



Product Approval
USER: Public User

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OFFICE OF THE
SECRETARY

FL #

Application Type

Code Version

Application Status

FL20692-R7

Revision

2023

Approved

Comments

Archived



Product Manufacturer

Address/Phone/Email

E.S. Windows, Inc.

10653 NE Quaybridge Ct.

Miami, FL 33138

(305) 624-7775

achamorro@eswillc.com

Authorized Signature

Jalal Farooq

veronica@afceng.com

Technical Representative

Address/Phone/Email

Samir Sabagh

3550 NW 49th St.

Miami, FL 33142

(305) 638-5151

ssabagh@energiasolarsa.com

Quality Assurance Representative

Address/Phone/Email

Category

Subcategory

Windows

Casement

Compliance Method

Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer

☐ Evaluation Report - Hardcopy Received

Florida Engineer or Architect Name who developed the Evaluation Report

Jalal Farooq

Florida License

PE-81223

Quality Assurance Entity

Keystone Certifications, Inc.

Quality Assurance Contract Expiration Date

07/16/2025

Validated By

Abel Carrasco, PE

☒ Validation Checklist - Hardcopy Received

Certificate of Independence

[FL20692_R7_COI_SS - Certificate of Independence 2023.pdf](#)

Referenced Standard and Year (of Standard)

Standard

Year

TAS 201

1994

TAS 202

1994

TAS 203

1994

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted

08/15/2023

Date Validated

08/17/2023

Date Pending FBC Approval

08/19/2023

Date Approved

10/17/2023

Summary of Products

FL #	Model, Number or Name	Description
20692.1	Series "ES-P252" Thermal Aluminum Casement Window	Large missile impact resistant thermal aluminum casement Window.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +95/-105 Other: See installation drawings W16-46 for installation details.		Installation Instructions FL20692_R7_II_SS - ES-P252 Thermal Casement (LMI)-DWG W16-46.pdf Verified By: Jalal Farooq PE 81223 Created by Independent Third Party: Yes Evaluation Reports FL20692_R7_AE_SS - ES-P252 Thermal Casement (LMI)-PAE 2023.pdf Created by Independent Third Party: Yes
20692.2	Series "ES-P252" Thermal Aluminum Casement Window	Small missile impact resistant thermal aluminum casement Window.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +95/-105 Other: See installation drawings W16-47 for installation details.		Installation Instructions FL20692_R7_II_SS - ES-P252 Thermal Casement (SMI)-DWG W16-47.pdf Verified By: Jalal Farooq PE 81223 Created by Independent Third Party: Yes Evaluation Reports FL20692_R7_AE_SS - ES-P252 Thermal Casement (SMI)-PAE 2023.pdf Created by Independent Third Party: Yes

[Back](#)

[Next](#)

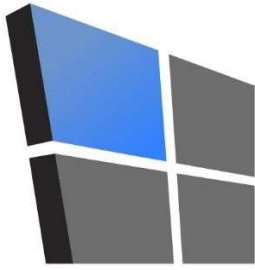
[Contact Us](#) :: [2601 Blair Stone Road, Tallahassee FL 32399](#) Phone: 850-487-1824

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Product Approval Accepts:





AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

January 23, 2023

Product Approval Administrator
Building Codes & Standards Section
Department of Business & Professional Regulations
1940 North Monroe Street, Suite 90
Tallahassee, FL 32399-2100

To whom it may concern,

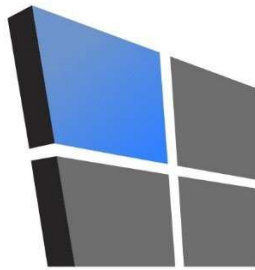
As the design engineer retained to prepare the product approval(s) associated with this letter as shown below on this same web page, I do hereby declare that I do not have and will not have any financial interest in any company manufacturing or distributing the referenced product(s), nor do I have or will have any financial interest with any other entity involved in the approval process of the referenced product(s).

Sincerely,



Jalal Farooq, P.E.
CFO

Sealed: 1/23/2023



AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

PRODUCT APPROVAL EVALUATION RULE CHAPTER #61G20-3 • METHOD 1 OPTION D

FL 20692

Date: 07/19/2023

Detailed Product Description:

Manufacturer: E.S. WINDOWS, LLC.

Manufacturer Address: 3550 N.W. 49 STREET – MIAMI, FL. 33142

Model Name: SERIES “ES-P252” THERMAL ALUMINUM CASEMENT WINDOW

Maximum Load: +95 PSF, -105 PSF (Large Missile Impact)

Installation Drawings # W16-46

This product complies with the High Velocity Hurricane Zone (HVHZ) testing requirements.					
For maximum sizes, combination of span vs loads and anchor type refer to installation drawings.					
Comparative analysis used ☐ Yes ☒ No					
Mandatory Tests (Tested in accordance with AAMA 101/I.S.2/NAFS/TAS-202)					
TEST	DESCRIPTION	TEST LOCATION	TEST REPORT DATE	TEST REPORT #	Test Sealed by
ASTM E283	Air Infiltration Leakage	Fenestration Testing Laboratory, Inc	04/14/2016 07/23/2020 04/06/2021	FTL-7798 FTL-12064 FTL-12502	Idalmis Ortega, P.E.
		Blackwater Testing Inc.	12/05/2017	BT-ESW-17-022	Constantin Bortes, PE
		QAI Laboratories	05/15/2023	QAI-13166	Idalmis Ortega, P.E.
ASTM E331 OR ASTM 547 & TAS 202	Water Penetration	Fenestration Testing Laboratory, Inc	04/14/2016 07/23/2020 04/06/2021	FTL-7798 FTL-12064 FTL-12502	Idalmis Ortega, P.E.
		Blackwater Testing Inc.	12/05/2017	BT-ESW-17-022	Constantin Bortes, PE
		QAI Laboratories	05/15/2023	QAI-13166	Idalmis Ortega, P.E.
ASTM E330 & TAS 202	Uniform Static Air Press.	Fenestration Testing Laboratory, Inc	04/14/2016 07/23/2020 04/06/2021	FTL-7798 FTL-12064 FTL-12502	Idalmis Ortega, P.E.
		Blackwater Testing Inc.	12/05/2017	BT-ESW-17-022	Constantin Bortes, PE
		QAI Laboratories	05/15/2023	QAI-13166	Idalmis Ortega, P.E.
ASTM F588	Forced Entry	Fenestration Testing Laboratory, Inc	04/14/2016 07/23/2020 04/06/2021	FTL-7798 FTL-12064 FTL-12502	Idalmis Ortega, P.E.
		QAI Laboratories	05/15/2023	QAI-13166	Idalmis Ortega, P.E.

Supplemental Tests (Tested in accordance with TAS-201 and TAS-203)					
TEST	DESCRIPTION	TEST LOCATION	TEST REPORT DATE	TEST REPORT #	Test Sealed by
FBC 1626.2 TAS 201 & 203	Large Missile Impact & Cyclic	Fenestration Testing Laboratory, Inc	04/14/2016 07/23/2020 04/06/2021	FTL-7798 FTL-12064 FTL-12502	Idalmis Ortega, PE
		Blackwater Testing Inc	12/05/2017	BT-ESW-17-022	Constantin Bortes, PE
		QAI Laboratories	05/15/2023	QAI-13166	Idalmis Ortega, PE
Under the limitations of the attached installation drawings, to the best of my knowledge and ability, the above product conforms to the requirements of the 2023 Florida Building Code.					
Evaluation Report Engineer: Jalal Farooq Al-Farooq Corporation			 Sealed: 7/19/2023		

THESE WINDOWS ARE RATED FOR LARGE & SMALL MISSILE IMPACT.
SHUTTERS ARE NOT REQUIRED.

ES-P252 (L.M.I.)

THERMAL ALUMINUM CASEMENT WINDOW

APPROVAL APPLIES TO SINGLE UNITS OR SIDE BY SIDE
COMBINATIONS OF CASMT./CASMT. OR CASEMENT 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.

Sealed: 7/19/2023

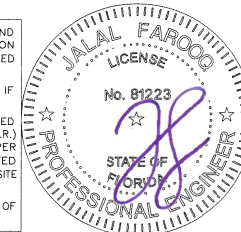
FL #20692

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

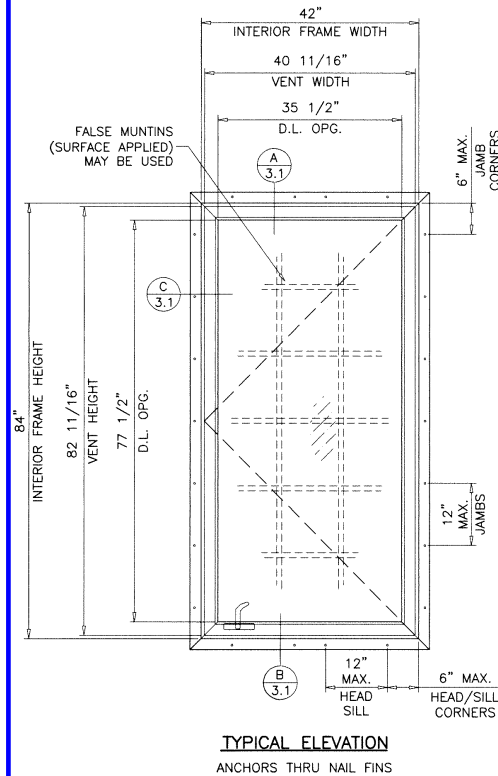
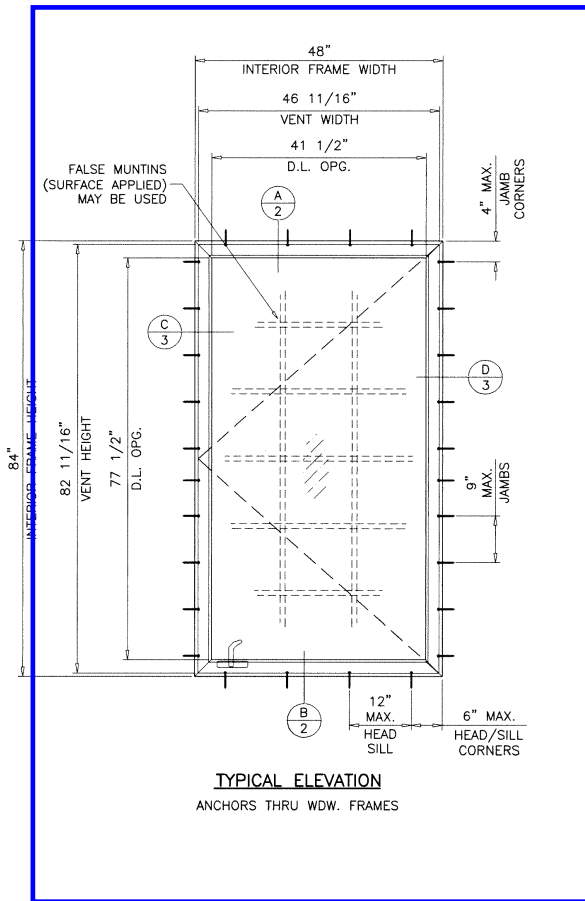
ES-P252 THERMAL ALUM CASEMENT WDW. (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

no.	date	by	description
E	10.31.21		NAIL FIN ADDED
F	04.28.23		NAIL FIN REV.
G	06.15.23		CLASS TYPE E ADDED
H	07.07.23		UPDATED TO 2023 FBC

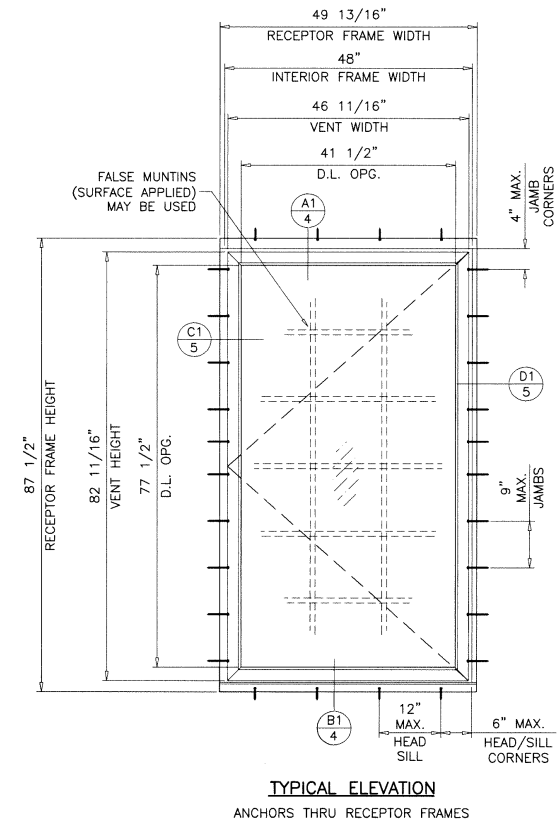
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chk. by:

drawing no.
W16-46

sheet 1 of 8



NOTE:
FOR WINDOWS WITH NAIL FIN
LIMIT MAX. DESIGN LOADS TO
+70.0, -75.0 PSF



Sealed: 7/19/2023

FL #20692



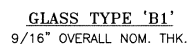
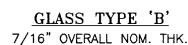
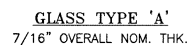
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COMP-ANL W16-46-ES

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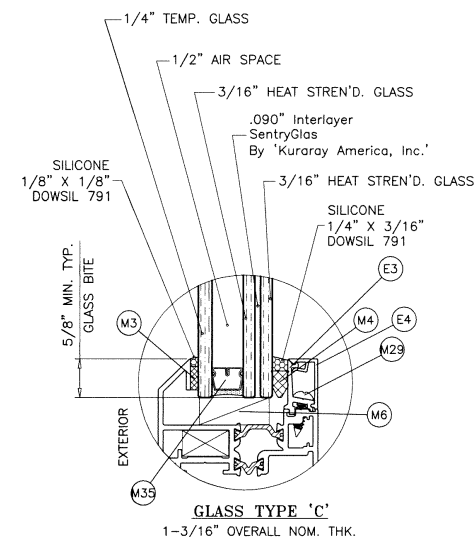
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drawing no.
W16-46
sheet 1.1 of 8



GLASS TYPES 'B' & 'B1' —————
 MAXIMUM DESIGN LOAD RATING = + 85.0 PSF
 (FOR SIZE SHOWN ON SHEET 1.1 OR SMALLER) - 105.0 PSF



GLASS TYPE 'C'

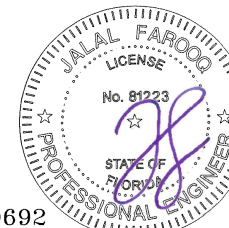
MAXIMUM DESIGN LOAD RATING = + 95.0 PSF
(FOR SIZE SHOWN ON SHEET 1.1 OR SMALLER) - 105.0 PSF

1/2" 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

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: 7/19/2023

FL #20692



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

ES-P252 THERMAL ALUM CASEMENT WDW. (L.M.I.)

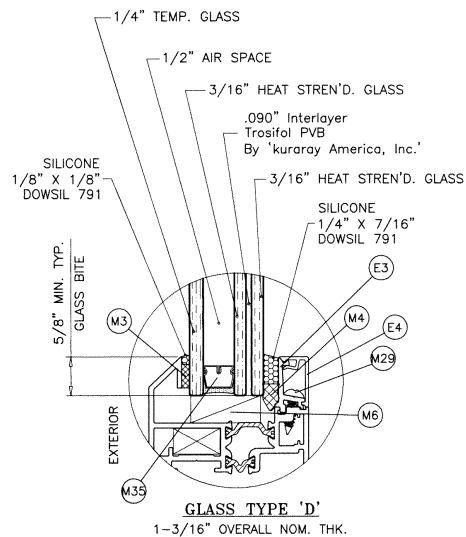
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142

FAX. (305) 638-5158

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chk. by:

drawing no.
W16-46
sheet 1.2 of 8



GLASS TYPE 'D'

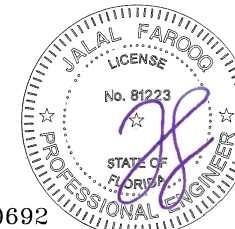
MAXIMUM DESIGN LOAD RATING = + 70.0 PSF
(FOR SIZES 42" W X 84" HT. OR SMALLER) - 75.0 PSF

1/2" 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

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: 7/19/2023

FL #20692



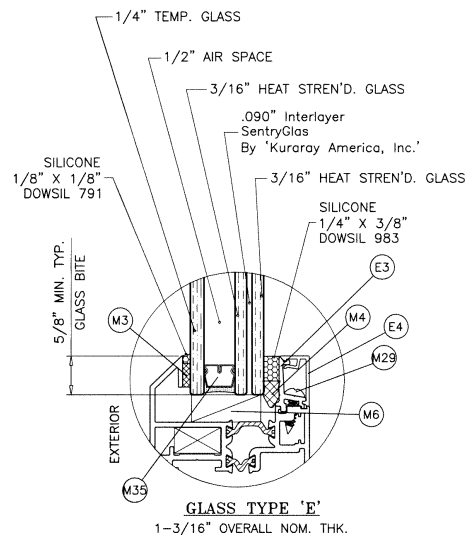
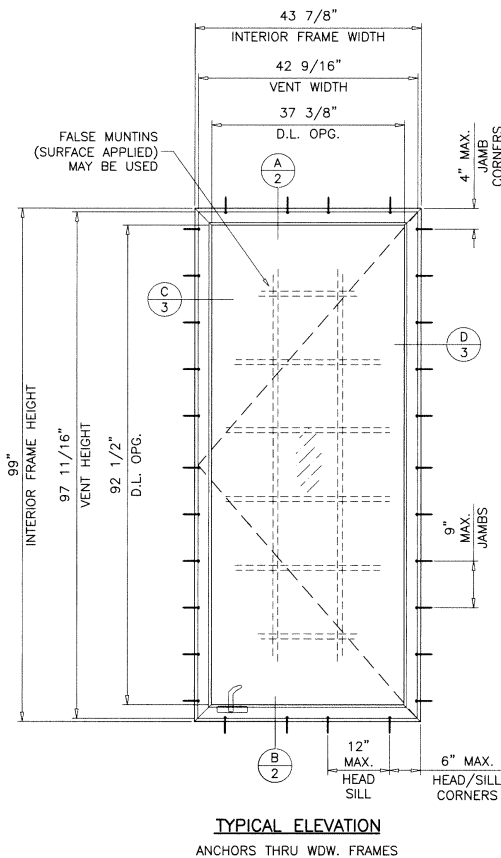
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
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 TEL. (305) 264-8100 FAX. (305) 262-6978
 (C.A.N. 3536)

ES-P252 THERMAL ALUM CASEMENT WDW. (L.M.I.)
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 MIAMI, FL. 33142
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revisions:	no	date	by	description

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drawing no.
W16-46
 sheet 1.3 of 8



GLASS TYPE 'E'

MAXIMUM DESIGN LOAD RATING = + 54.5 PSF

(FOR SIZE SHOWN ON THIS SHEET OR SMALLER) - 72.5 PSF

1/2" 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

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: 7/19/2023

FL #20692



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 W16-46-ES

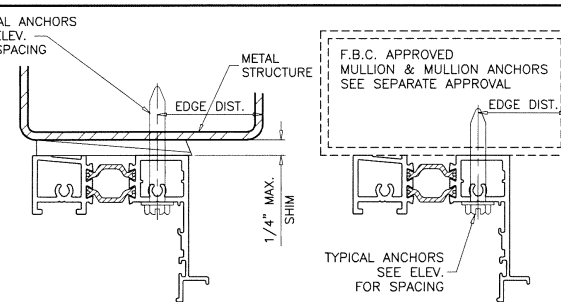
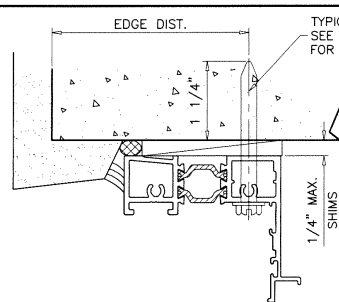
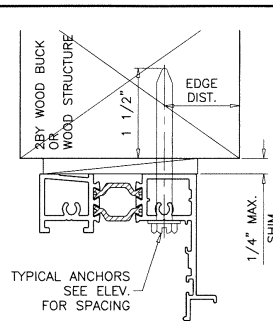
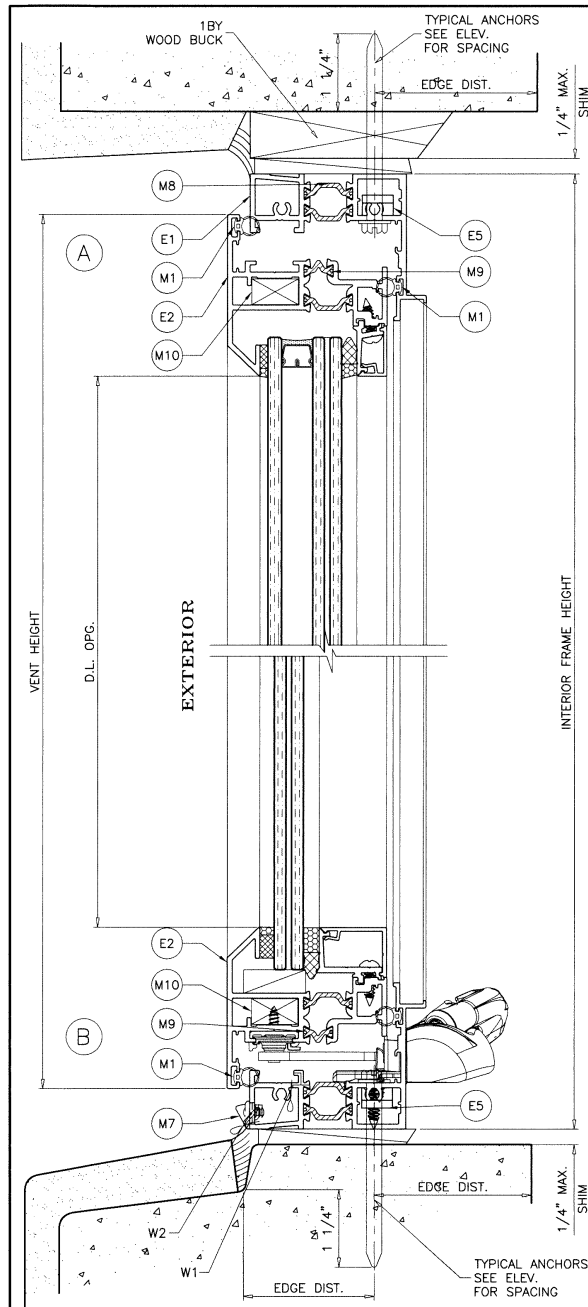
ES-P252 THERMAL ALUM CASEMENT WDW. (L.M.I.)

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revisions:	no.	date	by	description

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chk. by:

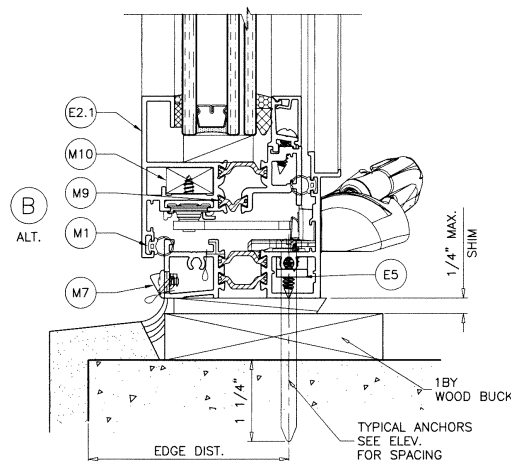
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W16-46
sheet 1.4 of 8



1BY OR 2BY WOOD BUCKS AND METAL STRUCTURE NOT BY 'E.S. WDW.' MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

WEEPHOLES:

- W1 = 2" X 5/16" WEEPHOLES AT 3-1/4" FROM EACH END AND AT MIDSPAN
- W2 = 1-1/2" X 1/4" WEEPHOLES AT 6" FROM EACH END WITH NYLON BAFFLE



TYPICAL ANCHORS: SEE ELEV. FOR SPACING

1/4" DIA. CRETE-FLEX SS4 BY 'DEWALT' (Fu=190 KSI, Fy=127 KSI)

1/4" DIA. ULTRA CON SS4 410 BY 'DEWALT' (Fu=190 KSI, Fy=164 KSI)

1/4" DIA. AGGRE-GATOR 300 BY 'DEWALT' (Fu=96 KSI, Fy=57 KSI)

1/4" DIA. ULTRA CON+ 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 BUCKS INTO CONC. OR BLOCKS
1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL)
1-1/2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

DIRECTLY INTO CONC. OR BLOCKS
1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL)
1-1/2" 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
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)

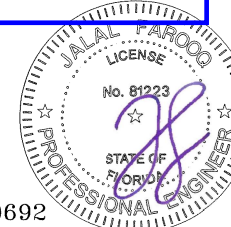
ANCHOR EDGE DISTANCES

INTO CONCRETE AND BLOCKS = 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 GROUT FILLED BLOCK AT JAMBS f'm = 2000 PSI MIN.

Sealed: 7/19/2023

FL #20692



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL (305) 264-8100 FAX (305) 262-6978
COMP-ANL W16-46-ES

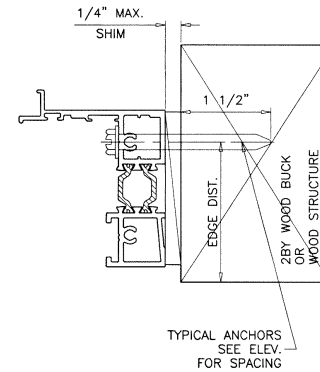
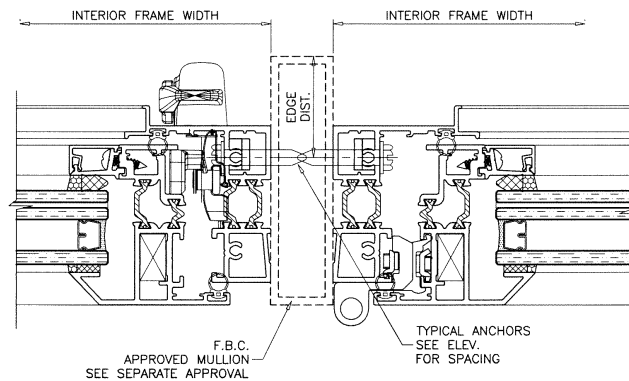
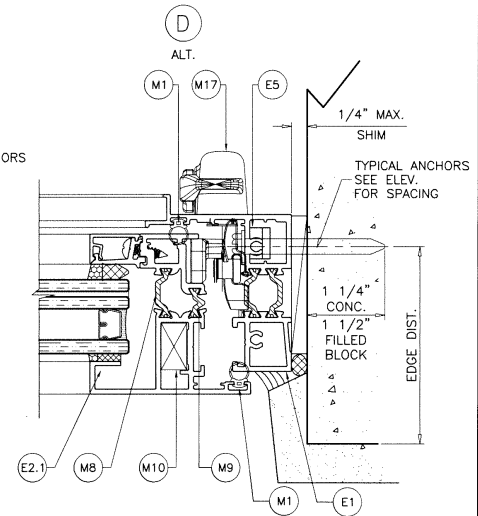
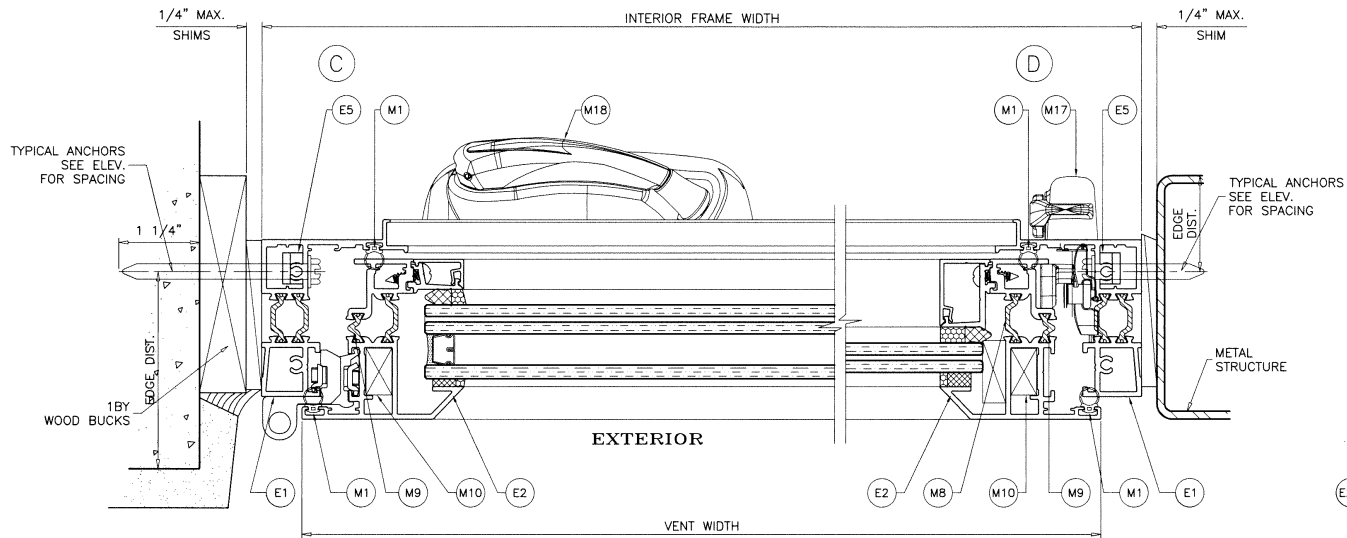
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E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL 33142
TEL (305) 638-5151 FAX (305) 638-5158

revisions:
no date by description

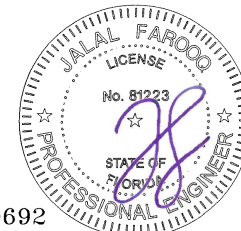
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dr. by: TARIQ
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drawing no.
W16-46
sheet 2 of 8



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FL #20692



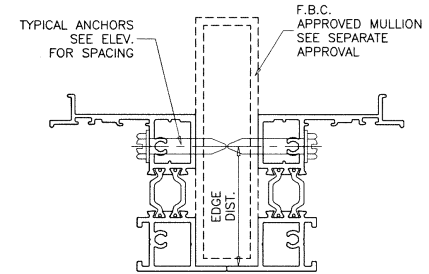
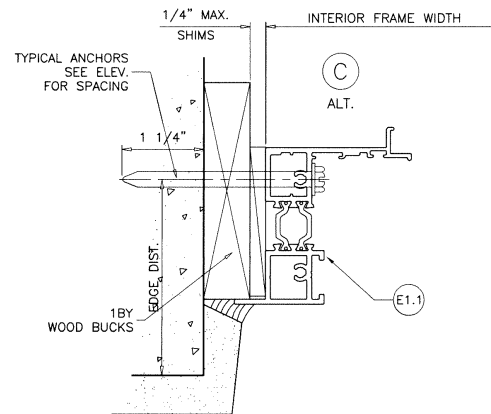
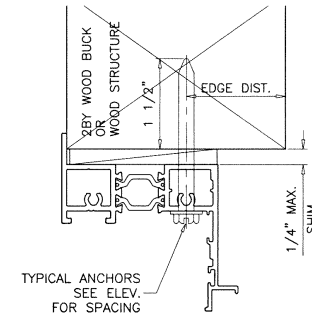
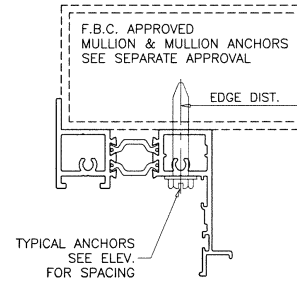
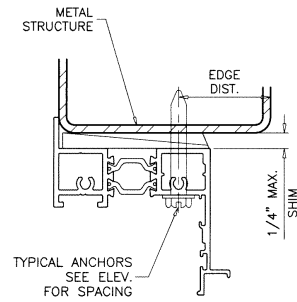
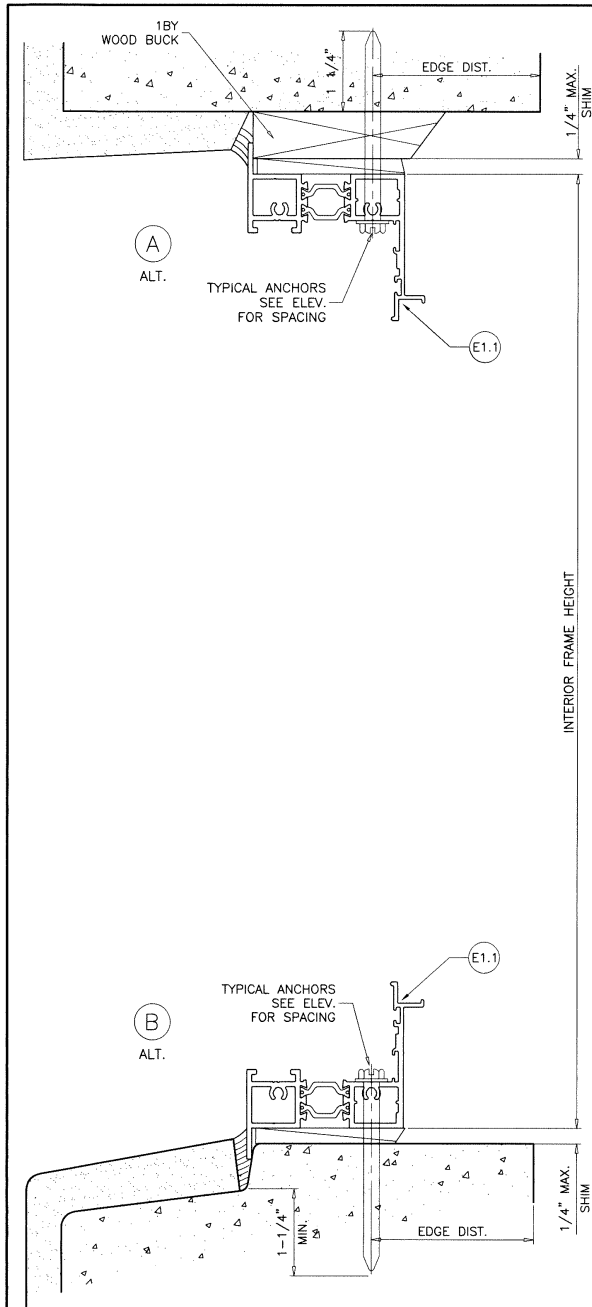
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 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
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revisions:	no	date	by	description

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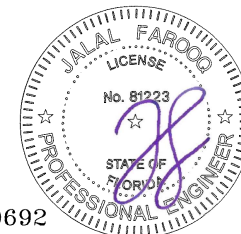
drawing no.
W16-46
 sheet 3 of 8



INSTALLATION DETAILS WITH FLANGE FRAME
SEE SHEETS 2 & 3 FOR WINDOW DETAILS

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FL #20692



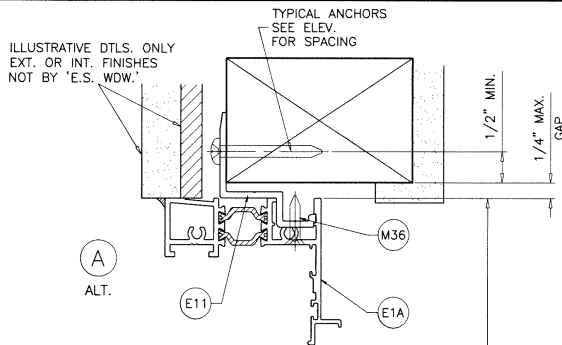
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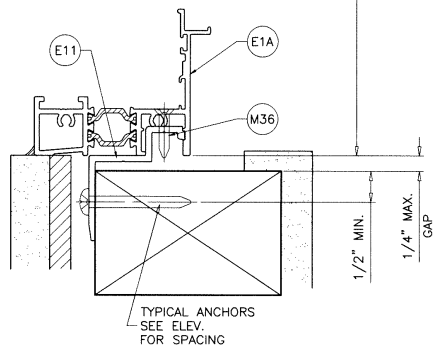
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drawing no.
W16-46
sheet 3.1 of 8



A
ALT.

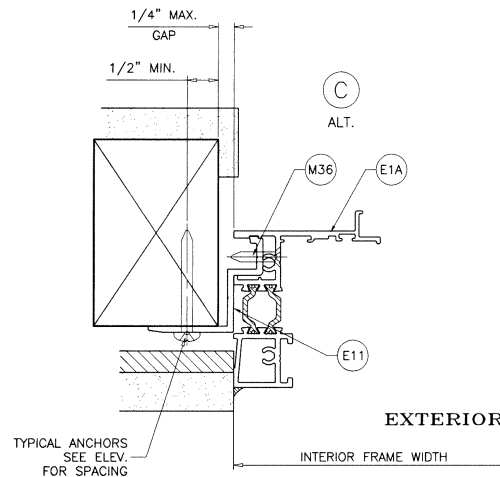
EXTERIOR



B
ALT.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

#10 SMS OR WOOD SCREWS (GRADE 2 CRS)
INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/4" MIN. PENETRATION INTO WOOD



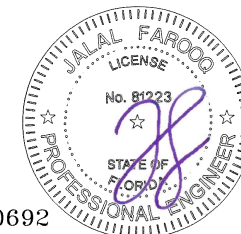
C
ALT.

EXTERIOR

INSTALLATION DETAILS ANCHORS THRU NAIL FIN
SEE SHEETS 2 & 3 FOR WINDOW DETAILS

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FL #20692



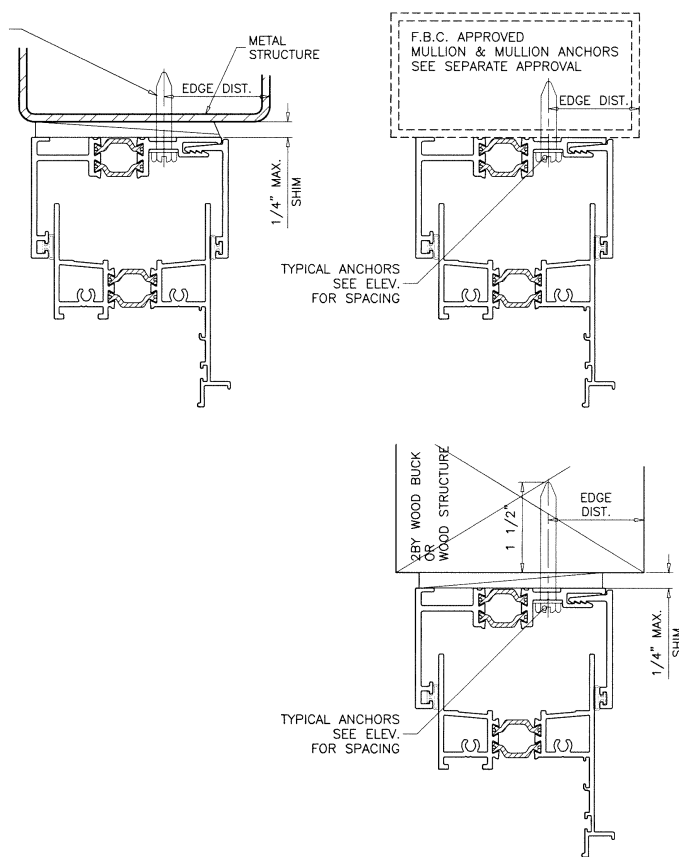
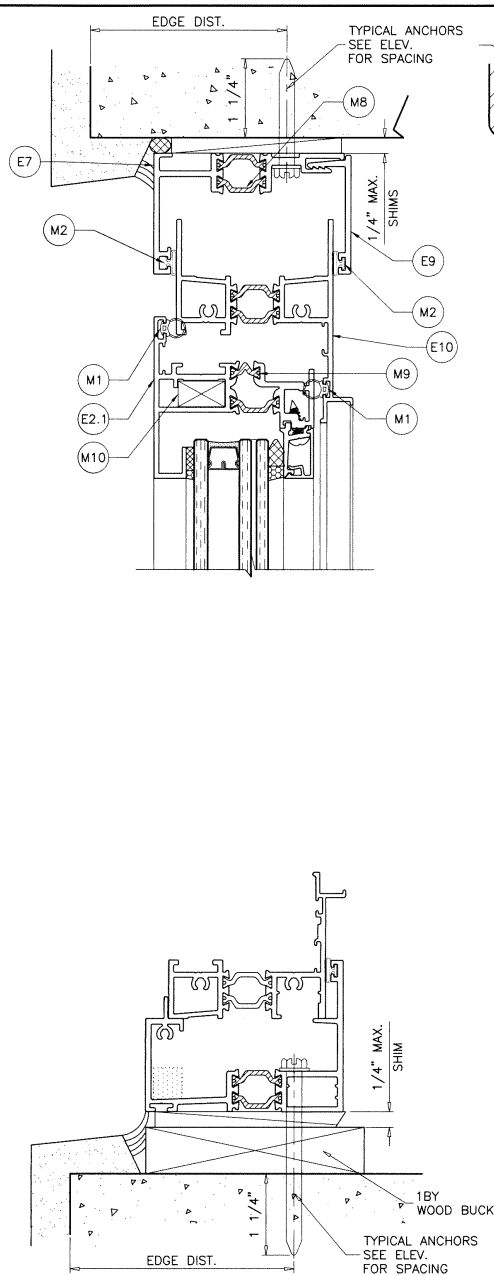
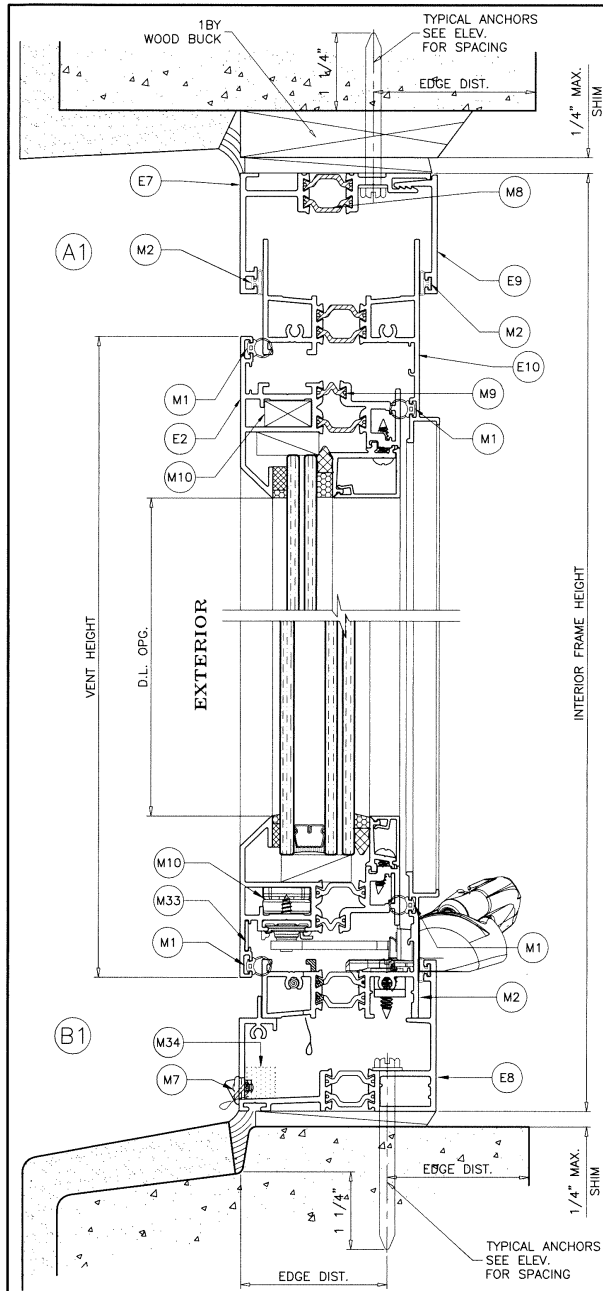
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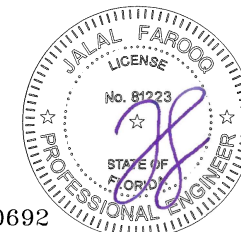
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W16-46
sheet 3.2 of 8

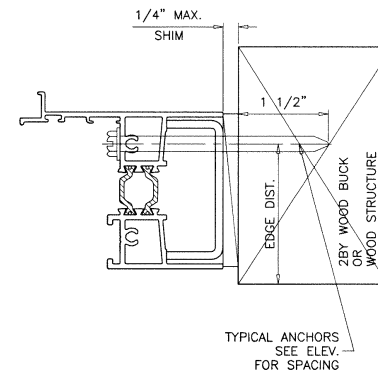
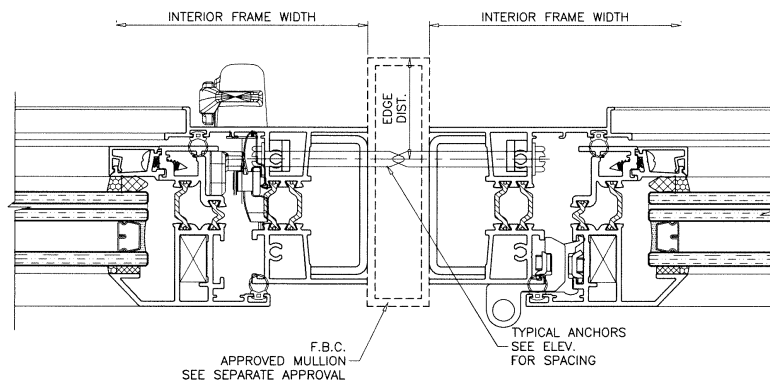
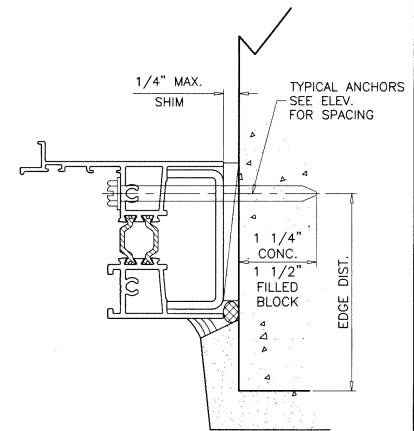
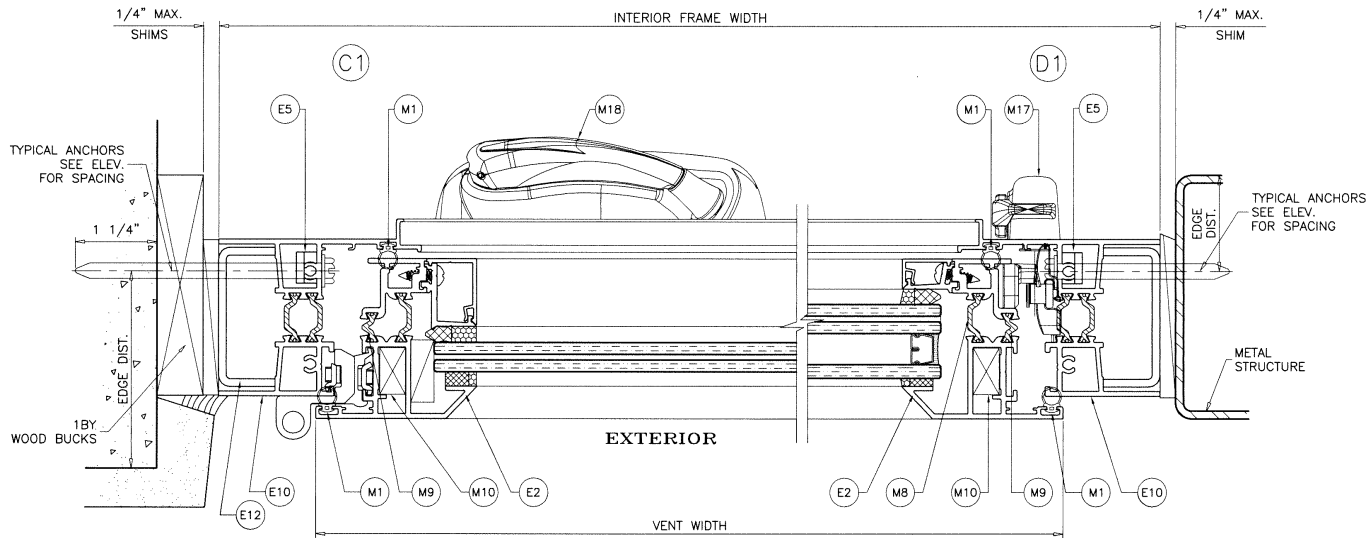


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FL #20692

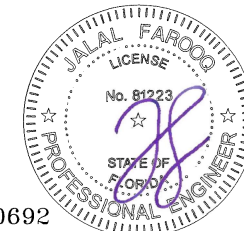


af c AL-FAROOQ CORPORATION ENGINEERS & PRODUCT DEVELOPMENT 9360 SUNSET DRIVE, SUITE 220 (C.A.N. 3538) MIAMI, FLORIDA 33173 TEL. (305) 264-8100 FAX. (305) 262-6978 COMP-ANL W16-46-ES	
ES-P252 THERMAL ALUM CASEMENT WDW (L.M.I.) E.S. WINDOWS, LLC 3550 N.W. 49 STREET MIAMI, FL. 33142 TEL. (305) 638-5151 FAX. (305) 638-5156	
date: 06-13-16 scale: 1/2" = 1" dr. by: TARIQ chk. by:	revisions: no. date by description 1 06-13-16 by TARIQ
drawing no. W16-46 sheet 4 of 8	



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FL #20692



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 MIAMI, FLORIDA 33173
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 (C.A.N. 3538)

ES-P252 THERMAL ALUM CASEMENT WDW. (L.M.I.)
E.S. WINDOWS, LLC
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drawing no.
W16-46
 sheet 5 of 8

ITEM #	PART #	REQD.	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	ES-P250-001/P252-001	4	FLUSH FRAME HEAD/SILL/JAMB	6063-T6	-
E1.1	ES-P250-030/P252-001	4	FLANGE FRAME HEAD/SILL/JAMB	6063-T6	-
E1A	ES-P252-508	4	FIN FRAME HEAD/SILL/JAMB	6063-T6	-
E2	ES-P252-509A	4	VENT	6063-T6	-
E2.1	ES-P252-026/P250-003	4	ALT. VENT	6063-T6	-
E3	ES-P252-004	4/ VENT	GLASS STOP (INSUL. LAM. GLASS)	6063-T6	-
E3A	ES-P252-029	4/ VENT	GLASS STOP (LAM. GLASS)	6063-T6	-
E4	ES-P252-003	-	COVER IMPACT (INSUL. LAM. GLASS)	6063-T6	-
E4A	ES-P252-030	-	COVER IMPACT (LAM. GLASS)	6063-T6	-
E5	AAC-A-027	1/ CORNER	FRAME ATTACHMENT ANGLE	6063-T6	-
E7	ES-P250-010/P251-013	AS REQD.	RECEPTOR HEAD	6063-T6	-
E8	ES-P251-016/032	1	RECEPTOR SILL	6063-T6	-
E9	ES-P251-014	1	RECEPTOR STOP	6063-T6	-
E10	ES-P250-017/P252-012	-	EQUAL LEG FRAME HEAD/JAMB	6063-T6	-
E11	TBA-001	AS REQD.	NAIL FIN	6063-T6	-
E12	-	AS REQD.	JAMB REINF. CHANNEL	6063-T6	-
M1	ES-P251-G05	AS REQD.	INTERIOR VENT GASKET	EPDM	TREMCO #TX-20003E, DUROMETER 70±5 SHORE A
M2	27-245	AS REQD.	FRAME RECEPTOR	EPDM	CANALVIDRIOS, DUROMETER 65±5 SHORE A
M3	-	-	GLAZING TAPE (1/8" X 3/8")	POLYURETHANE	-
M3A	-	AS REQD.	GLAZING TAPE (3/16" X 3/8")	POLYURETHANE	-
M3B	-	AS REQD.	GLAZING TAPE (1/4" X 3/8")	POLYURETHANE	-
M4	ES-H340-G02	-	GLAZING WEDGE	EPDM	DUROMETER 60±5 SHORE A
M6	ES-6025-B01	-	SETTING BLOCK AT VENT	EPDM	TREMCO TR-1870E, DUROMETER 85±5 SHORE A
M6A	NS-25-B03A	-	SETTING BLOCK AT VENT	EPDM	DUROMETER 85±5 SHORE A
M7	WA2L	-	WEEP HOLE COVER	-	PREFERRED
M8	2479	AS REQD.	INSULBAR 20MM OFFSET	POLYAMIDE	ENSINGER
M9	2531	AS REQD.	INSULBAR 12MM OFFSET	POLAMIDE	ENSINGER
M10	0337	-	CORNER JOINT	DIECAST ALUM	MASTER
M11	CL02-002X	-	LOCK POINT BAR	ST. STEEL	INTERLOCK
M12	CL02-2059-00B	-	STRIKER	-	INTERLOCK
M13	CL02-2060-00B	-	LOCKING BAR GUIDE	-	INTERLOCK
M14	C011-0151-085	-	13.5" SA OPERATOR LOW PROFILE RH	ST. STEEL	INTERLOCK
M15	C011-0152	-	13.5" SA OPERATOR LOW PROFILE LH	ST. STEEL	INTERLOCK
M16	C011-0704	-	TRACK	ST. STEEL	INTERLOCK
M17	CL01-0475	-	MULTIPOINT HANDLE	DIE CAST ZINC	INTERLOCK
M18	C011-0605-XXX	-	COVER OPERATOR HANDLE LEFT	-	INTERLOCK
M19	C011-0606-XXX	-	COVER OPERATOR HANDLE RIGHT	-	INTERLOCK
M20	CL01-2250-XXX	-	SNAP ON COVER	DIE CAST ZINC	INTERLOCK
M21	CL01-1050-XXX	-	SNAP ON HANDLE	COPOLYMER	INTERLOCK
M22	C001-4001	-	CLAMP WASHER	ST. STEEL	INTERLOCK
M23	A1199X0003	-	EURO HINGE	ST. STEEL	AMC
M24	#10 X 2" FH	-	FRAME CORNER FASTENER	ST. STEEL	-
M26	#10 X 3/4" PH	-	FRAME CORNER ANGLE FASTENER	ST. STEEL	-
M27	#8 X 1" FH	-	STRIKER FASTENER	ST. STEEL	-
M28	#8 X 1/2" FH	-	GUIDE, OPERATOR, TRACK FASTENER	ST. STEEL	-
M29	#8 X 5/8" PH SMS	-	GLASS STOP FASTENER	ST. STEEL	AT 4" FROM ENDS & 8-1/4" O.C.
M30	#8-32 X 1/2" PH	-	LOCKING HANDLE CLAMP WASHER FASTENER	ST. STEEL	-
M31	#8 X 1/2" PH	-	END DAM FASTENER	ST. STEEL	-
M32	C001-4000	-	CLAMP WASHER	ROH	INTERLOCK
M33	PJS43-SS	-	CORNER LOCK	ST. STEEL	-
M34	WPSA-N1	-	3/4" X 3/4" X 2" RETICULATED FOAM	OPEN CELL FOAM	30 PP1
M35	HELIMA	-	LOW PROFILE SPACER	ALUMINUM	LINGERMANN GMBH & CO. KG
M36	#10 X 3/4"	AS REQD.	NAIL FIN FASTENERS AT 3" FROM ENDS & 12" O.C.	ALUMINUM	FH SMS

SEALANTS:

FRAME AND VENT CORNERS AND INSTALLATION SCREWS AT SILL SEALED WITH WHITE/ALUMINUM COLORED GENERAL PURPOSE SILICONE SEALANT BY MACKLANBURG-DUNCAN.

LOCKS:

SEVEN POINT LOCK SYSTEM BY 'INTERLOCK' LOCATED AT FRAME JAMB AT 10" FROM BOTTOM FASTENED WITH (2) #8-32 X 1/2" PH MS

(10) SLIDE BAR NYLON GUIDES, EACH FASTENED TO FRAME JAMB WITH (2) #8 X 1" FH SMS

SURFACE MOUNT NYLON KEEPERS AT VENT FACING LOCKING POINTS EACH FASTENED WITH (2) #10 X 3/4" FH SDS

HINGES:

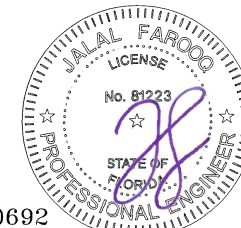
SURFACE MOUNT METALLIC PIVOT HINGES
(2) FOR VENT HEIGHTS UPTO 82-11/16"
(3) FOR VENT HEIGHTS ABOVE 82-11/16"
TOP & BOTTOM HINGES AT 8" FROM EACH END
INTERMEDIATE HINGE AT MIDSPAN
FASTENED WITH (2) #12-28 X 1/2" FH MS
(2) 1/4-20 X 1/4" SET SCREW

OPERATOR:

ROTO OPERATOR BY 'INTERLOCK' LOCATED AT SILL END FASTENED WITH (6) #8 X 3/4" FH SMS
(2) #8-32 X 7/16" FH MS

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FL #20692



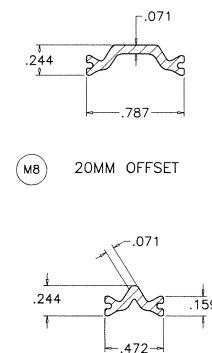
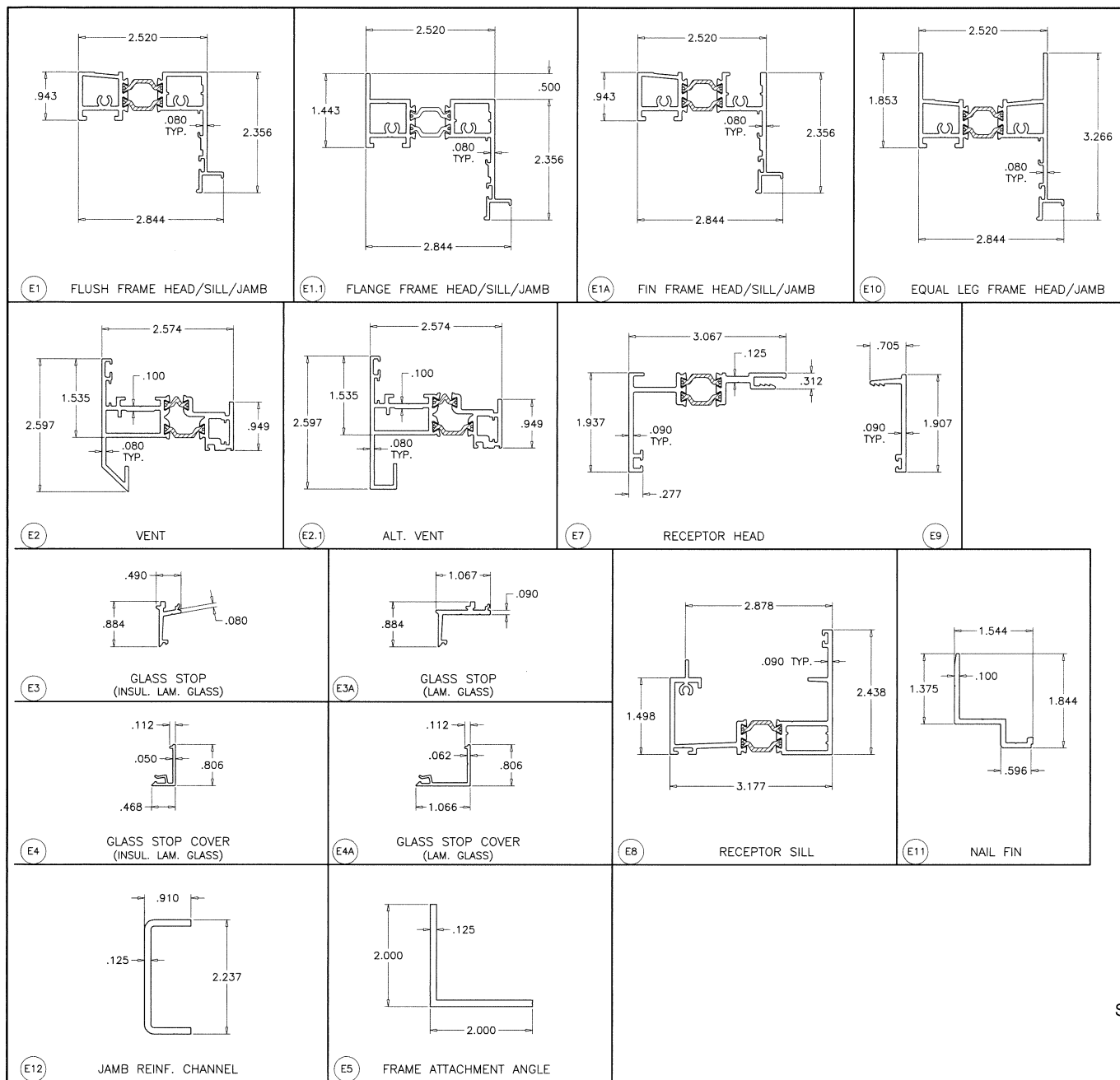
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W16-46
 sheet 6 of 8



TECATHERM® 66 GF INSULBARS
 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

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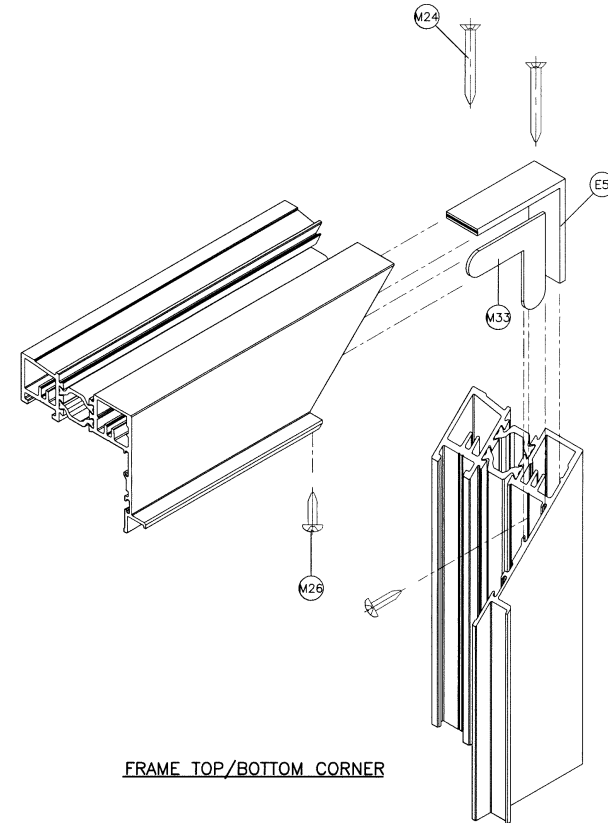
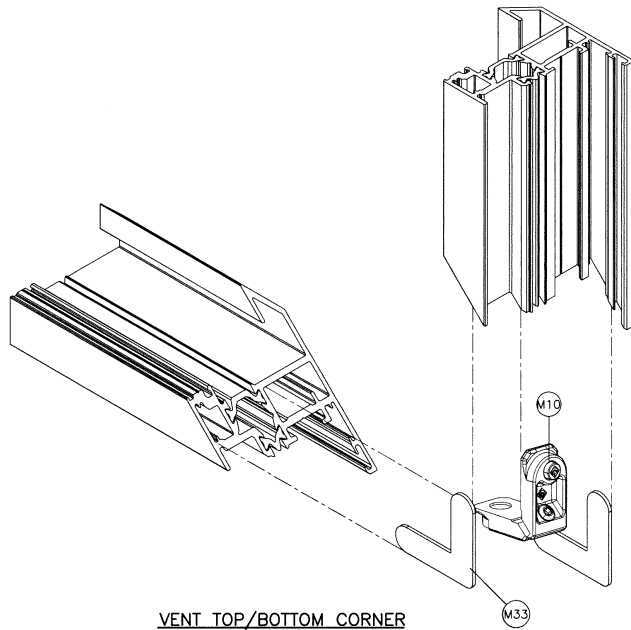


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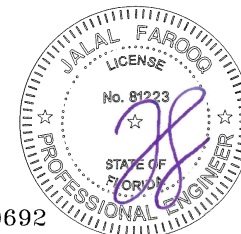
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drawing no.
W16-46
 sheet 8 of 8