



MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
 11805 SW 26 Street, Room 208
 Miami, Florida 33175-2474
 T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/building

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
 BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

E.S. Windows, LLC
3550 NW 49th Street
Miami, FL 33142

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami-Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/ or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Series “EL-400” Aluminum Horizontal Sliding Window – L.M.I.

APPROVAL DOCUMENT: Drawing No. **24-64D**, titled “ES-EL400 Alum Sliding Glass Window (L.M.I)”, sheets 1 through 11 of 11, dated 09/27/24, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, **Barranquilla, Colombia**, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

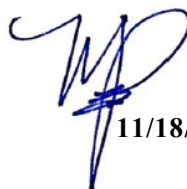
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**




 11/18/24

NOA No. 24-1021.05
Expiration Date: November 27, 2029
Approval Date: November 27, 2024
Page 1

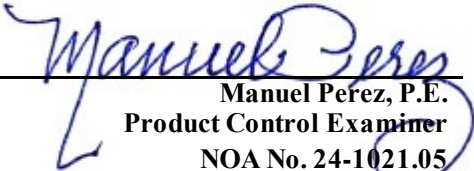
NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 24-1021.05)
2. Drawing No. **24-64D**, titled "ES-EL400 Alum Sliding Glass Window (L.M.I)", sheets 1 through 11 of 11, dated 09/27/24, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

B. TESTS (Supplement test for sill riser part #ES-2020-041)

1. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Forced Entry Test, per FBC, and TAS 202-94
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of aluminum sliding glass doors, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-19007**, dated 12/09/19, signed and sealed by Constantin Bortes, P.E.
(Submitted under NOA No. 21-0728.02)
2. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Forced Entry Test, per FBC, and TAS 202-94
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of an aluminum sliding glass door, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-17-009**, dated 06/15/17, signed and sealed by Constantin Bortes, P.E. with Letter of Clarification issued on 07/13/17, signed and sealed by Constantin Bortes, P.E.
(Submitted under NOA No. 16-0617.02)


Manuel Pérez, P.E.
Product Control Examiner
NOA No. 24-1021.05
Expiration Date: November 27, 2029
Approval Date: November 27, 2024

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C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with FBC 8th Edition (2023), dated 10/02/24, prepared by Al-Farooq Corporation, dated 11/16/20, signed and sealed by Jalal Farooq, P.E.
2. Glazing complies with **ASTM E1300-09**

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

E. MATERIAL CERTIFICATIONS

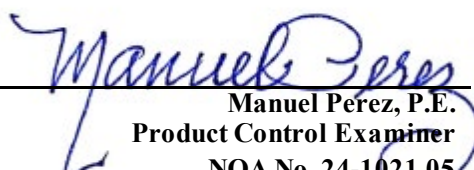
1. Notice of Acceptance No. **23-0717.30** issued to **Kuraray America, Inc.** for their “**SentryGlas® (Clear and White) Glass Interlayers**” dated 08/31/23, expiring on 07/04/28.
2. Notice of Acceptance No. **24-0205.08** issued to **Kuraray America, Inc.** for their “**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**” dated 03/21/24, expiring on 07/08/29.
3. Notice of Acceptance No. **23-0713.18** issued to **Eastman Chemical Company (MA)** for their “**Saflex® PVB Clear and Colored Interlayers for Laminated Glass**” dated 08/17/23, expiring on 05/21/26.
4. Notice of Acceptance No. **24-0312.10** issued to **Eastman Chemical Company (MA)** for their “**Saflex® Storm - Saflex® and Saflex® HP Composite Interlayers with PET Core Laminated Glass**” dated 04/11/24, expiring on 12/11/28.

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 8th Edition (2023)**, and of no financial interest, dated October 2, 2024, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
2. Distributor Agreement between ES Windows–Energia Solar, S.A., Barranquilla, Columbia, S.A. and E.S. Windows, LLC, Miami, Florida, dated 08/03/15, signed by Ms. Carla Garcia (MGR) and Andres Chamorro (Gen. MGR) respectively (original copy in various ES approved NOA(s) files).
(Submitted under NOA No. 23-0714.13)

G. OTHERS

1. Notice of Acceptance No. **23-0714.13**, issued to E.S. Windows, LLC for their Series “**EL-400**” Aluminum Sliding Glass Door – L.M.I., approved on 08/17/23 and expiring on 07/20/27.



Manuel Pérez, P.E.
Product Control Examiner
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DAYLITE OPENING WIDTH:
 PANEL WIDTH - 5.688"
 DAYLITE OPENING HEIGHT:
 PANEL HEIGHT - 5.813"
 PANEL HEIGHT = DOOR FRAME HEIGHT - 1.250"

THESE WINDOWS ARE RATED FOR LARGE & SMALL MISSILE IMPACT.
 SHUTTERS ARE NOT REQUIRED.
 VERIFY COMPLIANCE WITH EGRESS LIMITATIONS WHERE REQUIRED.

SERIES ES-EL400
ALUMINUM SLIDING GLASS WINDOW

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 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.

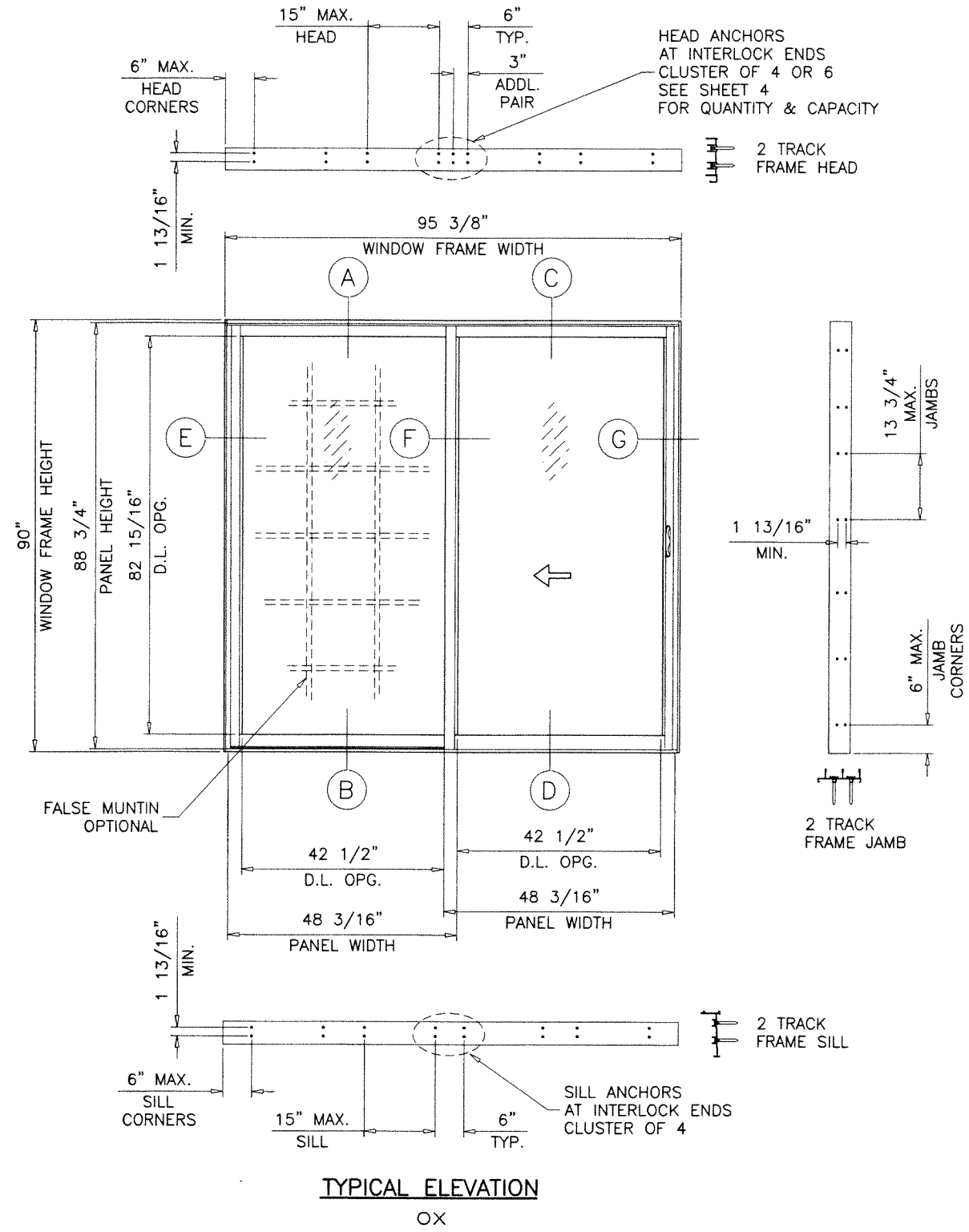
A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

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 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)'.



TYPICAL ELEVATION
 OX

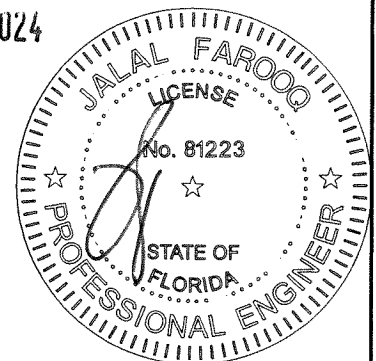
INSTRUCTIONS:

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** DETERMINE WINDOW CAPACITY FROM TABLE ON SHEET 3 FOR THE REINFORCING OPTION USED.
- STEP 3** USING CHARTS ON SHEET 4 SELECT ANCHOR OPTION WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2 AND 3 SHALL APPLY TO ENTIRE SYSTEM.

OCT 17 2024

PRODUCT APPROVED
 As complying with the Florida Building Code
 NOA-No. **24-1021.05**
 Approval Date: **11/27/2024**
 By: *Manuel Bern*
 Miami-Dade Product Control



af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220 (C.A.N. 3538)
 MIAMI, FLORIDA 33173 TEL. (305) 262-6978 FAX. (305) 262-6978
 COMP-ANL\24-64D-ES

ES-EL400 ALUM SLIDING GLASS WINDOW (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

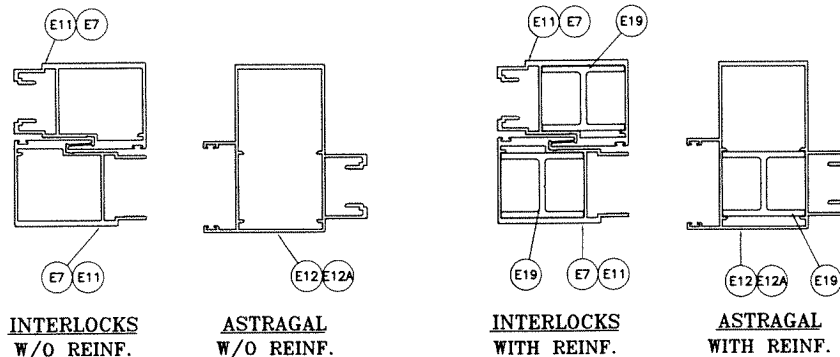
revisions:	no	date	by	description

date: 09-27-24
 scale: 3/8"=1'-0"
 dr. by: TARIQ
 chk. by:

drawing no. **24-64D**
 sheet 1 of 11

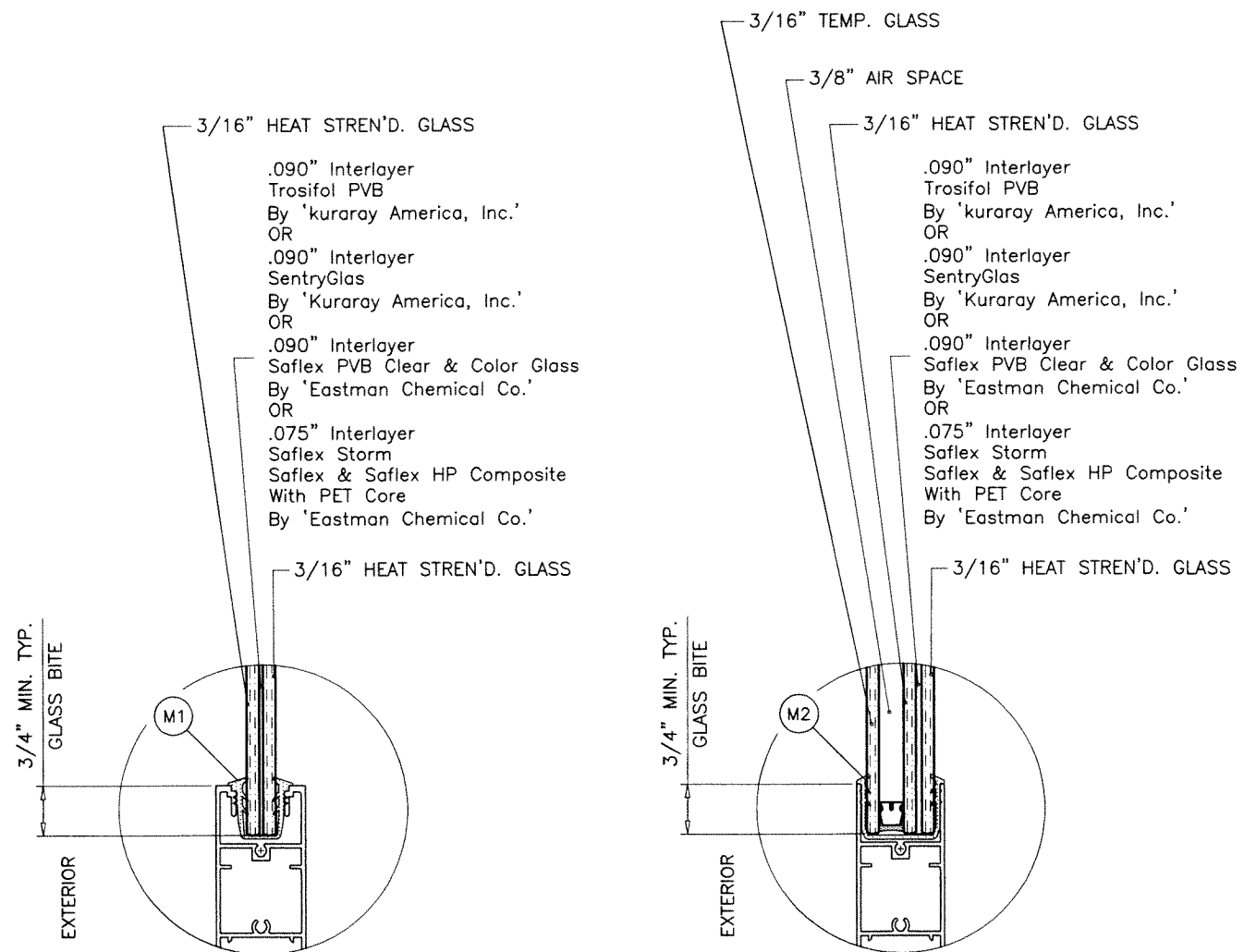
DESIGN LOAD CAPACITY - PSF					
AVERAGE PANEL WIDTH INCHES	WDW. FRAME HEIGHT INCHES	INTERLOCK & ASTRAGAL STILES WITHOUT REINF.		INTERLOCK & ASTRAGAL STILES WITH REINF.	
		EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
24	82	60.0	60.0	80.0	80.0
30		60.0	60.0	80.0	80.0
36		60.0	60.0	80.0	80.0
42		60.0	60.0	80.0	80.0
47-1/4		60.0	60.0	80.0	80.0
48		59.1	59.1	78.8	78.8
54	52.5	52.5	70.0	70.0	
60	-	-	47.3	47.3	
24	84	60.0	60.0	80.0	80.0
30		60.0	60.0	80.0	80.0
36		60.0	60.0	80.0	80.0
42		60.0	60.0	80.0	80.0
47-1/4		60.0	60.0	80.0	80.0
48		59.1	59.1	78.8	78.8
54	52.5	52.5	70.0	70.0	
60	-	-	47.3	47.3	
24	90	60.0	60.0	80.0	80.0
30		60.0	60.0	80.0	80.0
36		60.0	60.0	80.0	80.0
42		60.0	60.0	80.0	80.0
47-1/4		60.0	60.0	80.0	80.0
48		59.1	59.1	78.8	78.8
54	-	-	52.5	52.5	

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



$$\text{AVERAGE PANEL WIDTH} = \frac{\text{WINDOW FRAME WIDTH}}{\text{NUMBER OF PANELS}}$$

ALL EXT.(+) LOADS SHOWN IN CHART ARE FOR WINDOW INSTALLATIONS WHERE WATER INFILTRATION RESISTANCE IS NOT REQUIRED.
FOR WINDOW INSTALLATIONS WHERE WATER INFILTRATION RESISTANCE IS REQUIRED LIMIT EXT.(+) LOADS AS FOLLOWS:
FOR 3-11/16" SILL HEIGHT LIMIT EXT.(+) LOADS TO 80.0 PSF
FOR 3-1/8" SILL HEIGHT LIMIT EXT.(+) LOADS TO 66.6 PSF
FOR 2-3/4" SILL HEIGHT LIMIT EXT.(+) LOADS TO 53.3 PSF
SEE SHEET 14 FOR DETAILS



GLASS TYPE 'A'
7/16" OVERALL LAM. GLASS

GLASS TYPE 'A1'
1" OVERALL INSUL. LAM. GLASS

GLAZING OPTIONS

3/8" 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

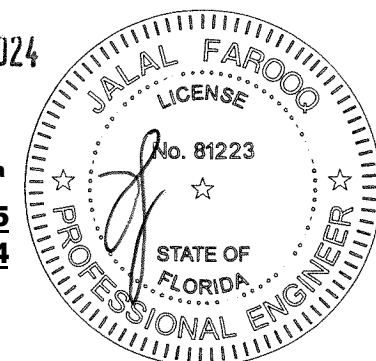
SEE CHART ABOVE FOR DESIGN LOAD CAPACITY OF DESIRED GLASS SIZE AND REINFORCING TYPES.

SEE CHART ON SHEET 4 FOR HEAD ANCHOR CAPACITY.

LOWER DESIGN PRESSURES FROM DESIGN LOAD CHART OR HEAD ANCHOR CHART WILL APPLY TO ENTIRE SYSTEM.

WINDOW HEIGHT AND WIDTH SIZE MUST COMPLY EGRESS REQUIREMENTS PER FBC AS REQUIRED.

PRODUCT APPROVED
As complying with the Florida Building Code
NOA-No. **24-1021.05**
Approval Date: **11/27/2024**
By: *Manuel Perez*
Miami-Dade Product Control



OCT 17 2024

af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
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revisions:	no	date	description

date: 09-27-24
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
24-64D

sheet 3 of 11

HEAD ANCHOR LOAD CAPACITY - PSF									
AVERAGE PANEL WIDTH INCHES	WDW. FRAME HEIGHT INCHES	ANCHOR TYPES 'A' & 'B'						ANCHOR TYPE 'C'	
		1/4" MAX. SHIM		3/8" MAX. SHIM		1/2" MAX. SHIM		3/8" MAX. SHIM	
		4 ANCHORS AT MTG. STILE ENDS	6 ANCHORS AT MTG. STILE ENDS	4 ANCHORS AT MTG. STILE ENDS	6 ANCHORS AT MTG. STILE ENDS	4 ANCHORS AT MTG. STILE ENDS	6 ANCHORS AT MTG. STILE ENDS	4 ANCHORS AT MTG. STILE ENDS	6 ANCHORS AT MTG. STILE ENDS
		EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)
24	82	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
30		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
36		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
42		80.0	80.0	80.0	80.0	71.5	80.0	80.0	80.0
47-1/4		80.0	80.0	80.0	80.0	63.6	80.0	80.0	80.0
48		80.0	80.0	80.0	80.0	62.6	80.0	80.0	80.0
54		80.0	80.0	71.6	80.0	55.6	74.2	72.7	80.0
60		72.7	80.0	64.4	80.0	50.1	66.8	65.4	80.0
24	84	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
30		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
36		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
42		80.0	80.0	80.0	80.0	69.8	80.0	80.0	80.0
47-1/4		80.0	80.0	79.8	80.0	62.1	80.0	80.0	80.0
48		80.0	80.0	78.6	80.0	61.1	80.0	79.8	80.0
54		78.9	80.0	69.9	80.0	54.3	72.4	71.0	80.0
60		71.0	80.0	62.9	80.0	48.9	65.2	63.9	80.0
24	90	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
30		80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
36		80.0	80.0	80.0	80.0	76.1	80.0	80.0	80.0
42		80.0	80.0	80.0	80.0	65.2	80.0	80.0	80.0
47-1/4		80.0	80.0	74.5	80.0	57.9	77.3	75.7	80.0
48		80.0	80.0	73.4	80.0	57.0	76.1	74.5	80.0
54		73.6	80.0	65.2	80.0	50.7	67.6	66.2	80.0

SEE CHART ON SHEET 3 FOR DESIGN LOAD CAPACITY OF DESIRED GLASS SIZE AND REINFORCING TYPES.

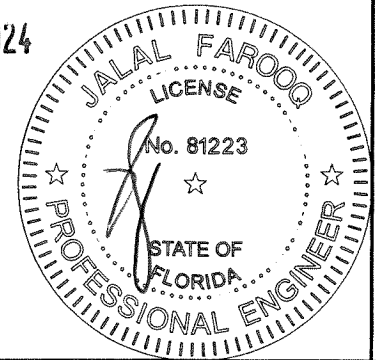
SEE CHART ABOVE FOR HEAD ANCHOR CAPACITY.

LOWER DESIGN PRESSURES FROM DESIGN LOAD CHART OR HEAD ANCHOR CHART WILL APPLY TO ENTIRE SYSTEM.

DOOR HEIGHT AND WIDTH SIZE MUST COMPLY EGRESS REQUIREMENTS PER FBC AS REQUIRED.

OCT 17 2024

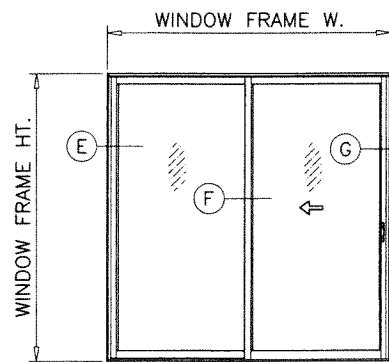
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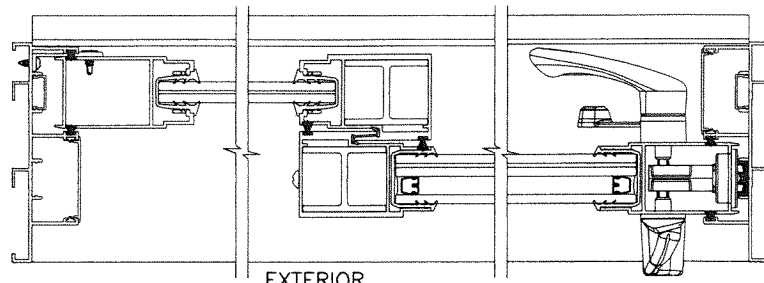
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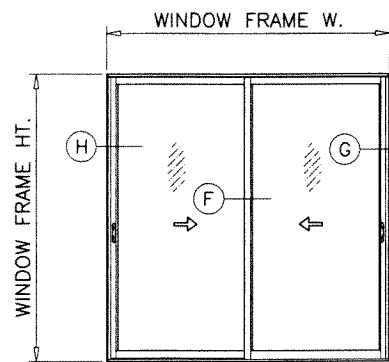
revisions:	no	date	by	description
date:	09-27-24	scale:	-	dr. by: TARIQ
				chk. by:
drawing no.	24-64D			
sheet	4 of 11			



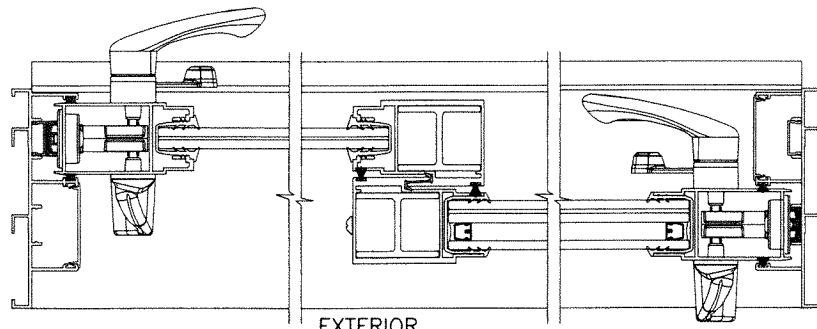
OX (SHOWN)
XO



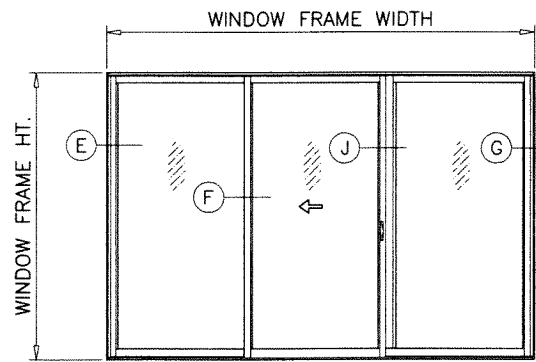
EXTERIOR



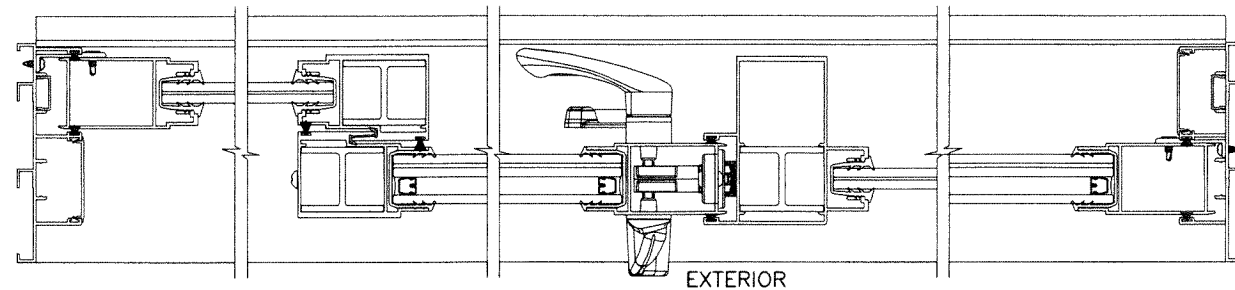
XX (SHOWN)



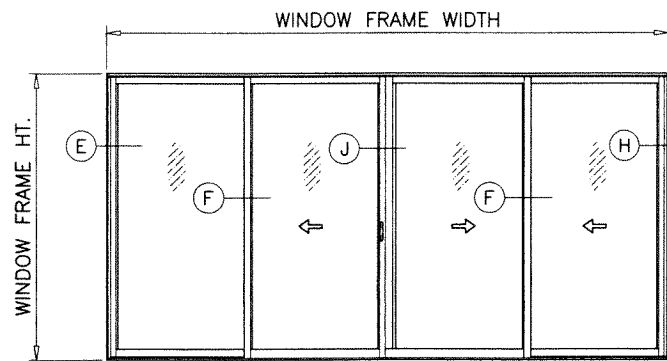
EXTERIOR



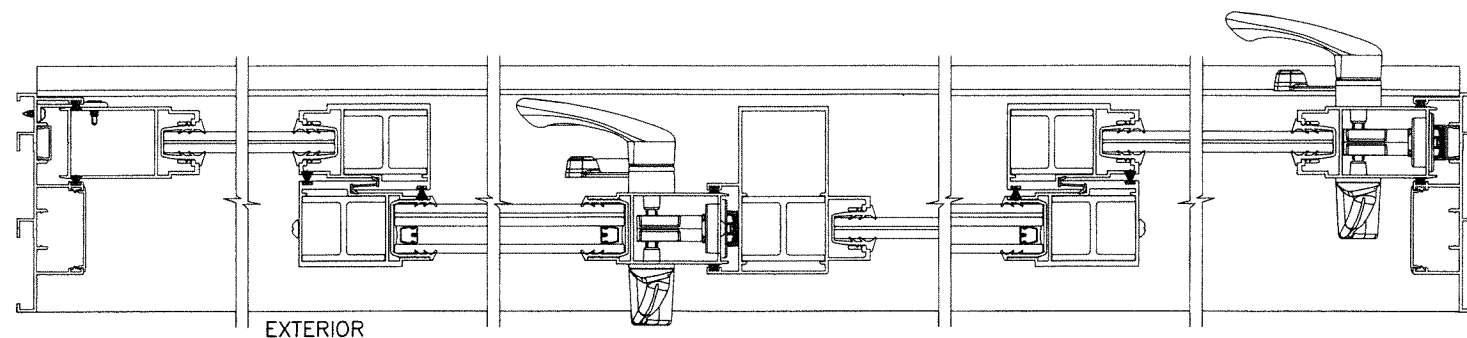
OX-O (SHOWN)
O-XO



EXTERIOR



OX-XX (SHOWN)
XX-XO
OX-XO
XX-XX



EXTERIOR

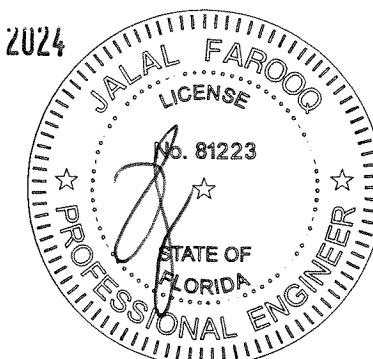
NOTE:

1. CONFIGURATIONS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
2. FOR APPLICABLE DESIGN PRESSURES SEE SHEET 2.
3. FOR ANCHOR DETAILS SEE SHEETS 6 THRU 7.

APPROVED CONFIGURATIONS

PRODUCT APPROVED
As complying with the Florida
Building Code
NOA-No. **24-1021.05**
Approval Date: **11/27/2024**
By: *Manuel Fern*
Miami-Dade Product Control

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COMP-ANL\24-64D-ES

ES-EL400 ALUM SLIDING GLASS WINDOW (L.M.I.)

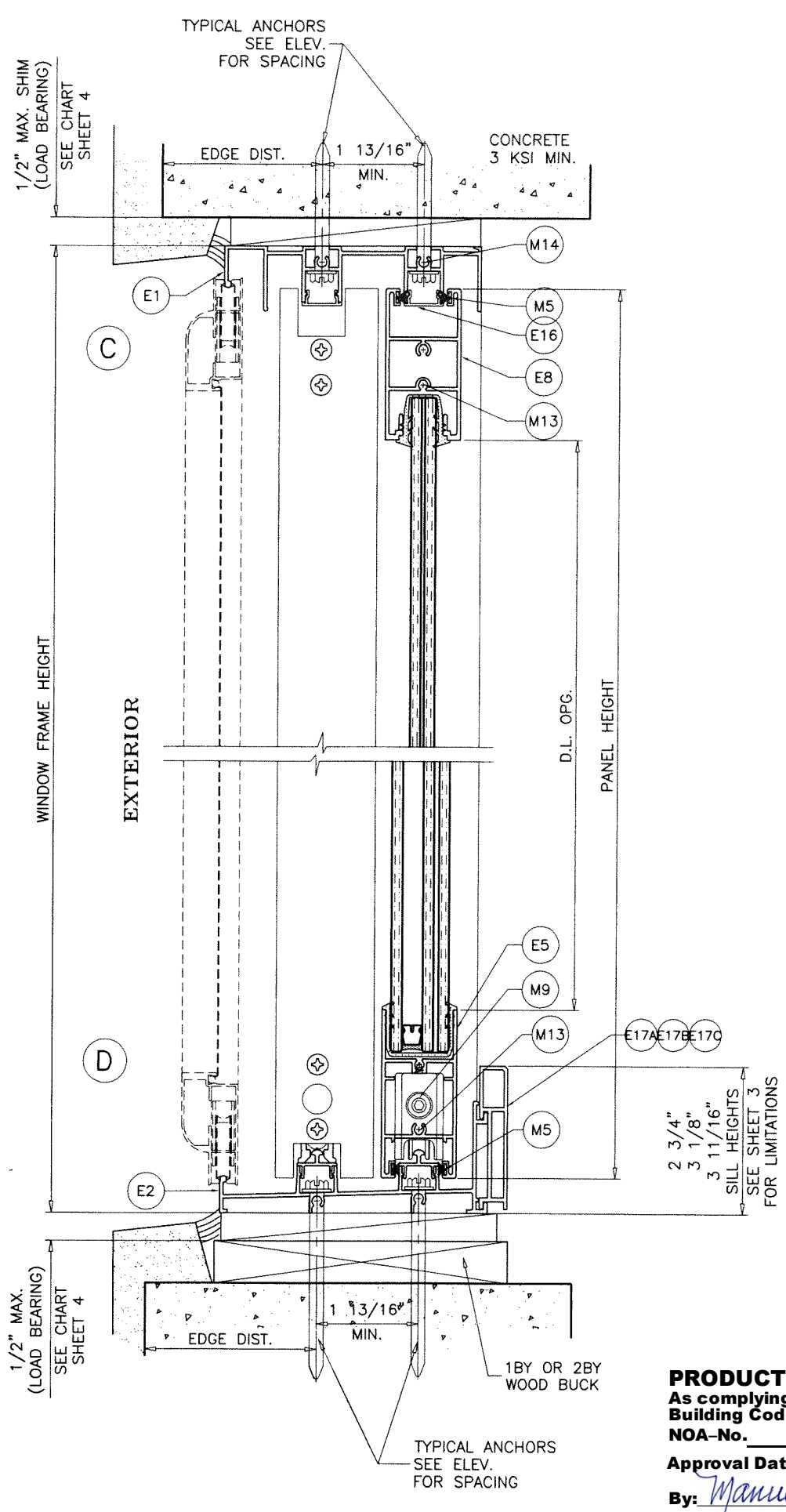
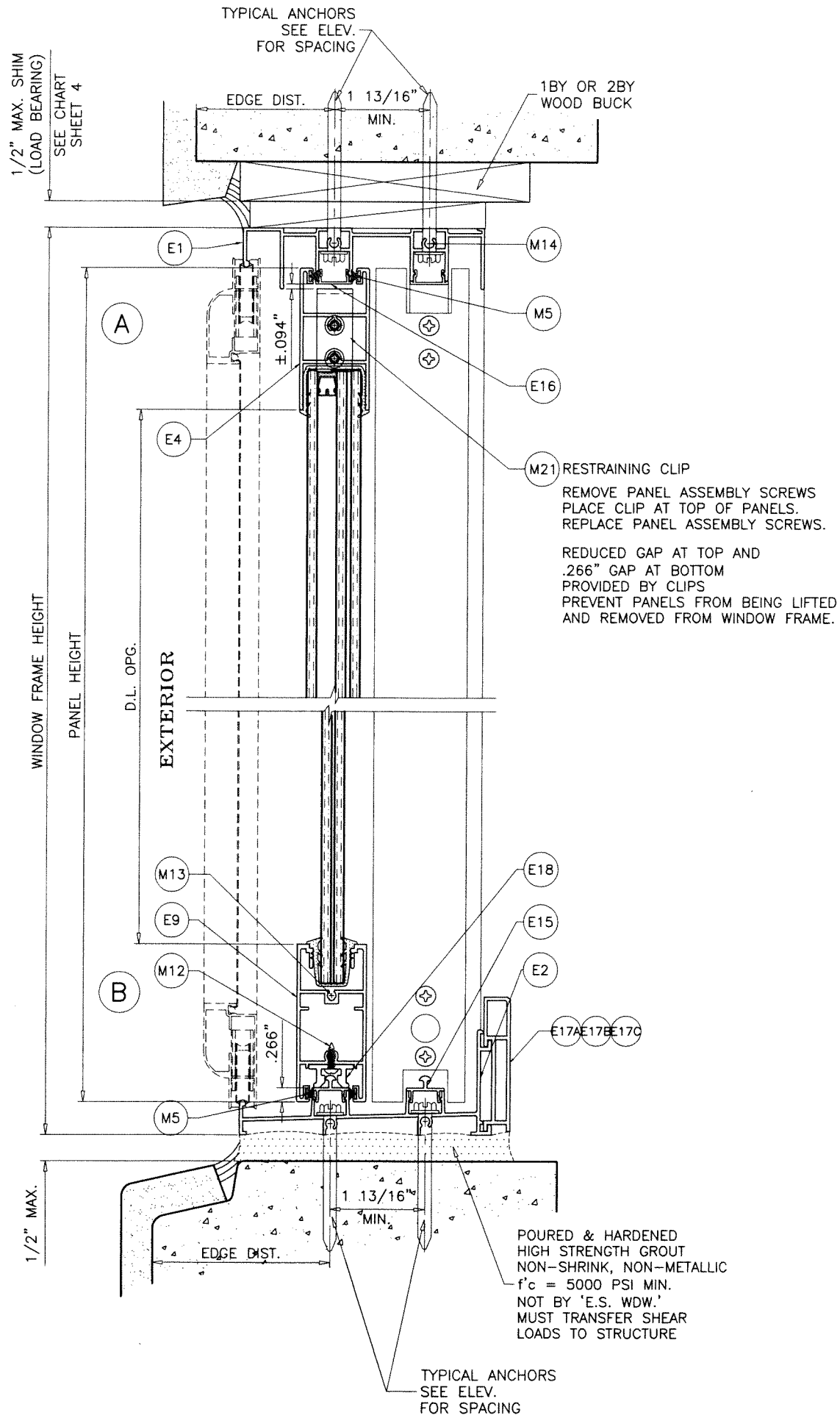
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

no.	date	by	description

date: 09-27-24
scale: -
dr. by: TARIQ
chk. by:

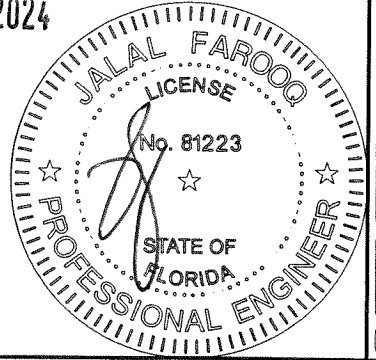
drawing no.
24-64D

sheet 5 of 11



OCT 17 2024

PRODUCT APPROVED
As complying with the Florida
Building Code
NOA-No. **24-1021.05**
Approval Date: **11/27/2024**
By: *Manuel Perez*
Miami-Dade Product Control



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

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dr. by: TARIQ
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drawing no.
24-64D

sheet 6 of 11

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

AT HEAD

- TYPE 'A'** - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD
 THRU 1BY BUCKS INTO CONCRETE
 1-3/4" MIN. EMBED INTO CONCRETE, 1-1/2" MIN. EDGE DIST.
 THRU 2BY BUCKS INTO CONCRETE
 1-1/2" MIN. EMBED INTO CONCRETE, 1-1/2" MIN. EDGE DIST.
- TYPE 'B'** - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 DIRECTLY INTO CONCRETE
 2" MIN. EMBED INTO CONCRETE, 1-1/2" MIN. EDGE DIST.
- TYPE 'C'** - 1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)
 INTO F.B.C. APPROVED MULLIONS
 OR
 INTO METAL STRUCTURES
 (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)

AT SILL

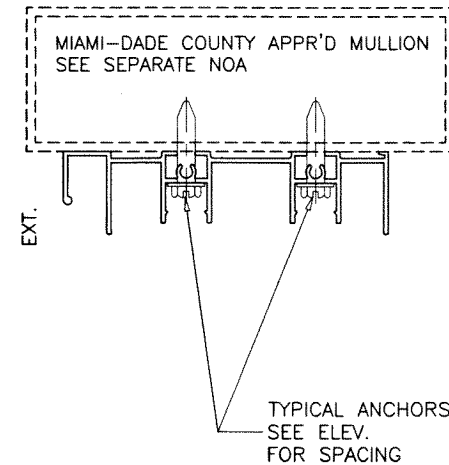
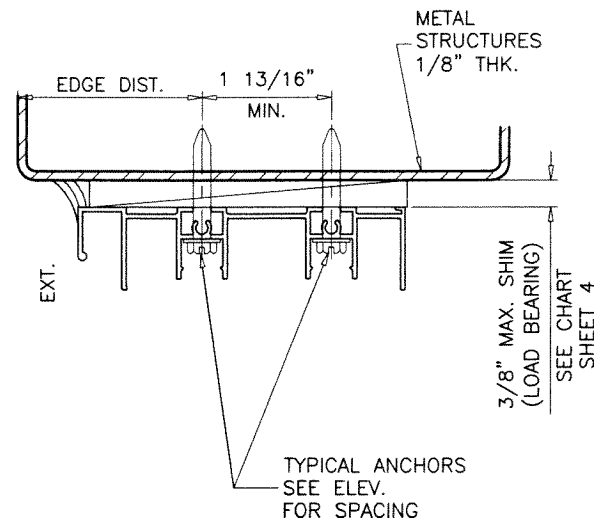
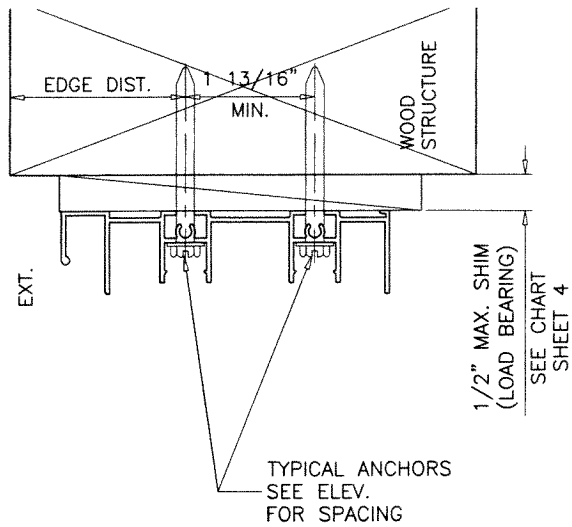
- TYPE 'B'** - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 DIRECTLY INTO CONCRETE
 1-3/4" MIN. EMBED INTO CONCRETE

AT JAMBS

- TYPE 'A'** - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD
 THRU 1BY OR 2BY BUCKS INTO CONC. OR FILLED BLOCK
 1-1/4" MIN. EMBED INTO CONCRETE
 1-1/2" MIN. EMBED INTO FILLED BLOCKS
- TYPE 'B'** - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 DIRECTLY INTO CONCRETE OR GROUT FILLED BLOCKS
 2" MIN. EMBED INTO CONCRETE
 2" MIN. EMBED INTO GROUT FILLED BLOCKS
- TYPE 'C'** - 1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)
 INTO F.B.C. APPROVED MULLIONS
 OR
 INTO METAL STRUCTURES
 (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)

ANCHOR EDGE DISTANCES

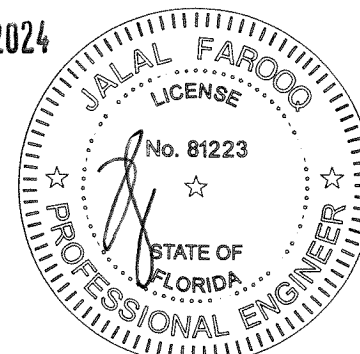
INTO CONCRETE AND MASONRY = 2-1/2" MIN. (UNLESS SPECIFIED OTHERWISE)
 INTO WOOD STRUCTURE = 1" MIN.
 INTO METAL STRUCTURE = 3/4" MIN.
 WOOD AT HEAD OR JAMBS SG = 0.55 MIN.
 CONCRETE AT HEAD, SILL OR JAMBS f'c = 3000 PSI MIN.
 C-90 GROUT FILLED BLOCK AT JAMBS f'm = 2000 PSI MIN.



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.

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ES-EL400 ALUM SLIDING GLASS WINDOW (L.M.I.)

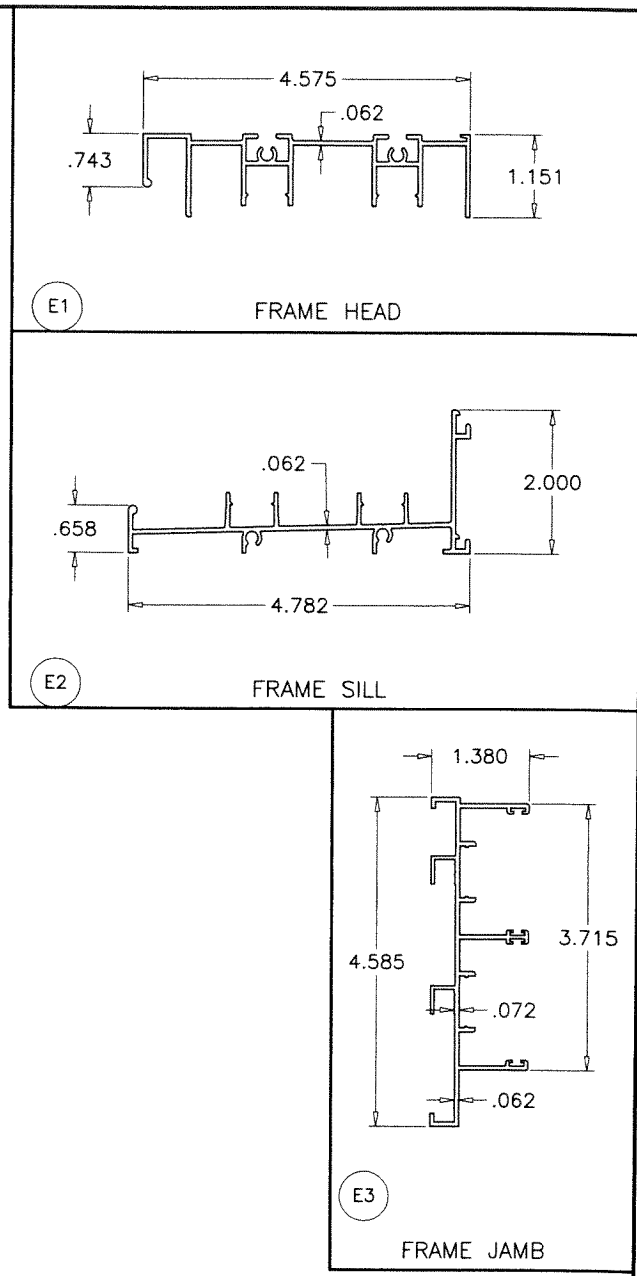
E.S. WINDOWS, LLC
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drawing no.
24-64D
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ITEM #	PART #	REQD.	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	ES-EL400-001	1	FRAME HEAD	6063-T6	-
E2	ES-EL400-002	1	FRAME SILL	6063-T6	-
E3	ES-EL400-003	2	FRAME JAMB	6063-T6	-
E4	ES-EL400-004	1/ PANEL	TOP RAIL (INSUL. LAM. GLASS)	6063-T6	-
E5	ES-EL400-005	1/ PANEL	BOTTOM RAIL (INSUL. LAM. GLASS)	6063-T6	-
E6	ES-EL400-006	AS REQD.	JAMB STILE (INSUL. LAM. GLASS)	6063-T6	-
E7	ES-EL400-007	AS REQD.	INTERLOCK STILE (INSUL. LAM. GLASS)	6063-T6	-
E8	ES-EL400-009	1/ PANEL	TOP RAIL (LAM. GLASS)	6063-T6	-
E9	ES-EL400-010	1/ PANEL	BOTTOM RAIL (LAM. GLASS)	6063-T6	-
E10	ES-EL400-011	AS REQD.	JAMB STILE (LAM. GLASS)	6063-T6	-
E11	ES-EL400-012	AS REQD.	INTERLOCK STILE (LAM. GLASS)	6063-T6	-
E12	ES-EL400-013	AS REQD.	ASTRAGAL STILE (LAM. GLASS)	6063-T6	-
E12A	ES-EL400-008	AS REQD.	ASTRAGAL STILE (INSUL. LAM. GLASS)	6063-T6	-
E13	ES-EL400-014	AS REQD.	JAMB COVER	6063-T5	-
E15	ES-EL400-016	AS REQD.	SILL TRACK	6063-T6	-
E16	ES-EL400-017	AS REQD.	HEAD COVER	6063-T5	-
E17A	ES-2020-008	AS REQD.	SILL RISER	6063-T6	-
E17B	ES-2020-007	AS REQD.	ALT. SILL RISER	6063-T6	-
E17C	ES-2020-041	AS REQD.	ALT. SILL RISER	6063-T6	-
E18	ES-EL400-020	AS REQD.	FIXED PANEL BOTTOM GUIDE	6063-T6	-
E19	ES-EL400-021	AS REQD.	INTERLOCK REINFORCEMENT	6005-T5	-
E26	ES-6011	AS REQD.	SCREW COVER	6063-T6	-
M1	ES-EL400-G01	4/ PANEL	GLAZING GASKET (LAM. GLASS)	SILICONE	DUROMETER 70±3 SHORE A
M2	ES-EL400-G02	4/ PANEL	GLAZING GASKET (INSUL. LAM. GLASS)	SILICONE	DUROMETER 70±3 SHORE A
M3	ES2020-G04	AS REQD.	INTERLOCK BUMPER	PVC	DUROMETER 60±5 SHORE D
M4	W33271NK	AS REQD.	PILE W'STRIPPING (INTERLOCK)	WOOL	-
M5	W33181NK	AS REQD.	PILE W'STRIPPING	WOOL	-
M6	PS01-0014	AS REQD.	WINDOW HANDLE	DIE CAST ALUM	TWO POINT HANDLE
M7	PS01-1015	AS REQD.	STRIKE FOR MORTISE LOCK	ST. STEEL	-
M8	PS01-1036	AS REQD.	MORTISE 2 POINT LOCK	ST. STEEL	-
M9	GT-R34/3-01-A	2/ PANEL	ROLLER ASSEMBLY	ZAMAK	-
M10	6844.1	AS REQD.	BUMPER	ALUM/NYLON	-
M11	ES-EL400-FPI SL	2/ PANEL	FIX. PANEL CLIPS, AT 12" FROM TOP & BOTTOM	6063-T6	-
M12	#8 X 3/4"	AS REQD.	KEEPER FASTENERS	ST. STEEL	P.H. SMS
M13	#10 X 1-1/4"	AS REQD.	PANEL ASSEMBLY FASTENERS	ST. STEEL	P.H. SMS
M14	#12 X 1-1/2"	AS REQD.	FRAME ASSEMBLY FASTENERS	ST. STEEL	P.H. SMS
M15	#6 X 3/8"	AS REQD.	FIX. PANEL CLIP FASTENERS	ST. STEEL	P.H. SMS
M16	#8 X 1/2"	AS REQD.	FIX. PANEL CLIP FASTENERS	ST. STEEL	F.H. SMS
M18	#10 X 1/2"	AS REQD.	ROLLER FASTENERS	ST. STEEL	P.H. SMS
M19	#10 X 1"	AS REQD.	LOCK INSTALLATION FASTENERS	ST. STEEL	F.H. SMS
M20	#8 X 1/2"	AS REQD.	HANDLE INSTALLATION FASTENERS	ST. STEEL	F.H. SMS
M21	-	2/ MOV. PANEL	PANEL RESTRAINING CLIP	6063-T6	-



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AL-FAROOQ CORPORATION
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chk. by:				
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sheet	9 of 11			

LOCK:

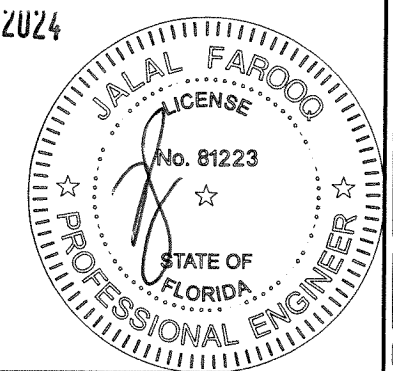
SURFACE MOUNT METALLIC HANDLE AT 44" FROM BOTTOM FASTENED TO LOCK STILE WITH (2) #8 X 1/2" FH SMS (M20)
 SURFACE MOUNT METALLIC 3 PLY DUAL HOOK LOCK 44" FROM BOTTOM FASTENED TO LOCK STILE WITH (2) #10 X 1" FH SMS
 SURFACE MOUNT METALLIC KEEPER AT 44" FROM BOTTOM FASTENED TO FRAME JAMB AND ASTRAGAL STILE WITH (3) #8 X 3/4" PH SMS (M12)

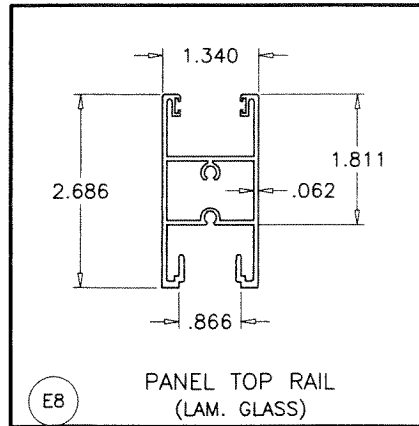
SEALANT:

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

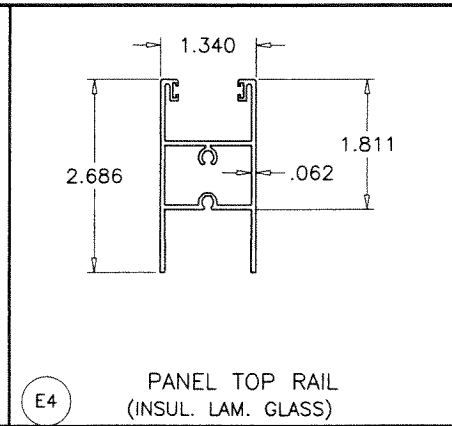
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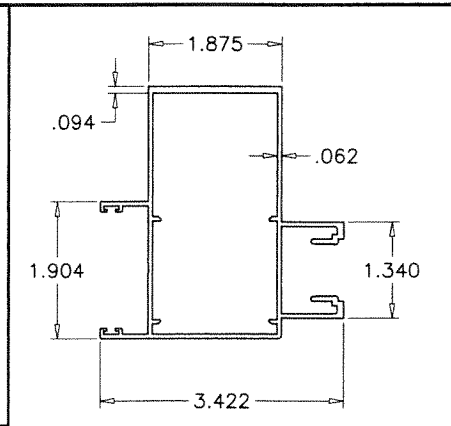




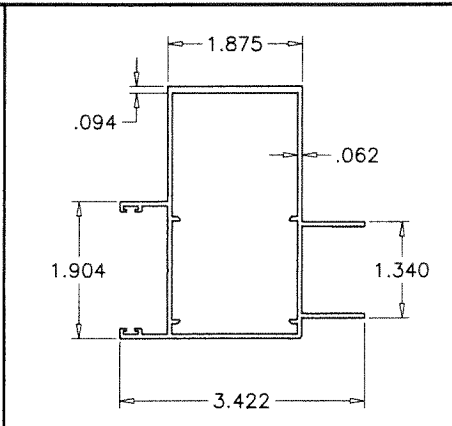
E8 PANEL TOP RAIL (LAM. GLASS)



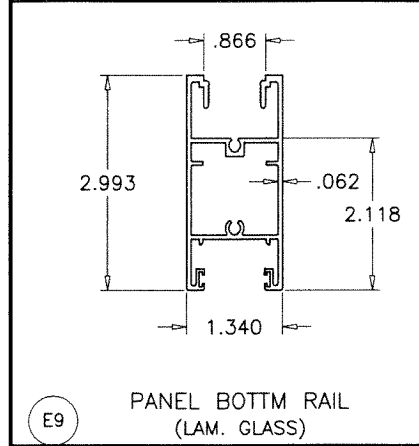
E4 PANEL TOP RAIL (INSUL. LAM. GLASS)



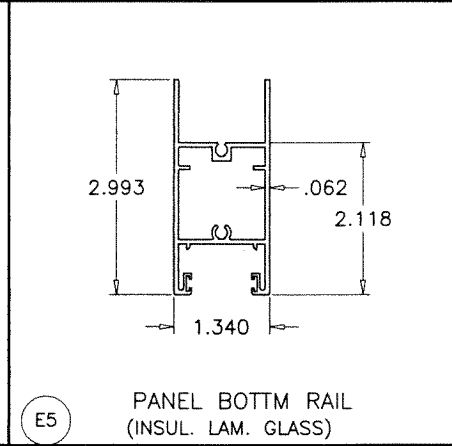
E12 ASTRAGAL STILE (LAM. GLASS)



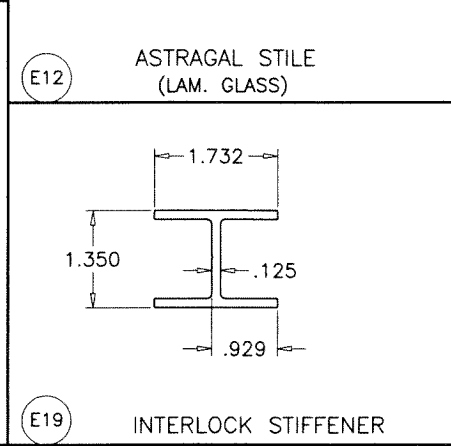
E12A ASTRAGAL STILE (INSUL. LAM. GLASS)



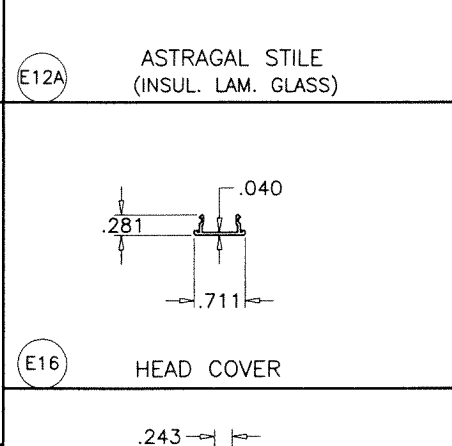
E9 PANEL BOTTM RAIL (LAM. GLASS)



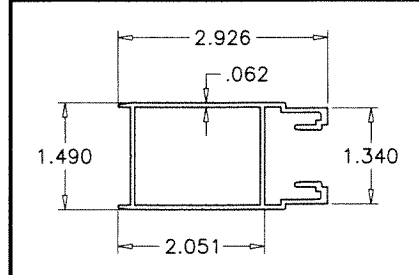
E5 PANEL BOTTM RAIL (INSUL. LAM. GLASS)



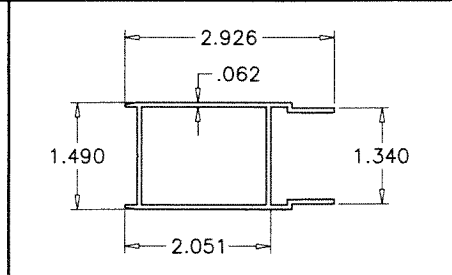
E19 INTERLOCK STIFFENER



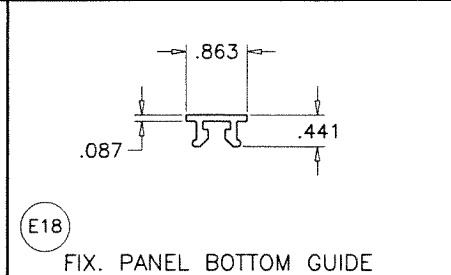
E16 HEAD COVER



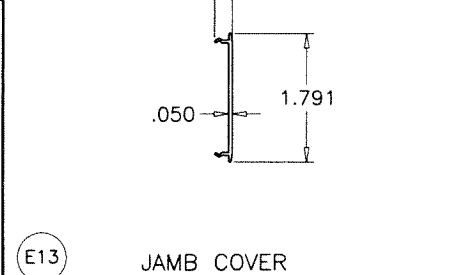
E10 PANEL JAMB STILE (LAM. GLASS)



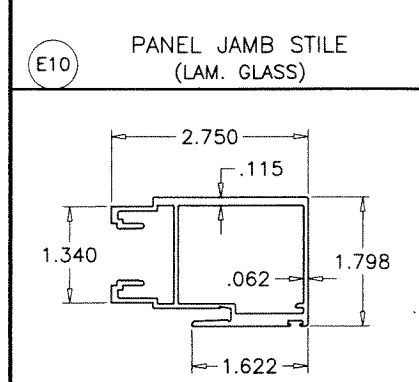
E6 PANEL JAMB STILE (INSUL. LAM. GLASS)



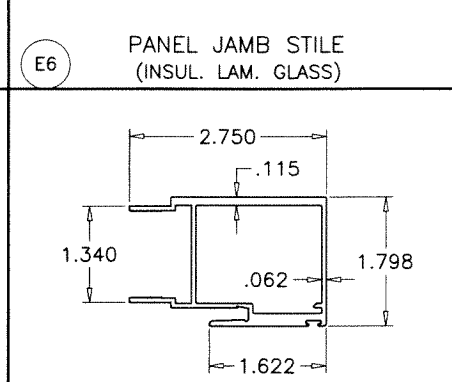
E18 FIX. PANEL BOTTOM GUIDE



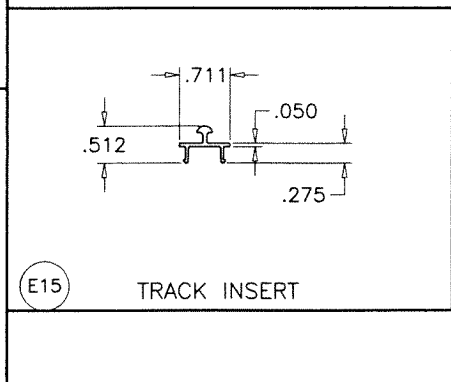
E13 JAMB COVER



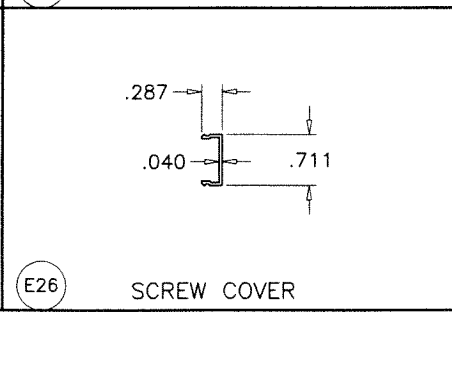
E11 INTERLOCK STILE (LAM. GLASS)



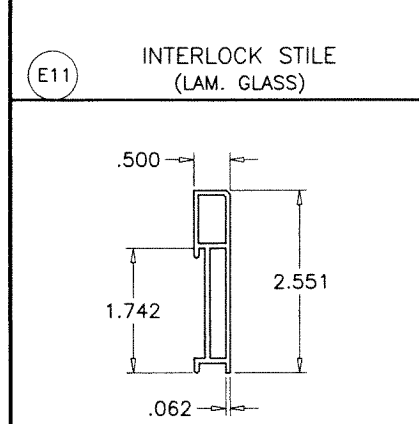
E7 INTERLOCK STILE (INSUL. LAM. GLASS)



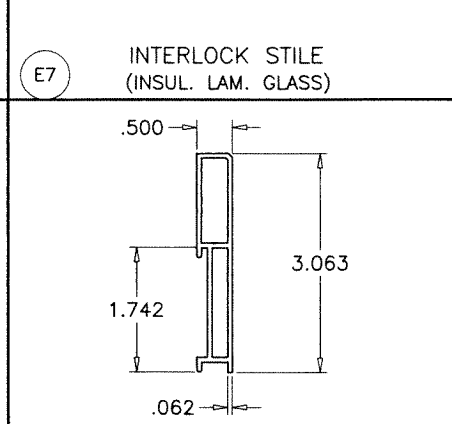
E15 TRACK INSERT



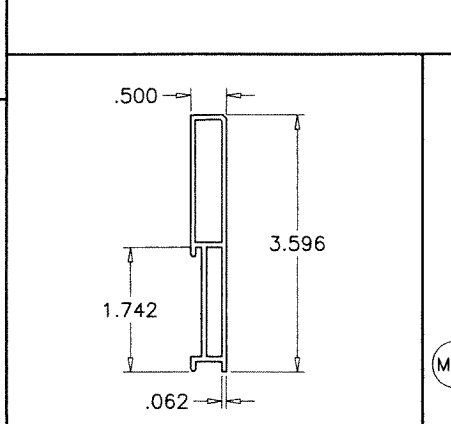
E26 SCREW COVER



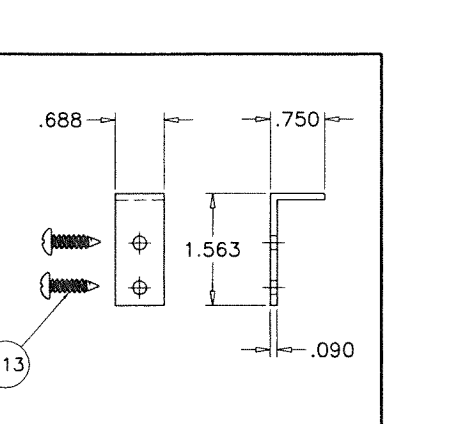
E17A SILL RISER



E17B ALT. SILL RISER



E17C ALT. SILL RISER



M21 RESTRAINING CLIP

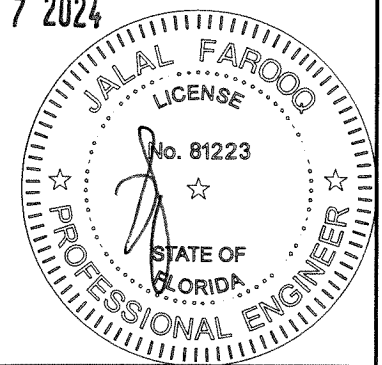
M1 GLAZING GAKET LAM. GLASS

M2 GLAZING GASKET INSUL. LAM. GLASS

MATERIAL = SILICONE
 HARDNESS = 70±3
 TENSILE STRENGTH = 1139 PSI
 ELONGATION AT BREAK = 235%
 TEAR STRENGTH = 107 Lb/IN
 BRITTLENESS TEMPERATURE = -40° F
 COMPRESSION SET = 12.5% (22h@212°F)

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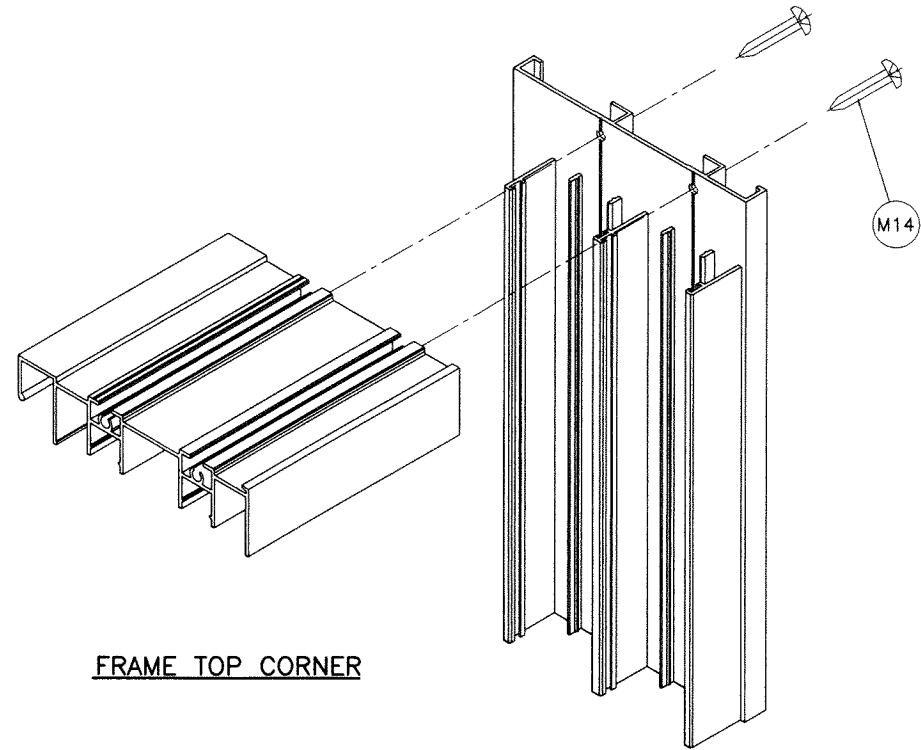
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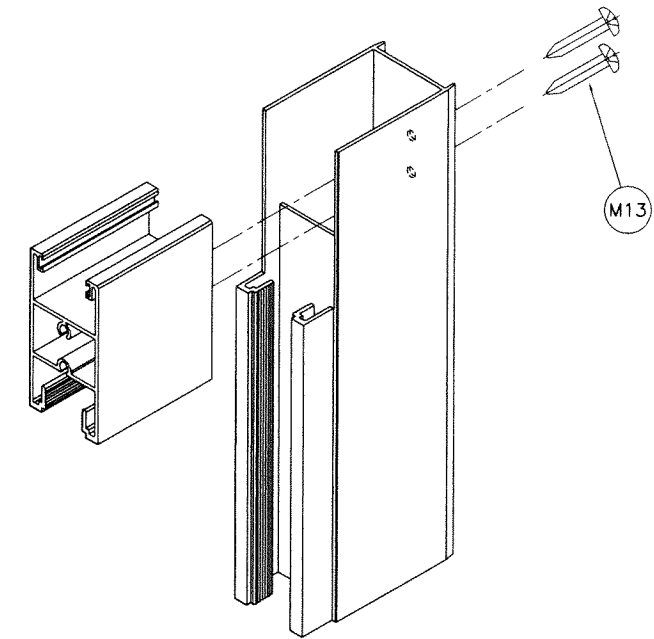
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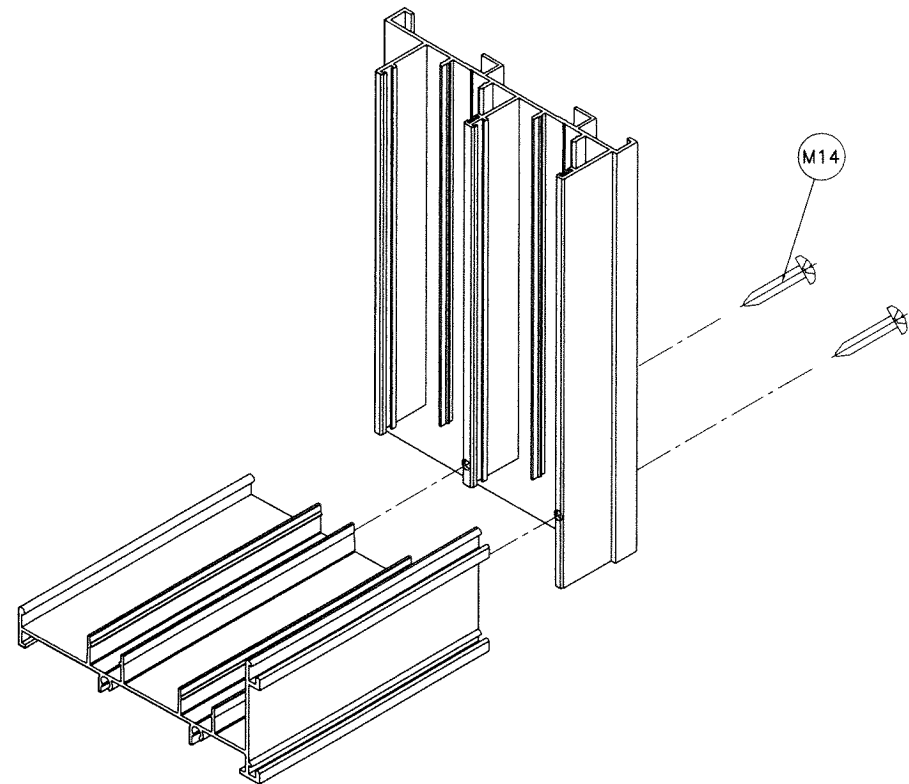
drawing no. **24-64D**
 sheet 10 of 11



FRAME TOP CORNER



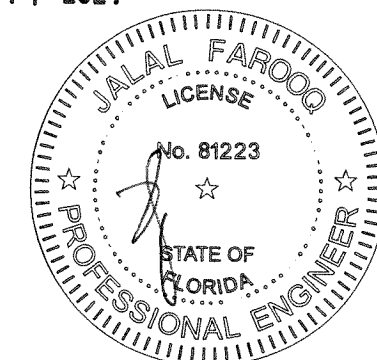
PANEL TOP/BOTTOM CORNER
LAM. GLASS RAIL & STILE (SHOWN)
INSUL. LAM. GLASS RAIL & STILE (SIMILAR)



FRAME BOTTOM CORNER

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