

ANDERSEN CORPORATION

E-SERIES HINGED PATIO DOOR -OUTSWING (HVHZ) (IMPACT)



100 FOURTH AVE NORTH
BAYPORT, MN 55003-1096
PH: (651) 264-5150 FX: (651) 264-5485

TITLE: E-SERIES HINGED PATIO
DOOR - OUTSWING
(HVHZ)(IMPACT)

GENERAL NOTES & GLAZING DETAILS

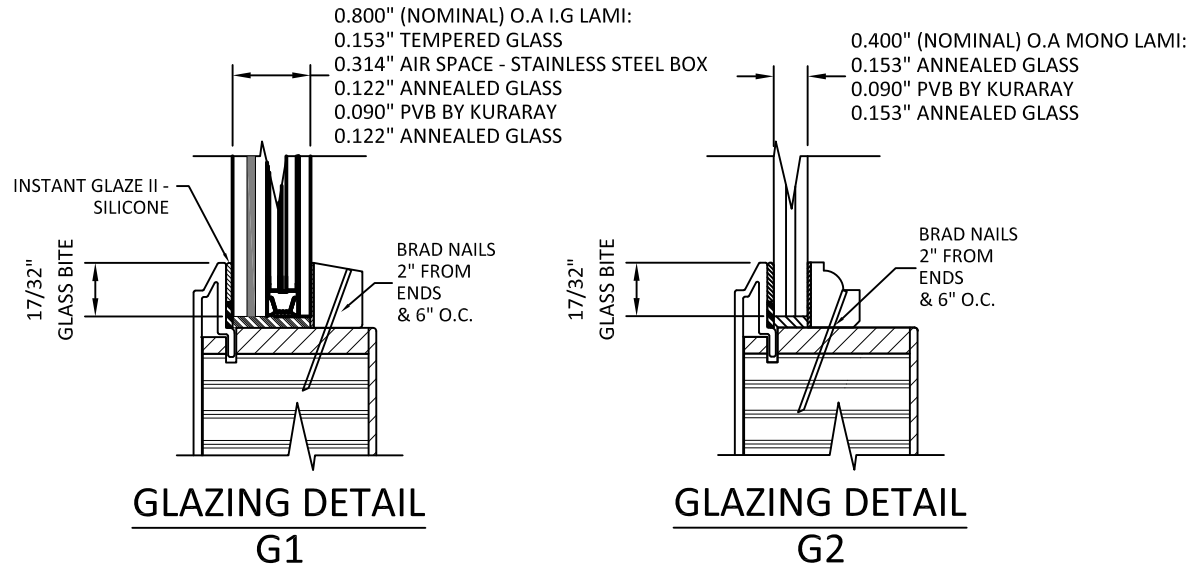
PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., STE. 338
DANIA BEACH, FL 33004
PH: (954)399-8478
FAX: (954)744-4738
WEB: www.buildingdrops.com



SECTION	SHEET DESCRIPTION
1.0	GENERAL NOTES & GLAZING DETAILS
2.0	ELEVATIONS AND CONFIGURATION
3.0	VERTICAL SECTIONS
4.0	HORIZONTAL SECTIONS
5.0	MUNTIN BAR, PANELS & SIDELITES DETAILS
6.0	HARDWARE LOCATIONS
7.0	ANCHOR LAYOUT
8.0	ANCHOR DETAILS, SCHEDULE & NOTES
9.0	MULLION TABLES
10.0	BILL OF MATERIALS

GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT FLORIDA BUILDING CODE (FBC), **INCLUDING** HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
 - TAS 201-94
 - TAS 202-94
 - TAS 203-94
- ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, 2X AND METAL STUD FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.
- APPROVED IMPACT PROTECTIVE SYSTEM IS **NOT REQUIRED** TO PROTECT THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
- DOOR FRAME MATERIAL, CLADDING : ALUMINUM
WOOD: PONDEROSA PINE
- MULLION MATERIAL: LAMINATED VENEER LUMBER.
- GLASS MEETS THE REQUIREMENTS OF ASTM E1300. SEE SHEET 1 FOR GLAZING DETAILS.
- DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:
X: OPERABLE PANEL
O: FIXED PANEL
- CUSTOM SIZES AVAILABLE UPON REQUEST. CUSTOM DESIGN PRESSURE WILL BE ASSIGNED EQUAL TO NEXT LARGER STANDARD SIZE.

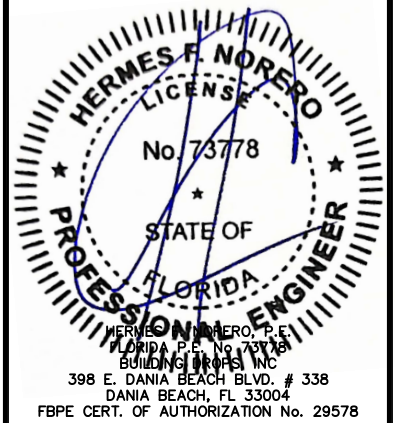


GLAZING NOTES:

- GLASS TYPE COMPLIES WITH ASTM E1300 REQUIREMENTS.
- SETTING BLOCKS TO BE LOCATED AT 1/4 SPAN LENGTH FOR GLASS WIDER THAN 36" AS PER FBC CHAPTER 24.
- SETTING BLOCK DUROMETER HARDNESS OF 70-90 (SHORE A) AS REFERENCED IN FBC CHAPTER 24.
- GLASS TYPE COMPLIES WITH APPLICABLE GLAZING REQUIREMENTS PER CHAPTER 24 OF THE FBC

REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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FL #:	FL25570
DATE:	9.05.17
DWG. BY:	RV
CHK. BY:	HFN
SCALE:	NTS
DWG. #:	AWD230
SECTION	1.0

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TITLE: E-SERIES HINGED PATIO
DOOR - OUTSWING
(HVHZ)(IMPACT)

ELEVATIONS & CONFIGURATIONS

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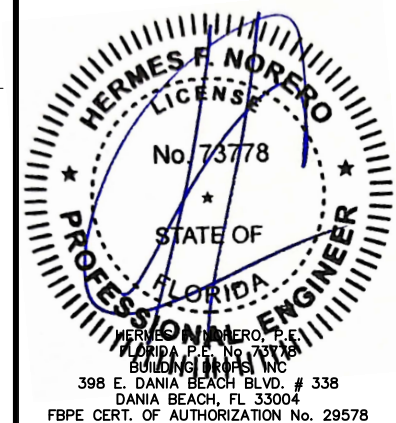


CONFIGURATION	WIDTH	HEIGHT	GLAZING TYPE	PANEL TYPE	PG RATING	STRUCTURAL DESIGN PRESSURE
X OR O	36.50	95.31	G1	SP1, SP2, SP1R1, SP1R2, SP2R3, SL1, SL2, SL1R1, SL1R2, SL2R3	PG65	+/-65
			G2		PG65	+65/-75
XX	72.06	95.31	G1 OR G2	SP1, SP2, SP1R1, SP1R2 & SP2R3	PG65	+/-65
O	72.06	36.00	G1	ST1, ST2, ST3, ST4 & ST5	PG65	+/-65
			G2		PG60	+60/-65

NOTE:
1. REFER TO SECTION 9 FOR DESIGN PRESSURES
BASED ON CORRESPONDING MULLION TYPES.

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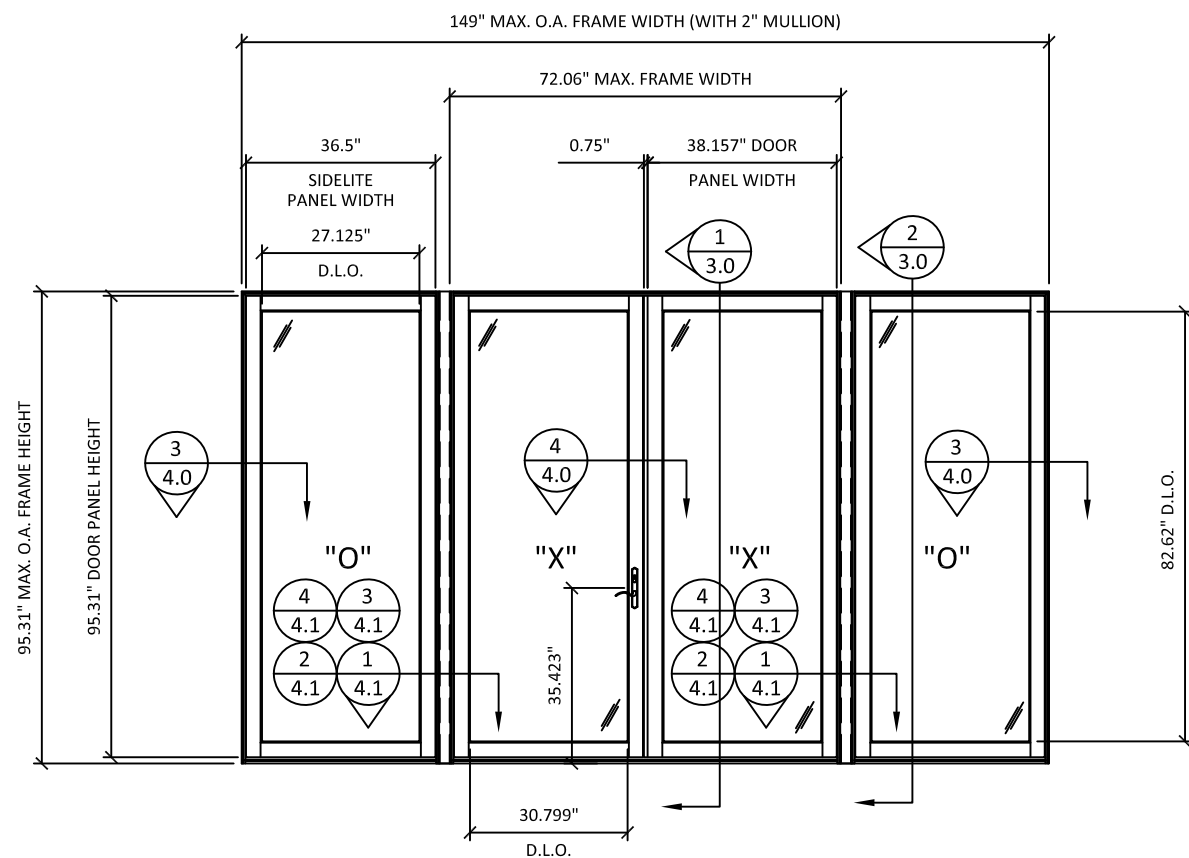
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DWG. #: AWD230

SECTION

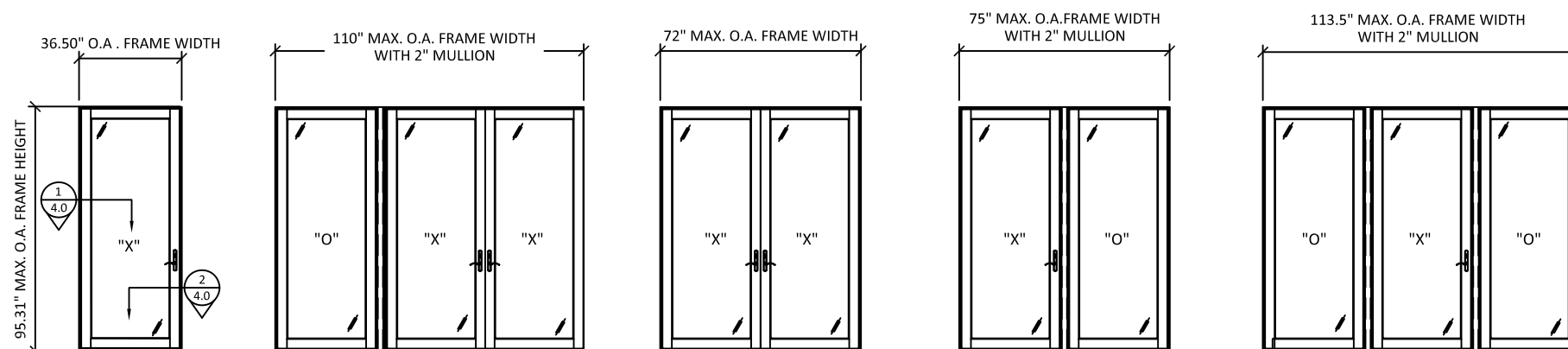
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ELEVATION
OUTSWING DOOR WITH 2" MULLION

OTHER QUALIFIED CONFIGURATIONS





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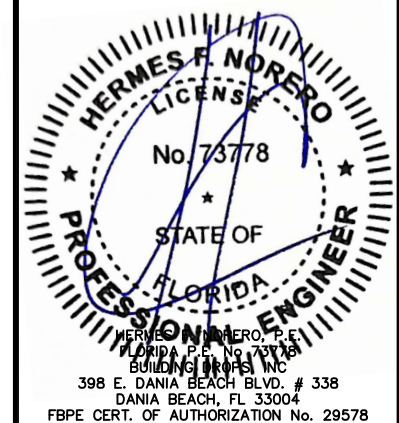
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VERTICAL SECTIONS

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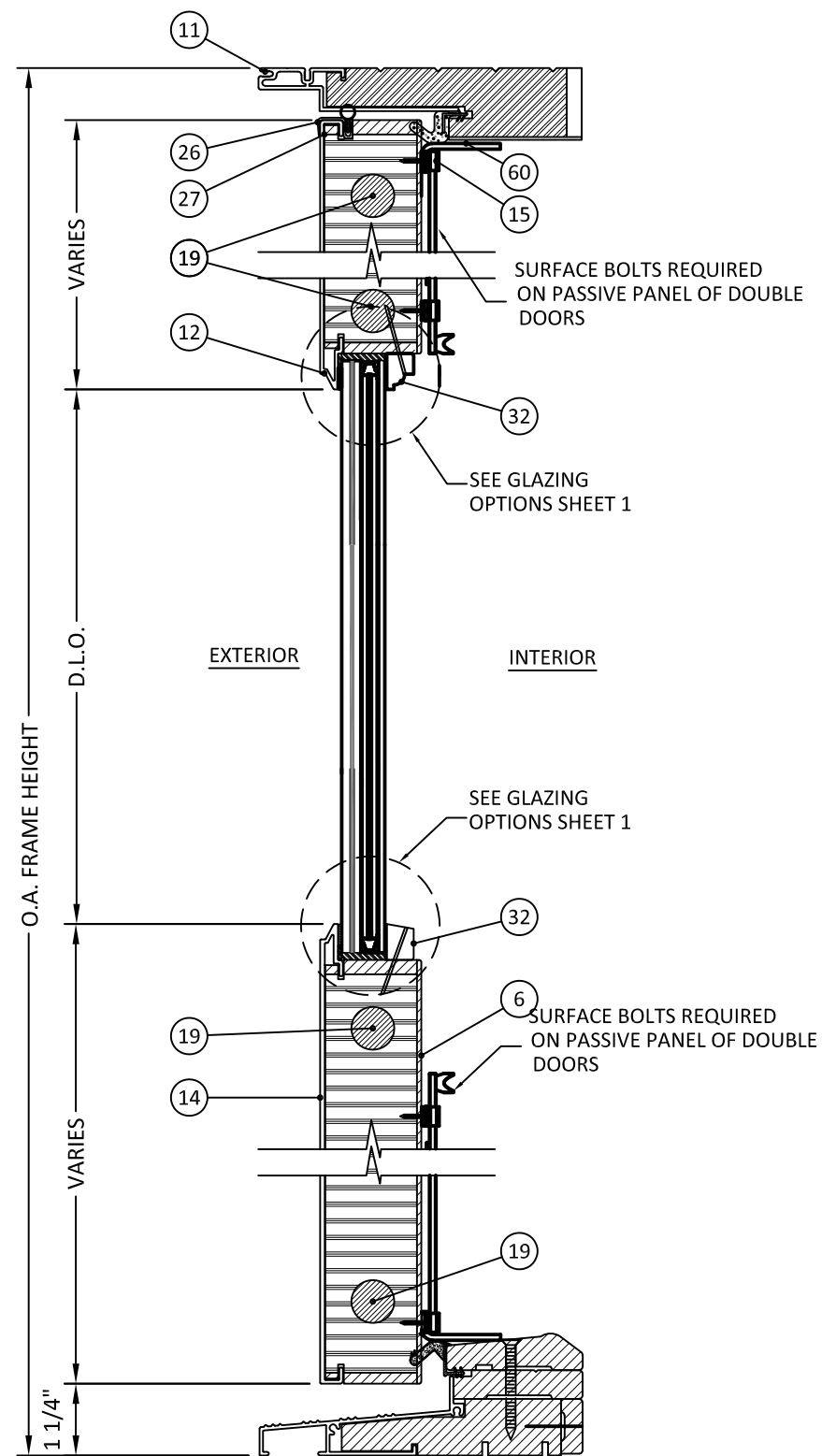
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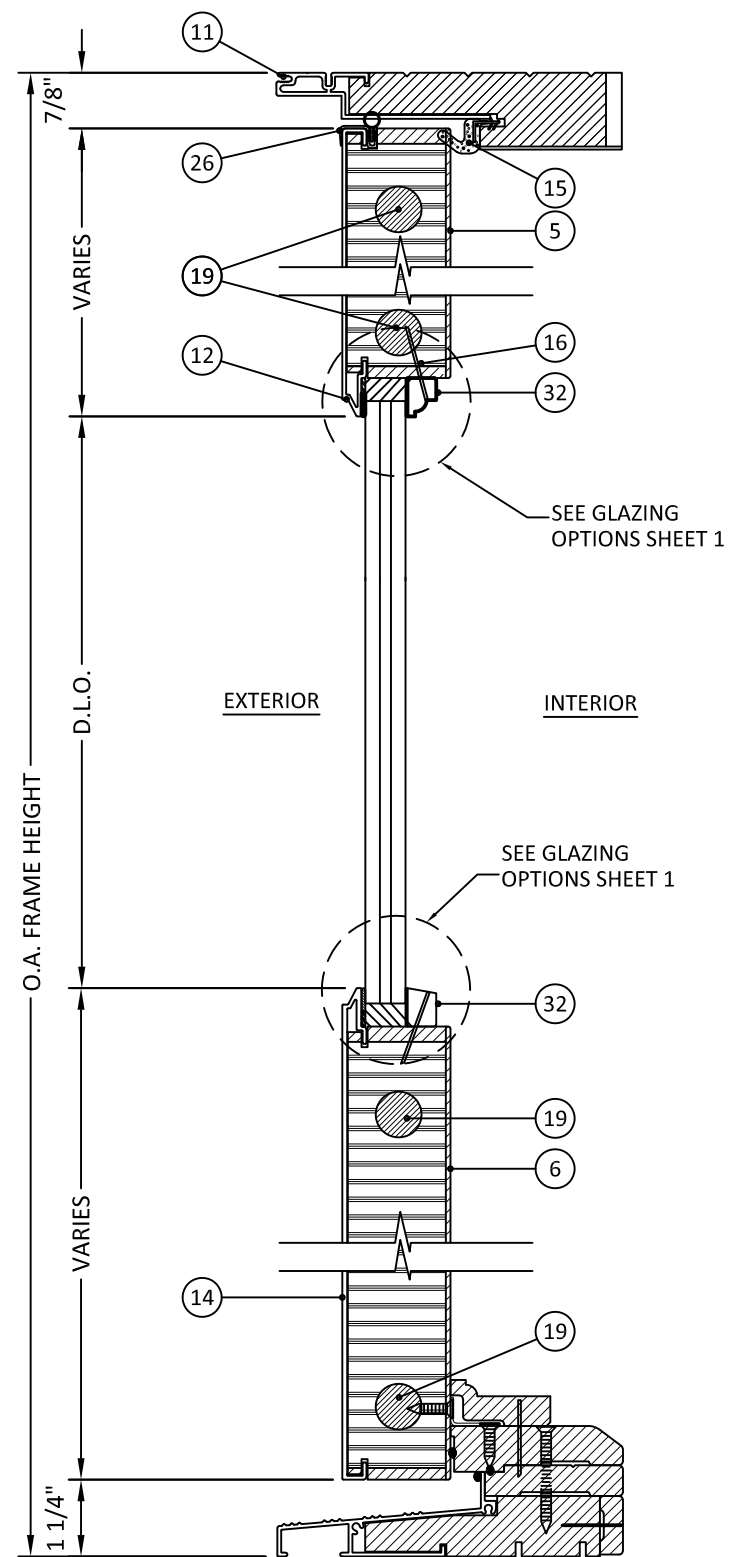
SCALE: **NTS**

DWG. #: **AWD230**

SECTION
3.0



1
3.0 VERTICAL SECTION
FULL GLAZED PANEL



2
3.0 VERTICAL SECTION
FULL GLAZED SIDELITE

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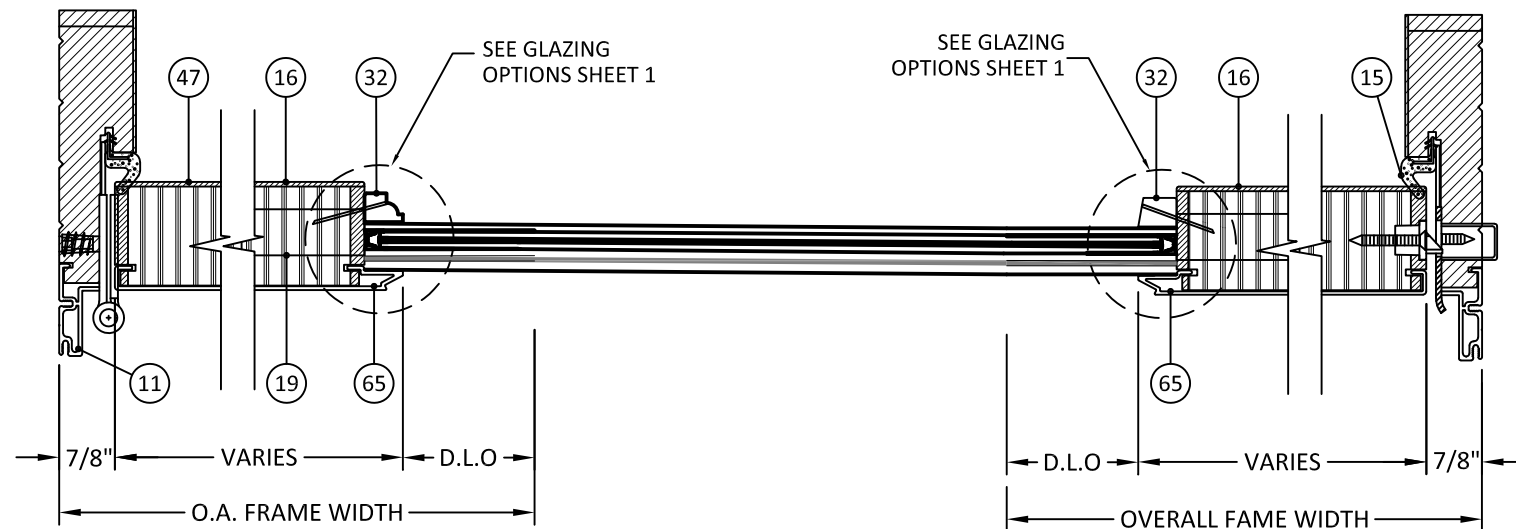


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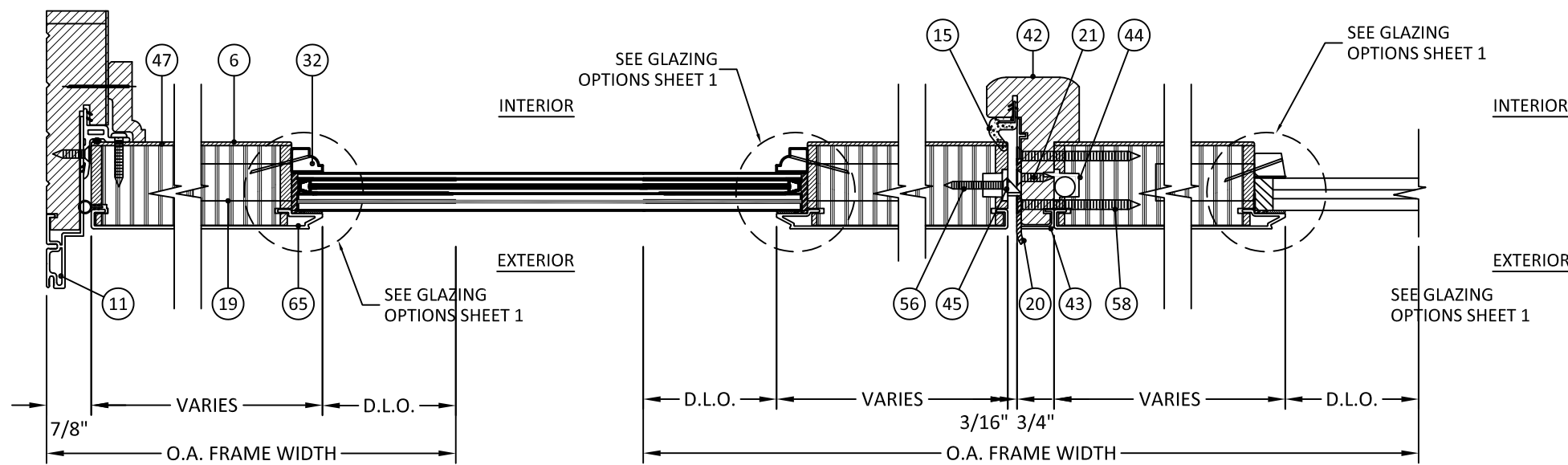
HORIZONTAL SECTIONS

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1 HORIZONTAL SECTION
4.0 HINGE JAMB

2 HORIZONTAL SECTION
4.0 LOCK JAMB

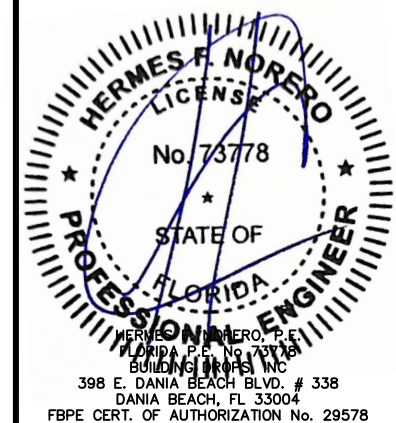


3 HORIZONTAL SECTION
4.0 SIDELITE JAMB

4 HORIZONTAL SECTION
4.0 ASTRAGAL

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SECTION
4.0

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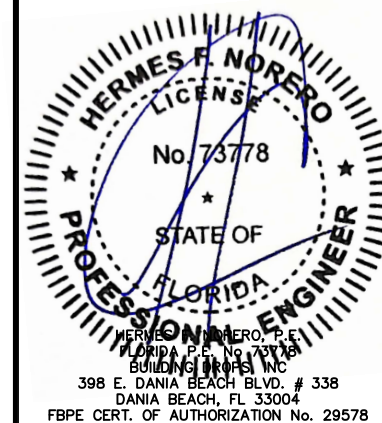
HORIZONTAL SECTIONS

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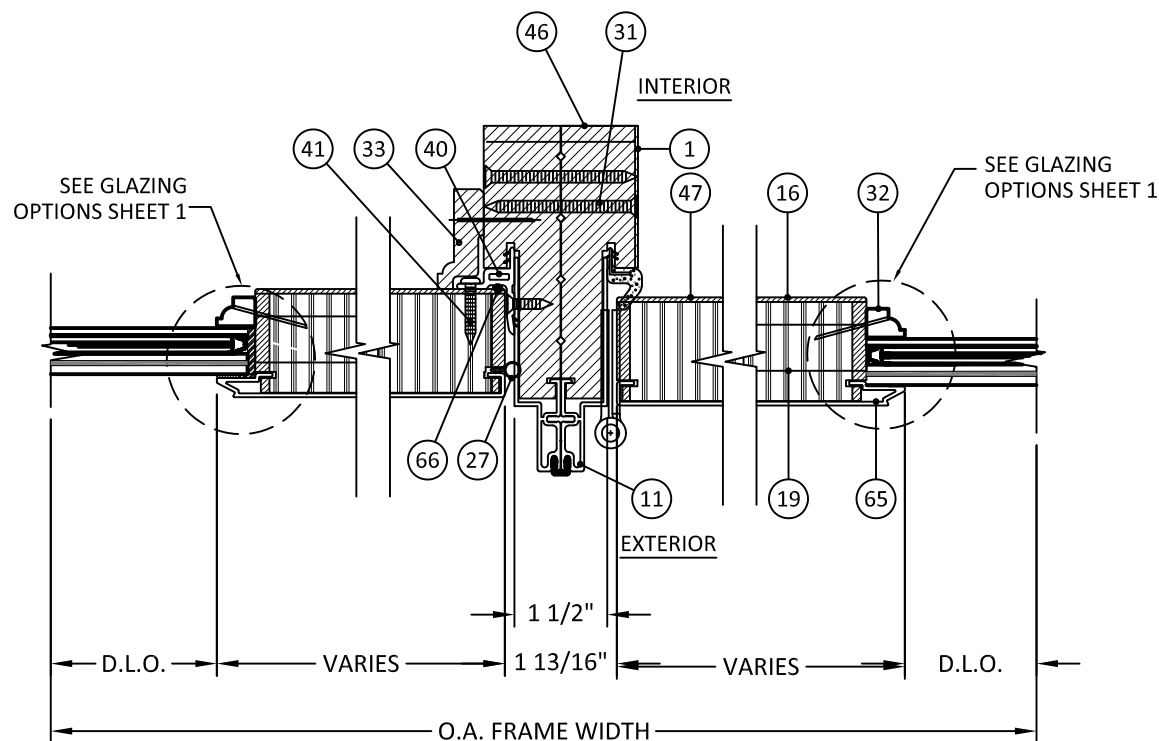
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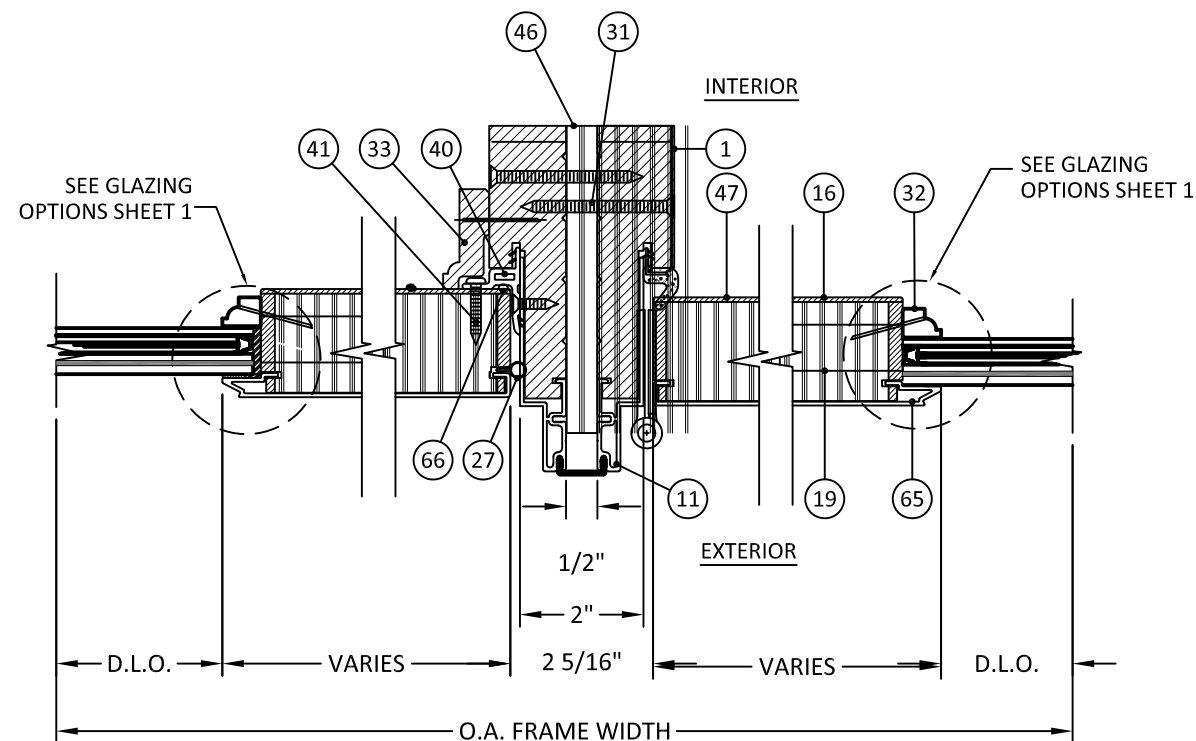


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SECTION	4.1

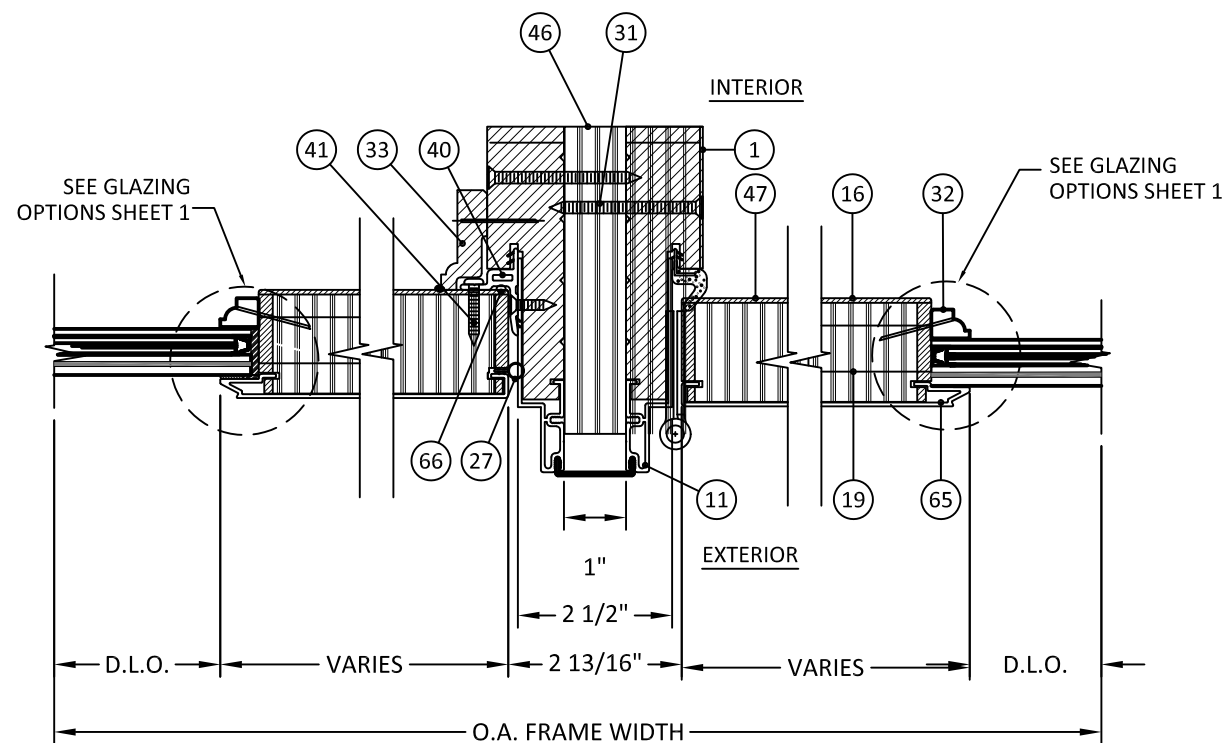
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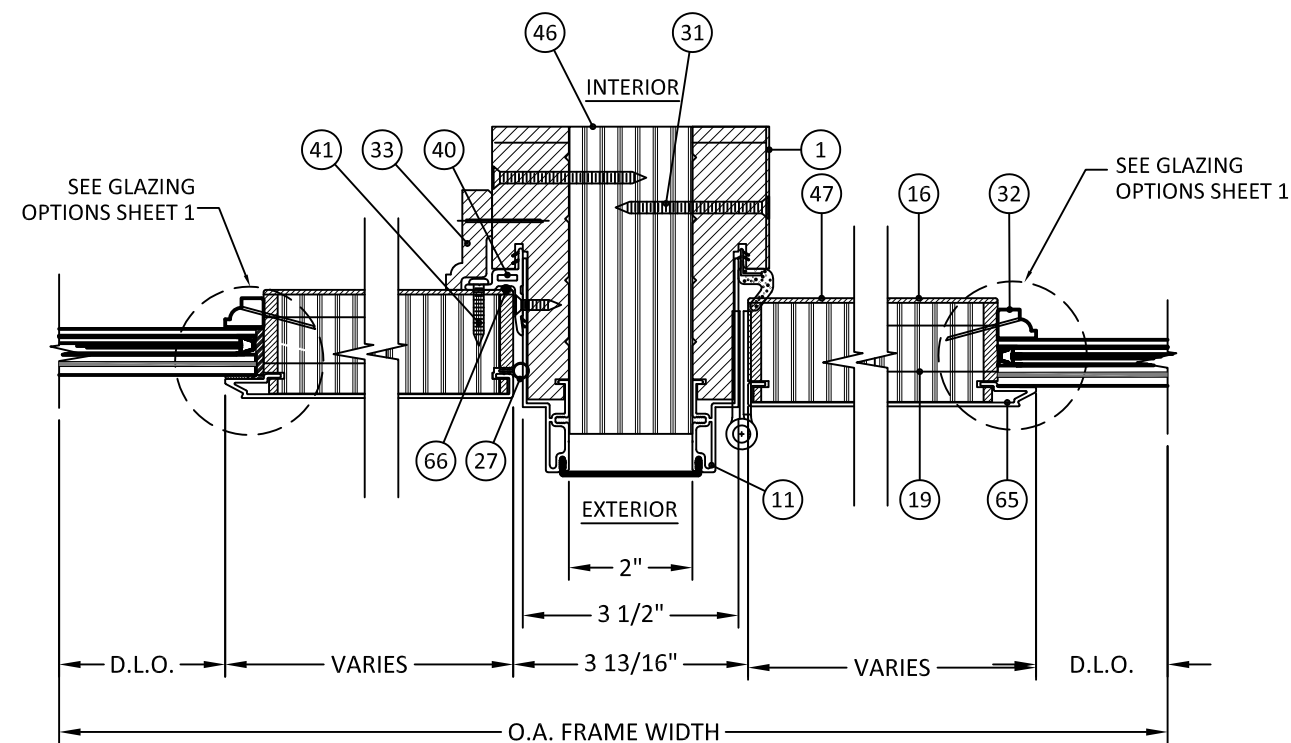
1 HORIZONTAL SECTION
4.1 ZERO MULLION
FIXED TO OPERABLE LITE



1 HORIZONTAL SECTION
4.1 1/2" MULLION
FIXED TO OPERABLE LITE



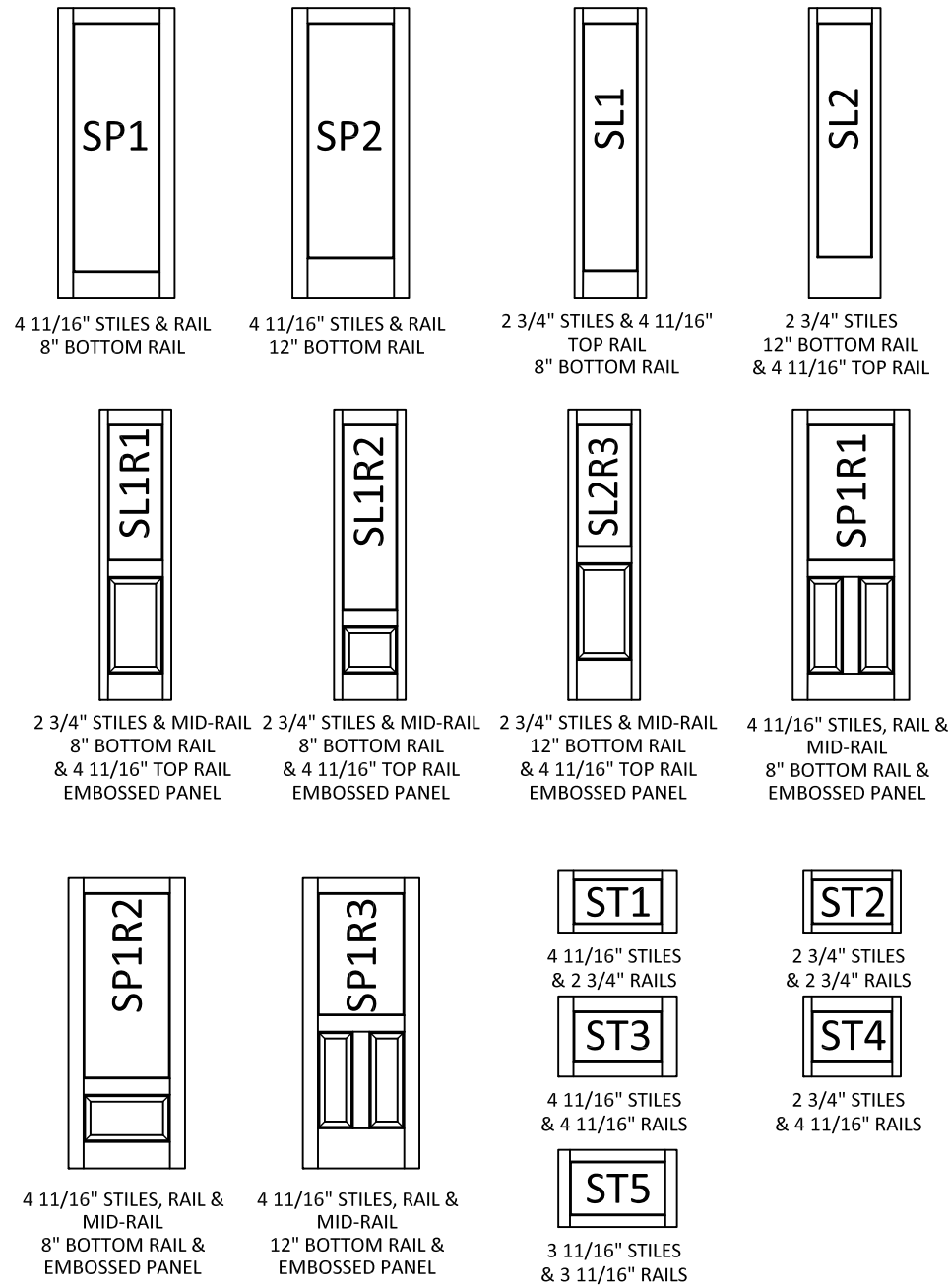
1 HORIZONTAL SECTION
4.1 1" MULLION
FIXED TO OPERABLE LITE



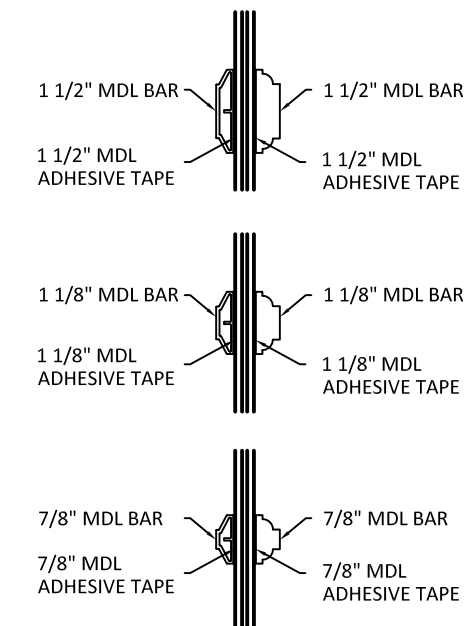
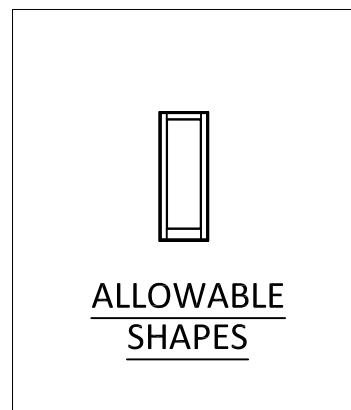
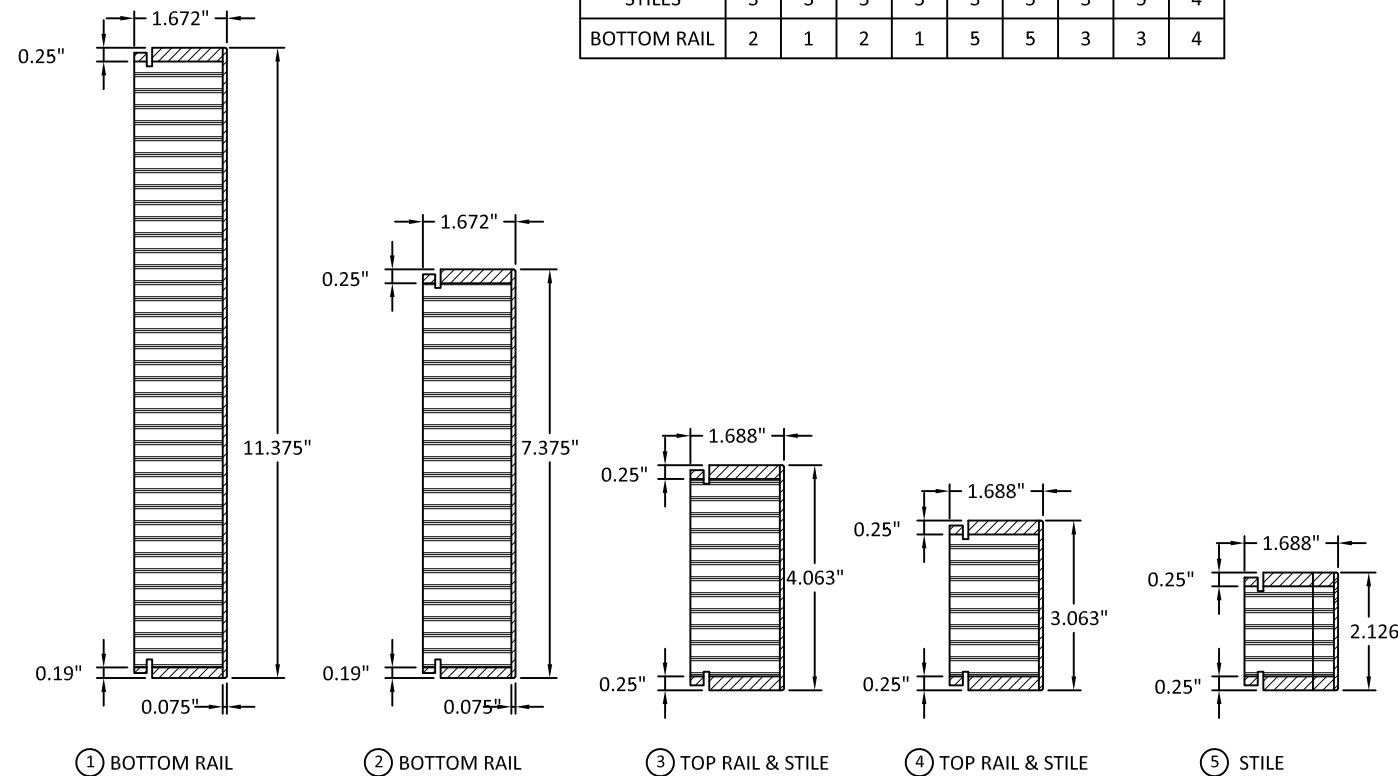
1 HORIZONTAL SECTION
4.1 2" MULLION
FIXED TO OPERABLE LITE

PANELS & SIDELITES TYPES

NOTES:
1. REFER TO SECTION 2 FOR CORRESPONDING PANEL TYPES AND CONFIGURATION QUALIFIED TO BE USED WITH THIS APPROVAL.



	SP1	SP2	SL1	SL2	ST1	ST2	ST3	ST4	ST5
TOP RAIL	3	3	3	3	5	5	3	3	4
STILES	3	3	5	5	3	5	3	5	4
BOTTOM RAIL	2	1	2	1	5	5	3	3	4



OPTIONAL MUNTIN BAR ATTACHMENT TO GLASS



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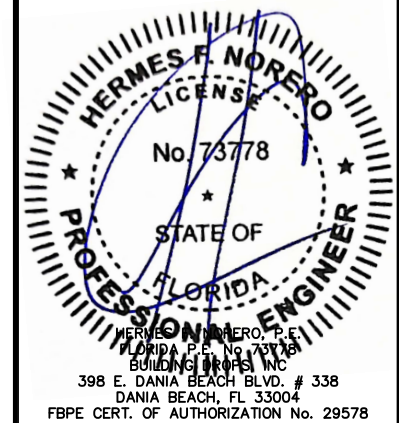
MUNTIN BAR,
PANELS & SIDELITES DETAILS

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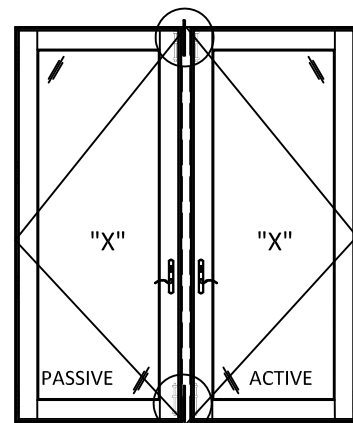
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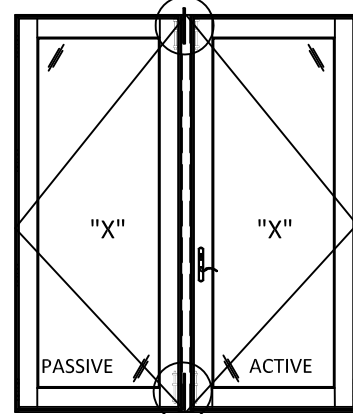
SECTION
5.0
[PAGE 6 of 20]

NOTES:
1. SURFACE BOLTS REQUIRED ON IMPACT DOUBLE UNITS



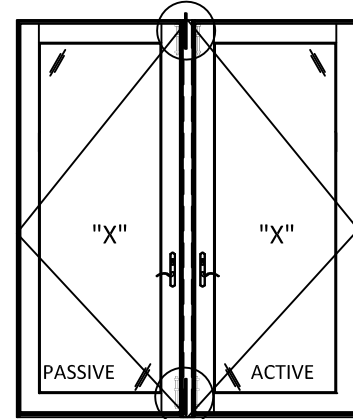
**OPTION 1
(AW HARDWARE)**

ACTIVE LEAF:
AUTOLATCH® MULTIPOINT LOCK SYSTEM, 105MM LOCK TO HANDLE SPACING, 50 MM LOCK/HANDLE BACKSET.
PASSIVE LEAF:
HANDLE OPERATED SHOOT BOLT THROUGH ASTRAGAL, LATCH AND DEADBOLT BLOKERS



**OPTION 2
(TYPE I)**

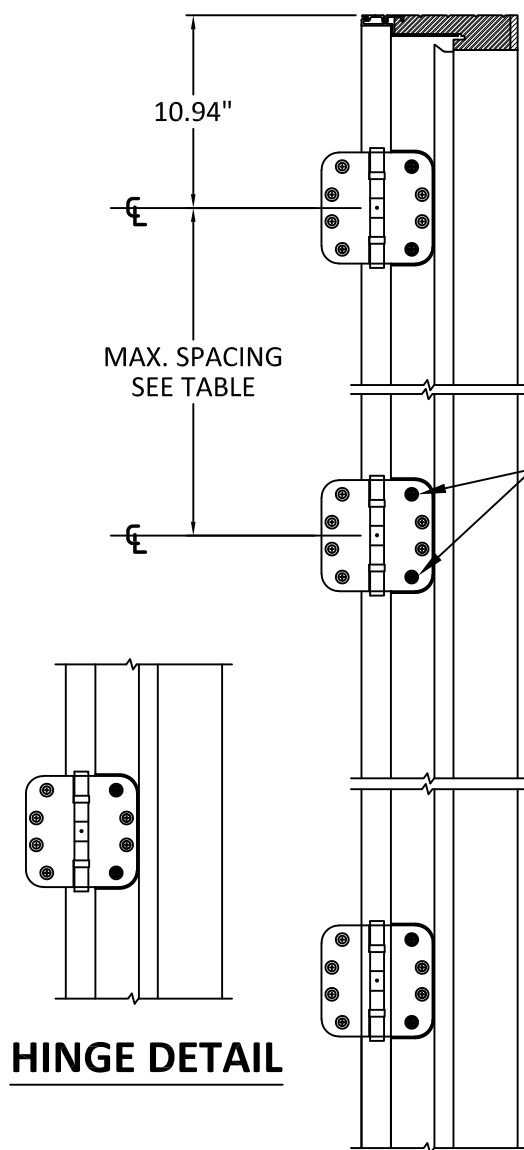
ACTIVE LEAF:
AUTOLATCH® MULTIPOINT LOCK SYSTEM, 92MM LOCK TO HANDLE SPACING, 45 MM LOCK/HANDLE BACKSET.
PASSIVE LEAF:
MANUALLY OPERATED MORTISE LEVER SHOOT BOLT THROUGH ASTRAGAL, NO HANDLE.



**OPTION 3
(TYPE II)**

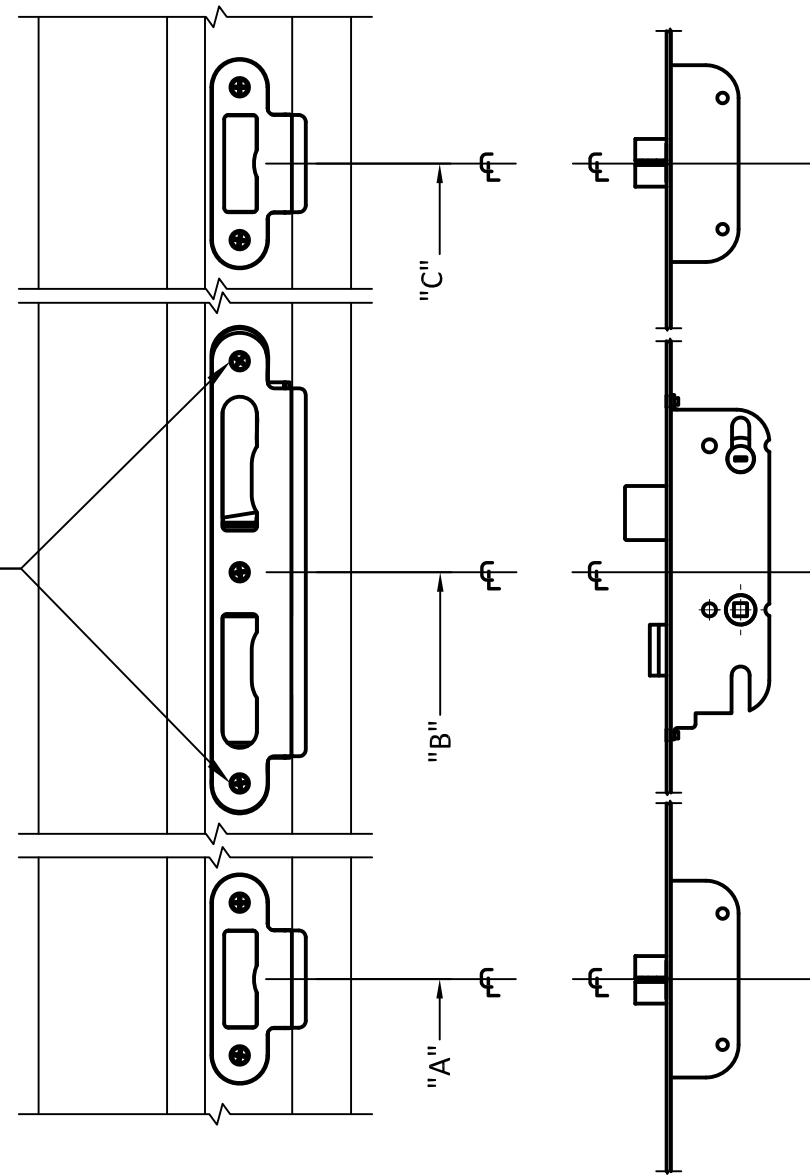
ACTIVE LEAF:
AUTOLATCH® MULTIPOINT LOCK SYSTEM, 92MM LOCK TO HANDLE SPACING, 45 MM LOCK/HANDLE BACKSET.
PASSIVE LEAF:
MANUALLY OPERATED MORTISE LEVER SHOOT BOLT THROUGH ASTRAGAL. DUMMY HANDLE

**HINGE LOCATIONS
USE #12 SCREW TYP.**



HINGE DETAIL

**STRIKE LOCATION
USE #8 SCREW TYP.**



**STRIKE PLATE LOCATIONS
@ ASTRAGAL/JAMB**
APPLIES TO ALL LOCK OPTIONS

**3-PT LOCK SYSTEM
ACTIVE / SINGLE DOOR**
APPLIES TO ALL LOCK OPTIONS

STRIKE CL LOCATION MEASURED FROM THE BOTTOM					
FRAME OPENING HEIGHT	ACTUAL DOOR HEIGHT	"A"	"B"	"C"	"D"
80.5"	80"			67.469"	N/A
84.5"	84"	14.875"	36.875"		
96.5"	96"			79.675"	

HINGE LOCATIONS		
FRAME OPENING HEIGHT	ACTUAL DOOR HEIGHT	MAX. HINGE SPACING (CENTER TO CENTER)
80.5"	80"	28.52"
84.5"	84"	30.52"
96.5"	96"	24.35"

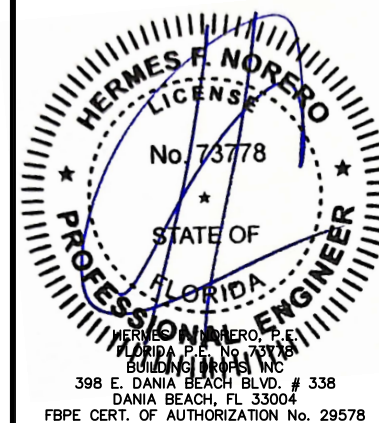


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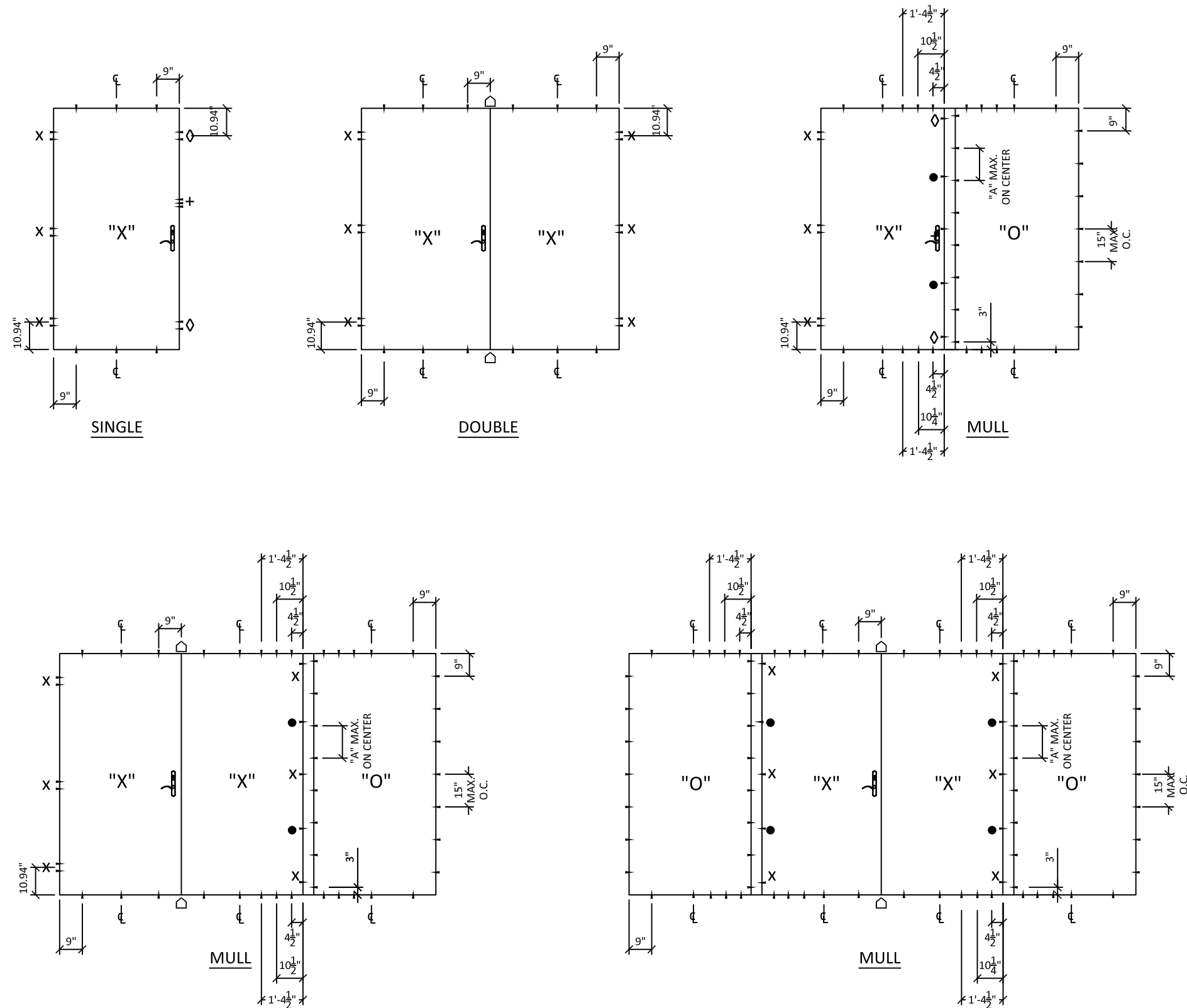
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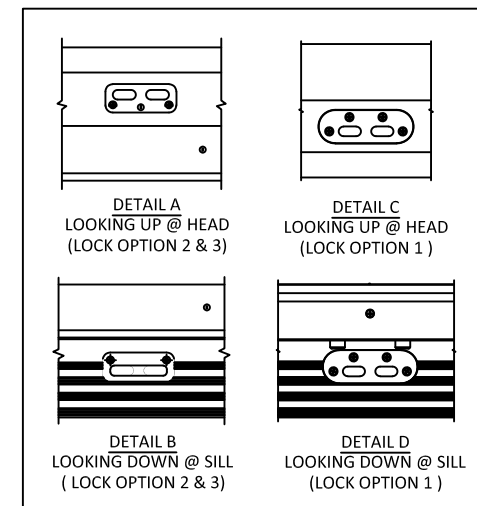
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SECTION
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ANCHOR LAYOUT



ACTIVE DOOR LEGEND "X"	
X	TWO (2) ANCHOR THRU HINGE PLATE
◇	ANCHORS THRU END RECEIVER - WOOD OR METAL: THREE (3) - CONCRETE / MASONRY: TWO (2)
+	ANCHORS THRU CENTER RECEIVER - WOOD OR STEEL: THREE (3) - CONCRETE / MASONRY: TWO (2)
□	ANCHORS THRU STRIKE HEAD PLATE: DETAIL A: - WOOD OR STEEL: TWO (2) - CONCRETE: TWO (2) DETAIL C: - WOOD OR STEEL: FOUR (4) - CONCRETE: TWO (2) ANCHORS THRU STRIKE SILL PLATE: DETAIL B: - WOOD OR STEEL: TWO (2) - CONCRETE: TWO (2) DETAIL D: - WOOD OR STEEL: FOUR (4) - CONCRETE: TWO (2)
•	ANCHOR MID-SPAM BETWEEN HINGES AND STRIKE PLATES

NOTE:
ANCHOR LOCATIONS APPLY TO SCREWS THROUGH FRAME, ALUMINUM NAIL FIN & STRAP INSTALLATION.



DESIGN PRESSURE	"A" DIMENSION
UP TO 75 PSF	13" MAX. O.C.



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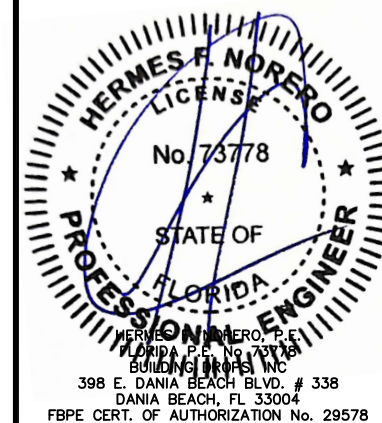
ANCHOR LAYOUTS

PREPARED BY:
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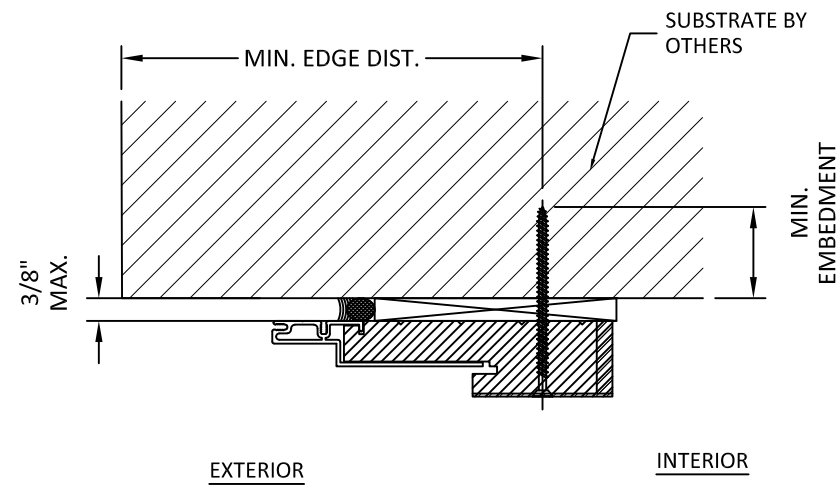


REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

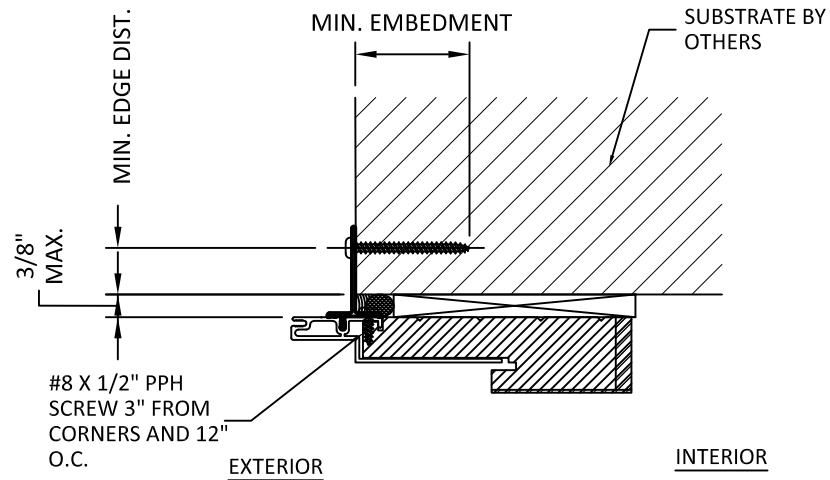
THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.



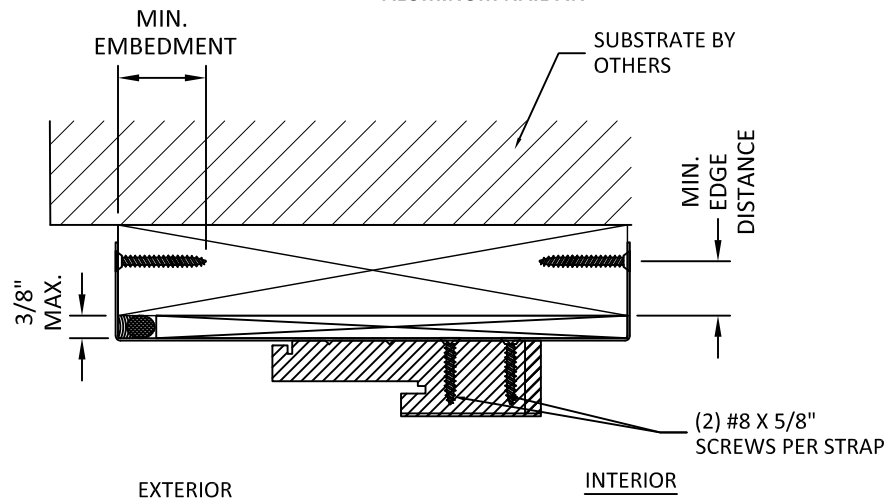
FL #:	FL25570
DATE:	9.05.17
DWG. BY:	RV
CHK. BY:	HFN
SCALE:	NTS
DWG. #:	AWD230
SECTION	7.0
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1
8.0
VERTICAL SECTION
DOOR HEAD OR JAMB OR SILL
THROUGH FRAME



2
8.0
VERTICAL SECTION
DOOR HEAD OR JAMB OR SILL
ALUMINUM NAIL FIN



3
8.0
VERTICAL SECTION
DOOR HEAD OR JAMB OR SILL
STRAP

ANCHOR SCHEDULE				
METHOD	SUBSTRATE	ANCHOR SCHEDULE	MIN EMBEDMENT	MIN. EDGE DISTANCE
THROUGH FRAME	WOOD: MIN. SG = 0.55	#12 WOOD SCREW	1.5"	0.75"
	METAL: 18 GAUGE , MIN. Fy=33KSI	#14 TEK SCREW	3 THREADS MIN PENETRATION BEYOND METAL	0.75"
	CONCRETE: f _c = 3000PSI	1/4" ITW TAPCON	1.75"	1"
	MASONRY: CMU per ASTM C90 f _c = 2000PSI	1/4" ITW TAPCON	1.75"	2.5"
STRAP ANCHOR	WOOD: MIN. SG = 0.55	#8 WOOD SCREW	1.5"	0.75"
	METAL: 18 GAUGE , MIN. Fy=33KSI	#14 TEK SCREW	3 THREADS MIN PENETRATION BEYOND METAL	0.75"
ALUMINUM NAIL FIN	WOOD: MIN. SG = 0.55	#8 WOOD SCREW	1.5"	0.75"
	METAL: 18 GAUGE Steel, MIN. Fy=33KSI	#8 TEK SCREW	3 THREADS MIN PENETRATION BEYOND METAL	0.75"
STRIKE PLATES	SEE SECTIONS 6 & 7 FOR QUANTITIES OF INSTALLATION ANCHORS AS MENTIONED ABOVE			
HINGES	2 ANCHORS PER HINGE SEE SECTIONS 6 & 7			

INSTALLATION NOTES:

- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF ±1/2 INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
- FOR MASONRY OR CONCRETE OPENINGS A 1X WOOD BUCK MAY BE USED (OPTIONAL) AS LONG AS THE MINIMUM EMBEDMENT AND EDGE DISTANCE REQUIREMENTS ARE STILL MET WITHIN THE CORRESPONDING HOST SUBSTRATE. SEE GENERAL NOTE #3 ON SHEET 1 FOR MORE INFORMATION.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- FOR HOLLOW BLOCK AND GROUT FILLED BLOCK, DO NOT INSTALL INSTALLATION ANCHORS INTO MORTAR JOINTS. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
- INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
- SHIM AS REQUIRED AT EACH INSTALLATION ANCHOR WITH LOAD BEARING SHIM(S). MAXIMUM ALLOWABLE SHIM STACK TO BE 3/8 INCH. SHIM WHERE SPACE OF 1/16 INCH OR GREATER OCCURS. SHIM(S) SHALL BE CONSTRUCTED OF HIGH DENSITY PLASTIC OR BETTER
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
 - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
 - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
 - MASONRY - MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
 - STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM WALL THICKNESS OF 33 MILS (20 GAUGE).
 - ALUMINUM - MINIMUM 6063-T5 ALLOY. MINIMUM WALL THICKNESS OF 1/8".



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TITLE: E-SERIES HINGED PATIO
DOOR - OUTSWING
(HVHZ)(IMPACT)

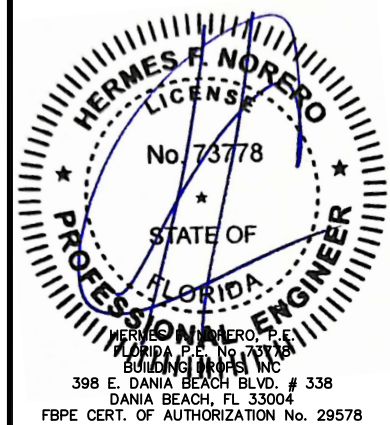
ANCHOR DETAILS, SCHEDULE & NOTES

PREPARED BY:
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REMARKS	BY	DATE
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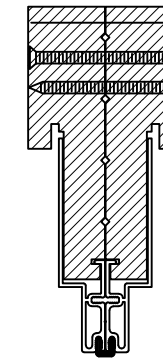


FL #:	FL25570
DATE:	9.05.17
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SECTION	8.0
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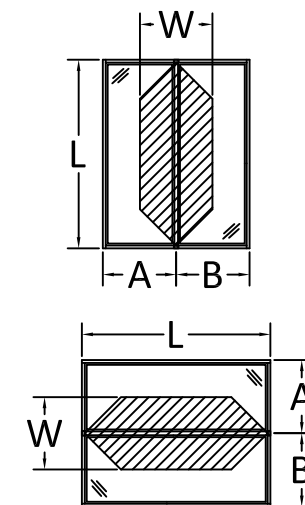
**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
ZERO STRUCTURAL MULLION (ONE-WAY) CONFIGURATION**

L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
30.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
36.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
42.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
48.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
54.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
66.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
72.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
78.0	75.00	75.00	75.00	70.57	65.97	65.39	65.39	65.39	65.39	65.39	65.39	65.39	65.39	65.39	65.39
84.0	75.00	75.00	63.06	54.64	50.50	49.20	49.20	49.20	49.20	49.20	49.20	49.20	49.20	49.20	49.20
90.0	75.00	63.78	50.37	43.15	39.28	37.57	37.33	37.33	37.33	37.33	37.33	37.33	37.33	37.33	37.33
96.0	75.00	52.14	40.91	34.73	31.23	29.43	28.84	28.84	28.84	28.84	28.84	28.84	28.84	28.84	28.84
102.0	62.92	43.18	33.70	28.41	25.30	23.54	22.74	22.63	22.63	22.63	22.63	22.63	22.63	22.63	22.63
108.0	52.87	36.17	28.11	23.56	20.81	19.17	18.30	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
114.0	44.86	30.61	23.71	19.76	17.35	15.85	14.97	14.56	14.50	14.50	14.50	14.50	14.50	14.50	14.50
120.0	38.39	26.14	20.18	16.76	14.63	13.27	12.43	11.97	11.81	11.81	11.81	11.81	11.81	11.81	11.81
126.0	33.11	22.50	17.33	14.34	12.46	11.23	10.45	9.98	9.75	9.72	9.72	9.72	9.72	9.72	9.72
132.0	28.76	19.51	14.99	12.36	10.70	9.60	8.88	8.41	8.16	8.07	8.07	8.07	8.07	8.07	8.07
138.0	25.14	17.03	13.06	10.74	9.27	8.28	7.61	7.17	6.90	6.77	6.75	6.75	6.75	6.75	6.75
144.0	22.10	14.95	11.45	9.40	8.08	7.19	6.58	6.17	5.90	5.75	5.70	5.70	5.70	5.70	5.70
150.0	19.54	13.20	10.09	8.27	7.09	6.29	5.74	5.35	5.09	4.93	4.85	4.84	4.84	4.84	4.84
156.0	17.35	11.72	8.94	7.31	6.26	5.54	5.03	4.67	4.43	4.26	4.17	4.14	4.14	4.14	4.14
162.0	15.48	10.44	7.96	6.50	5.55	4.90	4.44	4.11	3.88	3.71	3.61	3.56	3.56	3.56	3.56
168.0	13.88	9.35	7.12	5.81	4.95	4.36	3.94	3.64	3.42	3.26	3.16	3.10	3.08	3.08	3.08
174.0	12.48	8.41	6.39	5.21	4.43	3.90	3.51	3.23	3.03	2.88	2.78	2.71	2.68	2.67	2.67
180.0	11.27	7.58	5.76	4.69	3.99	3.50	3.15	2.89	2.70	2.56	2.45	2.39	2.35	2.33	2.33
186.0	10.21	6.87	5.21	4.24	3.60	3.15	2.83	2.59	2.41	2.28	2.18	2.12	2.07	2.05	2.05
192.0	9.28	6.24	4.73	3.84	3.26	2.85	2.56	2.34	2.17	2.05	1.95	1.88	1.84	1.81	1.80

- NOTE:**
- MULLION CHART APPLIES TO ZERO MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY CONFIGURATIONS.
 - DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
 - MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
 - DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
 - MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
 - TRIBUTARY WIDTH = $W = (A+B)/2$
 - WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



ZERO MULLION



$$\frac{A + B}{2} = W$$



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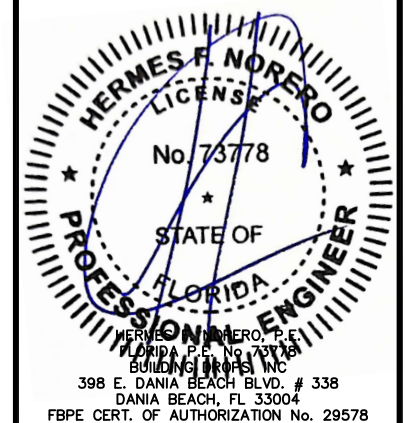
MULLION TABLES

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REMARKS	BY	DATE
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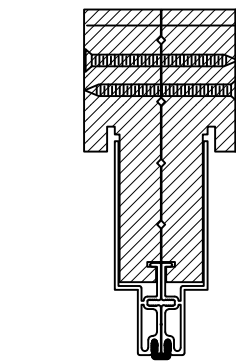
FL #:	FL25570
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SCALE:	NTS
DWG. #:	AWD230
SECTION	9.0

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
ZERO STRUCTURAL MULLION (TWO-WAY) CONFIGURATION

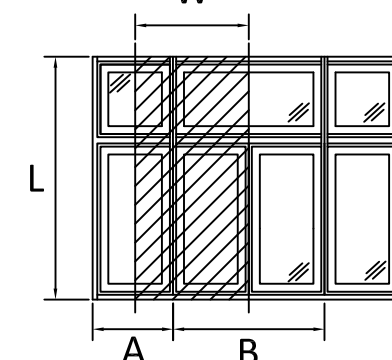
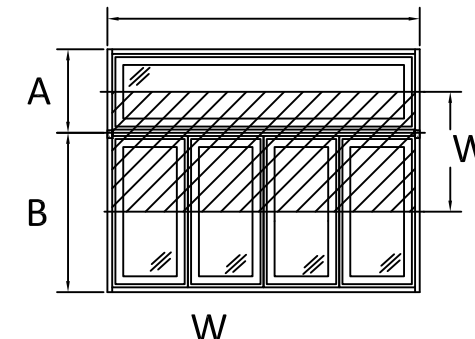
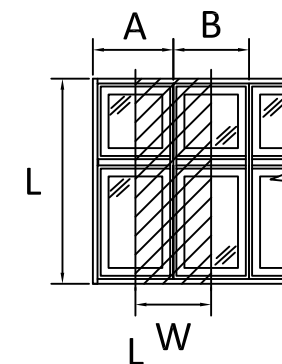
L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	55.75
30.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.89	50.97	47.57	44.60
36.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.06	49.56	45.74	42.48	39.64	37.17
42.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	56.63	50.97	46.34	42.48	39.21	36.41	33.98	31.86
48.0	60.00	60.00	60.00	60.00	60.00	60.00	55.75	49.56	44.60	40.55	37.17	34.31	31.86	29.73	27.88
54.0	60.00	60.00	60.00	60.00	60.00	56.63	49.56	44.05	39.64	36.04	33.04	30.50	28.32	26.43	24.78
60.0	60.00	60.00	60.00	60.00	59.47	50.97	44.60	39.64	35.68	32.44	29.73	27.45	25.49	23.79	22.30
66.0	60.00	60.00	60.00	60.00	54.06	46.34	40.55	36.04	32.44	29.49	27.03	24.95	23.17	21.62	20.27
72.0	60.00	60.00	60.00	59.47	49.56	42.48	37.17	33.04	29.73	27.03	24.78	22.87	21.24	19.82	18.58
78.0	60.00	60.00	60.00	54.89	45.74	39.21	34.31	30.50	27.45	24.95	22.87	21.11	19.60	18.30	17.15
84.0	60.00	60.00	55.10	44.08	36.74	31.49	27.55	24.49	22.04	20.04	18.37	16.96	15.74	14.69	13.78
90.0	60.00	59.74	44.80	35.84	29.87	25.60	22.40	19.91	17.92	16.29	14.93	13.79	12.80	11.95	11.20
96.0	60.00	49.22	36.92	29.53	24.61	21.09	18.46	16.41	14.77	13.42	12.31	11.36	10.55	9.84	9.23
102.0	60.00	41.04	30.78	24.62	20.52	17.59	15.39	13.68	12.31	11.19	10.26	9.47	8.79	8.21	7.69
108.0	51.85	34.57	25.93	20.74	17.28	14.82	12.96	11.52	10.37	9.43	8.64	7.98	7.41	6.91	6.48
114.0	44.09	29.39	22.05	17.64	14.70	12.60	11.02	9.80	8.82	8.02	7.35	6.78	6.30	5.88	5.51
120.0	37.80	25.20	18.90	15.12	12.60	10.80	9.45	8.40	7.56	6.87	6.30	5.82	5.40	5.04	4.73
126.0	32.65	21.77	16.33	13.06	10.88	9.33	8.16	7.26	6.53	5.94	5.44	5.02	4.66	4.35	4.08
132.0	28.40	18.93	14.20	11.36	9.47	8.11	7.10	6.31	5.68	5.16	4.73	4.37	4.06	3.79	3.55
138.0	24.86	16.57	12.43	9.94	8.29	7.10	6.21	5.52	4.97	4.52	4.14	3.82	3.55	3.31	3.11
144.0	21.88	14.58	10.94	8.75	7.29	6.25	5.47	4.86	4.38	3.98	3.65	3.37	3.13	2.92	2.73
150.0	19.35	12.90	9.68	7.74	6.45	5.53	4.84	4.30	3.87	3.52	3.23	2.98	2.76	2.58	2.42
156.0	17.21	11.47	8.60	6.88	5.74	4.92	4.30	3.82	3.44	3.13	2.87	2.65	2.46	2.29	2.15
162.0	15.36	10.24	7.68	6.15	5.12	4.39	3.84	3.41	3.07	2.79	2.56	2.36	2.19	2.05	1.92
168.0	13.78	9.18	6.89	5.51	4.59	3.94	3.44	3.06	2.76	2.50	2.30	2.12	1.97	1.84	1.72
174.0	12.40	8.27	6.20	4.96	4.13	3.54	3.10	2.76	2.48	2.25	2.07	1.91	1.77	1.65	1.55
180.0	11.20	7.47	5.60	4.48	3.73	3.20	2.80	2.49	2.24	2.04	1.87	1.72	1.60	1.49	1.40
186.0	10.15	6.77	5.08	4.06	3.38	2.90	2.54	2.26	2.03	1.85	1.69	1.56	1.45	1.35	1.27
192.0	9.23	6.15	4.61	3.69	3.08	2.64	2.31	2.05	1.85	1.68	1.54	1.42	1.32	1.23	1.15

NOTE:

- 1) MULLION CHART APPLIES TO ZERO MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
- 6) TRIBUTARY WIDTH = $W = (A+B)/2$
- 7) WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



ZERO MULLION



$$\frac{A + B}{2} = W$$

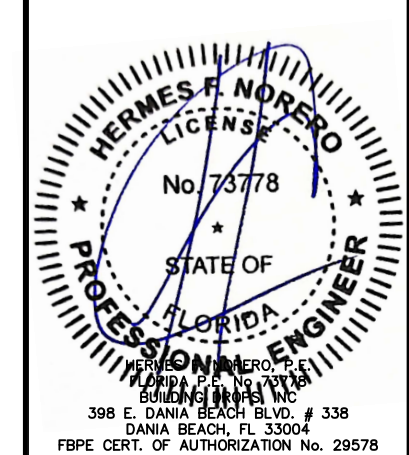


100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
 PH: (651) 264-5150 FX: (651) 264-5485

TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)
 MULLION TABLES
 PREPARED BY: BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
 PH: (954) 399-8478
 FAX: (954) 744-4738
 WEB: www.buildingdrops.com

REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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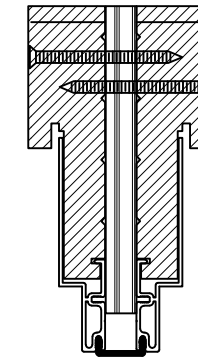
FL #: **FL25570**
 DATE: **9.05.17**
 DWG. BY: **RV** CHK. BY: **HFN**
 SCALE: **NTS**
 DWG. #: **AWD230**
 SECTION
9.1
 [PAGE 11 of 20]

**MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
1/2" X 5-3/16" STRUCTURAL MULLION (ONE-WAY) CONFIGURATION**

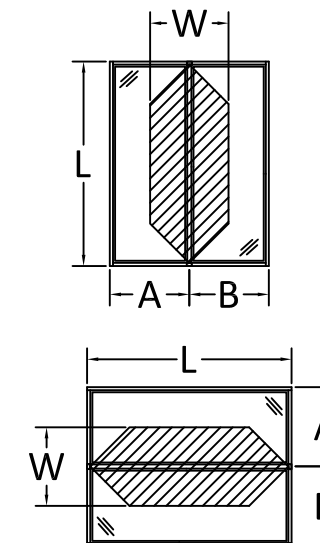
L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
30.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
36.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
42.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
48.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
54.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
66.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
72.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
78.0	75.00	75.00	75.00	68.55	64.08	63.52	63.52	63.52	63.52	63.52	63.52	63.52	63.52	63.52	63.52
84.0	75.00	75.00	66.55	57.16	52.38	50.86	50.86	50.86	50.86	50.86	50.86	50.86	50.86	50.86	50.86
90.0	75.00	72.79	57.07	48.51	43.79	41.63	41.35	41.35	41.35	41.35	41.35	41.35	41.35	41.35	41.35
96.0	75.00	63.55	49.54	41.76	37.26	34.85	34.07	34.07	34.07	34.07	34.07	34.07	34.07	34.07	34.07
102.0	75.00	55.98	43.43	36.37	32.15	29.71	28.55	28.40	28.40	28.40	28.40	28.40	28.40	28.40	28.40
108.0	69.71	47.69	37.07	31.06	27.44	25.28	24.13	23.74	23.74	23.74	23.74	23.74	23.74	23.74	23.74
114.0	59.15	40.36	31.26	26.06	22.87	20.89	19.74	19.20	19.12	19.12	19.12	19.12	19.12	19.12	19.12
120.0	50.62	34.46	26.61	22.09	19.28	17.49	16.39	15.78	15.58	15.58	15.58	15.58	15.58	15.58	15.58
126.0	43.66	29.67	22.84	18.90	16.42	14.81	13.77	13.15	12.86	12.81	12.81	12.81	12.81	12.81	12.81
132.0	37.92	25.72	19.76	16.30	14.11	12.66	11.70	11.09	10.76	10.64	10.64	10.64	10.64	10.64	10.64
138.0	33.14	22.45	17.22	14.16	12.22	10.92	10.04	9.46	9.10	8.93	8.91	8.91	8.91	8.91	8.91
144.0	29.14	19.72	15.09	12.39	10.65	9.49	8.68	8.13	7.78	7.58	7.51	7.51	7.51	7.51	7.51
150.0	25.76	17.41	13.30	10.90	9.35	8.30	7.56	7.06	6.71	6.50	6.40	6.38	6.38	6.38	6.38
156.0	22.88	15.45	11.79	9.64	8.25	7.30	6.64	6.16	5.84	5.62	5.50	5.45	5.45	5.45	5.45
162.0	20.42	13.77	10.50	8.57	7.32	6.46	5.86	5.42	5.11	4.90	4.77	4.70	4.69	4.69	4.69
168.0	18.29	12.33	9.39	7.65	6.53	5.75	5.20	4.79	4.50	4.30	4.16	4.08	4.05	4.05	4.05
174.0	16.46	11.08	8.43	6.86	5.85	5.14	4.63	4.26	3.99	3.79	3.66	3.57	3.53	3.52	3.52
180.0	14.86	10.00	7.60	6.18	5.26	4.61	4.15	3.81	3.56	3.37	3.24	3.15	3.10	3.08	3.08
186.0	13.46	9.05	6.87	5.59	4.74	4.16	3.73	3.42	3.18	3.01	2.88	2.79	2.73	2.70	2.70
192.0	12.23	8.22	6.24	5.06	4.30	3.76	3.37	3.08	2.86	2.70	2.57	2.49	2.43	2.39	2.38

NOTE:

- MULLION CHART APPLIES TO 1/2" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY CONFIGURATIONS.
- DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
- TRIBUTARY WIDTH = $W = (A+B)/2$
- WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



1/2" X 5 3/16" MULLION



$$\frac{A + B = W}{2}$$



100 FOURTH AVE NORTH
BAYPORT, MN 55003-1096
PH: (651) 264-5150 FX: (651) 264-5485

TITLE: E-SERIES HINGED PATIO
DOOR - OUTSWING
(HVHZ)(IMPACT)

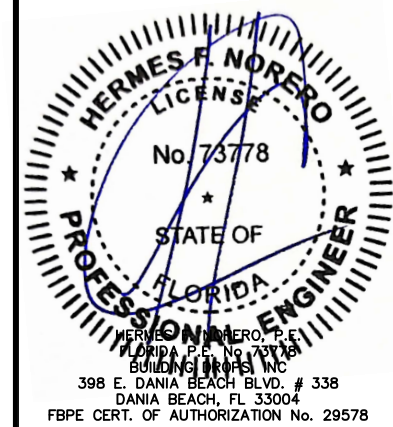
MULLION TABLES

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., STE. 338
DANIA BEACH, FL 33004
PH: (954) 399-8478
FAX: (954) 744-4738
WEB: www.buildingdrops.com



REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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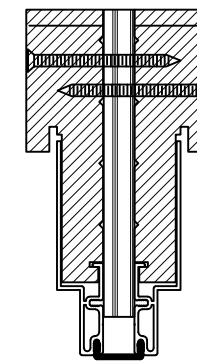


FL #:	FL25570
DATE:	9.05.17
DWG. BY:	RV
CHK. BY:	HFN
SCALE:	NTS
DWG. #:	AWD230

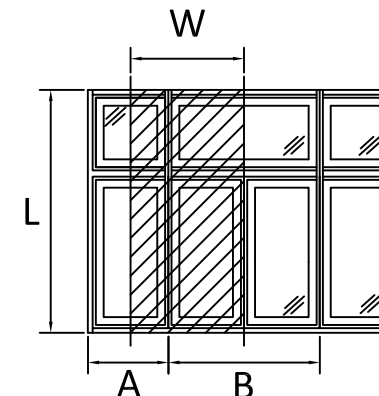
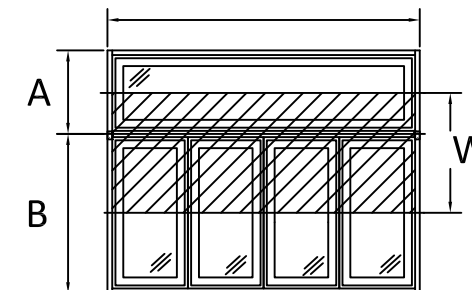
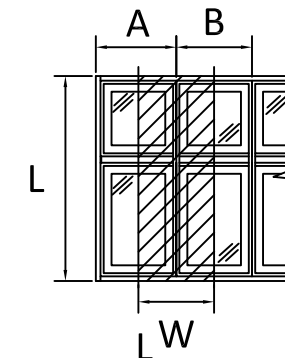
SECTION
9.2
[PAGE 12 of 20]

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
1/2" X 5-3/16" STRUCTURAL MULLION (TWO-WAY) CONFIGURATION

L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	55.75
30.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.89	50.97	47.57	44.60
36.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.06	49.56	45.74	42.48	39.64	37.17
42.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	56.63	50.97	46.34	42.48	39.21	36.41	33.98	31.86
48.0	60.00	60.00	60.00	60.00	60.00	60.00	55.75	49.56	44.60	40.55	37.17	34.31	31.86	29.73	27.88
54.0	60.00	60.00	60.00	60.00	60.00	56.63	49.56	44.05	39.64	36.04	33.04	30.50	28.32	26.43	24.78
60.0	60.00	60.00	60.00	60.00	59.47	50.97	44.60	39.64	35.68	32.44	29.73	27.45	25.49	23.79	22.30
66.0	60.00	60.00	60.00	60.00	54.06	46.34	40.55	36.04	32.44	29.49	27.03	24.95	23.17	21.62	20.27
72.0	60.00	60.00	60.00	59.47	49.56	42.48	37.17	33.04	29.73	27.03	24.78	22.87	21.24	19.82	18.58
78.0	60.00	60.00	60.00	54.89	45.74	39.21	34.31	30.50	27.45	24.95	22.87	21.11	19.60	18.30	17.15
84.0	60.00	60.00	60.00	49.06	40.88	35.04	30.66	27.25	24.53	22.30	20.44	18.87	17.52	16.35	15.33
90.0	60.00	60.00	53.42	42.73	35.61	30.52	26.71	23.74	21.37	19.42	17.81	16.44	15.26	14.24	13.35
96.0	60.00	60.00	46.95	37.56	31.30	26.83	23.47	20.87	18.78	17.07	15.65	14.45	13.41	12.52	11.74
102.0	60.00	55.45	41.59	33.27	27.72	23.76	20.79	18.48	16.63	15.12	13.86	12.80	11.88	11.09	10.40
108.0	60.00	47.10	35.33	28.26	23.55	20.19	17.66	15.70	14.13	12.85	11.78	10.87	10.09	9.42	8.83
114.0	60.00	40.05	30.04	24.03	20.03	17.16	15.02	13.35	12.02	10.92	10.01	9.24	8.58	8.01	7.51
120.0	51.51	34.34	25.75	20.60	17.17	14.72	12.88	11.45	10.30	9.37	8.58	7.92	7.36	6.87	6.44
126.0	44.50	29.66	22.25	17.80	14.83	12.71	11.12	9.89	8.90	8.09	7.42	6.85	6.36	5.93	5.56
132.0	38.70	25.80	19.35	15.48	12.90	11.06	9.67	8.60	7.74	7.04	6.45	5.95	5.53	5.16	4.84
138.0	33.87	22.58	16.93	13.55	11.29	9.68	8.47	7.53	6.77	6.16	5.64	5.21	4.84	4.52	4.23
144.0	29.81	19.87	14.90	11.92	9.94	8.52	7.45	6.62	5.96	5.42	4.97	4.59	4.26	3.97	3.73
150.0	26.37	17.58	13.19	10.55	8.79	7.53	6.59	5.86	5.27	4.79	4.40	4.06	3.77	3.52	3.30
156.0	23.44	15.63	11.72	9.38	7.81	6.70	5.86	5.21	4.69	4.26	3.91	3.61	3.35	3.13	2.93
162.0	20.94	13.96	10.47	8.37	6.98	5.98	5.23	4.65	4.19	3.81	3.49	3.22	2.99	2.79	2.62
168.0	18.77	12.51	9.39	7.51	6.26	5.36	4.69	4.17	3.75	3.41	3.13	2.89	2.68	2.50	2.35
174.0	16.90	11.26	8.45	6.76	5.63	4.83	4.22	3.75	3.38	3.07	2.82	2.60	2.41	2.25	2.11
180.0	15.26	10.17	7.63	6.10	5.09	4.36	3.82	3.39	3.05	2.77	2.54	2.35	2.18	2.03	1.91
186.0	13.83	9.22	6.92	5.53	4.61	3.95	3.46	3.07	2.77	2.51	2.31	2.13	1.98	1.84	1.73
192.0	12.58	8.38	6.29	5.03	4.19	3.59	3.14	2.79	2.52	2.29	2.10	1.93	1.80	1.68	1.57



1/2" X 5 3/16" MULLION



$$\frac{A + B}{2} = W$$

NOTE:

- 1) MULLION CHART APPLIES TO 1/2" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
- 6) TRIBUTARY WIDTH = W = (A+B)/2
- 7) WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
 PH: (651) 264-5150 FX: (651) 264-5485

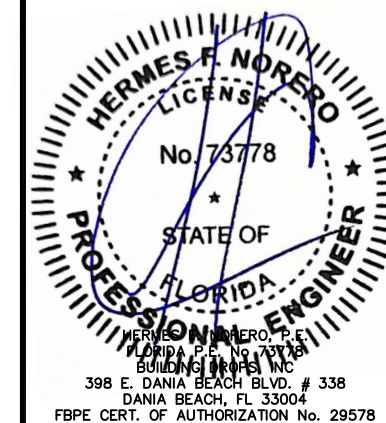
TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)

MULLION TABLES

PREPARED BY:
 BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
 PH: (954) 399-8478
 FAX: (954) 744-4738
 WEB: www.buildingdrops.com

REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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FL #: **FL25570**

DATE: **9.05.17**

DWG. BY: **RV** CHK. BY: **HFN**

SCALE: **NTS**

DWG. #: **AWD230**

SECTION
9.3

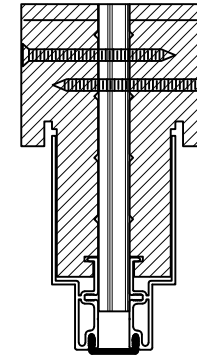
[PAGE 13 of 20]

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
3/4" X 5-3/16" STRUCTURAL MULLION (ONE-WAY) CONFIGURATION

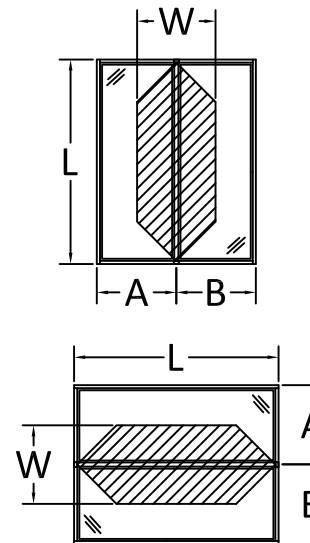
L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
30.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
36.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
42.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
48.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
54.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
66.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
72.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
78.0	75.00	75.00	75.00	75.00	73.27	72.62	72.62	72.62	72.62	72.62	72.62	72.62	72.62	72.62	72.62
84.0	75.00	75.00	75.00	65.36	59.89	58.15	58.15	58.15	58.15	58.15	58.15	58.15	58.15	58.15	58.15
90.0	75.00	75.00	65.25	55.46	50.07	47.59	47.28	47.28	47.28	47.28	47.28	47.28	47.28	47.28	47.28
96.0	75.00	72.66	56.64	47.74	42.60	39.85	38.95	38.95	38.95	38.95	38.95	38.95	38.95	38.95	38.95
102.0	75.00	64.00	49.66	41.58	36.76	33.96	32.65	32.48	32.48	32.48	32.48	32.48	32.48	32.48	32.48
108.0	75.00	54.53	42.38	35.51	31.37	28.90	27.58	27.14	27.14	27.14	27.14	27.14	27.14	27.14	27.14
114.0	67.63	46.14	35.73	29.79	26.15	23.89	22.57	21.95	21.86	21.86	21.86	21.86	21.86	21.86	21.86
120.0	57.87	39.40	30.42	25.26	22.05	20.00	18.73	18.04	17.81	17.81	17.81	17.81	17.81	17.81	17.81
126.0	49.91	33.92	26.12	21.61	18.78	16.93	15.75	15.04	14.70	14.65	14.65	14.65	14.65	14.65	14.65
132.0	43.35	29.41	22.60	18.64	16.13	14.48	13.38	12.68	12.30	12.16	12.16	12.16	12.16	12.16	12.16
138.0	37.90	25.67	19.68	16.19	13.97	12.48	11.48	10.81	10.41	10.21	10.18	10.18	10.18	10.18	10.18
144.0	33.32	22.54	17.25	14.16	12.18	10.84	9.93	9.30	8.90	8.67	8.59	8.59	8.59	8.59	8.59
150.0	29.45	19.90	15.21	12.46	10.69	9.49	8.65	8.07	7.67	7.43	7.31	7.29	7.29	7.29	7.29
156.0	26.16	17.66	13.48	11.02	9.43	8.35	7.59	7.05	6.67	6.43	6.29	6.23	6.23	6.23	6.23
162.0	23.34	15.74	12.00	9.80	8.37	7.39	6.70	6.20	5.84	5.60	5.45	5.37	5.36	5.36	5.36
168.0	20.92	14.10	10.73	8.75	7.46	6.57	5.94	5.48	5.15	4.91	4.76	4.67	4.64	4.64	4.64
174.0	18.81	12.67	9.64	7.85	6.68	5.88	5.30	4.87	4.56	4.34	4.18	4.09	4.04	4.03	4.03
180.0	16.99	11.43	8.69	7.07	6.01	5.27	4.75	4.35	4.07	3.85	3.70	3.60	3.54	3.52	3.52
186.0	15.39	10.35	7.86	6.39	5.42	4.75	4.27	3.91	3.64	3.44	3.29	3.19	3.12	3.09	3.09
192.0	13.98	9.40	7.13	5.79	4.91	4.30	3.85	3.52	3.27	3.08	2.94	2.84	2.77	2.73	2.72

NOTE:

- 1) MULLION CHART APPLIES TO 3/4" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
- 6) TRIBUTARY WIDTH = $W = (A+B)/2$
- 7) WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



3/4" X 5 3/16" MULLION



$$\frac{A + B}{2} = W$$

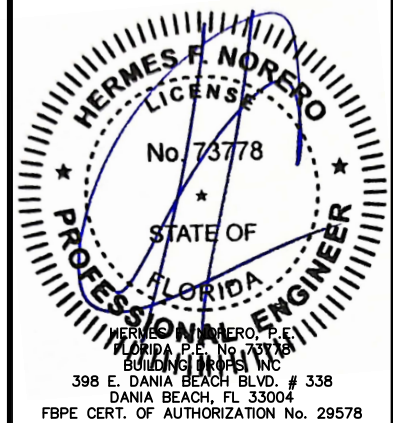


100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
 PH: (651) 264-5150 FX: (651) 264-5485

TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)
 MULLION TABLES
 PREPARED BY: BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
 PH: (954) 399-8478
 FAX: (954) 744-4738
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REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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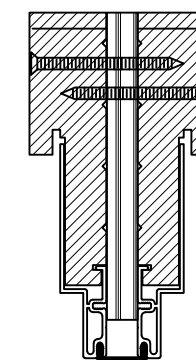
FL #: **FL25570**
 DATE: **9.05.17**
 DWG. BY: **RV** CHK. BY: **HFN**
 SCALE: **NTS**
 DWG. #: **AWD230**
 SECTION
9.4
 [PAGE 14 of 20]

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
3/4" X 5-3/16" STRUCTURAL MULLION (TWO-WAY) CONFIGURATION

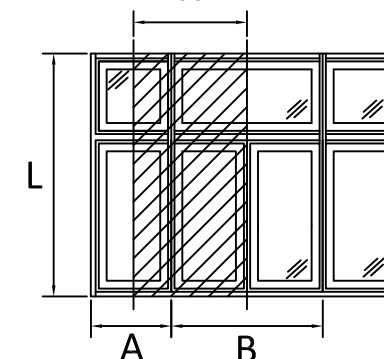
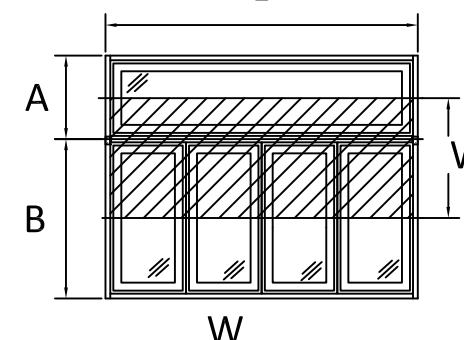
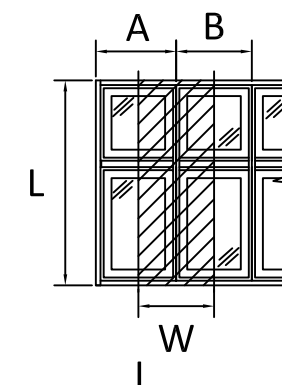
L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	55.75
30.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.89	50.97	47.57	44.60
36.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.06	49.56	45.74	42.48	39.64	37.17
42.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	56.63	50.97	46.34	42.48	39.21	36.41	33.98	31.86
48.0	60.00	60.00	60.00	60.00	60.00	60.00	55.75	49.56	44.60	40.55	37.17	34.31	31.86	29.73	27.88
54.0	60.00	60.00	60.00	60.00	60.00	56.63	49.56	44.05	39.64	36.04	33.04	30.50	28.32	26.43	24.78
60.0	60.00	60.00	60.00	60.00	59.47	50.97	44.60	39.64	35.68	32.44	29.73	27.45	25.49	23.79	22.30
66.0	60.00	60.00	60.00	60.00	54.06	46.34	40.55	36.04	32.44	29.49	27.03	24.95	23.17	21.62	20.27
72.0	60.00	60.00	60.00	59.47	49.56	42.48	37.17	33.04	29.73	27.03	24.78	22.87	21.24	19.82	18.58
78.0	60.00	60.00	60.00	54.89	45.74	39.21	34.31	30.50	27.45	24.95	22.87	21.11	19.60	18.30	17.15
84.0	60.00	60.00	60.00	50.97	42.48	36.41	31.86	28.32	25.49	23.17	21.24	19.60	18.20	16.99	15.93
90.0	60.00	60.00	59.47	47.57	39.64	33.98	29.73	26.43	23.79	21.62	19.82	18.30	16.99	15.86	14.87
96.0	60.00	60.00	54.22	43.37	36.15	30.98	27.11	24.10	21.69	19.72	18.07	16.68	15.49	14.46	13.55
102.0	60.00	60.00	48.03	38.42	32.02	27.44	24.01	21.35	19.21	17.46	16.01	14.78	13.72	12.81	12.01
108.0	60.00	54.40	40.80	32.64	27.20	23.31	20.40	18.13	16.32	14.84	13.60	12.55	11.66	10.88	10.20
114.0	60.00	46.25	34.69	27.75	23.13	19.82	17.35	15.42	13.88	12.61	11.56	10.67	9.91	9.25	8.67
120.0	59.49	39.66	29.74	23.79	19.83	17.00	14.87	13.22	11.90	10.82	9.91	9.15	8.50	7.93	7.44
126.0	51.39	34.26	25.69	20.55	17.13	14.68	12.85	11.42	10.28	9.34	8.56	7.91	7.34	6.85	6.42
132.0	44.69	29.79	22.35	17.88	14.90	12.77	11.17	9.93	8.94	8.13	7.45	6.88	6.38	5.96	5.59
138.0	39.11	26.08	19.56	15.65	13.04	11.18	9.78	8.69	7.82	7.11	6.52	6.02	5.59	5.22	4.89
144.0	34.42	22.95	17.21	13.77	11.47	9.84	8.61	7.65	6.88	6.26	5.74	5.30	4.92	4.59	4.30
150.0	30.46	20.30	15.23	12.18	10.15	8.70	7.61	6.77	6.09	5.54	5.08	4.69	4.35	4.06	3.81
156.0	27.08	18.05	13.54	10.83	9.03	7.74	6.77	6.02	5.42	4.92	4.51	4.17	3.87	3.61	3.38
162.0	24.18	16.12	12.09	9.67	8.06	6.91	6.04	5.37	4.84	4.40	4.03	3.72	3.45	3.22	3.02
168.0	21.68	14.45	10.84	8.67	7.23	6.19	5.42	4.82	4.34	3.94	3.61	3.34	3.10	2.89	2.71
174.0	19.51	13.01	9.76	7.80	6.50	5.57	4.88	4.34	3.90	3.55	3.25	3.00	2.79	2.60	2.44
180.0	17.63	11.75	8.81	7.05	5.88	5.04	4.41	3.92	3.53	3.20	2.94	2.71	2.52	2.35	2.20
186.0	15.97	10.65	7.99	6.39	5.32	4.56	3.99	3.55	3.19	2.90	2.66	2.46	2.28	2.13	2.00
192.0	14.52	9.68	7.26	5.81	4.84	4.15	3.63	3.23	2.90	2.64	2.42	2.23	2.07	1.94	1.82

NOTE:

- MULLION CHART APPLIES TO 3/4" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY CONFIGURATIONS.
- DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
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- TRIBUTARY WIDTH = $W = (A+B)/2$
- WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



3/4" X 5 3/16" MULLION



$$\frac{A + B}{2} = W$$

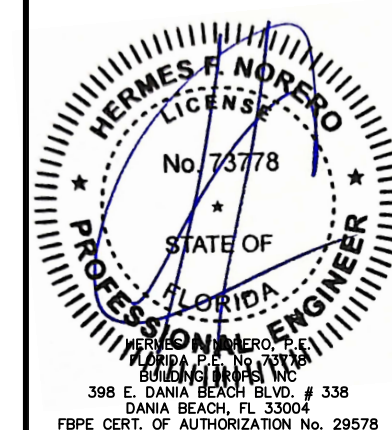


100 FOURTH AVE NORTH
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TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
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 MULLION TABLES
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 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
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REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

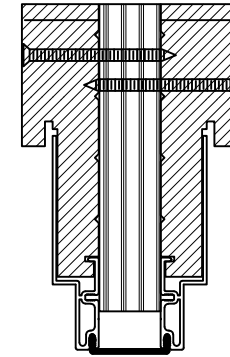
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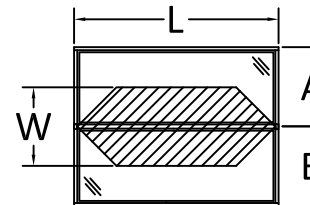
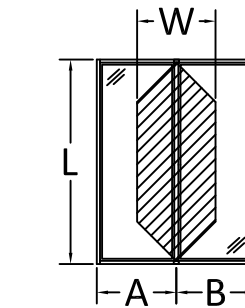
FL #: **FL25570**
 DATE: **9.05.17**
 DWG. BY: **RV** CHK. BY: **HFN**
 SCALE: **NTS**
 DWG. #: **AWD230**
 SECTION
9.5
 [PAGE 15 of 20]

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
1" X 5-3/16" STRUCTURAL MULLION (ONE-WAY) CONFIGURATION

L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
30.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
36.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
42.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
48.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
54.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
66.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
72.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
78.0	75.00	75.00	75.00	70.40	67.05	66.65	66.65	66.65	66.65	66.65	66.65	66.65	66.65	66.65	66.65
84.0	75.00	75.00	70.40	62.58	58.67	57.47	57.47	57.47	57.47	57.47	57.47	57.47	57.47	57.47	57.47
90.0	75.00	75.00	64.00	56.32	52.15	50.29	50.06	50.06	50.06	50.06	50.06	50.06	50.06	50.06	50.06
96.0	75.00	72.21	58.67	51.20	46.93	44.70	43.84	43.84	43.84	43.84	43.84	43.84	43.84	43.84	43.84
102.0	75.00	67.05	54.15	46.79	41.37	38.22	36.74	36.55	36.55	36.55	36.55	36.55	36.55	36.55	36.55
108.0	75.00	61.36	47.69	39.96	35.30	32.52	31.04	30.54	30.54	30.54	30.54	30.54	30.54	30.54	30.54
114.0	75.00	51.93	40.21	33.53	29.43	26.88	25.40	24.71	24.60	24.60	24.60	24.60	24.60	24.60	24.60
120.0	65.13	44.34	34.23	28.42	24.81	22.51	21.08	20.31	20.04	20.04	20.04	20.04	20.04	20.04	20.04
126.0	56.17	38.17	29.39	24.32	21.13	19.05	17.72	16.92	16.54	16.49	16.49	16.49	16.49	16.49	16.49
132.0	48.79	33.10	25.43	20.98	18.15	16.29	15.06	14.27	13.84	13.69	13.69	13.69	13.69	13.69	13.69
138.0	42.65	28.89	22.15	18.22	15.72	14.05	12.91	12.17	11.71	11.49	11.46	11.46	11.46	11.46	11.46
144.0	37.49	25.37	19.42	15.94	13.71	12.20	11.17	10.47	10.01	9.76	9.66	9.66	9.66	9.66	9.66
150.0	33.14	22.40	17.12	14.02	12.03	10.68	9.73	9.08	8.64	8.36	8.23	8.21	8.21	8.21	8.21
156.0	29.44	19.87	15.17	12.40	10.62	9.40	8.54	7.93	7.51	7.23	7.07	7.02	7.02	7.02	7.02
162.0	26.27	17.72	13.50	11.03	9.42	8.32	7.53	6.97	6.57	6.30	6.13	6.05	6.03	6.03	6.03
168.0	23.54	15.86	12.08	9.85	8.40	7.40	6.69	6.17	5.79	5.53	5.35	5.25	5.22	5.22	5.22
174.0	21.17	14.26	10.85	8.83	7.52	6.61	5.96	5.48	5.13	4.88	4.71	4.60	4.54	4.53	4.53
180.0	19.12	12.86	9.78	7.95	6.76	5.94	5.34	4.90	4.58	4.34	4.16	4.05	3.98	3.96	3.96
186.0	17.32	11.65	8.84	7.19	6.10	5.35	4.80	4.40	4.10	3.87	3.70	3.59	3.52	3.48	3.47
192.0	15.74	10.58	8.03	6.52	5.53	4.84	4.34	3.96	3.68	3.47	3.31	3.20	3.12	3.08	3.06



1" X 5 3/16" MULLION



$$\frac{A + B}{2} = W$$

NOTE:

- 1) MULLION CHART APPLIES TO 1" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
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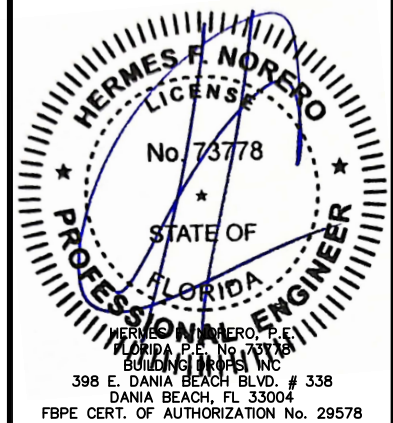
TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)

MULLION TABLES
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REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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FL #: **FL25570**

DATE: **9.05.17**

DWG. BY: **RV** CHK. BY: **HFN**

SCALE: **NTS**

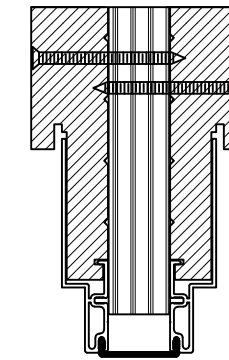
DWG. #: **AWD230**

SECTION
9.6
 [PAGE 16 of 20]

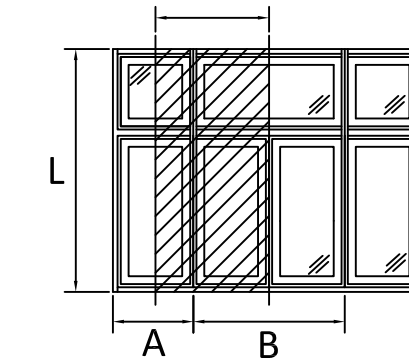
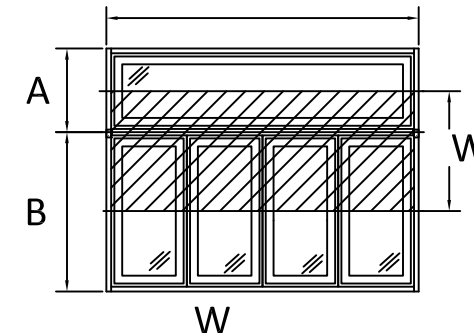
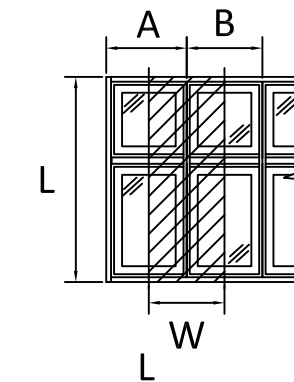
MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
1" X 5-3/16" STRUCTURAL MULLION (TWO-WAY) CONFIGURATION

L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	55.75
30.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.89	50.97	47.57	44.60
36.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.06	49.56	45.74	42.48	39.64	37.17
42.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	56.63	50.97	46.34	42.48	39.21	36.41	33.98	31.86
48.0	60.00	60.00	60.00	60.00	60.00	60.00	55.75	49.56	44.60	40.55	37.17	34.31	31.86	29.73	27.88
54.0	60.00	60.00	60.00	60.00	60.00	56.63	49.56	44.05	39.64	36.04	33.04	30.50	28.32	26.43	24.78
60.0	60.00	60.00	60.00	60.00	59.47	50.97	44.60	39.64	35.68	32.44	29.73	27.45	25.49	23.79	22.30
66.0	60.00	60.00	60.00	60.00	54.06	46.34	40.55	36.04	32.44	29.49	27.03	24.95	23.17	21.62	20.27
72.0	60.00	60.00	60.00	59.47	49.56	42.48	37.17	33.04	29.73	27.03	24.78	22.87	21.24	19.82	18.58
78.0	60.00	60.00	60.00	54.89	45.74	39.21	34.31	30.50	27.45	24.95	22.87	21.11	19.60	18.30	17.15
84.0	60.00	60.00	60.00	50.97	42.48	36.41	31.86	28.32	25.49	23.17	21.24	19.60	18.20	16.99	15.93
90.0	60.00	60.00	59.47	47.57	39.64	33.98	29.73	26.43	23.79	21.62	19.82	18.30	16.99	15.86	14.87
96.0	60.00	60.00	55.75	44.60	37.17	31.86	27.88	24.78	22.30	20.27	18.58	17.15	15.93	14.87	13.94
102.0	60.00	60.00	52.47	41.98	34.98	29.98	26.24	23.32	20.99	19.08	17.49	16.14	14.99	13.99	13.12
108.0	60.00	60.00	47.63	38.11	31.76	27.22	23.82	21.17	19.05	17.32	15.88	14.66	13.61	12.70	11.91
114.0	60.00	54.00	40.50	32.40	27.00	23.14	20.25	18.00	16.20	14.73	13.50	12.46	11.57	10.80	10.13
120.0	60.00	46.30	34.72	27.78	23.15	19.84	17.36	15.43	13.89	12.63	11.57	10.68	9.92	9.26	8.68
126.0	59.99	40.00	30.00	24.00	20.00	17.14	15.00	13.33	12.00	10.91	10.00	9.23	8.57	8.00	7.50
132.0	52.18	34.79	26.09	20.87	17.39	14.91	13.04	11.60	10.44	9.49	8.70	8.03	7.45	6.96	6.52
138.0	45.66	30.44	22.83	18.27	15.22	13.05	11.42	10.15	9.13	8.30	7.61	7.03	6.52	6.09	5.71
144.0	40.19	26.79	20.10	16.08	13.40	11.48	10.05	8.93	8.04	7.31	6.70	6.18	5.74	5.36	5.02
150.0	35.56	23.71	17.78	14.22	11.85	10.16	8.89	7.90	7.11	6.47	5.93	5.47	5.08	4.74	4.44
156.0	31.61	21.07	15.81	12.64	10.54	9.03	7.90	7.02	6.32	5.75	5.27	4.86	4.52	4.21	3.95
162.0	28.23	18.82	14.11	11.29	9.41	8.06	7.06	6.27	5.65	5.13	4.70	4.34	4.03	3.76	3.53
168.0	25.31	16.87	12.65	10.12	8.44	7.23	6.33	5.62	5.06	4.60	4.22	3.89	3.62	3.37	3.16
174.0	22.78	15.19	11.39	9.11	7.59	6.51	5.70	5.06	4.56	4.14	3.80	3.50	3.25	3.04	2.85
180.0	20.58	13.72	10.29	8.23	6.86	5.88	5.14	4.57	4.12	3.74	3.43	3.17	2.94	2.74	2.57
186.0	18.65	12.43	9.32	7.46	6.22	5.33	4.66	4.14	3.73	3.39	3.11	2.87	2.66	2.49	2.33
192.0	16.96	11.30	8.48	6.78	5.65	4.84	4.24	3.77	3.39	3.08	2.83	2.61	2.42	2.26	2.12

- NOTE:**
- MULLION CHART APPLIES TO 1" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY CONFIGURATIONS.
 - DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
 - MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
 - DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
 - MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
 - TRIBUTARY WIDTH = $W = (A+B)/2$
 - WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



1" X 5 3/16" MULLION



$$\frac{A + B}{2} = W$$



100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
 PH: (651) 264-5150 FX: (651) 264-5485

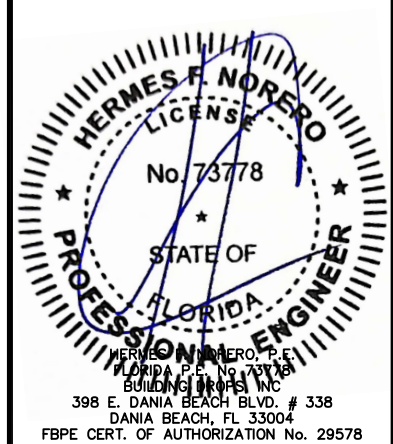
TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)

MULLION TABLES

PREPARED BY: BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
 PH: (954) 399-8478
 FAX: (954) 744-4738
 WEB: www.buildingdrops.com

REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.



FL #: **FL25570**

DATE: **9.05.17**

DWG. BY: **RV** CHK. BY: **HFN**

SCALE: **NTS**

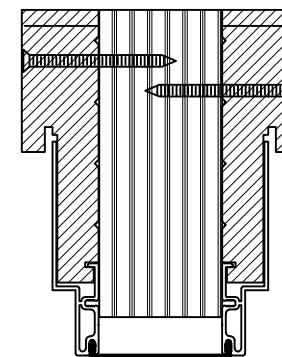
DWG. #: **AWD230**

SECTION **9.7**

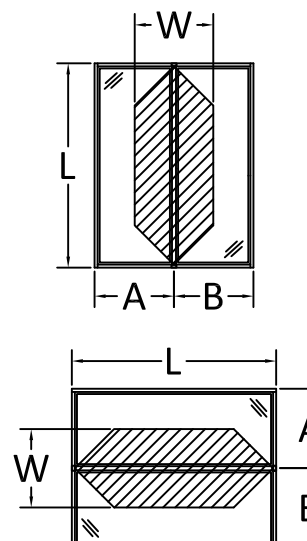
[PAGE 17 of 20]

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
2" X 5-3/16" STRUCTURAL MULLION (ONE-WAY) CONFIGURATION

L - Mull Length (in)	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
30.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
36.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
42.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
48.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
54.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
60.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
66.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
72.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
78.0	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
84.0	75.00	75.00	75.00	75.00	74.33	72.82	72.82	72.82	72.82	72.82	72.82	72.82	72.82	72.82	72.82
90.0	75.00	75.00	75.00	71.36	66.07	63.71	63.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43	63.43
96.0	75.00	75.00	74.33	64.87	59.47	56.63	55.75	55.75	55.75	55.75	55.75	55.75	55.75	55.75	55.75
102.0	75.00	75.00	68.62	59.47	54.06	50.97	49.56	49.38	49.38	49.38	49.38	49.38	49.38	49.38	49.38
108.0	75.00	75.00	63.71	54.89	49.56	46.34	44.60	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05
114.0	75.00	74.33	58.13	48.47	42.54	38.86	36.71	35.71	35.56	35.56	35.56	35.56	35.56	35.56	35.56
120.0	75.00	64.10	49.49	41.09	35.87	32.54	30.48	29.35	28.97	28.97	28.97	28.97	28.97	28.97	28.97
126.0	75.00	55.18	42.49	35.15	30.54	27.54	25.62	24.46	23.92	23.83	23.83	23.83	23.83	23.83	23.83
132.0	70.52	47.85	36.76	30.32	26.24	23.55	21.76	20.63	20.01	19.79	19.79	19.79	19.79	19.79	19.79
138.0	61.65	41.76	32.02	26.34	22.72	20.30	18.67	17.59	16.93	16.61	16.56	16.56	16.56	16.56	16.56
144.0	54.20	36.67	28.07	23.04	19.82	17.64	16.15	15.13	14.47	14.10	13.97	13.97	13.97	13.97	13.97
150.0	47.91	32.38	24.74	20.27	17.39	15.43	14.07	13.12	12.48	12.09	11.90	11.87	11.87	11.87	11.87
156.0	42.56	28.73	21.92	17.93	15.35	13.58	12.34	11.46	10.85	10.45	10.23	10.14	10.14	10.14	10.14
162.0	37.97	25.61	19.52	15.94	13.62	12.02	10.89	10.08	9.50	9.11	8.86	8.74	8.72	8.72	8.72
168.0	34.02	22.93	17.46	14.24	12.14	10.70	9.66	8.92	8.37	7.99	7.74	7.59	7.54	7.54	7.54
174.0	30.61	20.61	15.68	12.77	10.87	9.56	8.62	7.93	7.42	7.06	6.81	6.65	6.57	6.55	6.55
180.0	27.63	18.60	14.13	11.50	9.78	8.58	7.72	7.08	6.61	6.27	6.02	5.85	5.76	5.72	5.72
186.0	25.03	16.84	12.78	10.39	8.82	7.73	6.94	6.36	5.92	5.59	5.35	5.19	5.08	5.03	5.02
192.0	22.75	15.29	11.60	9.42	7.99	6.99	6.27	5.73	5.32	5.02	4.79	4.62	4.51	4.45	4.42



2" X 5 3/16" MULLION



$$\frac{A + B = W}{2}$$

NOTE:

- 1) MULLION CHART APPLIES TO 2" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN ONE-WAY CONFIGURATIONS.
- 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
- 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
- 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
- 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
- 6) TRIBUTARY WIDTH = $W = (A+B)/2$
- 7) WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.



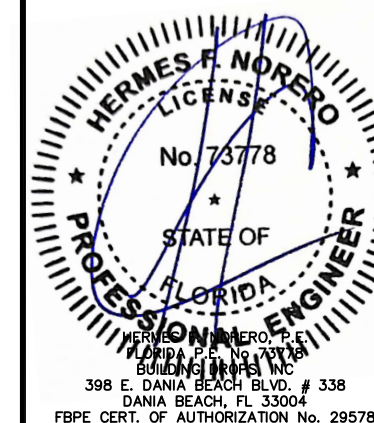
100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
 PH: (651) 264-5150 FX: (651) 264-5485

TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)
 MULLION TABLES
 PREPARED BY: BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
 PH: (954) 399-8478
 FAX: (954) 744-4738
 WEB: www.buildingdrops.com



REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.

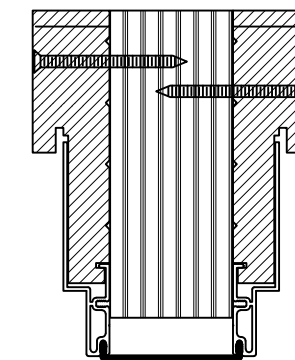


FL #: **FL25570**
 DATE: **9.05.17**
 DWG. BY: **RV** CHK. BY: **HFN**
 SCALE: **NTS**
 DWG. #: **AWD230**

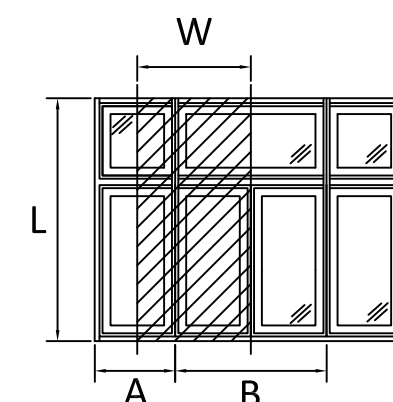
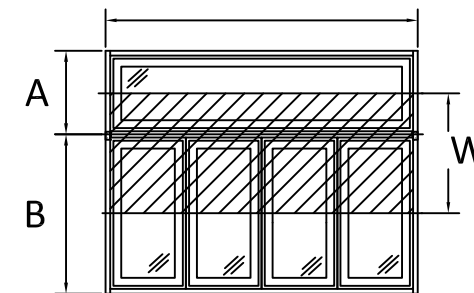
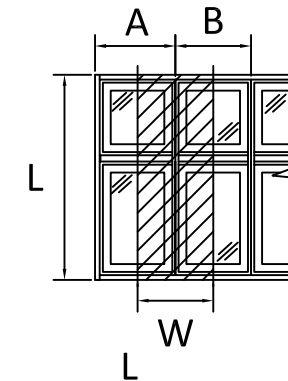
SECTION
9.8

MAXIMUM DESIGN PRESSURE CAPACITY CHART (PSF)
2" X 5-3/16" STRUCTURAL MULLION (TWO-WAY) CONFIGURATION

L - Mull Length	W - Tributary Width (in)														
	24.0	36.0	48.0	60.0	72.0	84.0	96.0	108.0	120.0	132.0	144.0	156.0	168.0	180.0	192.0
24.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	55.75
30.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.89	50.97	47.57	44.60
36.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	59.47	54.06	49.56	45.74	42.48	39.64	37.17
42.0	60.00	60.00	60.00	60.00	60.00	60.00	60.00	56.63	50.97	46.34	42.48	39.21	36.41	33.98	31.86
48.0	60.00	60.00	60.00	60.00	60.00	60.00	55.75	49.56	44.60	40.55	37.17	34.31	31.86	29.73	27.88
54.0	60.00	60.00	60.00	60.00	60.00	56.63	49.56	44.05	39.64	36.04	33.04	30.50	28.32	26.43	24.78
60.0	60.00	60.00	60.00	60.00	59.47	50.97	44.60	39.64	35.68	32.44	29.73	27.45	25.49	23.79	22.30
66.0	60.00	60.00	60.00	60.00	54.06	46.34	40.55	36.04	32.44	29.49	27.03	24.95	23.17	21.62	20.27
72.0	60.00	60.00	60.00	59.47	49.56	42.48	37.17	33.04	29.73	27.03	24.78	22.87	21.24	19.82	18.58
78.0	60.00	60.00	60.00	54.89	45.74	39.21	34.31	30.50	27.45	24.95	22.87	21.11	19.60	18.30	17.15
84.0	60.00	60.00	60.00	50.97	42.48	36.41	31.86	28.32	25.49	23.17	21.24	19.60	18.20	16.99	15.93
90.0	60.00	60.00	59.47	47.57	39.64	33.98	29.73	26.43	23.79	21.62	19.82	18.30	16.99	15.86	14.87
96.0	60.00	60.00	55.75	44.60	37.17	31.86	27.88	24.78	22.30	20.27	18.58	17.15	15.93	14.87	13.94
102.0	60.00	60.00	52.47	41.98	34.98	29.98	26.24	23.32	20.99	19.08	17.49	16.14	14.99	13.99	13.12
108.0	60.00	60.00	49.56	39.64	33.04	28.32	24.78	22.02	19.82	18.02	16.52	15.25	14.16	13.21	12.39
114.0	60.00	60.00	46.95	37.56	31.30	26.83	23.47	20.87	18.78	17.07	15.65	14.45	13.41	12.52	11.74
120.0	60.00	59.47	44.60	35.68	29.73	25.49	22.30	19.82	17.84	16.22	14.87	13.72	12.74	11.89	11.15
126.0	60.00	56.63	42.48	33.98	28.32	24.27	21.24	18.88	16.99	15.45	14.16	13.07	12.14	11.33	10.62
132.0	60.00	51.28	38.46	30.77	25.64	21.98	19.23	17.09	15.38	13.99	12.82	11.83	10.99	10.26	9.62
138.0	60.00	44.88	33.66	26.93	22.44	19.23	16.83	14.96	13.46	12.24	11.22	10.36	9.62	8.98	8.41
144.0	59.25	39.50	29.62	23.70	19.75	16.93	14.81	13.17	11.85	10.77	9.87	9.12	8.46	7.90	7.41
150.0	52.42	34.95	26.21	20.97	17.47	14.98	13.11	11.65	10.48	9.53	8.74	8.06	7.49	6.99	6.55
156.0	46.60	31.07	23.30	18.64	15.53	13.31	11.65	10.36	9.32	8.47	7.77	7.17	6.66	6.21	5.83
162.0	41.61	27.74	20.81	16.65	13.87	11.89	10.40	9.25	8.32	7.57	6.94	6.40	5.94	5.55	5.20
168.0	37.31	24.87	18.66	14.92	12.44	10.66	9.33	8.29	7.46	6.78	6.22	5.74	5.33	4.97	4.66
174.0	33.58	22.39	16.79	13.43	11.19	9.60	8.40	7.46	6.72	6.11	5.60	5.17	4.80	4.48	4.20
180.0	30.34	20.22	15.17	12.13	10.11	8.67	7.58	6.74	6.07	5.52	5.06	4.67	4.33	4.04	3.79
186.0	27.49	18.33	13.75	11.00	9.16	7.86	6.87	6.11	5.50	5.00	4.58	4.23	3.93	3.67	3.44
192.0	25.00	16.66	12.50	10.00	8.33	7.14	6.25	5.50	4.94	4.54	4.17	3.85	3.57	3.33	3.12



2" X 5 3/16" MULLION



$$\frac{A + B = W}{2}$$

- NOTE:**
- 1) MULLION CHART APPLIES TO 2" X 5-3/16" MULL ASSEMBLIES, WHEN MULLED IN TWO-WAY CONFIGURATIONS.
 - 2) DESIGN PRESSURE VALUES ARE POSITIVE AND NEGATIVE IN PSF.
 - 3) MAXIMUM DEFLECTION HAS BEEN LIMITED TO L/175.
 - 4) DESIGN PRESSURE OF ASSEMBLY IS LIMITED TO THE LESSER DESIGN PRESSURE OF THE MULLION ASSEMBLY OR THE INDIVIDUAL UNIT OF INSTALLATION. ADJACENT WINDOWS OR DOORS SHALL BE UNDER SEPARATE FL OR MIAMI-DADE APPROVAL.
 - 5) MULLION CHART APPLIES TO THE FOLLOWING INSTALLATION CONDITIONS AS LISTED ON SECTION 8.
 - 6) TRIBUTARY WIDTH = $W = (A+B)/2$
 - 7) WHEN PRODUCTS ARE STACKED VERTICALLY, THE MANUFACTURER/INSTALLER SHALL ENSURE THAT THE WEIGHT OF UNITS ABOVE WILL NOT CAUSE DEFLECTIONS OR STRESSES WHICH WILL AFFECT OPERATION OR STRUCTURAL ADEQUACY OF UNITS BELOW.

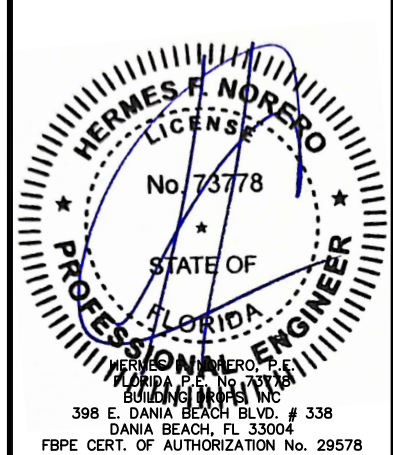


100 FOURTH AVE NORTH
 BAYPORT, MN 55003-1096
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TITLE: E-SERIES HINGED PATIO
 DOOR - OUTSWING
 (HVHZ)(IMPACT)
 MULLION TABLES
 PREPARED BY: BUILDING DROPS, INC.
 398 E. DANIA BEACH BLVD., STE. 338
 DANIA BEACH, FL 33004
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 WEB: www.buildingdrops.com

REMARKS	BY	DATE
TEST STANDARDS UPDATE	HR	7.2.18
ADDED ZERO, 1/2" & 1" MULL	HR	4.12.19
7TH FBC CODE CHANGE	NUS	6.29.20
2023 FBC CODE CHANGE	MS	5/11/23

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FL #: **FL25570**
 DATE: **9.05.17**
 DWG. BY: **RV** CHK. BY: **HFN**
 SCALE: **NTS**
 DWG. #: **AWD230**

SECTION

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BILL OF MATERIALS

ITEM	DESCRIPTION	MATERIAL
A	2X BUCK SG >= 0.55	WOOD
B	MASONRY — 3,192 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE
C	1/4" X 2-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL
D	3/8" MAX. SHIM SPACE	WOOD
E	1/4" X 2-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL
P	#10 X 3" PFH WS	STEEL
R	3/16" X 2-1/4" PFH ITW CONCRETE SCREW	STEEL
1	JAMB	LVL/WOOD
2	MID STILE & RAIL	LVL/WOOD
3	MID STILE & RAIL CLADDING (6063—T6 ALUM.)	ALUMINUM
4	OUTSWING THRESHOLD	AL./COMP./WOOD
5	TOP RAIL	LVL/WOOD
6	BOTTOM RAIL	LVL/WOOD
7	HINGE STILE / WIDE SIDELITE STILE	LVL/WOOD
8	LATCH / ASTRAGAL STILE	LVL/WOOD
9	PANEL INSERT (PINE)	WOOD
10	PANEL INSERT CLADDING (6063—T6 ALUM.)	ALUMINUM
11	FRAME CLADDING (6063—T6 ALUM.)	ALUMINUM
12	TOP RAIL CLADDING (6063—T6 ALUM.)	ALUMINUM
13	WIDE STILE CLADDING (6063—T6 ALUM.)	ALUMINUM
14	BOTTOM RAIL CLADDING (6063—T6 ALUM.)	ALUMINUM
15	WEATHERSTRIP	—
16	18ga 1-1/4" BRAD NAIL	STEEL
17	18ga 1" BRAD NAIL	STEEL
18	4" HINGE	BRASS
19	3/4" X 4" DOWEL	WOOD
20	LATCH 8c DEADBOLT STRIKE PLATE	BRASS
21	#7 X 5/8" STRIKE PLATE SCREW PFH WS	BRASS
22	#12 X 2-1/2" HINGE TO JAMB SCREW PFH WS	BRASS
23	#10 X 5/8" HINGE TO JAMB PFH MACHINE SCREW	BRASS
24	#12 X 1-1/2" HINGE TO DOOR SCREW PFH WS	BRASS
25	#8 X 1-3/4" THRESHOLD PFH WS	STEEL
26	RAIL WEATHERSTRIP CLIP (6063—T6 ALUM.)	ALUMINUM
27	PANEL WEATHERSTRIP	PVC
30	WOOD BUSHING INSERT FOR #10 MACH. SCREW	STEEL
31	#8 X 3" PFH WS	STEEL
32	GLASS STOP CLEAR PINE SG = .42 OR BETTER	WOOD
33	TRIM/PANEL STOP CLEAR PINE SG = .42 OR BETTER	WOOD
34	BOTTOM RAIL CLIP	STEEL
36	OUTSWING THRESHOLD (SIDELITE)	AL./COMP./WOOD
37	SEALANT	SILICONE
38	#8 X 3/4" CLIP TO JAMB / THRESHOLD PFH WS	STEEL
39	#8 X 3/4" CLIP TO BOTTOM RAIL PFH WS	STEEL
40	RETAINING CLIP	VINYL
41	#8 X 3/4" RETAINING CLIP TO STILE / TOP RAIL PPH SMS	STEEL
42	ASTRAGAL	WOOD

BILL OF MATERIALS

ITEM	DESCRIPTION	MATERIAL
43	ASTRAGAL CLADDING (6063—T6 ALUM.)	ALUMINUM
44	GU TYPE 2 FLUSH BOLT HARDWARE	-
45	GU EAGLE MULTI—POINT LOCK ASSEMBLY	-
46	2" MULLION BLOCK	LVL
47	SIDELITE STILE (NARROW)	LVL/WOOD
52	#12 X 1-1/4" SURFACE BOLT TO DOOR PFH WS	BRASS
54	BACKER ROD	NEOPRENE
55	2" MULLION CAP (6063—T6 ALUM.)	ALUMINUM
56	#7 X 1-1/4" LOCK ASSEMBLY SCREW PFH WS	ST. STEEL
58	#8 X 2" ASTRAGAL SCREW	ST. STEEL
59	SURFACE BOLT	BRASS
60	SURFACE BOLT STRIKE PLATE	BRASS
61	FLUSH BOLT STRIKE PLATE AT HEAD & SILL	ST. STEEL
63	#12 X 1-1/2" STRIKE PLATE SCREW	BRASS
64	#10 X 2-1/2" STRIKE PLATE SCREW (HEAD)	STEEL
65	SIDELITE STILE CLADDING (NARROW) (6063—T6 ALUM.)	ALUMINUM
66	SASH SEALANT	SILICONE
69	MULTI—POINT STRIKE PLATE	BRASS
74	#12 X 3" STRIKE PLATE SCREW	BRASS
84	#8 X 5/8" PFH SMS	STEEL
85	#8 X 1-1/2" PFH SMS	STEEL
86	STRAP ANCHOR 1.625" X 8.5" X 0.039" THK.	STEEL
101	ADHESIVE TAPE	POLYETHYLENE
102	SEALANT BUTYL TAPE	BUTYL RUBBER
103	PECORA 896 SEALANT	SILICONE
104	GLASS SETTING BLOCK	NEOPRENE
105	GLAZING SHIM	-
106	.094 x .265 BUTYL TAPE	-
150	1-1/2" INTERIOR COLONIAL MDL BAR	WOOD
151	1-1/2" EXTERIOR MDL BAR (6063—T6)	ALUMINUM
152	STILE & TALL RAIL CLADDING TRANSOM (6063—T6 ALUM.)	(6063—T6 ALUM.)
153	1-1/2" MDL ADHESIVE TAPE (EXTERIOR TAPE)	POLYETHYLENE
154	1-1/8" INTERIOR COLONIAL MDL BAR	WOOD
155	1-1/8" EXTERIOR MDL BAR (6063—T6)	ALUMINUM
156	1-1/8" MDL ADHESIVE TAPE (EXTERIOR TAPE)	POLYETHYLENE
157	1-1/8" MDL ADHESIVE TAPE (EXTERIOR TAPE)	POLYETHYLENE
158	7/8" INTERIOR COLONIAL MDL BAR	WOOD
159	7/8" EXTERIOR MDL BAR (6063—T6)	ALUMINUM
160	7/8" MDL ADHESIVE TAPE (EXTERIOR TAPE)	POLYETHYLENE
161	7/8" MDL ADHESIVE TAPE (INTERIOR TAPE)	POLYETHYLENE
162	1/2" x 1" GC20 CORRUGATED	POLYETHYLENE
163	ZERO MULLION BLOCK	LVL
164	1/2" MULLION BLOCK	LVL
165	1" MULLION BLOCK	LVL
166	1/2" MULLION CAP	LVL
167	1" MULLION CAP	LVL



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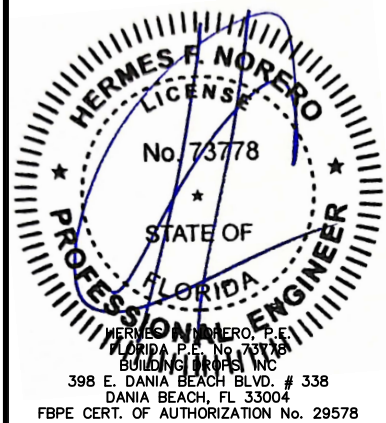
BILL OF MATERIALS

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SECTION	10.0
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