

ATLANTIC SHUTTERS, INC.

0.029" GALVANIZED STEEL STORM PANELS

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:

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE NINTH EDITION (2026) FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE. SEE PRODUCT EVALUATION REPORT FOR MORE INFORMATION.
- WIND LOAD DURATION FACTOR $C_d=1.6$ HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE. PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7 CURRENT EDITION AND CHAPTER 1609 OF THE FLORIDA BUILDING CODE NINTH EDITION (2026) SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
- INSTALLATIONS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE STRESS DESIGN (ASD) DESIGN RATINGS AND MAXIMUM SPAN LIMITS.
- DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- THESE INSTALLATION INSTRUCTIONS ARE PART OF A PRODUCT APPROVAL EVALUATION AND SHALL ONLY BE USED IN CONJUNCTION WITH THE EVALUATION REPORT SUBMITTED FOR THE SAME PRODUCT APPROVAL. USE OF THESE APPROVAL DOCUMENTS SHALL COMPLY WITH CHAPTER 61G20-3.005 OF THE FLORIDA ADMINISTRATIVE CODE.
- THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO EXISTING STRUCTURE. BRICK VENEER PER ASTM C62 (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER ANY APPLICABLE LOADS TO THE EXISTING HOST STRUCTURE.
- STORM PANELS SHALL BE 22 GAUGE STEEL WITH $t=0.029$ " MINIMUM WITH GALVANIC COATING ($t=0.028$ " BARE MIN. THICKNESS) CONFORMING TO ASTM A653, STRUCTURAL QUALITY, GRADE 80 WITH $F_y = 86$ KSI MINIMUM, G60 GALVANIZED COATING.
- ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE. ALL TOLERANCES SHALL BE IN ACCORDANCE WITH ADM (CURRENT VERSION).
- TOP & BOTTOM DETAILS SHOWN MAY BE INTERCHANGED AS FIELD CONDITIONS DICTATE. PANELS MAY BE MOUNTED VERTICALLY OR HORIZONTALLY AS APPLICABLE.

- PANELS SHALL BE PERMANENTLY LABELED WITH LABELS SPACED NOT MORE THAN EVERY THREE LINEAL FEET PER PANEL AND SHALL FACE THE EXTERIOR AND CONTAIN AT LEAST THE FOLLOWING:

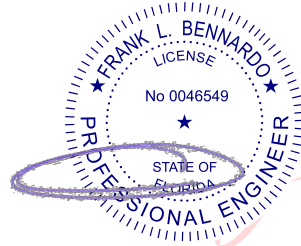
ATLANTIC SHUTTERS, INC.
NORTH MIAMI BEACH, FL
TAS 201, 202, & 203
FL21070

- ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, STAINLESS STEEL, OR 2024-T6 ALUMINUM ALLOY WITH A MINIMUM TENSILE YIELD STRENGTH OF 33 KSI, UNLESS OTHERWISE NOTED HEREIN.
- 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 INC, AND ANY APPLICABLE FEDERAL, STATE AND OR LOCAL CODES.
- REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
- 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.
- 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.
- 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.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.

SYSTEM PERFORMANCE DERIVATIONS

SYSTEM PERFORMANCE DERIVED FROM CERTIFIED TEST REPORT(S) #16-6667 BY FENESTRATION TESTING LABORATORY, INC. PER TAS 201, TAS 202 & TAS 203 TEST STANDARD(S).

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



Digitally signed by
Frank Bennardo
Date: 2026.10.05
15:23:16 -04'00'

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

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SHEET INDEX

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2	PARTS
3-4	DETAILS
5-6	ANCHOR SCHEDULE

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", "CS" FOR "CARBON STEEL", "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.

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& MORE INFORMATION ABOUT THIS DOCUMENT
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ATLANTIC SHUTTERS, INC.

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(305) 945-7277

0.029" GALVANIZED STEEL STORM PANELS
FLORIDA BUILDING CODE NINTH EDITION (2026)
FLORIDA STATEWIDE APPROVAL (FSA FL #21070.1)

REMARKS	DATE	DRWN	CHKD	DATE
2020 FBC (20-31017)	09/26/20	CCB	RWN	09/26/20
2023 FBC UPDATE (23-64762)	09/28/23	MRT	RWN	09/28/23
2026 FBC UPDATE (26-99322)	09/28/26	MEF	CCB	09/28/26

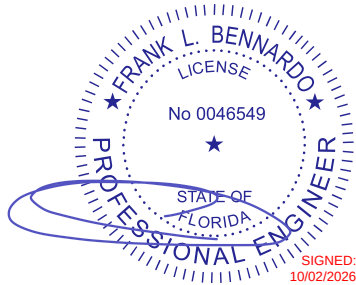
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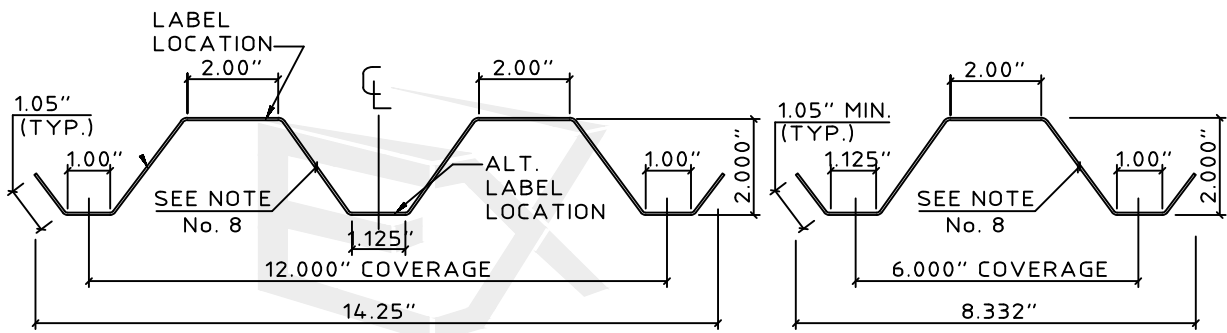
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26-99322

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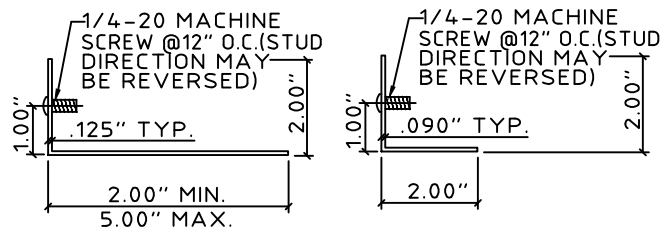
1 STORM PANEL
SCALE: 3" = 1'-0"

1a HALF STORM PANEL
SCALE: 3" = 1'-0"

2 "h" HEADER
SCALE: 3" = 1'-0"

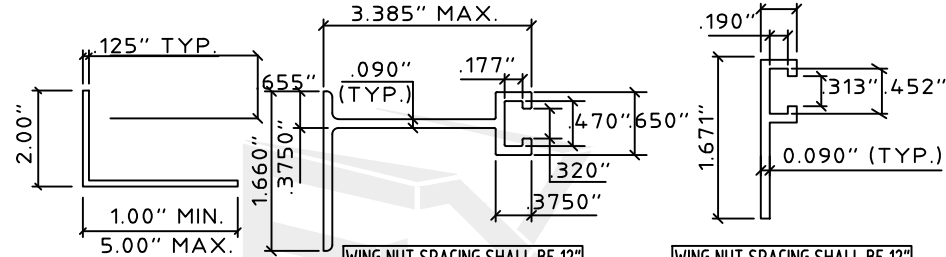
3 "U" HEADER
SCALE: 3" = 1'-0"

3a BUILD-OUT "U" HEADER



4 STUD ANGLE
SCALE: 3" = 1'-0"

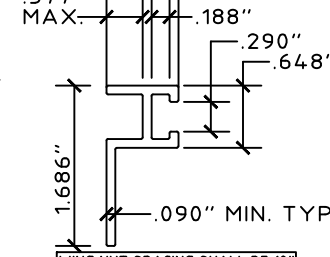
5 STUD ANGLE
SCALE: 3" = 1'-0"



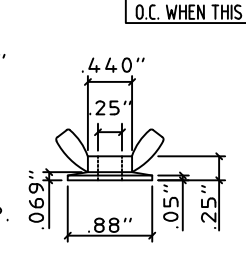
6 ANGLE
SCALE: 3" = 1'-0"

7 BUILD-OUT F-TRACK
SCALE: HALF SIZE

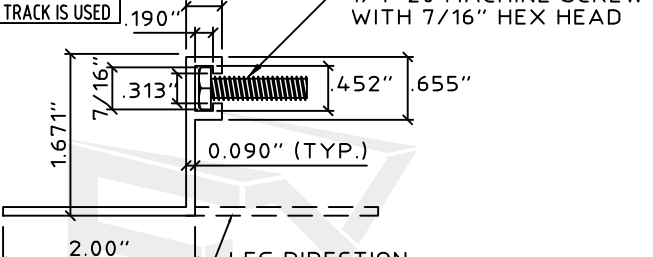
8 "F" TRACK
SCALE: HALF SIZE



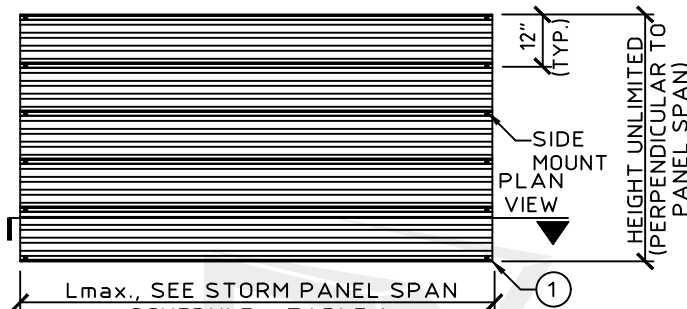
8a BF-TRACK
SCALE: HALF SIZE



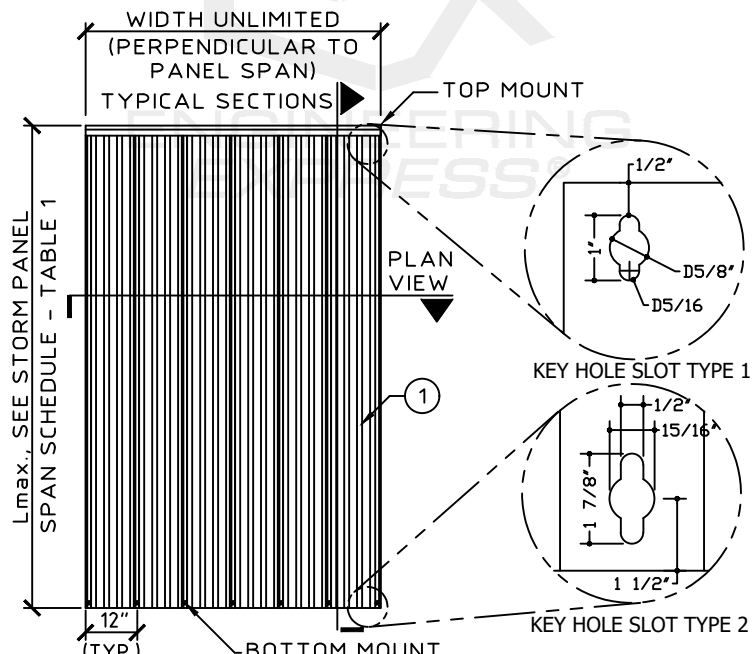
9 WING NUT
SCALE: HALF SIZE



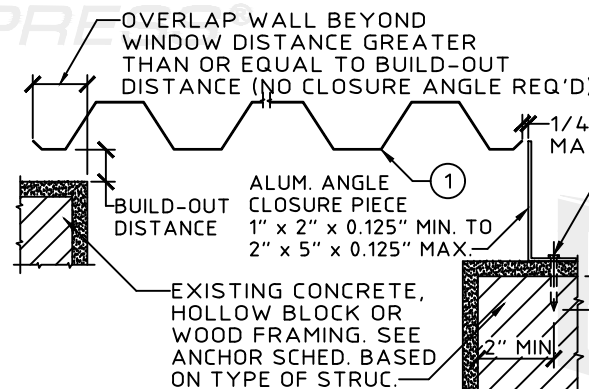
10 "F" ANGLE - TRACK
SCALE: HALF SIZE



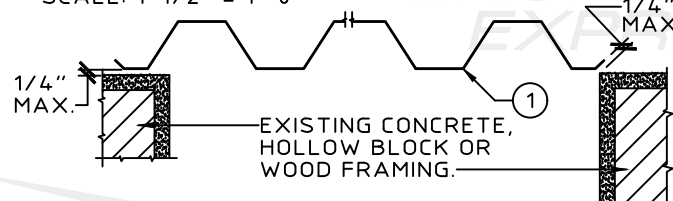
TYPICAL HORIZONTAL ELEVATION
SCALE: 1/4" = 1' - 0"



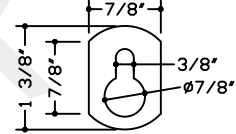
TYPICAL VERTICAL ELEVATION
SCALE: 1/4" = 1' - 0"



BUILD-OUT MOUNT CLOSURE DETAIL (PLAN)
SCALE: 1-1/2" = 1'-0"



WALL MOUNT CLOSURE DETAIL (PLAN)
SCALE: 1-1/2" = 1'-0"



11 KEYHOLE WASHER
SCALE: N.T.S.

12 1/4-20 TRUSS HEAD BOLT
SCALE: N.T.S.

REQUIRES USE OF KEYHOLE WASHER
IN DIRECT MOUNT APPLICATIONS

NOTE: TOP MAY BE SLOPED OR RADIUS TO MATCH GEOMETRY OF
OPENING. MOUNTING HARDWARE MUST BE ROLL-FORMED TO THE RADIUS;
NO NOTCHING OF MOUNTING HARDWARE TO ACHIEVE SHAPES IS ALLOWED.

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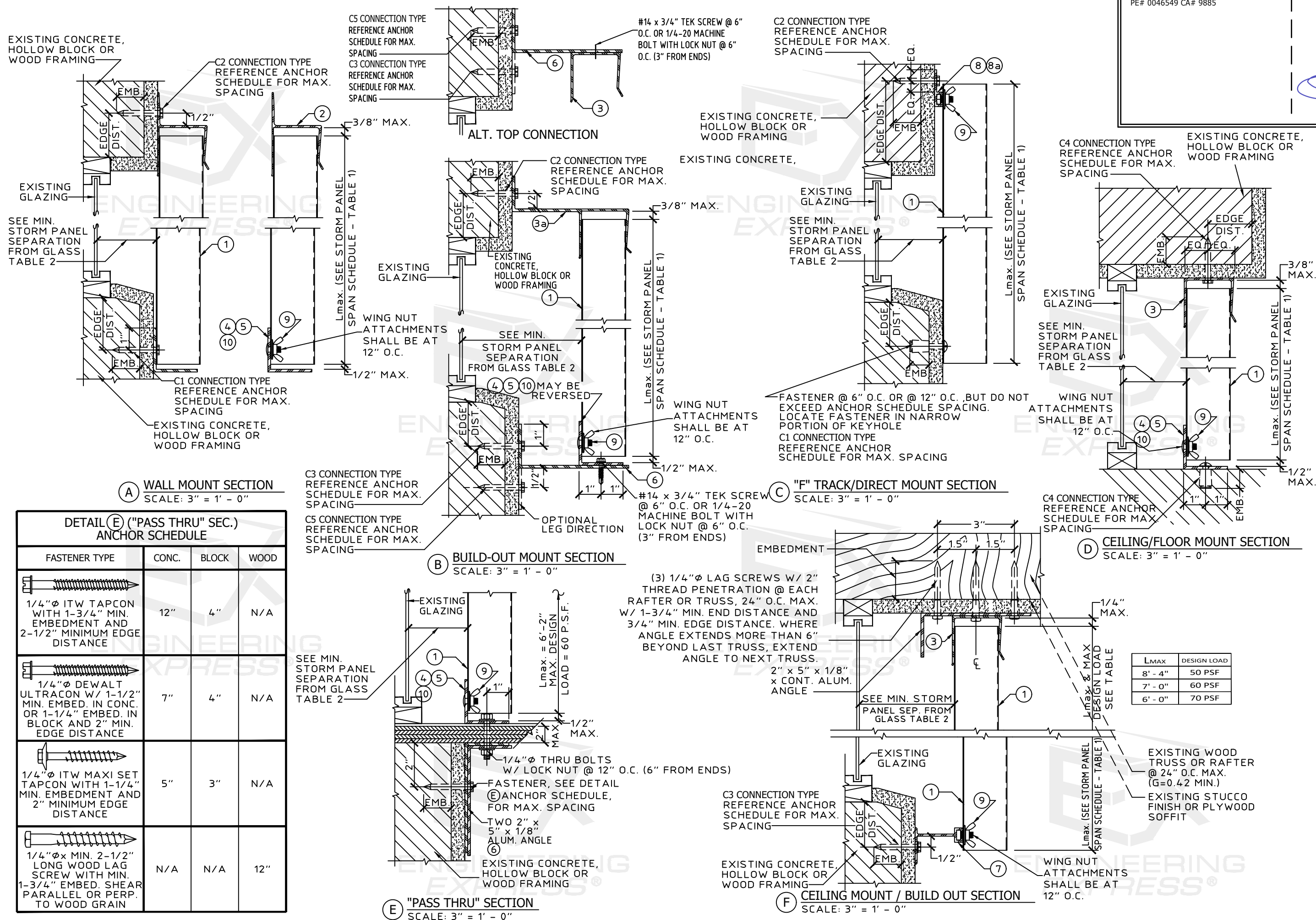
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FLORIDA STATEWIDE APPROVAL (FSA FL#21070.1)

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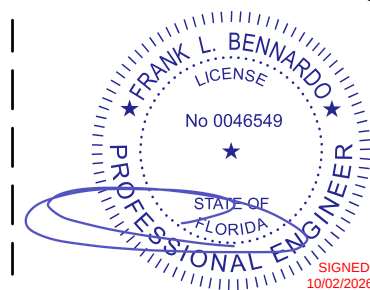
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PE# 0046549 CA# 9885

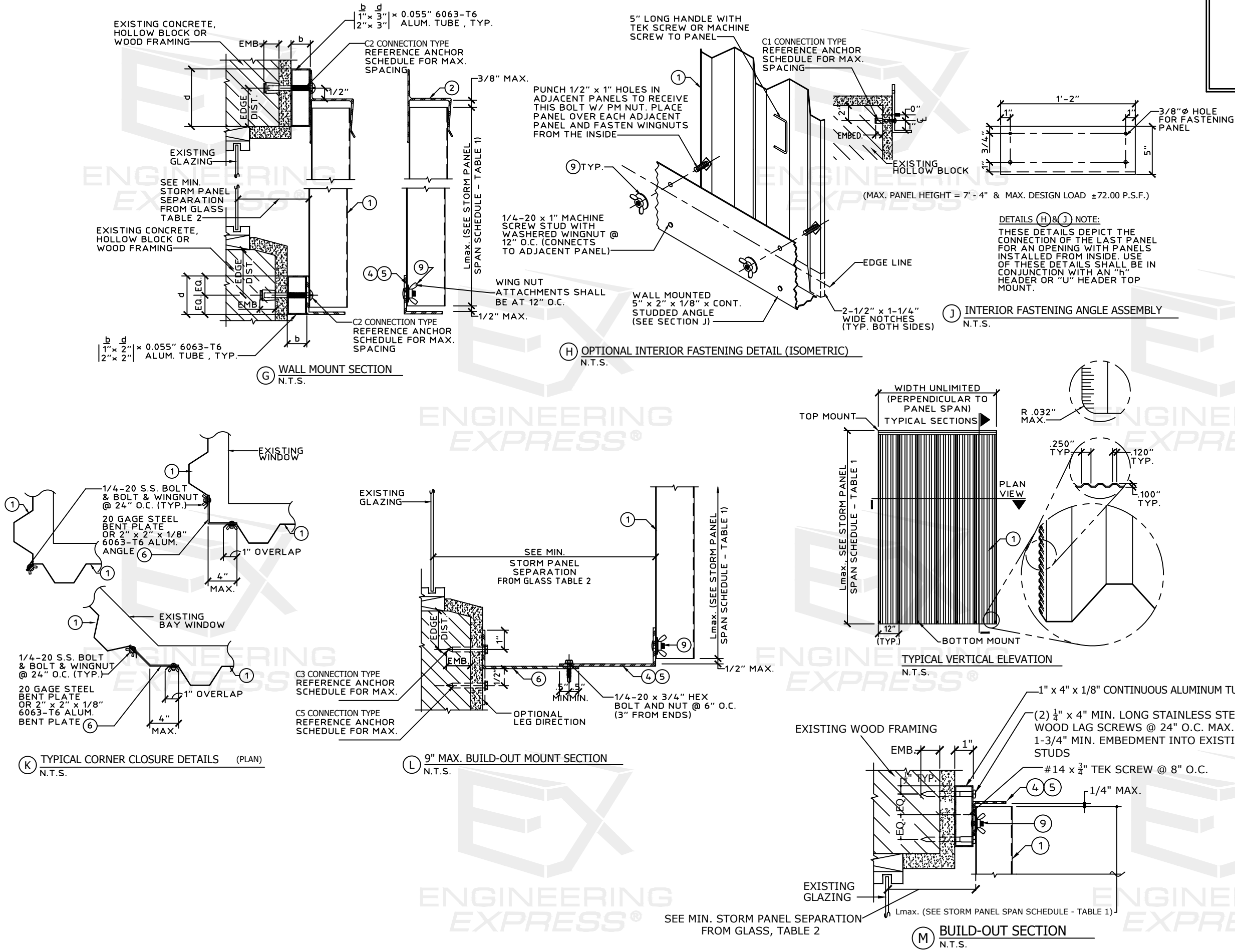


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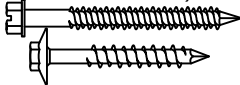
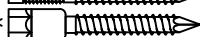


ANCHOR SCHEDULES: (SEE SHEET 6 FOR ANCHOR NOTES)

HOST STRUCT.	ANCHOR	LOAD (psf)	3" MIN. EDGE DISTANCE														
			Spans Up To 4'-0"					Spans Up To 8'-0"					Spans Up To 12'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE				
CONCRETE	1/4" ITW C.S. A.T.T. TAPCON WITH 1-3/4" EMBED. (3000 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.2"	16.0"	16.0"	13.2"	16.0"	8.5"	10.4"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.8"	15.9"	16.0"	10.2"	16.0"	7.0"	7.7"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.8"	16.0"	8.8"	11.0"	13.8"	7.9"	13.6"	5.7"	5.8"
		100	16.0"	16.0"	16.0"	14.7"	16.0"	16.0"	10.1"	16.0"	6.9"	7.6"	11.0"	6.0"	9.9"	4.5"	4.3"
	5/16" ITW C.S. TAPCON XL WITH 1-3/4" EMBED. (2899 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.6"	16.0"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.9"	16.0"	16.0"	13.9"	16.0"	10.1"	10.9"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.9"	16.0"	16.0"	10.7"	16.0"	8.3"	8.1"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.5"	16.0"	10.5"	11.6"	14.5"	8.3"	14.4"	6.8"	6.1"
		100	16.0"	16.0"	16.0"	16.0"	16.0"	10.6"	16.0"	8.2"	8.0"	11.6"	6.3"	10.4"	5.3"		
	1/4" DEWALT PANELMATE (MALE OR FEMALE) WITH 1-3/4" EMBED. (3350 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.4"	16.0"	16.0"	16.0"	9.8"	15.0"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.2"	16.0"	16.0"	13.0"	16.0"	7.9"	10.3"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.0"	15.7"	16.0"	10.1"	16.0"	6.5"	7.6"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.6"	16.0"	8.1"	10.8"	13.6"	7.8"	13.5"	5.3"	5.7"
		100	16.0"	16.0"	16.0"	13.6"	16.0"	16.0"	9.9"	16.0"	6.4"	7.5"	10.9"	5.9"	9.7"	4.2"	4.2"
	1/4-20 ALL POINTS SOLID-SET WITH 7/8" EMBED. (3000 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.6"	15.0"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.6"	16.0"	16.0"	13.0"	16.0"	9.3"	10.3"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.9"	15.7"	16.0"	10.1"	16.0"	7.6"	7.6"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	13.6"	16.0"	9.6"	10.8"	13.6"	7.8"	13.5"	6.2"	5.7"	
		100	16.0"	16.0"	16.0"	16.0"	16.0"	9.9"	16.0"	7.6"	7.5"	10.9"	5.9"	9.7"	4.9"	4.2"	
	1/4" DEWALT ULTRACON WITH 1-3/4" MIN EMBED (2846 psi MIN CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.3"	16.0"	16.0"	15.4"	16.0"	9.7"	13.1"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.2"	16.0"	16.0"	11.4"	16.0"	7.8"	9.0"	
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	9.9"	13.7"	14.4"	8.8"	14.4"	6.4"	6.7"	
		80	16.0"	16.0"	16.0"	16.0"	16.0"	11.9"	16.0"	8.0"	9.5"	11.9"	6.8"	11.8"	5.2"	5.0"	
		100	16.0"	16.0"	16.0"	13.6"	16.0"	14.3"	8.7"	14.3"	6.3"	6.6"	9.5"	5.2"	8.5"	4.1"	
		150	16.0"	13.1"	16.0"	8.6"	10.6"	9.5"	5.2"	8.5"	4.1"	3.7"	6.3"		5.0"		

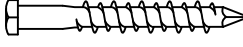
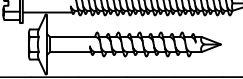
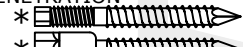
HOST STRUCT.	ANCHOR	LOAD (psf)	2" MIN. EDGE DISTANCE														
			Spans Up To 4'-0"					Spans Up To 8'-0"					Spans Up To 12'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE				
CONCRETE	1/4" ITW C.S. A.T.T. TAPCON WITH 1-3/4" EMBED. (3000 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.5"	16.0"	16.0"	16.0"	9.2"	14.7"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.6"	16.0"	16.0"	12.7"	16.0"	7.4"	10.1"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	9.5"	15.4"	16.0"	9.9"	16.0"	6.1"	7.5"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.3"	16.0"	7.7"	10.6"	13.3"	7.7"	13.2"	5.0"	5.6"
		100	16.0"	16.0"	16.0"	12.9"	16.0"	16.0"	9.7"	16.0"	6.1"	7.4"	10.7"	5.8"	9.5"		4.2"
	5/16" ITW C.S. TAPCON XL WITH 1-3/4" EMBED. (2899 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.5"	15.1"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.5"	16.0"	16.0"	13.0"	16.0"	9.2"	10.3"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.8"	15.8"	16.0"	10.1"	16.0"	7.6"	7.6"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.6"	16.0"	9.6"	10.9"	13.7"	7.9"	13.5"	6.2"	5.8"
		100	16.0"	16.0"	16.0"	16.0"	16.0"	10.0"	16.0"	7.5"	7.5"	10.9"	6.0"	9.8"			
	1/4" DEWALT PANELMATE (MALE OR FEMALE) WITH 2" EMBED. (3350 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.8"	16.0"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.6"	16.0"	16.0"	14.5"	16.0"	8.7"	11.5"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.1"	16.0"	16.0"	11.3"	16.0"	7.2"	8.5"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.2"	16.0"	9.0"	12.1"	15.2"	8.7"	15.1"	5.8"	6.4"
		100	16.0"	16.0"	16.0"	15.1"	16.0"	16.0"	11.1"	16.0"	7.1"	8.4"	12.2"	6.6"	10.9"	4.6"	4.7"
	1/4-20 ALL POINTS SOLID-SET WITH 7/8" EMBED. (3000 psi MIN. CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.3"	16.0"	16.0"	13.9"	16.0"	9.0"	11.8"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.3"	16.0"	15.6"	10.2"	15.6"	7.2"	8.1"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	9.2"	12.4"	13.0"	7.9"	13.0"	5.9"	6.0"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	10.7"	16.0"	7.5"	8.5"	10.7"	6.2"	10.6"	4.8"	4.5"	
		100	16.0"	16.0"	16.0"	12.6"	16.0"	12.8"	7.8"	12.8"	5.9"	5.9"	8.6"	4.7"	7.7"	3.8"	3.3"
	1/4" DEWALT ULTRACON WITH 1-3/4" MIN EMBED (2846 psi MIN CONCRETE)	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.8"	16.0"	16.0"	15.3"	16.0"	8.8"	13.0"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.0"	16.0"	16.0"	11.2"	16.0"	7.0"	8.9"	
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.8"	16.0"	9.0"	13.6"	14.2"	8.7"	14.2"	5.8"	6.6"
		80	16.0"	16.0"	16.0"	15.6"	16.0"	16.0"	11.7"	16.0"	7.3"	9.4"	11.8"	6.8"	11.6"	4.7"	5.0"
		100	16.0"	16.0"	16.0"	12.3"	16.0"	14.1"	8.6"	14.1"	5.7"	6.5"	9.4"	5.1"	8.4"	3.7"	3.7"
		150	16.0"	12.9"	16.0"	7.8"	10.5"	9.4"	5.1"	8.4"	3.7"	3.7"	6.3"	3.2"	5.0"		

HOST STRUCT.	ANCHOR	LOAD (psf)	4" MIN. EDGE DISTANCE														
			Spans Up To 4'-0"					Spans Up To 8'-0"					Spans Up To 12'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONCRETE BLOCK	5/16" ITW C.S. TAPCON XL WITH 1-3/4" EMBED. 	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.9"	16.0"	11.6"	8.5"	11.6"	7.4"	7.2"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	14.2"	12.1"	14.2"	9.3"	11.7"	9.5"	6.2"	9.5"	5.9"	
		66	16.0"	16.0"	16.0"	16.0"	16.0"	11.9"	8.8"	11.9"	7.6"	7.6"	7.9"		7.9"		
		80	16.0"	16.0"	16.0"	13.4"	16.0"	9.8"	6.5"	9.8"	6.1"	5.2"	6.5"		6.5"		
		100	15.7"	14.6"	15.7"	10.5"	15.6"	7.8"		7.8"			5.2"				
		150	10.4"	7.2"	10.4"	6.5"	5.9"	5.2"									

HOST STRUCT.	ANCHOR	LOAD (psf)	3" MIN. EDGE DISTANCE														
			Spans Up To 4'-0"					Spans Up To 8'-0"					Spans Up To 12'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONCRETE BLOCK	1/4" ITW C.S. A.T.T. TAPCON WITH 1" EMBED. (117 PCF MIN. DENSITY BLOCK) 	45	15.7"	15.7"	15.7"	9.5"	15.7"	7.9"	7.9"	7.9"	4.8"	7.9"	5.2"	C2	5.2"	C4	C5
		55	12.9"	12.9"	12.9"	7.8"	12.9"	6.4"	5.5"	6.4"		5.3"	4.3"		4.3"		
		66	10.7"	10.7"	10.7"	6.5"	10.7"	5.4"		5.4"							
		80	8.9"	8.9"	8.9"	5.4"	8.9"	4.4"		4.4"							
		100	7.1"	6.6"	7.1"	4.2"	7.1"										
		150	4.7"		4.7"												
	1/4" DEWALT PANELMATE (MALE OR FEMALE) WITH 1-1/4" EMBED. (2071 psi MIN. BLOCK)  * 	45	16.0"	16.0"	16.0"	13.6"	16.0"	14.0"	14.0"	14.0"	6.8"	14.0"	9.3"	6.8"	9.3"	4.3"	5.8"
		55	16.0"	16.0"	16.0"	11.1"	16.0"	11.5"	9.8"	11.5"	5.4"	9.4"	7.6"	5.0"	7.6"		
		66	16.0"	16.0"	16.0"	9.3"	16.0"	9.5"	7.1"	9.5"	4.4"	6.1"	6.4"		6.4"		
		80	15.8"	15.8"	15.8"	7.7"	15.8"	7.9"	5.2"	7.9"		4.2"	5.3"		5.2"		
		100	12.6"	11.8"	12.6"	6.0"	12.6"	6.3"		6.3"			4.2"				
		150	8.4"	5.8"	8.4"		4.7"	4.2"									
	1/4-20 ALL POINTS SOLID- SET WITH 7/8" EMBED. (1800 psi MIN. BLOCK)  *	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.6"	16.0"	14.0"	10.3"	14.0"	6.6"	8.7"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.7"	16.0"	8.4"	14.2"	11.5"	7.6"	11.5"	5.3"	6.0"
		66	16.0"	16.0"	16.0"	14.4"	16.0"	14.4"	10.7"	14.4"	6.8"	9.1"	9.6"	5.8"	9.6"	4.4"	4.4"
		80	16.0"	16.0"	16.0"	11.9"	16.0"	11.9"	7.9"	11.9"	5.5"	6.3"	7.9"	4.5"	7.8"	3.6"	3.3"
		100	16.0"	16.0"	16.0"	9.3"	16.0"	9.5"	5.8"	9.5"	4.3"	4.4"	6.3"	3.4"	5.7"		
		150	12.6"	8.7"	12.6"	5.9"	7.1"	6.3"	3.4"	5.7"			4.2"		3.3"		
	1/4" DEWALT ULTRAICON WITH 1-1/4" MIN EMBED 	45	16.0"	16.0"	16.0"	9.7"	16.0"	9.3"	9.3"	9.3"	4.8"	9.3"	6.2"	4.6"	6.2"	3.0"	3.9"
		55	15.3"	15.3"	15.3"	7.9"	15.3"	7.6"	6.5"	7.6"	3.8"	6.3"	5.1"	3.3"	5.1"		
66		12.7"	12.7"	12.7"	6.6"	12.7"	6.4"	4.7"	6.4"	3.1"	4.1"	4.2"		4.2"			
80		10.5"	10.5"	10.5"	5.4"	10.5"	5.3"	3.5"	5.3"			3.5"		3.5"			
100		8.4"	7.8"	8.4"	4.3"	8.4"	4.2"		4.2"								
150		5.6"	3.9"	5.6"		3.1"											

ANCHOR SCHEDULES:

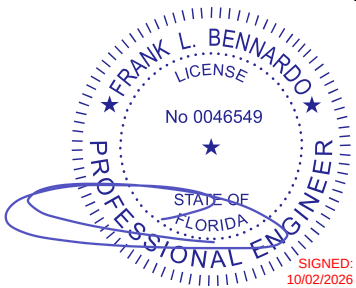
HOST STRUCT.	ANCHOR	LOAD (psf)	4" MIN. EDGE DISTANCE														
			Spans Up To 4'-0"					Spans Up To 8'-0"					Spans Up To 12'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE				
GROUT-FILLED CONCRETE BLOCK	5/16" ITW C.S. TAPCON XL WITH 1-3/4" EMBED.	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.8"	16.0"	12.0"	13.4"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.1"	16.0"	16.0"	11.6"	16.0"	9.6"	9.2"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.3"	14.1"	14.8"	9.0"	14.8"	7.8"	6.8"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.2"	16.0"	9.9"	9.7"	12.2"	7.0"	12.1"	6.4"	5.1"
		100	16.0"	16.0"	16.0"	16.0"	16.0"	14.6"	8.9"	14.6"	7.8"	9.7"	9.7"	5.3"	8.7"	5.0"	
		150	16.0"	13.4"	16.0"	10.6"	10.9"	9.7"	5.3"	8.7"	5.0"			6.5"		5.1"	
	5/16" ITW C.S. TAPCON XL WITH 2-1/4" EMBED.	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.5"	16.0"
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.9"	13.2"
		80	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.0"	16.0"	16.0"	13.5"	16.0"	9.7"	9.9"
		100	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	11.8"	13.0"	16.0"	10.3"	16.0"	7.7"	7.3"
		150	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.3"	16.0"	7.7"	7.3"	12.6"	6.4"	9.9"	5.1"	
	1/4" DEWALT ULTRA CON W/ 2-1/4" MIN. EMBED	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.4"	16.0"	16.0"	13.3"	16.0"	6.6"	11.3"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	8.3"	16.0"	14.9"	9.8"	14.9"	5.3"	7.7"
		66	16.0"	16.0"	16.0"	14.1"	16.0"	16.0"	13.8"	16.0"	6.8"	11.9"	12.4"	7.6"	12.4"		5.7"
		80	16.0"	16.0"	16.0"	11.6"	16.0"	15.4"	10.2"	15.4"	5.5"	8.2"	10.3"	5.9"	10.2"		
		100	16.0"	16.0"	16.0"	9.2"	16.0"	12.3"	7.5"	12.3"		5.7"	8.2"	4.5"	7.3"		
		150	16.0"	11.3"	16.0"	5.9"	9.2"	8.2"	4.5"	7.3"			5.5"				

HOST STRUCT.	ANCHOR	LOAD (psf)	3/4" MIN. EDGE DISTANCE															
			Spans Up To 4'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 12'-0" CONN TYPE					
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
WOOD (G=0.55 MIN.)	1/4" LAG SCREW WITH 1-7/8" THREAD PENETRATION 	45	16.0"	16.0"	16.0"	14.7"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		55	16.0"	16.0"	16.0"	12.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		66	16.0"	16.0"	16.0"	10.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		80	16.0"	16.0"	16.0"	8.2"	16.0"	16.0"	13.9"	16.0"	4.0"	11.1"	14.0"	8.0"	13.8"	2.6"	5.9"	
		100	16.0"	16.0"	16.0"	6.6"	16.0"	16.0"	10.2"	16.0"	3.2"	7.7"	11.2"	6.1"	10.0"	2.1"	4.3"	
		150	16.0"	15.4"	16.0"	4.3"	12.5"	11.2"	6.1"	10.0"	2.1"	4.3"	7.4"	3.8"	5.9"		2.6"	
	1/4" ITW C.S. A.T.T. TAPCON WITH 1-3/4" THREAD PENETRATION 	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	8.8"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		55	16.0"	16.0"	16.0"	14.3"	16.0"	16.0"	16.0"	16.0"	7.0"	16.0"	16.0"	12.4"	16.0"	4.6"	9.8"	
		66	16.0"	16.0"	16.0"	11.9"	16.0"	16.0"	16.0"	16.0"	5.8"	15.0"	15.7"	9.6"	15.7"	3.8"	7.2"	
		80	16.0"	16.0"	16.0"	9.8"	16.0"	16.0"	12.9"	16.0"	4.7"	10.3"	12.9"	7.4"	12.8"	3.1"	5.5"	
		100	16.0"	16.0"	16.0"	7.8"	16.0"	15.5"	9.4"	15.5"	3.8"	7.1"	10.3"	5.6"	9.2"	2.5"	4.0"	
		150	16.0"	14.2"	16.0"	5.1"	11.6"	10.3"	5.6"	9.2"	2.5"	4.0"	6.9"	3.5"	5.5"		2.4"	
	1/4" DEWALT PANELMATE (MALE OR FEMALE) WITH 1-7/8" THREAD PENETRATION 	45	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.4"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		55	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	10.7"	16.0"	16.0"	15.7"	16.0"	6.9"	12.4"	
		66	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	8.8"	16.0"	16.0"	12.2"	16.0"	5.7"	9.2"	
80		16.0"	16.0"	16.0"	15.0"	16.0"	16.0"	16.0"	16.0"	7.2"	13.1"	16.0"	9.5"	16.0"	4.7"	6.9"		
100		16.0"	16.0"	16.0"	11.9"	16.0"	16.0"	12.0"	16.0"	5.7"	9.1"	13.2"	7.2"	11.8"	3.7"	5.1"		
150		16.0"	16.0"	16.0"	7.7"	14.8"	13.2"	7.2"	11.8"	3.7"	5.1"	8.8"	4.5"	6.9"	2.5"	3.1"		
1/4" ALL POINTS BRASS WOOD BUSHING WITH 5/8" THREAD PENETRATION 	45	16.0"	16.0"	16.0"	15.4"	16.0"	15.4"	15.4"	15.4"	7.7"	15.4"	10.3"	7.5"	10.3"	4.9"	6.4"		
	55	16.0"	16.0"	16.0"	12.6"	16.0"	12.6"	10.7"	12.6"	6.1"	10.4"	8.4"	5.5"	8.4"	3.9"	4.4"		
	66	16.0"	16.0"	16.0"	10.5"	16.0"	10.5"	7.8"	10.5"	5.0"	6.7"	7.0"	4.3"	7.0"	3.2"	3.2"		
	80	16.0"	16.0"	16.0"	8.7"	16.0"	8.7"	5.8"	8.7"	4.0"	4.6"	5.8"	3.3"	5.7"	2.6"	2.4"		
	100	13.9"	12.9"	13.9"	6.8"	13.8"	6.9"	4.2"	6.9"	3.2"	3.2"	4.6"	2.5"	4.1"	2.1"			
	150	9.2"	6.4"	9.2"	4.3"	5.2"	4.6"	2.5"	4.1"	2.1"		3.1"		2.4"				

ANCHOR NOTES:

1. INSTALLATIONS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE STRESS DESIGN (ASD) DESIGN RATINGS AND MAXIMUM SPAN LIMITS. ULTIMATE DESIGN WIND LOADS DETERMINED BY THE FBC AND ASCE 7 SHALL BE REDUCED TO ASD BY MULTIPLYING BY 0.6 (SEE FBC SECTION 1609).
2. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
3. MANUFACTURER RATED EQUIVALENTS OF THE ANCHORS SPECIFIED IN THE TABLES ARE PERMITTED.
4. 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). 1" MIN. END DISTANCE IS REQUIRED FOR ALL WOOD INSTALLATIONS.
5. ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
6. EMBEDMENT AND MINIMUM EDGE DISTANCE SHALL BE AS NOTED IN ANCHOR SCHEDULE. EMBEDMENT AND MINIMUM EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
7. ANCHOR SCHEDULE APPLIES TO ALL PRODUCTS CERTIFIED HEREIN, BUT ONLY PROVIDES MAXIMUM ALLOWABLE ANCHOR SPACING. MAXIMUM ALLOWABLE SPANS AND PRESSURES INDICATED IN SPAN SCHEDULE(S) SHALL APPLY.
8. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
9. 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.
10.  DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE FOR USE.
11. * DESIGNATES ANCHORS WHICH ARE REMOVABLE AND MAY BE USED FOR DIRECT MOUNT INSTALLATIONS.
12. WHEN ANCHORING TO HOLLOW BLOCK, SDS DRILLS SHOULD NOT BE USED TO DRILL INTO HOLLOW BLOCK, NOR SHOULD IMPACT DRILLS BE USED TO INSTALL CONCRETE SCREWS TO HOLLOW BLOCK.
13. FOR DIRECT PANEL ATTACHMENTS (C1 AND C2) ROUND DOWN TO EITHER 12" O.C OR 6" O.C (FOR EXAMPLE: IF ANCHOR SCHEDULE SAYS 16" O.C., USE 12" O.C.; IF ANCHOR SCHEDULE SAYS 8" O.C., USE 6" O.C; IF ANCHOR SCHEDULE SPACING IS LESS THAN 6" O.C, ANCHOR IS NOT APPLICABLE)
14. ANCHORS BY THE HILLMAN GROUP MAY BE SUBSTITUTED FOR APPLICABLE ANCHORS HEREIN IF CERTIFIED SEPARATELY BY PROFESSIONAL ENGINEER.

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



PANEL SPAN	ALLOWABLE DESIGN PRESSURE	
144"	+ 27.0 PSF	- 27.0 PSF
138"	+ 30.3 PSF	- 30.3 PSF
132"	+ 34.0 PSF	- 34.0 PSF
126"	+ 38.4 PSF	- 38.4 PSF
120"	+ 43.4 PSF	- 43.4 PSF
114"	+ 49.4 PSF	- 49.4 PSF
108"	+ 56.4 PSF	- 56.4 PSF
102"	+ 64.9 PSF	- 64.9 PSF
96"	+ 75.0 PSF	- 75.0 PSF
90"	+ 80.0 PSF	- 80.0 PSF
84"	+ 85.7 PSF	- 85.7 PSF
78"	+ 92.3 PSF	- 92.3 PSF
72"	+ 100.0 PSF	- 100.0 PSF
66"	+ 109.1 PSF	- 109.1 PSF
60"	+ 120.0 PSF	- 120.0 PSF
54"	+ 133.3 PSF	- 133.3 PSF
48"	+ 150.0 PSF	- 150.0 PSF

TABLE 1 NOTES:

1. INSTALLATIONS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE STRESS DESIGN (ASD) DESIGN RATINGS AND MAXIMUM SPAN LIMITS. ULTIMATE DESIGN WIND LOADS DETERMINED BY THE FBC AND ASCE 7 SHALL BE REDUCED TO ASD BY MULTIPLYING BY 0.6 (SEE FBC SECTION 1609).
2. LINEAR INTERPOLATION BETWEEN SHUTTER SPANS IS NOT PERMITTED. FOR SPANS BETWEEN THOSE INDICATED ABOVE, THE DESIGN PRESSURES FOR THE NEXT HIGHER SPAN SHALL BE USED.
3. DESIGN PRESSURES NOTED IN TABLE 1 APPLY TO ALL MOUNTING AND ANCHORAGE CONDITIONS AND SHALL NOT BE EXCEEDED.

ALTERNATE ANCHOR NOTE:

FOR ALL $\frac{1}{4}$ " AND $\frac{3}{16}$ " DIAMETER ANCHOR OPTIONS LISTED IN THE ANCHOR SCHEDULES, AN EQUIVALENT DIAMETER HILLMAN/ALL-POINTS SOLID-SET TAPPER ANCHOR (CARBON OR STAINLESS STEEL) MAY BE USED IN LIEU OF THE OPTION(S) LISTED SO LONG AS THE LISTED MINIMUM EMBEDMENT, EDGE DISTANCE AND SPACING ARE ACHIEVED.

SEPARATION FROM GLAZING REQUIRED FOR USE IN HVHZ AND WIND ZONE 4		
PANEL SPAN	INSTALLATIONS ≤ 30' ABOVE GRADE	INSTALLATIONS > 30' ABOVE GRADE
144"	3.1"	2.6"
138"	3.1"	2.5"
132"	3.1"	2.5"
126"	3.1"	2.4"
120"	3.1"	2.3"
114"	3.1"	2.2"
108"	3.1"	2.2"
102"	3.1"	2.1"
96"	2.4"	2.0"
90"	2.4"	1.8"
84"	2.4"	1.7"
78"	2.4"	1.6"
72"	2.4"	1.5"
66"	2.4"	1.4"
60"	2.4"	1.3"
54"	2.4"	1.2"
48"	1.8"	1.2"

TABLE 2 NOTES:

1. INSTALLATIONS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE STRESS DESIGN (ASD) DESIGN RATINGS AND MAXIMUM SPAN LIMITS. ULTIMATE DESIGN WIND LOADS DETERMINED BY THE FBC AND ASCE 7 SHALL BE REDUCED TO ASD BY MULTIPLYING BY 0.6 (SEE FBC SECTION 1609).
2. ENTER TABLE 2 WITH POSITIVE LOAD TO DETERMINE MIN. STORM SHUTTER SEPARATION FROM GLASS.
3. THESE STORM PANELS ARE NOT APPROVED FOR INSTALLATION IN ESSENTIAL FACILITIES AS DEFINED IN ASCE 7.

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FLORIDA STATEWIDE APPROVAL (FSA FL#21070.1)

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