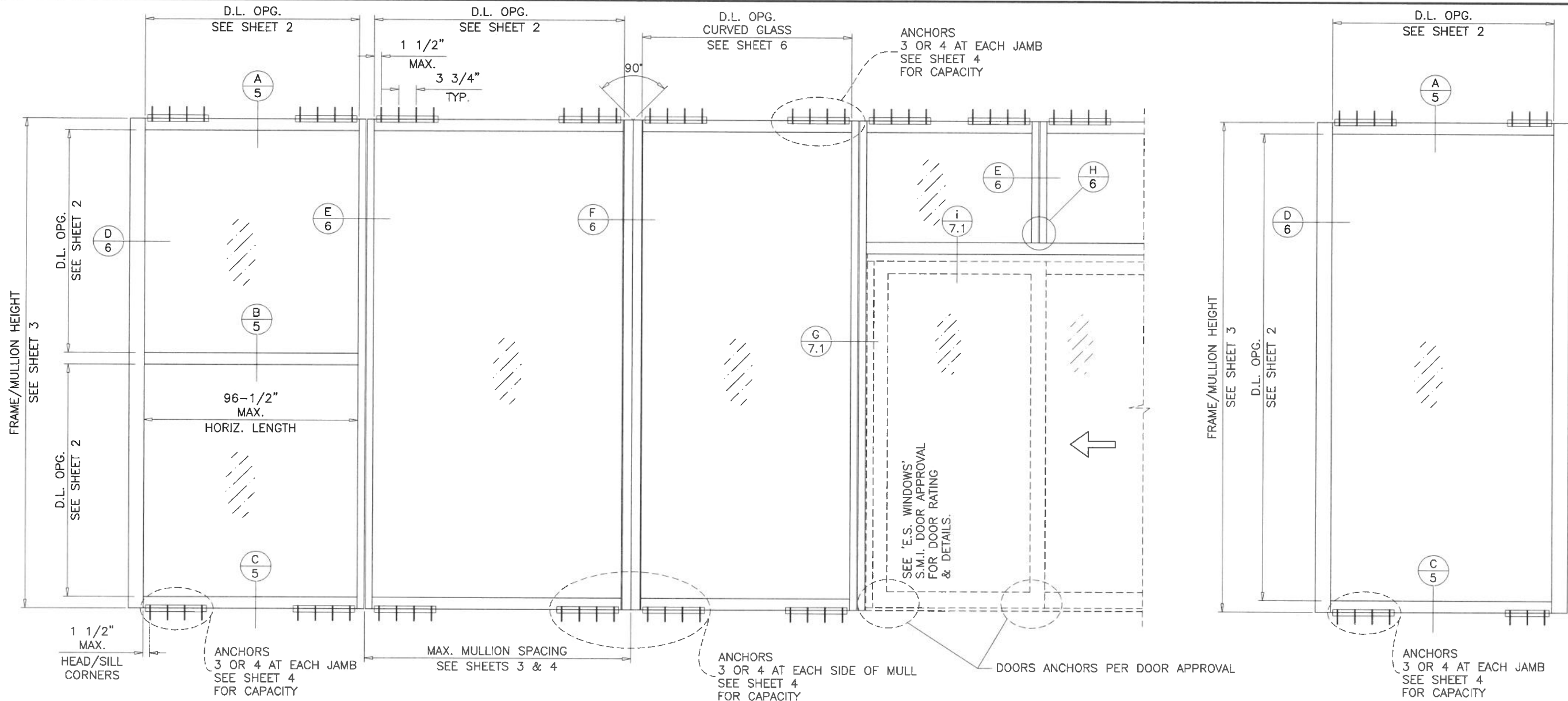




TYPICAL ELEVATIONS

ES-WW8701 ALUMINUM WINDOW WALL SYSTEM

THIS SYSTEM MAY BE USED IN CONJUNCTION WITH F.B.C. APPR'D LARGE MISSILE IMPACT RESISTANT DOORS. LOWER DESIGN PRESSURE FROM STOREFRONT OR DOOR APPROVAL WILL APPLY TO ENTIRE SYSTEM.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2023 (8TH EDITION)/2026 (9TH EDITION) FLORIDA BUILDING CODE INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ). 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. ALL SHIMS TO BE LOAD-BEARING, (HIGH DENSITY PLASTIC/COMPOSITE, METAL OR OTHER RIGID MATERIALS). MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 2023/2026 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.

INSTRUCTIONS:

USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN WIND PRESSURE REQUIREMENTS BASED ON WIND VELOCITY, BLDG. HEIGHT, WIND ZONE USING APPLICABLE ASCE 7 STANDARD.
- STEP 2** SEE CHARTS ON SHEET 2 FOR GLASS DESIGN LOAD CAPACITY.
- STEP 3** CHECK MULLION DESIGN LOAD CAPACITY FOR A GIVEN SPACING AND HEIGHT USING CHARTS ON SHEET 3 THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** USING CHARTS ON SHEET 4 SELECT ANCHOR OPTION WITH DESIGN LOAD CAPACITY MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 THAT EXCEED THE DESIGN WIND PRESSURES DETERMINED THRU STEP 1 SHALL APPLY TO ENTIRE SYSTEM.
- STEP 6** FOR UNANCHORED JAMBS, USING SHEET 6, DETERMINE THE MIN. & MAX. GAP DIMENSIONS.
- STEP 7** WHEN USING THIS SYSTEM WITH DOORS, THE LOWER VALUE OF THE DESIGN PRESSURE RATING FOR THE SYSTEM AND THE DOOR SHALL APPLY.

FASTENERS AND CONNECTORS (AS APPLICABLE) SHOWN IN THIS APPROVAL MAY NOT MEET CORROSION RESISTANCE REQUIREMENTS FOR COASTAL OR SALT WATER EXPOSURE ZONES. COMPLIANCE WITH THESE CONDITIONS TO BE CHECKED PER FBC 1711.

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

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

INSUL. LAM. GLASS
LARGE MISSILE IMPACT

Sealed: 9/4/2026

FL #29069

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.



af c
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-WW8701 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:		date:	no	description	by
01-31-19	A	12.04.20	1	UPDATED TO 2020 FBC	FBC
	B	09.27.23	2	UPDATED TO 2023 FBC	FBC
	C	02.16.26	3	GENERAL REVISION	REVISION
	D	08.14.26	4	GENERAL REVISION	REVISION
drawing no.		19-06F			
sheet		1 of 9			

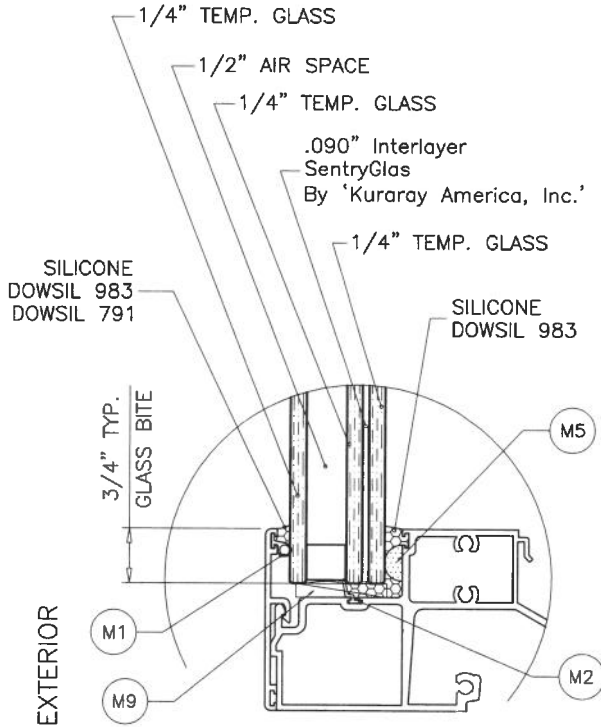
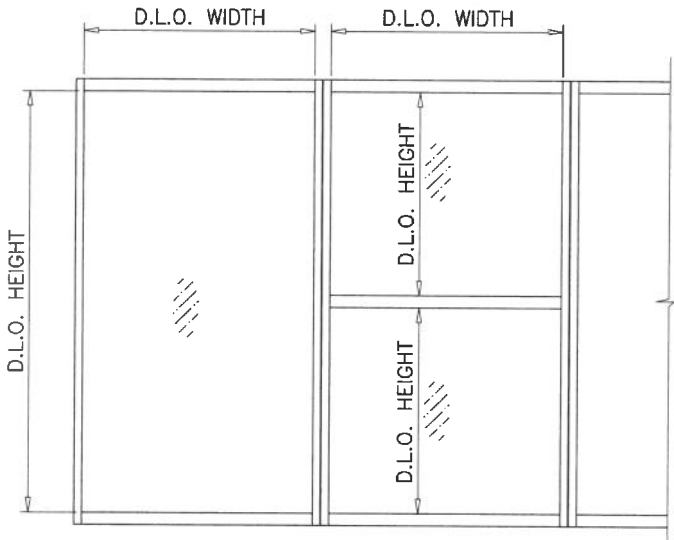
COMP-ANL\19-08F-ES

GLASS DESIGN LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'B'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT. (+)	INT. (-)
50-3/4"	117-1/2"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		85.0	85.0
92-3/4"		85.0	85.0
96-1/2"		85.0	85.0
98-3/4"		76.1	76.1
50-3/4"	121-1/2"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		85.0	85.0
92-3/4"		84.3	84.3
96-1/2"		77.9	77.9
98-3/4"		76.1	76.1
50-3/4"	127"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		85.0	85.0
92-3/4"		81.0	81.0
96-1/2"		77.9	77.9
98-3/4"		76.1	76.1
50-3/4"	133"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		85.0	85.0
92-3/4"		81.0	81.0
96-1/2"		77.9	77.9
98-3/4"		76.1	76.1
50-3/4"	137"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		85.0	85.0
92-3/4"		81.0	81.0
96-1/2"		77.9	77.9
98-3/4"		76.1	76.1

FOR ADDITIONAL CURVED GLASS LIMITATIONS SEE SHEET 7

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-16 (3 SEC. GUSTS).

GLASS DESIGN LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'B'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT. (+)	INT. (-)
50-3/4"	141"	85.0	85.0
56-3/4"		85.0	85.0
62-3/4"		85.0	85.0
68-3/4"		85.0	85.0
74-3/4"		85.0	85.0
80-3/4"		85.0	85.0
86-3/4"		84.0	84.0
92-3/4"		81.0	81.0
96-1/2"		77.9	77.9
98-3/4"		76.1	76.1



GLASS TYPE 'B'
FLAT & CURVED GLASS

GLAZING OPTIONS

*NOTE:
FOR DOWSIL 791 SILICONE LIMIT MAX. D.L.O AREA TO 44.93 SQ. FT.

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



Sealed: 9/4/2026

FL #29069

AL-FAROOQ CORPORATION
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9360 SUNSET DRIVE, SUITE 220
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revisions:		by description	
no	date		

date: 01-31-19
scale: 3/8" = 1"
dr. by: TARIO
chk. by:

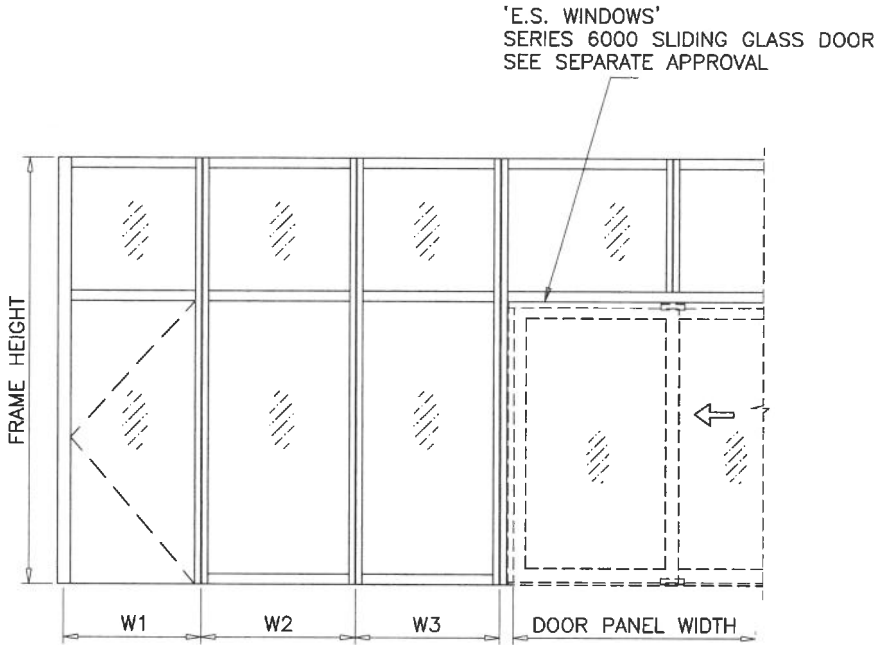
drawing no.
19-06F
sheet 2.1 of 9

MULLION DESIGN LOAD CAPACITY - PSF WITH INTERMEDIATE HORIZONTALS					
NOMINAL DIMS.		MULLIONS			
		MULLION 'M1A'		MULLION 'M2A'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
48"	96"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		85.0	85.0	85.0	85.0
99-3/4"		85.0	85.0	85.0	85.0
102"		85.0	85.0	85.0	85.0
48"	102"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		85.0	85.0	85.0	85.0
99-3/4"		85.0	85.0	85.0	85.0
102"		85.0	85.0	85.0	85.0
48"	108"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		85.0	85.0	85.0	85.0
99-3/4"		85.0	85.0	85.0	85.0
102"		85.0	85.0	85.0	85.0
48"	114"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		85.0	85.0	85.0	85.0
99-3/4"		85.0	85.0	85.0	85.0
102"		85.0	85.0	85.0	85.0

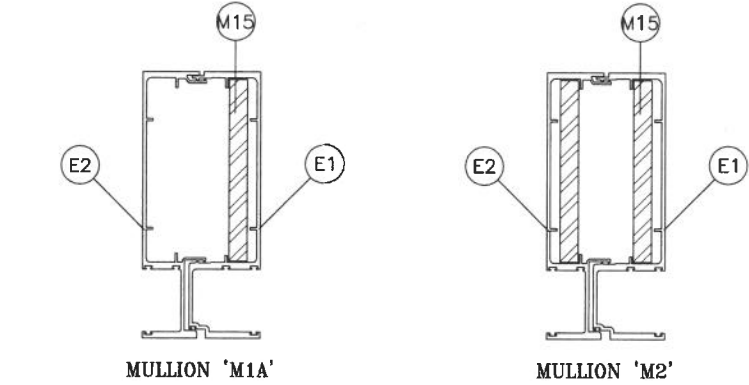
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

MULLION DESIGN LOAD CAPACITY - PSF WITH INTERMEDIATE HORIZONTALS					
NOMINAL DIMS.		MULLIONS			
		MULLION 'M1A'		MULLION 'M2A'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
48"	120"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		85.0	85.0	85.0	85.0
99-3/4"		85.0	85.0	85.0	85.0
102"		85.0	85.0	85.0	85.0
48"	126"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		85.0	85.0	85.0	85.0
96"		83.5	83.5	85.0	85.0
99-3/4"		80.4	80.4	85.0	85.0
102"		78.6	78.6	85.0	85.0
48"	132"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		85.0	85.0	85.0	85.0
90"		81.2	81.2	85.0	85.0
96"		76.1	76.1	85.0	85.0
99-3/4"		73.2	73.2	85.0	85.0
102"		71.6	71.6	85.0	85.0
48"	138"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		85.0	85.0	85.0	85.0
84"		79.6	79.6	85.0	85.0
90"		74.3	74.3	85.0	85.0
96"		69.6	69.6	85.0	85.0
99-3/4"		67.0	67.0	85.0	85.0
102"		65.5	65.5	85.0	85.0

MULLION DESIGN LOAD CAPACITY - PSF WITH INTERMEDIATE HORIZONTALS					
NOMINAL DIMS.		MULLIONS			
		MULLION 'M1A'		MULLION 'M2A'	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
48"	142"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		85.0	85.0	85.0	85.0
78"		80.9	80.9	85.0	85.0
84"		75.1	75.1	85.0	85.0
90"		70.1	70.1	85.0	85.0
96"		65.7	65.7	85.0	85.0
99-3/4"		63.3	63.3	85.0	85.0
102"		61.9	61.9	85.0	85.0
48"	146"	85.0	85.0	85.0	85.0
54"		85.0	85.0	85.0	85.0
60"		85.0	85.0	85.0	85.0
66"		85.0	85.0	85.0	85.0
72"		82.9	82.9	85.0	85.0
78"		76.5	76.5	85.0	85.0
84"		71.1	71.1	85.0	85.0
90"		66.3	66.3	85.0	85.0
96"		62.2	62.2	85.0	85.0
99-3/4"		59.9	59.9	84.2	84.2



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



	Ix IN^4	Sx IN^3
ALUMINUM	21.7597	5.4810
STEEL	5.2083	2.0833
TOTAL Ix ALUM + Ix STL X 2.9	36.7142	

	Ix IN^4	Sx IN^3
ALUMINUM	21.7597	5.4810
STEEL	10.4166	4.1666
TOTAL Ix ALUM + Ix STL X 2.9	51.6687	



Sealed: 9/4/2026

FL #29069

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revisions:
no date by description

date: 01-31-19
scale: -
dr. by: TARIQ
chk. by:

drawing no.
19-06F
sheet 3.3 of 9

HEAD/SILL ANCHOR DESIGN LOAD CAPACITY - PSF EXT.(+) & INT.(-)										
NOMINAL DIMS.		ANCHOR TYPE 'A'		ANCHOR TYPE 'B'		ANCHOR TYPE 'AA'			ANCHOR TYPE 'BB'	
WIDTH (W)	FRAME HEIGHT	'A3'	'A4'	'B3'	'B4'	'AA3'	'AA4'	'AA5'	'BB3'	'BB4'
48"	96"	122.8	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
54"		109.2	125.0	125.0	125.0	122.5	125.0	125.0	125.0	125.0
60"		98.2	125.0	125.0	125.0	110.3	125.0	125.0	125.0	125.0
66"		89.3	119.1	125.0	125.0	100.2	125.0	125.0	125.0	125.0
72"		81.9	109.2	119.9	125.0	91.9	122.5	125.0	125.0	125.0
78"		75.6	85.0	85.0	85.0	84.8	85.0	85.0	85.0	85.0
84"		70.2	85.0	85.0	85.0	78.8	85.0	85.0	85.0	85.0
90"		65.5	85.0	85.0	85.0	73.5	85.0	85.0	85.0	85.0
96"		61.4	81.9	85.0	85.0	68.9	85.0	85.0	85.0	85.0
102"		57.8	77.0	84.6	85.0	64.9	85.0	85.0	85.0	85.0
48"	102"	115.6	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0
54"		102.7	125.0	125.0	125.0	115.3	125.0	125.0	125.0	125.0
60"		92.5	123.3	125.0	125.0	103.8	125.0	125.0	125.0	125.0
66"		84.1	112.1	123.1	125.0	94.3	125.0	125.0	125.0	125.0
72"		77.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
78"		71.1	85.0	85.0	85.0	79.8	85.0	85.0	85.0	85.0
84"		66.0	85.0	85.0	85.0	74.1	85.0	85.0	85.0	85.0
90"		61.6	82.2	85.0	85.0	69.2	85.0	85.0	85.0	85.0
96"		57.8	77.0	84.6	85.0	64.9	85.0	85.0	85.0	85.0
102"		54.4	72.5	79.6	85.0	61.0	81.4	85.0	85.0	85.0
48"	108"	109.2	125.0	125.0	125.0	122.5	125.0	125.0	125.0	125.0
54"		97.0	125.0	125.0	125.0	108.9	125.0	125.0	125.0	125.0
60"		87.3	116.4	125.0	125.0	98.0	125.0	125.0	125.0	125.0
66"		79.4	105.8	116.2	125.0	89.1	118.8	125.0	125.0	125.0
72"		72.8	85.0	85.0	85.0	81.7	85.0	85.0	85.0	85.0
78"		67.2	85.0	85.0	85.0	75.4	85.0	85.0	85.0	85.0
84"		62.4	83.2	85.0	85.0	70.0	85.0	85.0	85.0	85.0
90"		58.2	77.6	85.0	85.0	65.3	85.0	85.0	85.0	85.0
96"		54.6	72.8	79.9	85.0	61.3	81.7	85.0	85.0	85.0
102"		51.4	68.5	75.2	85.0	57.7	76.9	85.0	85.0	85.0
48"	114"	103.4	125.0	125.0	125.0	116.1	125.0	125.0	125.0	125.0
54"		91.9	122.6	125.0	125.0	103.2	125.0	125.0	125.0	125.0
60"		82.7	110.3	121.1	125.0	92.9	123.8	125.0	125.0	125.0
66"		75.2	85.0	85.0	85.0	84.4	85.0	85.0	85.0	85.0
72"		68.9	85.0	85.0	85.0	77.4	85.0	85.0	85.0	85.0
78"		63.6	84.8	85.0	85.0	71.4	85.0	85.0	85.0	85.0
84"		59.1	78.8	85.0	85.0	66.3	85.0	85.0	85.0	85.0
90"		55.2	73.5	80.7	85.0	61.9	82.5	85.0	85.0	85.0
96"		51.7	68.9	75.7	85.0	58.0	77.4	85.0	85.0	85.0
102"		48.7	64.9	71.2	85.0	54.6	72.8	85.0	85.0	85.0
48"	120"	98.2	125.0	125.0	125.0	110.3	125.0	125.0	125.0	125.0
54"		87.3	116.4	125.0	125.0	98.0	125.0	125.0	125.0	125.0
60"		78.6	104.8	115.1	125.0	88.2	117.6	125.0	125.0	125.0
66"		71.4	85.0	85.0	85.0	80.2	85.0	85.0	85.0	85.0
72"		65.5	85.0	85.0	85.0	73.5	85.0	85.0	85.0	85.0
78"		60.5	80.6	85.0	85.0	67.9	85.0	85.0	85.0	85.0
84"		56.1	74.8	82.2	85.0	63.0	84.0	85.0	85.0	85.0
90"		52.4	69.9	76.7	85.0	58.8	78.4	85.0	85.0	85.0
96"		49.1	65.5	71.9	85.0	55.1	73.5	85.0	85.0	85.0
102"		46.2	61.6	67.7	85.0	51.9	69.2	85.0	85.0	85.0
48"	126"	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
54"		83.2	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
60"		74.8	85.0	85.0	85.0	84.0	85.0	85.0	85.0	85.0
66"		68.0	85.0	85.0	85.0	76.4	85.0	85.0	85.0	85.0
72"		62.4	83.2	85.0	85.0	70.0	85.0	85.0	85.0	85.0
78"		57.6	76.8	84.3	85.0	64.6	85.0	85.0	85.0	85.0
84"		53.5	71.3	78.3	85.0	60.0	80.0	85.0	85.0	85.0
90"		49.9	66.5	73.1	85.0	56.0	74.7	85.0	85.0	85.0
96"		46.8	62.4	68.5	85.0	52.5	70.0	85.0	85.0	85.0
102"		44.0	58.7	64.5	85.0	49.4	65.9	82.4	85.0	85.0

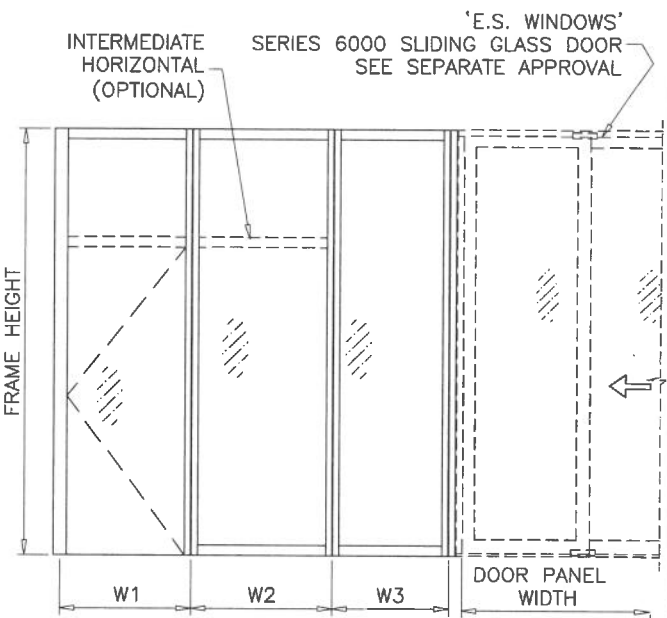
HEAD/SILL ANCHOR DESIGN LOAD CAPACITY - PSF EXT.(+) & INT.(-)										
NOMINAL DIMS.		ANCHOR TYPE 'A'		ANCHOR TYPE 'B'		ANCHOR TYPE 'AA'			ANCHOR TYPE 'BB'	
WIDTH (W)	FRAME HEIGHT	'A3'	'A4'	'B3'	'B4'	'AA3'	'AA4'	'AA5'	'BB3'	'BB4'
48"	132"	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
54"		79.4	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
60"		71.4	85.0	85.0	85.0	80.2	85.0	85.0	85.0	85.0
66"		65.0	85.0	85.0	85.0	72.9	85.0	85.0	85.0	85.0
72"		59.5	79.4	85.0	85.0	66.8	85.0	85.0	85.0	85.0
78"		55.0	73.3	80.5	85.0	61.7	82.3	85.0	85.0	85.0
84"		51.0	68.0	74.7	85.0	57.3	76.4	85.0	85.0	85.0
90"		47.6	63.5	69.7	85.0	53.5	71.3	85.0	85.0	85.0
96"		44.7	59.5	65.4	85.0	50.1	66.8	83.5	85.0	85.0
102"		42.0	56.0	61.5	82.0	47.2	62.9	78.6	81.7	85.0
48"	138"	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
54"		75.9	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
60"		68.3	85.0	85.0	85.0	76.7	85.0	85.0	85.0	85.0
66"		62.1	82.8	85.0	85.0	69.7	85.0	85.0	85.0	85.0
72"		56.9	75.9	83.4	85.0	63.9	85.0	85.0	85.0	85.0
78"		52.6	70.1	77.0	85.0	59.0	78.7	85.0	85.0	85.0
84"		48.8	65.1	71.5	85.0	54.8	73.1	85.0	85.0	85.0
90"		45.6	60.7	66.7	85.0	51.1	68.2	85.0	85.0	85.0
96"		42.7	56.9	62.5	83.4	47.9	63.9	79.9	83.1	85.0
102"		40.2	53.6	58.9	78.5	45.1	60.2	75.2	78.2	85.0
48"	142"	83.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
54"		73.8	85.0	85.0	85.0	82.8	85.0	85.0	85.0	85.0
60"		66.4	85.0	85.0	85.0	74.5	85.0	85.0	85.0	85.0
66"		60.4	80.5	85.0	85.0	67.8	85.0	85.0	85.0	85.0
72"		55.3	73.8	81.0	85.0	62.1	82.8	85.0	85.0	85.0
78"		51.1	68.1	74.8	85.0	57.3	76.5	85.0	85.0	85.0
84"		47.4	63.3	69.5	85.0	53.2	71.0	85.0	85.0	85.0
90"		44.3	59.0	64.8	85.0	49.7	66.3	82.8	85.0	85.0
96"		41.5	55.3	60.8	81.0	46.6	62.1	77.7	80.7	85.0
102"		39.1	52.1	57.2	76.3	43.9	58.5	73.1	76.0	85.0
48"	146"	80.2	85.0	85.0	85.0	85.0	85.0	85.0	85.0	85.0
54"		71.8	85.0	85.0	85.0	80.6	85.0	85.0	85.0	85.0
60"		64.6	85.0	85.0	85.0	72.5	85.0	85.0	85.0	85.0
66"		58.7	78.3	85.0	85.0	65.9	85.0	85.0	85.0	85.0
72"		53.8	71.8	78.8	85.0	60.4	80.6	85.0	85.0	85.0
78"		49.7	66.3	72.7	85.0	55.8	74.4	85.0	85.0	85.0
84"		46.1	61.5	67.6	85.0	51.8	69.1	85.0	85.0	85.0
90"		43.1	57.4	63.0	84.1	48.3	64.4	80.6	83.8	85.0
96"		40.4	53.8	59.1	78.8	45.3	60.4	75.5	78.5	85.0
102"		38.0	50.7	55.6	74.2	42.6	56.9	71.1	73.9	81.0

ANCHORS TYPES: SEE SHEET 5 FOR DESCRIPTION

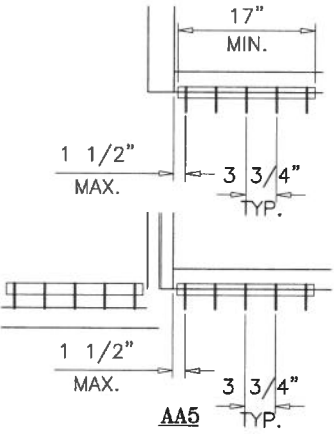
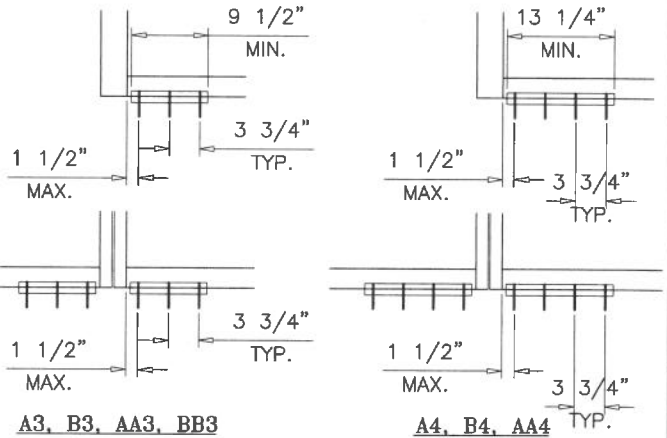
A3 = (3) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
B3 = (3) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
AA3 = (3) ANCHORS TYPE 'AA' AT EACH SIDE OF JAMB AND MULLION
BB3 = (3) ANCHORS TYPE 'BB' AT EACH SIDE OF JAMB AND MULLION

A4 = (4) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
B4 = (4) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
AA4 = (4) ANCHORS TYPE 'AA' AT EACH SIDE OF JAMB AND MULLION

AA5 = (5) ANCHORS TYPE 'AA' AT EACH SIDE OF JAMB AND MULLION



$$\text{WIDTH (W) AT JAMB} = W1$$
$$\text{WIDTH (W) AT MULLION} = \frac{W2 + W3}{2}$$



Sealed: 9/4/2026

FL #29069

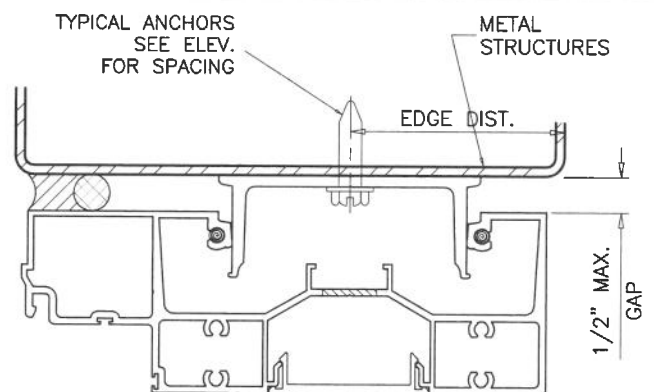
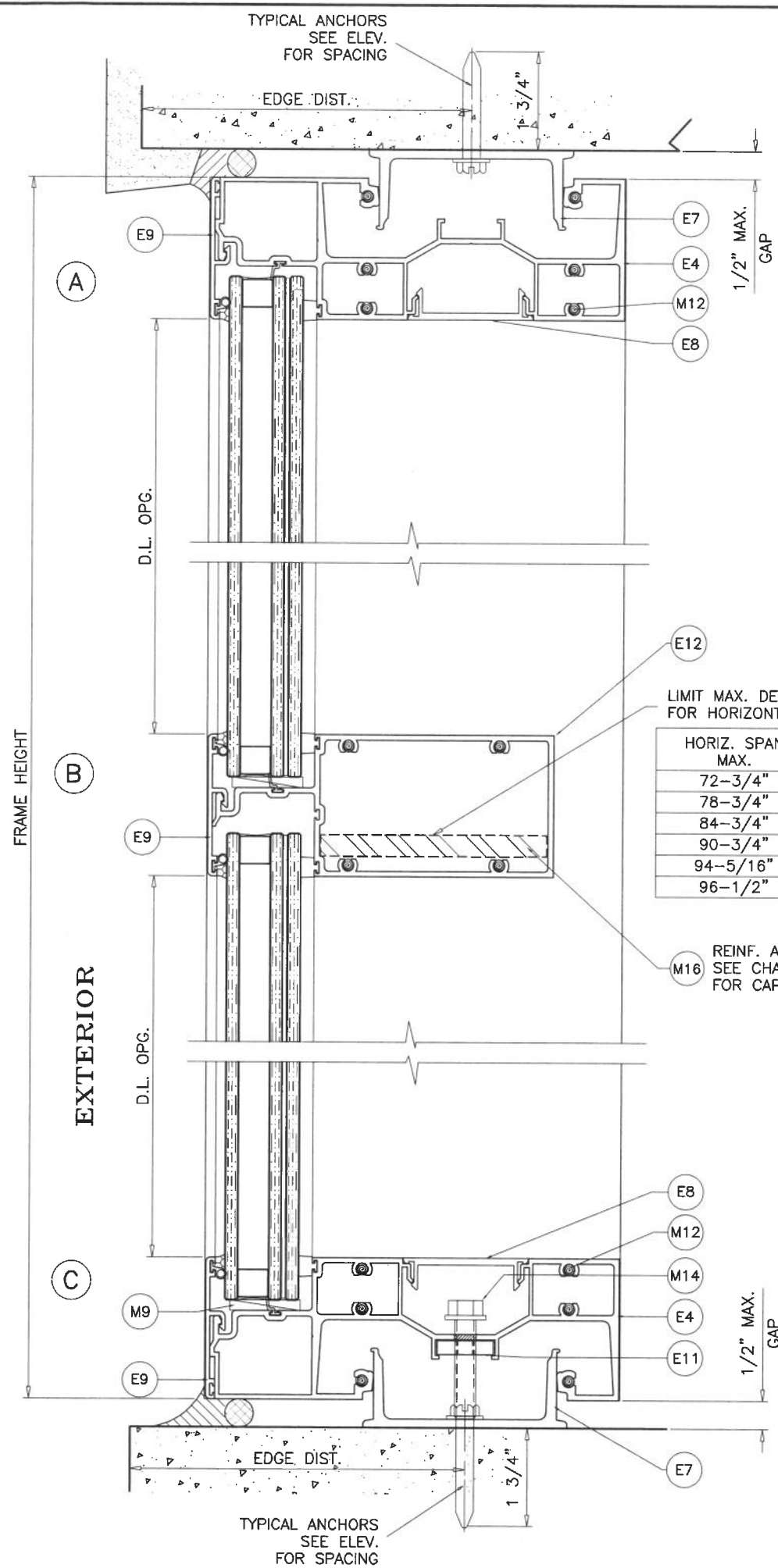
af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100
FAX. (305) 262-6978
(C.A.N. 3538)

COMP-ANL 19-08F-ES

ES-WW8701 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:		by description	
no	date		



LIMIT MAX. DESIGN LOADS
FOR HORIZONTAL AS FOLLOWS

HORIZ. SPAN MAX.	LOAD CAPACITY — PSF	
	W/O REINF.	WITH REINF.
72-3/4"	85.0	85.0
78-3/4"	78.3	85.0
84-3/4"	62.0	85.0
90-3/4"	50.0	85.0
94-5/16"	44.3	85.0
96-1/2"	41.2	83.1

METAL STRUCTURES NOT BY 'E.S. WDW.'
MUST SUPPORT LOADS IMPOSED BY GLAZING SYSTEM AND
TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

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

TYPE 'B'— 1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)
INTO F.B.C. APPROVED MULLIONS
OR
INTO METAL STRUCTURES (HEAD/SILL)
(3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
ALUMINUM: 3/16" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPE 'AA'— 5/16" DIA. ULTRACON BY 'DEWALT' (Fu=177 KSI, Fy=155 KSI)
DIRECTLY INTO CONCRETE
1-3/4" MIN. EMBED INTO CONCRETE (HEAD/SILL)

TYPE 'BB'— 5/16" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)
INTO F.B.C. APPROVED MULLIONS
OR
INTO METAL STRUCTURES (HEAD/SILL)
(3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
ALUMINUM: 3/16" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPICAL EDGE DISTANCE

INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
INTO METAL STRUCTURE = 3/4" MIN.

CONCRETE AT HEAD, SILL f'c = 3500 PSI MIN.

Sealed: 9/4/2026

FL #29069



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
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COMP-ANL 19-08F-ES

ES-WW8701 ALUM WINDOW WALL SYSTEM (L.M.I.)

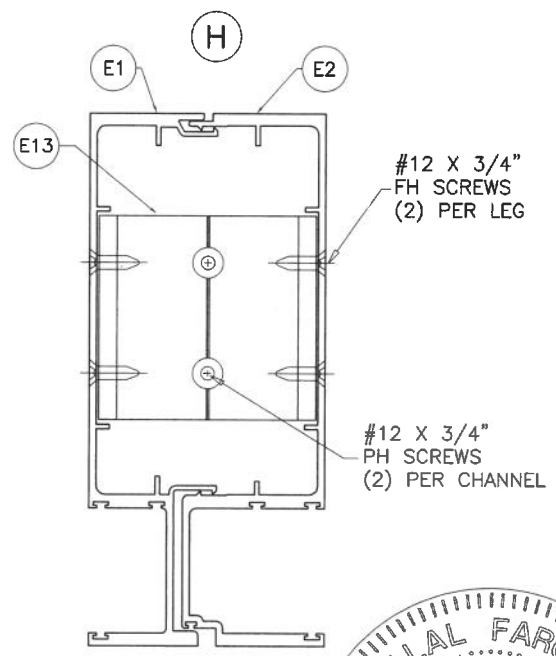
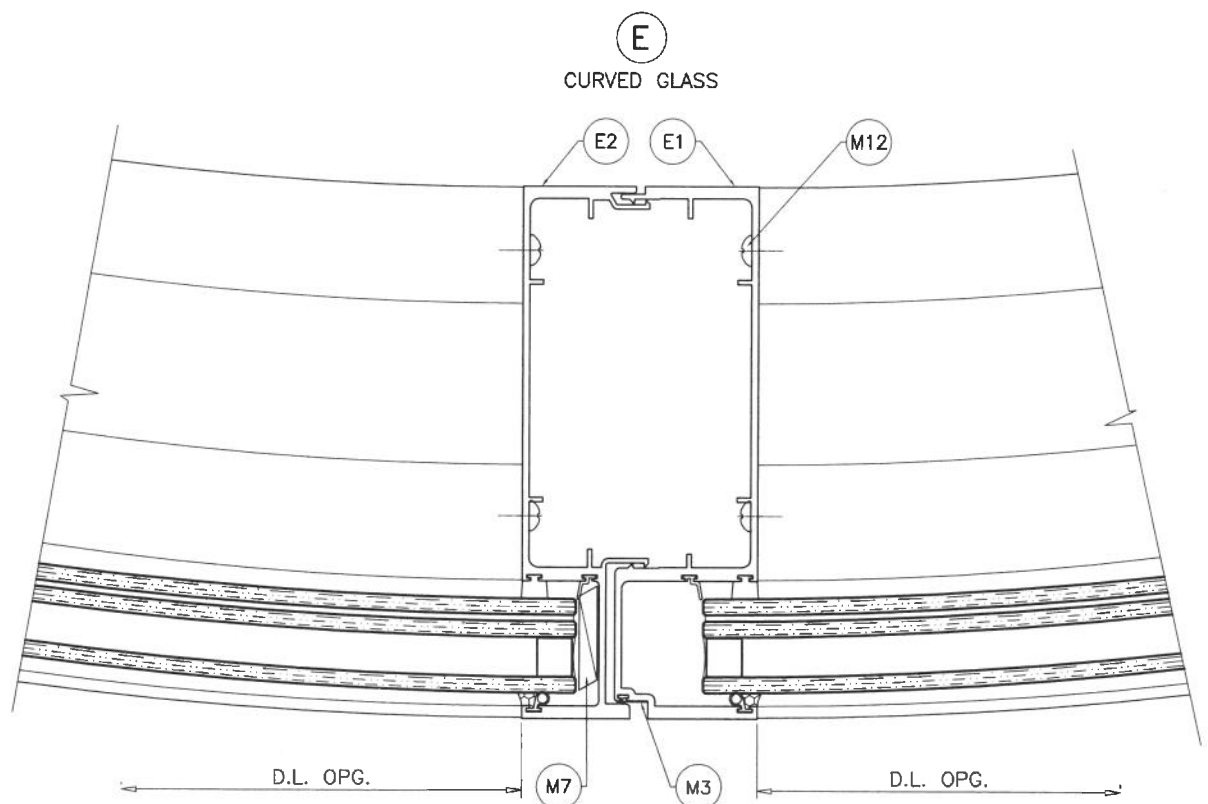
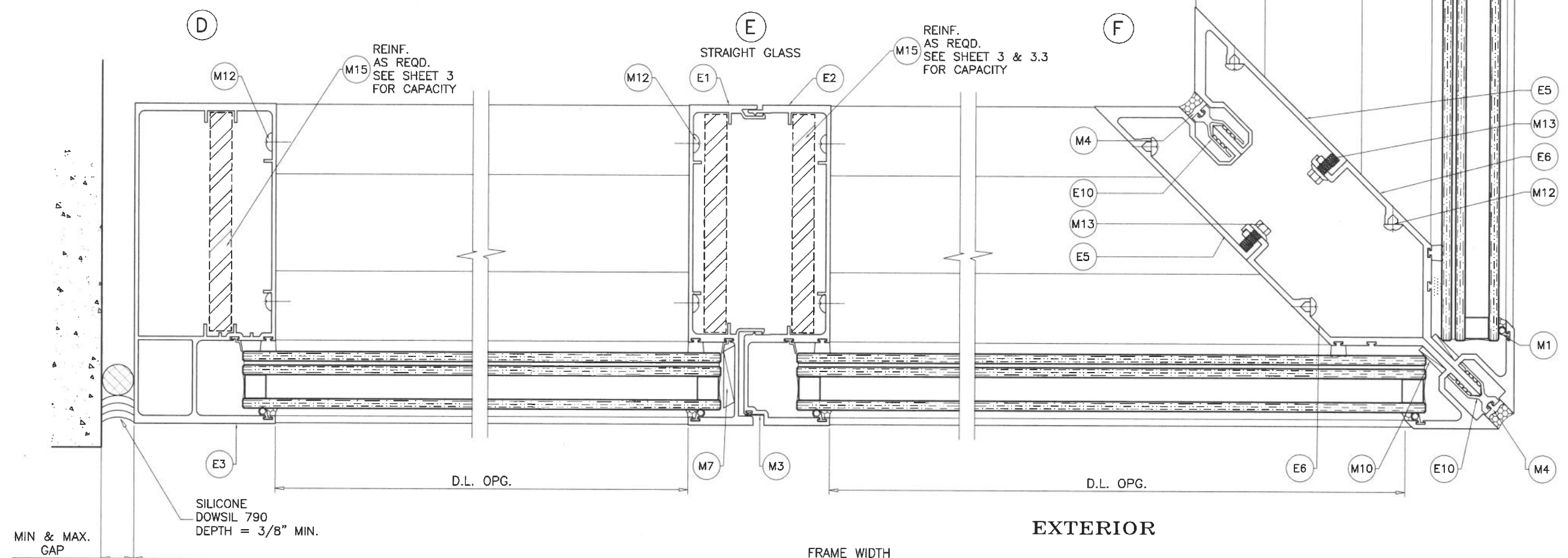
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:		date:	scale:	dr. by:	chk. by:
no	date	01-31-19	3/8" = 1"	TARIQ	

drawing no.

19-06F

sheet 5 of 9



MAX. FRAME HEIGHT	GAP 100% STRETCH		GAP 50% STRETCH	
	MIN.	MAX.	MIN.	MAX.
96"	5/16"	3/4"	1/2"	3/4"
120"	7/16"	3/4"	5/8"	3/4"
146"	1/2"	3/4"	3/4"	3/4"

NOTE:
PLEASE REFER TO SEALANT MANUFACTURER'S DATA AND APPLICATION MANUAL FOR COMPATABILITY OF SEALANT TO SUBSTRATE & WINDOW WALL 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.

Sealed: 9/4/2026



FL #29069

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COMP-ANL 19-08F-ES

ES-WW8701 ALUM WINDOW WALL SYSTEM (L.M.I.)

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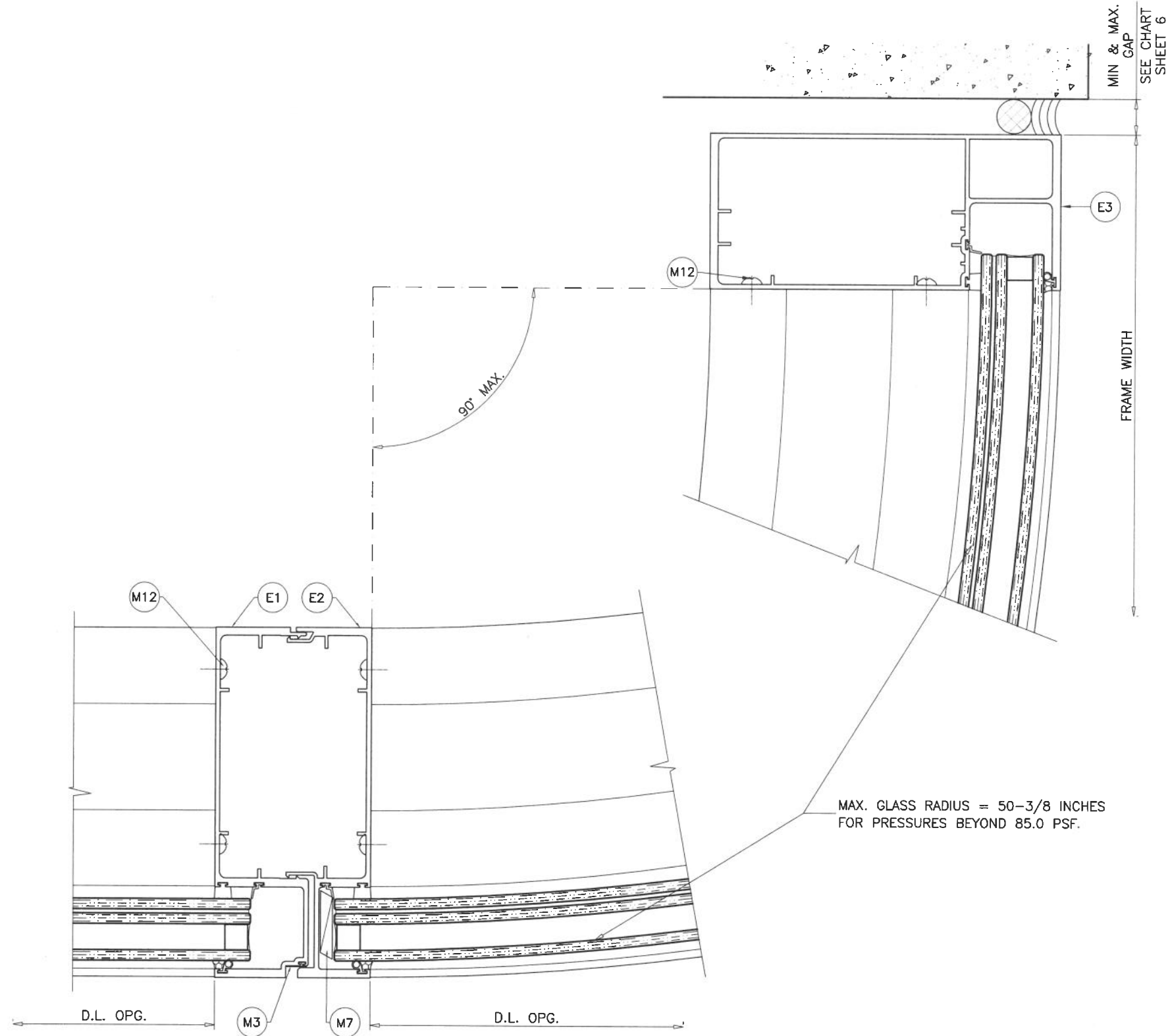
revisions:

no	date	by	description

date: 01-31-19 scale: 3/8" = 1" dr. by: TARIQ chk. by:

drawing no. **19-06F**

sheet **6** of **9**

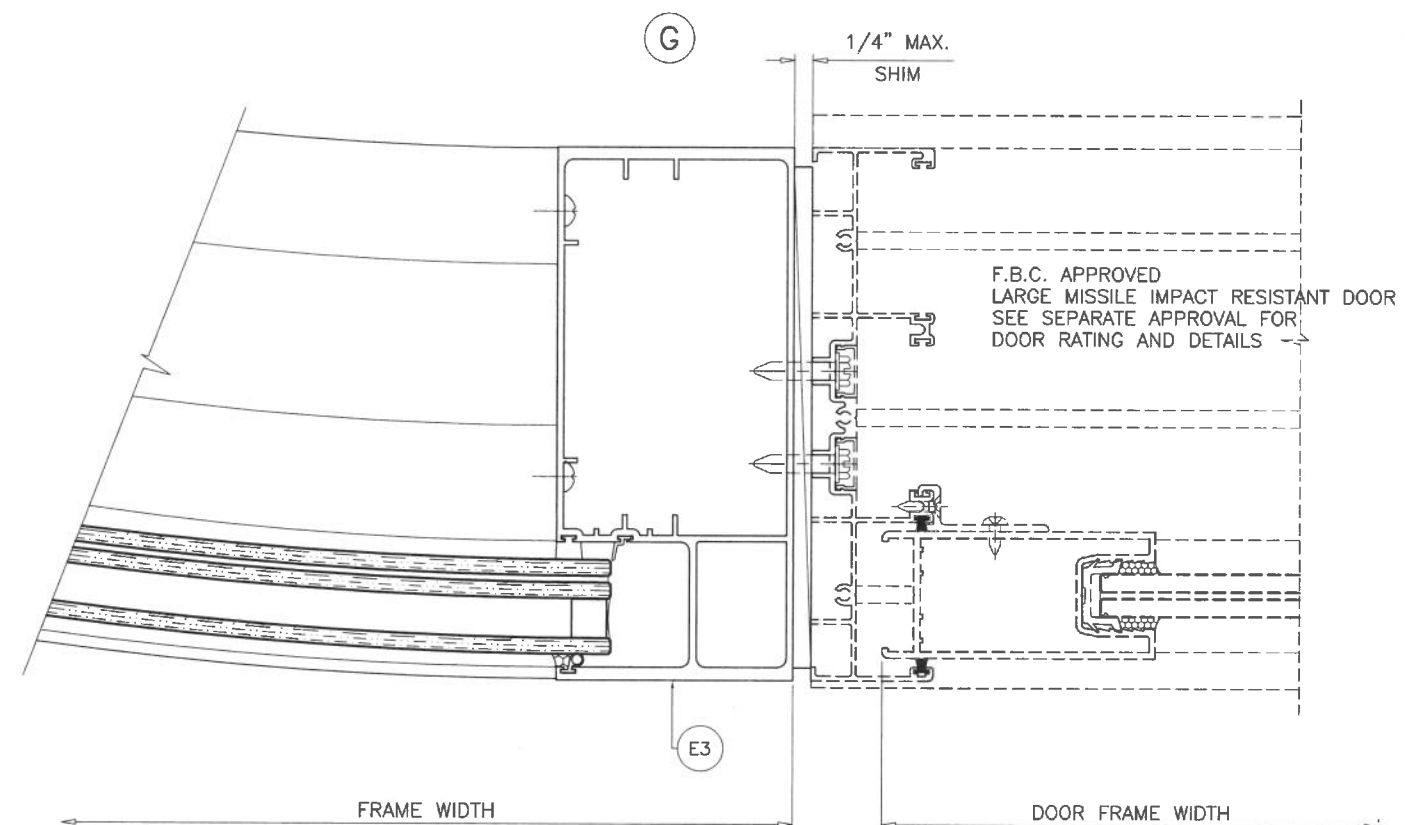
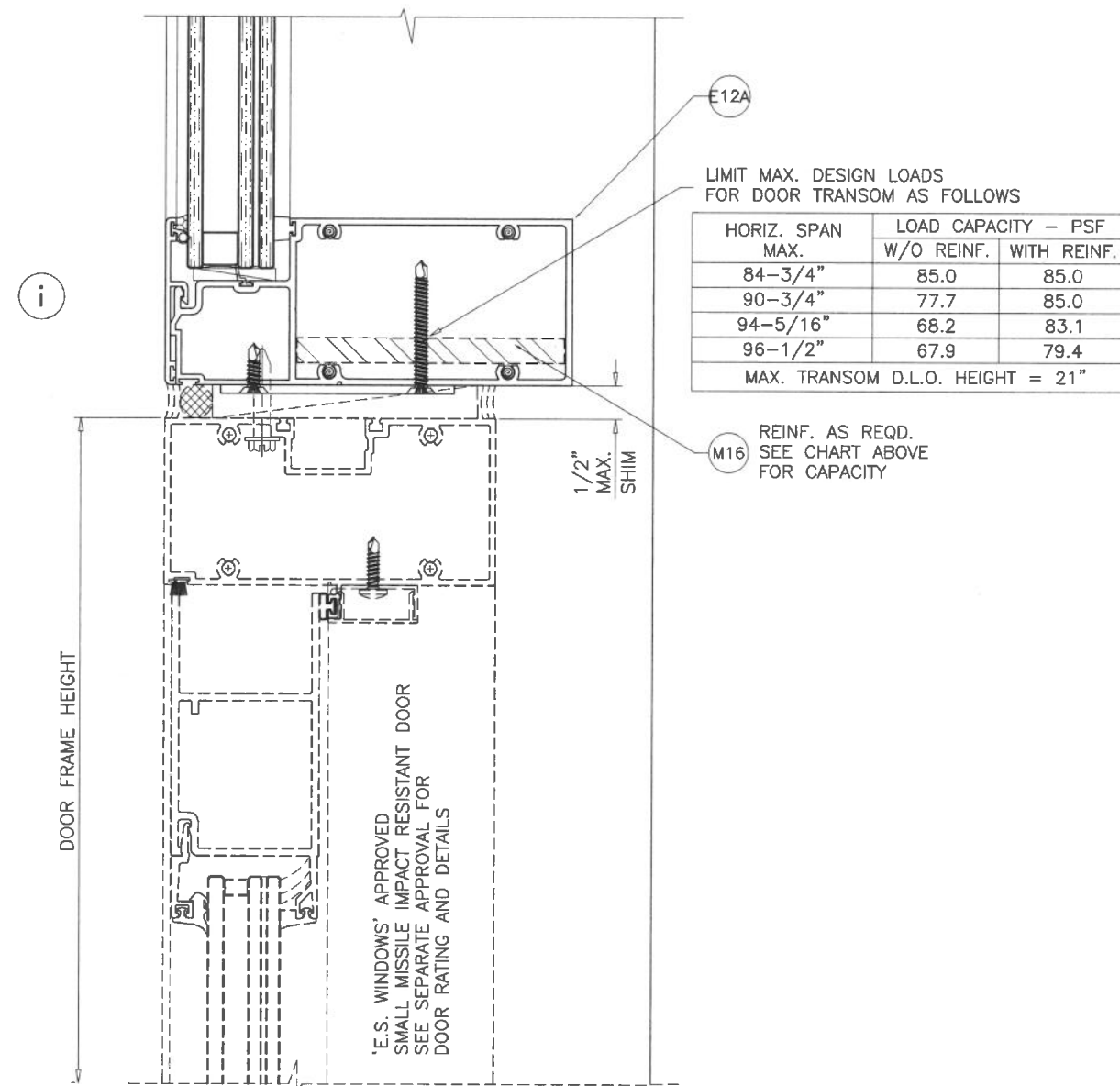


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FL #29069



AL-FAROOQ CORPORATION ENGINEERS & PRODUCT DEVELOPMENT 9360 SUNSET DRIVE, SUITE 220 MIAMI, FLORIDA 33173 TEL. (305) 264-8100 FAX. (305) 262-6978 COMP-ANL \ 19-08F-ES		E.S. WINDOWS, LLC 3550 N.W. 49 STREET MIAMI, FL. 33142 TEL. (305) 638-5151 FAX. (305) 638-5158		ES-WW8701 ALUM WINDOW WALL SYSTEM (L.M.I.)	
date: 01-31-19 scale: 3/8" = 1" dr. by: TARIQ chk. by:		revisions: no. date by description		drawing no. 19-06F sheet 7 of 9	



SEE SEPARATE APPROVAL FOR DESIGN LOAD CAPACITY OF
'E.S. WINDOWS' DOORS AND DOOR ANCHORS.

LOWER VALUES FROM DOORS APPROVAL OR WINDOWALL
SYSTEM CAPACITY CHARTS WILL APPLY TO ENTIRE SYSTEM.



Sealed: 9/4/2026

FL #29069

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9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
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COMP-ANL \ 19-08F-ES

ES-WW8701 ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
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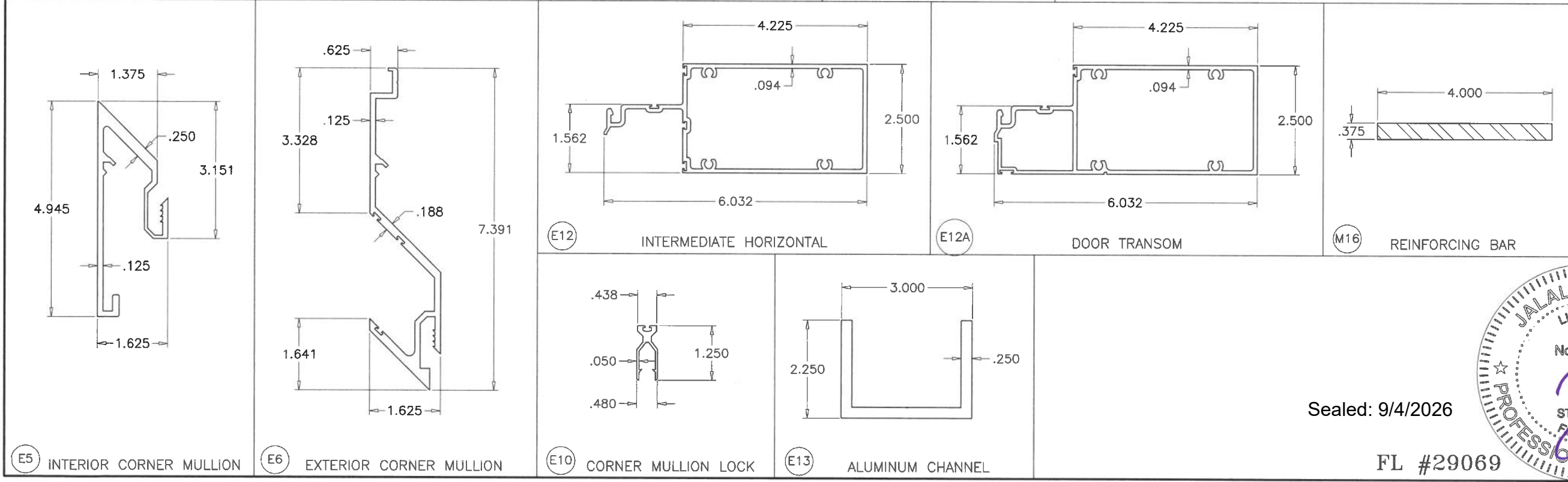
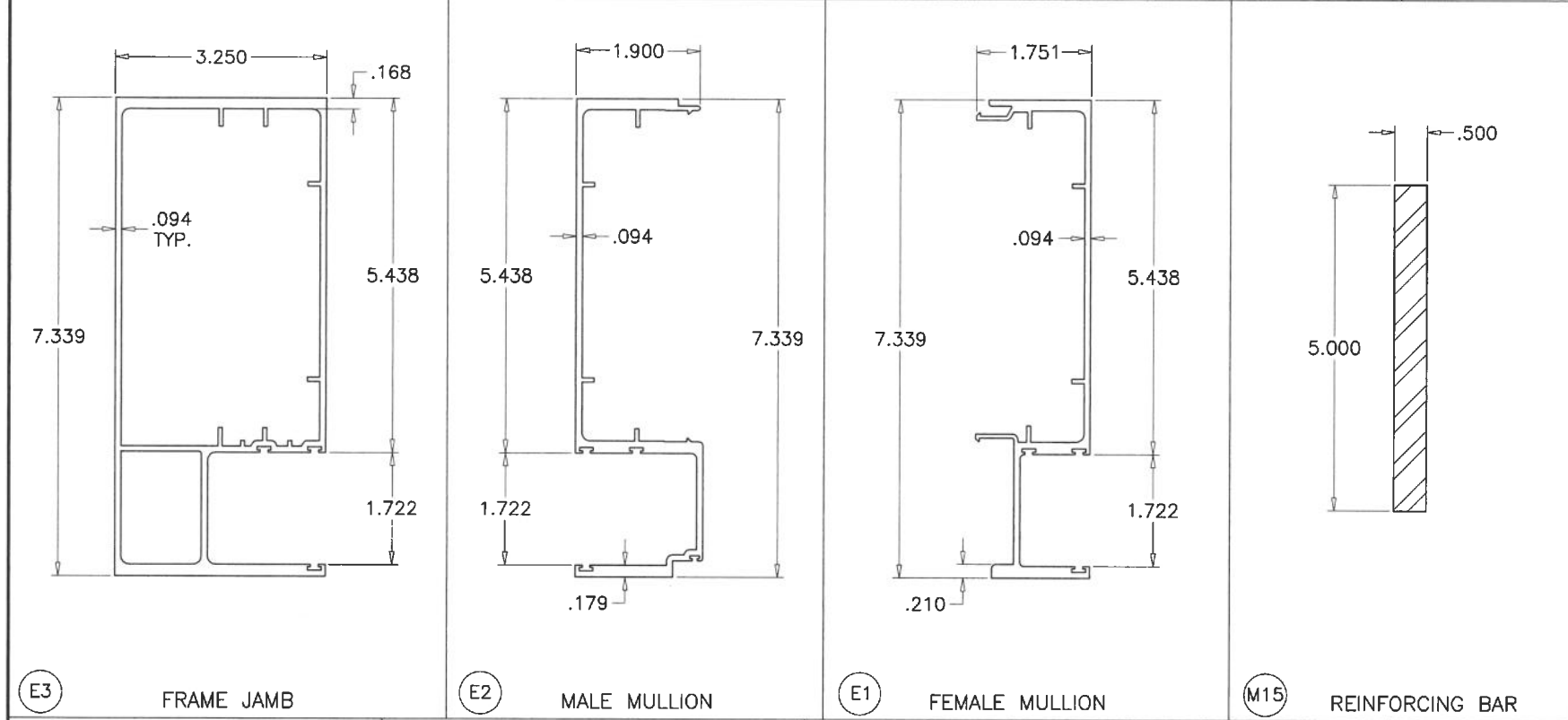
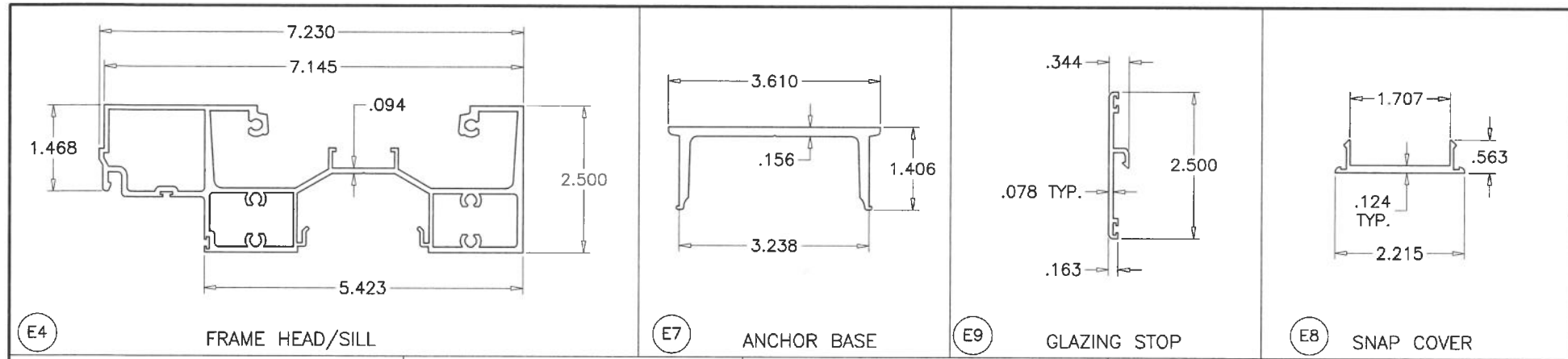
revisions:

no	date	by	description

date: 01-31-19
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
19-06F

sheet 7.1 of 9



Sealed: 9/4/2026

FL #29069



AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
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COMP-ANL\19-08F-ES

ES-WW8701 ALUM WINDOW WALL SYSTEM (L.M.I.)

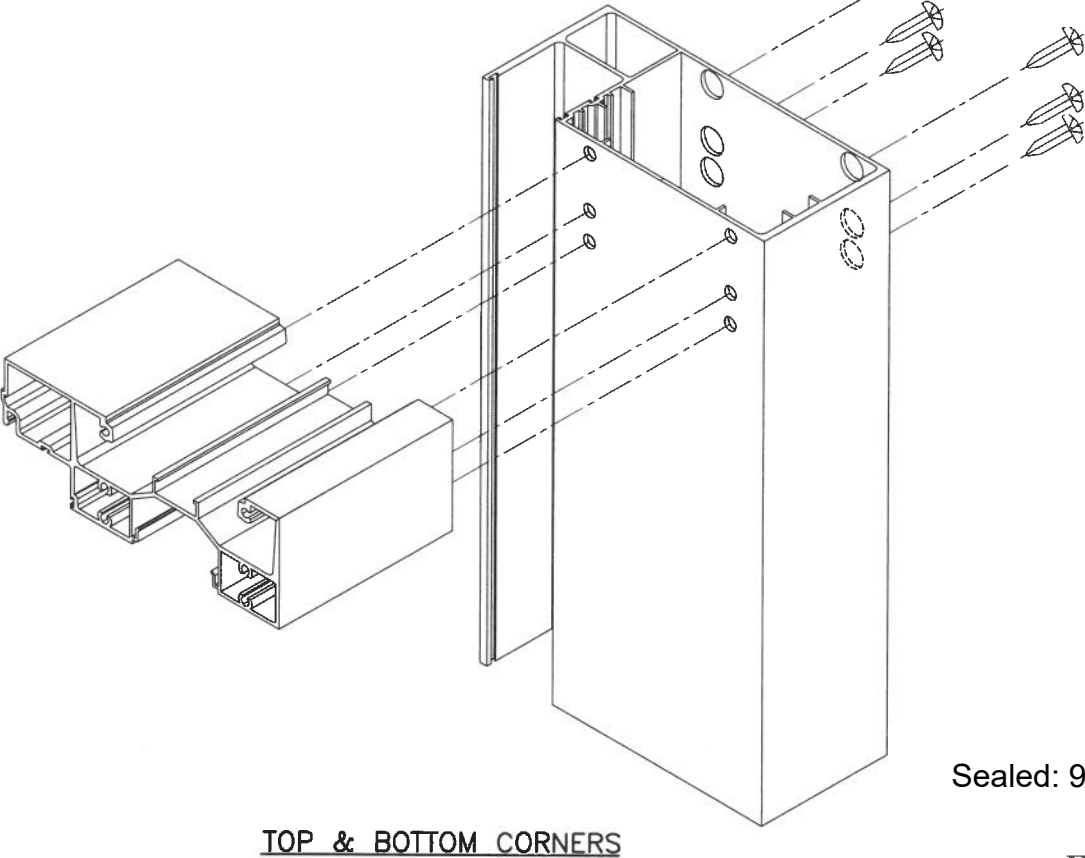
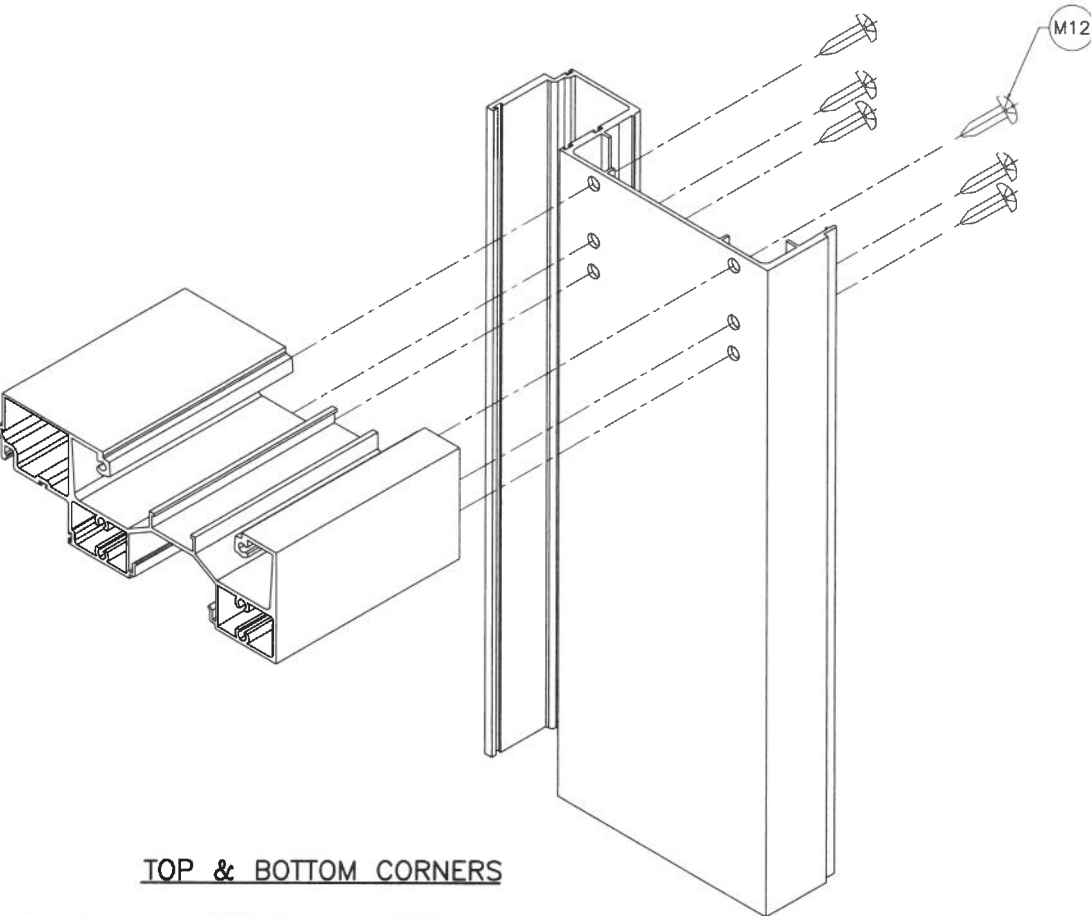
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:

no	date	by	description

date: 01-31-19 scale: 3/8" = 1" dr. by: TARIQ chk. by:
 drawing no. **19-06F** sheet 8 of 9

ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
E1	ES-WW8701-001	AS REQD.	FEMALE MULLION	6005-T5	-
E2	ES-WW8701-002	AS REQD.	MALE MULLION	6005-T5	-
E3	ES-WW8701-003	AS REQD.	FRAME JAMB	6005-T5	-
E4	ES-WW8701-004	AS REQD.	FRAME HEAD/SILL	6063-T6	-
E5	ES-WW8701-005	AS REQD.	INTERIOR CORNER MULLION	6005-T5	-
E6	ES-WW8701-006	AS REQD.	EXTERIOR CORNER MULLION	6005-T5	-
E7	ES-7004	AS REQD.	ANCHOR BASE (SEE SHEET 4 FOR LENGTHS)	6005-T5	-
E8	ES-7003A	AS REQD.	SNAP COVER	6063-T5	-
E9	ES-7006	AS REQD.	GLAZING STOP	6063-T6	-
E10	HP3060-059	AS REQD.	CORNER MULLION LOCK	6063-T6	-
E11	ALU-P-020	AS REQD.	SILL LEVELER	6063-T6	-
E12	ES-7022	AS REQD.	INTERMEDIATE HORIZONTAL	6005-T5	-
E12A	-	AS REQD.	DOOR TRANSOM	6005-T5	-
E13	-	AS REQD.	ALUMINUM CHANNEL	6061-T6	-
M1	ES-7000-G01	AS REQD.	EXTERIOR BULB SEAL	SILICONE	DUROMETER 65±5 SHORE A
M2	ES-7000-G02	AS REQD.	SILICONE DAM	SILICONE	DUROMETER 65±5 SHORE A
M3	ES-7000-G03	AS REQD.	SILICONE SEPARATER	SILICONE	DUROMETER 65±5 SHORE A
M4	V-003A	AS REQD.	MARINE GLAZING FOR GLASS	SILICONE	DUROMETER 65±5 SHORE A
M5	ES-7100-G01	AS REQD.	SPACER GASKET	SILICONE	DUROMETER 65±5 SHORE A
M7	ES7000-B01A	AS REQD.	SETTING BLOCK (INSUL. GLASS)	SILICONE	DUROMETER 80±5 SHORE A
M9	ES-4520-B02A	AS REQD.	SETTING BLOCK	SILICONE	DUROMETER 80±5 SHORE A
M10	80342A	AS REQD.	SIDE BLOCK	SILICONE	DUROMETER 80±5 SHORE A
M12	#12 X 1"	AS REQD.	FRAME ASSEMBLY SCREWS	-	PH SMS
M13	1/4-20 X 1/2"	AS REQD.	FRAME ASSEMBLY CORNER	ST/ST	PH SMS
M14	3/8-16 X 2"	AS REQD.	LEVELING SCREW	ST/ST	HH BOLT
M15	-	AS REQD.	REINFORCING BAR	STEEL	A36, Fu MIN. = 58 KSI
M16	-	AS REQD.	REINFORCING BAR	STEEL	A36, Fu MIN. = 58 KSI



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



Sealed: 9/4/2026

FL #29069

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revisions:	no	date	by	description
date:	01-31-19	scale:	3/8" = 1"	
dr. by:	TARIQ	chk. by:		
drawing no.	19-06F	sheet	9 of 9	

COMP-ANL\19-08F-ES