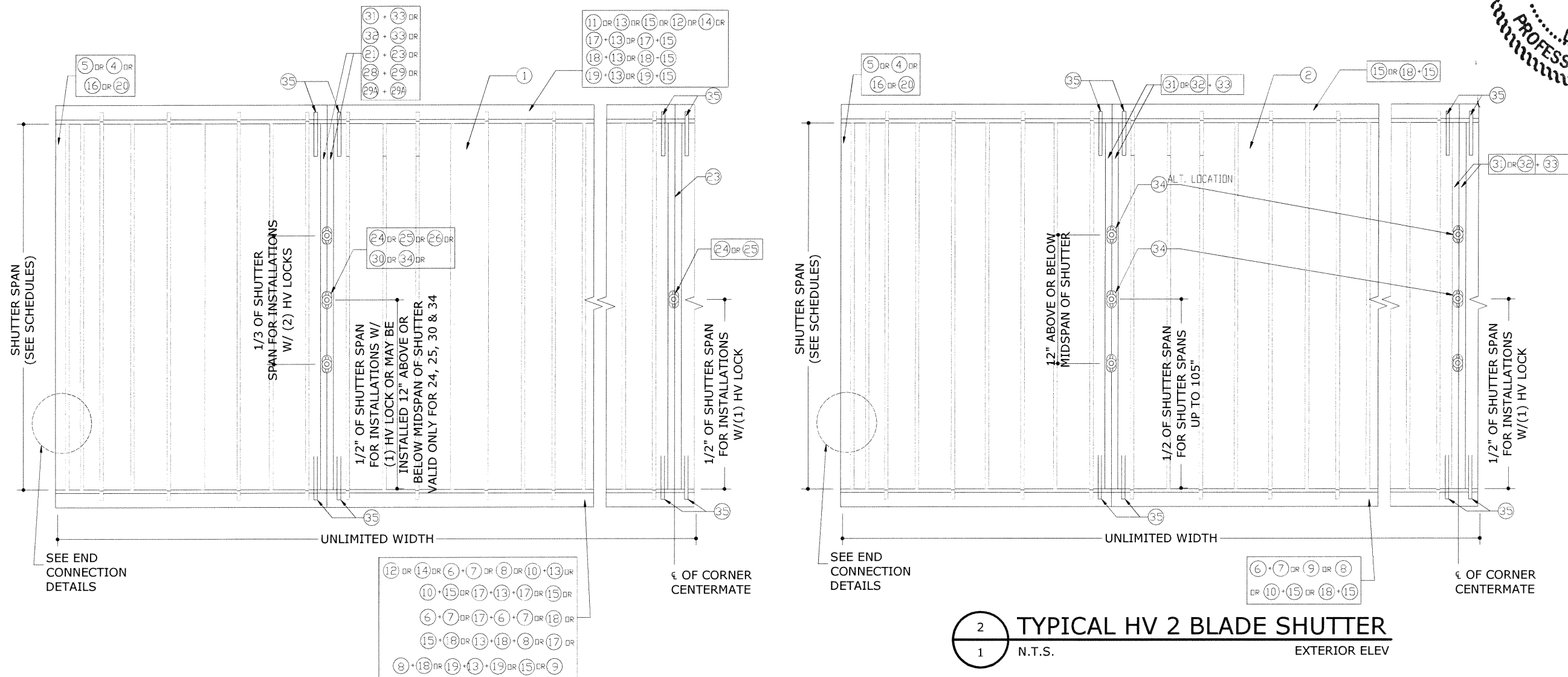


BERTHA HV ACCORDION SHUTTER

HV BLADE 1, HV WINDOW BLADE 1A & HV BLADE 2



1 TYPICAL HV 1 BLADE SHUTTER
1 N.T.S. EXTERIOR ELEV

2 TYPICAL HV 2 BLADE SHUTTER
1 N.T.S. EXTERIOR ELEV

GENERAL NOTES

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (2018), AND THE INTERNATIONAL RESIDENTIAL CODE (IRC) FOR USE IN ACCORDANCE WITH THE TEXAS DEPARTMENT OF INSURANCE (TDI) REQUIREMENTS, PER ASTM E330, E1886, AND E1996 AND TAS 201, 202 & 203 STANDARDS. SEE PRODUCT APPROVAL EVALUATION FOR ADDITIONAL INFORMATION.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. 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.

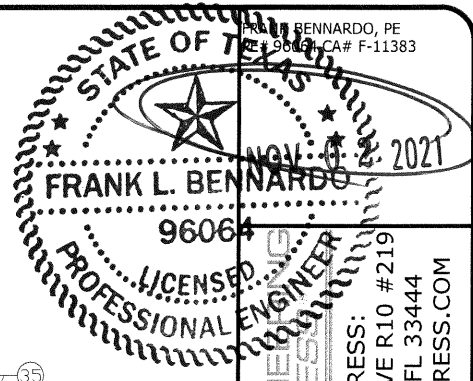
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- EACH UNIT MUST 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.

- ALL EXTRUSIONS SHALL BE MINIMUM 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
- EACH SHUTTER ASSEMBLY SHALL BEAR A PERMANENT LABEL PER SECTION 1709. OF THE IBC 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 TDI EVALUATED
- 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.
- ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.

VISIT ECALC.IO/31270

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

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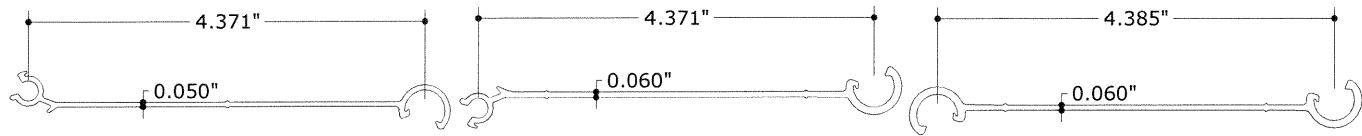
AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407
(561) 841-5480
BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE
RWN	IRWN	1/8/2020
CCB	IRWN	9/02/2020
RWN	FLB	10/12/2020
TDI		

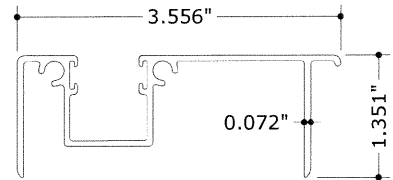
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1 OF 16

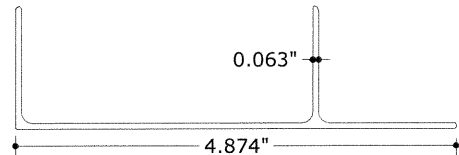
BLADE 1, 1A & 2 COMPONENTS



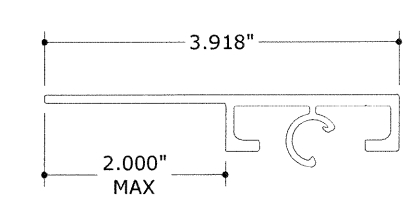
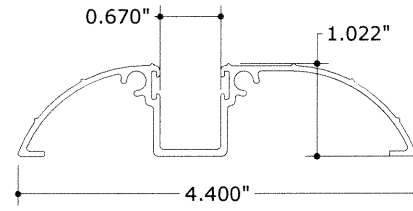
1 1A HV BLADE 1
N.T.S. 6063-T6 ALUM
*W/ OR W/ OUT WINDOW



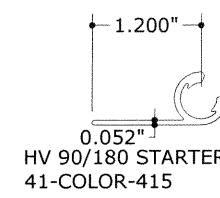
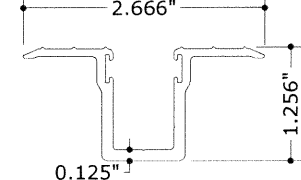
2 HV BLADE 2
N.T.S. 6063-T6 ALUM



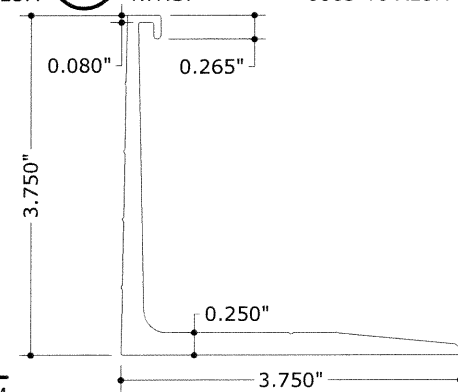
3 HV UNIVERSAL FLOATER
N.T.S. 6063-T6 ALUM



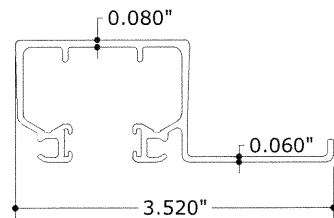
4 HV DIRECT MOUNT
N.T.S. 6063-T6 ALUM



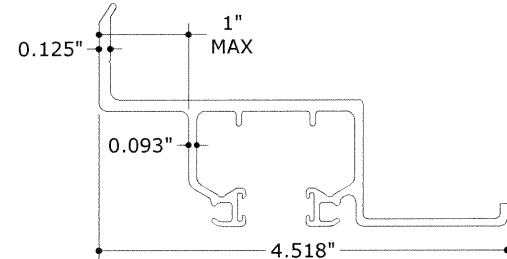
5 HV 90°/180° STARTER
N.T.S. 6063-T6 ALUM



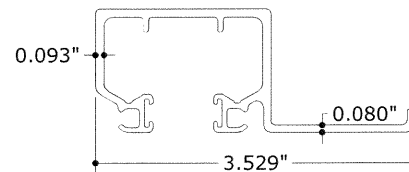
6 HV ADJ. FLOOR TRACK
N.T.S. 6063-T6 ALUM



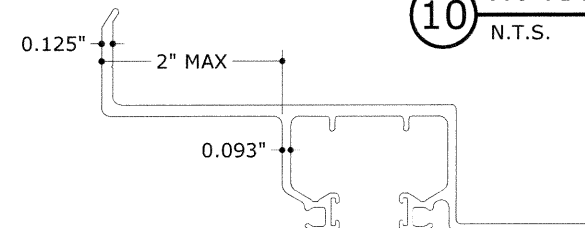
7 HV ADJ. ADAPTOR W/ LIP
N.T.S. 6063-T6 ALUM



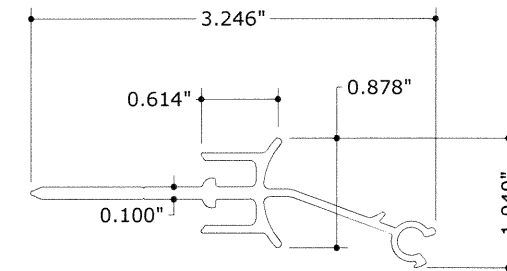
8 HV WALK OVER TRACK
N.T.S. 6063-T6 ALUM



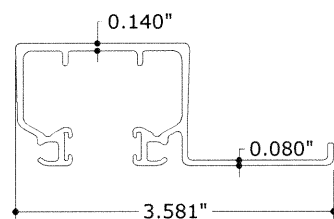
9 HV TRENCH TRACK
N.T.S. 6063-T6 ALUM



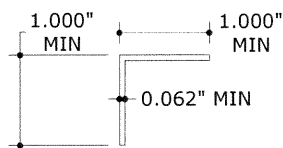
10 HV RAIN GUARD
N.T.S. 6063-T6 ALUM



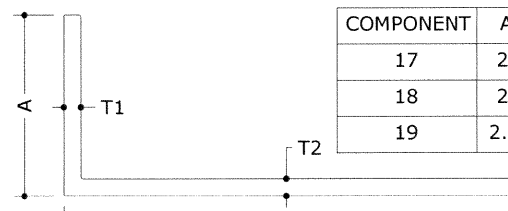
11 HV CEILING HEADER
N.T.S. 6063-T6 ALUM



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

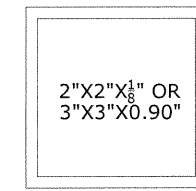


13 HD CEILING HEADER/SILL
N.T.S. 6063-T6 ALUM
*USE W/ BLADE 1 ONLY



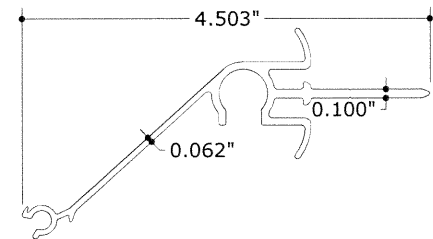
14 HD WALL HEADER/SILL
N.T.S. 6063-T6 ALUM
*USE W/ BLADE 1 ONLY

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

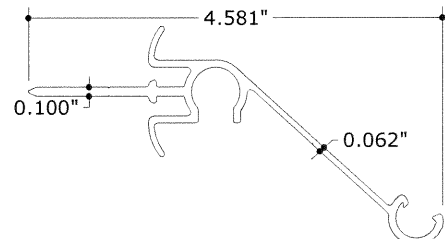


29A FLAT CENTERMATE
N.T.S. 6063-T6 ALUM
*USE W/ BLADE 1 ONLY

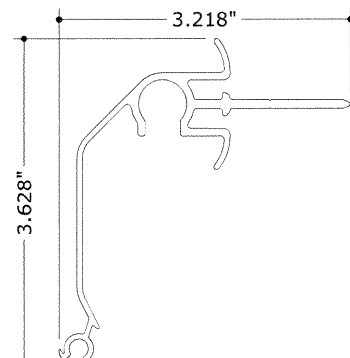
15 SHD CEILING HEADER/SILL
N.T.S. 6063-T6 ALUM



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



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

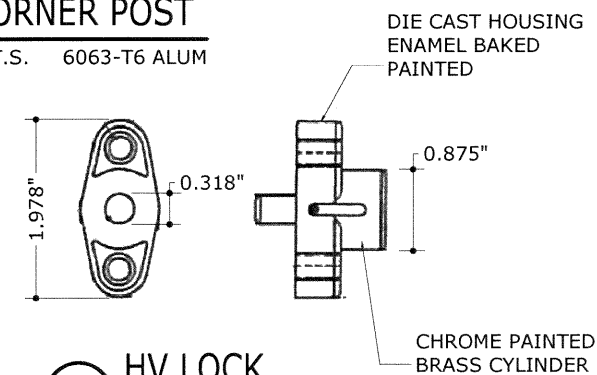


21 HV CENTERMATE
N.T.S. 6063-T6 ALUM
*USE W/ BLADE 1 ONLY

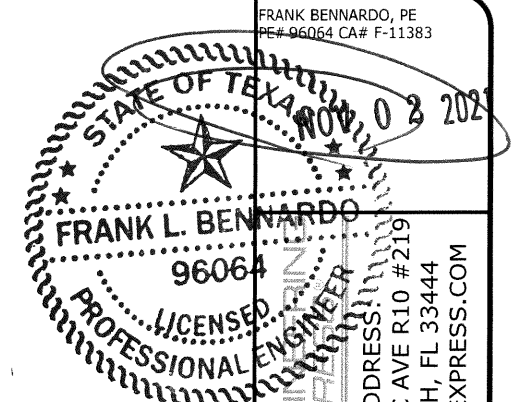
22 HV FLOATING CENTERMATE
N.T.S. 6063-T6 ALUM
*USE W/ BLADE 1 ONLY

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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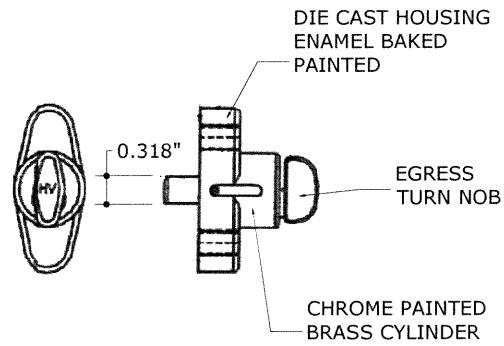
BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE
IRVN	IRVN	1/8/2020
CCB	IRVN	9/02/2020
IRVN	FLB	10/12/2021

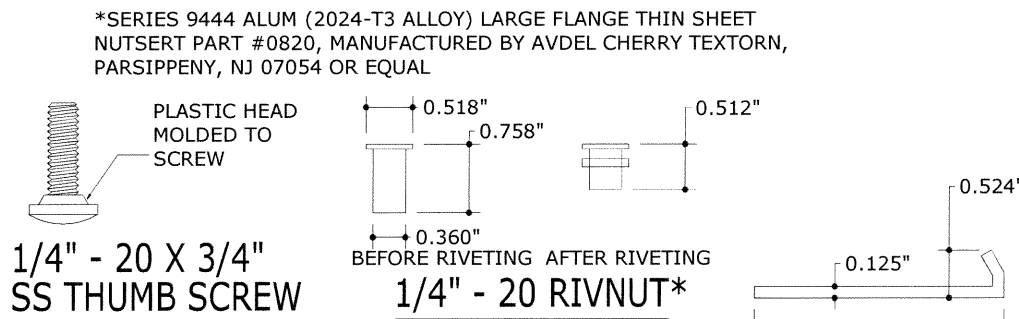
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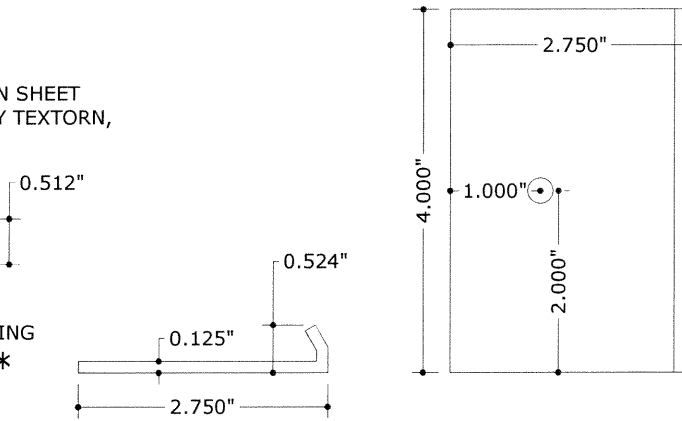
BLADE 1, 1A & 2 COMPONENTS (CONT'D)



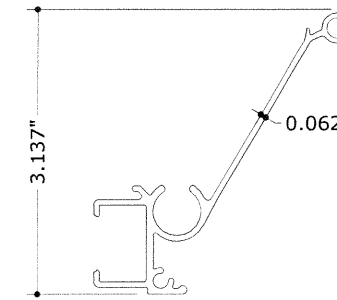
25 HV EGRESS LOCK
N.T.S.
*USE W/ BLADE 1 ONLY



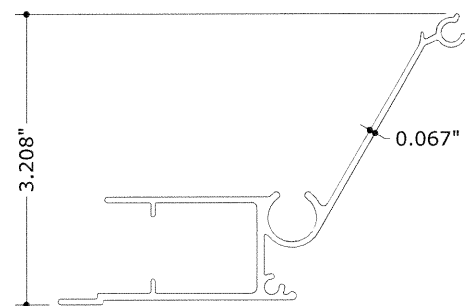
26 HV ALTERNATIVE LOCK
N.T.S.
*USE W/ BLADE 1 ONLY



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



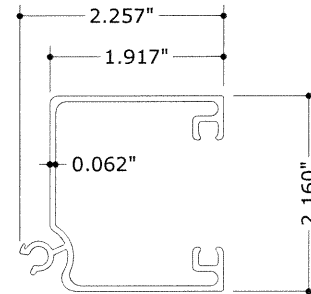
28 HV MALE "T" LOCK CENTERMATE
N.T.S.
*USE W/ BLADE 1 ONLY
6063-T6 ALUM



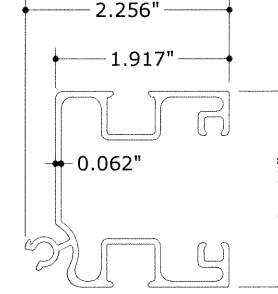
29 HV FEMALE "T" LOCK CENTERMATE
N.T.S.
*USE W/ BLADE 1 ONLY
6063-T6 ALUM



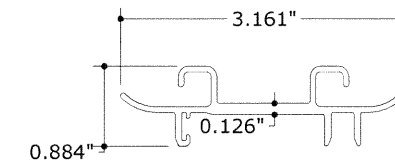
30 HV "T" LOCK
N.T.S.
*USE W/ BLADE 1 ONLY



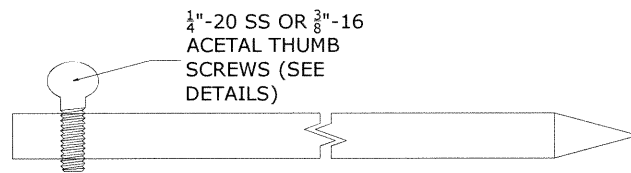
31 HD CENTERMATE W/ NO LOCKING ROD
N.T.S.
6063-T6 ALUM



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



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



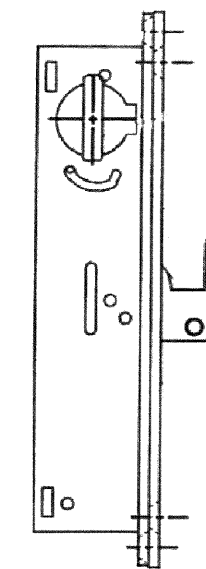
35 LOCKING ROD
N.T.S.
6063-T6 ALUM



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

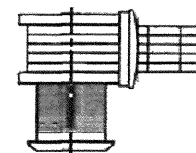


37 HV 3/8"-16 ACETAL THUMBSCREW
N.T.S.
6063-T6 ALUM

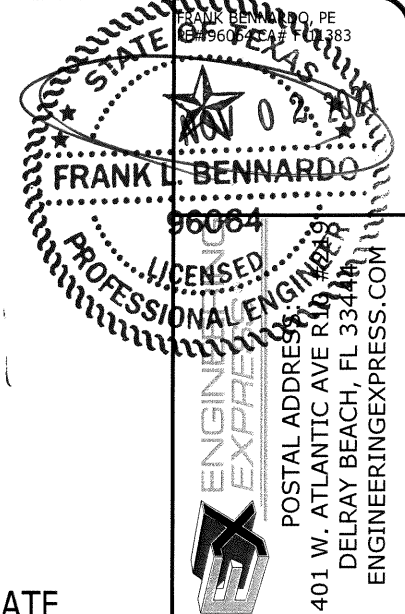


34 HD LOCK
N.T.S.

BY REGENT HARDWARE
MORTISE LOCKS SERIES
2333 HOOK BOLT LOCK



**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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BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DATE	DRWN	CHKD	DATE
1/8/2020	RWN	RWN	1/8/2020
9/02/2020	CCB	RWN	9/02/2020
10/12/2020	RWN	FLB	10/12/2020

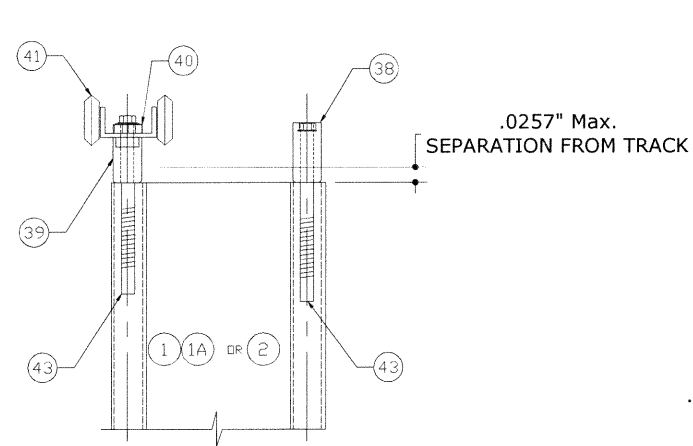
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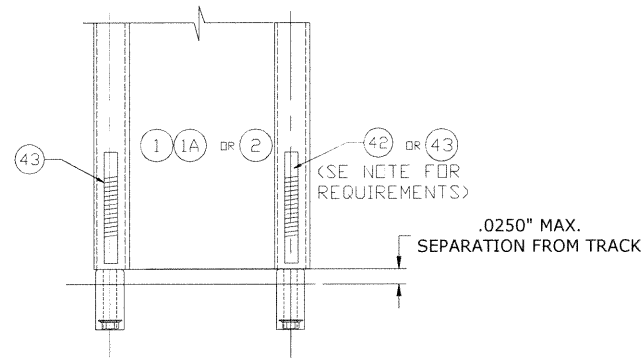
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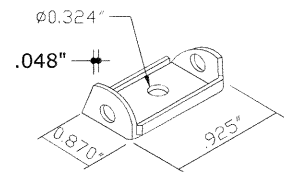
TYPICAL SHUTTER ASSEMBLY (ALL BLADE TYPES)



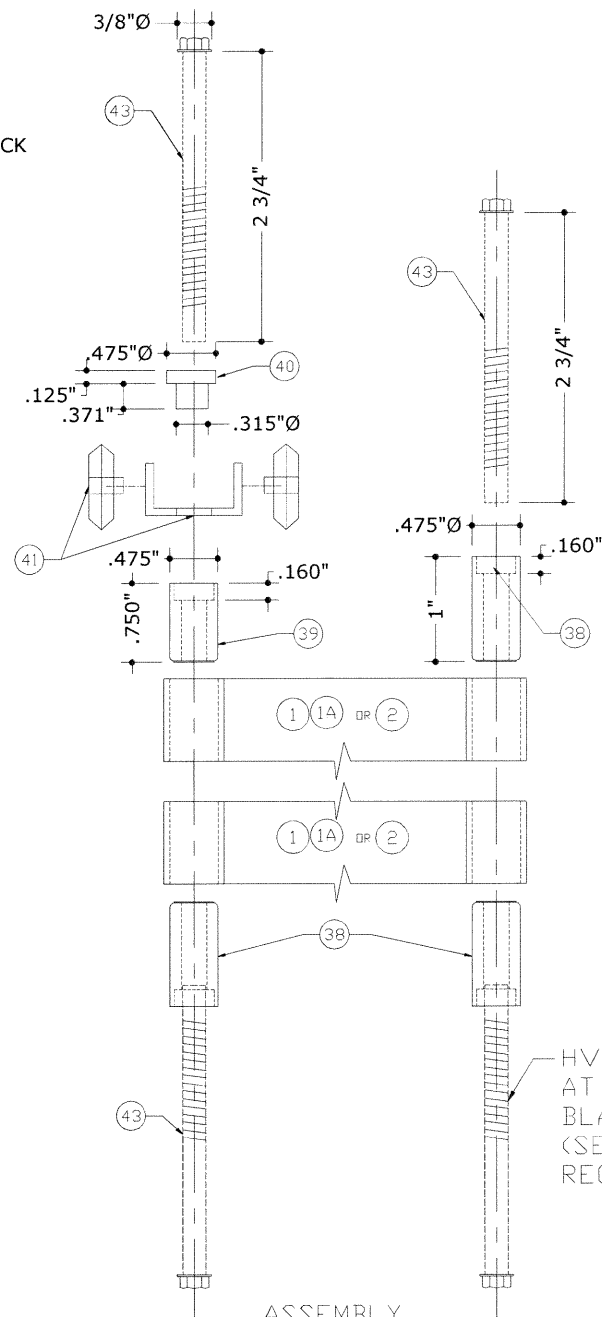
EXTERIOR



TYPICAL SHUTTER ASSEMBLY
SCALE: 3/8" = 1"



HV WALL SILL INSTALLATION
N.T.S.

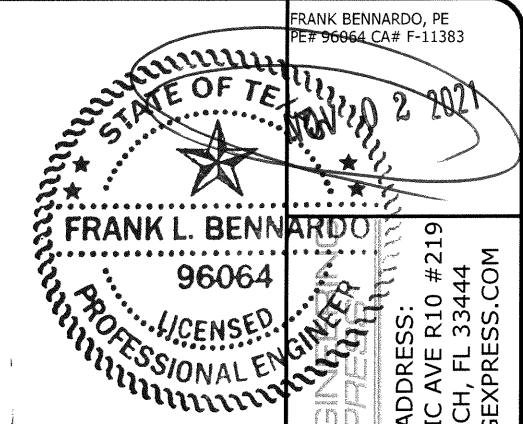


EXTERIOR

ASSEMBLY
LAYOUT
N.T.S.

HV PIN (42) OR (43)
AT EXTERIOR
BLADE'S KNUCKLE
(SEE NOTE * FOR
REQUIREMENTS)

- (38) - HV LONG RECESSED NYLON BUSHING
- (39) - HV SHORT RECESSED NYLON BUSHING
- (40) - 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



FRANK BENNARDO, PE
PE# 96064 CA# F-11383

FRANK L. BENNARDO
96064
LICENSED PROFESSIONAL ENGINEER
ENGINEERING EXPRESS



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BERTHA HV ACCORDION SHUTTER
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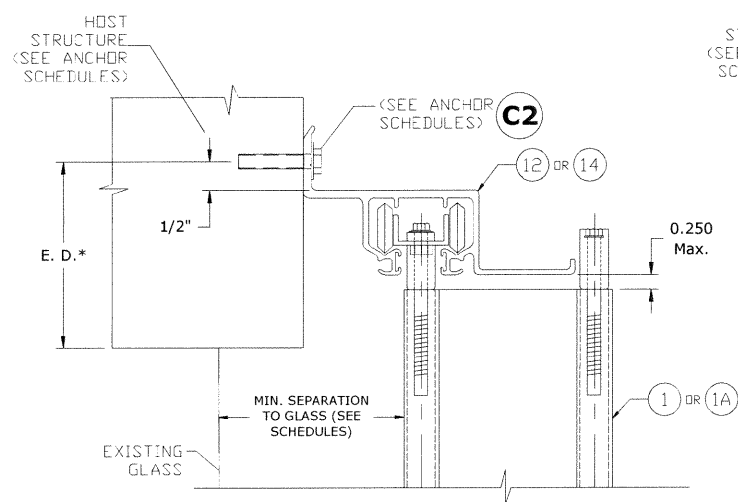
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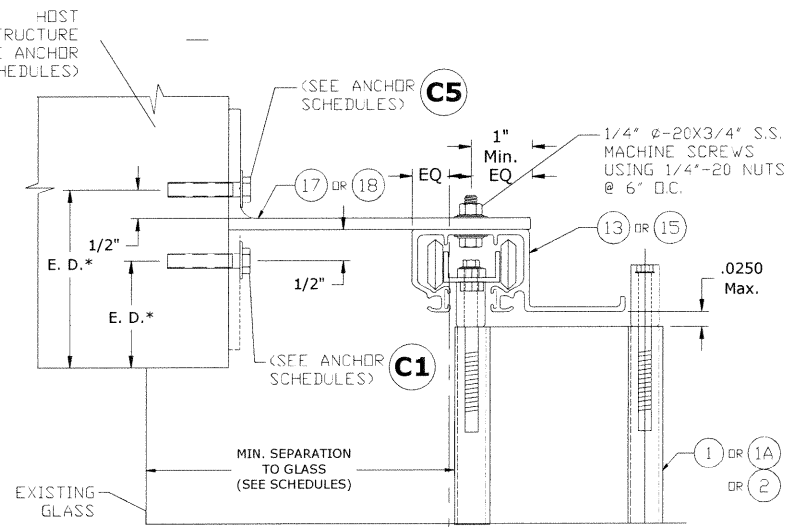
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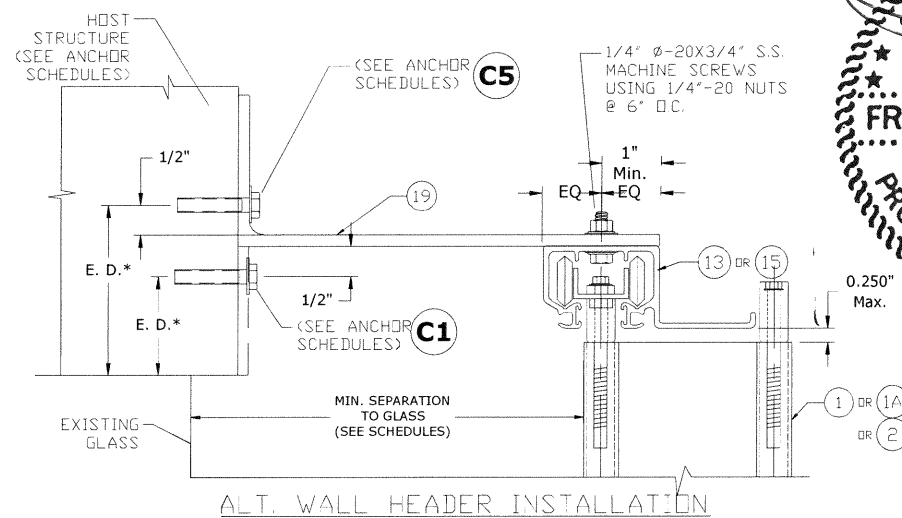
SECTION DETAILS - ALL BLADE OPTIONS



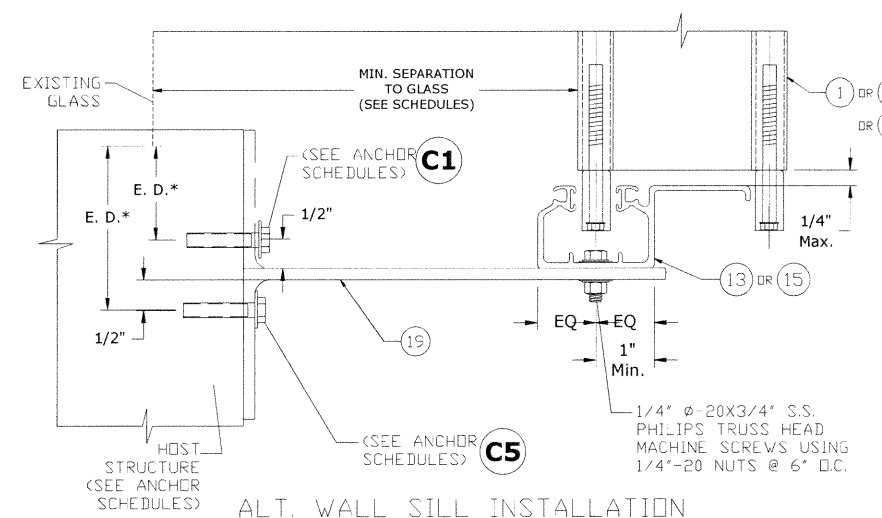
WALL HEADER INSTALLATION
*ONLY APPROVED FOR BLADE 1 OR 1A



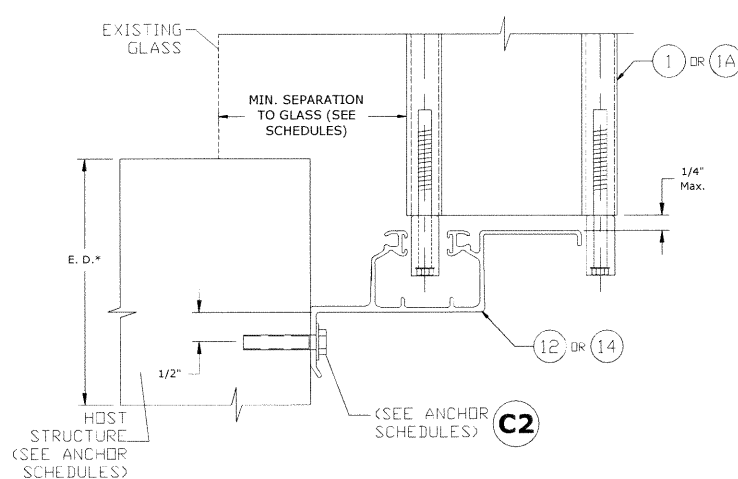
ALT. WALL HEADER INSTALLATION



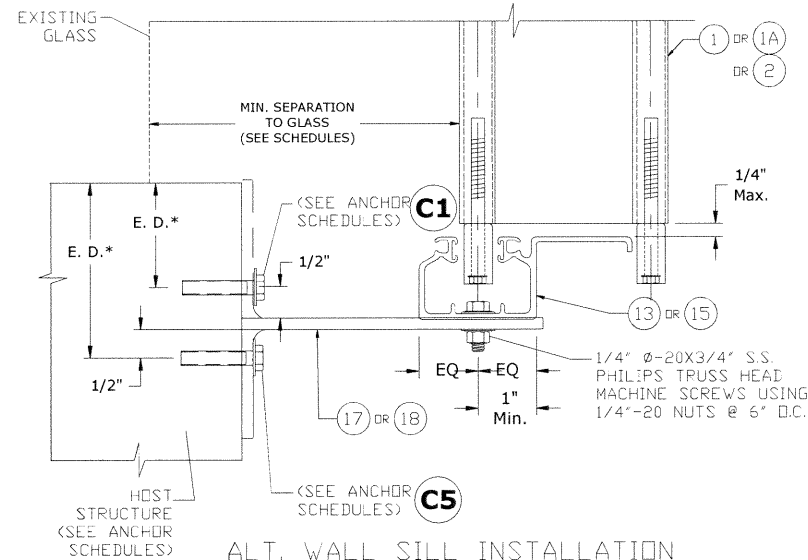
ALT. WALL HEADER INSTALLATION



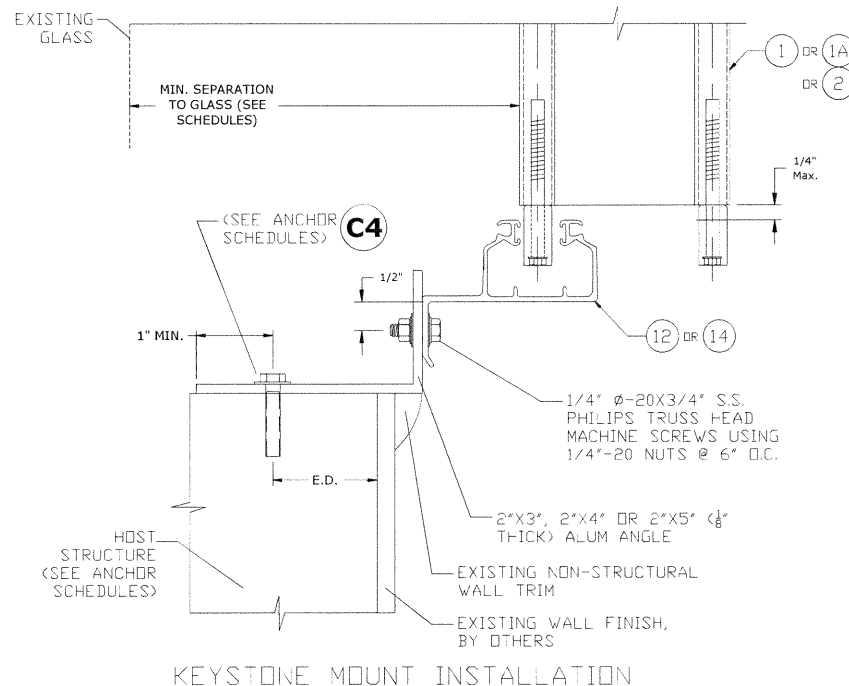
ALT. WALL SILL INSTALLATION



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



ALT. WALL SILL INSTALLATION



KEYSTONE MOUNT INSTALLATION

STATE OF TEXAS
NOV 0 2 2020

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(561) 841-5480

BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DATE	DATE
1/8/2020	1/8/2020
9/02/2020	9/02/2020
10/1/2020	10/1/2020

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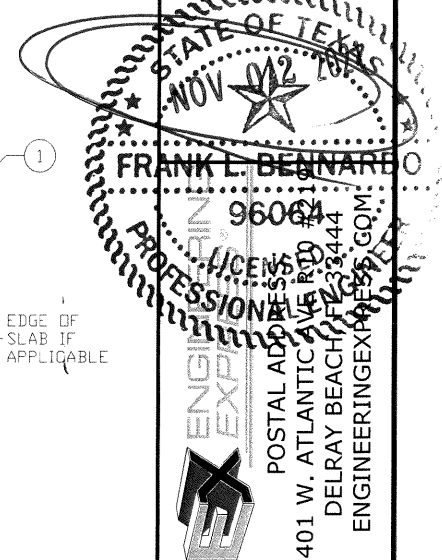
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5 OF 16

SECTION DETAILS - ALL BLADE OPTIONS (CONT'D)

FRANK BERNARDO, PE
PE# 96064 CA# F-11383



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(561) 841-5480

BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DATE	DRWN	CHKD	DATE	DRWN	CHKD
1/8/2020	RWN	IRWN	9/02/2020	CB	IRWN
10/1/2020	RWN	FLB			

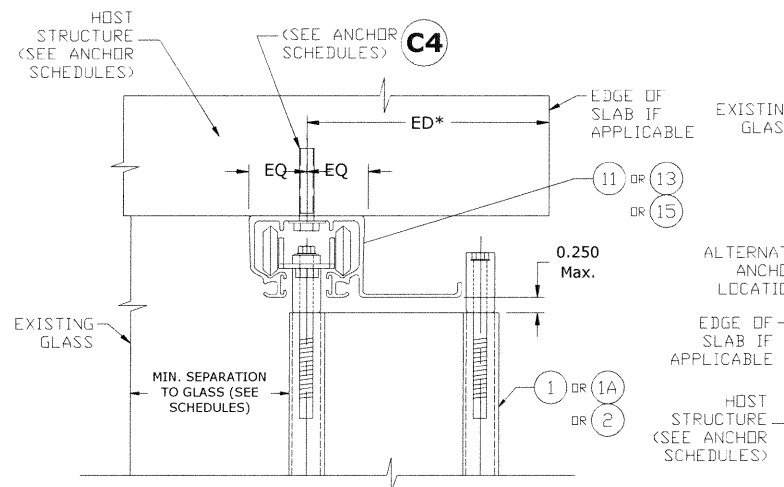
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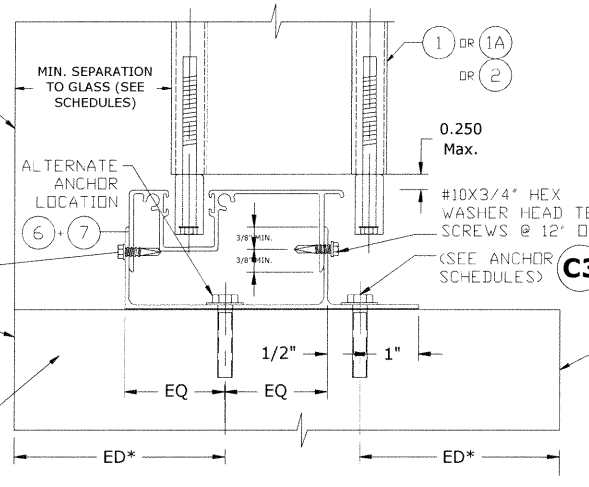
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SCALE: NTS UNLESS NOTED

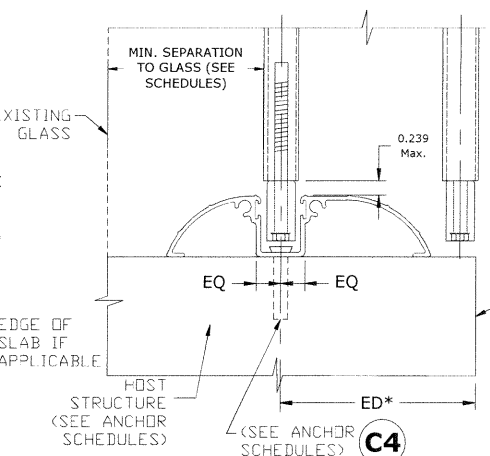
16



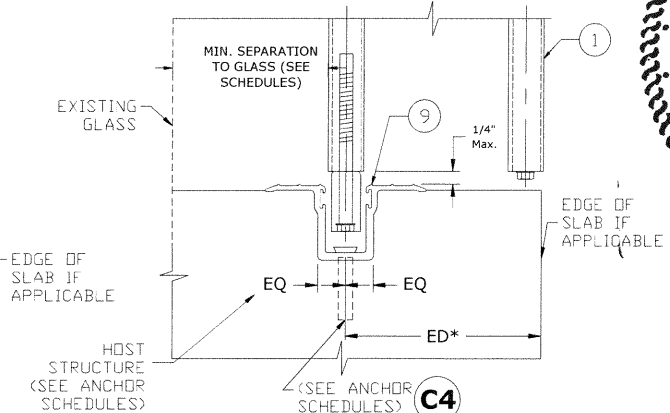
CEILING INSTALLATION



FLOOR INSTALLATION

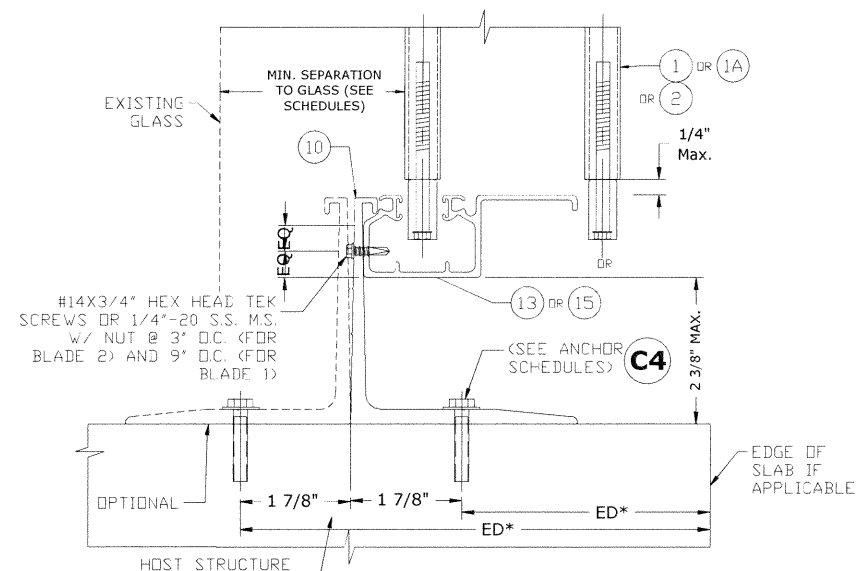


WALK-OVER INSTALLATION

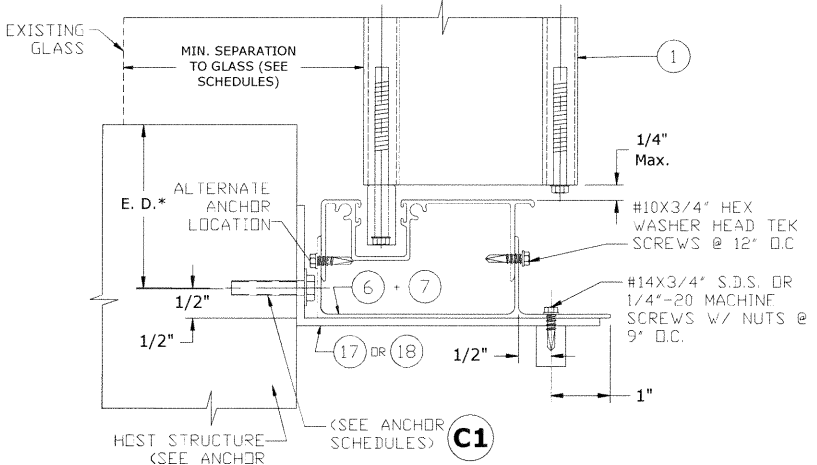


TRENCH INSTALLATION

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

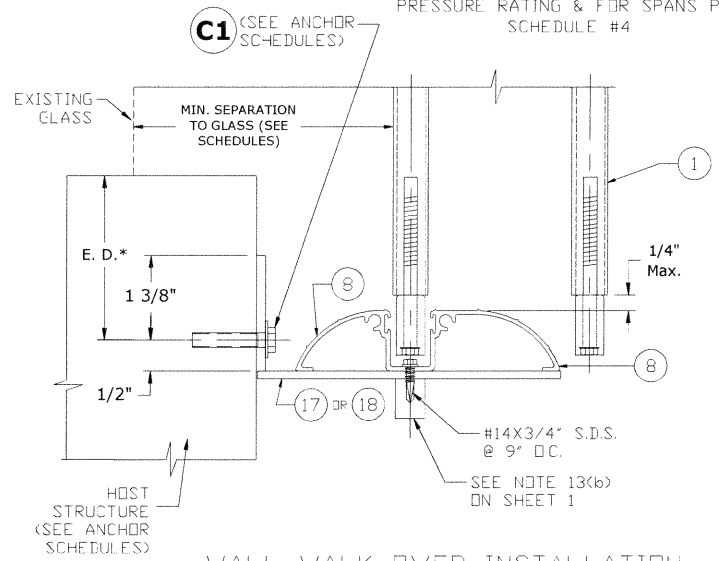


RAINGUARD INSTALLATION †



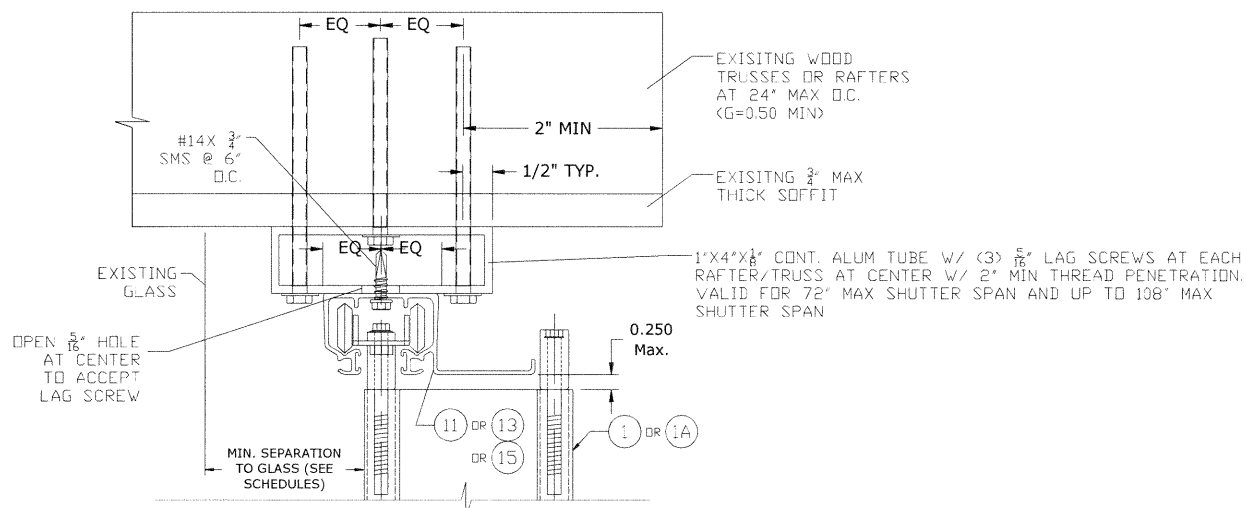
ALT. RAINGUARD INSTALLATION

*ONLY APPROVED FOR BLADE 1 OR 1A



WALL WALK-OVER INSTALLATION

*ONLY APPROVED FOR BLADE 1 OR 1A



CEILING INSTALLATION (TO WOOD TRUSSES/RAFTERS)

NOTE:
THIS INSTALLATION SHALL BE
REMOVED WHEN PERFORMED
ADJACENT TO AN OPERABLE
EXIT OR ENTRANCE

HV BLADE 1 - SECTION DETAILS

FRANK BENNARDO, PE
PE# 96064 CA# F-11383



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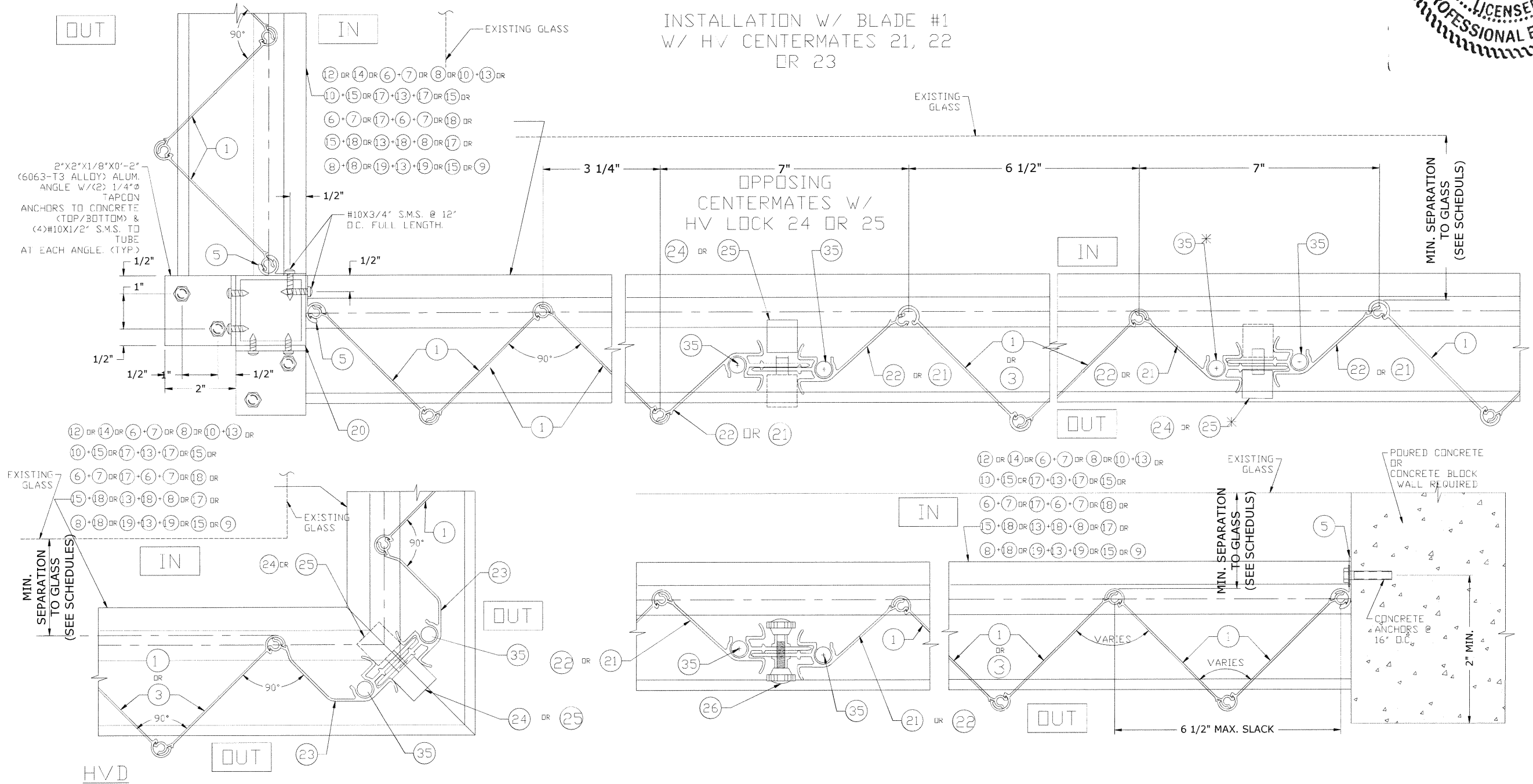
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CB/IRWN	9/02/2020
IRWN/FLB	10/12/2020

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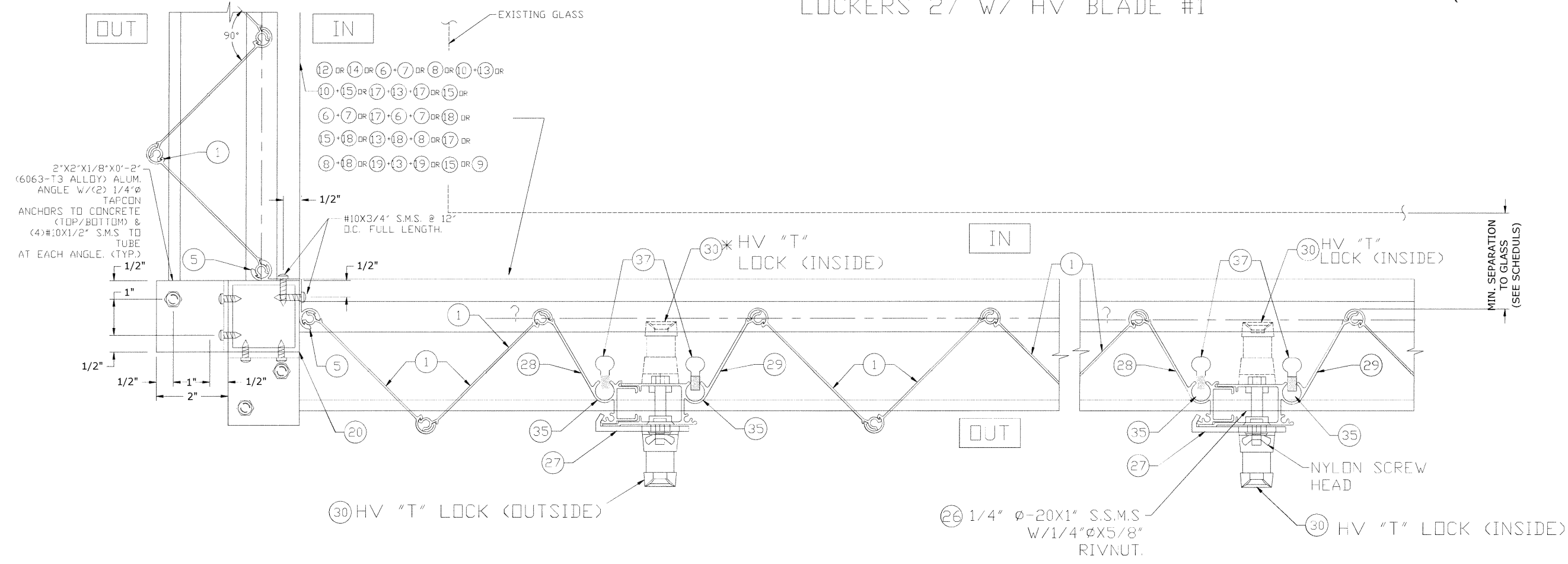
7 OF 16



HVD

HV BLADE 1 - SECTION DETAILS (CONT'D)

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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PE# 96064 CA# F-11383

STATE OF TEXAS
NOV 2021

FRANK L. BENNARDO
96064
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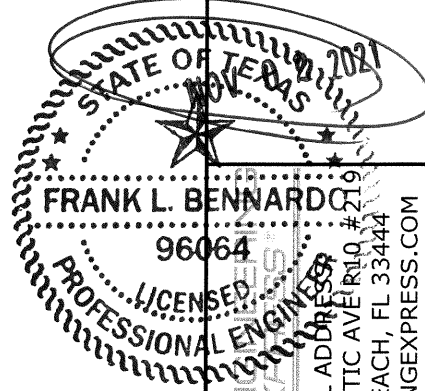
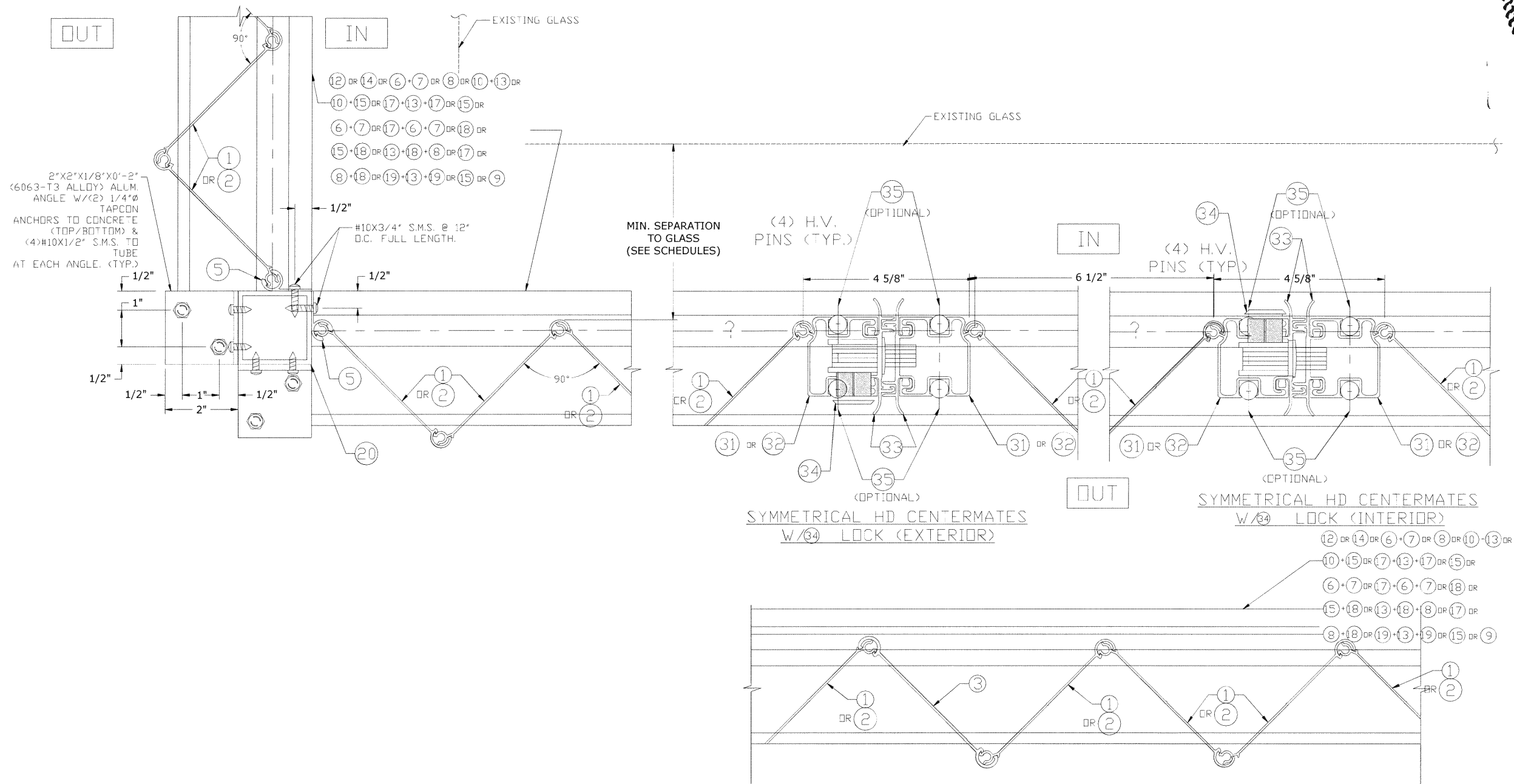
BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE
RWN	IRWN	1/8/2020
CCB	IRWN	5/02/2020
RWN	FLB	10/12/2021

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HV BLADE 1 OR 2 - SECTION DETAILS

INSTALLATION W/ HV BLADE #1, 1A OR 2 W/ HD CENTERMATES 31, 32 OR 33



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 96064
 LICENSED
 PROFESSIONAL ENGINEER
 EX-1000
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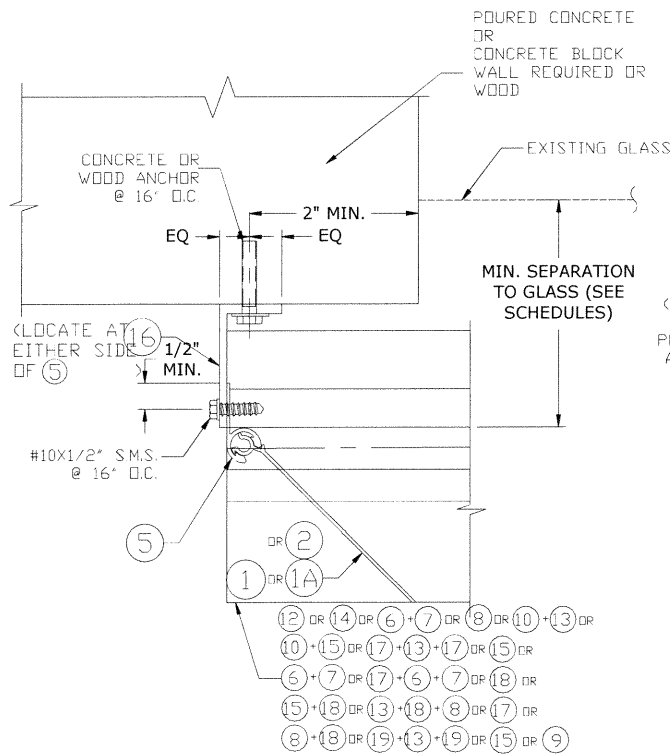
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 BERTHA HV ACCORDION SHUTTER
 HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
 TEXAS DEPARTMENT OF INSURANCE

REMARKS	DATE	DRWN	CHKD
INITISSUE	1/8/2020	RVN	RVN
2020 FBC	5/02/2020	CCB	RVN
TDI	10/1/2020	RVN	FLB

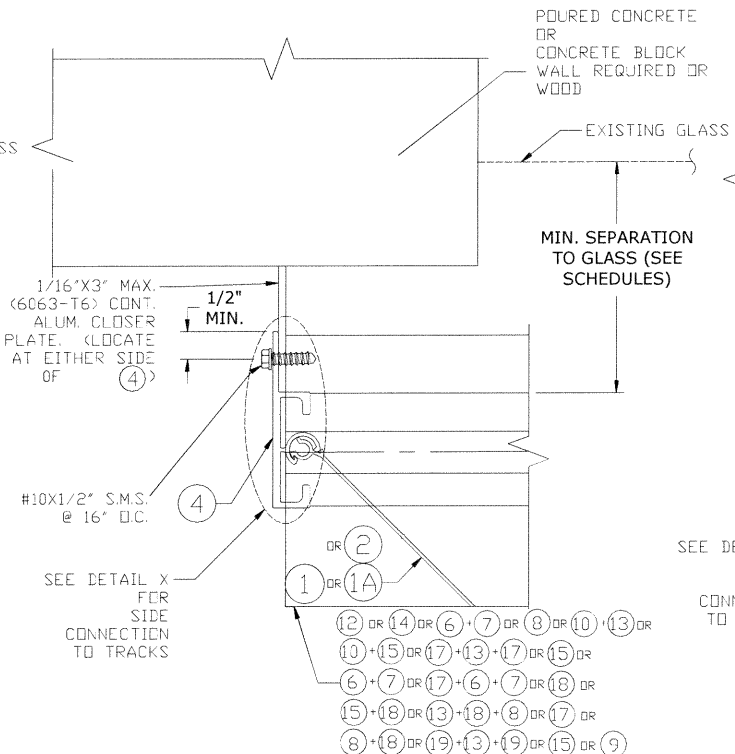
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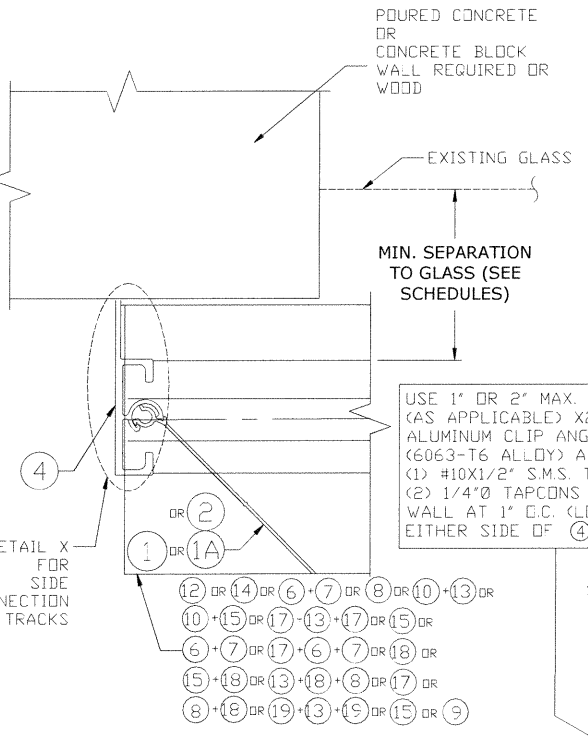
END CONNECTION DETAILS (ALL BLADE OPTIONS)



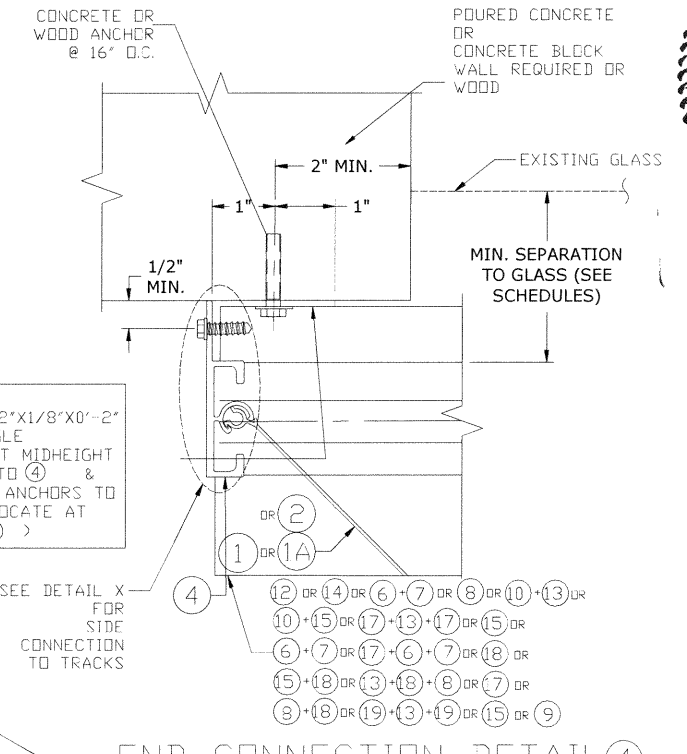
END CONNECTION DETAIL 1



END CONNECTION DETAIL 2

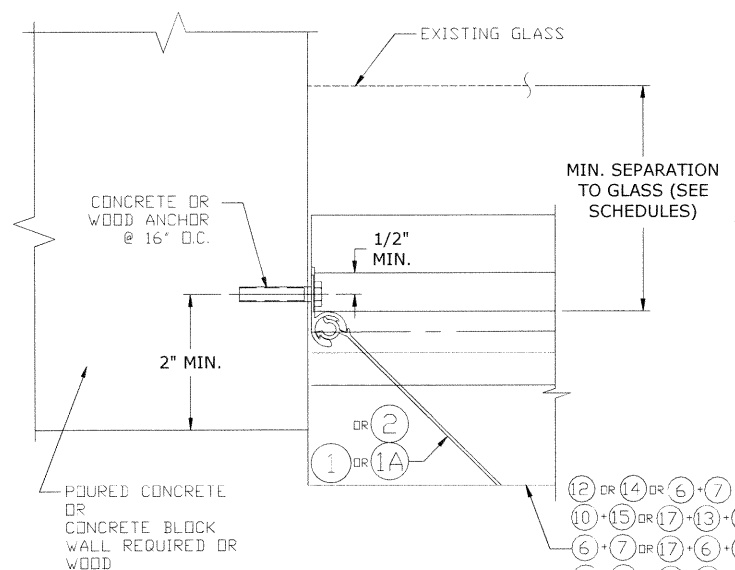


END CONNECTION DETAIL 3

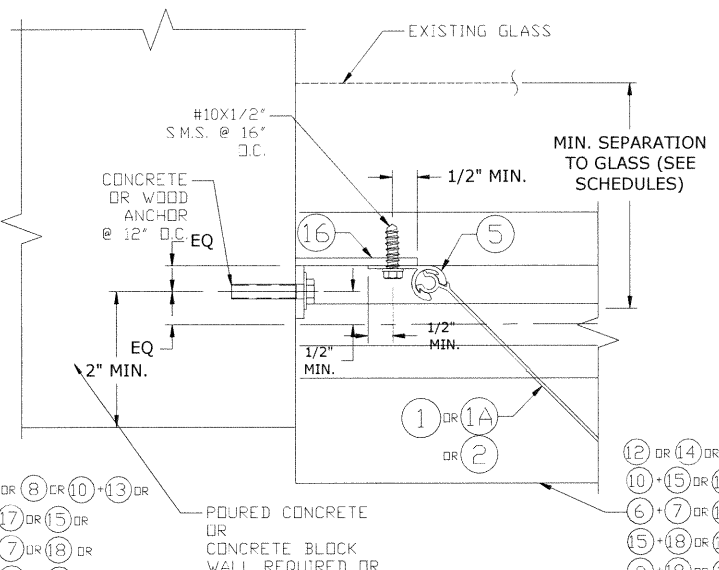


END CONNECTION DETAIL 4

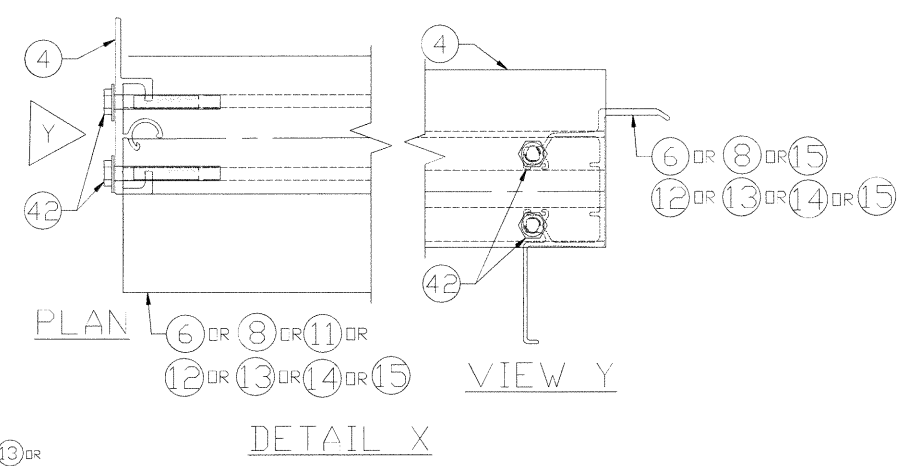
REQUIRED ONLY FOR SPANS GREATER THAN 12'-0"



END CONNECTION DETAIL 5

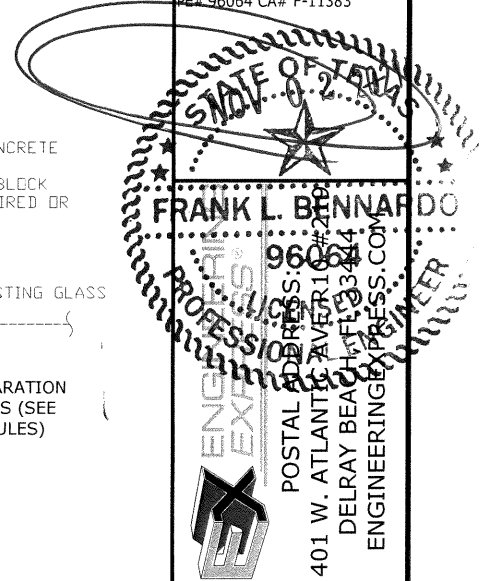


END CONNECTION DETAIL 6



USE 1" OR 2" MAX. (AS APPLICABLE) X2"X1/8"X0'-2" ALUMINUM CLIP ANGLE (6063-T6 ALLOY) AT MIDHEIGHT (1) #10X1/2" S.M.S. TO (4) & (2) 1/4" TAPCONS ANCHORS TO WALL AT 1' O.C. (LOCATE AT EITHER SIDE OF (4))

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BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

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CCB	10/1/2020
IRWN	10/1/2020
FLB	
TDI	

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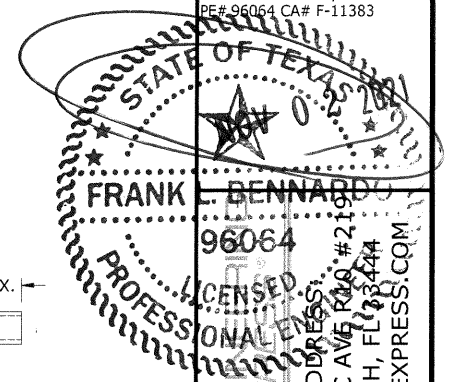
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CONNECTION TO METAL WALL STUDS (BLADE 1 ONLY)

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INSTALLATIONS W/ HV BLADE & HV CENTERMATES INTO METAL STUD WALLS *

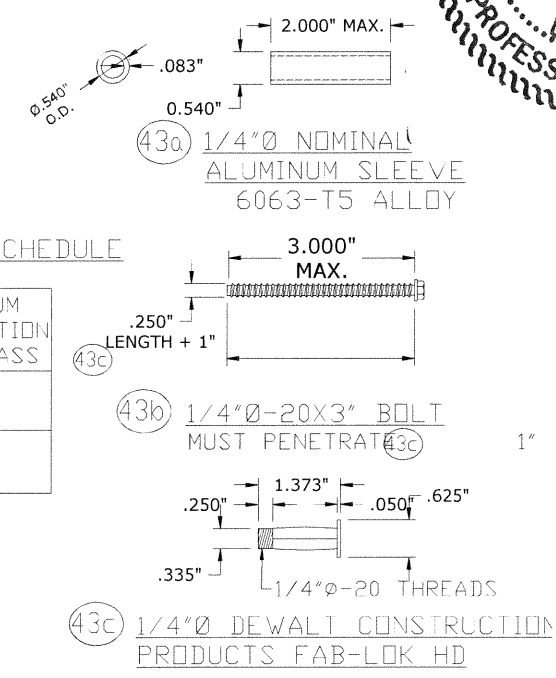
*LIMITATIONS AND CONDITIONS OF USE FOR BERTHA 1 HV BLADE INSTALLATION TO METAL STUD WALLS

1. MAX. A.S.D. DESIGN PRESSURE RATING: +75 p.s.f
2. MAX. SHUTTER SPAN: 84"
3. ALLOWED MOUNTING: (A) ON THIS SHEET
4. ONLY CENTERMATE (21) W/ (24) HV LOCK ARE ALLOWED WITH (21) ARRANGED IN A SYMMETRICAL LAYOUT. USE OF (35) (2) (6" LONG, MINIMUM) MUST ALWAYS BE INCLUDED AT EXTERIOR OR INTERIOR ACCESS SIDE OF CENTERMATES.

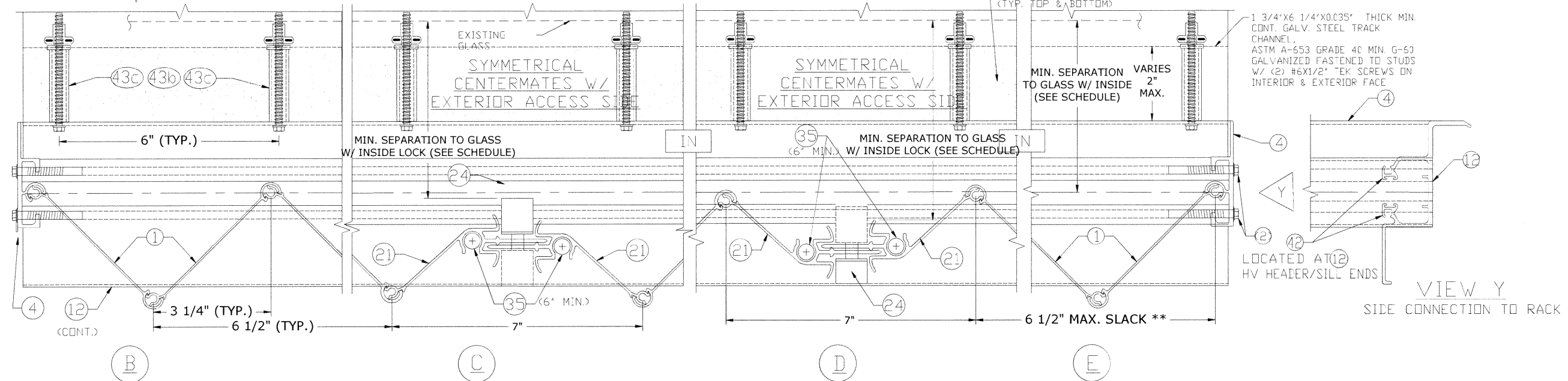
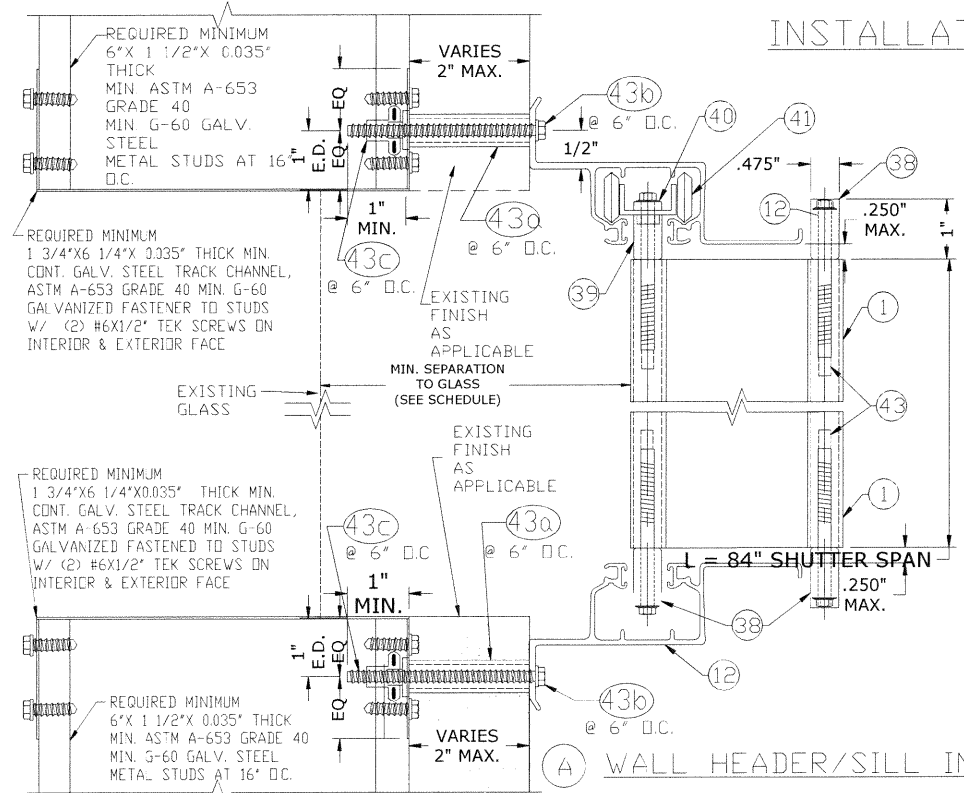
** BLADE SLACK DETAIL E IS VALID FOR CENTERMATE (21) APPLICATION WITH BLADE (1)

SEPARATION GLASS SCHEDULE

WIND ZONE ASTM E-1996	MINIMUM SEPARATION TO GLASS
1 THRU 3	1"
4	4"



COMPONENTS SCALE: 3/8" = 1"



SPAN SCHEDULES (ALL BLADE OPTIONS)

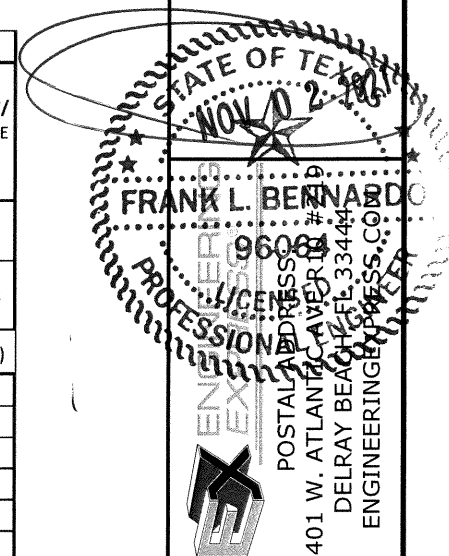
SCHEDULE #1 (BLADE 1)					SCHEDULE #2 (BLADE 1)			SCHEDULE #3 (BLADE 1)			SCHEDULE #4 (BLADE 1)			SCHEDULE #5 (BLADE 2)		
MAXIMUM SHUTTER SPAN FOR INSTALLATIONS W/ SYMMETRICAL CENTERMATES 21 & 22 OR 31 OR 32 W/ ONE HV LOCK 24 OR 25 OR 26 HD LOCK 34 W/ NO LOCKING RODS 35 OR CENTERMATES 28 & 29 OR 29A W/ ONE HV LOCK 30 W/ TWO LOCKING RODS 35 TOP & BOTTOM					MAXIMUM SHUTTER SPAN FOR INSTALLATIONS W/ OPPOSING CENTERMATES, 21 & 22 ONE HV LOCK 24 OR 25 OR 26 W/ NO LOCKING RODS 35			MAXIMUM SHUTTER SPAN FOR INSTALLATIONS W/ SYMMETRICAL CENTERMATES 21 & 22 W/ TWO HV 24 OR 25 OR 26 LOCKS OR TWO LOCKING RODS 35 TOP/BOTTOM W/ ONE HV LOCK 24 OR 25 OR 26			MAXIMUM SHUTTER SPAN FOR INSTALLATIONS W/ SYMMETRICAL CENTERMATES 21 & 22 W/ ONE HV LOCKS 24 OR 25 W/ NO LOCKING RODS 35			MAXIMUM SHUTTER SPAN FOR INSTALLATIONS W/ SYMMETRICAL HD CENTERMATES 31 OR 32 W/ ONE HD 34 LOCK & LOCKING RODS 35		
MAXIMUM DESIGN PRESSURE RATING (+/-)	CONCRETE & WOOD INSALLATIONS				MAXIMUM DESIGN PRESSURE RATING (+/-)	CONCRETE & WOOD INSALLATIONS		MAXIMUM DESIGN PRESSURE RATING (+/-)	CONCRETE & WOOD INSALLATIONS		MAXIMUM DESIGN PRESSURE RATING (+/-)	CONCRETE INSTALLATIONS		MAXIMUM DESIGN PRESSURE RATING (+/-)	POURED CONCRETE INSTALLATIONS	
	WALL MOUNTING		FLOOR/CEILING MOUNTING			WALL MOUNTING & FLOOR/CEILING MOUNTINGS			FLOOR/CEILING MOUNTING			FLOOR/CEILING MOUNTING OR FLOOR/WALL MOUNTING			ALL MOUNTING CONDITIONS	
	MAX SPAN (+)	MAX SPAN (-)	MAX SPAN (+)	MAX SPAN (-)		MAX SPAN (+)	MAX SPAN (-)		MAX SPAN (+)	MAX SPAN (-)		MAX SPAN (+)	MAX SPAN (-)		MAX SPAN (+)	MAX SPAN (-)
30 psf	158"	192"	158"	192"	30 psf	147"	177"	30 psf	157"	192"	30 psf	158"	192"	30 psf	185"	216"
35 psf	152"	178"	152"	178"	35 psf	141"	164"	35 psf	151"	187"	35 psf	152"	178"	35 psf	178"	216"
40 psf	147"	166"	147"	166"	40 psf	136"	153"	40 psf	146"	182"	40 psf	147"	166"	40 psf	172"	214"
45 psf	143"	157"	143"	157"	45 psf	133"	144"	45 psf	141"	171"	45 psf	143"	157"	45 psf	167"	210"
50 psf	139"	149"	139"	149"	50 psf	129"	137"	50 psf	138"	163"	50 psf	139"	149"	50 psf	162"	204"
55 psf	136"	142"	136"	142"	55 psf	126"	131"	55 psf	135"	155"	55 psf	134"	142"	55 psf	159"	202"
60 psf	133"	136"	132"	136"	60 psf	123"	125"	60 psf	132"	148"	60 psf	122"	131"	60 psf	155"	194"
65 psf	120"	120"	127"	120"	65 psf	120"	120"	65 psf	128"	143"	65 psf	113"	121"	65 psf	152"	186"
70 psf	126"	126"	122"	126"	70 psf	117"	117"	70 psf	127"	138"	70 psf	105"	112"	70 psf	150"	179"
75 psf	121"	121"	118"	121"	75 psf	112"	112"	75 psf	124"	133"	75 psf	-	105"	75 psf	147"	173"
80 psf	118"	117"	115"	118"	80 psf	108"	108"	80 psf	120"	129"				80 psf	144"	168"
85 psf	114"	114"	111"	114"	85 psf	105"	105"	85 psf	117"	125"				85 psf	142"	163"
90 psf	111"	111"	108"	111"	90 psf	102"	102"	90 psf	113"	121"				90 psf	138"	158"
95 psf	108"	105"	105"	108"	95 psf	99"	99"	95 psf	110"	118"				95 psf	135"	154"
100 psf	105"	100"	102"	105"	100 psf	97"	97"	100 psf	108"	115"				100 psf	126"	150"
105 psf	103"	95"	100"	100"	105 psf	95"	95"	105 psf	105"	112"				105 psf	120"	146"
110 psf	100"	91"	98"	95"	110 psf	92"	91"	110 psf	103"	110"				110 psf	114"	143"
115 psf	98"	87"	96"	91"	115 psf	90"	87"	115 psf	100"	107"				115 psf	109"	140"
120 psf	96"	83"	94"	88"	120 psf	88"	83"	120 psf	98"	105"				120 psf	105"	137"
125 psf	94"	80"	92"	84"	125 psf	87"	80"	125 psf	96"	101"				125 psf	-	134"
130 psf	92"	77"	90"	81"	130 psf	85"	77"	130 psf	94"	97"				130 psf	-	131"
135 psf	91"	74"	88"	78"	135 psf	83"	74"	135 psf	93"	93"				135 psf	-	129"
140 psf	89"	71"	87"	75"	140 psf	82"	71"	140 psf	91"	90"				140 psf	-	126"
145 psf	87"	69"	85"	72"	145 psf	80"	69"	145 psf	89"	87"				145 psf	-	124"
150 psf	86"	67"	84"	70"	150 psf	79"	67"	150 psf	88"	84"				150 psf	-	122"
155 psf	84"	65"	82"	68"	155 psf	78"	65"	155 psf	86"	81"				155 psf	-	120"
160 psf	83"	62"	81"	66"	160 psf	77"	62"	160 psf	85"	79"				160 psf	-	118"
165 psf	82"	61"	80"	64"	165 psf	75"	61"	165 psf	84"	76"				165 psf	-	117"
170 psf	81"	59"	79"	62"	170 psf	74"	59"	170 psf	83"	74"				170 psf	-	115"
175 psf	79"	57"	77"	60"	175 psf	73"	57"	175 psf	81"	72"				175 psf	-	113"
180 psf	78"	56"	76"	58"	180 psf	72"	56"	180 psf	80"	70"				180 psf	-	112"
185 psf	77"	54"	75"	57"	185 psf	71"	54"	185 psf	79"	68"				185 psf	-	110"
190 psf	76"	53"	74"	55"	190 psf	70"	53"	190 psf	78"	66"				190 psf	-	108"
195 psf	75"	51"	73"	54"	195 psf	69"	51"	195 psf	77"	65"				195 psf	-	105"
200 psf	74"	50"	72"	53"	200 psf	69"	50"	200 psf	76"	63"						
205 psf	72"	49"	72"	51"	205 psf	68"	49"	205 psf	75"	61"						

SCHEDULE 1-5 NOTES:
 1. INSTALLATIONS TO WOOD HOST SHALL BE LIMITED TO 105 psf.
 2. H.V. CORNER CENTERMATE #3 MAY BE USED AT ALL MOUNTING INSTALLATIONS AS DESCRIBED IN THE SECTION DETAILS

SCHEDULE #6 (BLADE 1 - GLASS SEPARATION)		
MINIMUM GLASS SEPARATION FOR SHUTTERS W/ ONE LOCK WITHOUT LOCKING RODS		
SHUTTER SPAN	W/ SYMMETRICAL CENTERMATES	W/ OPPOSING CENTERMATES
UP TO 105"	3.5"	4"
> 105"	4"	4"
MINIMUM GLASS SEPARATION FOR SHUTTERS W/ ONE LOCK AND TWO LOCKING RODS OR ONLY TWO LOCKS		
SHUTTER SPAN	W/ SYMMETRICAL CENTERMATES	W/ OPPOSING CENTERMATES
UP TO 105"	3"	3.25"
> 105"	3.25"	3.25"

SCHEDULE 6 NOTES:
 1. FOR BASIC PROTECTION, GLASS SEPARATION IS NOT REQUIRED.
 2. SHUTTERS MAY BE USED IN ESSENTIAL FACILITIES AT HEIGHTS ABOVE 30 FEET ABOVE GRADE IN WIND ZONE 3 AND SHALL ADHERE TO THE GLASS SEPARATION REQUIREMENTS IN THIS SCHEDULE.
 3. SHUTTERS MAY BE USED IN ESSENTIAL FACILITIES AT ANY HEIGHT IN WIND ZONE 2 AND SHALL ADHERE TO THE GLASS SEPARATION REQUIREMENTS IN THIS SCHEDULE

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BERTHA HV ACCORDION SHUTTER
 HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
 TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE	1/8/2020
RVN	RVN	RVN	RVN
CCB	RVN	FLB	10/12/2020
TDI			

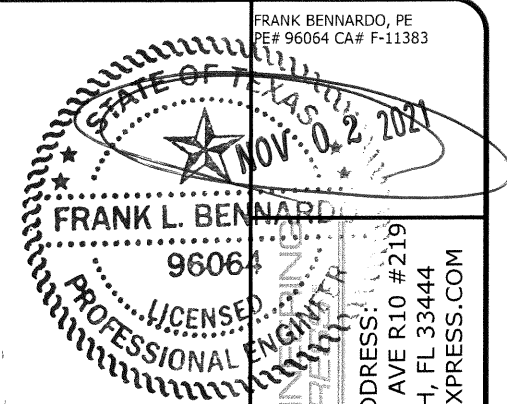
20-31270
 SCALE: NTS UNLESS NOTED

ANCHOR SCHEDULES - ALL BLADE OPTIONS

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 ULTRACON 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"	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"	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"	5.5"	5.0"	7.5"	6.0"	5.0"	3.5"	3.0"	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"	2.5"	2.0"	3.0"	3.0"	2.5"	1.5"	1.0"	1.5"	
		150	9.5"	8.5"	4.0"	3.5"	5.0"	6.5"	5.5"	3.0"	3.0"	3.5"	5.0"	4.0"	2.5"	2.0"	3.0"	3.0"	2.5"	1.5"	1.0"	1.5"	
		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"			3.5"	5.0"	4.0"	2.5"	2.0"	3.0"	3.0"	2.5"	1.5"	1.0"	1.5"	
		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"	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"
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"	3.5"	3.0"	4.0"	3.0"	2.5"	1.5"	1.0"	1.5"	
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"	3.0"				
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"	2.5"	3.0"	2.5"	1.5"	1.0"	1.0"	1.0"	
205	8.5"			7.0"	4.5"	3.5"	4.5"	6.0"	5.0"	3.0"		3.0"	5.0"	3.5"			2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	
CONCRETE	1/4" ITW TAPCON OR ELCO ULTRACON WITH 1-3/4" EMBED (3192psi MIN CONC)			48	16.0"	16.0"	7.5"	7.5"	16.0"	16.0"	16.0"	5.5"	5.0"	16.0"	16.0"	16.0"	4.0"	4.0"	16.0"	11.5"	10.5"		6.5"
				62	16.0"	16.0"	5.5"	5.5"	16.0"	16.0"	16.0"	4.0"	3.5"	15.5"	15.5"	15.5"	3.0"	3.0"	9.5"	8.0"	7.0"		4.5"
		72	16.0"	16.0"	4.5"	4.5"	16.0"	16.0"	16.0"	3.5"	3.0"	11.0"	12.5"	12.0"	2.5"	2.5"	7.0"	7.0"	5.5"		3.5"		
		110	14.0"	14.0"	3.0"		8.5"	9.5"	8.5"			5.0"	7.0"	6.0"	1.5"	1.5"	3.5"	4.0"	3.0"				
		135	10.5"	9.5"			6.0"	7.5"	6.0"			3.5"	5.5"	4.5"	1.0"	1.0"	3.0"	3.0"	2.5"				
		150	9.5"	8.0"			5.0"	6.5"	5.5"			3.0"	5.0"	4.0"	1.0"	1.0"	3.0"	3.0"	2.5"				
		180	14.0"	14.0"	3.0"		8.5"	9.5"	8.5"			5.0"	7.0"	6.0"	1.5"	1.5"	3.5"	4.0"	3.0"				
		205	6.5"	5.0"			3.0"	4.5"	3.5"			1.0"	1.0"	2.0"	3.5"	2.5"	0.5"	0.5"	1.5"	2.0"	1.5"	1.0"	
		CONCRETE	1/4" ALL-POINTS SOLID-SET ANCHOR W/ 7/8" EMBED & 1/4-20 SS MACHINE SCREW (3000psi MIN CONC)	48	16.0"	16.0"	9.5"	9.5"	16.0"	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	16.0"	5.0"	4.5"	12.0"	8.0"	7.5"	3.0"	4.5"
				62	16.0"	16.0"	7.0"	6.5"	16.0"	15.0"	15.5"	5.0"	4.5"	11.0"	11.0"	11.0"	3.5"	3.5"	6.5"	6.0"	5.0"		3.0"
72	16.0"			16.0"	5.5"	5.5"	16.0"	12.0"	13.0"	4.0"	3.5"	7.5"	9.0"	8.5"	3.0"	3.0"	5.0"	5.0"	4.0"		1.5"	1.5"	
110	10.0"			10.0"	3.5"	3.0"	6.0"	6.5"	6.0"			3.5"	5.0"	4.0"	3.0"	3.0"	5.0"	3.0"	3.0"				
135	7.5"			7.0"			4.0"	5.0"	4.5"			1.5"	2.5"	4.0"	3.0"	1.5"	1.0"	2.0"	1.5"	1.0"	0.5"	1.0"	
150	6.5"			5.5"			3.5"	4.5"	3.5"			1.5"	1.5"	2.5"	3.5"	2.5"	1.5"	1.0"	1.5"	0.5"	0.5"	1.0"	
180	10.0"			10.0"	3.5"	3.0"	6.0"	6.5"	6.0"			2.5"	2.0"	3.5"	5.0"	4.0"	2.0"	1.5"	2.5"	3.0"	2.0"	1.0"	
205	4.5"			3.5"			3.0"	2.0"	1.0"	1.0"	1.5"	2.5"	2.0"	1.0"	0.5"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	
CONCRETE	1/4" ALL-POINTS SOLID-SET ANCHOR W/ 7/8" EMBED & 1/4-20 SS MACHINE SCREW (3000psi MIN CONC)			48	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	15.5"	14.5"	16.0"	16.0"	16.0"	11.5"	10.5"	16.0"	13.5"	12.5"	6.5"	5.5"	7.5"
				62	16.0"	16.0"	16.0"	15.0"	16.0"	16.0"	16.0"	11.0"	10.0"	16.0"	16.0"	16.0"	8.5"	7.5"	11.0"	10.0"	8.5"	5.0"	4.0"
		72	16.0"	16.0"	13.0"	12.0"	16.0"	16.0"	16.0"	9.0"	8.0"	13.0"	14.5"	14.0"	7.0"	6.0"	8.5"	8.0"	6.5"	4.0"	3.5"	4.0"	
		110	16.0"	16.0"	8.0"	7.0"	10.0"	11.5"	10.0"	5.5"	5.0"	6.0"	8.5"	7.0"	4.5"	3.5"	4.5"	5.0"	4.0"				
		135	12.5"	11.5"	6.0"	5.5"	7.0"	9.0"	7.5"	4.5"	3.5"	4.5"	6.5"	5.5"	3.5"	3.0"	3.5"	4.0"	3.0"				
		150	11.0"	9.5"	5.5"	4.5"	6.0"	7.5"	6.5"	4.0"	3.5"	4.0"	6.0"	4.5"	3.0"		3.0"	3.5"					
		180	16.0"	16.0"	8.0"	7.0"	10.0"	11.5"	10.0"	5.5"	5.0"	6.0"	8.5"	7.0"	4.5"	3.5"	4.5"	5.0"	4.0"				
		205	7.5"	6.0"	4.0"	3.0"	3.5"	5.5"	4.0"			2.5"	2.0"	2.5"	4.0"	3.0"	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	
		CONCRETE	5/16" ITW TAPCON XL WITH 1-3/4" EMBED (2899psi MIN CONC)	48	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.5"	11.5"	16.0"	12.5"	11.0"	6.0"	5.5"	6.5"	
				62	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.0"	11.0"	16.0"	16.0"	16.0"	9.0"	8.0"	12.0"	9.0"	7.5"	4.5"	4.0"
72	16.0"			16.0"	14.5"	13.0"	16.0"	16.0"	16.0"	10.0"	9.0"	14.0"	16.0"	15.0"	7.5"	6.5"	9.0"	7.5"	6.0"				
110	16.0"			16.0"	8.5"	7.5"	10.5"	12.0"	11.0"	6.0"	5.0"	6.5"	9.0"	7.5"	4.5"	4.0"	4.5"	4.5"					
135	13.5"			12.5"	6.5"	5.5"	7.5"	9.5"	8.0"	5.0"	4.0"	5.0"	7.0"	6.0"	3.5"	3.0"	3.5"	3.5"	2.0"	1.5"	1.5"		
150	12.0"			10.5"	6.0"	5.0"	6.5"	8.5"	7.0"	4.0"	3.5"	4.0"	6.5"	5.0"	3.5"	3.0"	3.0"	3.0"	2.5"	1.5"	1.5"		
180	16.0"			16.0"	8.5"	7.5"	10.5"	12.0"	11.0"	6.0"	5.0"	6.5"	9.0"	7.5"	4.5"	4.0"	4.5"	4.5"	3.5"	2.5"	2.0"	2.0"	
205	8.0"			6.5"	4.0"		4.0"	5.5"	4.5"			2.5"	2.5"	4.5"			2.0"	2.0"	1.5"	1.0"	1.0"		
CONCRETE	5/16" ELCO/DEWALT ULTRACON WITH 1-3/4" EMBED (3500psi 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"	15.5"	14.0"	16.0"	14.0"	12.5"	7.5"	6.5"	7.5"
				62	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.5"	13.0"	16.0"	16.0"	16.0"	11.0"	9.5"	13.5"	10.5"	8.5"	5.5"	4.5"
		72	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	12.0"	10.5"	16.0"	16.0"	16.0"	9.5"	8.0"	10.5"	8.5"	7.0"	4.5"	4.0"	4.5"	
		110	16.0"	16.0"	10.5"	9.0"	12.0"	14.0"	12.0"	7.5"	6.5"	7.5"	10.5"	9.0"	5.5"	5.0"	5.5"	5.5"	4.0"				
		135	15.5"	14.0"	8.0"	7.0"	8.5"	10.5"	9.0"	6.0"	5.0"	5.5"	8.0"	6.5"	4.5"	4.0"	4.0"	4.0"	3.0"				
		150	13.5"	12.0"	7.0"	6.0"	7.0"	9.5"	8.0"	5.0"	4.5"	4.5"	7.5"	6.5"	4.0"	3.5"	4.0"	4.0"	3.0"				
		180	10.5"	9.0"	6.0"	5.0"	5.5"	7.5"	6.0"	4.0"		3.5"	6.0"	4.5"	3.0"	2.5"	3.0"	3.0"	2.5"	1.5"	1.5"		
		205	9.0"	7.5"	5.0"	4.0"	4.5"	6.5"	5.0"			4.5"	3.0"	3.0"	5.0"	4.0"	3.0"	2.5"	2.0"	1.5"	1.0"	1.0"	

ANCHOR NOTES:

- 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.
 - 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
 - SEE MOUNTING SECTION DETAILS FOR IDENTIFICATION OF CONNECTION TYPE.
 - 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.
 - ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
 - 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.
 - 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/ 3/8" 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.
 - 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.
 - 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.
- DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE USES.
 DESIGNATES ANCHORS WHICH ARE REMOVABLE BY REMOVING MACHINE SCREW, NUT OR WASHER WINGNUT.
- MINIMUM CONCRETE STRENGTHS ARE AS INDICATED IN ANCHOR SCHEDULE.
 - 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



FRANK L. BENNARDO
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EXPERIENCE

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 TEXAS DEPARTMENT OF INSURANCE

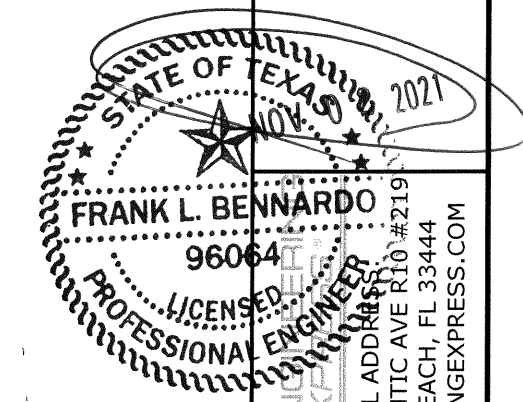
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REMARKS
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 2020 FBC
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ANCHOR SCHEDULES - ALL BLADE OPTIONS (CONT'D)

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TEXAS DEPARTMENT OF INSURANCE

REMARKS	DRWN	CHKD	DATE
INITIAL ISSUE	RWN	RWN	1/8/2020
2020 FBC	CCB	RWN	9/02/2020
TDI	RWN	FLB	10/12/2021

20-31270
SCALE: NTS UNLESS NOTED
14 OF 16

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"	2.0"	2.0"	5.5"	4.5"	4.5"	1.5"	1.5"	3.0"	2.0"	1.5"	0.5"	0.5"	1.0"	
		62	6.0"	6.0"	2.0"	2.0"	6.0"	4.0"	4.5"	1.5"	1.5"	3.0"	3.0"	1.0"	1.0"	1.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	
		72	5.0"	5.0"	2.0"	1.5"	4.5"	3.5"	3.5"	1.0"	1.0"	2.0"	2.5"	2.0"	1.0"	0.5"	0.5"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"
		110	2.5"	2.5"	1.0"	1.0"	2.5"	1.5"	1.5"	0.5"	0.5"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
		135	2.0"	2.0"	0.5"	0.5"	1.0"	1.5"	1.0"	0.5"	0.5"	1.0"	0.5"	0.5"	0.0"	0.5"	0.5"	0.0"	0.5"	0.0"	0.0"	0.0"	0.0"
		150	1.5"	1.5"	0.5"	0.5"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	1.0"	0.5"	0.5"	0.0"	0.5"	0.0"	0.5"	0.0"	0.0"	0.0"	0.0"
180	2.5"	2.5"	1.0"	1.0"	1.5"	1.5"	0.5"	0.5"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"		
205	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	0.0"	0.0"	0.0"	0.0"	0.0"	0.0"		
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"	2.5"	5.0"	3.0"	2.5"	1.5"	1.0"	1.5"	
		62	9.0"	9.0"	4.5"	4.0"	9.0"	6.5"	6.5"	3.0"	2.5"	4.5"	4.5"	4.5"	2.0"	2.0"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	
		72	7.5"	7.5"	3.5"	3.0"	6.5"	5.0"	5.5"	2.5"	2.0"	3.0"	3.5"	3.5"	2.0"	1.5"	2.0"	1.5"	1.5"	1.0"	0.5"	0.5"	0.5"
		110	4.0"	4.0"	2.5"	2.5"	4.0"	2.5"	2.5"	1.5"	1.0"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"
		135	3.0"	3.0"	1.5"	1.5"	2.5"	2.0"	1.5"	1.0"	1.0"	1.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
		150	2.5"	2.5"	1.5"	1.0"	1.5"	2.0"	1.5"	1.0"	0.5"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
180	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	
205	1.5"	1.5"	1.0"	0.5"	1.0"	1.0"	0.5"	0.5"	0.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	

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"	2.5"	4.5"	2.5"	2.0"	1.5"	1.0"	1.5"	
		62	8.0"	8.0"	4.5"	4.0"	8.0"	5.5"	6.0"	3.0"	2.5"	4.0"	4.0"	4.0"	2.0"	2.0"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	
		72	7.0"	7.0"	3.5"	3.0"	6.0"	4.5"	5.0"	2.5"	2.0"	3.0"	3.5"	3.0"	1.5"	1.5"	2.0"	2.5"	1.0"	1.0"	0.5"	0.5"	0.5"
		110	3.5"	3.5"	2.0"	2.0"	3.0"	2.5"	2.0"	1.5"	1.0"	2.0"	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"
		135	3.0"	2.5"	1.5"	1.5"	2.0"	1.5"	1.0"	1.0"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
		150	2.5"	2.0"	1.5"	1.0"	1.0"	1.5"	1.5"	0.5"	0.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
180	3.5"	3.5"	2.0"	1.5"	2.0"	2.0"	1.5"	1.0"	1.0"	1.5"	1.0"	1.5"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	
205	1.5"	1.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	
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"	2.0"	1.5"	2.0"	
		62	11.0"	11.0"	6.0"	5.5"	11.0"	8.0"	8.0"	4.0"	3.5"	8.5"	5.5"	6.0"	3.0"	2.5"	3.5"	2.5"	2.0"	1.5"	1.0"	1.0"	
		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"	2.5"	2.0"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	
		110	5.0"	5.0"	3.0"	2.5"	3.0"	3.5"	3.0"	2.0"	1.5"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"
		135	4.0"	3.5"	2.0"	1.5"	2.0"	2.0"	1.5"	1.0"	1.0"	1.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
		150	3.5"	3.0"	2.0"	1.5"	1.5"	2.5"	2.0"	1.5"	1.0"	1.0"	1.5"	1.5"	1.0"	0.5"	0.5"	1.0"	0.5"	0.5"	0.5"	0.0"	0.0"
180	2.5"	2.0"	1.5"	1.0"	1.5"	2.0"	1.5"	1.0"	1.0"	1.0"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	
205	2.0"	2.0"	1.0"	1.0"	1.0"	1.5"	1.0"	1.0"	0.5"	0.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	

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 CONG. 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"	2.5"	6.0"	3.5"	3.0"	1.5"	1.0"	1.5"	
		62	10.5"	10.5"	4.0"	4.0"	10.5"	7.5"	8.0"	2.5"	2.5"	5.5"	5.5"	5.5"	2.0"	2.0"	3.0"	2.5"	2.0"	1.0"	1.0"	1.0"	
		72	9.0"	9.0"	3.0"	3.0"	8.0"	6.0"	6.5"	2.0"	2.0"	4.0"	4.5"	4.0"	1.5"	1.5"	2.5"	2.0"	1.5"	1.0"	0.5"	0.5"	0.5"
		110	5.0"	5.0"	2.0"	2.0"	3.0"	3.5"	3.0"	1.5"	1.0"	2.5"	2.0"	1.5"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"
		135	3.5"	3.5"	1.5"	1.0"	2.0"	2.0"	1.0"	1.0"	1.0"	2.0"	1.5"	0.5"	0.5"	1.0"	1.0"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
		150	3.0"	3.0"	1.0"	1.0"	1.5"	2.0"	1.0"	0.5"	0.5"	1.0"	1.5"	1.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"
180	5.0"	5.0"	2.0"	1.5"	3.0"	3.5"	3.0"	1.5"	1.0"	1.5"	2.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	
205	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	

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 CONG. 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"	2.5"	2.0"	3.0"	
		62	16.0"	16.0"	7.0"	6.5"	16.0"	13.0"	13.5"	4.5"	4.5"	9.5"	9.5"	9.5"	3.5"	3.0"	6.0"	4.5"	3.5"	1.5"	1.5"	2.5"	
		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"	2.5"	4.5"	3.5"	3.0"	1.5"	1.0"	1.5"	1.5"
		110	8.5"	8.5"	3.5"	3.0"	5.0"	6.0"	5.0"	2.5"	2.0"	3.0"	4.5"	3.5"	2.0"	1.5"	2.0"	2.0"	1.5"	1.0"	0.5"	0.5"	1.0"
		135	6.5"	6.0"	2.5"	2.5"	3.5"	4.5"	4.0"	2.0"	1.5"	2.0"	3.5"	2.5"	1.5"	1.0"	1.5"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"
		150	5.5"	5.0"	2.5"	2.0"	3.0"	4.0"	3.0"	1.5"	1.5"	2.0"	3.0"	2.5"	1.0"	1.0"	1.5"	1.5"	1.0"	0.5"	0.5"	0.5"	0.5"
180	8.5"	8.5"	3.5"	3.0"	5.0"	6.0"	5.0"	2.5"	2.0"	3.0"	4.5"	3.5"	2.0"	1.5"	2.0"	2.0"	1.5"	1.0"	0.5"	0.5"	1.0"		
205	1.0"	1.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.5"	0.0"	0.0"	0.0"	0.0"	

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 CONG. 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"	2.5"	2.0"	2.5"	
		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"	3.5"	3.0"	4.5"	3.0"	2.0"	1.5"	1.5"	1.5"	
		72	12.5"	12.5"	6.0"	5.5"	11.0"	8.0"	9.0"	4.0"	3.5"	5.5"	6.0"	5.5"	2.0"	2.5"	3.0"	2.0"	1.5"	1.0"	1.0"	1.0"	1.5"
		110	6.5"	6.5"	2.5"	2.5"	4.0"	4.5"	4.0"	2.5"	2.0"	3.5"	3.0"	2.0"	1.5"	1.5"	1.5"	1.5"	1.0"	1.0"	0.5"	0.5"	0.5"
		135	5.0"	4.5"	2.5"	2.0"	3.5"	3.0"	2.0"	1.5"	1.5"	2.5"	2.0"	1.5"	1.0"	1.0"	1.5"	1.5"	1.0"	0.5"	0		

ANCHOR SCHEDULES - ALL BLADE OPTIONS (CONT'D)

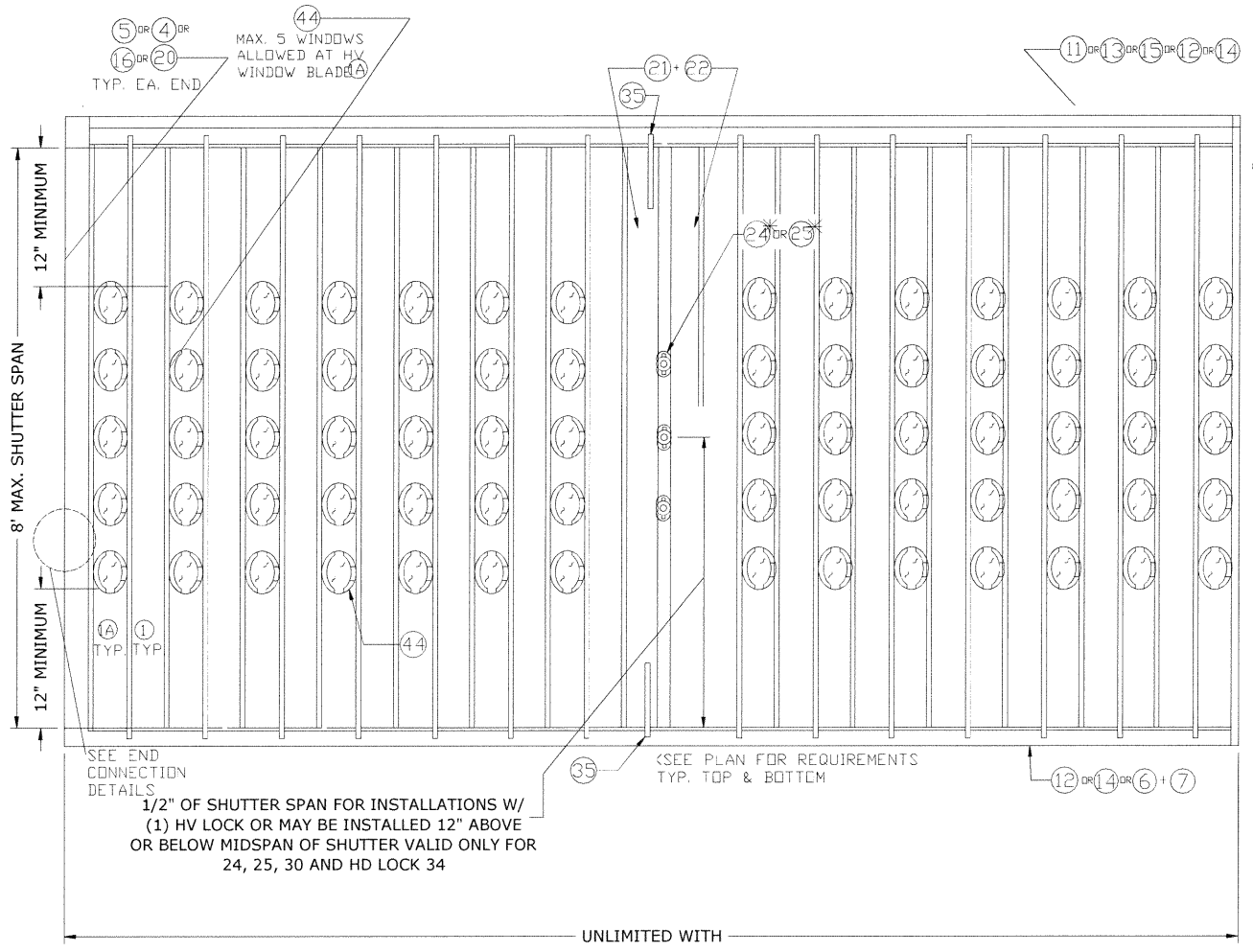
HOST STRUCT.	ANCHOR	LOAD (psf)	2-1/2" MIN EDGE DISTANCE																			
			Spans Up To 6'-0"					Spans Up To 8'-0"					Spans Up To 10'-0"					Spans Up To 18'-0"				
			CONN TYPE					CONN TYPE					CONN TYPE					CONN TYPE				
	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5		
GROUT-FILLED 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"	14.5"	13.5"	16.0"	16.0"	14.5"	7.0"	6.5"	9.0"	
		62	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	16.0"	14.0"	12.5"	16.0"	16.0"	10.5"	9.5"	15.5"	12.0"	10.0"	5.5"	4.5"	6.0"	
		72	16.0"	16.0"	16.0"	15.5"	16.0"	16.0"	16.0"	11.5"	10.5"	16.0"	16.0"	9.0"	8.0"	12.0"	10.0"	8.0"	4.5"	4.0"	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"	10.5"	5.5"	5.0"	6.5"	9.5"	7.5"	4.5"	3.5"	4.5"	5.0"	3.5"			
		150	15.5"	13.5"	7.0"	6.0"	8.0"	12.0"	9.0"	5.0"	4.5"	5.5"	8.5"	6.5"	4.0"	3.5"	4.0"	4.0"	3.0"			
		180	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"	
		205																				
		GROUT-FILLED CONCRETE BLOCK	1/4" ITW TAPCON XL OR DEWALT ULTRACON W/ 1-3/4" MIN. EMBED	48	16.0"	16.0"	13.5"	13.5"	16.0"	16.0"	9.5"	9.0"	16.0"	16.0"	7.0"	6.5"	14.5"	8.5"	7.5"	3.5"	3.0"	4.5"
				62	16.0"	16.0"	9.5"	9.5"	16.0"	16.0"	6.5"	6.0"	13.0"	13.0"	5.0"	4.5"	8.0"	6.0"	5.0"			3.0"
72	16.0"			16.0"	8.0"	7.5"	16.0"	14.5"	5.5"	5.0"	9.5"	10.5"	4.5"	4.0"	6.0"	5.0"	4.0"					
110	12.0"			12.0"	5.0"	4.5"	7.0"	8.0"	7.0"	3.5"	3.0"	4.5"	6.0"	5.0"		3.0"	3.0"					
135	9.0"			8.5"	3.5"	3.5"	5.0"	6.5"	5.5"		3.0"	5.0"	4.0"									
150	8.0"			7.0"	3.5"	3.0"	4.0"	5.5"	4.5"			4.0"	3.5"									
180	6.5"			5.5"			3.0"	4.5"	3.5"			3.5"										
205	5.5"			4.5"				4.0"	3.0"			3.0"										

HOST STRUCT.	ANCHOR	LOAD (psf)	3/4" 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		
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"	8.0"	8.0"	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"	6.0"	6.0"	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"	4.5"	4.0"	13.5"	16.0"	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"	3.5"	3.0"	9.0"	12.0"	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"	6.5"	6.0"	14.0"	11.0"	11.5"	4.5"	4.0"	8.5"	5.0"	4.5"	2.0"	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"			
		82	10.5"	11.0"	4.5"	4.0"	7.5"	7.0"	7.0"	3.0"	3.0"	4.0"	5.0"	4.5"	2.5"	2.0"	3.0"	2.5"	2.0"			
		105	7.5"	7.5"	3.5"	3.0"	4.5"	5.0"	4.5"	2.5"	2.0"	2.5"	3.5"	3.0"		2.0"	2.0"					
		48	16.0"	16.0"	13.0"	13.0"	16.0"	16.0"	9.5"	9.0"	16.0"	16.0"	7.0"	6.5"	16.0"	12.5"	11.0"	3.5"	3.5"	7.0"		
		62	16.0"	16.0"	9.5"	9.5"	16.0"	16.0"	7.0"	6.5"	16.0"	16.0"	5.5"	5.0"	12.0"	9.0"	7.5"	2.5"	2.5"	4.5"		
82	16.0"	16.0"	7.0"	6.5"	16.0"	16.0"	5.0"	4.5"	11.0"	13.5"	4.0"	3.5"	7.5"	6.5"	5.0"	2.0"		3.0"				
105	16.0"	16.0"	5.0"	5.0"	11.5"	13.0"	11.5"	3.5"	3.5"	7.0"	10.0"	8.5"	3.0"	2.5"	5.0"	5.0"	3.5"		2.0"			

HOST STRUCT.	ANCHOR	LOAD (psf)	3/4" 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		
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"	6.5"	6.5"	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"	5.0"	4.5"	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"	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"	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"	3.0"	2.0"	2.0"				
		82	7.0"	7.0"	3.0"	2.5"	5.0"	4.5"	4.5"	2.0"		2.5"	3.0"	3.0"								
		105	4.5"	5.0"	2.0"		3.0"	3.0"	3.0"			2.5"	2.0"									
		48	16.0"	16.0"	9.5"	9.5"	16.0"	16.0"	6.5"	6.5"	16.0"	16.0"	5.0"	4.5"	12.5"	7.0"	6.5"	2.5"	2.0"	4.0"		
		62	16.0"	16.0"	7.0"	6.5"	16.0"	15.5"	16.0"	5.0"	4.5"	11.5"	11.0"	11.5"	3.5"	3.5"	7.0"	5.0"	4.5"	2.0"	2.5"	
82	16.0"	16.0"	5.0"	4.5"	11.5"	10.5"	10.5"	3.5"	3.0"	6.0"	7.5"	7.0"	2.5"	2.5"	4.0"	3.5"	3.0"					
105	16.0"	16.0"	5.0"	5.0"	11.5"	13.0"	11.5"	3.5"	3.5"	7.0"	10.0"	8.5"	3.0"	2.5"	5.0"	5.0"	3.5"		2.0"			

ANCHOR NOTES: SEE SHEET 13 FOR ANCHOR NOTES.

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 (SEE GLASS SEPARATION TABLE)
 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.

FRANK BERNARDO, PE
PE# 96064 CA# F-11383

NOV 2020
STATE OF TEXAS
FRANK BERNARDO
REGISTERED PROFESSIONAL ENGINEER
POSTAL ADDRESS: 401 W. ATLANTIC BLVD. #404
DELRAY BEACH, FL 33407
ENGINEERING EXPRESS

AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.
4268 West Roads Dr.
West Palm Beach, FL 33407
(561) 841-5480

BERTHA HV ACCORDION SHUTTER
HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE
IRVN	IRVN	1/6/2020
CCB	IRVN	9/02/2024
IRVN	FLB	10/1/2022

REMARKS:
INITIALS
2020 FBC
TDI

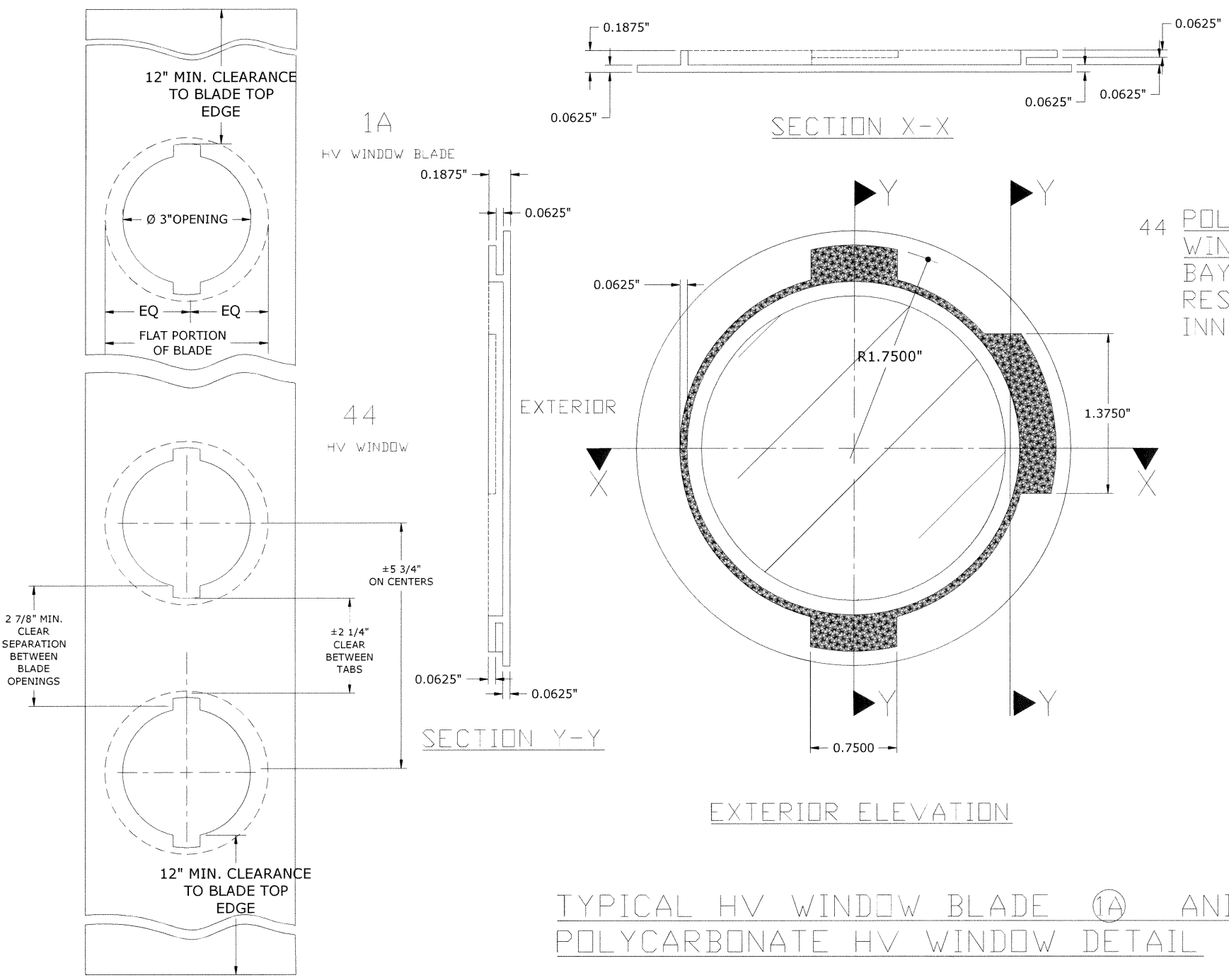
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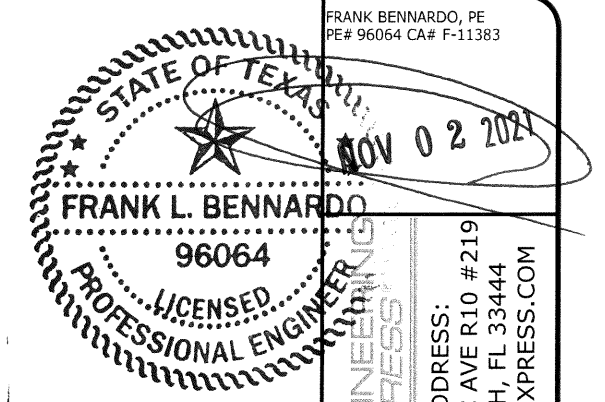
15 OF 16

WINDOW BLADE 1A OPTION



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



ENGINEERING EXPRESS

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AMERICAN SHUTTER SYSTEMS ASSOCIATION, INC.

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 West Palm Beach, FL 33407
 (561) 841-5480

BERTHA HV ACCORDION SHUTTER
 HV BLADE 1, HV WINDOW BLADE 1A * HV BLADE 2
 TEXAS DEPARTMENT OF INSURANCE

DRWN	CHKD	DATE
RWN	RWN	1/8/2020
CCB	RWN	9/02/2020
RWN	FLB	10/11/2020

REMARKS
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 2020 FBC
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