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

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

NOTICE OF ACCEPTANCE (NOA)

Tecnoglass, LLC
3550 NW 49 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 "PH4400" Aluminum Single Hung Window - L.M.I.

APPROVAL DOCUMENT: Drawing No. W**08-78,** titled "Series PH4400 Alum. Single Hung Window (L.M.I.)", sheets 1 through 9 of 9, dated 09/10/2008, with revision "**E**" dated 11/19/2020, 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, city, state, 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. 16-0510.17** 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 **Sifang Zhao, P.E.**

S. Z.

08/12/2021

Tecnoglass, 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. 09-0604.21)

2. Drawing No **W08-78**, titled "Series PH4400 Alum. Single Hung Window (L.M.I.)", sheets 1 through 8 of 8, dated 09/10/2008, with revision "**A**" dated 07/09/2010, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

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) Kinetic Energy drop Load Test, (400 Ft. Lb) per ANSI Z97.1
along with marked-up drawings and installation diagram of Series PH4400 Aluminum Single Hung Window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-5470**, dated 03/20/2008, signed and sealed by Carlos S. Rionda, P.E.
(Submitted under NOA No. 09-0604.21)

2. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94
3) Kinetic Energy drop Load Test, (400 Ft. Lb) per ANSI Z97.1
along with marked-up drawings and installation diagram of Series PH4400 Aluminum Single Hung Window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-5469**, dated 02/19/2008, signed and sealed by Carlos S. Rionda, P.E.
(Submitted under NOA No. 09-0604.21)

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
along with marked-up drawings and installation diagram of Series PH4400 Aluminum Single Hung Window, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-5155**, dated 02/27/2007, signed and sealed by Carlos S. Rionda, P.E.
(Submitted under NOA No. 09-0604.21)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC- 2007**, prepared by Al-Farooq Corporation, dated 03/18/2009 and 07/09/2010, signed and sealed by Javad Ahmad, P.E.

2. Glazing complies with ASTM E1300-04

Sifang Zhao, P. E.
Product Control Examiner
NOA No. 21-0405.19
Expiration Date: October 25, 2023
Approval Date: August 12, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. NOA No. **09-0312.03** issued to **E.I. DuPont DeNemours & Co., Inc.** for their **"DuPont SentryGlas® Interlayers**" dated 05/13/2009, expiring on 01/14/2012**.**

F. STATEMENTS

1. Statement letter of conformance, and no financial interest dated July 09, 2010, signed and sealed by Javad Ahmad, P.E.

2. Proposal #06-0204 issued by BCCO to R.C. Aluminum Industries, Inc. dated 03/28/08, signed by Ishaq I. Chanda, P.E., Product Control Division.

G. OTHERS

1. None.

2. EVIDENCE SUBMITTED UNDER PREVIOUS NOA No. 16-0510.07

A. DRAWINGS

1. Drawing No **W08-78**, titled "Series PH4400 Alum. Single Hung Window (L.M.I.)", sheets 1 through 9 of 9, dated 09/10/2008, with revision "**D**" dated 09/25/2018, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

B. TESTS

1. None

C. CALCULATIONS

1. Anchor verification and structural analysis complying with **FBC 6th Edition *(*2017)** dated 07/03/2018, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. NOA No. **17-0808.02** issued to **Kuraray America, Inc.** for their **"SentryGlas® (Clear and White) Glass Interlayers**" dated 12/28/2017, expiring on 07/04/2023**.**

Sifang Zhao, P. E.
Product Control Examiner
NOA No. 21-0405.19
Expiration Date: October 25, 2023
Approval Date: August 12, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 6th Edition (2017),** and of no financial interest, dated July 03, 2018, issued by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

2. Asset purchase agreement dated 06/19/14, signed by Mr. Raul Casares, for and on behalf of R.C. Aluminum Industries, Inc. and Mr. José M. Daes, for and on behalf of Tecnoglass, LLC.

3. Statement letter dated 07/15/14, issued by R.C. Aluminum Industries, Inc. of sales of asset and relinquishing of all rights of NOA No. **12-0330.11**, signed by Raul Casares, for and on behalf of R.C. Aluminum Industries, Inc.

4. Department of State Certification of **TECNOGLASS, LLC** as a limited liability company, active and organized under the laws of the State of Florida, dated 03/03/14 and signed by Ken Detzner, Secretary of State.

G. OTHERS

1. Notice of Acceptance No. **09-0604.21**, issued to R.C. Aluminum Industries, Inc., for their Series "PH4400 Aluminum Single Hung Window - L.M.I.", approved on 08/04/2010 and expiring on 08/04/2015.

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No **W08-78**, titled "Series PH4400 Alum. Single Hung Window (L.M.I.)", sheets 1 through 9 of 9, dated 09/10/2008, with revision "**E**" dated 11/19/2020, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, 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. NOA No. **17-0808.02** issued to **Kuraray America, Inc.** for their **"SentryGlas® (Clear and White) Glass Interlayers**" dated 12/28/2017, expiring on 07/04/2023**.**

Sifang Zhao, P. E.
Product Control Examiner
NOA No. 21-0405.19
Expiration Date: October 25, 2023
Approval Date: August 12, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

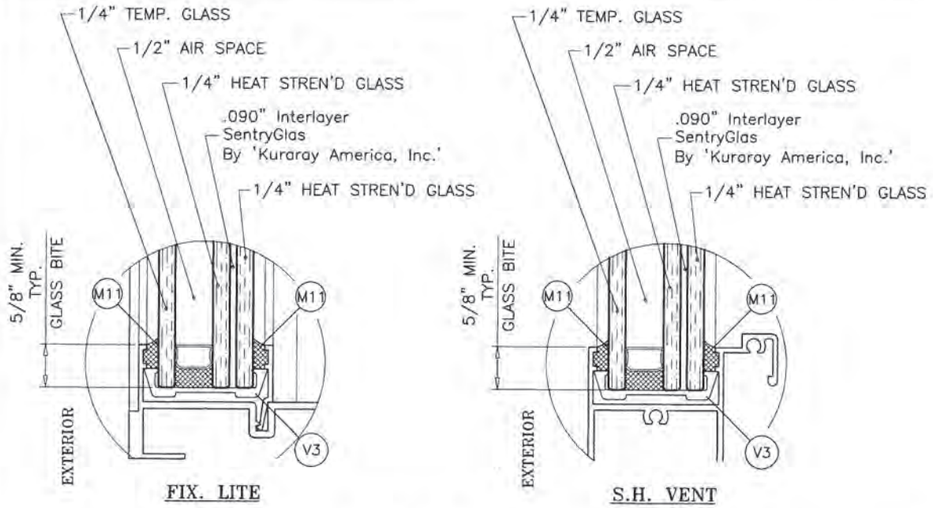
F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 7th Edition (2020),** and of no financial interest, dated 01/11/2021, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

G. OTHERS

1. Notice of Acceptance No. **16-0510.07**, issued to **Tecnoglass, LLC**, for their Series "PH4400 Aluminum Single Hung Window - L.M.I.", approved on 10/25/2018 and expiring on 10/25/2023.

Sifang Zhao, P. E.
Product Control Examiner
NOA No. 21-0405.19
Expiration Date: October 25, 2023
Approval Date: August 12, 2021



GLAZING DETAIL

1-1/4" OVERALL LAM. INSUL. GLASS

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 982

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

SERIES PH4400
ALUMINUM SINGLE HUNG WINDOW

APPROVAL APPLIES TO SINGLE UNITS OR SIDE BY SIDE COMBINATIONS OF S.H. TO S.H. OR S.H./FIX. TO S.H./FIX. IN MODULES OF TWO OR MORE WINDOWS USING MIAMI-DADE COUNTY APPROVED MULLIONS IN BETWEEN.

FOR WINDOWS CAPACITY SEE CHARTS ON SHEETS 1 THRU 3.

FOR MULLION CAPACITY SEE CHART ON SHEET 4.

LOWER DESIGN PRESSURES FROM WINDOW CAPACITY CHART OR MULLION CAPACITY CHART WILL APPLY TO ENTIRE SYSTEM.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2020 (7TH 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.

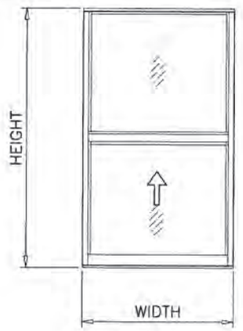
ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

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

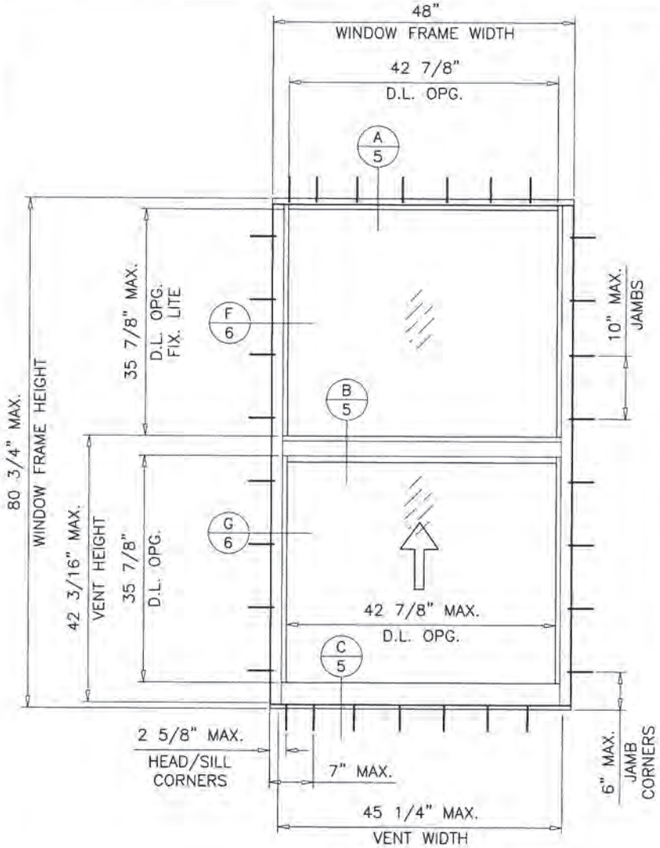
DESIGN LOADS SHOWN ARE BASED ON 'ALLOWABLE STRESS DESIGN (ASD)'.

EQUAL LITES SINGLE HUNG WINDOWS			
DESIGN LOAD CAPACITY - PSF			
WINDOW DIMS.		INSUL. LAM. GLASS	
WIDTH	HEIGHT	EXT.(+)	INT.(-)
36"	48"	120.0	120.0
42"		120.0	120.0
48"		105.0	105.0
54"		88.6	88.6
36"	54"	120.0	120.0
42"		120.0	120.0
48"		97.9	97.9
54"		82.0	82.0
36"	60"	120.0	120.0
42"		116.3	116.3
48"		92.6	92.6
54"		76.9	76.9
36"	66"	120.0	120.0
42"		112.9	112.9
48"		88.7	88.7
54"		73.0	73.0
36"	72"	120.0	120.0
42"		111.1	111.1
48"		85.9	85.9
36"	78"	120.0	120.0
42"		110.7	110.7
48"		84.0	84.0
36"	84"	120.0	120.0
42"		110.7	110.7
36"	90"	120.0	120.0
42"		110.7	110.7
36"	96"	120.0	120.0
36"	102"	120.0	120.0



EQUAL LITES
SINGLE HUNG WINDOWS

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



TYPICAL ELEVATION

EQUAL LITES
S.H. WINDOWS

DAYLITE OPENINGS:

DLO WIDTH = FRAME WIDTH - 5.125 (FIX. LITE)
DLO WIDTH = FRAME WIDTH - 5.125 (VENT)

DLO HEIGHT = VENT HEIGHT - 6.313

VENT WIDTH = FRAME WIDTH - 2.75

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

INSUL. LAM. GLASS
LARGE MISSILE IMPACT

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 21-0405.19 '2021
Expiration Date 10/25/2023
By _____
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\W08-78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

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

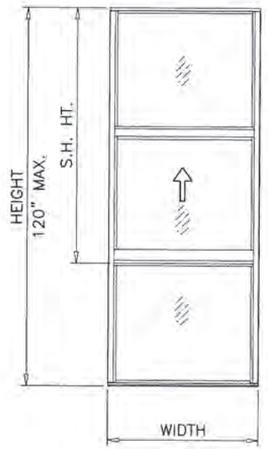
revisions:			
no	date	by	description
A	07.09.10		NO CHANGE THIS SHEET
B	01.18.16		UPDATED TO 2014 FBC
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

date: 09-10-08
scale: 1/2"=1'-0"
dr. by: TARIQ
chk. by:

drawing no. W08-78

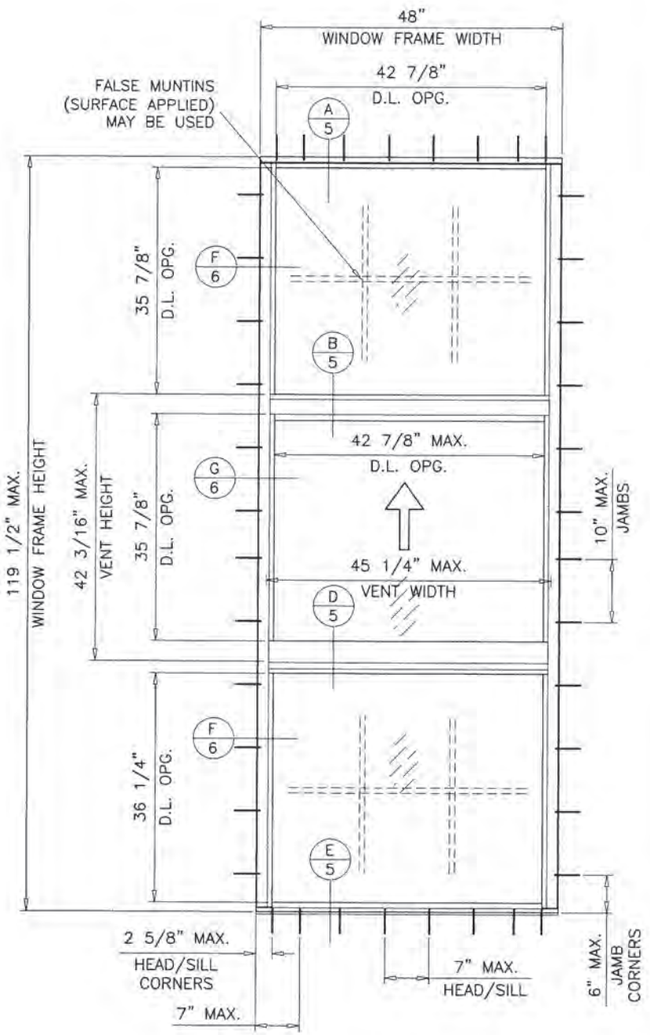
sheet 1 of 9

EQUAL LITES SINGLE HUNG/FIXED WINDOWS				
DESIGN LOAD CAPACITY – PSF				
WINDOW DIMS.			INSUL. LAM. GLASS	
WIDTH	S.H. HT.	HEIGHT	EXT.(+)	INT.(–)
36"	48"	72"	120.0	120.0
42"			120.0	120.0
48"			105.0	105.0
54"			88.6	88.6
36"	54"	81"	120.0	120.0
42"			120.0	120.0
48"			97.9	97.9
54"			82.0	82.0
36"	60"	90"	120.0	120.0
42"			116.3	116.3
48"			92.6	92.6
54"			76.9	76.9
36"	66"	99"	120.0	120.0
42"			112.9	112.9
48"			88.7	88.7
54"			73.0	73.0
36"	72"	108"	120.0	120.0
42"			111.1	111.1
48"			85.9	85.9
36"	78"	117"	120.0	120.0
42"			110.7	110.7
48"			84.0	84.0
36"	80"	120"	120.0	120.0
42"			110.7	110.7
48"			84.0	84.0



EQUAL LITES
SINGLE HUNG/FIXED WINDOWS

NOTE:
FOR ANSI Z97.1 COMPLIANCE LIMIT
MAX. WIDTHS TO 48".



TYPICAL ELEVATION
EQUAL LITES
S.H./FIX. WDW.

DAYLITE OPENINGS:

DLO WIDTH = FRAME WIDTH – 5.125 (FIX. LITE)
DLO WIDTH = FRAME WIDTH – 5.125 (VENT)

DLO HEIGHT = VENT HEIGHT – 6.313

VENT WIDTH = FRAME WIDTH – 2.75

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

PRODUCT REVISED
as complying with the Florida Building Code
NOA–No. 21-0405.19
Expiration Date 10/25/2023
By
Miami–Dade Product Control

MAR 26 2021

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\W08–78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

TECNOGLASS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638–5151 FAX. (305) 638–5158

revisions:			
no	date	by	description
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

date: 09–10–08
scale: 1/2"=1'–0"
dr. by: TARIQ
chk. by:

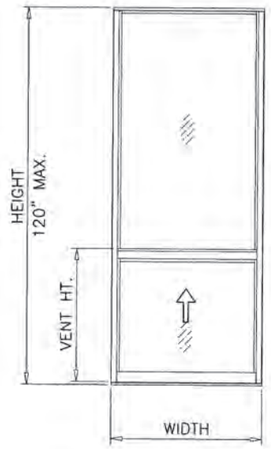
drawing no.
W08–78

sheet 2 of 9

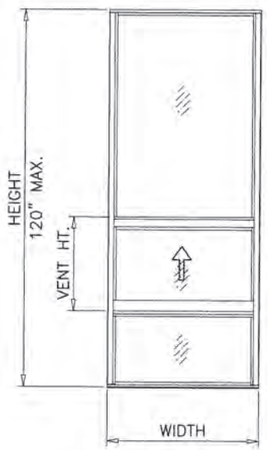
UNEQUAL LITES SINGLE HUNG WINDOWS
UNEQUAL LITES SINGLE HUNG/FIXED WINDOWS

DESIGN LOAD CAPACITY – PSF
INSUL. LAM. GLASS

WINDOW DIMS.		42-3/16" VENT HT.		36-3/16" VENT HT.		30-3/16" VENT HT.		24-3/16" VENT HT.	
WIDTH	HEIGHT	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
36"	84"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	120.0	120.0
48"		83.3	83.3	85.4	85.4	89.3	89.3	95.5	95.5
54"		–	–	68.1	68.1	71.7	71.7	76.9	76.9
36"	90"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	120.0	120.0
48"		83.3	83.3	85.4	85.4	89.3	89.3	95.5	95.5
54"		–	–	68.1	68.1	71.7	71.7	76.9	76.9
36"	96"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	120.0	120.0
48"		83.3	83.3	85.4	85.4	89.3	89.3	95.5	95.5
54"		–	–	68.1	68.1	71.7	71.7	–	–
36"	102"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	120.0	120.0
48"		83.3	83.3	85.4	85.4	89.3	89.3	95.5	95.5
54"		–	–	68.1	68.1	–	–	–	–
36"	108"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	119.6	119.6
48"		83.3	83.3	85.4	85.4	89.3	89.3	–	–
36"	114"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	115.3	115.3	–	–
48"		83.3	83.3	85.4	85.4	–	–	–	–
36"	120"	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
42"		110.7	110.7	111.6	111.6	–	–	–	–
48"		83.3	83.3	–	–	–	–	–	–

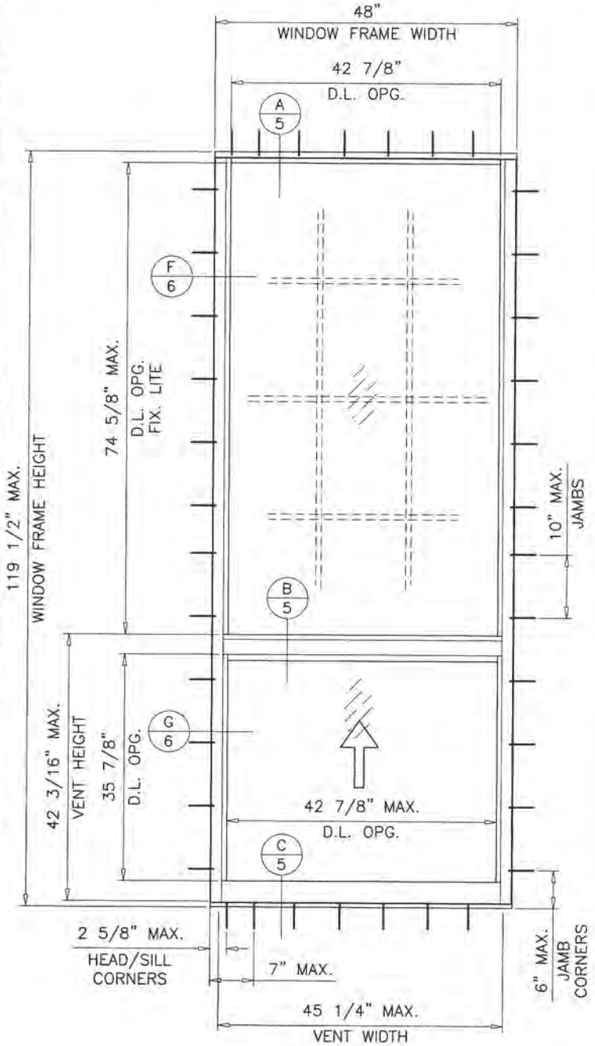


UNEQUAL LITES (ORIEL)
SINGLE HUNG WINDOWS

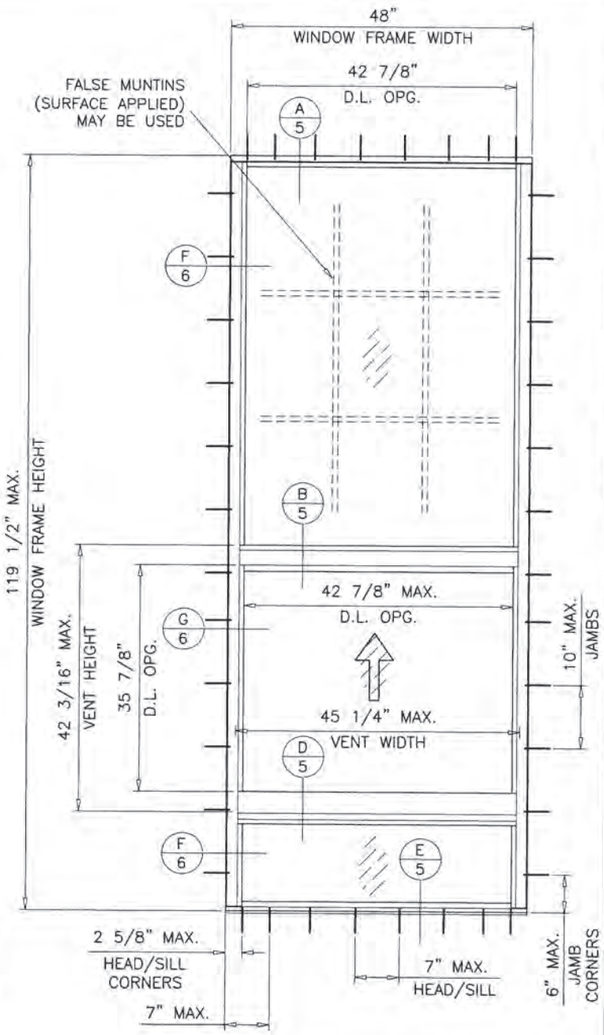


UNEQUAL LITES (ORIEL)
SINGLE HUNG/FIXED WINDOWS

NOTE:
FOR ANSI Z97.1 COMPLIANCE LIMIT
MAX. WIDTHS TO 48".



TYPICAL ELEVATION
UNEQUAL LITES (ORIEL TYPE)
S.H. WINDOWS



TYPICAL ELEVATION
UNEQUAL LITES
S.H./FIX. WDW.

DAYLITE OPENINGS:

DLO WIDTH = FRAME WIDTH – 5.125 (FIX. LITE)
DLO WIDTH = FRAME WIDTH – 5.125 (VENT)

DLO HEIGHT = VENT HEIGHT – 6.313

VENT WIDTH = FRAME WIDTH – 2.75

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

PRODUCT REVISED
as complying with the Florida Building Code
NOA–No. 21-0405.19 21
Expiration Date 10/25/2023
By _____
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\W08–78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

TECNOGLASS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638–5151 FAX. (305) 638–5158

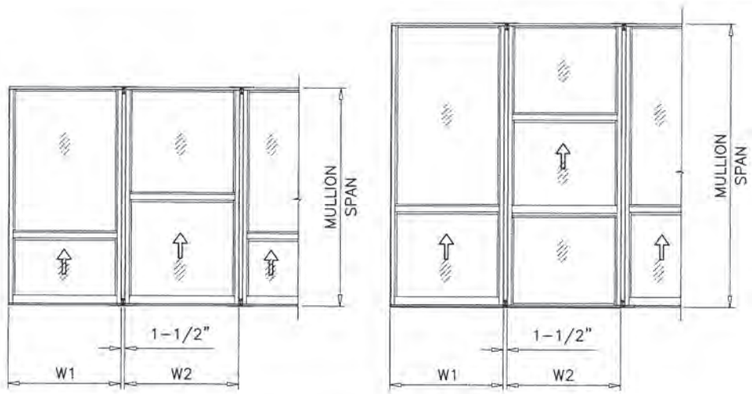
revisions: no	date	by	description
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

date: 09–10–08
scale: 1/2"=1'–0"
dr. by: TARIQ
chk. by:

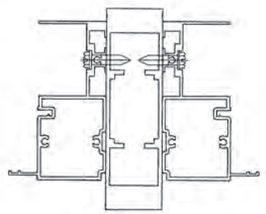
drawing no.
W08–78

sheet 3 of 9

MULLION CAPACITY CHART – PSF			
WINDOW DIMS.		STD. MULLION	
WIDTH (W)	MULL SPAN	EXT.(+)	INT.(–)
37–1/2"	78"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		120.0	120.0
37–1/2"	84"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		120.0	120.0
37–1/2"	90"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		120.0	120.0
37–1/2"	96"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		120.0	120.0
37–1/2"	102"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		120.0	120.0
37–1/2"	108"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
54"		118.4	118.4
37–1/2"	114"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0
37–1/2"	120"	120.0	120.0
43–1/2"		120.0	120.0
49–1/2"		120.0	120.0



$$\text{WIDTH (W)} = \frac{W1 + W2}{2} + 1\text{–}1/2"$$



STD. MULLION

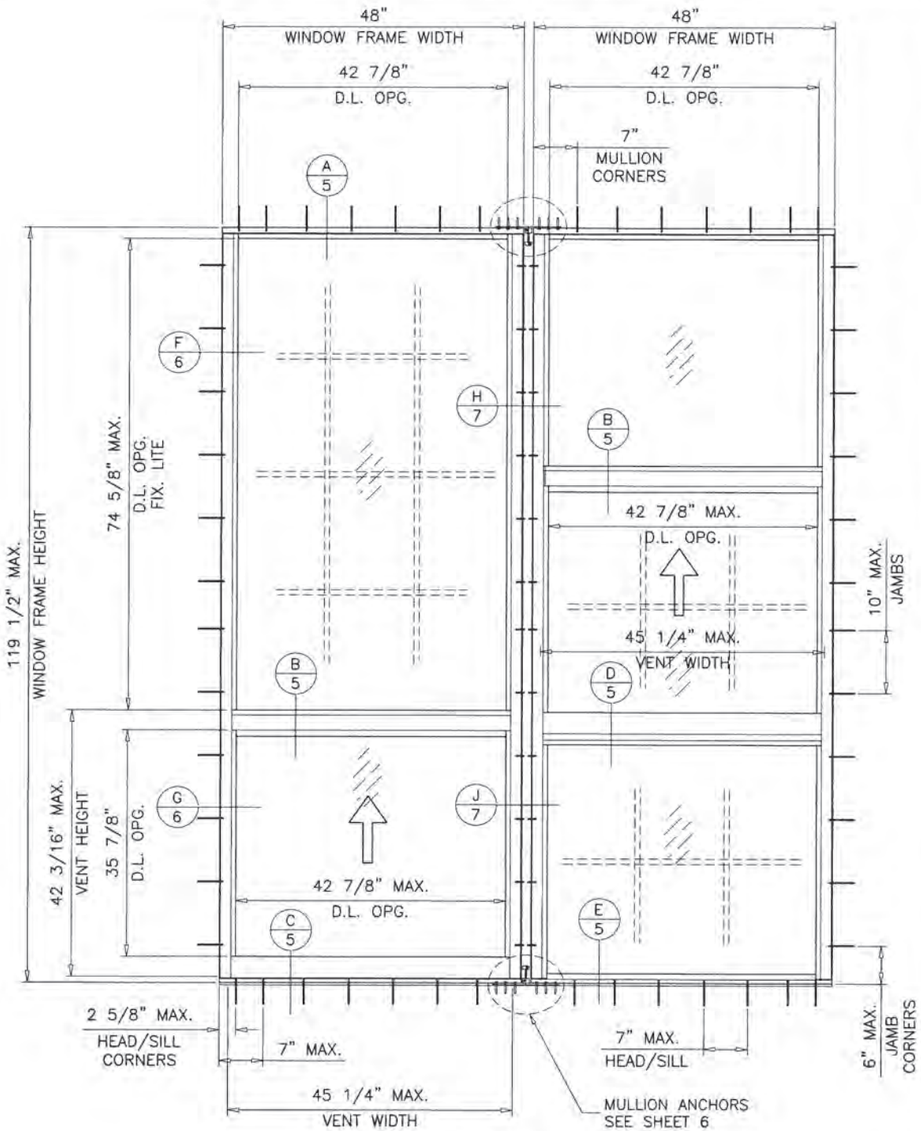
Ix IN^4	Sx IN^3
16.8106	6.3410

REFER TO SHEET 1 THRU 3 TO OBTAIN CAPACITY OF EQUAL LITE AND UNEQUAL LITES SINGLE HUNG WINDOWS AND SINGLE HUNG/FIXED WINDOWS

REFER TO CHARTS ABOVE TO OBTAIN MULLION CAPACITY.

USE LOWEST VALUES OF WINDOW CAPACITY CHARTS OR MULLION CAPACITY CHART.

NOTE:
FOR ANSI Z97.1 COMPLIANCE LIMIT MAX. WIDTHS TO 48".



TYPICAL ELEVATION

TESTED UNIT

PRODUCT REVISED
as complying with the Florida Building Code
NOA–No. 21-0405.19 MAR 26 2021
Expiration Date 10/25/2023
By _____
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\W08–78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

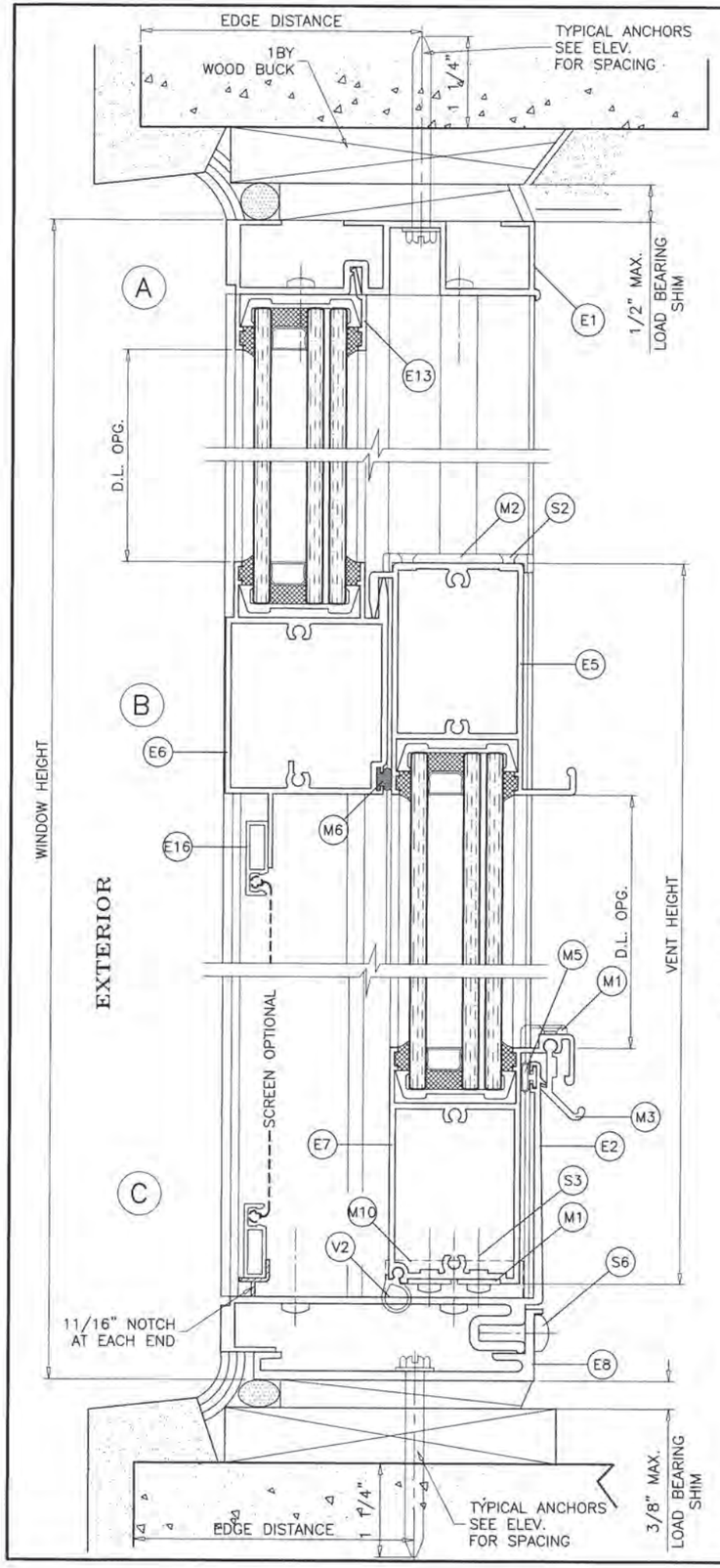
TECNOGLASS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638–5151 FAX. (305) 638–5158

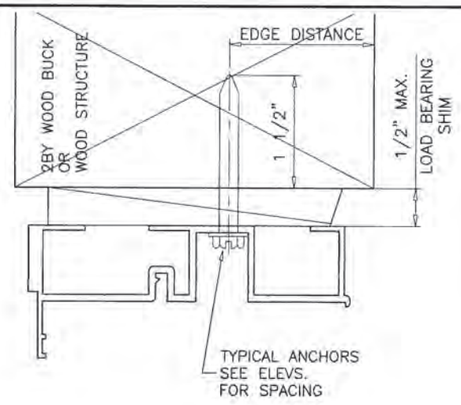
revisions:			
no	date	by	description
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

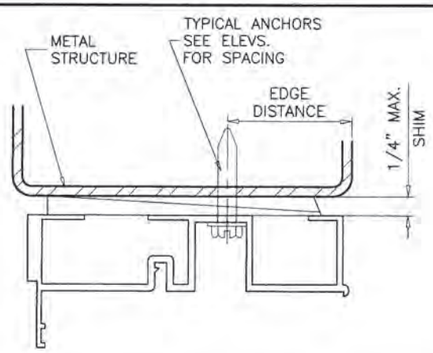
date: 09–10–08
scale: 1/2"=1'–0"
dr. by: TARIQ
chk. by:

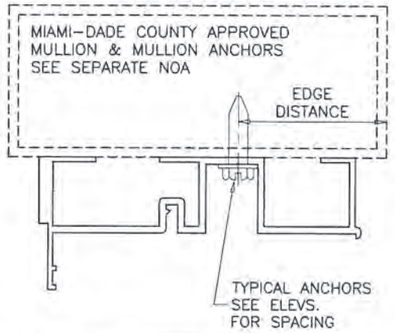
drawing no. W08–78

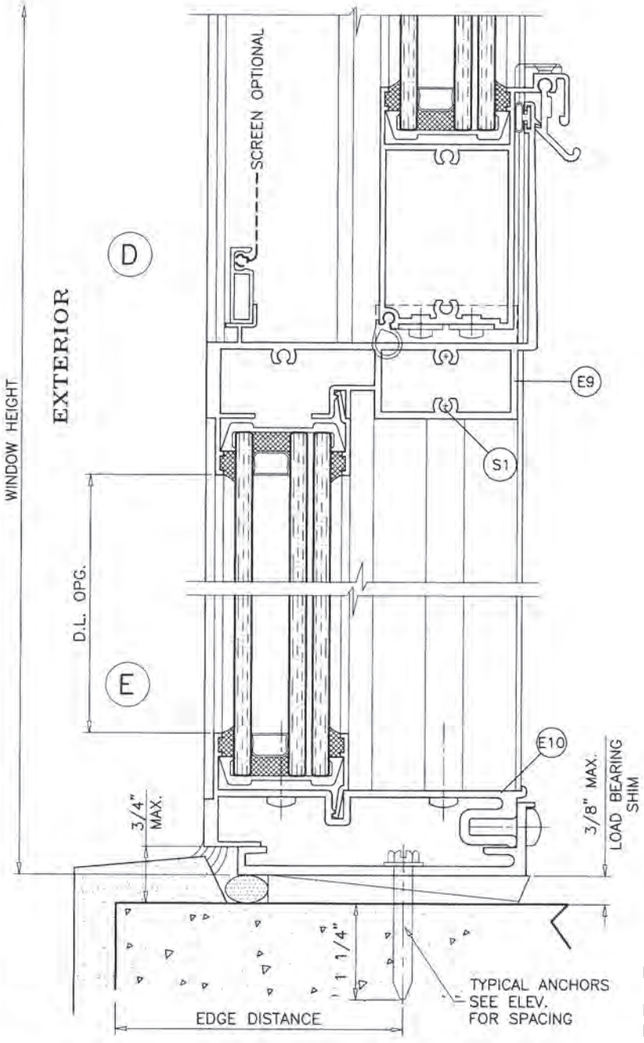
sheet 4 of 9











1BY OR 2BY WOOD BUCKS AND METAL STRUCTURES NOT BY 'TECNOGLASS' MUST SUPPORT LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

1/4" DIA. KWIK-CON II+ BY 'HILTI' (Fu=138 KSI, Fy=137 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/JAMBS)
1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)

DIRECTLY INTO CONCRETE OR BLOCKS
1-3/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
1-1/4" MIN. EMBED INTO GROUT-FILLED BLOCKS (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)

EDGE DISTANCE
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 HOLLOW/FILLED BLOCK AT JAMBS f'm = 2000 PSI MIN.

SEALANT:

ALL JOINTS AND FRAME CONNECTIONS SEALED WITH DOW CORNING 795 SEALANT.

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 21-0405.19
Expiration Date 10/25/2023
By
Miami-Dade Product Control

MAR 26 2021

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\W08-7BRC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

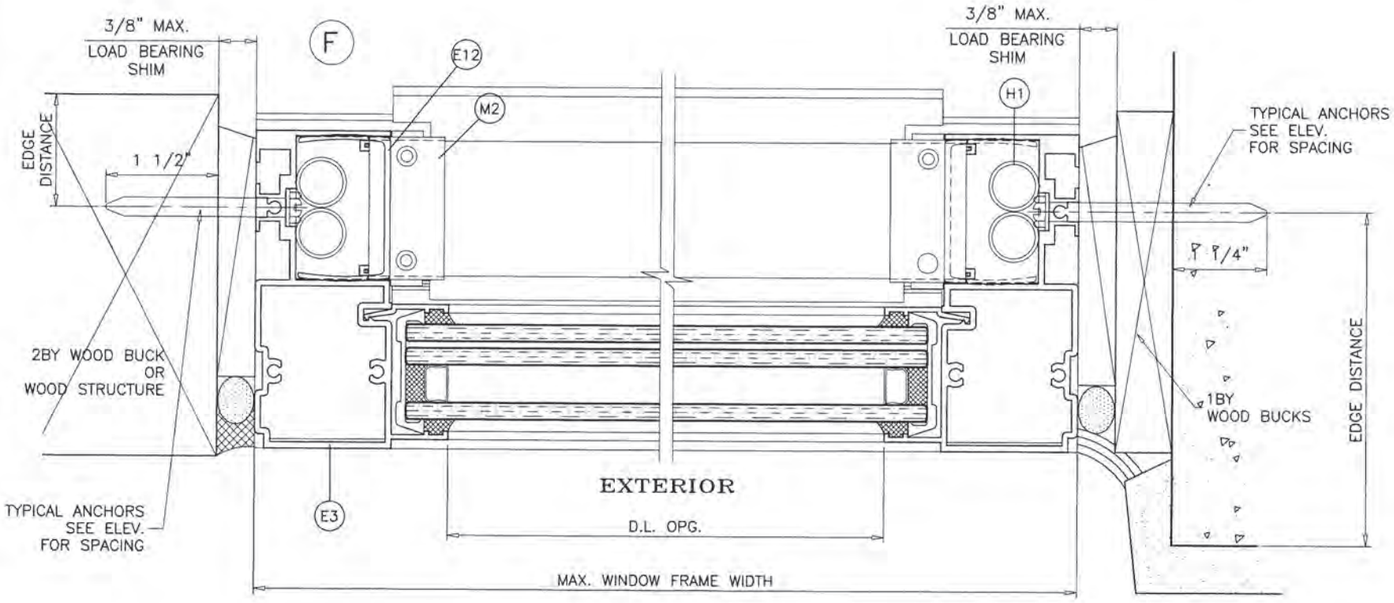
TECNOGLASS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5158 FAX. (305) 638-5151

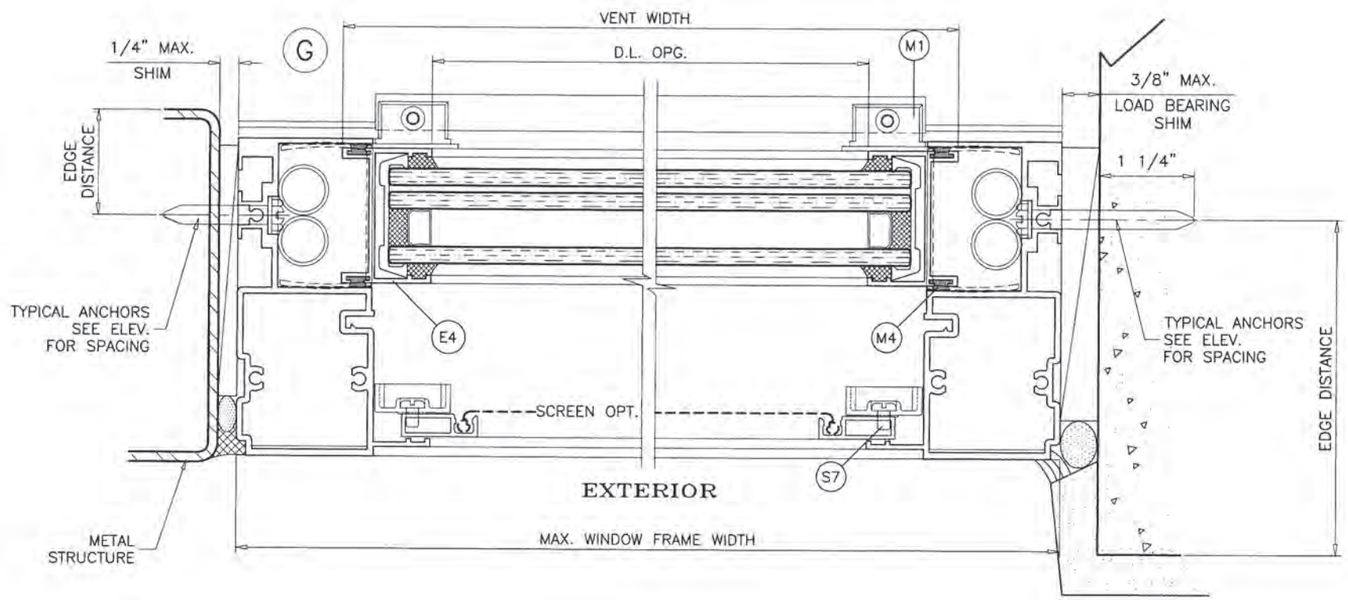
revisions:		
no	date	by description
A	07.09.10	REV. PER BCCO COMMENTS
B	01.18.16	UPDATED TO 2014 FBC
C	04.14.17	REV. PER RER COMMENTS
D	09.25.18	REV. PER RER COMMENTS
E	11.18.20	UPDATED TO 2020 FBC

date: 09-10-08
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W08-78

sheet 5 of 9





PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 21-0405.19
Expiration Date 10/25/2023
By
Miami-Dade Product Control

MAR 26 2021

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\W08-78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

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

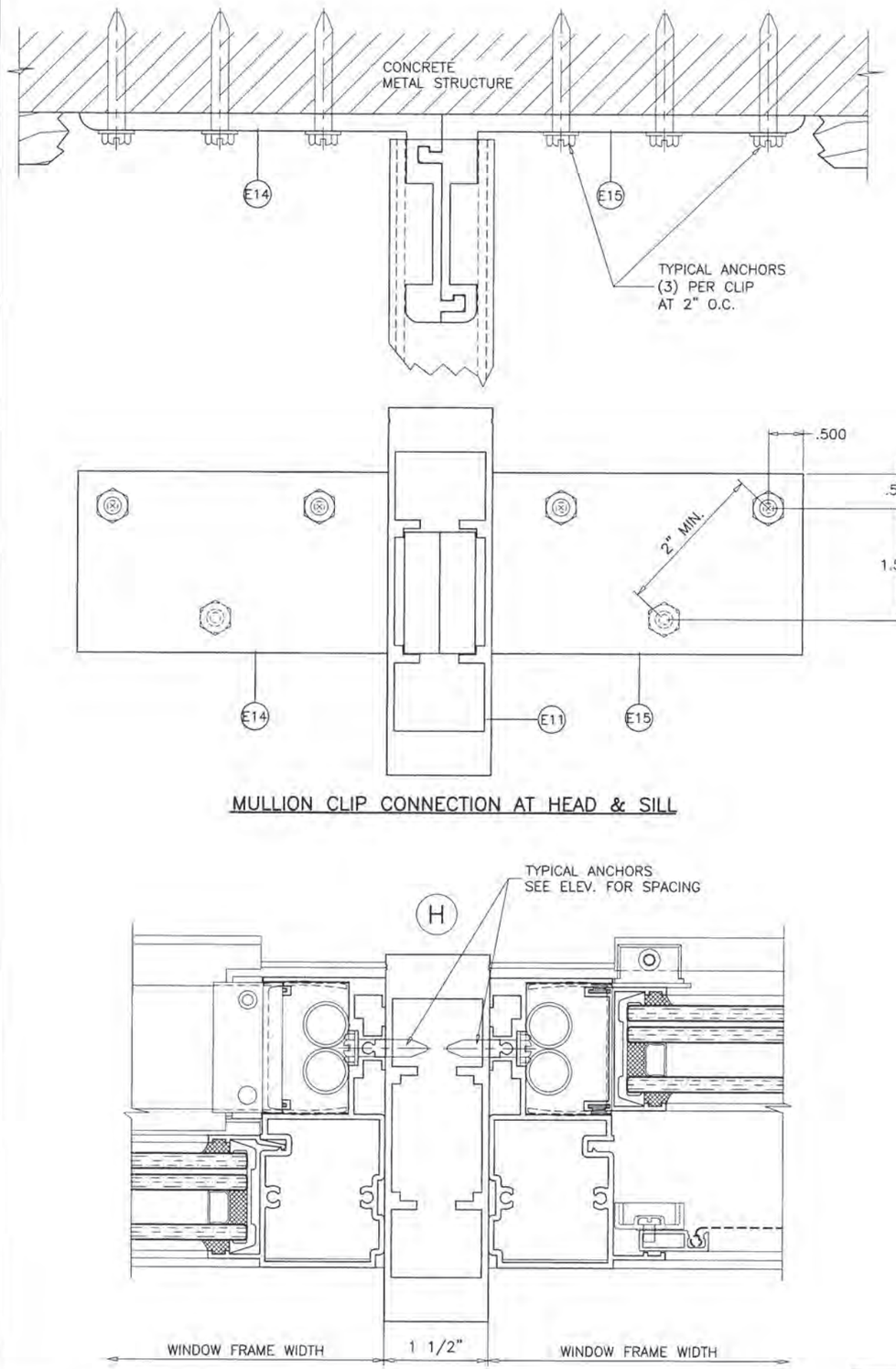
revisions:

no	date	by	description
A	07.09.10		NO CHANGE THIS SHEET
B	01.18.16		UPDATED TO 2014 FBC
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		REV. PER RER COMMENTS
E	11.18.20		UPDATED TO 2020 FBC

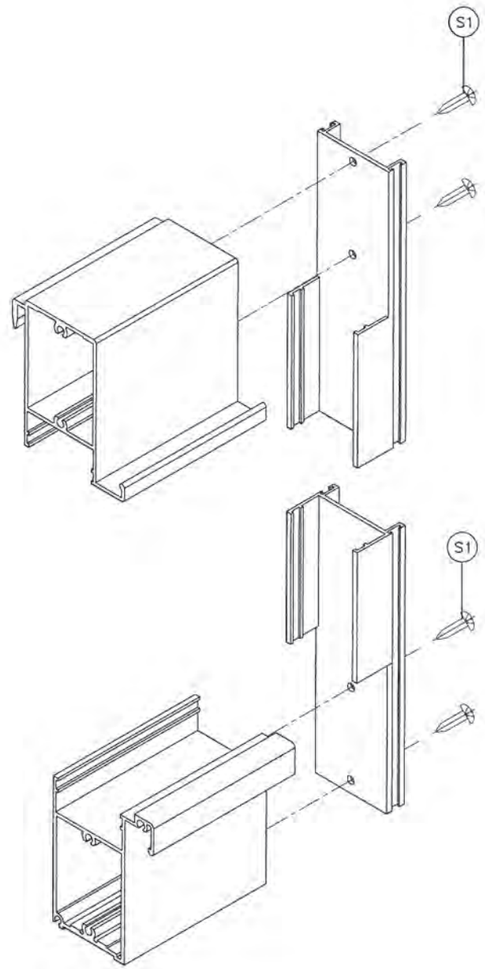
date: 09-10-08
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no.
W08-78

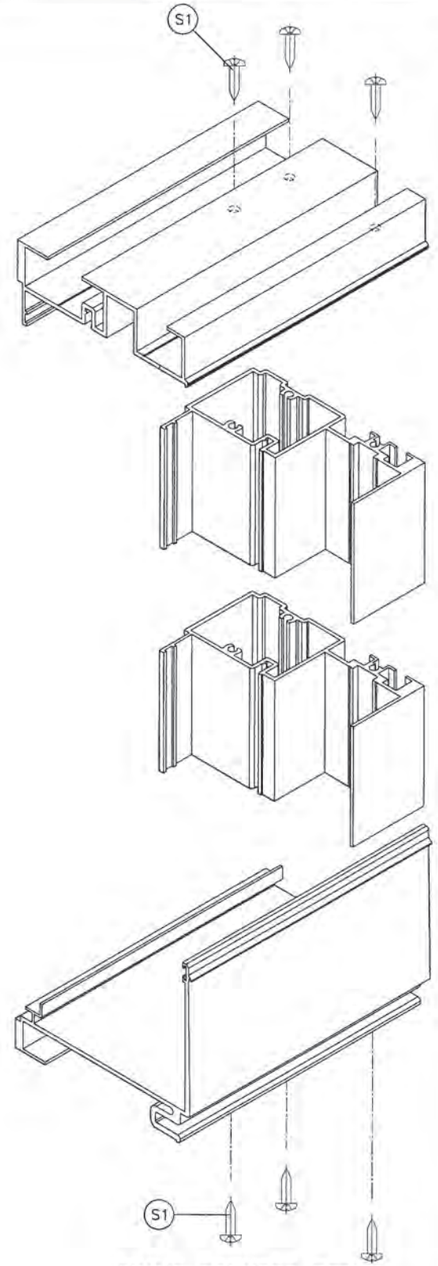
sheet 6 of 9



MULLION CLIP CONNECTION AT HEAD & SILL



VENT CORNER DETAIL



FRAME CORNERS DETAIL

PRODUCT REVISED
as complying with the Florida Building Code
NOA–No. 21-0405.19
Expiration Date 10/25/2023
By
Miami–Dade Product Control

MAR 26 2021

SEE CHARTS ON SHEET 4 FOR MULLION LOAD CAPACITY

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\W08–78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

TECNOGLASS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638–5151 FAX. (305) 638–5158

revisions:

no	date	by	description
A	07.09.10		REV. PER BCCO COMMENTS
B	01.18.16		UPDATED TO 2014 FBC
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

date: 09–10–08
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W08–78

sheet 7 of 9

ITEM #	PART #	REQD.	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	PH4400-001	1	FRAME HEAD	6063-T6	-
E2	PH4400-002	1	FRAME SILL	6063-T6	-
E3	PH4400-003	2	FRAME JAMB	6005-T5	-
E4	PH4400-004	2	VENT JAMB	6063-T6	-
E5	PH4400-005	1	VENT TOP	6005-T5	-
E6	PH4400-006	1	MEETING RAIL	6005-T5	-
E7	PH4400-007	1	VENT BOTTOM	6063-T6	-
E8	PH4400-008	1	SILL ANCHOR CLIP	6063-T6	-
E9	PH4400-009	1	MEETING SILL	6063-T6	-
E10	PH4400-010	1	FRAME SILL 3P	6063-T6	-
E11	PH4400-011A	AS REQD.	MULLIOM	6063-T6	-
E12	PH4400-012	1	VENT STOP	6063-T6	AT TOP OF FRAME
E13	500Y-007	AS REQD.	GLAZING BEAD	6063-T6	-
E14	500Y-024	AS REQD.	FEMALE ANCHOR CLIP	6063-T6	TOP & BOTTOM OF MULLION
E15	500Y-025	AS REQD.	MALE ANCHOR CLIP	6063-T6	TOP & BOTTOM OF MULLION
E16	500Y-026	AS REQD.	EXTRUDED FRAME (OPTIONAL)	-	-
V2	V-071	AS REQD.	VENT BOTTOM WEATHERSEAL	VINYL	DUROMETER 65±5 SHORE A
V3	V-073	AS REQD.	MARINE GLAZING GASKET	EPDM	DUROMETER 75±5 SHORE A
S1		AS REQD.	#10 X 1" LG. PH. SMS POINT"B" ST/ST (ASSEMBLY SCREW)	-	-
S2		2/ GUIDE	#8 X 3/8" LG. FH. SMS TYPE "B" ST/ST (@ P-037 & P-013)	-	-
S3		-	#8 X 1/2" LG. P.H. SMS. ST/ST (@ BALANCE BRACKET)	-	AT BALANCE CLIP
S5		-	#8 X 1" LG. FH. SMS ST/ST (@ BALANCE)	-	AT TOP OF BALANCE
S6		AS REQD.	#14 X 3/4" LG. PH. SMS TYPE "B" ST/ST AT SILL	-	AT 4" FROM ENDS & 20" O.C. MAX.
S7		-	#8-32 X 1/4" LG. PHL. MACHINE SCREW ST/ST	-	-
H1		2/ WDW.	ULTRALIFT BALANCE	-	-
H2		2/ WDW.	ULTRALIFT NOT TILT BRACKET	-	-
M1	P-040	2/ VENT	VENT BOTTOM GUIDE	NYLON	BOTTOM OF SASH VENT
M2	P-037	2/ VENT	VENT TOP GUIDE	NYLON	TOP OF SASH VENT
M3	P-035	2/ WDW.	FINGER LOCK	ALUMINUM	AT 6" FROM EACH END
M4	U56	-	Q225T270 BLACK @ VENT JAMBS	FOAM	-
M5	V-086	-	OPERABLE VENT GASKET	VINYL	-
M6	U52	-	Q250T270 WHITE @ MEETING RAIL	-	-
M7	P-028	-	SCREEN RETAINER CLIP-90° ROTATION	-	-
M10		-	1 1/4" X 1 7/8" X 1/2" HIGH BAFFLE 30 PPI RETIC. W/ADHES AT BOTTOM	-	-
M11	DC-995	AS REQD.	GLAZING COMPOUND	SILICONE	DOW CORNING

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 21-0405.19
Expiration Date 10/25/2023
By
Miami-Dade Product Control

MAR 26 2021

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\W08-7BRC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

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

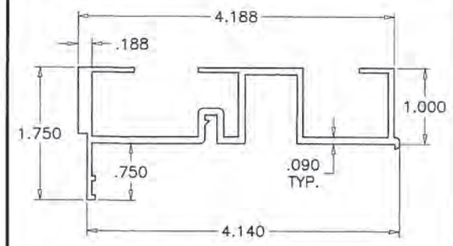
revisions:

no	date	by	description
A	07.09.10		REV. PER BCCO COMMENTS
B	01.18.16		UPDATED TO 2014 FBC
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

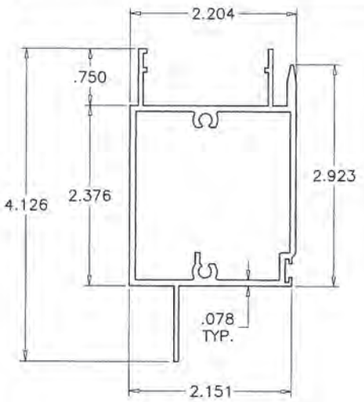
date: 09-10-08
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W08-78

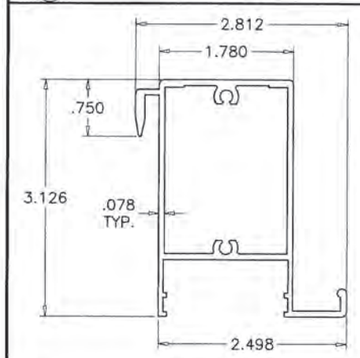
sheet 8 of 9



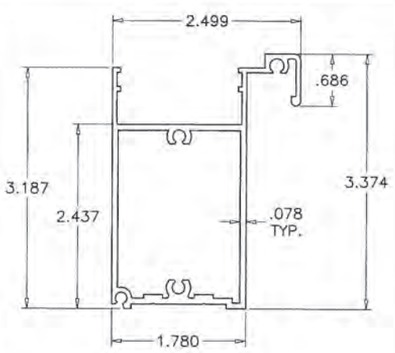
E1 FRAME HEAD



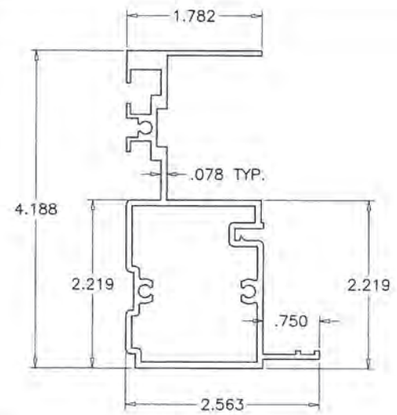
E6 MEETING RAIL



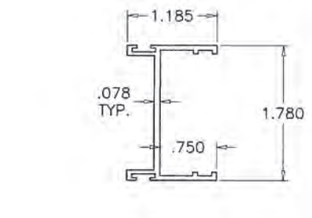
E5 VENT TOP RAIL



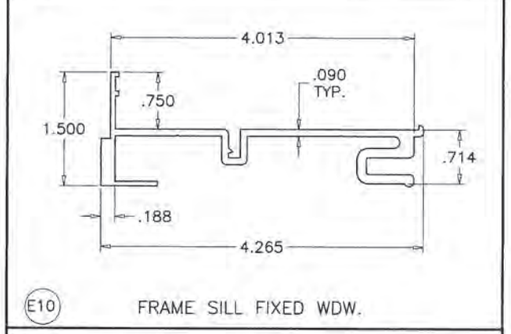
E7 VENT BOTTOM RAIL



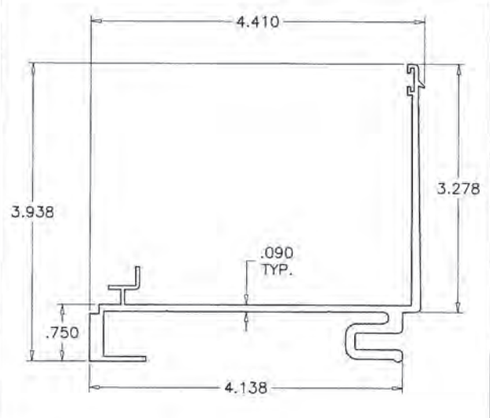
E3 FRAME JAMB



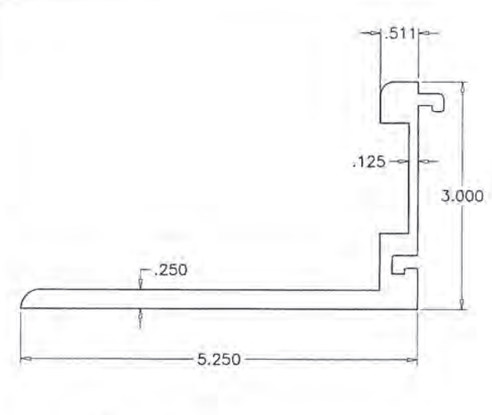
E4 VENT SIDE RAIL



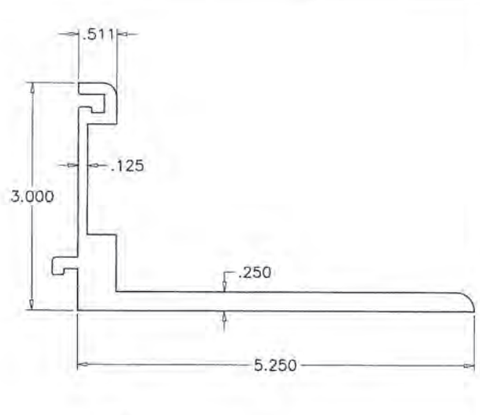
E10 FRAME SILL FIXED WDW.



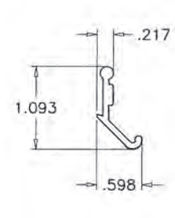
E2 FRAME SILL



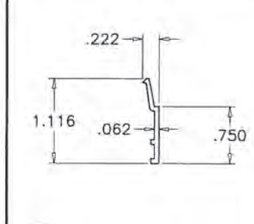
E14 FEMALE ANCHOR CLIP



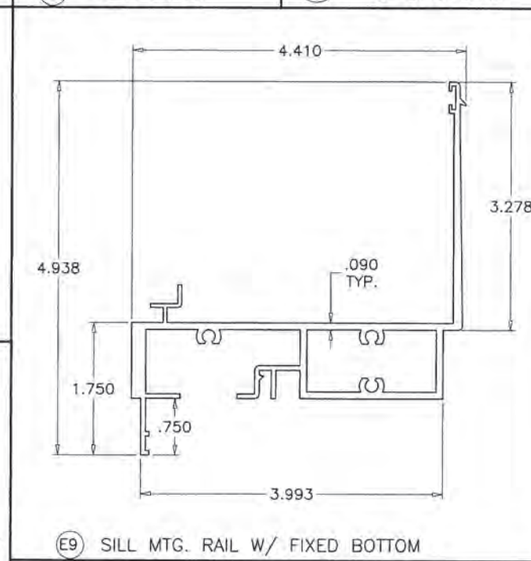
E15 MALE ANCHOR CLIP



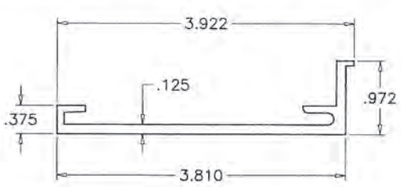
M3 VENT LATCH



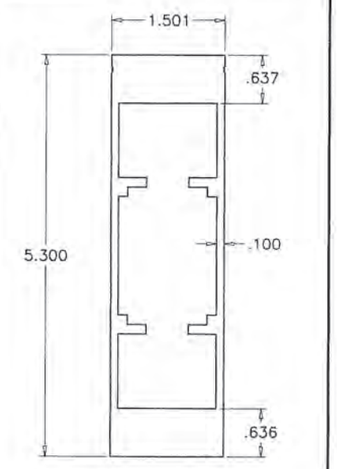
E13 GLAZING BEAD



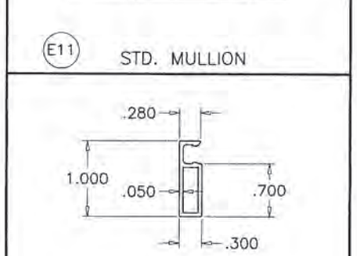
E9 SILL MTG. RAIL W/ FIXED BOTTOM



E8 SILL ANCHOR CLIP



E11 STD. MULLION



E16 SCREEN FRAME

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 21-0405.19
Expiration Date 10/25/2023
By
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\W08-78RC

SERIES PH4400 ALUM SINGLE HUNG WINDOW (L.M.I.)

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

revisions:

no	date	by	description
A	07.09.10		NO CHANGE THIS SHEET
B	01.18.16		UPDATED TO 2014 FBC
C	04.14.17		REV. PER RER COMMENTS
D	09.25.18		NO CHANGE THIS SHEET
E	11.18.20		UPDATED TO 2020 FBC

date: 09-10-08
scale: 1/2" = 1"
dr. by: TARIQ
chk. by:

drawing no. W08-78

sheet 9 of 9