

ES-EL100 (N.I.)  
ALUMINUM SINGLE HUNG WINDOW

DESIGN LOAD RATINGS FOR THESE WINDOWS TO BE AS PER CHARTS SHOWN ON SHEETS 2 & 3.

APPROVAL APPLIES TO SINGLE UNITS OR SIDE BY SIDE COMBINATIONS OF S.H./S.H. OR SINGLE HUNG 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 INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).

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.

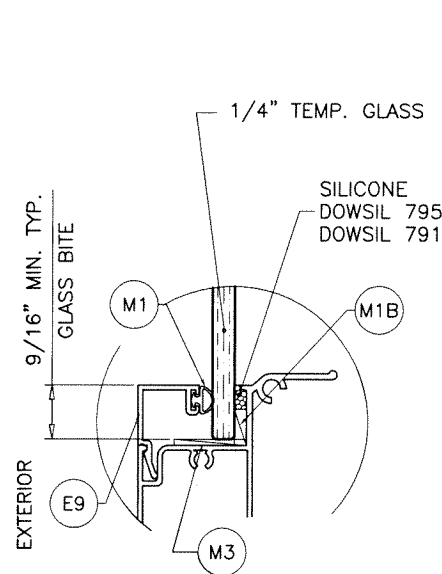
ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

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.

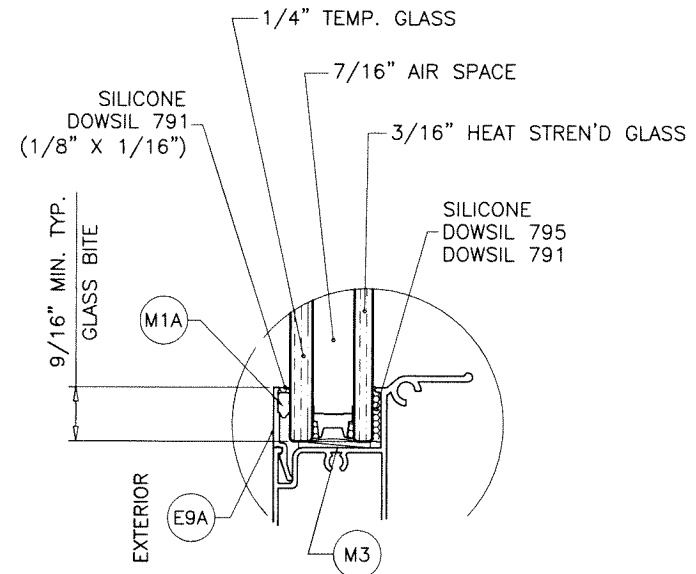
THIS PRODUCT APPROVAL IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT, I.E. LIFE SAFETY OF THIS PRODUCT, ADEQUACY OF STRUCTURE RECEIVING THIS PRODUCT AND SEALING AROUND OPENING FOR WATER INFILTRATION RESISTANCE ETC. CONDITIONS NOT SHOWN IN THIS DRAWING ARE TO BE ANALYZED SEPARATELY,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



GLASS TYPE 'A'



GLASS TYPE 'Ai'

GLAZING OPTIONS

7/16" AIR SPACE CONSISTING OF:

SPACER:

'HELIMA' LOW PROFILE ALUMINUM SPACER BY 'LINGERMANN GMBH' AROUND THE PERIMETER OF THE GLASS.

PERIMETER SEALANT:

SILICONE  
DOWSIL 791  
GE 2000

THESE WINDOWS ARE NOT RATED FOR IMPACT.

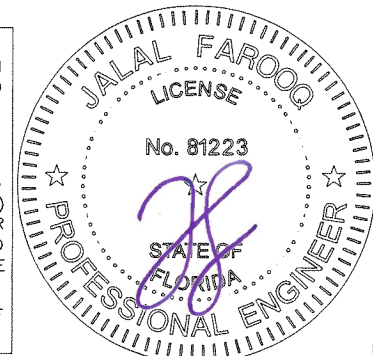
INSTALLATION OF THIS PRODUCT IN THE HVHZ AREA REQUIRES THE USE OF APPROVED SHUTTERS OR EXTERNAL PROTECTION DEVICES COMPLYING WITH HVHZ REQUIREMENTS.

INSTALLATION OF THIS SYSTEM OUTSIDE THE HVHZ AREA MUST MEET THE APPLICABLE REQUIREMENTS FOR WIND BORNE DEBRIS PROTECTION.

Sealed: 8/16/2023

FL #22250

- 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.

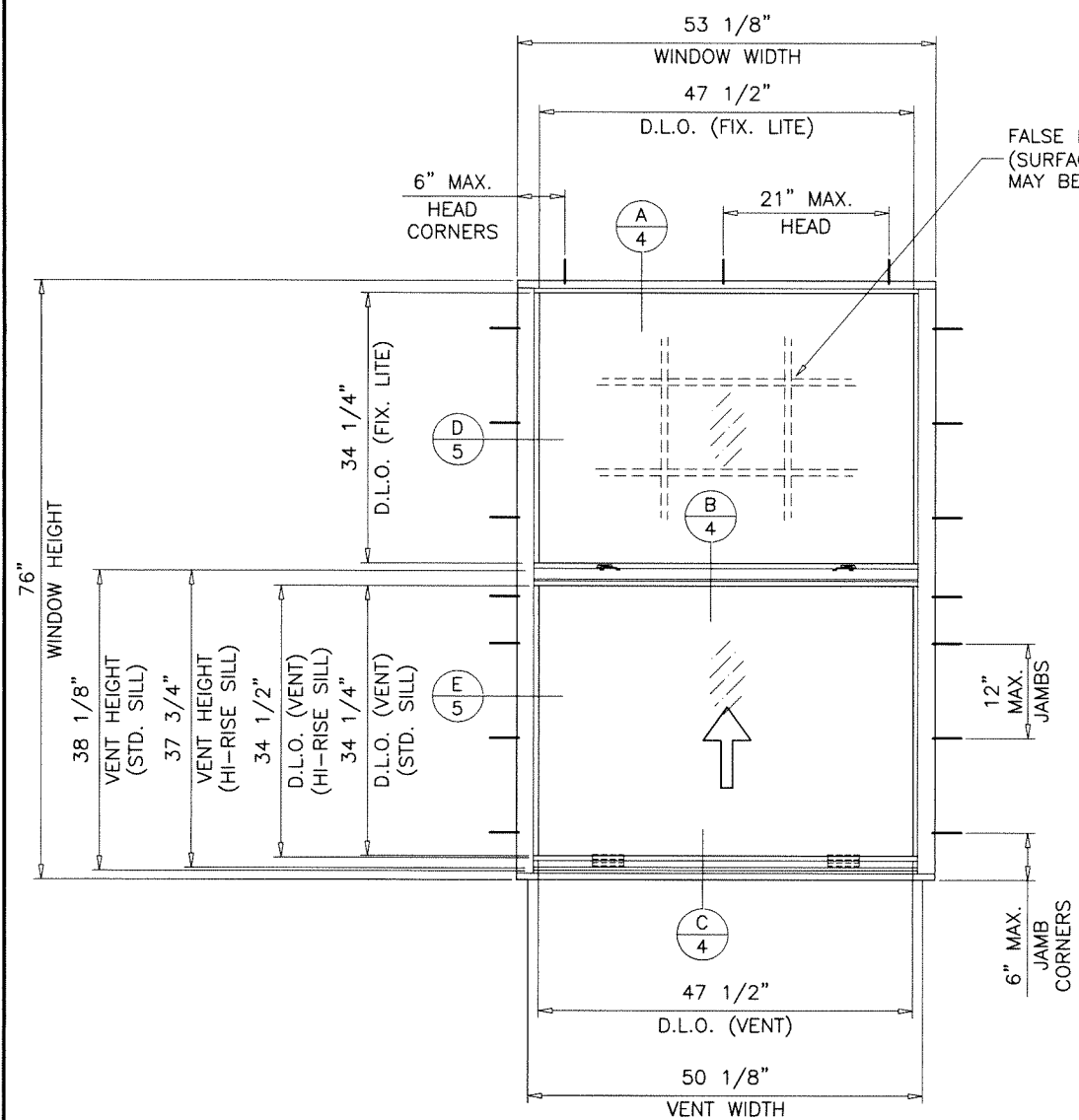


**af c**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
9360 SUNSET DRIVE, SUITE 220  
MIAMI, FLORIDA 33173  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL\20-62FES

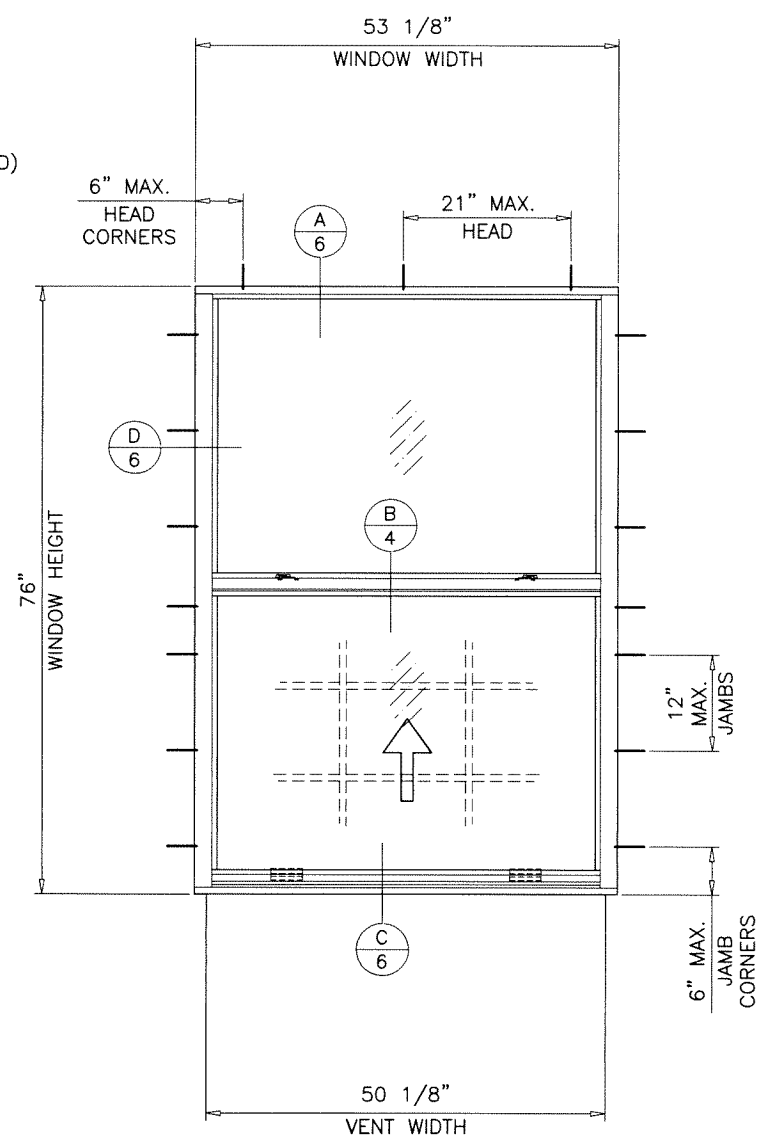
ES-EL100 ALUM SINGLE HUNG WDW. (N.I.)

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

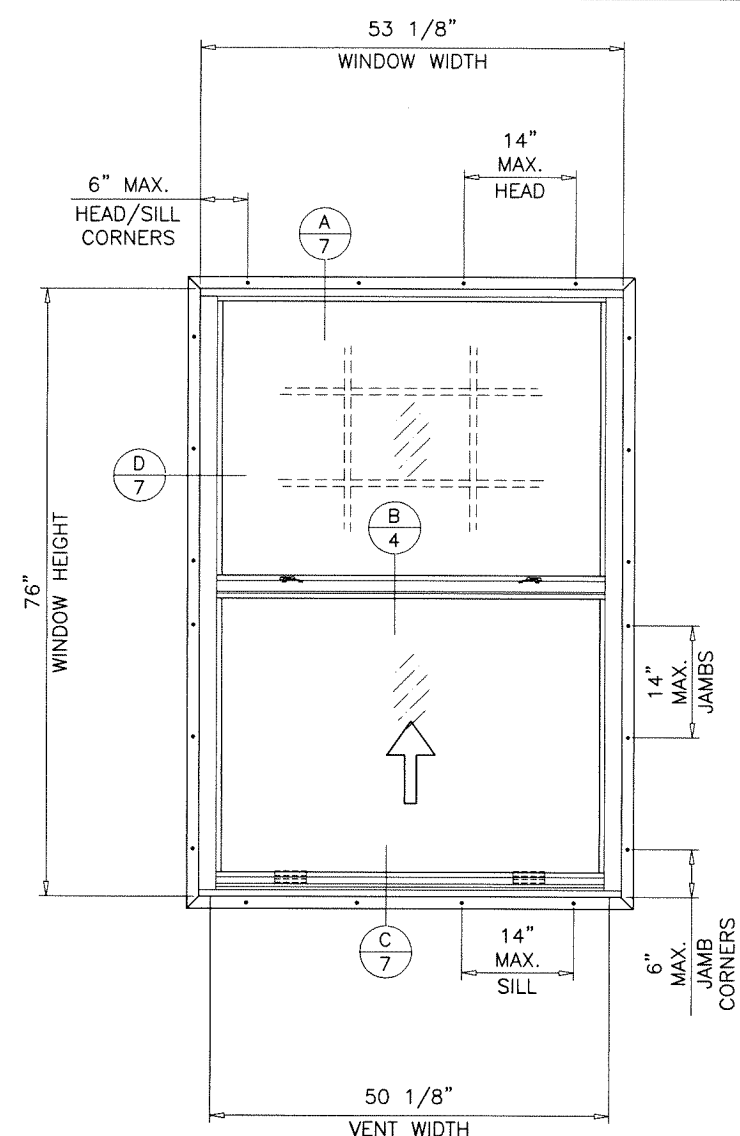
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| drawing no. |  | 20-62F   |          |          |                     |
| sheet       |  | 1 of 10  |          |          |                     |



**TYPICAL ELEVATION**  
EQUAL LITES  
FLANGE FRAMES



**TYPICAL ELEVATION**  
EQUAL LITES  
FLANGE FRAMES WITH FLUSH ADAPTER



**TYPICAL ELEVATION**  
EQUAL LITES  
FLANGE FRAMES WITH FIN ADAPTER

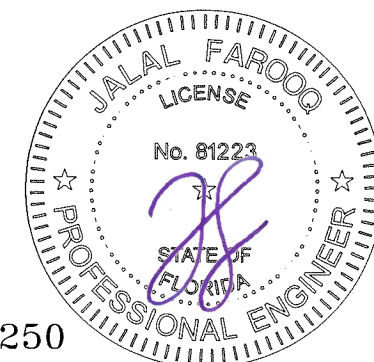
**EQUAL LITE WINDOWS**  
MAXIMUM DESIGN LOAD RATING = + 60.0 PSF  
(FOR SIZES SHOWN ABOVE OR SMALLER) - 80.0 PSF  
STD. FRAME SILL

**EQUAL LITE WINDOWS**  
MAXIMUM DESIGN LOAD RATING = + 80.0 PSF  
(FOR SIZES SHOWN ABOVE OR SMALLER) - 80.0 PSF  
HI-RISE FRAME SILL

FOR ALTERNATE SIZE UNITS MAX. FRAME AREA OF WINDOW  
NOT TO EXCEED TESTED FRAME AREA OF 28.04 SQ. FT. OR 53-1/8" WIDTH.

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: 8/16/2023



FL #22250

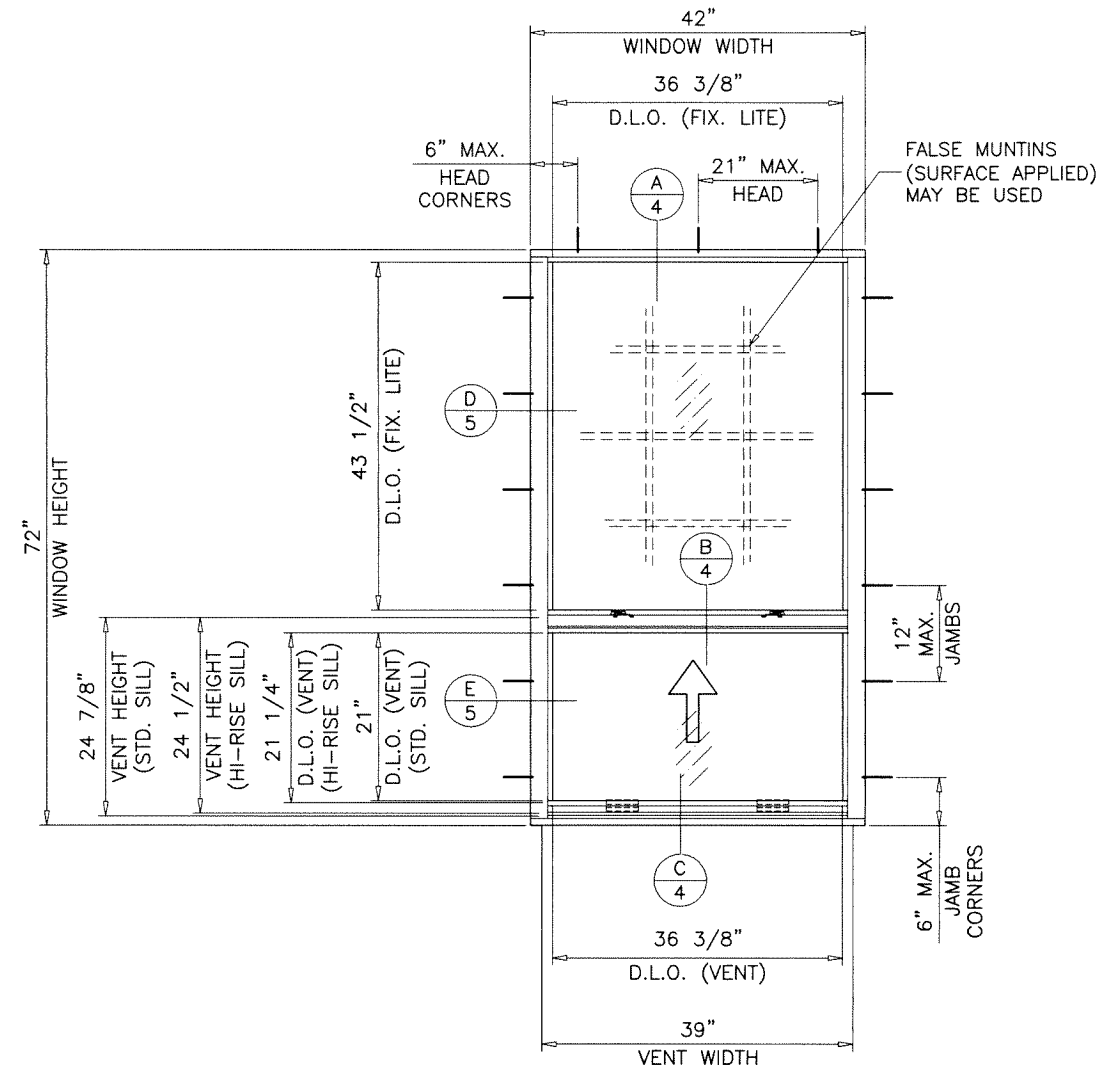
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**AL-FAROOQ CORPORATION**  
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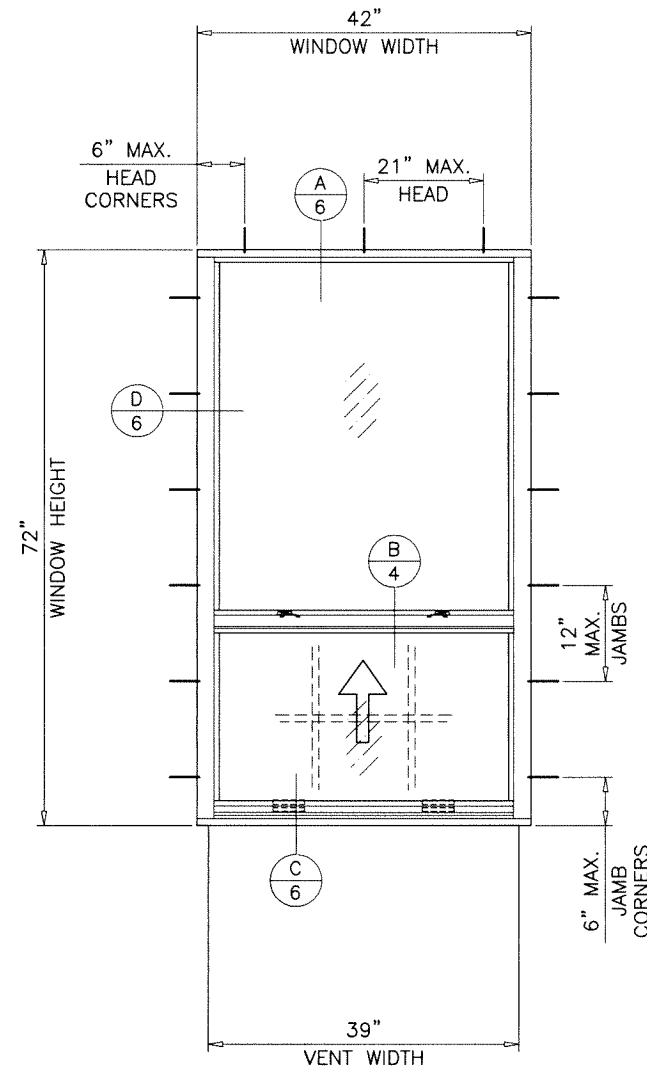
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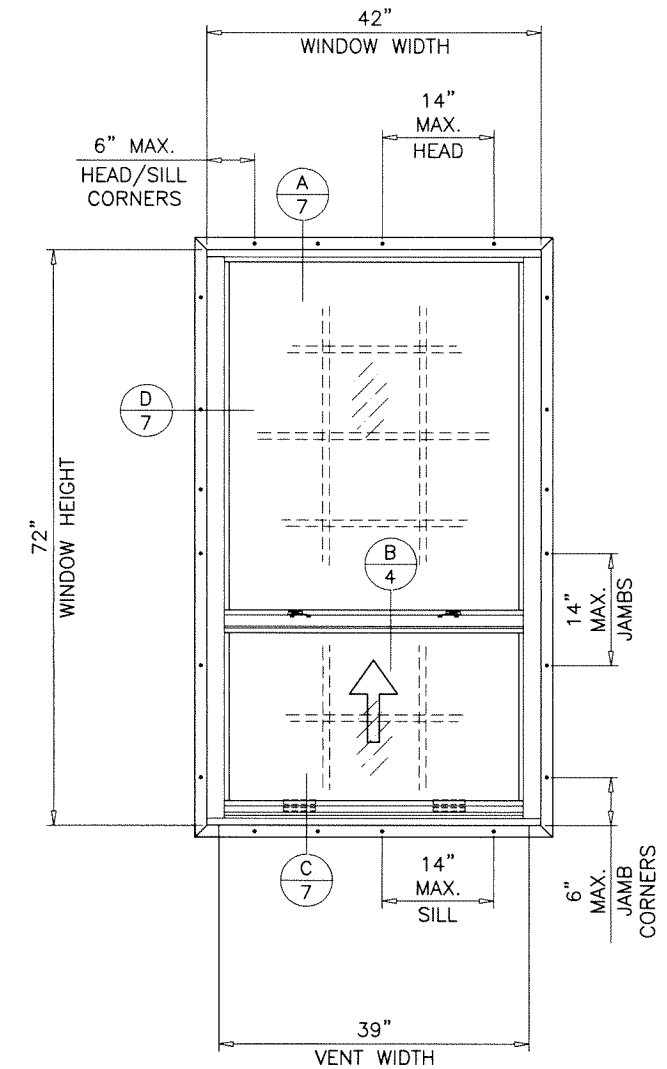
drawing no.  
**20-62F**  
sheet 2 of 10



**TYPICAL ELEVATION**  
UNEQUAL LITES (ORIEL TYPE)  
FLANGE FRAMES



**TYPICAL ELEVATION**  
UNEQUAL LITES (ORIEL TYPE)  
FLANGE FRAMES WITH FLUSH ADAPTER



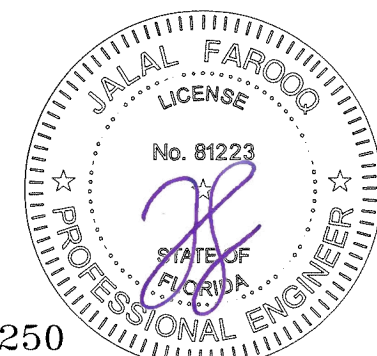
**TYPICAL ELEVATION**  
UNEQUAL LITES (ORIEL TYPE)  
FLANGE FRAMES WITH FIN ADAPTER

| UNEQUAL LITE (ORIEL TYPE) WINDOWS<br>DESIGN LOAD CAPACITY - PSF |        |                        |         |                       |         |
|-----------------------------------------------------------------|--------|------------------------|---------|-----------------------|---------|
| FRAME DIMS.                                                     |        | STANDARD<br>FRAME SILL |         | HI-RISE<br>FRAME SILL |         |
| WIDTH                                                           | HEIGHT | EXT.(+)                | 1NT.(-) | EXT.(+)               | 1NT.(-) |
| 24"                                                             | 60"    | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 30"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 36"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 42"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 48"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 53-1/8"                                                         |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 24"                                                             | 64"    | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 30"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 36"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 42"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 48"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 24"                                                             | 72"    | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 30"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 36"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 42"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 48"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 24"                                                             | 76"    | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 30"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |
| 36"                                                             |        | 60.0                   | 80.0    | 80.0                  | 80.0    |

NOTE:  
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DECLARATORY STATEMENT DCA05-DEC-219

Sealed: 8/16/2023

FL #22250



**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 20-62FES

ES-EL100 ALUM SINGLE HUNG WDW. (N.I.)

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
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revisions:  
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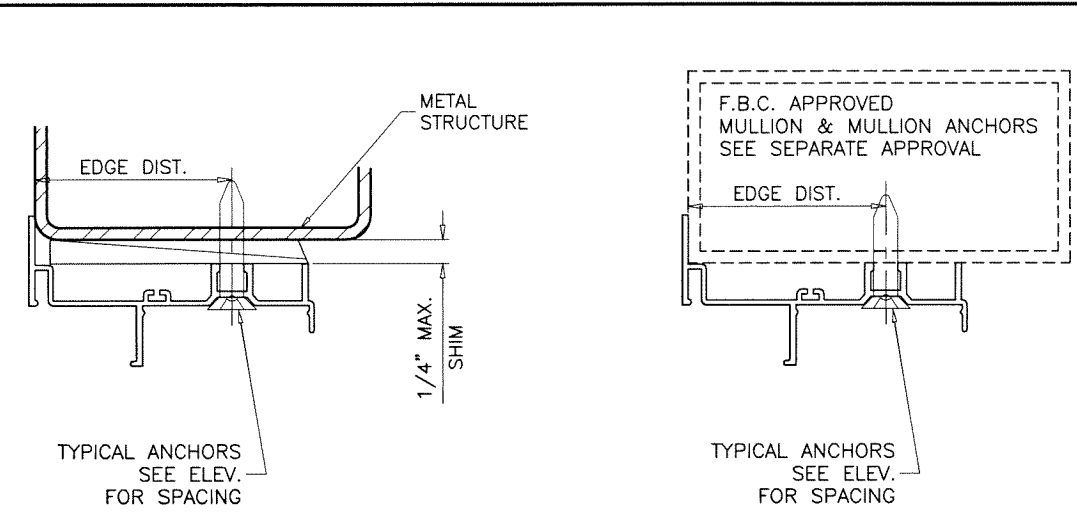
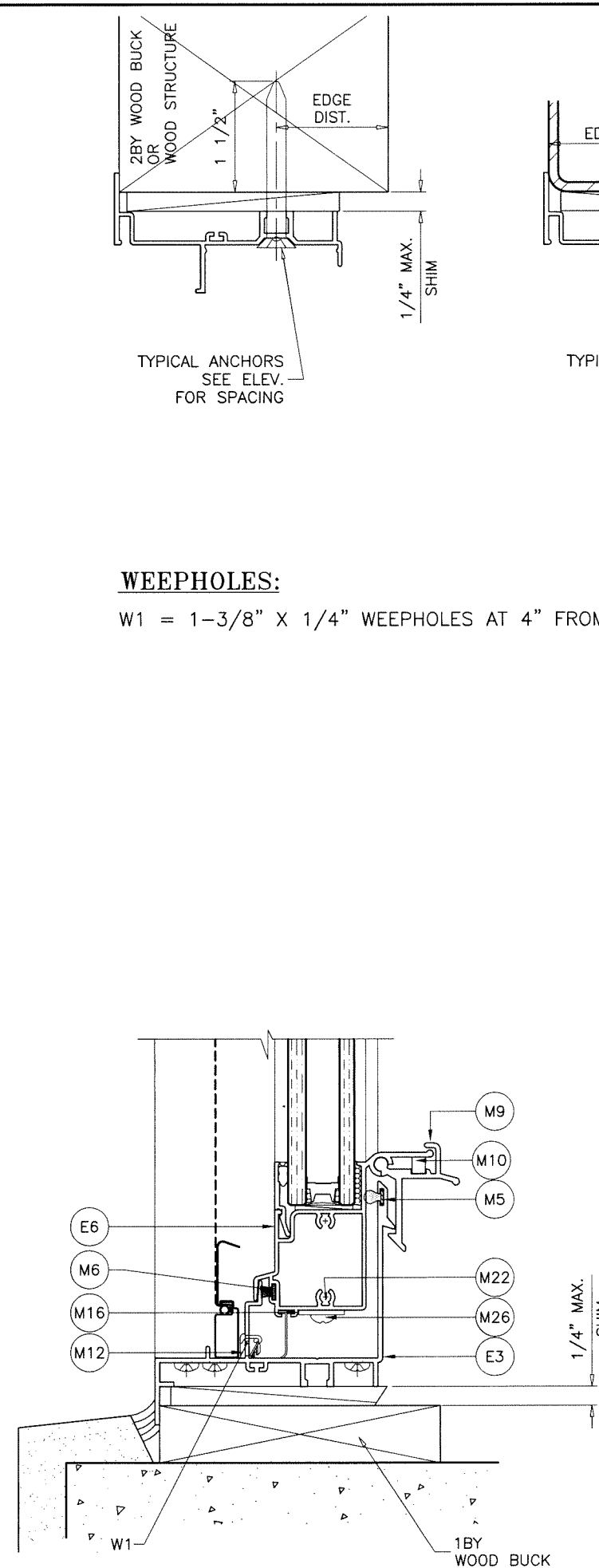
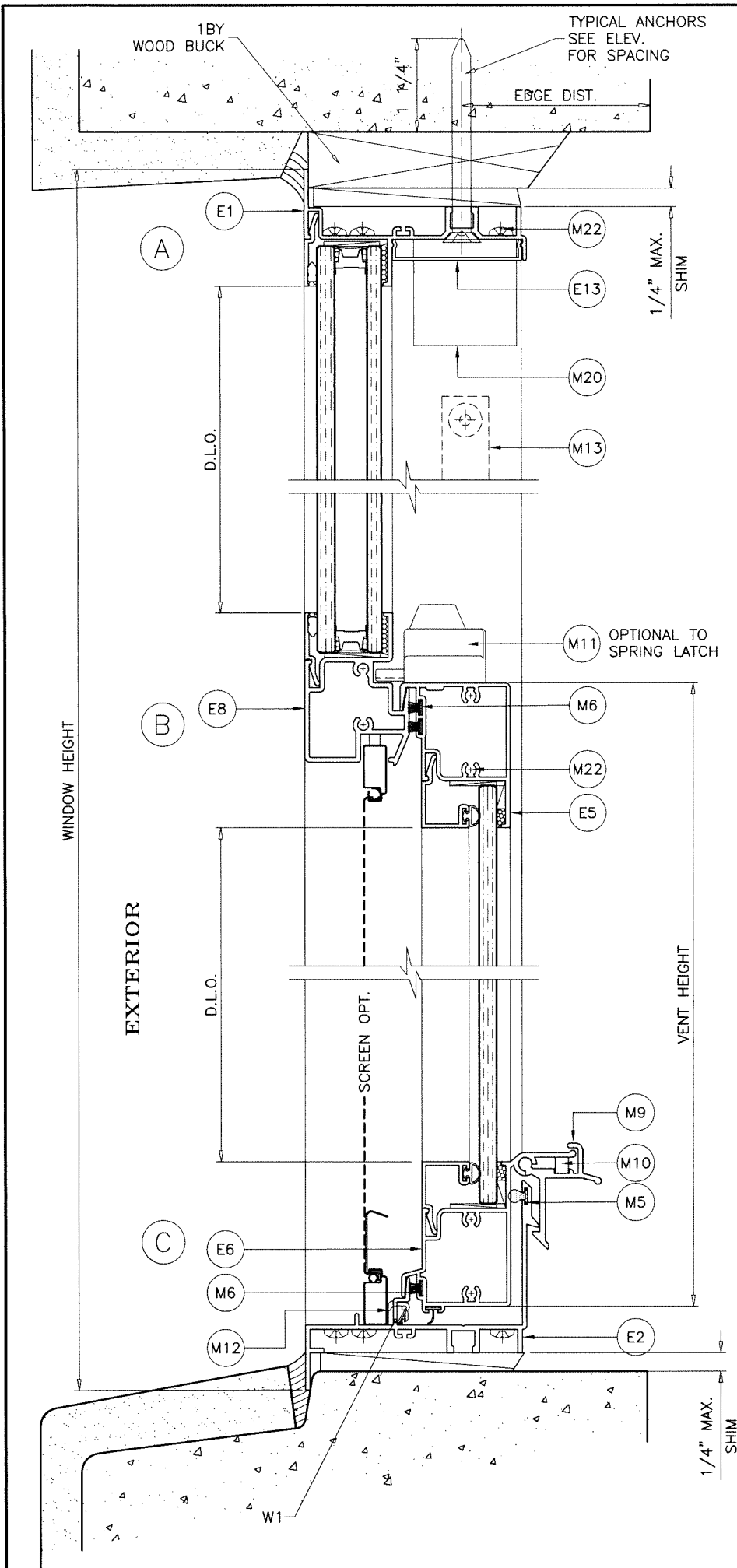
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**20-62F**

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

**WEEPHOLES:**

W1 = 1-3/8" X 1/4" WEEPHOLES AT 4" FROM EACH END

**TYPICAL ANCHORS:** SEE ELEV. FOR SPACING

**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/JAMBS)

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

DIRECTLY INTO CONCRETE OR BLOCKS  
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/JAMBS)  
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)

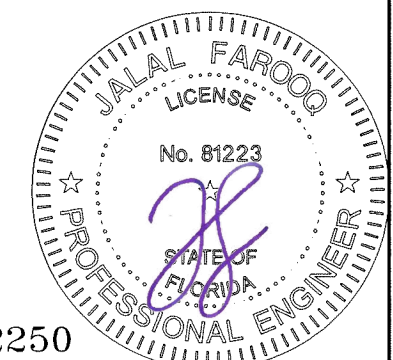
**1/4" DIA. TEKS OR SELF DRILLING SCREWS** (GRADE 5 CRS)  
 INTO F.B.C. APPROVED MULLIONS  
 OR  
 INTO METAL STRUCTURES (HEAD/JAMBS)  
 (3) THREADS MIN. PENETRATION BEYOND SUBSTRATE  
 ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)  
 STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)  
 (STEEL IN CONTACT WITH ALUMINUM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

**TYPICAL EDGE DISTANCE**

INTO CONCRETE AND 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.

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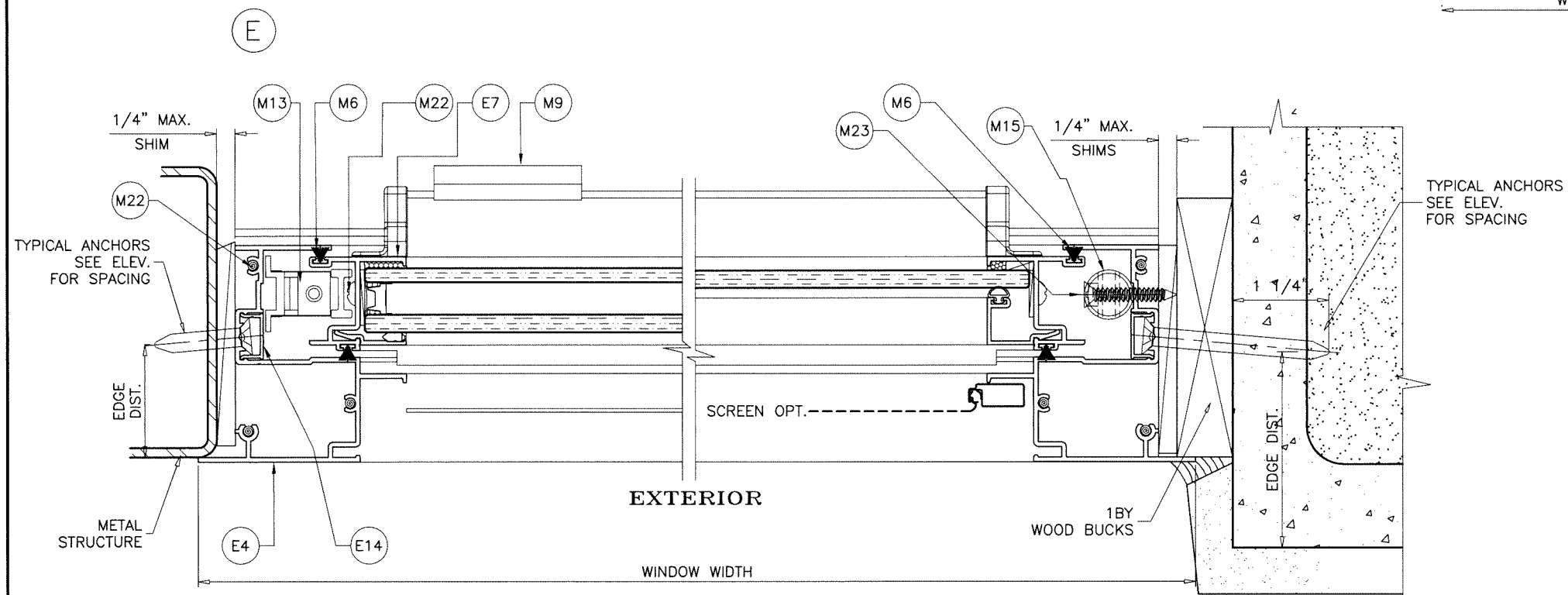
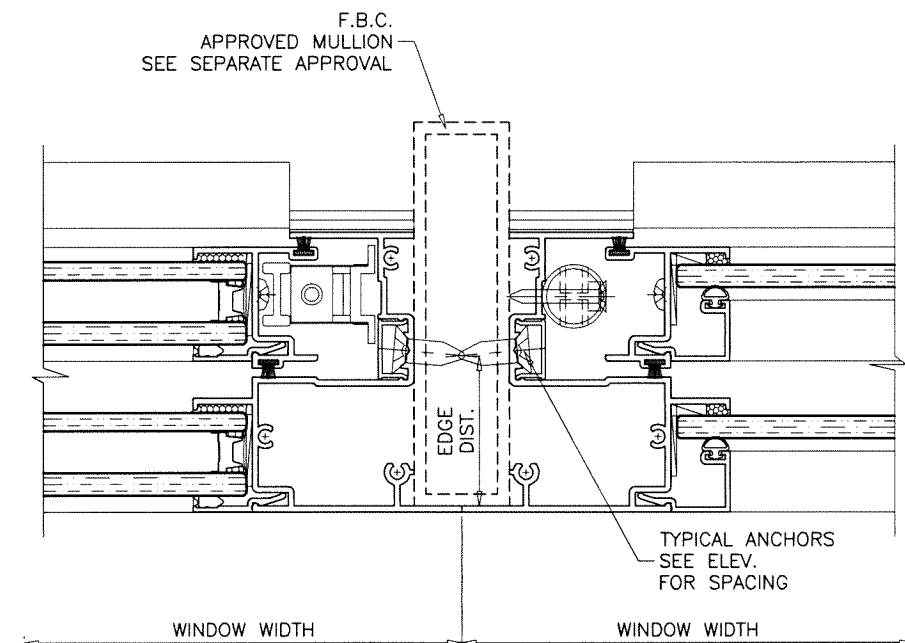
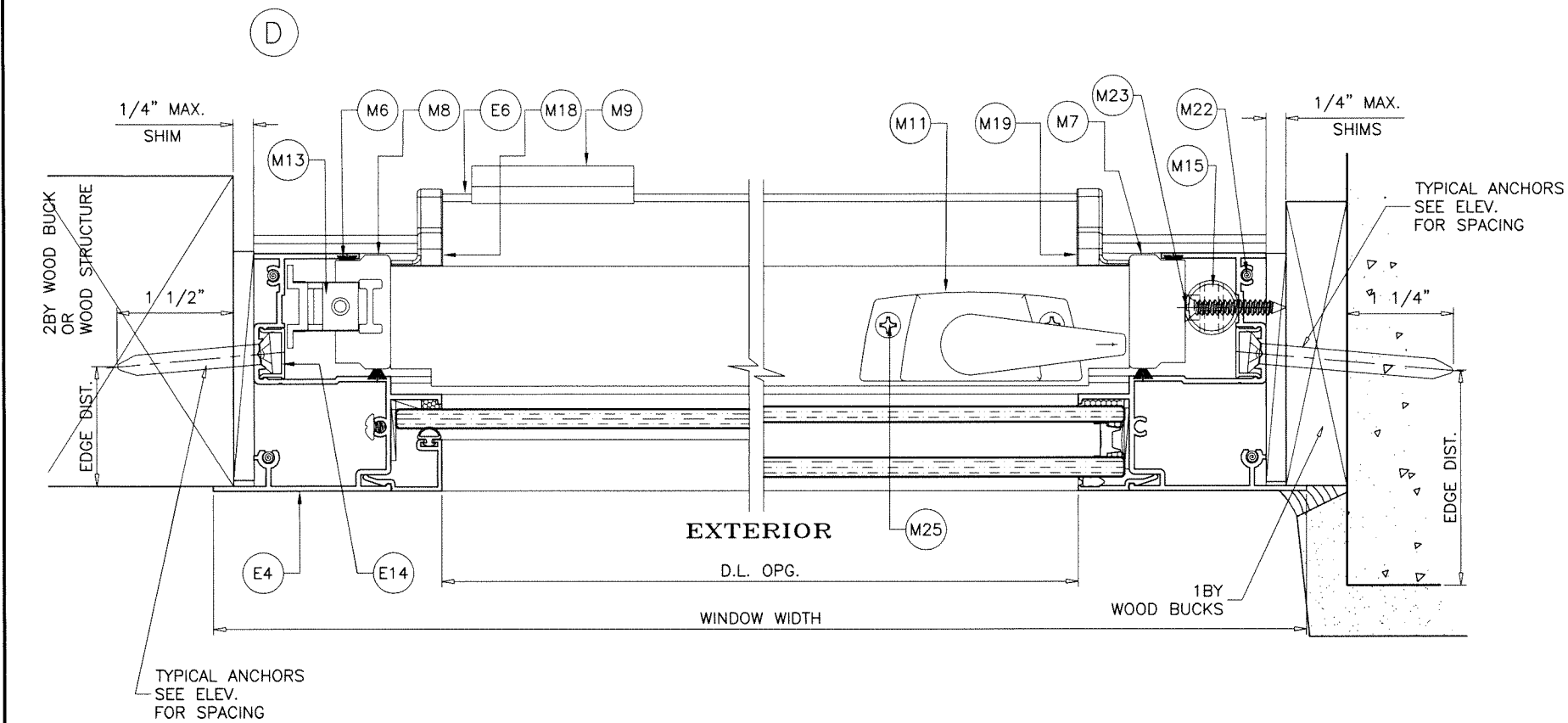
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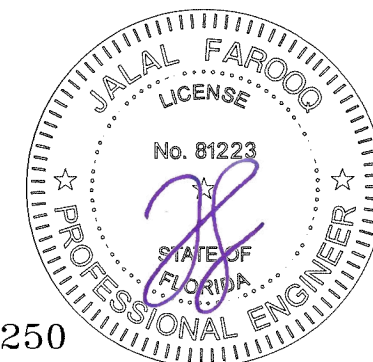
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drawing no.  
**20-62F**  
 sheet 4 of 10



Sealed: 8/16/2023



FL #22250

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FAX. (305) 638-5158

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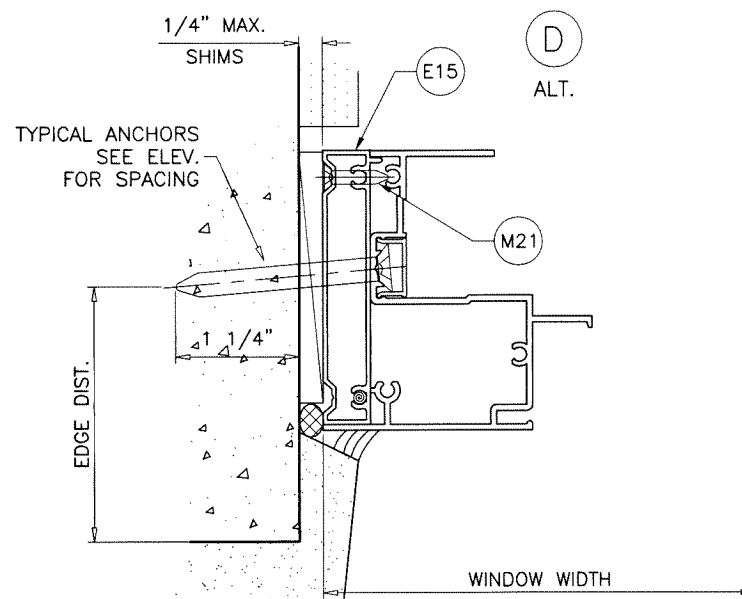
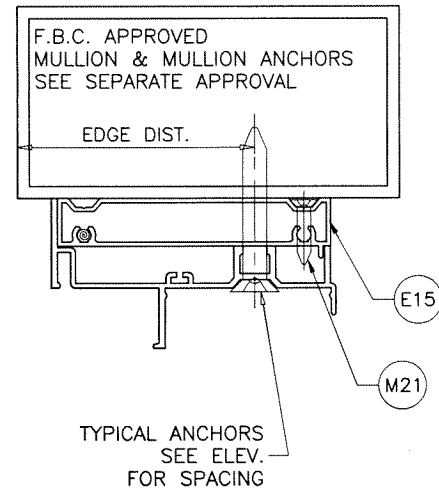
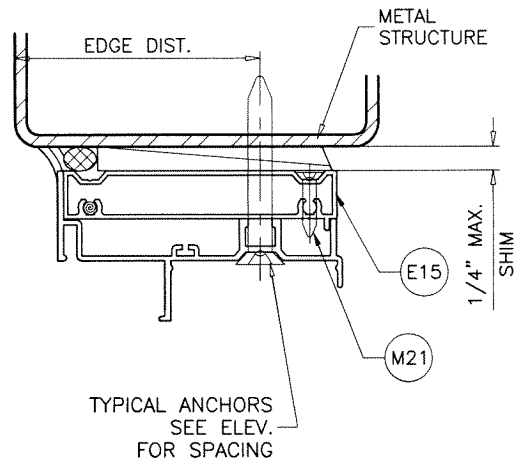
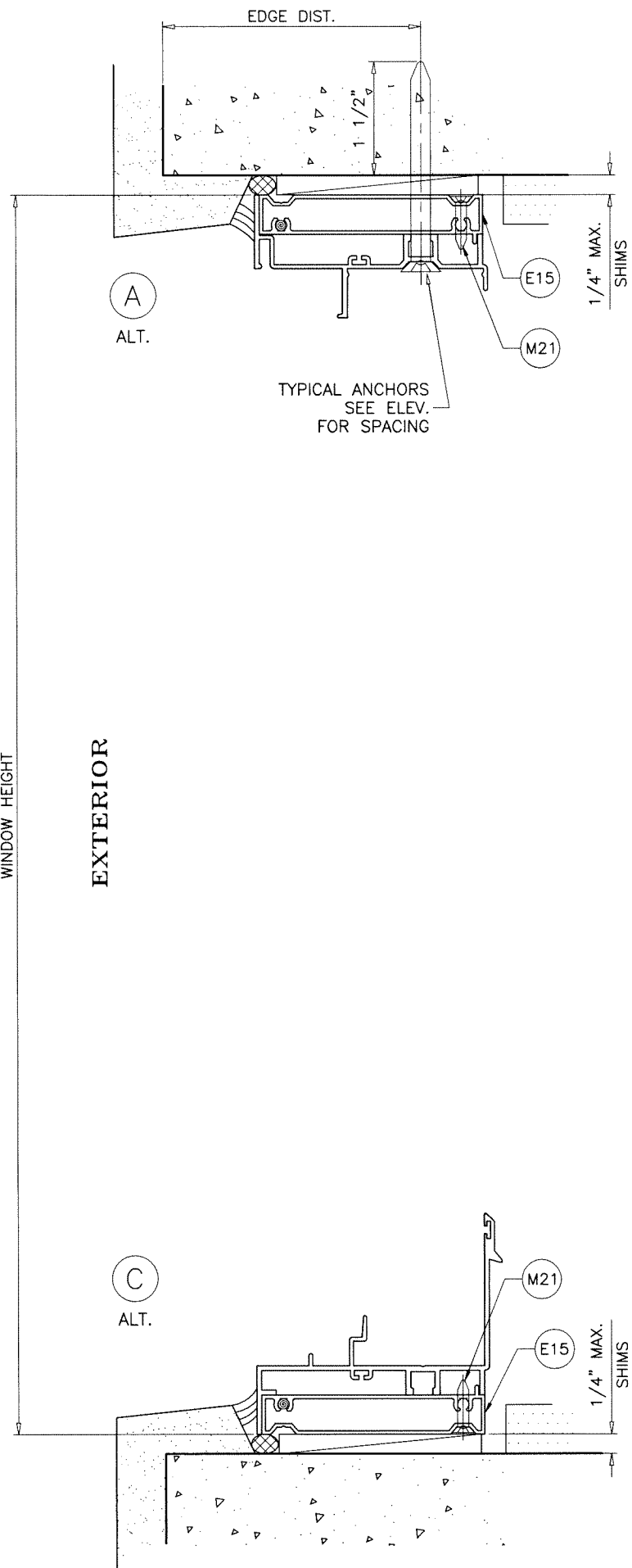
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sheet 5 of 10

COMP-ANL\20-62FES

WINDOW HEIGHT

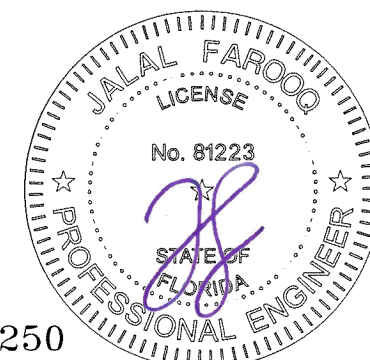
EXTERIOR



**INSTALLATION DETAILS WITH FLUSH FRAME ADAPTER**  
SEE SHEETS 4 & 5 FOR WINDOW DETAILS

Sealed: 8/16/2023

FL #22250



**af c**

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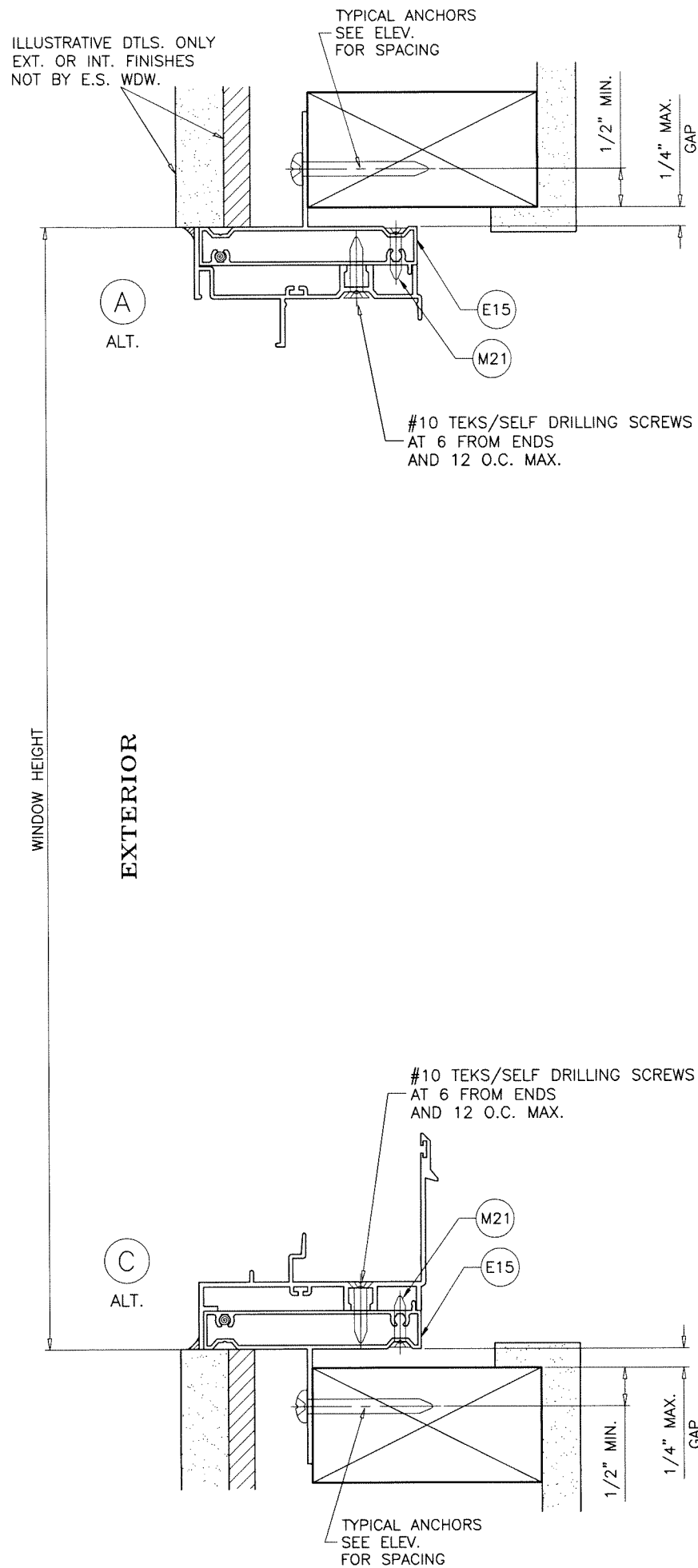
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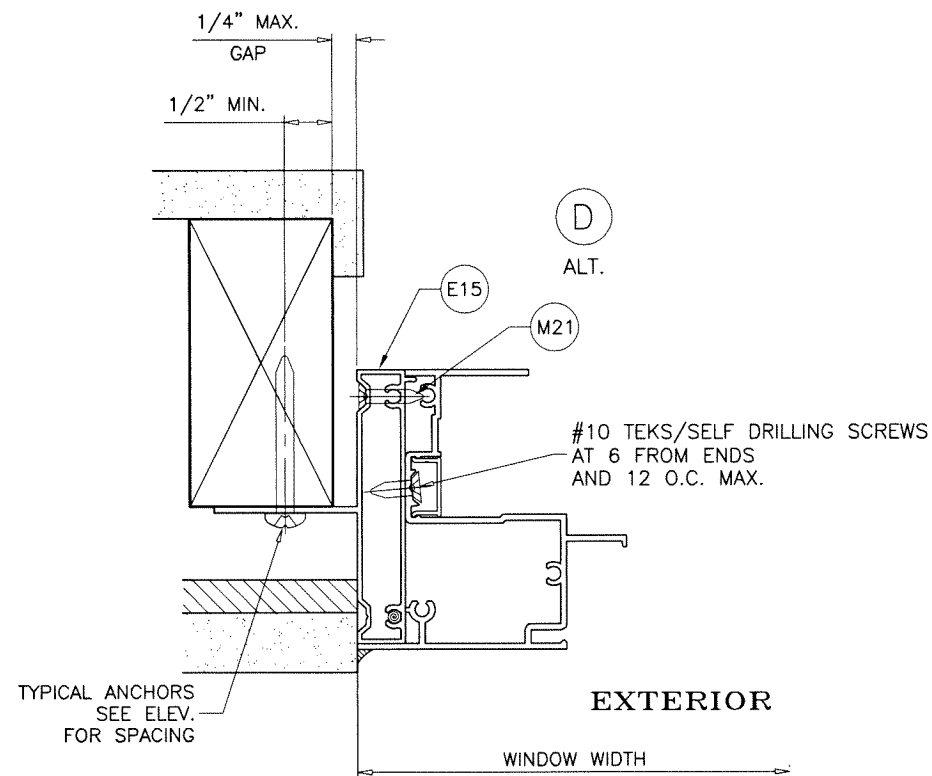
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sheet 6 of 10



**TYPICAL ANCHORS:** SEE ELEV. FOR SPACING

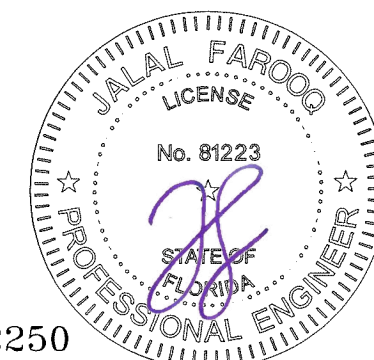
**#14 WOOD SCREWS** (GRADE 2 CRS)  
INTO 2BY WOOD BUCKS OR WOOD STRUCTURES  
1-1/2" MIN. PENETRATION INTO WOOD



**INSTALLATION DETAILS WITH FIN FRAME ADAPTER**  
SEE SHEETS 4 & 5 FOR WINDOW DETAILS

Sealed: 8/16/2023

FL #22250



**a f c**

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**20-62F**  
sheet 7 of 10

COMP-ANL\20-62FES



E1  
FRAME HEAD

E8  
FIX. MEETING RAIL

E5  
VENT TOP RAIL

E6  
VENT BOTTOM RAIL

E7  
VENT SIDE RAIL

E4  
FRAME JAMB

E2  
FRAME SILL (STANDARD)

E3  
FRAME SILL (HI-RISE)

E13  
HEAD SCREW COVER

E14  
JAMB SCREW COVER

E12  
FLUSH FRAME ADAPTER

E15  
FLUSH FRAME ADAPTER WITH FIN

E9  
GLAZING BEADS

E9A

M9  
SPRING LOADED LATCH

Sealed: 8/16/2023

FL #22250

revisions:

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date: 08-06-20

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chk. by:

drawing no.

20-62F

sheet 9 of 10

AL-FAROOQ CORPORATION

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ES-EL100 ALUM SINGLE HUNG WDW. (N.I.)

E.S. WINDOWS, LLC

3550 N.W. 49 STREET

MIAMI, FL. 33142

TEL. (305) 638-5151

FAX. (305) 638-5158

COMP-ANL\20-62FES

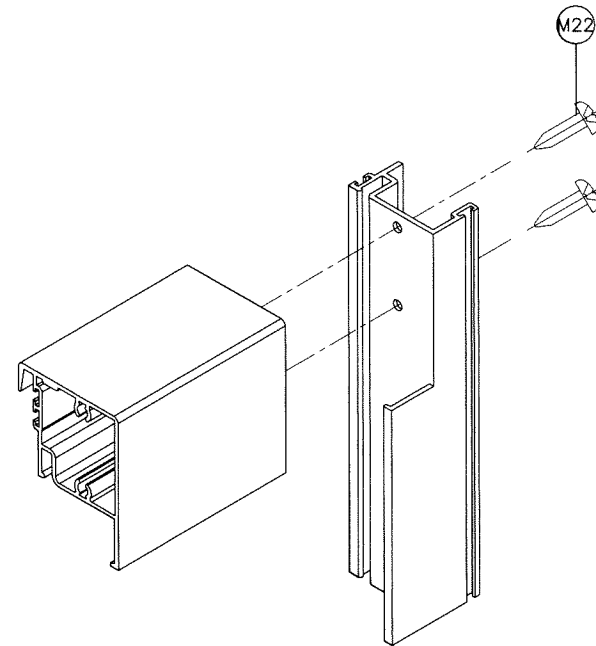
JALAL FAROOQ

LICENSE

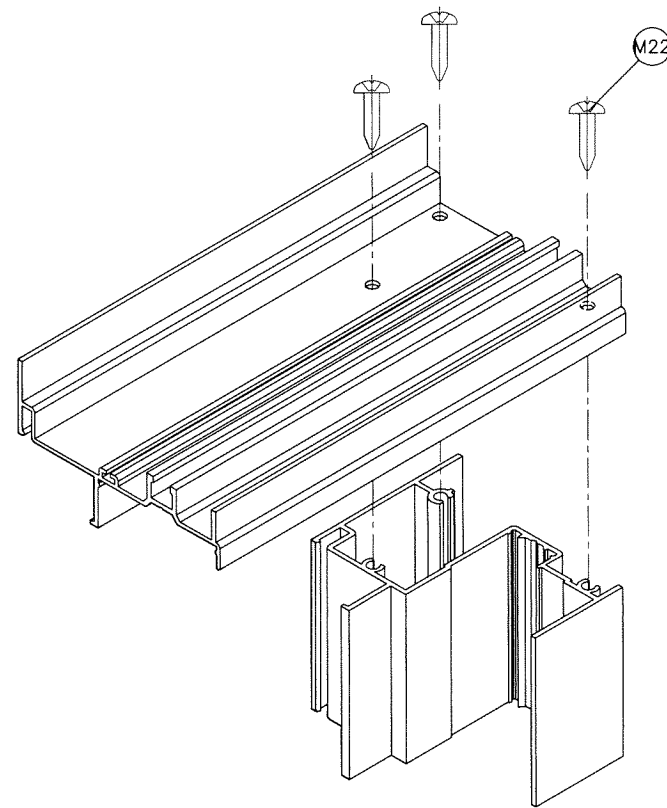
No. 81223

STATE OF FLORIDA

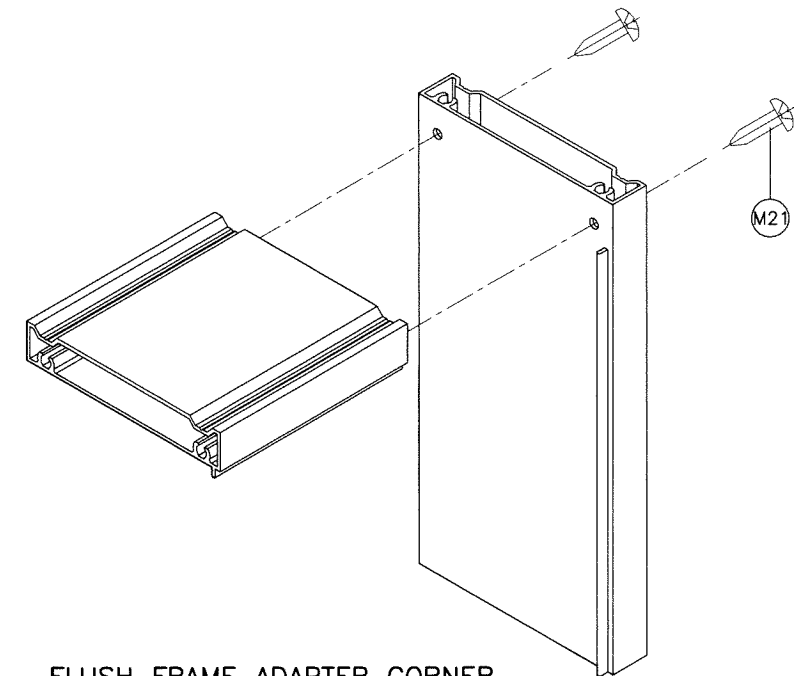
PROFESSIONAL ENGINEER



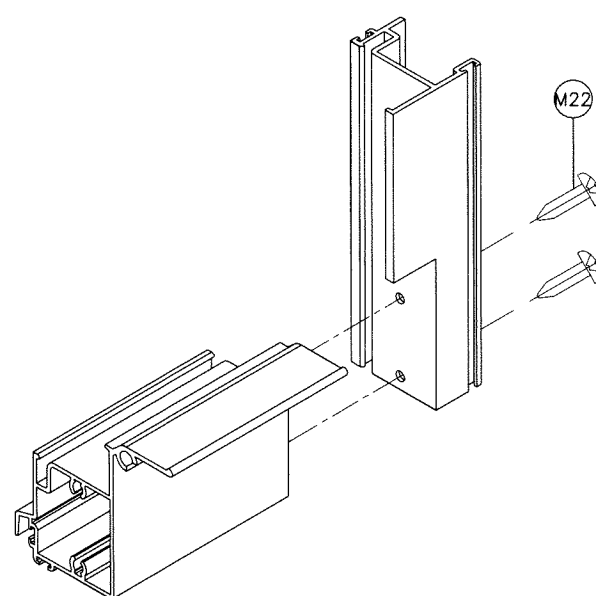
VENT TOP CORNER



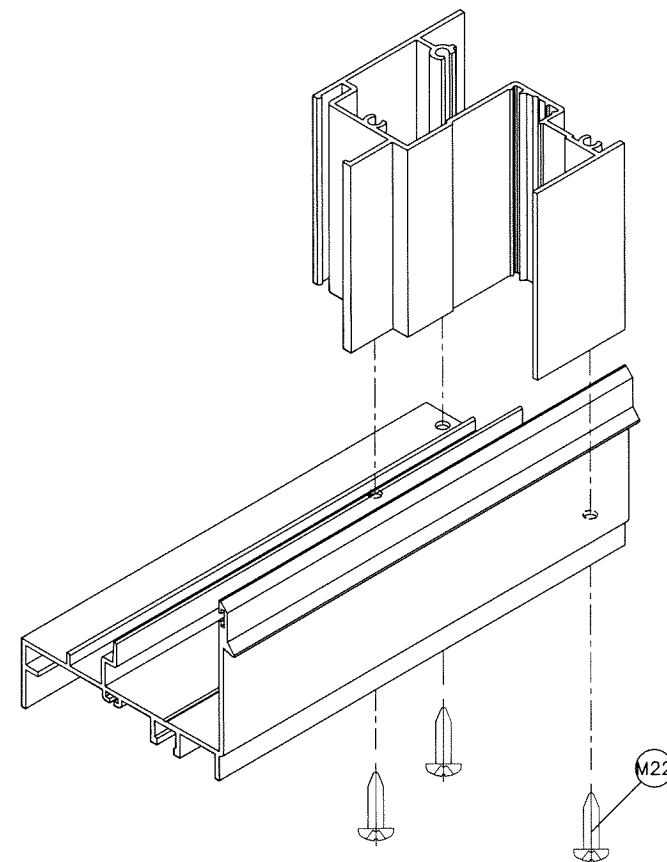
FRAME TOP CORNER



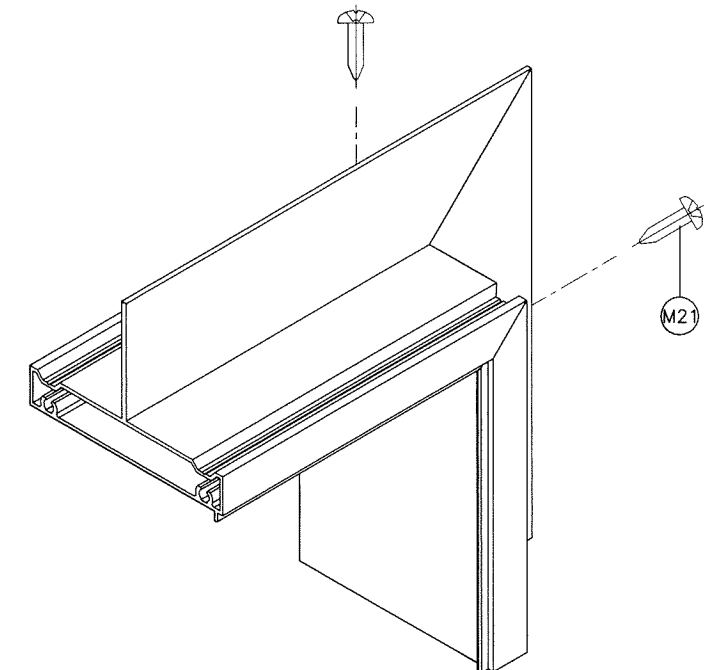
FLUSH FRAME ADAPTER CORNER



VENT BOTTOM CORNER

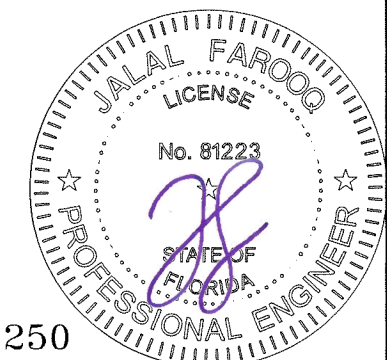


FRAME BOTTOM CORNER



FIN FRAME ADAPTER CORNER

Sealed: 8/16/2023



FL #22250

**af c**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 9360 SUNSET DRIVE, SUITE 220 (C.A.N. 3538)  
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revisions:  
 no date by description

date: 08-06-20  
 scale: 1/2" = 1"  
 dr. by: TARIQ  
 chk. by:

drawing no.

**20-62F**

sheet 10 of 10