

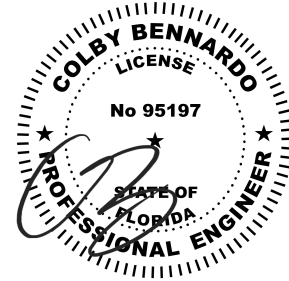


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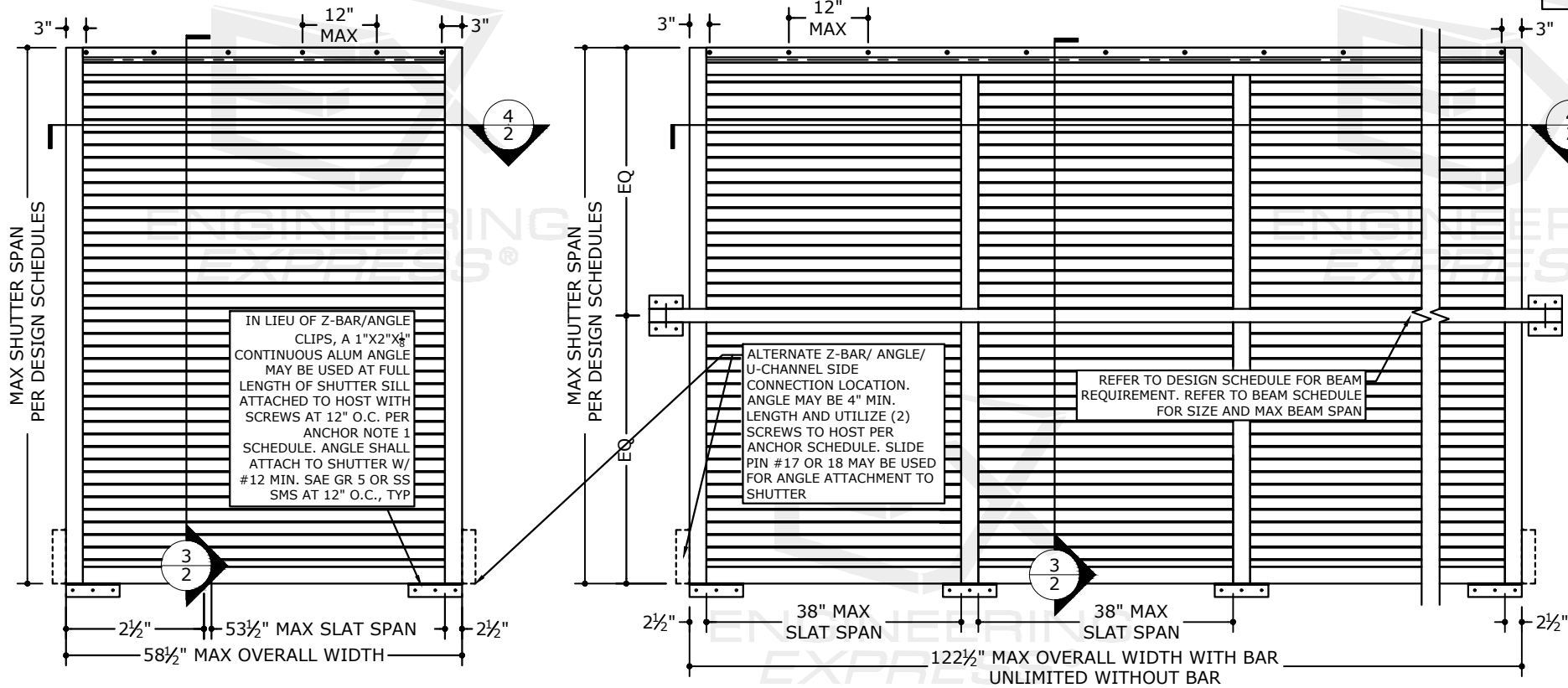
FULLVIEW & ULTRAVIEW BAHAMA SHUTTER

PATENT #8126298 & 8136298B1 - IMPACT / NON-IMPACT & HVHZ / NON-HVHZ

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1 SINGLE PANEL SPAN
1 N.T.S. EXTER. ELEVATION

2 MULTI PANEL SPAN
1 N.T.S. EXTER. ELEVATION

TABLE 1 HVHZ			
ALLOWABLE DESIGN PRESSURES			
MAX SHUTTER SPAN	CONFIGURATION		
	SINGLE PANEL SPAN	MULTI PANEL SPAN	
		W/O BEAM	W/ BEAM
69"	+60/-73 PSF	+60/-73 PSF*	+60/-73 PSF*
81 5/8"	+60/-73 PSF	-	+60/-73 PSF*
96 3/4"	+60/-73 PSF*	-	+60/-73 PSF*

*NOTE: LIMITED TO A MAX SLAT SPAN OF 38"

TABLE 3 NON-HVHZ			
ALLOWABLE DESIGN PRESSURES			
MAX SHUTTER SPAN	CONFIGURATION		
	SINGLE PANEL SPAN	MULTI PANEL SPAN	
		W/O BEAM	W/ BEAM
69"	+78/-95 PSF	+78/-95 PSF*	+78/-95 PSF*
81 5/8"	+78/-95 PSF	+50/-50 PSF†*	+78/-95 PSF*
96 3/4"	+78/-95 PSF*	+50/-50 PSF†*	+78/-95 PSF*

*NOTE: LIMITED TO A MAX SLAT SPAN OF 38"
†NOTE: NOT APPROVED FOR USE IN ESSENTIAL FACILITIES.

TABLE 2 HVHZ				
MINIMUM SEPARATION FROM GLASS				
MAX SHUTTER SPAN	DESIGN PRESSURE	CONFIGURATION		
		SINGLE PANEL SPAN	MULTI PANEL SPAN	
			W/O BEAM	W/ BEAM
69"	+56/-73 PSF	2 3/8"	3"	2 3/8"
69"	+60/-73 PSF	2 3/8"	3 1/4"	2 3/8"
81 5/8"	+60/-73 PSF	2 3/8"	-	2 3/8"
96 3/4"	+60/-73 PSF	2 3/8"*	-	2 3/8"

*NOTE: LIMITED TO A MAX SLAT SPAN OF 38"

TABLE 4 NON-HVHZ NOT REQUIRED FOR WIND ZONES 1-3				
MINIMUM SEPARATION FROM GLASS				
MAX SHUTTER SPAN	DESIGN PRESSURE	CONFIGURATION		
		SINGLE PANEL SPAN	MULTI PANEL SPAN	
			W/O BEAM	W/ BEAM
69"	+78/-95 PSF	3 3/8"	4 3/8"	2 7/8"
81 5/8"	+78/-95 PSF	3 3/8"	-	2 7/8"
96 3/4"	+78/-95 PSF	2 7/8"*	-	2 7/8"

*NOTE: LIMITED TO A MAX SLAT SPAN OF 38"

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GENERAL NOTES

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE EIGHTH EDITION (2023), FOR USE WITHIN THE HVHZ AND NON-HVHZ, AS WELL AS THE INTERNATIONAL BUILDING CODE (IBC) AND INTERNATIONAL RESIDENTIAL CODE (IRC). SEE PRODUCT EVALUATION REPORT FOR ADDITIONAL INFORMATION.
- 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 EIGHTH EDITION (2023) SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE 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.
- THIS SYSTEM HAS BEEN DESIGNED WITH NO SEPARATION FROM GLAZING REQUIRED FOR ALL WIND ZONES, IN ACCORDANCE WITH ASTM 1996. IT IS ACCEPTABLE BY CODE UNLESS OPTIONAL CRITERIA IS INDEPENDENTLY ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- 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 DESIGN PROFESSIONAL SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- 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.
- PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
- SHUTTER MAY BE INSTALLED AS SINGLE PANEL OR AS MULTI-PANEL SPANS TO UNLIMITED WIDTH, SEE DETAIL 1/2 & 3/4 FOR MAXIMUM SLAT SPANS.
- ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE. ALL TOLERANCES SHALL BE IN ACCORDANCE WITH ADM 2015.
- THIS SYSTEM MUST BE CLOSED AND LOCKED FOR WIND AND IMPACT PROTECTION. THIS SYSTEM HAS BEEN DESIGNED FOR A WIND PRESSURE OF 18 PSF IN THE OPEN POSITION. A PERMANENT LABEL MUST BE ADHERED TO THE UNDERSIDE OF EACH BAHAMA SHUTTER CONTAINING THE FOLLOWING:

SHUTTER AND LOUVERS TO BE CLOSED AND LOCKED WHEN HURRICANE WARNINGS ARE ISSUED

- BAHAMA SHUTTERS SHALL BE PERMANENTLY LABELED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE, IN ACCORDANCE WITH THE FLORIDA BUILDING COMMISSION AND THE FLORIDA DBPR SPECIFICATIONS.
- ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, STAINLESS STEEL, OR 2024-T6 ALUMINUM ALLOY WITH A MINIMUM TENSILE YIELD STRENGTH OF 33 KSI.
- ALL CONCRETE ANCHORS TO BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
- WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- REFER TO FASTENER MANUFACTURER'S PUBLISHED DATA SHEETS AND RECOMMENDATIONS FOR FASTENER INSTALLATION INSTRUCTIONS.
- ALL STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.

HVHZ (TABLE 1 & 2) NOTES:

- HIGH VELOCITY HURRICANE ZONE (HVHZ) IS DEFINED AS MIAMI-DADE COUNTY AND BROWARD COUNTY FLORIDA ONLY.
- TABLE 1 SHALL BE USED FOR INSTALLATIONS IN THE HIGH VELOCITY HURRICANE ZONE (HVHZ) TO DETERMINE THE MAXIMUM ALLOWABLE DESIGN PRESSURE FOR EACH SPAN.
- FOR SPANS BETWEEN TABULATED VALUES USE NEXT HIGHER SPAN.
- TABLE 2 SHALL BE USED TO DETERMINE MINIMUM SEPARATION FROM GLASS WITH IN THE HVHZ.

NON-HVHZ (TABLE 3 & 4) NOTES:

- NON-HVHZ IS DEFINED AS ALL LOCATIONS OTHER THAN MIAMI-DADE COUNTY AND BROWARD COUNTY FLORIDA.
- TABLE 2 MAY BE USED FOR INSTALLATIONS OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
- FOR SPANS BETWEEN TABULATED VALUES, USE NEXT HIGHER SPAN.
- FOR INSTALLATIONS OUTSIDE THE HVHZ SEPARATION FROM GLASS IS NOT REQUIRED UNLESS LOCAL MUNICIPALITY ADOPTS ADDITIONAL CRITERIA.

INDEX SHEET # | DESCRIPTION

- COVER, DESIGN CRITERIA & DESGN PRESSURE TABLES
- TYPICAL INSTALLATION ASSEMBLIES
- WALL BRACKET ANCHORS & BEAM SCHEDULE
- WALL BRACKET CONNECTION & SIDE CLOSURE DETAILS
- ANCHOR SCHEDULES AND NOTES
- TYPICAL STRUCTURAL EXTRUSIONS & COMPONENTS
- ALTERNATE INSTALLATION ASSEMBLIES
- ALTERNATE STRUCTURAL EXTRUSIONS & COMPONENTS

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FULLVIEW & ULTRAVIEW BAHAMA SHUTTER
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#13434.1)

REMARKS	DATE	DRWN	CHKD	CCB	RWN	MLD	CCB	MLD	CCB	MLD	CCB
2020 FBC (20-26176)	6/24/20										
FBC 2023	8/16/23										
ALTERNATE COMPONENTS	4/23/24										

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TYPICAL ASSEMBLIES (ALTERNATE ASSEMBLIES ON FOLLOWING SHEETS)

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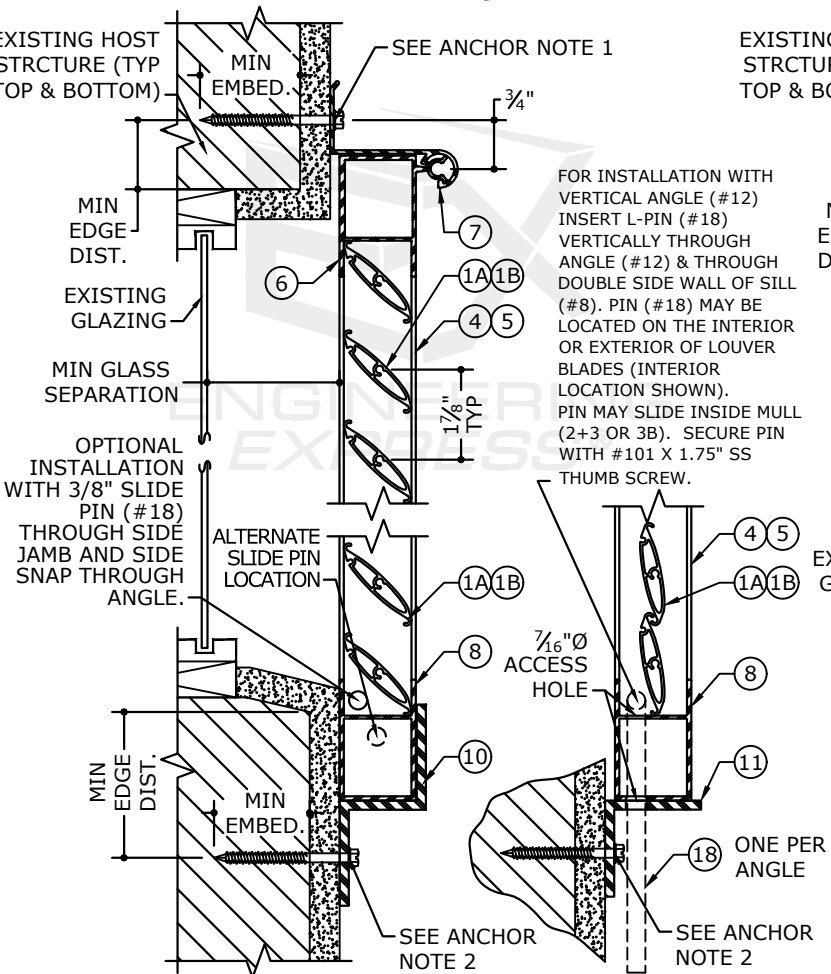
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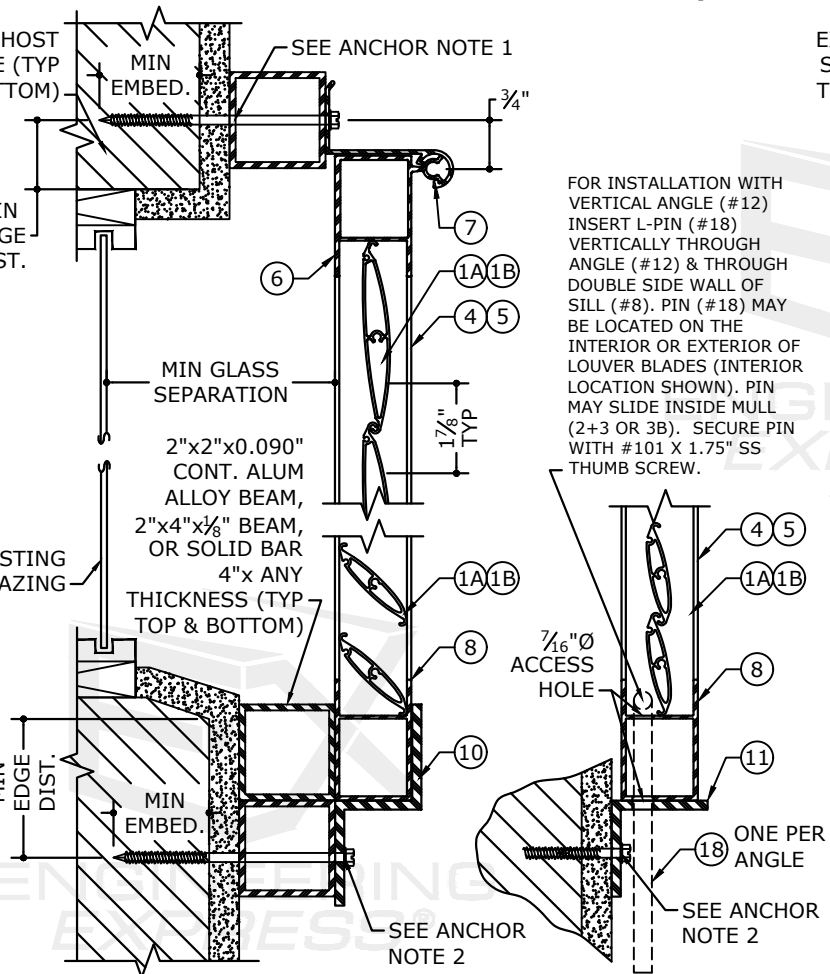
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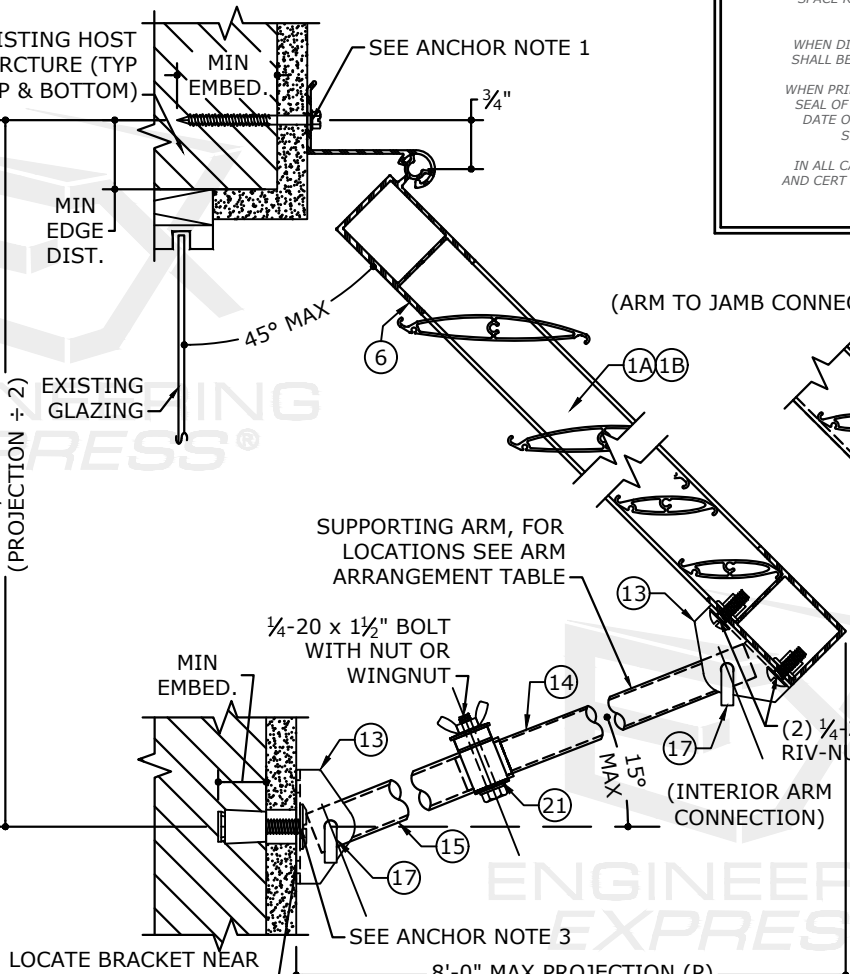
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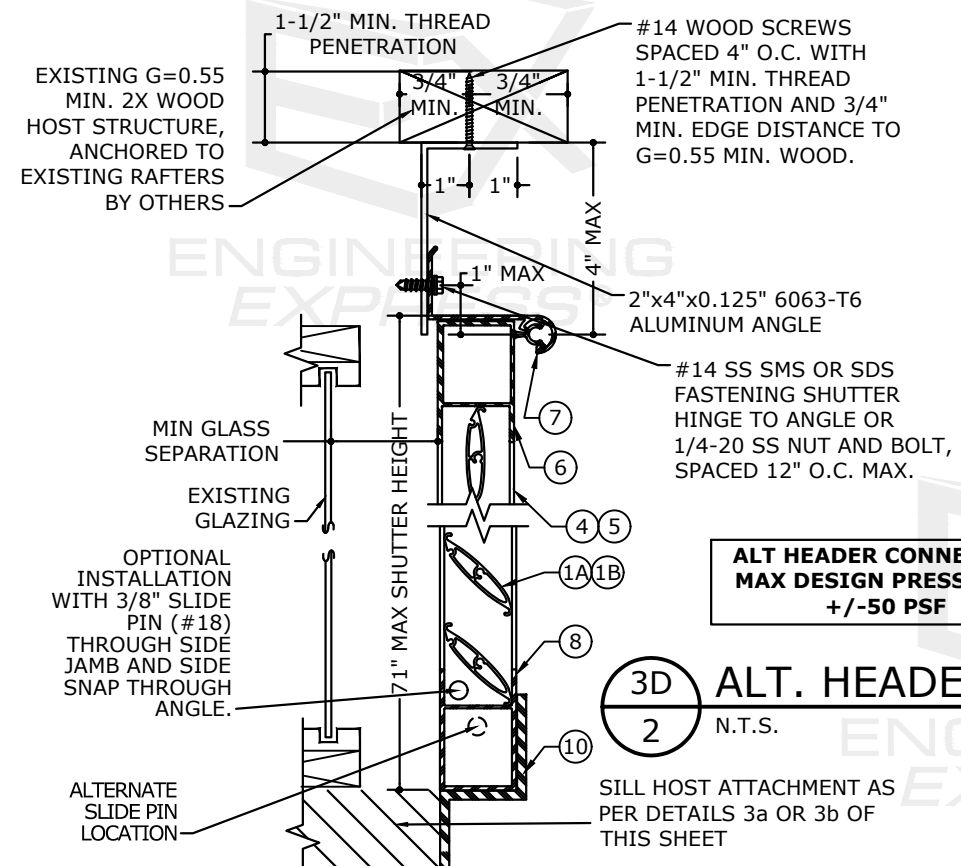
3A TYPICAL CLOSED POSITION
2 N.T.S. VERTICAL SECTION



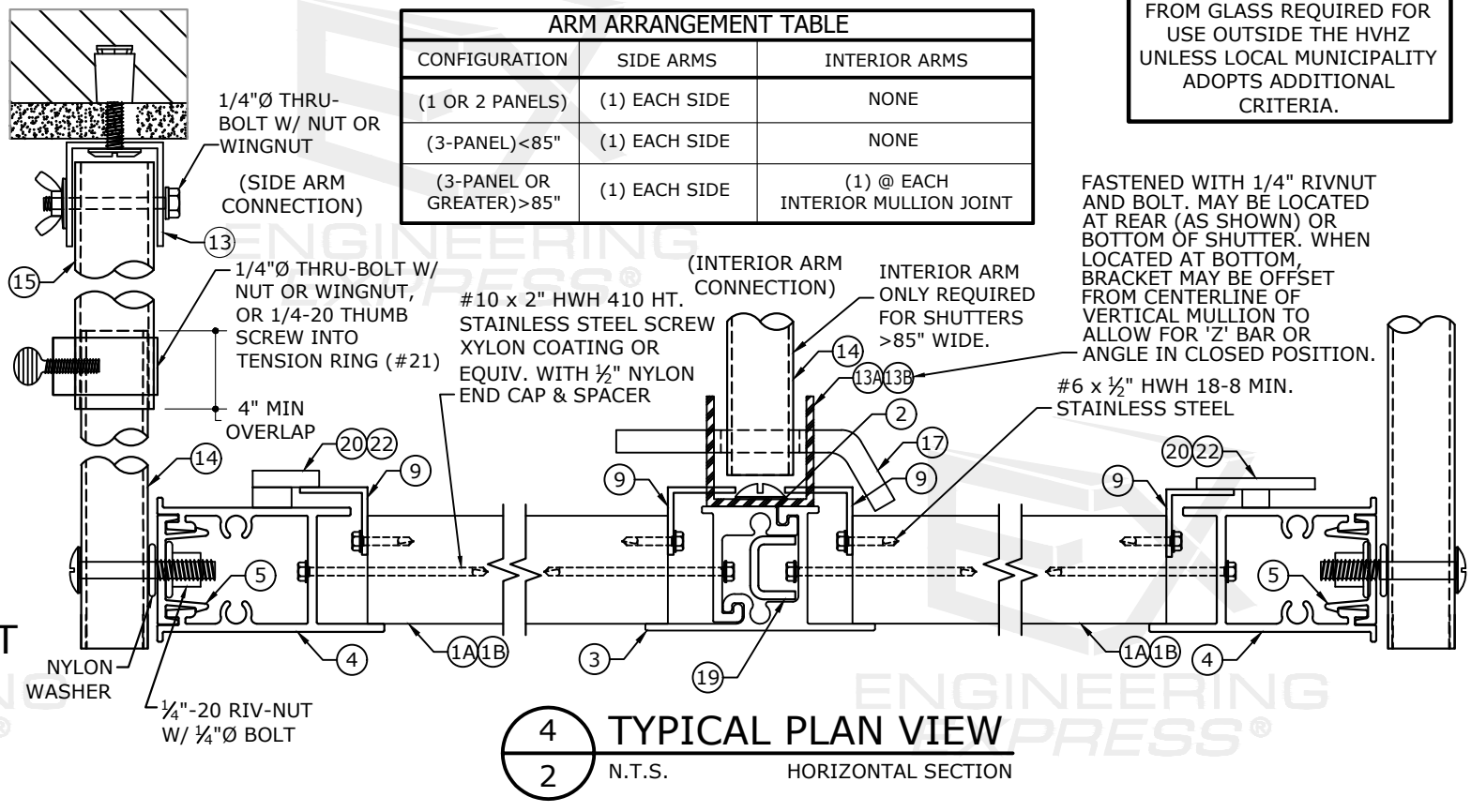
3B BUILD-OUT CLOSED POSITION
2 N.T.S. VERTICAL SECTION



3C TYPICAL OPEN POSITION
2 N.T.S. VERTICAL SECTION



3D ALT. HEADER ATTACHMENT
2 N.T.S. VERTICAL SECTION



4 TYPICAL PLAN VIEW
2 N.T.S. HORIZONTAL SECTION

ARM ARRANGEMENT TABLE		
CONFIGURATION	SIDE ARMS	INTERIOR ARMS
(1 OR 2 PANELS)	(1) EACH SIDE	NONE
(3-PANEL) <85"	(1) EACH SIDE	NONE
(3-PANEL OR GREATER) >85"	(1) EACH SIDE	(1) @ EACH INTERIOR MULLION JOINT

NO MINIMUM SEPARATION FROM GLASS REQUIRED FOR USE OUTSIDE THE HVHZ UNLESS LOCAL MUNICIPALITY ADOPTS ADDITIONAL CRITERIA.

FASTENED WITH 1/4" RIVNUT AND BOLT. MAY BE LOCATED AT REAR (AS SHOWN) OR BOTTOM OF SHUTTER. WHEN LOCATED AT BOTTOM, BRACKET MAY BE OFFSET FROM CENTERLINE OF VERTICAL MULLION TO ALLOW FOR 'Z' BAR OR ANGLE IN CLOSED POSITION.

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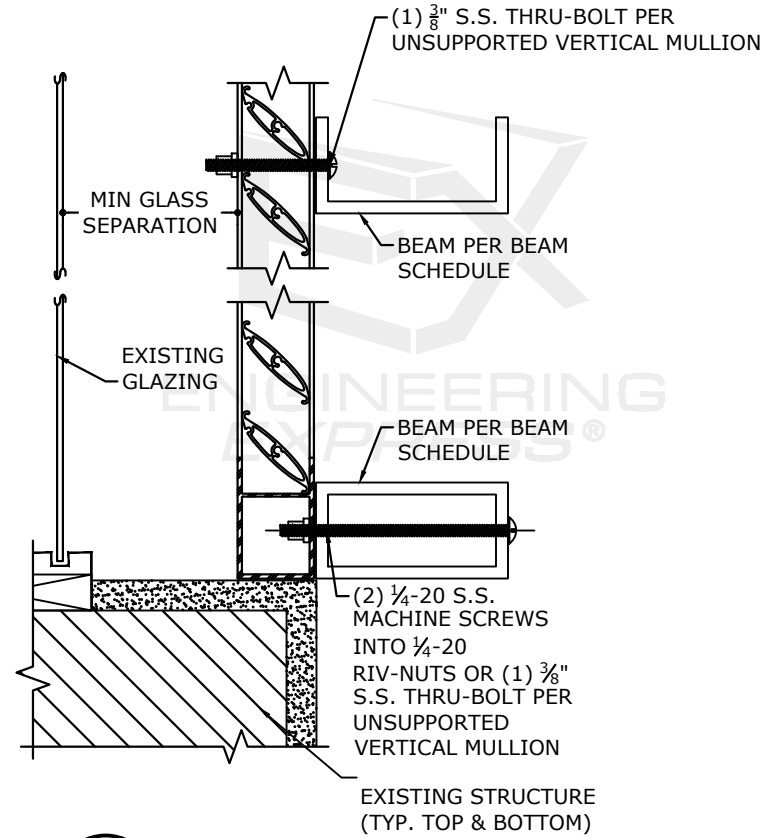
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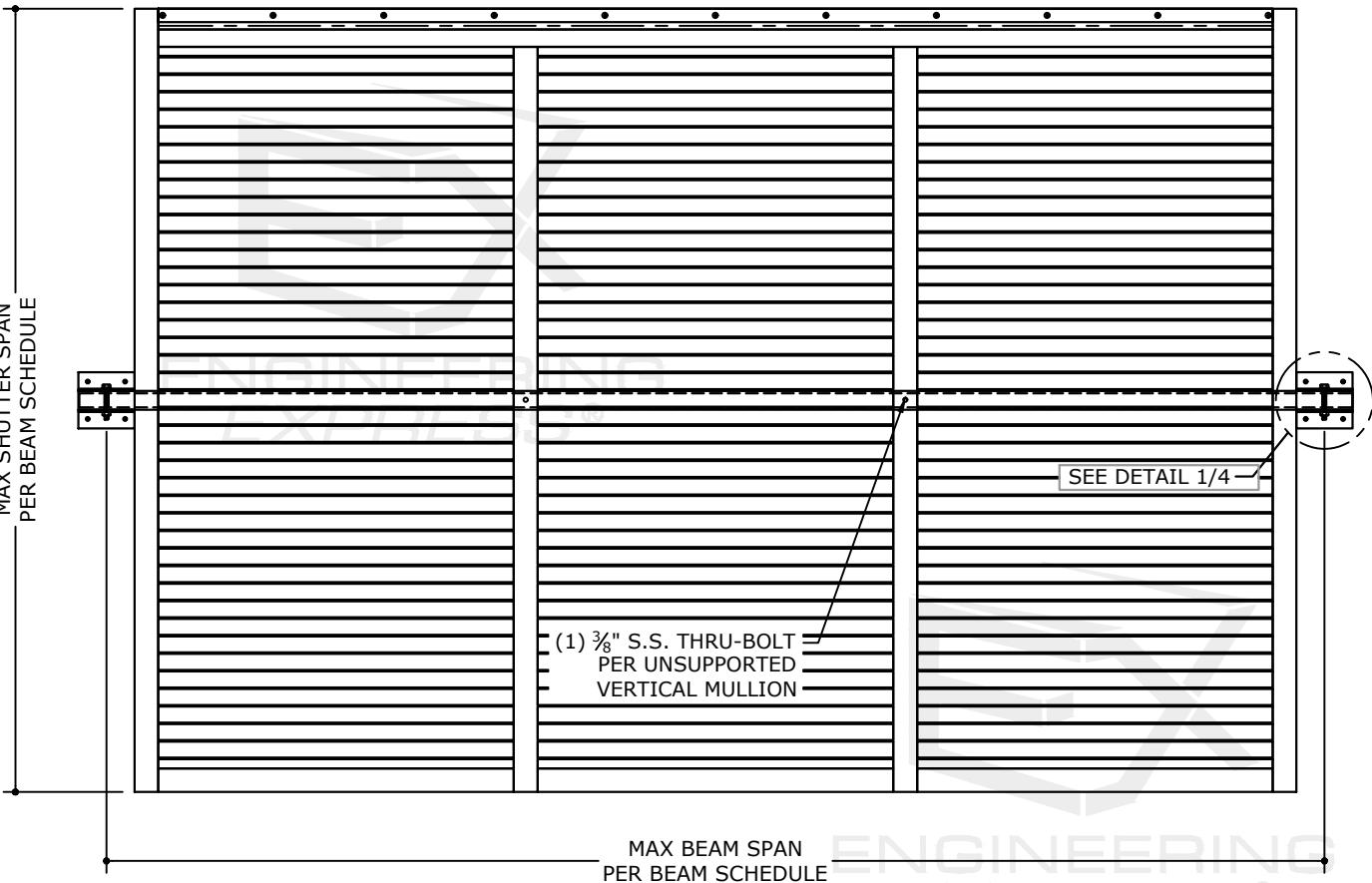
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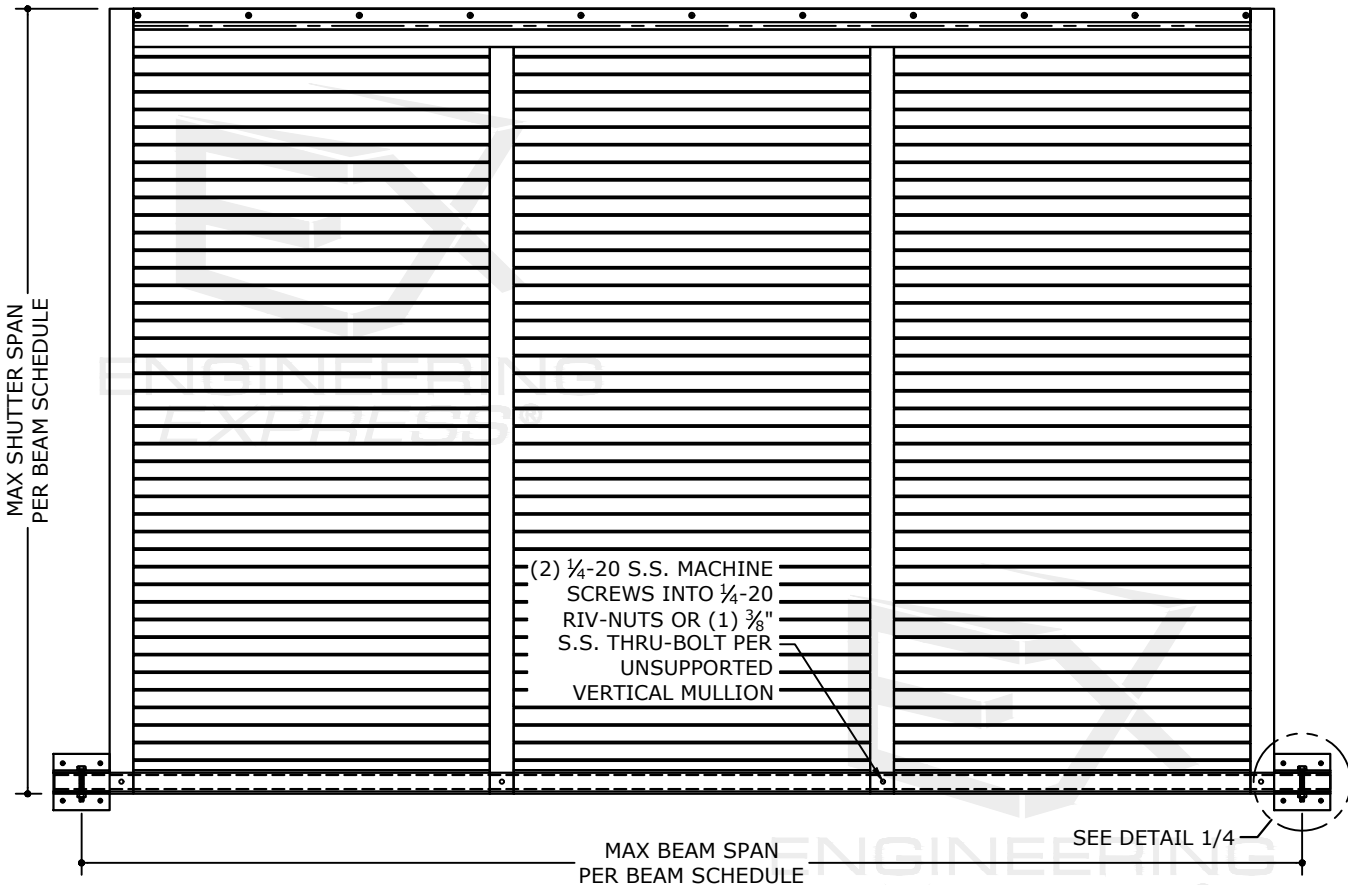
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3 BEAM CONNECTION TO SHUTTER
3 N.T.S. VERTICAL SECTION



1 MID-SPAN BEAM (AS REQUIRED)
3 N.T.S. EXTER. ELEVATION



2 BOTTOM BEAM (OPTIONAL)
3 N.T.S. EXTER. ELEVATION

WALL BRACKET ANCHORS TYPES:

- **TYPE A:** 1/4-20 ALL POINT SOLID SET ANCHORS:
 - IN CONCRETE (3.35KSI MIN) WITH 7/8" MIN EMBED. AND 3" MIN EDGE DIST.
 - IN HOLLOW CONCRETE BLOCK WITH 7/8" MIN EMBED. AND 3" MIN EDGE DIST.
- **TYPE B:** 1/4-20 DEWALT PANELMATES (MALE/FEMALE):
 - IN CONCRETE (3.35KSI MIN) WITH 1 3/4" MIN EMBED. AND 2 1/2" MIN EDGE DIST.
 - IN HOLLOW CONCRETE BLOCK WITH 1 1/4" MIN EMBED. AND 2" MIN EDGE DIST.
 - IN WOOD (G=0.42 MIN) WITH 1 1/2" MIN EMBED. AND 3/4" MIN EDGE DIST.
- **TYPE C:** 1/2" EYEWALL ARMOR MALE OR FEMALE BOLTS:
 - IN CONCRETE (3.0KSI MIN) WITH 1 3/4" MIN EMBED. AND 2 1/2" MIN EDGE DIST.
 - IN HOLLOW CONCRETE BLOCK WITH 1 1/4" MIN EMBED. AND 2" MIN EDGE DIST.
 - IN WOOD (G=0.42 MIN) WITH 1 7/8" MIN EMBED. AND 3/4" MIN EDGE DIST.
- **TYPE D*:** 1/4" MILLENNIUM MILLFAST W/ T&C ULTRACOTE:
 - IN CONCRETE (3.275KSI MIN) WITH 1 3/4" EMBED AND 2 1/2" EDGE DIST.
 - IN HOLLOW CONCRETE BLOCK WITH 1 1/4" EMBED. AND 2 1/2" MIN EDGE DIST.
- **TYPE E:** #12 SMS W/ 2" EYEWALL ARMOR NYLON INSERT:
 - IN CONCRETE (2KSI MIN) WITH 2" EMBED AND 2" EDGE DIST.
 - IN HOLLOW CONCRETE BLOCK WITH 1 1/4" EMBED AND 2" EDGE DIST.

NOTE: 3" MIN SPACING FOR ANCHORS INTO CONCRETE/HOLLOW BLOCK HOST STRUCTURE. 1" MIN SPACING FOR ANCHORS INTO WOOD HOST STRUCTURE

BEAM SCHEDULE:

	BEAM SIZE	ALUMINUM ALLOY	SHUTTER SPAN	BEAM SPAN (+/- 40 PSF MAX)	BEAM SPAN (+/- 50 PSF MAX)	BEAM SPAN (+/- 60 PSF MAX)	BEAM SPAN (+/- 95 PSF MAX)	WALL BRACKET ANCHOR TYPES (+/-95 PSF MAX)			WALL BRACKET ANCHOR TYPES (+/-50 PSF MAX)		
								CONCRETE	HOLLOW BLOCK	WOOD (G=0.42 MIN)	CONCRETE	HOLLOW BLOCK	WOOD (G=0.42 MIN)
BOX BEAMS	2"x3"x1/8"	6063-T6	8'-0"	7'-9"	7'-0"	6'-4"	5'-1"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
			6'-8"	8'-7"	7'-8"	7'-0"	5'-7"	A,B,C,D,E	A,C,E	B,C	A,B,C,D,E	A,B,C,E	B,C
			5'-10"	9'-2"	8'-2"	7'-6"	5'-11"	A,B,C,D,E	A,B,C,E	B,C	A,B,C,D,E	A,B,C,D,E	B,C
	2"x4"x1/8"	6063-T6	8'-0"	9'-7"	8'-7"	7'-10"	6'-3"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,C,E	B,C
			6'-8"	10'-6"	9'-5"	8'-7"	6'-10"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
			5'-10"	11'-3"	10'-1"	9'-2"	7'-4"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
	2"x5"x1/8"	6063-T6	8'-0"	11'-5"	10'-2"	9'-4"	7'-5"	A,B,C,D,E	A,C		A,B,C,D,E	A,C	B,C
			6'-8"	12'-6"	11'-2"	10'-2"	8'-1"	A,B,C,D,E	A,C		A,B,C,D,E	A,C	B,C
			5'-10"	13'-4"	11'-11"	10'-11"	8'-8"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,C,E	B,C
	2"x4"x1/4"	6061-T6	8'-0"	14'-10"	13'-3"	12'-2"	9'-8"	A,B,C			A,B,C,D,E	A,C	
			6'-8"	16'-3"	14'-7"	13'-3"	10'-7"	A,B,C,D,E			A,B,C,D,E	A,C	
			5'-10"	17'-5"	15'-7"	14'-2"	11'-3"	A,B,C,D,E	A		A,B,C,D,E	A,C	B,C
C-CHANNEL BEAMS	4"x2"x0.23"x0.15"	6063-T6	8'-0"	9'-4"	8'-4"	7'-9"	6'-1"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
			6'-8"	10'-3"	9'-2"	8'-4"	6'-8"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
			5'-10"	10'-11"	9'-9"	8'-11"	7'-1"	A,B,C,D,E	A,C	B,C	A,B,C,D,E	A,B,C,E	B,C
	6"x2"x0.29"x0.17"	6061-T6	8'-0"	17'-3"	15'-6"	14'-1"	11'-3"	A,B,C			A,B,C,D,E	A,C	

*MILLENNIUM MILLFAST ANCHORS MUST BE SPACED AT 4" O.C. MINIMUM

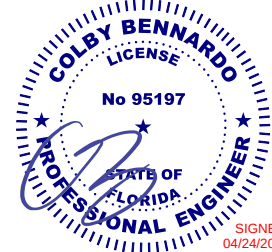
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ALTERNATE COMPONENTS	MLD	CCB	4/23/24

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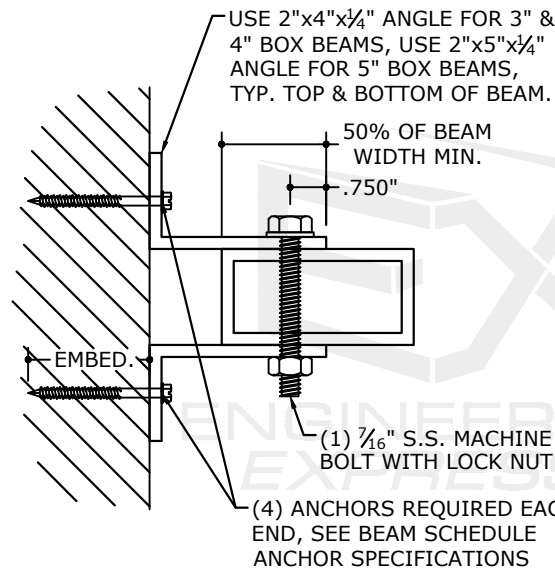
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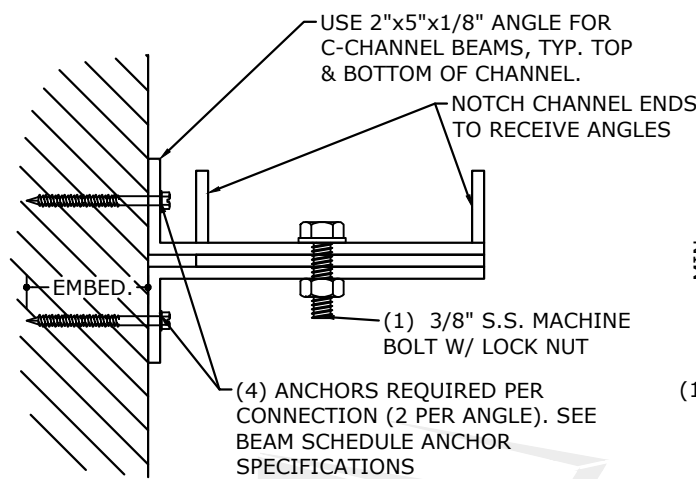
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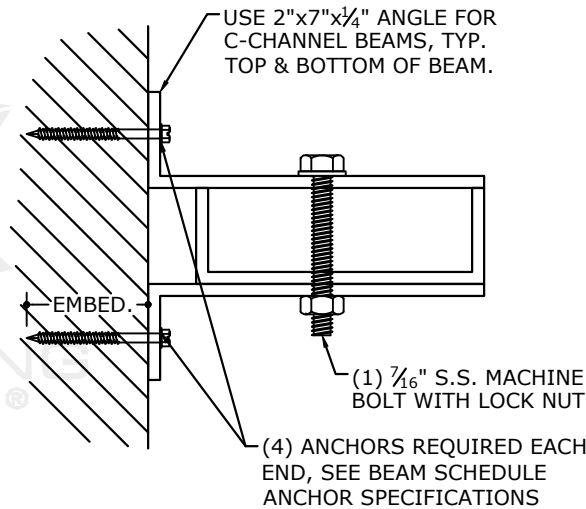
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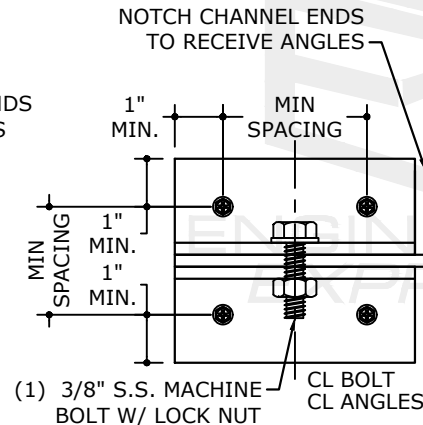
(BOX BEAM)
(SIDE VIEW)



(C-CHANNEL BEAM)
(SIDE VIEW)

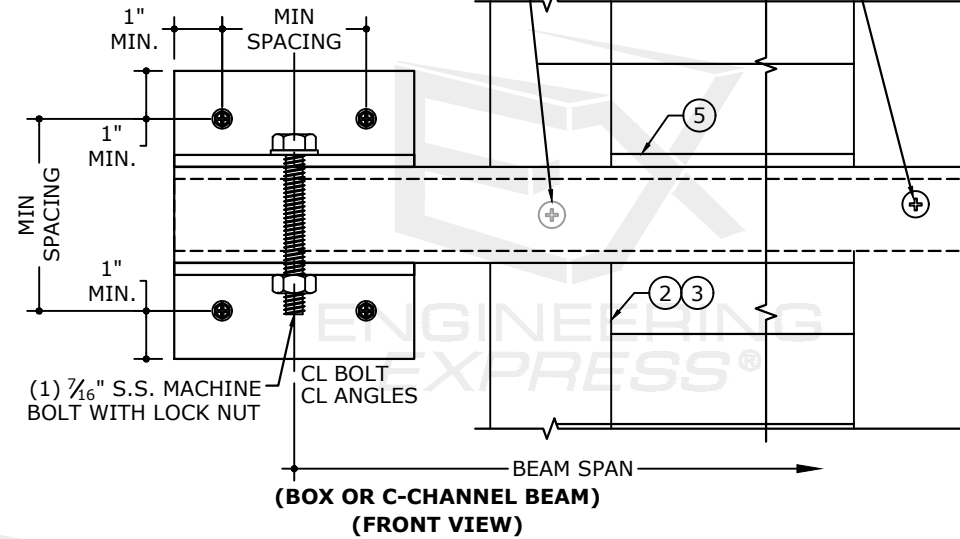


(C-CHANNEL BEAM)
(SIDE VIEW)



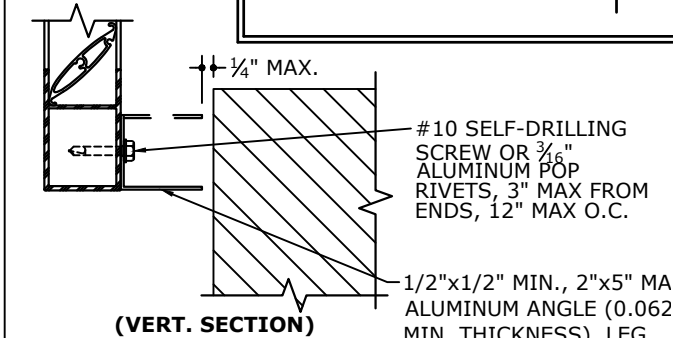
(C-CHANNEL BEAM)
(FRONT VIEW)

DIRECT SCREW / BOLT CONNECTION THROUGH SUPPORTING CHANNEL TO EDGE VERTICAL JAMB SHALL ONLY BE REQUIRED WHEN EDGE COMPONENT IS NOT CONTINUOUSLY SUPPORTED BY HOST STRUCTURE.

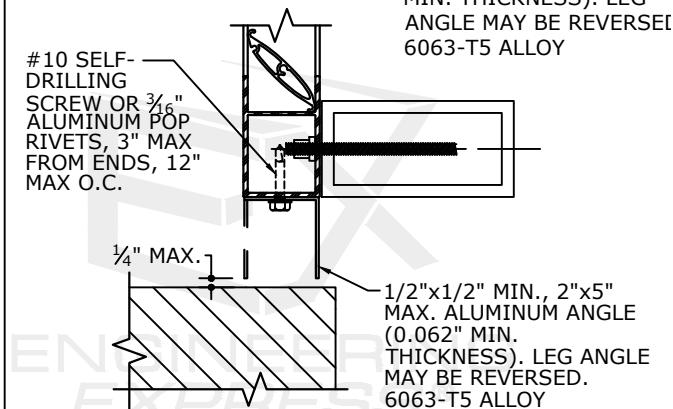


(BOX OR C-CHANNEL BEAM)
(FRONT VIEW)

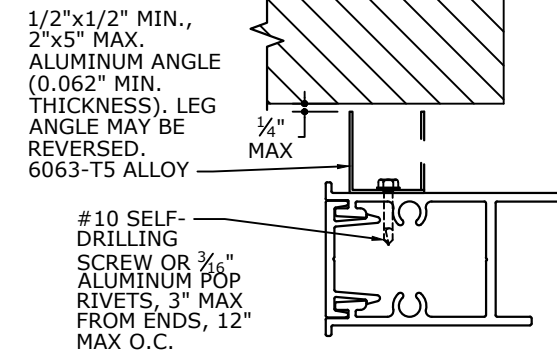
5/16" Ø S.S.BOLT DRILLED & TAPPED AT EACH CROSSING VERTICAL MULLION



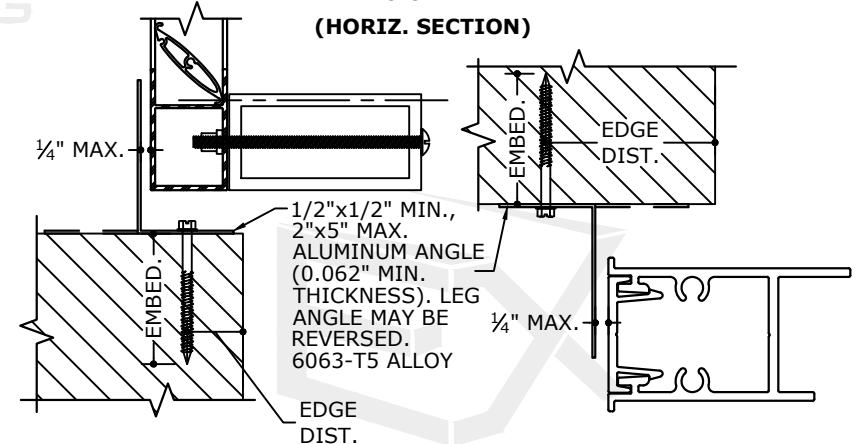
(VERT. SECTION)



(VERT. SECTION)



(HORIZ. SECTION)



(VERT. SECTION)

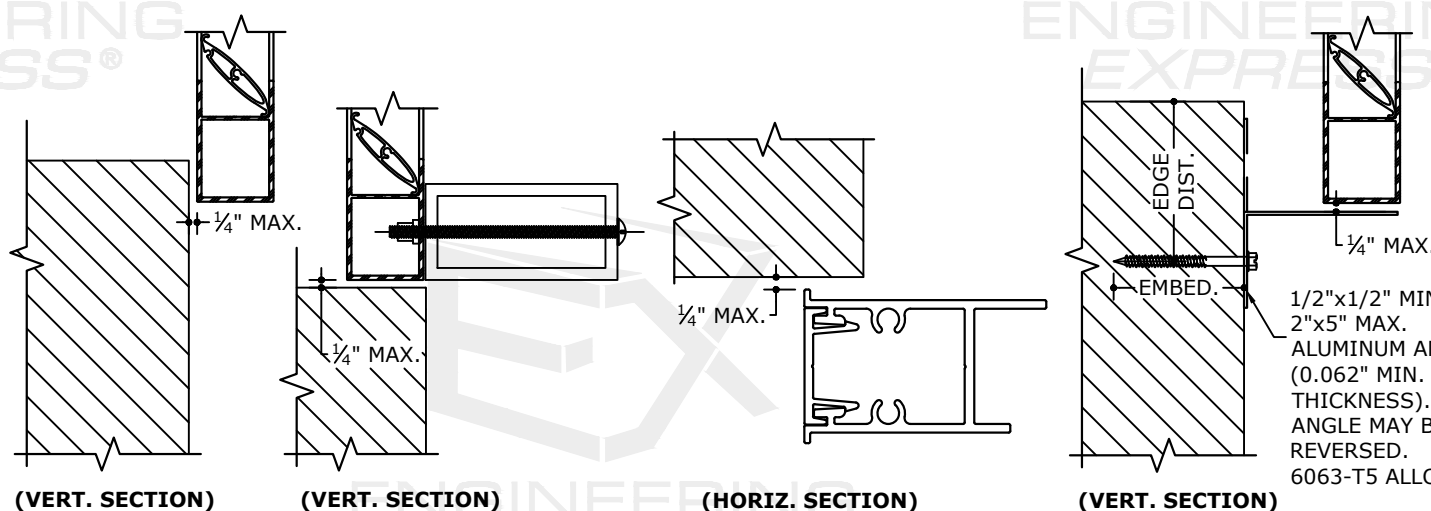
(HORIZ. SECTION)

1 WALL BRACKET CONNECTION OPTIONS

N.T.S. EXTER. ELEVATION

SIDE CLOSURE NOTES

- FOR INSTALLATIONS WITHIN THE HVHZ, IN LIEU OF SIDE CLOSURE ANGLE, SHUTTER MAY OVERLAP OPENING BY 1.5 X SHUTTER BUILD OUT DISTANCE.
- ANCHORS MAY BE ANY ANCHOR FROM ANCHOR NOTE 1, INSTALLED 3" MAX FROM EACH END, AND 12" O.C. MAX, OR 1/4" ITW TAPCONS WITH 1 1/2" MIN EDGE DISTANCE AND FULL THREAD ENGAGEMENT TO 7/16" MIN PLYWOOD INSTALLED 3" MAX FROM EACH END AND 7" O.C. MAX.
- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- ALL CONCRETE ANCHORS SHALL BE INSTALLED TO NON-CRACKED CONCRETE ONLY.
- MINIMUM EMBEDMENT SHALL BE AS NOTED IN ANCHOR NOTE 1. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
- WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD.



2 SIDE CLOSURE DETAILS

N.T.S.

SECTIONS

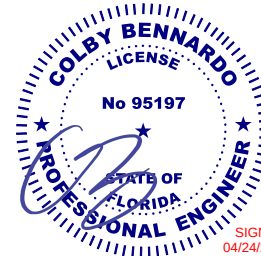
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FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#13434.1)

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FBC 2023	8/16/23	MLD	CCB
ALTERNATE COMPONENTS	4/23/24	MLD	CCB
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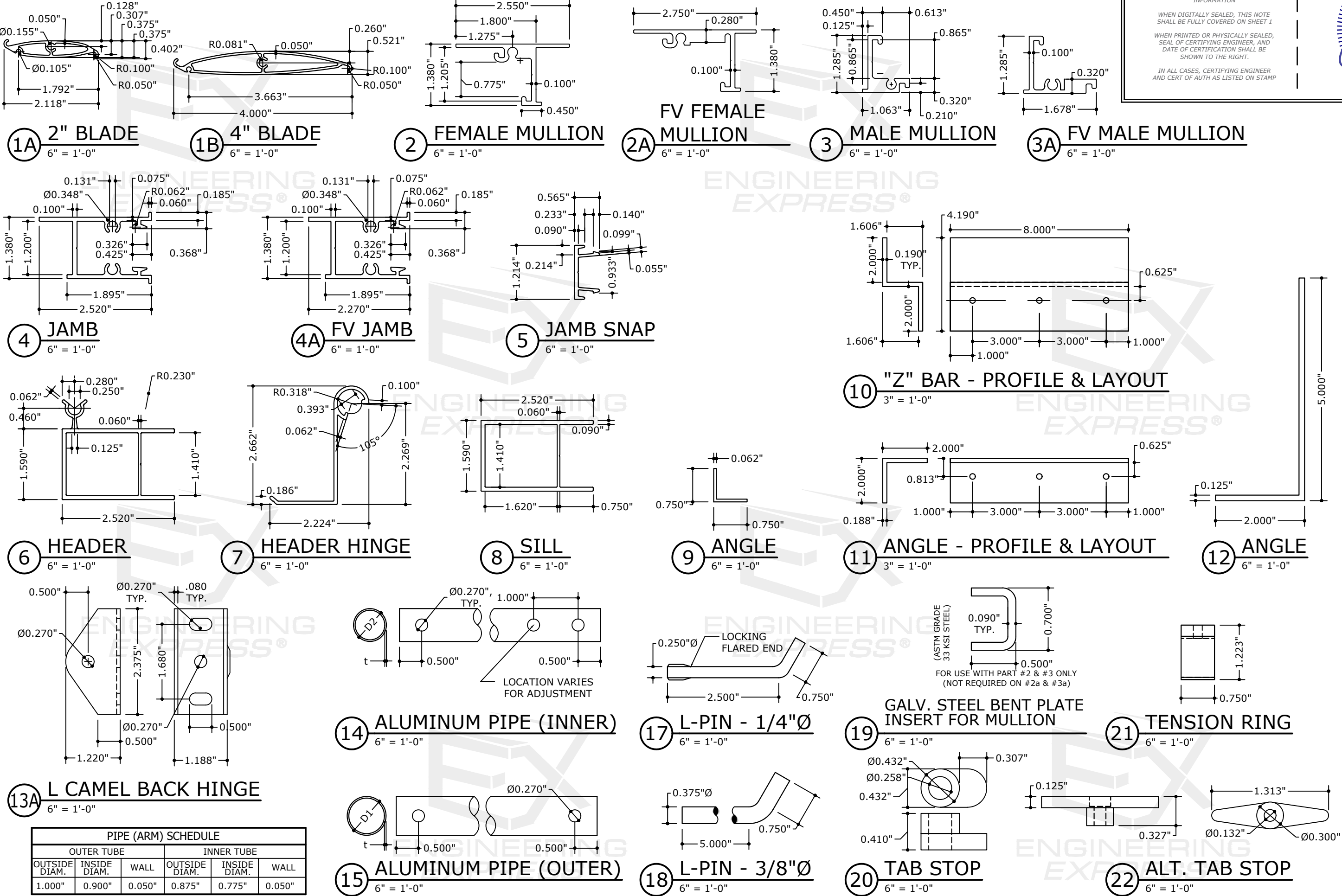
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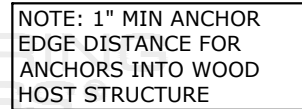
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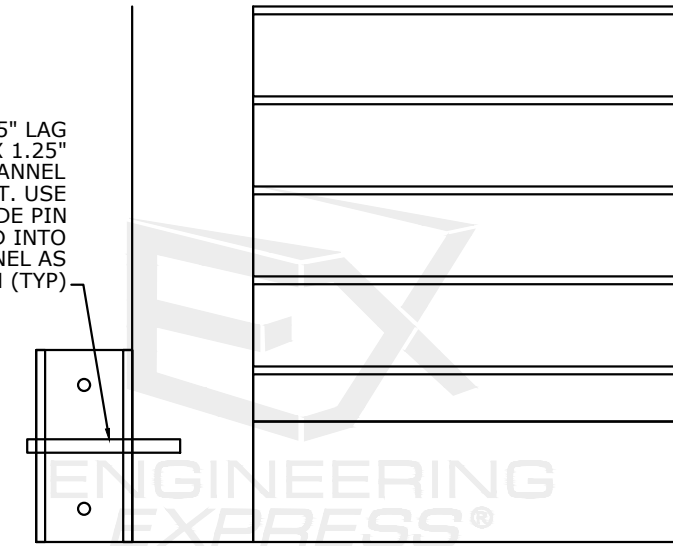
7 8



NOT Z-BAR),
 HIGH ANGLE &
 PIN MAY BE
 OF LOUVER
 N MAY SLIDE
 1 X 1.75" SS
 UMB SCREW.

3B 4B 5B
 1a 1b
 8 7/16" Ø ACCESS HOLE
 12 BASE ANGLE
 18 ONE DROP-PIN PER ANGLE
 (3) ANCHORS REQUIRED PER BOTTOM CONNECTION Z-BAR / ANGLE. SEE BEAM SCHEDULE ANCHOR SPECIFICATIONS

USE (2) 1/4" Ø X 2.5" LAG
SCREWS INTO 1.25" X 1.25"
X 3.5" X 0.125" CHANNEL
(6063-T5) INTO HOST. USE
3/8" DIA, 6061-T6 SLIDE PIN
THROUGH FRAME AND INTO
CENTER OF CHANNEL AS
BOTTOM CONNECTION (TYP).



ALTERNATE SHUTTER ASSEMBLY

BASE CONNECTION TO ANGLE (NOT Z-BAR)

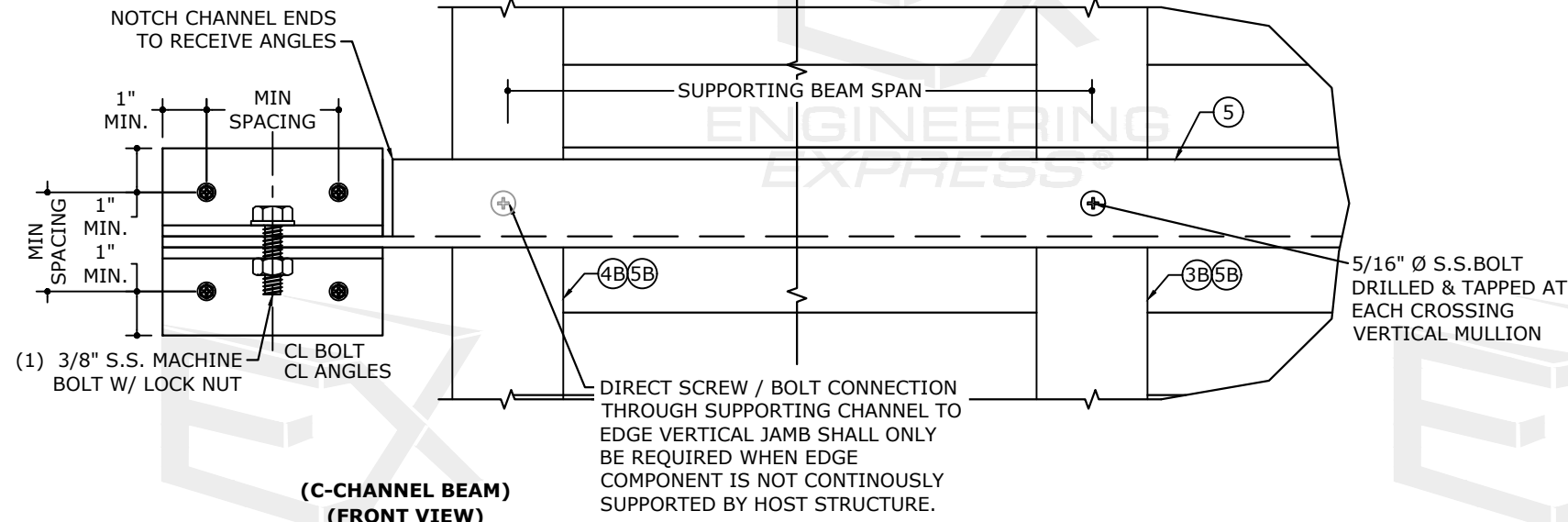
N.T.S.

VERTICAL SECTION

3
7

N.T.S.

VERTICAL ELEVATION



4 WALL BRACKET TO CENTER SUPPORT CHANNEL (SIDE CONNECTION)
7 N.T.S. EXTER. ELEVATION

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ADDITIONAL / ALTERNATE SHUTTER COMPONENTS
FOR USE WITH ALTERNATE CONNECTION ASSEMBLY

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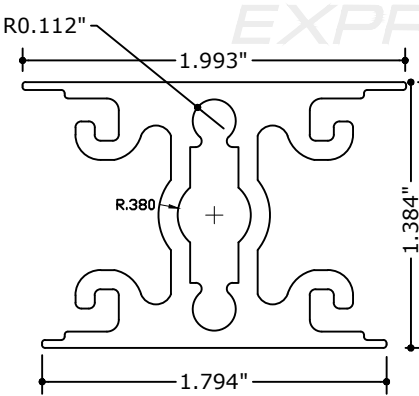
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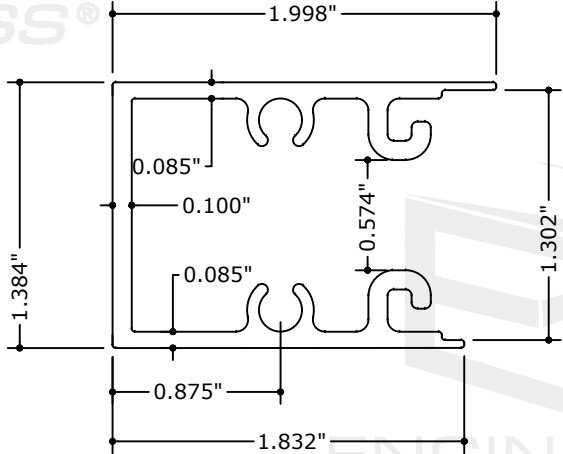
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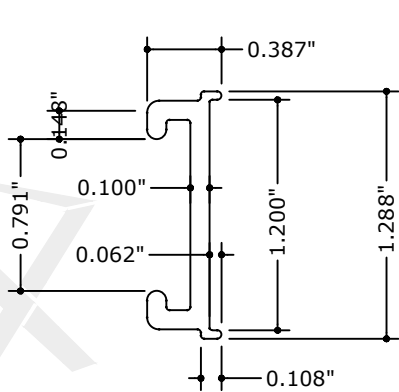
ALTERNATE VERTICAL COMPONENTS



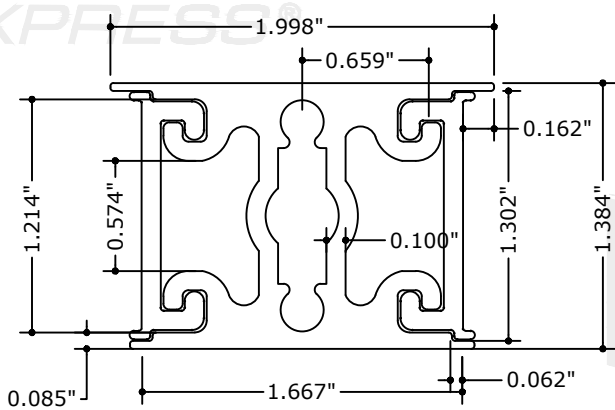
3B COMBINED MULLION
N.T.S. 6005-T5



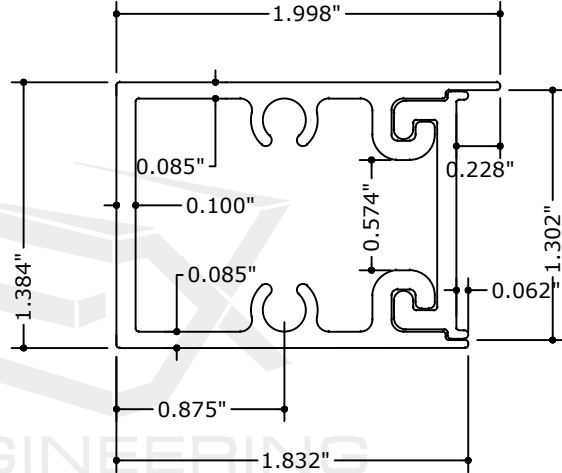
4B ALTERNATE JAMB
N.T.S.



5B SLIDE INSERT
N.T.S.

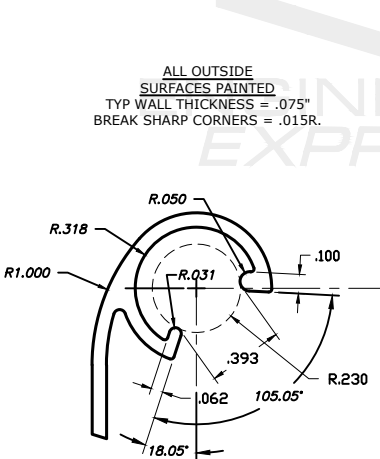


3B 5B MULL + SLIDES
N.T.S.

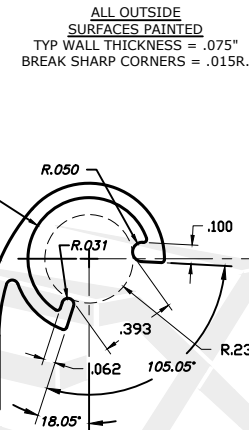
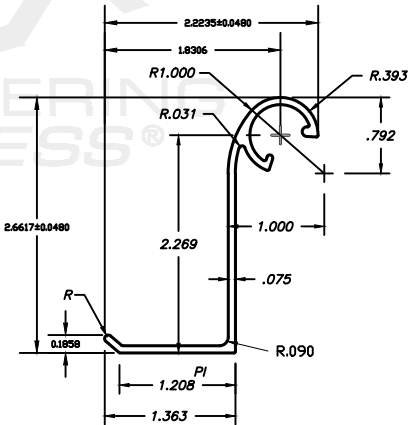


4B 5B JAM + SLIDE
N.T.S.

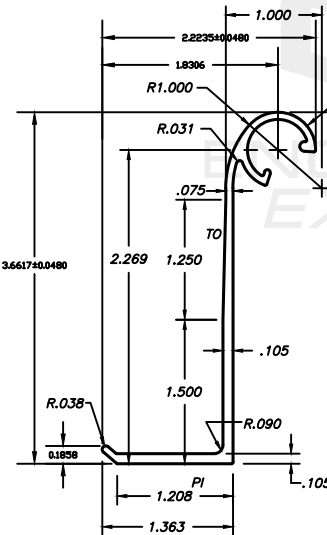
ALTERNATE HEADER EXTRUSIONS



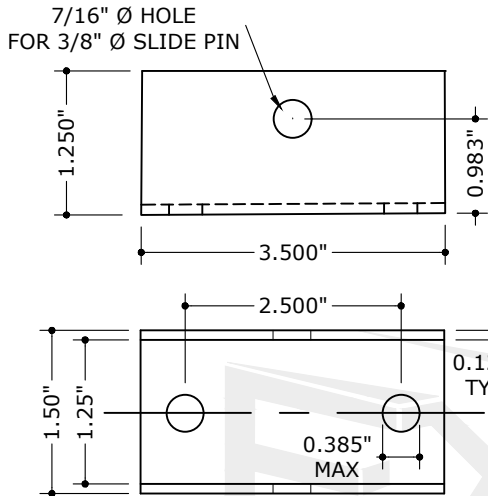
7A ALTERNATE HEADER HINGE
N.T.S.



7B EXTENDED HEADER HINGE
N.T.S.



ALTERNATE SIDE BOTTOM BRACKET



13B 1.25" X 1.25" X 3.5" L X 1/8" T
"U" CHANNEL WALL BRACKET
N.T.S. 6063-T5

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