.0	110.0
30"		100.0	110.0	100.0	110.0	-	-
36"		100.0	110.0	100.0	110.0	-	-
42"		94.2	94.2	75.0	75.0	-	-
18"	84-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	110.0	100.0	110.0
30"		100.0	110.0	100.0	110.0	-	-
36"		100.0	110.0	100.0	110.0	-	-
42"		94.2	94.2	-	-	-	-
18"	90-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	110.0	75.0	75.0
30"		100.0	110.0	100.0	110.0	-	-
36"		100.0	110.0	75.0	75.0	-	-
42"		84.2	88.1	-	-	-	-
18"	96-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	110.0	75.0	75.0
30"		100.0	110.0	100.0	110.0	-	-
36"		100.0	110.0	-	-	-	-
42"		38.8	38.8	-	-	-	-
18"	102-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	110.0	-	-
30"		100.0	110.0	100.0	100.0	-	-
36"		88.9	88.9	-	-	-	-
42"		39.9	39.9	-	-	-	-
18"	108-3/4"	100.0	110.0	100.0	110.0	100.0	110.0
24"		100.0	110.0	100.0	104.1	-	-
30"		68.1	68.1	75.0	75.0	-	-
36"		62.9	62.9	-	-	-	-
18"	114-3/4"	75.0	75.0	75.0	75.0	100.0	110.0
24"		75.0	75.0	75.0	75.0	-	-
30"		75.0	75.0	-	-	-	-
36"		75.0	75.0	-	-	-	-
18"	120-3/4"	75.0	75.0	75.0	75.0	75.0	75.0
24"		75.0	75.0	75.0	75.0	-	-
30"		75.0	75.0	-	-	-	-
36"		55.0	55.0	-	-	-	-

WIDTH "W" = (PANEL WIDTH + ADJACENT PANEL WIDTH) / 2 + 1.250



OXOXO MULLED SIDELITES
COMBINATION OF STANDARD & NARROW STILES



OXX MULLED SIDELITE

NOTES:

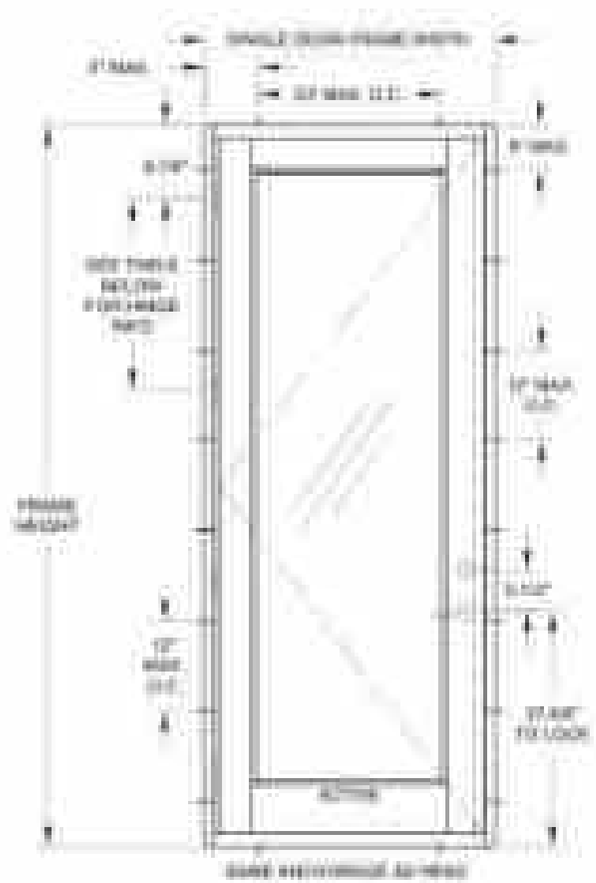
1) CHECK THE ALLOWABLE DESIGN PRESSURES FROM THE APPROPRIATE TABLES OF ALL SHEETS PER THE INSTRUCTIONS ON SHEET 1. THE LOWEST DESIGN PRESSURE FROM ALL SHALL CONTROL THE ENTIRE SYSTEM.

2) EXAMPLE CONFIGURATIONS SHOWN. SIMILAR CONFIGURATIONS ALLOWED. DOORS MAY BE LEFT OR RIGHT HANDED, INSWING OR OUTSWING & USE ANY LOCK FROM TABLE 1.

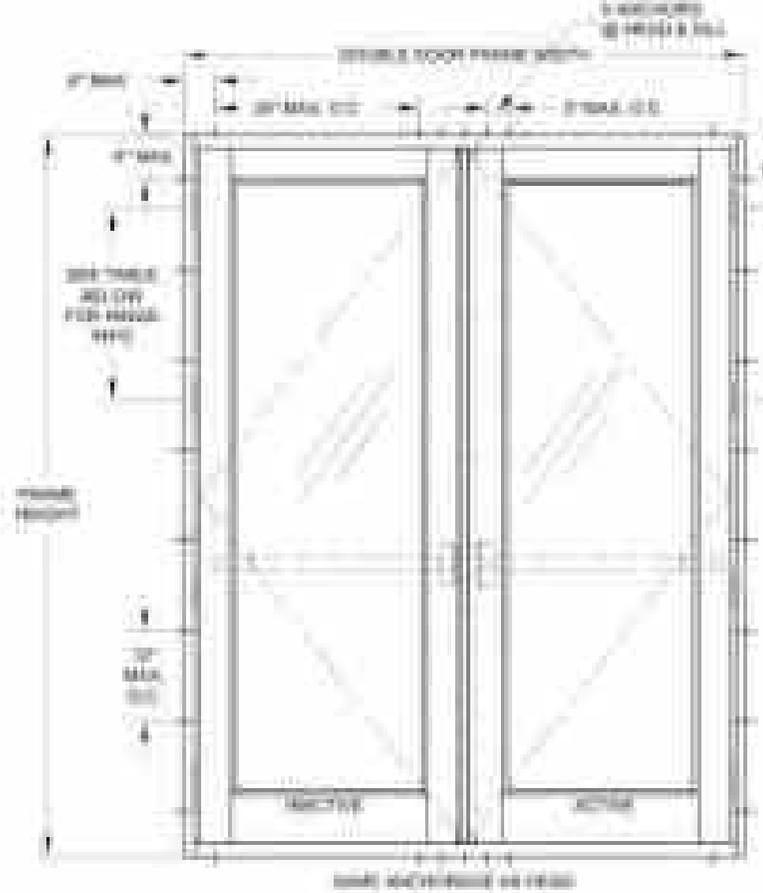
3) "EXT" = OUTSWING, "INT" = INSWING. SEE DETAILS ON SHEETS 8-11 & 15 (OUTSWING) & 11-15 (INSWING).

ALUMINUM SWING DOOR (L/M)
DESIGN PRESSURE TABLES
6 OF 19

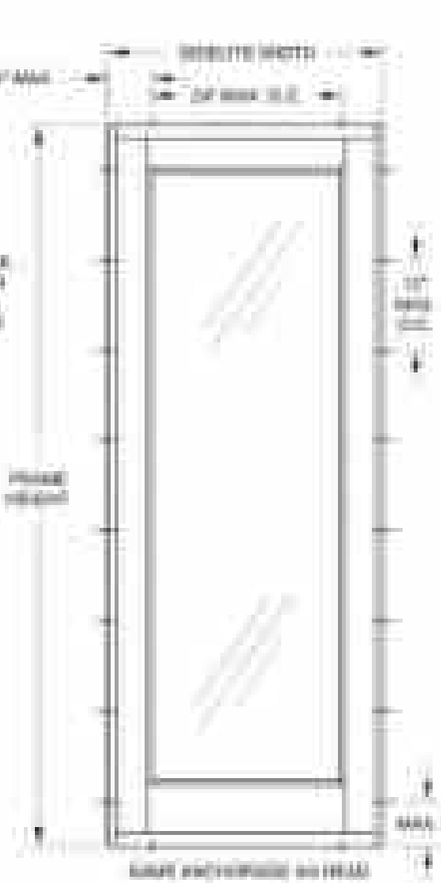




TYPICAL X DOOR ANCHOR LOCATIONS



TYPICAL XX DOOR ANCHOR LOCATIONS



TYPICAL O SIDELITE ANCHOR LOCATIONS

NOTES:

1) EXAMPLE CONFIGURATIONS SHOWN. SIMILAR CONFIGURATIONS ALLOWED. DOORS MAY BE LEFT OR RIGHT HANDED, SWINGING OR SLIDING & USE ANY LOCK FROM TABLE 1.

2) FOR FRAMING SEE SHEET 4

DOOR/SIDELITE GLU WIDTH = DOOR/SIDELITE PANEL WIDTH - 1.5"
DOOR/SIDELITE GLU HEIGHT = DOOR/SIDELITE PANEL HEIGHT - 13.125"
NARROW STILE SIDELITE GLU WIDTH = SIDELITE PANEL WIDTH - 6"
FRAME HEIGHT = PANEL HEIGHT + 1 1/8" (SITE THRESHOLD)
FRAME HEIGHT = PANEL HEIGHT + 1 5/8" (NON THRESHOLD)
FRAME WIDTH = PANEL WIDTH + 3 (1/16"

ANKER LOCATIONS		
MAX. FRAME HEIGHT	NO. PER DOOR	MAX. O.C. SPACING
UP TO 96-3/4"	3	36-1/2"
ABOVE 96-3/4" UP TO 120-3/4"	4	40-1/2"

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/28/2020

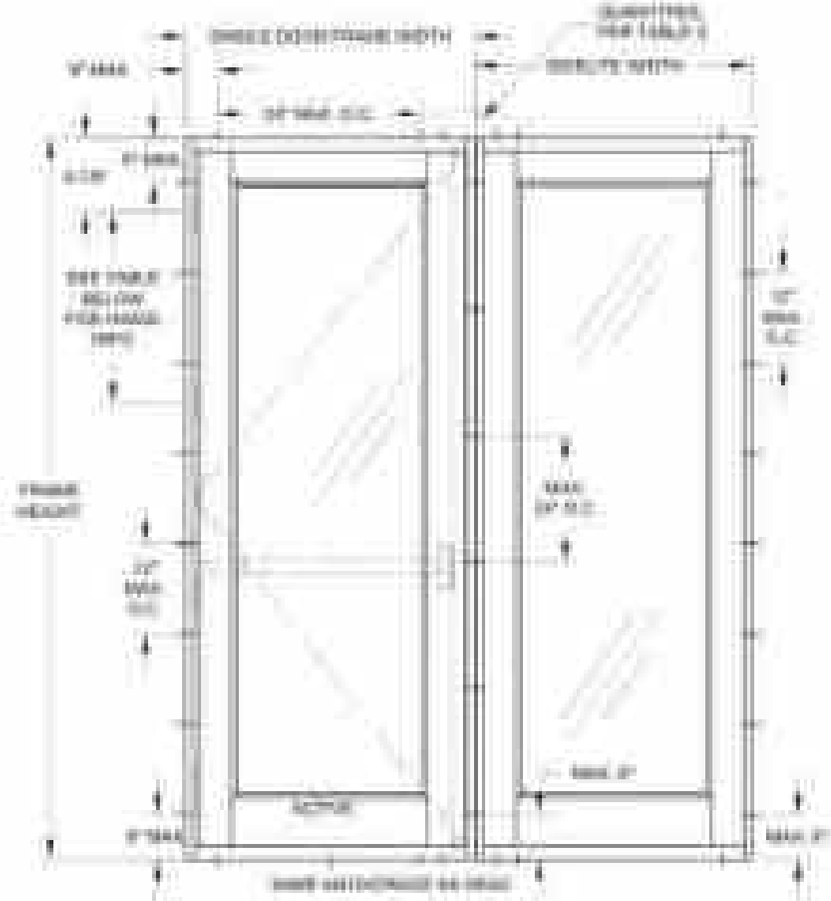
IGT

ALUMINUM SWING DOOR (3/4")

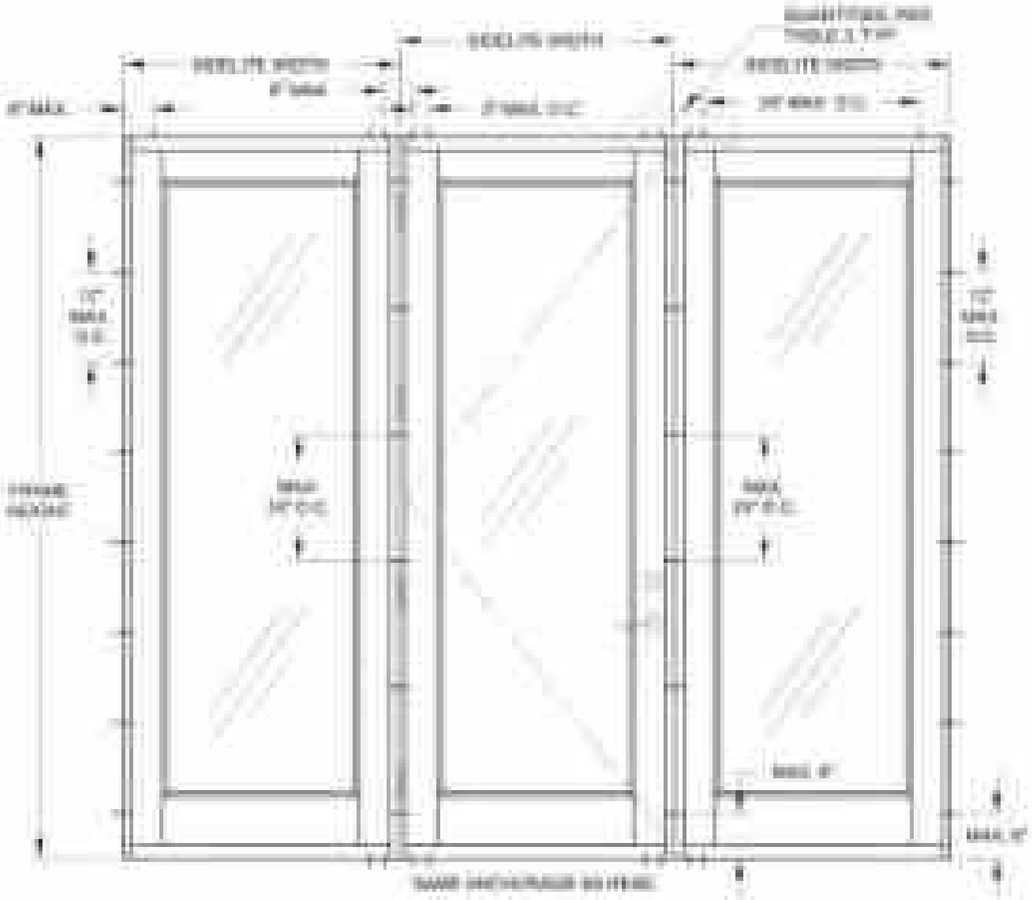
TESTED ANCHOR LOCATIONS

FIG(S) 4 OF 13

ANTHONY LYNN MILES
LICENSE
No. 90705
EXPIRATION DATE
STATE OF
CALIFORNIA
PROFESSIONAL ENGINEER



TYPICAL X DOOR MULLED TO SIDELITE ANCHOR LOCATIONS



TYPICAL OXO DOOR MULLED TO SIDELITES ANCHOR LOCATIONS

NOTES:

1) EXAMPLE CONFIGURATIONS SHOWN. PANEL CONFIGURATIONS ALLOWED: DOORS MAY BE LEFT OR RIGHT HANDED, INSWING OR OUTSWING & USE ANY LOCK FROM TABLE 1.

2) FOR TRANSOMS SEE SHEET 4.

DOOR/SIDELITE GLU WIDTH = DOOR/SIDELITE PANEL WIDTH - 1.5"
DOOR/SIDELITE GLU HEIGHT = DOOR/SIDELITE PANEL HEIGHT - 15.125"
NARROW STILE SIDELITE GLU WIDTH = SIDELITE PANEL WIDTH - 6"
FRAME HEIGHT = PANEL HEIGHT + 1 1/8" (SITE THRESHOLD)
FRAME HEIGHT = PANEL HEIGHT + 1 5/8" (NEW THRESHOLD)
FRAME WIDTH = PANEL WIDTH + 3 (1) 5/8"

ANCHOR LOCATIONS		
Max. FRAME HEIGHT	NO. PER SIDE	Max. O.C. SPACING
UP TO 80-3/4"	3	30-1/2"
ABOVE 80-3/4" UP TO 120-3/4"	4	40-1/2"

1	10/28/19	ADDED 96"
REVISIONS		

96" SIDELITE DOOR

ALUMINUM SWING DOOR (UA)	
TESTED ANCHOR LOCATIONS	
FINISH	7 OF 13

PGT

ANTHONY LYNN MILLS
No. 50705
STATE OF FLORIDA
PROFESSIONAL ENGINEER

OUTSWING DETAILS

DOOR JAMB X-SECTION

DOOR JAMB X-SECTION

DETAIL A-08

DETAIL B-08

DETAIL C-08

DETAIL C-08

DETAIL D-08

DOOR ASTRAGAL X-SECTION

DOOR JAMB X-SECTION

NO.	REVISION	DATE
1		
2		
3		
4		

ALUMINUM SWING DOOR (LHF)

X-SECTIONS (OUTSWING)

PGT

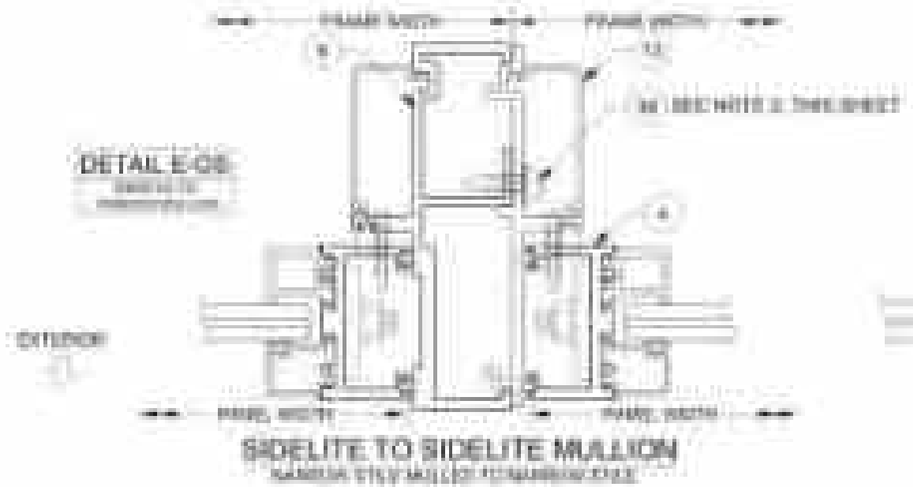
ANTHONY LYNN MILES

PROFESSIONAL ENGINEER

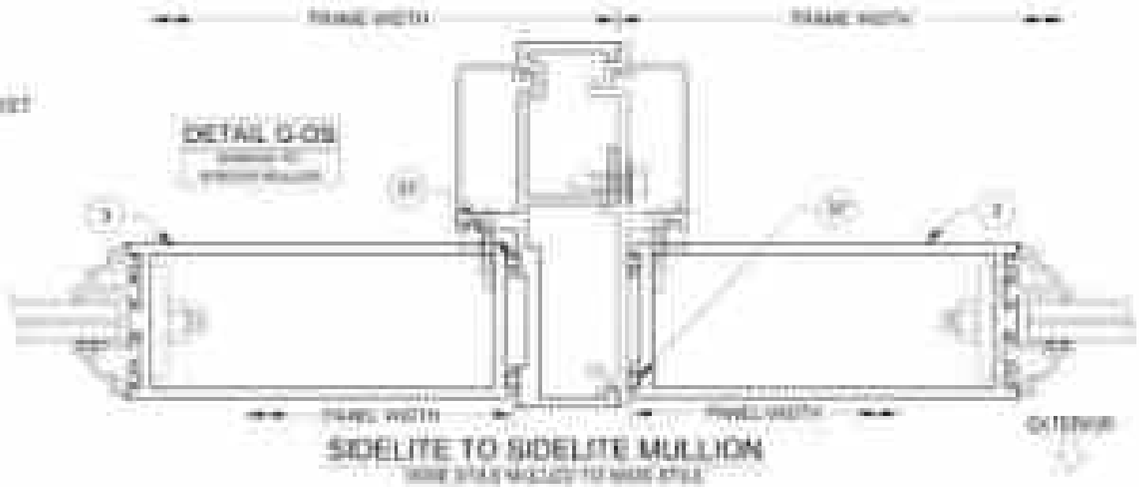
STATE OF FLORIDA

No. 56705

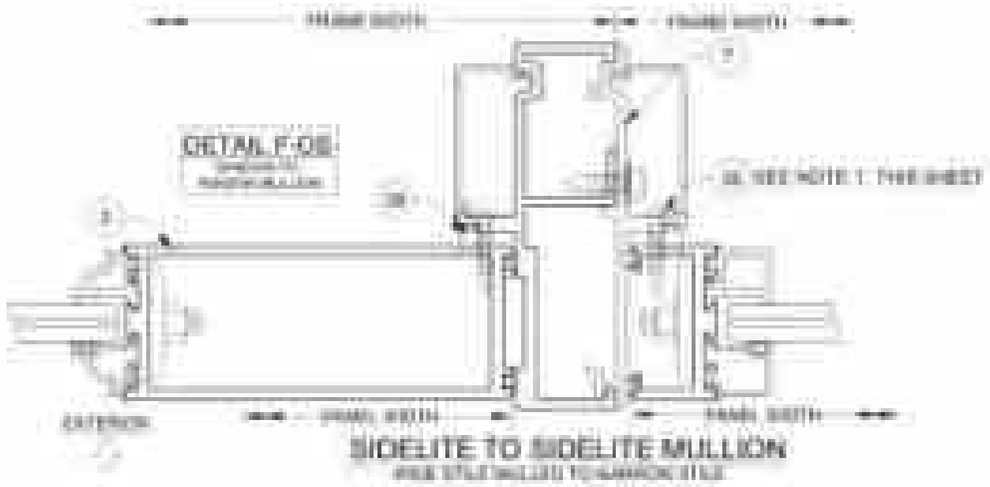
OUTSWING DETAILS



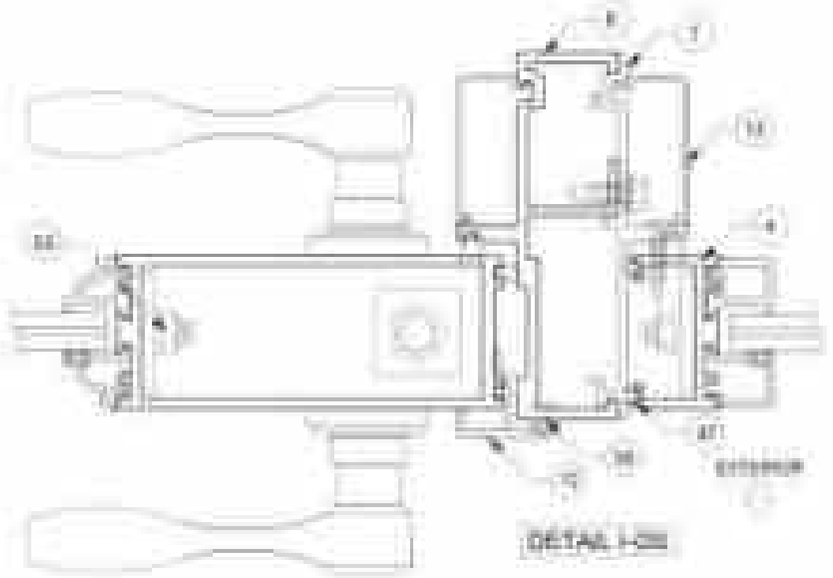
SIDELITE TO SIDELITE MULLION



SIDELITE TO SIDELITE MULLION



SIDELITE TO SIDELITE MULLION



DOOR TO SIDELITE MULLION

NOTES:

1) [illegible]

2) [illegible]

3) SEE INSTALLATION NOTES, SHEET [illegible]

NO.	REVISION	DATE
1		

PGT

ALUMINUM SWING DOOR (LAF)

ELEVATIONS (OUTSWING)

ENGINEERING

ISSUED

DRAWN BY

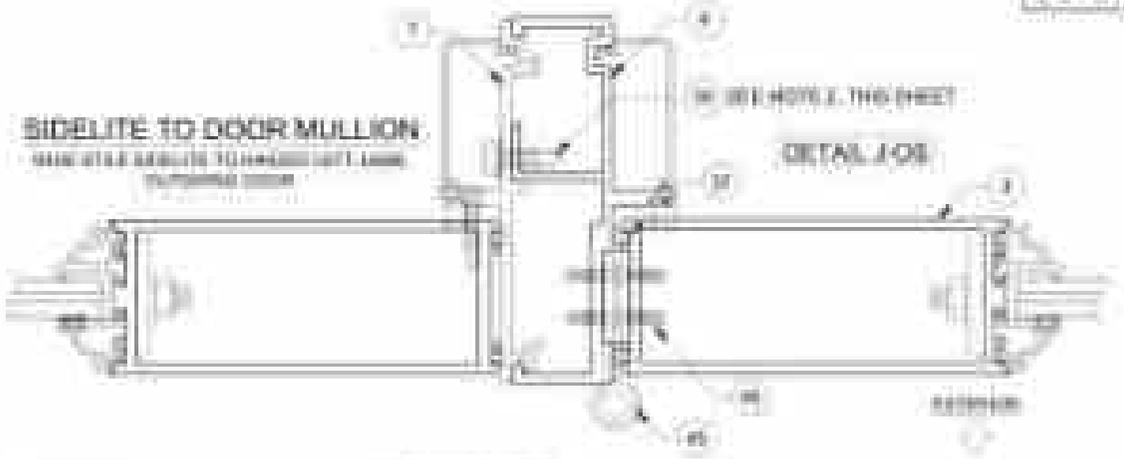
CHECKED BY

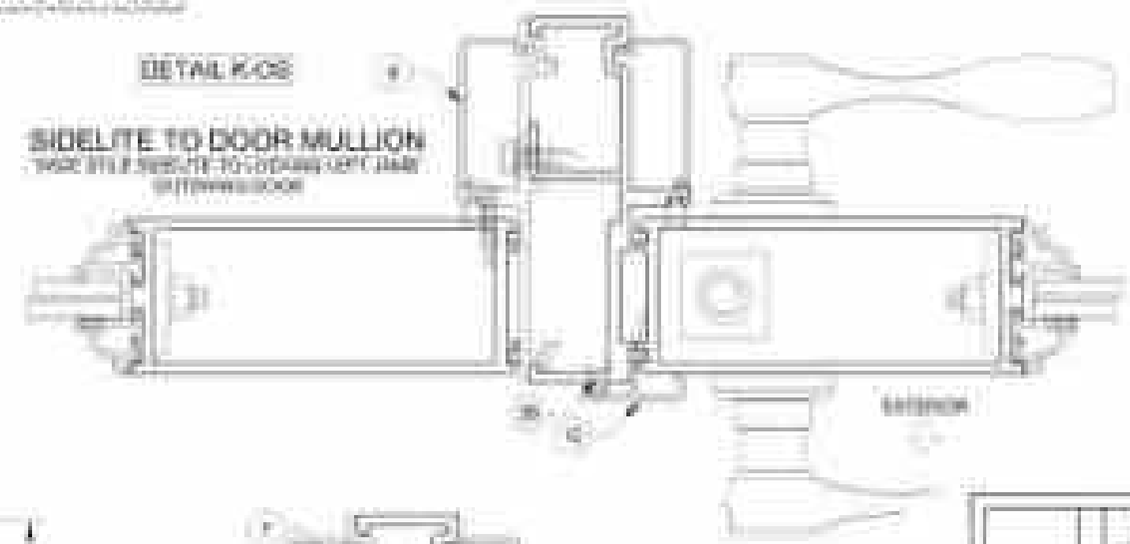
SCALE

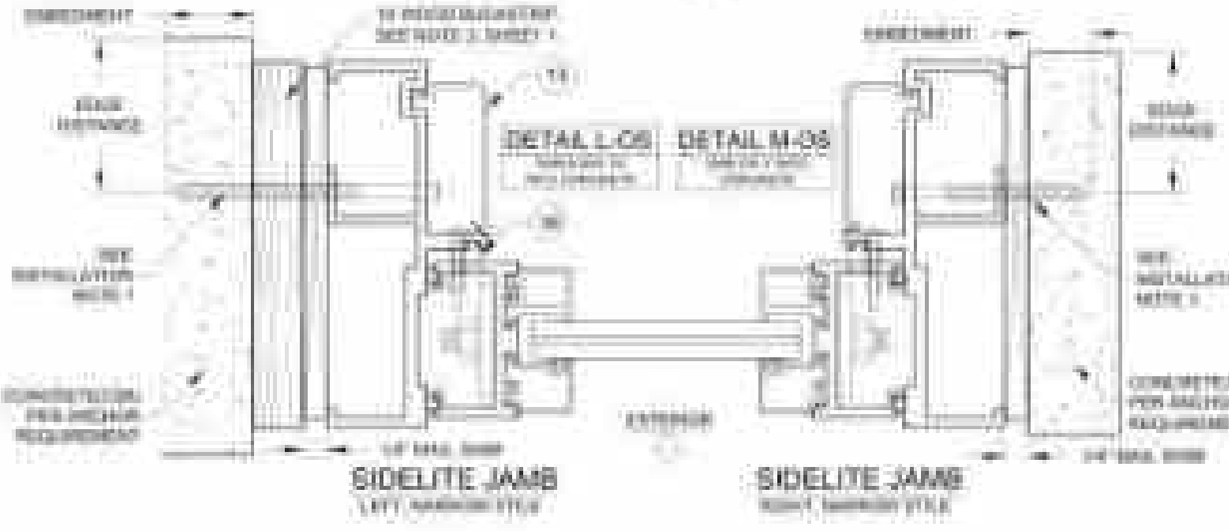
SHEET NO.

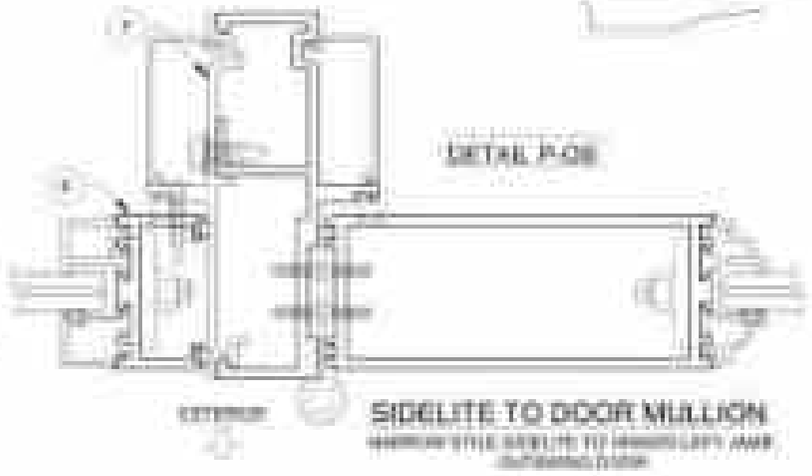
ACCURATE LYNN RILEY
No. 90700
STATE OF FLORIDA
PROFESSIONAL ENGINEER

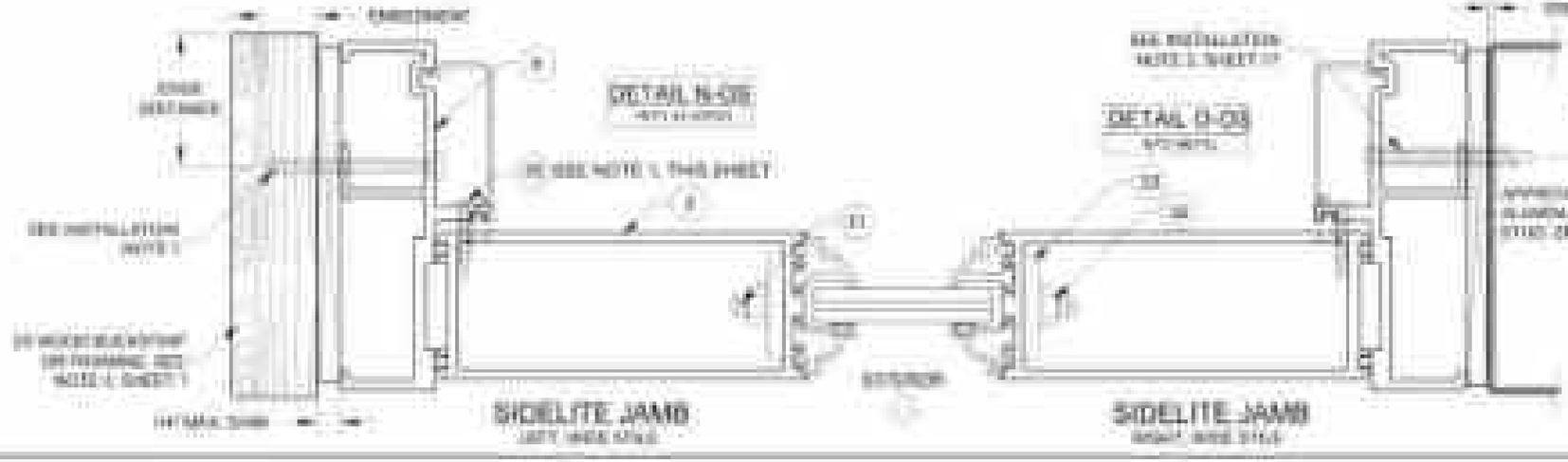
OUTSWING DETAILS











ALUMINUM SWING DOOR UNIT		
ELECTRONIC (OUTSWING)		
FINISH		

OUTSWING DETAILS

DETAIL U-DS

DOOR HEADER

DETAIL U-DS

TRUE MUNTIN

DETAIL T-DS

SIDELITE HEADER

DETAIL R1-DS

DOOR THRESHOLD

DETAIL R2-DS

DOOR THRESHOLD

DETAIL R3-DS

DOOR THRESHOLD

DETAIL T-DS

SIDELITE SILL

PGT

ALUMINUM SWING DOOR (LAM)

ELEVATION B (OUTSWING)

FINISH

11 OF 19

ISSUE

ENGINEER

DATE

REVISIONS

BY

DATE

NO.

INSWING DETAILS

DETAIL A-IS

DETAIL B-IS

DOOR JAMB X-SECTION

DOOR JAMB X-SECTION

DETAIL C-IS

DETAIL D-IS

DOOR ASTRAGAL X-SECTION

DOOR JAMB X-SECTION

NO.	REVISION	DATE
1		
2		
3		
4		

PGT

ALUMINUM SWING DOOR (LAT)

X-SECTIONS (INSWING)

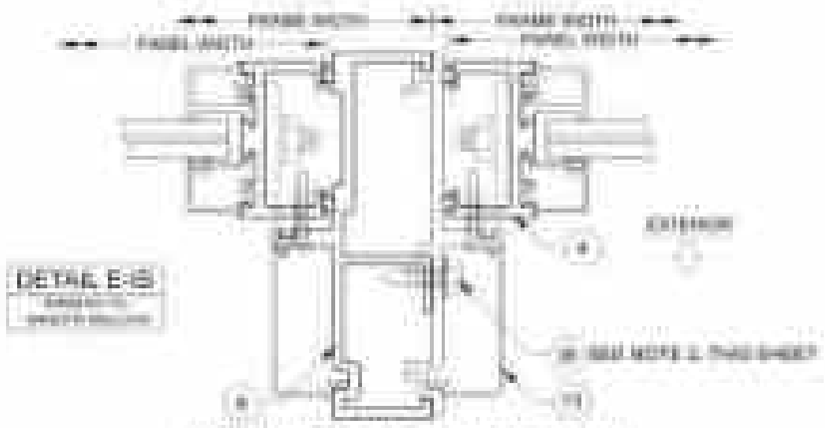
DRAWN BY	CHECKED BY	APPROVED BY

DRAWING NO.

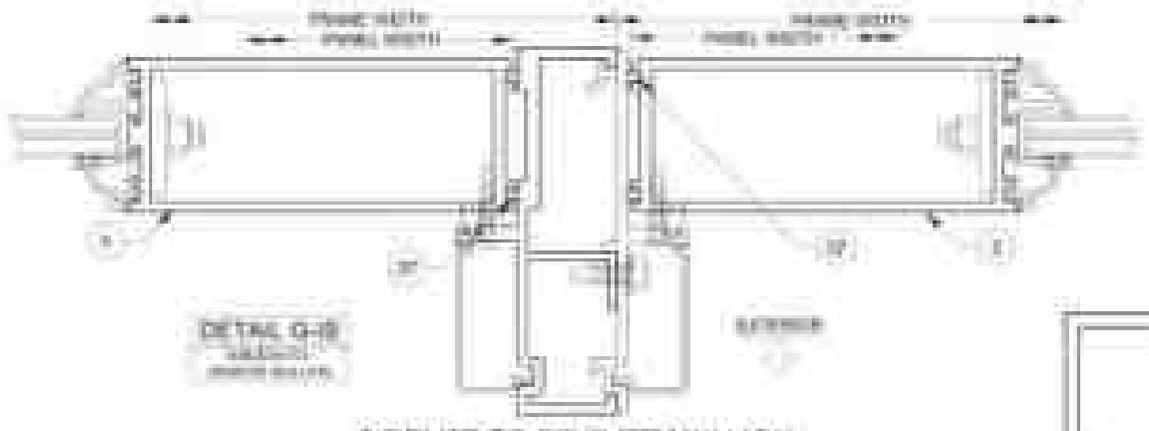
SHEET NO.

ANTHONY LYNN MILLS
REGISTERED
PROFESSIONAL ENGINEER

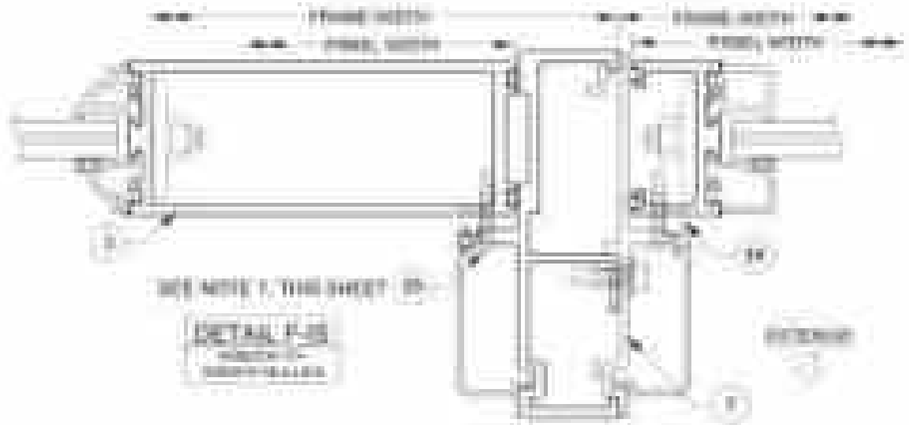
INSWING DETAILS



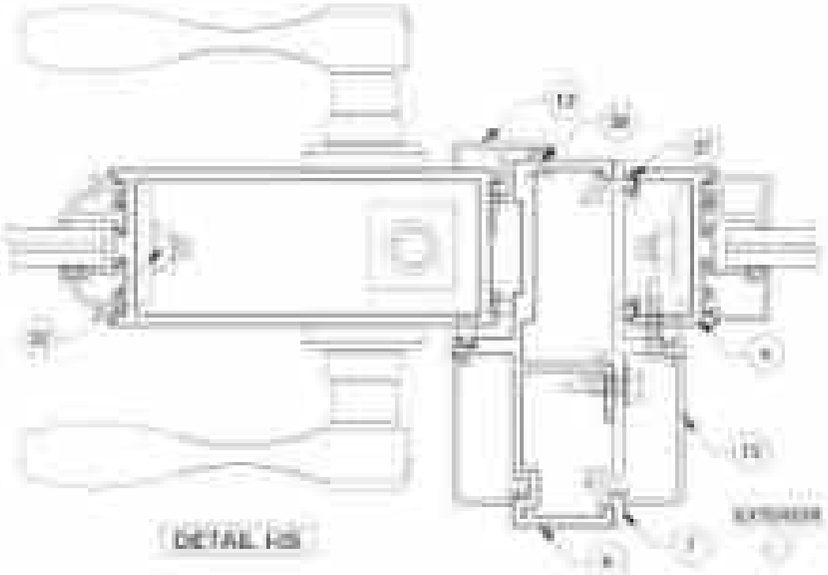
SIDELITE TO SIDELITE MULLION



SIDELITE TO SIDELITE MULLION



SIDELITE TO SIDELITE MULLION



DOOR TO SIDELITE MULLION

NOTES:

1) [illegible]

2) [illegible]

3) SEE INSTALLATION NOTES, SHEET [illegible]

PGT	ALUMINUM SWING DOOR (LH)
	ELEVATIONS (OSWD)
	1/2" = 1'-0"
	10 OF 10
	FSSH

ALUMINUM SWING DOOR (LH)
ELEVATIONS (OSWD)
1/2" = 1'-0"
10 OF 10
FSSH

REVISIONS

1		
2		
3		

ALUMINUM LYNN MILLS
No. 50705
STATE OF
PROFESSIONAL ENGINEER

INSWING DETAILS

DETAIL J-IS

SIDELITE TO DOOR MULLION

DETAIL K-IS

SIDELITE TO DOOR MULLION

DETAIL L-IS

SIDELITE JAMB

DETAIL M-IS

SIDELITE JAMB

DETAIL N-IS

SIDELITE JAMB

DETAIL O-IS

SIDELITE JAMB

DETAIL P-IS

SIDELITE TO DOOR MULLION

NOTES:

1. SEE INSTALLATION NOTES SHEET 11

2. SEE INSTALLATION NOTES SHEET 11

3. SEE INSTALLATION NOTES SHEET 11

PGT

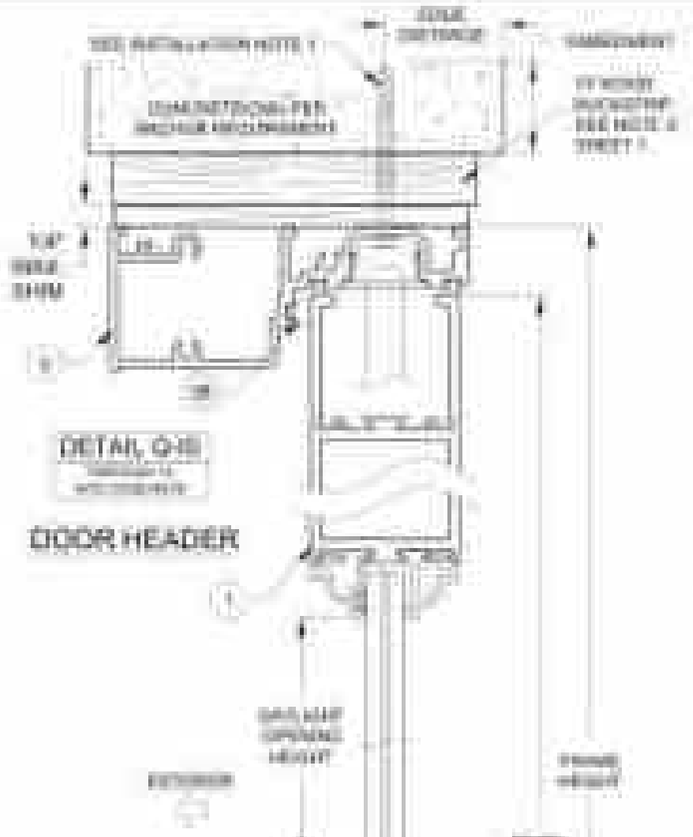
ALUMINUM SWING DOOR (SAT)

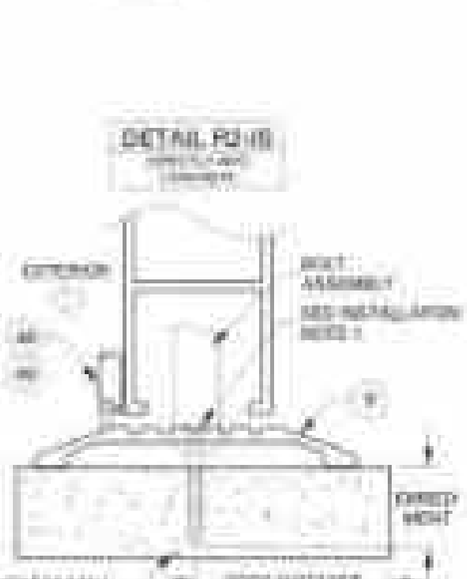
ELEVATIONS (INSWING)

FINISH

16 OF 19

INSWING DETAILS





INSTALLATION NOTES:

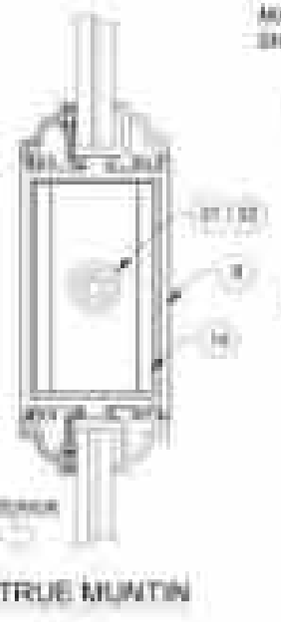
1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS LISTED ON TABLE 6. FOLLOW EMBEDMENT AND EDGE DISTANCE LIMITS. ANY INSTALLATION OPTION SHOWN MAY BE USED ON ANY SIDE OF THE DOOR OR SIDELITE.

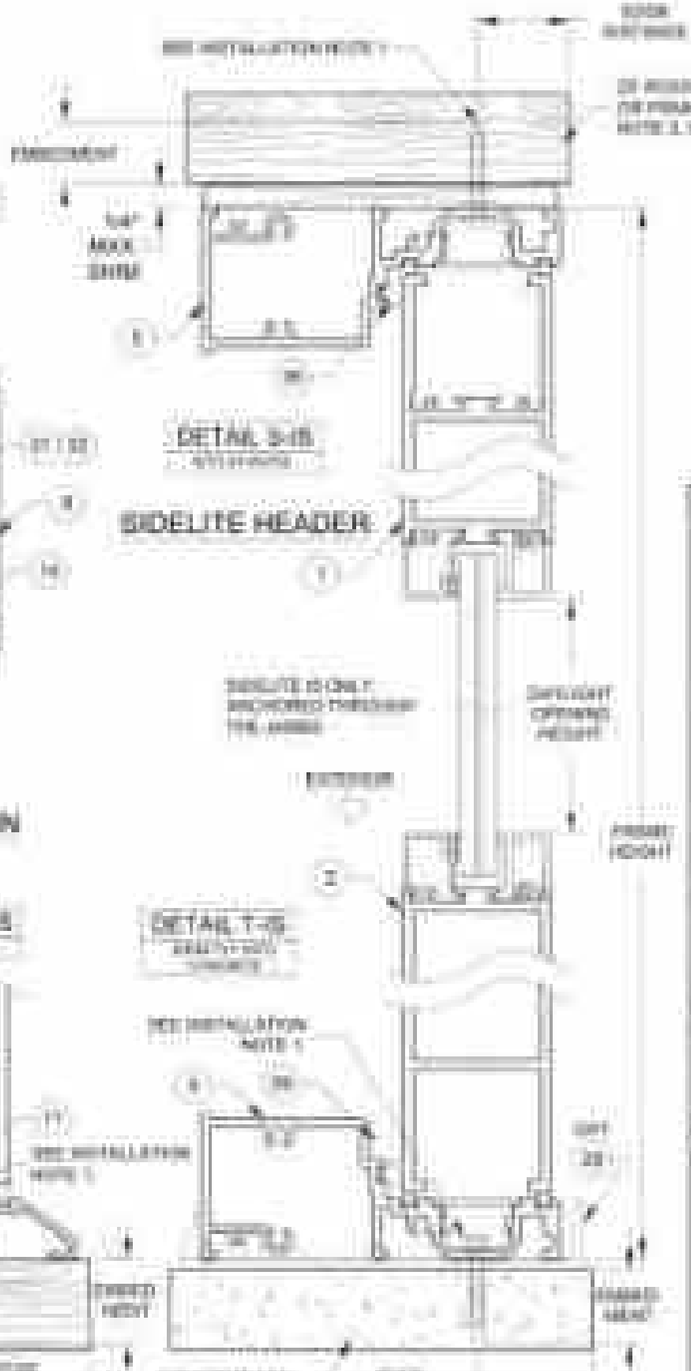
2) SEE SHEET 5 FOR ANCHOR LOCATIONS & SPACING FOR DRIVEN QUANTITIES. SEE TABLES 5 & 6.

3) METAL SUBSTRATE TO MEET MIN. STRENGTH AND THICKNESS REQUIREMENTS PER CURRENT FLORIDA BUILDING CODE AND TO BE REVIEWED BY THE AUTHORITY HAVING JURISDICTION.

4) IT IS ILLEGAL TO SUBSTITUTE GROUT OR COVER MATERIAL IS NOT REQUIRED. FOAM SHRINK, NON-METALLIC GROUT AND 1/4" HARDI & MDO PLYWOOD SUBSTRATE CANNOT FULLY SUPPORT THE OUTSIDE LEAVES OF THE SILL THAT SLANT TOWARD TO THE SUBSTRATE, AND TRANSFERS WHEN USED TO SUBSTITUTE IF SUBSTRATE IS WOOD, 30# FELT PAPER OR MASTIC IS REQUIRED BETWEEN THE GROUT AND WOOD SUBSTRATE, OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

5) BEADING AND GLASS TYPE SHOWN IN DETAILS MAY VARY FROM ACTUAL. SEE GLAZING DETAILS SHEET FOR FURTHER OPTIONS.





REVISIONS			
DESCRIPTION			
ENGINEER			
DATE			

ALUMINUM SWING DOOR (LW)	
X-SECTIONS (INSWING)	
FINISH	16 OF 19

IGT



DETAIL V-OS

TRANSOM HEADER

DETAIL V-IS

TRANSOM HEADER

DETAIL W-OS

TRANSOM TO DOOR MULLION

DETAIL W-IS

TRANSOM TO DOOR MULLION

TRANSOM JAMB DETAIL

TRANSOM FRAME CORNER DETAIL

TRANSOM FRAME MULLION DETAIL

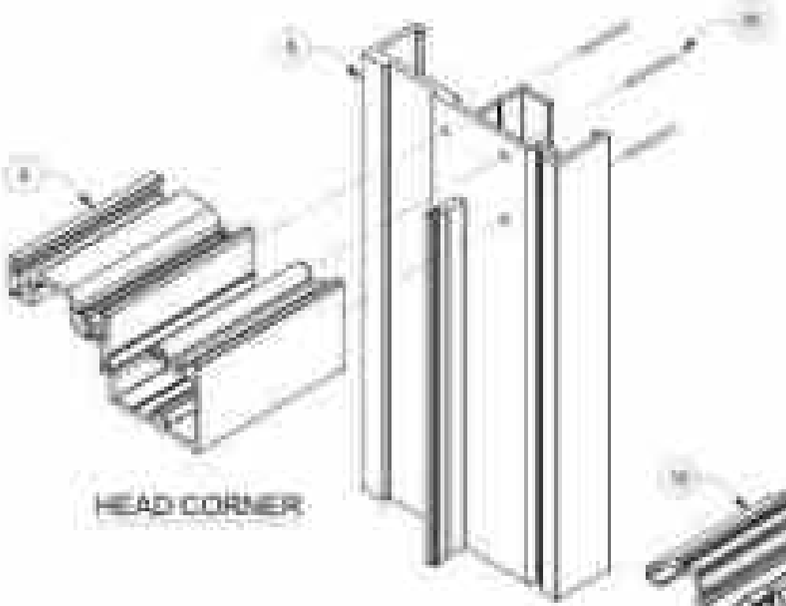
PGT

ALUMINUM SWING DOOR (LAF)

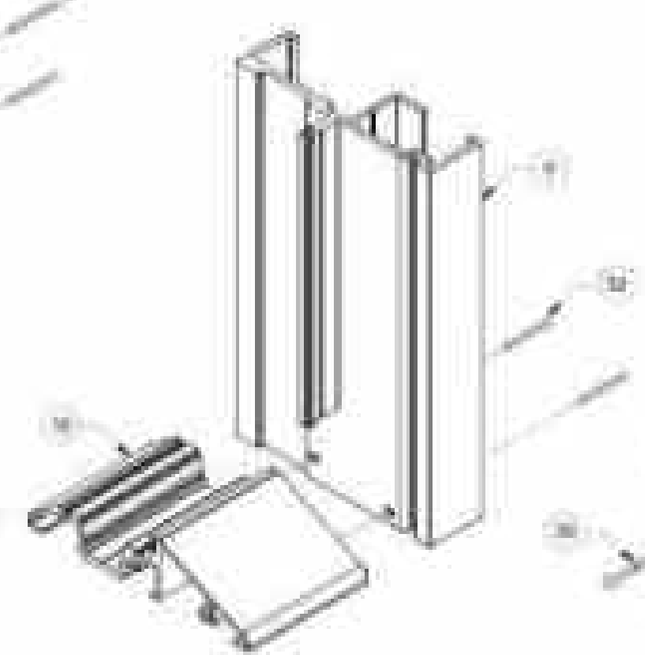
TRANSOM DETAILS

FRSH

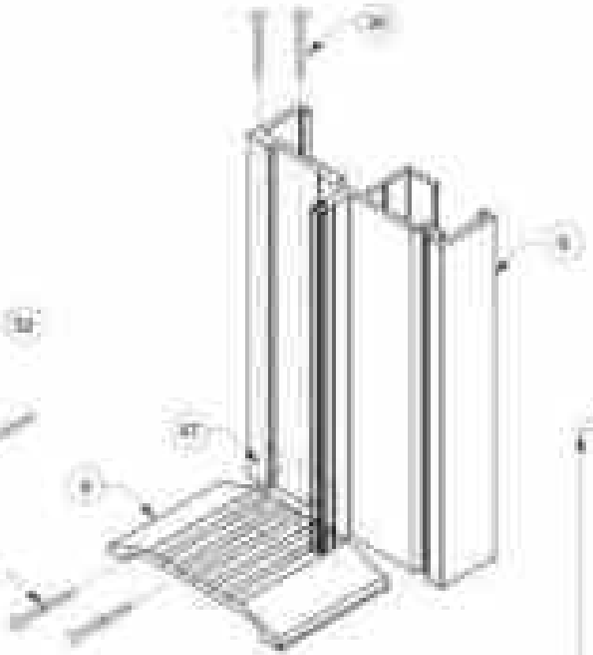
16 OF 19



HEAD CORNER

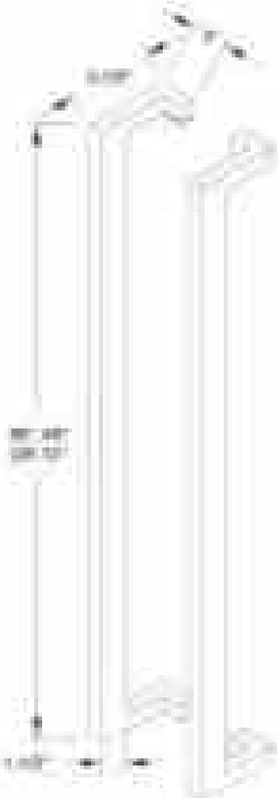


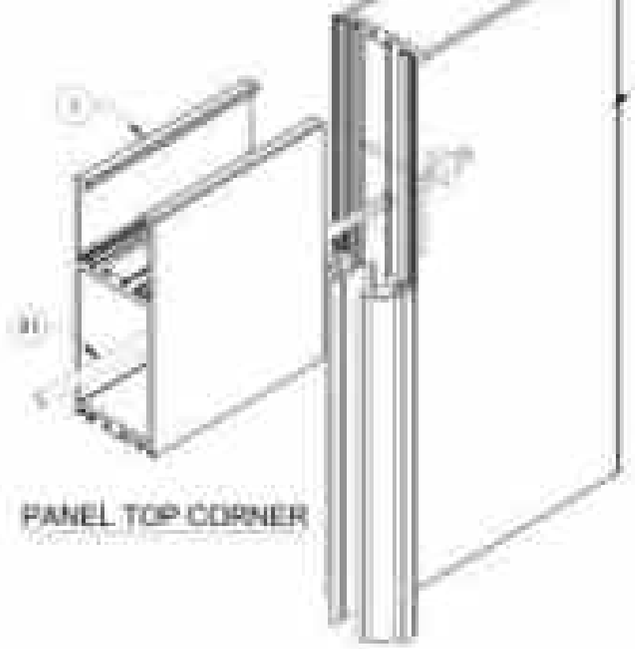
RESIDENTIAL SADDLE SILL



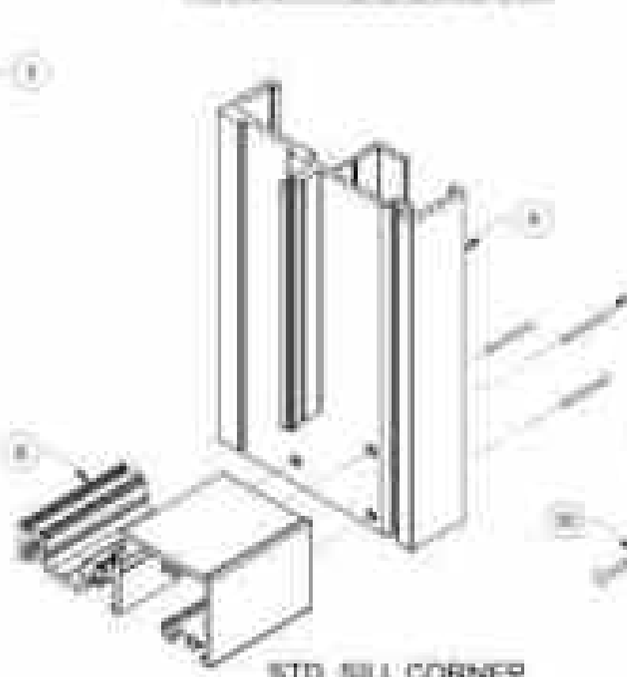
ADA SILL CORNER



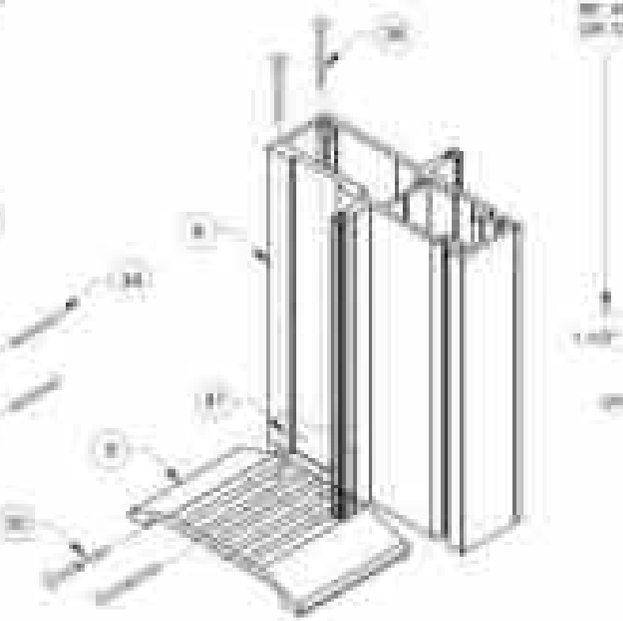




PANEL TOP CORNER



STD. SILL CORNER



ADA SILL @ MULLION

ALL CORNERS TO BE SEALED WITH SILICONE SUPPLIED OR EQUIVALENT

PGT	ALUMINUM SWING DOOR (LAM)	ISSUE PDT	
	CORNER ASSEMBLY		
	FINISH	11 SEP 19	



GLASS TYPE 1



GLASS TYPE 2



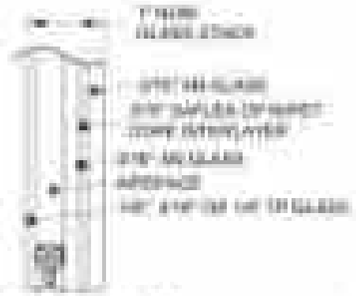
GLASS TYPE 3



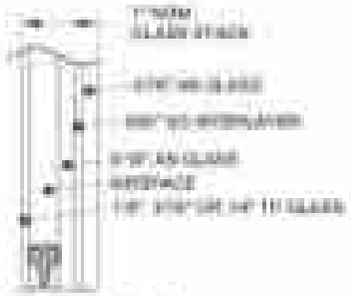
GLASS TYPE 4



GLASS TYPE 5



GLASS TYPE 6



GLASS TYPE 7

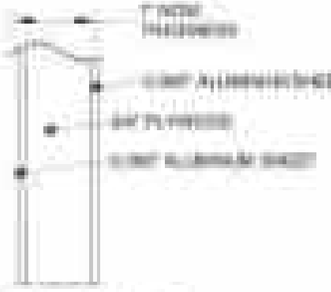


GLASS TYPE 8



COMPOSITE TYPE 9

ALUM. OPAQUE COMPOSITE PANEL

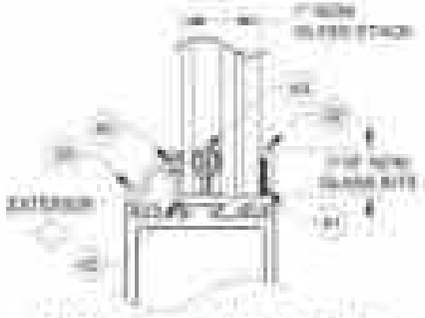


COMPOSITE 10

ALUM. OPAQUE COMPOSITE PANEL



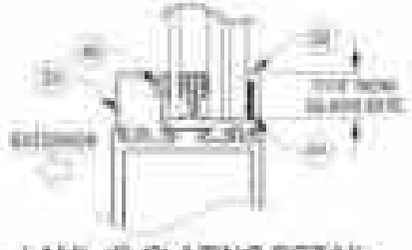
LAMI. GLAZING DETAIL



LAMI. IG GLAZING DETAIL



LAMI. GLAZING DETAIL



LAMI. IG GLAZING DETAIL

TABLE A

Glazing Type	Description (Listed from Exterior to Interior)
1	7/16" LAMI: 3/16" AN – 0.070" Saflex DF – 3/16" AN
2	7/16" LAMI: 3/16" AN – 0.060" SG – 3/16" AN
3	7/16" LAMI: 3/16" HS – 0.075" Saflex DF – 3/16" HS
4	7/16" LAMI: 3/16" HS – 0.060" SG – 3/16" HS
5	7/16" LAMI: 3/16" AN – 0.060" PVB – 3/16" HS
6	1" LAMI IG: 1/8" 3/16" w 1/4" TP Gap - Argonne - 3/16" AN – 0.070" Saflex DF – 3/16" AN
7	1" LAMI IG: 1/8" 3/16" w 1/4" TP Gap - Argonne - 3/16" AN – 0.060" SG – 3/16" AN
8	1" LAMI IG: 1/8" 3/16" w 1/4" TP Gap - Argonne - 3/16" AN – 0.060" PVB – 3/16" HS
9	7/16" Composite Opaque Panel: 0.060" Aluminum - 1/8" Plywood - 0.060" Aluminum
10	1" Composite Opaque Panel: 0.060" Aluminum - 3/4" Plywood - 0.060" Aluminum

AN = ANNEALED GLASS
HS = HEAT STRENGTHENED GLASS
TP = TEMPERED GLASS

DRAWING SHEET NOTE # 7 REFERENCES GLASS TYPES WHERE SQUARE OR EDGE BLASTING MAY BE REQUIRED. ALL GLASS TYPES ARE NOT LISTED BY BOOKENDS, AS NOT ALL GLASS TYPES ARE SHOWN ON EACH SHEET.

NO.	REVISION	DATE
1	ISSUED FOR BID	10/25/2019
2	ISSUED FOR PERMIT	12/20/2019

ISSUE PDT

PGT

ALUMINUM SWING DOOR (UM)

GLAZING DETAILS

FDSSI

18 OF 19

REGISTERED ARCHITECT
STATE OF FLORIDA
PROFESSIONAL ENGINEER

TABLE C:

ITEM #	PART #	DESCRIPTION	MATERIAL
1	[illegible]	[illegible]	[illegible]
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5	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]
16	[illegible]	[illegible]	[illegible]
17	[illegible]	[illegible]	[illegible]
18	[illegible]	[illegible]	[illegible]
19	[illegible]	[illegible]	[illegible]
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21	[illegible]	[illegible]	[illegible]
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42	[illegible]	[illegible]	[illegible]
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48	[illegible]	[illegible]	[illegible]
49	[illegible]	[illegible]	[illegible]

