



Product Approval
USER: Public User

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OFFICE OF THE
SECRETARY

FL #

Application Type

Code Version

Application Status

FL17897-R16

Revision

2023

Approved

Comments

Archived

☐

Product Manufacturer

Address/Phone/Email

E.S. Windows, Inc.

10653 NE Quaybridge Ct.

Miami, FL 33138

(305) 638-5151

ssabagh@energiasolarsa.com

Authorized Signature

Jalal Farooq

veronica@afceng.com

Technical Representative

Address/Phone/Email

Samir Sabagh

3550 NW 49th St.

Miami, FL 33142

(305) 638-5151

ssabagh@energiasolarsa.com

Quality Assurance Representative

Address/Phone/Email

Category

Subcategory

Panel Walls

Storefronts

Compliance Method

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

☐ Evaluation Report - Hardcopy Received

Florida Engineer or Architect Name who developed the Evaluation Report

Jalal Farooq

Florida License

PE-81223

Quality Assurance Entity

Keystone Certifications, Inc.

Quality Assurance Contract Expiration Date

03/21/2035

Validated By

Abel Carrasco, PE

☒ Validation Checklist - Hardcopy Received

Certificate of Independence

[FL17897_R16_COI_SS - Certificate of Independence 2023.pdf](#)

Referenced Standard and Year (of Standard)

Standard

Year

AAMA 501

2015

TAS 201

1994

TAS 202

1994

TAS 203

1994

Equivalence of Product Standards

Certified By

Product Approval Method

Method 1 Option D

Date Submitted

03/19/2025

Date Validated

04/24/2025

Date Pending FBC Approval

04/25/2025

Date Approved

06/10/2025

Summary of Products

FL #	Model, Number or Name	Description
17897.1	Series ES-8000 Aluminum Window Wall System	Large missile impact resistant aluminum window wall system.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +130/-130 Other: See drawing W17-92 for span vs load combinations and installation details.		Installation Instructions FL17897_R16_II_SS - 8000 WW (LMI) - DWG W17-92 2023 R1.1.pdf Verified By: Jalal Farooq PE# 81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000 WW (LMI)-PAE 2023.pdf Created by Independent Third Party: Yes
17897.2	Series ES-8000 Aluminum Window Wall System	Small missile impact resistant aluminum window wall system.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +100/-150 Other: See drawing 23-06F for span vs load combinations and installation details.		Installation Instructions FL17897_R16_II_SS - 8000 WW (SMI) - DWG 23-06F 2023 R1.1.pdf Verified By: Jalal Farooq PE # 81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000 WW (SMI)-PAE 2023.pdf Created by Independent Third Party: Yes
17897.3	Series ES-8000T Aluminum Window Wall System	Non-impact resistant aluminum window wall system.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: No Design Pressure: +80/-100 Other: See drawing 24-71F for span vs load combinations and installation details.		Installation Instructions FL17897_R16_II_SS - ES-8000T WW (NI) - DWG 24-71F 2023 R1.pdf Verified By: Jalal Farooq PE 81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000T Window Wall (NI)-PAE 2023.pdf Created by Independent Third Party: Yes
17897.4	Series ES-8000T Aluminum Window Wall System	Small missile impact resistant aluminum window wall system.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +60/-60 Other: See drawing 21-12F for span vs load combinations and installation details.		Installation Instructions FL17897_R16_II_SS - 8000T WW (SMI) - DWG 21-12F 2023 R1.pdf Verified By: Jalal Farooq PE #81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000T WW (SMI)-PAE 2023.pdf Created by Independent Third Party: Yes
17897.5	Series ES-8000T Aluminum Window Wall System	Large missile impact resistant aluminum window wall system.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +90/-120 Other: See drawing W15-37 for span vs load combinations and installation details.		Installation Instructions FL17897_R16_II_SS - 8000T WW (LMI) - DWG W15-37 2023 R1.pdf Verified By: Jalal Farooq PE# 81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000T WW (LMI)-PAE 2023.pdf Created by Independent Third Party: Yes
17897.6	Series ES-8000T Jumbo Aluminum Window Wall System	Large missile impact resistant aluminum window wall system.

Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +70/-70 Other: See drawing 21-58F for span vs load combinations and installation details.	Installation Instructions FL17897_R16_II_SS - 8000T (JUMBO) WW (LMI) - DWG 21-58F 2023 R1.pdf Verified By: Jalal Farooq PE # 81223 Created by Independent Third Party: Yes Evaluation Reports FL17897_R16_AE_SS - ES-8000T Jumbo WW (LMI)-PAE 2023.pdf Created by Independent Third Party: Yes
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[Back](#)
[Next](#)

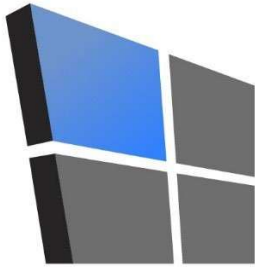
[Contact Us](#) :: 2601 Blair Stone Road, Tallahassee FL 32399 Phone: 850-487-1824

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Product Approval Accepts:





AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

January 23, 2023

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

To whom it may concern,

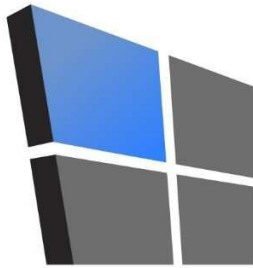
As the design engineer retained to prepare the product approval(s) associated with this letter as shown below on this same web page, I do hereby declare that I do not have and will not have any financial interest in any company manufacturing or distributing the referenced product(s), nor do I have or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

Sincerely,



Jalal Farooq, P.E.
CFO

Sealed: 1/23/2023



AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

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

FL 17897

Date: 07/31/2023

Detailed Product Description:

Manufacturer: E.S. WINDOWS, LLC.

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

Model Name: SERIES ES-8000T ALUMINUM WINDOW WALL SYSTEM

Maximum Load: +90 PSF, -120 PSF (Large Missile Impact)

Installation Drawings # W15-37

This product complies with the High Velocity Hurricane Zone (HVHZ) testing requirements.

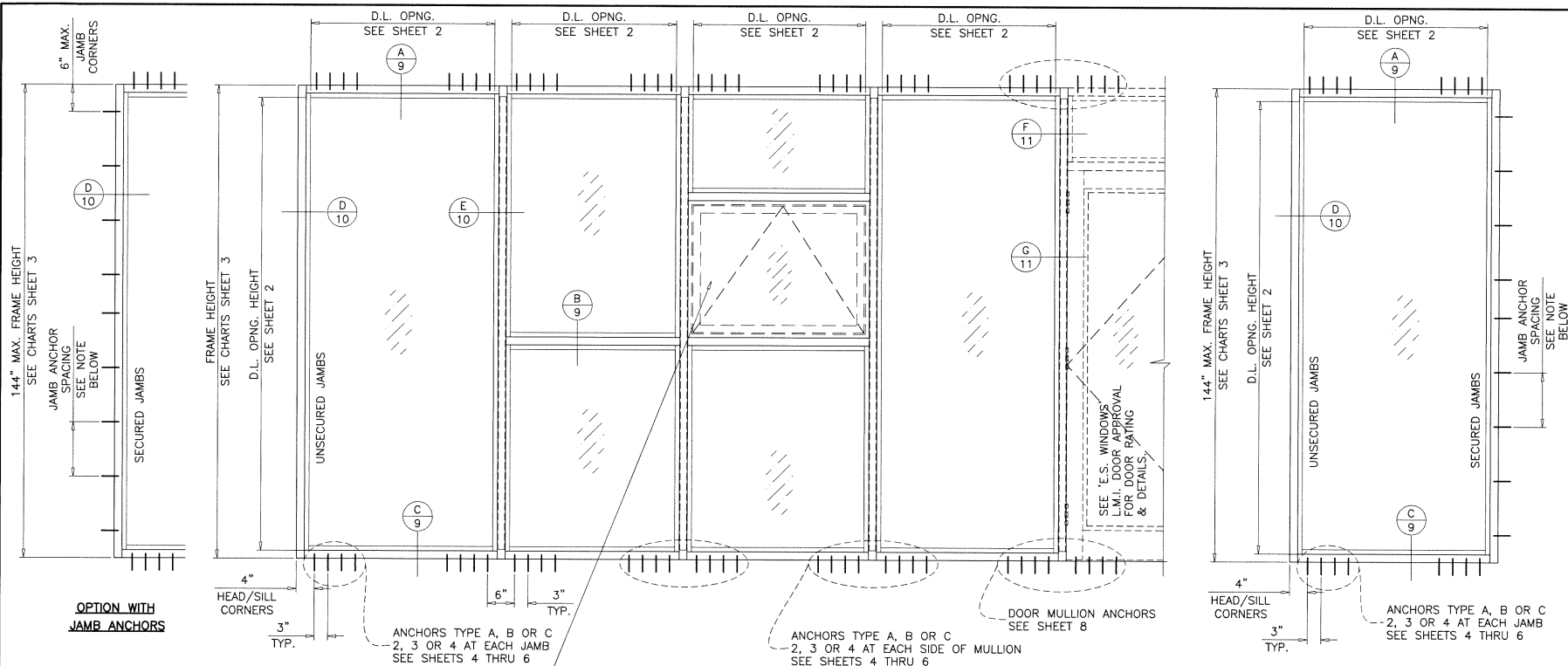
For maximum sizes, combination of span vs loads and anchor type refer to installation drawings.

Comparative analysis used ☒ Yes ☐ No

Mandatory Tests (Tested in accordance with AAMA 501/101/I.S.2/NAFS/TAS-202)

TEST	DESCRIPTION	TEST LOCATION	TEST REPORT DATE	TEST REPORT #	Test Sealed by
ASTM E283	Air Infiltration Leakage	Fenestration Testing Laboratory, Inc. Blackwater Technical Services Inc.	12/19/2007 04/14/2015 08/16/2017 06/19/2020 04/07/2021 03/08/2021 05/03/2021	FTL-5447 FTL-7546 FTL-9605 FTL-12221 FTL-12525 BT-ESW-20-046 BT-ESW-20-036B	Michael R. Wenzel, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E.
ASTM E331 OR ASTM 547 & TAS 202	Water Penetration	Fenestration Testing Laboratory, Inc. Blackwater Technical Services Inc.	12/19/2007 04/14/2015 08/16/2017 06/19/2020 04/07/2021 03/08/2021 05/03/2021	FTL-5447 FTL-7546 FTL-9605 FTL-12221 FTL-12525 BT-ESW-20-046 BT-ESW-20-036B	Michael R. Wenzel, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E.
ASTM E330 & TAS 202	Uniform Static Air Press.	Fenestration Testing Laboratory, Inc. Blackwater Technical Services Inc.	12/19/2007 04/14/2015 08/16/2017 06/19/2020 04/07/2021 12/13/2021 03/08/2021 05/03/2021 01/12/2023	FTL-5447 FTL-7546 FTL-9605 FTL-12221 FTL-12525 FTL-12879 BT-ESW-20-046 BT-ESW-20-036B BT-ESW-22-023	Michael R. Wenzel, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E.
ASTM F588	Forced Entry	Blackwater Technical Services Inc.	03/08/2021 05/03/2021	BT-ESW-20-046 BT-ESW-20-036B	Michael D. Caldwell, P.E. Michael D. Caldwell, P.E.

Supplemental Tests (Tested in accordance with TAS-201 and TAS-203)					
TEST	DESCRIPTION	TEST LOCATION	TEST REPORT DATE	TEST REPORT #	Test Sealed by
FBC 1626.2 (TAS 201 & 203) ANSI Z97.1 ASTM E1886/1996	Large Missile Impact & Cyclic	Fenestration Testing Laboratory, Inc. Blackwater Technical Services Inc.	12/19/2007 04/14/2015 08/16/2017 06/19/2020 04/07/2021 12/13/2021 03/08/2021 05/03/2021 01/12/2023	FTL-5447 FTL-7546 FTL-9605 FTL-12221 FTL-12525 FTL-12879 BT-ESW-20-046 BT-ESW-20-036B BT-ESW-22-023	Michael R. Wenzel, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Idalmis Ortega, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E. Michael D. Caldwell, P.E.
Under the limitations of the attached installation drawings, to the best of my knowledge and ability, the above product conforms to the requirements of the 2023 Florida Building Code.					
Evaluation Report Engineer: Jalal Farooq Al-Farooq Corporation			 Sealed: 8/1/2023		
		PE # 81223 EB # 3538			



SERIES ES-8000T ALUMINUM WINDOW WALL SYSTEM

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)'.

MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION IN ACCORDANCE WITH SECTION 1709.9.3 OF FLORIDA BUILDING CODE. LABELING TO COMPLY WITH SECTION 1709.9.2.

WINDOWS AND LOUVERS SUPPORTED BY APPROVALS CAN BE INSTALLED WITHIN THE DAYLIGHT OPENING. ALLOWED AREA NOT TO EXCEED THE TESTED GLASS AREA AND MAX. MULLION SPACING PER CHARTS ON SHEETS 3, 3.1 & 3.2 PROVIDED THESE ARE PROPERLY SECURED WITH SCREWS AT PERIMETER OF OPENING. INSTALLATION AND COMPLIANCE WITH CODE SHALL BE VERIFIED INDEPENDENTLY. PTAC UNITS USED AS WINDOW INSERT TO BE ENGINEERED SEPARATELY FOR MULLION CAPACITY, ANCHORS, ASYMMETRICAL LOADS ETC.

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** SEE CHARTS ON SHEET 2 FOR DESIGN LOAD CAPACITY OF DESIRED GLASS SIZE.
- STEP 3** CHECK MULLION CAPACITY FOR A GIVEN SPACING AND HEIGHT USING CHARTS ON SHEETS 3 FOR WINDOW WALL MULLION AND SHEETS 7 THRU 8 FOR DOOR MULLION. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** CHECK ANCHOR CAPACITY FOR WINDOW WALL SYSTEM USING CHARTS ON SHEETS 4 THRU 6 FOR DOOR MULLION ANCHOR CAPACITY SEE CHART ON SHEET 8. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO ENTIRE SYSTEM.

TYPICAL ELEVATIONS

JAMB ANCHORS:

FOR 12" MAX. SPACING LIMIT MAX. LOADS TO 80.0 PSF FOR ANCHOR TYPES 'A' & 'B' TO 74.0 PSF FOR ANCHOR TYPE 'C'
FOR LOADS HIGHER THAN SHOWN ABOVE LIMIT ANCHOR SPACING TO 6" MAX.

SINGLE 'O' PANEL:
FRAME WIDTH = D.L.O. WIDTH + 5.50"
FRAME HEIGHT = D.L.O. HEIGHT + 5.50"

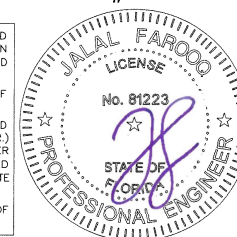
THIS SYSTEM IS RATED FOR LARGE & SMALL MISSILE IMPACT. SHUTTERS ARE NOT REQUIRED.

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

Sealed: 3/13/2025

FL #17897

- A- CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
- B- THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
- C- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- D- THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 262-6978
FAX. (305) 262-6978
COMP-ANL W15-37CS

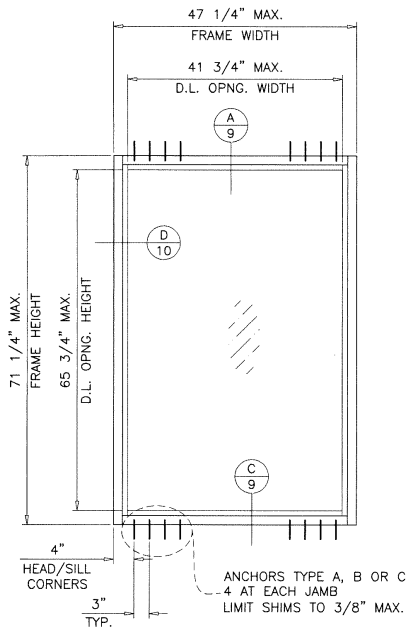
ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:	no.	date	by	description
	G	06.11.21		NEW TESTS ADDED
	H	11.24.21		NEW TESTS ADDED
	I	01.25.23		GLAZING SILICONE GE ADDED
	J	08.01.23		UPDATED TO 2023 FBC
	K	06.11.24		LOUVER NOTE ADDED

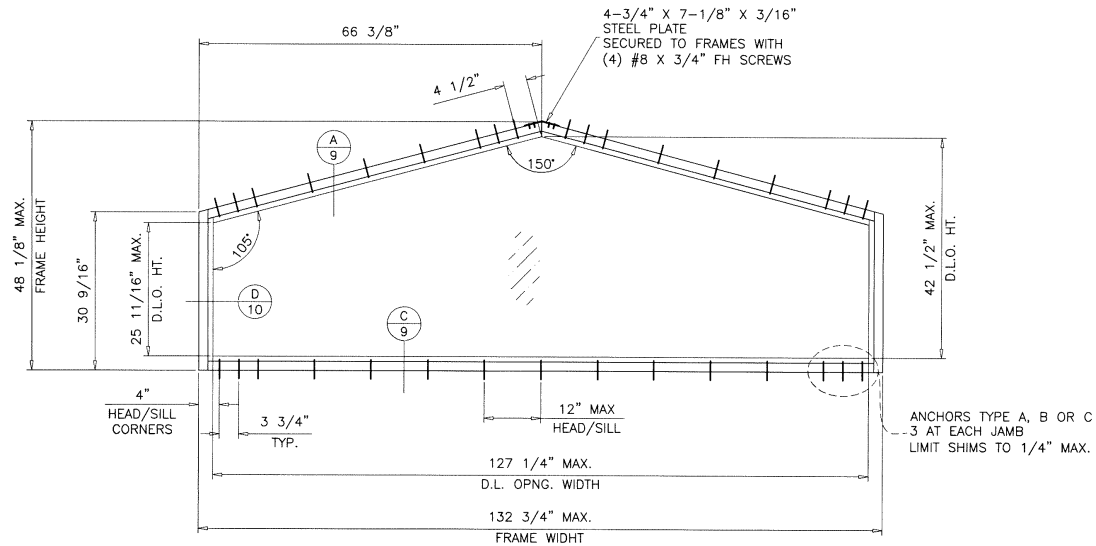
date: 07-16-15
scale: 1/2"=1'-0"
dr. by: TARIO
chk. by:

drawing no.
W15-37

sheet 1 of 13



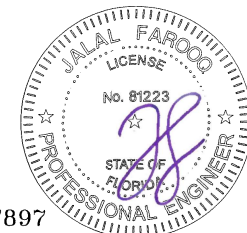
GLASS TYPE 'GL2R'
 MAXIMUM DESIGN LOAD RATING = + 66.0 PSF
 (FOR SINGLE UNIT SHOWN ABOVE) - 108.0 PSF



GLASS TYPE 'GL2R'
 MAXIMUM DESIGN LOAD RATING = + 80.0 PSF
 (FOR SINGLE UNIT SHOWN ABOVE) - 80.0 PSF

Sealed: 3/13/2025

FL #17897



af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 5538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 COMP-ANL W15-37ES

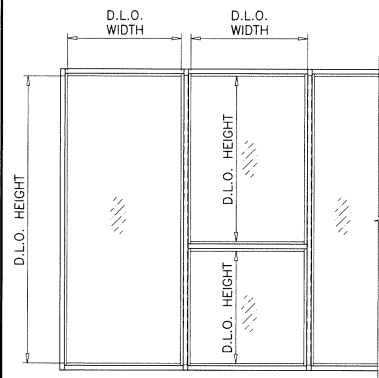
ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:	no	date	by	description

date: 07-16-15
 scale: 1/2"=1'-0"
 dr. by: TARIQ
 chk. by:

drawing no.
W15-37
 sheet 1.1 of 13

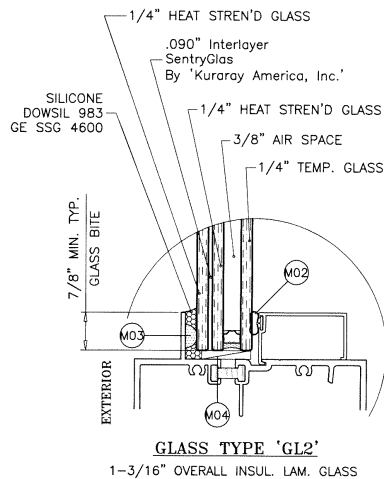
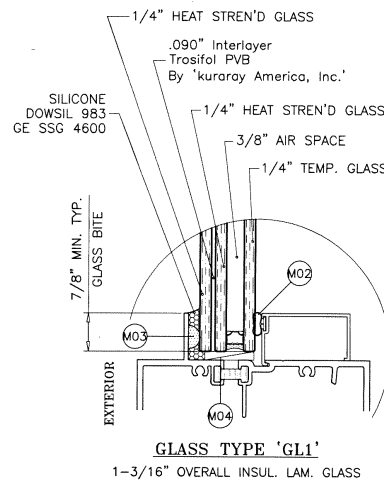
GLASS LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPES	
D.L.O. WIDTH	D.L.O. HEIGHT	'GL1'/'GL1R'	
EXT.(+)	INT.(-)		
26-1/4"	105-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	108-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	114-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	120-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	126-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	132-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	138-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
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56-1/4"		60.0	70.0



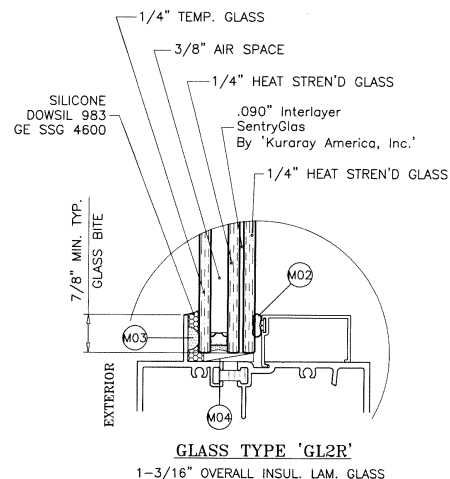
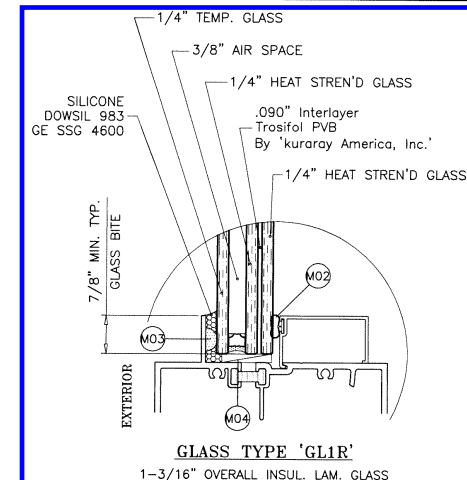
GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES			
D.L.O. WIDTH	D.L.O. HEIGHT	'GL2'	'GL2R'		
EXT.(+)	INT.(-)	EXT.(+)	INT.(-)		
26-1/4"	84-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	96-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	102-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	105-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	108-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	114-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	126-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	138-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

GLASS

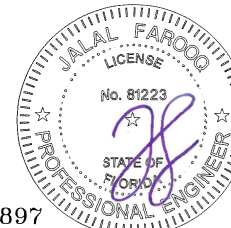


3/8" AIR SPACE CONSISTING OF:
SPACER:
'HELIMA' LOW PROFILE ALUMINUM SPACER
BY 'LINGERMANN GMBH'
AROUND THE PERIMETER OF THE GLASS.
PERIMETER SEALANT:
SILICONE
DOWSIL 791
GE 2000



Sealed: 3/13/2025

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-09 (3 SEC. GUSTS). FL #17897



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

ES-8000T ALUM WINDOW WALL SYSTEM (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

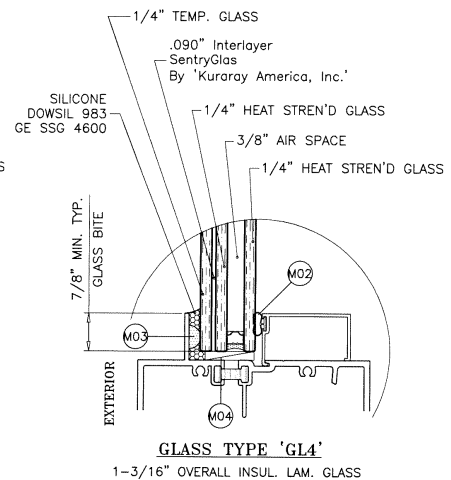
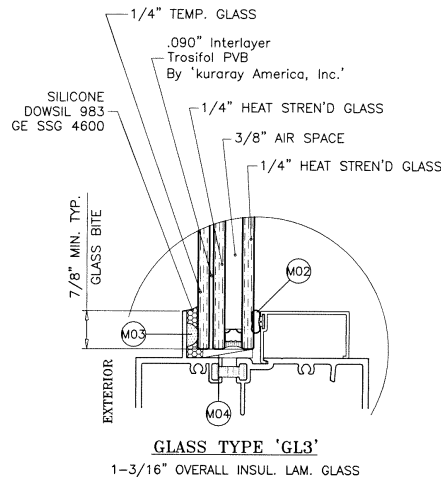
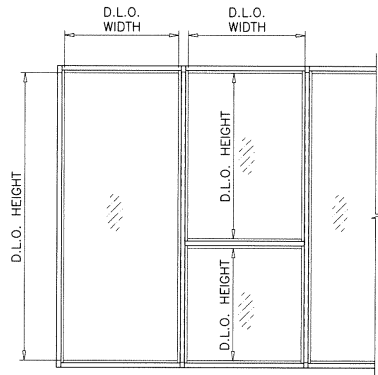
date: 07-16-15
scale: -
dr. by: TARIQ
chk. by:

drawing no.
W15-37
sheet 2 of 13

GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES			
		'GL3'		'GL4'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
26-1/4"	84-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	86.6	115.4
48-1/4"		55.0	64.2	83.0	110.6
49"		53.5	62.0	81.3	108.4
50-1/4"		52.8	61.6	79.3	105.7
56-1/4"		47.2	55.1	70.8	94.4
26-1/4"	96-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	86.6	115.4
48-1/4"		55.0	64.2	83.0	110.6
49"		53.5	62.0	81.3	108.4
50-1/4"		52.8	61.6	79.3	105.7
56-1/4"		47.2	55.1	-	-
26-1/4"	102-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	86.6	115.4
48-1/4"		55.0	64.2	83.0	110.6
49"		53.5	62.0	81.3	108.4
50-1/4"		52.8	61.6	-	-
56-1/4"		47.2	55.1	-	-
26-1/4"	105-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	86.6	115.4
48-1/4"		55.0	64.2	83.0	110.6
50-1/4"		52.8	61.6	-	-
56-1/4"		47.2	55.1	-	-
26-1/4"	108-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	86.6	115.4
48-1/4"		55.0	64.2	-	-
50-1/4"		52.8	61.6	-	-
56-1/4"		47.2	55.1	-	-
26-1/4"	114-1/2"	60.0	70.0	90.0	120.0
32-1/4"		60.0	70.0	90.0	120.0
38-1/4"		60.0	70.0	90.0	120.0
44-1/4"		60.0	70.0	90.0	120.0
46-1/4"		57.4	67.0	-	-
48-1/4"		55.0	64.2	-	-
50-1/4"		52.8	61.6	-	-

GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES			
		'GL3'		'GL4'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
26-1/4"	120-1/2"	60.0	70.0	-	-
32-1/4"		60.0	70.0	-	-
38-1/4"		60.0	70.0	-	-
44-1/4"		60.0	70.0	-	-
46-1/4"		57.4	67.0	-	-
48-1/4"		55.0	64.2	-	-
50-1/4"		52.8	61.6	-	-
26-1/4"	126-1/2"	60.0	70.0	-	-
32-1/4"		60.0	70.0	-	-
38-1/4"		60.0	70.0	-	-
44-1/4"		60.0	70.0	-	-
46-1/4"		57.4	67.0	-	-
48-1/4"		55.0	64.2	-	-
26-1/4"	132-1/2"	60.0	70.0	-	-
32-1/4"		60.0	70.0	-	-
38-1/4"		60.0	70.0	-	-
44-1/4"		60.0	70.0	-	-
46-1/4"		57.4	67.0	-	-
26-1/4"	138-1/2"	60.0	70.0	-	-
32-1/4"		60.0	70.0	-	-
38-1/4"		60.0	70.0	-	-
44-1/4"		60.0	70.0	-	-

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

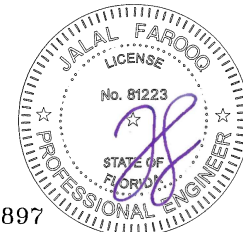


3/8" AIR SPACE CONSISTING OF:
SPACER:
 'HELIMA' LOW PROFILE ALUMINUM SPACER
 BY 'LINGERMANN GMBH'
 AROUND THE PERIMETER OF THE GLASS.
PERIMETER SEALANT:
 SILICONE
 DOWSIL 791
 GE 2000

GLASS

NOTE:
 GLASS CAPACITIES ON THIS SHEET ARE
 BASED ON ASTM E1300-09 (3 SEC. GUSTS). FL #17897

Sealed: 3/13/2025



AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 262-6978 FAX. (305) 264-8100
 COMP-ANL W15-37ES

ES-800T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

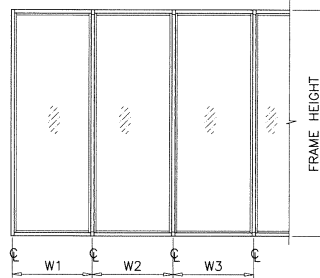
revisions:	no	date	by	description

date: 07-16-15	scale: -	dr. by: TARIQ	chk. by:
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drawing no.
W15-37
 sheet 2 of 13

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS							
NOMINAL DIMS.		JAMB 'J1'		MULLION 'M1'		MULLION 'M2'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	90"	60.0	60.0	60.0	60.0	60.0	60.0
36"		60.0	60.0	60.0	60.0	60.0	60.0
42"		60.0	60.0	60.0	60.0	60.0	60.0
48"		60.0	60.0	60.0	60.0	60.0	60.0
54"		60.0	60.0	60.0	60.0	60.0	60.0
60"		60.0	60.0	60.0	60.0	60.0	60.0
30"	96"	60.0	60.0	60.0	60.0	60.0	60.0
36"		60.0	60.0	60.0	60.0	60.0	60.0
40"		60.0	60.0	60.0	60.0	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
60"		60.0	60.0	-	-	60.0	60.0
30"	102"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
60"		60.0	60.0	-	-	60.0	60.0
30"	108"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
30"	126"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
30"	132"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
44-3/4"		60.0	60.0	-	-	60.0	60.0
30"	137"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	58.1	58.1
44-3/4"		54.0	54.0	-	-	54.0	54.0

INTERPOLATION BETWEEN WIDTHS ALLOWED.



$$\text{WIDTH (W)} = W1$$

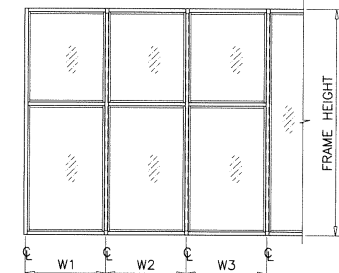
AT FRAME JAMB

$$\text{WIDTH (W)} = \frac{W2 + W3}{2}$$

AT FRAME MULLION

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITH INTERMEDIATE HORIZONTALS							
NOMINAL DIMS.		JAMB 'J1'		MULLION 'M1'		MULLION 'M2'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	90"	60.0	60.0	60.0	60.0	60.0	60.0
36"		60.0	60.0	60.0	60.0	60.0	60.0
42"		60.0	60.0	60.0	60.0	60.0	60.0
48"		60.0	60.0	60.0	60.0	60.0	60.0
54"		60.0	60.0	60.0	60.0	60.0	60.0
60"		60.0	60.0	60.0	60.0	60.0	60.0
30"	96"	60.0	60.0	60.0	60.0	60.0	60.0
36"		60.0	60.0	60.0	60.0	60.0	60.0
40"		60.0	60.0	60.0	60.0	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
60"		60.0	60.0	-	-	60.0	60.0
30"	102"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
60"		60.0	60.0	-	-	60.0	60.0
30"	108"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
54"		60.0	60.0	-	-	60.0	60.0
30"	126"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
48"		60.0	60.0	-	-	60.0	60.0
30"	132"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	60.0	60.0
44-3/4"		60.0	60.0	-	-	58.8	58.8
30"	137"	60.0	60.0	-	-	60.0	60.0
36"		60.0	60.0	-	-	60.0	60.0
42"		60.0	60.0	-	-	56.1	56.1
44-3/4"		54.0	54.0	-	-	52.6	52.6

INTERPOLATION BETWEEN WIDTHS ALLOWED.

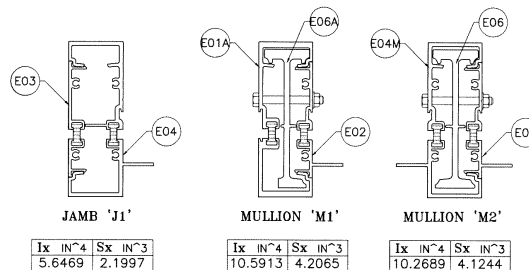


$$\text{WIDTH (W)} = W1$$

AT FRAME JAMB

$$\text{WIDTH (W)} = \frac{W2 + W3}{2}$$

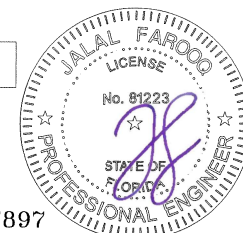
AT FRAME MULLION



MULLIONS

Sealed: 3/13/2025

FL #17897



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
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af c

COMP-ANL W15-37ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)

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

date: 07-16-15
scale: -
dr. by: TARIQ
chk. by:

Revisions:

no	date	by	description

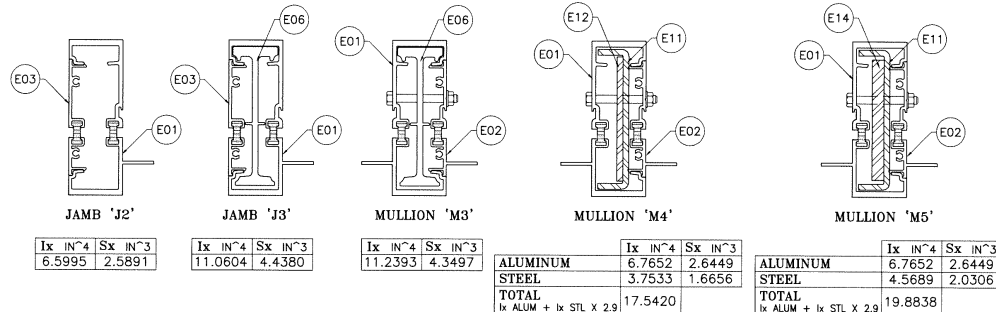
drawing no. **W15-37**

sheet 3 of 13

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS											
NOMINAL DIMS.		JAMB 'J2'		JAMB 'J3'		MULLION 'M3'		MULLION 'M4'		MULLION 'M5'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	96"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
60"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
30"	98-1/2"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
60"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	102"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
60"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	108"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	110-1/2"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	116.1	90.0	116.1	90.0	116.1	90.0	116.1	90.0	116.1
54"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	114"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	118.1	90.0	118.1	90.0	118.1	90.0	118.1	90.0	118.1
48"		90.0	105.2	90.0	105.2	90.0	105.2	90.0	105.2	90.0	105.2
54"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	120"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	116.0	90.0	116.0	90.0	116.0	90.0	116.0	90.0	116.0
42"		90.0	100.7	90.0	100.7	90.0	100.7	90.0	100.7	90.0	100.7
48"		89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5	89.5
54"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
57"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	126"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
48"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
54"		60.0	69.4	70.0	70.0	69.4	69.4	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	63.6	63.6	70.0	70.0	70.0	70.0

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS											
NOMINAL DIMS.		JAMB 'J2'		JAMB 'J3'		MULLION 'M3'		MULLION 'M4'		MULLION 'M5'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	132"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
48"		60.0	66.5	70.0	70.0	66.5	66.5	70.0	70.0	70.0	70.0
52"		60.0	62.0	70.0	70.0	62.0	62.0	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	59.9	59.9	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	54.8	54.8	69.2	69.2	70.0	70.0
30"	138"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	65.4	70.0	70.0	65.4	65.4	70.0	70.0	70.0	70.0
48"		57.9	57.9	70.0	70.0	57.9	57.9	70.0	70.0	70.0	70.0
50"		55.8	55.8	70.0	70.0	55.8	55.8	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	52.1	52.1	69.0	69.0	70.0	70.0
60"		-	-	70.0	70.0	47.6	47.6	62.9	62.9	70.0	70.0
30"	144"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	66.4	70.0	70.0	66.4	66.4	70.0	70.0	70.0	70.0
42"		57.4	57.4	70.0	70.0	57.4	57.4	70.0	70.0	70.0	70.0
48"		50.8	50.8	70.0	70.0	50.8	50.8	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	45.6	45.6	63.1	63.1	70.0	70.0
60"		-	-	60.0	60.0	41.6	41.6	57.5	57.5	60.0	60.0

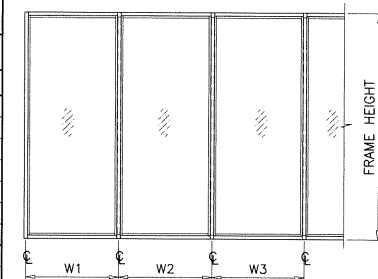
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



MULLIONS

Sealed: 3/13/2025

FL #17897



WIDTH (W) = W1
AT FRAME JAMB

WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION

AL-FAROQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978
COMP-ANL W15-37ES

ES-800T ALUM WINDOW WALL SYSTEM (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: 07-16-15
scale: -
dr. by: TARIQ
chk. by:

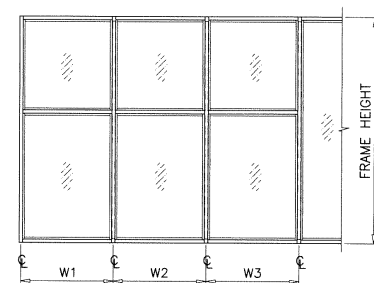
drawing no.
W15-37
sheet 3.1 of 13

JALAL FAROQ
LICENSE
No. 81223
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITH INTERMEDIATE HORIZONTALS											
NOMINAL DIMS.		JAMB 'J2'		JAMB 'J3'		MULLION 'M3'		MULLION 'M4'		MULLION 'M5'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	96"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	98-1/2"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	102"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	108"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	115.3	90.0	115.3	90.0	115.3	90.0	115.3	90.0	115.3
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	110-1/2"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
48"		90.0	107.7	90.0	107.7	90.0	107.7	90.0	107.7	90.0	107.7
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	114"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
42"		90.0	112.1	90.0	112.1	90.0	112.1	90.0	112.1	90.0	112.1
48"		90.0	98.1	90.0	98.1	90.0	98.1	90.0	98.1	90.0	98.1
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
30"	120"	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0	90.0	120.0
36"		90.0	112.1	90.0	112.1	90.0	112.1	90.0	112.1	90.0	112.1
42"		90.0	96.1	90.0	96.1	90.0	96.1	90.0	96.1	90.0	96.1
48"		84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1	84.1
54"		-	-	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	67.2	67.2	70.0	70.0	70.0	70.0
30"	126"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
48"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	64.5	64.5	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	58.0	58.0	70.0	70.0	70.0	70.0

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITH INTERMEDIATE HORIZONTALS											
NOMINAL DIMS.		JAMB 'J2'		JAMB 'J3'		MULLION 'M3'		MULLION 'M4'		MULLION 'M5'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	132"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
48"		60.0	63.2	70.0	70.0	63.2	63.2	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	56.1	56.1	70.0	70.0	70.0	70.0
60"		-	-	70.0	70.0	50.5	50.5	64.5	64.5	70.0	70.0
30"	138"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
42"		60.0	63.2	70.0	70.0	63.2	63.2	70.0	70.0	70.0	70.0
48"		55.3	55.3	70.0	70.0	55.3	55.3	70.0	70.0	70.0	70.0
54"		-	-	70.0	70.0	49.1	49.1	65.6	65.6	70.0	70.0
60"		-	-	70.0	70.0	44.2	44.2	59.0	59.0	67.0	67.0
30"	144"	60.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
36"		60.0	64.9	70.0	70.0	64.9	64.9	70.0	70.0	70.0	70.0
42"		55.6	55.6	70.0	70.0	55.6	55.6	70.0	70.0	70.0	70.0
48"		48.7	48.7	70.0	70.0	48.7	48.7	67.8	67.8	70.0	70.0
54"		-	-	70.0	70.0	43.2	43.2	60.2	60.2	68.4	68.4
60"		-	-	60.0	60.0	38.9	38.9	54.2	54.2	60.0	60.0

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



WIDTH (W) = W1
AT FRAME JAMB

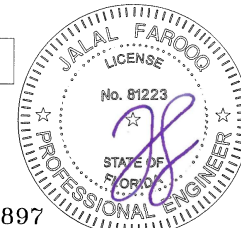
WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION

JAMB 'J2'		JAMB 'J3'		MULLION 'M3'		MULLION 'M4'		MULLION 'M5'	
1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³
6.5995	2.5891	11.0604	4.4380	11.2393	4.3497	6.7652	2.6449	6.7652	2.6449
ALUMINUM		STEEL		STEEL		ALUMINUM		STEEL	
TOTAL		TOTAL		TOTAL		TOTAL		TOTAL	
1x ALUM + 1x STL X 2.9		1x ALUM + 1x STL X 2.9		1x ALUM + 1x STL X 2.9		1x ALUM + 1x STL X 2.9		1x ALUM + 1x STL X 2.9	
17.5420		17.5420		17.5420		19.8838		19.8838	

MULLIONS

Sealed: 3/13/2025

FL #17897



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C-4 N. 3538)
TEL. (305) 262-8100 FAX. (305) 262-6978
COMP-ANL W15-37ES

ES-800T ALUM WINDOW WALL SYSTEM (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

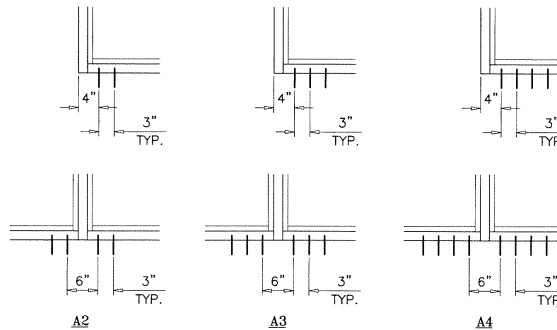
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scale: -
dr. by: TARIQ
chk. by:

drawing no.
W15-37
sheet 3.2 of 13

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS. WIDTH (W) FRAME HEIGHT		ANCHORS TYPE 'A'							
		1/4" MAX. SHIM			3/8" MAX. SHIM			1/2" SHIM	
		A2	A3	A4	A2	A3	A4	A3	A4
30"	78"	120.0	120.0	120.0	90.3	120.0	120.0	105.3	120.0
36"		107.1	120.0	120.0	75.2	112.9	120.0	87.8	117.0
42"		91.8	120.0	120.0	64.5	96.7	120.0	75.2	100.3
48"		80.3	120.0	120.0	56.4	84.6	112.9	65.8	87.8
54"		71.4	107.1	120.0	50.2	75.2	100.3	58.5	78.0
60"		64.2	96.4	120.0	45.1	67.7	90.3	52.7	70.2
30"	84"	119.3	120.0	120.0	83.8	120.0	120.0	97.8	120.0
36"		99.4	120.0	120.0	69.9	104.8	120.0	81.5	108.6
42"		85.2	120.0	120.0	59.9	89.8	119.8	69.8	93.1
48"		74.6	111.9	120.0	52.4	78.6	104.8	61.1	81.5
54"		66.3	99.4	120.0	46.6	69.9	93.2	54.3	72.4
60"		59.7	89.5	119.3	41.9	62.9	83.8	48.9	65.2
30"	90"	111.4	120.0	120.0	78.3	117.4	120.0	91.3	120.0
36"		92.8	120.0	120.0	65.2	97.8	120.0	76.1	101.4
42"		79.5	119.3	120.0	55.9	83.8	111.8	65.2	86.9
48"		69.6	104.4	120.0	48.9	73.4	97.8	57.0	76.1
54"		61.9	92.8	120.0	43.5	65.2	86.9	50.7	67.6
60"		55.7	83.5	111.4	39.1	58.7	78.3	45.6	60.8
30"	96"	104.4	120.0	120.0	73.4	110.0	120.0	85.6	114.1
36"		87.0	120.0	120.0	61.1	91.7	120.0	71.3	95.1
42"		74.6	111.9	120.0	52.4	78.6	104.8	61.1	81.5
48"		65.3	97.9	120.0	45.9	68.8	91.7	53.5	71.3
54"		58.0	87.0	116.0	40.8	61.1	81.5	47.5	63.4
60"		52.2	78.3	104.4	36.7	55.0	73.4	42.8	57.0
30"	102"	98.3	120.0	120.0	69.0	103.6	120.0	80.5	107.4
36"		81.9	120.0	120.0	57.5	86.3	115.1	67.1	89.5
42"		70.2	105.3	120.0	49.3	74.0	98.6	57.5	76.7
48"		61.4	92.1	120.0	43.2	64.7	86.3	50.3	67.1
54"		54.6	81.9	109.2	38.4	57.5	76.7	44.7	59.6
60"		49.1	70.0	70.0	34.5	51.8	69.0	40.3	53.7
30"	108"	92.8	120.0	120.0	65.2	97.8	120.0	76.1	101.4
36"		77.3	116.0	120.0	54.3	81.5	108.7	63.4	84.5
42"		66.3	99.4	120.0	46.6	69.9	93.2	54.3	72.4
48"		58.0	87.0	116.0	40.8	61.1	81.5	47.5	63.4
54"		51.6	77.3	103.1	36.2	54.3	72.5	42.3	56.3
60"		46.4	69.6	70.0	32.6	48.9	65.2	38.0	50.7
30"	114"	87.9	120.0	120.0	61.8	92.7	120.0	72.1	96.1
36"		73.3	109.9	120.0	51.5	77.2	103.0	60.0	80.1
42"		62.8	94.2	120.0	44.1	66.2	88.3	51.5	68.6
48"		54.9	82.4	109.9	38.6	57.9	77.2	45.0	60.0
54"		48.8	70.0	70.0	34.3	51.5	68.6	40.0	53.4
60"		44.0	65.9	70.0	30.9	46.3	61.8	36.0	48.0
30"	120"	83.5	120.0	120.0	58.7	88.0	117.4	68.4	91.3
36"		69.6	104.4	120.0	48.9	73.4	97.8	57.0	76.1
42"		59.7	89.5	119.3	41.9	62.9	83.8	48.9	65.2
48"		52.2	78.3	104.4	36.7	55.0	73.4	42.8	57.0
54"		46.4	69.6	70.0	32.6	48.9	65.2	38.0	50.7
60"		—	62.6	70.0	—	44.0	58.7	34.2	45.6
30"	126"	70.0	70.0	70.0	55.9	70.0	70.0	65.2	70.0
36"		66.3	70.0	70.0	46.6	69.9	70.0	54.3	70.0
42"		56.8	70.0	70.0	39.9	59.9	70.0	46.6	62.1
48"		49.7	70.0	70.0	34.9	52.4	69.9	40.7	54.3
54"		44.2	66.3	70.0	31.1	46.6	62.1	36.2	48.3
60"		—	59.7	70.0	—	41.9	55.9	32.6	43.5

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS. WIDTH (W) FRAME HEIGHT		ANCHORS TYPE 'A'							
		1/4" MAX. SHIM			3/8" MAX. SHIM			1/2" SHIM	
		A2	A3	A4	A2	A3	A4	A3	A4
30"	132"	70.0	70.0	70.0	53.4	70.0	70.0	62.2	70.0
36"		63.3	70.0	70.0	44.5	66.7	70.0	51.9	69.1
42"		54.2	70.0	70.0	38.1	57.2	70.0	44.4	59.3
48"		47.5	70.0	70.0	33.3	50.0	66.7	38.9	51.9
54"		—	63.3	70.0	—	44.5	59.3	34.6	46.1
60"		—	56.9	70.0	—	40.0	53.4	31.1	41.5
30"	138"	70.0	70.0	70.0	51.0	70.0	70.0	59.5	70.0
36"		60.5	70.0	70.0	42.5	63.8	70.0	49.6	66.1
42"		51.9	70.0	70.0	36.5	54.7	70.0	42.5	56.7
48"		45.4	68.1	70.0	31.9	47.8	63.8	37.2	49.6
54"		—	60.5	70.0	—	42.5	56.7	33.1	44.1
60"		—	54.5	70.0	—	38.3	51.0	29.8	39.7
30"	144"	69.6	70.0	70.0	48.9	70.0	70.0	57.0	70.0
36"		58.0	70.0	70.0	40.8	61.1	70.0	47.5	63.4
42"		49.7	70.0	70.0	34.9	52.4	69.9	40.7	54.3
48"		43.5	65.3	70.0	30.6	45.9	61.1	35.7	47.5
54"		—	58.0	70.0	—	40.8	54.3	31.7	42.3
60"		—	52.2	60.0	—	36.7	48.9	28.5	38.0

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



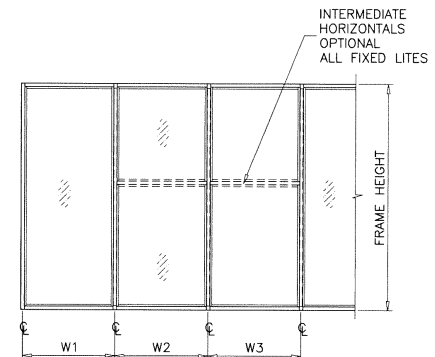
ANCHORS TYPES: SEE SHEET 9 FOR DESCRIPTION

A2 = (2) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
A3 = (3) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
A4 = (4) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION

ANCHORS

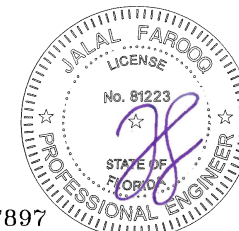
Sealed: 3/13/2025

FL #17897



WIDTH (W) = W1
AT FRAME JAMB

WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION



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 W15-37ES

ES-8000T ALUM WINDOW WALL SYSTEM (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:	07-16-15
scale:	—
dr. by:	TARQ
chk. by:	

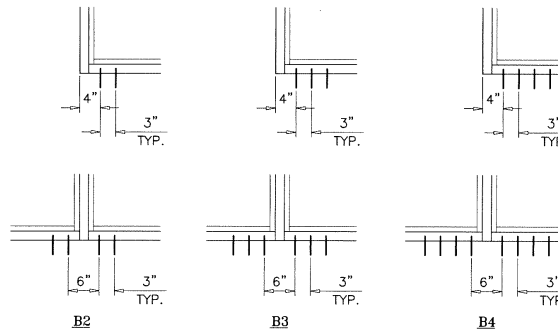
drawing no.
W15-37

sheet 4 of 13

ANCHOR LOAD CAPACITY – PSF EXT.(+) & INT.(–)										
NOMINAL DIMS.		ANCHORS TYPE 'B'								
		1/4" MAX. SHIM			3/8" MAX. SHIM			1/2" SHIM		
WIDTH (W)	FRAME HEIGHT	B2	B3	B4	B2	B3	B4	B2	B3	B4
30"	78"	120.0	120.0	120.0	120.0	120.0	120.0	101.4	120.0	120.0
36"		120.0	120.0	120.0	107.1	120.0	120.0	84.5	120.0	120.0
42"		119.9	120.0	120.0	91.8	120.0	120.0	72.4	108.7	120.0
48"		104.9	120.0	120.0	80.3	120.0	120.0	63.4	95.1	120.0
54"		93.3	120.0	120.0	71.4	107.1	120.0	56.3	84.5	112.7
60"		83.9	120.0	120.0	64.2	96.4	120.0	50.7	76.1	101.4
30"	84"	120.0	120.0	120.0	119.3	120.0	120.0	94.2	120.0	120.0
36"		120.0	120.0	120.0	99.4	120.0	120.0	78.5	117.7	120.0
42"		111.3	120.0	120.0	85.2	120.0	120.0	67.3	100.9	120.0
48"		97.4	120.0	120.0	74.6	111.9	120.0	58.9	88.3	117.7
54"		86.6	120.0	120.0	66.3	99.4	120.0	52.3	78.5	104.6
60"		77.9	116.9	120.0	59.7	89.5	119.3	47.1	70.6	94.2
30"	90"	120.0	120.0	120.0	111.4	120.0	120.0	87.9	120.0	120.0
36"		120.0	120.0	120.0	92.8	120.0	120.0	73.2	109.9	120.0
42"		103.9	120.0	120.0	79.5	119.3	120.0	62.8	94.2	120.0
48"		90.9	120.0	120.0	69.6	104.4	120.0	54.9	82.4	109.9
54"		80.8	120.0	120.0	61.9	92.8	120.0	48.8	73.2	97.7
60"		72.7	109.1	120.0	55.7	83.5	111.4	43.9	65.9	87.9
30"	96"	120.0	120.0	120.0	104.4	120.0	120.0	82.4	120.0	120.0
36"		113.7	120.0	120.0	87.0	120.0	120.0	68.7	103.0	120.0
42"		97.4	120.0	120.0	74.6	111.9	120.0	58.9	88.3	117.7
48"		85.3	120.0	120.0	65.3	97.9	120.0	51.5	77.3	103.0
54"		75.8	113.7	120.0	58.0	87.0	116.0	45.8	68.7	91.6
60"		68.2	102.3	120.0	52.2	78.3	104.4	41.2	61.8	82.4
30"	102"	120.0	120.0	120.0	98.3	120.0	120.0	77.6	116.3	120.0
36"		107.0	120.0	120.0	81.9	120.0	120.0	64.6	96.9	120.0
42"		91.7	120.0	120.0	70.2	105.3	120.0	55.4	83.1	110.8
48"		80.2	120.0	120.0	61.4	92.1	120.0	48.5	72.7	96.9
54"		71.3	107.0	120.0	54.6	81.9	109.2	43.1	64.6	86.2
60"		64.2	70.0	70.0	49.1	70.0	70.0	38.8	58.2	70.0
30"	108"	120.0	120.0	120.0	92.8	120.0	120.0	73.2	109.9	120.0
36"		101.0	120.0	120.0	77.3	116.0	120.0	61.0	91.6	120.0
42"		86.6	120.0	120.0	66.3	99.4	120.0	52.3	78.5	104.6
48"		75.8	113.7	120.0	58.0	87.0	116.0	45.8	68.7	91.6
54"		67.4	101.0	120.0	51.6	77.3	103.1	40.7	61.0	81.4
60"		60.6	70.0	70.0	46.4	69.6	70.0	36.6	54.9	70.0
30"	114"	114.9	120.0	120.0	87.9	120.0	120.0	69.4	104.1	120.0
36"		95.7	120.0	120.0	73.3	109.9	120.0	57.8	86.7	115.6
42"		82.0	120.0	120.0	62.8	94.2	120.0	49.6	74.3	99.1
48"		71.8	107.7	120.0	54.9	82.4	109.9	43.4	65.1	86.7
54"		63.8	70.0	70.0	48.8	70.0	70.0	38.5	57.8	70.0
60"		57.4	70.0	70.0	44.0	65.9	70.0	34.7	52.0	69.4
30"	120"	109.1	120.0	120.0	83.5	120.0	120.0	65.9	98.9	120.0
36"		90.9	120.0	120.0	69.6	104.4	120.0	54.9	82.4	109.9
42"		77.9	116.9	120.0	59.7	89.5	119.3	47.1	70.6	94.2
48"		68.2	102.3	120.0	52.2	78.3	104.4	41.2	61.8	82.4
54"		60.6	70.0	70.0	46.4	69.6	70.0	36.6	54.9	70.0
60"		–	70.0	70.0	–	62.6	70.0	–	49.4	65.9
30"	126"	70.0	70.0	70.0	70.0	70.0	70.0	62.8	70.0	70.0
36"		70.0	70.0	70.0	66.3	70.0	70.0	52.3	70.0	70.0
42"		70.0	70.0	70.0	56.8	70.0	70.0	44.8	67.3	70.0
48"		65.0	70.0	70.0	49.7	70.0	70.0	39.2	58.9	70.0
54"		57.7	70.0	70.0	44.2	66.3	70.0	34.9	52.3	69.8
60"		–	70.0	70.0	–	59.7	70.0	–	47.1	62.8

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(–)										
NOMINAL DIMS.		ANCHORS TYPE 'B'								
		1/4" MAX. SHIM			3/8" MAX. SHIM			1/2" SHIM		
WIDTH (W)	FRAME HEIGHT	B2	B3	B4	B2	B3	B4	B2	B3	B4
30"	132"	70.0	70.0	70.0	70.0	70.0	70.0	59.9	70.0	70.0
36"		70.0	70.0	70.0	63.3	70.0	70.0	49.9	70.0	70.0
42"		70.0	70.0	70.0	54.2	70.0	70.0	42.8	64.2	70.0
48"		62.0	70.0	70.0	47.5	70.0	70.0	37.5	56.2	70.0
54"		–	70.0	70.0	–	63.3	70.0	–	49.9	66.6
60"		–	70.0	70.0	–	56.9	70.0	–	44.9	59.9
30"	138"	70.0	70.0	70.0	70.0	70.0	70.0	57.3	70.0	70.0
36"		70.0	70.0	70.0	60.5	70.0	70.0	47.8	70.0	70.0
42"		67.8	70.0	70.0	51.9	70.0	70.0	40.9	61.4	70.0
48"		59.3	70.0	70.0	45.4	68.1	70.0	35.8	53.7	70.0
54"		–	70.0	70.0	–	60.5	70.0	–	47.8	63.7
60"		–	70.0	70.0	–	54.5	70.0	–	43.0	57.3
30"	144"	70.0	70.0	70.0	69.6	70.0	70.0	54.9	70.0	70.0
36"		70.0	70.0	70.0	58.0	70.0	70.0	45.8	68.7	70.0
42"		65.0	70.0	70.0	49.7	70.0	70.0	39.2	58.9	70.0
48"		56.8	70.0	70.0	43.5	65.3	70.0	34.3	51.5	68.7
54"		–	70.0	70.0	–	58.0	70.0	–	45.8	61.0
60"		–	60.0	60.0	–	52.2	60.0	–	41.2	54.9

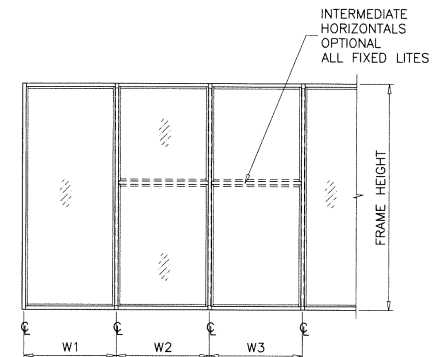
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



ANCHORS TYPES: SEE SHEET 9 FOR DESCRIPTION

B2 = (2) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
 B3 = (3) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
 B4 = (4) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION

ANCHORS

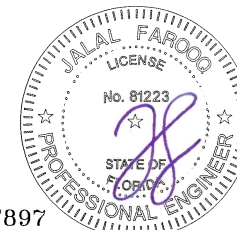


WIDTH (W) = W1
AT FRAME JAMB

WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION

Sealed: 3/13/2025

FL #17897



af c
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 W15-37ES

ES-8000T ALUM WINDOW WALL SYSTEM (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: 07-16-15	scale: -	dr: TARIQ	chk: by:
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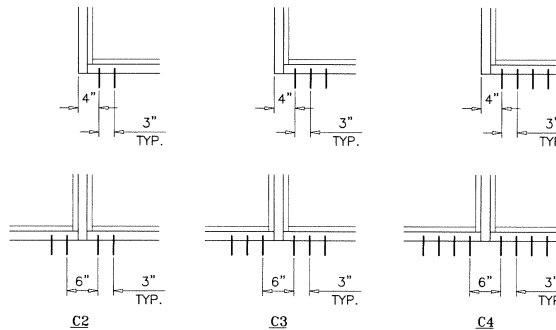
drawing no.
W15-37

sheet 5 of 13

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS. WIDTH (W) FRAME HEIGHT		ANCHORS TYPE 'C'							
		1/4" MAX. SHIM				3/8" MAX. SHIM			
		C2	C3	C4	C2	C3	C4	C3	C4
30"	78"	120.0	120.0	120.0	91.6	120.0	120.0	108.6	120.0
36"		120.0	120.0	120.0	76.3	114.5	120.0	90.5	120.0
42"		120.0	120.0	120.0	65.4	98.1	120.0	77.5	103.4
48"		120.0	120.0	120.0	57.2	85.8	114.5	67.8	90.5
54"		106.9	120.0	120.0	50.9	76.3	101.7	60.3	80.4
60"	84"	96.2	120.0	120.0	45.8	68.7	91.6	54.3	72.4
30"		120.0	120.0	120.0	85.0	120.0	120.0	100.8	120.0
36"		120.0	120.0	120.0	70.9	106.3	120.0	84.0	112.0
42"		120.0	120.0	120.0	60.7	91.1	120.0	72.0	96.0
48"		111.7	120.0	120.0	53.1	79.7	106.3	63.0	84.0
54"	90"	99.3	120.0	120.0	47.2	70.9	94.5	56.0	74.7
60"		89.4	120.0	120.0	42.5	63.8	85.0	50.4	67.2
30"	96"	120.0	120.0	120.0	79.4	119.0	120.0	94.1	120.0
36"		120.0	120.0	120.0	66.1	99.2	120.0	78.4	104.5
42"		119.2	120.0	120.0	56.7	85.0	113.4	67.2	89.6
48"		104.3	120.0	120.0	49.6	74.4	99.2	58.8	78.4
54"		92.7	120.0	120.0	44.1	66.1	88.2	52.3	69.7
60"	102"	83.4	120.0	120.0	39.7	59.5	79.4	47.0	62.7
30"		120.0	120.0	120.0	74.4	111.6	120.0	88.2	117.6
36"		120.0	120.0	120.0	62.0	93.0	120.0	73.5	98.0
42"		111.7	120.0	120.0	53.1	79.7	106.3	63.0	84.0
48"		97.8	120.0	120.0	46.5	69.8	93.0	55.1	73.5
54"	108"	86.9	120.0	120.0	41.3	62.0	82.7	49.0	65.3
60"		78.2	117.3	120.0	37.2	55.8	74.4	44.1	58.8
30"	114"	120.0	120.0	120.0	70.0	105.0	120.0	83.0	110.7
36"		120.0	120.0	120.0	58.4	87.5	116.7	69.2	92.2
42"		105.1	120.0	120.0	50.0	75.0	100.0	59.3	79.1
48"		92.0	120.0	120.0	43.8	65.6	87.5	51.9	69.2
54"		81.8	120.0	120.0	38.9	58.4	77.8	46.1	61.5
60"	120"	70.0	70.0	70.0	35.0	52.5	70.0	41.5	55.3
30"		120.0	120.0	120.0	66.1	99.2	120.0	78.4	104.5
36"		115.9	120.0	120.0	55.1	82.7	110.2	65.3	87.1
42"		99.3	120.0	120.0	47.2	70.9	94.5	56.0	74.7
48"		86.9	120.0	120.0	41.3	62.0	82.7	49.0	65.3
54"	126"	77.2	115.9	120.0	36.7	55.1	73.5	43.6	58.1
60"		69.5	70.0	70.0	33.1	49.6	66.1	39.2	52.3
30"	132"	120.0	120.0	120.0	62.7	94.0	120.0	74.3	99.0
36"		109.8	120.0	120.0	52.2	78.3	104.4	61.9	82.5
42"		94.1	120.0	120.0	44.8	67.1	89.5	53.1	70.7
48"		82.3	120.0	120.0	39.2	58.7	78.3	46.4	61.9
54"		70.0	70.0	70.0	34.8	52.2	69.6	41.3	55.0
60"	138"	65.9	70.0	70.0	31.3	47.0	62.7	37.1	49.5
30"		120.0	120.0	120.0	59.5	89.3	119.0	70.6	94.1
36"		104.3	120.0	120.0	49.6	74.4	99.2	58.8	78.4
42"		89.4	120.0	120.0	42.5	63.8	85.0	50.4	67.2
48"		78.2	117.3	120.0	37.2	55.8	74.4	44.1	58.8
54"	144"	69.5	70.0	70.0	33.1	49.6	66.1	39.2	52.3
60"		-	70.0	70.0	-	44.6	59.5	35.3	47.0
30"	150"	70.0	70.0	70.0	56.7	70.0	70.0	67.2	70.0
36"		70.0	70.0	70.0	47.2	70.0	70.0	56.0	70.0
42"		70.0	70.0	70.0	40.5	60.7	70.0	48.0	64.0
48"		70.0	70.0	70.0	35.4	53.1	70.0	42.0	56.0
54"		66.2	70.0	70.0	31.5	47.2	63.0	37.3	49.8
60"	156"	-	70.0	70.0	-	42.5	56.7	33.6	44.8

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS. WIDTH (W) FRAME HEIGHT		ANCHORS TYPE 'C'							
		1/4" MAX. SHIM				3/8" MAX. SHIM			
		C2	C3	C4	C2	C3	C4	C3	C4
30"	132"	70.0	70.0	70.0	54.1	70.0	70.0	64.1	70.0
36"		70.0	70.0	70.0	45.1	67.6	70.0	53.5	70.0
42"		70.0	70.0	70.0	38.6	58.0	70.0	45.8	61.1
48"		70.0	70.0	70.0	33.8	50.7	67.6	40.1	53.5
54"		-	70.0	70.0	-	45.1	60.1	35.6	47.5
60"	138"	-	70.0	70.0	-	40.6	54.1	32.1	42.8
30"		70.0	70.0	70.0	51.8	70.0	70.0	61.4	70.0
36"		70.0	70.0	70.0	43.1	64.7	70.0	51.1	68.2
42"		70.0	70.0	70.0	37.0	55.5	70.0	43.8	58.4
48"		68.0	70.0	70.0	32.3	48.5	64.7	38.3	51.1
54"	144"	-	70.0	70.0	-	43.1	57.5	34.1	45.4
60"		-	70.0	70.0	-	38.8	51.8	30.7	40.9
30"	150"	70.0	70.0	70.0	49.6	70.0	70.0	58.8	70.0
36"		70.0	70.0	70.0	41.3	62.0	70.0	49.0	65.3
42"		70.0	70.0	70.0	35.4	53.1	70.0	42.0	56.0
48"		65.2	70.0	70.0	31.0	46.5	62.0	36.8	49.0
54"		-	70.0	70.0	-	41.3	55.1	32.7	43.6
60"	156"	-	60.0	60.0	-	37.2	49.6	29.4	39.2

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



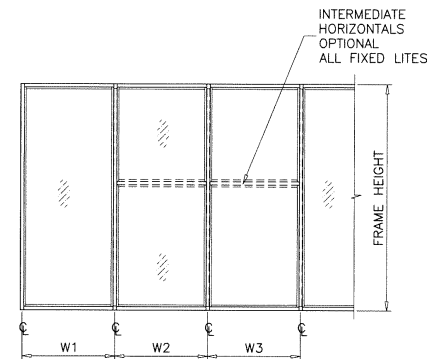
ANCHORS TYPES: SEE SHEET 9 FOR DESCRIPTION

C2 = (2) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
C3 = (3) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION

ANCHORS

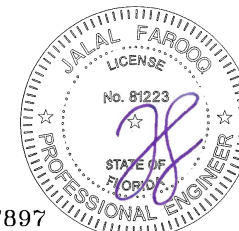
Sealed: 3/13/2025

FL #17897



WIDTH (W) = W1
AT FRAME JAMB

WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION



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 W15-37ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

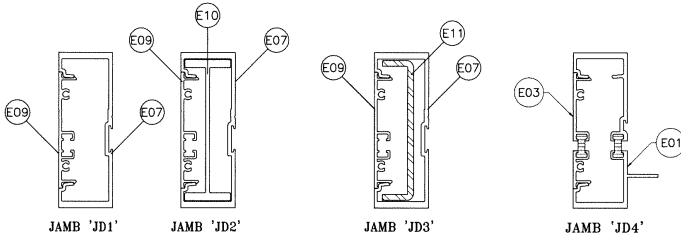
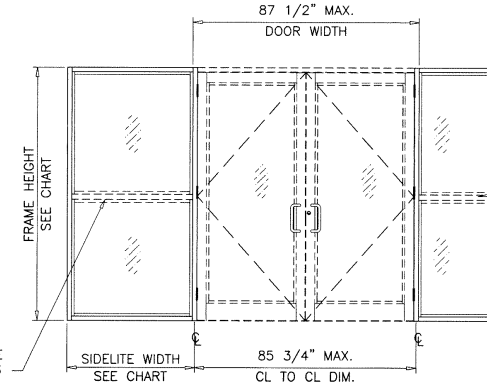
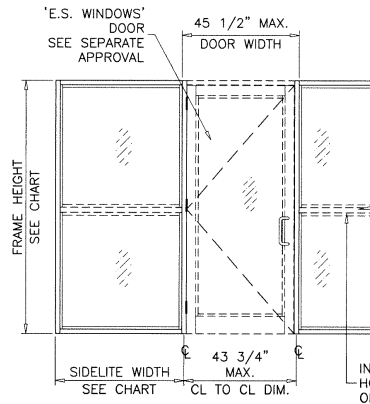
revisions:	no.	date	by	description

date: 07-16-15
scale: -
dr. by: TARIQ
chk. by:

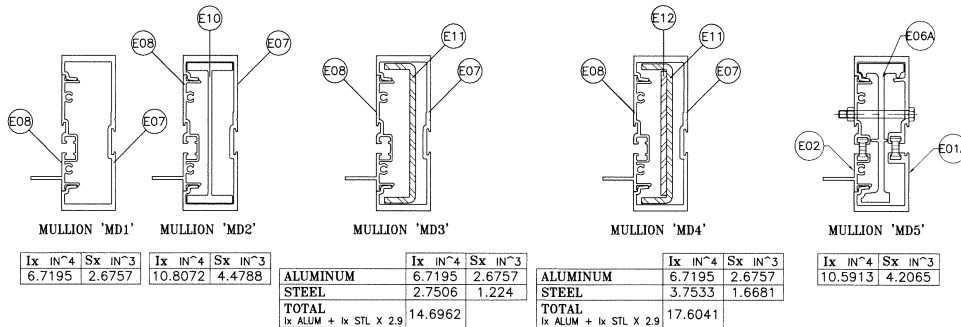
drawing no.
W15-37

sheet 6 of 13

DOOR MULLION LOAD CAPACITY-PSF											
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	JAMB 'JD1' MULL		JAMB 'JD1' MULL		JAMB 'JD2' MULL		JAMB 'JD3' MULL		JAMB 'JD4' MULL	
		EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
32	86-1/2	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
36		120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
42		120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
48		120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
54		120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
60		120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
32	98-1/2	112.6	112.6	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
36		107.1	107.1	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
42		99.7	99.7	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
48		93.3	93.3	120.0	120.0	120.0	120.0	120.0	120.0	80.0	90.0
54		87.7	87.7	120.0	120.0	116.1	116.1	120.0	120.0	80.0	90.0
32	110-1/2	79.8	79.8	120.0	120.0	118.5	118.5	120.0	120.0	80.0	90.0
36		75.8	75.8	120.0	120.0	112.6	112.6	120.0	120.0	80.0	90.0
42		70.6	70.6	113.6	113.6	104.9	104.9	120.0	120.0	80.0	90.0
48		66.1	66.1	106.3	106.3	98.2	98.2	120.0	120.0	80.0	90.0
32	120	-	-	-	-	-	-	-	-	80.0	90.0
36		-	-	-	-	-	-	-	-	80.0	90.0
42		-	-	-	-	-	-	-	-	80.0	88.7
48		-	-	-	-	-	-	-	-	80.0	82.9

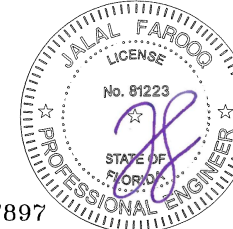


Ix IN ⁴	Sx IN ³	Ix IN ⁴	Sx IN ³		Ix IN ⁴	Sx IN ³		Ix IN ⁴	Sx IN ³
6.570	2.7226	10.6577	3.8057	ALUMINUM	6.570	2.7226		6.5995	2.5891
				STEEL	2.7506	1.2224			
				TOTAL	14.5467				
				Ix ALUM + Ix STL X 2.9					



Ix IN ⁴	Sx IN ³	Ix IN ⁴	Sx IN ³		Ix IN ⁴	Sx IN ³		Ix IN ⁴	Sx IN ³		Ix IN ⁴	Sx IN ³
6.7195	2.6757	10.8072	4.4788	ALUMINUM	6.7195	2.6757	ALUMINUM	6.7195	2.6757		10.5913	4.2065
				STEEL	2.7506	1.224	STEEL	3.7533	1.6681			
				TOTAL			TOTAL					
				Ix ALUM + Ix STL X 2.9	14.6962		Ix ALUM + Ix STL X 2.9	17.6041				

DOOR-WINDOW WALL
TRANSITION MULLION



Sealed: 3/13/2025

FL #17897

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
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COMP-ANL W15-37ES

ES-800T ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
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revisions:	not	date	by	description

date: 07-16-15

scale: -

dr. by: TARIQ

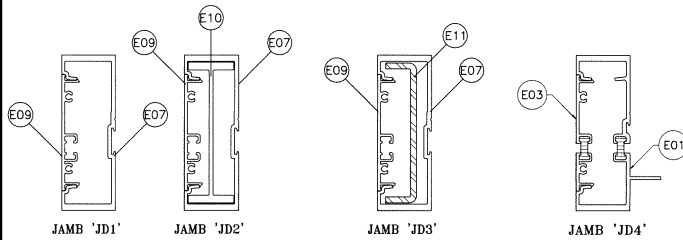
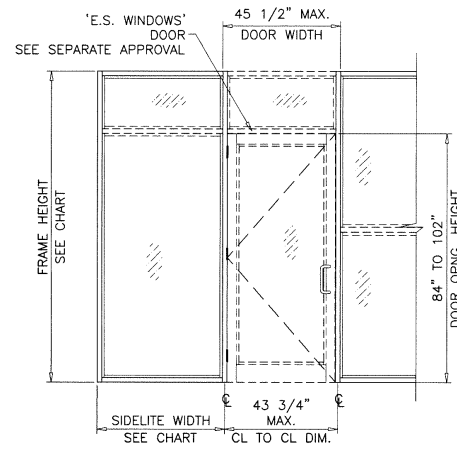
chk. by:

drawing no.

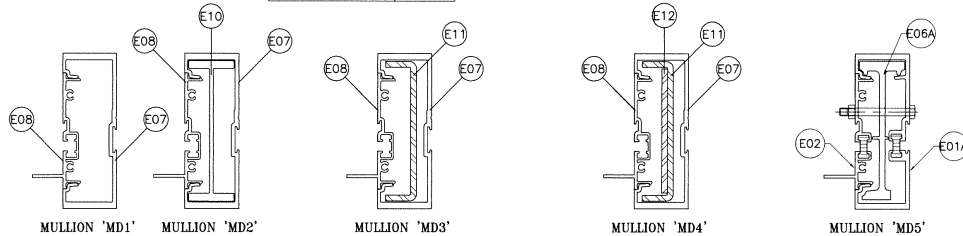
W15-37

sheet 7 of 13

DOOR MULLION LOAD CAPACITY-PSF											
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	JAMB 'JD1'		JAMB 'JD1'		JAMB 'JD2'		JAMB 'JD3'		JAMB 'JD4'	
		EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
32	98-1/2	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
36		90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
42		90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
48		90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
32	110-1/2	87.7	87.7	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
36		79.8	79.8	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
42		75.8	75.8	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
48		70.6	70.6	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
32	114	66.1	66.1	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
36		72.6	72.6	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
42		69.1	69.1	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
48		64.3	64.3	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
32	120	60.2	60.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
36		62.3	62.3	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
42		59.2	59.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
48		55.2	55.2	88.7	88.7	89.1	89.1	90.0	90.0	80.0	88.7
		51.6	51.6	83.0	83.0	83.4	83.4	90.0	90.0	80.0	82.9

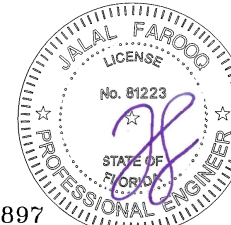


1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	
6.570	2.7226	10.6577	3.8057	ALUMINUM	6.570	2.7226	6.5995	2.5891
				STEEL	2.7506	1.2224		
				TOTAL	14.5467			
				1x ALUM + 1x STL X 2.9				



1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³	1x IN ⁴	Sx IN ³		
6.7195	2.6757	10.8072	4.4788	ALUMINUM	6.7195	2.6757	ALUMINUM	6.7195	2.6757
				STEEL	2.7506	1.224	STEEL	3.7533	1.6681
				TOTAL			TOTAL		
				1x ALUM + 1x STL X 2.9	14.6962		1x ALUM + 1x STL X 2.9	17.6041	

DOOR-WINDOW WALL
TRANSITION MULLION



Sealed: 3/13/2025

FL #17897

af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
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COMP-ANL W15-37ES

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revisions:	no	date	by	description

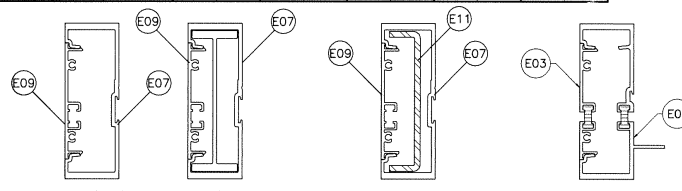
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drawing no.
W15-37
sheet 7,1 of 13

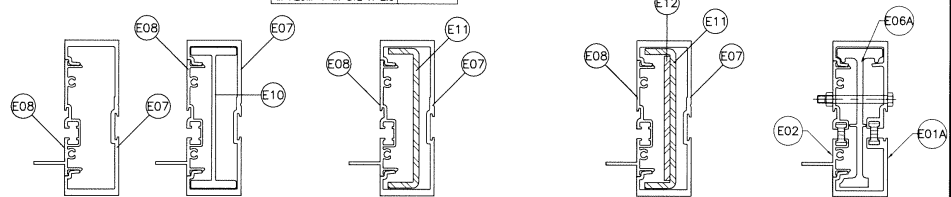
DOOR MULLION LOAD CAPACITY - PSF														
NOMINAL DIMS.				JAMB MULL	'JD1' 'MD1'	JAMB MULL	'JD1' 'MD2'	JAMB MULL	'JD2' 'MD3'	JAMB MULL	'JD3' 'MD4'	JAMB MULL	'JD4' 'MD5'	
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)	
85-3/4	30	96	84	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	36			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	42			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	48			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	54			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	60			85.7	85.7	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	30	102		90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
	36			86.9	86.9	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	42			81.5	81.5	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	48			76.7	76.7	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	54			72.5	72.5	90.0	90.0	89.0	89.0	90.0	90.0	80.0	90.0	
	60			74.2	74.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	30	108		69.5	69.5	90.0	90.0	89.1	89.1	90.0	90.0	80.0	90.0	
	36			65.4	65.4	90.0	90.0	84.4	84.4	90.0	90.0	80.0	88.9	
	42			61.7	61.7	90.0	90.0	80.2	80.2	90.0	90.0	80.0	84.5	
	48			60.2	60.2	90.0	90.0	81.7	81.7	90.0	90.0	80.0	86.1	
	54			56.6	56.6	90.0	90.0	77.4	77.4	90.0	90.0	80.0	81.5	
	60			53.3	53.3	85.8	85.8	73.4	73.4	87.8	87.8	77.4	77.4	
	30	114		50.5	50.5	81.2	81.2	69.9	69.9	83.5	83.5	73.6	73.6	
	36			49.7	49.7	80.0	80.0	71.9	71.9	85.9	85.9	75.8	75.8	
	42			46.8	46.8	75.3	75.3	68.1	68.1	81.5	81.5	71.8	71.8	
	48			44.2	44.2	71.2	71.2	64.8	64.8	77.4	77.4	68.2	68.2	
	54			41.9	41.9	67.5	67.5	61.7	61.7	73.8	73.8	65.0	65.0	
	60			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
85-3/4	30	102	90	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	36			90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	42			86.6	86.6	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	48			81.2	81.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	54			76.5	76.5	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	60			79.3	79.3	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	30	108		74.0	74.0	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	36			69.3	69.3	90.0	90.0	88.9	88.9	90.0	90.0	80.0	90.0	
	42			65.2	65.2	90.0	90.0	84.3	84.3	90.0	90.0	80.0	88.0	
	48			63.9	63.9	90.0	90.0	85.6	85.6	90.0	90.0	80.0	89.4	
	54			59.9	59.9	90.0	90.0	80.8	80.8	90.0	90.0	80.0	84.4	
	60			56.3	56.3	90.0	90.0	76.5	76.5	90.0	90.0	79.9	79.9	
	30	114		53.1	53.1	85.4	85.4	72.7	72.7	86.9	86.9	75.9	75.9	
	36			52.4	52.4	84.2	84.2	74.5	74.5	89.1	89.1	77.9	77.9	
	42			49.2	49.2	79.1	79.1	70.5	70.5	84.3	84.3	73.7	73.7	
	48			46.3	46.3	74.5	74.5	66.9	66.9	80.0	80.0	69.9	69.9	
	54			43.8	43.8	70.5	70.5	63.6	63.6	76.1	76.1	66.5	66.5	
	60			84.6	84.6	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
85-3/4	30	108	95	78.6	78.6	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	36			73.4	73.4	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	42			68.8	68.8	90.0	90.0	89.7	89.7	90.0	90.0	80.0	90.0	
	48			68.2	68.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0	
	54			63.5	63.5	90.0	90.0	85.3	85.3	90.0	90.0	80.0	88.4	
	60			59.5	59.5	90.0	90.0	80.6	80.6	90.0	90.0	80.0	83.5	
	30	114		56.0	56.0	90.0	90.0	76.3	76.3	90.0	90.0	79.1	79.1	
	36			55.5	55.5	89.3	89.3	78.0	78.0	90.0	90.0	80.0	80.9	
	42			51.9	51.9	83.5	83.5	73.6	73.6	88.0	88.0	76.3	76.3	
	48			48.8	48.8	78.5	78.5	69.7	69.7	83.3	83.3	72.2	72.2	
	54			46.0	46.0	74.0	74.0	66.2	66.2	79.1	79.1	68.6	68.6	
	60													

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

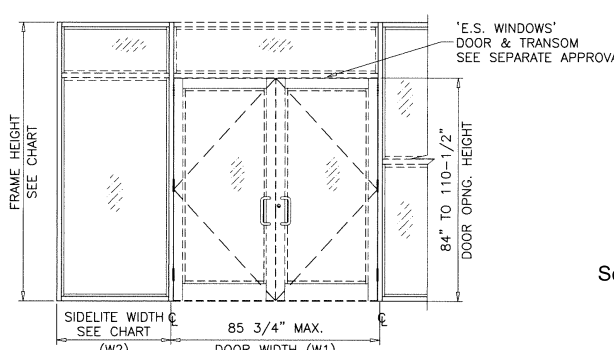
DOOR MULLION LOAD CAPACITY – PSF													
NOMINAL DIMS.				JAMB 'JD1' MULL 'MD1'	JAMB 'JD1' MULL 'MD2'	JAMB 'JD2' JAMB 'JD3' MULL 'MD3'	JAMB 'JD3' MULL 'MD4'	JAMB 'JD4' MULL 'MD5'					
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)	EXT.(+)	INT.(–)
85–3/4	30	114	102	72.4	72.4	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
	36			67.2	67.2	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
	42			62.7	62.7	90.0	90.0	85.9	85.9	90.0	90.0	80.0	88.2
	48			58.8	58.8	90.0	90.0	81.1	81.1	90.0	90.0	80.0	83.3
	54			59.0	59.0	90.0	90.0	82.6	82.6	90.0	90.0	80.0	84.9
	60			55.0	55.0	88.4	88.4	77.7	77.7	90.0	90.0	79.9	79.9
	36	120		51.5	51.5	82.8	82.8	73.3	73.3	87.7	87.7	75.4	75.4
	42			48.4	48.4	77.8	77.8	69.4	69.4	83.0	83.0	71.4	71.4
	48			63.7	63.7	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
	54			59.0	59.0	90.0	90.0	85.7	85.7	90.0	90.0	80.0	87.1
	60			55.0	55.0	88.4	88.4	80.4	80.4	90.0	90.0	80.0	81.7
	66			51.5	51.5	82.8	82.8	75.7	75.7	90.0	90.0	77.0	77.0
85–3/4	30	120	110–1/2	63.7	63.7	90.0	90.0	90.0	90.0	90.0	90.0	80.0	90.0
	36			59.0	59.0	90.0	90.0	85.7	85.7	90.0	90.0	80.0	87.1
	42			55.0	55.0	88.4	88.4	80.4	80.4	90.0	90.0	80.0	81.7
	48			51.5	51.5	82.8	82.8	75.7	75.7	90.0	90.0	77.0	77.0
	54			59.0	59.0	90.0	90.0	85.7	85.7	90.0	90.0	80.0	87.1



JAMB 'JD1'	JAMB 'JD2'	JAMB 'JD3'	JAMB 'JD4'
1x IN-4 Sx IN-3 6.570 2.7226	1x IN-4 Sx IN-3 10.6577 3.8057	1x IN-4 Sx IN-3 6.570 2.7226	1x IN-4 Sx IN-3 6.5995 2.5891
ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
STEEL	STEEL	STEEL	STEEL
TOTAL	TOTAL	TOTAL	TOTAL
1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9
14.5467	14.5467	14.5467	14.5467

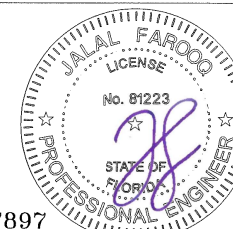


MULLION 'MD1'	MULLION 'MD2'	MULLION 'MD3'	MULLION 'MD4'	MULLION 'MD5'
1x IN-4 Sx IN-3 6.7195 2.6757	1x IN-4 Sx IN-3 10.8072 4.4788	1x IN-4 Sx IN-3 6.7195 2.6757	1x IN-4 Sx IN-3 6.7195 2.6757	1x IN-4 Sx IN-3 10.5913 4.2065
ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
STEEL	STEEL	STEEL	STEEL	STEEL
TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9	1x ALUM + 1x STL X 2.9
14.6962	14.6962	14.6962	14.6962	14.6962



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DOOR-WINDOW WALL
TRANSITION MULLION



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COMP-ANL W15-37ES

ES-800T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL 33142
TEL (305) 638-5151 FAX (305) 638-5158

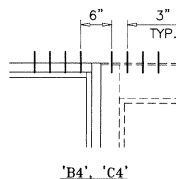
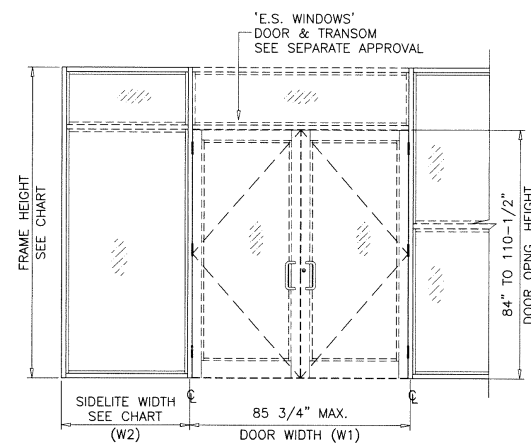
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date: 07-16-15
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chk. by:
drawing no.
W15-37
sheet 7.2 of 13

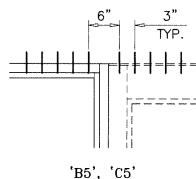
DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF							
NOMINAL DIMS.				'B4'/'C4'	'B5'/'C5'	'B6'/'C6'	
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	
85-3/4	30	96	84	89.6	90.0	90.0	
	36			85.0	90.0	90.0	
	42			80.8	90.0	90.0	
	48			77.0	90.0	90.0	
	54			73.6	90.0	90.0	
	60			70.4	88.0	90.0	
	30	102		86.0	90.0	90.0	
	36			81.5	90.0	90.0	
	42			77.4	90.0	90.0	
	48			73.8	90.0	90.0	
	54	108		70.4	88.0	90.0	
	30			82.7	90.0	90.0	
	36			78.3	90.0	90.0	
	42			74.3	90.0	90.0	
	48	114		70.8	88.4	90.0	
	30			79.7	90.0	90.0	
	36			75.4	90.0	90.0	
	42			71.5	89.4	90.0	
	48	120		68.0	85.0	90.0	
	30			76.9	90.0	90.0	
	36			72.6	90.0	90.0	
	42			68.9	86.1	90.0	
	48			65.4	81.8	90.0	
	85-3/4	30		102	90	84.1	90.0
36		79.7				90.0	90.0
42		75.8				90.0	90.0
48		72.3				90.0	90.0
54		108		69.1		86.4	90.0
30				80.9		90.0	90.0
36				76.7		90.0	90.0
42				72.9		90.0	90.0
48		114		69.4		86.8	90.0
30				78.0		90.0	90.0
36				73.9		90.0	90.0
42				70.1		87.7	90.0
48		120		66.8		83.5	90.0
30				75.3		90.0	90.0
36				71.2		89.1	90.0
42				67.6		84.5	90.0
48				64.3		80.4	90.0

DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF						
NOMINAL DIMS.				'B4'/'C4'	'B5'/'C5'	'B6'/'C6'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	30	108	96	79.2	90.0	90.0
	36			75.1	90.0	90.0
	42			71.5	89.3	90.0
	48			68.1	85.2	90.0
	30	114		76.4	90.0	90.0
	36			72.4	90.0	90.0
	42			68.8	86.0	90.0
	48			65.6	82.0	90.0
	30	120		73.8	90.0	90.0
	36			69.9	87.4	90.0
	42			66.4	83.0	90.0
	48			63.2	79.0	90.0
85-3/4	30	114	102	74.9	90.0	90.0
	36			71.0	88.8	90.0
	42			67.6	84.5	90.0
	48			64.4	80.5	90.0
	30	120		72.4	90.0	90.0
	36			68.6	85.7	90.0
	42			65.2	81.5	90.0
	48			62.1	77.7	90.0
85-3/4	30	120	110-1/2	70.4	88.0	90.0
	36			66.8	83.5	90.0
	42			63.6	79.5	90.0
	48			60.7	75.9	90.0

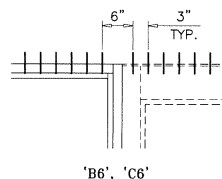
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



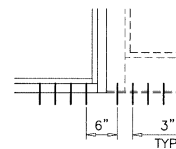
'B4', 'C4'



'B5', 'C5'



'B6', 'C6'



'B4' AT SILL ALL CASES

ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

B4 = (4) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION
B5 = (5) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION
B6 = (6) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION

C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION
C5 = (5) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION
C6 = (6) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

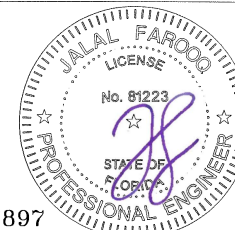
ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.

SHIM SPACE FOR ANCHORS TYPE 'C' LIMITED TO 1/4\"

TRANSITION MULLION ANCHORS

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FL #17897



af c
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COMP-ANL W15-37ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)

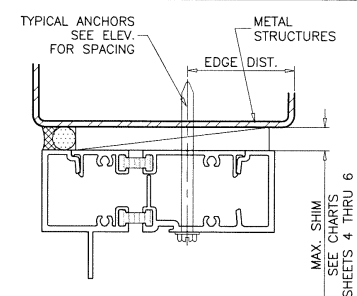
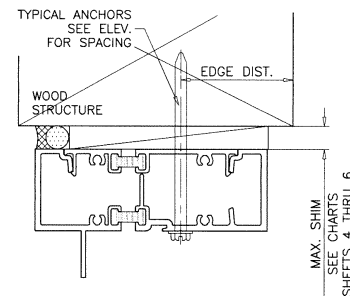
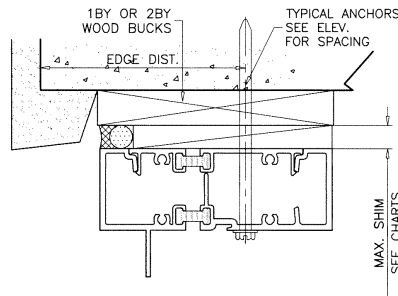
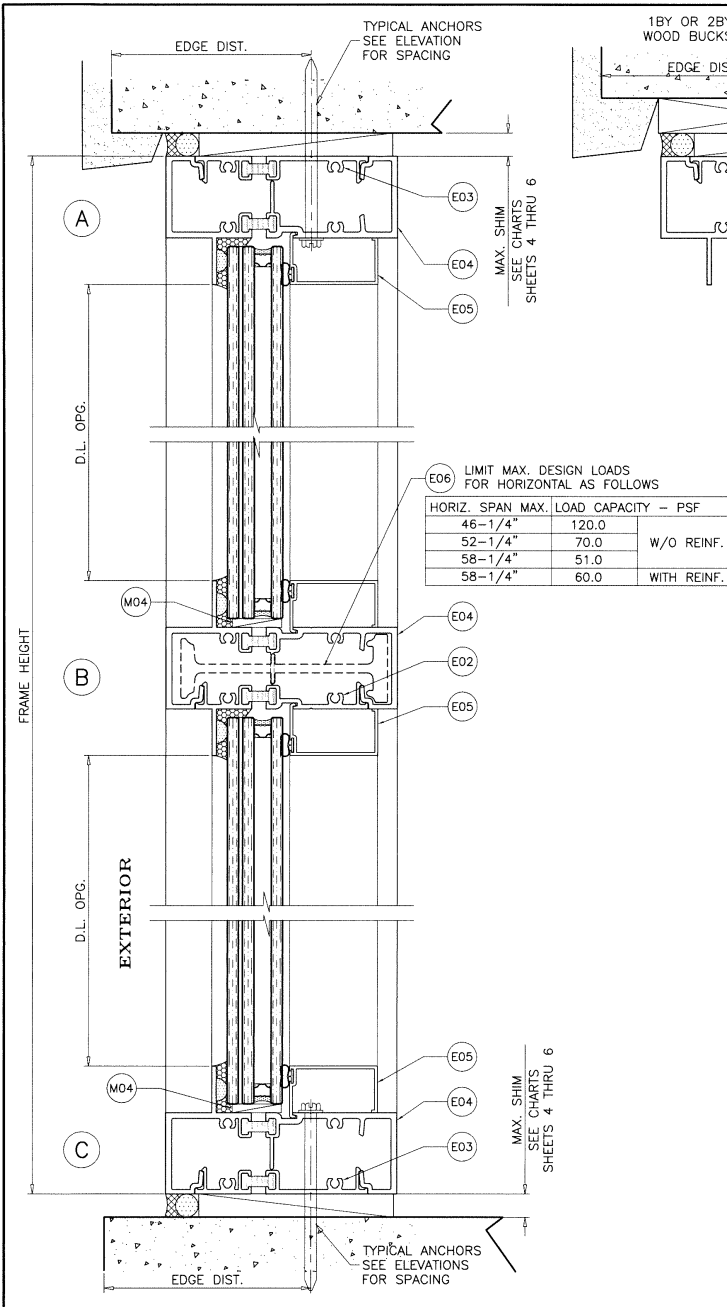
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TYPICAL ANCHORS: SEE ELEV. FOR SPACING

TYPE 'A' - 1/4" DIA. ULTRACON+ BY 'DEWALT' ($F_u=164$ KSI, $F_y=148$ KSI)

INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY 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 CONC. OR BLOCKS
 2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

ANCHOR EDGE DISTANCES

INTO CONCRETE AND MASONRY = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1" MIN.

TYPE 'B' - 5/16" DIA. ULTRACON BY 'DEWALT' ($F_u=177$ KSI, $F_y=155$ KSI)

INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY 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 CONC. OR BLOCKS
 2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

ANCHOR EDGE DISTANCES

INTO CONCRETE AND MASONRY = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1-1/4" MIN.

TYPE 'C' - 1/4" DIA. TEK'S OR SELF DRILLING SCREWS ST/ST (GRADE 5 CRS)

INTO F.B.C. APPROVED MULLIONS
 OR
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (3) THREADS MIN. PENETRATION BEYOND SUBSTRATE
 ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
 STEEL: 1/8" THK. MIN. ($F_y = 36$ KSI MIN.)
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

ANCHOR EDGE DISTANCES

INTO METAL STRUCTURE = 1/2" MIN.

WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.
 CONCRETE AT HEAD, SILL OR JAMBS $f'_c = 3000$ PSI MIN.
 C-90 GROUT FILLED NORMAL WEIGHT BLOCK AT JAMBS $f'_m = 2000$ PSI MIN.

SEALANTS:

ALL FRAME CORNERS, JOINTS, MULLION SEAMS AND PERIMETER OF GLAZING BEAD TO FRAME SEALED WITH SILICONE SEALANT.

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

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 COMP-ANL W15-37ES

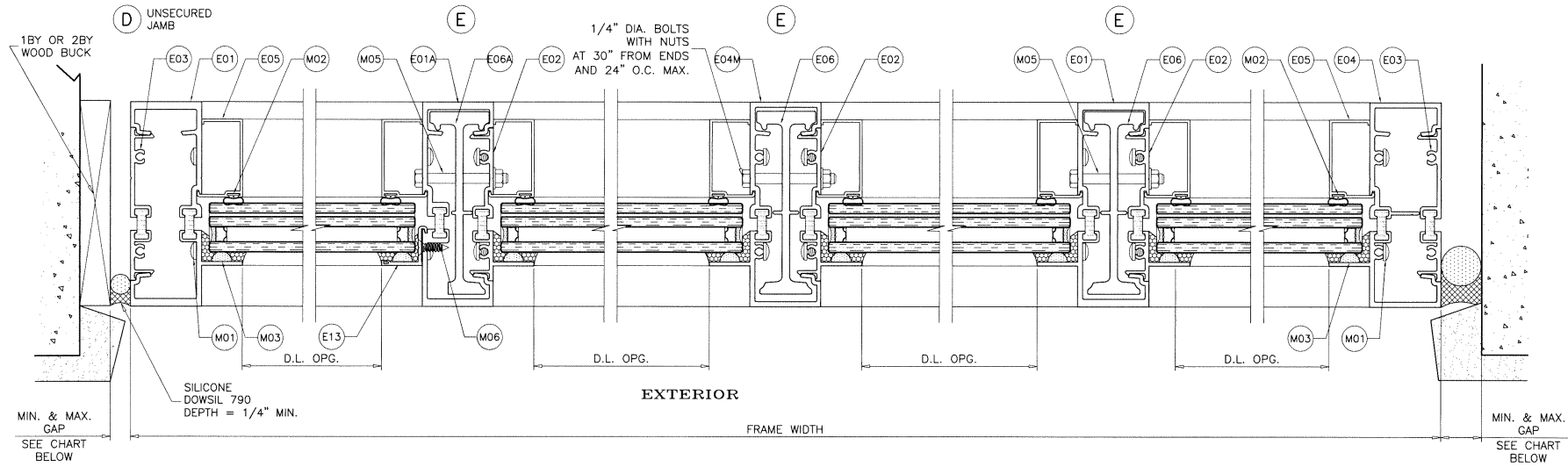
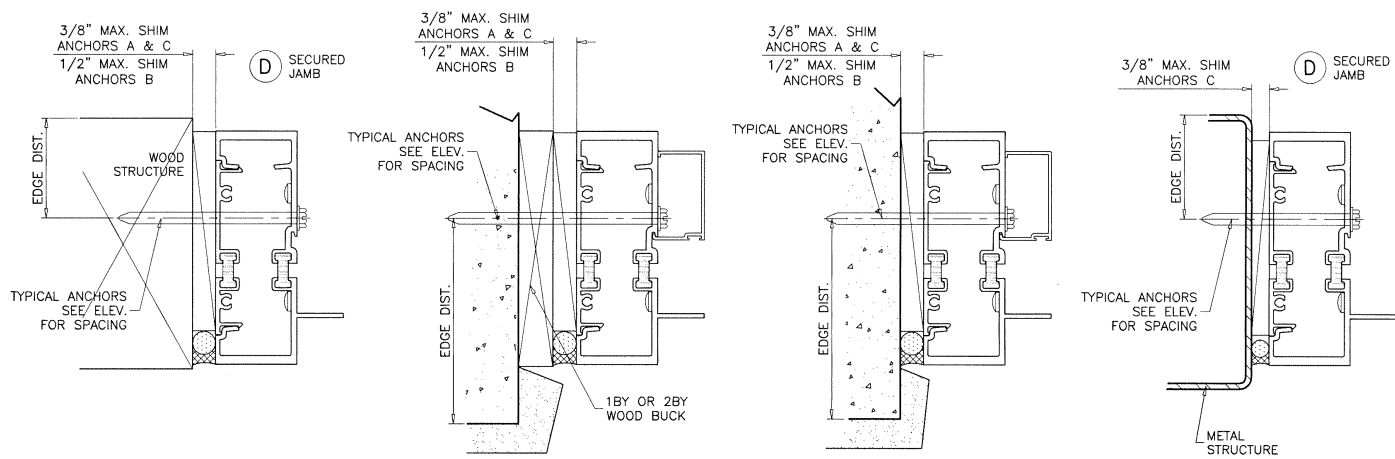
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MAX. GAPS FOR UNANCHORED JAMBS		
MAX. FRAME HEIGHT	JAMB J1	
	MIN.	MAX.
96"	1/4"	1"
102"	1/4"	1"
108"	3/8"	1"
120"	3/8"	1"
132"	3/8"	1"
144"	3/8"	1"

NOTE:
 MAX. MOVEMENT CONSIDERED=100% STRETCH.
 PLEASE REFER TO SEALANT MANUFACTURER'S DATA AND APPLICATION MANUAL FOR COMPATIBILITY OF SEALANT TO SUBSTRATE & WINDOWALL MATERIAL/FINISH AND COMPLIANCE FOR WARRANTY.
 REFER TO ACI-117-10 FOR CONSTRUCTION TOLERANCES.
 ALTERNATE SEALANTS AT JAMB GAPS CAN BE DESIGNED BY ENGINEER OF RECORD BASED ON MANUFACTURER GUIDE LINES.
 GAPS LESS THAN 1/4" MAY BE DESIGNED BY ENGINEER OF RECORD BY THE USE OF BOND BREAKER TAPE OR 15% OF GAP ALLOWED MOVEMENT.

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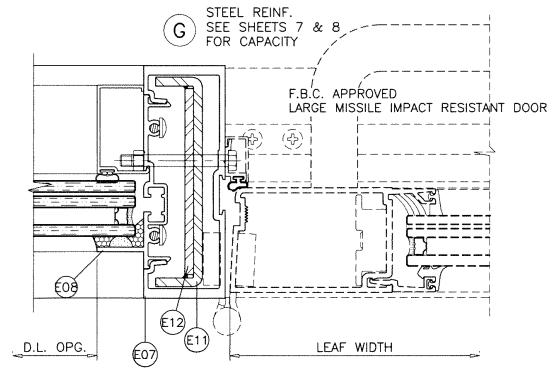
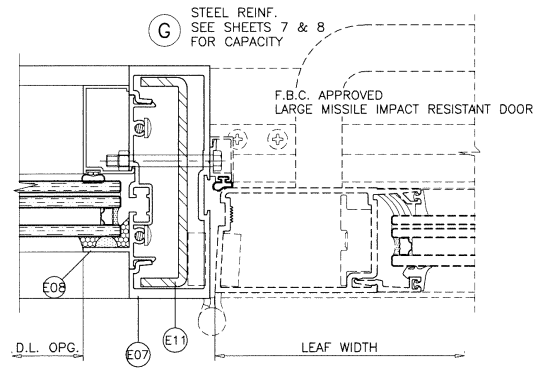
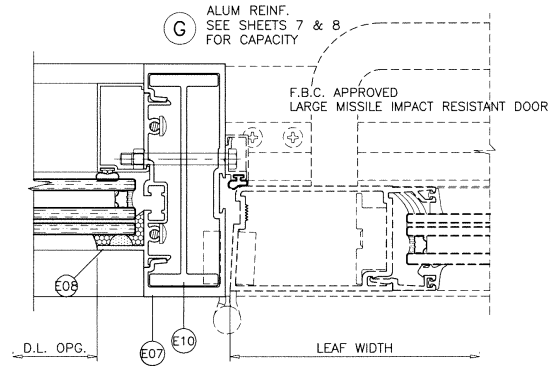
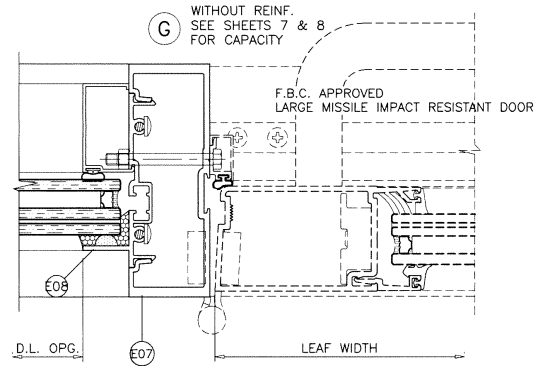
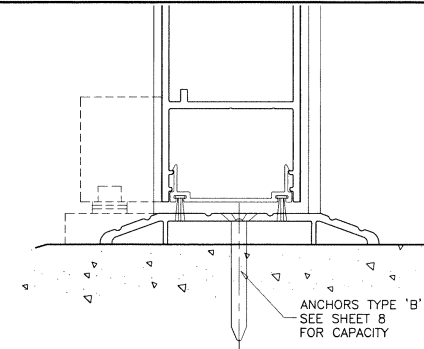
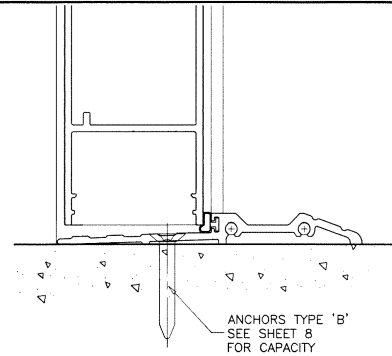
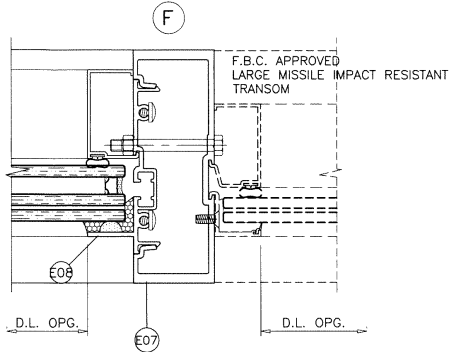
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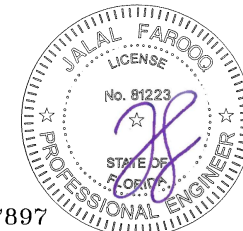
drawing no.
W15-37
 sheet 10 of 13



SEE SEPARATE APPROVAL FOR DESIGN LOAD CAPACITY OF DOORS AND DOOR ANCHORS.
LOWER VALUES FROM DOORS APPROVAL OR STOREFRONT SYSTEM CAPACITY CHARTS WILL APPLY TO ENTIRE SYSTEM.

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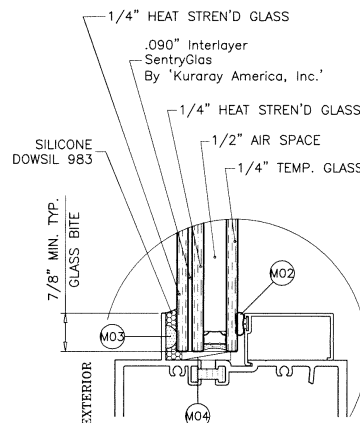
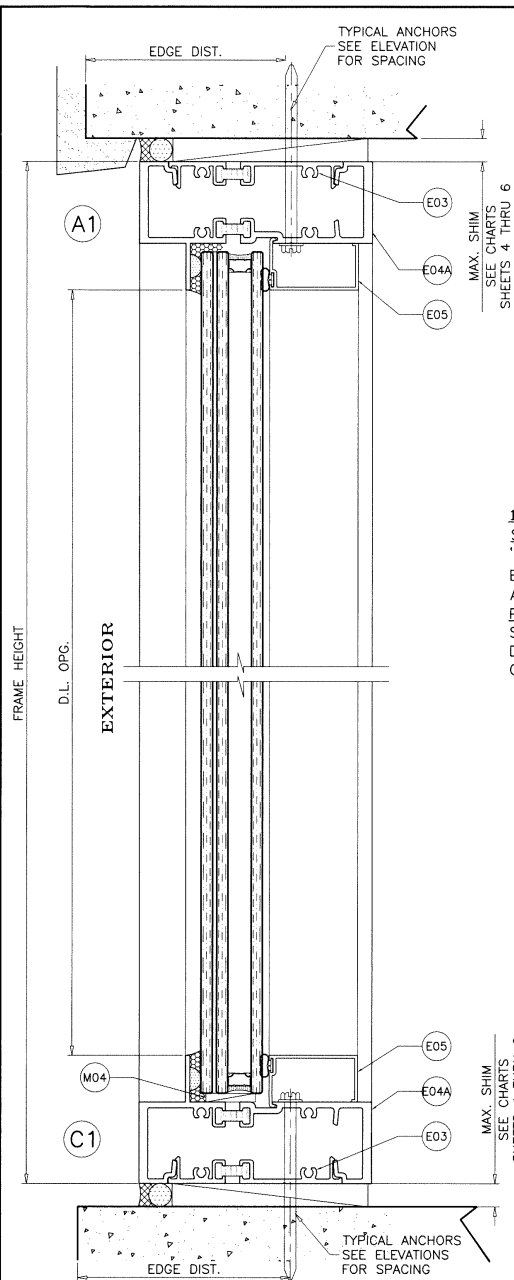
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9360 SUNSET DRIVE, SUITE 220
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date: 07-16-15	scale: 3/8" = 1"	dr: TARIO	chk: by:
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sheet 11 of 13



GLASS TYPE 'GL3'

1-5/16" OVERALL INSUL. LAM. GLASS

1/2" AIR SPACE CONSISTING OF:

SPACER:

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

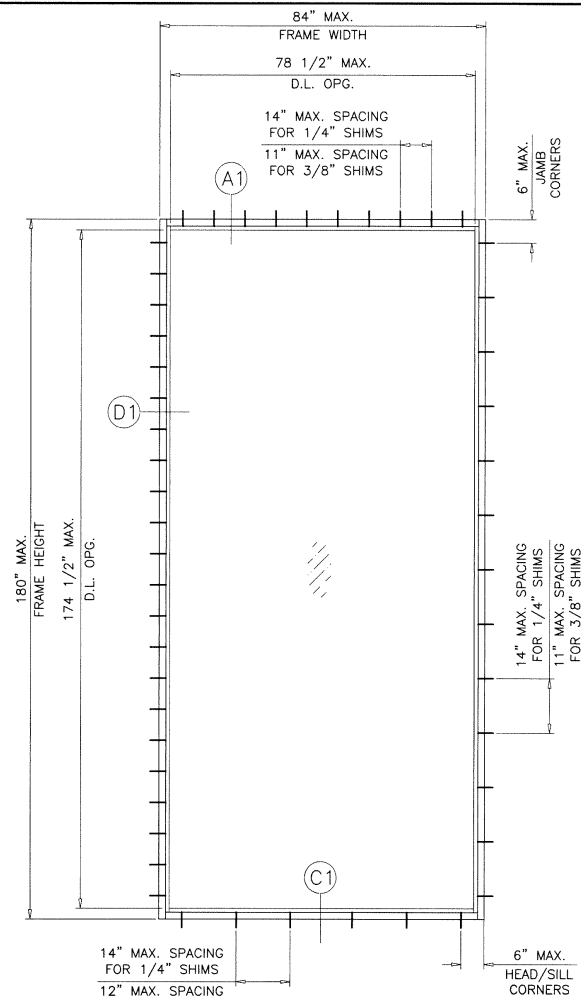
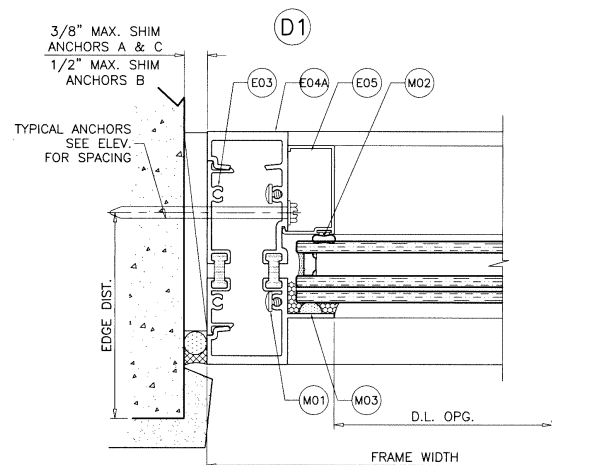
PERIMETER SEALANT:

SILICONE
DOWSIL 791
GE 2000

MAXIMUM DESIGN LOAD RATING = + 70.0 PSF
- 70.0 PSF

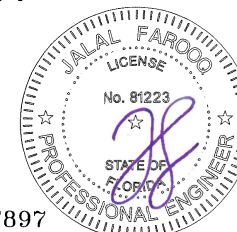
(FOR SINGLE UNITS SHOWN IN THIS SHEET OR SMALLER)

THESE FRAMES CAN BE USED AT ALL SUBSTRATES SHOWN
ON SHEETS 9 AND 10.



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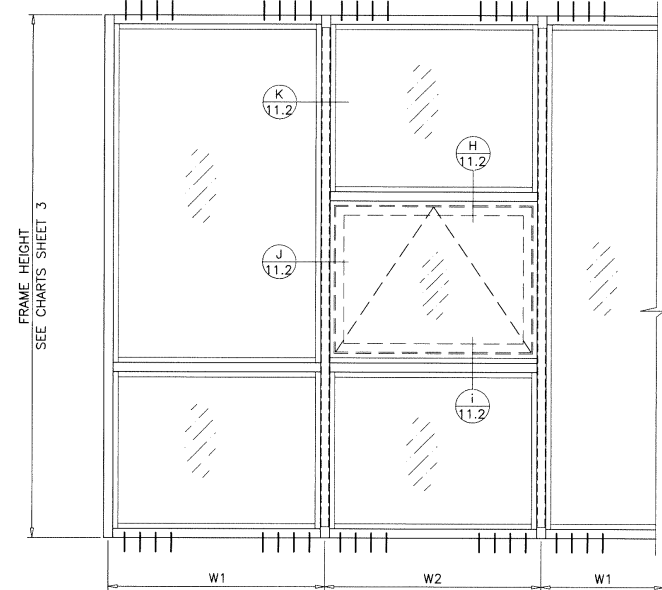
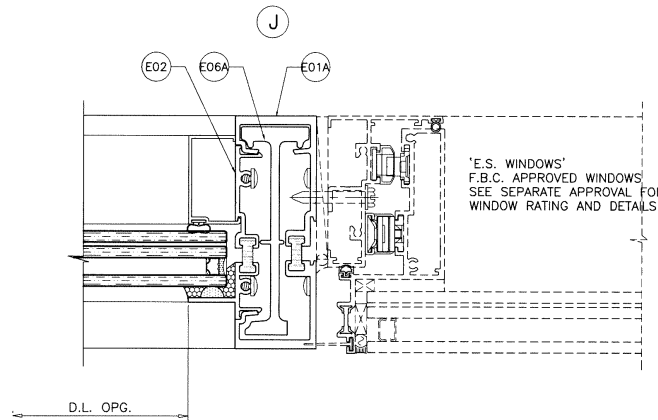
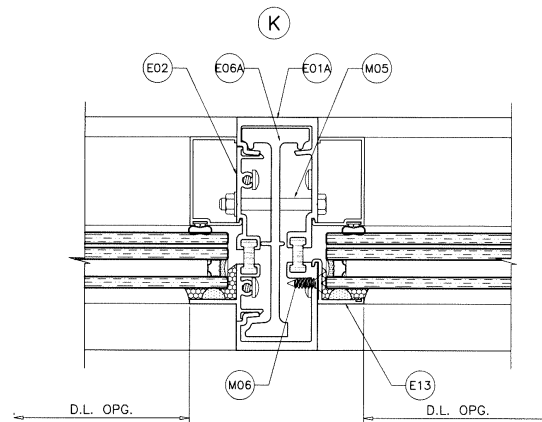
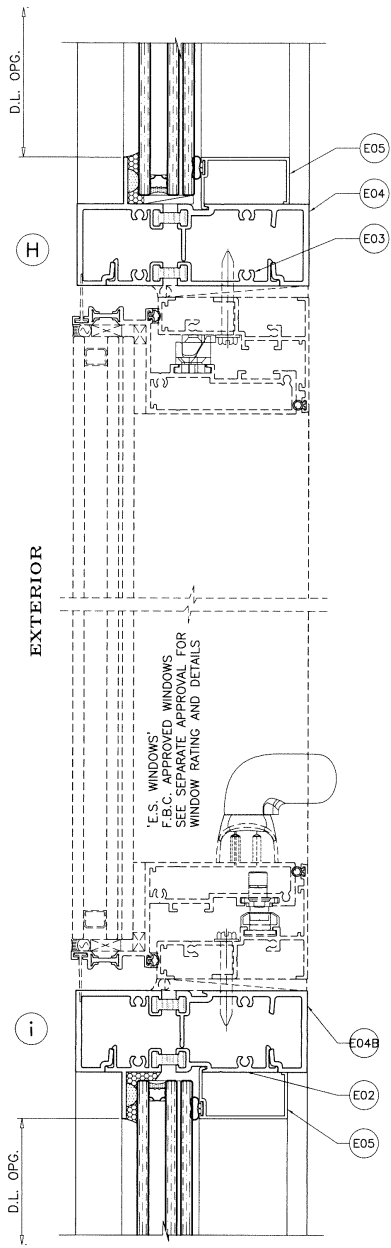
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Sheet 11.1 of 13

COMP-ANL W15-37ES



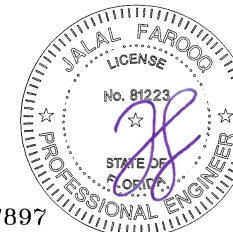
TYPICAL INSTALLATION OF WINDOWS IN THE WINDOW WALL SYSTEM
USE WINDOWS HOLDING CURRENT APPROVAL
REFER TO NOTES ON SHEET 1

$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

AT FRAME MULLION

Sealed: 3/13/2025

FL #17897



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

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

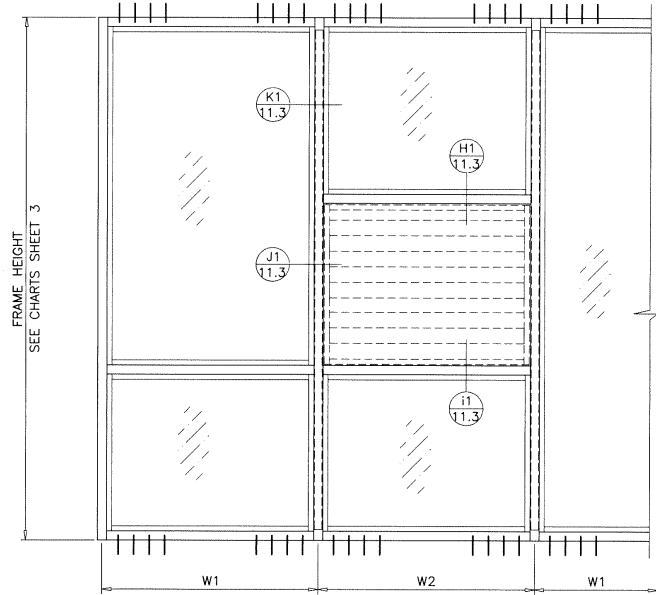
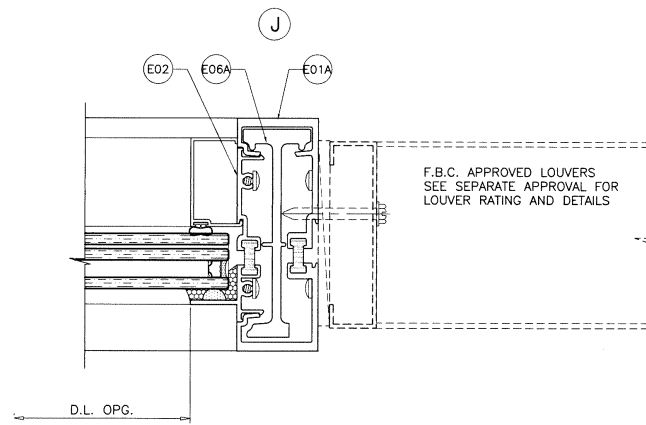
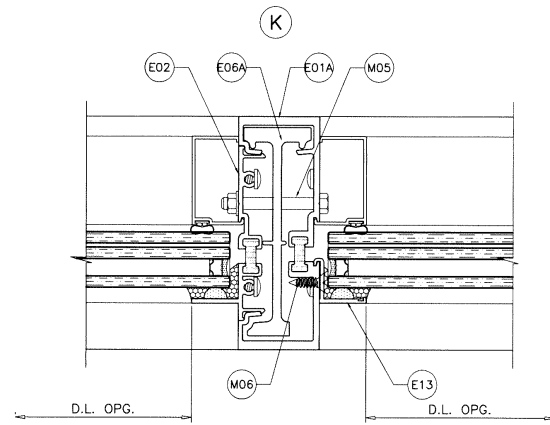
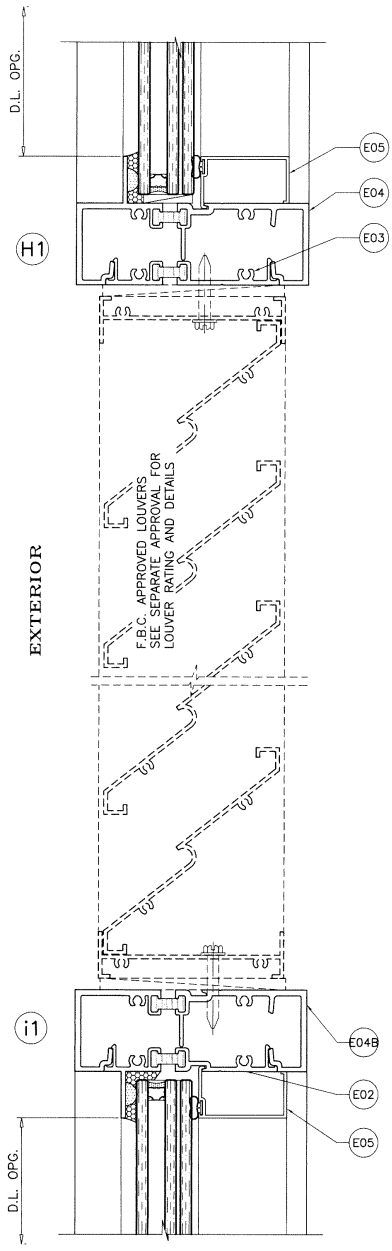
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date: 07-16-15
scale: 3/8" = 1"
dr. by: TARG
chk. by:

drawing no.
W15-37

sheet 11.2 of 13

COMP-ANL W15-37ES



TYPICAL INSTALLATION OF LOUVERS IN THE WINDOW WALL SYSTEM

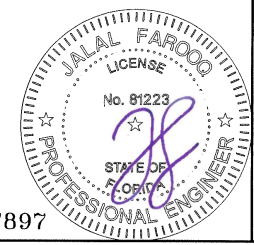
USE LOUVERS HOLDING CURRENT APPROVAL
REFER TO NOTES ON SHEET 1

$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

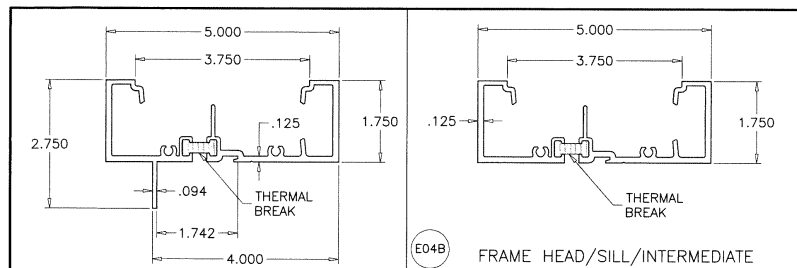
AT FRAME MULLION

Sealed: 3/13/2025

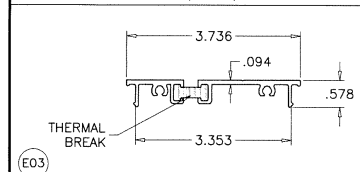
FL #17897



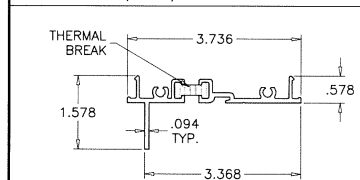
AL-FAROOQ CORPORATION ENGINEERS & PRODUCT DEVELOPMENT 9360 SUNSET DRIVE, SUITE 220 MIAMI, FLORIDA 33173 TEL. (305) 264-8100 FAX. (305) 262-6978 (C.A.N. 3538) COMP-ANL W15-37ES																					
E.S. WINDOWS, LLC 3550 N.W. 49 STREET MIAMI, FL 33142 TEL. (305) 638-5151 FAX. (305) 638-5158																					
ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)																					
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no	date	by	description																		
date: 07-16-15 scale: 3/8" = 1" dr. by: TARIQ chk. by:	drawing no. W15-37 sheet 11.3 of 13																				



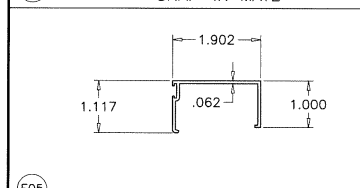
(E04) FRAME HEAD/SILL/INTERMEDIATE



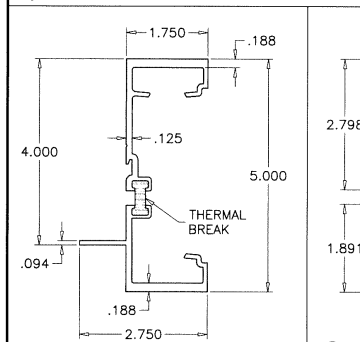
(E03) FRAME HEAD/SILL/JAMB SNAP-IN PLATE



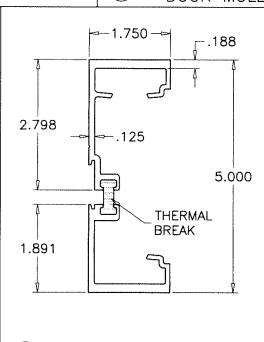
(E02) SNAP-IN MATE



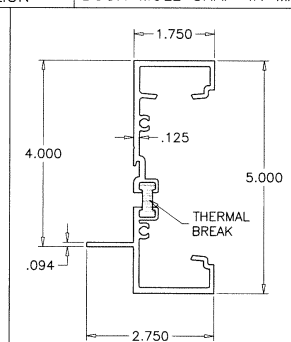
(E05) GLAZING BEAD



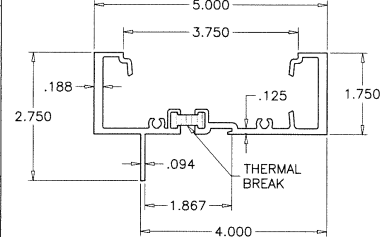
(E01) JAMB/VERTICAL MULLION



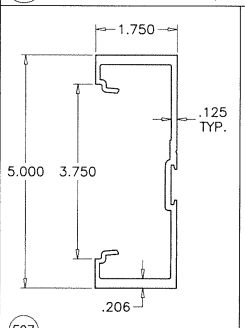
(E01A) VERTICAL MULLION



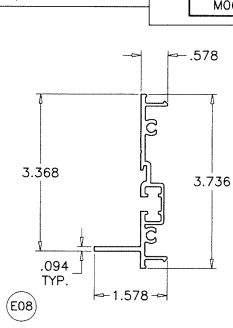
(E04M) VERTICAL MULLION



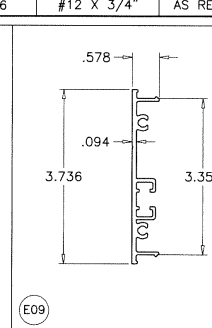
(E04A) FRAME HEAD/SILL/JAMB



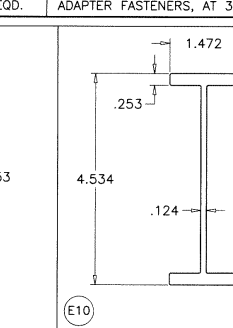
(E07) DOOR MULLION



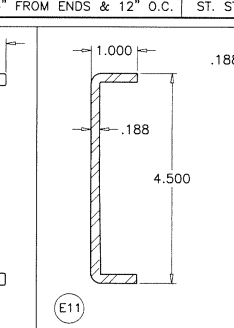
(E08) DOOR MULL SNAP-IN MATE



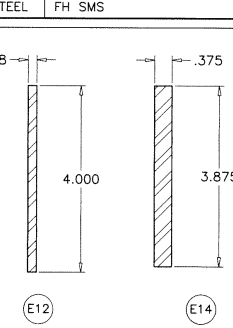
(E09) DOOR MULL SNAP-IN PLATE



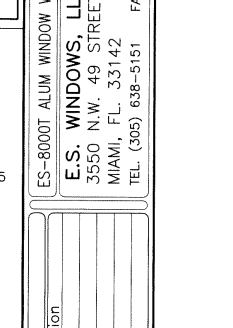
(E10) DOOR MULL STIFFENER



(E11) MULL STEEL REINF.

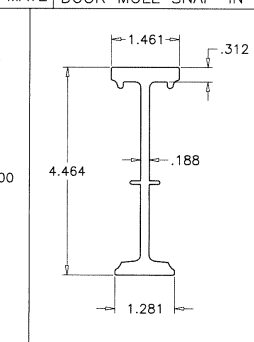


(E12) MULL STEEL REINF.

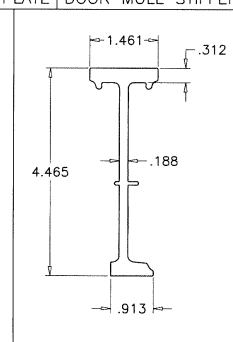


(E14) MULL STEEL REINF.

ITEM #	PART #	REQ'D	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E01	ES-8000T-001	AS REQD.	JAMB AND VERTICAL MULLION	6005-T5	-
E01A	ES-8000T-009T	AS REQD.	VERTICAL MULLION	6063-T6	-
E02	ES-8000T-002	AS REQD.	SNAP-IN MATE	6005-T5	-
E03	ES-8000T-003	AS REQD.	HEAD/SILL/JAMB SNAP-IN PLATE	6005-T5	-
E04	ES-8000T-004	AS REQD.	FRAME HEAD/SILL/INTERMEDIATE	6005-T5	-
E04M	ES-8000T-004	AS REQD.	VERTICAL MULLION	6005-T5	-
E04A	ES-8000T-007	AS REQD.	FRAME HEAD/SILL/JAMB (GLASS TYPE GL3)	6005-T5	-
E04B	ES-8000T-012T	AS REQD.	FRAME HEAD/SILL/INTERMEDIATE	6005-T5	-
E05	ES-8000T-005	AS REQD.	GLAZING BEAD	6063-T5	-
E06	ES-8000T-006	AS REQD.	STIFFENER	6005-T5	-
E06A	ES-8000T-011	AS REQD.	STIFFENER	6005-T5	-
E07	-	AS REQD.	DOOR MULLION	6005-T5	-
E08	ES-8000T-002	AS REQD.	DOOR MULLION SNAP-IN MATE	6005-T5	-
E09	ES-8000T-003	AS REQD.	DOOR MULL SNAP-IN PLATE	6005-T5	-
E10	-	AS REQD.	DOOR MULLION STIFFENER	6005-T5	-
E11	-	AS REQD.	MULLION REINFORCING CHANNEL	STEEL	A36, Fu MIN. = 58 KSI
E12	-	AS REQD.	MULLION REINFORCING BAR	STEEL	A36, Fu MIN. = 58 KSI
E13	ES8014	AS REQD.	EXTERIOR GLAZING ADAPTER	6063-T6	-
E14	-	AS REQD.	MULLION REINFORCING BAR	STEEL	A36, Fu MIN. = 58 KSI
M01	#12 X 1-1/2"	AS REQD.	ASSEMBLY FASTENERS	ST. STEEL	PH SMS
M02	ES-8010A	AS REQD.	INTERIOR GLAZING GASKET	SILICONE	DUROMETER 70±3 SHORE A
M03	ES-8011A	AS REQD.	1/4" GLASS SPACER	SILICONE	DUROMETER 85±5 SHORE A
M04	ES-7530-B01A	2/ LITE	SETTING BLOCKS AT 1/4 POINTS	EPDM	DUROMETER 80±5 SHORE A
M05	1/4" X 2-1/8"	AS REQD.	MULLION FASTENERS	ST. STEEL	BOLT WITH NUT
M06	#12 X 3/4"	AS REQD.	ADAPTER FASTENERS, AT 3" FROM ENDS & 12" O.C.	ST. STEEL	FH SMS



(E06) STIFFENER

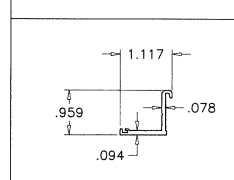


(E06A) STIFFENER

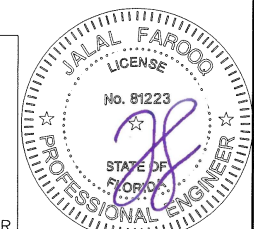
THERMAL BREAK:
FRAME MEMBERS FILLED AND DEBRIDGED USING
'BAYDUR TB 100-30' MANUFACTURED BY
'BAYER MATERIALSCIENCE, LLC.

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FL #17897



(E13) EXT. GLAZING ADAPTER



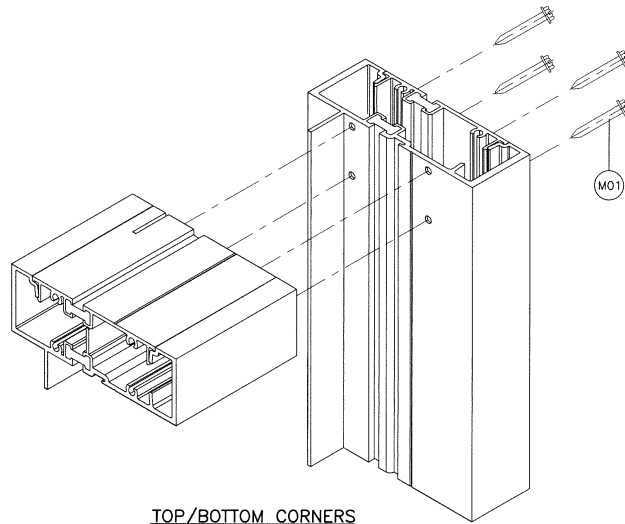
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
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COMP-ANL W15-37ES

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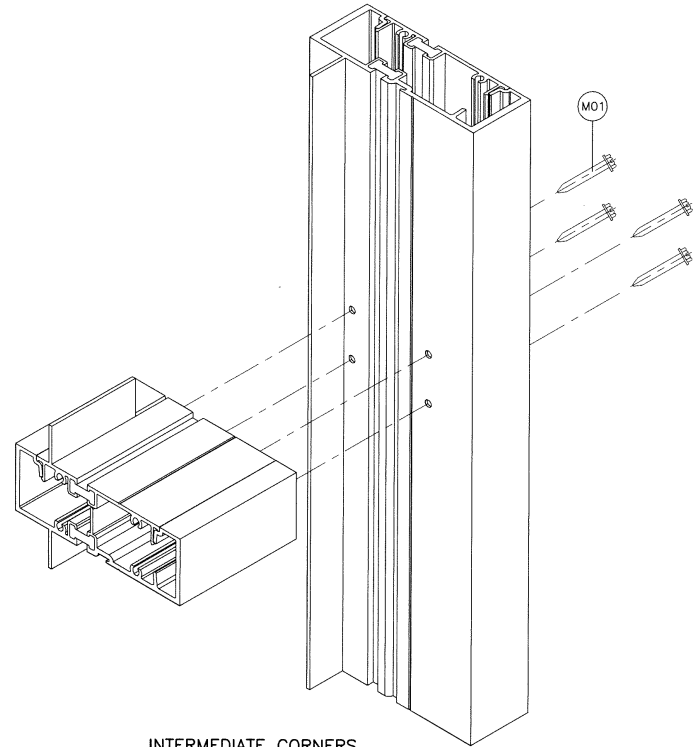
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dr. by: TARIQ	chk. by:

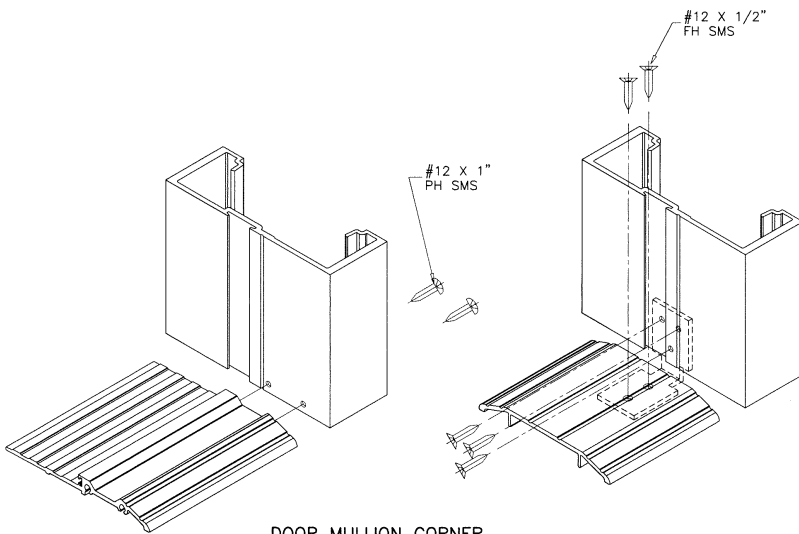
drawing no.
W15-37
sheet 12 of 13



TOP/BOTTOM CORNERS



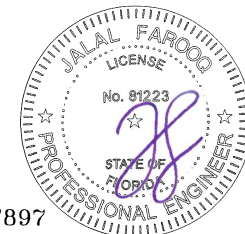
INTERMEDIATE CORNERS



DOOR MULLION CORNER

Sealed: 3/13/2025

FL #17897



af c
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
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revisions:	
no	description

date: 07-16-15	scale: 3/8" = 1"
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drawing no.
W15-37
 sheet 13 of 13