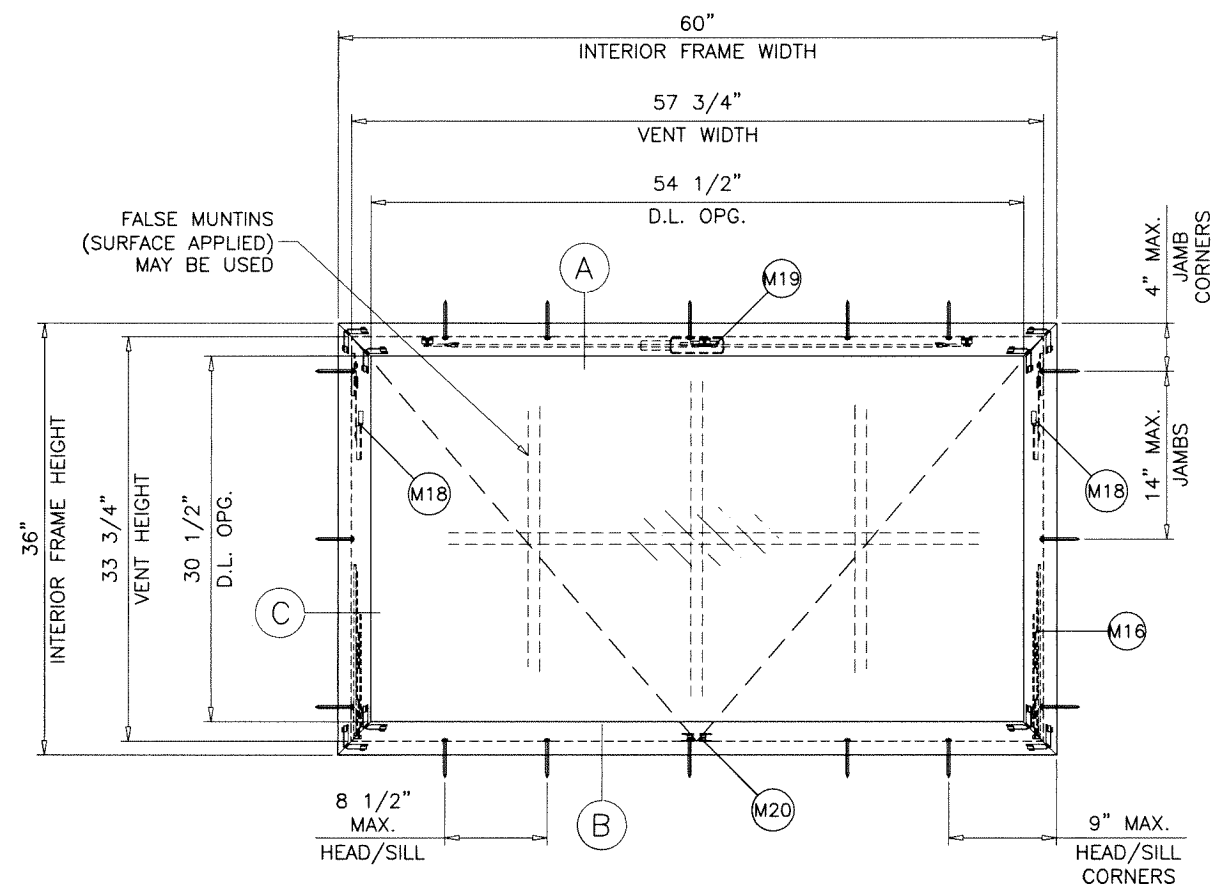
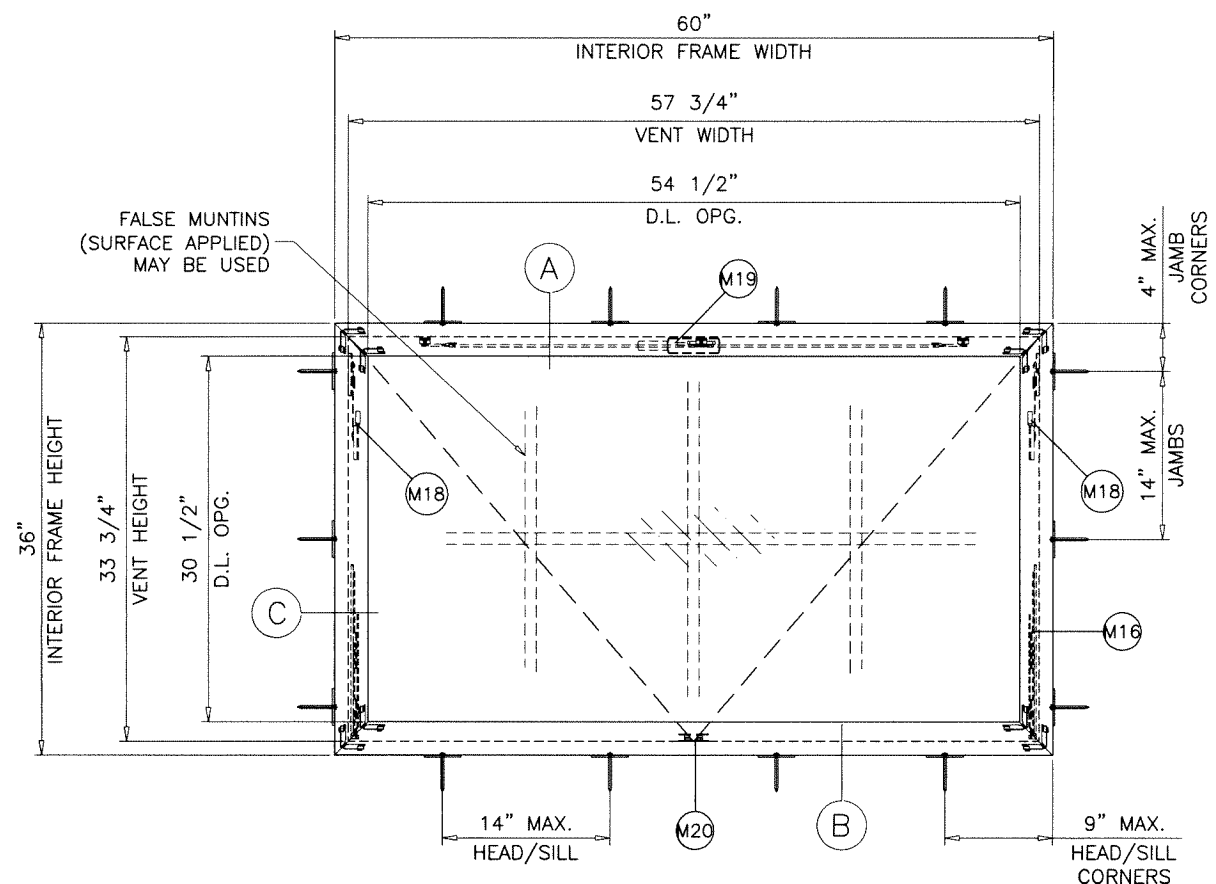




TYPICAL ELEVATION
ANCHORS THRU WDW. FRAMES



TYPICAL ELEVATION
ANCHORS THRU STRAP CLIPS

MAXIMUM DESIGN LOAD RATING = + 70.0 PSF
(FOR SIZE SHOWN ABOVE OR SMALLER) - 70.0 PSF

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

SERIES ES-P251 (N.I.)
ALUMINUM THERMALLY BROKEN
PROJECT-IN (HOPPER) WINDOW

APPROVAL APPLIES TO SINGLE UNITS OR SIDE BY SIDE
COMBINATIONS OF HOPPER/HOPPER OR HOPPER WITH OTHER
WINDOW TYPES IN MODULES OF TWO OR MORE WINDOWS USING
F.B.C. APPROVED MULLIONS IN BETWEEN.
LOWER DESIGN PRESSURE FROM WINDOWS OR MULLION APPROVAL
WILL APPLY TO ENTIRE SYSTEM.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE
REQUIREMENTS OF THE 2020 (7TH EDITION)/2023 (8TH 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.

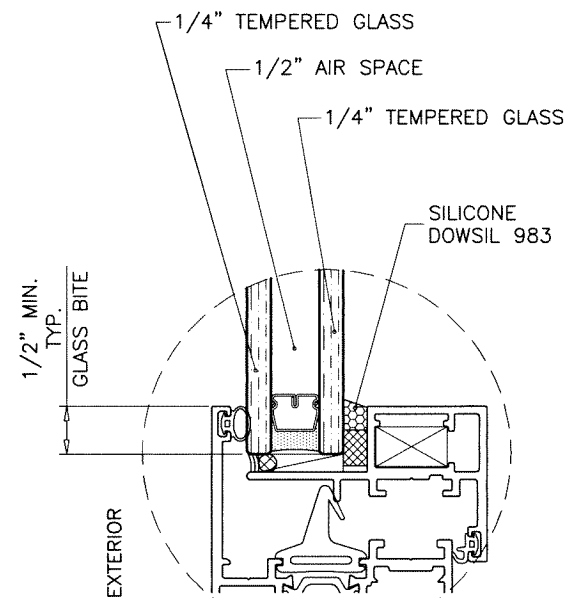
A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.
ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT
COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE
REQUIREMENTS OF THE 2020/2023 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.



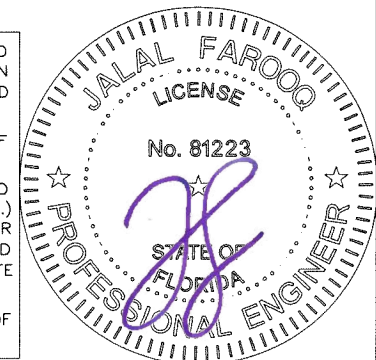
GLAZING DETAIL
1" OVERALL INSUL. GLASS

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-09 (3 SEC. GUSTS)
AND FLORIDA BUILDING COMMISSION
DECLARATORY STATEMENT DCA05-DEC-219

Sealed: 10/9/2023

FL #19654

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.



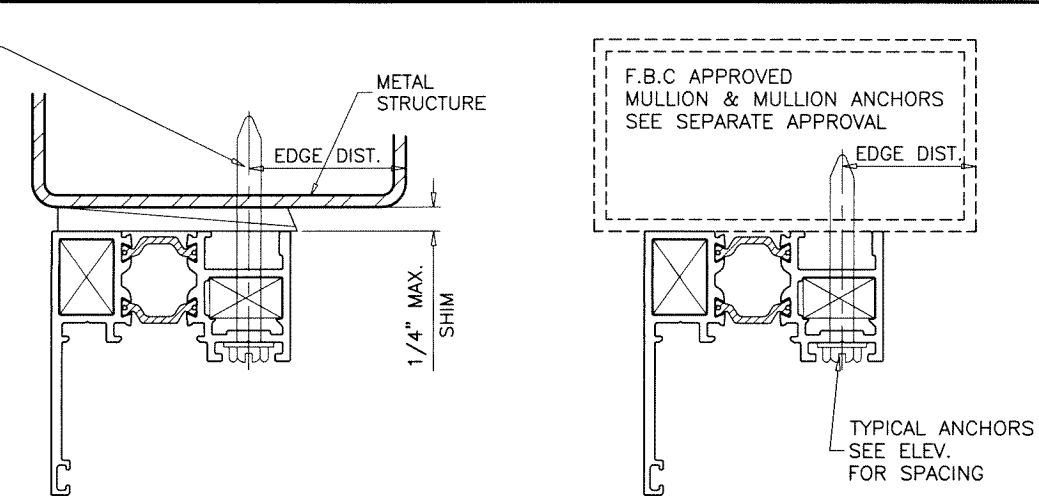
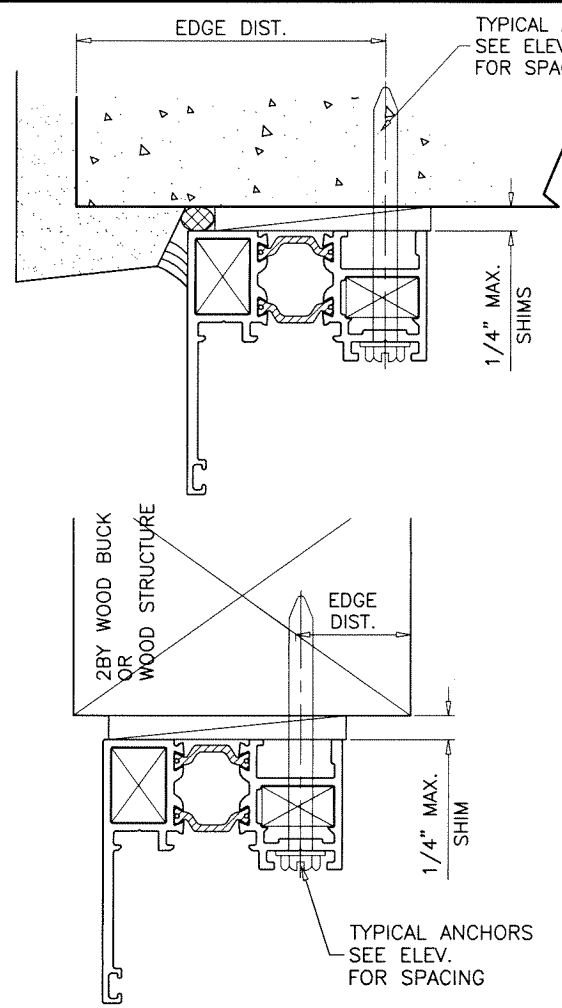
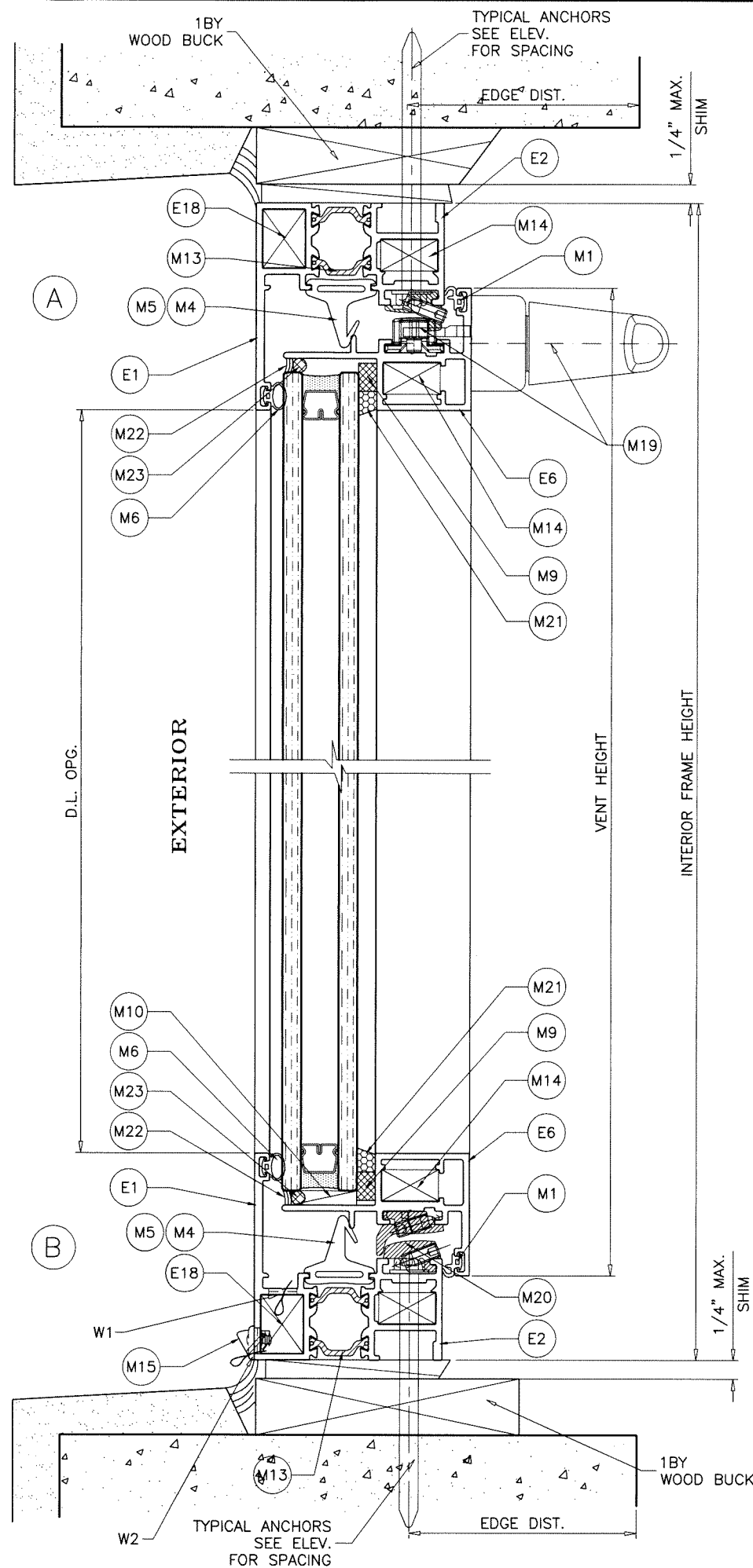
ES-P251 ALUM THERMALLY BROKEN PROJECT-IN W. (N.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978

COMP-ANL\W15-110ESW

date: 12-16-15		revisions:	
drawing no.		no	date by description
W15-110		A	10.13.17 UPDATED TO 2017 FBC
		B	12.17.20 UPDATED TO 2020 FBC
		C	09.27.23 UPDATED TO 2023 FBC
sheet 1 of 5			
dr. by: TARIQ			
chk. by:			



TYPICAL ANCHORS: SEE ELEV. FOR SPACING

#14 DIA. CRETE-FLEX SS4 BY 'DEWALT' ($F_u=190$ KSI, $F_y=127$ KSI)

1/4" DIA. ULTRACON+ BY 'DEWALT' ($F_u=164$ KSI, $F_y=148$ KSI)

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)

THRU 1BY BUCKS INTO CONC. OR MASONRY
1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
1-1/4" MIN. EMBED INTO MASONRY (JAMBS)

DIRECTLY INTO CONC. OR MASONRY
2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

1/4" DIA. BI-FLEX 300 SELF DRILLING SCREWS BY 'DEWALT'

1/4" DIA. DRIL-FLEX SELF DRILLING SCREWS BY 'DEWALT' (GRADE 5 CRS)

INTO F.B.C. APPROVED MULLIONS (MIN. THK. = 1/8")

INTO METAL STRUCTURES

STEEL : 1/8" THK. MIN. ($F_y = 36$ KSI MIN.)

ALUMINUM : 1/8" THK. MIN. (6063-T5 MIN.)

(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

ANCHOR EDGE DISTANCES

INTO CONCRETE AND MASONRY = 2-1/2" MIN.

INTO 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/FILLED BLOCK AT JAMBS $f'_m = 2000$ PSI MIN.

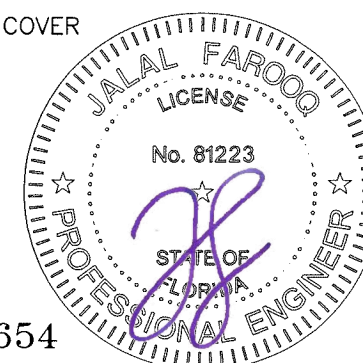
WEEPHOLES:

W1 = 1/4" X 1-1/4" WEEPHOLES AT 5-1/2" FROM EACH END

W2 = 1/4" X 1-1/4" WEEPHOLES WITH PLASTIC COVER
AT 5-1/2" FROM EACH END

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

Sealed: 10/9/2023



FL #19654

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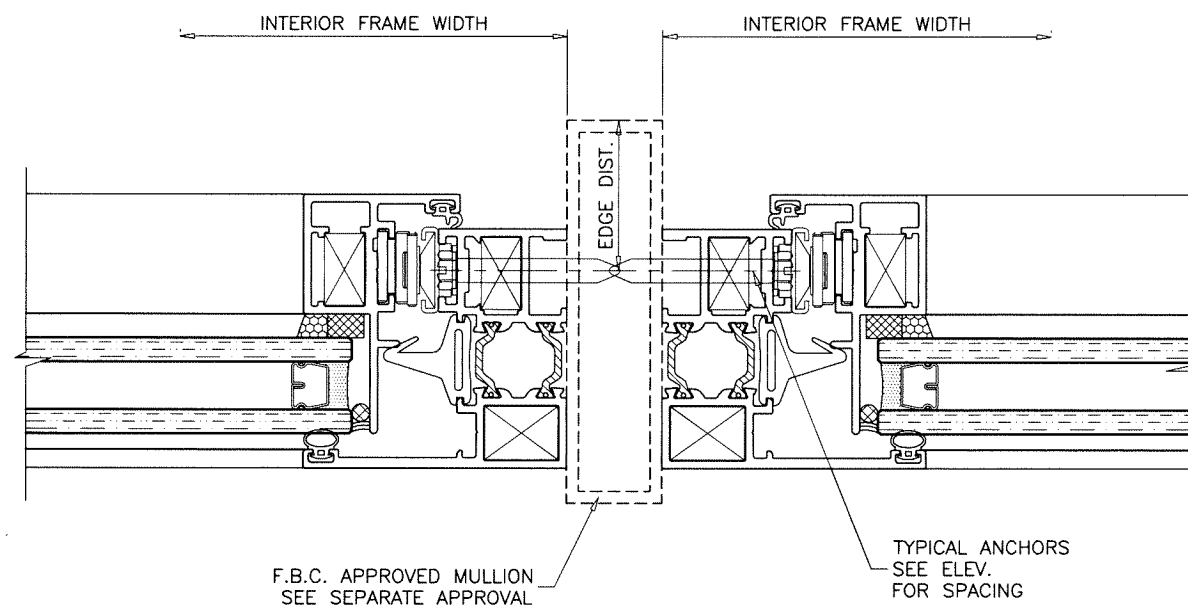
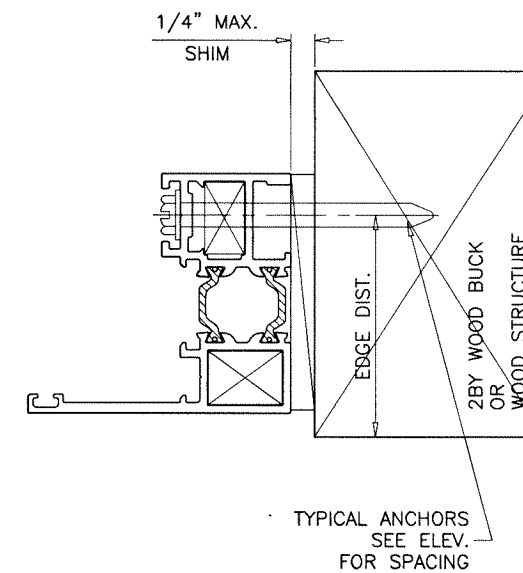
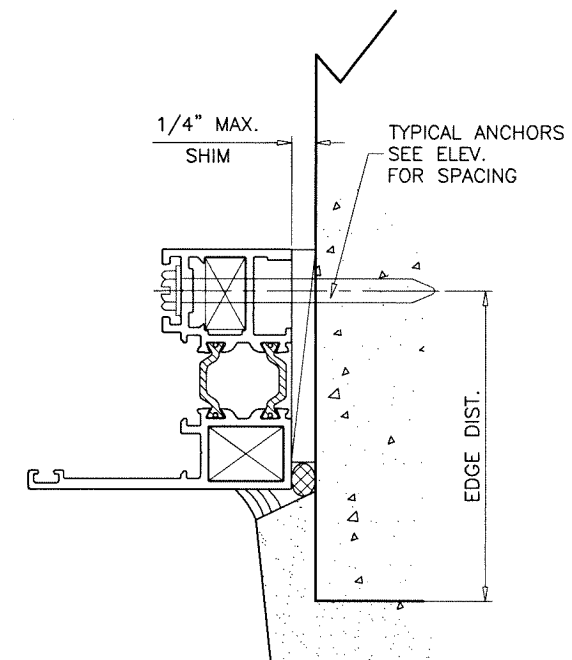
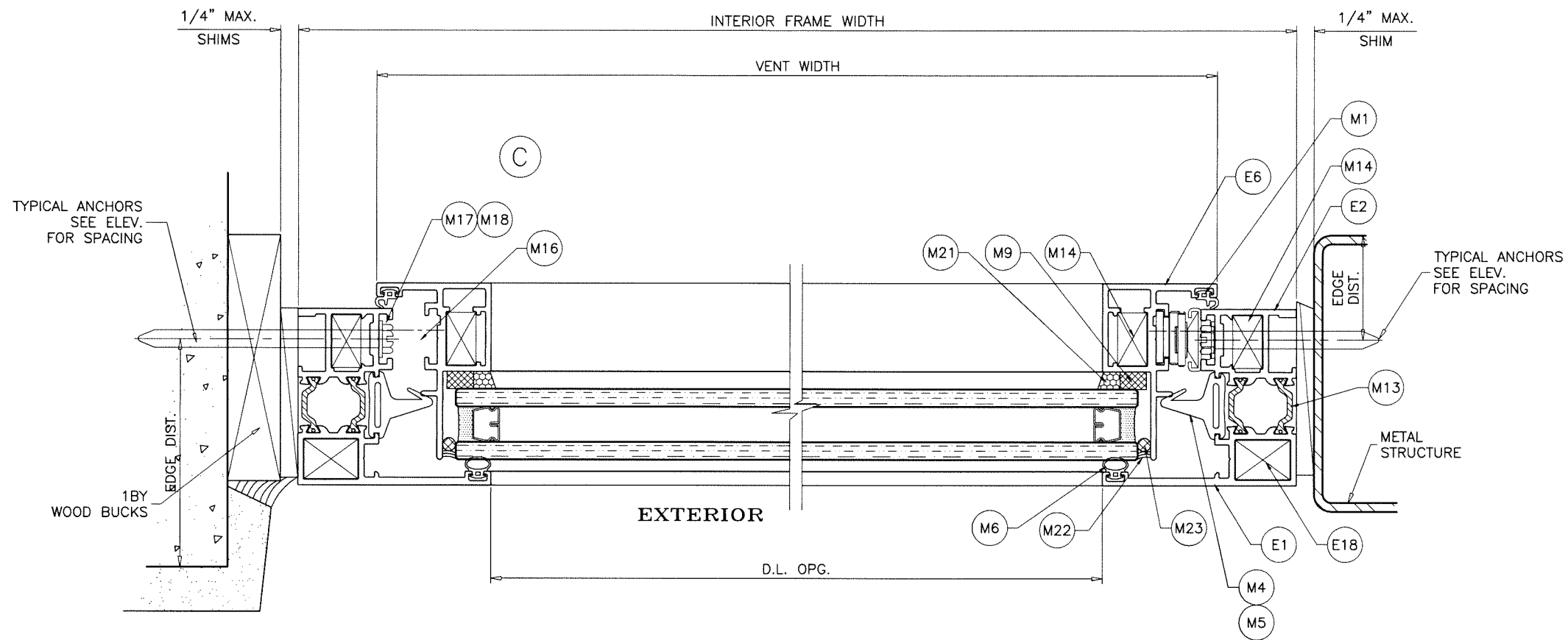
ES-P251 ALUM THERMALLY BROKEN PROJECT-IN W. (N.I.)

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revisions:	no	date	by	description

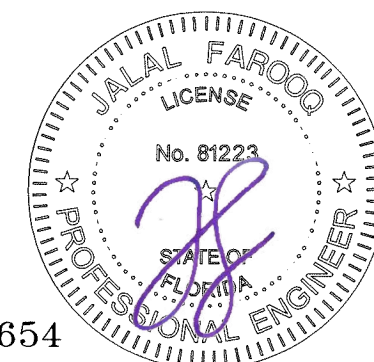
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dr. by:	TARIQ
chk. by:	

drawing no.
W15-110
sheet 2 of 5



Sealed: 10/9/2023

FL #19654



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COMP-ANL W15-110ESW

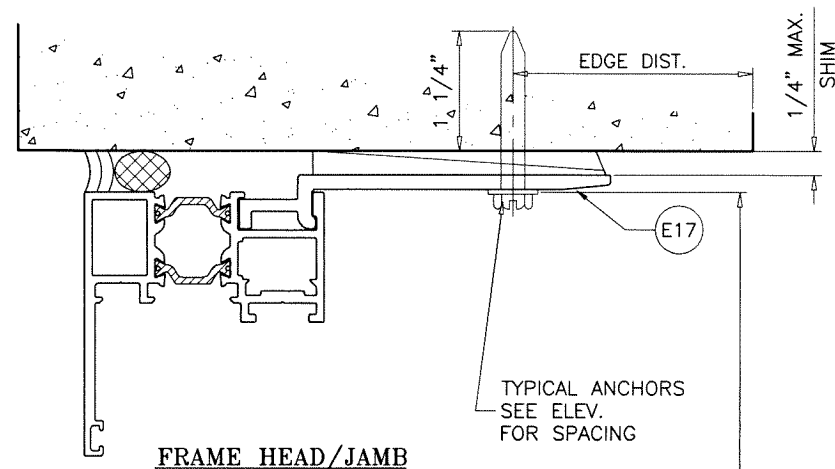
revisions:	no	date	by	description

date: 12-16-15	scale: 1/2" = 1"	dr. by: TARIQ	chk. by:
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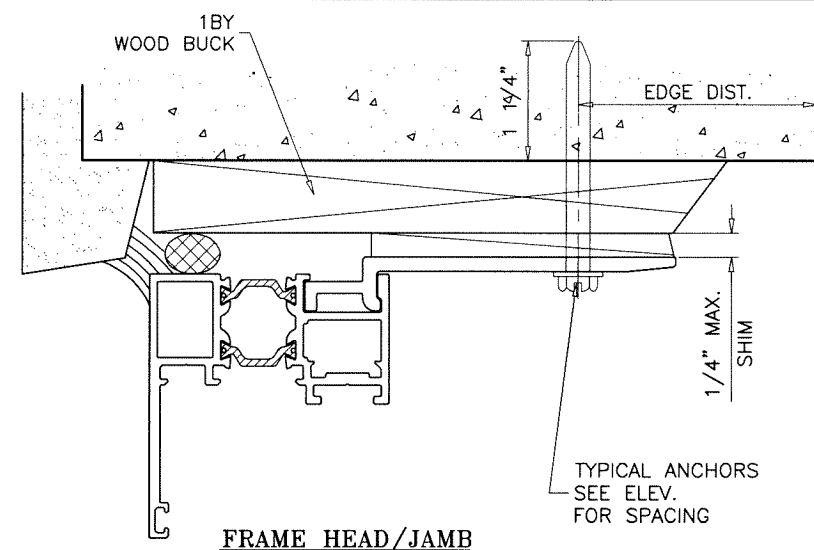
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W15-110

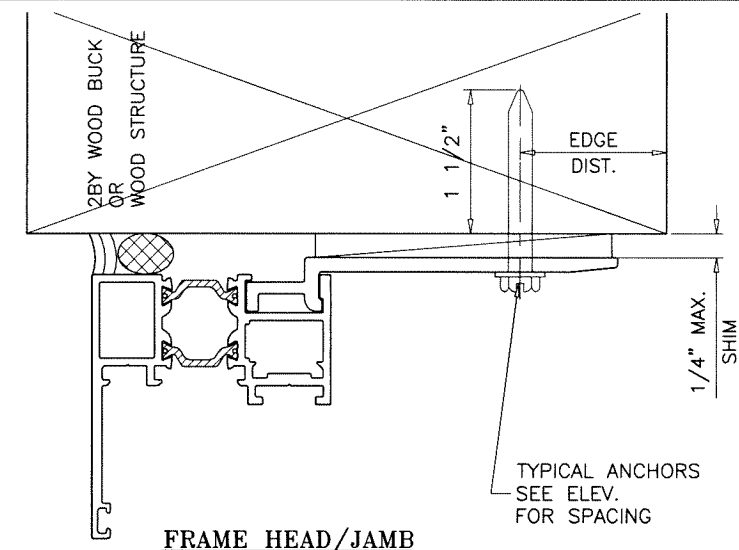
sheet 3 of 5



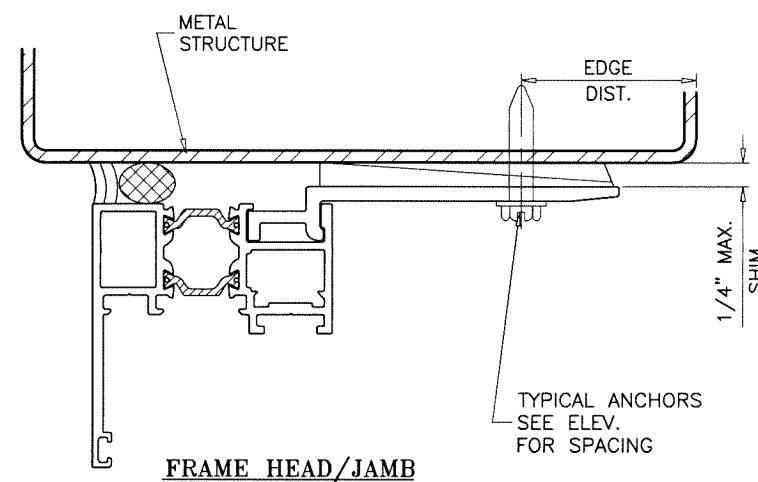
FRAME HEAD/JAMB



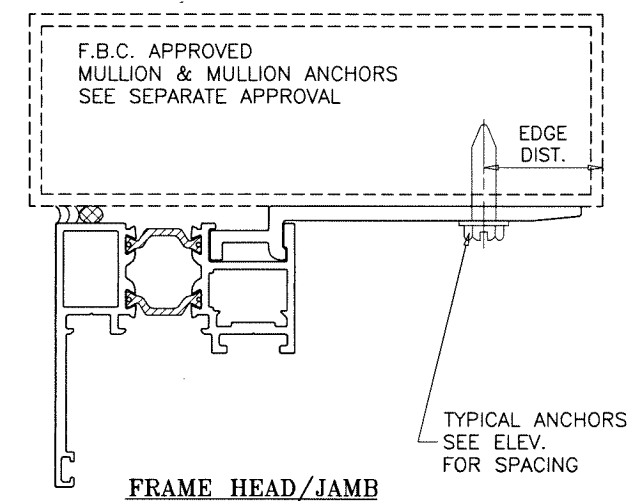
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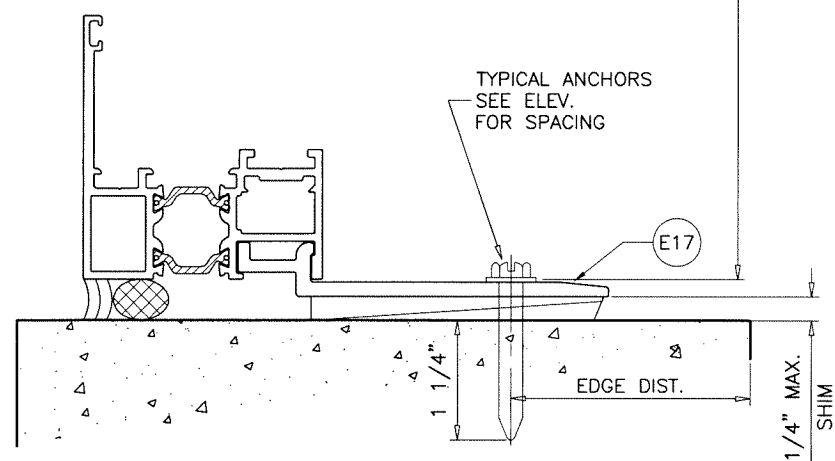
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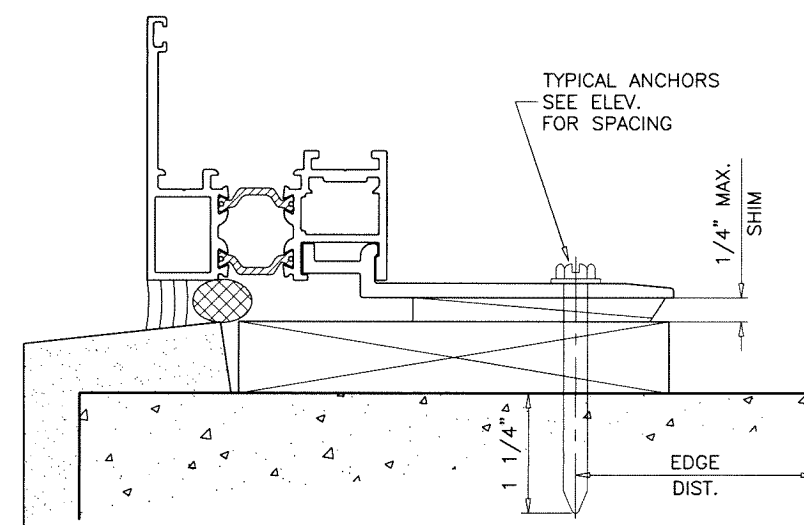
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FRAME HEAD/JAMB



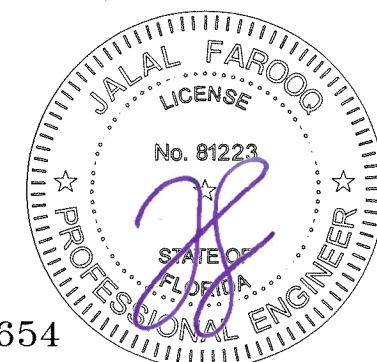
FRAME SILL



FRAME SILL

INSTALLATION DETAILS WITH STRAP ANCHOR

Sealed: 10/9/2023

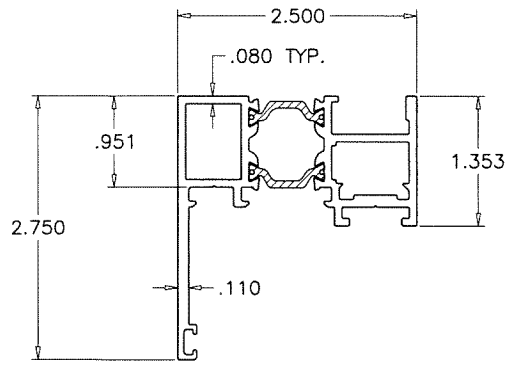
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ES-P251 ALUM THERMALLY BROKEN PROJECT-IN W. (N.I.)

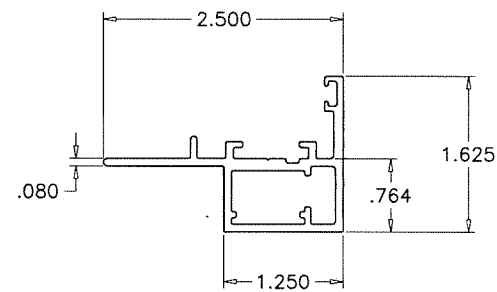
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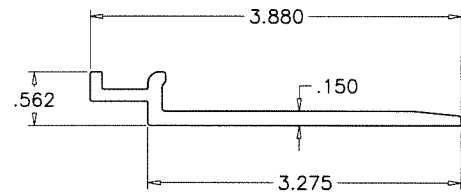
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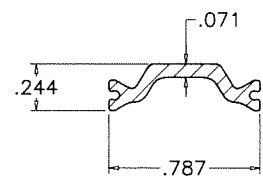
(E1) (E2) FRAME HEAD/SILL/JAMB



(E6) VENT



(E17) STRAP ANCHOR



(M13) 20MM OFFSET

TECATHERM® 66 GF INSULBAR
SCALE 1:1

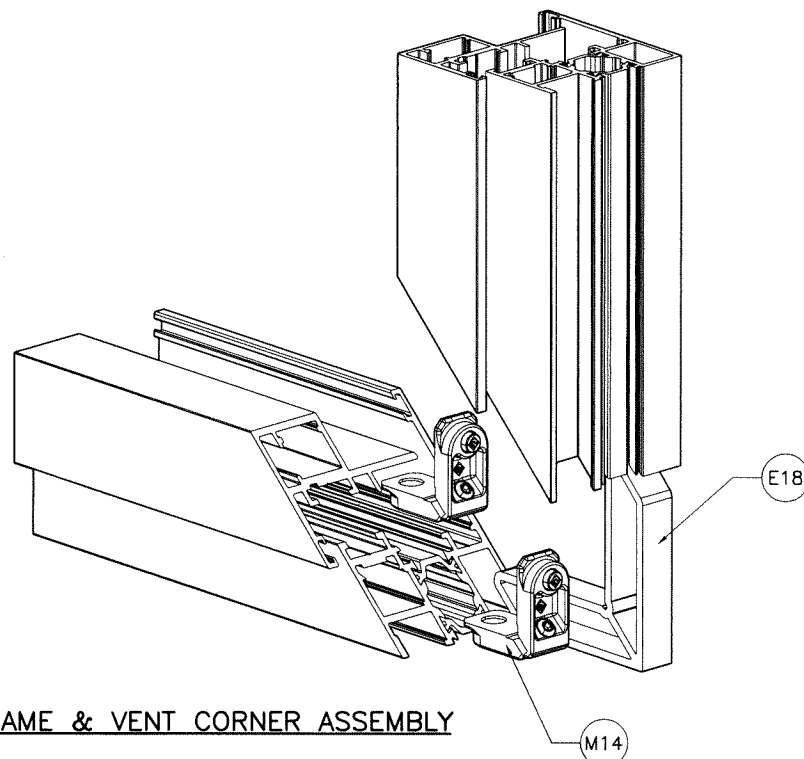
MATERIAL = POLYAMIDE
TENSILE STRENGTH = 13031 PSI
RATE OF BURN = .752 IN./MIN.
SELF IGNITION TEMP. = 793° F
FLASH IGNITION TEMP. = 781°C
SMOKE DENSITY = 1.63

ITEM #	PART #	REQD.	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	ES-P251-001	4	WINDOW FRAME (EXTERIOR)	6063-T6	-
E2	ES-P251-002	4	WINDOW FRAME (INTERIOR)	6063-T6	-
E6	ES-P251-006	4	VENT	6063-T6	-
E17	ES-P251-017	AS REQD.	STRAP ANCHOR, 4" LONG	6005-T5	-
E18	ES-P251-018	4/ WDW.	CORNER KEY	6063-T6	-
E19	ES-EURO-001	-	EURO GROOVE BAR	6063-T5	-
M01	ES-P251-G01	AS REQD.	INTERIOR VENT GASKET	EPDM	TREMCO TR-19602E, DUROMETER 70±5 SHORE A
M04	ES-P251-G04	AS REQD.	CHAMBER DIVIDER EXTRUSION	EPDM	TREMCO TR-20018E, DUROMETER 60±5 SHORE A
M05	ES-P251-G04A	AS REQD.	CHAMBER DIVIDER MOLDED CORNER	EPDM	TREMCO TX-19606E, DUROMETER 60±5 SHORE A
M06	ES-P251-G05	AS REQD.	EXTERIOR VENT GASKET	EPDM	TREMCO TX-20003E, DUROMETER 70±5 SHORE A
M09	-	AS REQD.	GLAZING TAPE (1/4" X 3/8")	POLYURETHANE	-
M10	ES-P251-B01	2/ LITE	SETTING BLOCK , AT 1/4 POINTS	EPDM	DUROMETER 80±5 SHORE A
M13	-	AS REQD.	20 mm INSULBAR OFFSET	POLYAMIDE	-
M14	0337	AS REQD.	CORNER JOINT	CAST ALUMINUM	MASTER
M15	WA2L	2	WEEP COVER	PLASTIC	-
M16	5800	2/ WDW.	4 BAR HINGE	STEEL	AMC
M17	1529-XX	-	SHIM	ALUMINUM	AMC
M18	876	2	LIMIT DEVIC, AT 3-1/2" FROM LOCK JAMB ENDS	-	AMC
M19	LM-2200	1	MULTI POINT LOCK SYSTEM	-	SIEGENIA
M20	857052	-	SNUBBER KIT	CAST ALUMINUM	SIEGENIA
M21	983	-	GLAZING SEALANT	SILICONE	DOW CORNING
M22	791	-	GLAZING SEALANT	SILICONE	DOW CORNING
M23	-	-	1/4" DIA. BACKER ROD	FOAM	CLOSED CELL

SEALANT:

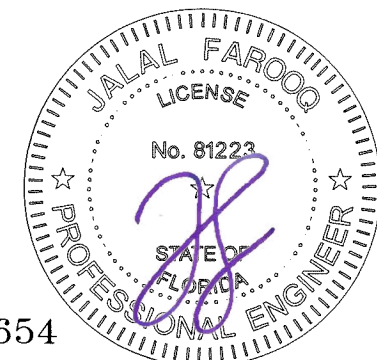
ALL JOINTS AND FRAME CONNECTIONS SEALED WITH WHITE/ALUMINUM COLORED SILICONE.

NOTE: HARDWARE AS SHOWN OR EQUIVALENT.



FRAME & VENT CORNER ASSEMBLY

Sealed: 10/9/2023



FL #19654

af c
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