

FOLDING SHUTTER CORPORATION

IMPACT COLONIAL SHUTTER

LARGE MISSILE IMPACT RESISTANT (MISSILE LEVEL D)

VALID FOR USE INSIDE AND OUTSIDE THE HVHZ (SEE LIMITATIONS HEREIN)

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. A DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR CERTIFYING THE APPLICATION OF THIS INFORMATION TO ANY SITE-SPECIFIC LOCATION.

GENERAL NOTES:

- THIS SYSTEM HAS BEEN TESTED AND EVALUATED AS A LARGE MISSILE IMPACT PROTECTIVE SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE NINTH EDITION (2026) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE ("HVHZ"), PER TAS 201, 202, & 203 PROTOCOLS.
- WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- POSITIVE AND NEGATIVE DESIGN PRESSURES TO BE USED WITH THESE DRAWINGS SHALL BE DETERMINED BY OTHERS FOR SPECIFIC JOBS IN ACCORDANCE WITH THE GOVERNING CODE.
- ONLY 2- AND 4-PANEL ASSEMBLIES ARE DEPICTED IN SHEET 2, BUT SHUTTER IS APPROVED FOR USE WITH 1, 2, 3, OR 4 PANELS.
- A SINGLE FIXED PANEL CAN BE ATTACHED ON EACH SIDE OF THE OPENING FOR DECORATIVE PURPOSES ONLY, USING ¼"Ø ITW STAINLESS STEEL TAPCON THROUGH MAIN FRAME WITH 3/4"Ø MIN WASHER, 1-1/4" EMBED TO CONCRETE/BLOCK, 2-1/2" MIN EDGE DISTANCE, (1) AT EACH CORNER AND 24" O.C. MAX SPACING AROUND FRAME PERIMETER.
- SHUTTER WIDTH SHALL BE RESTRICTED BY THE MAXIMUM DIMENSIONS SHOWN. SHUTTER HEIGHT MAY EXCEED 96" PROVIDED THE REQUIRED NUMBER & SPACING OF STORM BARS ARE USED.
- THE NUMBER OF STORM BARS REQUIRED FOR EACH SHUTTER TYPICALLY VARIES FROM 1 TO 4 & IS DEPENDENT ON SHUTTER SIZE & REQUIRED DESIGN PRESSURE. SEE ELEVATION DETAILS & LOAD TABLES ON SHEETS 7 & 8 FOR STORM BAR REQUIREMENTS.
- MINIMUM SEPARATION BETWEEN SHUTTER (IN CLOSED POSITION) & GLAZING SHALL BE AS FOLLOWS:
 - WITHIN THE HVHZ, W/ OR W/O 1/4" VENT PERFORATIONS: 3.53" MIN SEPAR
 - OUTSIDE THE HVHZ, ASTM WIND ZONE 4 AND ESSENTIAL FACILITIES: NO SEPAR REQ'DWHEN USED OUTSIDE THE HVHZ, ASTOM WIND ZONE 4, AND ESSENTIAL FACILITIES, THIS SHUTTER SYSTEM CONSTITUTES A NON-POROUS ASSEMBLY AS DEFINED IN THE ASTM E1996 STANDARD.
- EACH SHUTTER SHALL HAVE A LEGIBLE & READILY VISIBLE MARKING INSTRUCTING THE OWNER/TENNANT TO SECURE THE SHUTTER WITH BRACKETS & STORM BARS, PER THESE APPROVED DRAWINGS, DURING PERIODS OF HURRICANE WARNINGS.
- THIS SYSTEM HAS BEEN DESIGNED TO WITHSTAND WIND PRESSURES, IN THE OPEN POSITION, RESULTING FROM FASTEST MILE WIND SPEEDS UP TO 75 MPH (3-SECOND GUST WIND SPEED UP TO 115 MPH), 30' MRH, EXTERIOR ZONE 5, IN ACCORDANCE WITH THE BUILDING CODE SPECIFIED HEREIN. SEE WALL CLIP DETAILS FOR APPROPRIATE "OPEN SHUTTER" CONDITIONS. SHUTTERS MUST BE CLOSED WHEN FASTEST MILE WIND SPEEDS REACH 75 MPH OR GREATER. WHEN CLOSED, THE OWNER SHALL BE RESPONSIBLE FOR SECURING THE SHUTTER AS REQ'D.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEViate FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.

SYSTEM PERFORMANCE DERIVATIONS

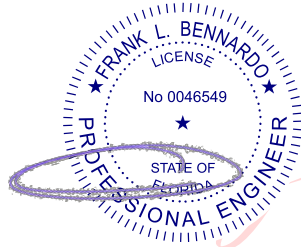
SYSTEM PERFORMANCE DERIVED FROM CERTIFIED TEST REPORT(S) #0143-0409-00 & #0143-0604-00 BY HURRICANE TEST LABORATORY (HTL) PER TAS 201, TAS 202 & TAS 203 TEST STANDARD(S).

GENERAL NOTES (CONTINUED):

- 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.
- ALL COMPONENTS SHALL CONFORM TO THEIR RESPECTIVE SPECIFICATIONS AS NOTED HEREIN.
- ALL EXTRUSIONS SHALL BE 6063-T5 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- SHUTTERS SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER ASSEMBLY CONTAINING THE FOLLOWING:
FOLDING SHUTTER CORPORATION
WEST PALM BEACH, FL
TAS 201, 202, 203
PRODUCT APPROVAL #
- THIS SHUTTER SYSTEM HAS BEEN DESIGNED AND TESTED TO THE MAXIMUM SPANS AND CORRESPONDING LOADS SHOWN HEREIN.
- ALL BOLTS, NUTS, & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, STAINLESS STEEL, OR ALUMINUM ALLOY 2024-T4 OR 7075-T5.
- STEEL SURFACES TO BE PLACED IN CONTACT WITH ALUMINUM SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER OR SHALL BE GALVANIZED.
- CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- 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 IN.C, AND ANY APPLICABLE FEDERAL, STATE AND OR LOCAL CODES.
- REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
- 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.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
- PRESSURE VALUES ON THIS APPROVAL ARE (ASD) ALLOWABLE DESIGN PRESSURES.
- ALTERATIONS ADDITIONS OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.
- FOR PERMANENT OUTDOOR INSTALLATIONS, ALL EXPOSED ANCHORS, FASTENERS, CONNECTORS, AND METAL PLATES SHALL BE CORROSION RESISTANT. CORROSION RESISTANCE MAY BE PROVIDED BY INHERENT MATERIAL COMPOSITION OR, WHERE PERMITTED BY CODE, BY AN APPROVED PROTECTIVE COATING OR GALVANIZATION. WHERE APPLICABLE NEAR A SALTWATER COASTLINE, SUCH COMPONENTS SHALL COMPLY WITH FBC SECTION 1711, INCLUDING APPLICABLE REQUIREMENTS FOR EXPOSED, PROTECTED, OR ENCLOSED CONDITIONS. MATERIALS, COATINGS, AND FINISHES SHALL BE COMPATIBLE WITH CONNECTED MATERIALS, AND PROTECTIVE COATINGS SHALL BE CONTINUOUS OVER EXPOSED SURFACES. FASTENERS USED WITH ALUMINUM MEMBERS SHALL ALSO COMPLY WITH SECTION J.3.7.2 OF THE ALUMINUM DESIGN MANUAL, "SPECIFICATION FOR ALUMINUM STRUCTURES." SUBSTITUTION OF COMPONENTS FROM ALTERNATE MANUFACTURERS, OR WITH DIFFERENT MATERIALS, COATINGS, OR FINISHES, SHALL NOT BE ASSUMED EQUIVALENT AND MAY REQUIRE ADDITIONAL ENGINEERING REVIEW OR SITE-SPECIFIC ANALYSIS

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885

JULY 31, 2026



Digitally signed by
Frank Bennardo
Date: 2026.08.18
13:38:42 -04'00'

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SEE **ECALC.IO/SEAL** TO LEARN MORE.

PAGE INDEX:

SHEET INDEX

# SHEET	DESCRIPTION
1	COVER SHEET
2	TYPICAL ELEVATIONS
3	INSTALLATION DETAILS
4	ANCHOR SCHEDULE
5-6	DETAILS
7	STORM BAR TYPICAL ELEVATIONS
8-9	STORM BAR ALLOWABLE SPAN

TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL: "CORP." FOR "CORPORATION", "ALUM" FOR "ALUMINUM", "ASD" FOR "ALLOWABLE STRESS DESIGN", "ASTM" FOR "AMERICAN SOCIETY FOR TESTING AND MATERIALS", "CONN" FOR "CONNECTION", "EMBED" FOR "EMBEDMENT", "DIST." FOR "DISTANCE", "GA" FOR "GAUGE", "HVHZ" FOR "HIGH-VELOCITY HURRICANE ZONE", "LB" FOR "POUND", "MAX" FOR "MAXIMUM", "N.T.S." FOR "NOT TO SCALE", "PSF" FOR "POUNDS PER SQUARE FOOT (lb/ft²)", "SPECS" FOR "SPECIFICATIONS", "&" FOR "AND", "MAX" FOR "MAXIMUM", "W/" FOR "WITH", "EXIST" FOR "EXISTING", "STRUCT" FOR "STRUCTURE", "CONC." FOR "CONCRETE". CONTACT ENGINEERING EXPRESS FOR ADDITIONAL ABBREVIATION/TERMINOLOGY CLARIFICATIONS.

VISIT **ECALC.IO/98591**

FOR SITE-SPECIFIC DEVIATIONS
& MORE INFORMATION ABOUT THIS DOCUMENT
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PREV SUBMITTAL (23-619500) MRT	RWVN		09/29/23
2026 FBC UPDATE	AEG	RS	07/31/26

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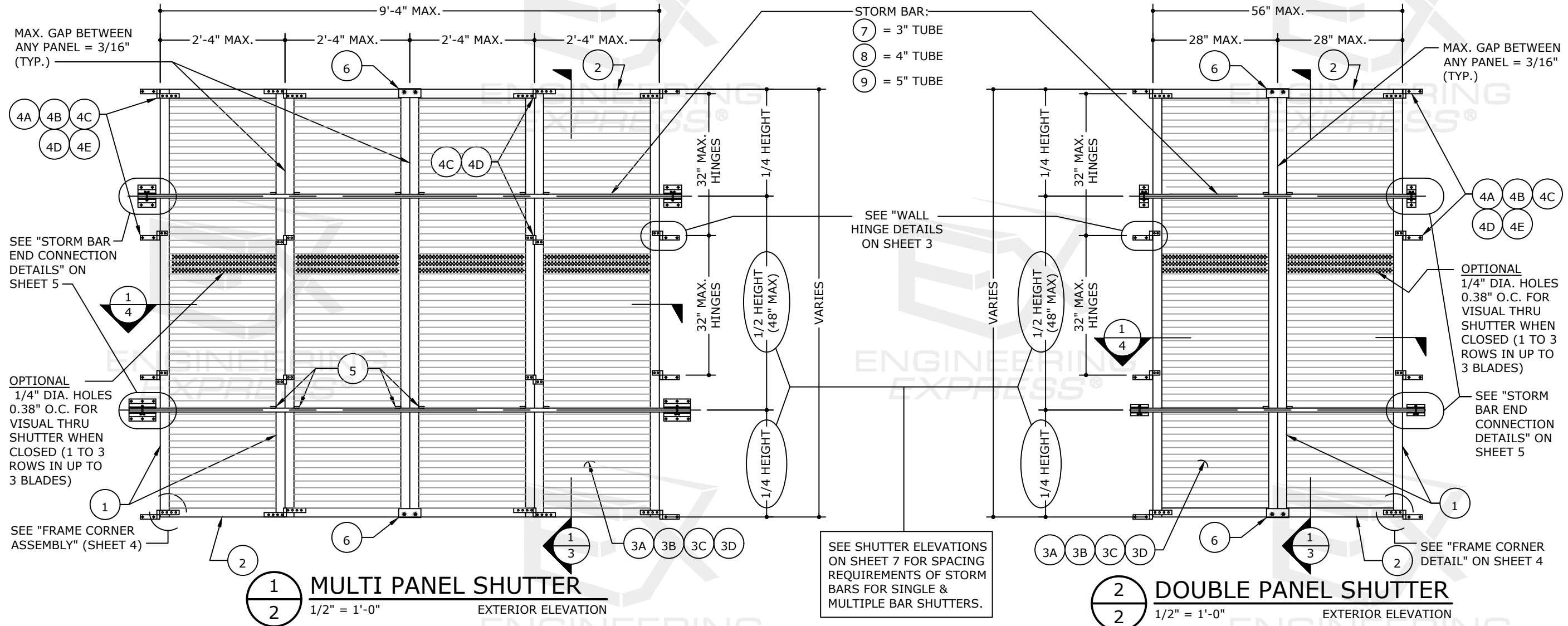
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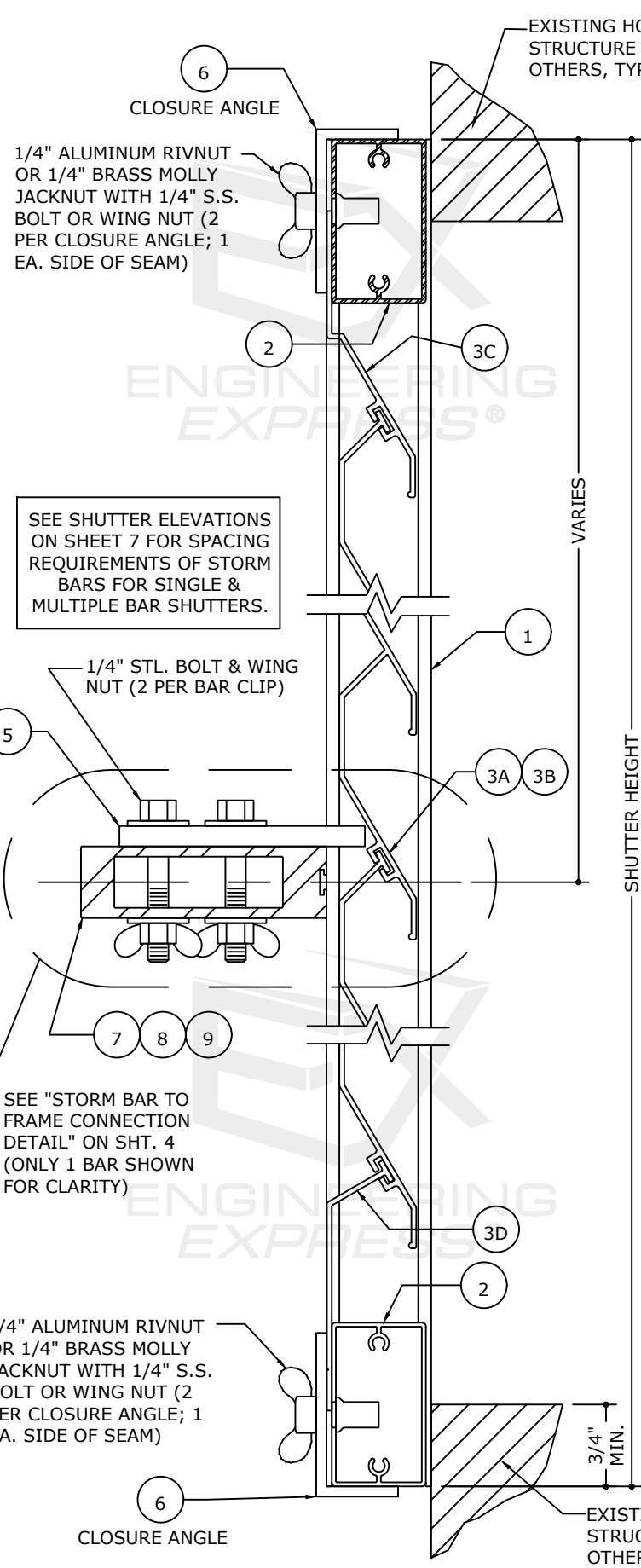
POSITIVE AND NEGATIVE DESIGN PRESSURES
CALCULATED FOR USE WITH THIS SYSTEM SHALL
BE DETERMINED BY OTHERS ON A JOB-SPECIFIC
BASIS IN ACCORDANCE WITH THE GOVERNING
CODE. SITE-SPECIFIC PRESSURE REQUIREMENTS
AS DETERMINED IN ACCORDANCE WITH ASCE 7
AND CHAPTER 1609 OF THE FLORIDA BUILDING
CODE SHALL BE LESS THAN OR EQUAL TO THE
POSITIVE OR NEGATIVE DESIGN PRESSURE
CAPACITY VALUES LISTED HEREIN FOR ANY
ASSEMBLY AS SHOWN.

SEE SHUTTER ELEVATIONS ON SHEET 7 & STORM BAR
TABLES ON SHEET 8 & 9 FOR ALLOWABLE STORM BAR
SPANS AS CONTROLLED BY DESIGN PRESSURE &
STORM BAR TRIBUTARY WIDTH.

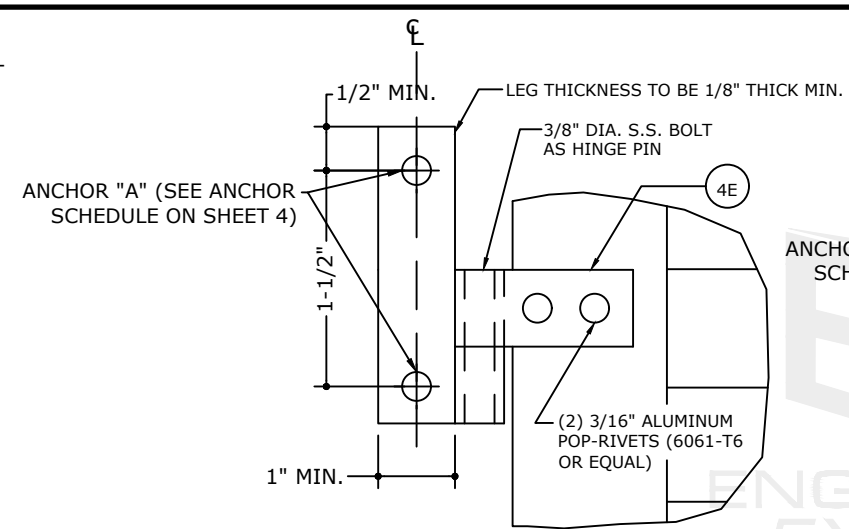
SEE GENERAL NOTES FOR MINIMUM
SEPARATION BETWEEN SHUTTER & GLAZING



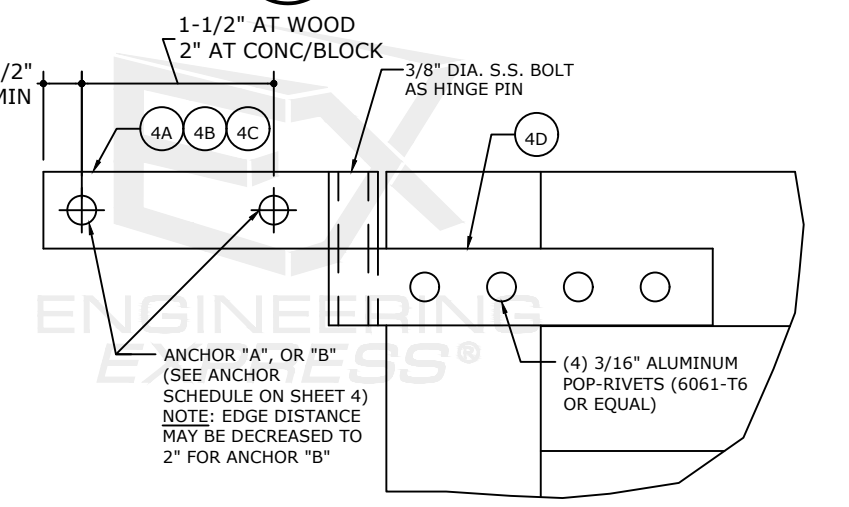
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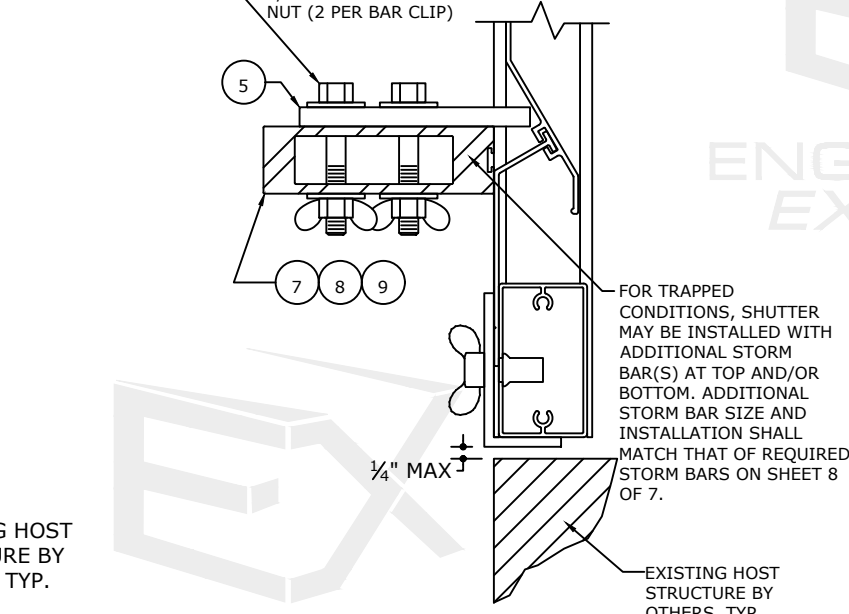
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3 TYPICAL VERTICAL SECTION
6" = 1'-0"
VERT SECTION



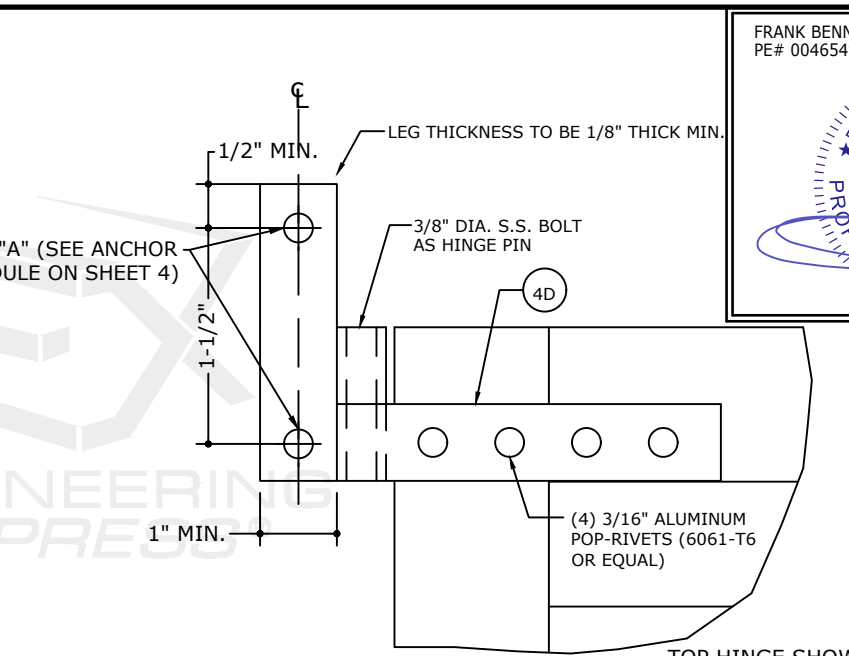
3B
3 ALT. INTERMEDIATE WOOD HINGE
N.T.S. VERT SECTION



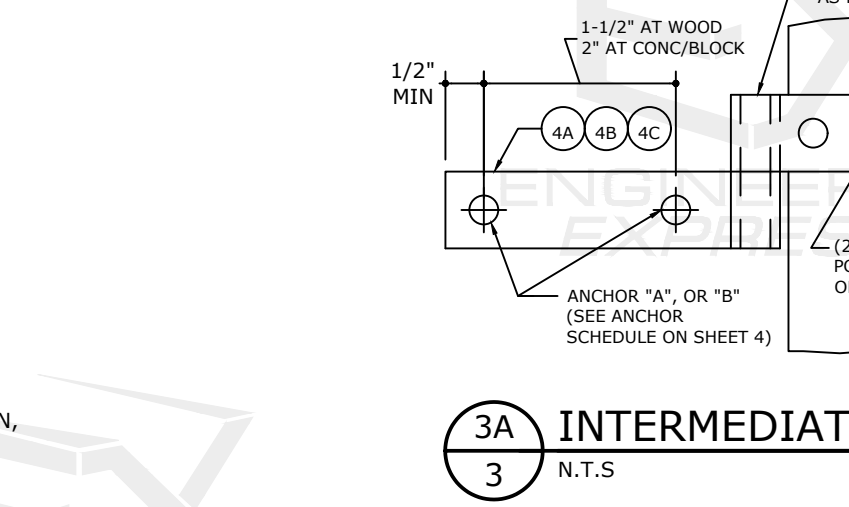
2B
3 ALT. TOP/BOTTOM WOOD HINGE
N.T.S. VERT SECTION



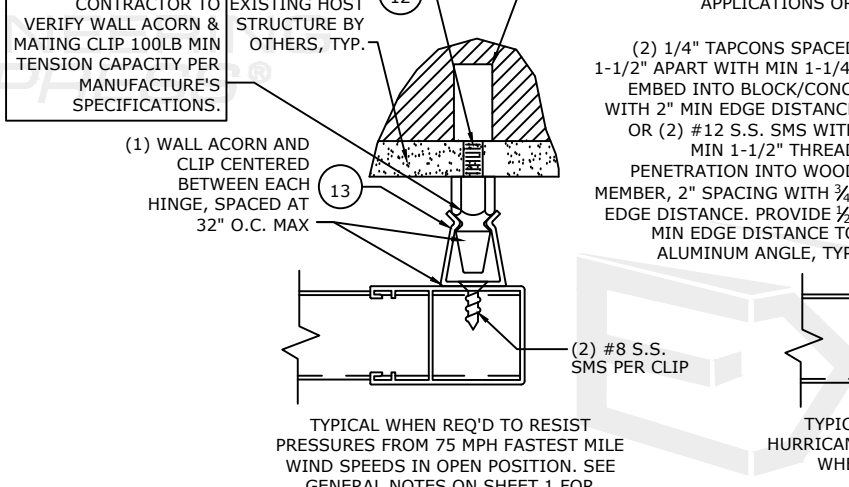
2A
3 TOP/BOTTOM HINGE
N.T.S. VERT SECTION



2B
3 ALT. TOP/BOTTOM WOOD HINGE
N.T.S. VERT SECTION



3A
3 INTERMEDIATE HINGE
N.T.S. VERT SECTION



4
3 WALL CLIP
N.T.S. HORIZ SECTION

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3
OF 3

5
3 OPTIONAL WALL CLIP
N.T.S. HORIZ SECTION

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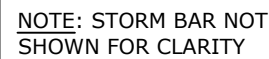
4 OF 9



3 FRAME CORNER ASSEMBLY

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
2. TAPCONS SPECIFIED HEREIN SHALL BE MANUFACTURED BY ITW. "DEWALT PANELMATE" ANCHORS MAY BE MALE OR FEMALE.
3. WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x (MIN) WOOD STUD (i.e. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING).
4. WOOD HOST STRUCTURE SHALL BE "SOUTHERN PINE" G=0.55 OR GREATER DENSITY.
5. MINIMUM EMBEDMENT, EDGE DISTANCE AND SPACING SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
6. ALL CONCRETE ANCHORS SPECIFIED HEREIN SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
7. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
8. ANCHORS D, E, F, AND G SHALL BE INSTALLED WITH 1/4-20 316 SS MACHINE SCREW OR WASHERED NUT, AS APPLICABLE. MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE EITHER A PAN HEAD, TRUSS HEAD, OR WAFER HEAD ("SIDEWALK BOLT") U.N.O.

6" = 1'-0" VERT SECTION

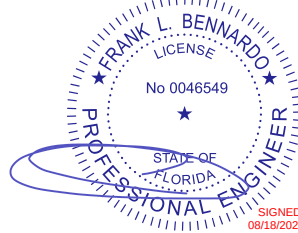


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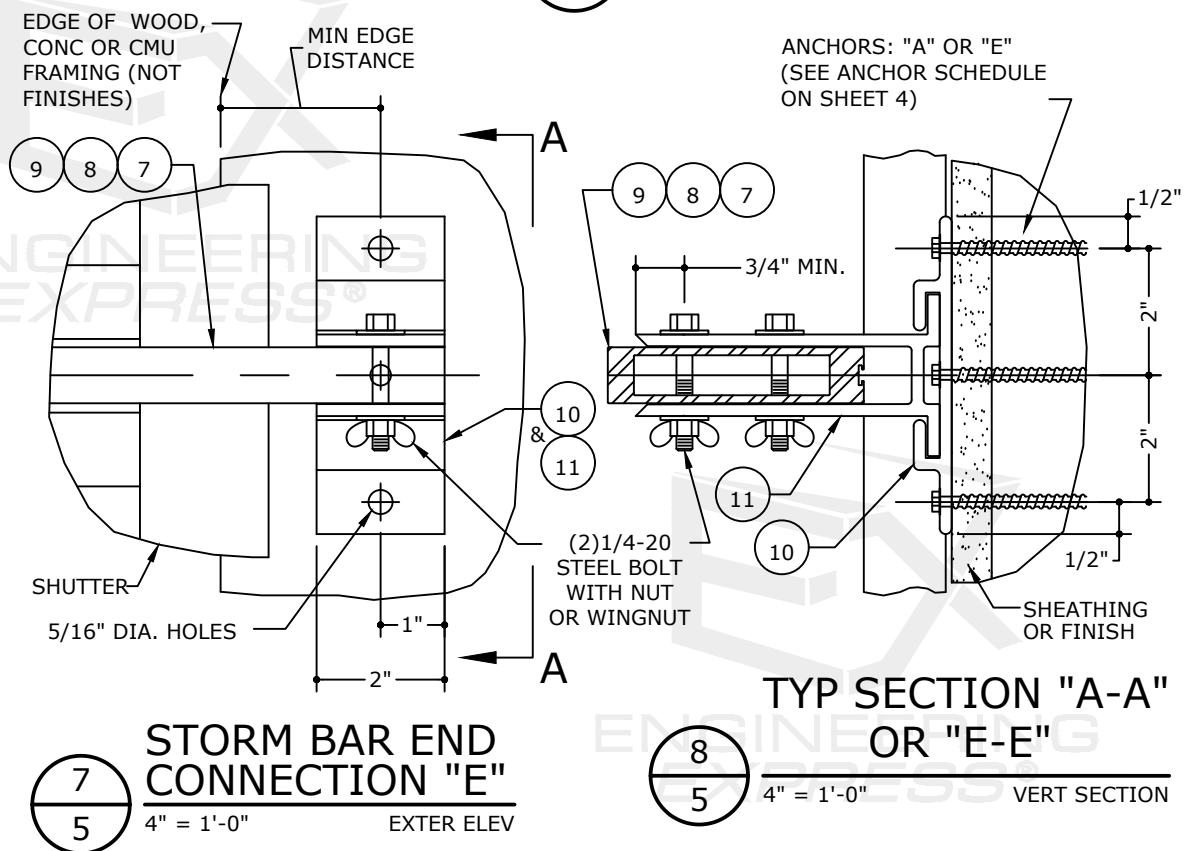
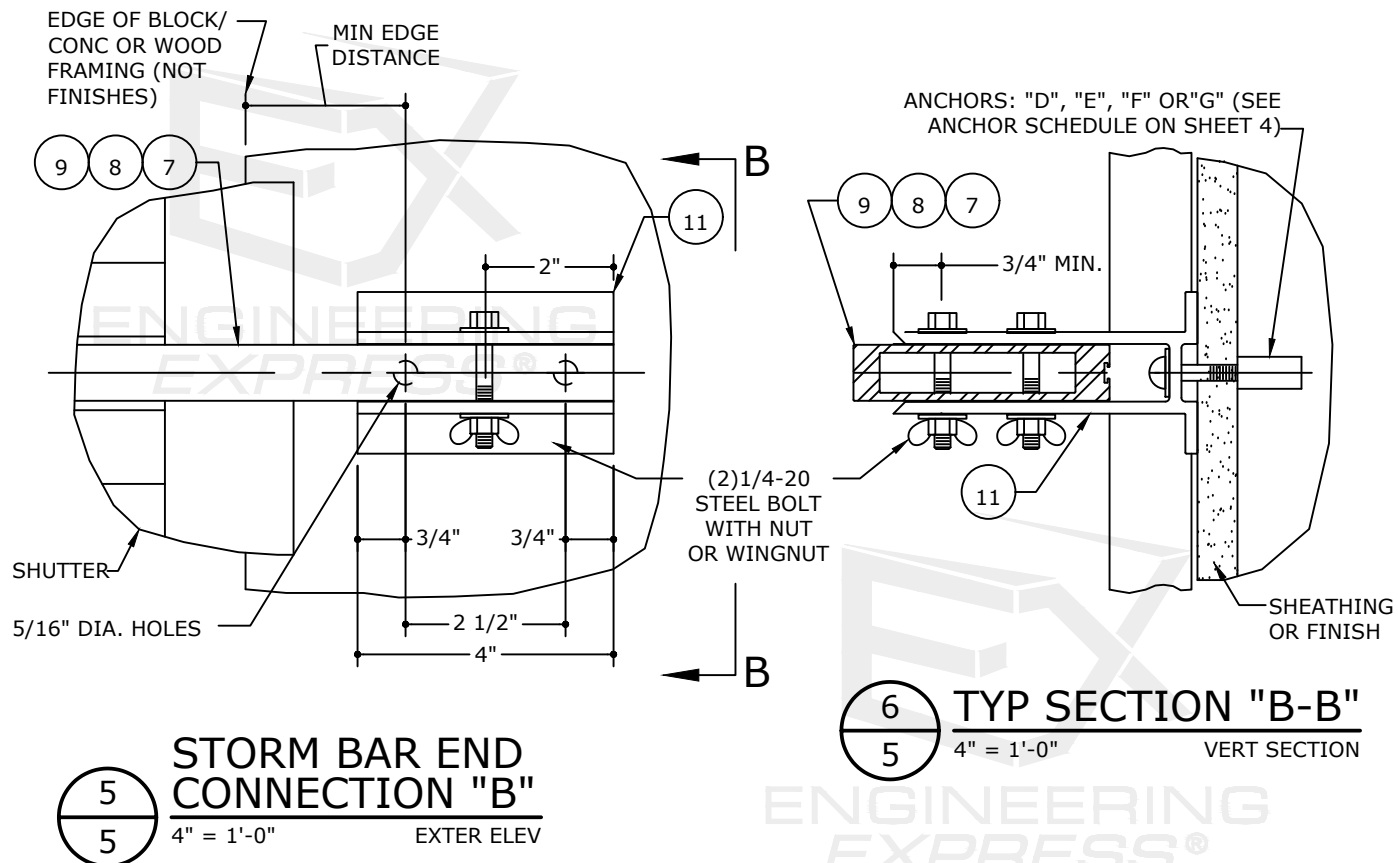
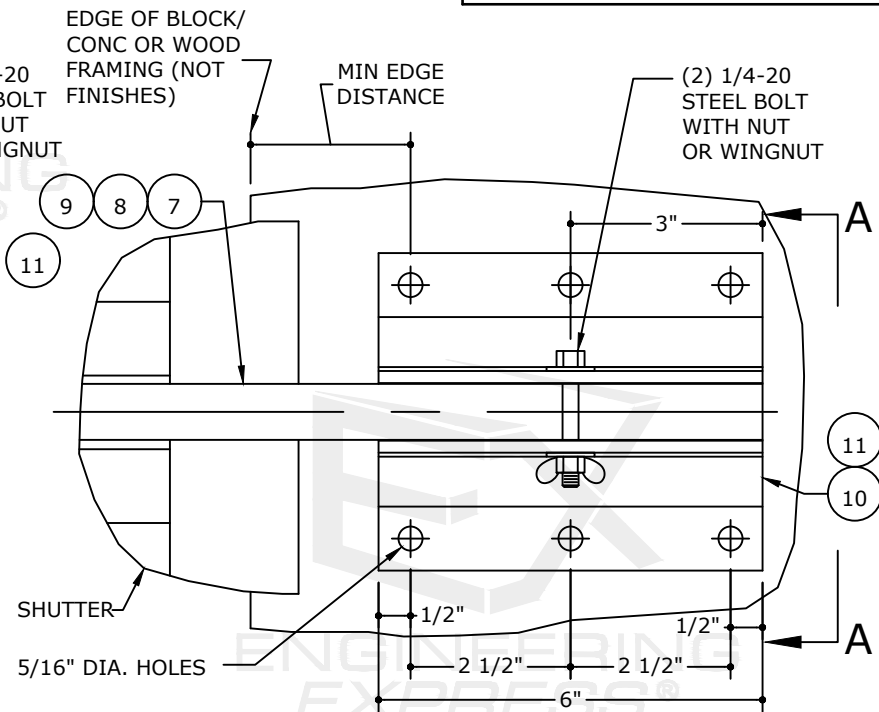
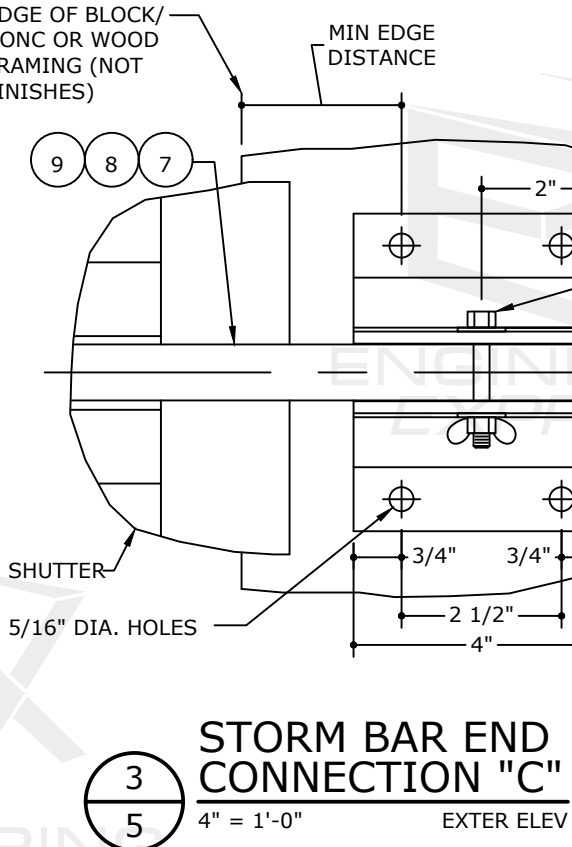
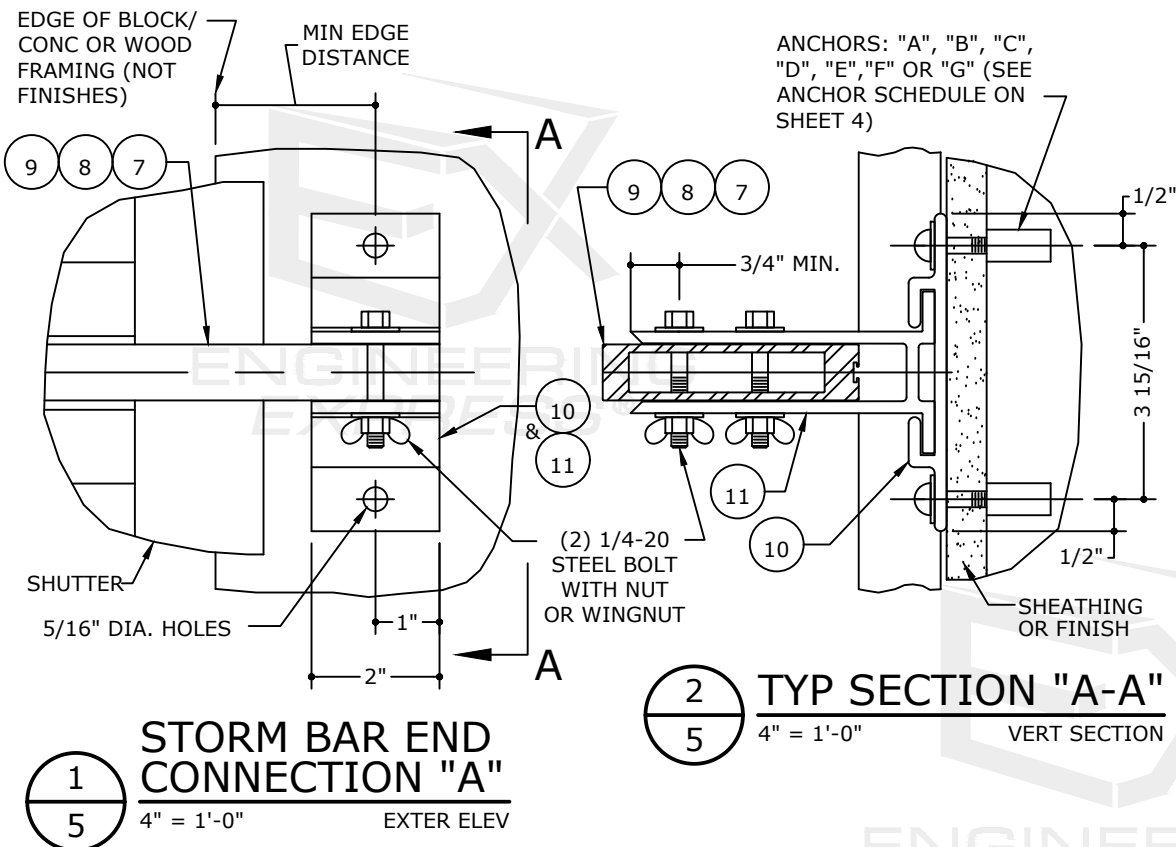
TYPICAL HORIZONTAL SECTION

6" = 1'-0"

VERT SECTION



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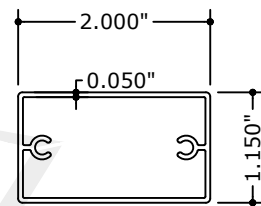
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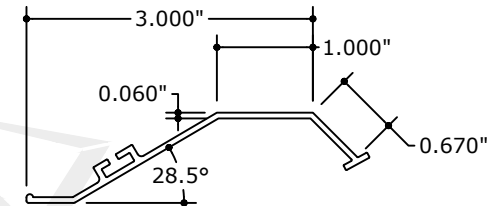
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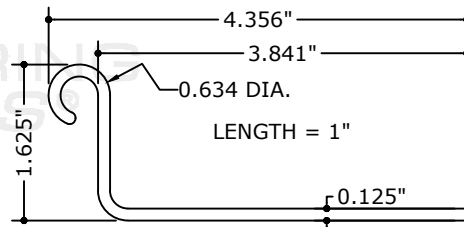
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2 BOTTOM/TOP RAIL
6063-T5 ALUMINUM



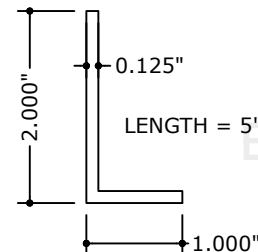
3B SINGLE BLADE SECTION
6063-T5 ALUMINUM



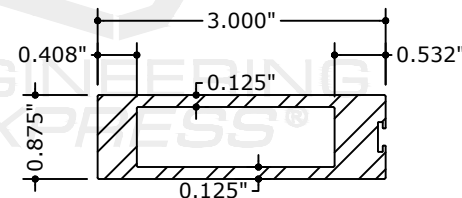
Technical drawing of a 90-degree elbow fitting. The drawing shows the profile of the fitting with the following dimensions:

- Overall height: 4.356"
- Overall width: 3.841"
- Inner radius: 0.634 DIA.
- Vertical leg length: 2.125"
- Horizontal leg length: LENGTH = 1"
- Horizontal leg end radius: R.0125"

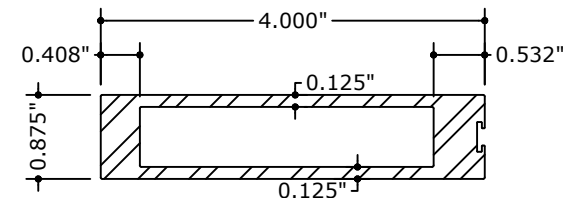
4C SHUTTER HINGE
6063-T5 ALUMINUM



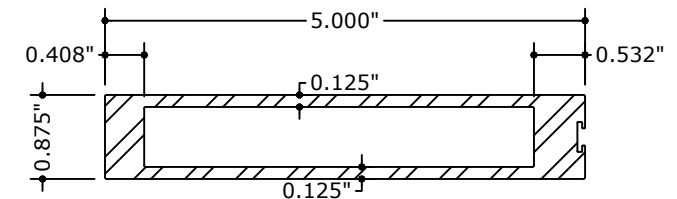
6 CLOSURE ANGLE
6063-T5 ALUMINUM



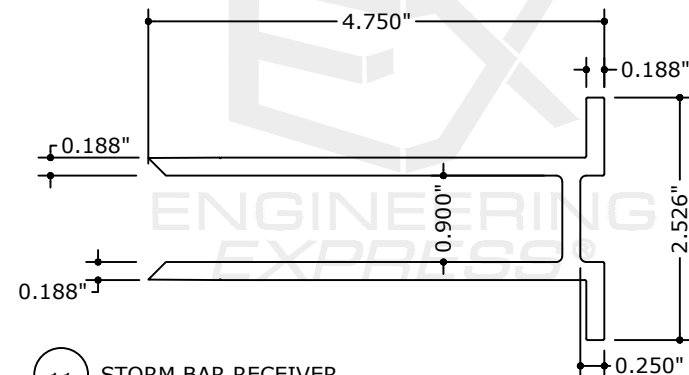
7 3" STORM BAR
6005-T5 ALUMINUM



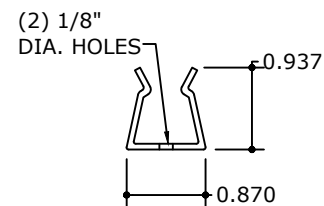
8 4" STORM BAR
6005-T5 ALUMINUM



9 5" STORM BAR
6005-T5 ALUMINUM

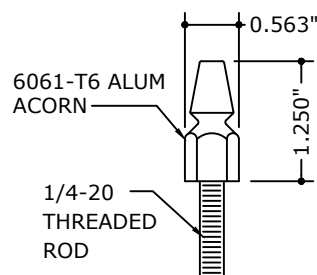


11 STORM BAR RECEIVER
6063-T6 ALUMINUM



THICKNESS = 0.035"
LENGTH = 1"

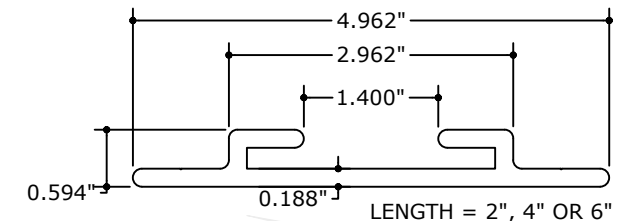
13 WALL CLIP
BRASS



(12) WALL ACORN

MATERIAL LIST		
NO.	DESCRIPTION	NOTES
1	SIDE STILE	
2	TOP & BOTTOM RAIL	
3A	DOUBLE BLADE SECTION	MAIN BLADE SECTION
3B	SINGLE BLADE SECTION	USED AS FILLER WHEN REQUIRED
3C	TOP SHUTTER BLADE	
3D	BOTTOM SHUTTER BLADE	
4A	WALL HINGE	USED WITH SINGLE PANEL
4B	WALL HINGE	USED WITH DOUBLE PANEL
4C	SHUTTER HINGE	USED AT TOP & BOTTOM OF SHUTTER
4D	SHUTTER HINGE	USED FOR MIDDLE HINGES
5	STORM BAR CLIP	SECURES STORM BAR TO SHUTTER PANEL FRAMES
6	CLOSURE ANGLE	SECURES SHUTTER SHUT
7	3" STORM BAR	
8	4" STORM BAR	
9	5" STORM BAR	
10	STORM BAR RECEIVER PLATE	GRABS THE STORM BAR END CONNECTOR
11	STORM BAR RECEIVER	
12	WALL ACORN	USED TO SECURE SHUTTER IN OPEN POSITION
13	WALL CLIP	USED TO SECURE SHUTTER IN OPEN POSITION

NO.	DESCRIPTION	NOTES
1	SIDE STILE	
2	TOP & BOTTOM RAIL	
3A	DOUBLE BLADE SECTION	MAIN BLADE SECTION
3B	SINGLE BLADE SECTION	USED AS FILLER WHEN REQUIRED
3C	TOP SHUTTER BLADE	
3D	BOTTOM SHUTTER BLADE	
4A	WALL HINGE	USED WITH SINGLE PANEL
4B	WALL HINGE	USED WITH DOUBLE PANEL
4C	SHUTTER HINGE	USED AT TOP & BOTTOM OF SHUTTER
4D	SHUTTER HINGE	USED FOR MIDDLE HINGES
5	STORM BAR CLIP	SECURES STORM BAR TO SHUTTER PANEL FRAMES
6	CLOSURE ANGLE	SECURES SHUTTER SHUT
7	3" STORM BAR	
8	4" STORM BAR	
9	5" STORM BAR	
10	STORM BAR RECEIVER PLATE	GRABS THE STORM BAR END CONNECTOR
11	STORM BAR RECEIVER	
12	WALL ACORN	USED TO SECURE SHUTTER IN OPEN POSITION
13	WALL CLIP	USED TO SECURE SHUTTER IN OPEN POSITION



10 STORM BAR RECEIVER PLATE
6063-T6 ALUMINUM

NOTE: ALL DETAILS ARE
DRAWN AT 1:2 SCALE,
UNLESS NOTED OTHERWISE

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1862 DR MARTIN LUTHER KING JR BLVD
WEST PALM BEACH, FL 33404
(561) 683-4811

IMPACT COLONIAL SHUTTER
FLORIDA BUILDING CODE NINTH EDITION (2026)
FLORIDA STATEWIDE APPROVAL (FSA FL#6414.1)

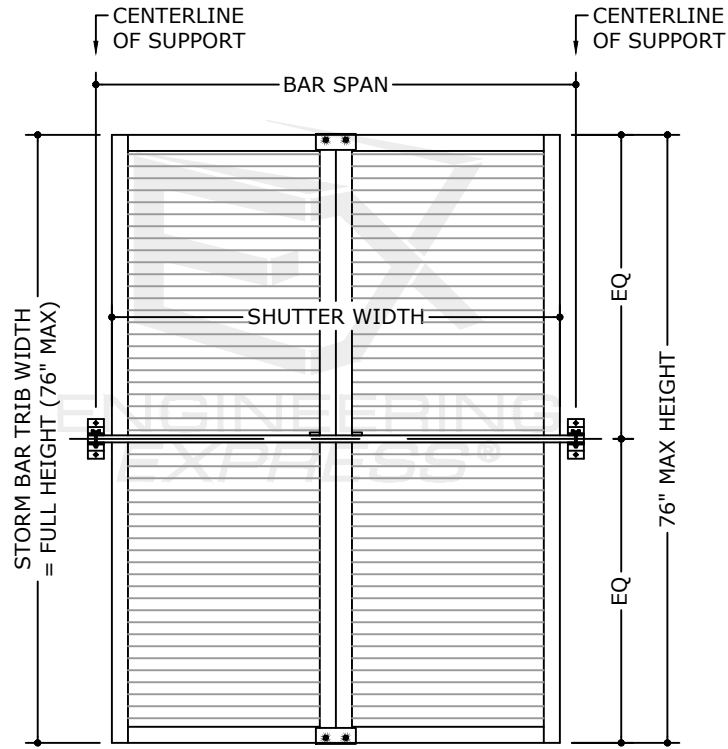
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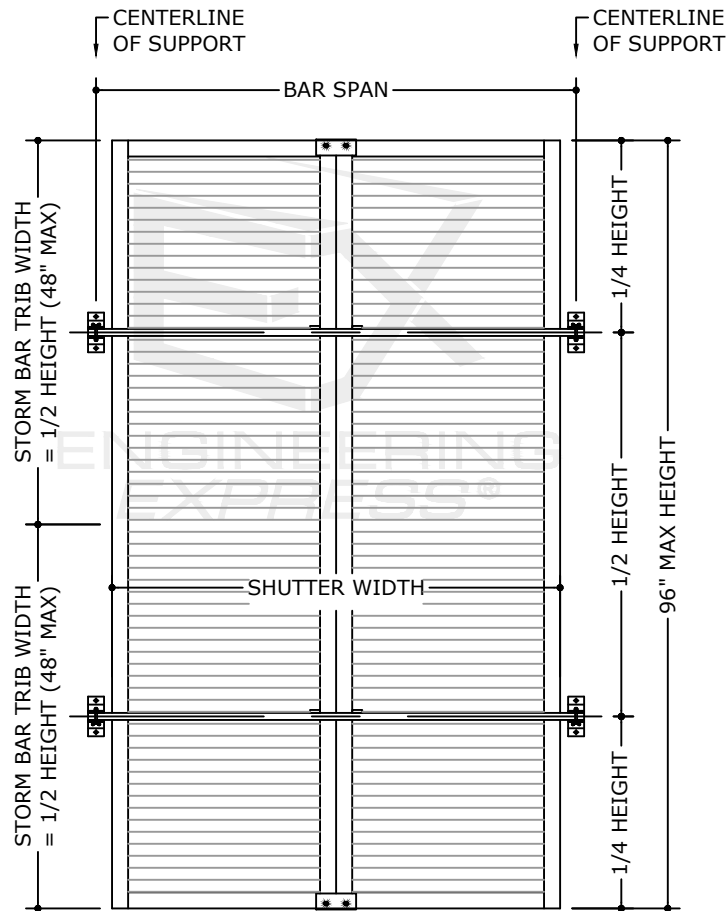
SCALE: NTS UNLESS NOTED

6 OF 9

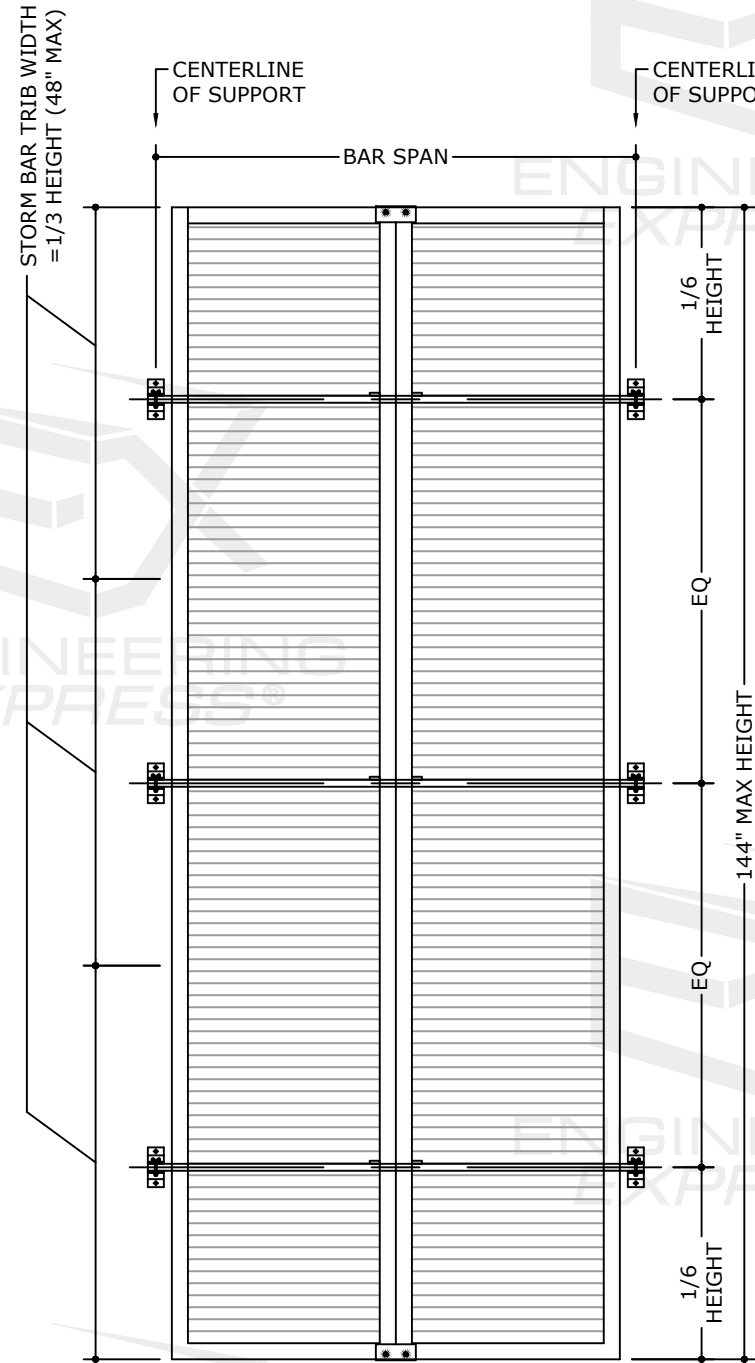
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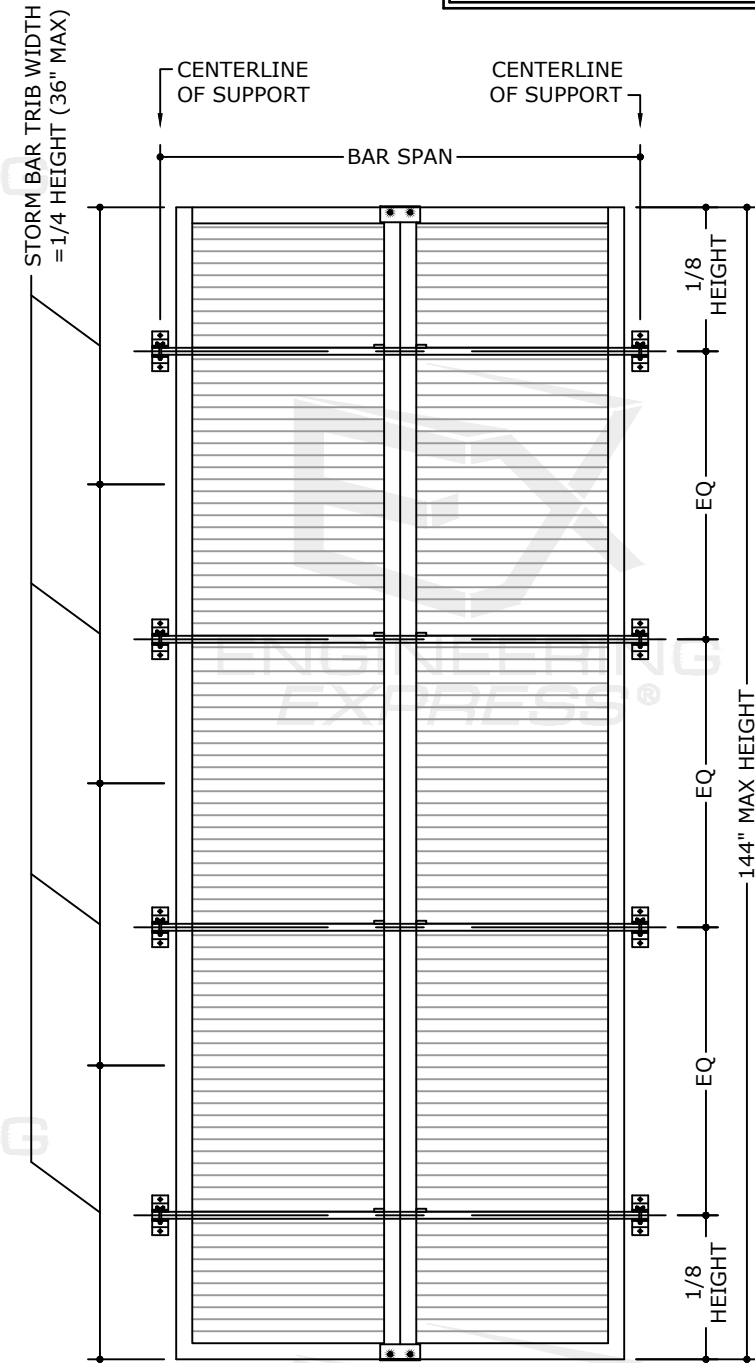
1
7 SINGLE BAR
1/2" = 1'-0" EXTER ELEV



2
7 TWO BARS
1/2" = 1'-0" EXTER ELEV

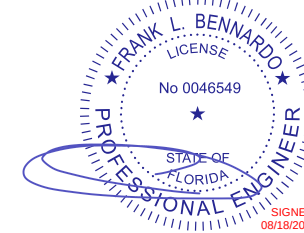


3
7 THREE BARS
1/2" = 1'-0" EXTER ELEV



4
7 FOUR BARS
1/2" = 1'-0" EXTER ELEV

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885



JULY 31, 2026

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FLORIDA STATEWIDE APPROVAL (FSA FL#6414.1)

REMARKS	DRWN	CHKD	DATE
PREV SUBMITTAL (20-20259) CCB	RWN		07/28/20
PREV SUBMITTAL (23-61990) MRT	RWN		09/29/23
2026 FBC UPDATE AEG	RS		07/31/26

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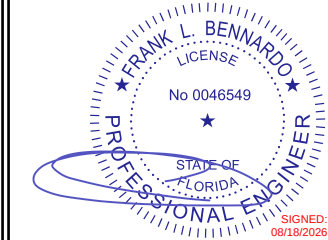
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STORM BAR ALLOWABLE BAR SPAN (IN)													
ALLOWABLE PRESSURE (PSF)	STORM BAR TRIB WIDTH (IN)	3" BAR				4" BAR				5" BAR			
		CONNECTION TYPE				CONNECTION TYPE				CONNECTION TYPE			
		"A" OR "B"	"C"	"D"	"E"	"A" OR "B"	"C"	"D"	"E"	"A" OR "B"	"C"	"D"	"E"
+/- 30	24	114.4	120.0	120.0	120.0	114.4	124.0	124.0	124.0	114.4	124.0	124.0	124.0
	30	93.9	112.3	112.3	112.3	93.9	124.0	124.0	124.0	93.9	124.0	124.0	124.0
	36	80.3	106.4	106.4	106.4	80.3	124.0	124.0	124.0	80.3	124.0	124.0	124.0
	42	70.5	101.6	101.6	101.6	70.5	124.0	124.0	124.0	70.5	124.0	124.0	124.0
	48	63.2	97.7	97.7	97.7	63.2	114.4	121.9	121.9	63.2	114.4	124.0	124.0
	58*	54.4	92.5	92.5	92.5	54.4	96.7	115.2	115.2	54.4	96.7	116.3	124.0
	66*	49.2	86.5	89.1	89.1	49.2	86.5	103.6	110.9	49.2	86.5	103.6	124.0
+/- 35	76*	44.3	76.7	85.6	85.6	44.3	76.7	91.6	106.3	44.3	76.7	91.6	124.0
	24	99.8	114.6	114.6	114.6	99.8	124.0	124.0	124.0	99.8	124.0	124.0	124.0
	30	82.2	107.2	107.2	107.2	82.2	124.0	124.0	124.0	82.2	124.0	124.0	124.0
	36	70.5	101.6	101.6	101.6	70.5	124.0	124.0	124.0	70.5	124.0	124.0	124.0
	42	62.2	97.1	97.1	97.1	62.2	112.3	121.2	121.2	62.2	112.3	124.0	124.0
	48	55.9	93.4	93.4	93.4	55.9	99.8	116.4	116.4	55.9	99.8	120.0	124.0
	58*	48.3	84.6	88.5	88.5	48.3	84.6	101.4	110.0	48.3	84.6	101.4	124.0
+/- 40	66*	43.9	75.8	85.2	85.2	43.9	75.8	90.5	105.9	43.9	75.8	90.5	123.4
	76*	39.7	67.4	80.2	81.9	39.7	67.4	80.2	101.6	39.7	67.4	80.2	108.8
	24	88.8	110.1	110.1	110.1	88.8	124.0	124.0	124.0	88.8	124.0	124.0	124.0
	30	73.4	103.1	103.1	103.1	73.4	124.0	124.0	124.0	73.4	124.0	124.0	124.0
	36	63.2	97.7	97.7	97.7	63.2	114.4	121.9	121.9	63.2	114.4	124.0	124.0
	42	55.9	93.4	93.4	93.4	55.9	99.8	116.4	116.4	55.9	99.8	120.0	124.0
	48	50.4	88.8	89.9	89.9	50.4	88.8	106.5	111.9	50.4	88.8	106.5	124.0
+/- 45	58*	43.8	75.6	85.1	85.1	43.8	75.6	90.2	105.8	43.8	75.6	90.2	123.0
	66*	39.9	67.9	80.7	82.0	39.9	67.9	80.7	101.8	39.9	67.9	80.7	109.5
	76*	36.3	60.5	71.7	78.8	36.3	60.5	71.7	96.7	36.3	60.5	71.7	96.7
	24	80.3	106.4	106.4	106.4	80.3	124.0	124.0	124.0	80.3	124.0	124.0	124.0
	30	66.6	99.6	99.6	99.6	66.6	121.2	124.0	124.0	66.6	121.2	124.0	124.0
	36	57.5	94.4	94.4	94.4	57.5	103.0	117.7	117.7	57.5	103.0	124.0	124.0
	42	51.0	90.0	90.3	90.3	51.0	90.0	108.0	112.4	51.0	90.0	108.0	124.0
+/- 50	48	46.1	80.3	86.9	86.9	46.1	80.3	96.0	108.0	46.1	80.3	96.0	124.0
	58*	40.2	68.5	81.5	82.3	40.2	68.5	81.5	102.2	40.2	68.5	81.5	110.6
	66*	36.8	61.6	73.1	79.3	36.8	61.6	73.1	98.4	36.8	61.6	73.1	98.7
	76*	33.6	55.1	65.1	76.3	33.6	55.1	65.1	87.3	33.6	55.1	65.1	87.3
	24	73.4	103.1	103.1	103.1	73.4	124.0	124.0	124.0	73.4	124.0	124.0	124.0
	30	61.2	96.6	96.6	96.6	61.2	110.3	120.4	120.4	61.2	110.3	124.0	124.0
	36	53.0	91.6	91.6	91.6	53.0	93.9	112.8	114.1	53.0	93.9	112.8	124.0
+/- 55	42	47.1	82.2	87.6	87.6	47.1	82.2	98.4	108.9	47.1	82.2	98.4	124.0
	48	42.7	73.4	84.3	84.3	42.7	73.4	87.6	104.7	42.7	73.4	87.6	119.3
	58*	37.4	62.8	74.6	79.9	37.4	62.8	74.6	99.1	37.4	62.8	74.6	100.8
	66*	34.3	56.7	67.0	77.0	34.3	56.7	67.0	90.0	34.3	56.7	67.0	90.0
	76*	31.4	50.8	59.7	74.0	31.4	50.8	59.7	79.7	31.4	50.8	59.7	79.7
	24	67.9	100.3	100.3	100.3	67.9	123.7	124.0	124.0	67.9	123.7	124.0	124.0
	30	56.7	93.9	93.9	93.9	56.7	101.4	117.1	117.1	56.7	101.4	122.0	124.0
+/- 60	36	49.2	86.5	89.1	89.1	49.2	86.5	103.6	110.9	49.2	86.5	103.6	124.0
	42	43.9	75.8	85.2	85.2	43.9	75.8	90.5	105.9	43.9	75.8	90.5	123.4
	48	39.9	67.9	80.7	82.0	39.9	67.9	80.7	101.8	39.9	67.9	80.7	109.5
	58*	35.1	58.2	68.9	77.8	35.1	58.2	68.9	92.7	35.1	58.2	68.9	92.7
	66*	32.3	52.6	62.0	75.0	32.3	52.6	62.0	82.9	32.3	52.6	62.0	82.9
	76*	29.6	47.3	55.4	72.1	29.6	47.3	55.4	73.6	29.6	47.3	55.4	73.6
	24	63.2	97.7	97.7	97.7	63.2	114.4	121.9	121.9	63.2	114.4	124.0	124.0
+/- 60	30	53.0	91.6	91.6	91.6	53.0	93.9	112.8	114.1	53.0	93.9	112.8	124.0
	36	46.1	80.3	86.9	86.9	46.1	80.3	96.0	108.0	46.1	80.3	96.0	124.0
	42	41.3	70.5	83.1	83.1	41.3	70.5	84.0	103.2	41.3	70.5	84.0	114.2
	48	37.6	63.2	75.0	80.0	37.6	63.2	75.0	99.3	37.6	63.2	75.0	101.4
	58*	33.2	54.4	64.1	75.9	33.2	54.4	64.1	86.0	33.2	54.4	64.1	86.0
	66*	30.6	49.2	57.8	73.2	30.6	49.2	57.8	77.0	30.6	49.2	57.8	77.0
	76*	28.2	44.3	51.8	68.5	28.2	44.3	51.8	68.5	28.2	44.3	51.8	68.5

1. ALL PRESSURES ARE FOR BOTH POSITIVE & NEGATIVE AND ARE PSF.
2. REF. SHEET 5 FOR CONNECTION TYPES & DETAILS.
= APPLIES TO SINGLE BAR SHUTTERS ONLY

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885

JULY 31, 2026



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IMPACT COLONIAL SHUTTER
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FLORIDA STATEWIDE APPROVAL (FSA FL#6414.1)

REMARKS	DRWN	CHKD	DATE
PREV SUBMITTAL (20-20259) CCB	RWVN		07/28/20
PREV SUBMITTAL (23-61950) MRT	RWVN		09/29/23
2026 FBC UPDATE	AEG	RS	07/31/26

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LOAD TABLE INSTRUCTIONS:

1. DETERMINE THE REQUIRED DESIGN PRESSURE AND STORM BAR TRIBUTARY WIDTH.
2. FIND THE APPLICABLE DESIGN PRESSURE IN THE 1ST COLUMN & STORM BAR TRIBUTARY WIDTH IN THE 2ND COLUMN. GO ACROSS THE STORM BAR/CONNECTION TYPE COLUMNS UNTIL YOU HAVE A STORM BAR AND CONNECTION TYPE WHICH MEETS THE REQUIRED STORM BAR SPAN. USE THAT BAR & THAT CONNECTION. NOTE THAT IF YOU DECIDE THAT THE BAR &/OR CONNECTION IS TOO LARGE FOR YOUR LIKING, ADD A BAR & REPEAT THESE INSTRUCTIONS.
3. NOTE THAT WHEN MORE THAN ONE BAR IS USED WITH ONE SHUTTER, THE MAXIMUM STORM BAR TRIBUTARY WIDTH MAY NOT EXCEED 48".

8/13/2026 2:31 PM ALFREDO ESPINOZA\projects\26-98591\26-98591.dwg 8/13/2026 2:31 PM ALFREDO ESPINOZA\projects\26-98591\26-98591.dwg 8/13/2026 2:31 PM ALFREDO ESPINOZA\projects\26-98591\26-98591.dwg

STORM BAR ALLOWABLE BAR SPAN (IN)													
ALLOWABLE PRESSURE (PSF)	STORM BAR TRIB WIDTH (IN)	3" BAR				4" BAR				5" BAR			
		CONNECTION TYPE				CONNECTION TYPE				CONNECTION TYPE			
		"A" OR "B"	"C"	"D"	"E"	"A" OR "B"	"C"	"D"	"E"	"A" OR "B"	"C"	"D"	"E"
+/- 65	24	59.3	95.5	95.5	95.5	59.3	106.5	119.0	119.0	59.3	106.5	124.0	124.0
	30	49.8	87.6	89.5	89.5	49.8	87.6	105.0	111.4	49.8	87.6	105.0	124.0
	36	43.5	75.0	84.9	84.9	43.5	75.0	89.5	105.5	43.5	75.0	89.5	122.0
	42	39.0	66.0	78.5	81.3	39.0	66.0	78.5	100.8	39.0	66.0	78.5	106.3
	48	35.6	59.3	70.2	78.3	35.6	59.3	70.2	94.5	35.6	59.3	70.2	94.5
	58*	31.6	51.1	60.1	74.2	31.6	51.1	60.1	80.3	31.6	51.1	60.1	80.3
	66*	29.2	46.4	54.3	71.6	29.2	46.4	54.3	72.0	29.2	46.4	54.3	72.0
+/- 70	24	55.9	93.4	93.4	93.4	55.9	99.8	116.4	116.4	55.9	99.8	120.0	124.0
	30	47.1	82.2	87.6	87.6	47.1	82.2	98.4	108.9	47.1	82.2	98.4	124.0
	36	41.3	70.5	83.1	83.1	41.3	70.5	84.0	103.2	41.3	70.5	84.0	114.2
	42	37.1	62.2	73.7	79.6	37.1	62.2	73.7	98.7	37.1	62.2	73.7	99.6
	48	33.9	55.9	66.0	76.6	33.9	55.9	66.0	88.6	33.9	55.9	66.0	88.6
	58*	30.2	48.3	56.7	72.7	30.2	48.3	56.7	75.4	30.2	48.3	56.7	75.4
	66*	28.0	43.9	51.3	67.7	28.0	43.9	51.3	67.7	28.0	43.9	51.3	67.7
+/- 75	24	53.0	91.6	91.6	91.6	53.0	93.9	112.8	114.1	53.0	93.9	112.8	124.0
	30	44.8	77.5	85.9	85.9	44.8	77.5	92.6	106.7	44.8	77.5	92.6	124.0
	36	39.3	66.6	79.2	81.5	39.3	66.6	79.2	101.1	39.3	66.6	79.2	107.3
	42	35.4	58.8	69.6	78.0	35.4	58.8	69.6	93.7	35.4	58.8	69.6	93.7
	48	32.5	53.0	62.4	75.2	32.5	53.0	62.4	83.5	32.5	53.0	62.4	83.5
	58*	28.9	45.9	53.7	71.2	28.9	45.9	53.7	71.2	28.9	45.9	53.7	71.2
	66*	26.9	41.8	48.7	64.0	26.9	41.8	48.7	64.0	26.9	41.8	48.7	64.0
+/- 80	24	50.4	88.8	89.9	89.9	50.4	88.8	106.5	111.9	50.4	88.8	106.5	124.0
	30	42.7	73.4	84.3	84.3	42.7	73.4	87.6	104.7	42.7	73.4	87.6	119.3
	36	37.6	63.2	75.0	80.0	37.6	63.2	75.0	99.3	37.6	63.2	75.0	101.4
	42	33.9	55.9	66.0	76.6	33.9	55.9	66.0	88.6	33.9	55.9	66.0	88.6
	48	31.2	50.4	59.3	73.8	31.2	50.4	59.3	79.0	31.2	50.4	59.3	79.0
	58*	27.9	43.8	51.1	67.5	27.9	43.8	51.1	67.5	27.9	43.8	51.1	67.5
	66*	26.0	39.9	46.4	60.8	26.0	39.9	46.4	60.8	26.0	39.9	46.4	60.8
	76*	24.1	36.3	41.8	54.3	24.1	36.3	41.8	54.3	24.1	36.3	41.8	54.3

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FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885

FRANK L. BENNARDO
LICENSE
No 0046549
STATE OF FLORIDA
PROFESSIONAL ENGINEER
SIGNED: 08/18/2026

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FLORIDA STATEWIDE APPROVAL (FSA FL# 6414.1)

REMARKS
PREV SUBMITTAL (20-20259)
PREV SUBMITTAL (23-61990)
2026 FBC UPDATE

DRWN
CCB
AEG

CHKD
RVN
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DATE
07/28/20
09/29/23
07/31/26

26-98591

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OF 9