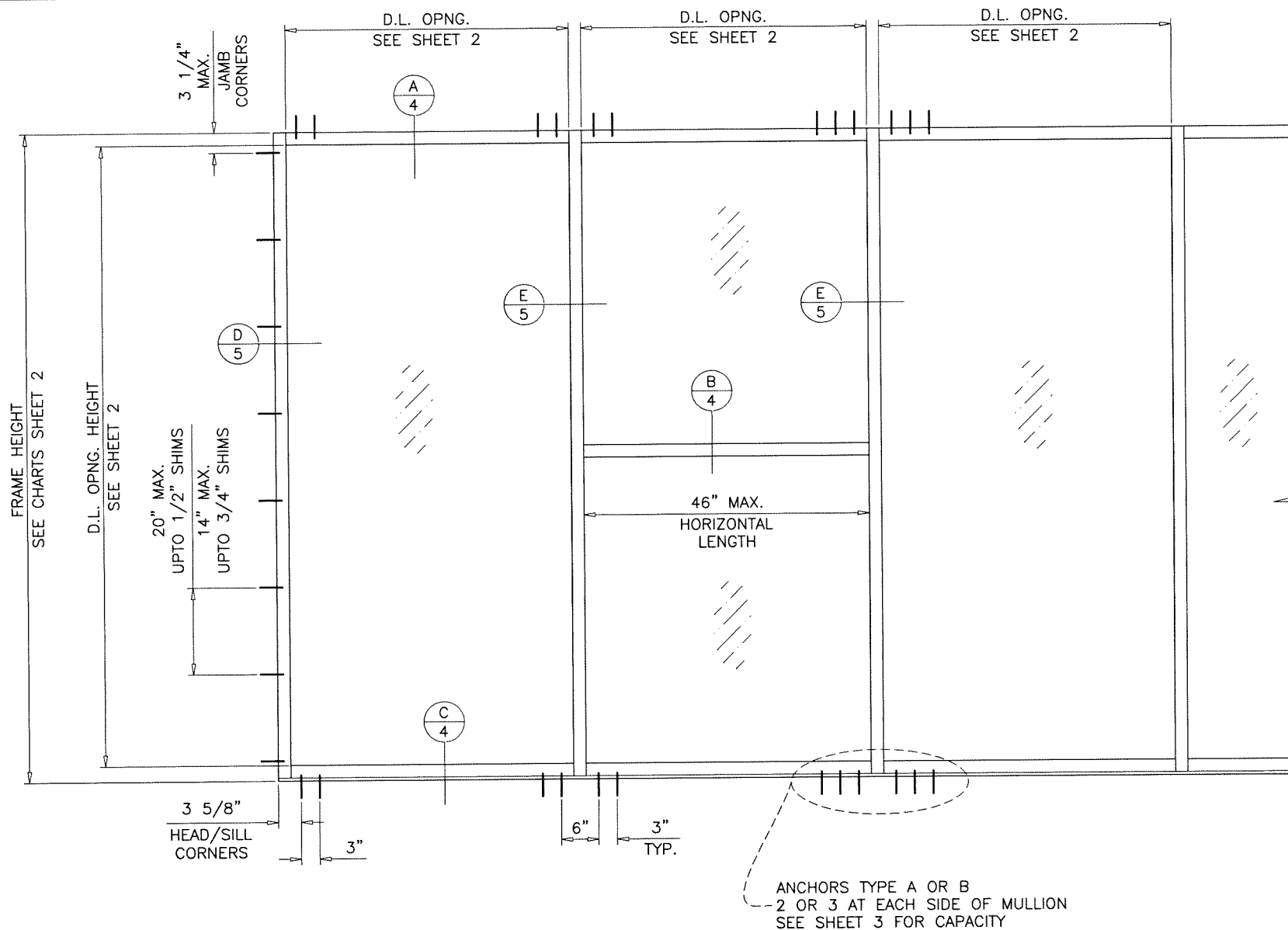
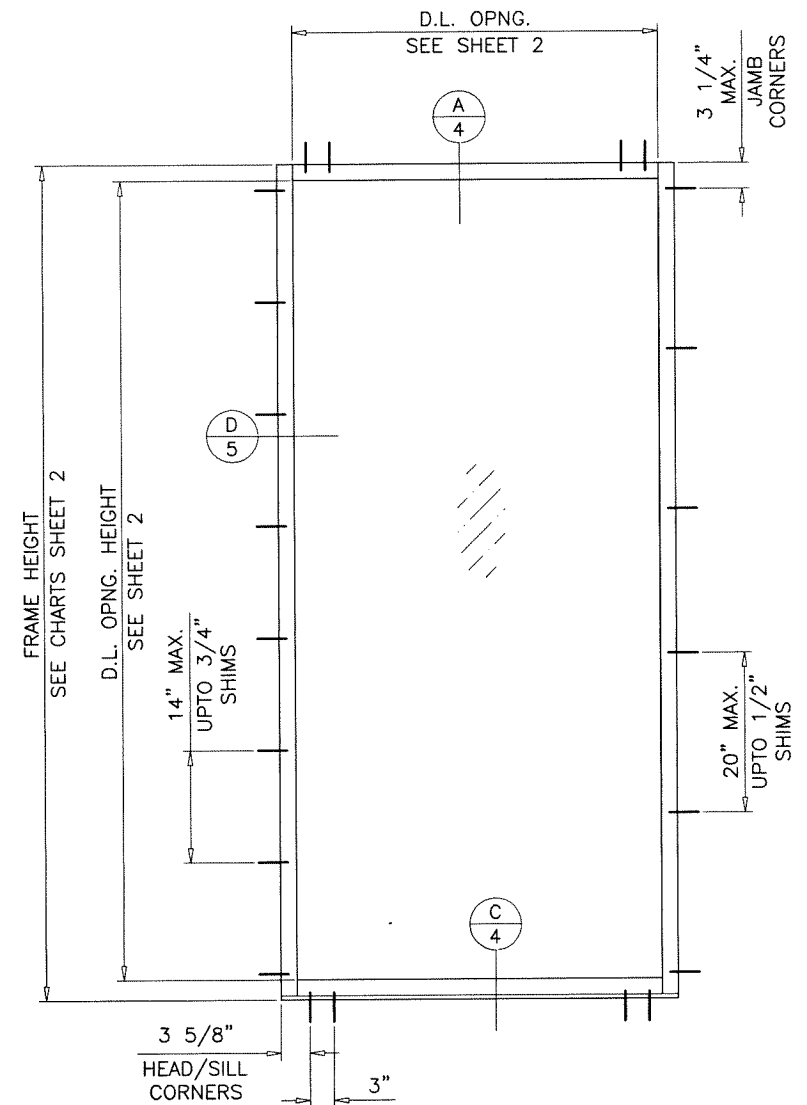




TYPICAL ELEVATIONS



SINGLE 'O' PANEL:
 FRAME WIDTH = D.L.O. WIDTH + 4.0"
 FRAME HEIGHT = D.L.O. HEIGHT + 4.50"

ES-4520
THERMAL ALUMINUM WINDOW WALL SYSTEM

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2023 (8TH EDITION)/2026 (9TH EDITION) FLORIDA BUILDING CODE FOR NON HIGH VELOCITY HURRICANE ZONE.

1BY OR 2BY WOOD BUCKS & BUCK FASTENERS BY OTHERS, MUST BE DESIGNED AND INSTALLED ADEQUATELY TO TRANSFER APPLIED PRODUCT LOADS TO THE BUILDING STRUCTURE.

ANCHORS SHALL BE CORROSION RESISTANT, SPACED AS SHOWN ON DETAILS AND INSTALLED PER MANUF'S INSTRUCTIONS. SPECIFIED EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.

A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY. ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 2023/2026 FLORIDA BLDG. CODE & ADOPTED STANDARDS.

THIS PRODUCT APPROVAL IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT, i.e. LIFE SAFETY OF THIS PRODUCT, ADEQUACY OF STRUCTURE RECEIVING THIS PRODUCT AND SEALING AROUND OPENING FOR WATER INFILTRATION RESISTANCE ETC. CONDITIONS NOT SHOWN IN THIS DRAWING ARE TO BE ANALYZED SEPARATELY, AND TO BE REVIEWED BY BUILDING OFFICIAL.

DESIGN LOADS SHOWN ARE BASED ON 'ALLOWABLE STRESS DESIGN (ASD)'.

MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION IN ACCORDANCE WITH SECTION 1709.9.3 OF FLORIDA BUILDING CODE. LABELING TO COMPLY WITH SECTION 1709.9.2.

INSTRUCTIONS:

USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN WIND LOAD REQUIREMENT BASED ON WIND VELOCITY, BLDG. HEIGHT, WIND ZONE USING APPLICABLE ASCE 7 STANDARD.
- STEP 2** CHECK GLASS CAPACITY TABLE ON SHEET 2 FOR GLASS TYPE, GLASS DIMENSIONS (WIDTH & HEIGHT) AND PRESSURE CAPACITY. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 3** CHECK WINDOW WALL SYSTEM CAPACITY FOR DESIRED HEIGHT AND MULLION SPACING USING CHARTS ON SHEET 2. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** USING CHARTS ON SHEET 3 SELECT ANCHOR OPTION WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO ENTIRE SYSTEM.

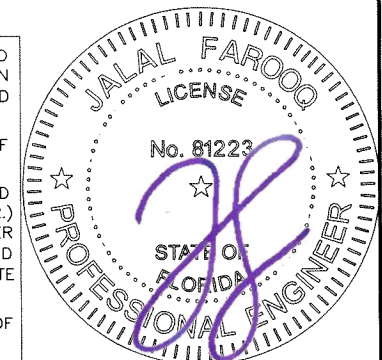
WINDOW WALL SYSTEM NOT RATED FOR IMPACT.
 INSTALLATION OF THIS SYSTEM OUTSIDE THE HVHZ AREA SHALL MEET THE APPLICABLE REQUIREMENTS FOR WIND BORNE DEBRIS PROTECTION.

FASTENERS AND CONNECTORS (AS APPLICABLE) SHOWN IN THIS APPROVAL MAY NOT MEET CORROSION RESISTANCE REQUIREMENTS FOR COASTAL OR SALT WATER EXPOSURE ZONES. COMPLIANCE WITH THESE CONDITIONS TO BE CHECKED PER FBC 1711.

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- A- 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.
- B- THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
- C- 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. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- D- THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.



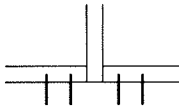
AL-FAROOQ CORPORATION
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 9360 SUNSET DRIVE, SUITE 220
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ES-4520 THERMAL ALUM WINDOW WALL SYS. (N.I.)
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 3550 N.W. 49 STREET
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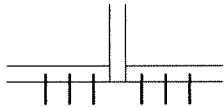
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chk. by:				
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sheet	1 of 6			

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS. WIDTH (W) FRAME HEIGHT		1/2" MAX. SHIMS				3/4" MAX. SHIMS			
		ANCHORS 'A'		ANCHORS 'B'		ANCHORS 'A'		ANCHORS 'B'	
		A2	A3	B2	B3	A2	A3	B2	B3
30"	84"	45.0	45.0	45.0	45.0	33.1	45.0	45.0	45.0
36"		39.6	45.0	45.0	45.0	27.5	41.3	38.8	45.0
42"		33.9	45.0	45.0	45.0	23.6	35.4	33.2	45.0
48"		29.7	44.5	41.4	45.0	20.7	31.0	29.1	43.6
54"		26.4	39.6	36.8	45.0	18.4	27.5	25.9	38.8
60"		23.7	35.6	33.1	45.0	16.5	24.8	23.3	34.9
30"	96"	41.6	45.0	45.0	45.0	28.9	43.4	40.7	45.0
36"		34.6	45.0	45.0	45.0	24.1	36.2	33.9	45.0
42"		29.7	44.5	41.4	45.0	20.7	31.0	29.1	43.6
48"		26.0	39.0	36.3	45.0	18.1	27.1	25.5	38.2
54"		23.1	34.6	32.2	45.0	16.1	24.1	22.6	33.9
30"	108-1/8"	36.9	45.0	45.0	45.0	25.7	38.5	36.2	45.0
36"		30.7	45.0	42.9	45.0	21.4	32.1	30.1	45.0
42"		26.4	39.5	36.8	45.0	18.3	27.5	25.8	38.7
48"		23.1	30.0	30.0	30.0	16.0	24.1	22.6	30.0

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



A2, B2

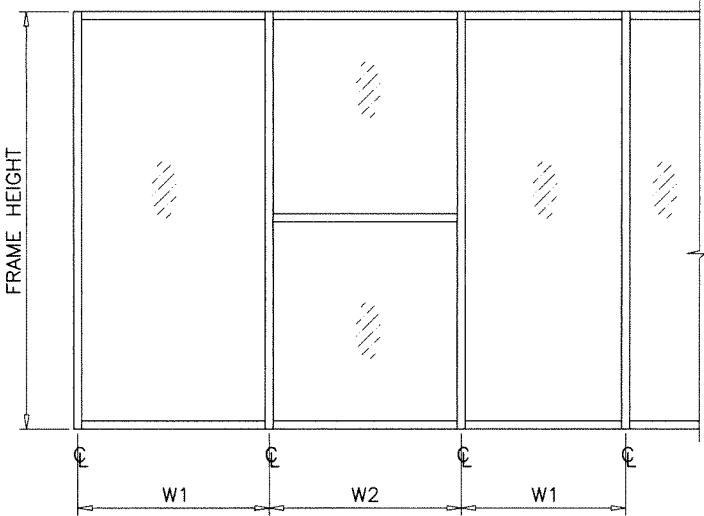


A3, B3

ANCHORS TYPES: SEE SHEET 4 FOR DESCRIPTION

- A2 = (2) ANCHORS TYPE 'A' AT EACH SIDE OF MULLION
B2 = (2) ANCHORS TYPE 'B' AT EACH SIDE OF MULLION

A3 = (3) ANCHORS TYPE 'A' AT EACH SIDE OF MULLION
B3 = (3) ANCHORS TYPE 'B' AT EACH SIDE OF MULLION



WIDTH (W) = $\frac{W1 + W2}{2}$
AT FRAME MULLION

ANCHORS

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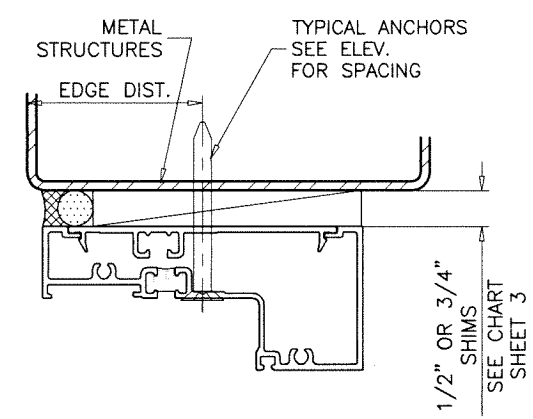
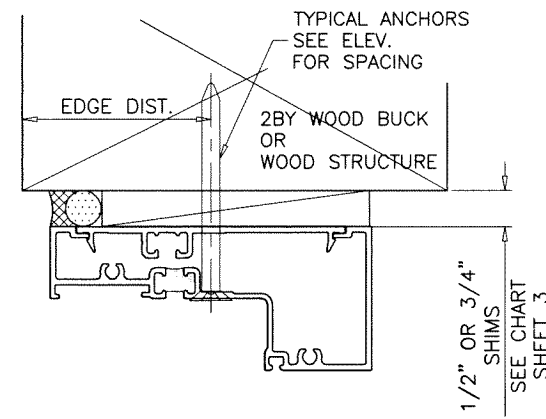
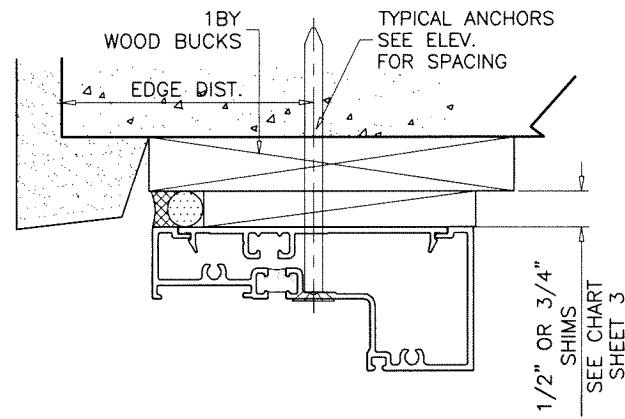
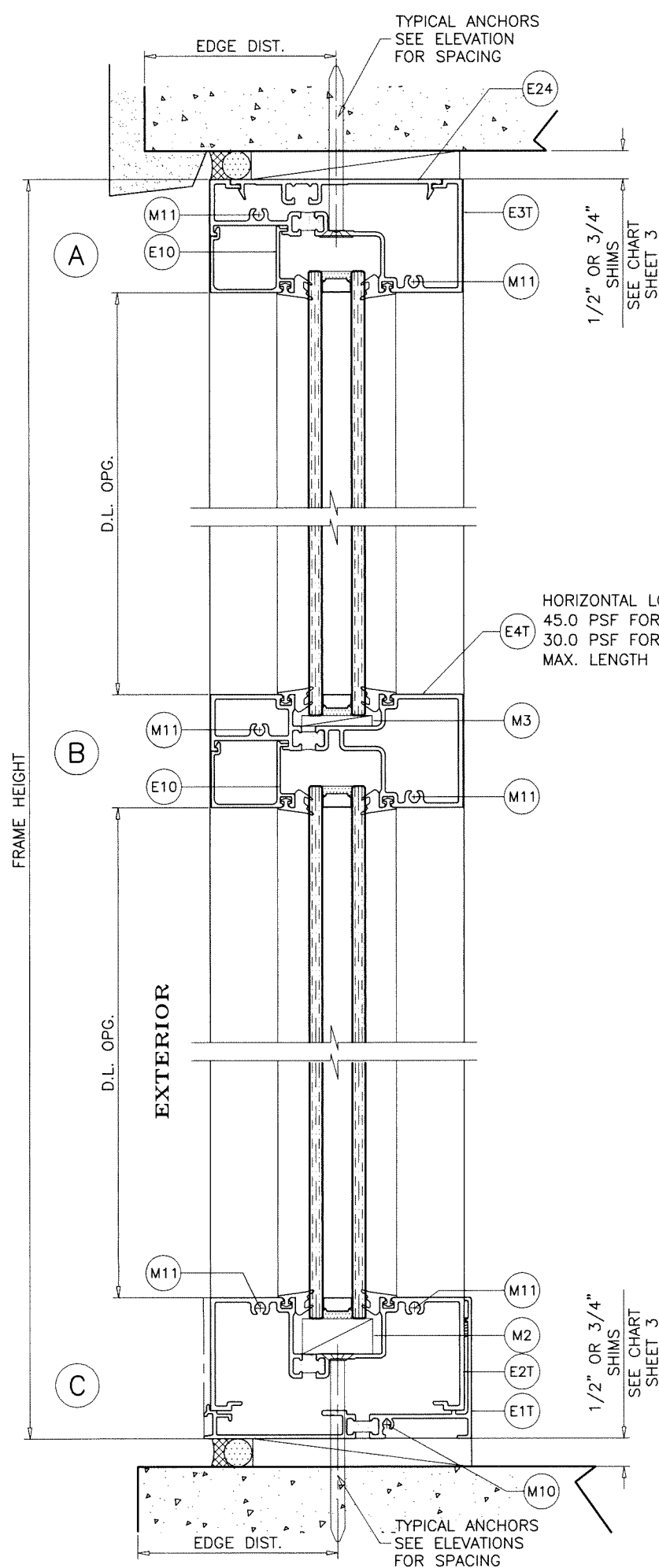
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3550 N.W. 49 STREET
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TEL. (305) 638-5151
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25-65F
sheet 3 of 6



WOOD BUCKS AND METAL STRUCTURE NOT BY 'E.S. WINDOWS'
MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM
AND TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

ANCHOR TYPE 'A' - 1/4" DIA. ULTRACON BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
 1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY WOOD BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONCRETE OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)

ANCHOR TYPE 'B'— 1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)
 INTO F.B.C. APPROVED MULLIONS
 OR
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
 ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
 STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

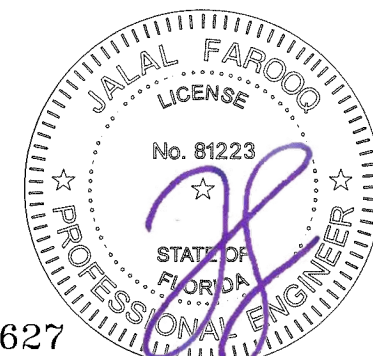
TYPICAL EDGE DISTANCE

INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
 INTO WOOD BUCKS OR WOOD STRUCTURE = 1" MIN.
 INTO METAL STRUCTURE = 3/4" MIN.

WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.
CONCRETE AT HEAD, SILL OR JAMBS f'_c = 3000 PSI MIN.
C-90 HOLLOW/GROUT FILLED BLOCK AT JAMBS f'_m = 2000 PSI MIN.

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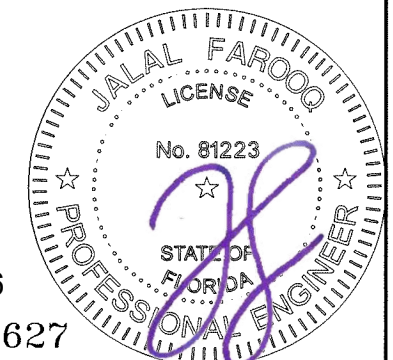
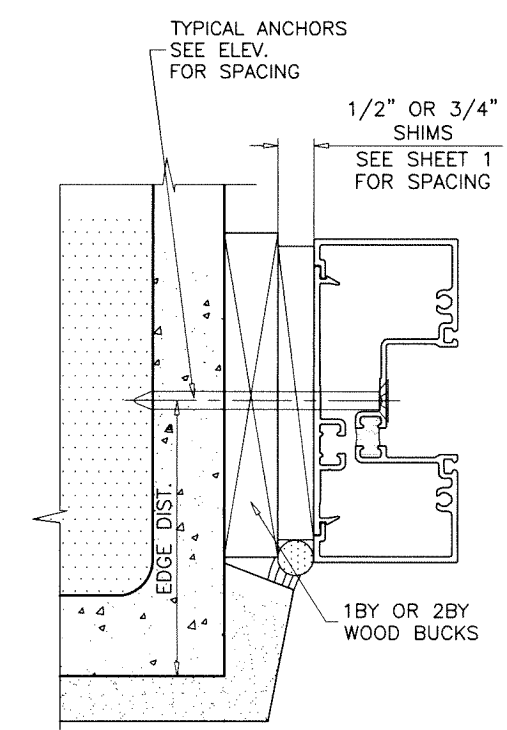
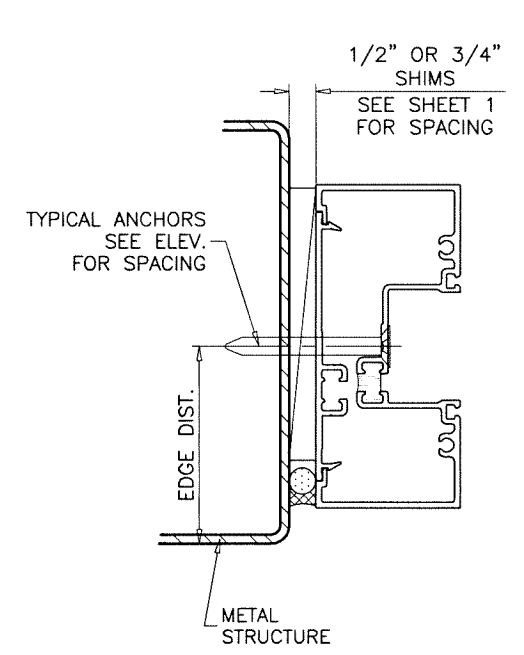
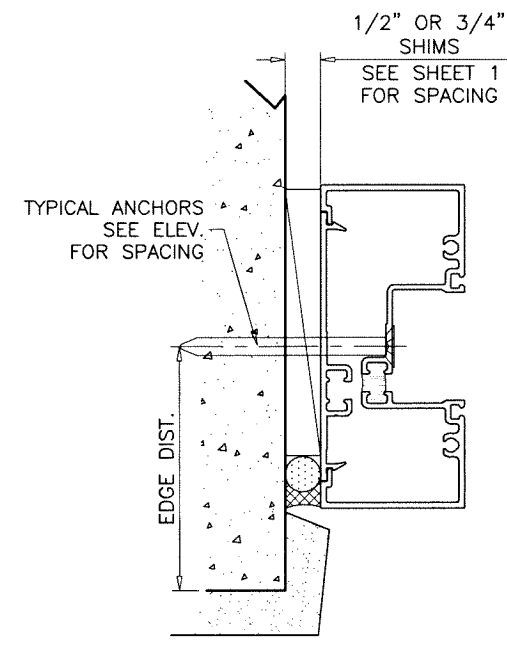
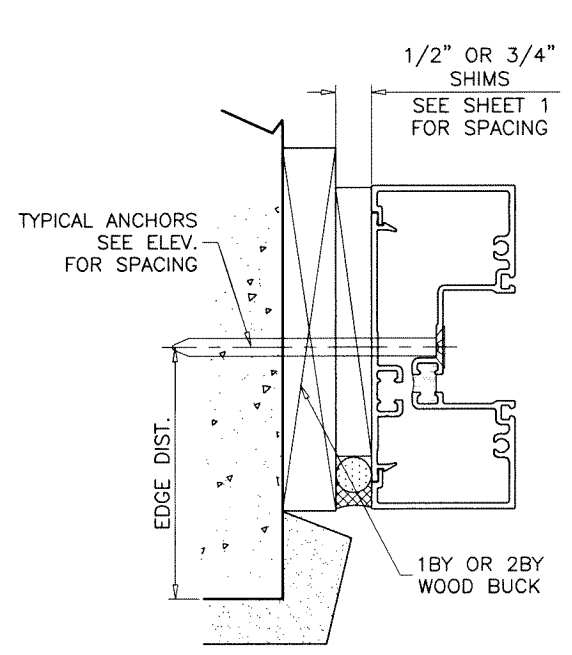
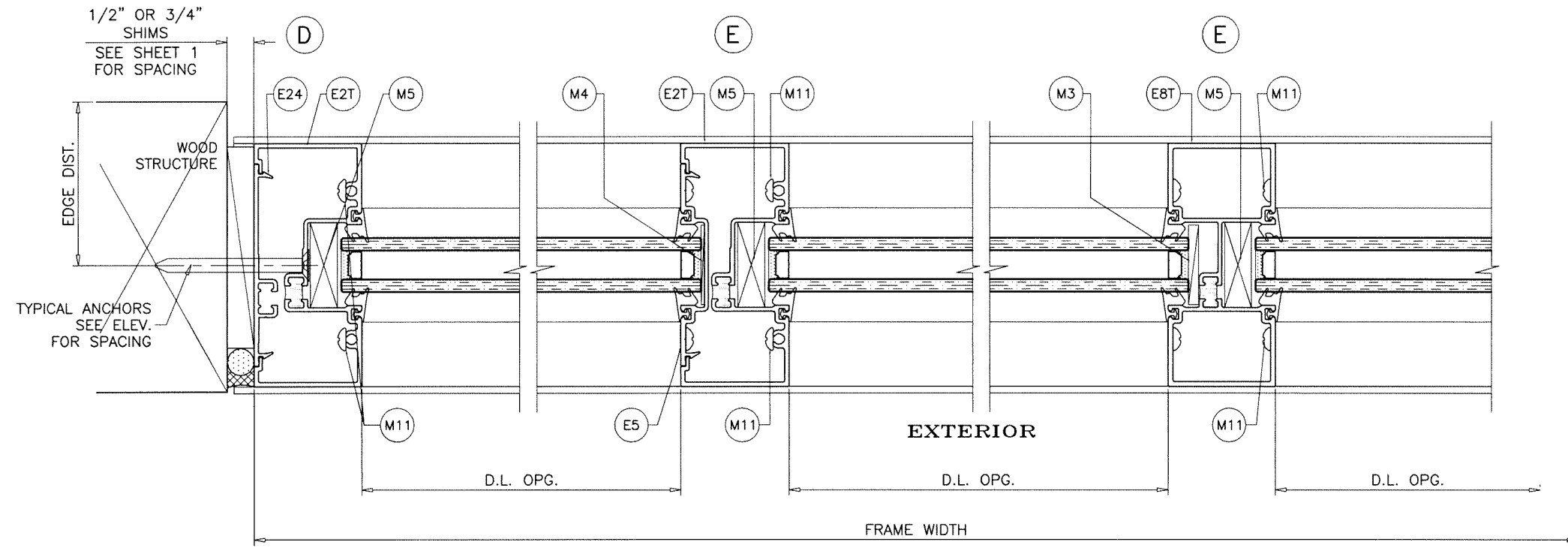
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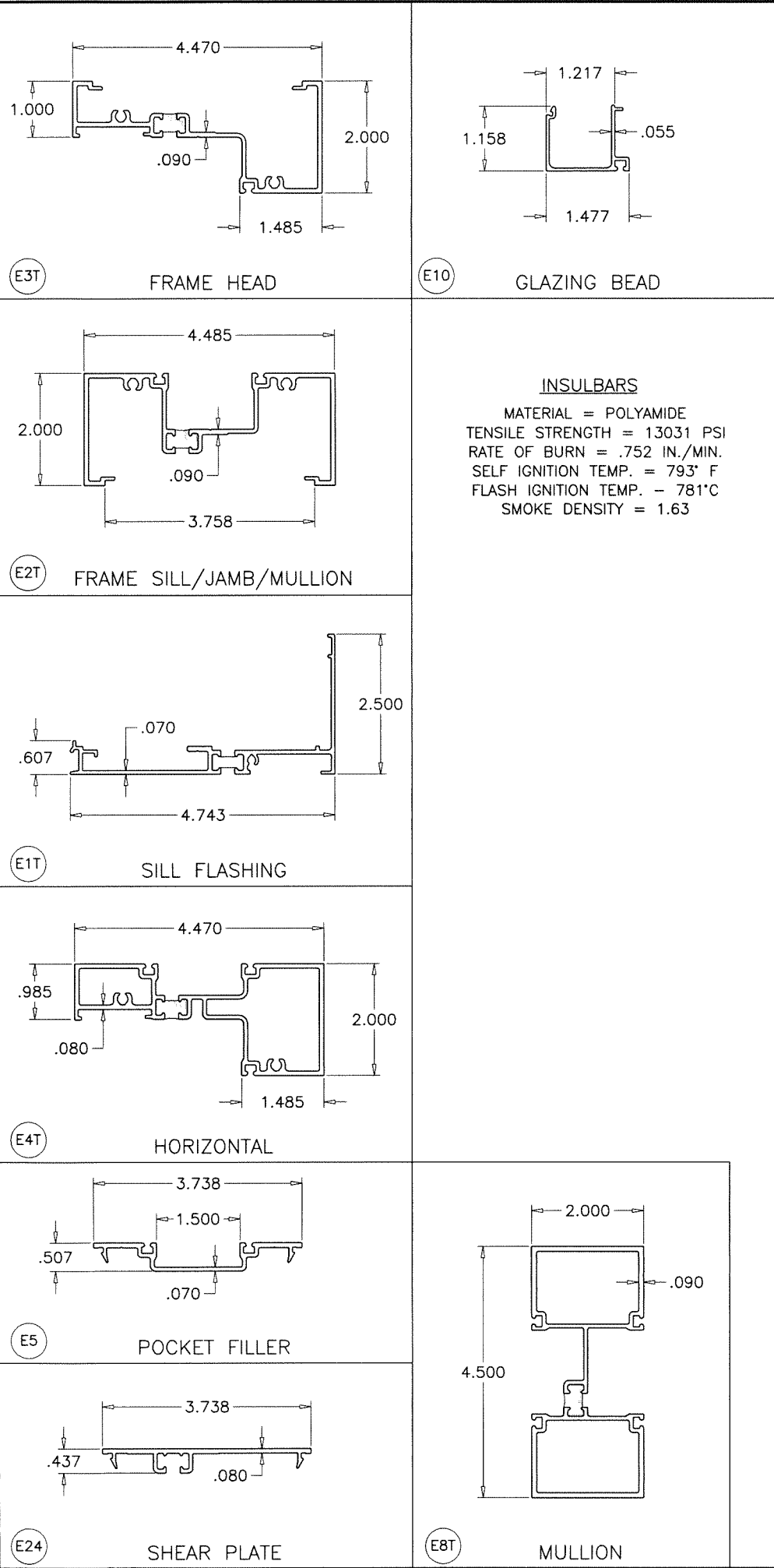
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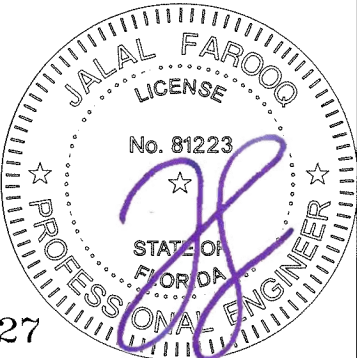
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25-65F
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ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1T	ES-4520-101T	AS REQD.	SILL FLASHING	6063-T5	-
E2T	ES-4520-002T	AS REQD.	SILL/JAMB/MULLION	6063-T6	-
E3T	ES-4520-003T	AS REQD.	FRAME HEAD	6063-T6	-
E4T	ES-4520-004T	AS REQD.	HORIZONTAL	6063-T6	-
E5	ES-4520-005	AS REQD.	POCKET FILLER	6063-T6	-
E8T	ES-4520-008T	AS REQD.	MULLION	6063-T6	-
E10	ES-4520-010	AS REQD.	GLAZING BEAD	6063-T6	-
E24	ES-4520-022	AS REQD.	SHEAR PLATE	6063-T6	-
M1	ES-4520-G01A	AS REQD.	GLAZING GASKET	SILICONE	DUROMETER 70±5 SHORE A
M2	ES-4520-B01A	2/ LITE	SETTING BLOCKS AT SILL	SILICONE	DUROMETER 80±5 SHORE A
M3	ES-4520-B02	2/ LITE	SETTING BLOCKS AT HORIZONTAL / SIDE BLOCK	EPDM	DUROMETER 85±5 SHORE A
M4	ES-4520-B03A	2/ LITE	SIDE BLOCKS	SILICONE	DUROMETER 65±5 SHORE A
M5	ES-4520-B04	2/ LITE	'W' BLOCKS	EPDM	DUROMETER 70±5 SHORE A
M10	#10 X 1/2"	AS REQD.	END DAM FASTENERS	ST/ST	FH SMS
M11	#12 X 1-1/4"	AS REQD.	ASSEMBLY FASTENERS	ST/ST	PH SMS
-	-	-	-	-	-

SEALANTS:
ALL FRAME CORNERS, JOINTS, MULLION SEAMS AND PERIMETER OF GLAZING BEAD TO FRAME SEALED WITH SILICONE SEALANT.

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sheet	6 of 6