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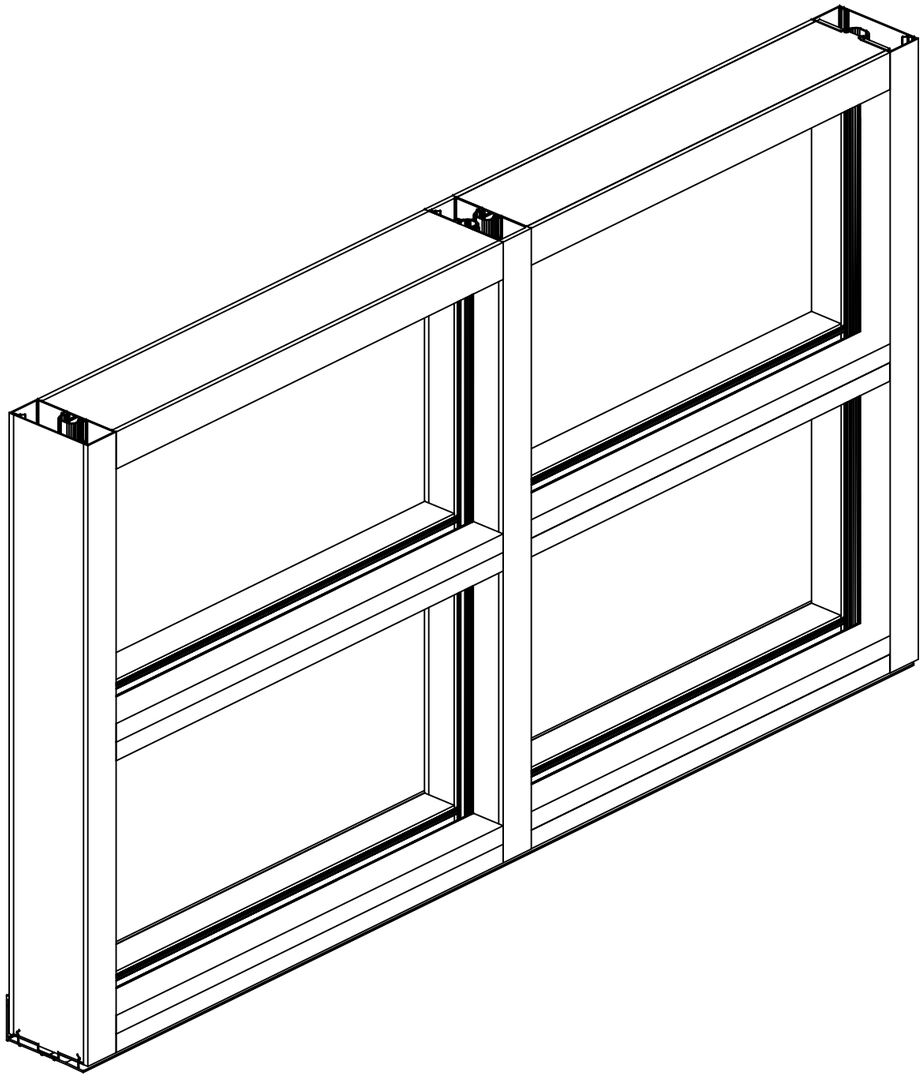
Oldcastle BuildingEnvelope®

FG-2000 STOREFRONT WITH NON IMPACT MONOLITHIC TEMPERED GLASS (HVHZ)



INDEX

SHEET # | DESCRIPTION

01	COVER & DESIGN CRITERIA
02	ELEVATION
03-04	GLASS LOADING TABLES
05	MULLION LOAD DETERMINATION
06-10	MULLION LOADING TABLES
11-20	FASTENER SCHEDULE & ANCHOR CHARTS
21-25	DETAILS
26-27	EXTRUSIONS / PARTS LIST
27	TOTAL

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No PE0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER

SEPTEMBER 26, 2023

Digitally signed by Frank Bennardo
Date: 2023.09.28 16:47:57 -04'00'

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. THIS PRODUCT EVALUATION IS VALID FOR USE IN **FLORIDA ONLY**. USE IN FLORIDA OR ANY OTHER STATE SHALL REQUIRE A REVIEW & CERTIFICATION BY A REGISTERED DESIGN PROFESSIONAL LICENSED IN THAT STATE, WHO SHALL BE RESPONSIBLE FOR THE CONTENT & PROPER ADAPTATION OF THIS GENERAL PERFORMANCE EVALUATION TO ANY SITE-SPECIFIC PROJECT. CONTACT THIS OFFICE FOR ASSISTANCE WITH YOUR PROJECT NEEDS.

GENERAL NOTES:

1. THE SYSTEM AND GLASS TYPES DESCRIBED HEREIN COMPLY AND HAVE BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 8TH EDITION (2023) PER
   a. ASTM E330-02, E331-00, E283-04
   b. TAS 202
   c. AAMA 501
   d. ANSI Z97.1-2014 (400 ft-lb. IMPACT)
   e. ALUMINUM DESIGN MANUAL 2015, ASCE 7-22
2. FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
3. GLASS UNIT(S) SHALL ME THE REQUIREMENTS OF ASTM E-1300.
4. DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
5. THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
6. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
7. THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
8. FASTENERS SHALL BE CADMIUM-PLATED OR OTHERWISE CORROSION-RESISTANT MATERIAL AND SHALL COMPLY WITH "SPECIFICATIONS FOR ALUMINUM STRUCTURES" SECTION J.3.7.2 BY THE ALUMINUM ASSOCIATION, INC., & ANY APPLICABLE FEDERAL, STATE, AND/OR LOCAL CODES.
9. REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
10. ENGINEER SEAL AFFIXED HERETO VALIDATE STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
11. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
12. PRESSURE VALUES ON THIS APPROVAL ARE (ASD) ALLOWABLE DESIGN PRESSURES.
13. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.
14. SAFEGUARDS MUST BE OBSERVED (NOT IN THIS CERTIFICATION)
15. IF SLOPED GLAZING IS NEEDED, IT SHALL BE ALLOWED UNDER SITE SPECIFIC ENGINEERING. DESIGN MUST BE CHECKED AND APPROVED BY A PROFESSIONAL ENGINEER AND THE MANUFACTURER(S).
16. UNITS SHALL BE LABELED IN ACCORDANCE WITH THE FLORIDA BUILDING COMMISSION AND THE FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION SPECIFICATION.

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FOR SITE-SPECIFIC DEVIATIONS
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FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#17688.1)

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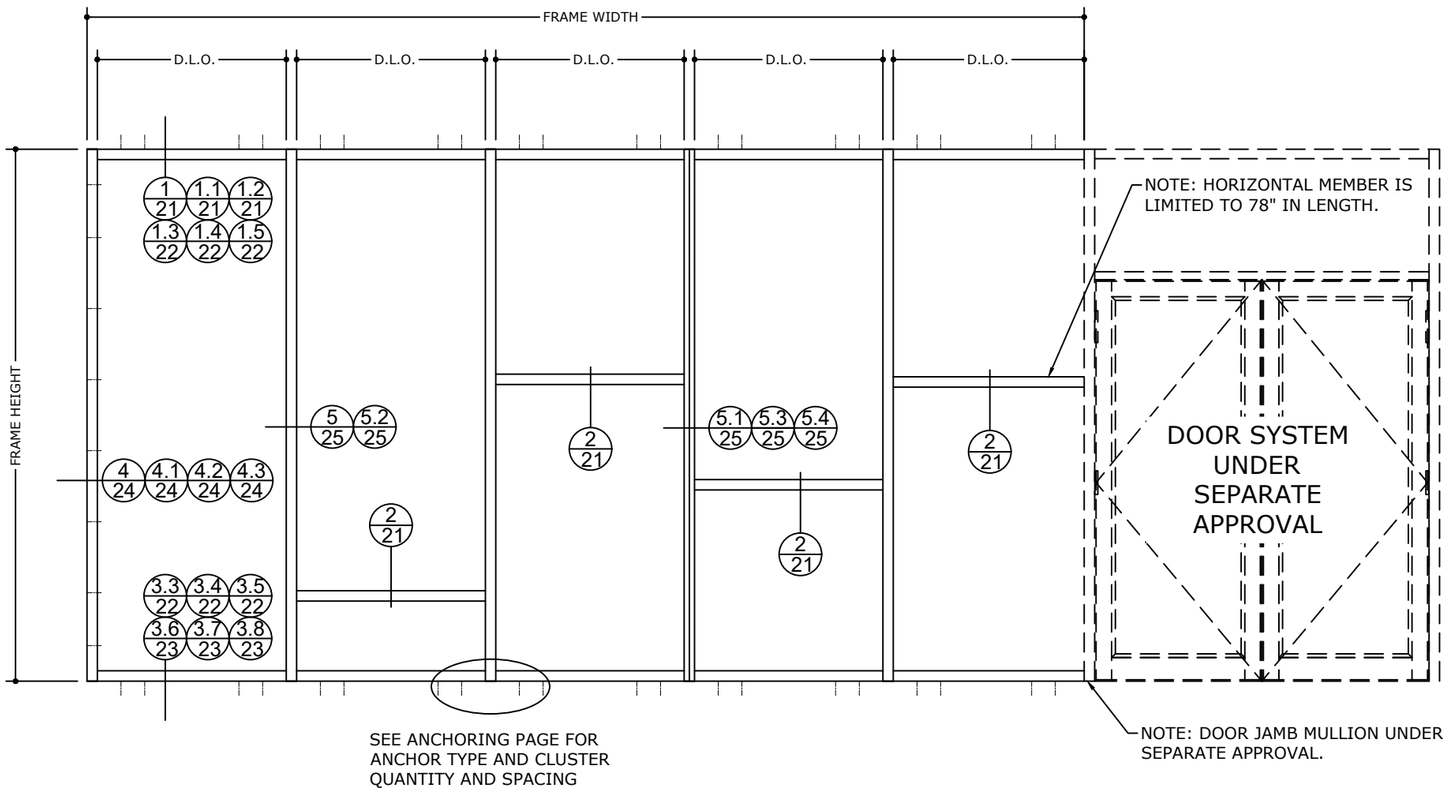
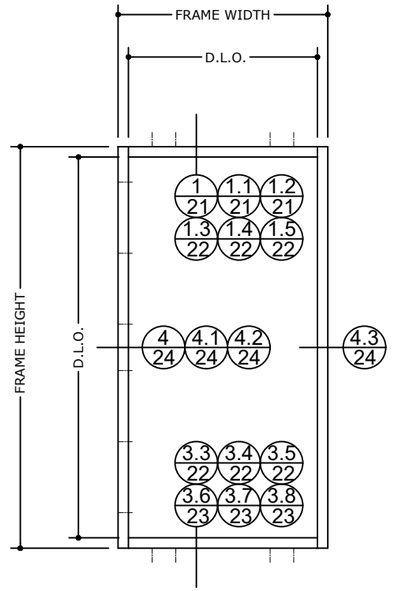


TYPICAL STOREFRONT ELEVATIONS



TYPICAL SINGLE PANEL OPENING

FRAME SIZE FOR SINGLE OPENINGS SHALL BE GOVERNED BY THE MAXIMUM ALLOWABLE D.L.O. DIMENSIONS DISPLAYED ON THE GLASS CHARTS

INSTRUCTIONS TO DETERMINE DESIGN PRESSURE RATING

STEP (1): USE THE GLASS LOADING TABLES TO DETERMINE THE ALLOWABLE PRESSURE OF THE GLASS.

STEP (2): USE THE MULLION LOADING TABLE TO DETERMINE THE ALLOWABLE PRESSURES FOR THE MULLIONS
NOTE: TO DETERMINE THE LOADS OF THE MULLIONS, SEE DIAGRAM ON PAGE 5

STEP (3): THE MINIMUM VALUE BETWEEN STEP (1) AND STEP (2) WILL DETERMINE THE DESIGN LOAD PRESSURE FOR THE STOREFRONT SYSTEM.

STEP (4): LESSER OF SILL / HEAD ALLOWABLE PRESSURE (PAGE 22, AND FASTENER SCHEDULE (PAGES 12-20) MUST MEET OR EXCEED DESIGN LOAD PRESSURE FOR THE STOREFRONT SYSTEM.

WATER INFILTRATION NOTE:

WATER RESISTANCE PER TAS 202 AND ASTM E331= 12 P.S.F

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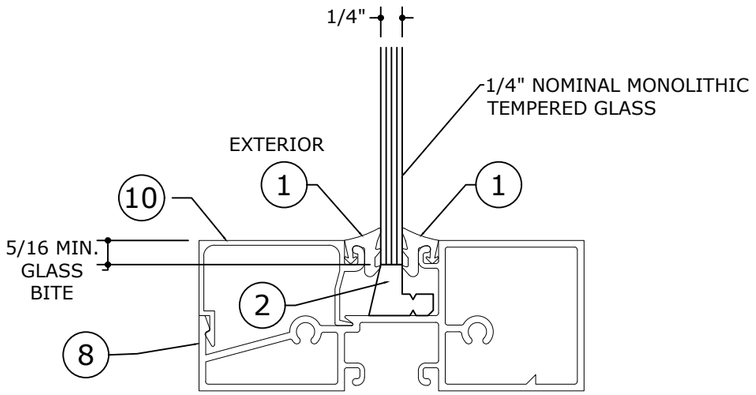
GLASS TYPE



GLASS TYPE G

GLAZING DETAIL

N.T.S.

GLASS SIZE = D.L.O. + 5/8"

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GLASS LOADING TABLE

MAX. D.L.O WIDTH (in)	MAX. D.L.O HEIGHT (in)	ALLOWABLE DESIGN PRESSURE (P.S.F)
18	306	+/- 60
24	234	
30	186	
36	150	
42	126	
46 1/4	116 1/2	
54	102	
60	90	
66	78	
72	78	

NOTE: D.L.O. WIDTH AND HEIGHT DIMENSIONS CAN BE REVERSED.

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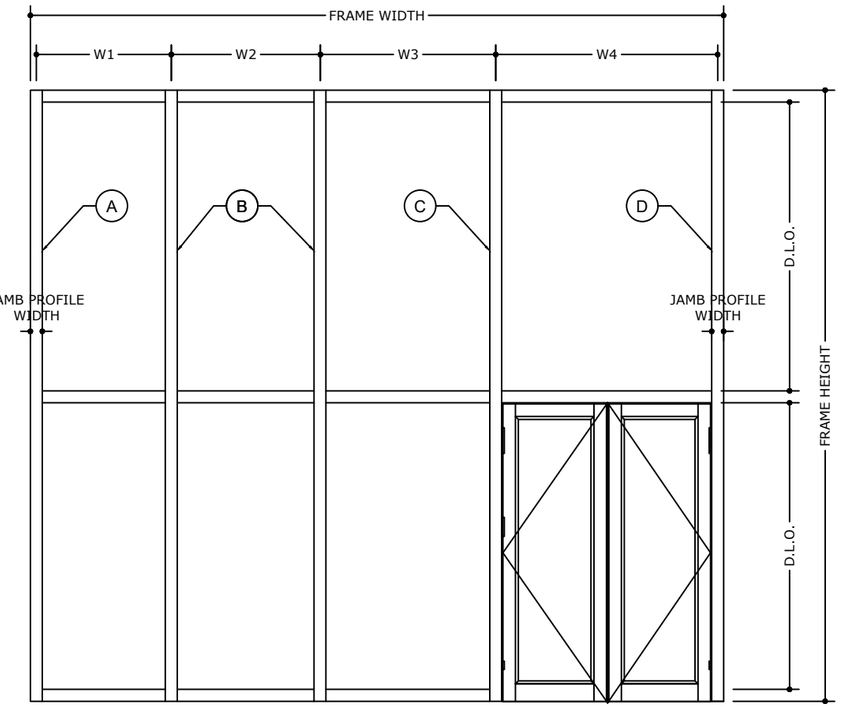
MULLION & JAMB LOAD DETERMINATION



LOAD DETERMINATION

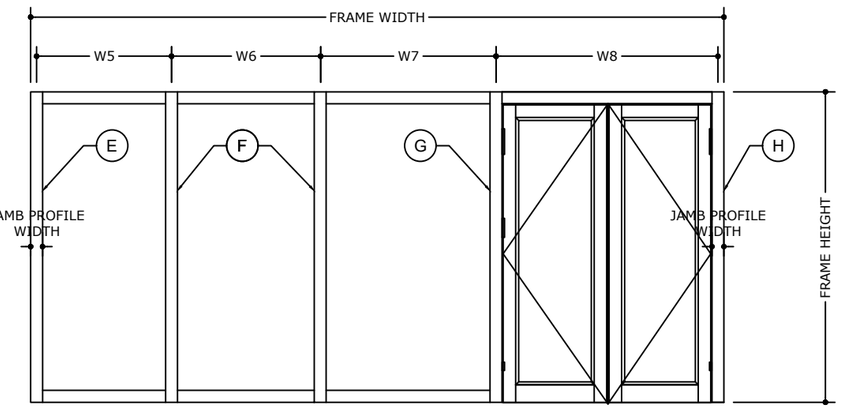
TRIBUTARY WIDTH A = $\frac{W1}{2}$ + 1/2" JAMB PROFILE WIDTH
(FOR STANDARD JAMB MULLION)

TRIBUTARY WIDTH B = LARGER OF $\frac{W1 + W2}{2}$ OR $\frac{W2 + W3}{2}$
(FOR STANDARD MULLION)

TRIBUTARY WIDTH C = $\frac{W3 + W4}{2}$
(FOR INTERMEDIATE DOOR MULLION)

TRIBUTARY WIDTH D = $\frac{W4}{2}$ + 1/2" JAMB PROFILE WIDTH
(FOR DOOR JAMB MULLION)

A E I	JAMB MULLION
B F	STANDARD MULLION
C G	DOOR JAMB INTERMEDIATE MULLION
D H	DOOR JAMB MULLION



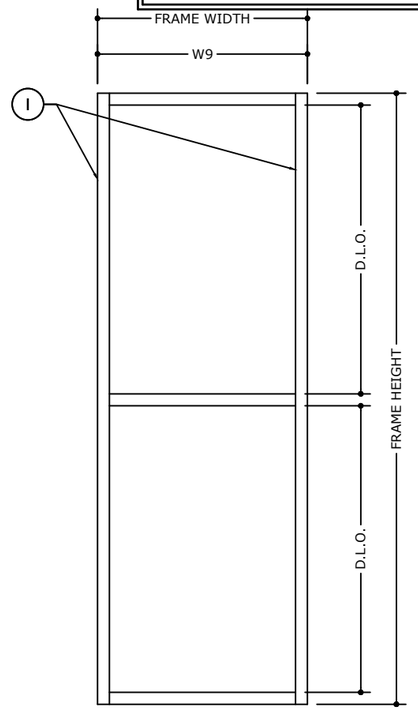
LOAD DETERMINATION

TRIBUTARY WIDTH E = $\frac{W5}{2}$ + 1/2" JAMB PROFILE WIDTH
(FOR STANDARD JAMB MULLION)

TRIBUTARY WIDTH F = LARGER OF $\frac{W5 + W6}{2}$ OR $\frac{W6 + W7}{2}$
(FOR STANDARD MULLION)

TRIBUTARY WIDTH G = $\frac{W7}{2} + \frac{W8}{4}$
(FOR INTERMEDIATE DOOR MULLION)

TRIBUTARY WIDTH H = $\frac{W8}{4}$ + 1/2" JAMB PROFILE WIDTH
(FOR DOOR JAMB MULLION)



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TRIBUTARY WIDTH I = $\frac{W9}{2}$

(FOR STANDARD JAMB MULLION)

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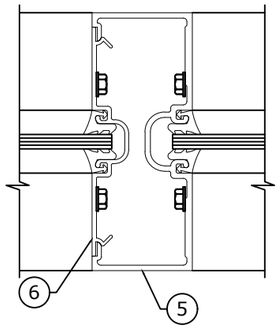
FG-2000 STOREFRONT SINGLE SPAN MULLIONS



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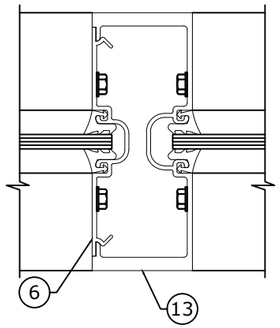

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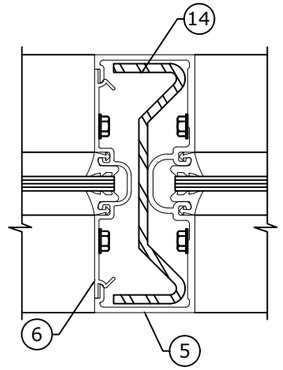

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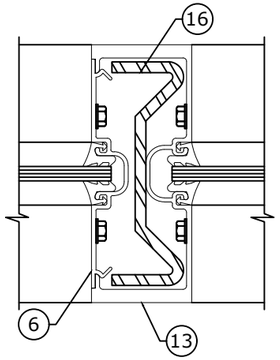

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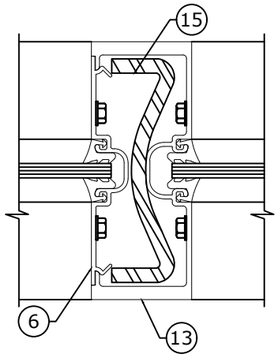

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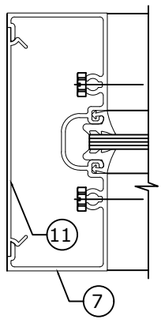

J1

NOTE:
ALL STEEL REINFORCEMENT MUST BE SHIMMED TIGHT.

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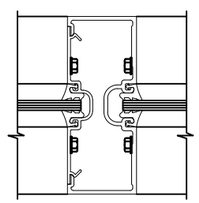
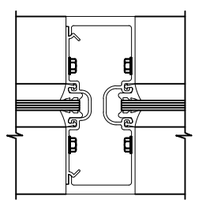
MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS

MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
36	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	60	60	60	60	60	60	60	60
	80	60	60	60	60	60	60	60	60
42	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	60	60	60	60	60	60	60	60
	80	60	60	60	60	60	60	60	60
48	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	60	60	60	60	60	60	60	60
	80	60	60	60	60	60	60	60	60

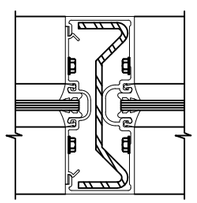
MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
54	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	60	60	60	60	60	60	60	60
	80	60	60	60	60	60	60	60	60
60	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60
64	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	60	60	60	60	60	60	60	60
	60	60	60	60	60	60	60	60	60
	66	60	60	60	60	60	60	60	60
	72	60	60	60	60	60	60	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60



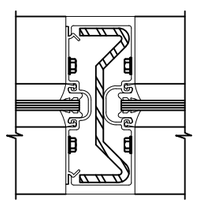
M1
DETAIL 5



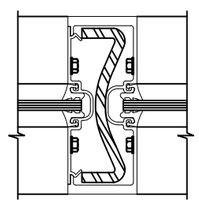
M2
DETAIL 5.2



M3
DETAIL 5.1



M4
DETAIL 5.4



M5
DETAIL 5.3

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

SEPTEMBER 26, 2023

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FLORIDA STATEWIDE APPROVAL (FSA FL#17688.1)

REMARKS	DRWN	CHKD	DATE
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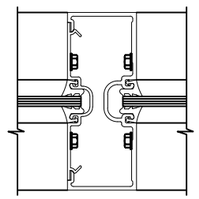
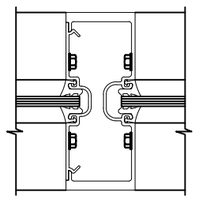
MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS

MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
72	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	60	60	60	60	60	60	60	60
	48	60	60	60	60	60	60	60	60
	54	56	56	60	60	60	60	60	60
	60	54	54	60	60	60	60	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60
78	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	60	60	60	60	60	60	60	60
	42	57	57	60	60	60	60	60	60
	48	53	53	60	60	60	60	60	60
	54	50	50	60	60	60	60	60	60
	60	-	-	-	-	-	-	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60
84	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	58	58	60	60	60	60	60	60
	42	52	52	60	60	60	60	60	60
	48	48	48	60	60	60	60	60	60
	54	44	44	60	60	60	60	60	60
	60	-	-	-	-	-	-	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60

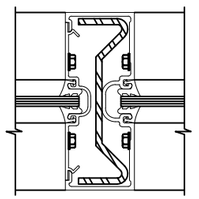
MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
90	24	60	60	60	60	60	60	60	60
	30	60	60	60	60	60	60	60	60
	36	53	53	60	60	60	60	60	60
	42	47	47	60	60	60	60	60	60
	48	43	43	60	60	60	60	60	60
	54	-	-	-	-	-	-	60	60
	60	-	-	-	-	-	-	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	60	60
	78	-	-	-	-	-	-	60	60
	80			-	-	-	-	60	60
96	24	60	60	60	60	60	60	60	60
	30	56	56	60	60	60	60	60	60
	36	49	49	60	60	60	60	60	60
	42	43	43	60	60	60	60	60	60
	48	40	40	55	55	55	55	60	60
	54	-	-	-	-	-	-	60	60
	60	-	-	-	-	-	-	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	60	60
	78	-	-	-	-	-	-	60	60
	80	-	-	-	-	-	-	60	60
102	24	60	60	60	60	60	60	60	60
	30	52	52	60	60	60	60	60	60
	36	45	45	60	60	60	60	60	60
	42	40	40	54	54	54	54	60	60
	48	-	-	-	-	-	-	60	60
	54	-	-	-	-	-	-	60	60
	60	-	-	-	-	-	-	60	60
	66	-	-	-	-	-	-	60	60
	72	-	-	-	-	-	-	58	58



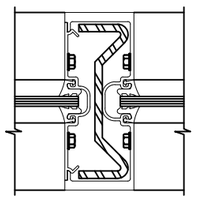
M1
DETAIL 5



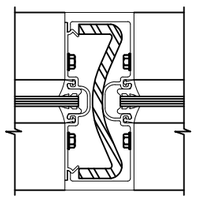
M2
DETAIL 5.2



M3
DETAIL 5.1



M4
DETAIL 5.4



M5
DETAIL 5.3

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

SEPTEMBER 26, 2023

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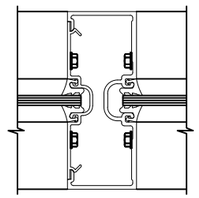
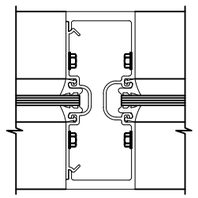
MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS

MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
108	24	58	58	60	60	60	60	60	60
	30	47	47	60	60	60	60	60	60
	36	40	40	55	55	51	51	60	60
	42	34	34	47	47	45	45	60	60
	48	-	-	-	-	-	-	60	60
	54	-	-	-	-	-	-	60	60
	60	-	-	-	-	-	-	59	59
	66	-	-	-	-	-	-	55	55
114	24	52	52	60	60	60	60	60	60
	30	42	42	58	58	52	52	60	60
	36	35	35	49	49	43	43	60	60
	42	-	-	-	-	-	-	60	60
	48	-	-	-	-	-	-	60	60
	54	-	-	-	-	-	-	58	58
	60	-	-	-	-	-	-	54	54
	66	-	-	-	-	-	-	51	51
120	24	47	47	60	60	55	55	60	60
	30	38	38	52	52	44	44	60	60
	36	32	32	44	44	37	37	60	60
	42	-	-	-	-	-	-	60	60
	48	-	-	-	-	-	-	60	60
	54	-	-	-	-	-	-	54	54
	60	-	-	-	-	-	-	50	50
	64	-	-	-	-	-	-	50	50

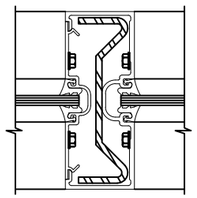
MULLION LOADING CHART		MULLION TYPE M1		MULLION TYPE M2		MULLION TYPE M3		MULLION TYPE M4 - M5	
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F	(+) P.S.F	(-) P.S.F
126	24	41	41	59	59	47	47	60	60
	30	33	33	47	47	38	38	60	60
	36	28	28	40	40	32	32	60	60
	42	-	-	-	-	-	-	60	60
	48	-	-	-	-	-	-	54	54
	54	-	-	-	-	-	-	48	48
	60	-	-	-	-	-	-	44	44
	64	-	-	-	-	-	-	42	42
132	24	36	36	53	53	41	41	60	60
	30	29	29	43	43	33	33	60	60
	36	-	-	-	-	-	-	60	60
	42	-	-	-	-	-	-	55	55
	48	-	-	-	-	-	-	49	49
	54	-	-	-	-	-	-	44	44
	60	-	-	-	-	-	-	40	40
138	24	-	-	49	49	36	36	60	60
	30	-	-	39	39	29	29	60	60
	36	-	-	-	-	-	-	58	58
	42	-	-	-	-	-	-	50	50
	48	-	-	-	-	-	-	44	44
	54	-	-	-	-	-	-	40	40
	60	-	-	-	-	-	-	38	38
144	24	-	-	45	45	31	31	60	60
	30	-	-	36	36	25	25	60	60
	36	-	-	-	-	-	-	53	53
	42	-	-	-	-	-	-	46	46
	48	-	-	-	-	-	-	40	40
	54	-	-	-	-	-	-	38	38



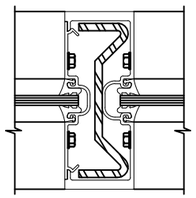
M1
DETAIL 5



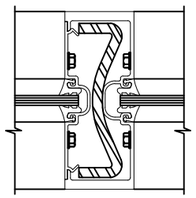
M2
DETAIL 5.2



M3
DETAIL 5.1



M4
DETAIL 5.4



M5
DETAIL 5.3

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

SEPTEMBER 26, 2023

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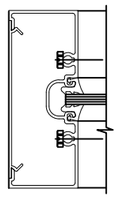
MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD JAMBS

JAMB LOADING CHART		JAMB TYPE J1
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+ / -) P.S.F
36	24	60
	30	60
	36	60
	42	60
	48	60
	54	60
	60	60
	66	60
	72	60
	78	60
	80	60
42	24	60
	30	60
	36	60
	42	60
	48	60
	54	60
	60	60
	66	60
	72	60
	78	60
48	24	60
	30	60
	36	60
	42	60
	48	60
	54	60
	60	60
	66	60
	72	60

JAMB LOADING CHART		JAMB TYPE J1
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+ / -) P.S.F
54	24	60
	30	60
	36	60
	42	59
	48	57
	54	56
	60	56
60	24	60
	30	60
	36	54
	42	50
	48	47
	54	46
64	24	60
	30	56
	36	49
	42	45
	48	43
	54	41
72	24	57
	30	48
	36	42
	42	38
	48	35
78	24	52
	30	43
	36	38
	42	34
84	24	47
	30	39
	36	34

JAMB LOADING CHART		JAMB TYPE J1
FRAME HEIGHT (in)	TRIBUTARY WIDTH (in)	(+ / -) P.S.F
90	24	44
	30	36
	36	31
99	24	40
	30	31
102	24	36
	30	29
108	24	32
	30	26
114	24	29
	30	23
118	24	27
120	24	26
126	24	23
132	24	20
138	24	17
144	24	15



J1
DETAIL 4.3

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

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-	-	-	-
-	-	-	-

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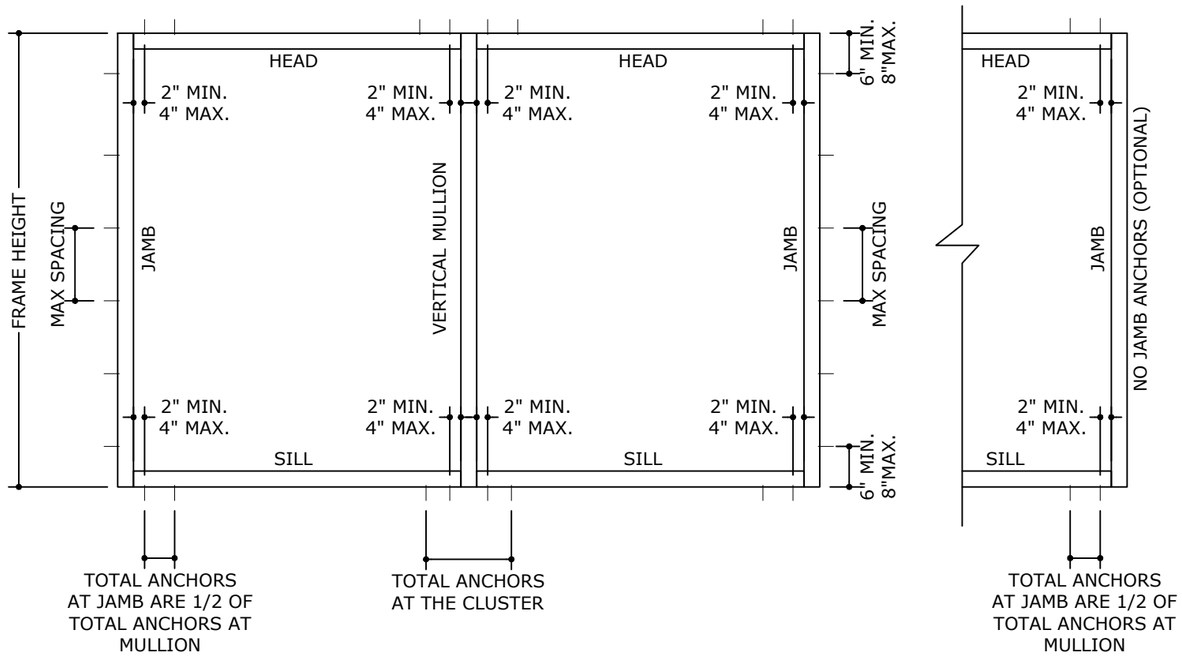
FASTENER SCHEDULE



FASTENER SCHEDULE							
ANCHOR TYPE	**ANCHOR DIAMETER**	**TYPE**	**MANUFACTURER**	**SUBSTRATE**	**MIN EMBEDMENT (IN)**	**MIN EDGE DISTANCE (IN)**	**SPACING (IN)**
A	1/4"	ULTRACON ANCHOR	DEWALT	POURED CONCRETE 3000 PSI MIN	1-3/4	2-1/2	3" MIN. 4" MAX.
B	1/4"-14	DRIL-FLEX HEX WASHER HEAD SELF DRILLING SCREW	DEWALT	16 GA MIN. STUD ASTM A-653 GRADE 33 STEEL	FULL	1-1/2	3" MIN. 4" MAX.
				1/8" STEEL-A36			
				1/8" ALUMINUM-6063-T6			
C	1/4"	ULTRACON ANCHOR OR LAG SCREW	DEWALT	2X WOOD BUCK G=0.55	1-1/2	1-1/2	3" MIN. 4" MAX.

NOTE: REFER TO PAGE 5 FOR TRIBUTARY WIDTH CALCULATIONS FOR USE WITH ANCHOR TABLES.

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD & SILL CONNECTIONS-ANCHOR TYPE A

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE A					
		2		4		6	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
36	24	60	18''O.C.	60	18''O.C.	60	18''O.C.
	36	60	18''O.C.	60	18''O.C.	60	18''O.C.
	48	60	18''O.C.	60	18''O.C.	60	18''O.C.
	60	60	18''O.C.	60	18''O.C.	60	18''O.C.
	72	50	18''O.C.	60	18''O.C.	60	18''O.C.
	80	42	18''O.C.	60	18''O.C.	60	18''O.C.
48	24	60	24''O.C.	60	24''O.C.	60	24''O.C.
	36	60	24''O.C.	60	24''O.C.	60	24''O.C.
	48	56	24''O.C.	60	24''O.C.	60	24''O.C.
	60	45	24''O.C.	60	24''O.C.	60	24''O.C.
	72	37	24''O.C.	60	24''O.C.	60	24''O.C.
	80	32	24''O.C.	60	24''O.C.	60	24''O.C.
60	24	60	30''O.C.	60	30''O.C.	60	30''O.C.
	36	60	30''O.C.	60	30''O.C.	60	30''O.C.
	48	45	30''O.C.	60	30''O.C.	60	30''O.C.
	60	36	30''O.C.	60	30''O.C.	60	30''O.C.
	72	30	30''O.C.	60	30''O.C.	60	30''O.C.
	80	25	30''O.C.	51	30''O.C.	60	20''O.C.
72	24	60	36''O.C.	60	36''O.C.	60	36''O.C.
	36	50	36''O.C.	60	36''O.C.	60	36''O.C.
	48	37	36''O.C.	60	36''O.C.	60	36''O.C.
	60	30	36''O.C.	60	36''O.C.	60	36''O.C.
	72	25	36''O.C.	50	36''O.C.	60	24''O.C.
	80	21	36''O.C.	42	36''O.C.	60	24''O.C.

FRANK BENNARDO, PE
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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE A

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE A									
		2		4		6		8		10	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
84	24	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.
	36	42	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.
	48	32	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.
	60	25	42''O.C.	51	42''O.C.	60	28''O.C.	60	28''O.C.	60	28''O.C.
	72	21	42''O.C.	42	42''O.C.	60	28''O.C.	60	28''O.C.	60	28''O.C.
	80	18	42''O.C.	36	42''O.C.	55	28''O.C.	60	21''O.C.	60	21''O.C.
96	24	56	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.
	36	37	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.
	48	28	48''O.C.	56	48''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.
	60	22	48''O.C.	45	48''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.
	72	18	48''O.C.	37	48''O.C.	56	32''O.C.	60	24''O.C.	60	24''O.C.
	80	16	48''O.C.	32	48''O.C.	48	32''O.C.	60	24''O.C.	60	24''O.C.
108	24	50	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.
	36	33	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.
	48	25	54''O.C.	50	54''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	60	20	54''O.C.	40	54''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	72	16	54''O.C.	33	54''O.C.	50	36''O.C.	60	27''O.C.	60	27''O.C.
	80	14	54''O.C.	28	54''O.C.	42	36''O.C.	57	27''O.C.	60	22''O.C.
120	24	45	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.
	36	30	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.
	48	22	60''O.C.	45	60''O.C.	60	40''O.C.	60	40''O.C.	60	40''O.C.
	60	18	60''O.C.	36	60''O.C.	54	40''O.C.	60	30''O.C.	60	30''O.C.
	72	15	60''O.C.	30	60''O.C.	45	40''O.C.	60	30''O.C.	60	30''O.C.
	80	12	60''O.C.	25	60''O.C.	38	40''O.C.	51	30''O.C.	60	24''O.C.

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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE A

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE A											
		2		4		6		8		10		12	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
132	24	40	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.
	36	27	66''O.C.	54	66''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.
	48	20	66''O.C.	40	66''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.
	60	16	66''O.C.	32	66''O.C.	49	44''O.C.	60	33''O.C.	60	33''O.C.	60	33''O.C.
	72	13	66''O.C.	27	66''O.C.	40	44''O.C.	54	33''O.C.	60	26''O.C.	60	26''O.C.
	80	11	66''O.C.	23	66''O.C.	35	44''O.C.	46	33''O.C.	58	26''O.C.	60	22''O.C.
144	24	37	72''O.C.	60	72''O.C.	60	72''O.C.	60	72''O.C.	60	72''O.C.	60	72''O.C.
	36	25	72''O.C.	50	72''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.
	48	18	72''O.C.	37	72''O.C.	56	48''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	60	15	72''O.C.	30	72''O.C.	45	48''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	72	12	72''O.C.	25	72''O.C.	37	48''O.C.	50	36''O.C.	60	29''O.C.	60	29''O.C.
	80	10	72''O.C.	21	72''O.C.	32	48''O.C.	42	36''O.C.	53	29''O.C.	60	24''O.C.

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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE B

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE B			
		2		4	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
36	24	60	18''O.C.	60	18''O.C.
	36	60	18''O.C.	60	18''O.C.
	48	60	18''O.C.	60	18''O.C.
	60	60	18''O.C.	60	18''O.C.
	72	60	18''O.C.	60	18''O.C.
	80	60	18''O.C.	60	18''O.C.
48	24	60	24''O.C.	60	24''O.C.
	36	60	24''O.C.	60	24''O.C.
	48	60	24''O.C.	60	24''O.C.
	60	60	24''O.C.	60	24''O.C.
	72	60	24''O.C.	60	24''O.C.
	80	60	24''O.C.	60	24''O.C.
60	24	60	30''O.C.	60	30''O.C.
	36	60	30''O.C.	60	30''O.C.
	48	60	30''O.C.	60	30''O.C.
	60	60	30''O.C.	60	30''O.C.
	72	60	30''O.C.	60	30''O.C.
	80	57	30''O.C.	60	30''O.C.
72	24	60	36''O.C.	60	36''O.C.
	36	60	36''O.C.	60	36''O.C.
	48	60	36''O.C.	60	36''O.C.
	60	60	36''O.C.	60	36''O.C.
	72	55	36''O.C.	60	36''O.C.
	80	47	36''O.C.	60	36''O.C.

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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE B

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE B					
		2		4		6	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
84	24	60	42''O.C.	60	42''O.C.	60	42''O.C.
	36	60	42''O.C.	60	42''O.C.	60	42''O.C.
	48	60	42''O.C.	60	42''O.C.	60	42''O.C.
	60	57	42''O.C.	60	42''O.C.	60	42''O.C.
	72	47	42''O.C.	60	42''O.C.	60	42''O.C.
	80	40	42''O.C.	60	42''O.C.	60	42''O.C.
96	24	60	48''O.C.	60	48''O.C.	60	48''O.C.
	36	60	48''O.C.	60	48''O.C.	60	48''O.C.
	48	60	48''O.C.	60	48''O.C.	60	48''O.C.
	60	50	48''O.C.	60	48''O.C.	60	48''O.C.
	72	41	48''O.C.	60	48''O.C.	60	48''O.C.
	80	35	48''O.C.	60	48''O.C.	60	48''O.C.
108	24	60	54''O.C.	60	54''O.C.	60	54''O.C.
	36	60	54''O.C.	60	54''O.C.	60	54''O.C.
	48	55	54''O.C.	60	54''O.C.	60	54''O.C.
	60	44	54''O.C.	60	54''O.C.	60	54''O.C.
	72	37	54''O.C.	60	54''O.C.	60	54''O.C.
	80	31	54''O.C.	60	54''O.C.	60	54''O.C.
120	24	60	60''O.C.	60	60''O.C.	60	60''O.C.
	36	60	60''O.C.	60	60''O.C.	60	60''O.C.
	48	50	60''O.C.	60	60''O.C.	60	60''O.C.
	60	40	60''O.C.	60	60''O.C.	60	60''O.C.
	72	33	60''O.C.	60	60''O.C.	60	60''O.C.
	80	28	60''O.C.	57	60''O.C.	60	40''O.C.

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FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE B					
		2		4		6	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
132	24	60	66''O.C.	60	66''O.C.	60	66''O.C.
	36	60	66''O.C.	60	66''O.C.	60	66''O.C.
	48	45	66''O.C.	60	66''O.C.	60	66''O.C.
	60	36	66''O.C.	60	66''O.C.	60	66''O.C.
	72	30	66''O.C.	60	66''O.C.	60	66''O.C.
	80	25	66''O.C.	51	66''O.C.	60	44''O.C.
144	24	60	72''O.C.	60	72''O.C.	60	72''O.C.
	36	55	72''O.C.	60	72''O.C.	60	72''O.C.
	48	41	72''O.C.	60	72''O.C.	60	72''O.C.
	60	33	72''O.C.	60	72''O.C.	60	72''O.C.
	72	27	72''O.C.	55	72''O.C.	60	48''O.C.
	80	23	72''O.C.	47	72''O.C.	60	48''O.C.

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

SEPTEMBER 26, 2023

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FG-2000 STOREFRONT - NON-IMPACT / HVHZ
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#17688.1)

REMARKS	DRWN	CHKD	DATE
INT. ISSUE (19-20209a)	JEM	AJP	10/22/20
FBC 2023 UPDATE	SQ	RS	08/29/23
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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE C

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE C							
		2		4		6		8	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
36	24	60	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
	36	60	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
	48	56	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
	60	45	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
	72	37	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
	80	32	18''O.C.	60	18''O.C.	60	18''O.C.	60	18''O.C.
48	24	60	24''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	36	56	24''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	48	42	24''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	60	34	24''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	72	28	24''O.C.	56	24''O.C.	60	16''O.C.	60	16''O.C.
	80	24	24''O.C.	48	24''O.C.	60	16''O.C.	60	16''O.C.
60	24	60	30''O.C.	60	30''O.C.	60	30''O.C.	60	30''O.C.
	36	45	30''O.C.	60	30''O.C.	60	30''O.C.	60	30''O.C.
	48	34	30''O.C.	60	30''O.C.	60	30''O.C.	60	30''O.C.
	60	27	30''O.C.	54	30''O.C.	60	20''O.C.	60	20''O.C.
	72	22	30''O.C.	45	30''O.C.	60	20''O.C.	60	20''O.C.
	80	19	30''O.C.	38	30''O.C.	58	20''O.C.	60	15''O.C.
72	24	56	36''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	36	37	36''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	48	28	36''O.C.	56	36''O.C.	60	24''O.C.	60	24''O.C.
	60	22	36''O.C.	45	36''O.C.	60	24''O.C.	60	24''O.C.
	72	18	36''O.C.	37	36''O.C.	56	24''O.C.	60	18''O.C.
	80	16	36''O.C.	32	36''O.C.	48	24''O.C.	60	18''O.C.

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MAXIMUM ALLOWABLE STRESS DESIGN PRESSURE RATING FOR STANDARD MULLIONS WITH HEAD&SILL CONNECTIONS-ANCHOR TYPE C

FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE C													
		2		4		6		8		10		12		16	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
84	24	48	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.
	36	32	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.	60	42''O.C.
	48	24	42''O.C.	48	42''O.C.	60	28''O.C.	60	28''O.C.	60	28''O.C.	60	28''O.C.	60	28''O.C.
	60	19	42''O.C.	38	42''O.C.	58	28''O.C.	60	21''O.C.	60	21''O.C.	60	21''O.C.	60	21''O.C.
	72	16	42''O.C.	32	42''O.C.	48	28''O.C.	60	21''O.C.	60	21''O.C.	60	21''O.C.	60	21''O.C.
	80	13	42''O.C.	27	42''O.C.	41	28''O.C.	55	21''O.C.	60	17''O.C.	60	17''O.C.	60	17''O.C.
96	24	42	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.
	36	28	48''O.C.	56	48''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.
	48	21	48''O.C.	42	48''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.	60	32''O.C.
	60	17	48''O.C.	34	48''O.C.	51	32''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	72	14	48''O.C.	28	48''O.C.	42	32''O.C.	56	24''O.C.	60	19''O.C.	60	19''O.C.	60	19''O.C.
	80	12	48''O.C.	24	48''O.C.	36	32''O.C.	48	24''O.C.	60	19''O.C.	60	19''O.C.	60	19''O.C.
108	24	37	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.	60	54''O.C.
	36	25	54''O.C.	50	54''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	48	18	54''O.C.	37	54''O.C.	56	36''O.C.	60	27''O.C.	60	27''O.C.	60	27''O.C.	60	27''O.C.
	60	15	54''O.C.	30	54''O.C.	45	36''O.C.	60	27''O.C.	60	27''O.C.	60	27''O.C.	60	27''O.C.
	72	12	54''O.C.	25	54''O.C.	37	36''O.C.	50	27''O.C.	60	22''O.C.	60	22''O.C.	60	22''O.C.
	80	10	54''O.C.	21	54''O.C.	32	36''O.C.	43	27''O.C.	53	22''O.C.	60	18''O.C.	60	18''O.C.
120	24	34	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.	60	60''O.C.
	36	22	60''O.C.	45	60''O.C.	60	40''O.C.	60	40''O.C.	60	40''O.C.	60	40''O.C.	60	40''O.C.
	48	17	60''O.C.	34	60''O.C.	51	40''O.C.	60	30''O.C.	60	30''O.C.	60	30''O.C.	60	30''O.C.
	60	13	60''O.C.	27	60''O.C.	40	40''O.C.	54	30''O.C.	60	24''O.C.	60	24''O.C.	60	24''O.C.
	72	11	60''O.C.	22	60''O.C.	34	40''O.C.	45	30''O.C.	56	24''O.C.	60	20''O.C.	60	20''O.C.
	80	9	60''O.C.	19	60''O.C.	29	40''O.C.	38	30''O.C.	48	24''O.C.	58	20''O.C.	60	17''O.C.

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FRAME HEIGHT (IN)	TRIBUTARY WIDTH (IN)	TOTAL NUMBER OF ANCHORS AT THE CLUSTER-ANCHOR TYPE C													
		2		4		6		8		10		12		16	
		MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)	MAX PRESSURE (PSF)	JAMBS MAX ANCHOR SPACING (IN)
132	24	30	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.	60	66''O.C.
	36	20	66''O.C.	41	66''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.	60	44''O.C.
	48	15	66''O.C.	30	66''O.C.	46	44''O.C.	60	33''O.C.	60	33''O.C.	60	33''O.C.	60	33''O.C.
	60	12	66''O.C.	24	66''O.C.	37	44''O.C.	49	33''O.C.	60	26''O.C.	60	26''O.C.	60	26''O.C.
	72	10	66''O.C.	20	66''O.C.	30	44''O.C.	41	33''O.C.	51	26''O.C.	60	22''O.C.	60	22''O.C.
	80	8	66''O.C.	17	66''O.C.	26	44''O.C.	35	33''O.C.	44	26''O.C.	52	22''O.C.	60	19''O.C.
144	24	28	72''O.C.	56	72''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.	60	48''O.C.
	36	18	72''O.C.	37	72''O.C.	56	48''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.	60	36''O.C.
	48	14	72''O.C.	28	72''O.C.	42	48''O.C.	56	36''O.C.	60	29''O.C.	60	29''O.C.	60	29''O.C.
	60	11	72''O.C.	22	72''O.C.	34	48''O.C.	45	36''O.C.	56	29''O.C.	60	24''O.C.	60	24''O.C.
	72	9	72''O.C.	18	72''O.C.	28	48''O.C.	37	36''O.C.	47	29''O.C.	56	24''O.C.	60	21''O.C.
	80	8	72''O.C.	16	72''O.C.	24	48''O.C.	32	36''O.C.	40	29''O.C.	48	24''O.C.	60	18''O.C.

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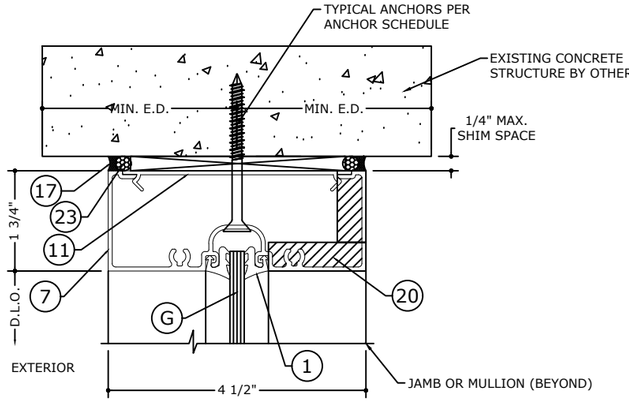
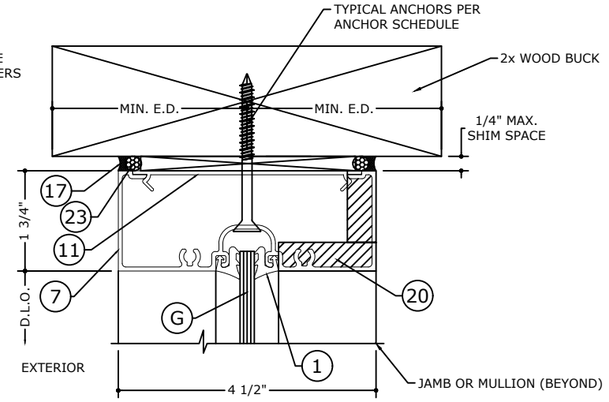
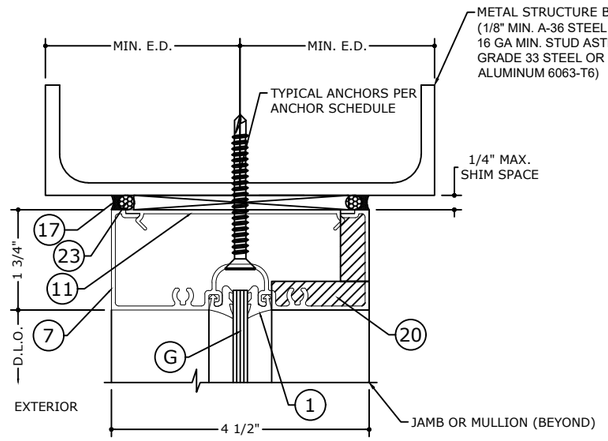
HEAD DETAILS



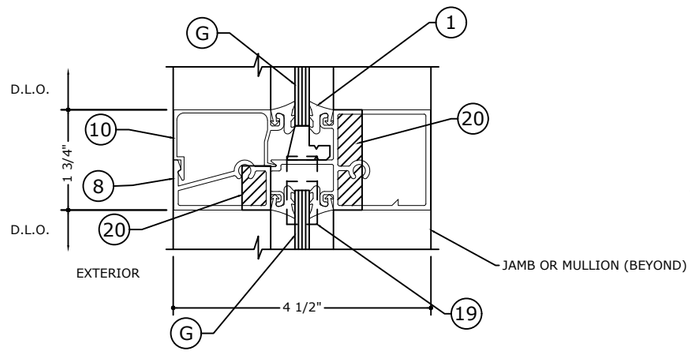
1 HEAD DETAIL
SCALE: 6" = 1'-0"



1.1 HEAD DETAIL
SCALE: 6" = 1'-0"



1.2 HEAD DETAIL
SCALE: 6" = 1'-0"



2 HORIZONTAL DETAIL
SCALE: 6" = 1'-0"

HORIZONTAL DETAILS

NOTE: HORIZONTAL DETAIL (2) IS LIMITED TO 78" MAX. IN LENGTH.

NOTE: REFER TO SYSTEM INSTALLATION MANUAL FOR FABRICATION AND ASSEMBLY INSTRUCTIONS.

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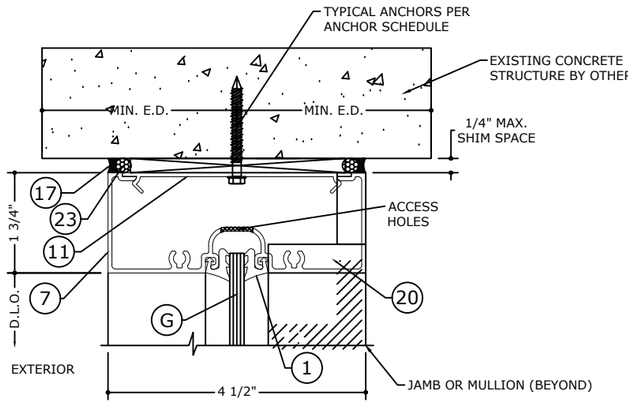
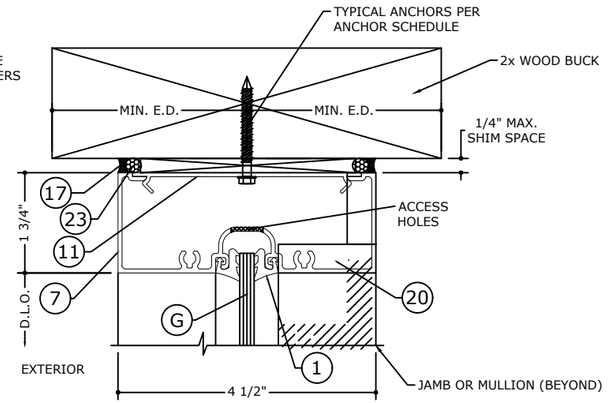
HEAD DETAILS



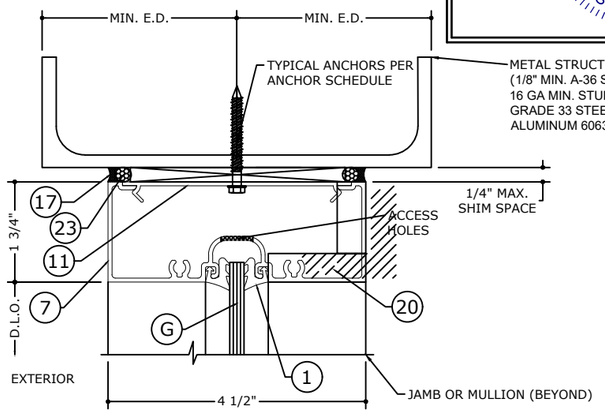
1.3 HEAD DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"



1.4 HEAD DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"

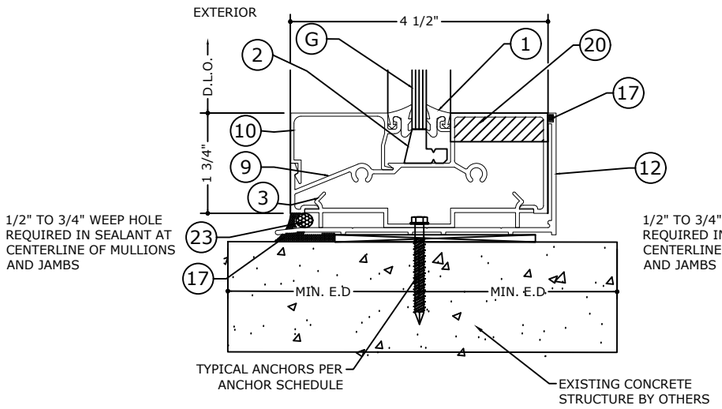


1.5 HEAD DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"

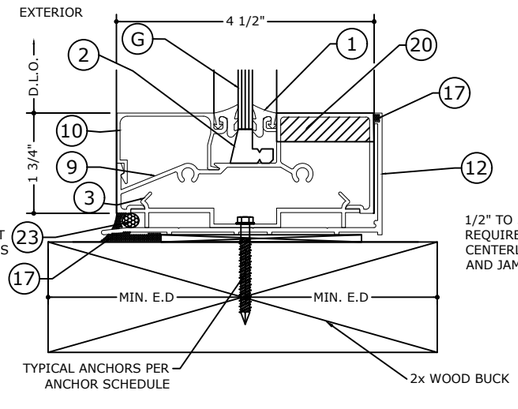
NOTE: REFER TO SYSTEM INSTALLATION MANUAL FOR FABRICATION AND ASSEMBLY INSTRUCTIONS.

SILL DETAILS



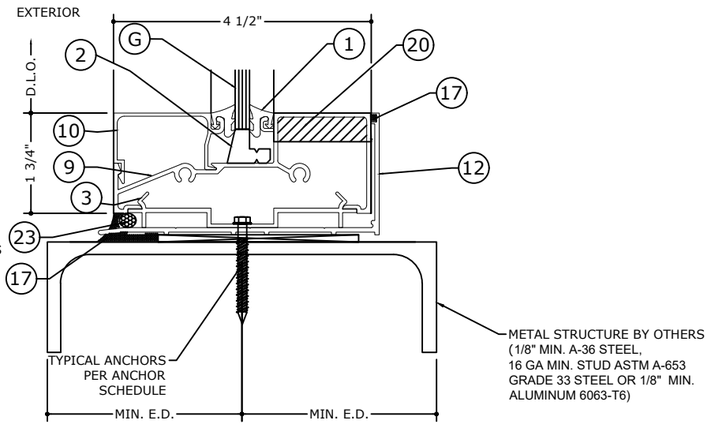
3.3 SILL DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"



3.4 SILL DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"



3.5 SILL DETAIL
SCALE: 6" = 1'-0"

NOTE:
MAX. WATER PENETRATION PER ASTM E331= 10 P.S.F
MAX. DESIGN PRESSURE = ± 45 P.S.F.
MAX. WIDTH FOR SINGLE PANEL OPENING = 60"

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
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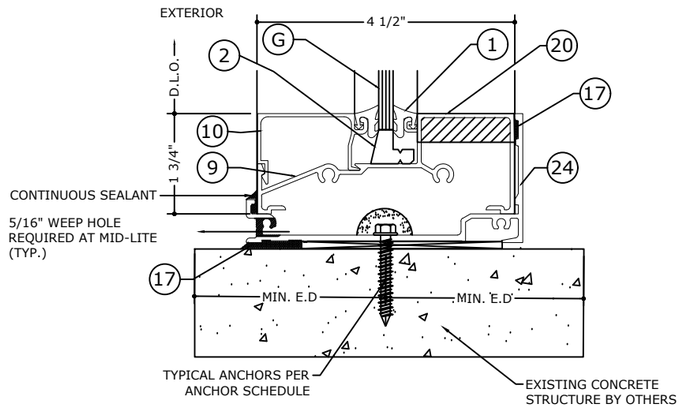
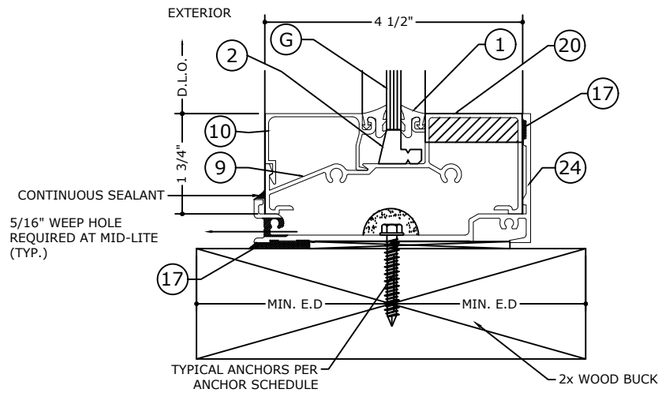
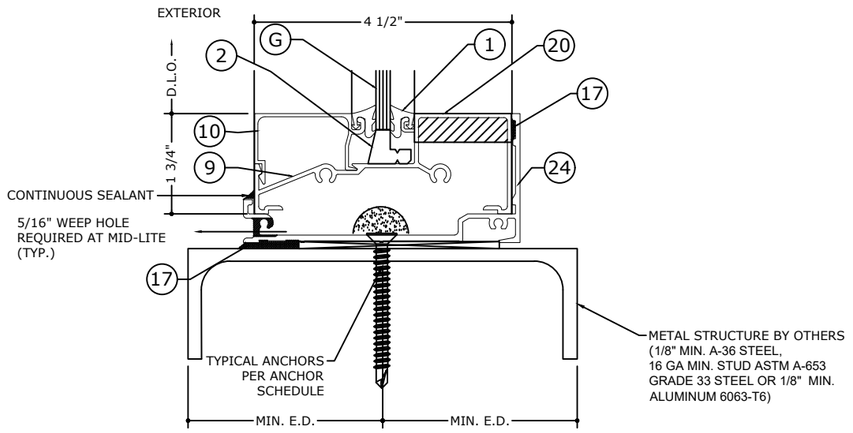
ALTERNATE SILL DETAILS



3.6 SILL DETAIL
SCALE: 6" = 1'-0"



3.7 SILL DETAIL
SCALE: 6" = 1'-0"



3.8 SILL DETAIL
SCALE: 6" = 1'-0"

NOTE: REFER TO SYSTEM INSTALLATION MANUAL FOR FABRICATION AND ASSEMBLY INSTRUCTIONS.

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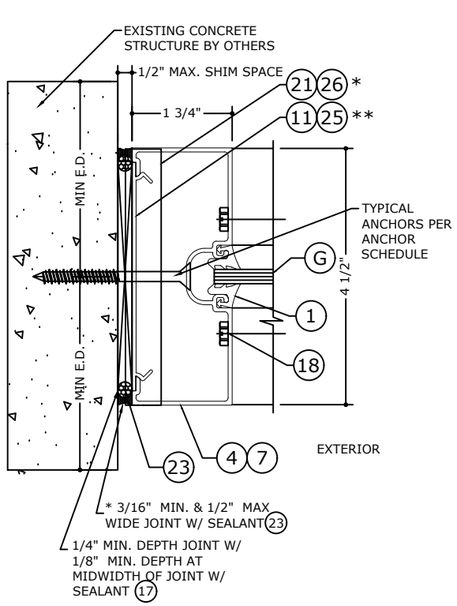
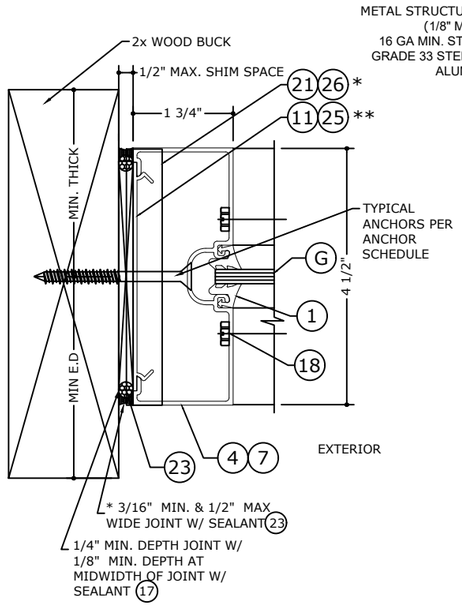
JAMB DETAILS

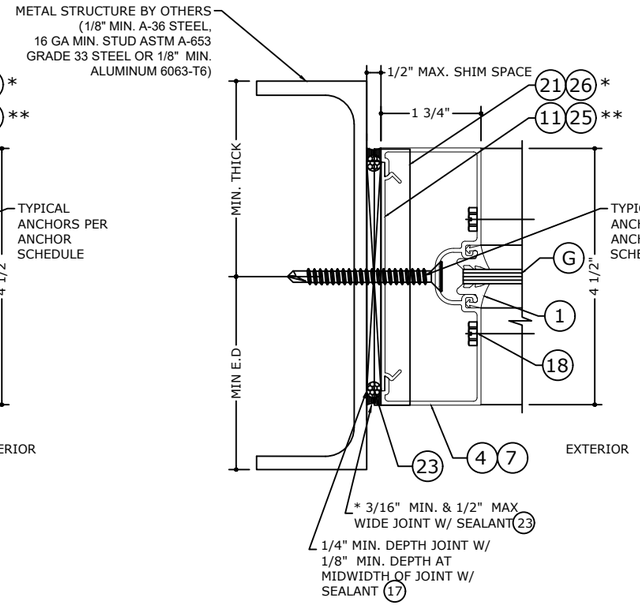
NOTES:
* SUB-SILL DETERMINES END DAM CHOICE
FG-2169 SUBSILL - FG-2000-FP-4 END DAM
FG-2246 SUBSILL - FG-3000-FP-78 END DAM
** PART (11) AT ANCHORS & PART (25) BETWEEN ANCHOR LOCATIONS.



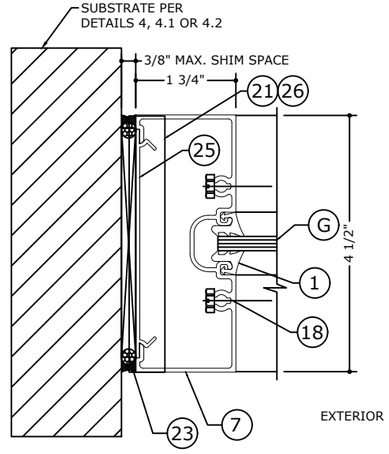
4 JAMB DETAIL
SCALE: 6" = 1'-0"



4.1 JAMB DETAIL
SCALE: 6" = 1'-0"



4.2 JAMB DETAIL
SCALE: 6" = 1'-0"



4.3 JAMB DETAIL - J1
SCALE: 6" = 1'-0"

NOTE: REFER TO SYSTEM INSTALLATION MANUAL FOR FABRICATION AND ASSEMBLY INSTRUCTIONS.

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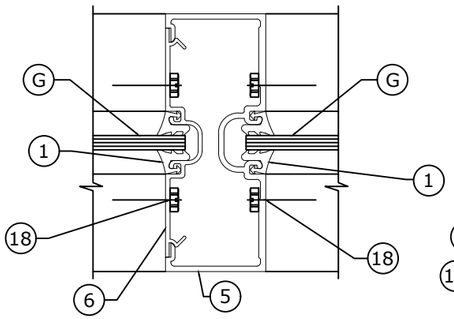
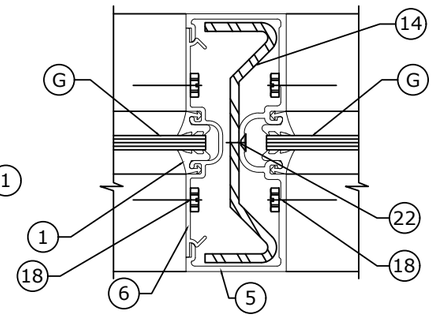
MULLION DETAILS

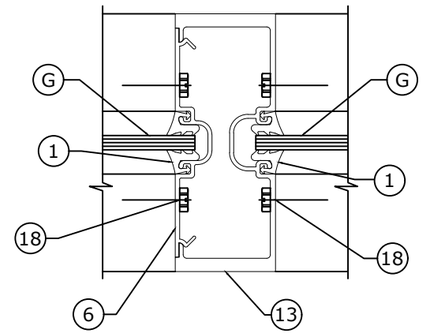
NOTE: REFER TO SYSTEM INSTALLATION MANUAL FOR FABRICATION AND ASSEMBLY INSTRUCTIONS.



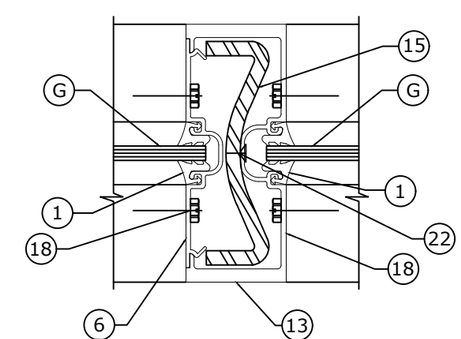
5 MULLION DETAIL
SCALE: 6" = 1'-0"
M1



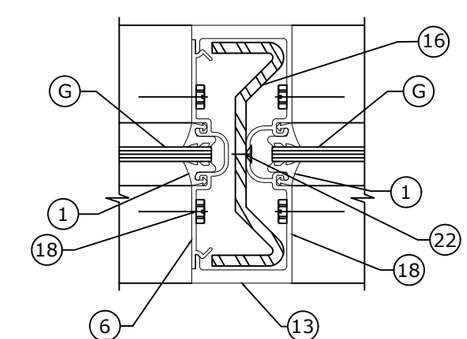
5.1 MULLION DETAIL
SCALE: 6" = 1'-0"
M3



5.2 MULLION DETAIL
SCALE: 6" = 1'-0"
M2



5.3 MULLION DETAIL
SCALE: 6" = 1'-0"
M5



5.4 MULLION DETAIL
SCALE: 6" = 1'-0"
M4

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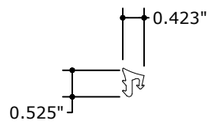
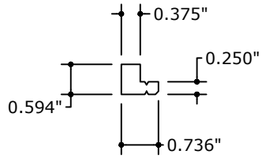
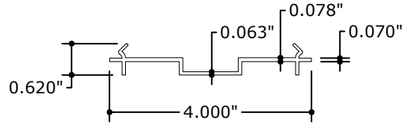
SERIES FG-2000 STOREFRONT COMPONENTS



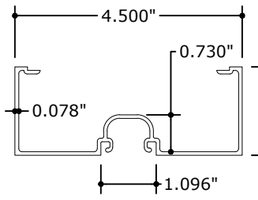
1 FG-1133 GLAZING GASKET



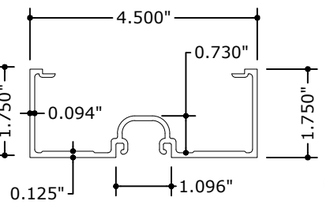
2 FG-1136 SETTING BLOCK



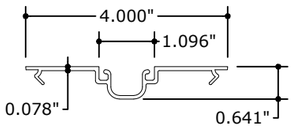
3 FG-2000-FP-3 SUB-ANCHOR



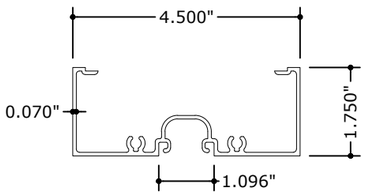
4 FG-2100 JAMB



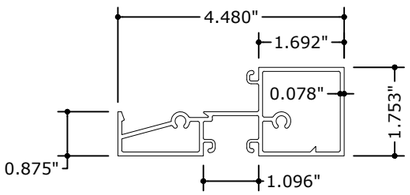
5 FG-2101 MULLION



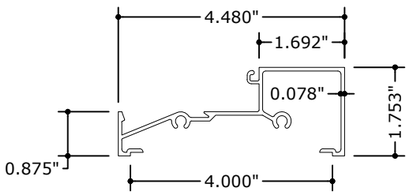
6 FG-2102 MULLION FILLER



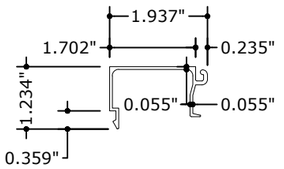
7 FG-2103 HEAD & JAMB



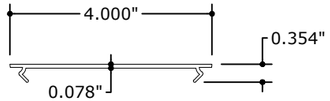
8 FG-2104 HORIZONTAL



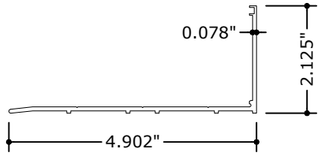
9 FG-2105 SILL



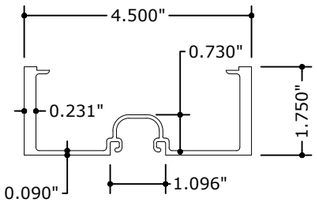
10 FG-2166 GLASS STOP



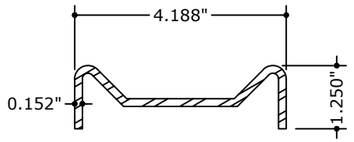
11 FG-2122-01 HEAD & JAMB FILLER



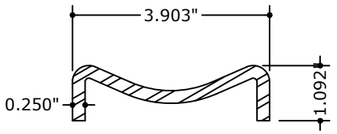
12 FG-3380 SUB SILL



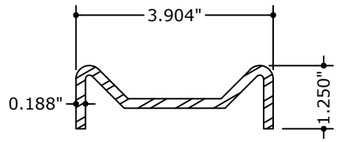
13 FG-2228 MULLION



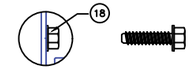
14 RS-1 STEEL REINFORCEMENT



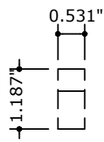
15 RS-9 STEEL REINFORCEMENT



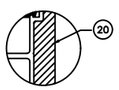
16 RS-10 STEEL REINFORCEMENT



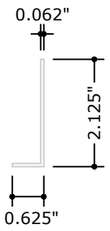
18 FS-8 JOINT FASTENER



19 FG-1000-FP-1 WATER DIVERTER



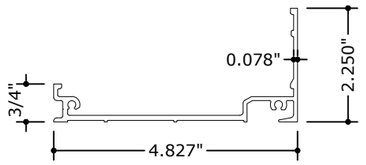
20 SM-5601 JOINT TAPE



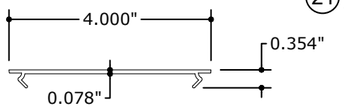
21 FG-2000-FP-4 END DAM

22 FS-22 REINFORCEMENT FASTENER

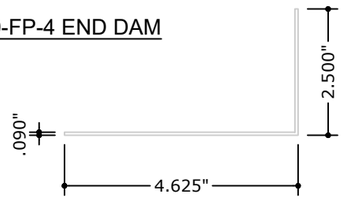
23 FG-2246 CLOSED CELL BACKER ROD



24 FG-2246 SILL FLASHING



25 FG-2188 VINYL FILLER



26 FG-3000-FP-78 END DAM

27 FS-320 DRIVE PIN

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PE# 0046549 CA# 9885

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9/26/2023 10:27 AM SAM

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO LICENSE No 0046549 STATE OF FLORIDA PROFESSIONAL ENGINEER
SIGNED: 09/26/2023

SEPTEMBER 26, 2023

FL

BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	DIMENSIONS	MATERIAL	NOTES
1	FG-1133	GLAZING GASKET	.501" x .548"	EPDM	
2	FG-1136	SETTING BLOCK	.594" x .750"	EPDM	
3	FG-2000-FP-3	SUB-ANCHOR	4.00" x 0.615" x 0.078" x 4" LONG	6063-T6 ALUMINUM	LOCATED CENTER WITH ANCHOR'S LOCATION
4	FG-2100	JAMB	4.50" x 1.750" x .070"	6063-T5 ALUMINUM	
5	FG-2101	MULLION	4.50" x 1.750" x .094"	6063-T6 ALUMINUM	
6	FG-2102	MULLION FILLER	4.00" x .633" x .070"	6063-T6 ALUMINUM	
7	FG-2103	HEAD & JAMB	4.50" x 1.75" x .070"	6063-T6 ALUMINUM	
8	FG-2104	HORIZONTAL	4.480" x 1.750" x 0.078"	6063-T6 ALUMINUM	
9	FG-2105	SILL	4.480" x 1.750" x 0.078"	6063-T6 ALUMINUM	
10	FG-2106	GLASS STOP	1.927" x 1.234" x 0.055"	6063-T6 ALUMINUM	
11	FG-2122-01	HEAD & JAMB FILLER	4.000" x 0.357" x 0.070" x 4" LONG	6063-T6 ALUMINUM	LOCATED CENTER WITH ANCHOR'S LOCATION
12	FG-2169	SUB SILL	4.390" x 2.125" x 0.078"	6063-T5 ALUMINUM	
13	FG-2228	MULLION	4.500" x 1.750" x 0.090"	6063-T6 ALUMINUM	
14	RS-1	STEEL REINFORCEMENT	4.187" x 1.250" x 0.135"	A-36 STEEL	
15	RS-9	STEEL REINFORCEMENT	3.903" x 1.092" x 0.250"	A-36 STEEL	
16	RS-10	STEEL REINFORCEMENT	3.904" x 1.250" x .188"	A-36 STEEL	
17	DOWSIL 795	PERIMETER SEALANT & VINYL JOINTS		SILICONE	LOCATED AT EACH INTERIOR FRAME
18	FS-8	SPLINE ASSEMBLY SCREW	#14 x 1" HHSTS	STEEL	
19	FG-1000-FP-1	WATER DIVERTER SET IN SEALANT	1.187" x 1.187" x 0.062" x 0.531 LONG	PVC	LOCATED AT EACH END OF (8) & SEALED W/(17)
20	SM-5601	ISOCRYL TAPE	.125" x .500" VARIES	POLYISOBUTYLENE	LOCATED AT EACH END HORIZONTAL BETWEEN JOINTS
21	FG-2000-FP-4	END DAM	0.625" x 2.125" x 0.062" x 4.25" LONG	6063-T6 ALUMINUM	USE WITH FG-2169
22	FS-22	SCREW FOR STEEL REINFORCEMENT	#12-24X1/2 PFH	STEEL	TOP, BOTT. & CTR.
23	–	BACKER ROD	.500"	POLYETHYLENE	
24	FG-2246	SUB-SILL	4.827" x 2.250" x 0.078"	6063-T5 ALUMINUM	
25	FG-2188	VINYL FILLER	4.000" x 0.365" x 0.070"	VINYL	TO BE USED BETWEEN ANCHORS / (#3) FG-2000-FP-3
26	FG-3000-FP-78	END DAM	4.625" x 2.500" x 0.090"	ALUMINUM SHEET	USE WITH FG-2246
27	FS-320	DRIVE PIN	M4 X 16MM HEADED HELICAL KNURLED PIN	STEEL	USE WITH FG-2246

NOTE:
SETTING BLOCK FG-1136 SHALL BE COMPLIANT WITH 2411.3.3.1 OF THE FLORIDA BUILDING CODE EIGHTH EDITION (2023).

FL 17688.1

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FG-2000 STOREFRONT - NON-IMPACT / HVHZ
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#17688.1)

REMARKS	DRWN	CHKD	DATE
INT. ISSUE (19-20209a)	JEM	AJP	10/22/20
FBC 2023 UPDATE	SQ	RS	08/29/23
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-	-	-	-
-	-	-	-

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SCALE: NTS UNLESS NOTED