PA-01

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-150" Aluminum Fixed Window – L.M.I.

APPROVAL DOCUMENT: Drawing No. **W16-70**, titled "ES-EL150 Fixed Aluminum Wdw. (L.M.I)", sheets 1, 2, 2.1, 3, 3.1, 4 and 5 through 9 of 9, dated 11/13/16, with revision **E** dated 06/29/23, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration 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 **revises NOA No. 22-0105.01** and consists of this page 1 and evidence pages E-1, E-2, E-3 and E-4, as well as approval document mentioned above.

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

MIAMI-DADE COUNTY APPROVED

8/15/23

NOA No. 23-0714.17
Expiration Date: May 18, 2027
Approval Date: August 24, 2023

E.S. Windows, LLC

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 16-0617.05)

2. Drawing No. **W16-70**, titled "ES-EL150 Fixed Aluminum Wdw. (L.M.I)", sheets 1, 2, 2.1, 3, 3.1, 4 and 5 through 9 of 9, dated 11/13/16, with revision **D** dated 06/15/21, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0708.03)

B. TESTS

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) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Safety Performance Test, (class A) per ANSI Z97.1
along with marked-up drawings and installation diagram of a series EL-150 aluminum fixed window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-12002**, dated 04/30/20, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 20-1223.01)

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) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Safety Performance Test, (class A) per ANSI Z97.1
along with marked-up drawings and installation diagram of a series EL-150 aluminum fixed window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-11035**, dated 04/30/20, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 20-1223.01)

3. 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) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Safety Performance Test, (class A) per ANSI Z97.1
along with marked-up drawings and installation diagram of a series EL-150 aluminum fixed window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-11027**, dated 04/23/20, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 20-1223.01)

Manuel Perez

Manuel Perez, P.E.
Product Control Examiner
NOA No. 23-0714.17
Expiration Date: May 18, 2027
Approval Date: August 24, 2023

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

B. TESTS (CONTINUED)

4. 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
along with marked-up drawings and installation diagram of aluminum fixed window, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-16-004**, dated 11/14/16, and revised on 05/10/17, signed and sealed by Constantin Bortes, P.E.
(Submitted under NOA No. 16-0617.05)

5. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of aluminum fixed window, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-17-012**, dated 05/10/17, signed and sealed by Constantin Bortes, P.E.
(Submitted under NOA No. 16-0617.05)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC 5th Edition (2014)**, dated 11/16/16, revised on 12/21/16, updated on 11/09/20 to comply with **FBC 7th Edition (2020)** and further revised on 06/29/21 to include additional window sizes, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0708.03)

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. **20-0915.22** issued to **Kuraray America, Inc.** for their "**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**" dated 11/19/20, expiring on 07/08/24.

2. Notice of Acceptance No. **20-0915.19** issued to **Kuraray America, Inc.** for their **"SentryGlas® (Clear and White) Glass Interlayers**" dated 11/19/20, expiring on 07/04/23.

3. Notice of Acceptance No. **20-0622.03** issued to **Eastman Chemical Company (MA)** for their "**Saflex Storm - Saflex and Saflex HP Composite Glass Interlayers with PET Core"** dated 08/06/20, expiring on 12/11/23.

4. Notice of Acceptance No. **20-0622.01** issued to **Eastman Chemical Company (MA)** for their "**Saflex PVB Clear and Color Glass Interlayers**" dated 08/06/20, expiring on 05/21/21.

Manuel Perez

Manuel Perez, P.E.
Product Control Examiner
NOA No. 23-0714.17
Expiration Date: May 18, 2027
Approval Date: August 24, 2023

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 7th Edition (2020)** dated February 20, 2020, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 22-0105.01)

2. Statement letter of conformance, complying with **FBC 6th Edition (2017),** with **FBC 7th Edition (2020),** and of no financial interest, dated November 09, 2020, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 20-1223.01)

3. Proposal No. **18-0784** issued by the Product Control Section, dated June 29, 2018, signed by Manuel Perez, P.E.
(Submitted under NOA No. 20-1223.01)

4. Proposal No. **19-1230** issued by the Product Control Section, dated November 18, 2019, signed by Manuel Perez, P.E.
(Submitted under NOA No. 20-1223.01)

G. OTHERS

1. Notice of Acceptance No. **21-0708.03**, issued to E.S. Windows, LLC, for their Series "EL-150" Aluminum Fixed Windows – L.M.I., approved on 09/02/21 and expiring on 05/18/22.

Manuel Perez, P.E.
Product Control Examiner
NOA No. 23-0714.17
Expiration Date: May 18, 2027
Approval Date: August 24, 2023

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **W16-70**, titled "ES-EL150 Fixed Aluminum Wdw. (L.M.I)", sheets 1, 2, 2.1, 3, 3.1, 4 and 5 through 9 of 9, dated 11/13/16, with revision **E** dated 06/29/23, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **20-0915.22** issued to **Kuraray America, Inc.** for their "**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**" dated 11/19/20, expiring on 07/08/24.

2. Notice of Acceptance No. **22-1116.01** issued to **Kuraray America, Inc.** for their **"SentryGlas® (Clear and White) Glass Interlayers**" dated 12/15/22, expiring on 07/04/28.

3. Notice of Acceptance No. **22-1130.05** issued to **Eastman Chemical Company (MA)** for their "**Saflex Storm - Saflex and Saflex HP Composite Glass Interlayers with PET Core"** dated 01/26/23, expiring on 12/11/28.

4. Notice of Acceptance No. **21-0216.01** issued to **Eastman Chemical Company (MA)** for their "**Saflex PVB Interlayers - Clear and Colored for Glass**" dated 04/29/21, expiring on 05/21/26.

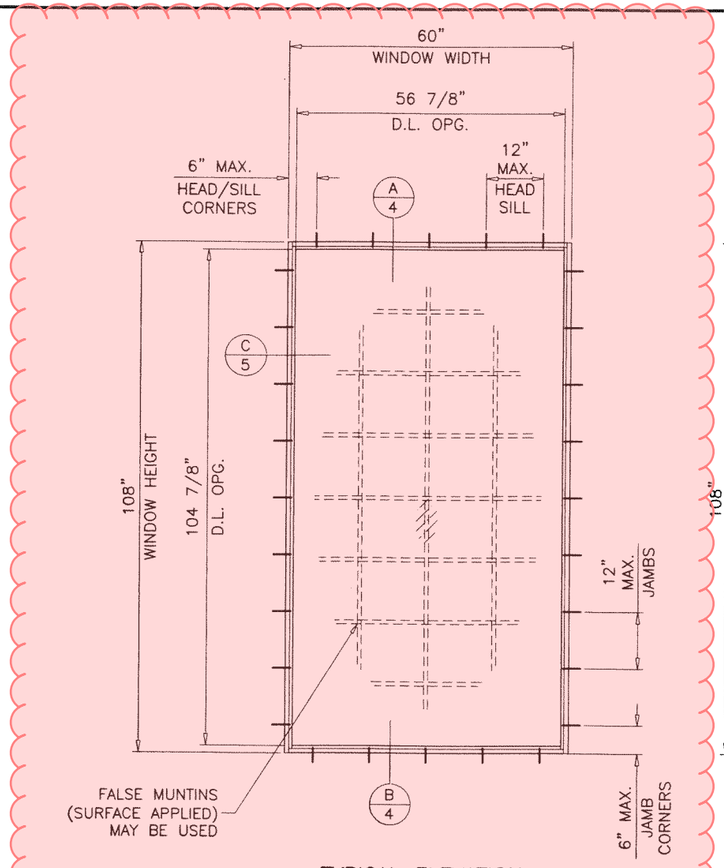
F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 7th Edition (2020),** with **FBC 8th Edition (2023),** and of no financial interest, dated July 12, 2023, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

G. OTHERS

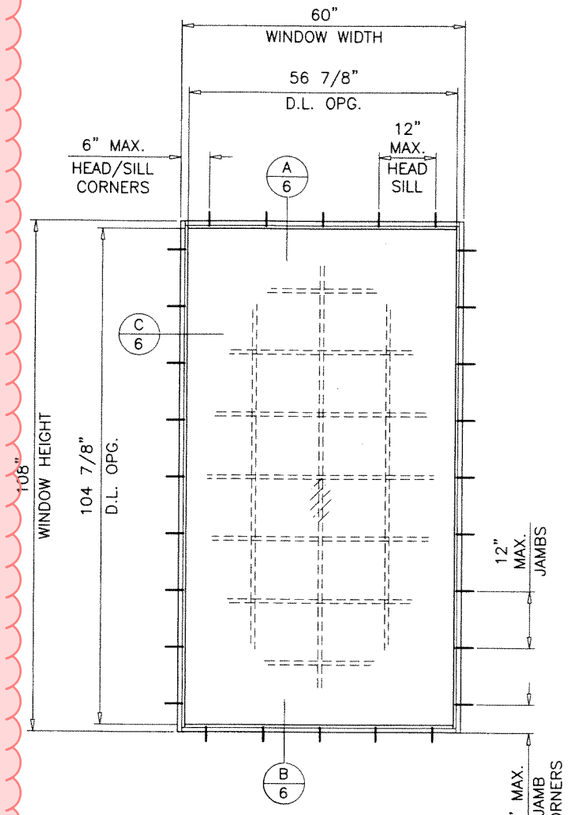
1. Notice of Acceptance No. **22-0105.01**, issued to E.S. Windows, LLC, for their Series "EL-150" Aluminum Fixed Windows – L.M.I., approved on 02/10/22 and expiring on 05/18/27.

Manuel Perez, P.E.
Product Control Examiner
NOA No. 23-0714.17
Expiration Date: May 18, 2027
Approval Date: August 24, 2023



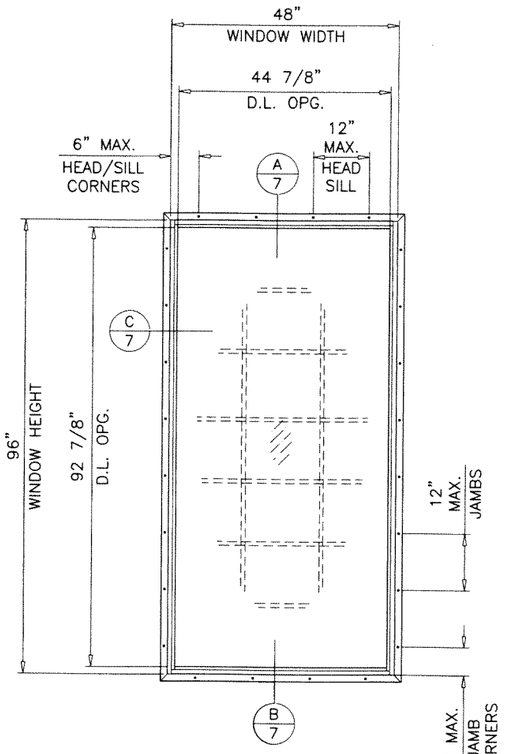
TYPICAL ELEVATION

FLANGE FRAMES



TYPICAL ELEVATION

FLANGE FRAMES WITH FLUSH ADAPTER



TYPICAL ELEVATION

FLANGE FRAMES WITH FIN ADAPTER

WINDOWS WITH FIN FRAME ADAPTERS LIMITED TO GLASS TYPES 'A', 'Ai', 'B', 'DI' & 'Ei' ONLY

ES-EL150
FIXED ALUMINUM WINDOW

DESIGN LOAD RATINGS FOR THESE WINDOWS TO BE AS PER CHARTS SHOWN ON SHEETS 3 AND 3.1.

APPROVAL APPLIES TO SINGLE UNITS OR SIDE BY SIDE COMBINATIONS OF FIX./FIX. OR FIXED WITH OTHER WINDOW TYPES IN MODULES OF TWO OR MORE WINDOWS USING MIAMI-DADE COUNTY 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)'.

DAYLITE OPENINGS:
D.L.O. HEIGHT = WINDOW HEIGHT – 3.125"
D.L.O. WIDTH = WINDOW WIDTH – 3.125"

WINDOWS WITH GLASS TYPES 'AA', 'BB' & 'AAi' COMPLY WITH REQUIREMENTS OF ANSI Z97.1.

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

PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami-Dade Product Control

JALAL FAROOQ LICENSE No. 61228 STATE OF FLORIDA PROFESSIONAL ENGINEER

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\W16-70ES

ES-EL150 FIXED ALUMINUM WDW. (L.M.I.)

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

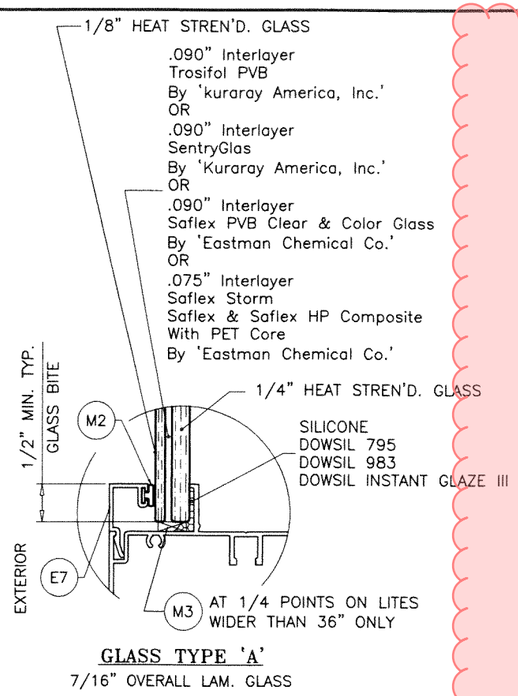
revisions:

no	date	by	description
A	05.12.17		NO CHANGE THIS SHEET
B	11.27.17		UPDATED TO 2017 FBC
C	06.22.20		GENERAL REVISION
D	06.15.21		NO CHANGE THIS SHEET
E	06.29.23		UPDATED TO 2023 FBC

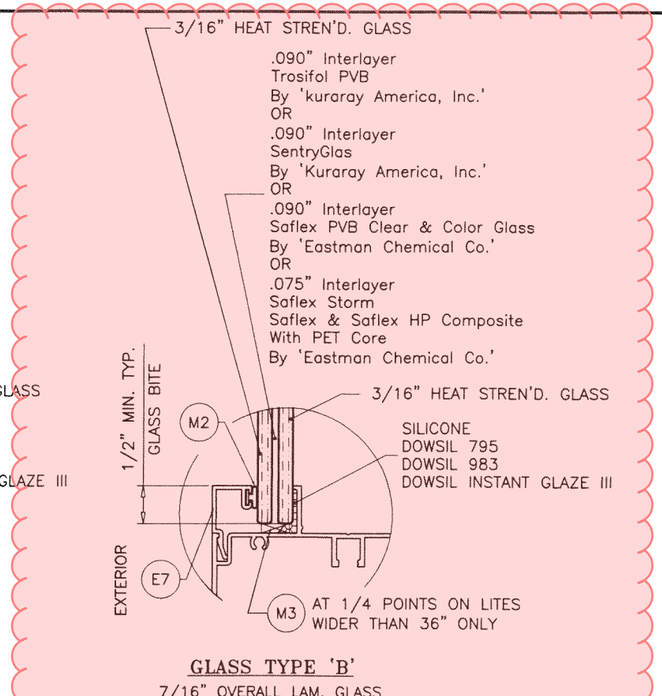
date: 11-13-16
scale: 1/2"=1'-0"
dr. by: TARIQ
chk. by:

drawing no. W16-70

sheet 1 of 9

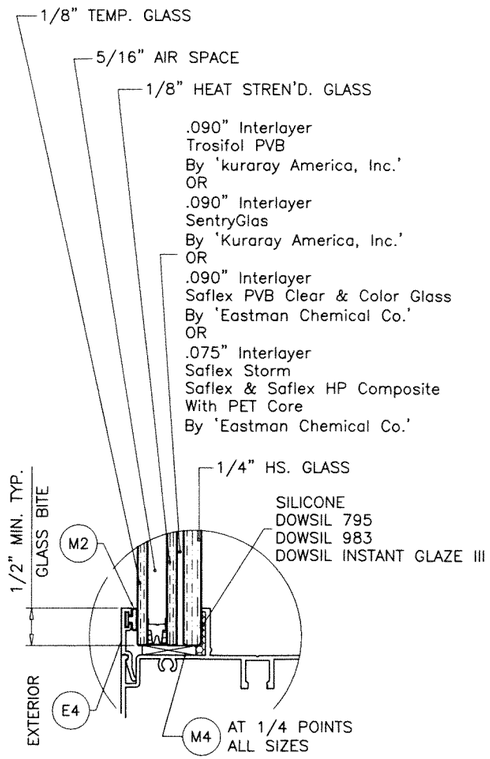


GLASS TYPE 'A'
7/16" OVERALL LAM. GLASS

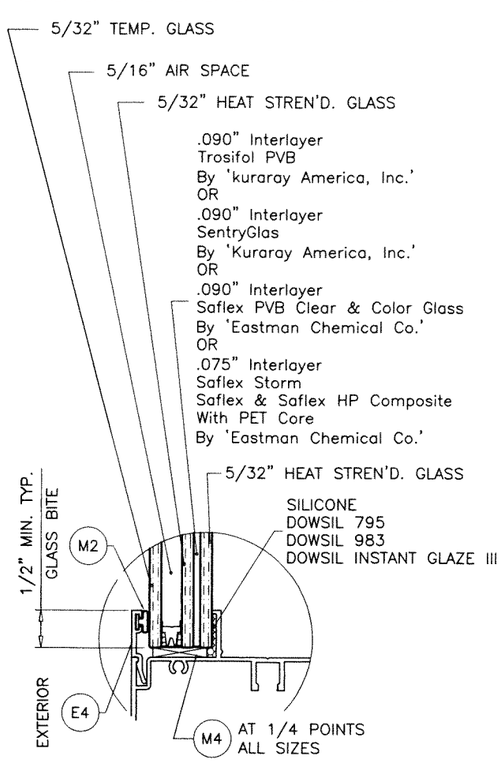


GLASS TYPE 'B'
7/16" OVERALL LAM. GLASS

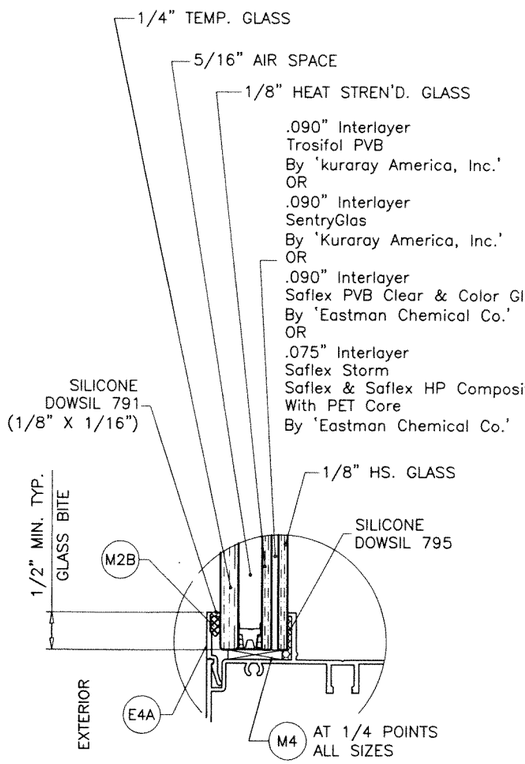
5/16" AIR SPACE CONSISTING OF:
SPACER:
'HELIMA' LOW PROFILE ALUMINUM SPACER
BY 'LINGERMANN GMBH'
AROUND THE PERIMETER OF THE GLASS.
PERIMETER SEALANT:
SILICONE
DOWSIL 791
GE 2000



GLASS TYPE 'Ai'
7/8" OVERALL INSUL. LAM. GLASS



GLASS TYPE 'Di'
7/8" OVERALL INSUL. LAM. GLASS



GLASS TYPE 'Ei'
7/8" OVERALL INSUL. LAM. GLASS

PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami-Dade Product Control

JALAL FAROOQ LICENSE No. 81228 STATE OF FLORIDA PROFESSIONAL ENGINEER

GLAZING OPTIONS

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\W16-70ES

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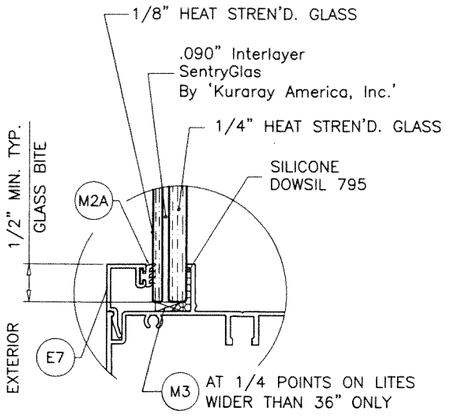
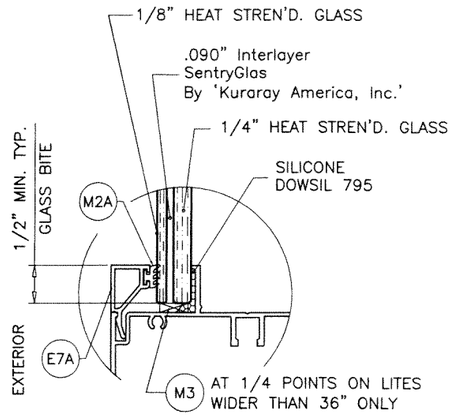
revisions:			
no	date	by	description
A	05.12.17		GLAZING DETAILS REV.
B	11.27.17		NO CHANGE THIS SHEET
C	06.22.20		GENERAL REVISION
D	06.15.21		NO CHANGE THIS SHEET
E	06.29.23		UPDATED TO 2023 FBC

date: 11-13-16
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

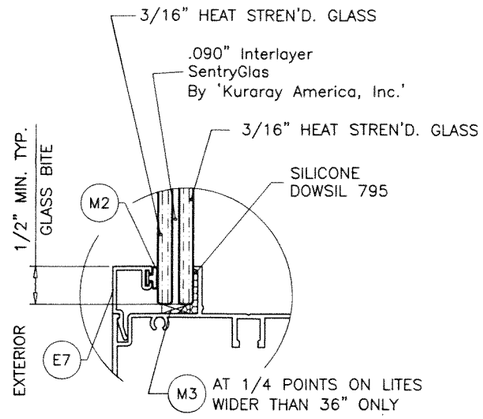
drawing no. W16-70

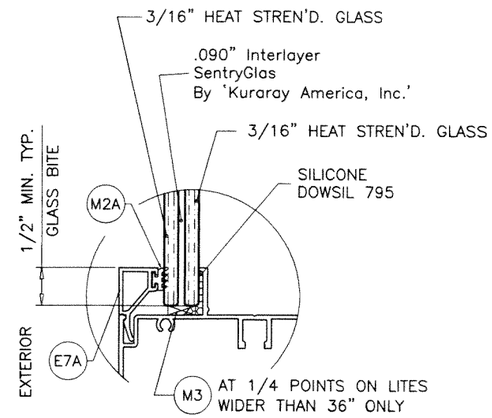
sheet 2 of 9



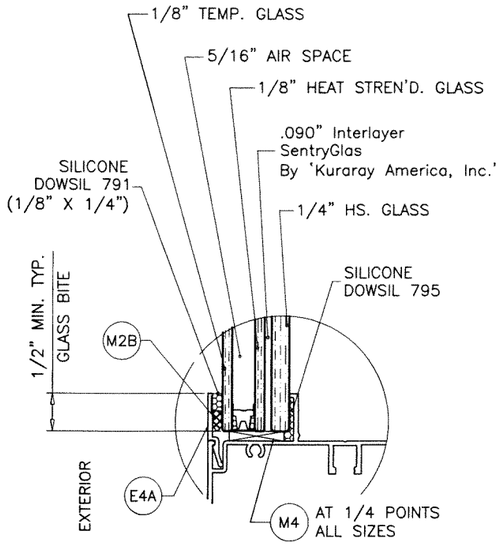


GLASS TYPE 'AA'
7/16" OVERALL LAM. GLASS





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



GLASS TYPE 'AAi'
7/8" OVERALL INSUL. LAM. GLASS

5/16" 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

PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami-Dade Product Control

JALAL FAROOQ LICENSE No. 81223 STATE OF FLORIDA PROFESSIONAL ENGINEER

GLAZING OPTIONS

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\W16-70ES

ES-EL150 FIXED ALUMINUM WDW. (L.M.I.)

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C	06.22.20		GENERAL REVISION
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E	06.29.23		NO CHANGE THIS SHEET

date: 11-13-16
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no.
W16-70

sheet 2.1 of 9

DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES, FLUSH FRAMES, FIN FRAMES

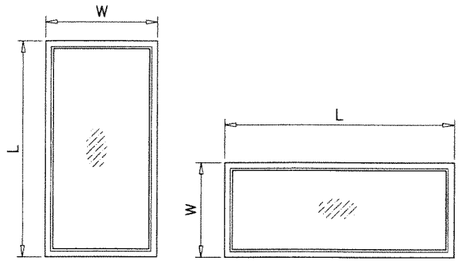
WINDOW DIMS.		GLASS TYPE 'A'		GLASS TYPES 'B', 'Ai', 'Di', 'Ei'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
30"	48"	60.0	80.0	80.0	80.0
36"		60.0	80.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		60.0	60.0	80.0	80.0
60"		60.0	60.0	80.0	80.0
30"	54"	60.0	80.0	80.0	80.0
36"		60.0	80.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
60"		53.3	53.3	71.1	71.1
30"	60"	60.0	80.0	80.0	80.0
36"		60.0	80.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
60"		48.0	48.0	64.0	64.0
30"	66"	60.0	80.0	80.0	80.0
36"		60.0	80.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
60"		48.0	48.0	64.0	64.0
30"	72"	60.0	80.0	80.0	80.0
36"		60.0	80.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
60"		48.0	48.0	64.0	64.0
30"	78"	60.0	80.0	80.0	80.0
36"		60.0	78.0	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
30"	84"	60.0	80.0	80.0	80.0
36"		60.0	76.4	80.0	80.0
42"		60.0	68.6	80.0	80.0
48"		60.0	60.0	80.0	80.0
54"		53.3	53.3	71.1	71.1
30"	90"	60.0	80.0	80.0	80.0
36"		60.0	75.0	80.0	80.0
42"		60.0	67.1	80.0	80.0
48"		60.0	60.0	80.0	80.0
30"	96"	60.0	80.0	80.0	80.0
36"		60.0	73.8	80.0	80.0
42"		60.0	65.8	80.0	80.0
48"		60.0	60.0	80.0	80.0

DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES, FLUSH FRAMES, FIN FRAMES

WINDOW DIMS.		GLASS TYPE 'A'		GLASS TYPES 'B', 'Ai', 'Di', 'Ei'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
30"	102"	60.0	80.0	80.0	80.0
36"		60.0	78.1	80.0	80.0
36"		60.0	72.9	80.0	80.0
39"		60.0	68.5	80.0	80.0
42"		60.0	64.8	80.0	80.0
45"		60.0	61.6	80.0	80.0
30"	108"	60.0	80.0	80.0	80.0
33"		60.0	77.3	80.0	80.0
36"		60.0	72.0	80.0	80.0
39"		60.0	67.6	80.0	80.0
42"		60.0	63.8	80.0	80.0
30"	114"	60.0	80.0	80.0	80.0
33"		60.0	76.5	80.0	80.0
36"		60.0	71.3	80.0	80.0
39"		60.0	66.8	80.0	80.0
30"	120"	60.0	80.0	80.0	80.0
33"		60.0	75.9	80.0	80.0
36"		60.0	70.6	80.0	80.0
30"	126"	60.0	80.0	80.0	80.0
33"		60.0	75.3	80.0	80.0
36"		60.0	70.0	80.0	80.0
30"	132"	60.0	80.0	80.0	80.0
33"		60.0	74.8	80.0	80.0
30"	138"	60.0	80.0	80.0	80.0
33"		60.0	74.3	80.0	80.0
30"	144"	60.0	80.0	80.0	80.0

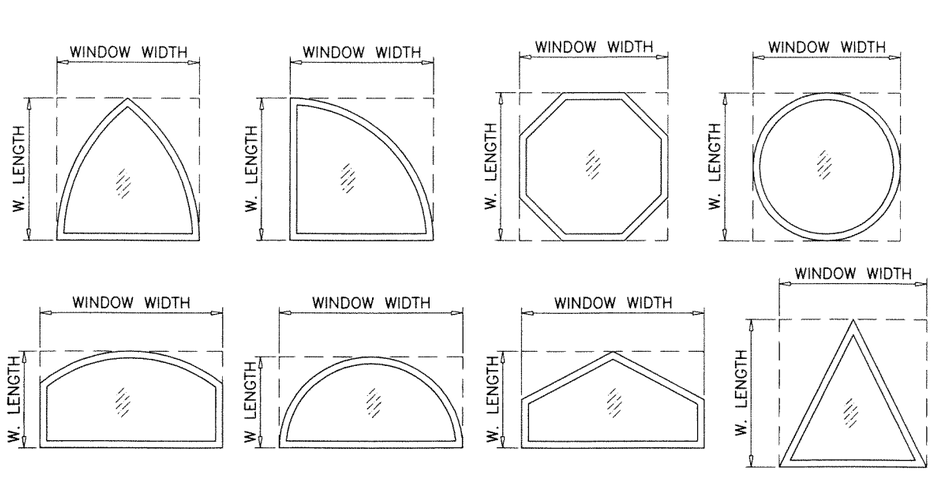
DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES, FLUSH FRAMES, FIN FRAMES

WINDOW DIMS.		GLASS TYPE 'A'		GLASS TYPES 'B', 'Ai', 'Di', 'Ei'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
19–1/8"	26"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		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
19–1/8"	38–3/8"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		60.0	77.8	80.0	80.0
48"		60.0	75.0	80.0	80.0
53–1/8"		60.0	75.0	80.0	80.0
19–1/8"	50–5/8"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		60.0	77.8	80.0	80.0
48"		60.0	60.0	80.0	80.0
53–1/8"		56.9	56.9	75.9	75.9
19–1/8"	58"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		60.0	77.8	80.0	80.0
48"		60.0	60.0	80.0	80.0
53–1/8"		54.2	54.2	72.3	72.3
19–1/8"	63"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		60.0	77.8	80.0	80.0
48"		60.0	60.0	80.0	80.0
53–1/8"		54.2	54.2	72.3	72.3
19–1/8"	76"	60.0	80.0	80.0	80.0
26–1/2"		60.0	80.0	80.0	80.0
37"		60.0	77.2	80.0	80.0
48"		60.0	60.0	80.0	80.0
53–1/8"		54.2	54.2	72.3	72.3



NOTE:
WIDTH AND LENGTH DIMENSIONS CAN BE ORIENTED VERTICALLY OR HORIZONTALLY AS SHOWN ABOVE.

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE BASED ON ASTM E1300–09 (3 SEC. GUSTS).



ALLOWABLE LOADS FOR ALTERNATE SHAPES AS SHOWN ABOVE OR SIMILAR CAN BE VERIFIED BY INSCRIBING PICTURE WINDOW SHAPE WITHIN SQUARE OR RECTANGLE AS SHOWN IN DOTTED LINES AND OBTAINING ALLOWABLE LOADS FROM THOSE SHAPES.

PRODUCT REVISED
As complying with the Florida Building Code
NOA–No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami–Dade Product Control

JALAL FAROOQ LICENSE No. 81223 STATE OF FLORIDA PROFESSIONAL ENGINEER

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\W16–70ES

ES–EL150 FIXED ALUMINUM WDW. (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
A	05.12.17		GLASS CHART REV.
B	11.27.17		NO CHANGE THIS SHEET
C	06.22.20		GENERAL REVISION
D	06.15.21		WDW. SIZES ADDED
E	06.29.23		NO CHANGE THIS SHEET

date: 11–13–16
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W16–70

sheet 3 of 9

DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES & FLUSH FRAMES ONLY

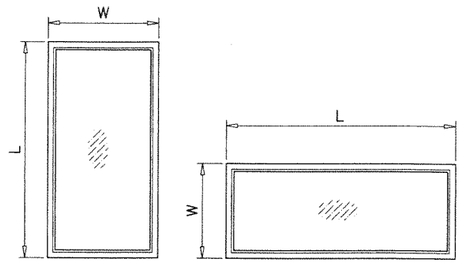
WINDOW DIMS.		GLASS TYPES 'AA' & 'AAi'		GLASS TYPE 'BB'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
48"	48"	80.0	105.0	80.0	100.0
54"		80.0	105.0	80.0	100.0
60"		80.0	105.0	80.0	100.0
66"		80.0	105.0	80.0	100.0
72"		80.0	105.0	80.0	100.0
78"		80.0	105.0	80.0	100.0
48"	54"	80.0	105.0	80.0	100.0
54"		71.1	93.3	80.0	88.9
60"		71.1	93.3	80.0	88.9
66"		71.1	93.3	80.0	88.9
72"		–	–	80.0	88.9
78"		–	–	80.0	88.9
48"	60"	80.0	105.0	80.0	100.0
54"		71.1	93.3	80.0	88.9
60"		64.0	84.0	80.0	80.0
66"		–	–	80.0	80.0
72"		–	–	80.0	80.0
78"		–	–	80.0	80.0
48"	66"	80.0	105.0	80.0	100.0
54"		71.1	93.3	80.0	88.9
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7
72"		–	–	72.7	72.7
78"		–	–	72.7	72.7
48"	72"	80.0	105.0	80.0	100.0
54"		–	–	80.0	88.9
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7
72"		–	–	66.7	66.7
78"		–	–	66.7	66.7
48"	78"	80.0	105.0	80.0	100.0
54"		–	–	80.0	88.9
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7
72"		–	–	66.7	66.7
78"		–	–	61.5	61.5
42"	84"	80.0	105.0	80.0	100.0
48"		–	–	80.0	100.0
54"		–	–	80.0	88.9
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7
72"		–	–	66.7	66.7
42"	90"	80.0	105.0	80.0	100.0
48"		–	–	80.0	100.0
54"		–	–	80.0	80.0
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7
72"		–	–	66.7	66.7
36"	96"	80.0	105.0	80.0	100.0
42"		–	–	80.0	100.0
48"		–	–	80.0	100.0
54"		–	–	80.0	80.0
60"		–	–	80.0	80.0
66"		–	–	72.7	72.7

DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES & FLUSH FRAMES ONLY

WINDOW DIMS.		GLASS TYPES 'AA' & 'AAi'		GLASS TYPE 'BB'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
36"	102"	80.0	105.0	80.0	100.0
42"		–	–	80.0	100.0
48"		–	–	80.0	80.0
54"		–	–	80.0	80.0
60"		–	–	80.0	80.0
30"	108"	80.0	105.0	80.0	80.0
42"		–	–	80.0	100.0
48"		–	–	80.0	80.0
54"		–	–	80.0	80.0
60"		–	–	80.0	80.0
30"	114"	80.0	105.0	80.0	80.0
48"		–	–	80.0	80.0
54"		–	–	80.0	80.0
30"	120"	80.0	105.0	80.0	80.0
48"		–	–	80.0	80.0
54"		–	–	80.0	80.0
30"	126"	80.0	105.0	80.0	80.0
24"	132"	80.0	105.0	80.0	80.0
42"		–	–	80.0	80.0
48"		–	–	80.0	80.0
24"	138"	80.0	105.0	80.0	80.0
42"		–	–	80.0	80.0
24"	144"	80.0	105.0	80.0	80.0
42"		–	–	80.0	80.0

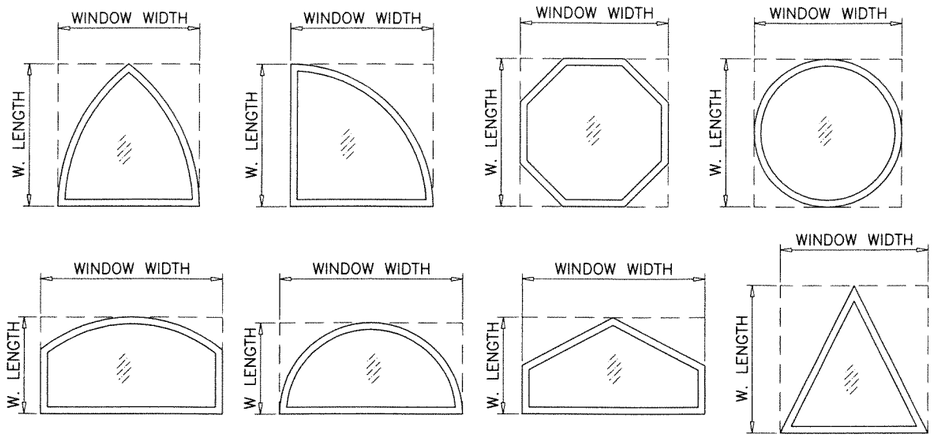
DESIGN LOAD CAPACITY – PSF
FLANGE FRAMES & FLUSH FRAMES ONLY

WINDOW DIMS.		GLASS TYPES 'AA' & 'AAi'		GLASS TYPE 'BB'	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
19–1/8"	26"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		80.0	105.0	80.0	100.0
19–1/8"	38–3/8"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		80.0	105.0	80.0	100.0
19–1/8"	50–5/8"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		75.9	99.6	80.0	94.8
19–1/8"	58"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		72.3	94.9	80.0	90.4
19–1/8"	63"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		72.3	94.9	80.0	90.4
19–1/8"	76"	80.0	105.0	80.0	100.0
26–1/2"		80.0	105.0	80.0	100.0
37"		80.0	105.0	80.0	100.0
48"		80.0	105.0	80.0	100.0
53–1/8"		–	–	80.0	90.4



NOTE:
WIDTH AND LENGTH DIMENSIONS CAN BE ORIENTED VERTICALLY OR HORIZONTALLY AS SHOWN ABOVE.

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE BASED ON ASTM E1300–09 (3 SEC. GUSTS).



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PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami-Dade Product Control

JALAL FAROOQ LICENSE No. 81223 STATE OF FLORIDA PROFESSIONAL ENGINEER

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\W16–70ES

ES–EL150 FIXED ALUMINUM WDW. (L.M.I.)

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

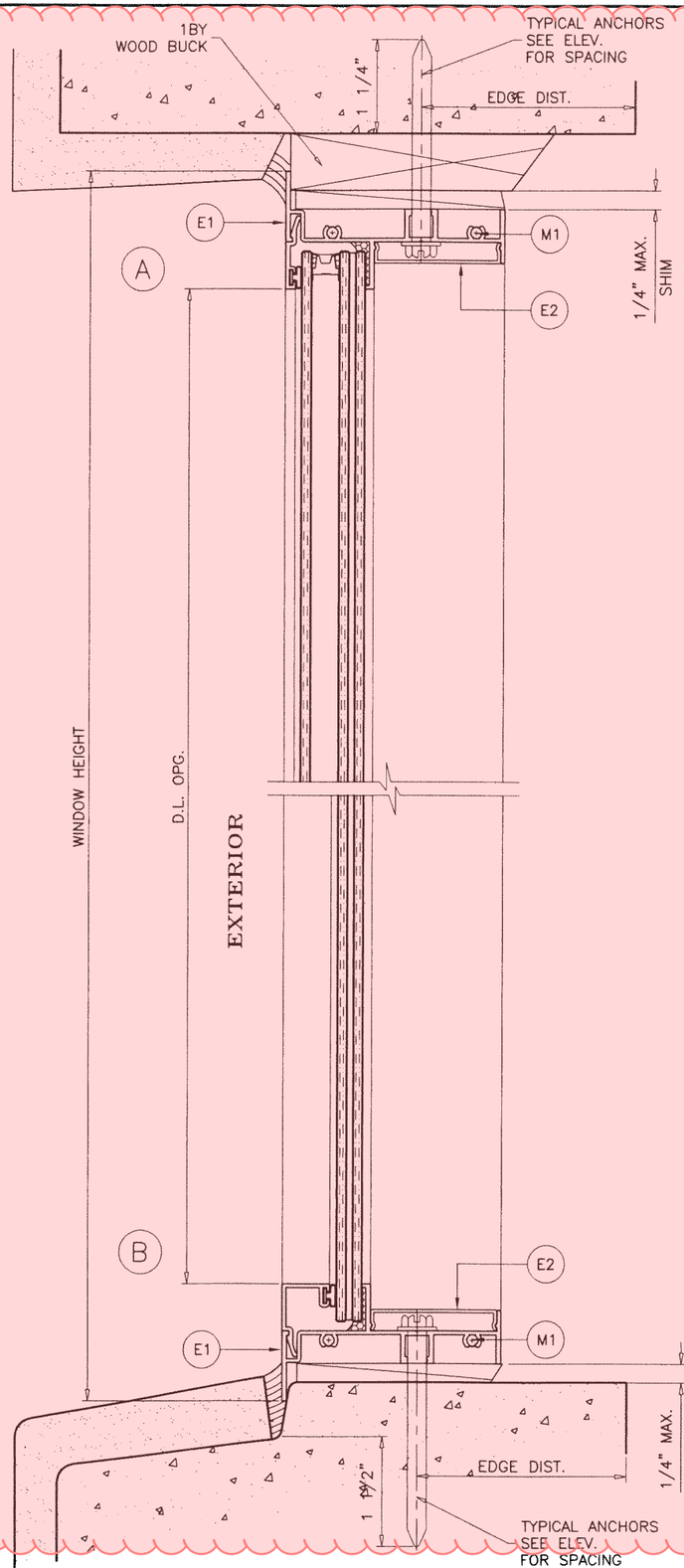
revisions:

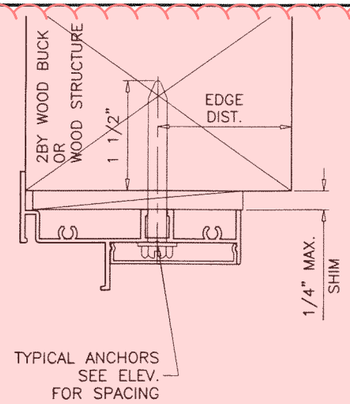
no	date	by	description
C	06.22.20		GENERAL REVISION
D	06.15.21		WDW. SIZES ADDED
E	06.29.23		NO CHANGE THIS SHEET

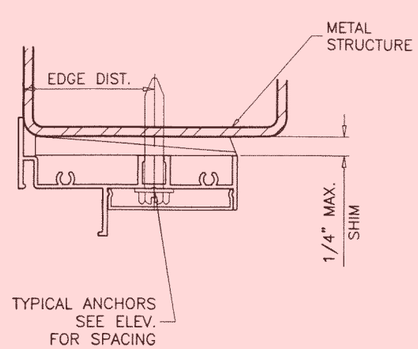
date: 11–13–16
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

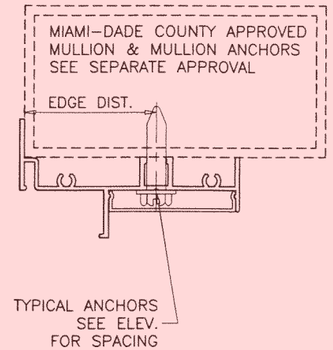
drawing no.
W16–70

sheet 3.1 of 9









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

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

1/4" DIA. TAPCON BY 'ITW' (Fu=125 KSI, Fy=100 KSI)
1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)

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

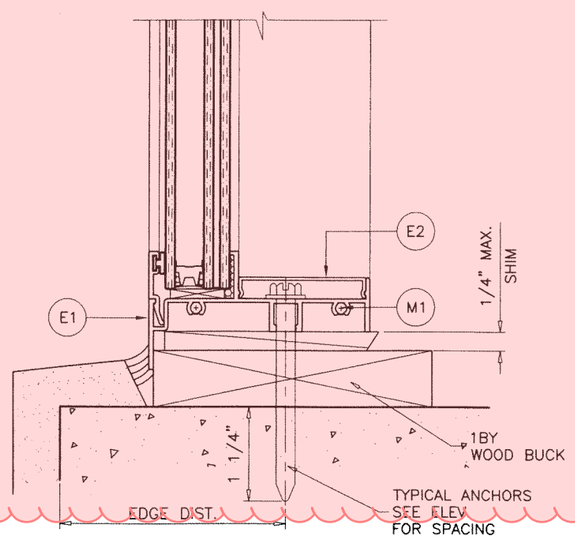
DIRECTLY INTO CONCRETE OR MASONRY
1-1/2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
1-1/4" MIN. EMBED INTO MASONRY (JAMBS)

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

TYPICAL EDGE DISTANCE

INTO CONCRETE AND MASONRY = 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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revisions:			
no	date	by	description
A	05.12.17		NO CHANGE THIS SHEET
B	11.27.17		UPDATED TO 2017 FBC
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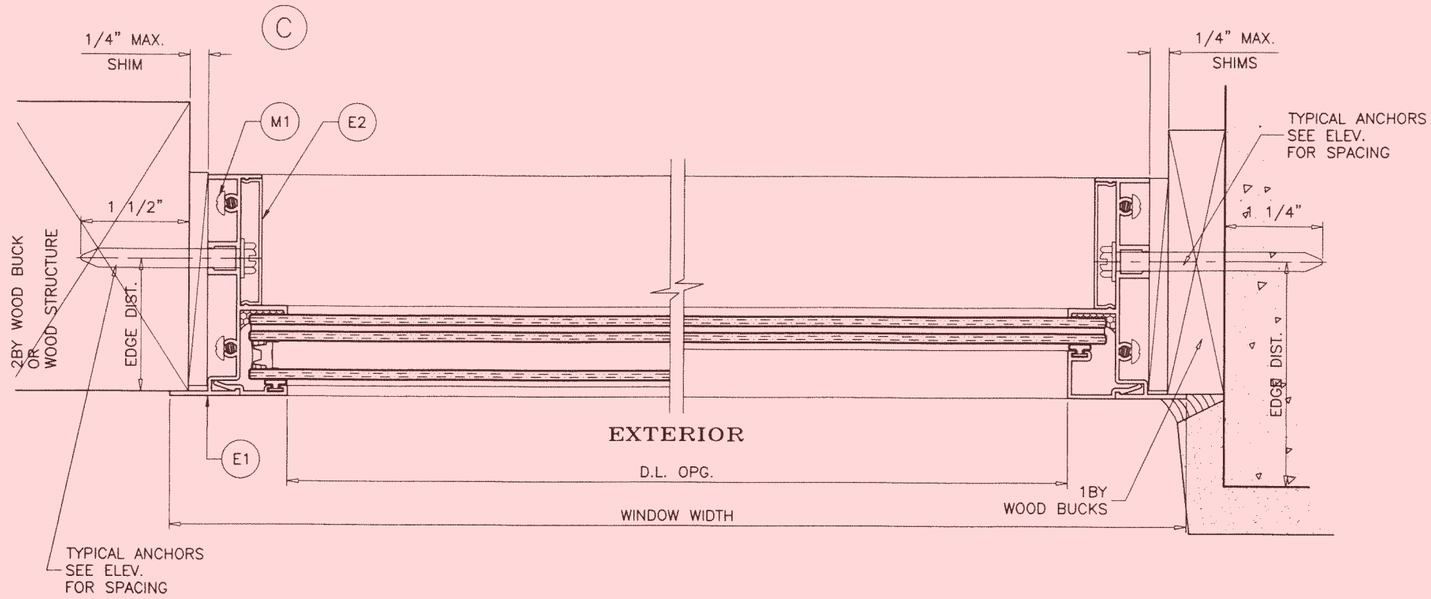
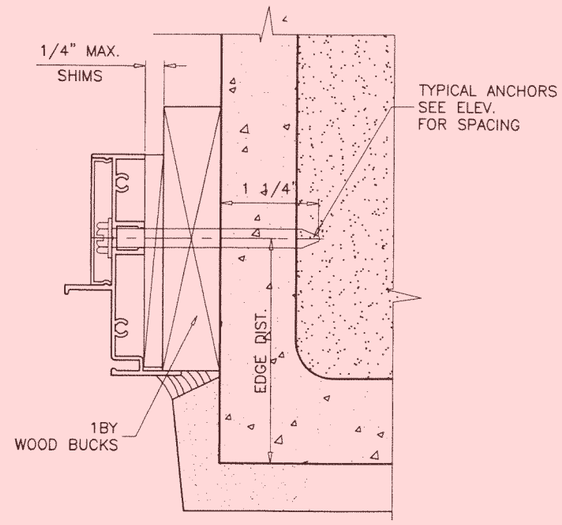
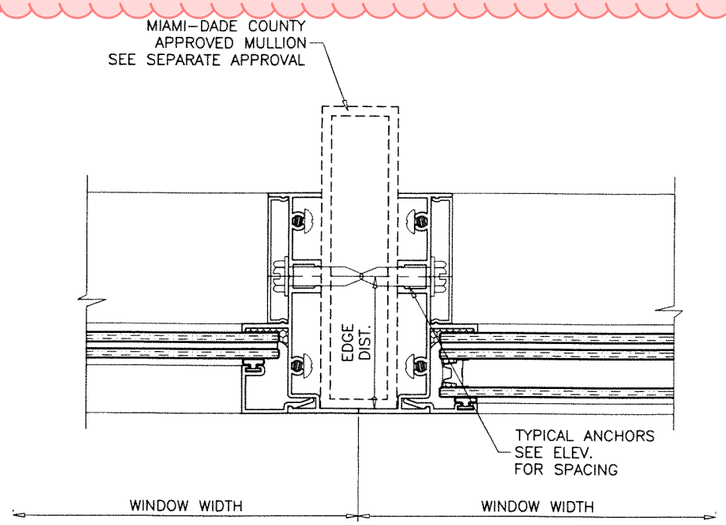
D	06.15.21		NO CHANGE THIS SHEET
E	06.29.23		NO CHANGE THIS SHEET

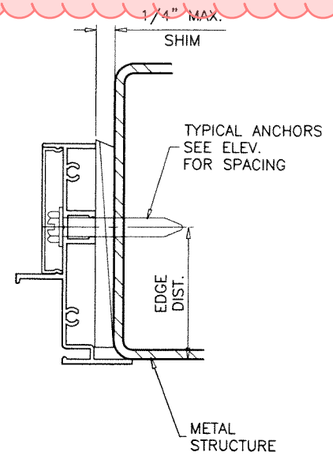
date: 11-13-16
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W16-70









PRODUCT REVISED
As complying with the Florida Building Code
NOA-No. 23-0714.17
Expiration Date: 05/18/2027
By: Manuel Perez
Miami-Dade Product Control

JALAL FAROOQ LICENSE No. 81223 STATE OF FLORIDA PROFESSIONAL ENGINEER

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\W16-70ES

ES-EL150 FIXED ALUMINUM WDW. (L.M.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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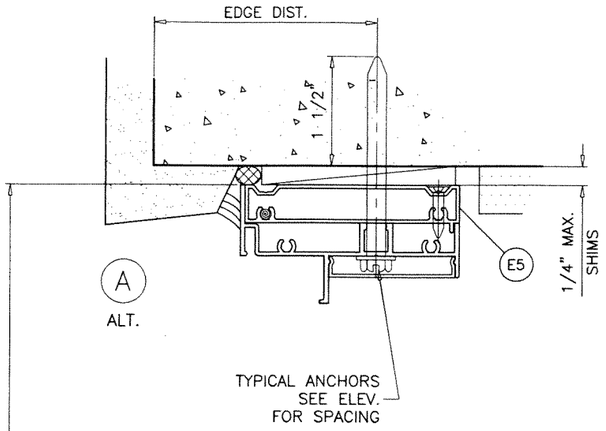
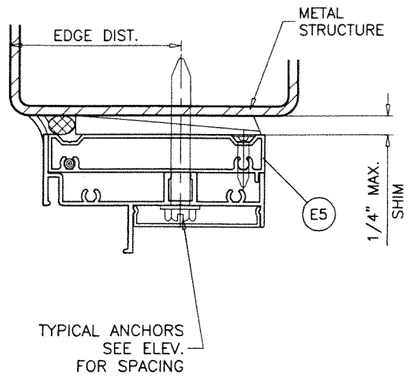
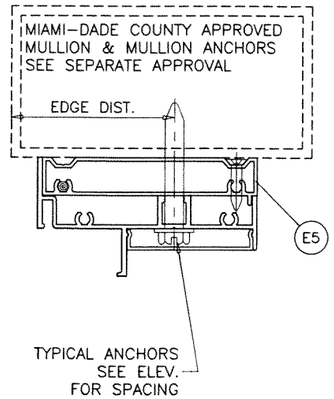
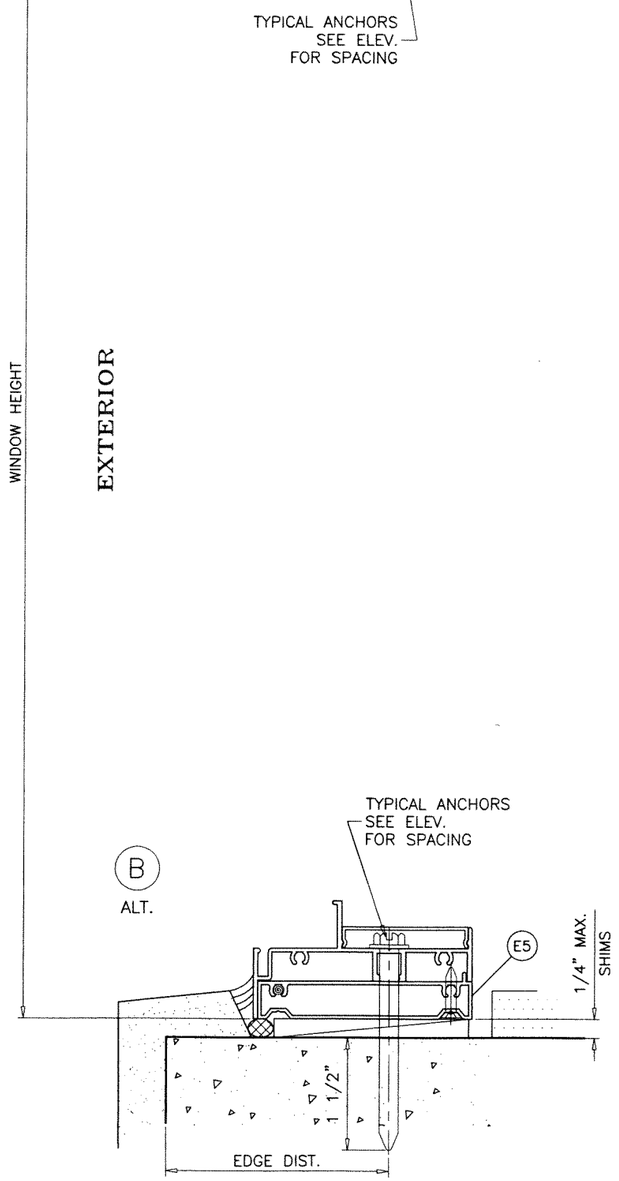
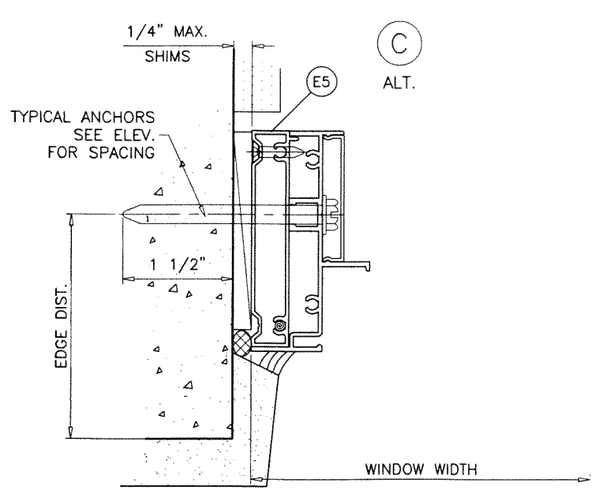
sheet 5 of 9











INSTALLATION DETAILS WITH FLUSH FRAME ADAPTERS

SEE SHEETS 4 & 5 FOR WINDOW DETAILS

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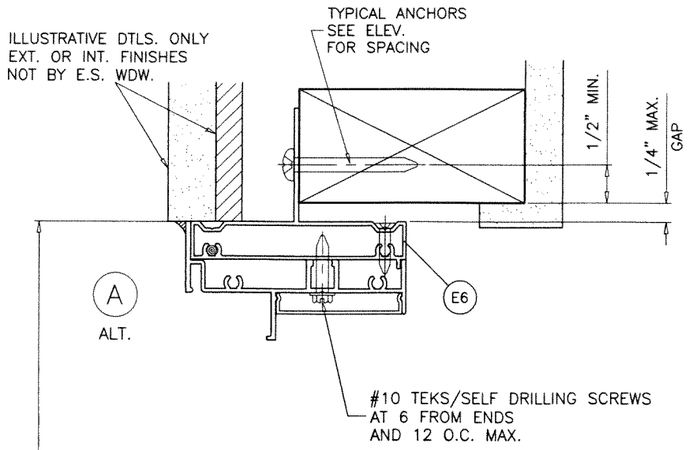
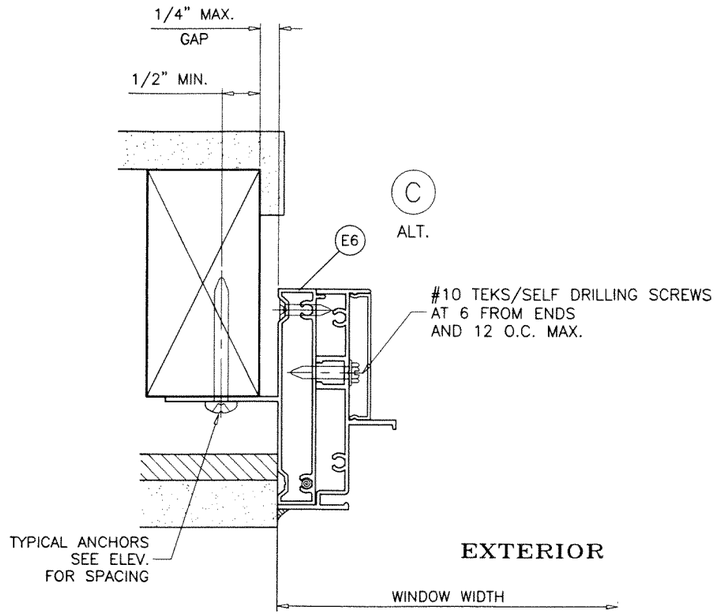
sheet 6 of 9



TYPICAL ANCHORS: SEE ELEV. FOR SPACING

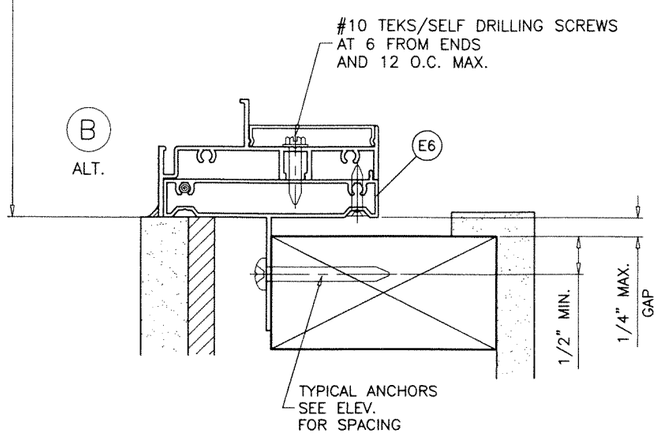
#10 WOOD SCREWS (GRADE 2 CRS)

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD



WINDOW HEIGHT

EXTERIOR



INSTALLATION DETAILS WITH FIN FRAME ADAPTERS

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JUL 07 2023

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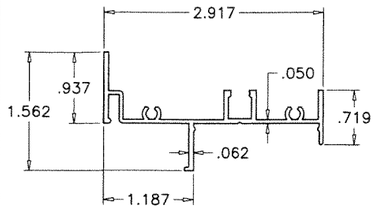
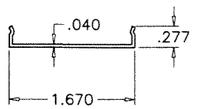
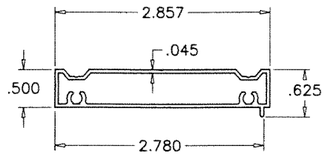


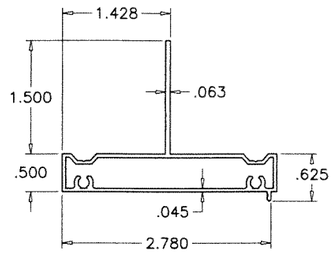
E1 FRAME



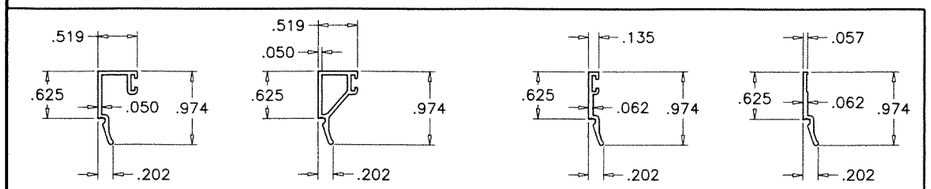
E2 FRAME SCREW COVER



E5 FLUSH FRAME ADAPTER



E6 FLUSH FRAME ADAPTER WITH FIN



E7 E7A E4 E4A GLAZING BEADS

ITEM #	PART #	REQD.	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	ES-EL151	1	FRAME	6063-T6	–
E2	ES-EL152	AS REQD.	FRAME SCREW COVER	6063-T6	–
E4	ES-EL111	AS RQD.	GLAZING BEAD (INSUL. LAM. GLASS)	6063-T6	–
E4A	ES-EL116	AS RQD.	GLAZING BEAD (INSUL. LAM. GLASS)	6063-T6	–
E5	ES-EL112	AS REQD.	FLUSH FRAME ADAPTER	6063-T6	–
E6	ES-EL115	AS REQD.	FLUSH FRAME ADAPTER WITH FIN	6063-T6	–
E7	ES-EL110	AS RQD.	GLAZING BEAD (7/16" LAM. GLASS)	6063-T6	–
E7A	ES-EL123	AS RQD.	GLAZING BEAD (7/16" LAM. GLASS)	6063-T6	–
M1	#8 X 1"	–	FRAME ASSEMBLY FASTENERS	ST. STEEL	PH SMS
M2	ES-5008A	AS REQD.	EXTERIOR BULB GASKET	SILICONE	DUROMETER 60±5 SHORE A
M2A	EL100-G02	AS REQD.	EXTERIOR LEAF GASKET	SILICONE	DUROMETER 60±5 SHORE A
M2B	ES-H-340-G05	AS REQD.	EXTERIOR WEDGE GASKET	SILICONE	DUROMETER 65±5 SHORE A
M3	80-372A	2/ LITE	SETTING BLOCK AT 1/4 POINTS (LAM. GLASS)	SILICONE	DUROMETER 80±5 SHORE A
M4	EL100-B01	2/ LITE	SETTING BLOCK AT 1/4 POINTS (INSUL. LAM. GLASS)	SILICONE	DUROMETER 80±5 SHORE A
M5	#8 X 1"	–	FLUSH/FIN FRAME ADAPTER ASSEMBLY FASTENERS	ST. STEEL	FH SMS

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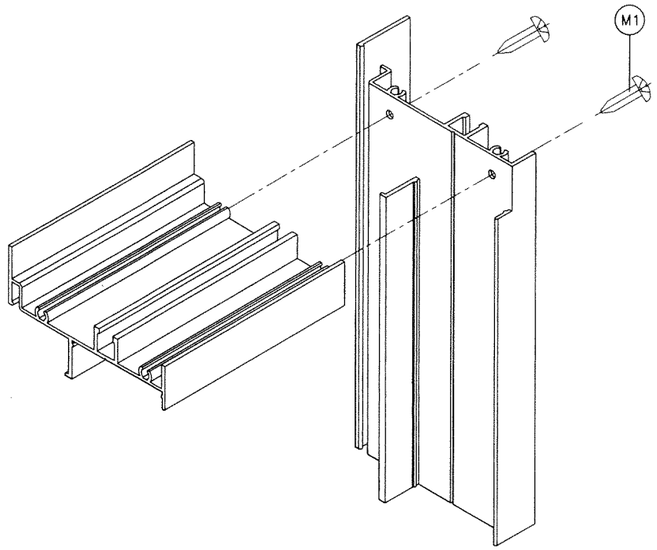
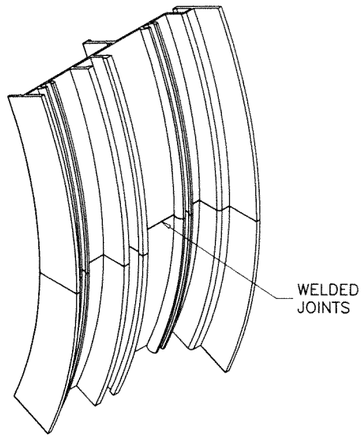
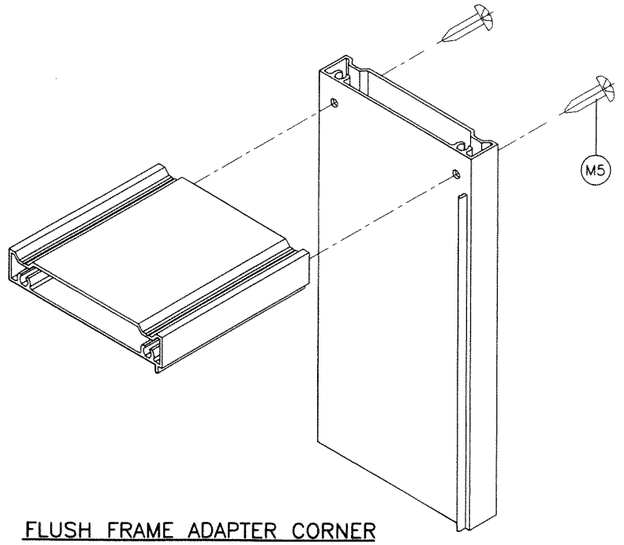


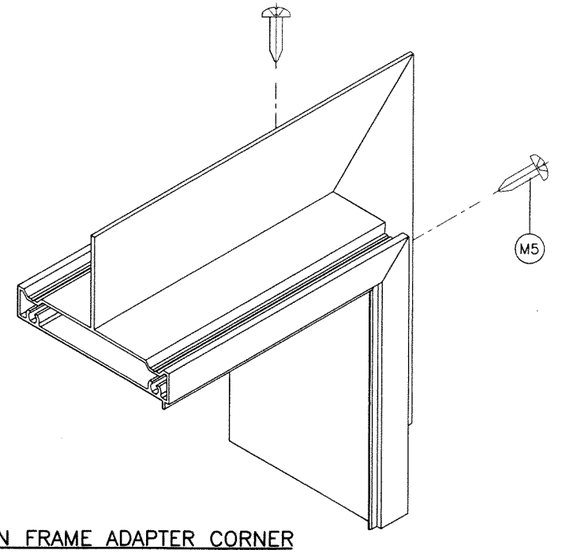
RECT. OR SQUARE WINDOWS



CIRCULAR WINDOWS



FLUSH FRAME ADAPTER CORNER



FIN FRAME ADAPTER CORNER

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