

# AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.

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

OCTOBER 9, 2023

## BERTHA HV ACCORDION SHUTTER HV BLADE 1, HV WINDOW BLADE 1A & HV BLADE 2 LARGE MISSILE IMPACT RESISTANT (MISSILE LEVEL D)

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

### NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

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### PAGE INDEX:

SHEET INDEX	
# SHEET	DESCRIPTION
1	COVER SHEET
2-3	BLADE 1, 1A & 2 COMPONENTS
4	TYPICAL SHUTTER ASSEMBLY (ALL BLADE TYPES)
5-6	SECTION DETAILS - ALL BLADE OPTIONS
7-8	HV BLADE 1 - SECTIONS DETAILS
9	HV BLADE 1 OR 2 - SECTION DETAILS
10	END CONNECTION DETAILS (ALL BLADE OPTIONS)
11	CONNECTION TO METAL WALL STUDS (BLADE 1 ONLY)
12	SPAN SCHEDULES (ALL BLADE OPTIONS)
13-15	ANCHOR SCHEDULES - ALL BLADE OPTIONS
16	WINDOW BLADE 1A OPTION

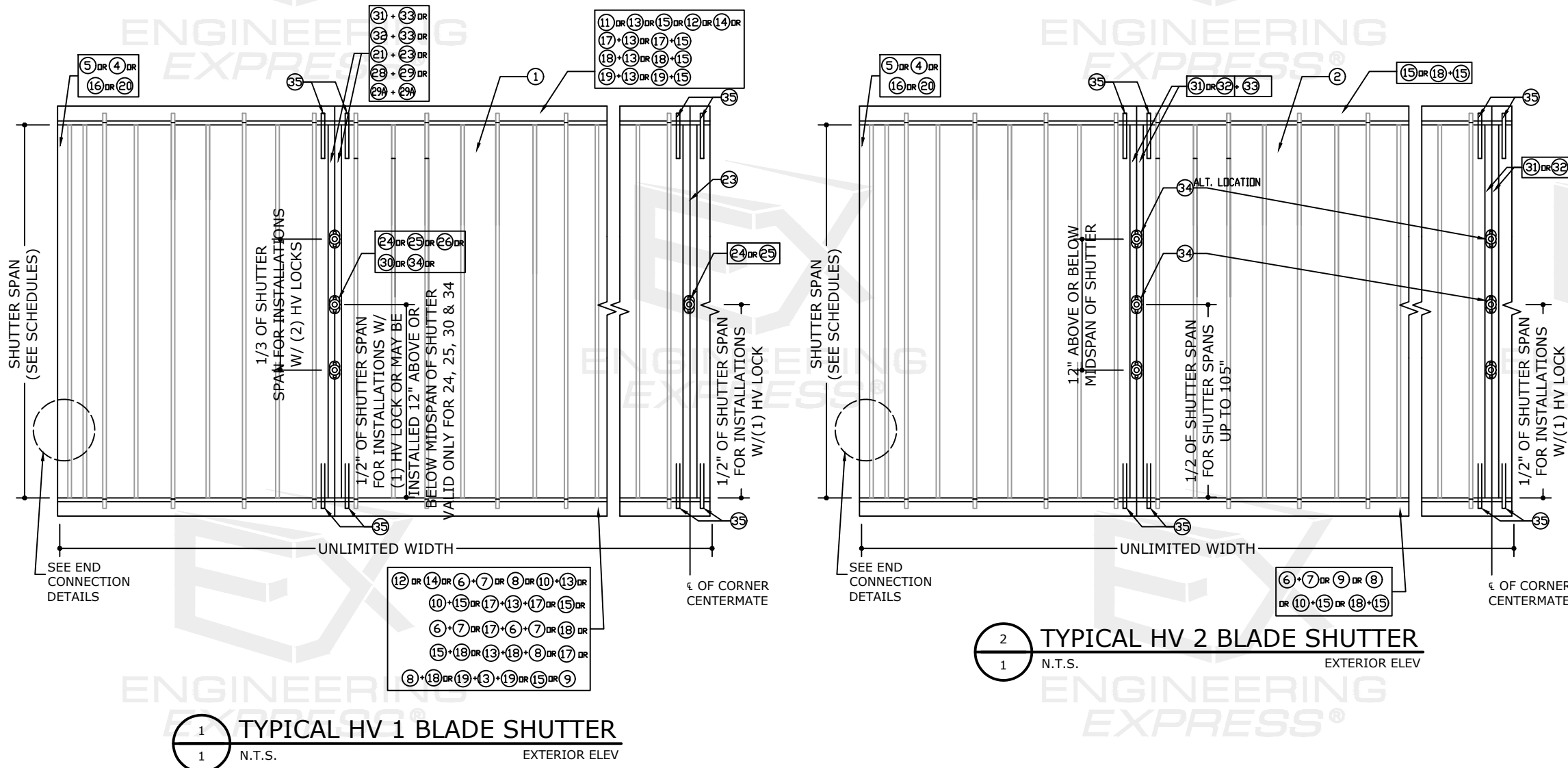
### TERMINOLOGY:

THE FOLLOWING ABBREVIATIONS APPEAR IN THIS APPROVAL:  
"ER" FOR "END RETENTION", "NER" FOR "NON-END RETENTION", "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/ft<sup>2</sup>)", "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/EASTERN](http://ECALC.IO/EASTERN)

FOR SITE-SPECIFIC DEVIATIONS & MORE INFORMATION ABOUT THIS DOCUMENT OR SCAN THIS QR CODE

VISIT [ENGINEERINGEXPRESS.COM/STORE](http://ENGINEERINGEXPRESS.COM/STORE) FOR ADDITIONAL PLANS, REPORTS & RESOURCES



### GENERAL NOTES:

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE SEVENTH EDITION (2023), THE INTERNATIONAL BUILDING CODE (IBC) AND THE INTERNATIONAL RESIDENTIAL CODE (IRC) FOR USE INSIDE AND OUTSIDE OUTSIDE THE HIGH VELOCITY HURRICANE ZONE, PER ASTM E330, E1886, AND E1996 AND TAS 201, 202 & 203 STANDARDS. SEE PRODUCT APPROVAL EVALUATION FOR ADDITIONAL INFORMATION.
- WIND LOAD DURATION FACTOR Cd=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.
- 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.
- EACH UNIT MUST BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH WARNING NOTE: DURING PERIODS OF HURRICANE WARNINGS HOME OWNER, TENANT OR OTHERS MUST PROPERLY CLOSE A HV AND HD CENTERMATES AND ENGAGE OR LOCK ALL HV/HD LOCKS.
- THIS DOCUMENT CONTAINS INFORMATION RELEVANT TO THE NECESSARY STRUCTURAL REQUIREMENTS OF THE SYSTEM INSTALLATION. COMPONENTS AND FASTENERS NOT REFERENCED WHICH ARE PART OF THE INTERNAL FABRICATION OF THE SPECIFIED SYSTEMS OR ASSEMBLIES SHALL BE PER MANUFACTURER PUBLISHED SPECIFICATIONS.
- 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.

### GENERAL NOTES (CONTINUED):

- ALL EXTRUSIONS SHALL BE MINIMUM 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- EACH SHUTTER ASSEMBLY SHALL BEAR A PERMANENT LABEL PER SECTION 1709.9 OF THE FBC 2023 WITH THE FOLLOWING MINIMUM INFORMATION:  
**AMERICAN SHUTTER SYSTEMS ASSOC., INC.**  
**WEST PALM BEACH, FL**  
**MISSILE LEVEL D - ASTM E1886, E1996 & E330 - TAS 201, 202 & 203**  
**FLORIDA PRODUCT APPROVAL NUMBER**
- ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI. ALL ALUMINUM 3/16"Ø OR 1/4"Ø POP RIVETS SHALL BE 7075-T6 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.
- ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.
- CONCRETE ANCHORS NOTED HEREIN SHALL BE EMBEDDED TO NON-CRACKED CONCRETE ONLY. INSTALL ALL CONCRETE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- 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.

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.  
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WEST PALM BEACH, FL 33407  
(800) 432-2204

BERTHA HV ACCORDION SHUTTER  
FLORIDA BUILDING CODE EIGHTH EDITION (2023)  
FLORIDA STATEWIDE APPROVAL (FSA #32030.1)

REMARKS	DRWN	CHKD	DATE
PREV. SUBMITTAL (20-31270)	CCB	RWN	09/02/20
2023 FBC UPDATE	MRT	RWN	10/09/23

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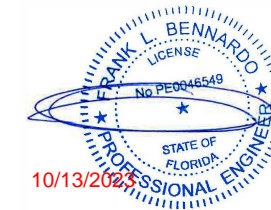
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1 OF 16

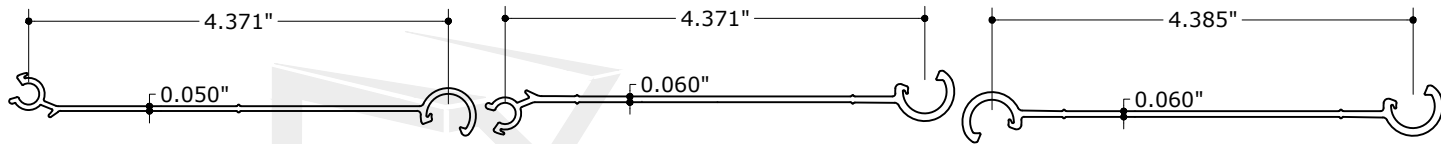
# BLADE 1, 1A & 2 COMPONENTS

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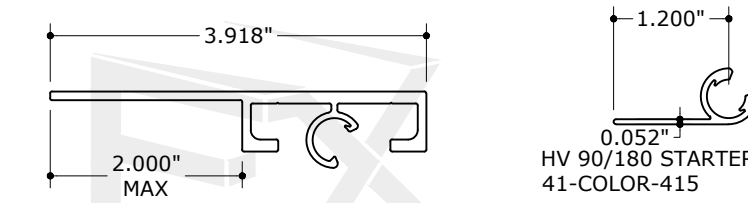
FL



**1 1A HV BLADE 1**  
N.T.S. 6063-T6 ALUM  
\*W/ OR W/ OUT WINDOW

**2 HV BLADE 2**  
N.T.S. 6063-T6 ALUM

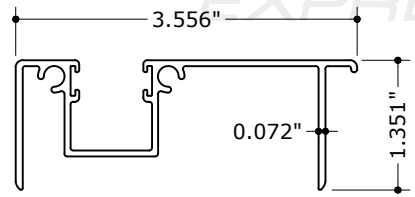
**3 HV UNIVERSAL FLOATER**  
N.T.S. 6063-T6 ALUM



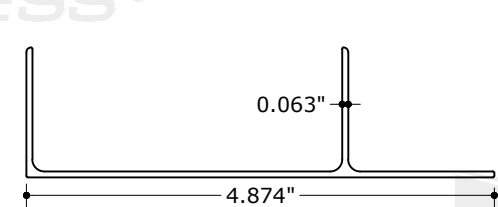
**4 HV DIRECT MOUNT**  
N.T.S. 6063-T6 ALUM

**5 HV 90°/180° STARTER**  
N.T.S. 6063-T6 ALUM

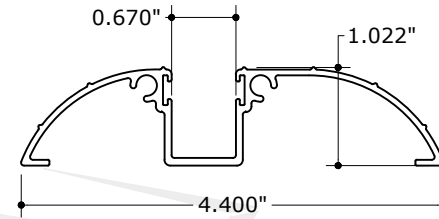
HV 90/180 STARTER  
41-COLOR-415



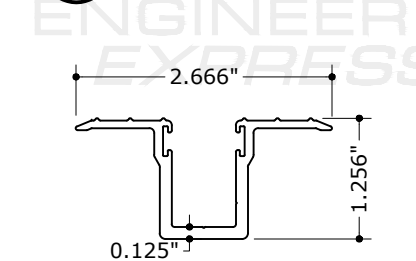
**6 HV ADJ. FLOOR TRACK**  
N.T.S. 6063-T6 ALUM



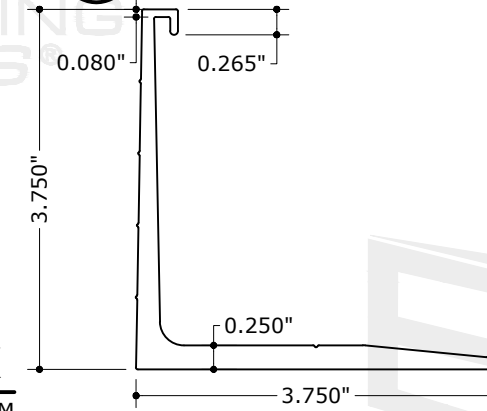
**7 HV ADJ. ADAPTOR W/ LIP**  
N.T.S. 6063-T6 ALUM



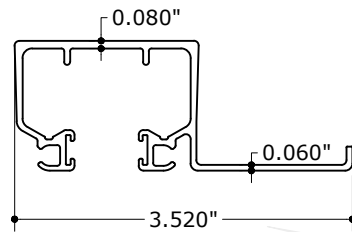
**8 HV WALK OVER TRACK**  
N.T.S. 6063-T6 ALUM



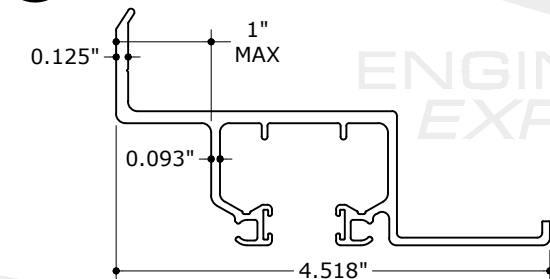
**9 HV TRENCH TRACK**  
N.T.S. 6063-T6 ALUM



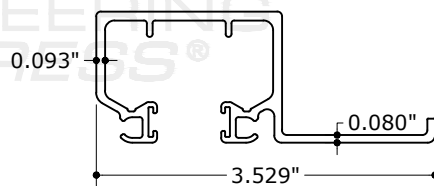
**10 HV RAIN GUARD**  
N.T.S. 6063-T6 ALUM



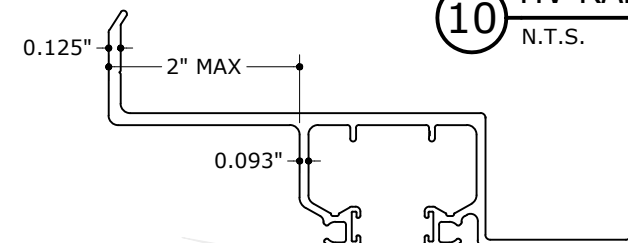
**11 HV CEILING HEADER**  
N.T.S. 6063-T6 ALUM



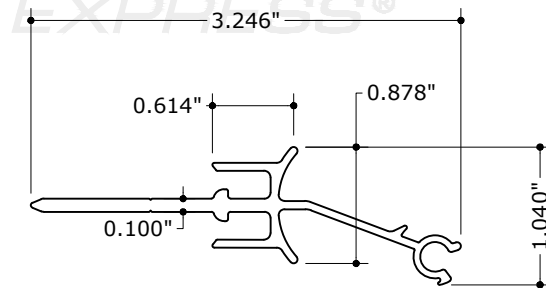
**12 HV HEADER/SILL**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY



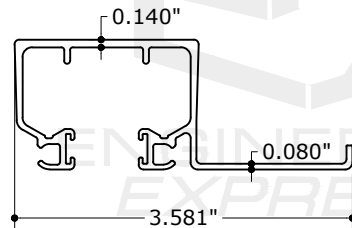
**13 HD CEILING HEADER/SILL**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY



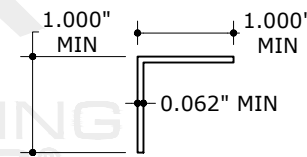
**14 HD WALL HEADER/SILL**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY



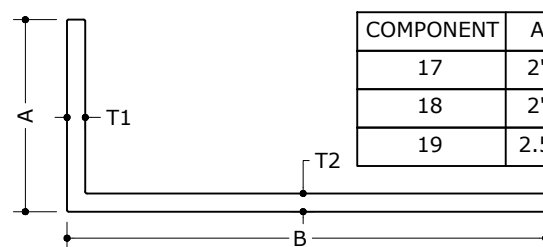
**29A FLAT CENTERMATE**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY



**15 SHD CEILING HEADER/SILL**  
N.T.S. 6063-T6 ALUM

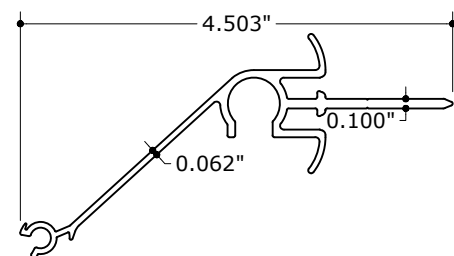
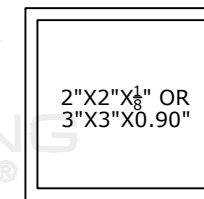


**16 SIDE ANGLE**  
N.T.S. 6063-T6 ALUM

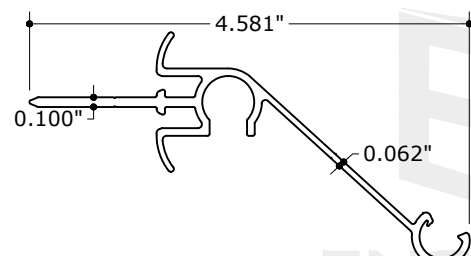


**17 18 19 ALUM ANGLES**  
N.T.S. 6063-T6 ALUM

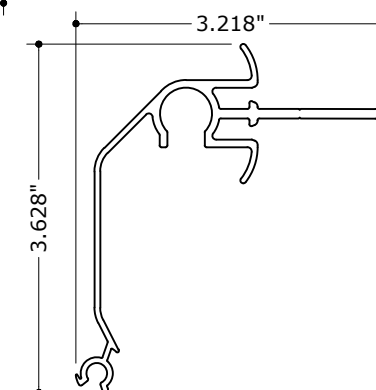
COMPONENT	A	B	T1	T2	BLADE QUALIFIED
17	2"	5" MAX	0.125"	0.125"	1
18	2"	5" MAX	0.192"	0.192"	2
19	2.5"	7" MAX	0.190"	0.190"	1



**21 HV CENTERMATE**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY

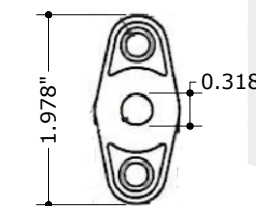


**22 HV FLOATING CENTERMATE**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY

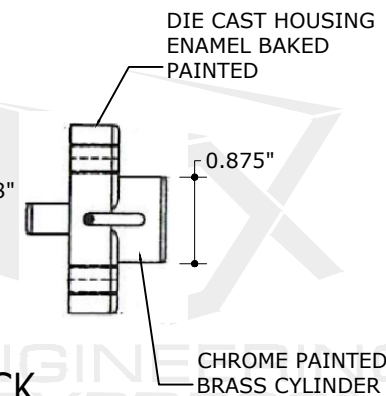


**23 HV CORNER CENTERMATE**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY

**20 CORNER POST**  
N.T.S. 6063-T6 ALUM



**24 HV LOCK**  
N.T.S. 6063-T6 ALUM  
\*USE W/ BLADE 1 ONLY



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FLORIDA BUILDING CODE EIGHTH EDITION (2023)  
FLORIDA STATEWIDE APPROVAL (FSA FL#32030.1)

REMARKS	DRWN	CHKD	DATE
PREV. SUBMITTAL (20-31270)	CCB	RWV	09/02/20
2023 FBC UPDATE	MRT	RWV	10/09/23

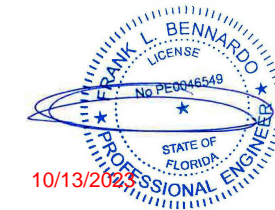
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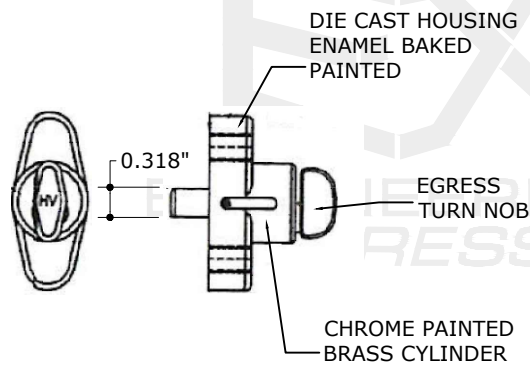
# BLADE 1, 1A & 2 COMPONENTS (CONT'D)

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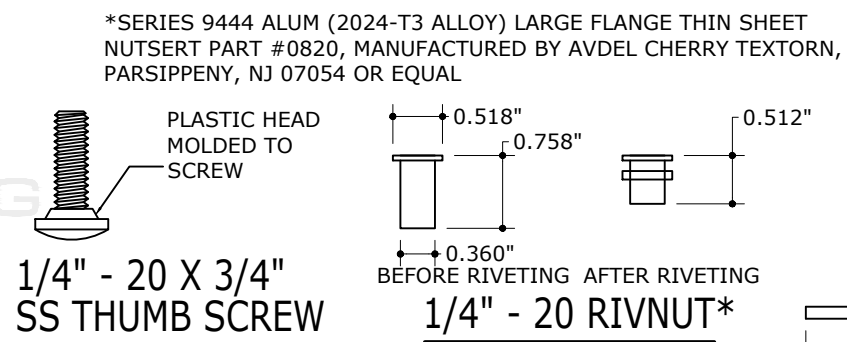
OCTOBER 9, 2023



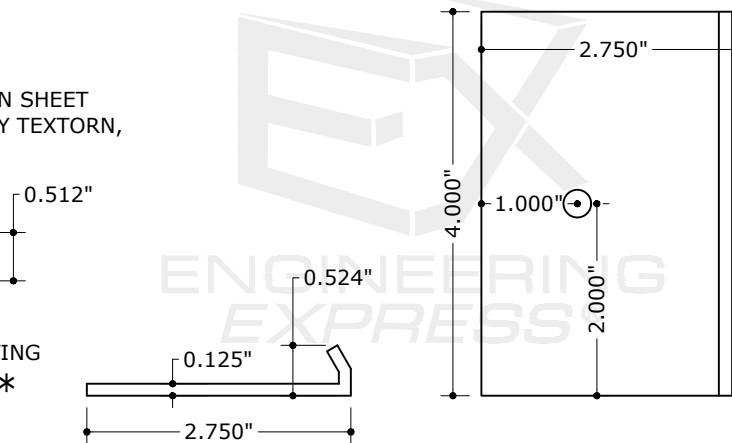
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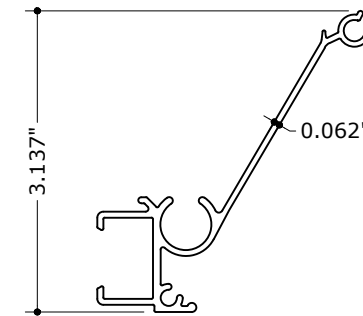
**25** HV EGRESS LOCK  
N.T.S.  
\*USE W/ BLADE 1 ONLY



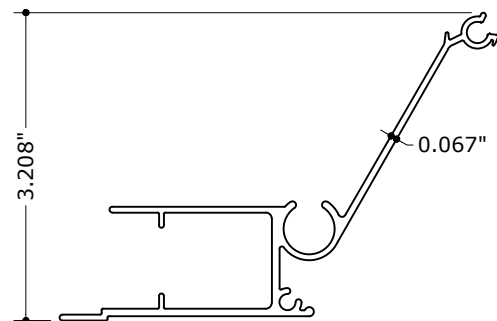
**26** HV ALTERNATIVE LOCK  
N.T.S.  
\*USE W/ BLADE 1 ONLY



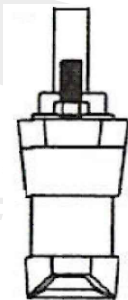
**27** LOCKER FOR "T" LOCK CENTERMATE  
N.T.S.  
\*USE W/ BLADE 1 ONLY  
6063-T6 ALUM



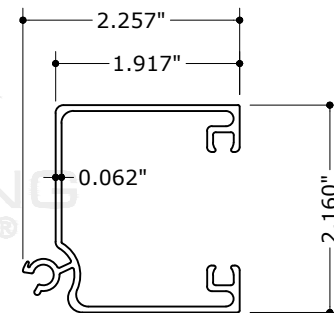
**28** HV MALE "T" LOCK CENTERMATE  
N.T.S.  
\*USE W/ BLADE 1 ONLY  
6063-T6 ALUM



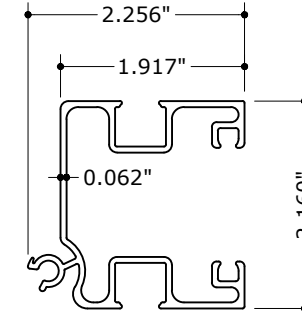
**29** HV FEMALE "T" LOCK CENTERMATE  
N.T.S.  
\*USE W/ BLADE 1 ONLY  
6063-T6 ALUM



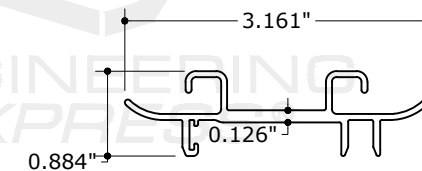
**30** HV "T" LOCK  
N.T.S.  
\*USE W/ BLADE 1 ONLY



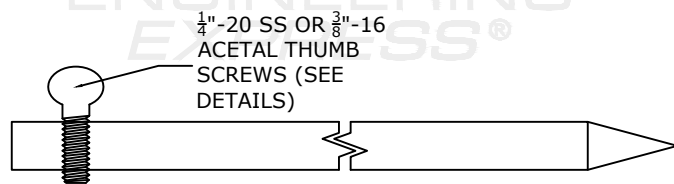
**31** HD CENTERMATE W/  
NO LOCKING ROD  
N.T.S.  
6063-T6 ALUM



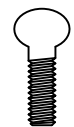
**32** HD CENTERMATE W/  
LOCKING ROD  
N.T.S.  
6063-T6 ALUM



**33** HD CENTERMATE  
INSERT  
N.T.S.  
6063-T6 ALUM



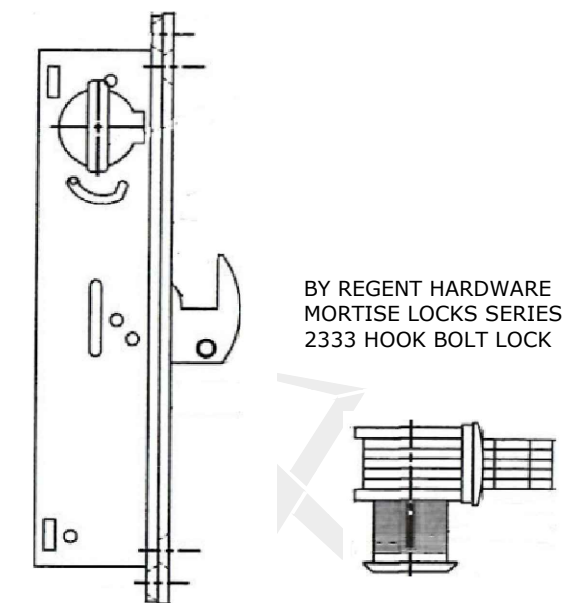
**35** LOCKING ROD  
N.T.S.  
6063-T6 ALUM



**36** HV 1/4"-20 THUMBSCREW  
N.T.S.  
304 SS



**37** HV 3/8"-16 ACETAL THUMBSCREW  
N.T.S.  
6063-T6 ALUM



**34** HD LOCK  
N.T.S.

\*\*LOCKING ROD MAY BE USED TO HOLD SYSTEM IN OPEN POSITION WITHOUT EXTENDING THROUGH RAINGUARD (VIA FRICTION). WHEN LOCKING ROD IS USED TO LOCK IN SYSTEM IN CLOSED POSITION, ROD SHALL EXTEND THROUGH RAINGUARD LIP, TYP.

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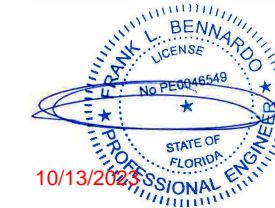
3 OF 16

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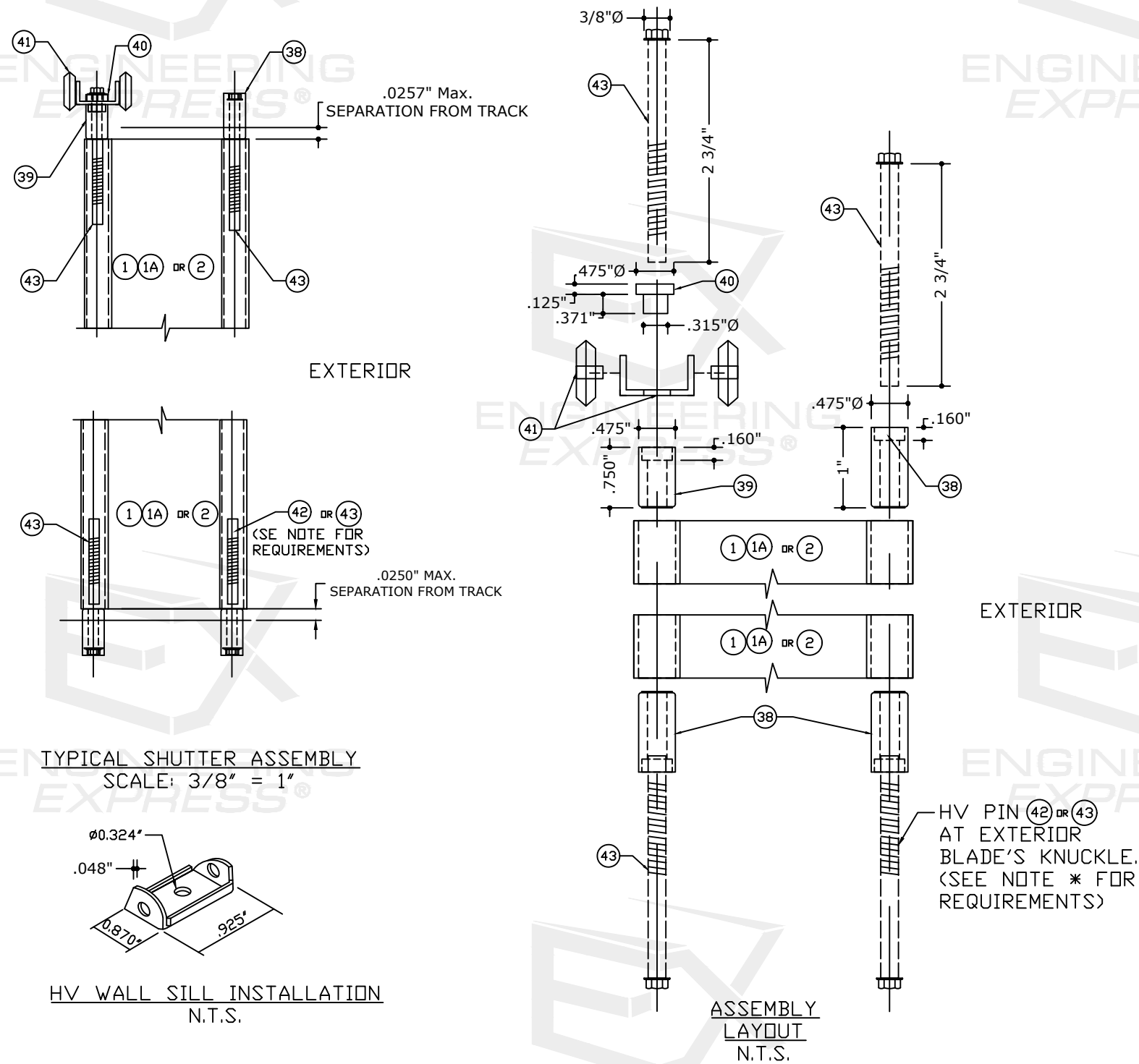
# TYPICAL SHUTTER ASSEMBLY (ALL BLADE TYPES)

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

OCTOBER 9, 2023



FL



- ③⑧ - HV LONG RECESSED NYLON BUSHING
- ③⑨ - HV SHORT RECESSED NYLON BUSHING
- ④① - HV NYLON HAT WASHER
- ④② - HV 1-3/4" ACCORDION PIN W/ #8 HEAD
- ④③ - HV 2-3/4" ACCORDION PIN W/ #8 HEAD
- ④④ - POLYCARBONATE IMPACT RESISTANT HV WINDOW

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 FLORIDA BUILDING CODE EIGHTH EDITION (2023)  
 FLORIDA STATEWIDE APPROVAL (FSA FL#32030.1)

REMARKS	DRWN	CHKD	DATE
PREV. SUBMITTAL (20-31270)	CCB	RWV	09/02/20
2023 FBC UPDATE	MRT	RWV	10/09/23

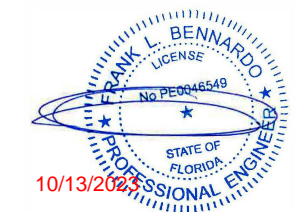
23-65176

SCALE: NTS UNLESS NOTED

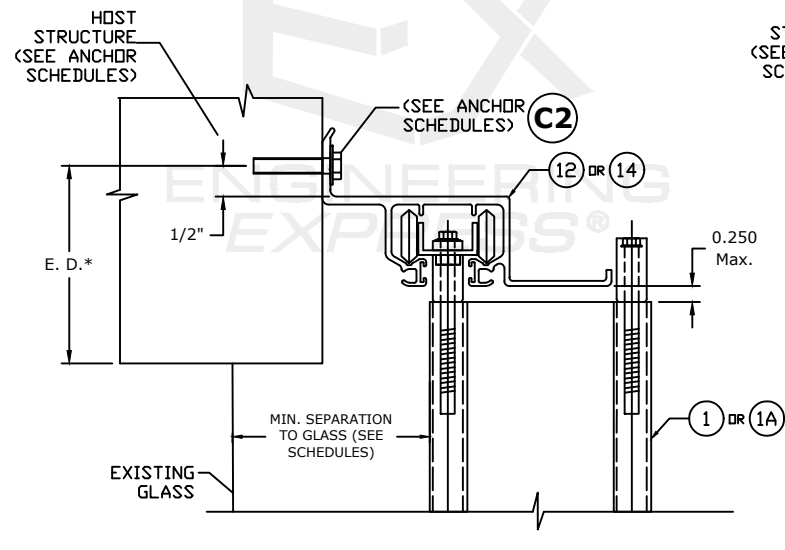
# SECTION DETAILS - ALL BLADE OPTIONS

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

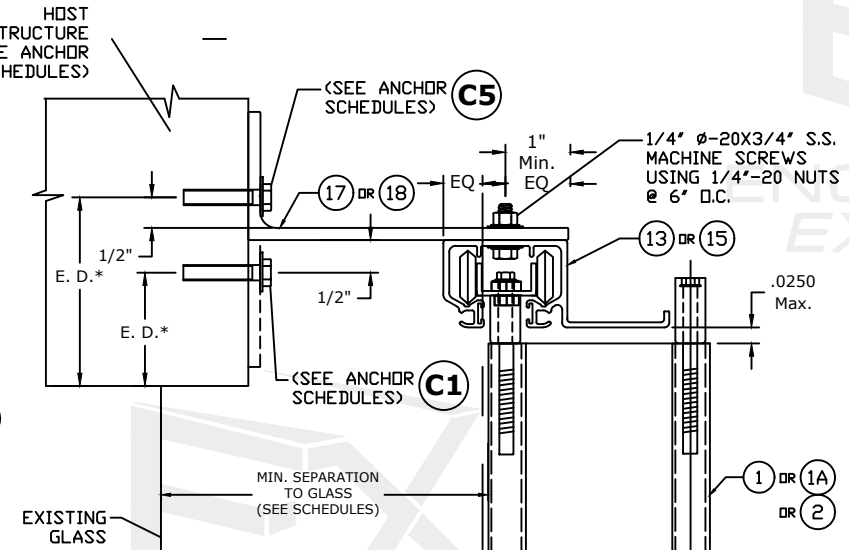
OCTOBER 9, 2023



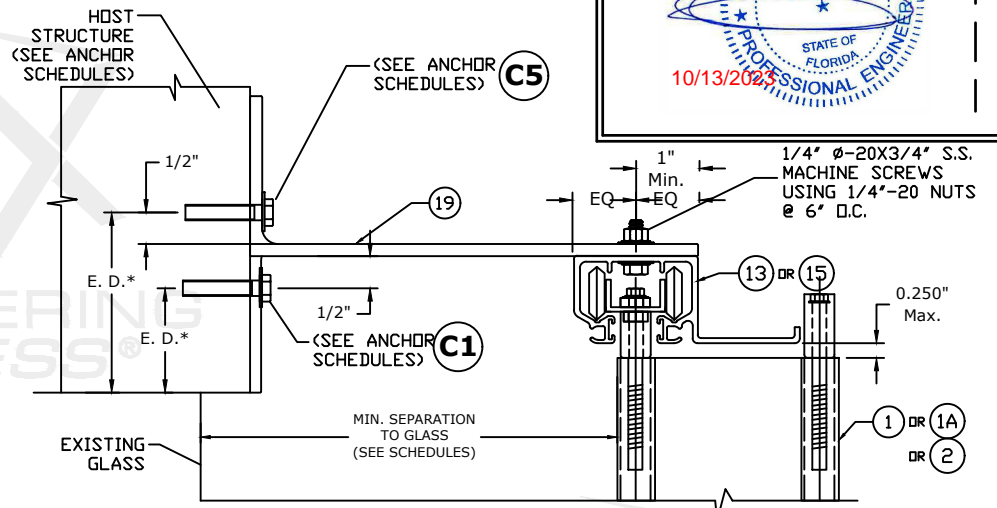
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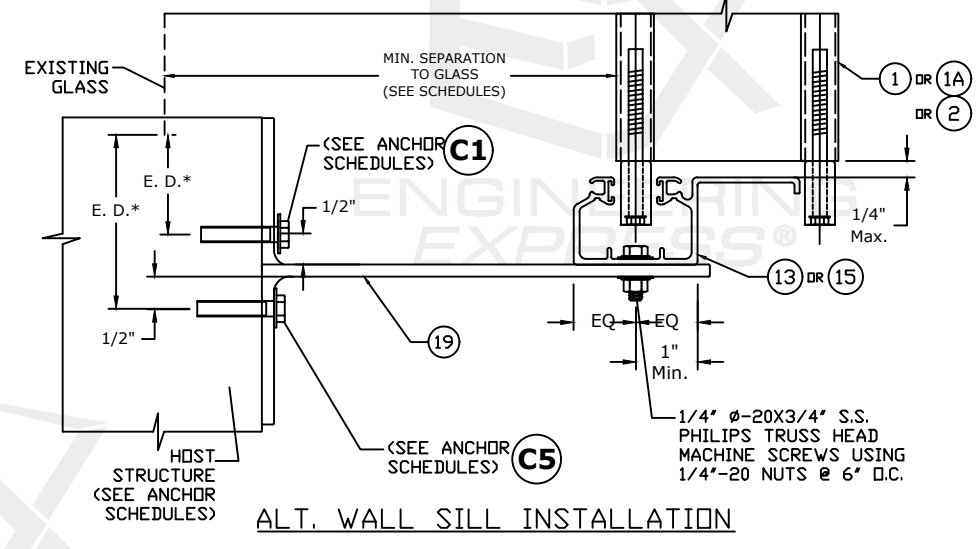
**WALL HEADER INSTALLATION**  
\*ONLY APPROVED FOR BLADE 1 OR 1A



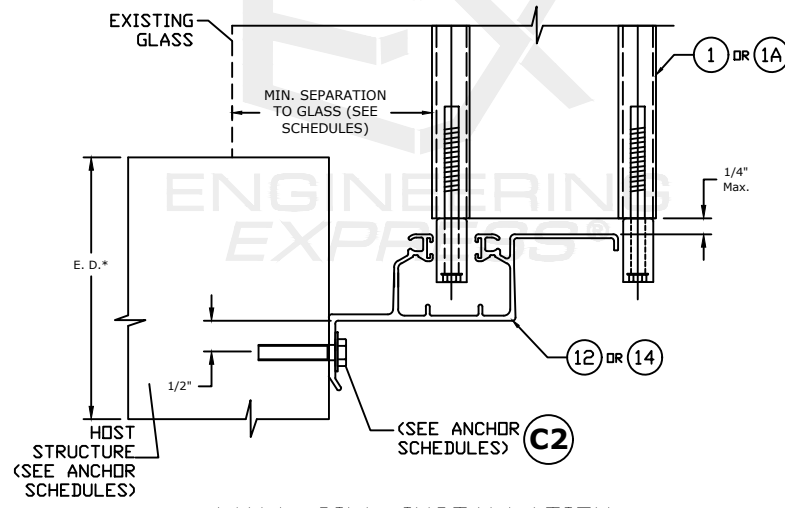
**ALT. WALL HEADER INSTALLATION**



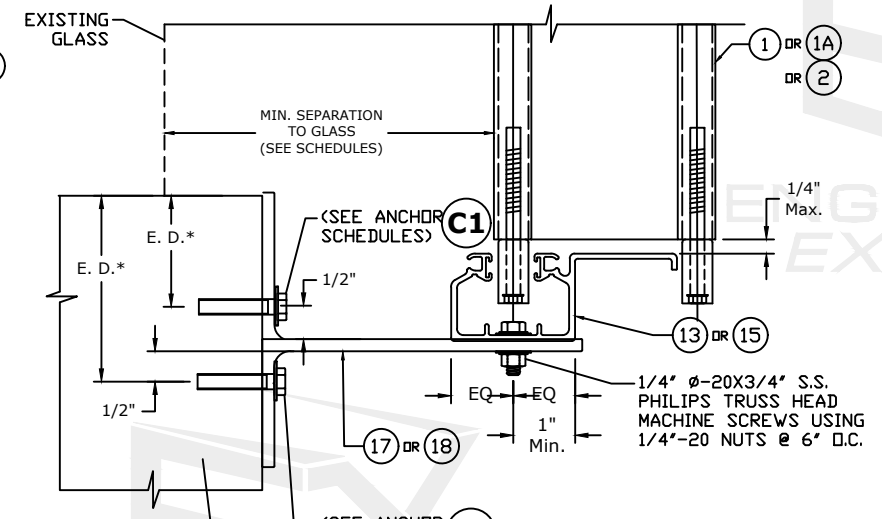
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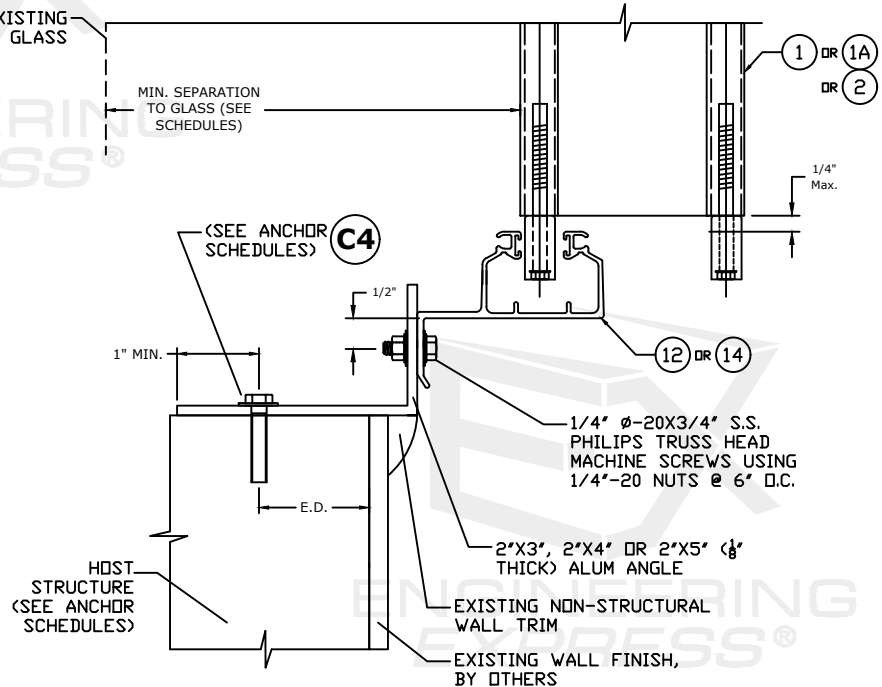
**ALT. WALL SILL INSTALLATION**



**WALL SILL INSTALLATION**  
\*ONLY APPROVED FOR BLADE 1 OR 1A



**ALT. WALL SILL INSTALLATION**



**KEYSTONE MOUNT INSTALLATION**

FL 32030.1

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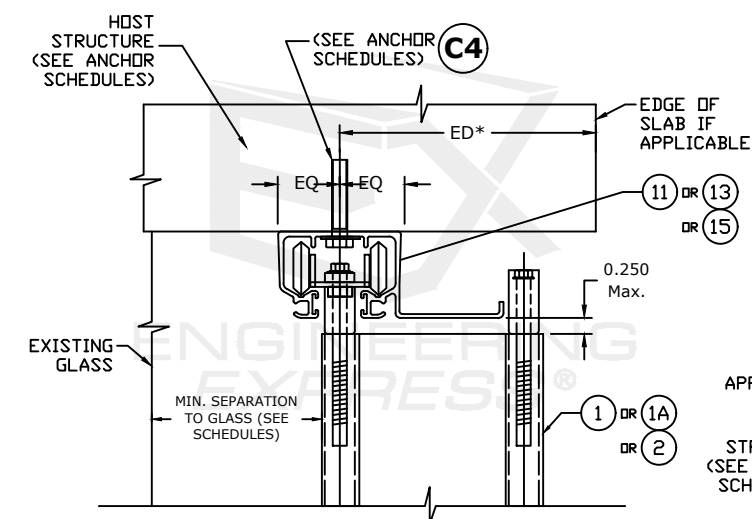
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2023 FCC UPDATE	MRT	RWN	10/09/23

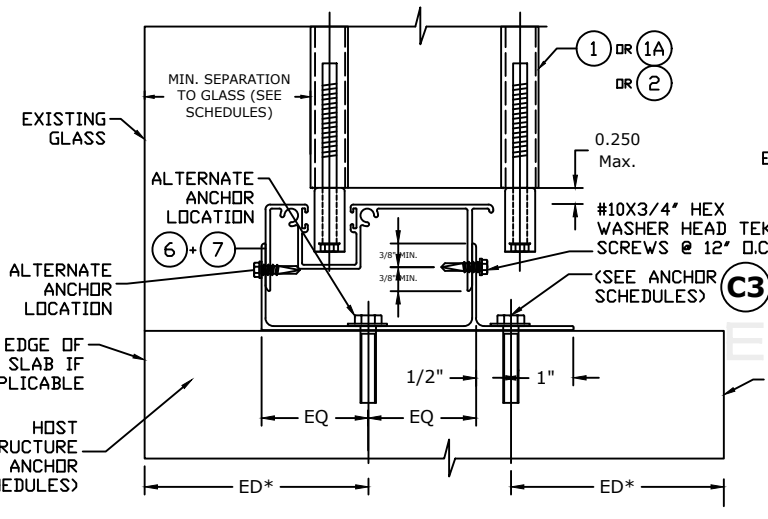
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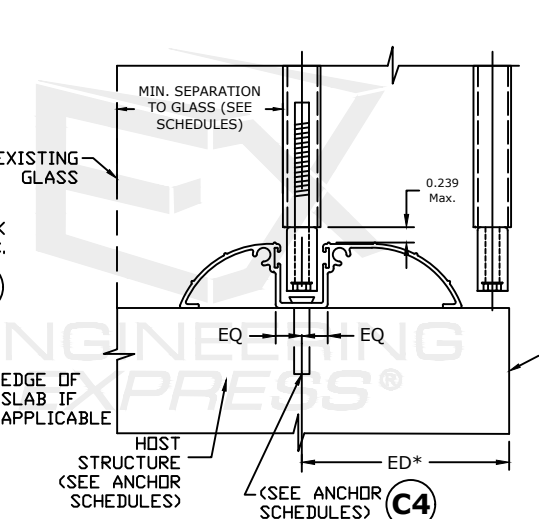
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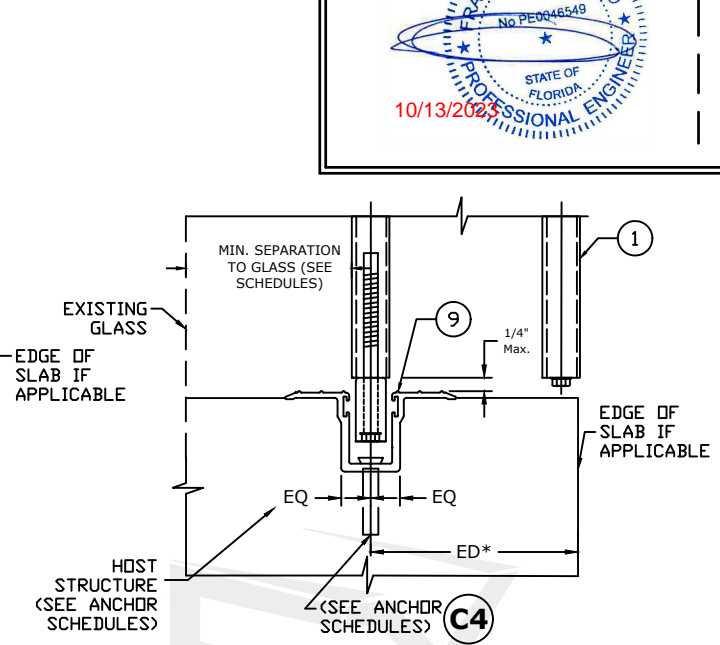
CEILING INSTALLATION



FLOOR INSTALLATION

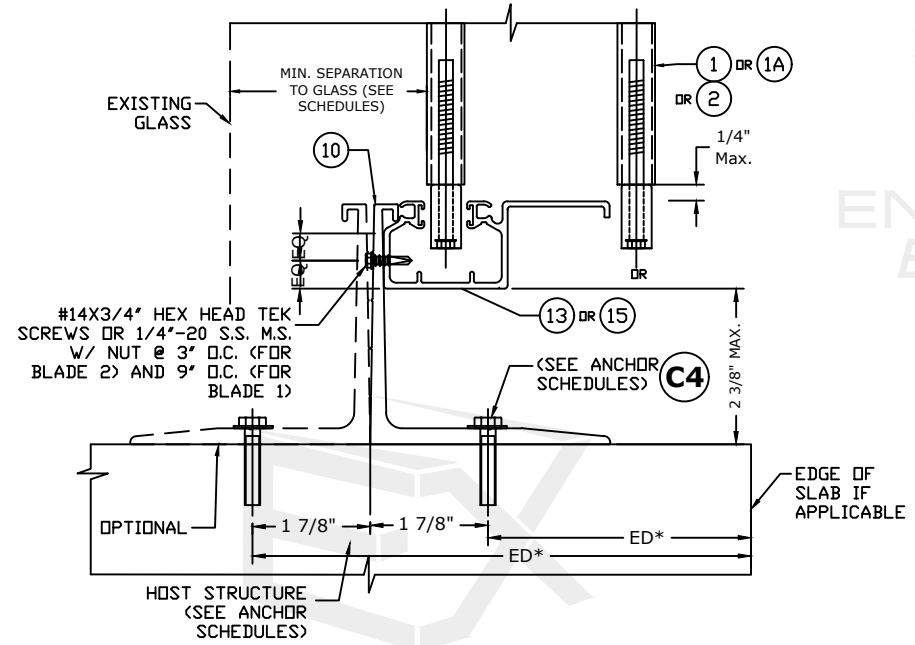


WALK-OVER INSTALLATION

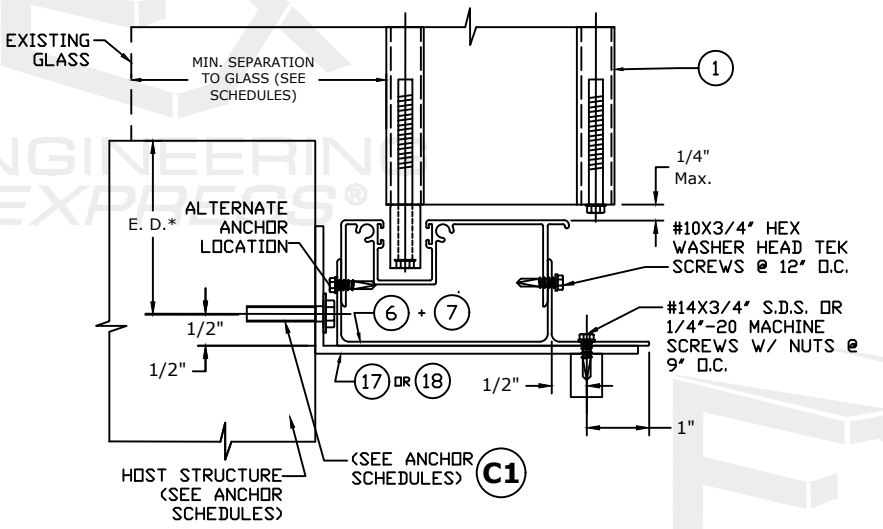


TRENCH INSTALLATION

VALID ONLY UP TO +70, -75 psf PRESSURE RATING & FOR SPANS PER SCHEDULE #4

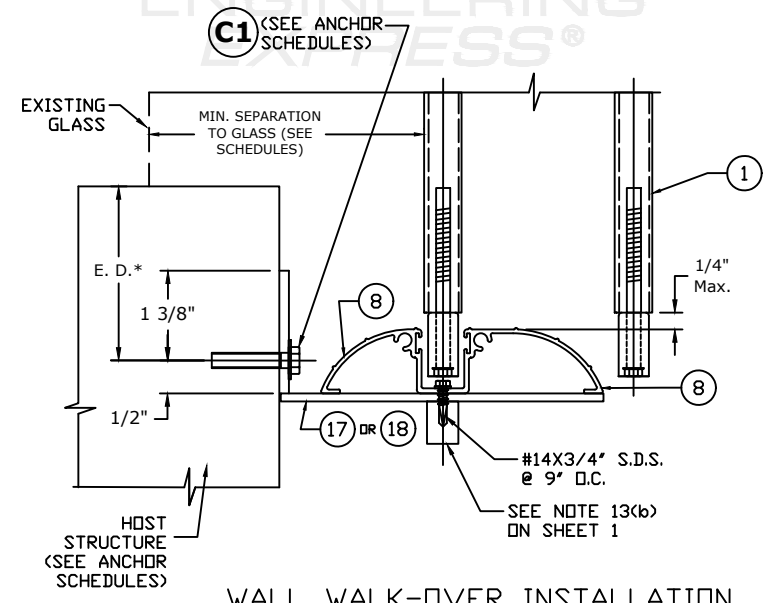


RAINGUARD INSTALLATION †



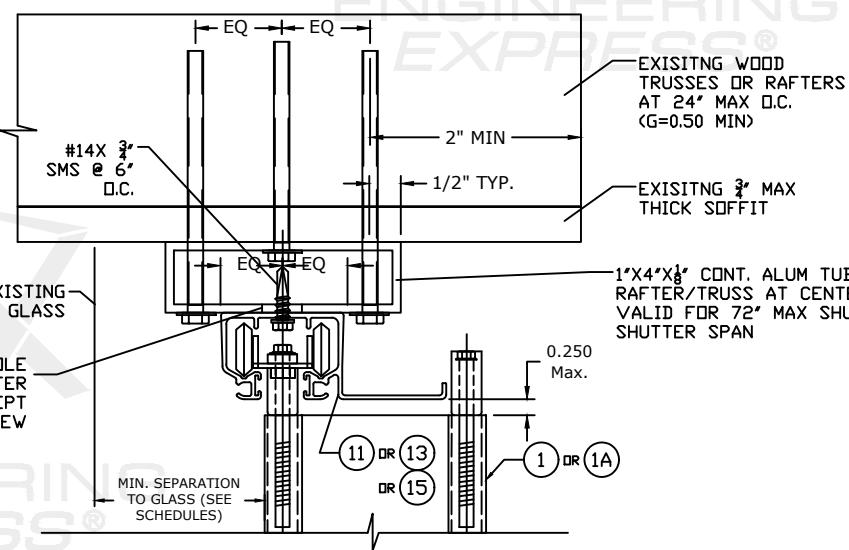
ALT. RAINGUARD INSTALLATION

\*ONLY APPROVED FOR BLADE 1 OR 1A



WALL WALK-OVER INSTALLATION

\*ONLY APPROVED FOR BLADE 1 OR 1A



CEILING INSTALLATION (TO WOOD TRUSSES/RAFTERS)

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# HV BLADE 1 - SECTION DETAILS

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

OCTOBER 9, 2023



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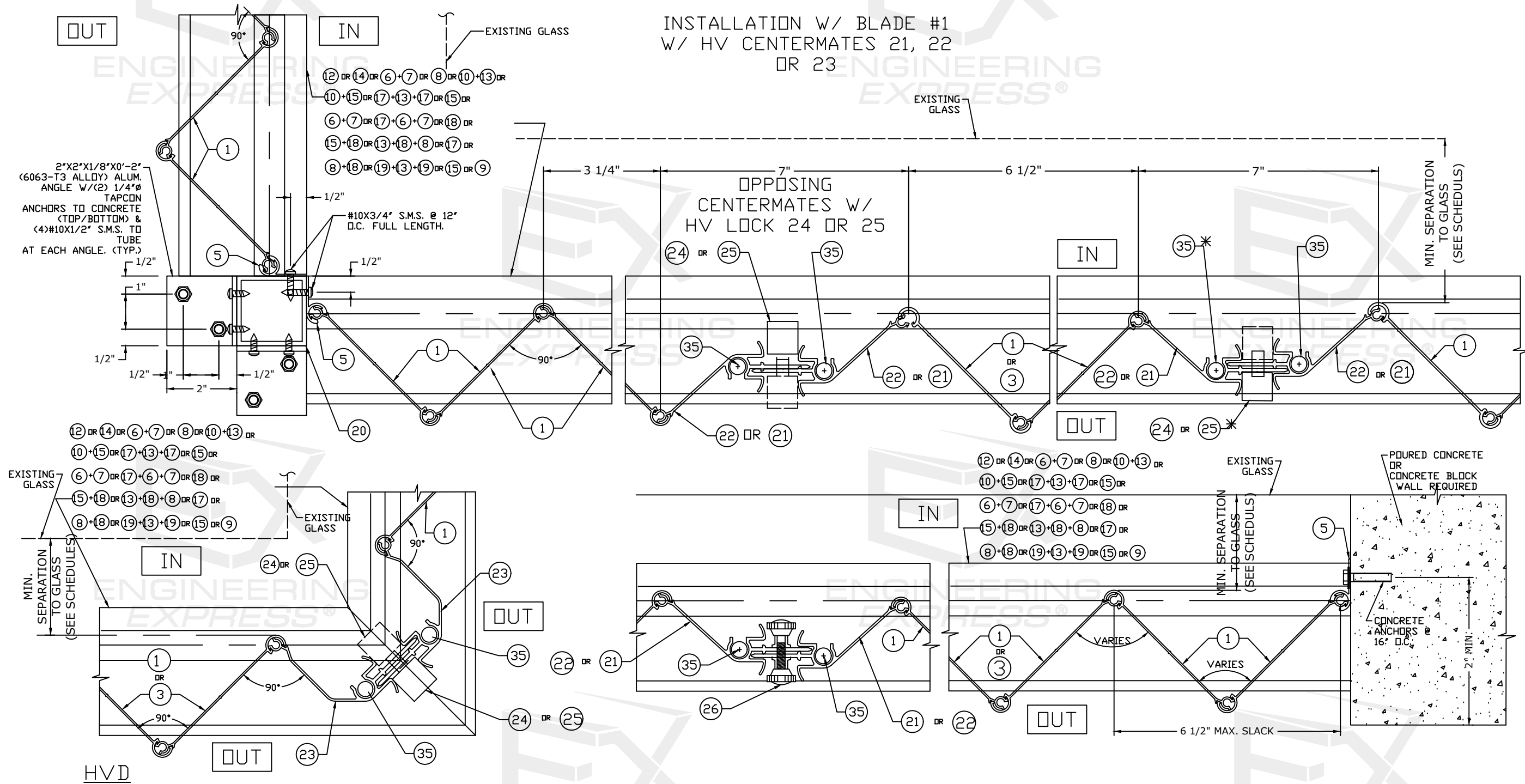
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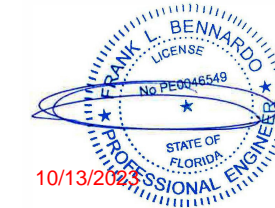
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# HV BLADE 1 - SECTION DETAILS (CONT'D)

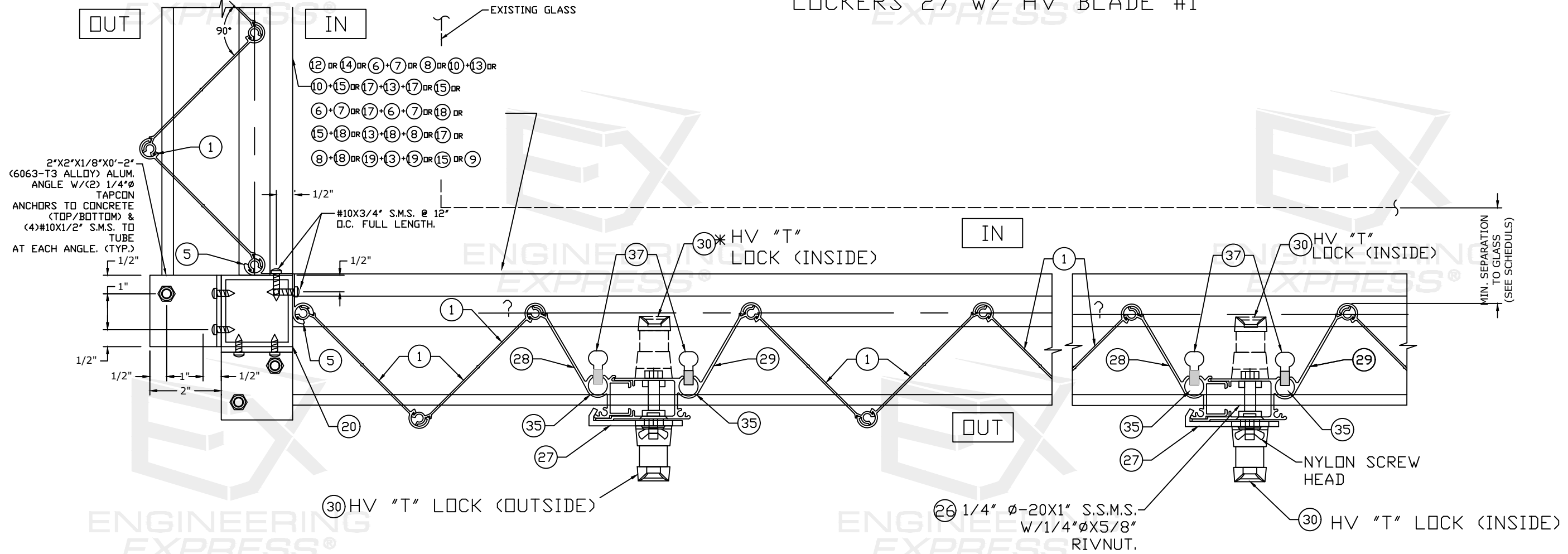
FRANK BENNARDO, P.E.  
PE# 0046549 CA# 9885

OCTOBER 9, 2023



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ALTERNATE INSTALLATION W/ HV "T" LOCK 30, HV MALE/FEMALE "T" LOCKS CENTERMATES 28, 29 & LOCKERS 27 W/ HV BLADE #1



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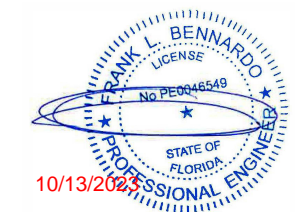




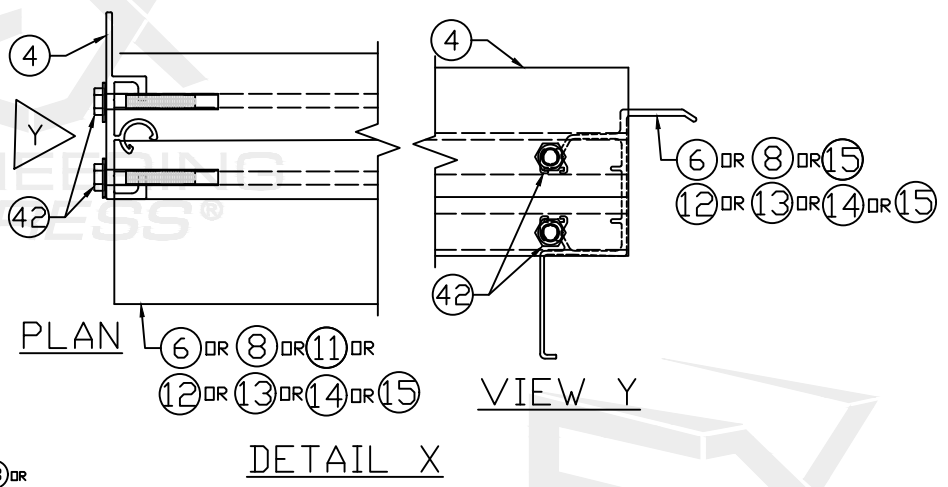
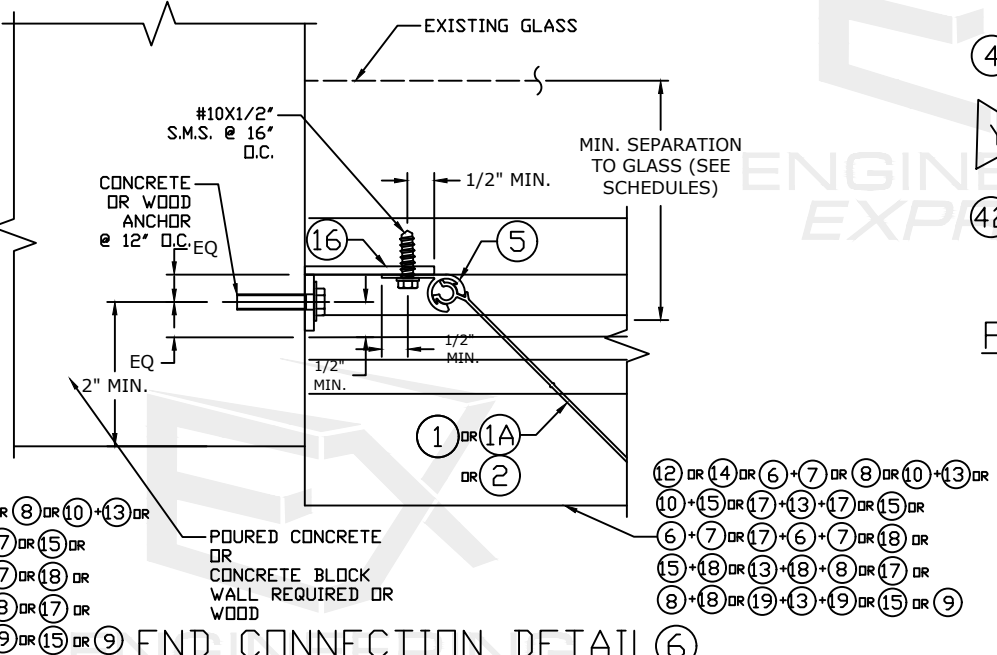
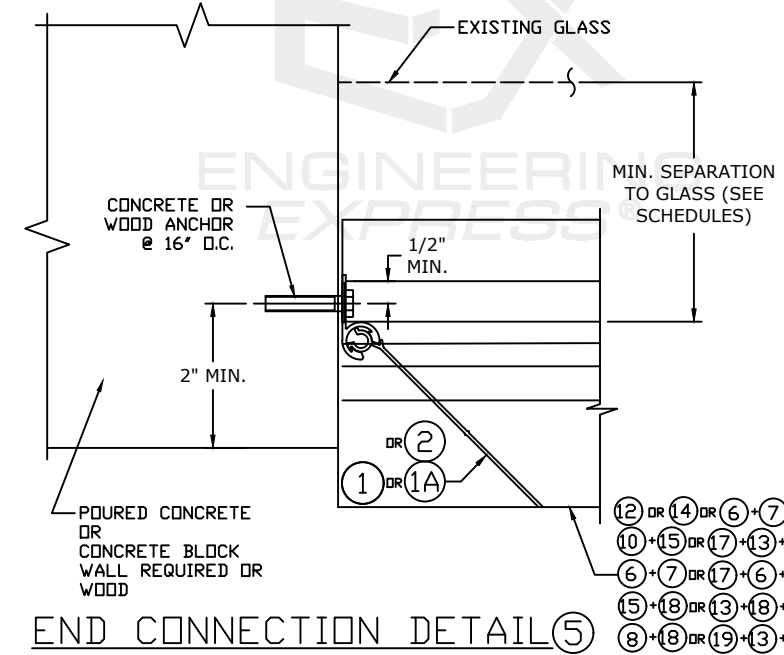
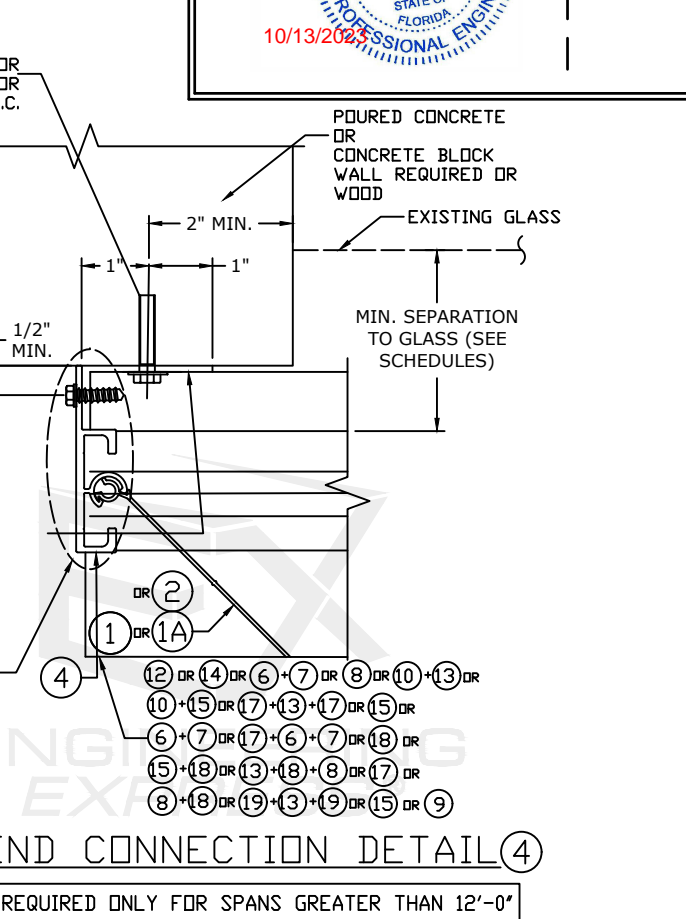
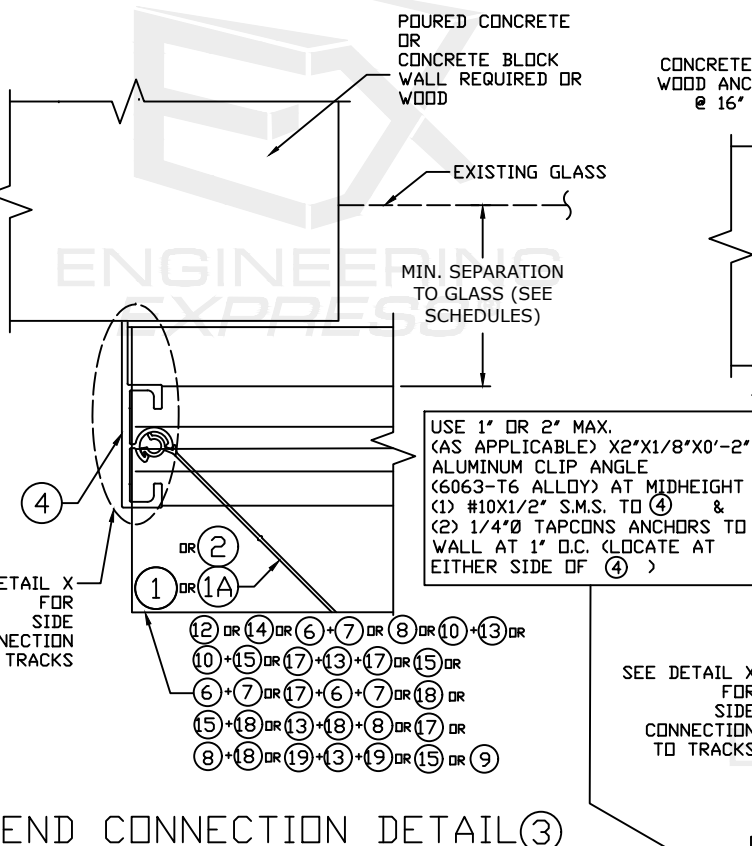
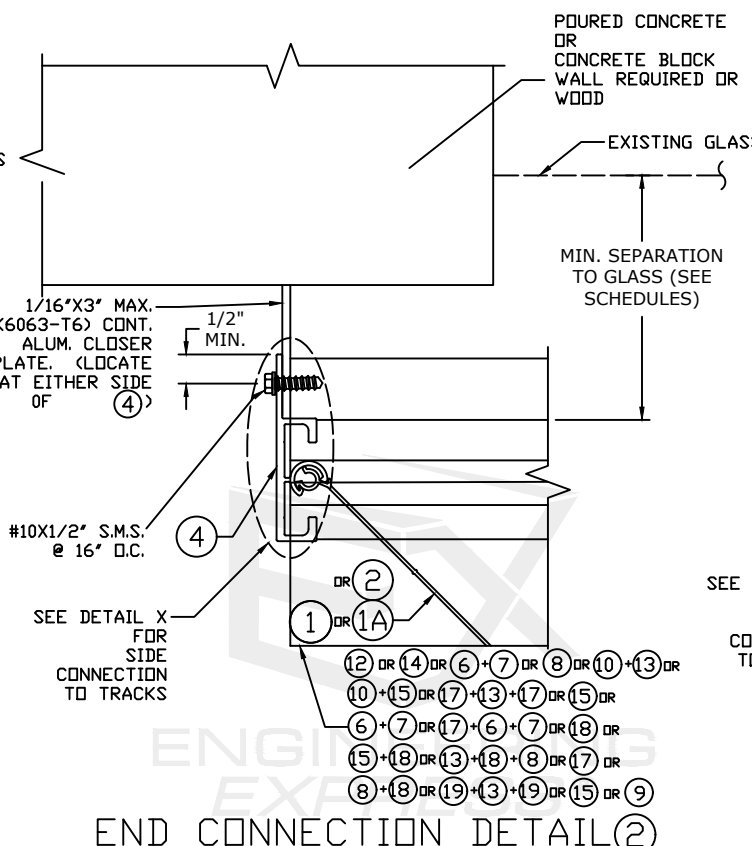
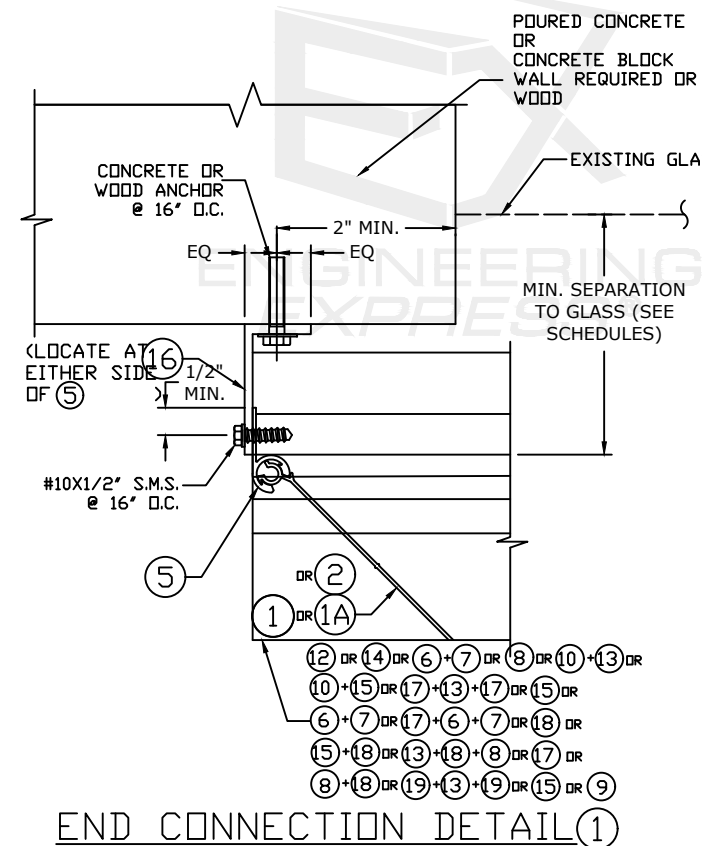
# END CONNECTION DETAILS (ALL BLADE OPTIONS)

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

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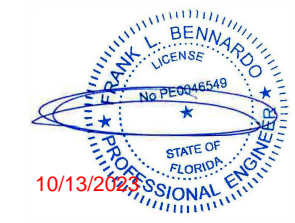




# ANCHOR SCHEDULES - ALL BLADE OPTIONS

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

OCTOBER 9, 2023



HOST STRUCT.	ANCHOR	LOAD (psf)	2.5" MIN EDGE DISTANCE																					
			Spans Up To 6'-0"					Spans Up To 8'-0"					Spans Up To 10'-0"					Spans Up To 18'-0"						
			CONN TYPE					CONN TYPE					CONN TYPE					CONN TYPE						
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
CONCRETE	1/4" ITW TAPCON OR ELCO/DEWALT ULTRAACON WITH 1-3/4" EMBED (3000psi MIN CONC)	48	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.0"	11.0"	16.0"	16.0"	16.0"	16.0"	9.0"	8.0"	16.0"	10.0"	9.0"	4.5"	4.0"	5.5"	
		62	16.0"	16.0"	12.5"	12.0"	16.0"	16.0"	16.0"	8.5"	8.0"	16.0"	16.0"	16.0"	16.0"	6.5"	6.0"	9.5"	7.5"	6.0"	3.5"	3.0"	3.5"	
		72	16.0"	16.0"	10.0"	9.5"	16.0"	16.0"	16.0"	7.0"	6.5"	11.5"	13.0"	12.0"	12.0"	5.5"	5.0"	7.5"	6.0"	5.0"			3.0"	
		110	14.5"	14.5"	6.0"	5.5"	8.5"	10.0"	8.5"	4.5"	4.0"	5.5"	7.5"	6.0"	3.5"	3.0"	4.0"	3.5"	3.0"					
		135	11.0"	10.0"	5.0"	4.0"	6.0"	7.5"	6.5"	3.5"	3.0"	4.0"	6.0"	4.5"										
		150	9.5"	8.5"	4.0"	3.5"	5.0"	6.5"	5.5"	3.0"		3.5"	5.0"	4.0"										
		180	14.5"	14.5"	6.0"	5.5"	8.5"	10.0"	8.5"	4.5"	4.0"	5.5"	7.5"	6.0"	3.5"	3.0"	4.0"	3.5"	3.0"					
		205	6.5"	5.5"	3.0"		3.0"	4.5"	3.5"															
		CONCRETE	1/4" ELCO CRETEFLEX SS4 W/ 2" EMBED (3350psi MIN CONC)	48	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.5"	12.5"	16.0"	13.5"	12.0"	6.5"	5.5"	7.5"
				62	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	13.0"	11.5"	16.0"	16.0"	16.0"	10.0"	8.5"	13.0"	10.0"	8.0"	5.0"	4.0"	5.0"
72	16.0"			16.0"	15.5"	14.5"	16.0"	16.0"	16.0"	11.0"	9.5"	15.0"	16.0"	16.0"	8.5"	7.0"	10.0"	8.0"	6.5"	4.0"	3.5"	4.0"		
110	16.0"			16.0"	9.0"	8.0"	11.5"	13.0"	11.5"	6.5"	5.5"	7.0"	10.0"	8.5"	5.0"	4.5"	5.0"	5.0"	4.0"					
135	14.5"			13.0"	7.0"	6.0"	8.0"	10.0"	8.5"	5.0"	4.5"	5.0"	8.0"	6.0"	4.0"	3.5"	4.0"	4.0"	3.0"					
150	12.5"			11.0"	6.5"	5.5"	7.0"	9.0"	7.5"	4.5"	4.0"	4.5"	7.0"	5.5"	3.5"	3.0"	3.5"	3.5"						
180	10.0"			8.5"	5.0"	4.5"	5.0"	7.0"	5.5"	3.5"	3.0"	3.5"	5.5"	4.5"	3.0"									
205	8.5"			7.0"	4.5"	3.5"	4.5"	6.0"	5.0"	3.0"			3.0"	5.0"	3.5"									

**ANCHOR NOTES:**

1. SPANS AND LOADS SHOWN HERE ARE FOR DETERMINING ANCHOR SPACING ONLY. ALLOWABLE STORM SHUTTER SPANS FOR SPECIFIC LOADS MUST BE LIMITED TO THOSE SHOWN IN SPAN SCHEDULES.
2. ENTER ANCHOR SCHEDULE BASED ON THE EXISTING STRUCTURE MATERIAL, ANCHOR TYPE AND EDGE DISTANCE. SELECT DESIGN LOAD GREATER THAN OR EQUAL TO NEGATIVE DESIGN LOAD ON SHUTTER AND SELECT SPAN GREATER THAN OR EQUAL TO SHUTTER SPAN. INTERPOLATION BETWEEN PRESSURES OR SPANS IS PERMITTED
3. SEE MOUNTING SECTION DETAILS FOR IDENTIFICATION OF CONNECTION TYPE.
4. EXISTING STRUCTURE MAY BE CONCRETE, ASTM C-90 HOLLOW CONCRETE BLOCK OR WOOD FRAMING. REFERENCE ANCHOR SCHEDULE FOR PROPER ANCHOR TYPE BASED ON TYPE OF EXISTING STRUCTURE AND APPROPRIATE CONNECTION TYPE. SEE CONNECTION DETAILS FOR IDENTIFICATION OF CONNECTION TYPE.
5. ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
6. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE ANCHORS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. EMBEDMENT LENGTHS SHALL BE AS NOTED AND DO NOT INCLUDE STUCCO OR OTHER FINISHES.
7. WHERE EXISTING STRUCTURE IS WOOD FRAMING, WOOD FRAMING CONDITIONS VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS. ATTACHMENT TO 1/2" MIN THICK CDX PLYWOOD SHALL BE 1/4" ITW TAPCONS OR #14 WOOD SCREWS W/ 1/2" THREAD PENETRATION SPACED AT 3" O.C.. EXISTING WOOD STUDS SHALL BE MIN 2X4 SPACED AT 16" O.C. MAX W/ PLYWOOD ATTACHED TO STUDS IN ACCORDANCE W/ SECTION 2322 OF THE FBC.
8. WHERE LAG SCREWS FASTEN TO NARROW FACE OF STUD FRAMING, FASTENER SHALL BE LOCATED IN CENTER OF NOMINAL 2" x 4" (MIN.) WOOD STUD. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR WOOD FRAMING. LAG SCREWS SHALL HAVE PHILLIPS PAN HEAD OR HEX HEAD.
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.O.N.
10. MINIMUM CONCRETE STRENGTHS ARE AS INDICATED IN ANCHOR SCHEDULE.
11. 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

**ALTERNATE ANCHOR NOTE:**

FOR ALL 1/4" AND 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

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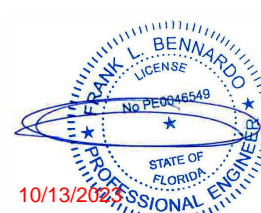
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# ANCHOR SCHEDULES - ALL BLADE OPTIONS (CONT'D)

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



OCTOBER 9, 2023



HOST STRUCT.	ANCHOR	LOAD (psf)	1" MIN EDGE DISTANCE																			
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONCRETE BLOCK		48	7.5"	7.5"	3.0"	3.0"	7.5"	5.5"	5.5"			5.5"	4.5"	4.5"			3.0"					
		62	6.0"	6.0"			6.0"	4.0"	4.5"			3.0"	3.0"	3.0"								
		72	5.0"	5.0"			4.5"	3.5"	3.5"													
		110																				
		135																				
		150																				
HOLLOW CONCRETE BLOCK		48	11.5"	11.5"	6.5"	6.5"	11.5"	8.5"	8.5"	4.0"	4.0"	8.5"	6.5"	7.0"	3.0"		5.0"	3.0"				
		62	9.0"	9.0"	4.5"	4.0"	9.0"	6.5"	6.5"	3.0"		4.5"	4.5"	4.5"			3.0"	3.0"	3.0"	3.0"		
		72	7.5"	7.5"	3.5"	3.0"	6.5"	5.0"	5.5"			3.0"	3.5"	3.5"								
		110	4.0"	4.0"																		
		135	3.0"	3.0"																		
		150																				

HOST STRUCT.	ANCHOR	LOAD (psf)	2-1/2" MIN EDGE DISTANCE																			
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONCRETE BLOCK		48	10.5"	10.5"	6.5"	6.5"	10.5"	8.0"	8.0"	4.0"	4.0"	8.0"	6.0"	6.0"	3.0"		4.5"					
		62	8.0"	8.0"	4.5"	4.0"	8.0"	5.5"	6.0"	3.0"		4.0"	4.0"	4.0"			3.0"	3.0"	3.0"	3.0"		
		72	7.0"	7.0"	3.5"	3.0"	6.0"	4.5"	5.0"			3.0"	3.5"	3.0"								
		110	3.5"	3.5"																		
		135	3.0"																			
		150																				
HOLLOW CONCRETE BLOCK		48	14.5"	14.5"	9.0"	9.0"	14.5"	10.5"	10.5"	6.0"	5.5"	10.5"	8.5"	8.5"	4.0"	4.0"	6.0"	3.5"	3.0"			
		62	11.0"	11.0"	6.0"	5.5"	11.0"	8.0"	8.0"	4.0"	3.5"	5.5"	5.5"	6.0"	3.0"		3.5"					
		72	9.5"	9.5"	5.0"	4.5"	8.5"	6.5"	7.0"	3.5"	3.0"	4.0"	4.5"	4.5"								
		110	5.0"	5.0"	3.0"		3.0"	3.5"	3.0"													
		135	4.0"	3.5"																		
		150	3.5"	3.0"																		


HOST STRUCT.	ANCHOR	LOAD (psf)	1-1/4" MIN EDGE DISTANCE																			
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONC. BLOCK		48	13.5"	13.5"	5.5"	5.5"	13.5"	10.0"	10.0"	4.0"	3.5"	10.0"	8.0"	8.0"	3.0"		6.0"	3.5"	3.0"			
		62	10.5"	10.5"	4.0"	4.0"	10.5"	7.5"	8.0"			5.5"	5.5"	5.5"			3.0"	3.0"	3.0"	3.0"		
		72	9.0"	9.0"	3.0"	3.0"	8.0"	6.0"	6.5"			4.0"	4.5"	4.0"								
		110	5.0"	5.0"			3.0"	3.5"	3.0"													
		135	3.5"	3.5"																		
		150	3.0"	3.0"																		

HOST STRUCT.	ANCHOR	LOAD (psf)	2" MIN EDGE DISTANCE																			
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONC. BLOCK		48	16.0"	16.0"	9.5"	9.5"	16.0"	16.0"	16.0"	6.5"	6.0"	16.0"	14.0"	14.0"	5.0"	4.5"	10.5"	6.0"	5.5"			
		62	16.0"	16.0"	7.0"	6.5"	16.0"	13.0"	13.5"	4.5"	4.5"	9.5"	9.5"	3.5"	3.0"		6.0"	4.5"	3.5"			
		72	15.5"	15.5"	5.5"	5.0"	14.0"	10.5"	11.5"	4.0"	3.5"	6.5"	7.5"	7.5"	3.0"		4.5"	3.5"	3.0"			
		110	8.5"	8.5"	3.5"	3.0"	5.0"	6.0"	5.0"			3.0"	4.5"	3.5"								
		135	6.5"	6.0"			3.5"	4.5"	4.0"				3.5"									
		150	5.5"	5.0"			3.0"	3.0"					3.0"	4.0"								

HOST STRUCT.	ANCHOR	LOAD (psf)	3-1/8" MIN EDGE DISTANCE																			
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE				
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5
HOLLOW CONC. BLOCK		48	16.0"	16.0"	10.5"	10.5"	16.0"	14.0"	14.0"	7.0"	6.5"	14.0"	11.0"	11.0"	5.0"	4.5"	8.0"	4.5"	4.0"			
		62	14.5"	14.5"	7.0"	6.5"	14.5"	10.5"	10.5"	5.0"	4.5"	7.5"	7.5"	7.5"			4.5"					
		72	12.5"	12.5"	6.0"	5.5"	11.0"	8.0"	9.0"	4.0"		5.0"	6.0"	5.5"								
		110	6.5"	6.5"			4.0"	4.5"	4.0"													
		135	5.0"	4.5"																		
		150	4.5"	4.0"																		

ANCHOR NOTES: SEE SHEET 13 FOR ANCHOR NOTES.

FL 32030.1



**ENGINEERING EXPRESS**

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2234 NORTH FEDERAL HWY #7664  
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WEST PALM BEACH, FL 33407  
(800) 432-2204

BERTHA HV ACCORDION SHUTTER  
FLORIDA BUILDING CODE EIGHTH EDITION (2023)  
FLORIDA STATEWIDE APPROVAL (FSA FL#32030.1)

REMARKS	DRWN	CHKD	DATE
PREV. SUBMITTAL (20-31270)	CCB	RWN	09/02/20
2023 FBC UPDATE	MRT	RWN	10/09/23

**23-65176**

SCALE: NTS UNLESS NOTED

14 <sup>OF</sup> 16



# ANCHOR SCHEDULES - ALL BLADE OPTIONS (CONT'D)

HOST STRUCT.	ANCHOR	LOAD (psf)	2-1/2" MIN EDGE DISTANCE																				
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE					
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
GROUT-FILLED CONCRETE BLOCK	5/16" ITW TAPCON XL OR DEWALT ULTRACON W/ 2-1/4" MIN. EMBED	48	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"	16.0"	16.0"	16.0"	16.0"	16.0"	
		62	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"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"
		72	16.0"	16.0"	16.0"	15.5"	16.0"	16.0"	16.0"	11.5"	10.5"	16.0"	16.0"	16.0"	9.0"	8.0"	12.0"	10.0"	8.0"	4.5"	4.0"	5.0"	5.0"
		110	16.0"	16.0"	10.0"	9.0"	14.0"	16.0"	14.0"	7.0"	6.0"	8.5"	12.0"	10.0"	5.5"	4.5"	6.0"	6.0"	4.5"	3.0"			3.0"
		135	16.0"	16.0"	8.0"	7.0"	9.5"	12.5"	16.0"	5.5"	6.0"	13.0"	13.0"	13.5"	4.5"	3.5"	4.5"	5.0"	3.5"				
		150	15.5"	13.5"	7.0"	6.0"	8.0"	11.0"	9.0"	5.0"	4.5"	5.5"	8.5"	6.5"	4.0"	3.5"	4.0"	4.0"	3.0"				
WOOD (G = 0.55)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	11.5"	11.5"	16.0"	16.0"	16.0"	8.0"	8.0"	16.0"	16.0"	16.0"	6.5"	6.0"	16.0"	15.5"	14.0"	3.5"	3.0"	8.5"	
		62	16.0"	16.0"	8.5"	8.5"	16.0"	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.5"	15.0"	11.5"	9.5"	2.5"	2.0"	6.0"	
		82	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.0"	13.5"	16.0"	15.0"	3.5"	3.0"	9.0"	8.0"	6.5"	2.0"		4.0"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	16.0"	16.0"	9.5"	9.5"	16.0"	14.0"	14.0"	6.5"	6.0"	14.0"	11.0"	11.5"	4.5"	4.0"	8.5"	5.0"	4.5"	2.0"			2.5"
		62	14.5"	14.5"	6.5"	6.0"	14.5"	10.5"	11.0"	4.5"	4.0"	7.5"	7.5"	8.0"	3.5"	3.0"	4.5"	3.5"	3.0"				
WOOD (G = 0.42)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	9.0"	9.0"	16.0"	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	10.5"	9.0"	2.5"	2.5"	5.5"	
		62	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	16.0"	16.0"	3.5"	3.5"	10.0"	7.5"	6.0"	2.0"		4.0"	
		82	16.0"	16.0"	5.0"	4.5"	16.0"	15.0"	15.0"	3.5"	3.0"	9.0"	11.0"	10.0"	2.5"	2.5"	6.0"	5.5"	4.0"			2.5"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	12.5"	12.5"	6.0"	6.0"	12.5"	9.0"	9.0"	4.0"	3.5"	9.0"	7.0"	7.5"	3.0"	2.5"	5.5"	3.0"	2.5"				
		62	9.5"	9.5"	4.0"	4.0"	9.5"	7.0"	7.0"	2.5"	2.5"	5.0"	5.0"	5.0"	2.0"	2.0"	3.0"	2.0"	2.0"				

HOST STRUCT.	ANCHOR	LOAD (psf)	3/4" MIN EDGE DISTANCE																				
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE					
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
WOOD (G = 0.55)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	11.5"	11.5"	16.0"	16.0"	16.0"	8.0"	8.0"	16.0"	16.0"	16.0"	6.5"	6.0"	16.0"	15.5"	14.0"	3.5"	3.0"	8.5"	
		62	16.0"	16.0"	8.5"	8.5"	16.0"	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.5"	15.0"	11.5"	9.5"	2.5"	2.0"	6.0"	
		82	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.0"	13.5"	16.0"	15.0"	3.5"	3.0"	9.0"	8.0"	6.5"	2.0"		4.0"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	16.0"	16.0"	9.5"	9.5"	16.0"	14.0"	14.0"	6.5"	6.0"	14.0"	11.0"	11.5"	4.5"	4.0"	8.5"	5.0"	4.5"	2.0"			2.5"
		62	14.5"	14.5"	6.5"	6.0"	14.5"	10.5"	11.0"	4.5"	4.0"	7.5"	7.5"	8.0"	3.5"	3.0"	4.5"	3.5"	3.0"				
WOOD (G = 0.42)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	9.0"	9.0"	16.0"	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	10.5"	9.0"	2.5"	2.5"	5.5"	
		62	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	16.0"	16.0"	3.5"	3.5"	10.0"	7.5"	6.0"	2.0"		4.0"	
		82	16.0"	16.0"	5.0"	4.5"	16.0"	15.0"	15.0"	3.5"	3.0"	9.0"	11.0"	10.0"	2.5"	2.5"	6.0"	5.5"	4.0"			2.5"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	12.5"	12.5"	6.0"	6.0"	12.5"	9.0"	9.0"	4.0"	3.5"	9.0"	7.0"	7.5"	3.0"	2.5"	5.5"	3.0"	2.5"				
		62	9.5"	9.5"	4.0"	4.0"	9.5"	7.0"	7.0"	2.5"	2.5"	5.0"	5.0"	5.0"	2.0"	2.0"	3.0"	2.0"	2.0"				

HOST STRUCT.	ANCHOR	LOAD (psf)	3/4" MIN EDGE DISTANCE																				
			Spans Up To 6'-0" CONN TYPE					Spans Up To 8'-0" CONN TYPE					Spans Up To 10'-0" CONN TYPE					Spans Up To 18'-0" CONN TYPE					
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	
WOOD (G = 0.55)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	11.5"	11.5"	16.0"	16.0"	16.0"	8.0"	8.0"	16.0"	16.0"	16.0"	6.5"	6.0"	16.0"	15.5"	14.0"	3.5"	3.0"	8.5"	
		62	16.0"	16.0"	8.5"	8.5"	16.0"	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.5"	15.0"	11.5"	9.5"	2.5"	2.0"	6.0"	
		82	16.0"	16.0"	6.0"	6.0"	16.0"	16.0"	16.0"	4.5"	4.0"	13.5"	16.0"	15.0"	3.5"	3.0"	9.0"	8.0"	6.5"	2.0"		4.0"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	16.0"	16.0"	9.5"	9.5"	16.0"	14.0"	14.0"	6.5"	6.0"	14.0"	11.0"	11.5"	4.5"	4.0"	8.5"	5.0"	4.5"	2.0"			2.5"
		62	14.5"	14.5"	6.5"	6.0"	14.5"	10.5"	11.0"	4.5"	4.0"	7.5"	7.5"	8.0"	3.5"	3.0"	4.5"	3.5"	3.0"				
WOOD (G = 0.42)	1/4" LAG SCREW WITH 1-3/4" MIN THREAD PENETRATION	48	16.0"	16.0"	9.0"	9.0"	16.0"	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	10.5"	9.0"	2.5"	2.5"	5.5"	
		62	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	16.0"	16.0"	16.0"	3.5"	3.5"	10.0"	7.5"	6.0"	2.0"		4.0"	
		82	16.0"	16.0"	5.0"	4.5"	16.0"	15.5"	16.0"	3.5"	3.0"	9.0"	11.0"	11.5"	2.5"	2.5"	6.0"	5.5"	4.0"			2.5"	
		105	16.0"	16.0"	4.5"	4.5"	14.5"	16.0"	14.5"	3.5"	3.0"	9.0"	12.0"	10.5"	2.5"	2.5"	6.5"	6.0"	4.5"				3.0"
		48	12.5"	12.5"	6.0"	6.0"	12.5"	9.0"	9.0"	4.0"	3.5"	9.0"	7.0"	7.5"	3.0"	2.5"	5.5"	3.0"	2.5"				
		62	9.5"	9.5"	4.0"	4.0"	9.5"	7.0"	7.0"	2.5"	2.5"	5.0"	5.0"	5.0"	2.0"	2.0"	3.0"	2.0"	2.0"				

ANCHOR NOTES: SEE SHEET 13 FOR ANCHOR NOTES.

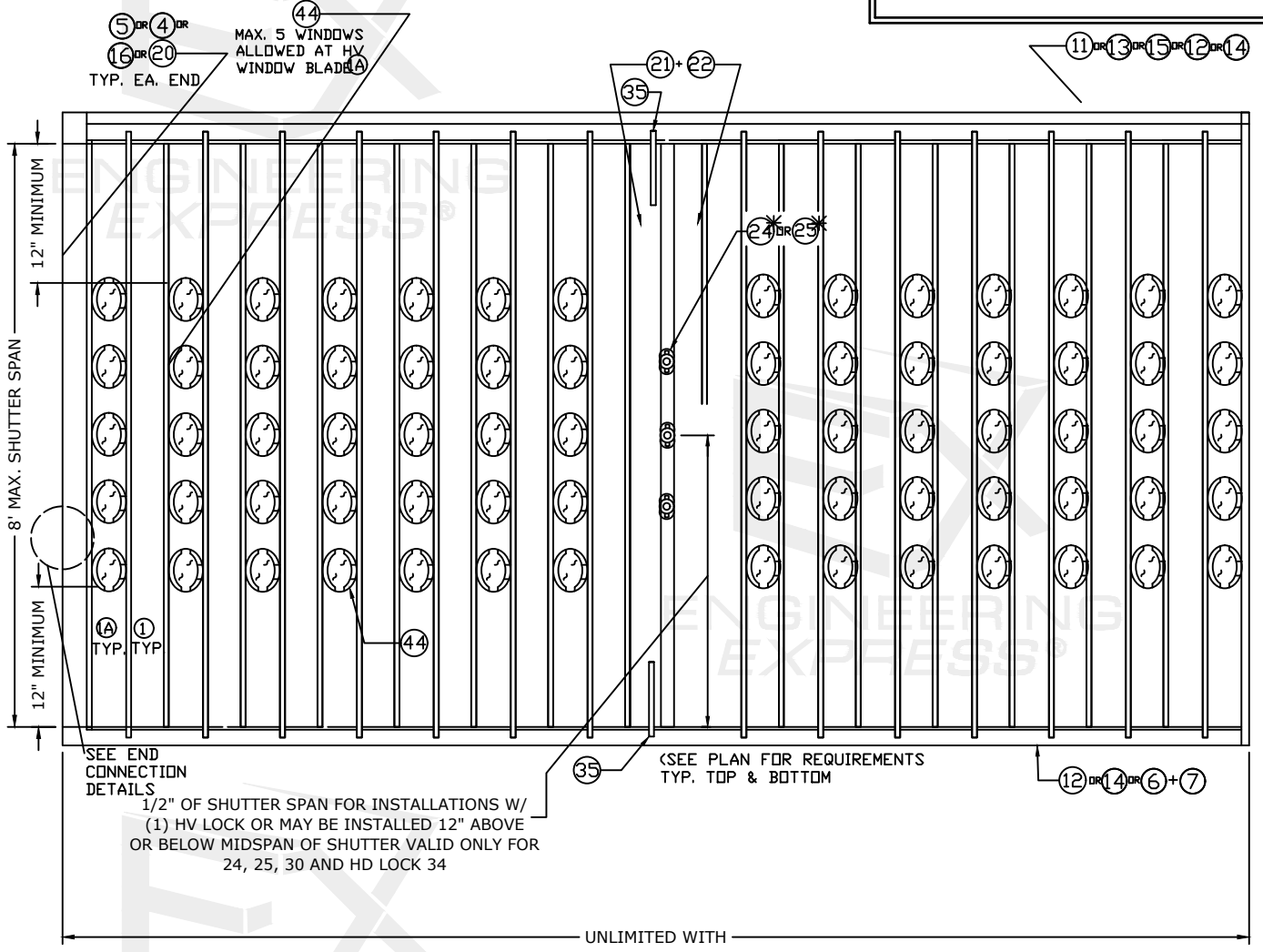
FRANK BENNARDO, P.E.  
PE# 0046549 CA# 9885

OCTOBER 9, 2023

FL

10/13/2023

## WINDOW BLADE 1A OPTION



TYPICAL 1A HV BLADE WORKING IN UNISON WITH 1 HV WINDOW BLADE SHUTTER

- WINDOW BLADE 1A NOTES:
1. MAXIMUM DESIGN PRESSURE = +/-110psf
  2. MAXIMUM SHUTTER SPAN = 96"
  3. MINIMUM GLASS SEPARATION = 5"
  4. SEE SECTION DETAILS FOR MOUNTING OPTIONS
  5. ONLY CENTERMATES 21, 22 (WITH 24 OR 25) ARE ALLOWED WITH SYMMETRICAL OR OPPOSING LAYOUT. 35 MUST BE INCLUDED FOR OPPOSING LAYOUT.
  6. BLADE 1A SHALL ONLY ALLOW 5 OPENINGS MAXIMUM. SEE NEXT SHEET FOR SPACING.
  7. MINIMUM CLEARANCE FROM TOP OR BOTTOM EDGE OF WINDOW BLADE SHALL BE 12"
  8. FIRST OR LAST BLADE CONNECTED TO STARTERS MAY BE WINDOW BLADE 1A
  9. BLADE 1A SHALL ALTERNATE WITH HV BLADE 1 THROUGHOUT SHUTTER WIDTH
  10. CENTERMATES SHALL ALWAYS BE INSTALLED ADJACENT TO SOLID HV BLADE 1 ON BOTH SIDES.
  11. POLYCARBONATE HV WINDOW SHALL BE INSTALLED SUCH THAT TABS FACE THE INTERIOR OF OPENING BEING PROTECTED.
  12. HV WINDOW SHALL ONLY BE INSTALLED AND LOCKED USING AN HV SETTING TOOL PROVIDED BY ASSA, INC.
  13. REFERENCE ANCHOR SCHEDULES FOR ANCHOR SPACING OPTIONS.

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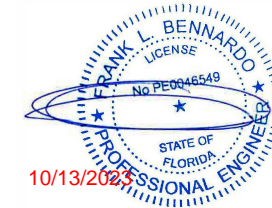
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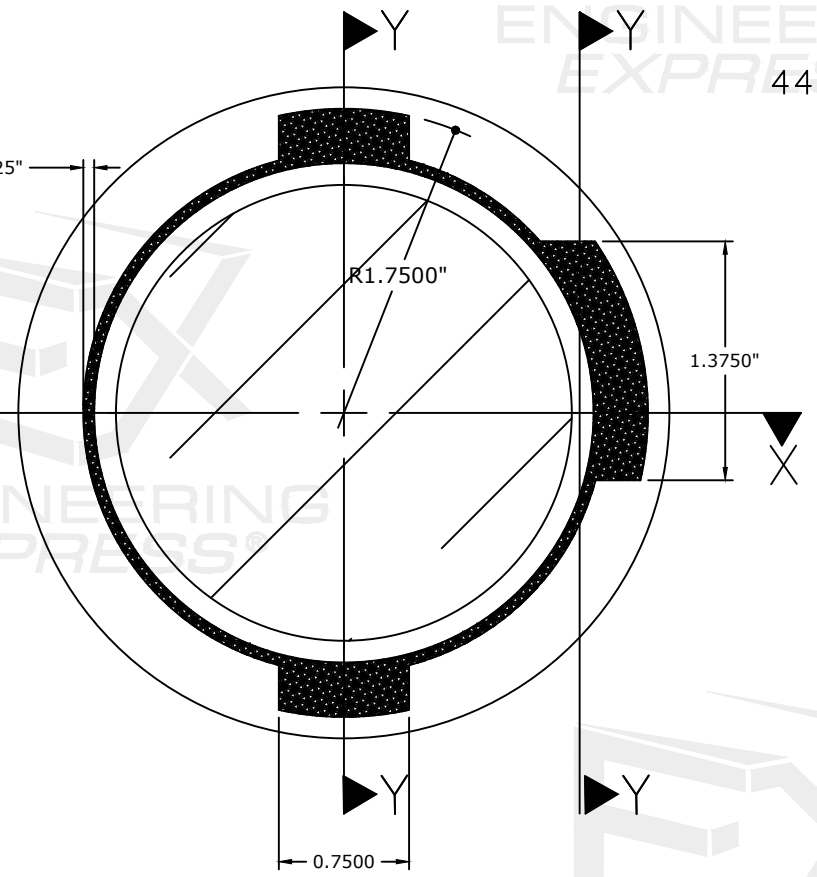
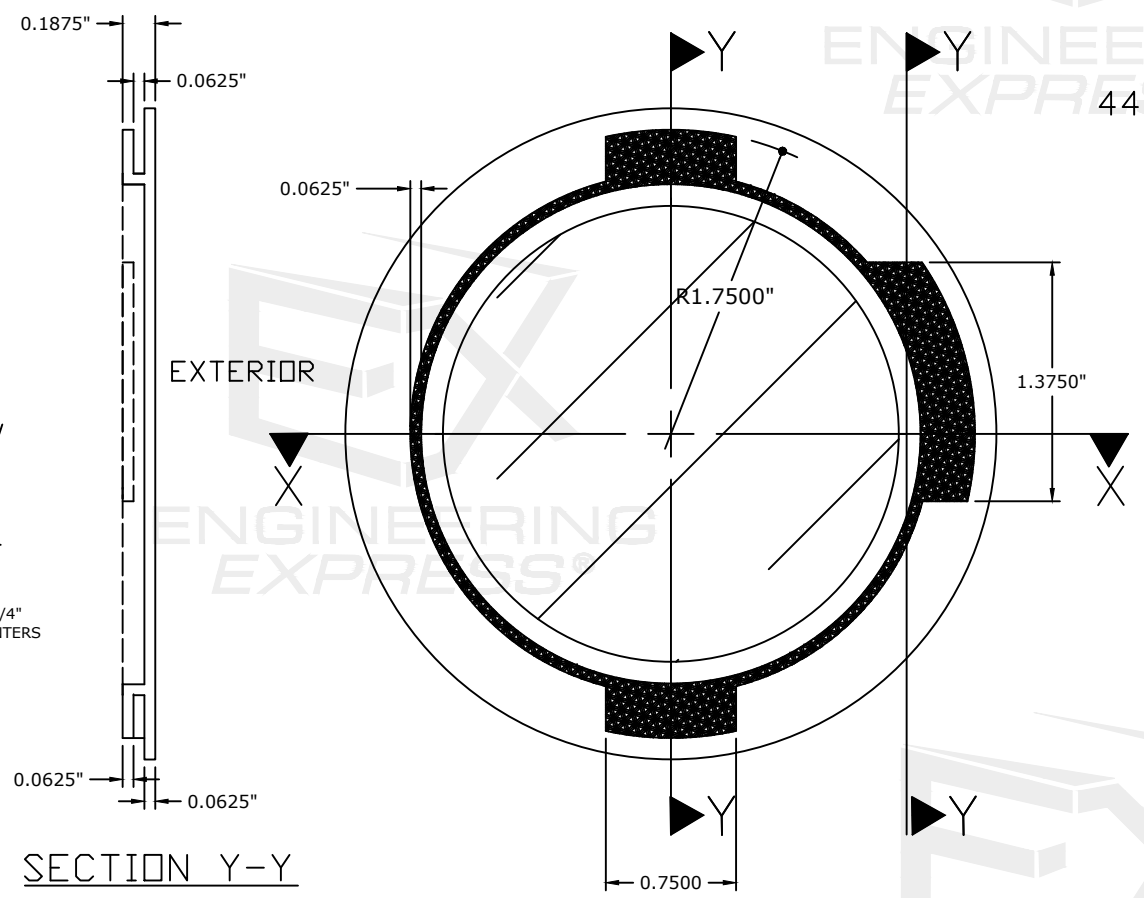
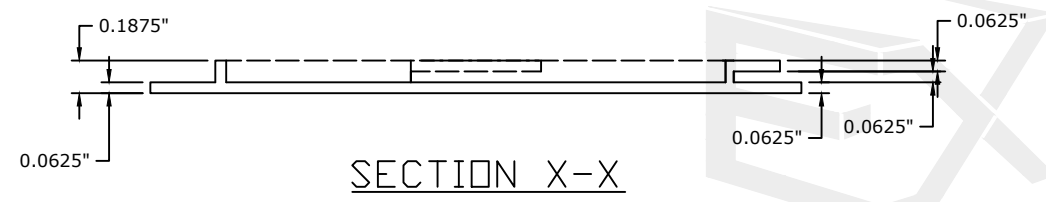
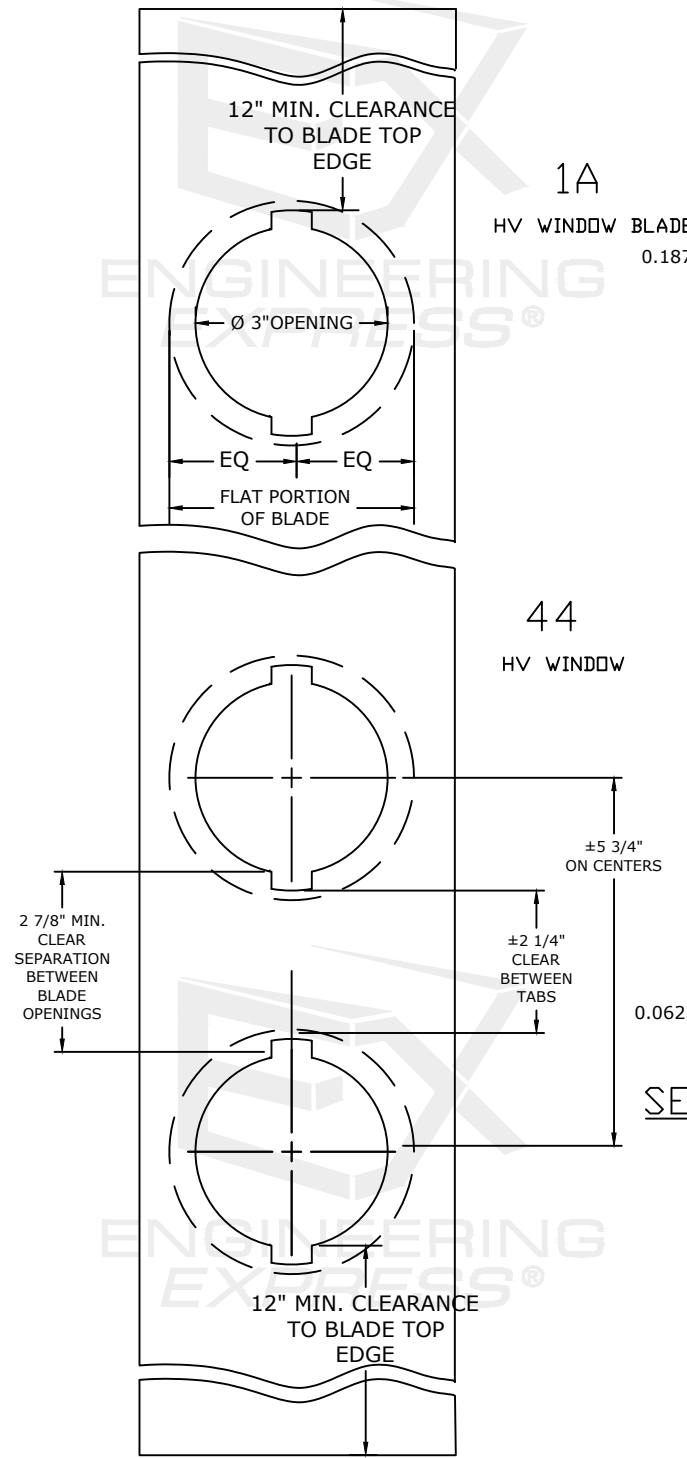
# WINDOW BLADE 1A OPTION

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

OCTOBER 9, 2023



FL



44 POLYCARBONATE IMPACT RESISTANT HV WINDOW  
BAYER MAKROLON 3103 POLYCARBONATE RESINS, UV-STABILIZED GRADE OR SABIC INNOVATIVE PLASTIC LEXAN 103 RESIN

TYPICAL HV WINDOW BLADE (1A) AND POLYCARBONATE HV WINDOW DETAIL

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16 OF 16

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