

# ES WINDOWS, INC.

## ES-V100 VINYL SINGLE HUNG WINDOWS –L.M.I. & S.M.I.

**GENERAL NOTES:**

- THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 8TH EDITION FLORIDA BUILDING CODE (2023) INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).
- WINDOWS RATED FOR LARGE MISSILE IMPACT. IMPACT SHUTTERS ARE NOT REQUIRED.
- THESE WINDOWS ARE APPROVED FOR AIR AND WATER INFILTRATION.
- ANCHORS SHALL BE AS LISTED, SPACED AS SHOWN ON DETAILS. ANCHORS EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- ANCHORING OR LOADING CONDITIONS NOT SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
- MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 8TH EDITION FLORIDA BUILDING CODE (2023) SECTION AS APPLICABLE.
- WOOD BUCKS AND METAL STRUCTURES NOT BY E.S. WINDOWS TO BE DESIGNED TO SUPPORT THE LOADS IMPOSED BY THIS GLAZING SYSTEM AND TO TRANSFER SUCH LOADS TO THE BUILDING MAIN STRUCTURE.
- ULTIMATE LOAD OBTAINED FROM ASCE 7-22, MULTIPLY BY 0.6 SHALL BE LESS THAN OR EQUAL TO MAX. DESIGN LOAD IN THIS DOCUMENT. THE DESIGN LOADS SHOWN IN THIS DOCUMENT ARE ALLOWABLE DESIGN LOADS.
- ALL JOINT AND FRAME CONNECTION SEALED WITH SILICONE SEALANT.

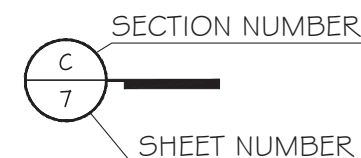
**INSTRUCTIONS:**

USE CHARTS AS FOLLOWS.

- STEP 1:** DETERMINE DESIGN WIND LOAD REQUIREMENTS BASED ON WIND VELOCITY, BLDG. HEIGHT, WIND ZONE USING APPLICABLE ASCE 7-22 STANDARD.
- STEP 2:** SEE SHEET E1 & E2 FOR APPROVED TYPICAL ELEVATION.
- STEP 3:** SEE CHARTS ON SHEET G1 FOR DESIGN LOAD CAPACITY OF DESIRED GLASS SIZE BASED ON APPLICABLE WIND DURATION.
- STEP 4:** ANCHOR OPTION SEE SHEET D3 & D4. ANCHOR LAYOUT SEE ELEVATION.
- STEP 5:** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO ENTIRE SYSTEM.

**ABBREVIATIONS AND SYMBOLS**

- G.B. - GLASS BITE
- D.L.O. - DAYLITE OPENING
- F.H. - FRAME HEIGHT
- F.W. - FRAME WIDTH
- W/ - WITH
- W/O - WITHOUT
- O.C. - ON CENTER



LIMITATIONS OF USE	
A-	THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.
B-	CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
C-	THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
D-	SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.
E-	THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

FL 42159

July 11th, 2023

**MCY ENGINEERING, INC.**  
GLAZING CONSULTANTS  
12781 MIRAMAR PARKWAY #301  
MIRAMAR, FL 33027 P: 305.271.0117  
www.MCYEngineering.com mcy@mcyengineering.com

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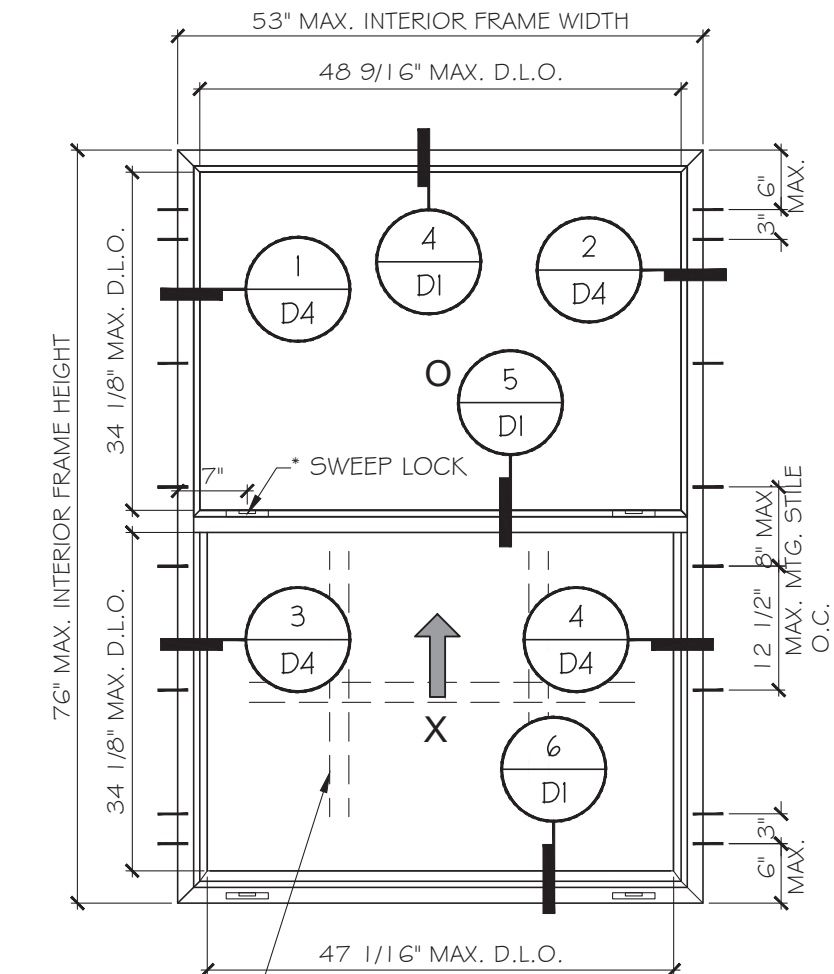
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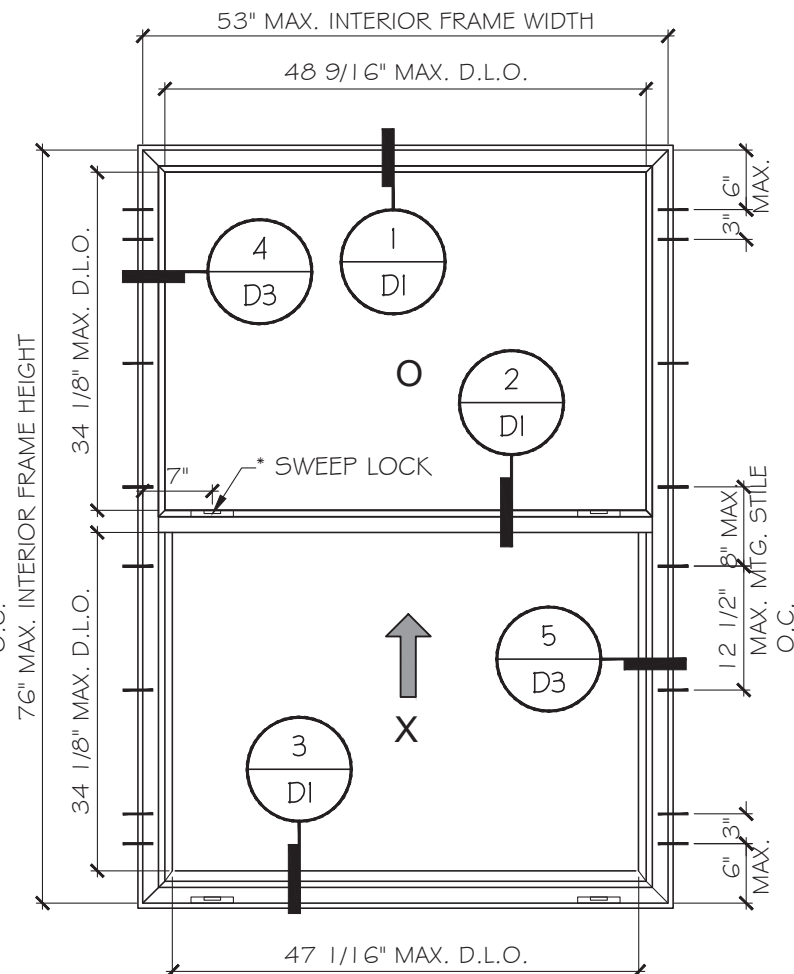
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**COVER**

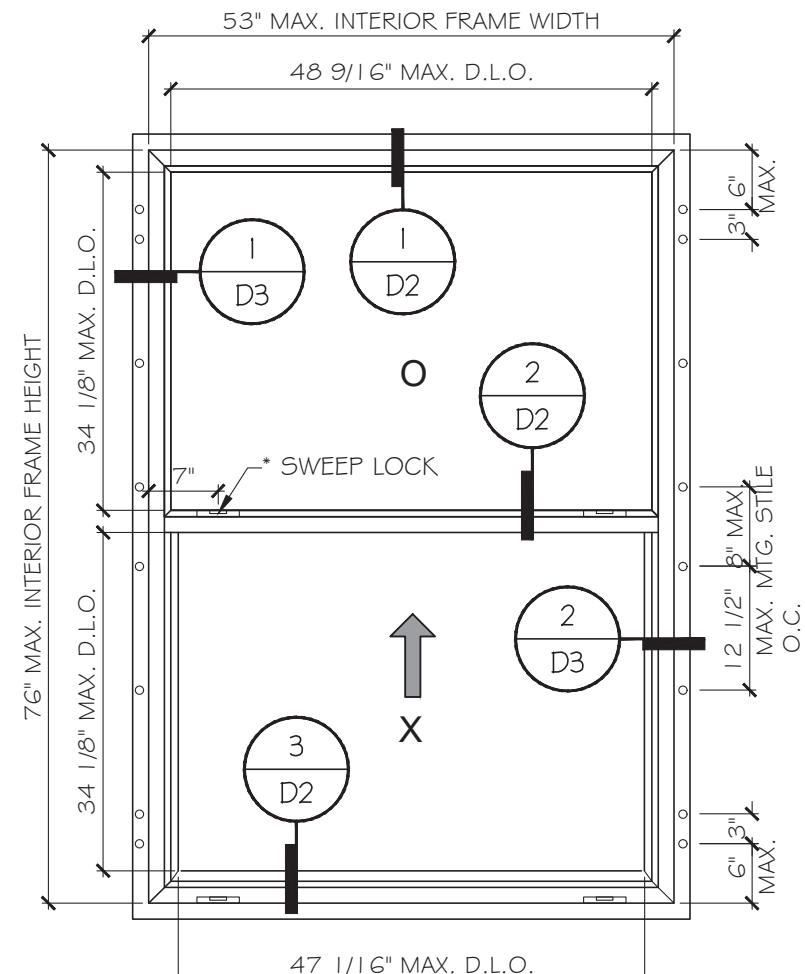
Sheet No. **01 OF 12**



TYPICAL EXTERIOR ELEVATIONS  
FLUSH FRAME  
SEE SHEET G1 FOR DESIGN LOAD



TYPICAL EXTERIOR ELEVATIONS  
FLANGE FRAME  
SEE SHEET G1 FOR DESIGN LOAD



TYPICAL EXTERIOR ELEVATIONS  
FIN FRAME  
SEE SHEET G1 FOR DESIGN LOAD

\* SWEEP LOCK  
(1) PER VENT FOR WDW. HT UPTO 25" AT MID HEIGHT  
(2) PER VENT FOR WDW. HT ABOVE 25" AT 7"  
FROM EACH END.

FL 42159

YIPING WANG, P.E.  
C.O.D.A. REGISTRATION  
#25963  
C.A.N. 28677

STATE OF FLORIDA  
PROFESSIONAL ENGINEER

July 14th, 2023

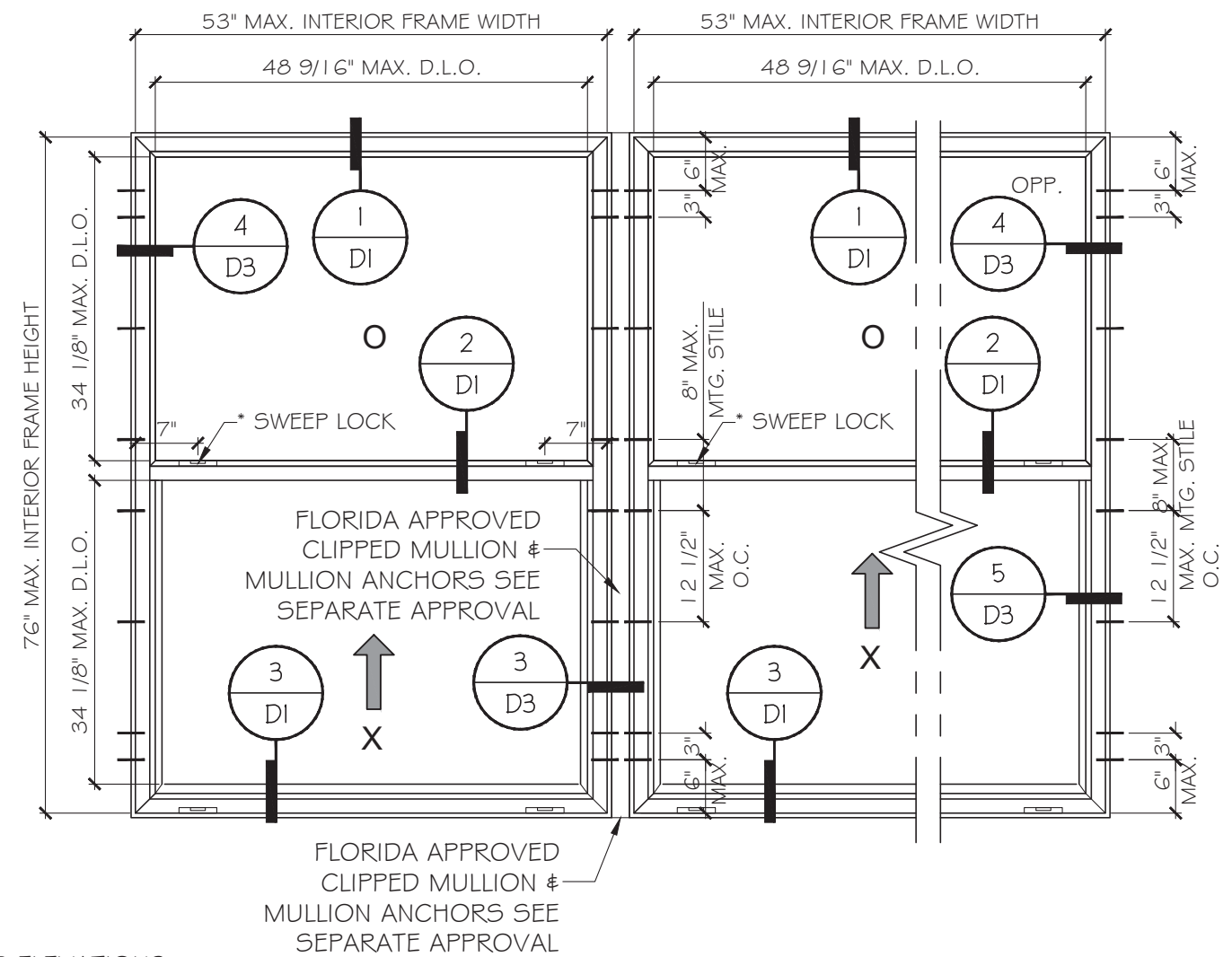
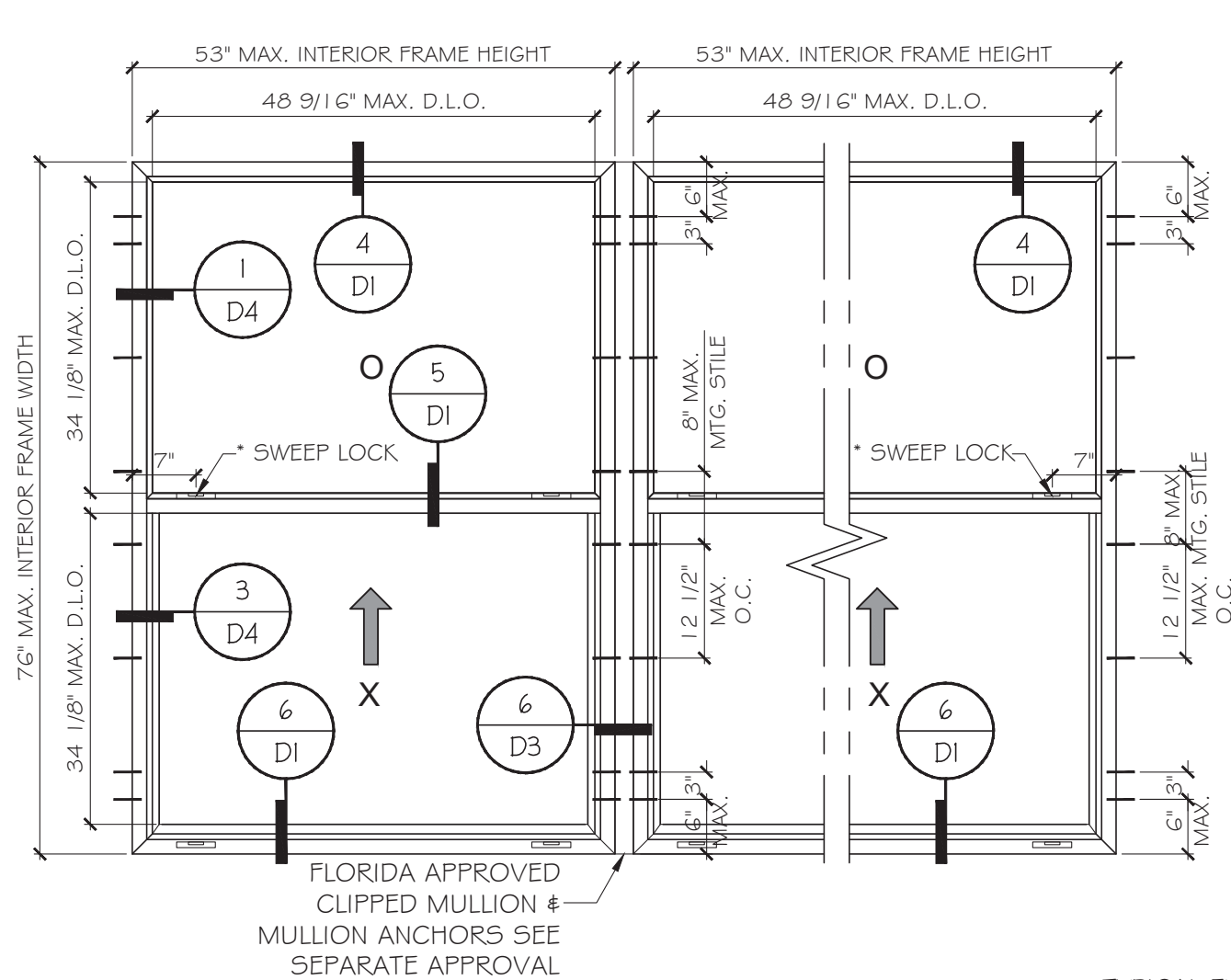
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TYPICAL EXTERIOR ELEVATIONS  
SEE SHEET G 1 FOR DESIGN LOAD

\* SWEEP LOCK  
(1) PER VENT FOR WDW. HT UPTO 25" AT MID HEIGHT  
(2) PER VENT FOR WDW. HT ABOVE 25" AT 7" FROM EACH END.

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06.23.2023  
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AD23-14

E2

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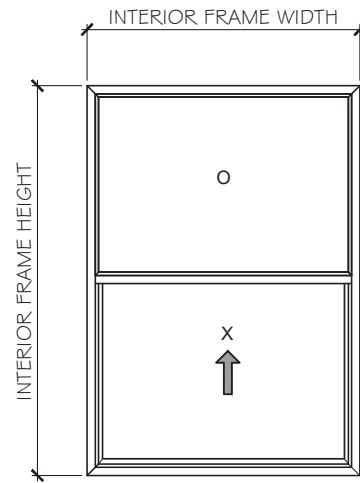
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DESIGN LOAD CAPACITY - PSF			
INTERIOR FRAME DIMENSIONS		GLASS TYPE	
HEIGHT	WIDTH	'A' & 'A1' & 'B' & 'B1'	
INCH	INCH	EXT(+)	INT(-)
25	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
37-3/8	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
49-5/8	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
58	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
62	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
73-1/4	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
76	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60

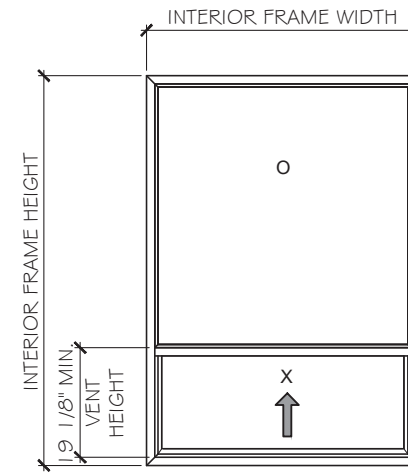


EQUAL LITES

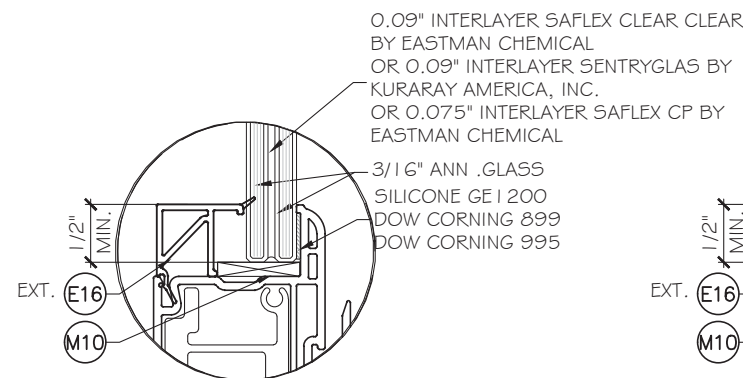
DAYLITE OPENINGS:  
DLO WIDTH = INTERIOR FRAME WIDTH - 4.4375 (FIX. LITE)  
= INTERIOR FRAME WIDTH - 6 (VENT)

DLO HEIGHT (EQUAL LITES) =  $\frac{\text{WINDOW HEIGHT} - 7.750}{2}$

DESIGN LOAD CAPACITY - PSF			
INTERIOR FRAME DIMENSIONS		GLASS TYPE	
HEIGHT	WIDTH	'A' & 'A1' & 'B' & 'B1'	
INCH	INCH	EXT(+)	INT(-)
49-5/8	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
58	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
62	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
73-1/4	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60
76	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
	47	60	60
	52-1/8	60	60

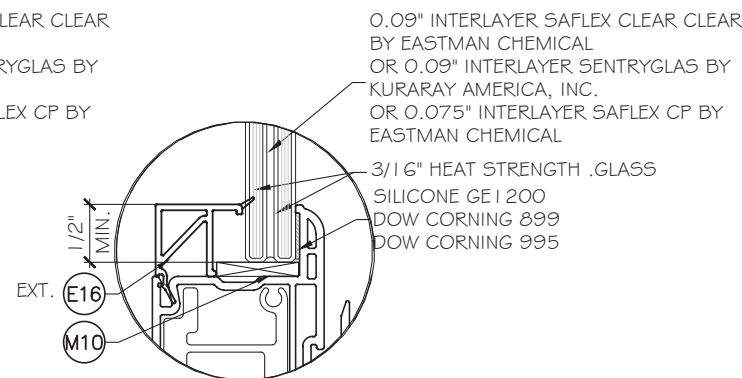


UNEQUAL LITES

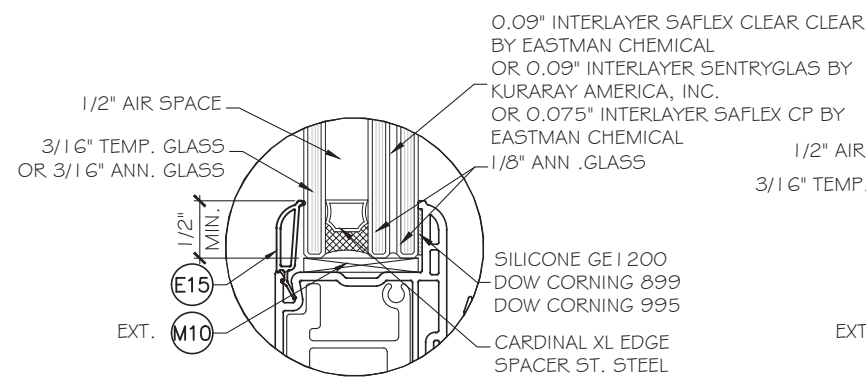


GLASS TYPE 'A'  
7/16" NOMINAL OVERALL

(L.M.I. & S.M.I.)

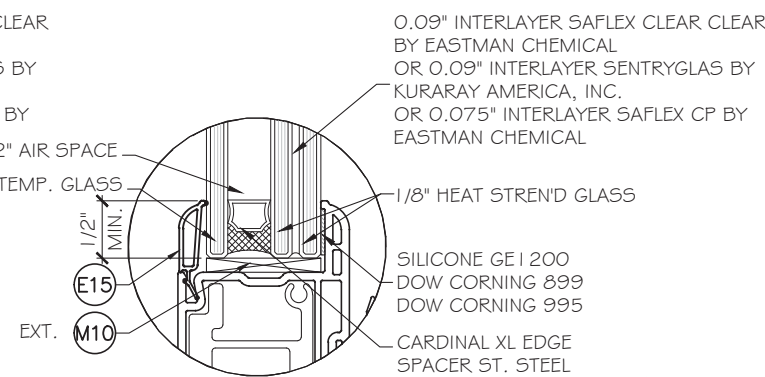


GLASS TYPE 'B'  
7/16" NOMINAL OVERALL



GLASS TYPE 'A1'  
1" NOMINAL OVERALL

(L.M.I. ONLY)



GLASS TYPE 'B1'  
1" NOMINAL OVERALL

(S.M.I.)  
IN ORDER TO QUALIFY FOR SMALL MISSILE IMPACT RATING,  
EXTERIOR PLY OF GLASS TYPES 'A1' & 'B1' MUST BE TEMPERED.

NOTE:  
GLASS COMPLIES WITH ASTM E1300-09  
(3 SEC. GUSTS).

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#25963  
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Professional Engineer  
STATE OF FLORIDA  
No 55983

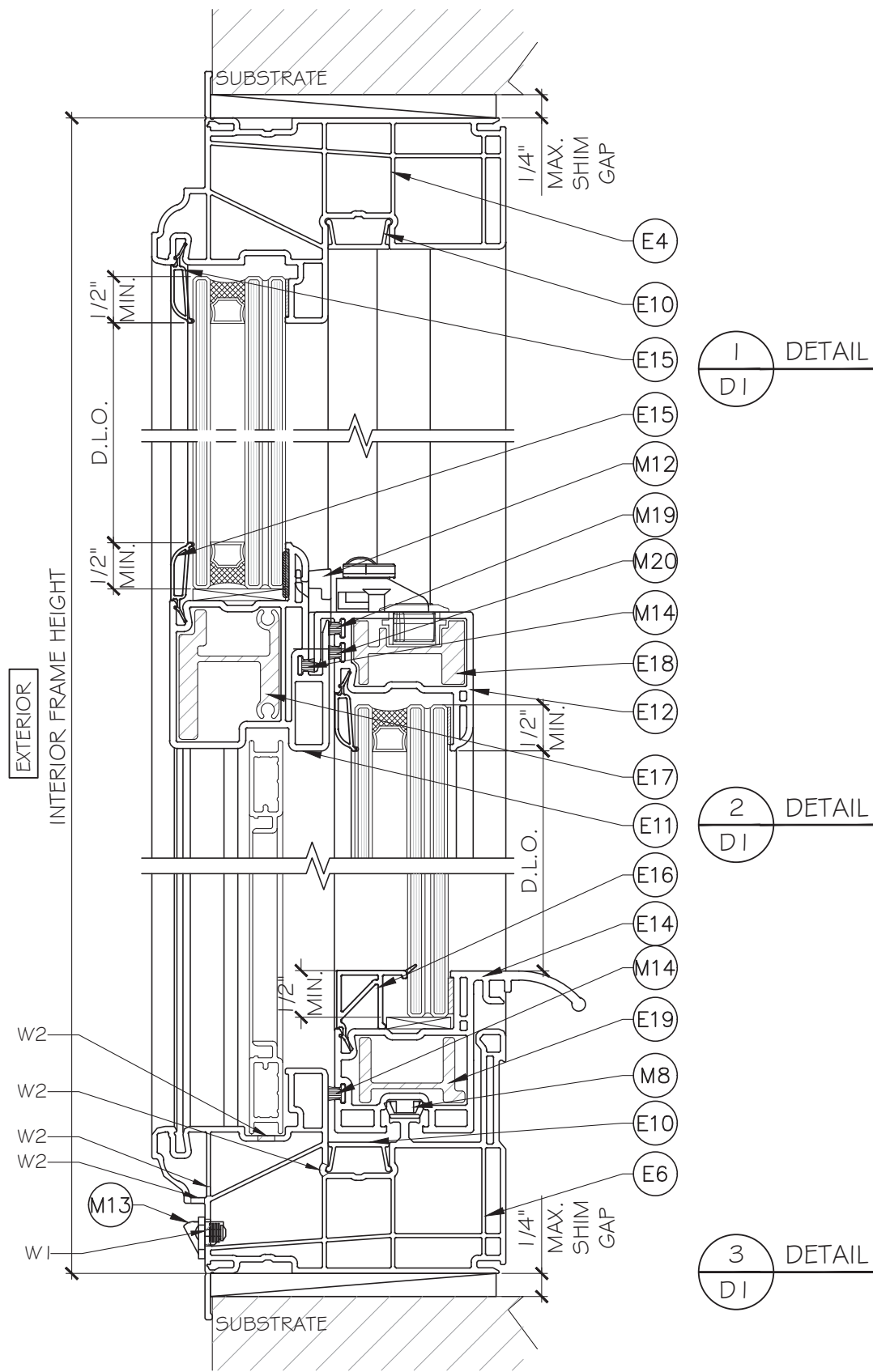
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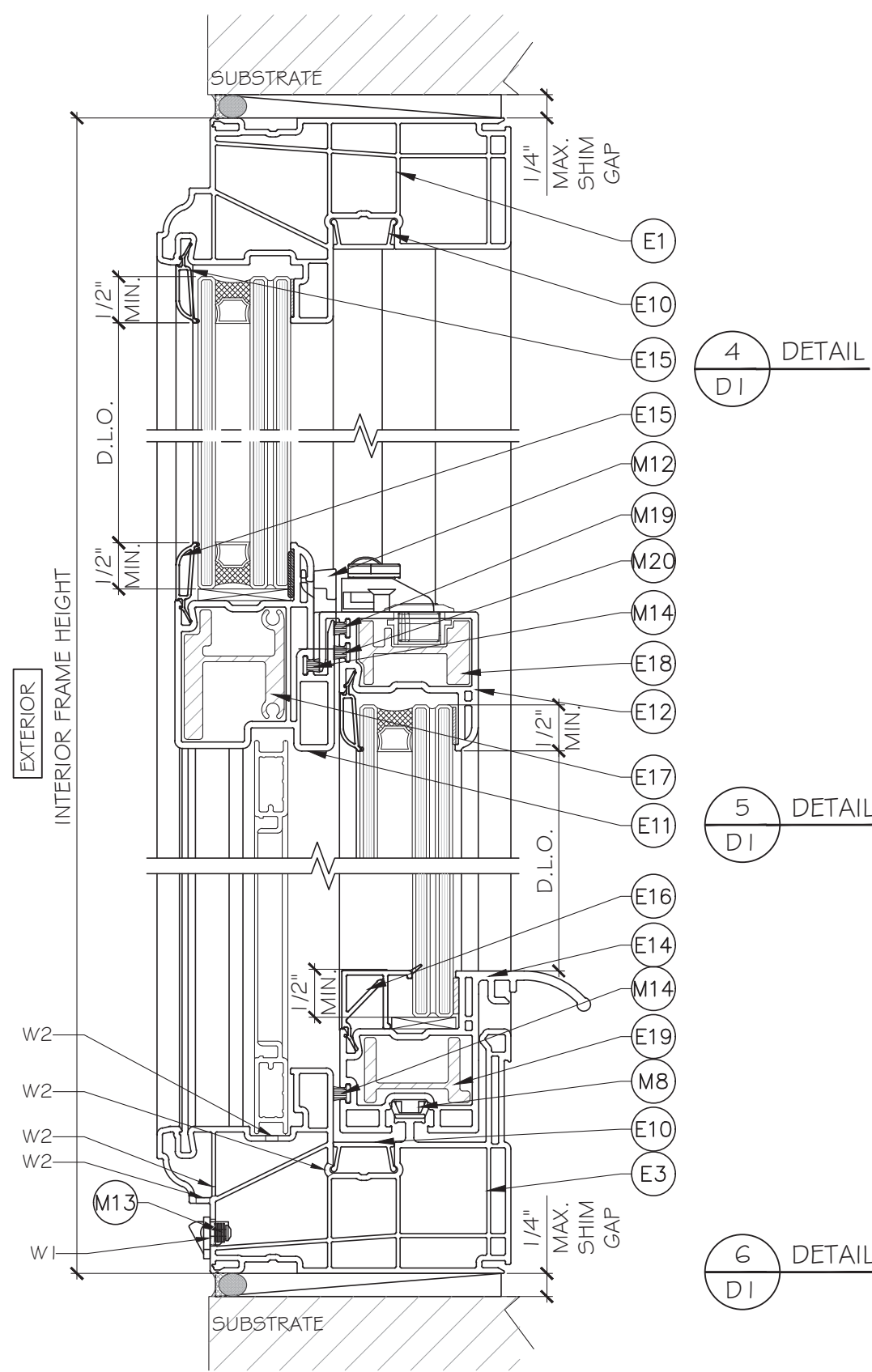
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WEEPHOLES:  
 W1 = 1/4" X 1-1/2" WEEP SLPT AT 4-1/8" FROM EACH END WITH PLASTIC COVER  
 W2 = 1/8" X 1/2" WEEP SLOT AT 3-1/4" FROM EACH END.

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 EN #25963  
 C.A.N. 28677

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 LICENSED PROFESSIONAL ENGINEER  
 STATE OF FLORIDA  
 No 55983

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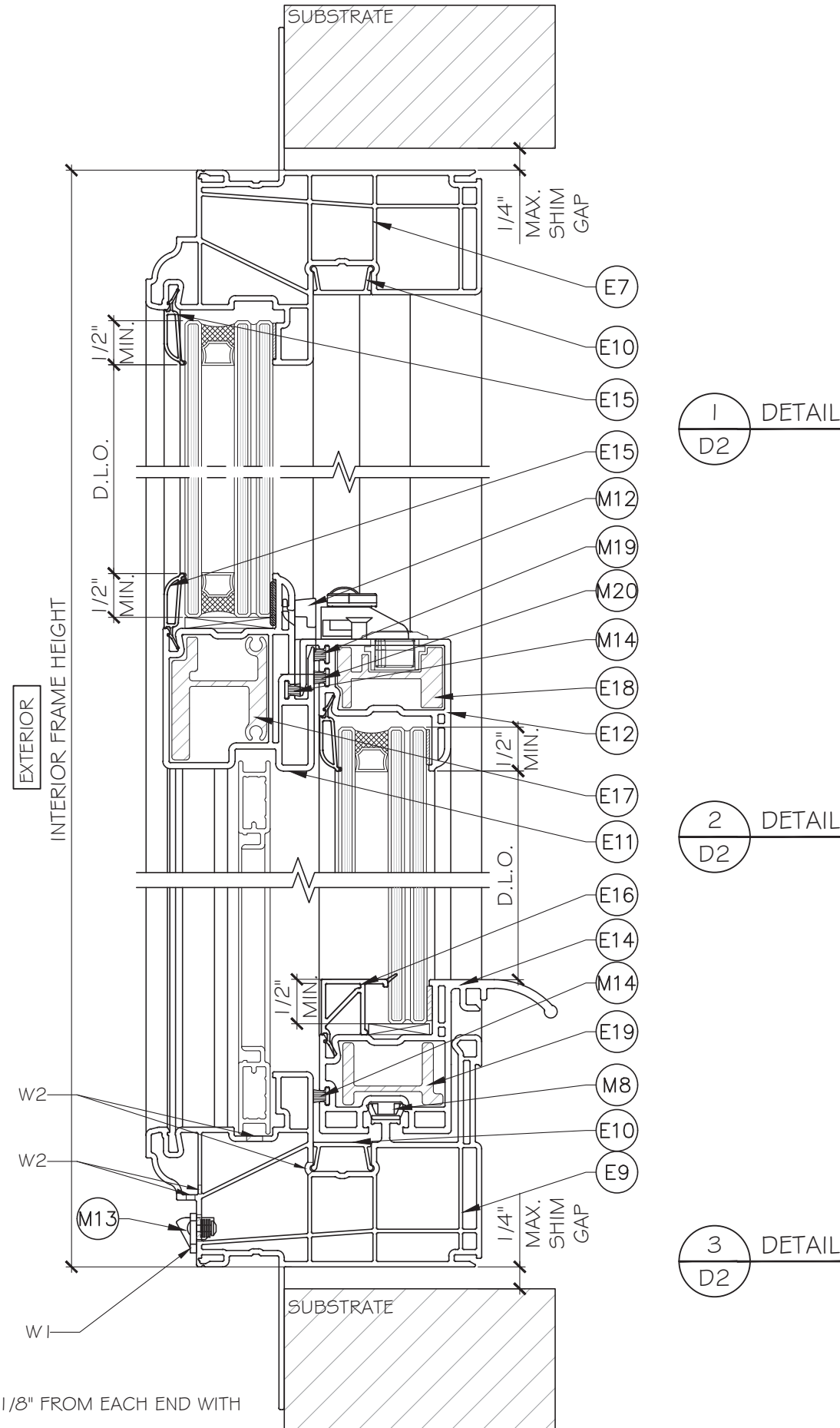
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WEEPHOLES:  
W1 = 1/4" X 1-1/2" WEEP SLPT AT 4-1/8" FROM EACH END WITH PLASTIC COVER  
W2 = 1/8" X 1/2" WEEP SLOT AT 3-1/4" FROM EACH END.

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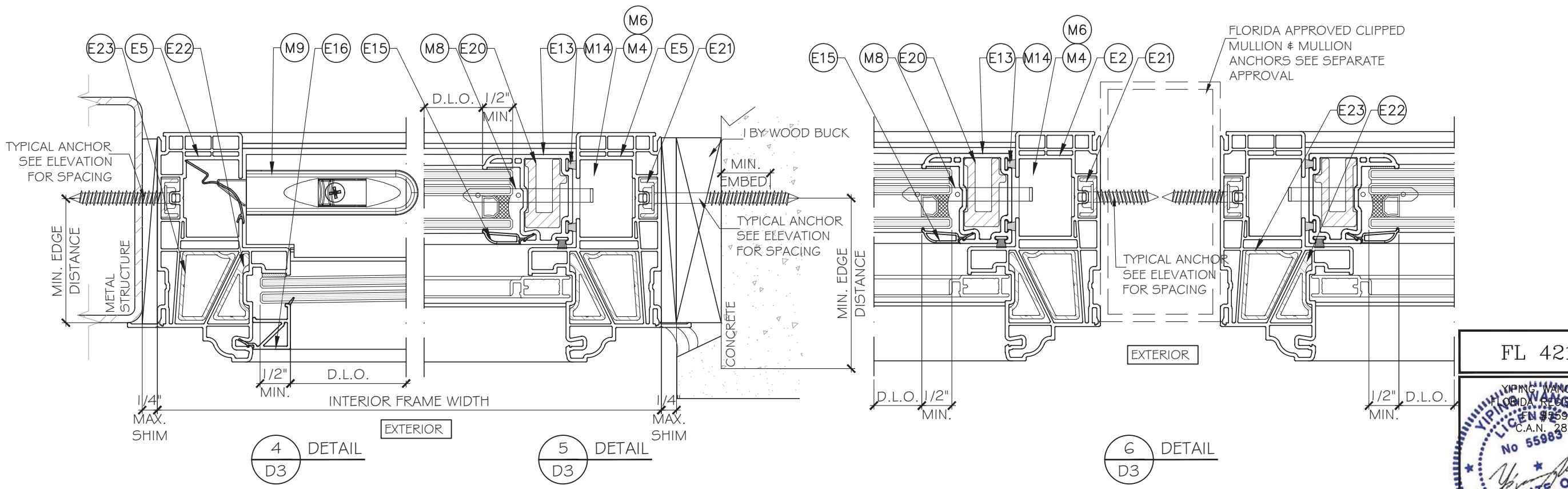
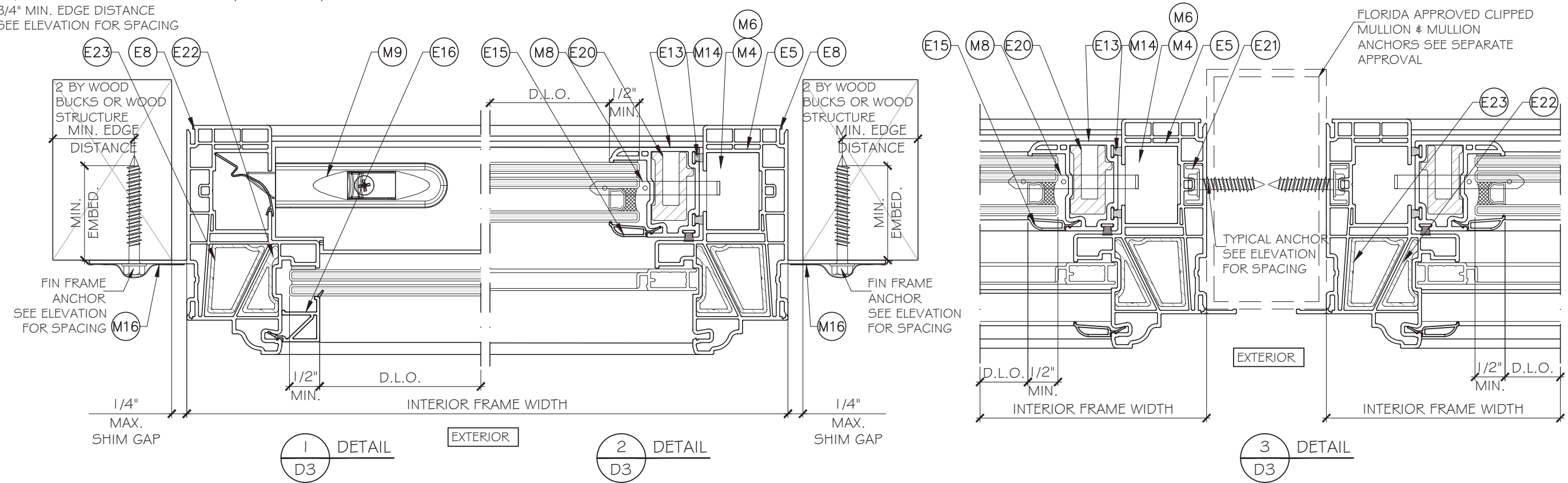
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FIN FRAME ANCHOR  
 #8 SMS/ WOOD SCREW (GRADE 2 CRS)  
 INTO 2 BY WOOD BUCKS  
 OR WOOD STRUCTURES  
 1 - 1/4" MIN. PENETRATION INTO WOOD (G=0.55 MIN.)  
 3/4" MIN. EDGE DISTANCE  
 SEE ELEVATION FOR SPACING

FLANGE AND FLUSH FRAMES CAN BE USED AT ALL ANCHORAGE CONDITIONS



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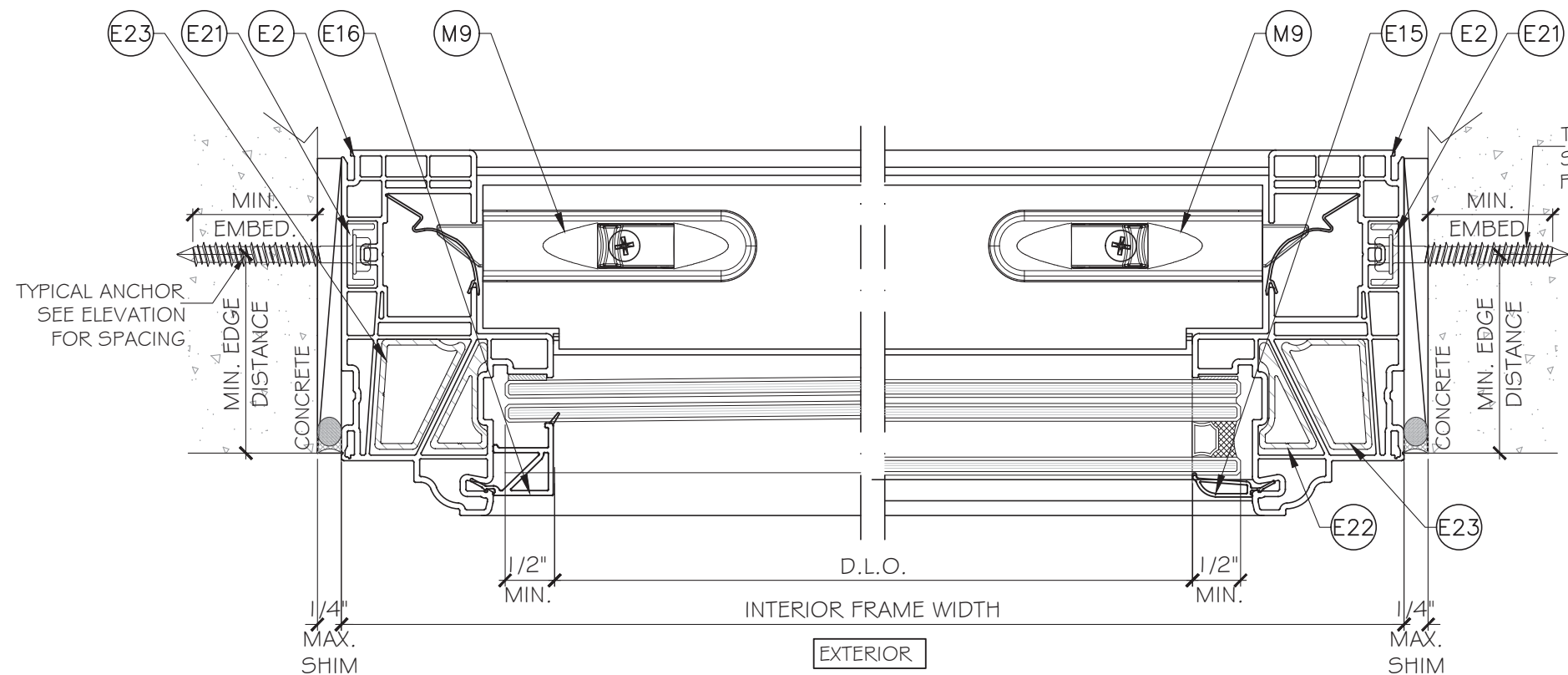
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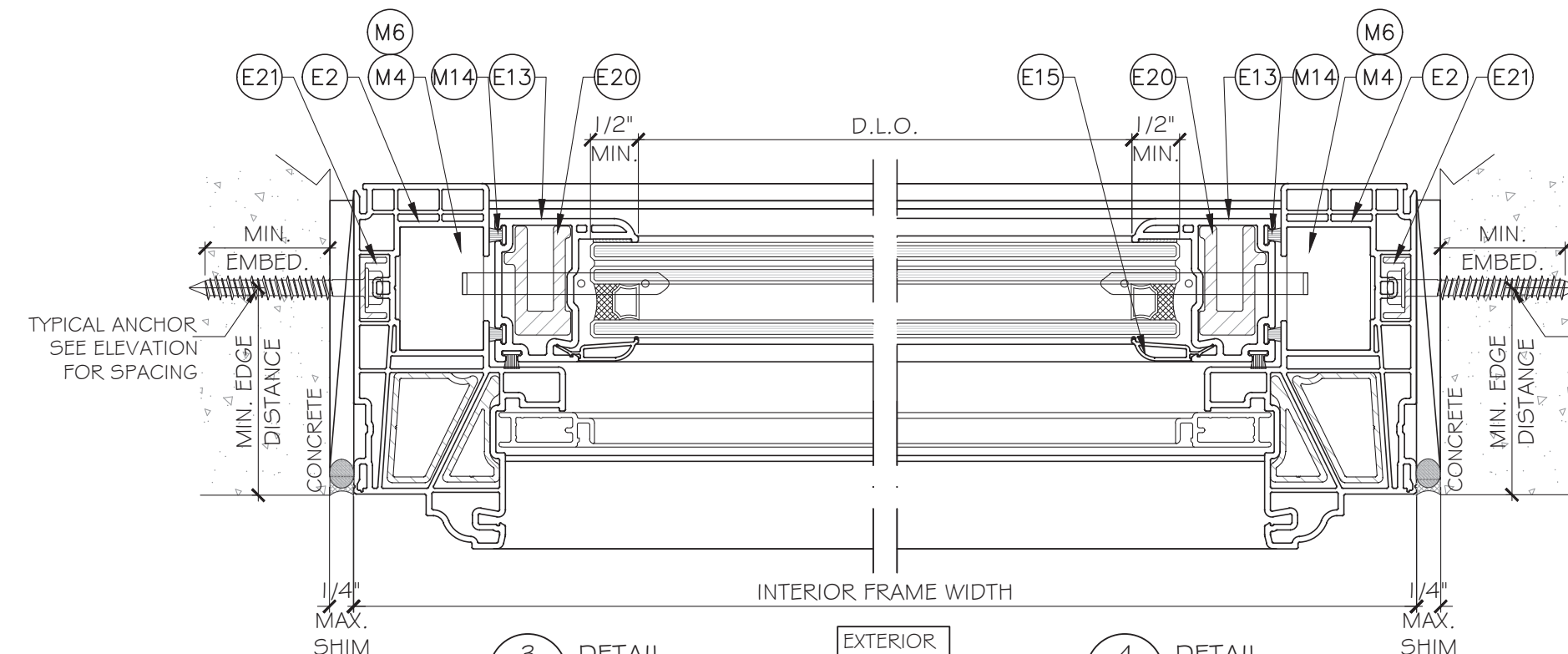
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1 DETAIL  
D4

2 DETAIL  
D4



3 DETAIL  
D4

4 DETAIL  
D4

TYPICAL ANCHOR TYPES: (SEE ELEVATIONS FOR SPACING)

TYPE 'A' -- 1/4" DIA. ULTRACON+ BY 'DEWALT' (F<sub>u</sub>=164 KSI, F<sub>y</sub>=148 KSI)  
 INTO 2 BY WOOD BUCKS OR WOOD STRUCTURES.  
 1 1/2" MIN. PENETRATION INTO WOOD (HEAD/ JAMBS)

THRU 1 BY BUCKS INTO CONCRETE OR BLOCKS  
 1 3/4" MIN. EMBED INTO CONCRETE (HEAD/ SILL/ JAMBS)  
 1 3/4" MIN. EMBED IN TO BLOCKS (JAMBS)

DIRECTLY INTO CONCRETE OR BLOCKS  
 1 3/4" MIN. EMBED IN TO CONCRETE (HEAD/ SILL/ JAMBS)  
 1 3/4" MIN. EMBED IN TO BLOCKS (JAMBS)

TYPE 'B' -- #14 SMS OR SELF-DRILLING SCREWS: (GRADE 2 CR5)  
 INTO FBC APPROVED MULLIONS 1/8" THK. MIN.(6063-T5 MIN.)  
 OR INTO METAL STRUCTURES, STEEL: 12 GA. MIN. (F<sub>y</sub>=36 ksi MIN.)  
 (3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS  
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPICAL EDGE DISTANCE

INTO CONCRETE = 2-1/2" MIN.  
 INTO METAL STRUCTURE = 3/4" MIN.  
 INTO WOOD STRUCTURE = 1" MIN.

WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.  
 CONCRETE AT HEAD, SILL OR JAMB f'<sub>c</sub>=3 ksi MIN.  
 C-90 HOLLOW/ FILLED BLOCK AT JAMBS f<sub>m</sub>=2000 PSI MIN.

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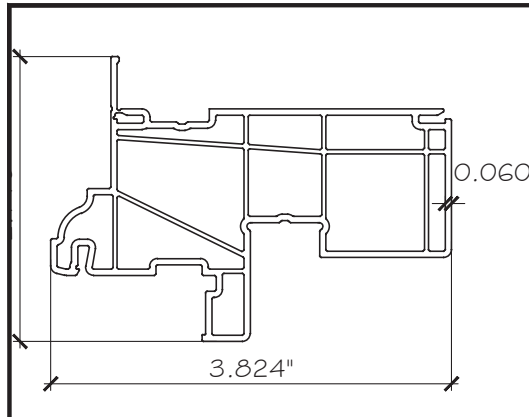
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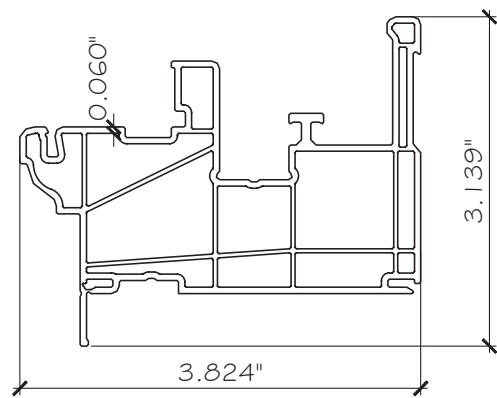
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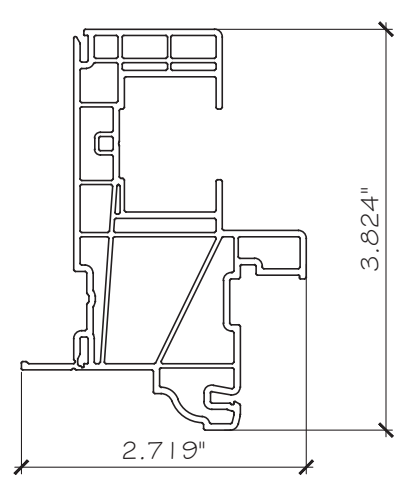




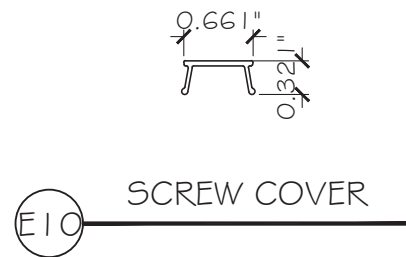
E4 FLANGE FRAME HEAD



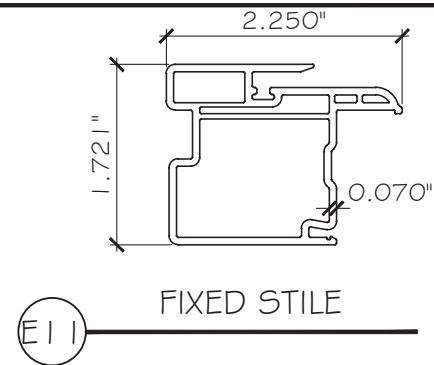
E6 FLANGE FRAME SILL



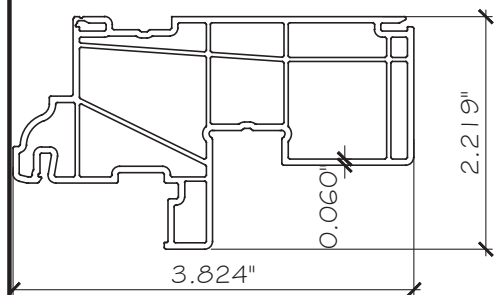
E5 FLANGE FRAME JAMB



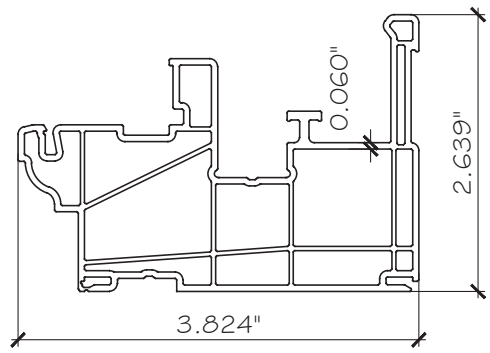
E10 SCREW COVER



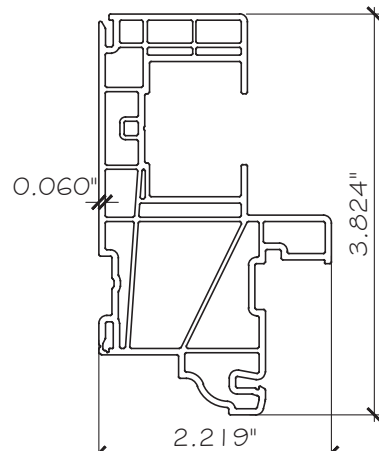
E11 FIXED STILE



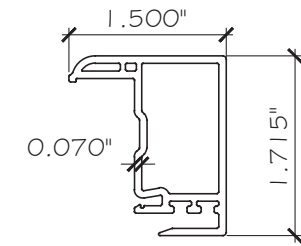
E1 FLUSH FRAME HEAD



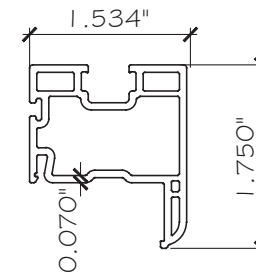
E1 FLUSH FRAME SILL



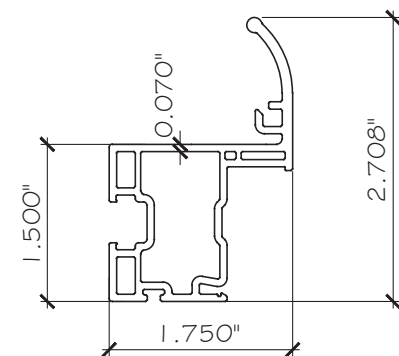
E2 FLUSH FRAME JAMB



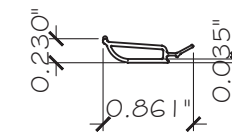
E12 LOCK STILE



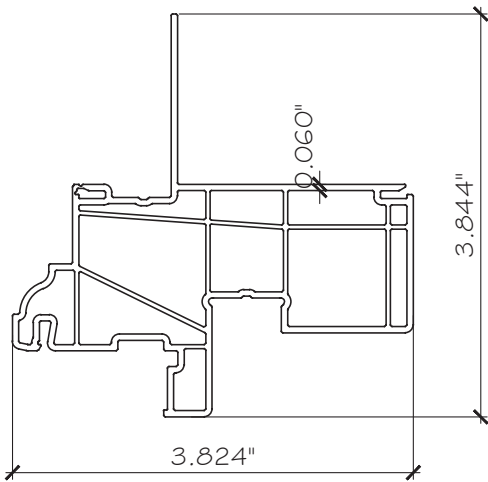
E13 VENT RAIL



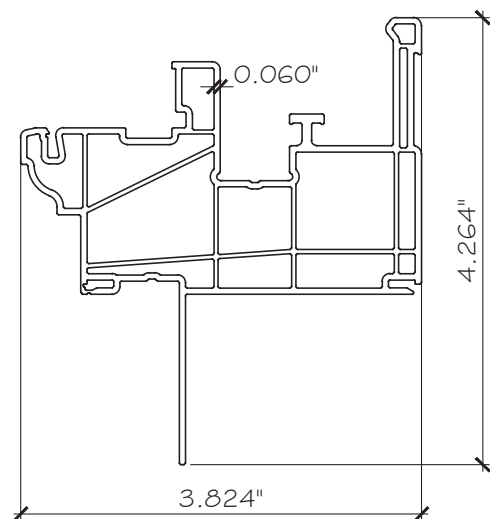
E14 JAMB STILE



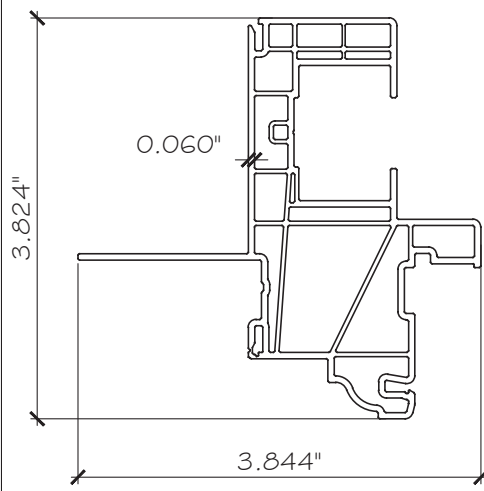
E15 GLAZING BEAD



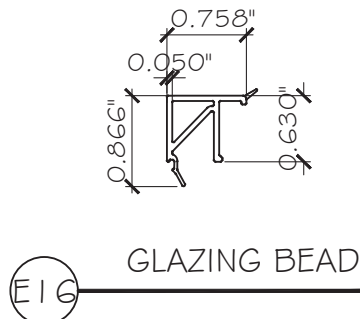
E7 FLUSH FRAME HEAD



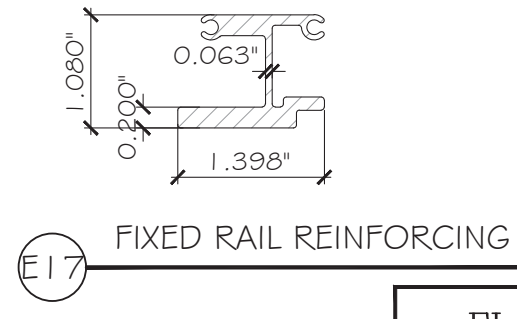
E9 FLUSH FRAME SILL



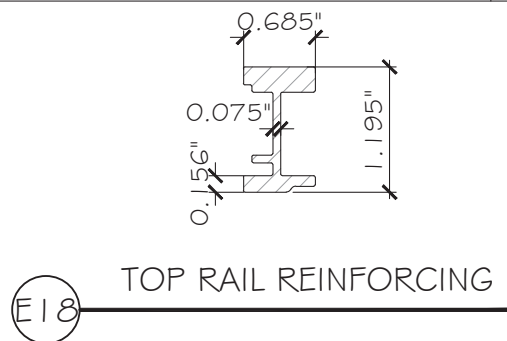
E8 FLUSH FRAME JAMB



E16 GLAZING BEAD



E17 FIXED RAIL REINFORCING



E18 TOP RAIL REINFORCING

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YIPING WANG, P.E.  
 O.C.D.A. REGISTRATION  
 #25963  
 C.A.N. 28677  
 No 55983

STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

July 14th, 2023

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 GLAZING CONSULTANTS  
 12781 MIRAMAR PARKWAY #301  
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ES-V100 Vinyl Single Hung Windows-L.M.I. & S.M.I.  
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 Miami, FL 33142  
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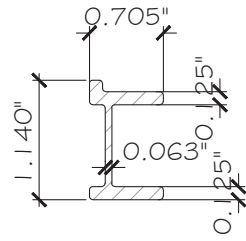
Rev. No.	Date	Drawn By	Description
1	06.23.2023	MCY	NEW

Drawn Date: 06.23.2023 Scale: \_\_\_\_\_

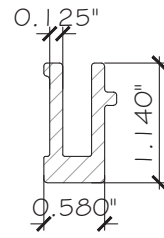
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PARTS

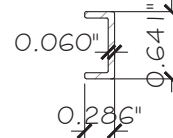
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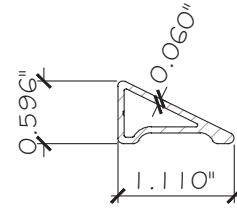
E19 BOTTOM RAIL REINF.



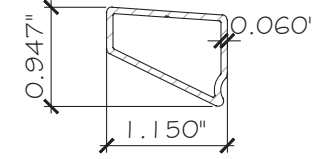
E20 JAMB STILE REINF.



E21 JAMB ANCHOR REINF.



E22 FRAME REINF. SMALL



E23 FRAME REINF. LARGE

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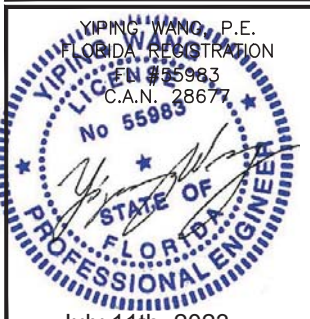
# BILL OF MATERIALS

ITEM	PART	DESCRIPTION	MATERIAL	MANUF.	REMARKS
E1	ES-1000	EQUAL LEG FRAME HEAD	PVC	DECEUNINCK NORTH AERICA LLC	-
E2	ES-1001	EQUAL LEG FRAME JAMB	PVC	DECEUNINCK NORTH AERICA LLC	-
E3	ES-1002	FLANGE FRAME SILL	PVC	DECEUNINCK NORTH AERICA LLC	-
E4	ES-1013	FLANGE FRAME HEAD	PVC	DECEUNINCK NORTH AERICA LLC	-
E5	ES-1014	FLANGE FRAME JAMB	PVC	DECEUNINCK NORTH AERICA LLC	-
E6	ES-1015	FLANGE FRAME SILL	PVC	DECEUNINCK NORTH AERICA LLC	-
E7	ES-1018	FIN FRAME HEAD	PVC	DECEUNINCK NORTH AERICA LLC	-
E8	ES-1019	FIN FRAME JAMB	PVC	DECEUNINCK NORTH AERICA LLC	-
E9	ES-1020	FIN FRAME SILL	PVC	DECEUNINCK NORTH AERICA LLC	-
E10	ES-1003	SCREW COVER	PVC	DECEUNINCK NORTH AERICA LLC	-
E11	ES-1004	FIXED MEETING RAIL	PVC	DECEUNINCK NORTH AERICA LLC	-
E12	ES-1005	LOCK RAIL	PVC	DECEUNINCK NORTH AERICA LLC	-
E13	ES-1006	SIDE RAIL	PVC	DECEUNINCK NORTH AERICA LLC	-
E14	ES-1007	LIFT RAIL	6005A-T5	ES WINDOWS	-
E15	ES-1008	IG GLAZING BEAD	6005A-T5	ES WINDOWS	-
E16	ES-1025	7/16" MONOLITHIC GLAZING BEAD	6005A-T5	ES WINDOWS	-
E17	ES-802	MEETING RAIL REINFORCEMENT	6005A-T5	ES WINDOWS	-
E18	ES-807	LOCK RAIL REINFORCEMENT	6005A-T5	ES WINDOWS	-
E19	ES-800	LIFT RAIL REINFORCEMENT	6005A-T5	ES WINDOWS	-
E20	ES-801	SIDE RAIL REINFORCEMENT	6005A-T5	ES WINDOWS	-
E21	ES-1023	JAMB ANCHOR REINFORCEMENT	6005A-T5	ES WINDOWS	-
E22	ES-1026	FRAME REINFORCEMENT SMALL	6005A-T5	ES WINDOWS	6" LONG AT MTG. RAIKL
E23	ES-1027	FRAME REINFORCEMENT LARGE	6005A-T5	ES WINDOWS	6" LONG AT MTG. RAIKL
M1	SCS 1200	GLAZING SILICONE (1/2" X 3/16" BEAD)	SILICONE	GENERAL ELECTIC	-
M2	DOW 995	GLAZING SILICONE (1/2" X 3/16" BEAD)	SILICONE	DOW CORNING	-
M3	DOW 899	GLAZING SILICONE (1/2" X 3/16" BEAD)	SILICONE	DOW CORNING	-
M4	ULTRALIFT	SPIRAL BALANCE	NYLON/ SS	SULLIVAN OR EQUIV	-
M5	218137	BALANCE SHOE (FOR SPIRAL BALANCE)			
M6	ROLLER TILT ELITE	CONSTANT FORCE BALANCE	-	ES WINDOWS	ATTACHED WITH (2) #6 X 3/4" FH SMS
M7	RT880	BALANCE SHOE (FOR CONSTANT FORCE BALANCE)	-	ES WINDOWS	ATTACHED WITH (2) #6 X 3/4" FH SMS
M8	16Y513	PIVOT BAR	PVC	ES WINDOWS	
M9	46.13.32.101(102)	TITLT LATCH	WOOL	ULTRAFAB	
M10	-	SETTING BLOCK, 2 PER LITE	EPDM	-	DUROMETER 85±5
M11	70-10044	SWEEP LOCK	-		AT FIN FRAME
M12	70-10045	KEEPER	WOOL	ULTRAFAB	

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# BILL OF MATERIALS

ITEM	PART	DESCRIPTION	MATERIAL	MANUF.	REMARKS
M13	I46-1A	WEEP HOLE COVERS	WOOL	ULTRAFAB	REQD. WITH FLAT HEAD ANCHORS AT FIX. LITE ONLY
M14	W43291NW	.187 X .290 WEATHERSTRIP PILE W/ COVER FIN	NYLON	ES WINDOWS	
M16		PROTECTO WRAP WATERPROOFING OR EQUIV.			
M17	W2315NW		WOOL	ULTRAFAB	
M18	W23221NG		WOOL	ULTRAFAB	
S3		#8 X 3" TRUSS HEAD SMS - MEETING RAIL ATTACHMENT			
S4		#8 X 5/8" FLAT HEAD SMS - CONSTANT FORCE BALANCE.			4 PER MTG RAIL
S5		#8 X 3/4" PAN HEAD SMS - PIVOT BAR			
S7		#8 X 1-1/8" FLAT HEAD SMS - SPIRAL BALANCE			
S8		#8 X 1/2" FLAT HEAD SMS - TILT LATCH			

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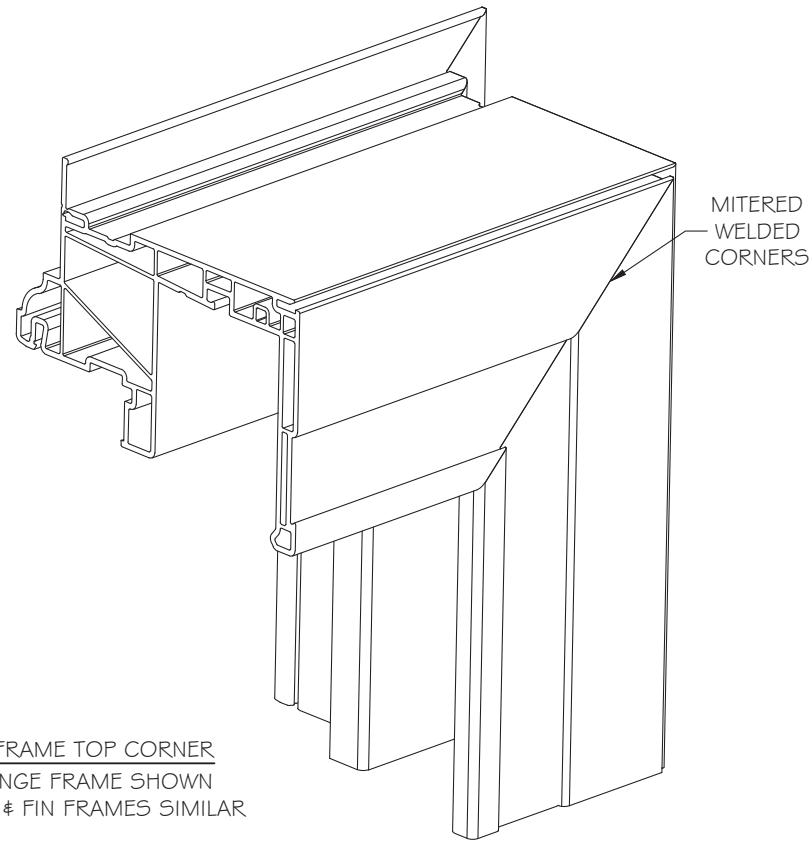
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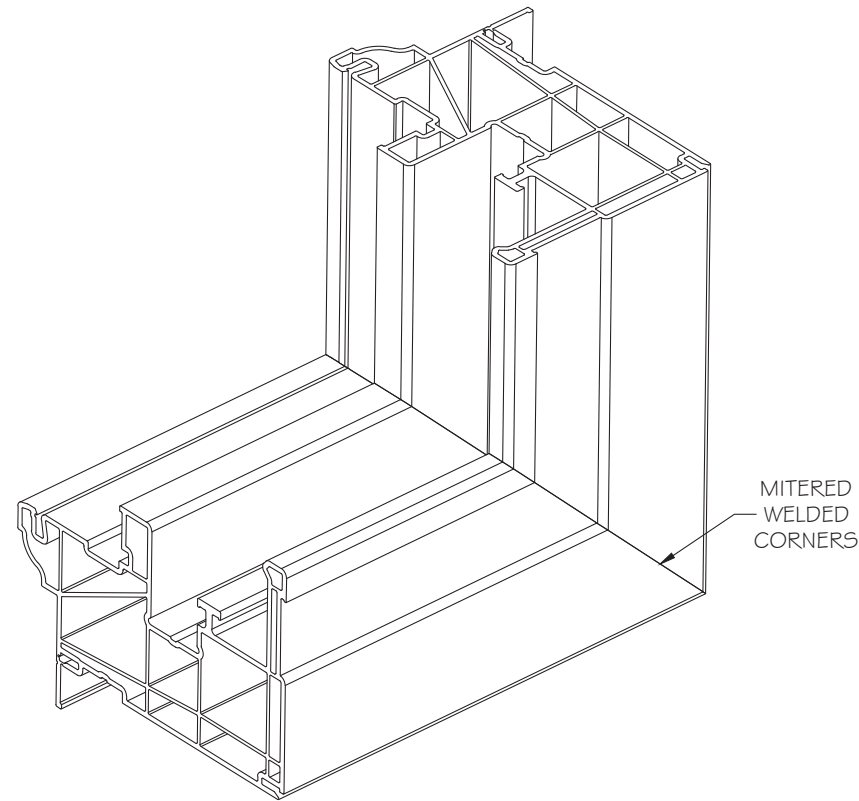
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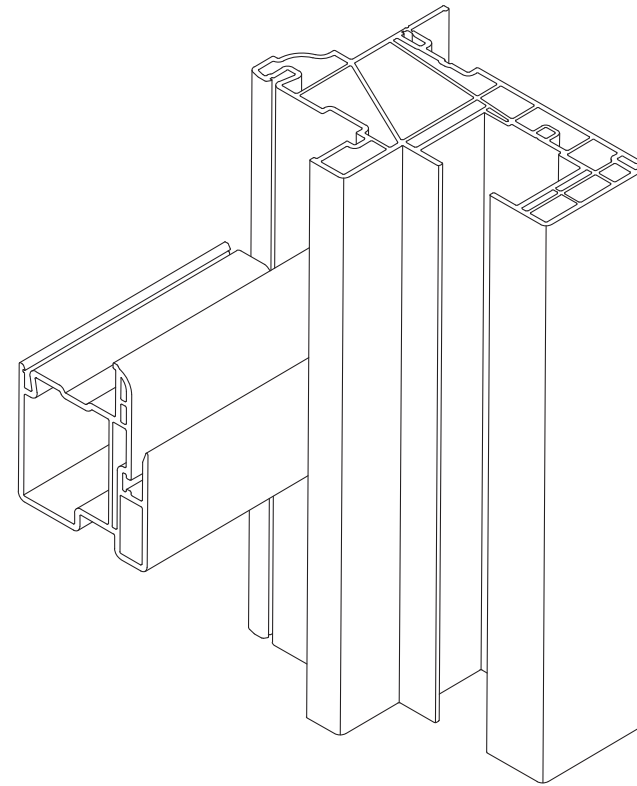
July 11th, 2023



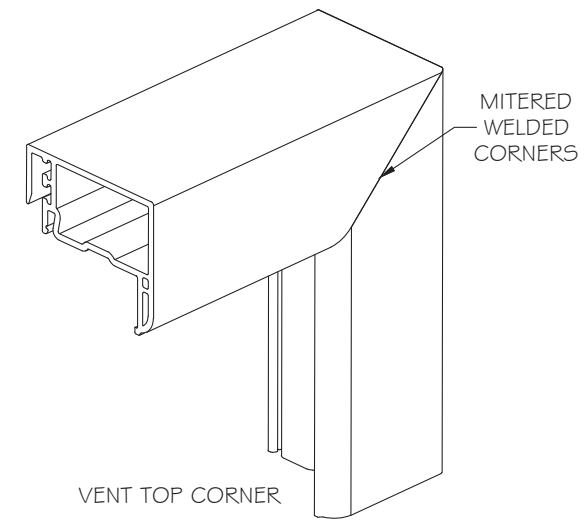
FRAME TOP CORNER  
FLANGE FRAME SHOWN  
FLUSH & FIN FRAMES SIMILAR



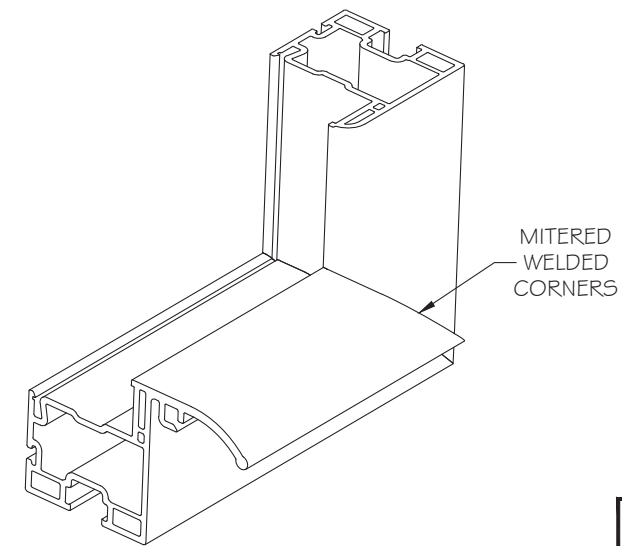
FRAME BOTTOM CORNER  
FLANGE FRAME SHOWN  
FLUSH & FIN FRAMES SIMILAR



FIXED MEETING RAIL CORNER  
FLANGE FRAME SHOWN  
FLUSH & FIN FRAMES SIMILAR



VENT TOP CORNER



VENT BOTTOM CORNER

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