

ATLANTIC PREMIUM SHUTTERS

LOUVERED BAHAMA SHUTTER

LARGE MISSILE IMPACT RESISTANT (MISSILE LEVEL D)
VALID FOR USE OUTSIDE THE HVHZ ONLY (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, LEVEL 'D', PROTECTIVE SYSTEM IN ACCORDANCE WITH THE STRUCTURAL PROVISIONS OF THE FLORIDA BUILDING CODE EIGHTH EDITION (2023), FOR USE OUTSIDE THE HIGH VELOCITY HURRICANE ZONE ONLY, PER ASTM E330, E1886 AND E1996 STANDARDS.
- 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 AND CHAPTER 1609 OF THE FLORIDA BUILDING CODE SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE ASD DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.
- 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 PER ASCE 7), 30' MRH, EXPOSURE "D", EXTERIOR ZONE 5, IN ACCORDANCE WITH THE BUILDING CODE SPECIFIED HEREIN. 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.
- PLASTIC COMPONENTS MUST MEET ALL APPLICABLE FIRE/SMOKE/UV PERFORMANCE REQUIREMENTS AS SET FORTH IN THE ABOVE-NOTED BUILDING CODE.
- THE STRUCTURAL ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS BY THIS SYSTEM SHALL BE VERIFIED BY OTHERS. 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 BUNKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
- 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) #02-042 BY CONSTRUCTION TESTING CORPORATION (CTC) PER ASTM E330-02, ASTM E1886-02 & ASTM E1996-02 TEST STANDARD(S).

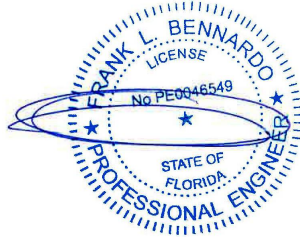
GENERAL NOTES (CONTINUED):

- ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE. ALL TOLERANCES SHALL BE IN ACCORDANCE WITH ADM 2015. PULTRUDED STRUCTURAL FIBERGLASS SHALL HAVE TENSILE YIELD STRESS OF 30.0 KSI.
- PRODUCT SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER SYSTEM CONTAINING THE FOLLOWING:

ATLANTIC PREMIUM SHUTTERS
LATTA, SC
MISSILE LEVEL D - ASTM E1886, E1996, & E330
FLORIDA PRODUCT APPROVAL NUMBER
- CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS. ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE BUILDING CODE.
- ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI. ALL 3/16"Ø OR 1/4"Ø POP RIVETS SHALL BE 5056-H32 ALUMINUM ALLOY OR STRONGER. FASTENERS SHALL BE CADMIUM-PLATED OR OTHERWISE CORROSION-RESISTANT MATERIAL AND SHALL COMPLY WITH "SPECIFICATIONS FOR ALUMINUM STRUCTURES" SECTION J.3.7.2 BY THE ALUMINUM ASSOCIATION, INC., & ANY APPLICABLE FEDERAL, STATE, AND/OR LOCAL CODES.
- 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.

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

OCTOBER 6, 2023



Digitally signed by
Frank Bennardo
Date: 2023.10.13
14:32:56 -04'00'

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. THIS PRODUCT EVALUATION IS VALID FOR USE IN **FLORIDA ONLY**. USE OF THIS EVALUATION REQUIRES A REVIEW & CERTIFICATION BY A LOCAL DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE PROPER ADAPTATION OF THIS GENERAL PERFORMANCE EVALUATION TO ANY SITE-SPECIFIC PROJECT. CONTACT THIS OFFICE AT **ENGINEERINGEXPRESS.COM/QUOTE** FOR ASSISTANCE WITH YOUR PROJECT-SPECIFIC NEEDS & FOR ADAPTATION & CERTIFICATION OF THIS DOCUMENT OUTSIDE OF FLORIDA.

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3	TYP. SECTIONS & ANCHOR SCHEDULE

TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL: "INC." FOR "INCORPORATION", "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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FOR SITE-SPECIFIC DEVIATIONS
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ATLANTIC PREMIUM SHUTTERS

A TAPCO INTERNATIONAL COMPANY

3239 HIGHWAY 301 NORTH

LATTA, SC 29565

LOUVERED BAHAMA SHUTTER

FLORIDA BUILDING CODE EIGHTH EDITION (2023)

FLORIDA STATEWIDE APPROVAL (FSA FL# 5480.1)

REMARKS	DATE	DRWN	CHKD
PREV. SUBMITTAL (20-31030)	09/28/20	CCB	RWN
2023 FBC UPDATE	10/06/23	MRT	RWN

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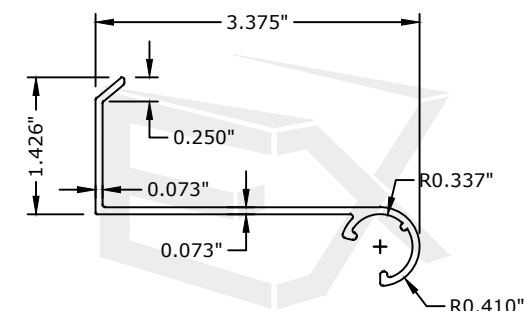
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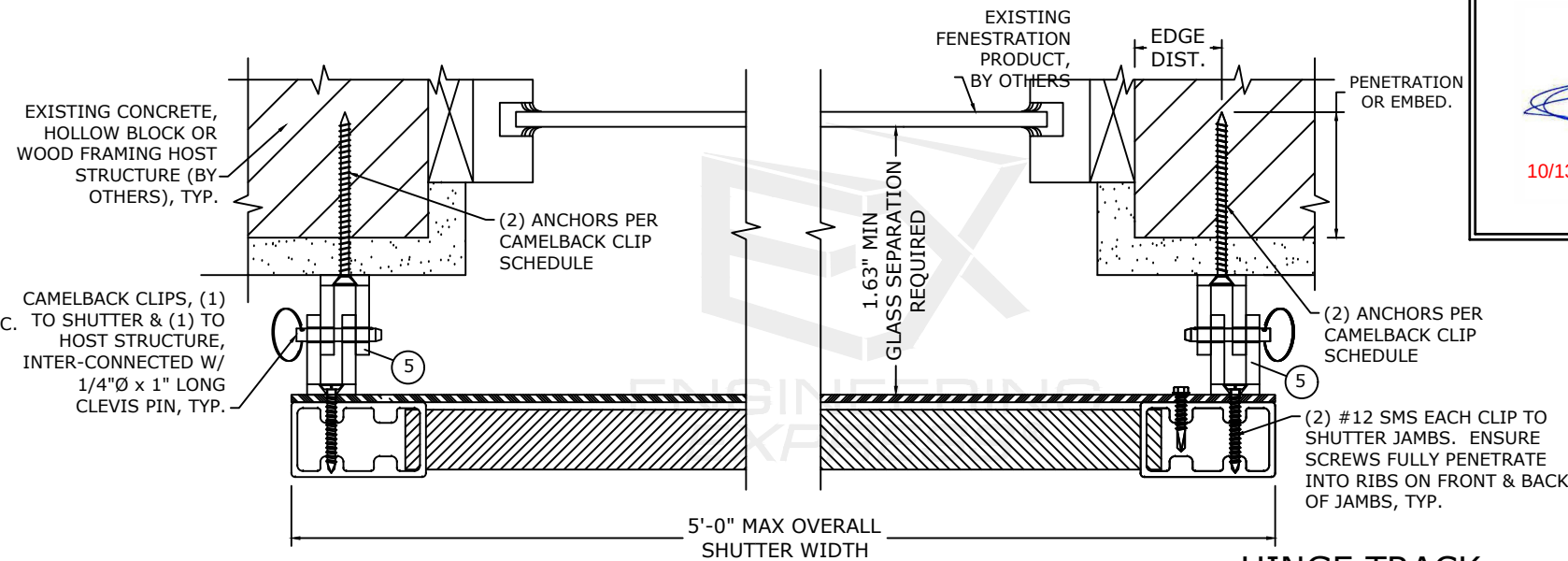
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LOUVERED BAHAMA SHUTTER ILLUSTRATED HEREIN IS APPROVED TO MAX DESIGN SIZE OF 103"H x 60"W AND MAX ALLOWABLE DESIGN PRESSURE OF ± 58.9 PSF USING ASD METHODOLOGY. SEE ANCHOR SCHEDULE FOR REQUIRED ANCHOR SPACING AND ACCOMPANYING ALLOWABLE DESIGN PRESSURES.

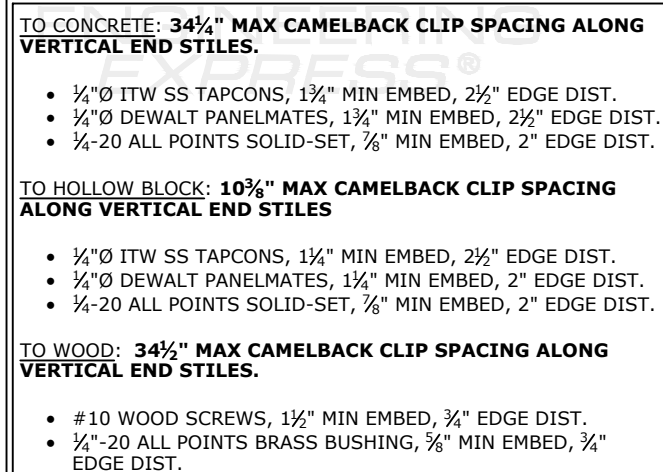


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HINGE TRACK

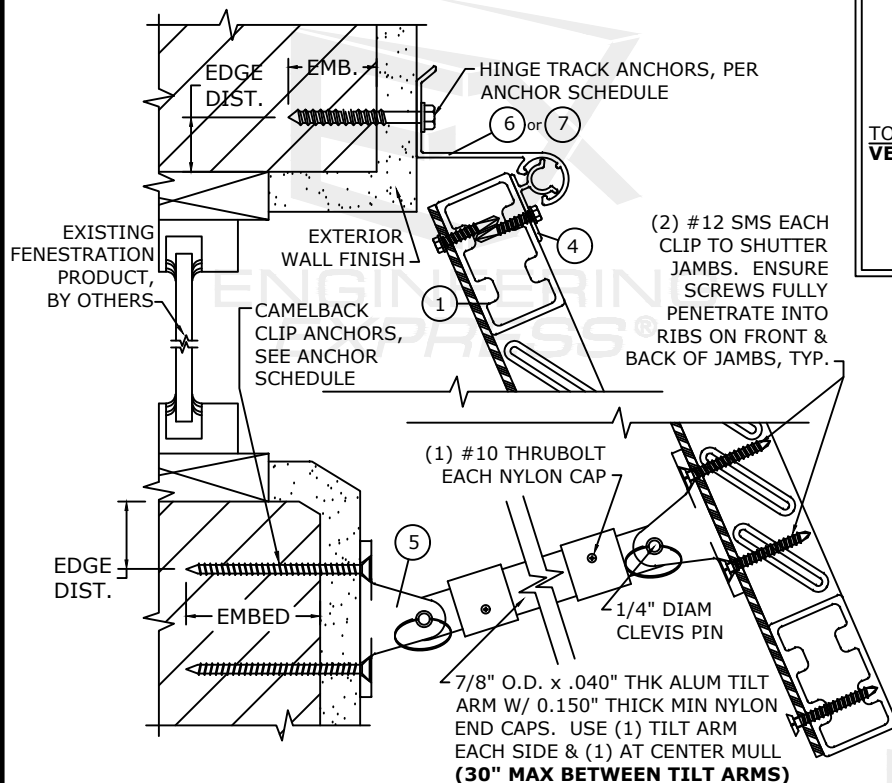
ANCHOR SCHEDULE:



HINGE TRACK
ANCHOR SCHEDULE:

EXIST. STRUCT.	HINGE TRACK ANCHORS	ALLOWABLE LOAD (PSF)	REQUIRED ANCHOR SPACING		
			SPANS UP TO 4'-0"	SPANS UP TO 6'-0"	SPANS UP TO 8'-7"
WOOD (G=0.55 MIN)	1/4" Ø LAG SCREW 2" MIN THREAD PENETRATION 3/4" EDGE DIST.	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
	#12 WOOD SCREW 1 1/2" MIN THREAD PENETRATION 3/4" EDGE DIST.	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
	1/4"-20 ALL POINTS BRASS BUSHING	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
	5/8" MIN THREAD PENETRATION 3/4" EDGE DIST.	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
	+/- 58.9	7.0"	7.0"	5.8"	

EXIST. STRUCT.	HINGE TRACK ANCHORS	ALLOWABLE LOAD (PSF)	REQUIRED ANCHOR SPACING		
			SPANS UP TO 4'-0"	SPANS UP TO 6'-0"	SPANS UP TO 8'-7"
CONCRETE	3/16"Ø ITW TAPCON 1 1/4" MIN EMBED 2 3/4" MIN EDGE DIST. (3192 PSI MIN)	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
		+/- 58.9	7.0"	7.0"	7.0"
	1/4"Ø S.S. ITW TAPCON 1 1/4" MIN EMBED 2 1/2" MIN EDGE DIST. (3192 PSI MIN)	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
		+/- 58.9	7.0"	7.0"	7.0"
	3/16"Ø DEWALT ULTRACON 1 1/4" MIN EMBED 2 1/2" MIN EDGE DIST. (2846 PSI MIN)	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
		+/- 45	7.0"	7.0"	7.0"
		+/- 58.9	7.0"	7.0"	7.0"
	1/4"Ø DEWALT ULTRACON 1 1/4" MIN EMBED 2 1/2" MIN EDGE DIST. (2846 PSI MIN)	+/- 30	7.0"	7.0"	7.0"
		+/- 35	7.0"	7.0"	7.0"
		+/- 40	7.0"	7.0"	7.0"
+/- 45		7.0"	7.0"	7.0"	
+/- 58.9		7.0"	7.0"	7.0"	



OPEN SHUTTER POSITION
2 3/8" BUILDOUT SIMILAR

ANCHOR NOTES:

1. SEE CAMELBACK CLIP SCHEDULE FOR CAMELBACK SPACING AND ACCEPTABLE ANCHORS. SEE ANCHOR SCHEDULE FOR HINGE ANCHOR SPACING AND ACCEPTABLE ANCHORS.
2. ALL CAMELBACK CLIPS SHALL RECEIVE (2) ANCHORS PER CAMELBACK CLIP SCHEDULE.
3. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
4. TAPCONS AND ULTRACONS MAY BE MANUFACTURED BY DEWALT OR ITW, RESPECTIVELY. "DEWALT PANELMATE" ANCHORS FOR USE IN CONCRETE OR HOLLOW BLOCK MAY BE MALE, FEMALE, OR PANELMATE PLUS. "DEWALT PANELMATE" ANCHORS FOR USE IN WOOD MAY BE MALE OR FEMALE.
5. ENSURE MINIMUM EDGE DISTANCE FOR ALL ANCHORS TO CONCRETE & TO HOLLOW BLOCK AS NOTED IN ANCHOR SCHEDULES.
6. ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY. CONCRETE HOST MINIMUM THICKNESS SHALL BE 1.5x ANCHOR DIAMETER.
7. 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).
8. WOOD HOST STRUCTURE SHALL BE "SOUTHERN PINE" G=0.55 OR GREATER DENSITY.
9. MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR SCHEDULE. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
10. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.
11. 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.
12.  DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE FOR USE.

ALTERNATE ANCHOR NOTE:

FOR ALL $\frac{3}{4}$ " AND $\frac{5}{16}$ " DIAMETER ANCHOR OPTIONS LISTED IN THE ANCHOR SCHEDULES, AN EQUIVALENT DIAMETER HILLMAN/ALL-POINTS SOLID-SET 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.

HOLLOW BLOCK (ASTM C90)	$\frac{3}{8}$ "Ø ITW TAPCON 1 $\frac{1}{4}$ " MIN EMBED 2 $\frac{3}{8}$ " MIN EDGE DIST.	+/- 30	7.0"	5.5"	3.9"
		+/- 35	7.0"	4.7"	3.3"
		+/- 40	6.2"	4.2"	2.9"
		+/- 45	5.5"	3.7"	2.6"
		+/- 58.9	4.2"	2.8"	
	$\frac{1}{4}$ "Ø S.S ITW TAPCON 1 $\frac{1}{4}$ " MIN EMBED 2 $\frac{1}{2}$ " MIN EDGE DIST.	+/- 30	7.0"	7.0"	6.3"
		+/- 35	7.0"	7.0"	5.4"
		+/- 40	7.0"	6.7"	4.7"
		+/- 45	7.0"	6.0"	4.2"
		+/- 58.9	6.8"	4.6"	3.2"
	$\frac{3}{8}$ "Ø DEWALT ULTRACON 1 $\frac{1}{4}$ " MIN EMBED 2 $\frac{1}{2}$ " MIN EDGE DIST.	+/- 30	7.0"	5.9"	4.2"
		+/- 35	7.0"	5.1"	3.6"
		+/- 40	6.7"	4.5"	3.1"
		+/- 45	5.9"	4.0"	
		+/- 58.9	4.5"	3.0"	
	$\frac{1}{4}$ "Ø DEWALT ULTRACON 1 $\frac{1}{4}$ " MIN EMBED 2 $\frac{3}{8}$ " MIN EDGE DIST.	+/- 30	7.0"	7.0"	6.8"
		+/- 35	7.0"	7.0"	5.9"
		+/- 40	7.0"	7.0"	5.1"
		+/- 45	7.0"	6.5"	4.6"
		+/- 58.9	7.0"	5.0"	3.5"

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LATTA, SC 29565

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FLORIDA STATEWIDE APPROVAL (FSA FL#5480.1)

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SCALE: NTS UNLESS NOTED