

# ES WINDOWS, INC.

## ES-V500 VINYL CASEMENT WINDOW -L.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.

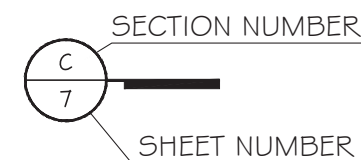
**INSTRUCTIONS:**

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 D1 & D2. 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.

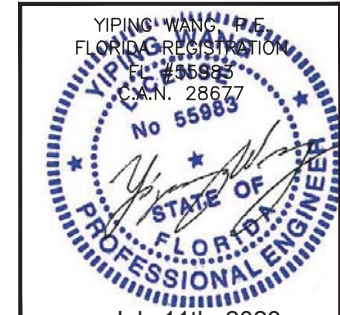
B- CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.

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.

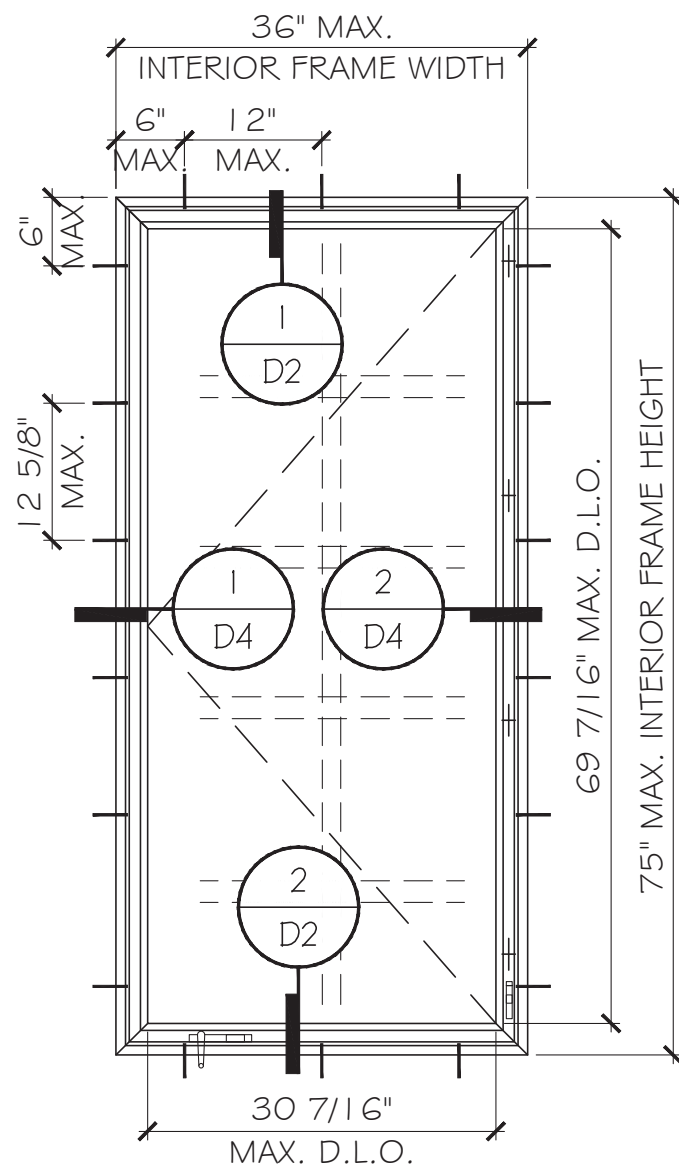
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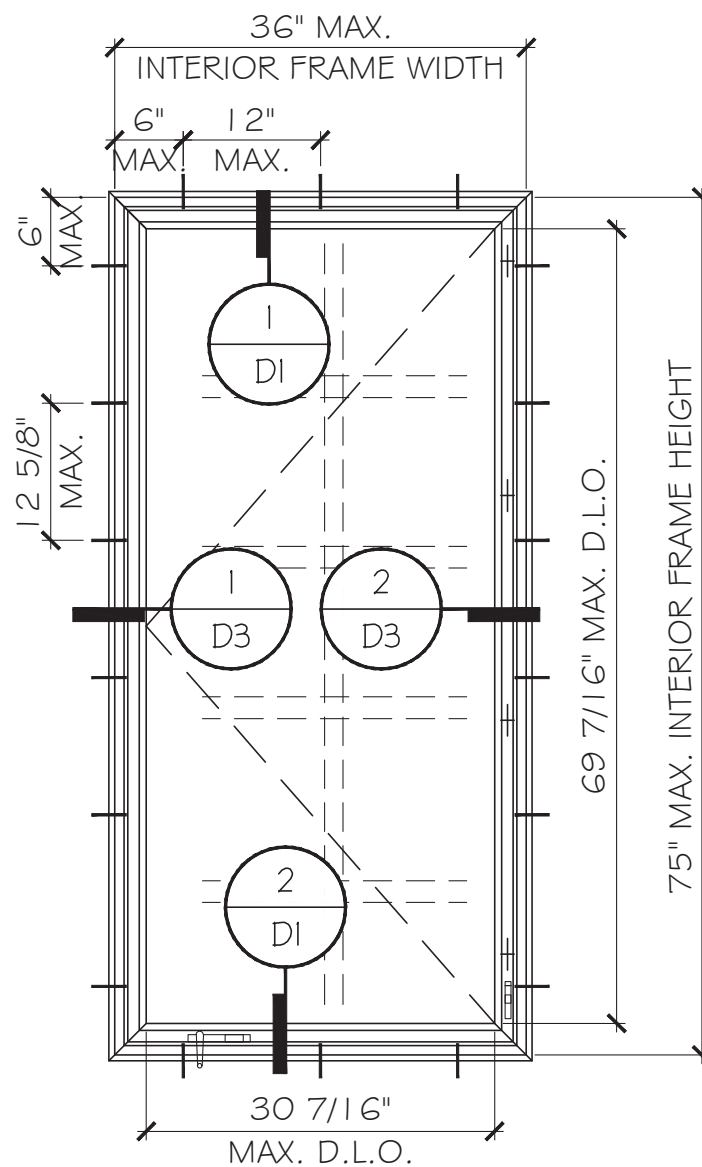
**MCY ENGINEERING, INC.**  
GLAZING CONSULTANTS  
12781 MIRAMAR PARKWAY #301  
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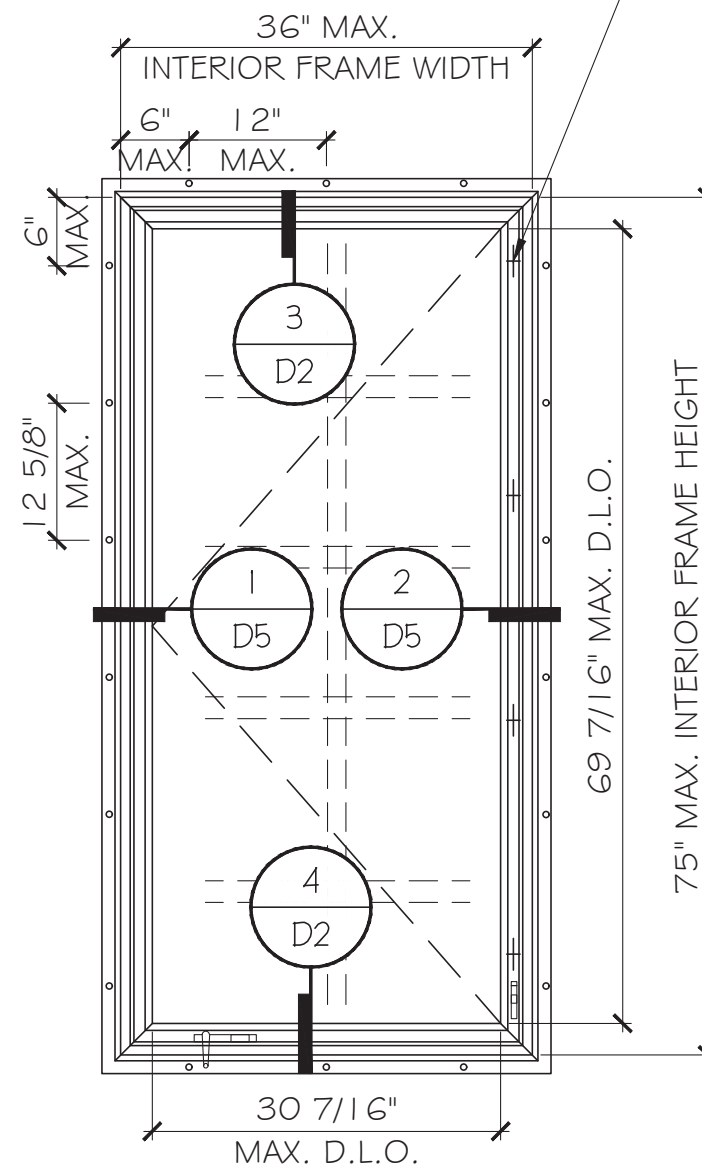
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Drawn Date 06.23.2023		Scale	
DRAWING NO. <b>AD23-11</b>			
COVER			
Sheet No. <b>01 OF 11</b>			



TYPICAL EXTERIOR ELEVATIONS  
 FLUSH FRAME  
 SEE SHEET G1 FOR DESIGN LOAD



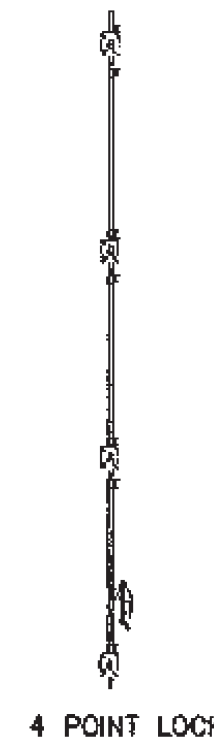
TYPICAL EXTERIOR ELEVATIONS  
 FLANGE FRAME  
 SEE SHEET G1 FOR DESIGN LOAD



TYPICAL EXTERIOR ELEVATIONS  
 FIN FRAME  
 SEE SHEET G1 FOR DESIGN LOAD

LOCKING POINTS  
 SEE CHART

WDW. HEIGHT UPTO	NO. OF KEEPERS AT SASH
36"	2
56"	3
74"	4



4 POINT LOCK

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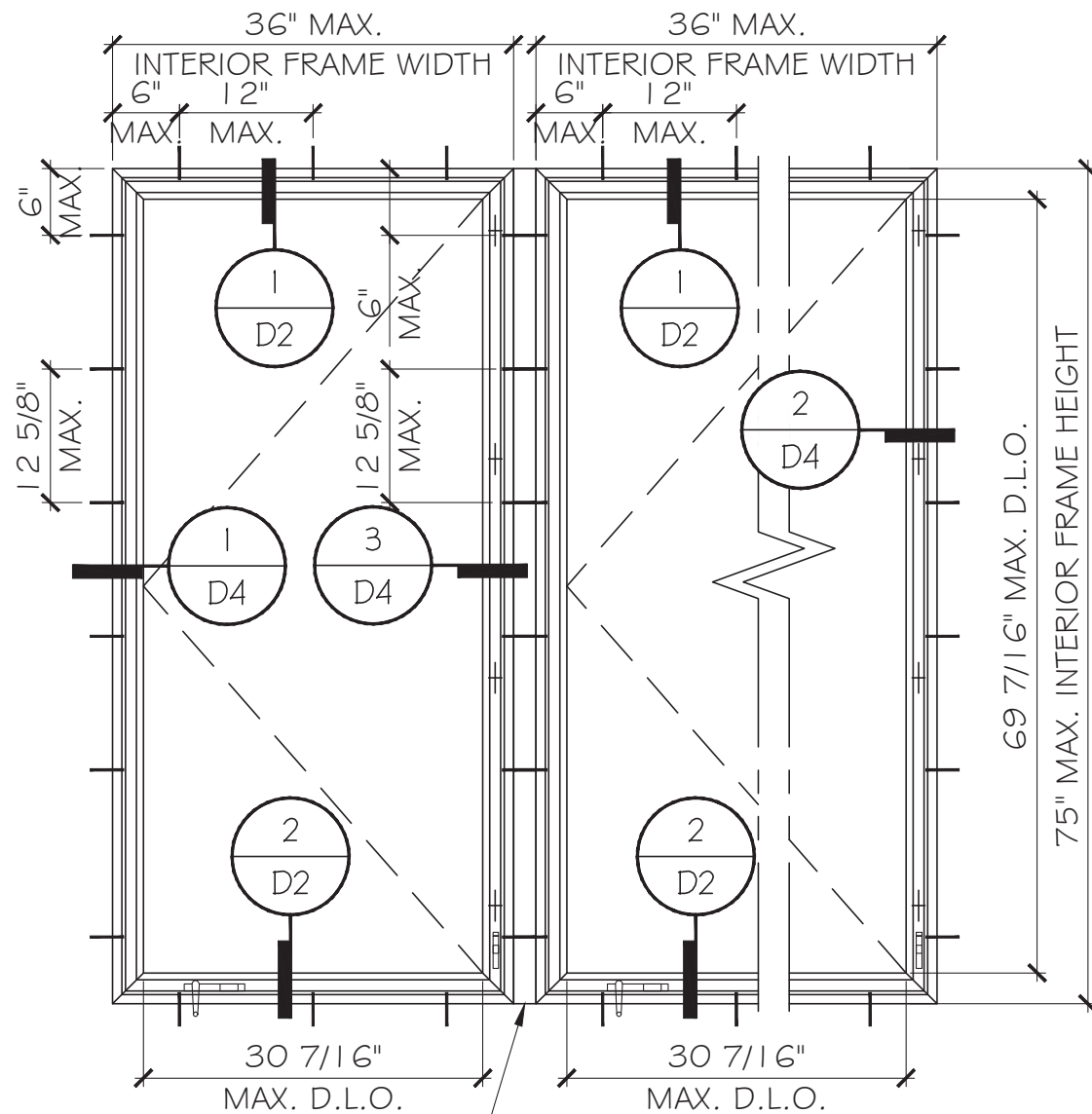
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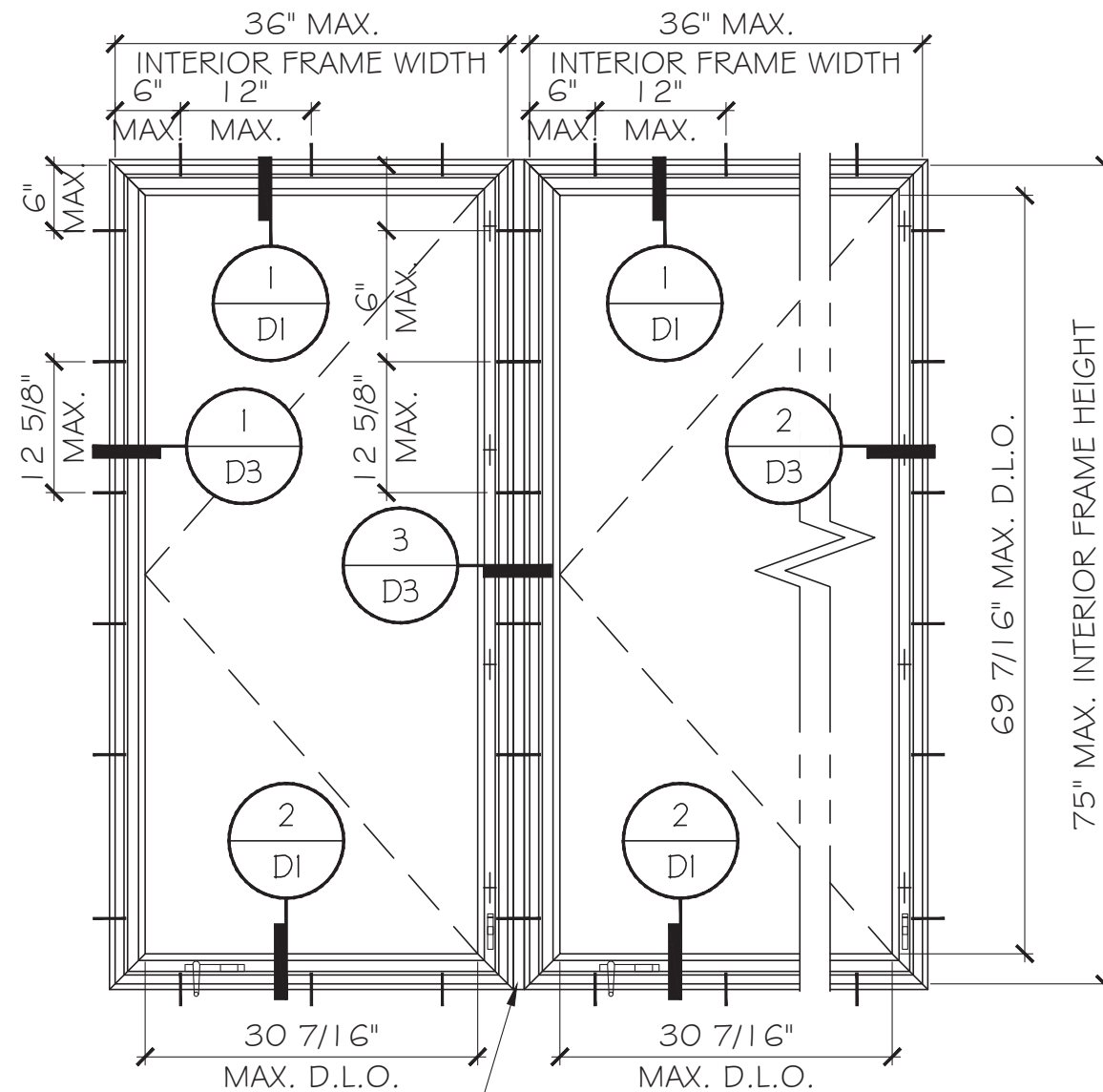
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FLORIDA APPROVED  
CLIPPED MULLION &  
MULLION ANCHORS SEE  
SEPARATE APPROVAL

TYPICAL EXTERIOR ELEVATIONS  
FLUSH FRAME  
SEE SHEET G1 FOR DESIGN LOAD



FLORIDA APPROVED  
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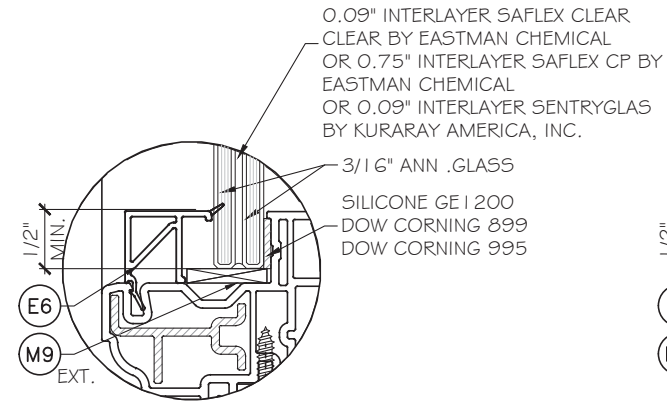
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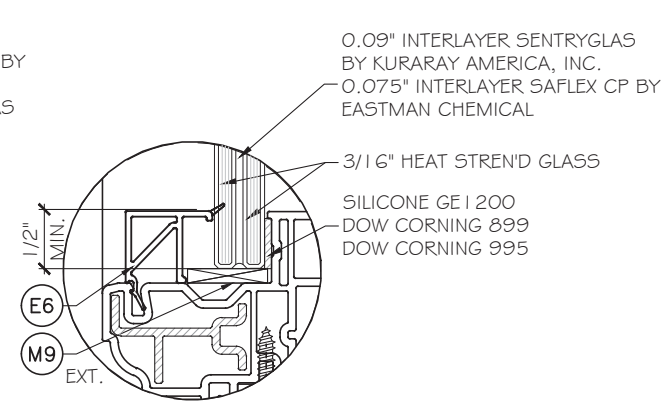
DESIGN LOAD CAPACITY - PSF			
INTERIOR FRAME DIMENSIONS		GLASS TYPE	
HEIGHT	WIDTH	'A', 'A1', 'B', 'B1'	
INCH	INCH	EXT.(+)	INT.(-)
25	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
37-3/8	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
49-5/8	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
58	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
62	18-1/8	60	60
	25-1/2	60	60
	36	60	60
	41	60	60
73-1/4	18-1/8	60	60
	25-1/2	60	60
	36	60	60
75	18-1/8	60	60
	25-1/2	60	60
	36	60	60

DESIGN LOAD CAPACITY - PSF			
INTERIOR FRAME DIMENSIONS		GLASS TYPE	
HEIGHT	WIDTH	'A', 'A1', 'B', 'B1'	
INCH	INCH	EXT.(+)	INT.(-)
35	23	60	60
	29	60	60
	35	60	60
	41	60	60
47	23	60	60
	29	60	60
	35	60	60
	41	60	60
59	23	60	60
	29	60	60
	35	60	60
	41	60	60
71	23	60	60
	29	60	60
	35	60	60
83	23	60	60
	29	60	60

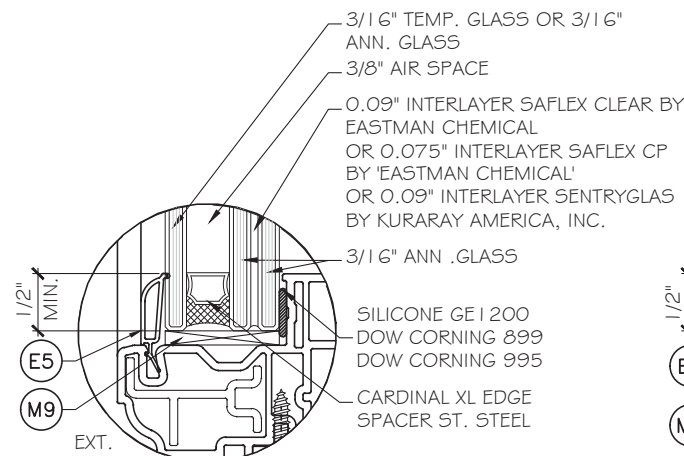
GLASS D.L.O. DIMS.  
D.L.O. HEIGHT = INTERIOR FRAME HEIGHT - 5.54"  
D.L.O. WIDTH = INTERIOR FRAME WIDTH - 5.54"



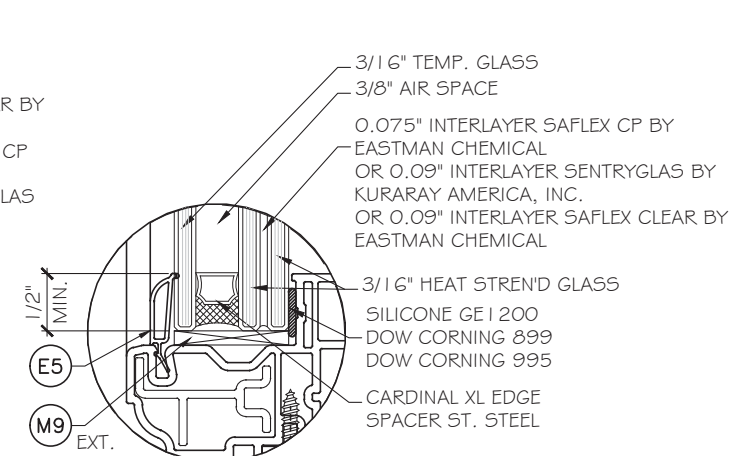
GLASS TYPE 'A'  
7/16" NOMINAL OVERALL (L.M.I. & S.M.I.)



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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Professional Engineer  
STATE OF FLORIDA

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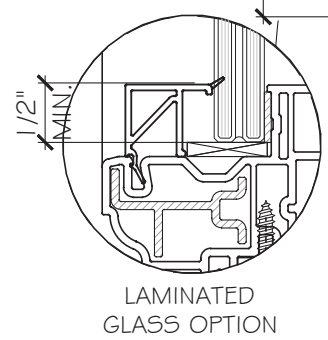
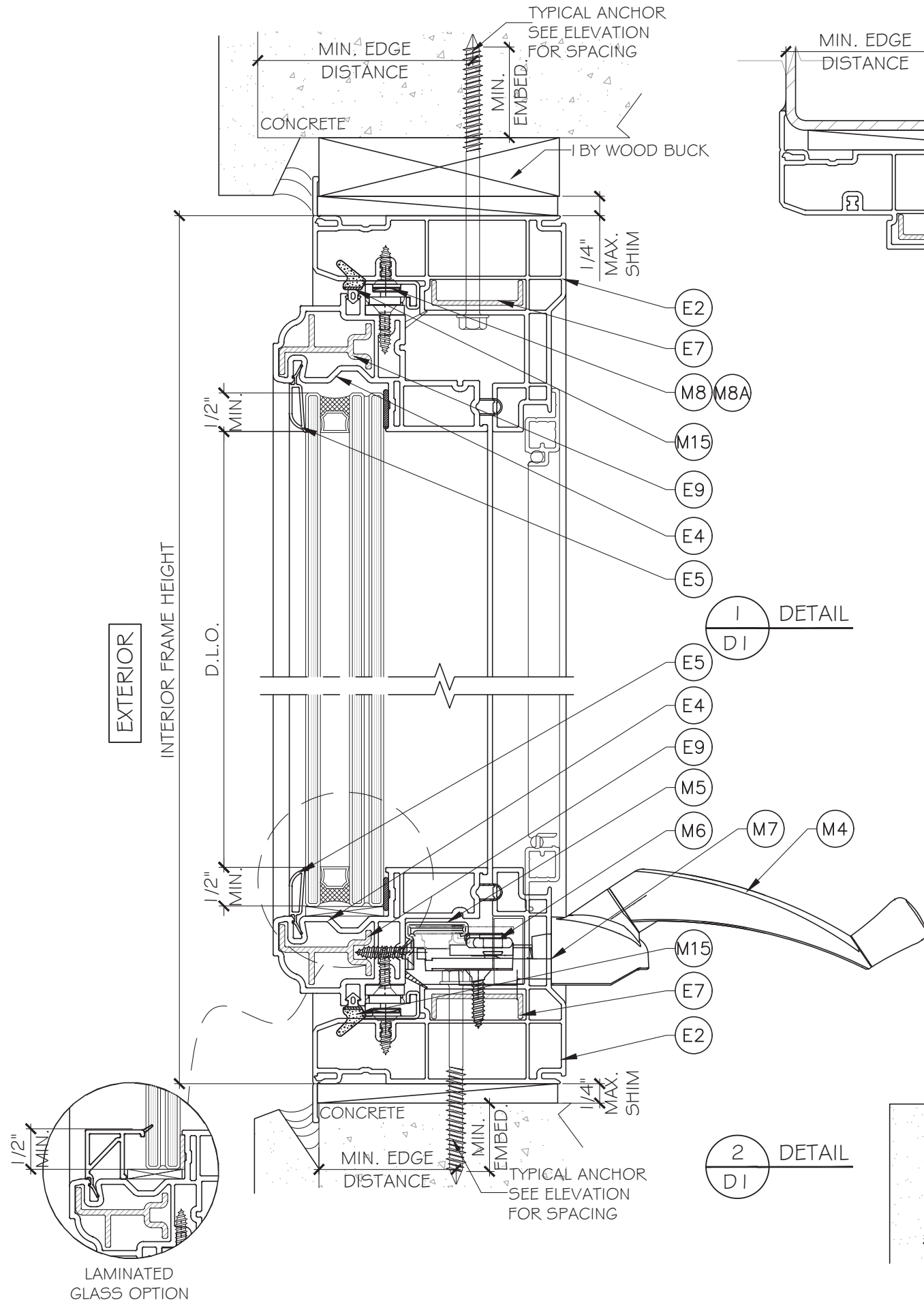
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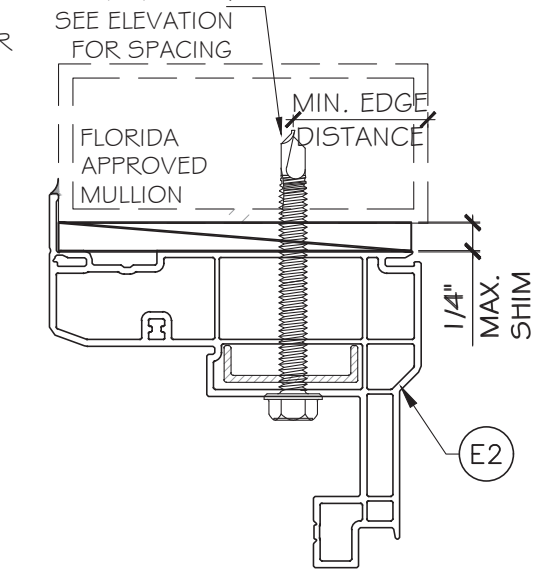
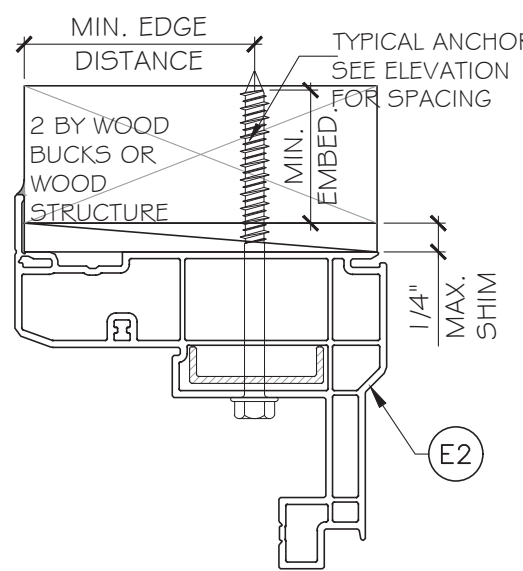
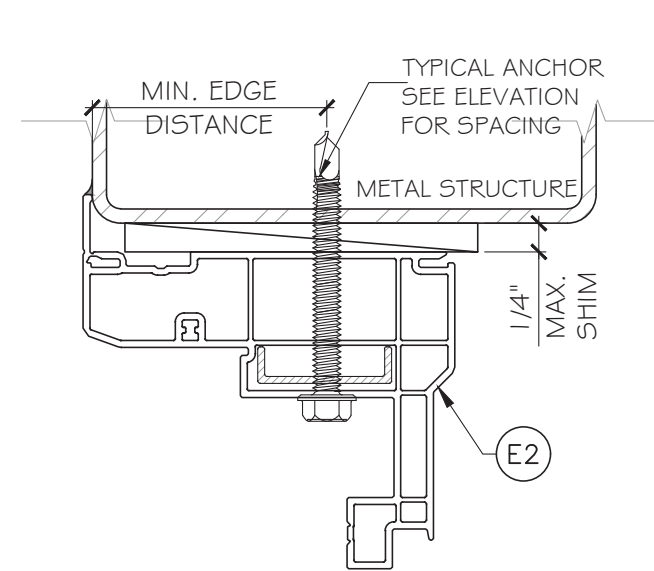
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1 DETAIL  
D1

2 DETAIL  
D1



TYPICAL ANCHOR TYPES: (SEE ELEVATIONS FOR SPACING)

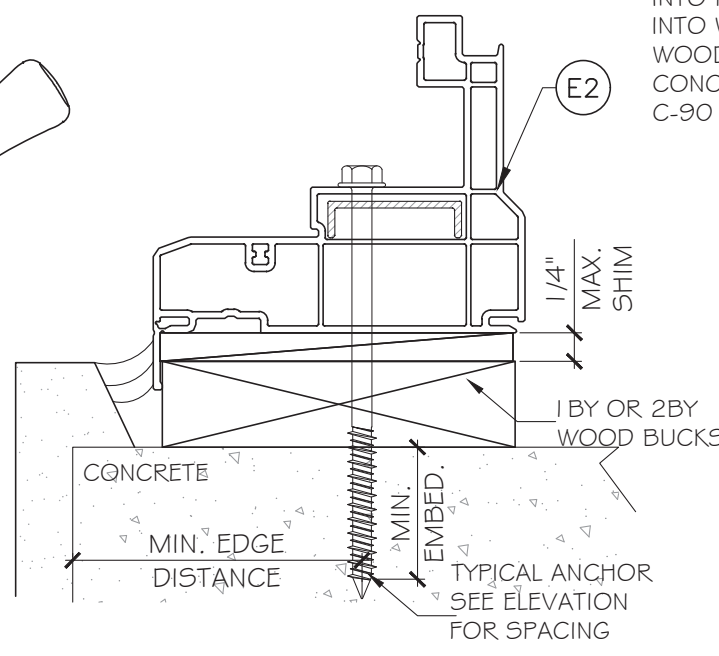
TYPE 'A' -- 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)  
 INTO 2 BY WOOD BUCKS OR WOOD STRUCTURES.  
 1 1/2" MIN. PENETRATION INTO WOOD (HEAD/ JAMBS)

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 CRS)  
 INTO FBC APPROVED MULLIONS, 1/8" THK. MIN.(GOG3-T5 MIN.)  
 OR INTO METAL STRUCTURES, STEEL: 12GA. MIN. (Fy=36 ksi MIN.)  
 (3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS  
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

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'c=3 ksi MIN.  
 C-90 HOLLOW/ FILLED BLOCK AT JAMBS fm=2000 PSI MIN.



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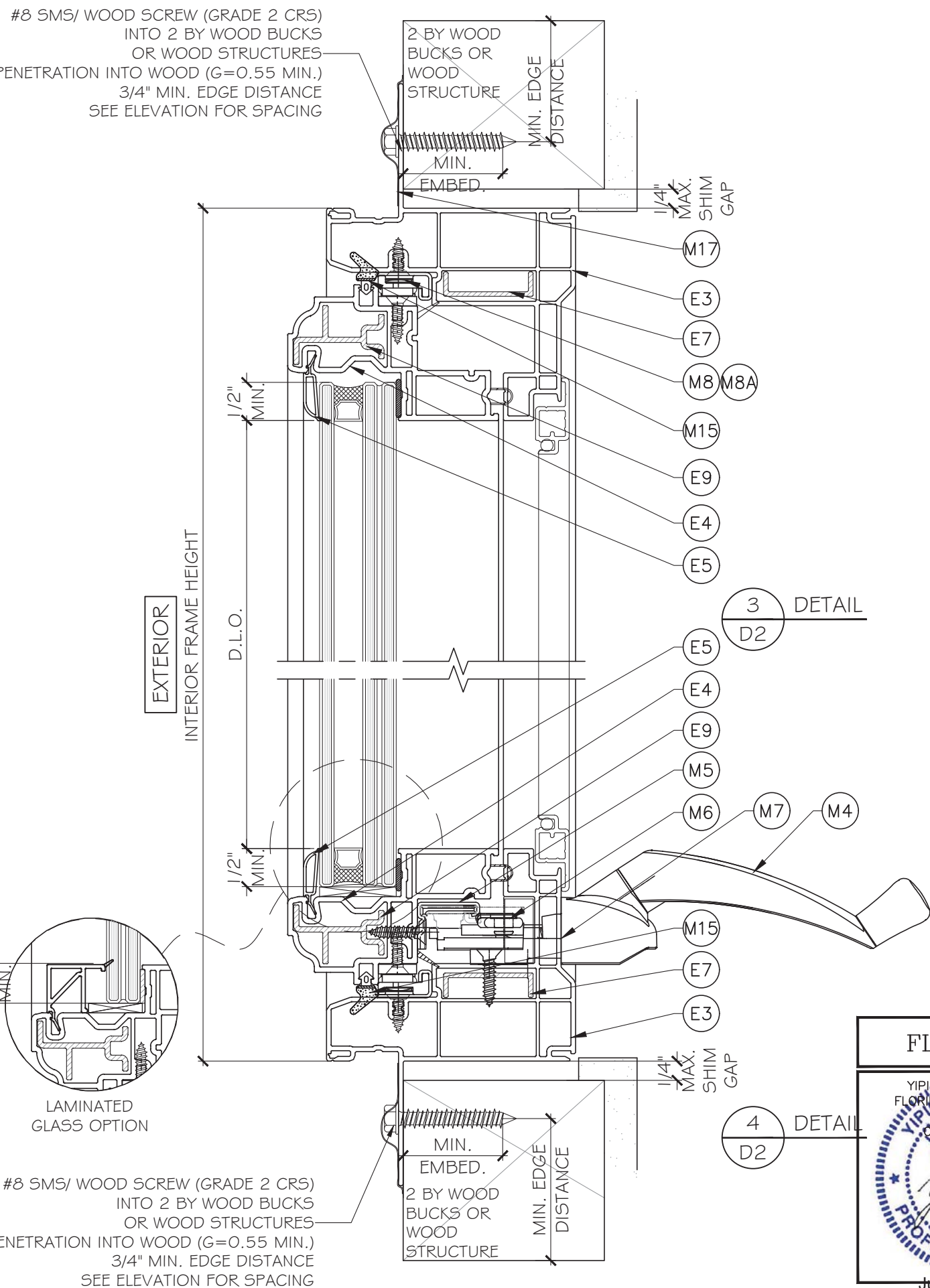
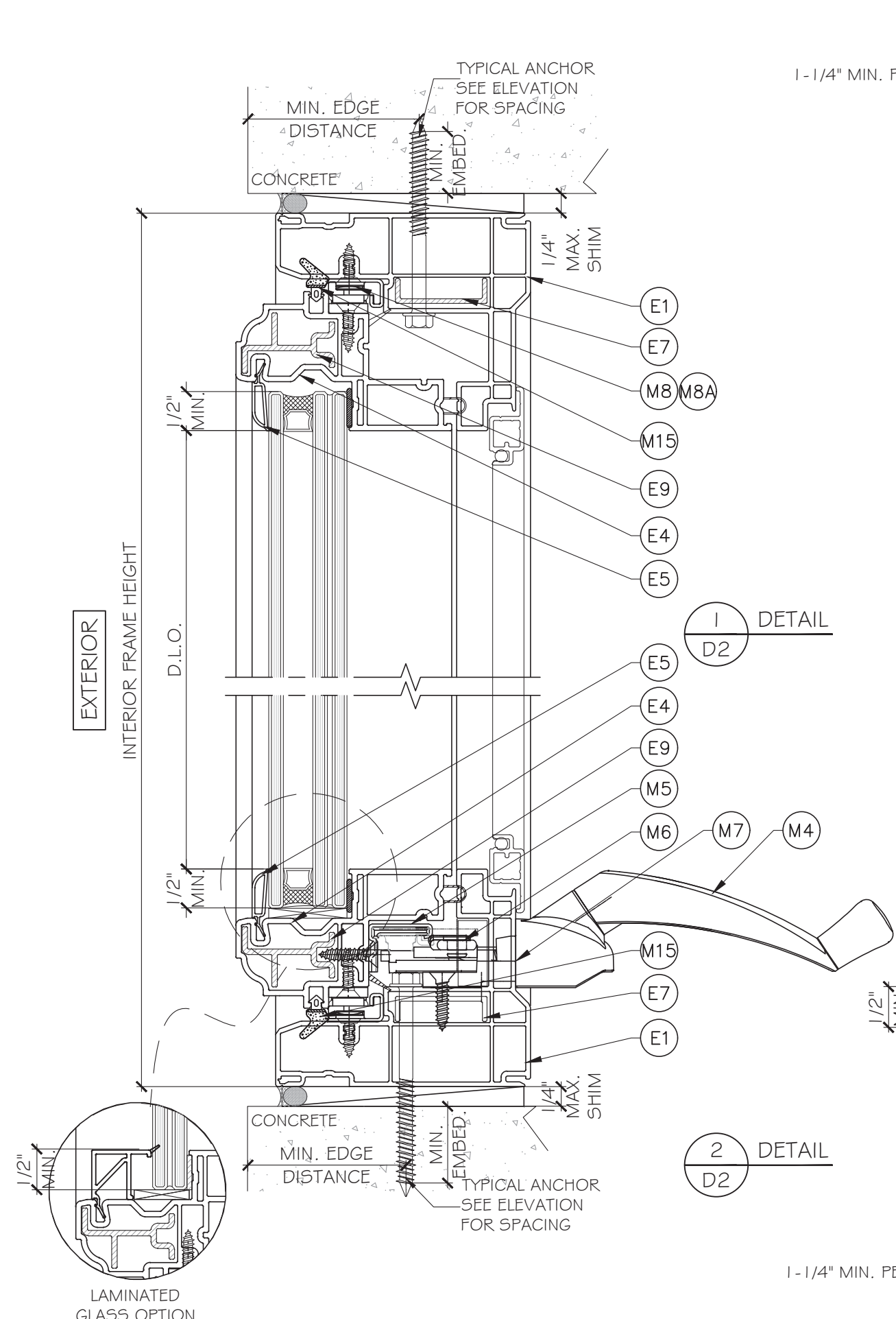
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#8 SMS/ WOOD SCREW (GRADE 2 CRS)  
 INTO 2 BY WOOD BUCKS  
 OR WOOD STRUCTURES  
 1-1/4" MIN. PENETRATION INTO WOOD (G=0.55 MIN.)  
 3/4" MIN. EDGE DISTANCE  
 SEE ELEVATION FOR SPACING

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 3/4" MIN. EDGE DISTANCE  
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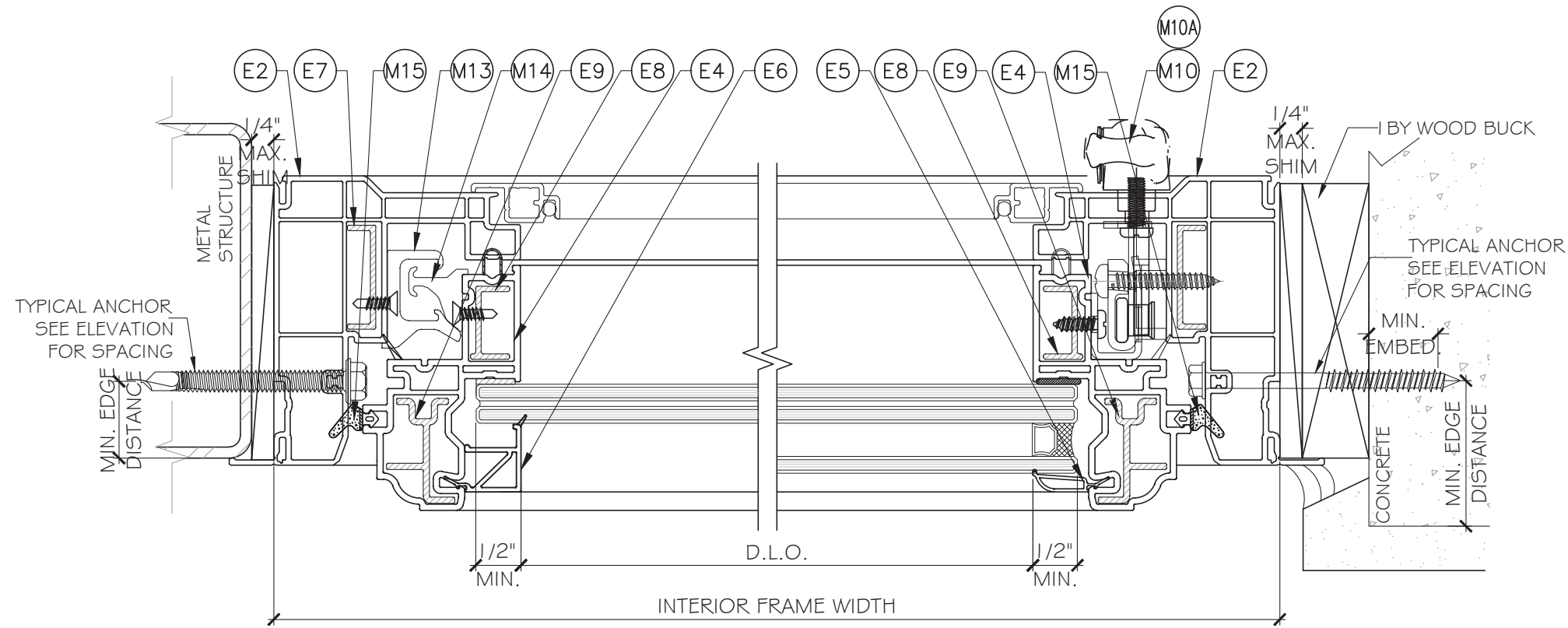
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1  
D3  
DETAIL

EXTERIOR

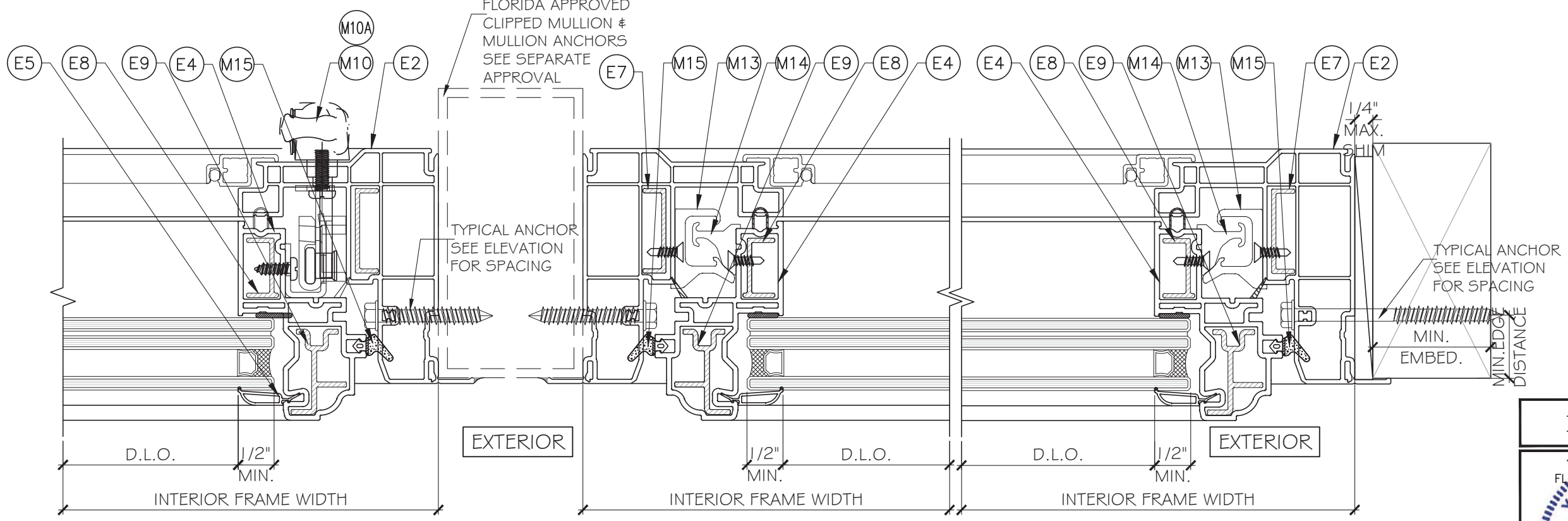
2  
D3  
DETAIL

INTERIOR FRAME WIDTH

D.L.O.

1/2"  
MIN.

1/2"  
MIN.



3  
D3  
DETAIL

EXTERIOR

2  
D3  
OPTION

EXTERIOR

D.L.O.

1/2"  
MIN.

1/2"  
MIN.

D.L.O.

D.L.O.

1/2"  
MIN.

INTERIOR FRAME WIDTH

INTERIOR FRAME WIDTH

INTERIOR FRAME WIDTH

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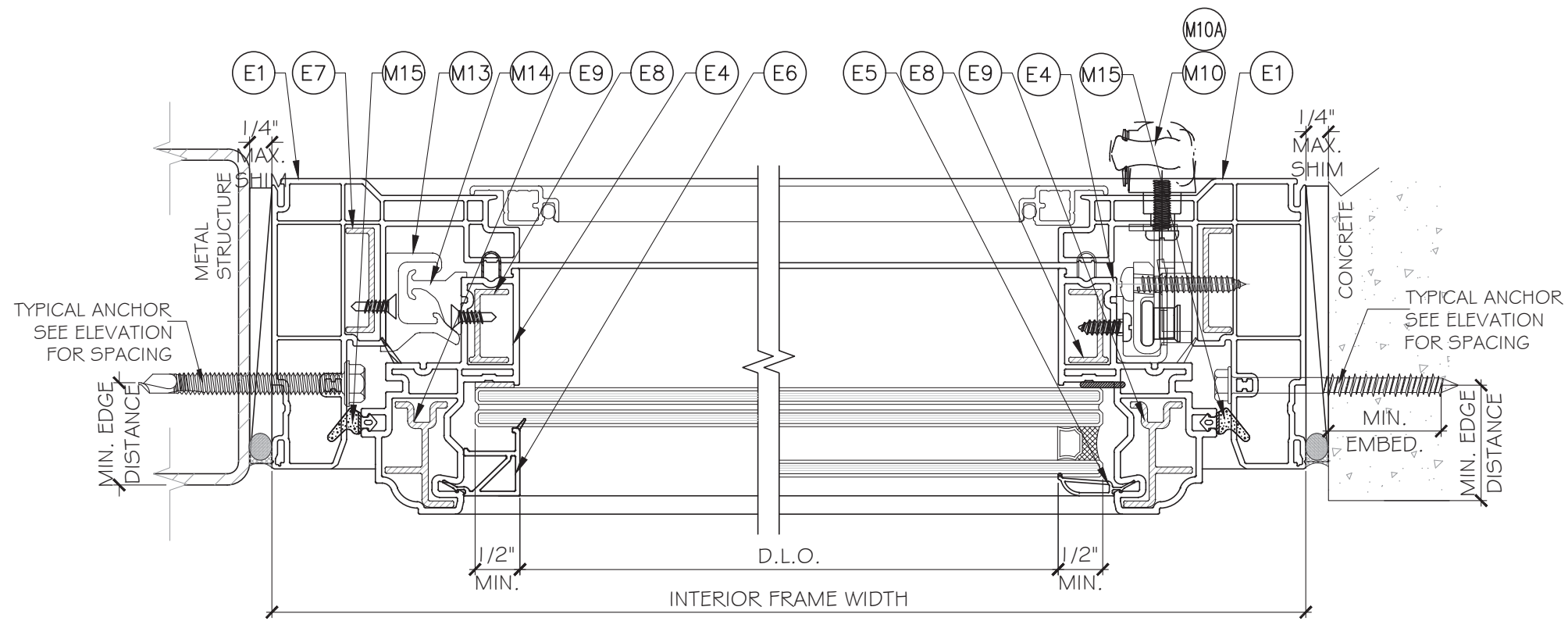
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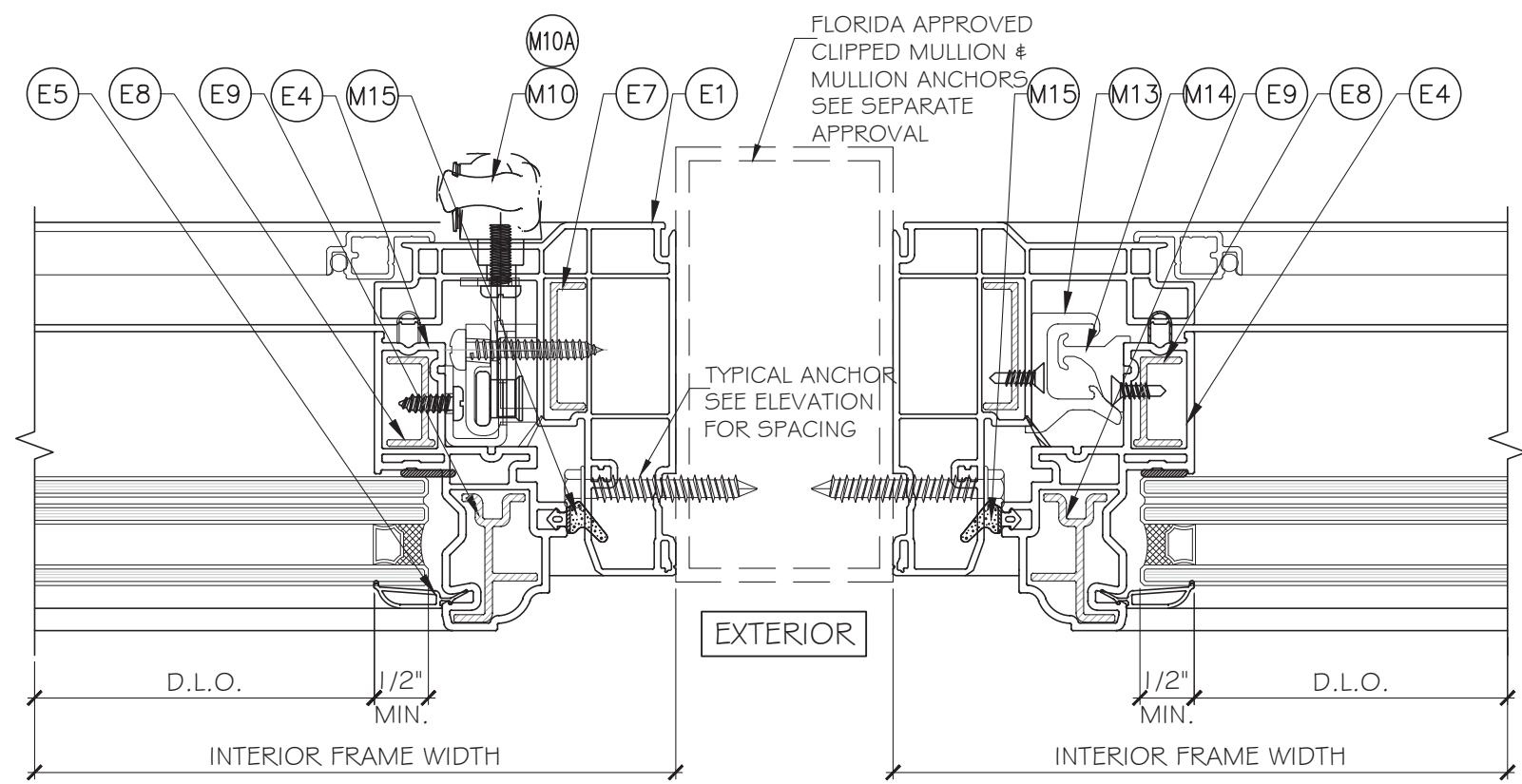
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1  
D4  
DETAIL

2  
D4  
DETAIL



3  
D4  
DETAIL

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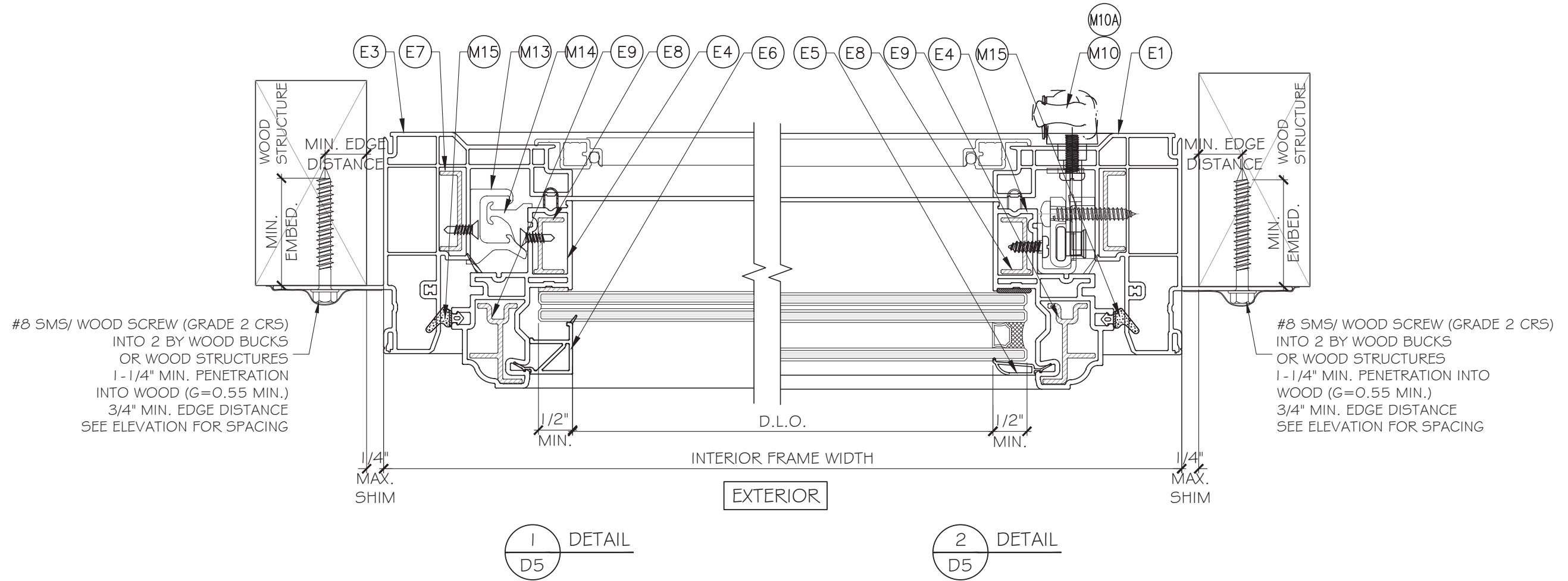
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#8 SMS/ WOOD SCREW (GRADE 2 CRS)  
 INTO 2 BY WOOD BUCKS  
 OR WOOD STRUCTURES  
 1-1/4" MIN. PENETRATION  
 INTO WOOD (G=0.55 MIN.)  
 3/4" MIN. EDGE DISTANCE  
 SEE ELEVATION FOR SPACING

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 1-1/4" MIN. PENETRATION INTO  
 WOOD (G=0.55 MIN.)  
 3/4" MIN. EDGE DISTANCE  
 SEE ELEVATION FOR SPACING

1  
 D5  
 DETAIL

2  
 D5  
 DETAIL

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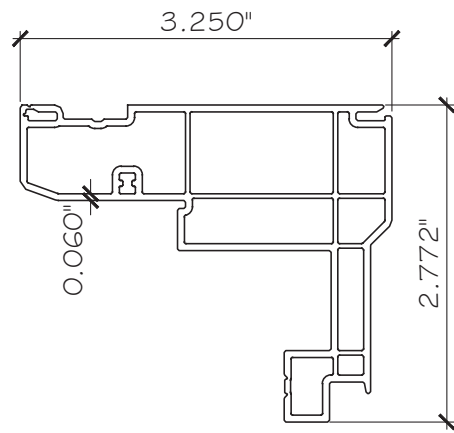
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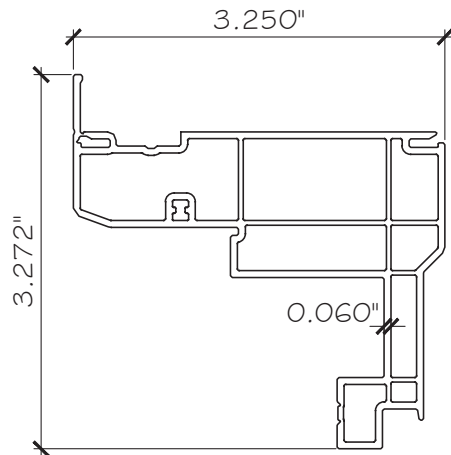
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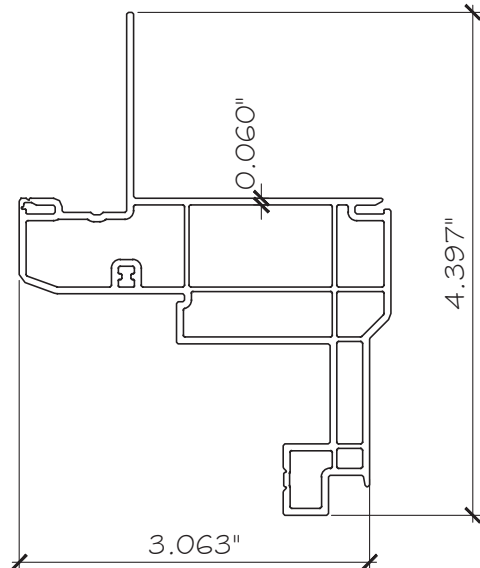
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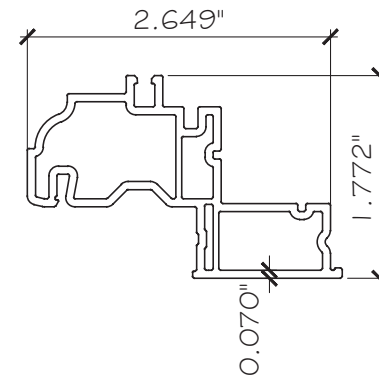
E2 FLUSH FRAME



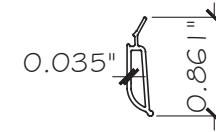
E1 FLANGE FRAME



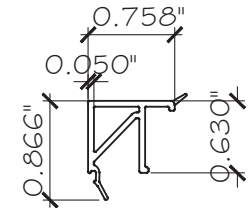
E3 FIN FRAME



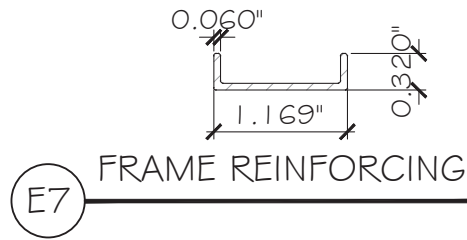
E4 VENT



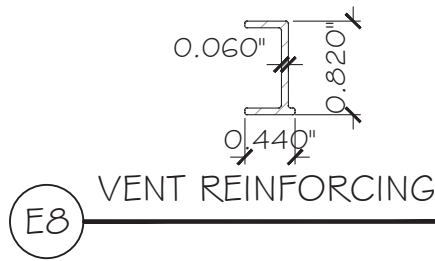
E5 GLAZING BEAD



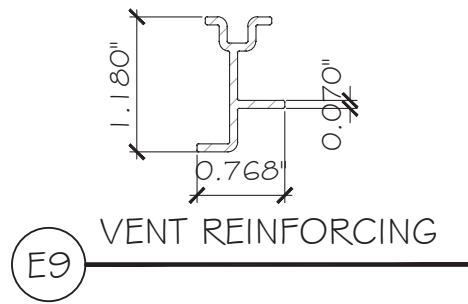
E6 GLAZING BEAD



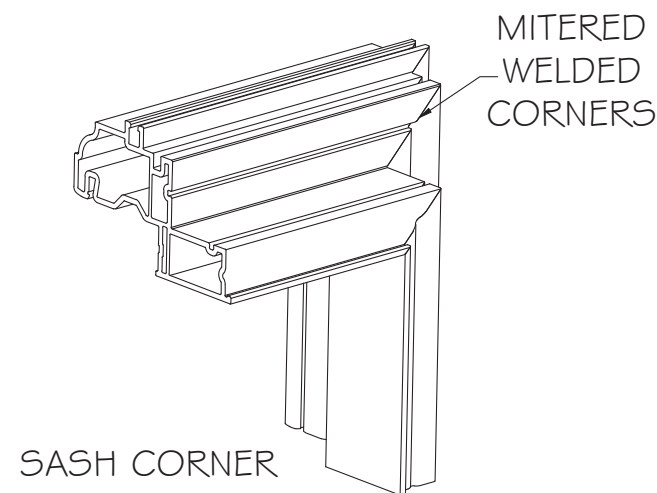
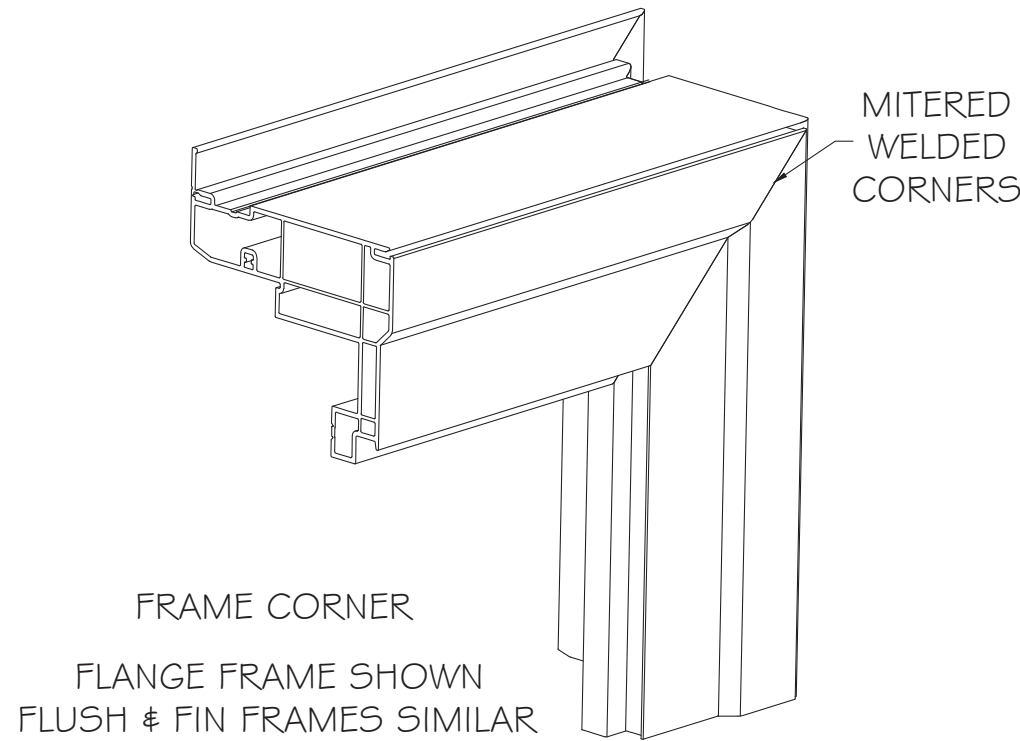
E7 FRAME REINFORCING



E8 VENT REINFORCING



E9 VENT REINFORCING



FL 42156

YIPING WANG  
 FLORIDA REGISTRATION  
 No. 55983  
 C.M.N. 28677

STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

July 14th, 2023

**MCY ENGINEERING, INC.**  
 GLAZING CONSULTANTS  
 12781 MIRAMAR PARKWAY #301  
 MIRAMAR, FL 33027 P: 305.271.0117  
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ES-V500 Vinyl Casement Window-L.M.I. & S.M.I.  
**ES WINDOWS, INC.**  
 3550 N.W. 49 STREET  
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 TEL. (305) 638-5151 EMAIL: ssabagh@energiasolarsa.com

Rev. No.	Date	Drawn By	Description
1.	06.23.2023	MCY	NEW

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

DRAWING NO. AD23-11

PARTS

Sheet No. 10 OF 11

# BILL OF MATERIALS

ITEM	PART	DESCRIPTION	MATERIAL	MANUF.	REMARKS
E1	ES-1011	EQUAL LEG FRAME	PVC	DECEUNINCK NORTH AERICA LLC	-
E2	ES-1017	FLANGE FRAME	PVC	DECEUNINCK NORTH AERICA LLC	-
E3	ES-1022	FIN FRAME	PVC	DECEUNINCK NORTH AERICA LLC	-
E4	ES-1012	SASH	PVC	DECEUNINCK NORTH AERICA LLC	-
E5	ES-1008	IG GLAZING BEAD	PVC	DECEUNINCK NORTH AERICA LLC	-
E6	ES-1025	7/16" MONOLITHIC GLAZING BEAD	PVC	DECEUNINCK NORTH AERICA LLC	-
E7	ES-804	FRAME REINFORCEMENT	6005A-T5	ES WINDOWS	-
E8	ES-805	SASH REINFORCEMENT (SMALL)	6005A-T5	ES WINDOWS	-
E9	ES-806	SASH REINFORCEMENT (LARGE)	6005A-T5	ES WINDOWS	-
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	50.10.00.011	OPERATOR	-	TRUTH	OPTIONAL
M5	11576.92	OPERATOR TRACK AND SLIDER ASSEMBLY	-	TRUTH	OPTIONAL
M6	12511.92	STUD BRACKET	-	TRUTH	OPTIONAL
M7	32658	GASKET	-	TRUTH	OPTIONAL
M8	14.97.00.005(006)	HINGE AT HEAD AND SILL	-	TRUTH	-
M8A	BPRPS-2501-13D55(13G55)	ALT. HINGE AT HEAD AND SILL	-	RADISSON INDUSTRIES	-
M9	-	SETTING BLOCK, 2 PER LITE	EPDM	-	DUROMETER 85±5
M10	-	MULTI POINT LOCK SYSTEM	-	TRUTH	-
M10A	-	ALT. MULTI POINT LOCK SYSTEM	-	RADISSON INDUSTRIES	-
M13	72-10039	FRAME SNUBBER AT 15" O.C.	6005A-T5	ES WINDOWS	-
M14	72-10040	SASH SNUBBER AT 15" O.C.	6005A-T5	ES WINDOWS	-
M15	QWS-580	SASH SEAL	VINYL	-	AT FIN FRAME
M17	-	PROTECTO WRAP WATERPROOFING OR EQUIV.	STAINLESS STEEL	-	-
S2	-	#8 X 1" FLAT HEAD SMS - OPERATOR TRACK	STAINLESS STEEL	-	4 PER TRACK
S3	-	#8 X 1" FLAT HEAD SMS - OPERATOR	STAINLESS STEEL	-	6 PER OPERATOR
S4	-	#7 X 1/2" FLAT HEAD SMS - HINGE TRACK	STAINLESS STEEL	-	4 PER HINGE
S5	-	#8 X 1/2" PAN HEAD SMS - KEEPER	STAINLESS STEEL	-	2 PER KEEPER
S6	-	#10-24 X 9/16" PAN HEAD SMS - LOCK HANDLE	STAINLESS STEEL	-	2 PER HANDLE
S7	-	#8 X 1-1/2" PAN HEAD SMS - TIE BAR GUIDES	STAINLESS STEEL	-	2 PER GUIDE
S8	-	#6 X 1/2" FLAT HEAD SMS - SNUBBERS	STAINLESS STEEL	-	2 PER SNUBBER
S9	-	#8 X 1" FLAT HEAD SMS - STUD BRACKET	STAINLESS STEEL	-	2 PER BRACKET
S10	-	#7 X 5/8" FLAT HEAD SMS - HINGE ARM	STAINLESS STEEL	-	4 PER HINGE

WHITE PVC EXTRUSIONS TO BE LABELED WITH AAMA EXTRUDER CODE, EXTRUDER NAME, CITY STATE AND 'MDCA'

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**BOM**

Sheet No. **11 OF 11**