

SHORELINE HVHZ HD COLONIAL SHUTTERS

SHORELINE SHUTTERS
105 SEBASTIAN INDUSTRIAL PL #8
SEBASTIAN - FLORIDA 32958
TEL (772) 581-9006

Pedro Figueiredo

Digitally signed by Pedro Figueiredo
Date: 2023.08.11 19:30:46 -04'00'

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PEDRO M. DE FIGUEIREDO

LICENSE

No. 52609

STATE OF FLORIDA

PROFESSIONAL ENGINEER

Pedro De Figueiredo

PE 52609

08/11/2023

ENGINEERING SERVICES - CA 32459
9715 W. BROWARD BLVD.
PLANTATION, FL 33324
PPMF@AOL.COM
ENGINEER SEAL
PEDRO DE FIGUEIREDO
PE 52609



PRODUCT:
EXTRUDED ALUMINUM
COLONIAL SHUTTER
LARGE MISSILE IMPACT RATED

MANUFACTURER:
SHORELINE SHUTTERS
105 SEBASTIAN INDUSTRIAL PL #8
SEBASTIAN, FLORIDA 32958
TEL: (772) 581-9006

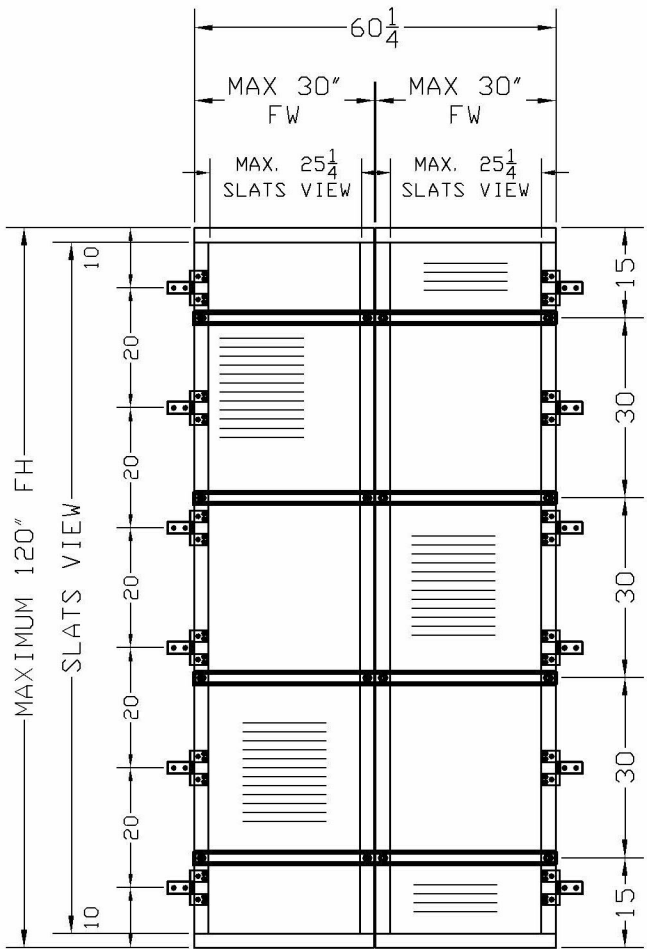
SCALE:
NA
DATE:
08/11/2023
DRAWING #
23-125
SHEET
1 OF 7

GENERAL NOTES:

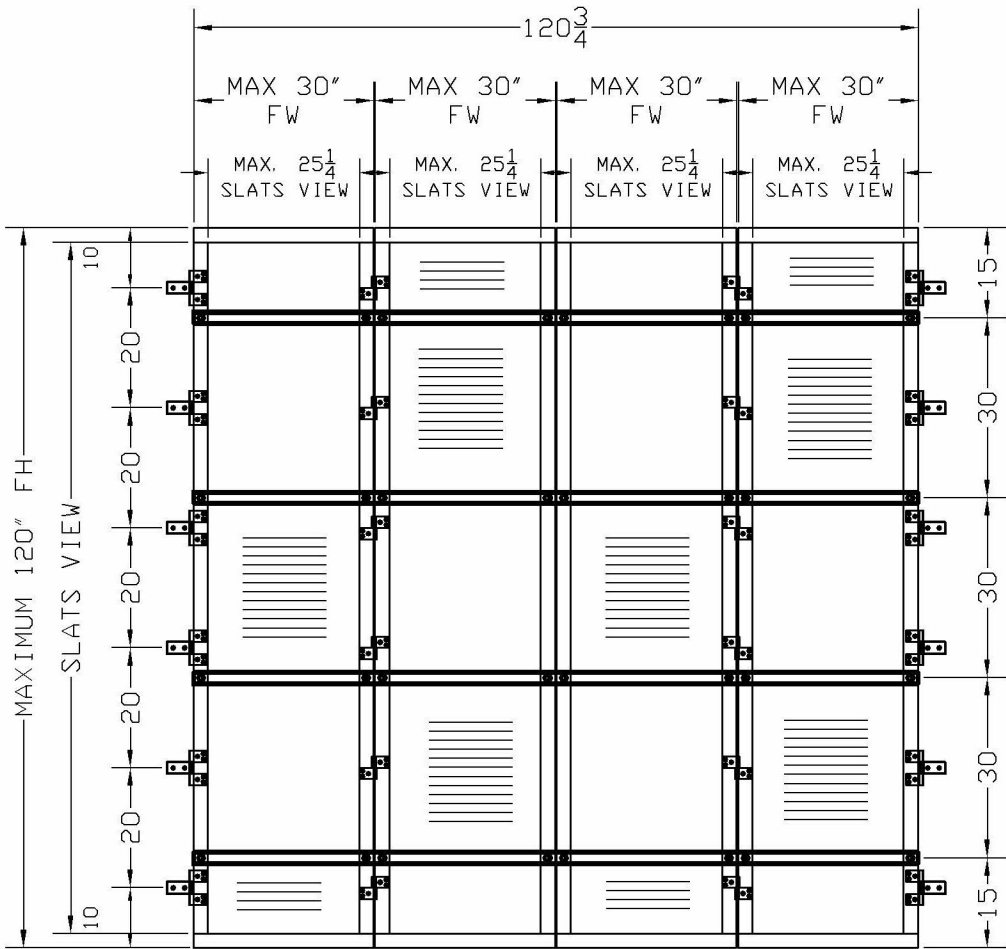
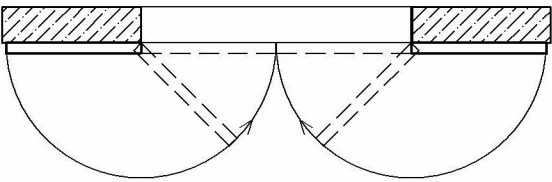
- FLORIDA BUILDING CODE 2023 - 8th EDITION HVHZ & NON HVHZ
LARGE MISSILE IMPACT RATED
- 1- CODE: THIS PRODUCT HAS BEEN TESTED UNDER TAS 201 (LARGE MISSILE), 202 AND 203 AND DESIGNED IN ACCORDANCE WITH THE FBC 2023 8th EDITION INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
- 2- DEFINITION: THIS PRODUCT IS AN ALUMINUM IMPACT RESISTANT COLONIAL SHUTTER DESIGNED, CONSTRUCTED AND TESTED FOR THE PURPOSE OF PROVIDING PROTECTION FROM HURRICANE FORCE WINDS AND WIND BORNE DEBRIS (LARGE MISSILE) WITHIN THE ALLOWABLE DESIGNED PRESSURES AND LIMITATIONS STATED IN THIS APPROVAL.
- 3- POSTING: A PERMANENT LABEL SHALL BE PROVIDED AS PER FBC. IT SHALL BE LOCATED ON THE BOTTOM, PLACED ON THE BACK OF THE SHUTTER.
- "SHORELINE - SEBASTIAN - FL.
EXTRUDED ALUMINUM COLONIAL SHUTTER
LARGE MISSILE IMPACT RATED"
- 4- LOADS: DESIGNED LOAD CALCULATED BASED ON THE ASCE 7-22 AND PROVIDED BY A PROFESSIONAL ARCHITECT OR ENGINEER FOR EACH SPECIFIC PROJECT. THE CALCULATED DESIGNED PRESSURE MUST NOT EXCEED THE ALLOWABLE PRESSURES HERE IN SPECIFIED. THE DESIGN PRESSURES, AS DETERMINED FROM ASCE 7-22, ARE TO BE MULTIPLE BY 0.6
- 5- MATERIAL: ALL EXTRUDED ALUMINUM PARTS TO BE 6063-T6 ALLOY OR AS NOTED ON THIS APPROVAL.
- 6- FASTENERS: ASSEMBLY SCREWS AND ANCHORS SHALL BE AS SPECIFIED IN THE CURRENT SET OF DRAWINGS. INSTALLATION AND LOADS AS PER THIS APPROVAL.
- 7- USE: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ARCHITECT OR ENGINEER OF RECORD TO VERIFY THE FOLLOWING:
7.1- THE STABILITY OF THE STRUCTURE WHERE THE PRODUCT IS TO BE ATTACHED ENSURING PROPER ANCHORAGE.
7.2- THE SITE SPECIFIC PROJECT CRITERIA, SUCH AS BUT NOT LIMITED TO, LOCAL CODE REQUIREMENTS, DESIGNED PRESSURES ETC.
7.3- THAT THIS APPROVAL IS ADEQUATE FOR A SPECIFIC PROJECT.
- 8- DISSIMILAR MATERIALS: WHERE ALUMINUM IS IN CONTACT OR FASTENED TO DISSIMILAR MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL, INSTALLATION SHALL MEET THE REQUIREMENTS OF CHAPTER M.7 OF THE ALUMINUM DESIGN MANUAL 2020.
- 9- BLADE CAN BE INSTALLED UPSIDE DOWN FOR THE PURPOSE OF SIGHT BLOCKING.

	MAX. FRAME DIMENSION	NUMBER OF PANELS	DESIGNED PRESSURE RATING (PSF)	MISSILE RATING
HVHZ & NON HVHZ	60" X 120"	2	± 100	LARGE
NON HVHZ ONLY	120" X 120"	4	± 50	
HVHZ	96" X 120"	4	+41, -62	

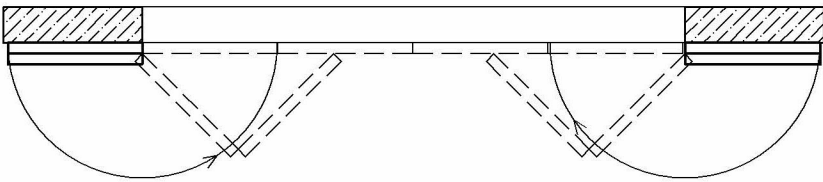
SEE SHEET 3 OF 7 FOR COMPLETE SIZES X PRESSURES



TYPICAL 2 PANELS
ELEVATION



TYPICAL 4 PANELS
ELEVATION



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DATE:	1/2023
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SHEET	OF 7



TYPICAL HINGE HORIZONTAL SECTION

TYPICAL STORM BAR HORIZONTAL SECTION

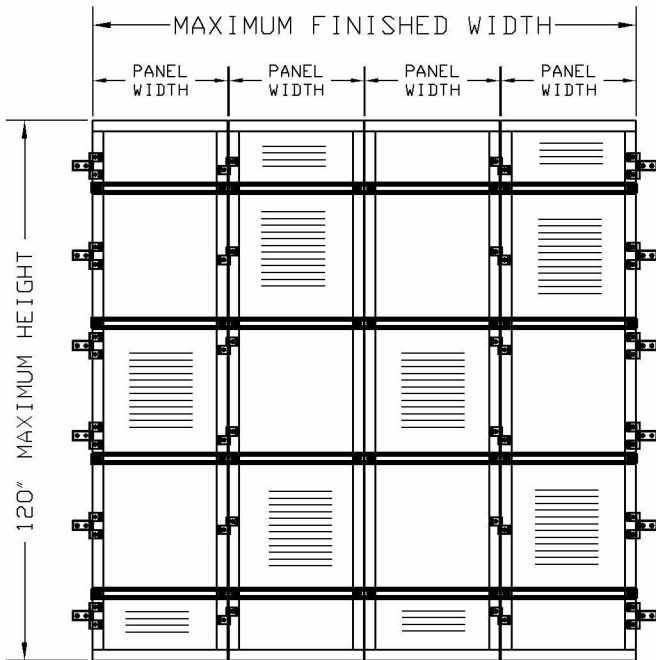
SHUTTER ALLOWABLE PRESSURES (PSF)

4 PANELS SHUTTERS		NON HVHZ	HVHZ	
Finished Width (in)	Panel Width (in)	Max. Design Pressure (PSF) POS / NEG	Max. Design Pressure (PSF) POS	Max. Design Pressure (PSF) POS
120.75	30	50	NA	NA
108.75	27	56	NA	NA
96.75	24	62	41	62
84.75	21	71	71	71
72.75	18	83	83	83
60.75	15	100	100	100

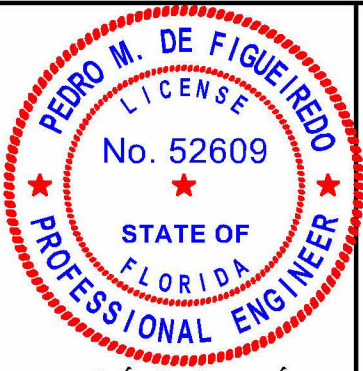
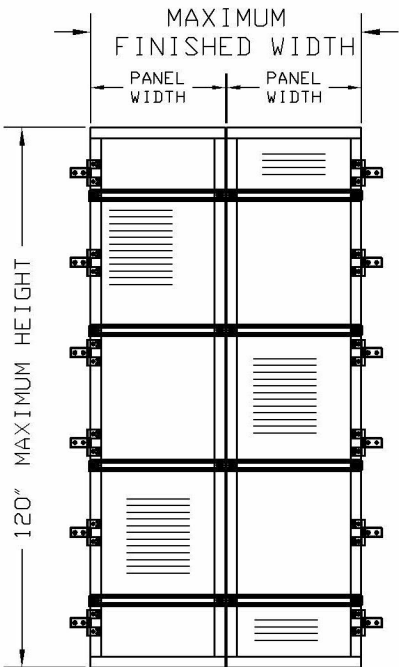
2 PANELS SHUTTERS		NON HVHZ	HVHZ	
Finished Width (in)	Panel Width (in)	Max. Design Pressure (PSF) POS / NEG	Max. Design Pressure (PSF) POS	Max. Design Pressure (PSF) POS
60.25	30	100	100	100
54.25	27	100	100	100
48.25	24	100	100	100
42.25	21	100	100	100
36.25	18	100	100	100
30.25	15	100	100	100

NOTES:
1- HIGH VELOCITY HURRICANE ZONES (HVHZ) ARE FOR INSTALLATIONS ON MIAMI AND BROWARD COUNTIES
2- GLASS SEPARATION APPLICABLE FOR ALL UNITS INSTALLED IN THE HVHZ. SEE TABLES ON SHEET 5 OF 7
3- ON NON HVHZ, WHEN APPLICABLE, SEE TABLES ON SHEET 4 OF 7 FOR GLAZING SEPARATION

TYPICAL 4 PANELS
ELEVATION



TYPICAL 2 PANELS
ELEVATION



Pedro De Figueiredo
PE 52609
08/11/2023

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SHUTTER MINIMUM GLASS SEPARATION - NON HVHZ

APPLICABLE ONLY FOR NON HVHZ MEETING CRITERIA A AND B

4 PANELS SHUTTERS

Finished Width (in)	Panel Width (in)	Max. Design Pressure (PSF)	GS h<=30'	GS h>30'
120.75	30	50	7.000	7.000
		40	5.750	5.750
		30	4.625	4.625
108.75	27	56	5.375	5.375
		50	4.875	4.875
		45	4.500	4.500
		40	4.250	4.125
		35	4.250	3.750
		30	4.250	3.375
96.75	24	62	4.250	4.125
		60	4.250	4.000
		55	4.250	3.750
		50	4.250	3.500
		45	4.250	3.250
		40	4.250	3.000
		35	4.250	2.750
		30	4.250	2.500
84.75	21	71	4.250	3.125
		60	4.250	2.750
		50	4.250	2.500
		45	4.250	2.250
		40	4.250	2.125
		35	4.250	2.000
		30	4.250	1.875
		30	4.250	1.875
72.75	18	83	4.250	2.250
		70	4.250	2.125
		65	4.250	2.000
		60	4.250	2.000
		55	4.250	1.875
		50	4.250	1.750
		45	4.250	1.750
		40	4.250	1.750
		35	4.250	1.500
		30	4.250	1.500
		99	4.250	1.750
		90	4.250	1.750
60.75	15	80	4.250	1.625
		70	4.250	1.500
		65	4.250	1.500
		60	4.250	1.500
		55	4.250	1.375
		50	4.250	1.375
		45	4.250	1.375
		40	4.250	1.250
		35	4.250	1.250
		30	4.250	1.250

2 PANELS SHUTTERS

Finished Width (in)	Panel Width (in)	Max. Design Pressure (PSF)	GS h<=30'	GS h>30'
60.25	30	100	4.375	2.375
		90	4.375	2.250
		80	4.375	2.125
		70	4.375	1.875
		60	4.375	1.750
		50	4.375	1.625
		40	4.375	1.500
		30	4.375	1.375
48.25	24	100	4.375	1.500
		90	4.375	1.500
		80	4.375	1.500
		70	4.375	1.375
		60	4.375	1.375
		50	4.375	1.250
		40	4.375	1.250
		30	4.375	1.125
36.25	18	100	4.375	1.125
		90	4.375	1.125
		80	4.375	1.125
		70	4.375	1.125
		60	4.375	1.125
		50	4.375	1.125
		40	4.375	1.125
		30	4.375	1.000
30.25	15	100	4.375	1.125
		90	4.375	1.125
		80	4.375	1.125
		70	4.375	1.000
		60	4.375	1.000
		50	4.375	1.000
		40	4.375	1.000
		30	4.375	1.000

GS h<=30' - GLASS SEPARATION IN INCHES FOR SHUTTERS
INSTALLED BELOW 30' ELEVATION

GS h>30' - GLASS SEPARATION IN INCHES FOR SHUTTERS
INSTALLED ABOVE 30' ELEVATION

GS - NON HVHZ

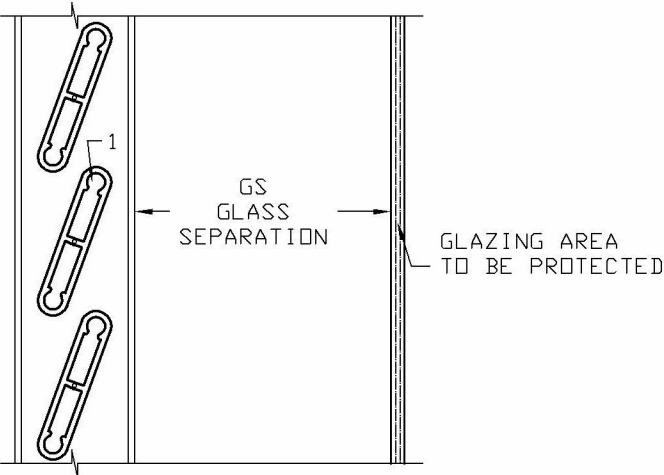
TABLES APPLICABLE ONLY FOR NON HIGH VELOCITY HURRICANE ZONES
MEETING CRITERIA A AND B BELOW

GLAZING SEPARATION - GS

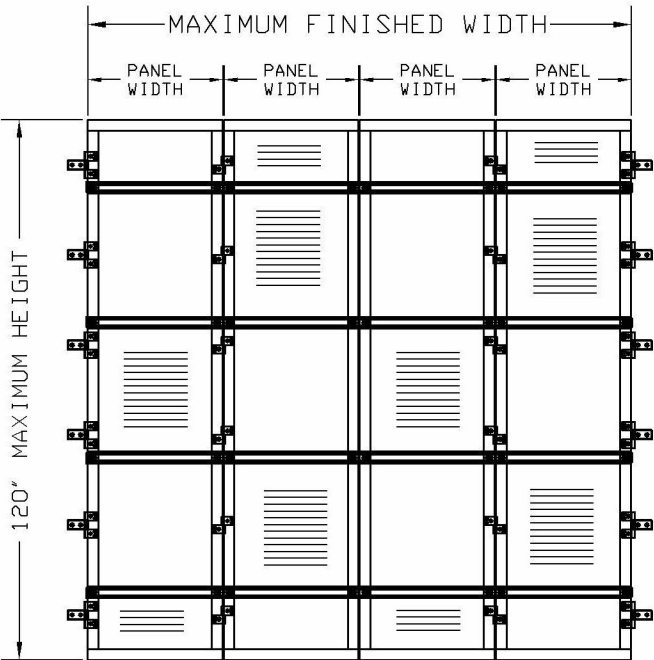
PRODUCT QUALIFIES AS "NON POROUS". THEREFORE GLAZING SEPARATION GS IS NOT
REQUIRED WITH THE FOLLOWING EXCEPTIONS:

A- FOR ESSENTIAL FACILITIES IN ALL WIND ZONES.

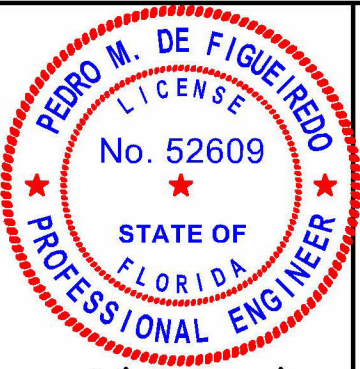
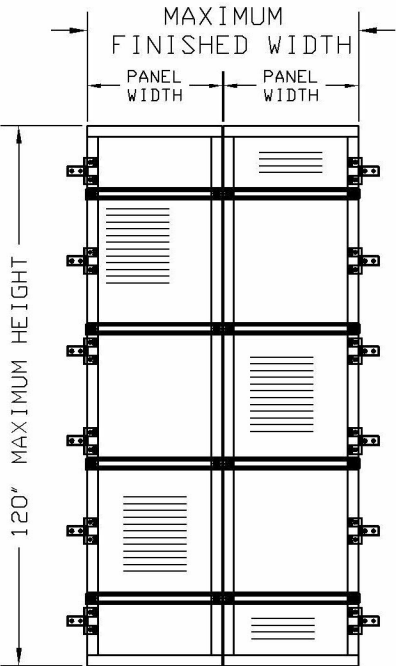
B- FOR WIND ZONE 4 AS DEFINED IN ASTM E 1996 WITH MODIFICATION BY THE FBC SECTION
1609.1.2.4 (LOCATIONS WITH BASIC WIND SPEED GREATER THAN 170 MPH), WHERE THE
SPECIFYING AUTHORITY HAS SPECIFIED OPTIONAL ADDITIONAL PASS/FAIL CRITERIA IN
ACCORDANCE WITH ASTM E 1996-09 SECTION 8.4).



TYPICAL 4 PANELS
ELEVATION



TYPICAL 2 PANELS
ELEVATION



Pedro De Figueiredo
PE 52609
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SHUTTER MINIMUM GLASS SEPARATION - HVHZ

4 PANELS SHUTTERS

Finished Width (in)	Panel Width (in)	Max. Design Pressure POS (PSF)	GS h<=30'	GS h>30'
96.75	24	41	4.250	3.000
		40	4.250	3.000
		35	4.250	2.750
		30	4.250	2.500
84.75	21	71	4.250	3.000
		60	4.250	2.750
		50	4.250	2.500
		45	4.250	2.250
		40	4.250	2.125
		35	4.250	2.000
		30	4.250	1.875
72.75	18	83	4.250	2.250
		70	4.250	2.125
		65	4.250	2.000
		60	4.250	2.000
		55	4.250	1.875
		50	4.250	2.750
		45	4.250	1.750
		40	4.250	1.625
		35	4.250	1.500
		30	4.250	1.500
60.75	15	100	4.250	1.750
		90	4.250	1.625
		80	4.250	1.625
		70	4.250	1.500
		65	4.250	1.500
		60	4.250	1.500
		55	4.250	1.375
		50	4.250	1.375
		45	4.250	1.375
		40	4.250	1.250
		35	4.250	1.250
		30	4.250	1.250

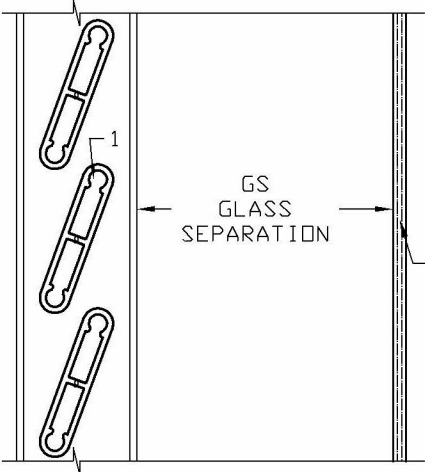
2 PANELS SHUTTERS

Finished Width (in)	Panel Width (in)	Max. Design Pressure POS (PSF)	GS h<=30'	GS h>30'
60.25	30	100	4.375	2.375
		90	4.375	2.250
		80	4.375	2.125
		70	4.375	1.875
		60	4.375	1.750
		50	4.375	1.625
		40	4.375	1.500
		30	4.375	1.375
48.25	24	100	4.375	1.500
		90	4.375	1.500
		80	4.375	1.500
		70	4.375	1.375
		60	4.375	1.375
		50	4.375	1.250
		40	4.375	1.250
		30	4.375	1.125
36.25	18	100	4.375	1.125
		90	4.375	1.125
		80	4.375	1.125
		70	4.375	1.125
		60	4.375	1.125
		50	4.375	1.125
		40	4.375	1.125
		30	4.375	1.000
30.25	15	100	4.375	1.125
		90	4.375	1.125
		80	4.375	1.125
		70	4.375	1.000
		60	4.375	1.000
		50	4.375	1.000
		40	4.375	1.000
		30	4.375	1.000

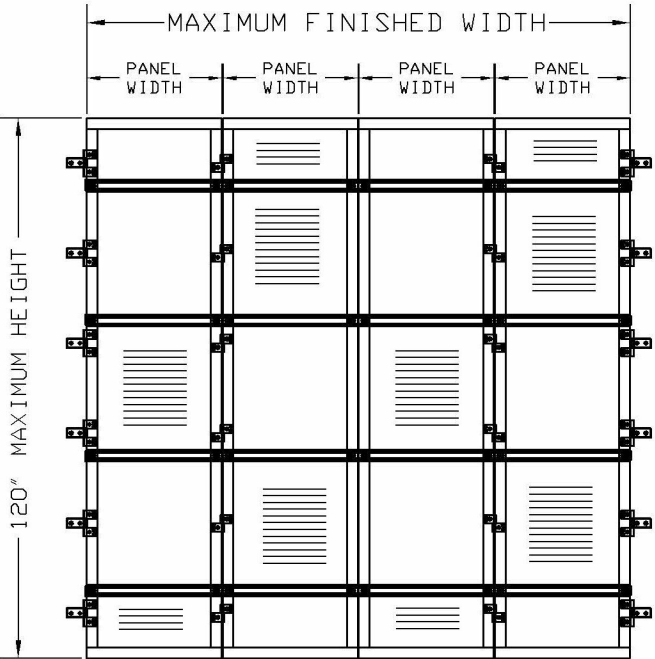
GS - HVHZ

TABLES APPLICABLE ONLY FOR NON HIGH VELOCITY HURRICANE ZONES (MIAMI AND BROWARD COUNTIES)

GLAZING SEPARATION - GS
GLAZING SEPARATION GS IS REQUIRED FOR ALL APPLICATIONS IN THE HVHZ



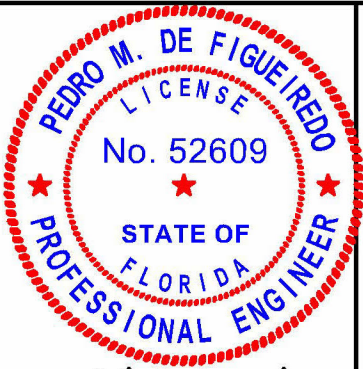
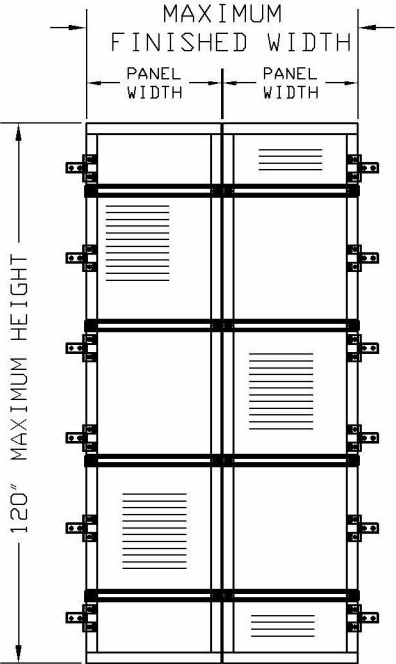
TYPICAL 4 PANELS ELEVATION



GS h<=30' - GLASS SEPARATION IN INCHES FOR SHUTTERS
INSTALLED BELOW 30' ELEVATION

GS h>30' - GLASS SEPARATION IN INCHES FOR SHUTTERS
INSTALLED ABOVE 30' ELEVATION

TYPICAL 2 PANELS ELEVATION



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WALL ANCHORAGE

MAXIMUM DESIGNED LOAD PRESSURE (PSF) X TYPE OF ANCHOR

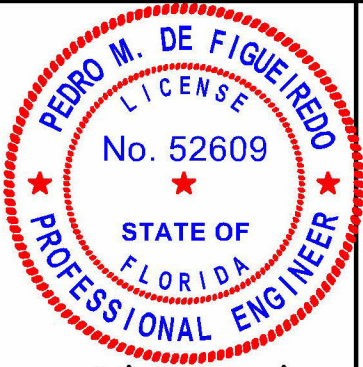
FW	# OF PANELS	TYPE OF ANCHORS			
		A	B	C	D
120.75	4	50	50	50	48
108.75	4	56	56	56	53
96.75	4	62	62	62	60
84.75	4	71	71	71	68
72.75	4	83	83	83	79
60.75	4	100	100	100	95
60.25	2	100	100	100	96
54.25	2	100	100	100	100
48.25	2	100	100	100	100
42.25	2	100	100	100	100
36.25	2	100	100	100	100
30.25	2	100	100	100	100

ANCHOR SCHEDULE

TYPE	DESCRIPTION
A	1/4" ELCO CONFLX ANCHOR INTO CONCRETE
B	#14 SS SMS SCREWS INTO WOOD
C	1/4-14 GRADE 5 SELF DRILLING SCREWS INTO 1/8" METAL
D	1/4" ELCO CONFLX ANCHOR INTO GF CMU WALLS

TYPE	E.D.	EMB.
A	3"	1 3/4"
B	3/4"	1 1/2"
C	1/2"	3 TREADS
D	3"	2 1/4"

- NOTES:
- 1- EMBEDMENT AND EDGE DISTANCE ARE BEYOND ANY WALL DRESSING
 - 2- CONCRETE SHALL CONFORM TO ACI 301, WITH MIN. $f_c \geq 3000$ PSI - UNCRACKED
 - 3- CONCRETE MASONRY UNIT (CMU) SHALL COMPLY WITH ASTM C-90
 - 4- ANCHORS INTO WOOD STRUCTURES WITH MINIMUM SG=0.55 (SYP)
 - 5- 1/4" CONFLX ANCHOR CAN BE USED INTO WOOD IN PLACE OF #14 SS SMS



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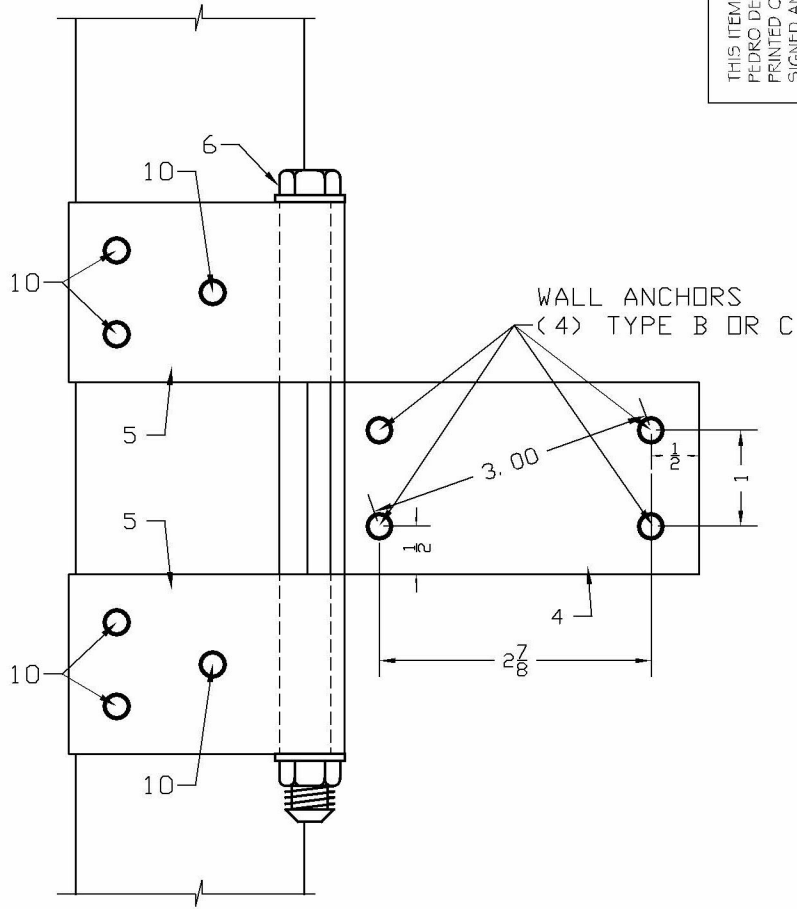
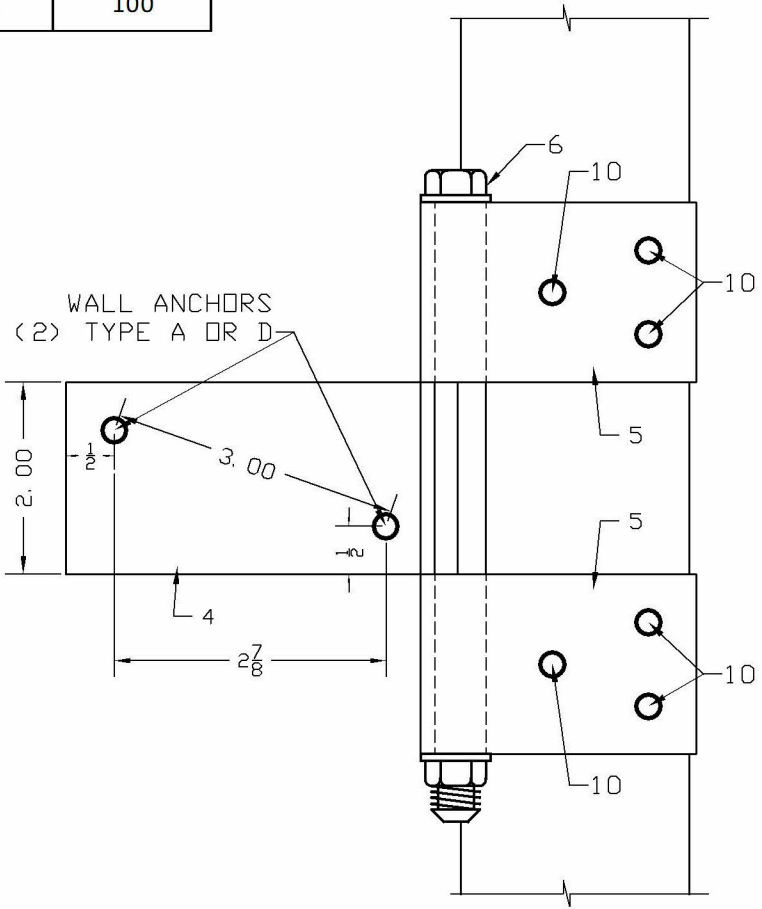
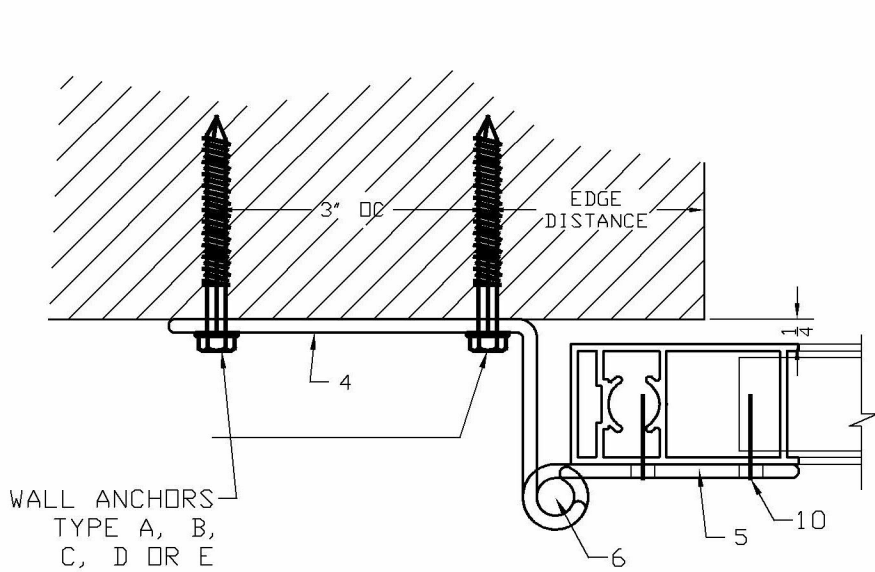
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6 OF 7



A circular professional engineer seal for Pedro M. de Figueiredo. The seal features a red dotted outer border. Inside, the text "PEDRO M. DE FIGUEIREDO" is written in blue, uppercase letters along the top arc. The word "LICENSE" is written in blue, uppercase letters along the top inner arc. The license number "No. 52609" is centered in blue. Below the number, the words "STATE OF" and "FLORIDA" are written in blue, uppercase letters. The text "PROFESSIONAL ENGINEER" is written in blue, uppercase letters along the bottom arc. Three red stars are positioned around the inner circle: one on the left, one at the bottom, and one on the right.

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PLANTATION, FL 33324
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ENR
PEDRO



EXTRUDED ALUMINUM
COLONIAL SHUTTER
LARGE MISSILE IMPACT RATED

SHORELINE SHUTTERS
1105 SEBASTIAN INDUSTRIAL PL #8
SEBASTIAN, FLORIDA 32958
TEL: (772) 581-9006

Calf:

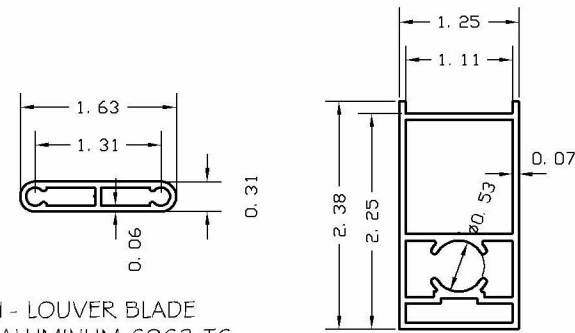
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DATE:
08/11/2023

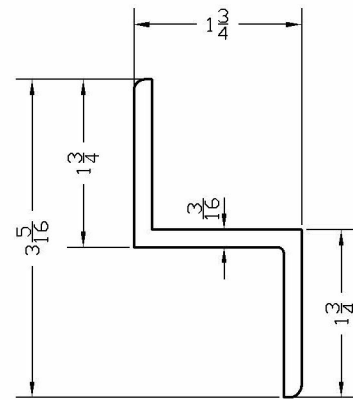
DRAWING #
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SHEET

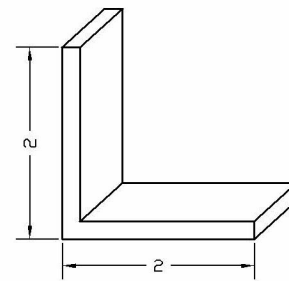
7 OF 7



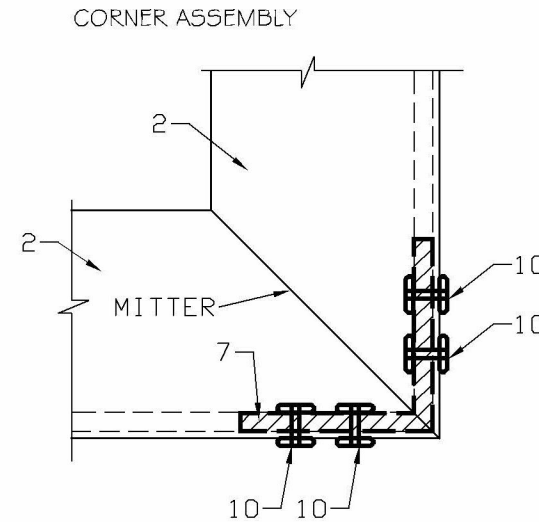
2- PERIMETER FRAME
ALUMINUM 6063-T6



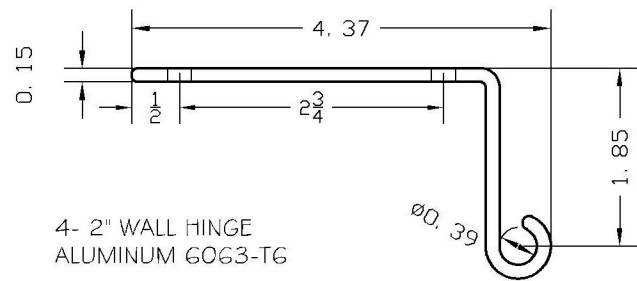
3- STORM BAR
ALUMINUM 6063-T6



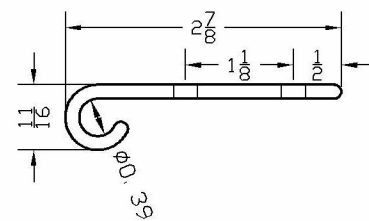
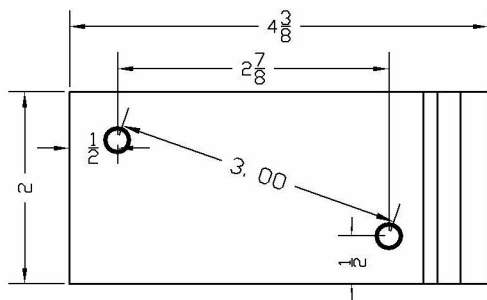
7- 3/16-2X2 - 1" CORNER KEY
ALUMINUM 6063-T6



CORNER ASSEMBLY



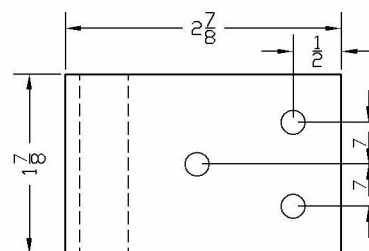
4- 2" WALL HINGE
ALUMINUM 6063-T6



5- HINGE - SHUTTER JAMB
ALUMINUM 6063-T6



8- 1/4-20X1
WALK OVER BOLTS
STAINLESS STEEL



ITEM	DESCRIPTION	MATERIAL
1	LOUVER BLADE	6063-T6 ALUMINUM
2	PERIMETER FRAME	6063-T5 ALUMINUM
3	"Z" STORM BARS	6063-T6 ALUMINUM
4	WALL HINGE	6063-T6 ALUMINUM
5	LOUVER HINGE	6063-T6 ALUMINUM
6	3/8"- 16 HHMS & NUT	300 SERIES SS
7	CORNER KEY ANGLE	6063-T6 ALUMINUM
8	1/4-20 WALK OVER BOLTS	300 SERIES SS
9	1/4-20 RIVET-NUTS	ALUMINUM
10	#6-3/16 POP-RIVET	ALUMINUM

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EVTB

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NA

DATE:
08/11/2023

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23-125

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7 OF 7