Engineering Evaluation Report #375-011923-01

Prepared by:
A. Lynn Miller, P.E.
1070 Technology Dr.
N. Venice, FL 34275
(941) 480-1600
Registration Number: #29296

Manufacturer:
WinDoor Incorporated
104 Triple Diamond Blvd.
North Venice, FL 34275
(833) 554-5432

Product Description:
HR375 Series Aluminum LMI HVHZ Horizontal Roller Window – FL19692

Compliance:
The above-mentioned product has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61 G20-3.005 method 1(d). The product listed herein complies with requirements of the current Florida Building Code.

Supporting Technical Documentation:

1. Approval Document: drawing number HR375LMI-FPA, signed and sealed by A. Lynn Miller, P.E.
2. Test Report CTLA-3056 WA, WB, WC dated 03/03/15, 03/03/15 and 04/16/15, prepared by Certified Test Laboratories, signed, and sealed by Ramesh C Patel P.E.

   TAS 201-94 Large Missile Impact Test
   TAS 202-94 Uniform Static Air Pressure Test
   TAS 203-94 Cyclic Pressure Loading Test

3. Anchor Calculations and Structural Analysis, dated 03/26/20 and revised on 06/03/20, prepared by manufacturer, and signed and sealed by Anthony Lynn Miller, P.E.

Limitations and Conditions of use:

- Units must be glazed per ASTM E1300-04/09, refer to approval document for glazing details.
- This product is rated to be used in the HVHZ.
- This product is impact resistant and does not require impact protection in wind borne debris regions.
- Units must be installed in accordance with Approval Document.



SERIES 375 'ESTATE' ALUMINUM HORIZONTAL ROLLER WINDOW.

LARGE & SMALL MISSILE

1). THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).

2). 1ST (OR 2ST) WOOD BUCKS & BUCK FASTENERS BY OTHERS, MUST BE DESIGNED AND INSTALLED ADEQUATELY TO TRANSFER APPLIED PRODUCT LOADS TO THE BUILDING STRUCTURE.

3). 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 ANCHOR HEAD TYPES ARE ACCEPTABLE.

4). A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

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

6). MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE & ADOPTED STANDARDS.

7). THIS PRODUCT APPROVAL IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT, i.e. LIFE SAFETY OF THE 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.

8). FRAME FLANGES MAY BE TRIMMED IN FIELD TO CREATE AN EQUAL LEG FRAME. THE EXPOSED ALUMINUM EDGE MUST BE PAINTED TO PROTECT AGAINST CORROSION.

INSTRUCTIONS FOR USING CAPACITY CHARTS:

STEP 1: DETERMINE THE REQUIRED DESIGN PRESSURES FOR A GIVEN WINDOW OPENING.

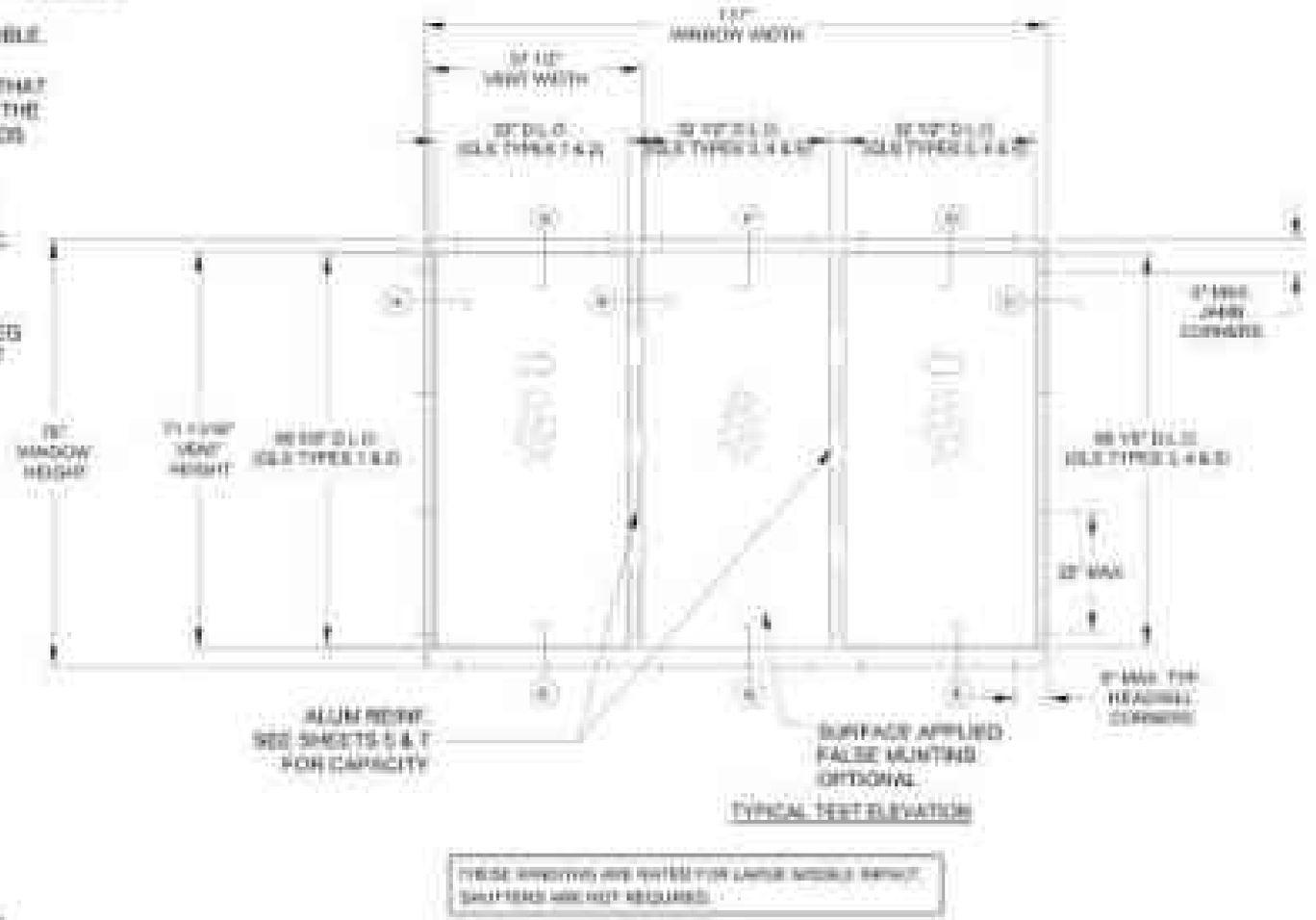
STEP 2: DETERMINE THE CAPACITY OF THE WINDOW SIZE/CONFIGURATION/GLASS TYPE FROM CHARTS ON SHEETS 9 AND 8.
FOR INSTALLATION ANCHOR TYPES SEE SHEETS 8 & 9.
EXTRA ANCHORS AT HEAD & SILL ARE SHOWN ON SHEETS 6, 7, 9 & 10.

STEP 3: IF ALUMINUM BUCKS ARE USED, VERIFY THE BUCK INSTALLATION CAPACITY FROM SHEETS 16 & 17.

STEP 4: FOR UNCLIPPED MULLED WINDOWS DETERMINE MULLION CAPACITY FOR 1X4 TUBE FROM CHARTS ON SHEET 14.

STEP 5: FOR MULLION ANCHOR CAPACITY SEE CHART ON SHEET 15.

THE LOWEST SELECTED VALUE APPLY TO THE INSTALLATION AND MUST EQUAL OR EXCEED THE REQUIRED DESIGN PRESSURES OBTAINED FROM STEP 1.



TYPICAL TEST ELEVATION

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

WINDOOR
PREPARED BY: A. L. HAWLEY, P.E.
STATE CERTIFICATE OF AUTHORIZATION #
FL# 13000 EXPIRATION DATE:
W. VENICE, FL 34275
941-493-7500
REGISTERED ENGINEER

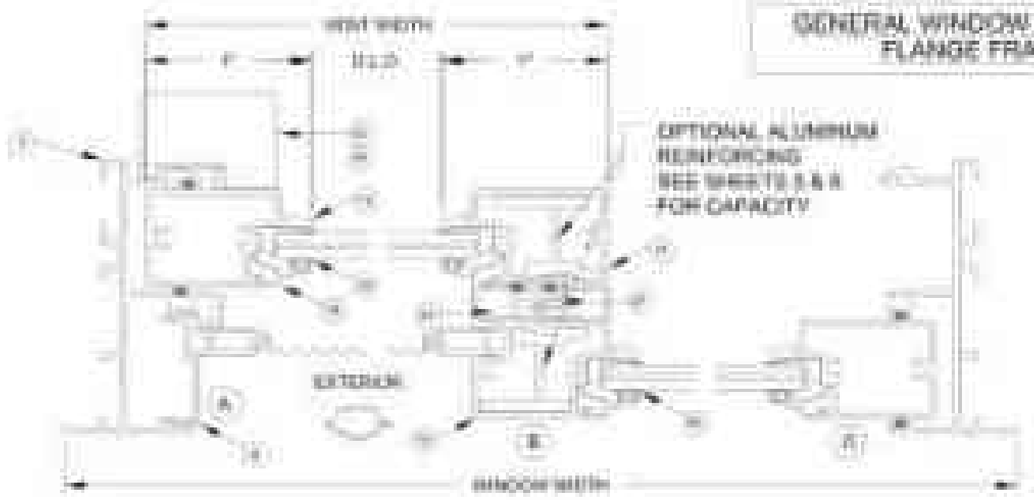
4	12/9/10		A. HAWLEY	REVISIONS
3	12/9/10			
2	12/9/10			
1	10/21/10			
				DATE

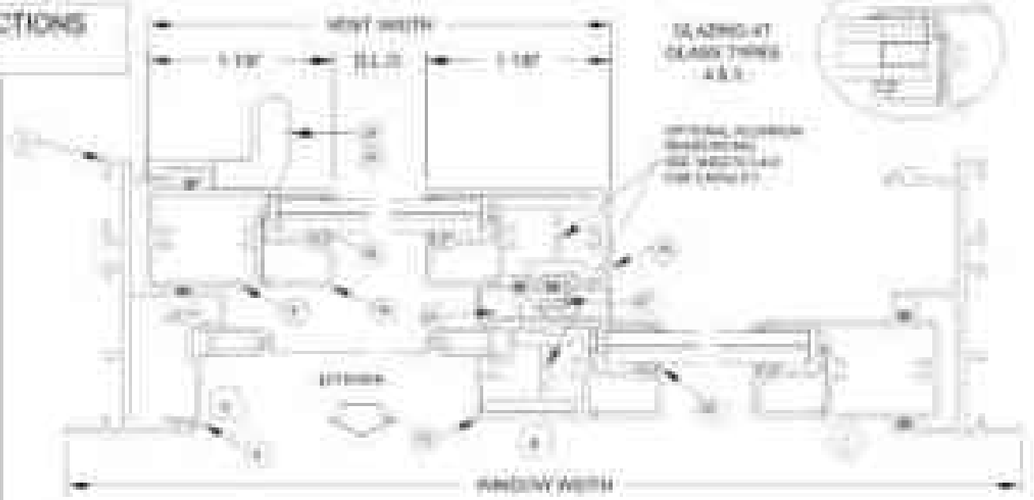
SERIES 375 'ESTATE' ALUM HORIZONTAL ROLLER WINDOW
LARGE & SMALL MISSILE
ELEVATION & GENERAL NOTES
SHEETS

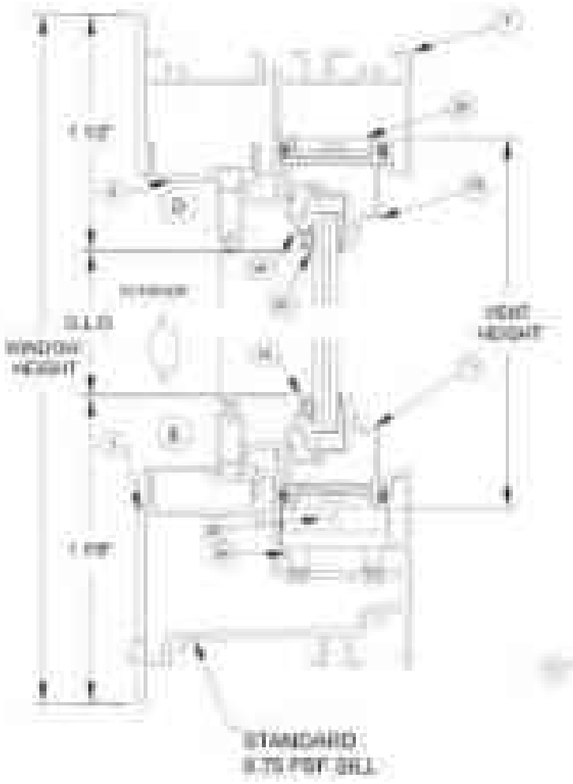


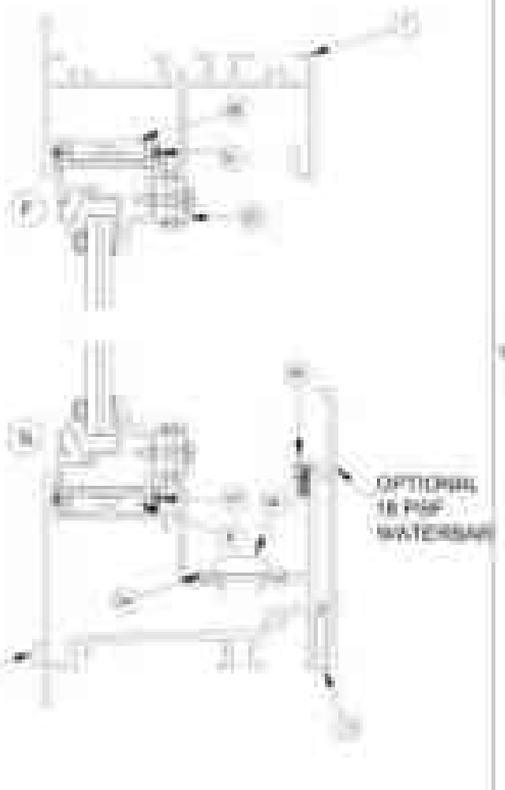
A. LYNN MILLER, P.E.
P.E. # 59706

GENERAL WINDOW SECTIONS
FLANGE FRAME

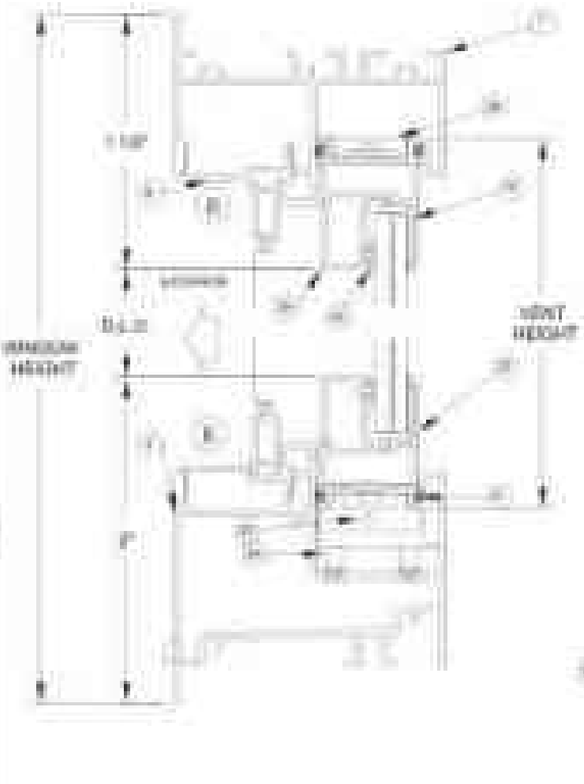




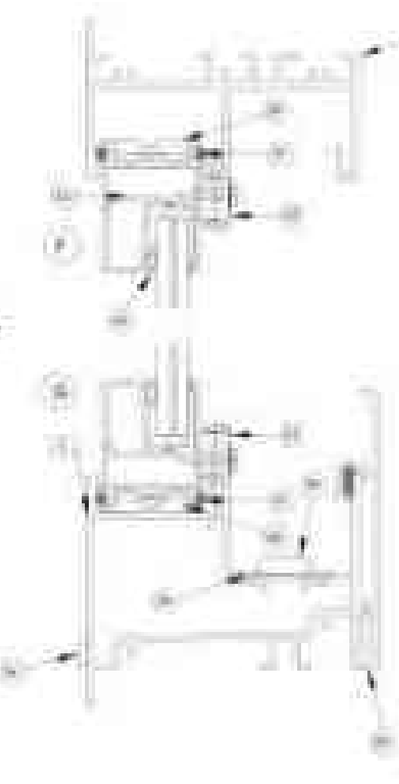




GLASS TYPES
1 & 2



GLASS TYPES
3, 4 & 5



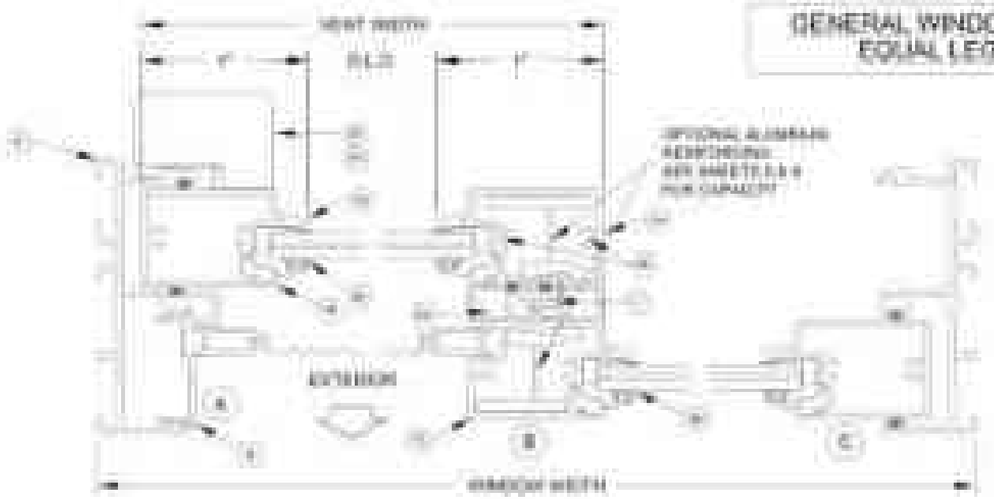
	REVISION	BY	DATE

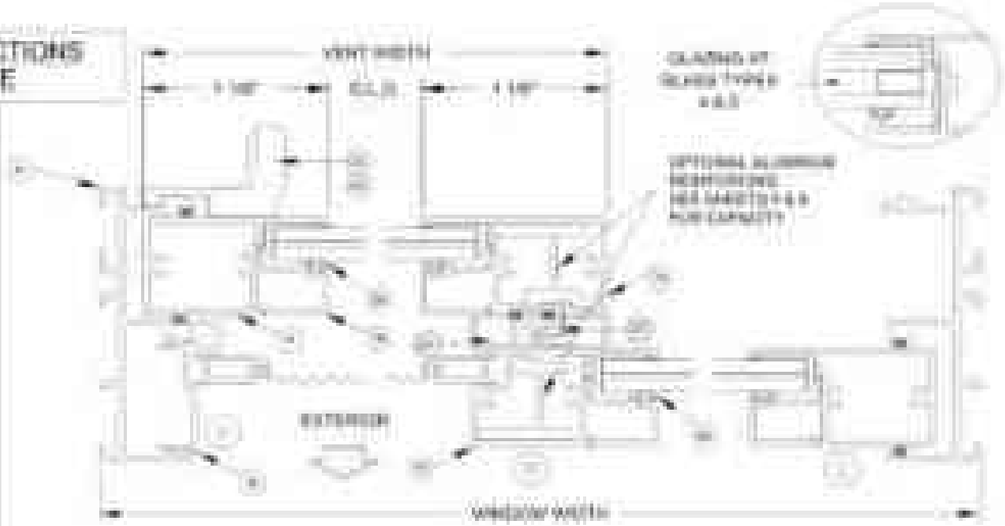
WINDOOR®

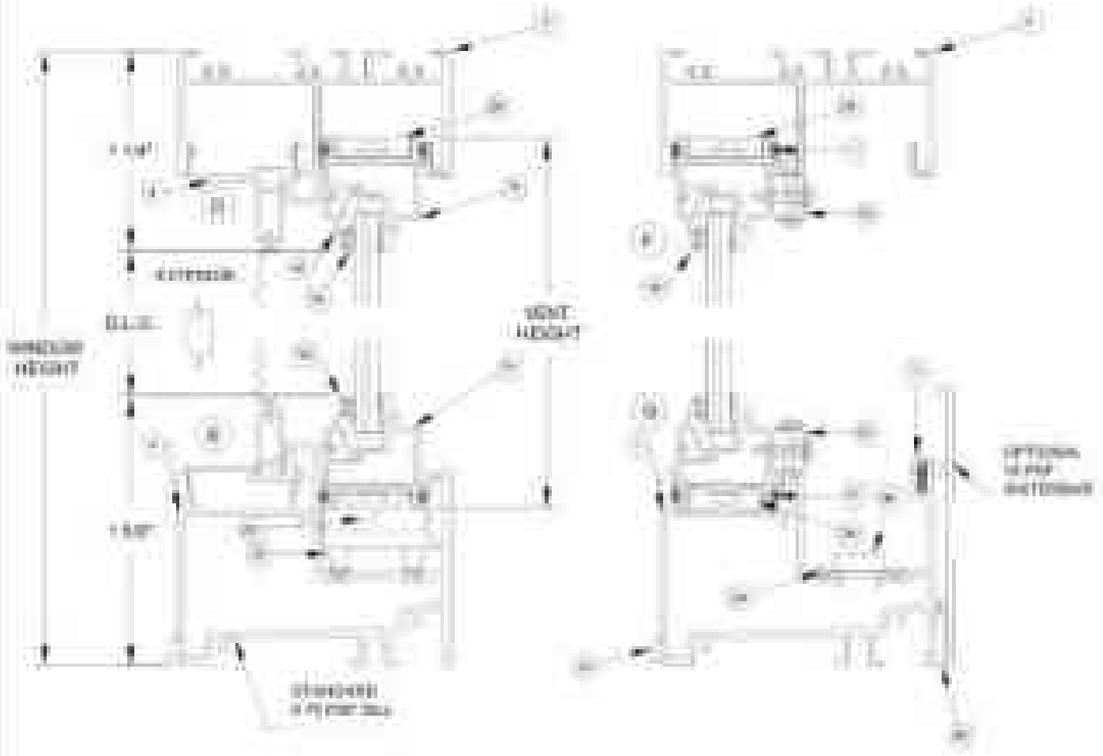
SERIES 700 AWI HORIZONTAL ROLLER WINDOW	
SECTION DETAILS FLANGE FRAME	
DRAWN BY:	A. WEIS
CHECKED BY:	
DATE:	7-26-21
SCALE:	
DRAWING NO.	
SHEET NO.	4

ANTHONY LYNN MILLER
LICENSE
No. 59706
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E. # 59706

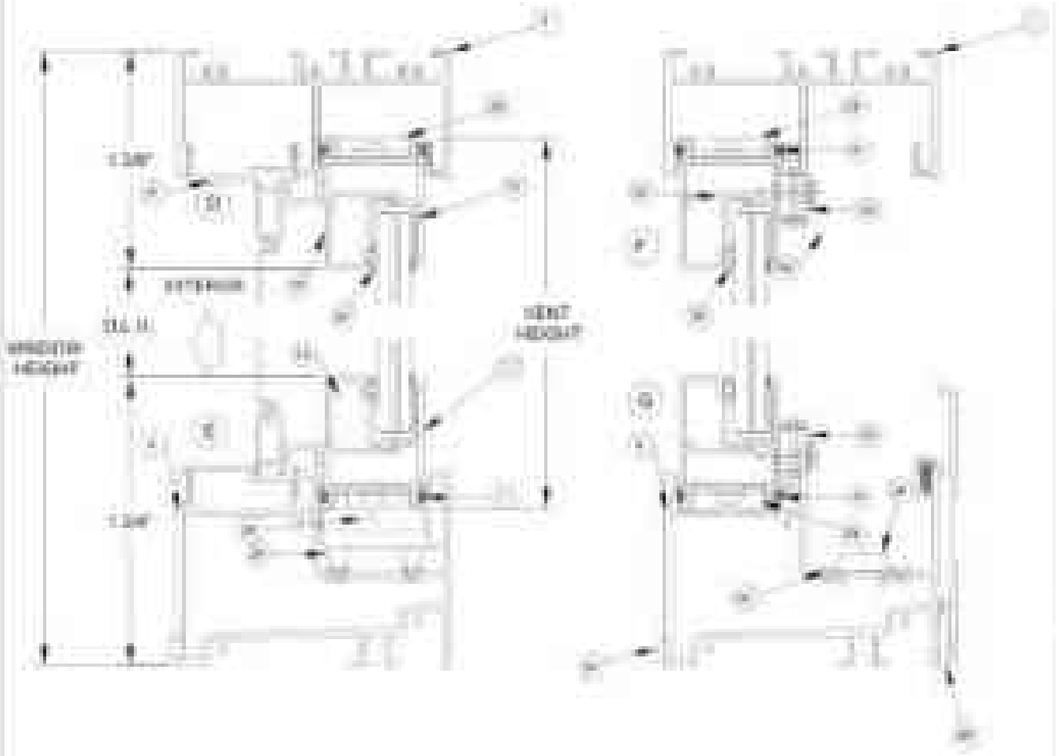
GENERAL WINDOW SECTIONS
EQUAL LEG FRAME







GLASS TYPES
1 & 2



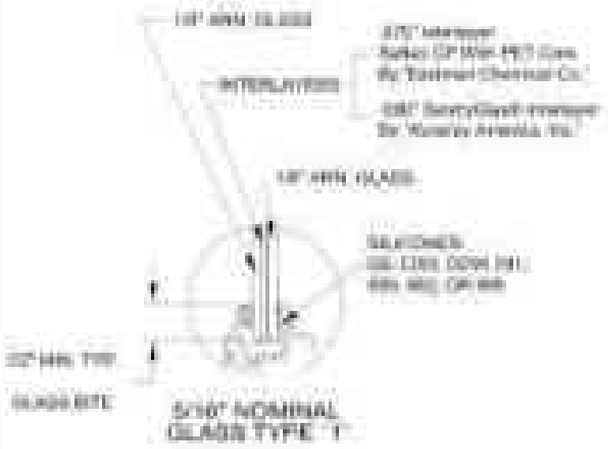
GLASS TYPES
3, 4, & 5

WINDOW A			
WINDOW SECTIONS			
SERIES 7700 A/W INTERMEDIATE ROLLER WEATHERSTRIP			
SECTION DETAILS EQUAL LEG FRAME			
WINDOW	3 OF 11		
#8375			

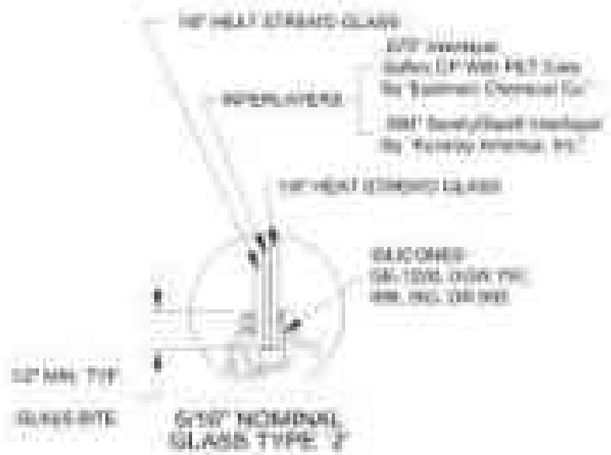
WINDOOR
WINDOW & DOOR SYSTEMS

ANTHONY LYNN MILLER
LICENSE
NO. 39706
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E. # 39706

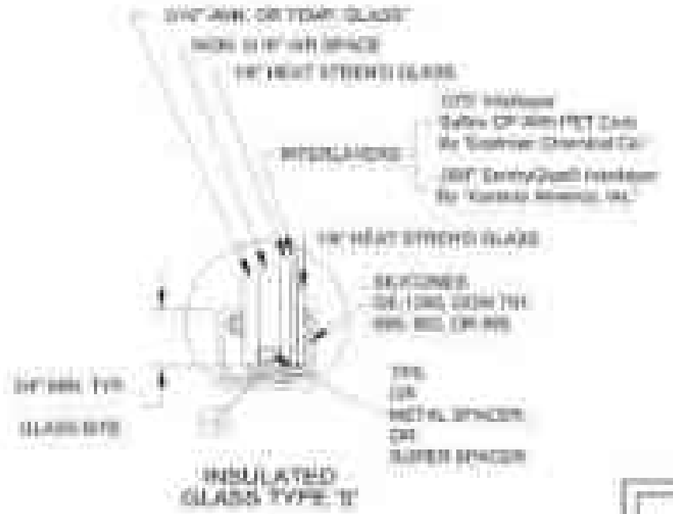
GLASS TYPES



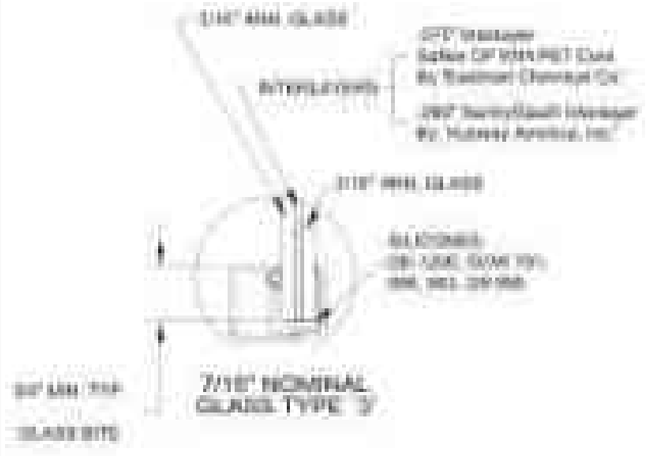
5/16" NOMINAL
GLASS TYPE '1'



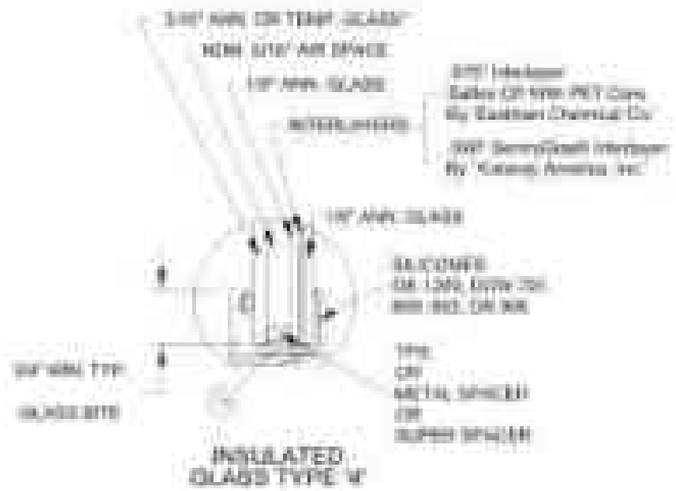
5/16" NOMINAL
GLASS TYPE '2'



INSULATED
GLASS TYPE '5'



7/16" NOMINAL
GLASS TYPE '3'



INSULATED
GLASS TYPE '4'

* FOR INSULATED GLASS INSTALLATIONS ABOVE 30' IN THE PSF.
OR FOR SAFETY GLAZING APPLICATIONS PER THE NBC THE OUTBOARD
LITE (S) MAY BE TEMPERED

NO.	DESCRIPTION	BY	DATE
1	ADDED GLASS TYPES		

WINDOOR®

SERIES 7700 ALUM. HORIZONTAL ROLLER

GLASS TYPES

SCALE	DRAWN	CHECKED	DATE	SHEET
				4 OF 4

ANTHONY LYNN MILLER
LICENSE
No. 30705
STATE OF
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E. # 30705

Design Load Capacity (lbs/ft²)

Design Load Capacity (lbs/ft²)

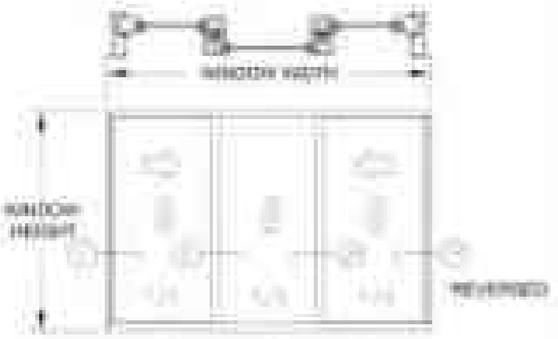
Design Load Capacity (lbs/ft²)

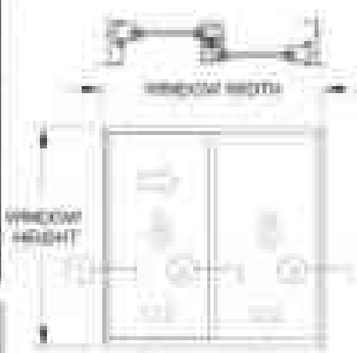
GLAZING/REINFORCEMENT
PERFORMANCE VALUES
EQUAL PANELS
NO INTERLOCK REINFORCMENT

VALUES FOR POS. LOADS (+) SHOWN ARE
FOR SILL WITH WATERBAR ADAPTER
FOR WINDOWS WITHOUT WATERBAR ADAPTER
USE POS(+) LOADS TO 65.0 PSF

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E 1300-09 (3 SEC. GUST).

MAXIMUM VENT SIZE 30 IN X 50 IN. FT.
AND MAXIMUM VENT WEIGHT 70 LBS.







WINDOOR
WINDOW & DOOR MANUFACTURERS
ASSOCIATION, INC.

SERIES TYPE AWS HORIZONTAL SLIDING WINDOW

DESIGN PRESSURE I

REVISIONS		
NO.	DESCRIPTION	DATE
1		
2		
3		
4		

APPROVED BY

DRAWN BY

SCALE: NTS

DATE: 4-28-15

SHEET NO.

ANTHONY LYNN MILLER
No. 90706
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 90706

Design Load Capacity (lbs/ft²)

Design Load Capacity (lbs/ft²)

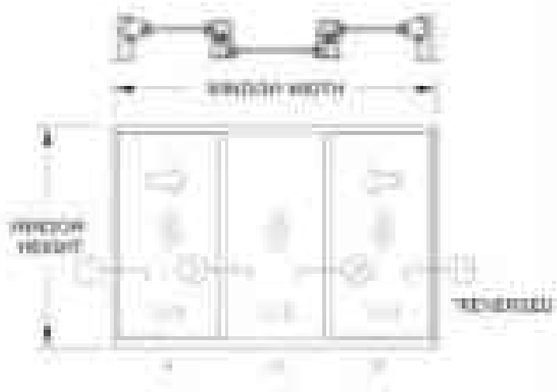
Design Load Capacity (lbs/ft²)

GLAZING/REINFORCEMENT
PERFORMANCE VALUES
EQUAL PANELS
WITH INTERLOCK REINFORCMENT

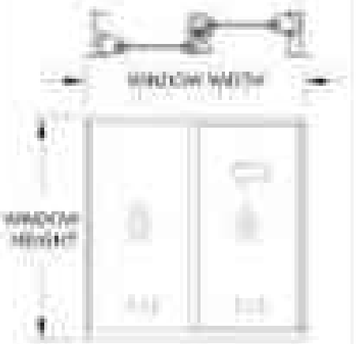
VALUES FOR POS. LOADS (+) SHOWN ARE
FOR SILL WITH WATERSHED ADAPTED
FOR WINDOWS WITHOUT WATERSHED ADAPTER
(-)NEG POSITIVE (+) LOADS TO BE STEP

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

MAXIMUM UNIT SIZE IS 16.7 SQ. FT.
AND MAXIMUM UNIT HEIGHT IS 71 11/16"







WINDOOR

DESIGN PRESSURE 1 (DP1)

ALUMINUM SLIDING PATIO DOOR

WINDOW SECTION "A"

REVISIONS		
DESCRIPTION	DATE	

SCALE	SHEET
1/2" = 1'-0"	

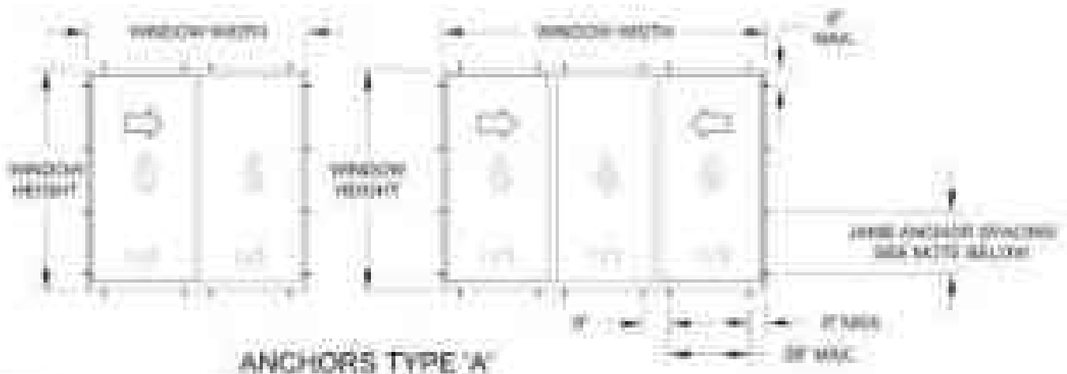
PRODUCT TYPE PERFORMANCE

ANTHONY LYNN MILLER
LICENSE
No. 39704
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 39704

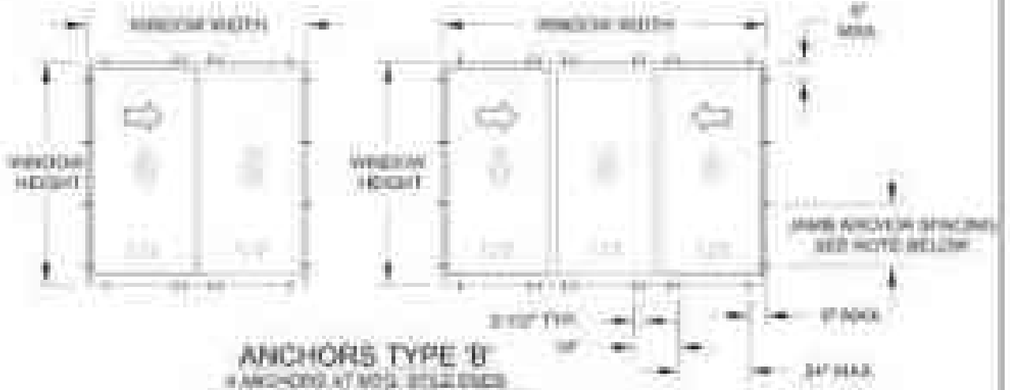
WIDTH (FRAME)	WIDTH (FRAME)	HEIGHT	1/2" IMPACT ZONE — ANCHORED TYPE A — A	1/2" IMPACT ZONE — ANCHORED TYPE A — B	1/2" IMPACT ZONE — ANCHORED TYPE A — C	9/16" IMPACT ZONE — ANCHORED TYPE A — A	9/16" IMPACT ZONE — ANCHORED TYPE A — B	9/16" IMPACT ZONE — ANCHORED TYPE A — C	9/16" IMPACT ZONE — ANCHORED TYPE C — A	9/16" IMPACT ZONE — ANCHORED TYPE C — B	9/16" IMPACT ZONE — ANCHORED TYPE C — C
36"	34"	36"	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
42"	40"		150.0	150.0	150.0	150.0	150.0	150.0	119.9	150.0	150.0
48"	46"		150.0	150.0	150.0	104.8	150.0	150.0	104.0	150.0	150.0
54"	52"		143.8	150.0	150.0	119.1	150.0	150.0	92.9	150.0	150.0
60"	58"		129.1	150.0	150.0	107.2	150.0	150.0	83.2	150.0	150.0
72"	70"		117.5	150.0	150.0	97.6	150.0	150.0	75.8	150.0	150.0
78"	76"		111.2	150.0	150.0	92.5	150.0	150.0	64.0	128.0	150.0
84"	82"		107.5	150.0	150.0	89.6	150.0	150.0	59.4	118.9	148.6
36"	34"	48"	150.0	150.0	150.0	134.9	150.0	150.0	104.0	150.0	150.0
42"	40"		136.5	150.0	150.0	114.8	150.0	150.0	104.0	150.0	150.0
48"	46"		121.0	150.0	150.0	102.5	150.0	150.0	78.3	150.0	150.0
54"	52"		107.6	150.0	150.0	89.3	150.0	150.0	69.3	138.7	150.0
60"	58"		96.8	150.0	150.0	80.4	150.0	150.0	62.4	124.8	150.0
72"	70"		80.7	150.0	150.0	67.0	134.0	150.0	52.0	104.0	130.0
78"	76"		74.3	148.6	150.0	61.8	123.7	150.0	48.0	96.0	120.0
84"	82"		68.1	136.3	150.0	57.4	114.8	143.5	44.6	89.1	111.4
36"	34"	60"	145.8	150.0	150.0	114.1	150.0	150.0	82.4	150.0	150.0
42"	40"		122.0	150.0	150.0	102.1	150.0	150.0	79.2	150.0	150.0
48"	46"		107.6	150.0	150.0	89.3	150.0	150.0	69.3	138.7	150.0
54"	52"		95.8	150.0	150.0	79.4	150.0	150.0	61.8	123.7	150.0
60"	58"		86.0	150.0	150.0	71.5	142.9	150.0	55.5	110.9	138.7
72"	70"		74.3	148.6	150.0	60.0	120.0	150.0	51.4	102.8	128.5
78"	76"		71.7	150.0	150.0	58.8	118.1	148.6	53.4	82.4	115.8
84"	82"		66.2	132.4	150.0	39.8	69.9	127.4	42.7	85.3	106.7
36"	34"	72"	61.9	123.8	150.0	51.0	102.1	127.6	39.8	79.2	98.9
42"	40"		126.1	150.0	150.0	107.2	150.0	150.0	83.2	150.0	150.0
48"	46"		110.6	150.0	150.0	91.9	150.0	150.0	71.3	142.6	150.0
54"	52"		96.8	150.0	150.0	80.4	150.0	150.0	62.4	124.8	150.0
60"	58"		86.0	150.0	150.0	71.5	142.9	150.0	55.5	110.9	138.7
72"	70"		77.4	150.0	150.0	64.3	128.6	150.0	49.9	99.8	124.8
78"	76"		70.4	140.8	150.0	58.5	116.9	146.2	45.4	90.8	113.5
84"	82"		64.5	129.1	150.0	53.6	107.3	134.1	41.6	83.3	104.1
36"	34"	84"	59.4	118.8	148.6	49.5	98.9	123.7	38.4	76.8	96.0
42"	40"		55.3	110.6	138.3	45.9	91.9	114.8	35.7	71.3	89.1
48"	46"		117.5	150.0	150.0	97.5	150.0	150.0	75.6	150.0	150.0
54"	52"		100.6	150.0	150.0	83.5	150.0	150.0	64.8	129.7	150.0
60"	58"		90.0	150.0	150.0	75.1	149.2	150.0	58.3	116.5	145.8
72"	70"		75.2	150.0	150.0	62.5	125.0	150.0	50.4	100.8	126.1
78"	76"	96"	70.4	140.8	150.0	58.5	116.9	146.2	45.4	90.8	113.5
84"	82"		64.3	128.6	150.0	53.2	106.3	132.8	41.3	82.6	103.2
36"	34"		58.7	117.3	146.7	48.7	97.5	121.8	37.8	75.5	94.3
42"	40"		54.2	108.3	135.4	45.0	90.0	112.4	34.9	69.8	87.3
48"	46"		50.3	100.6	125.7	41.8	83.5	104.4	32.4	64.8	81.0
54"	52"		107.6	150.0	150.0	89.3	83.5	150.0	69.3	138.7	150.0
60"	58"		96.8	150.0	150.0	80.4	150.0	150.0	62.4	124.8	150.0
72"	70"		80.7	150.0	150.0	67.0	134.0	150.0	52.0	104.0	130.0
78"	76"		74.3	148.6	150.0	61.8	123.7	150.0	48.0	96.0	120.0
84"	82"		68.1	136.3	150.0	57.4	114.8	143.5	44.6	89.1	111.4
36"	34"	108"	145.8	150.0	150.0	114.1	150.0	150.0	82.4	150.0	150.0
42"	40"		122.0	150.0	150.0	102.1	150.0	150.0	79.2	150.0	150.0
48"	46"		107.6	150.0	150.0	89.3	150.0	150.0	69.3	138.7	150.0
54"	52"		95.8	150.0	150.0	79.4	150.0	150.0	61.8	123.7	150.0
60"	58"		86.0	150.0	150.0	71.5	142.9	150.0	55.5	110.9	138.7
72"	70"		74.3	148.6	150.0	60.0	120.0	150.0	51.4	102.8	128.5
78"	76"		71.7	150.0	150.0	58.8	118.1	148.6	53.4	82.4	115.8
84"	82"		66.2	132.4	150.0	39.8	69.9	127.4	42.7	85.3	106.7
36"	34"	120"	61.9	123.8	150.0	51.0	102.1	127.6	39.8	79.2	98.9
42"	40"		126.1	150.0	150.0	107.2	150.0	150.0	83.2	150.0	150.0
48"	46"		110.6	150.0	150.0	91.9	150.0	150.0	71.3	142.6	150.0
54"	52"		96.8	150.0	150.0	80.4	150.0	150.0	62.4	124.8	150.0
60"	58"		86.0	150.0	150.0	71.5	142.9	150.0	55.5	110.9	138.7
72"	70"		77.4	150.0	150.0	64.3	128.6	150.0	49.9	99.8	124.8
78"	76"		70.4	140.8	150.0	58.5	116.9	146.2	45.4	90.8	113.5
84"	82"		64.5	129.1	150.0	53.6	107.3	134.1	41.6	83.3	104.1
36"	34"	144"	59.4	118.8	148.6	49.5	98.9	123.7	38.4	76.8	96.0
42"	40"		55.3	110.6	138.3	45.9	91.9	114.8	35.7	71.3	89.1
48"	46"		117.5	150.0	150.0	97.5	150.0	150.0	75.6	150.0	150.0
54"	52"		100.6	150.0	150.0	83.5	150.0	150.0	64.8	129.7	150.0
60"	58"		90.0	150.0	150.0	75.1	149.2	150.0	58.3	116.5	145.8
72"	70"		75.2	150.0	150.0	62.5	125.0	150.0	50.4	100.8	126.1
78"	76"	168"	70.4	140.8	150.0	58.5	116.9	146.2	45.4	90.8	113.5
84"	82"		64.3	128.6	150.0	53.2	106.3	132.8	41.3	82.6	103.2
36"	34"		58.7	117.3	146.7	48.7	97.5	121.8	37.8	75.5	94.3
42"	40"		54.2	108.3	135.4	45.0	90.0	112.4	34.9	69.8	87.3
48"	46"		50.3	100.6	125.7	41.8	83.5	104.4	32.4	64.8	81.0
54"	52"		107.6	150.0	150.0	89.3	83.5	150.0	69.3	138.7	150.0
60"	58"		96.8	150.0	150.0	80.4	150.0	150.0	62.4	124.8	150.0
72"	70"		80.7	150.0	150.0	67.0	134.0	150.0	52.0	104.0	130.0
78"	76"		74.3	148.6	150.0	61.8	123.7	150.0	48.0	96.0	120.0
84"	82"		68.1	136.3	150.0	57.4	114.8	143.5	44.6	89.1	111.4

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

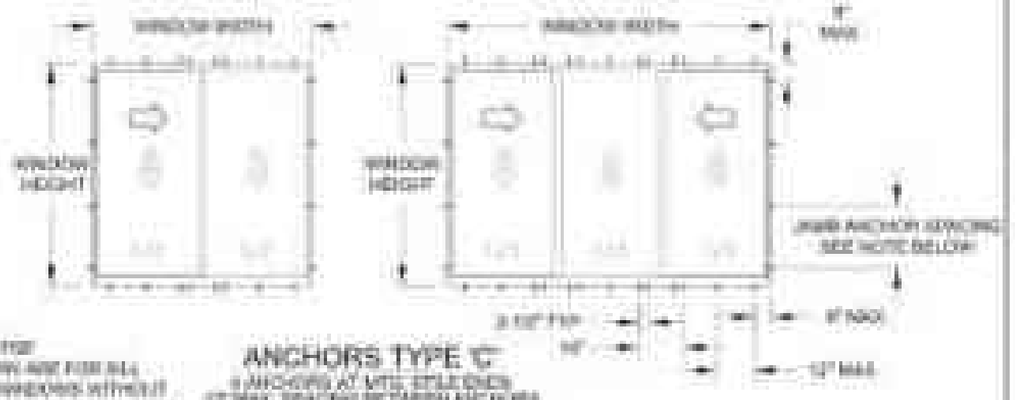
ANCHOR CAPACITY
EQUAL PANELS



ANCHORS TYPE 'A'
4 ANCHORS AT MTG. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 70 PSF



ANCHORS TYPE 'B'
4 ANCHORS AT MTG. STILE ENDS
24" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF



ANCHORS TYPE 'C'
4 ANCHORS AT MTG. STILE ENDS
12" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF

JAMB ANCHOR SPACING
20" MAX. FOR SHIMS UP TO 1/4"
16" MAX. FOR SHIMS GREATER THAN 1/4" TO 1/2"

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR EXT.(+) LOADS SHOWN ARE FOR ALL WITH WATERBAR ADAPTER. FOR WINDOWS WITHOUT WATERBAR ADAPTER LIMIT EXT.(+) LOADS TO 90.0 PSF

WINDOW TYPE	HORIZONTAL ROLLING WINDOW
SERIES	700
DESIGN PRESSURE	±
SIZE	MIN. MAX.
APPROVED	
DRAWN	
DATE	03/30/21
SCALE	AS NOTED
SHEET	1 OF 2

WINDOOR

ANTHONY LYNN MILLER
LICENSE
No. 69709
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E.# 69709

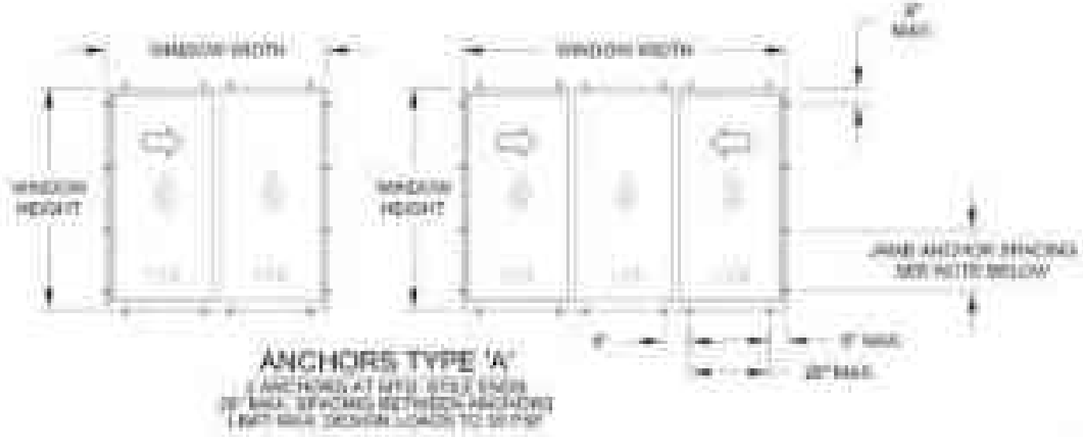
			10' SAW-WHOLE MULLIONS TYPE			20' SAW-WHOLE MULLIONS TYPE			10' SAW-WHOLE MULLIONS TYPE		
HEIGHT			A	B	C	A	B	C	A	B	C
3'-0 1/2"	3'-3 3/4"	24"	R(+) 110.0 R(-) 110.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
3'-7"	3'-11 1/2"		R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 126.6 R(-) 126.6	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
4'-11 5/8"	5'-3 1/8"		R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 88.1 R(-) 88.1	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
5'-6"	5'-10"	36-1/8"	R(+) 98.2 R(-) 98.2	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 91.5 R(-) 91.5	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 65.3 R(-) 65.3	R(+) 126.4 R(-) 126.4	R(+) 150.0 R(-) 150.0
6'-0 1/2"	6'-3 3/4"		R(+) 81.2 R(-) 81.2	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 75.7 R(-) 75.7	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 54.1 R(-) 54.1	R(+) 117.8 R(-) 117.8	R(+) 147.3 R(-) 147.3
7'-0 1/8"	7'-3 3/8"			R(+) 126.7 R(-) 126.7	R(+) 150.0 R(-) 150.0	R(+) 69.8 R(-) 69.8	R(+) 130.0 R(-) 130.0	R(+) 142.0 R(-) 142.0	R(+) 44.1 R(-) 44.1	R(+) 98.2 R(-) 98.2	R(+) 122.8 R(-) 122.8
3'-0 1/2"	3'-3 3/4"		R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 131.0 R(-) 131.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
3'-7"	3'-11 1/2"		R(+) 146.8 R(-) 146.8	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 123.8 R(-) 123.8	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 95.8 R(-) 95.8	R(+) 149.0 R(-) 149.0	R(+) 149.0 R(-) 149.0
4'-11 5/8"	5'-3 1/8"		R(+) 107.7 R(-) 107.7	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 96.1 R(-) 96.1	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 66.8 R(-) 66.8	R(+) 123.4 R(-) 123.4	R(+) 150.0 R(-) 150.0
5'-6"	5'-10"	60-1/8"	R(+) 74.4 R(-) 74.4	R(+) 144.8 R(-) 144.8	R(+) 150.0 R(-) 150.0	R(+) 81.5 R(-) 81.5	R(+) 122.8 R(-) 122.8	R(+) 150.0 R(-) 150.0	R(+) 49.0 R(-) 49.0	R(+) 95.8 R(-) 95.8	R(+) 119.0 R(-) 119.0
6'-0 1/2"	6'-3 3/4"		R(+) 68.1 R(-) 68.1	R(+) 138.5 R(-) 138.5	R(+) 150.0 R(-) 150.0	R(+) 67.4 R(-) 67.4	R(+) 115.1 R(-) 115.1	R(+) 142.8 R(-) 142.8	R(+) 44.9 R(-) 44.9	R(+) 89.3 R(-) 89.3	R(+) 111.6 R(-) 111.6
7'-0 1/8"	7'-3 3/8"		R(+) 57.8 R(-) 57.8	R(+) 103.7 R(-) 103.7	R(+) 129.6 R(-) 129.6	R(+) 60.0 R(-) 60.0	R(+) 96.1 R(-) 96.1	R(+) 127.6 R(-) 127.6	R(+) 32.4 R(-) 32.4	R(+) 69.8 R(-) 69.8	R(+) 83.3 R(-) 83.3
3'-0 1/2"	3'-3 3/4"		R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 138.1 R(-) 138.1	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 105.7 R(-) 105.7	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
3'-7"	3'-11 1/2"		R(+) 119.6 R(-) 119.6	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 99.9 R(-) 99.9	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 77.1 R(-) 77.1	R(+) 139.0 R(-) 139.0	R(+) 139.0 R(-) 139.0
4'-11 5/8"	5'-3 1/8"		R(+) 93.3 R(-) 93.3	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 84.4 R(-) 84.4	R(+) 138.4 R(-) 138.4	R(+) 150.0 R(-) 150.0	R(+) 52.7 R(-) 52.7	R(+) 107.4 R(-) 107.4	R(+) 134.2 R(-) 134.2
5'-6"	5'-10"	72"	R(+) 78.8 R(-) 78.8	R(+) 118.8 R(-) 118.8	R(+) 148.5 R(-) 148.5	R(+) 49.7 R(-) 49.7	R(+) 99.3 R(-) 99.3	R(+) 124.2 R(-) 124.2	R(+) 38.8 R(-) 38.8	R(+) 87.4 R(-) 87.4	R(+) 99.4 R(-) 99.4
6'-0 1/2"	6'-3 3/4"		R(+) 70.0 R(-) 70.0	R(+) 111.3 R(-) 111.3	R(+) 139.2 R(-) 139.2	R(+) 46.7 R(-) 46.7	R(+) 92.5 R(-) 92.5	R(+) 115.6 R(-) 115.6	R(+) 35.8 R(-) 35.8	R(+) 71.5 R(-) 71.5	R(+) 89.7 R(-) 89.7
7'-0 1/8"	7'-3 3/8"		R(+) 59.4 R(-) 59.4	R(+) 88.0 R(-) 88.0	R(+) 110.0 R(-) 110.0	R(+) 39.6 R(-) 39.6	R(+) 78.5 R(-) 78.5	R(+) 98.1 R(-) 98.1	R(+) 30.4 R(-) 30.4	R(+) 60.7 R(-) 60.7	R(+) 76.0 R(-) 76.0
3'-0 1/2"	3'-3 3/4"		R(+) 142.4 R(-) 142.4	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 114.1 R(-) 114.1	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 82.4 R(-) 82.4	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
3'-7"	3'-11 1/2"		R(+) 104.8 R(-) 104.8	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 86.8 R(-) 86.8	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 67.3 R(-) 67.3	R(+) 134.8 R(-) 134.8	R(+) 150.0 R(-) 150.0
4'-11 5/8"	5'-3 1/8"		R(+) 72.9 R(-) 72.9	R(+) 140.6 R(-) 140.6	R(+) 150.0 R(-) 150.0	R(+) 60.3 R(-) 60.3	R(+) 121.1 R(-) 121.1	R(+) 150.0 R(-) 150.0	R(+) 47.0 R(-) 47.0	R(+) 94.0 R(-) 94.0	R(+) 117.5 R(-) 117.5
5'-6"	5'-10"	84"	R(+) 55.2 R(-) 55.2	R(+) 104.9 R(-) 104.9	R(+) 132.8 R(-) 132.8	R(+) 43.5 R(-) 43.5	R(+) 86.5 R(-) 86.5	R(+) 108.6 R(-) 108.6	R(+) 33.7 R(-) 33.7	R(+) 67.5 R(-) 67.5	R(+) 84.3 R(-) 84.3
6'-0 1/2"	6'-3 3/4"		R(+) 135.6 R(-) 135.6	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 113.6 R(-) 113.6	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 87.4 R(-) 87.4	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0
7'-0 1/8"	7'-3 3/8"		R(+) 98.1 R(-) 98.1	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 82.0 R(-) 82.0	R(+) 150.0 R(-) 150.0	R(+) 150.0 R(-) 150.0	R(+) 62.9 R(-) 62.9	R(+) 127.8 R(-) 127.8	R(+) 159.8 R(-) 159.8
3'-0 1/2"	3'-3 3/4"		R(+) 68.0 R(-) 68.0	R(+) 136.1 R(-) 136.1	R(+) 150.0 R(-) 150.0	R(+) 57.1 R(-) 57.1	R(+) 114.7 R(-) 114.7	R(+) 143.4 R(-) 143.4	R(+) 44.3 R(-) 44.3	R(+) 89.0 R(-) 89.0	R(+) 111.3 R(-) 111.3
3'-7"	3'-11 1/2"		R(+) 49.6 R(-) 49.6	R(+) 96.1 R(-) 96.1	R(+) 120.2 R(-) 120.2	R(+) 41.3 R(-) 41.3	R(+) 82.3 R(-) 82.3	R(+) 102.9 R(-) 102.9	R(+) 32.0 R(-) 32.0	R(+) 63.0 R(-) 63.0	R(+) 79.9 R(-) 79.9

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

JAMB ANCHOR SPACING
20" MAX. FOR SPANS UP TO 1/4"
10" MAX. FOR SPANS GREATER
THAN 1/4" TO 1/2"

ALL VALUES SHOWN ARE DESIGN PSF.
VALUES FOR EXT (+) LOADS SHOWN ARE FOR ALL
WITH WATERBAR ADAPTER. FOR WINDOWS WITHOUT
WATERBAR ADAPTER LIMIT EXT (+) LOADS TO 80 PSF

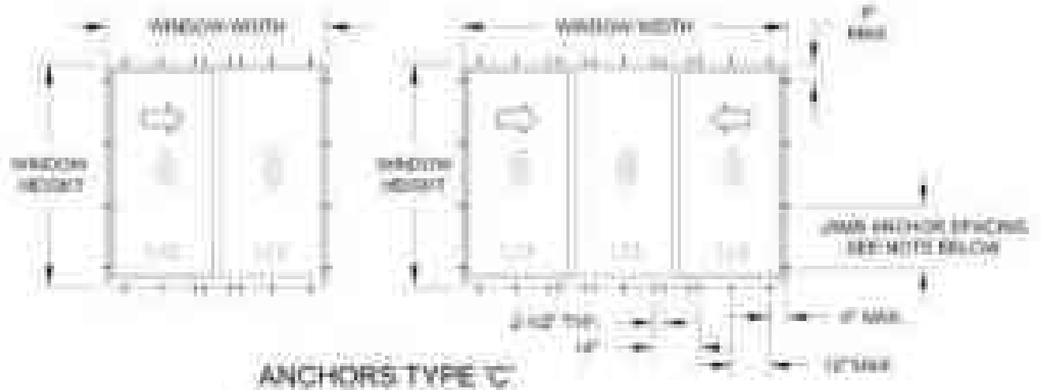
ANCHOR CAPACITY
EQUAL PANELS



ANCHORS TYPE 'A'
4 ANCHORS AT MTD. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 30 PSF



ANCHORS TYPE 'B'
4 ANCHORS AT MTD. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 120 PSF



ANCHORS TYPE 'C'
4 ANCHORS AT MTD. STILE ENDS
10" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF

WINDOW	
DESIGN PRESSURE	
SERIES	
DATE	
SCALE	
DRAWN BY	A. MOELLER
CHECKED BY	

WINDOOR®

ANTHONY LYNN MILLER
LICENSE
NO. 50705
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 50705

Design Load Capacity (lbs/ft²)

Design Load Capacity (lbs/ft²)

Design Load Capacity (lbs/ft²)







GLAZING/REINFORCEMENT
PERFORMANCE VALUES
UNEQUAL PANELS
NO INTERLOCK REINFORCMENT

NOTE
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E 1300-09 (2) SEC. 5.10.1.1(b)
VALUES FOR POSITIVE LOADING SHOWN ARE
FOR SILL WITH INTERIOR ADAPTER
FOR WINDOWS WITHOUT INTERIOR ADAPTER
LIMIT FOR LOADS TO 30 PSF
MAXIMUM VENT SIZE IS 14 T SQ. FT.
AND MAXIMUM VENT HEIGHT IS 71 1/16"

WINDOW TYPE: ALUMINUM SLIDING WINDOW
DESIGN PRESSURE #
SIZES

WINDOOR
WINDOW SYSTEMS
ARCHITECTURAL ALUMINUM
WINDOW & DOOR SYSTEMS
[illegible]

ANTHONY LYNN MILLER
LICENSED
No. 30705
STATE OF
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 30705

Design Load Capacity (lbs/ft²)

Design Load Capacity (lbs/ft²)

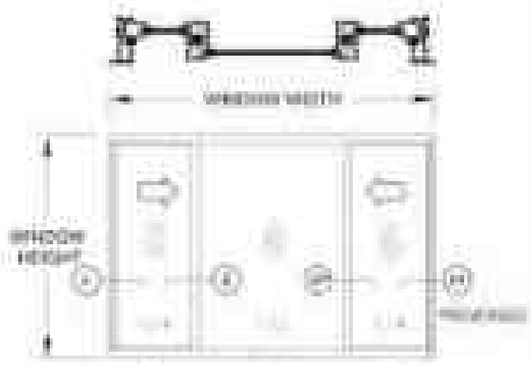
Design Load Capacity (lbs/ft²)

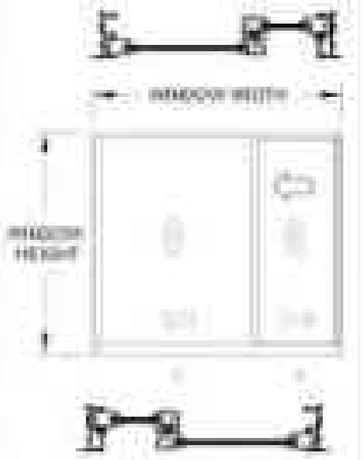
GLAZING/REINFORCEMENT
PERFORMANCE VALUES
UNEQUAL PANELS
WITH INTERLOCK REINFORCMENT

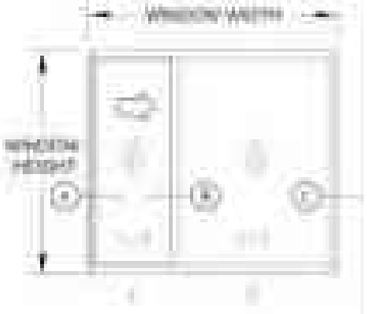
NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-09 (3 SEC. GUSTS)

VALUES FOR POSITIVE LOADING (+) SHOWN ARE
FOR GLASS WITH INTERIOR ADAPTER
FOR WINDOWS WITHOUT INTERIOR ADAPTER
LIMIT POSITIVE LOADS TO 30.0 PSF

MAXIMUM VENT SIZE IS 14.7 SQ.FT.
AND MAXIMUM VENT HEIGHT IS 71 1/16"







REVISIONS	
DATE	
DESIGN PRESSURE & COMPLIANCE WITH FBC 2010	
SIZES	

WINDOOR
WINDOW & DOOR MANUFACTURERS

ANTHONY LYNN MILLER
LICENSE
No. 69705
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 69705

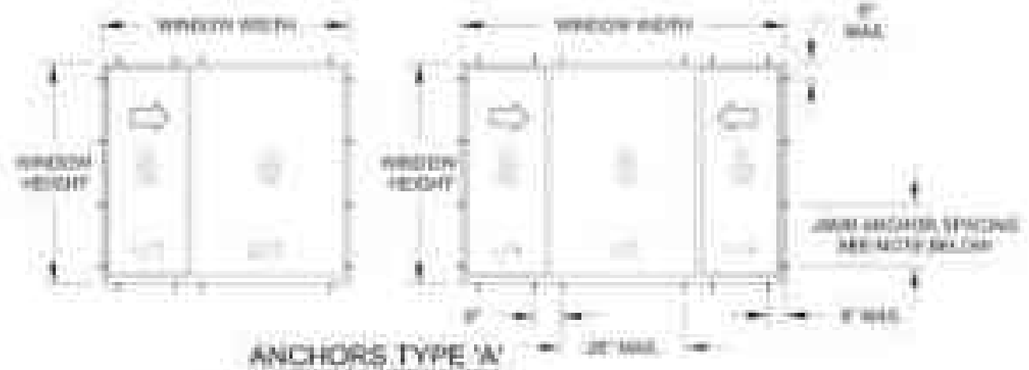
WIDTH (FT-IN)	WIDTH (MM)	HEIGHT	'A' (+) PSF	'A' (-) PSF	'B' (+) PSF	'B' (-) PSF	'C' (+) PSF	'C' (-) PSF
3'0"	914	36"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	48"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	60"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	72"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	84"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	96"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	108"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	120"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	132"	150.0	150.0	150.0	150.0	150.0	150.0
3'0"	914	144"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	36"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	48"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	60"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	72"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	84"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	96"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	108"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	120"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	132"	150.0	150.0	150.0	150.0	150.0	150.0
3'6"	1067	144"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	36"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	48"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	60"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	72"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	84"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	96"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	108"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	120"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	132"	150.0	150.0	150.0	150.0	150.0	150.0
4'0"	1219	144"	150.0	150.0	150.0	150.0	150.0	150.0

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

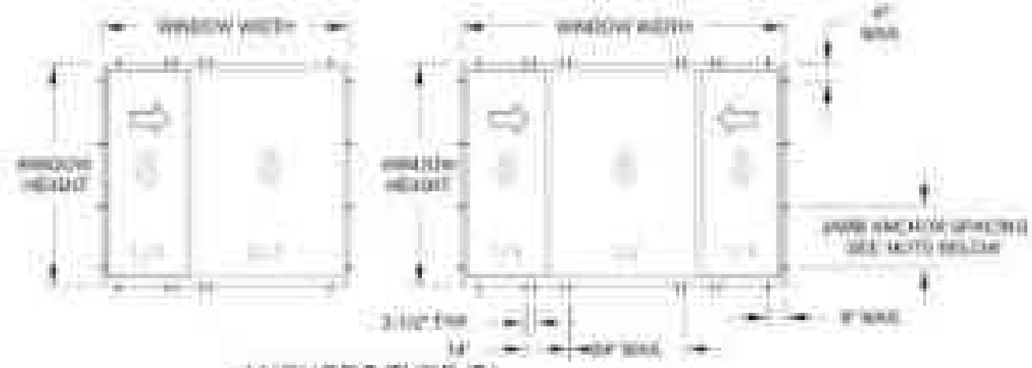
ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR PDS (+) LOADS SHOWN ARE PSF
SILL WITH WATERBAR ADAPTER
FOR WINDOWS WITHOUT WATERBAR ADAPTER
LIMIT PDS (+) LOADS TO 45.0 PSF

JAMB ANCHOR SPACING
22" MAX. FOR SHMS UP TO 144"
12" MAX. FOR SHMS GREATER THAN 144" TO 120"

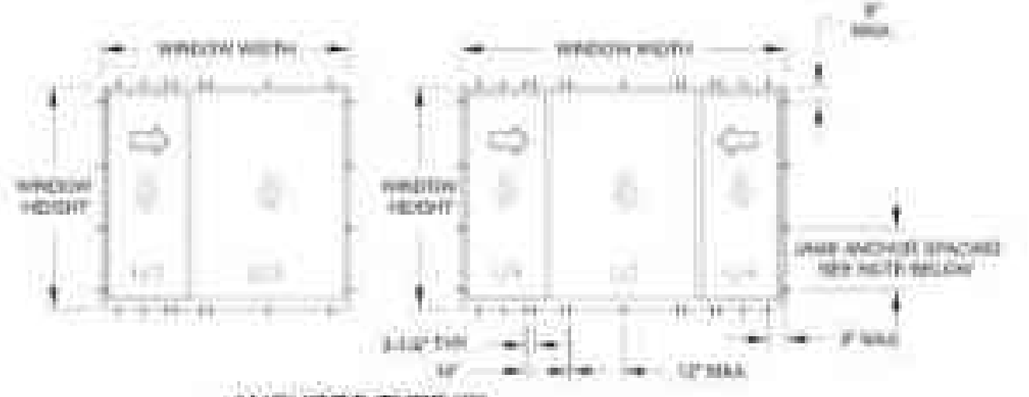
ANCHOR CAPACITY
UNEQUAL PANELS



ANCHORS TYPE 'A'
2 ANCHORS AT MTG. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 22.5 PSF



ANCHORS TYPE 'B'
4 ANCHORS AT MTG. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF



ANCHORS TYPE 'C'
4 ANCHORS AT MTG. STILE ENDS
12" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF

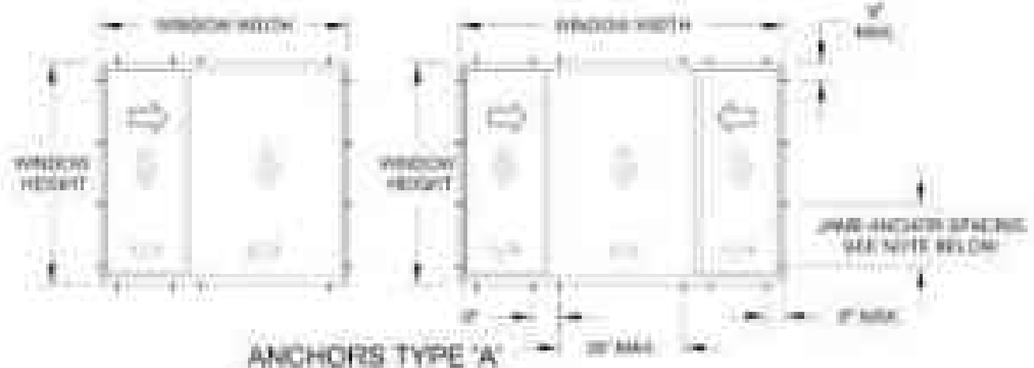
WINDOOR
SERIES "FSF" ALUM. HORIZONTAL ROLLING WINDOW
DESIGN PRESSURE II
11-05-11
SHEET

ANTHONY LYNN MILLER
LICENSED
No. 55709
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.

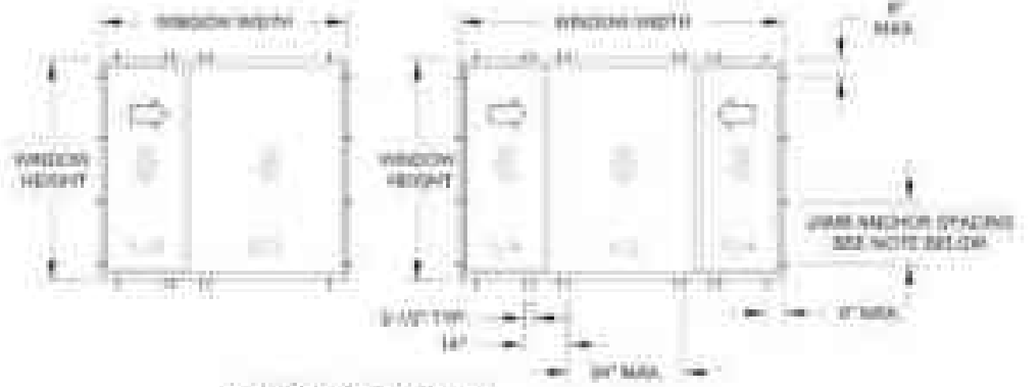
WINDOW SIZE			1/4" GLASS SPACE ANCHORING TYPE			1/2" GLASS SPACE ANCHORING TYPE			1/2" GLASS SPACE ANCHORING TYPE		
			A	B	C	A	B	C	A	B	C
WIDTH (mm)	HEIGHT (mm)	WIND SHEAR	POS (+) PSF	NEG (-) PSF	POS (+) PSF	POS (+) PSF	NEG (-) PSF	POS (+) PSF	POS (+) PSF	NEG (-) PSF	POS (+) PSF
25-1/2"	25-5/16"	35-105	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
37"	49-5/16		150.0	150.0	150.0	150.0	150.0	150.0	126.4	150.0	150.0
53-1/8"	11'		139.4	150.0	150.0	118.37	150.0	150.0	87.0	150.0	150.0
74"	99"		97.5	150.0	150.0	81.3	150.0	150.0	60.1	120.1	150.0
79-1/2"	106"		87.6	150.0	150.0	75.8	150.0	150.0	56.0	117.8	147.3
106-1/4"	142"		66.3	136.9	150.0	56.7	113.3	141.6	42.0	87.9	109.8
25-1/2"	25-5/16"	35-105	150.0	150.0	150.0	150.0	150.0	150.0	134.0	150.0	150.0
37"	49-5/16		150.0	150.0	150.0	123.6	150.0	150.0	86.0	150.0	150.0
53-1/8"	71"	35A-50P	102.4	140.0	150.0	95.9	150.0	150.0	66.7	133.0	166.0
74"	99"		79.3	146.3	150.0	81.8	150.0	150.0	47.6	95.6	119.5
79-1/2"	106"		68.1	136.5	150.0	57.0	114.1	142.6	44.7	89.3	111.9
25-1/2"	25-5/16"	50P	150.0	150.0	150.0	138.7	150.0	150.0	107.1	150.0	150.0
37"	49-5/16		150.0	150.0	150.0	94.3	150.0	150.0	77.1	150.0	150.0
53-1/8"	71"		83.1	150.0	150.0	69.0	138.0	150.0	53.6	107.1	133.9
25-1/2"	25-5/16"	70P	146.1	150.0	150.0	121.4	150.0	150.0	94.1	150.0	150.0
37"	49-5/16		104.6	150.0	150.0	86.9	150.0	150.0	67.5	134.9	150.0
53-1/8"	71"		104.6	145.4	150.0	80.4	120.8	150.0	46.9	83.7	117.2
25-1/2"	25-5/16"	70P	139.4	150.0	150.0	115.5	150.0	150.0	90.3	150.0	150.0
37"	49-5/16		96.1	150.0	150.0	82.2	150.0	150.0	63.9	127.8	159.8
53-1/8"	71"		68.6	137.8	150.0	57.2	114.4	143.0	44.4	88.8	111.0

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

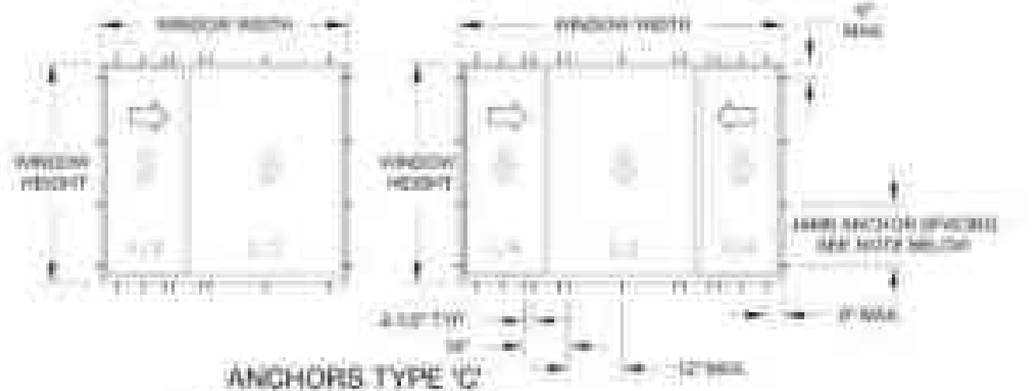
ALL VALUES SHOWN ARE DESIGN PSF.
VALUES FOR POS(+) LOADS SHOWN ARE FOR
WALL WITH WATERBAR ADAPTER.
FOR WINDOWS WITHOUT WATERBAR ADAPTER
LIMIT POS(+) LOADS TO 60.0 PSF



ANCHORS TYPE 'A'
2 ANCHORS AT MTG. STILE ENDS
20" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF



ANCHORS TYPE 'B'
6 ANCHORS AT MTG. STILE ENDS
24" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF



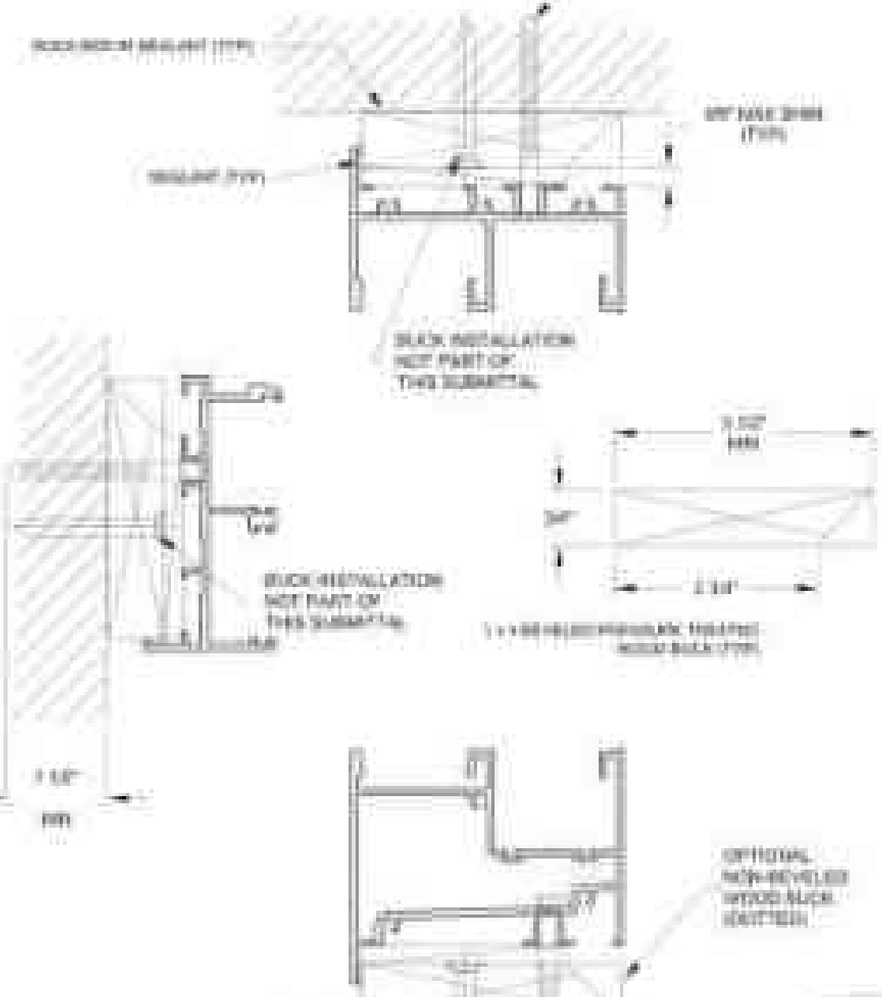
ANCHORS TYPE 'C'
6 ANCHORS AT MTG. STILE ENDS
12" MAX. SPACING BETWEEN ANCHORS
LIMIT MAX. DESIGN LOADS TO 150 PSF

ANCHOR CAPACITY
UNEQUAL PANELS

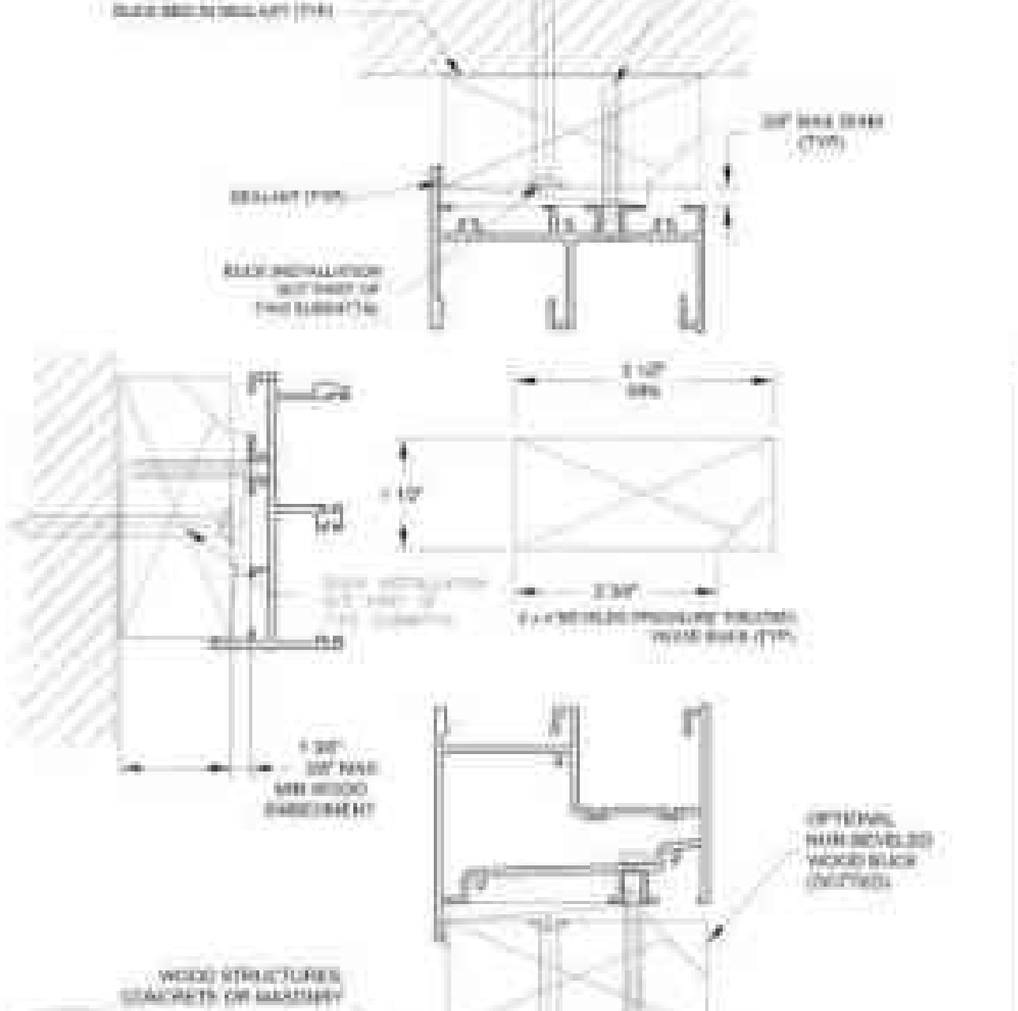
WINDOOR
DESIGN LOAD TABLES
SERIES "70P" ALUM. HORIZONTAL SLIDING
ANTHONY LYNN MILES
LICENSED
No. 90706
STATE OF
PROFESSIONAL ENGINEER
A. LYNN MILES P.E.
P.E.# 90706

INSTALLATION CONDITIONS FLANGE FRAME

FLANGE FRAME INSTALLATION TYPE '1'
THRU 1 BY WOOD BUCK



FLANGE FRAME INSTALLATION TYPE '2'
THRU 2 BY WOOD BUCK



WOOD BUCKS NOT BY WINDOOR CORP., MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

(OPTIONAL PRE-CAST SILL)

NO.	DESCRIPTION	DATE
1		

WINDOOR®

SERIES "TFF" ALUM. HORIZONTAL ROLLER WINDOW

FLANGE INSTALLATION

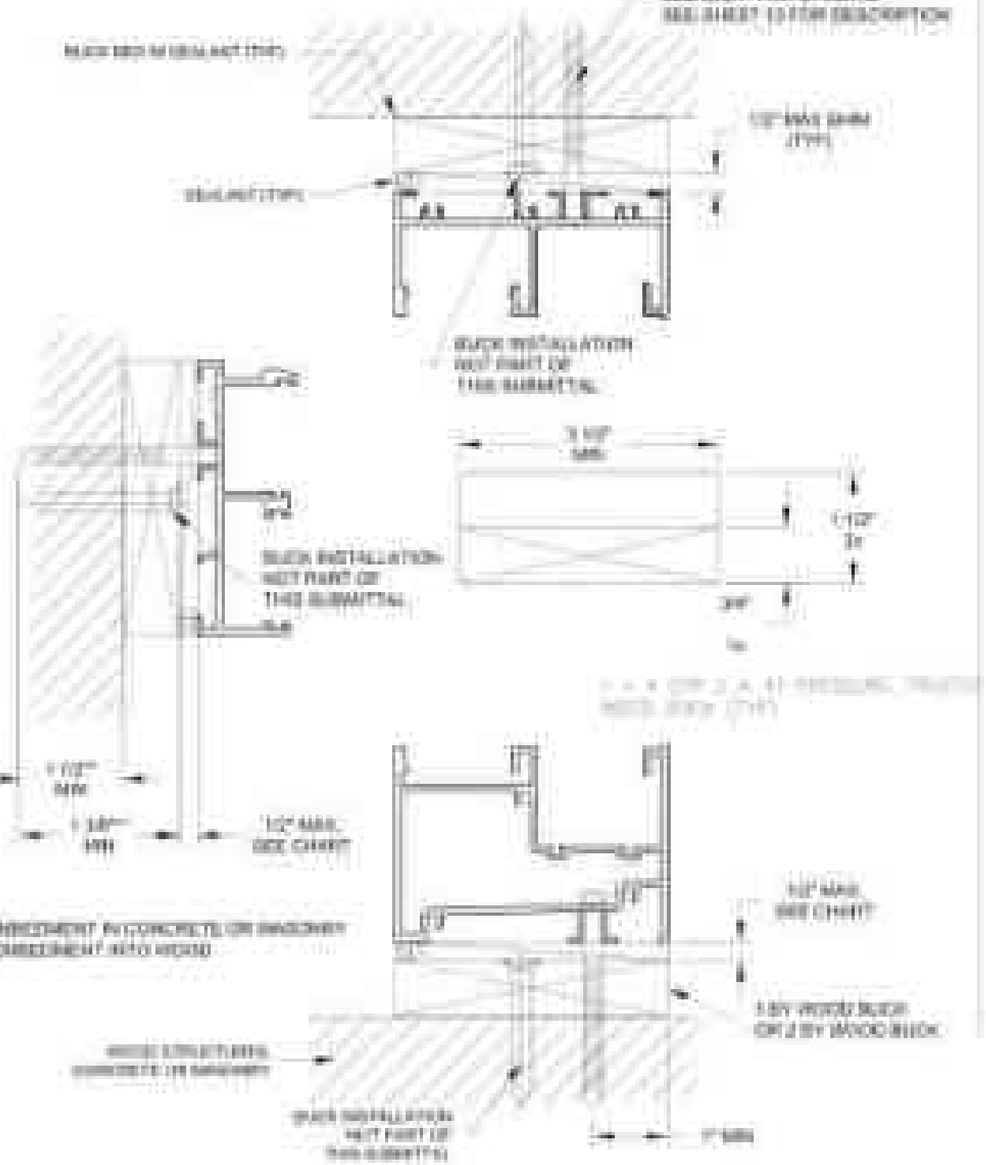
12-00

ANTHONY LYNN MILLER
LICENSED
No. 30729
STATE OF
PENNSYLVANIA
PROFESSIONAL ENGINEER

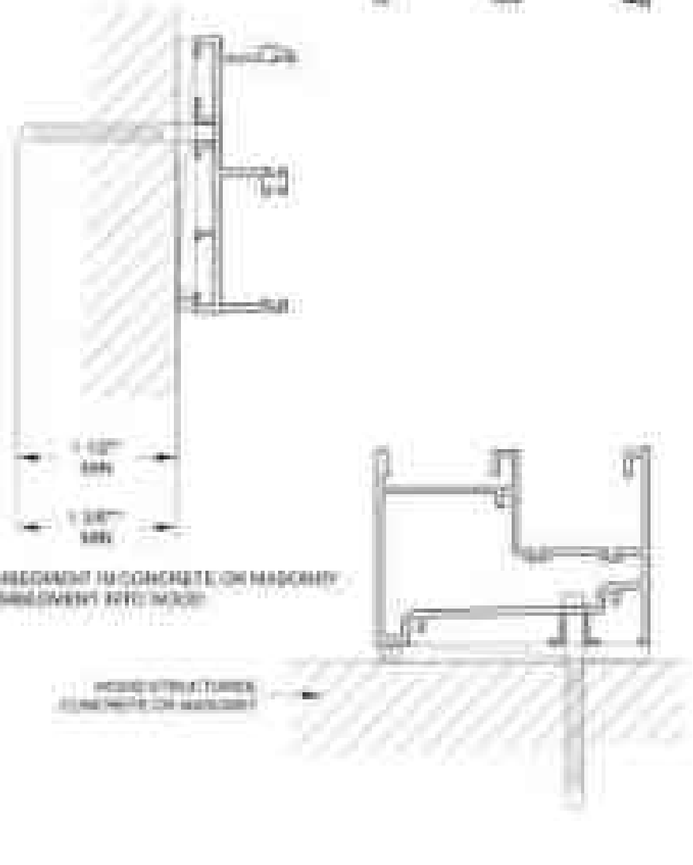
A. LYNN MILLER P.E.
P.E.# 30729

INSTALLATION CONDITIONS EQUAL LEG FRAME

EQUAL LEG INSTALLATION TYPE 'T'
THRU 1 OR 2 BY WOOD BUCK



EQUAL LEG INSTALLATION TYPE 'S'
DIRECTLY INTO STRUCTURE OPENING



WOOD BUCKS NOT BY WINDOOR CORP. MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE

NO.	DESCRIPTION	DATE
1	NO CHANGES THIS SHEET	8/8
2	ADD TYP ALUM EXTRUSION	11/8/21
3	ADD T/S DETAILS	11/8/21

WINDOOR
WINDOOR CORP.
2000 TECHNOLOGY DRIVE
PITTSBURG, CA 94565
(925) 439-1500

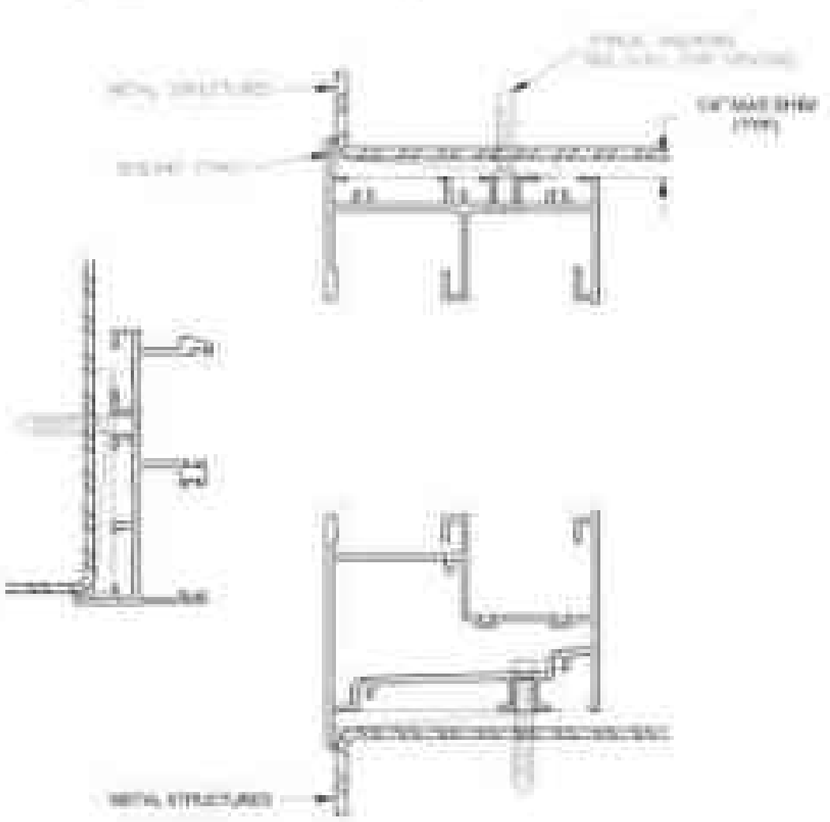
DRAWN BY	A. MOELLER
CHECKED BY	
APPROVED BY	
DATE	11/8/21
SCALE	1/2"=1'-0"
SHEET	14

TITLE: EQUAL LEG INSTALLATION

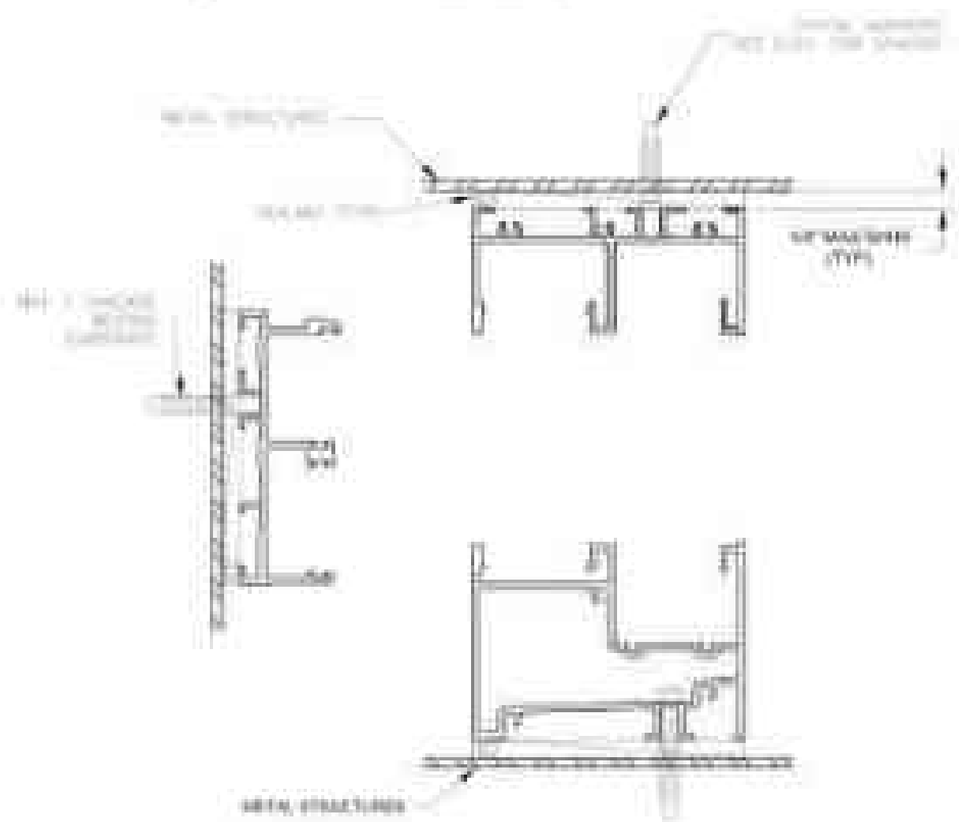
ANTHONY LYNN MILLER
LICENSED
No. 92705
STATE OF CALIFORNIA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.

INSTALLATION CONDITIONS METAL STRUCTURES

FLANGE FRAME INSTALLATION



EQUAL LEG FRAME INSTALLATION



TYPICAL ANCHORS:

Anchor Type	Substrate	Frame Members	Min. Edge Distance	Min. Embedment or Metal Thickness
1/4" DIA. HEX Rack-and-S	Southern Pine (SG = 0.55)	All	1"	1-1/2"
	Thru 1BV Buck into Concrete/Masonry	Jambs	2-1/2"	1-1/4"
	Thru 1BV Buck into Concrete	Head/Sill	2-1/2"	1-1/4"
	Concrete/Masonry	Jambs	2-1/2"	1-1/2"
	Concrete (min. 3.0 ksi)	Head/Sill	2-1/2"	1-1/2"
1/4" DIA. TEKS or Self Drilling Screw	Mulion FPA approved	All	3/8"	(3) Threads min. to extended beyond metal thickness
	Steel Stud, 12 GA	All	3/8"	(3) Threads min. to extended beyond metal thickness
	Aluminum 1/8" Thk Min. (6063-T5)	All	3/8"	(3) Threads min. to extended beyond metal thickness
1/4" DIA. Ultracon ®	Southern Pine (SG = 0.55)	All	1"	1-3/8"
	Thru 1BV Buck into Concrete/Masonry	Jambs	2-1/2"	1-1/8"
	Thru 1BV Buck into Concrete	Head/Sill	2-1/2"	1"
	Concrete/Masonry	Jambs	2-1/2"	1-1/4"
	Concrete	Head/Sill	2-1/2"	1"

MATERIAL PROPERTIES

Material	Min. F_y	Min. F_u
1/4" Tek® or Self-Drilling Steel Screw, SS-F	120 ksi	150 ksi
1/4" HEX Rack-Cast II	112 ksi	163 ksi
1/4" Ecu-Lineon	105 ksi	117 ksi
1/4" Self-Mill UltraCon	140 ksi	194 ksi
#082 "E" Substrate	36 ksi	58 ksi
1/16 Steel	36 ksi	58 ksi
12 GA Steel Stud	33 ksi	45 ksi

ANCHOR SPACING
24" MAX. FOR SHIMS UP TO 1/4"
16" MAX. FOR SHIMS GREATER THAN 1/4" TO 1/2"

NO.	REVISION	BY	DATE
1	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
2	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
3	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
4	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
5	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
6	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
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10	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
11	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23
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100	ADDED TYP ALUM INSERT/STRUCTURAL MULLION	MH	12-05-23

WINDOOR

INSTALLATION IN TO METALS

ADDED TYP ALUM INSERT/STRUCTURAL MULLION

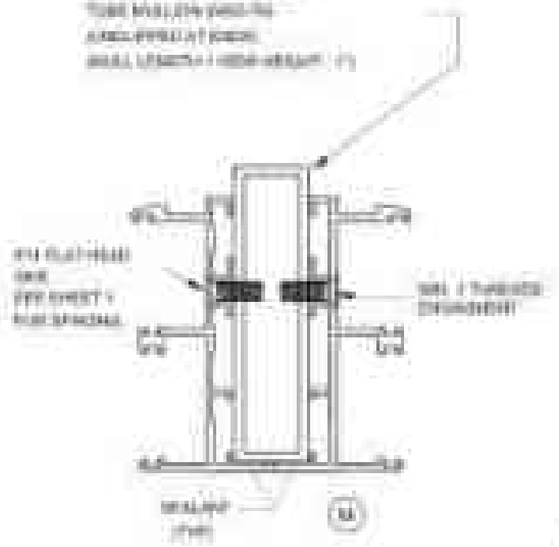
MH

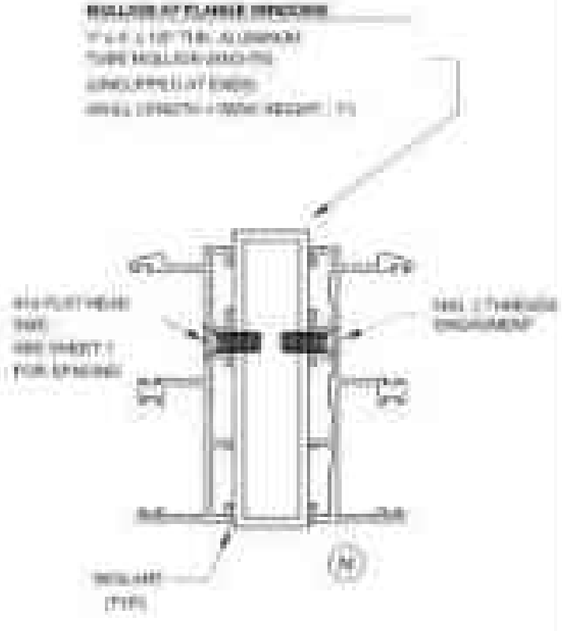
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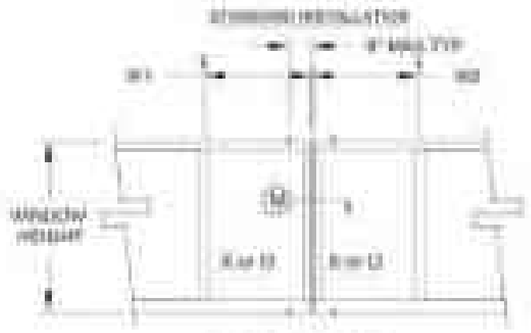
HR/TS

ANTHONY LYNN MILLER
LICENSED
No. 90706
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 90706

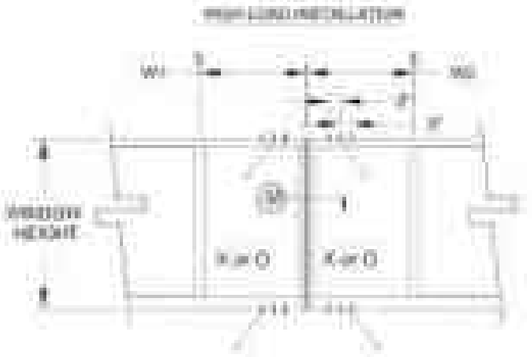
MULLION PERFORMANCE







MULTIPLE OPENING
(2 OR MORE WINDOWS)
w/ 1 SCREW ON EACH SIDE OF MULLION



MULTIPLE OPENING
(2 OR MORE WINDOWS)
w/ 2 OR 3 SCREWS ON EACH SIDE OF MULLION
(+ ADDITIONAL MULLION TO BE SELECTED BY INSTALLER)

$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$

TRIBUTARY WIDTH	WINDOW HEIGHT	MULLION DESIGN LOAD CAPACITY - PSF (+/-)
24"	54"	150.0
28"		150.0
32"		150.0
36"		150.0
40"		120.0
44"		120.0
48"		120.0
52"		120.0
56"		120.0
60"		120.0
24"	60"	150.0
28"		150.0
32"		150.0
36"		150.0
40"		120.0
44"		120.0
48"		120.0
52"		120.0
56"		120.0
60"		120.0
24"	66"	150.0
28"		150.0
32"		150.0
36"		150.0
40"		120.0
44"		120.0
48"		120.0
52"		120.0
56"		120.0
60"		120.0

TRIBUTARY WIDTH	WINDOW HEIGHT	MULLION DESIGN LOAD CAPACITY - PSF (+/-)
24"	72"	120.0
28"		120.0
32"		120.0
36"		120.0
40"		120.0
44"		120.0
48"	78"	120.0
52"		120.0
56"		120.0
60"		120.0

TRIBUTARY WIDTH	WINDOW HEIGHT	MULLION DESIGN LOAD CAPACITY - PSF (+/-)
18"	36-1/8"	150.0
20-1/2"		150.0
23"		150.0
44"		150.0
60"		120.0
77"		120.0
18"	50-3/8"	150.0
20-1/2"		150.0
23"		150.0
44"		120.0
60"		120.0
18"	62"	150.0
20-1/2"		150.0
23"		150.0
44"		120.0
18"	72"	150.0
20-1/2"		120.0
23"		120.0
39"		120.0
18"	78"	150.0
20-1/2"		120.0
23"		120.0

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

NOTE:
VALUES FROM CHARTS MAY
BE INTERPOLATED BETWEEN SIZES

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR PSS (+) LOAD SHOWN ARE FOR
WELL BATH WATERBAR ADAPTER.
FOR ASSEMBLIES WITHOUT SUCH WATERBAR ADAPTER
LIMIT PSS (+) LOADS TO 42.5 PSF.

A	03/31/21	ADDED PERFORMANCE TABLES	
REVISION	DATE	DESCRIPTION	

WINDOW MULLION DETAILS
MULLION DP +/-
WINDOW SERIES 1000 (1M)

WinDoor
WINDOWS & DOORS

ANTHONY LYNN MILLER
LICENSE
No. 90705
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. #90705

		11'-0" SPAN DEFLECTION			10'-0" SPAN DEFLECTION			12'-0" SPAN DEFLECTION			
TRIBUTARY WIDTH	MULLION HEIGHT	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	
24"	84"	107.6	158.0	158.0	148.0	158.0	158.0	85.0	138.7	158.0	
		92.2	158.0	158.0	74.0	150.0	150.0	59.4	119.5	158.0	
		86.6	158.0	158.0	71.3	142.0	150.0	55.8	110.9	158.0	
		80.7	158.0	158.0	67.0	134.0	150.0	52.0	104.1	158.0	
		73.7	147.4	158.0	59.6	118.7	150.0	46.2	92.4	138.7	
		53.8	107.4	158.0	44.7	89.3	134.0	34.7	69.3	104.0	
		40.6	99.1	148.6	41.3	82.5	123.7	32.0	64.0	96.0	
	96"	96.8	158.0	158.0	80.4	150.0	150.0	62.4	124.8	158.0	
		83.0	158.0	158.0	68.9	137.8	150.0	53.5	107.0	160.5	
		77.4	158.0	158.0	64.3	128.6	150.0	49.7	99.8	149.6	
		72.4	145.2	158.0	60.3	120.6	150.0	46.6	93.6	140.4	
		64.5	129.1	158.0	53.6	107.2	160.8	41.6	83.3	124.9	
		55.1	118.2	158.0	46.2	96.5	144.7	37.4	74.9	112.3	
		52.8	105.6	158.0	43.9	87.7	131.6	34.0	68.1	102.1	
		69.6	158.0	158.0	75.1	146.2	158.0	58.7	113.0	158.0	
		55.4	110.8	158.0	60.6	120.0	158.0	46.6	90.2	142.6	
	84"	70.4	140.8	158.0	58.5	116.9	158.0	45.4	90.8	136.1	
		66.3	132.3	158.0	55.8	100.0	158.0	42.5	85.1	127.6	
		58.7	117.3	156.4	48.7	97.3	146.0	37.6	75.4	113.0	
		52.3	104.6	156.0	43.6	87.1	131.0	34.0	68.1	102.1	
		80.7	158.0	158.0	67.0	134.0	158.0	52.0	104.0	156.0	
		68.1	136.3	158.0	57.4	114.9	158.0	44.6	89.1	133.7	
	72"	65.5	126.1	158.0	55.6	107.2	158.0	41.6	83.2	124.8	
		60.5	121.0	158.0	50.3	100.5	158.0	39.0	78.0	117.0	
		53.8	107.6	156.0	44.7	89.3	134.0	34.7	69.3	104.0	
		76.4	158.0	158.0	63.5	126.9	158.0	49.3	98.5	147.8	
		65.3	131.0	158.0	54.4	108.8	158.0	42.2	84.3	126.7	
	60"	61.1	122.3	158.0	50.8	101.6	154.0	39.4	78.8	118.2	
		57.3	114.6	158.0	47.6	95.2	142.8	36.9	73.9	110.9	
		50.8	101.5	152.3	42.3	84.6	126.9	32.8	65.7	98.5	

		11'-0" SPAN DEFLECTION			10'-0" SPAN DEFLECTION			12'-0" SPAN DEFLECTION			
TRIBUTARY WIDTH	MULLION HEIGHT	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	L/175 (1.0 W)	L/240 (0.75 W)	L/360 (0.5 W)	
48"	84"	150.0	158.0	158.0	150.0	158.0	158.0	100.0	138.7	158.0	
26-1/2"		127.1	158.0	158.0	150.0	113.9	150.0	100.0	88.4	150.0	
27"		86.2	158.0	158.0	80.8	150.0	150.0	63.0	83.3	126.5	
44"		82.8	158.0	158.0	134.0	68.6	137.1	100.0	83.3	126.4	
66"		64.8	129.7	158.0	150.0	63.6	127.2	100.0	61.8	93.6	
71"		57.2	105.3	158.0	150.0	42.5	85.0	127.5	33.6	50.0	
48"		150.0	158.0	158.0	150.0	137.1	150.0	100.0	95.8	150.0	
26-1/2"		103.9	158.0	158.0	150.0	86.3	150.0	150.0	67.8	102.5	
27"		74.2	158.8	158.0	150.0	61.8	123.6	150.0	48.9	73.9	
44"		62.8	125.2	158.0	150.0	52.0	104.1	150.0	40.7	60.7	
48"		122.9	158.0	158.0	150.0	102.1	150.0	150.0	80.2	121.0	
26-1/2"		85.8	158.0	158.0	150.0	71.1	142.1	150.0	55.8	84.5	
27"		56.8	113.6	158.0	150.0	40.7	80.3	144.0	32.0	48.3	
44"		50.3	100.5	158.0	150.0	41.8	83.5	125.3	32.4	49.0	
48"		107.8	158.0	158.0	150.0	89.5	150.0	150.0	70.3	106.0	
26-1/2"		73.1	146.1	158.0	150.0	60.7	121.4	150.0	47.7	72.1	
27"		52.3	104.6	158.0	150.0	43.5	86.9	130.4	33.7	50.9	
44"		46.9	93.8	158.0	150.0	38.9	77.8	116.7	30.2	45.7	
48"		93.2	158.4	158.0	150.0	77.5	155.0	150.0	60.8	91.9	
26-1/2"		63.2	126.3	158.0	150.0	52.5	105.0	150.0	41.2	62.4	
27"		48.8	98.1	148.7	41.3	82.1	123.6	32.6	50.9	77.1	

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$

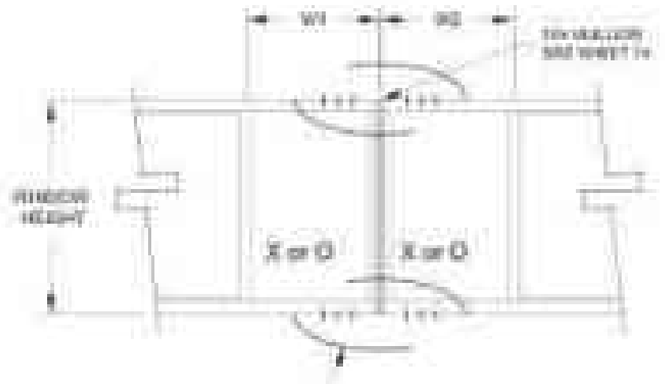


ILLUSTRATION OF X OR O ANCHORS
(SEE CHARTS ABOVE) ALL OTHER ANCHORS AS PER SHEET 11

NOTE:
VALUES FROM CHARTS MAY BE INTERPOLATED BETWEEN SIZES

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR PSF (1) LOADS SHOWN ABOVE SILL W/ 1/4 WATERFLOW ADAPTER
FOR WINDOWS WITHOUT WATERFLOW ADAPTER LIMIT PSF (1) LOADS TO 45.0 PSF

MULLION ANCHORS
ADJACENT TO MULLIONS AT HEAD & SILL
ALL OTHER WINDOW ANCHORS
AS PER SHEETS 11 THRU 14

WINDOOR
WINDOW & DOOR MANUFACTURERS ASSOCIATION

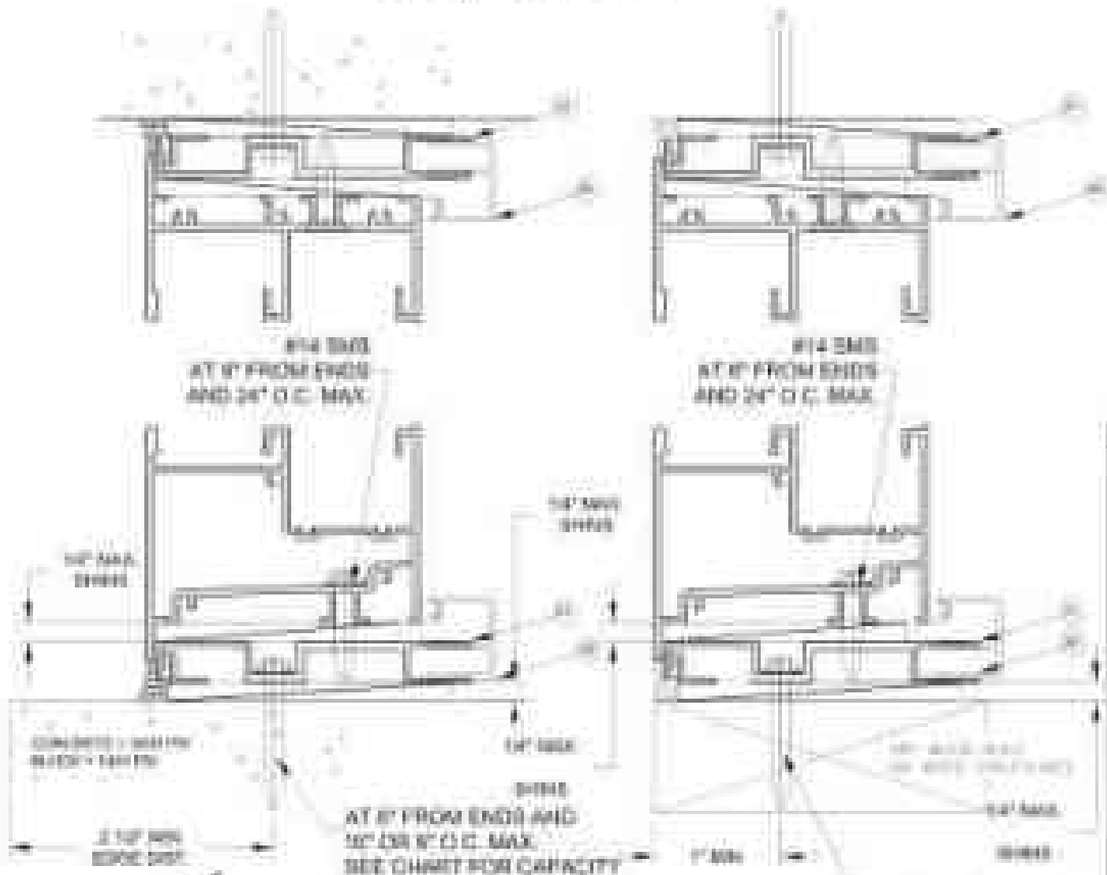
SERIES TFW ALUMINUM WINDOWS
MULLION GP 2

A	10/15/09		

ANTHONY LYNN MILLER
LICENSE
No. 36705
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E.#36705

ALUMINUM BUCK FRAMING DETAILS

REFER TO SHEETS 5 & 6 FOR WINDOW CAPACITIES
USE LOWER APPLICABLE VALUES





TYPICAL INSTALLATION DETAIL
ON ALL FOUR SIDES USING ALUMINUM BUCK SYSTEM

NOTE:
VALUES FROM DWG T3 MAY
BE INTERPOLATED BETWEEN SIZES

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR PG5 (1) LOADS SHOWN ARE FOR
SILL WITH WATERBAR ADAPTER
FOR WINDOWS WITHOUT WATERBAR ADAPTER
LIMIT PG5 (1) LOADS TO 80.0 PSF

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

WINDOOR
WINDOW & DOOR MANUFACTURERS ASSOCIATION

SERIES 7700 ALUM. HORIZONTAL ROLLING WINDOW
ALUMINUM BUCK DP 1

4	03/31/21	ADD PG5
3	12/16/20	ADD PG5
2	10/16/20	ADD PG5
1	08/28/20	ADD PG5
REVISION	DATE	DESCRIPTION

ANTHONY LYNN MILLER
LICENSE
No. 90705
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER P.E.
P.E.# 90705

ALUMINUM BUCK FRAMING DETAILS

REFER TO SHEETS 5 & 6 FOR WINDOW CAPACITIES
USE LOWER APPLICABLE VALUES

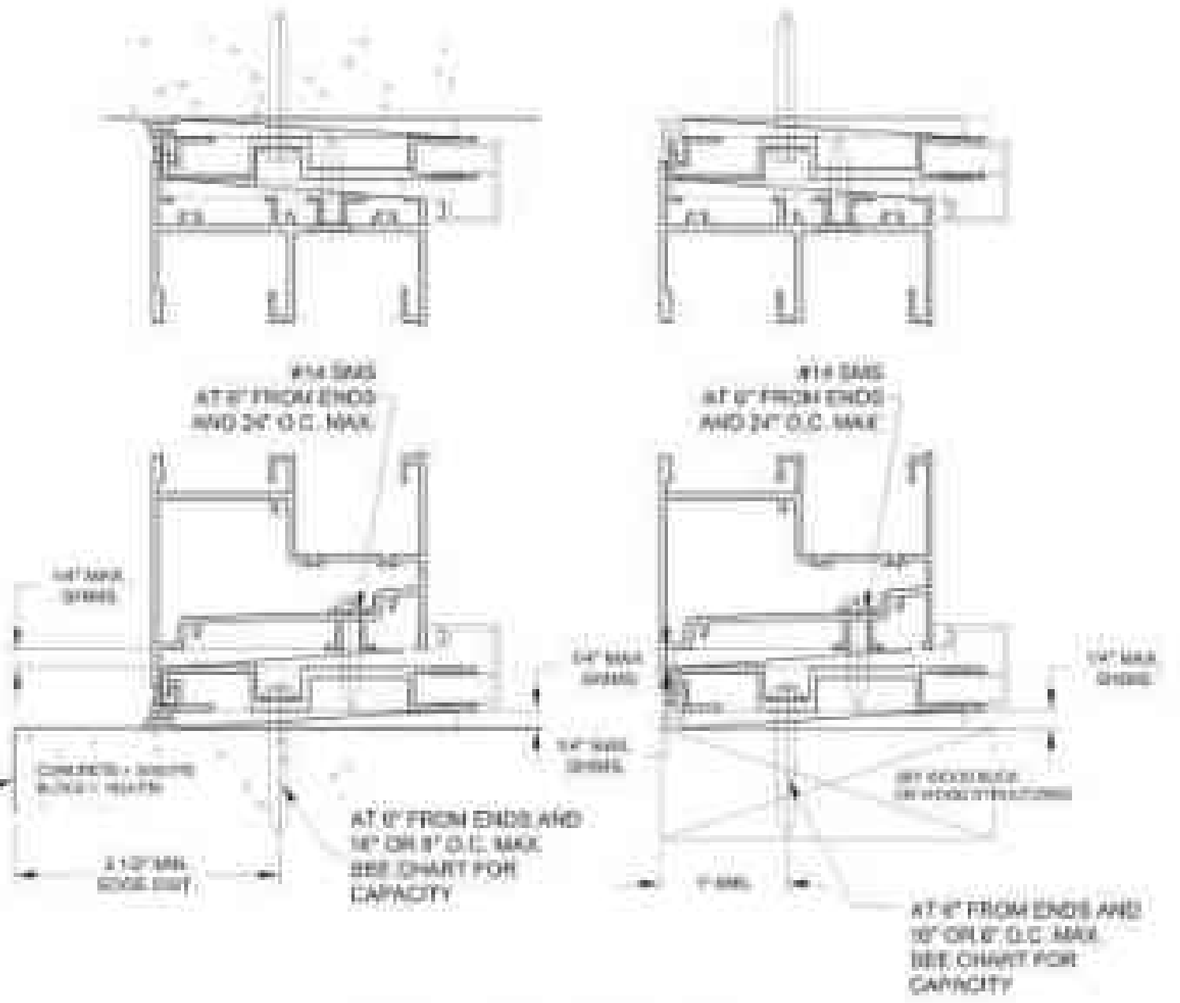
DESIGN PRESSURE	HEIGHT	WIDTH UP TO 36"	WIDTH UP TO 48"	WIDTH UP TO 60"	WIDTH UP TO 72"
15 PSF	36-3/8"	150.0	150.0	150.0	150.0
	48-3/8"	150.0	150.0	150.0	150.0
	60-3/8"	116.2	150.0	150.0	150.0
	72-3/8"	89.3	124.7	150.0	150.0
	84"	86.8	121.3	150.0	150.0
	96"	85.8	126.0	150.0	150.0
	108"	87.3	143.7	150.0	150.0
20 PSF	36-1/2"	150.0	150.0	150.0	150.0
	48-1/8"	121.1	150.0	150.0	150.0
	60-1/8"	92.8	117.8	150.0	150.0
	72-1/8"	79.8	111.3	137.8	150.0
	84"	71.7	107.7	134.4	150.0
	96"	69.1	98.5	125.8	150.0
	108"	70.3	115.7	147.8	150.0
30 PSF	36-1/2"	150.0	150.0	150.0	150.0
	48-1/8"	110.1	150.0	150.0	150.0
	60-1/8"	84.2	106.8	140.4	150.0
	72-1/8"	63.4	89.8	117.7	150.0
	84"	58.1	82.6	110.1	150.0
	96"	57.7	87.5	115.7	150.0
40 PSF	36-1/2"	138.9	150.0	150.0	150.0
	48-1/8"	88.3	126.3	150.0	150.0
	60-1/8"	61.1	103.4	136.0	150.0
	72-1/8"	50.0	83.7	109.8	150.0
	84"	47.1	69.5	110.6	150.0
50 PSF	36-1/2"	126.0	150.0	150.0	150.0
	48-1/8"	83.1	118.1	146.1	150.0
	60-1/8"	72.8	100.7	132.8	150.0
	72-1/8"	57.5	81.6	106.8	150.0
	84"	43.8	67.2	107.8	150.0

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

NOTE:
VALUES FROM CHARTS MAY
BE INTERPOLATED BETWEEN SIZES

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR EXT (+) LOADS SHOWN ARE FOR
SILL WITH WATERBAR ADAPTER
FOR WINDOWS WITHOUT WATERBAR ADAPTER
LIMIT EXT (+) LOADS TO 40.0 PSF





TYPICAL INSTALLATION DETAIL
ON ALL FOUR SIDES USING ALUMINUM BUCK SYSTEM

WINDOOR
ALUMINUM BUCK DIP 2
SERIES 7700 ALUMINUM HORIZONTAL SLIDING WINDOW
10-01-19
H5725

MEREDITH LYNN MILLER
LICENSED
No. 39704
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. # 39704

Tributary width	Height	Positive design pressure (psf)			Negative design pressure (psf)		
		DP1	DP2	DP3	DP1	DP2	DP3
24"	54"	165.8	111.6	153.0	83.3	139.6	192.0
30"		165.4	112.6	150.0	80.0	139.6	192.0
32"		165.3	98.7	144.0	70.0	140.0	189.0
36"		43.5	82.7	121.6	62.3	104.4	150.0
38"		40.5	81.0	121.6	57.4	114.8	150.0
40"		38.8	72.8	116.4	60.0	112.0	138.0
42"		37.6	75.2	113.0	52.3	106.7	150.0
44"		35.9	71.8	107.9	50.9	101.4	150.0
46"		34.5	68.6	103.0	48.7	97.4	146.1
48"		33.8	65.8	98.7	46.7	93.3	140.0
52"		31.4	60.7	91.1	43.1	86.2	129.3
24"	60"	150.2	100.4	150.0	84.0	160.0	150.0
30"		150.7	101.5	150.0	72.0	144.0	150.0
32"		44.4	88.8	133.2	63.0	126.0	150.0
36"		39.5	79.0	118.4	56.0	112.0	150.0
38"		36.4	72.9	109.3	51.7	103.4	150.0
40"		35.5	71.0	106.6	50.4	100.8	150.0
42"		33.8	67.7	101.5	48.0	96.0	144.0
44"		32.3	64.6	96.9	45.8	91.6	137.5
46"		30.8	61.6	92.7	43.8	87.7	131.5
24"	66"	53.8	107.6	150.0	76.4	150.0	150.0
30"		46.1	92.3	138.4	65.5	130.9	150.0
32"		40.4	80.7	121.1	57.2	114.3	150.0
36"		35.9	71.8	107.8	50.9	101.8	150.0
38"		33.1	66.2	99.4	47.0	94.0	141.0
40"		30.9	61.8	92.8	43.8	87.6	131.5
42"		29.0	58.0	87.0	41.2	82.3	123.5
44"		27.4	54.8	82.2	38.9	77.8	116.7
24"	72"	49.2	98.7	148.0	70.0	140.0	150.0
30"		45.3	94.6	126.6	60.0	120.0	150.0
32"		37.6	74.8	111.9	52.5	105.0	150.0
36"		32.8	65.6	98.7	46.7	93.3	140.0
38"		30.4	60.7	91.1	43.1	86.2	129.3
24"	78"	46.7	93.5	140.2	66.3	132.6	150.0
26"		45.1	90.1	135.2	63.8	127.7	150.0
32"		35.1	70.1	105.2	49.7	99.3	149.2
36"		31.2	62.5	93.8	44.2	88.4	132.6

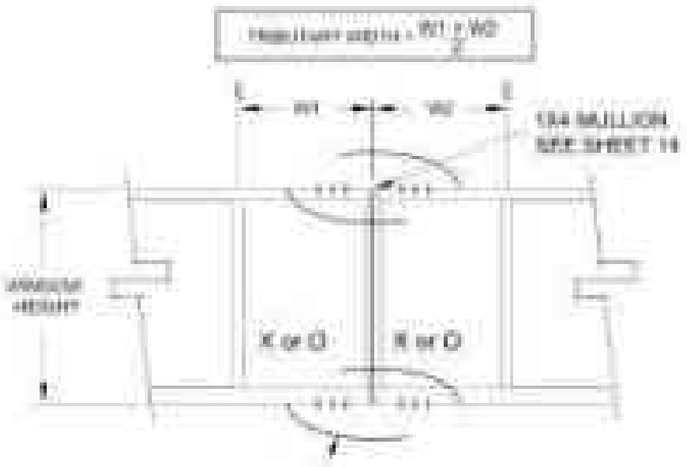
Tributary width	Height	Positive design pressure (psf)			Negative design pressure (psf)		
		DP1	DP2	DP3	DP1	DP2	DP3
18"	84"-120"	123.4	156.6	150.0	150.0	150.0	150.0
26-1/2"		83.8	156.6	150.0	119.8	150.0	150.0
37"	84"-120"	95.9	126.1	150.0	89.2	150.0	150.0
44"		80.8	101.8	150.0	77.8	143.3	150.0
66"		58.7	75.3	116.8	58.3	112.6	150.0
77"		51.3	62.8	93.8	44.4	88.8	150.0
18"	60"-83"	93.6	150.0	150.0	132.7	150.0	150.0
26-1/2"		63.8	127.7	150.0	96.3	150.0	150.0
37"		49.0	91.0	136.6	84.6	139.2	150.0
44"		38.3	76.6	114.8	84.2	108.4	150.0
18"	42"-59"	75.2	150.0	150.0	106.7	150.0	150.0
26-1/2"		51.1	102.1	150.0	72.6	144.8	150.0
37"		36.8	73.1	109.7	51.5	103.0	150.0
44"		30.8	61.5	92.3	43.6	87.2	130.9
18"	30"-41"	95.8	137.8	150.0	85.2	150.0	150.0
26-1/2"		44.7	89.4	134.0	63.4	126.8	150.0
37"		33.5	64.0	96.0	45.4	90.8	136.2
18"	24"-29"	62.3	124.8	150.0	88.4	150.0	150.0
26-1/2"		42.3	84.7	127.0	60.1	120.1	150.0
37"		30.3	60.6	90.9	43.0	86.0	129.0

ALL VALUES SHOWN ARE DESIGN PSF (POUNDS PER SQUARE FOOT)

NOTE:
ALUMINUM BUCKS ARE SUPPLIED WITH
CLUSTER OF 2 (1) SCREW HOLE PER SIDE AS STANDARD
EXTRA HOLES MUST BE FIELD DRILLED IF REQUIRED

ALL VALUES SHOWN ARE DESIGN PSF
VALUES FOR POS (+) LOADS SHOWN ARE FOR
SILL WITH WATERBAR ADAPTER
FOR WINDOWS WITHOUT WATERBAR ADAPTER
LIMIT POS (+) LOADS TO 80.0 PSF

VALUES FROM CHARTS MAY
BE INTERPOLATED BETWEEN SIZES

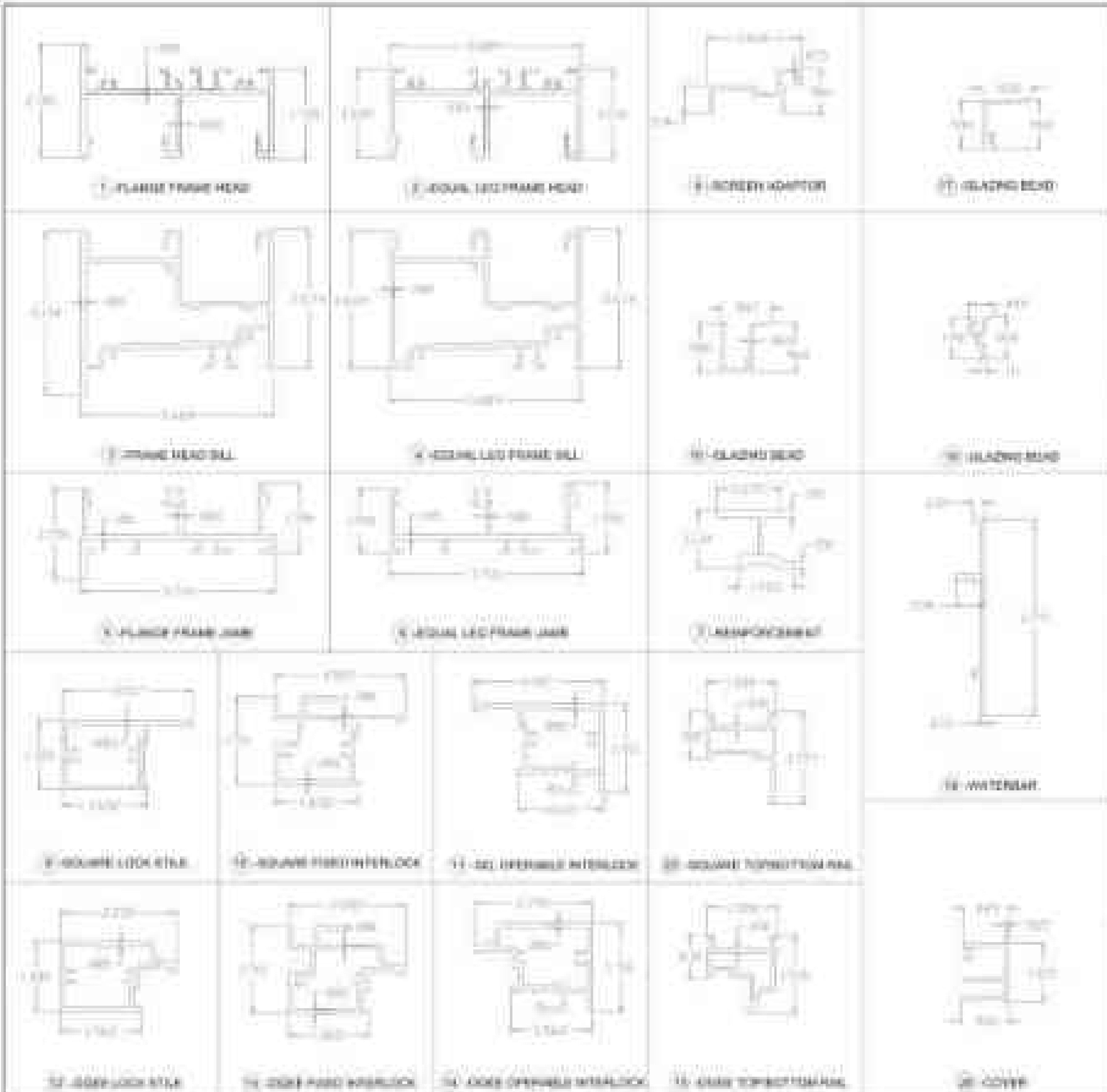




ALUMINUM BUCK ANCHORS
ADJACENT TO MULLIONS AT HEAD & SILL
ALL OTHER ALUMINUM BUCK ANCHORS
AS PER SHEET 16

WINDOOR
ANTHONY LYNN MILLER
LICENSE
No. 92705
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E.#92705

SERIES 7700 ALUM. HORIZONTAL ROLLER WINDOW
ALUMINUM BUCKS (DP 3)
SCALE: 1/4"=1'-0"
20 OF 20 SHEETS
SHEET 19



ITEM	PART #	DESCRIPTION	MATERIAL
1	[illegible]	FLANGE FRAME HEAD	6063-T6
2	[illegible]	EQUAL LEG FRAME HEAD	6063-T6
3	[illegible]	FRAME HEAD SILL	6063-T6
4	[illegible]	EQUAL LEG FRAME SILL	6063-T6
5	[illegible]	FLANGE FRAME JAMB	6063-T6
6	[illegible]	EQUAL LEG FRAME JAMB	6063-T6
7	[illegible]	REINFORCEMENT	6063-T6
8	[illegible]	SCREEN ADAPTOR	6063-T6
9	[illegible]	SQUARE LOCK STILE	6063-T6
10	[illegible]	SQUARE FIXED INTERLOCK	6063-T6
11	[illegible]	SQUARE OPERABLE INTERLOCK	6063-T6
12	[illegible]	OGEE LOCK STILE	6063-T6
13	[illegible]	OGEE FIXED INTERLOCK	6063-T6
14	[illegible]	OGEE OPERABLE INTERLOCK	6063-T6
15	[illegible]	OGEE TOP/BOTTOM RAIL	6063-T6
16	[illegible]	GLAZING BEAD	6063-T6
17	[illegible]	GLAZING BEAD	6063-T6
18	[illegible]	GLAZING BEAD	6063-T6
19	[illegible]	WATERBAR	6063-T6
20		OPTIONAL COVER	6063-T6
21		ALUMINUM BUCK	6063-T6
22	[illegible]	SQUARE TOP/BOTTOM RAIL	6063-T6
23	[illegible]	[illegible]	[illegible]
24	[illegible]	[illegible]	[illegible]
25	[illegible]	[illegible]	[illegible]
26	[illegible]	[illegible]	[illegible]
27	[illegible]	[illegible]	[illegible]
28	[illegible]	[illegible]	[illegible]
29	[illegible]	[illegible]	[illegible]
30	[illegible]	[illegible]	[illegible]
31	[illegible]	[illegible]	[illegible]
32	[illegible]	[illegible]	[illegible]
33	[illegible]	[illegible]	[illegible]
34	[illegible]	[illegible]	[illegible]
35		[illegible]	[illegible]
36		[illegible]	[illegible]
37	[illegible]	[illegible]	[illegible]
38	[illegible]	[illegible]	[illegible]
39		[illegible]	[illegible]
40		[illegible]	[illegible]



WINDOOR

SERIES "3700" ALUM HORIZONTAL ROLLER WDW

BOM / EXTRUSIONS

A. MCMILLEN

21 OF 21

NO CHANGES THIS SHEET

ANTHONY LYNN MILLER
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STATE OF FLORIDA
A. LYNN MILLER, P.E.