

PRODUCT APPROVAL FOR HR-251 SSG IMPACT-RESISTANT CAPTURED CURTAIN WALL SYSTEM WITH INSULATING LAMINATED GLASS FOR USE IN HURRICANE ZONES REQUIRING LARGE AND SMALL MISSILE IMPACT PROTECTION.

GENERAL NOTES:

- HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE AND SMALL MISSILE WITH INSULATING LAMINATED GLASS, SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2020 (7th EDITION) OF THE FLORIDA BUILDING CODE. CURTAIN WALL MAY BE INSTALLED WITHIN HIGH VELOCITY HURRICANE ZONES (HVHZ) AND OUT OF THEM (NHVHZ).
DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1620 (HVHZ) & 1609 (NHVHZ) OF THE ABOVE MENTIONED CODE, FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE THIS PRODUCT TO BE INSTALLED FOR A DIRECTIONALITY FACTOR $K_d=0.85$, USING ASCE 7-16 & SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATING INDICATED ON NOTE 2.
IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-16 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2.
IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS.
THIS PRODUCT'S ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 & 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER PROTOCOLS TAS-201, TAS-202, TAS-203, AND AAMA 501 (PER SECTIONS 2411.3.2.1.1 & 1709.8.4) PER HURRICANE TEST LABORATORY REPORTS # 0105-0117-05 AND 0105-0210-04 (DOOR JAMB MULLION CERTIFICATION) AND PER ARCHITECTURAL TESTING LABORATORY REPORT # A4707.01-801-18 AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTION 1616 & 1604 OF THE FLORIDA BUILDING CODE.
- MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR THIS CURTAIN WALL SHALL BE AS SHOWN ON SHEETS 8, 9, 10, 12, 13, 14 & 15.
- THIS PRODUCT IS RATED FOR LARGE AND SMALL MISSILE IMPACT RESISTANCE. HURRICANE PROTECTION DEVICE IS NOT REQUIRED.
- THIS PRODUCT IS APPROVED FOR AIR/WATER INFILTRATION (15.0 PSF WATER PRESSURE).
- HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE AND SMALL MISSILE WITH INSULATING LAMINATED GLASS SHALL COMPLY WITH SECTION 2406 OF THE FLORIDA BUILDING CODE.
- ALL JOINT WELDING BETWEEN ANGLES AND STEEL STRUCTURE SHALL BE 3/16" FILLET WELD TYPE AND SHALL BE WELDED IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY A.W.S. D.1.1 REGULATIONS. USE CERTIFIED WELDERS. USE E-70XX ELECTRODES.
- PROVIDE 3/4" MAX. LOAD BEARING SHIM (TYP.), WHEN ALLOWED BY THIS P.E.D.
- SEE ANCHOR SCHEDULES ON SHEETS 12 THRU 15 FOR ANCHOR TYPE IDENTIFICATION AND SPACING.
- REMAINING COMPONENTS FOR THIS CURTAIN WALL SYSTEM SHALL BE AS INDICATED ON BILL OF MATERIALS, SHEETS 4 AND 5 OF THIS DRAWING.
- ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2015 ALUMINUM DESIGN MANUAL.
- SHOP DRAWINGS PREPARED BASED ON THIS P.E.D. AND TAKING INTO ACCOUNT THE SPECIFIC JOB CONDITIONS, SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AS PART OF THE PERMIT DOCUMENTS.
- SUBSTRATE MATERIAL NOTED ON THIS DRAWING AS "BY OTHERS" MUST WITHSTAND THE LOADS IMPOSED BY BY THE CURTAIN WALL SYSTEM.
- (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.
(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.
(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS DELEGATED ENGINEER TO THE P.E.D. ENGINEER, SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
(e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

- PRODUCT MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PRODUCT IN ACCORDANCE WITH SECTION 1709.5 OF THE FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

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INSTRUCTIONS:

- STEP 1:** DETERMINE A.S.D. DESIGN WIND LOAD REQUIREMENTS BASED ON WIND VELOCITY, BUILDING HEIGHT, WIND ZONE, USING APPLICABLE ASCE 7 STANDARDS.
- STEP 2:** GO TO SCHEDULE ON SHEET 8 TO DETERMINE MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf) OF DESIRED GLASS SIZE BASED ON GLASS PANEL DIMENSIONS.
- STEP 3:** DETERMINE MAXIMUM MULLION AND JAMB SPAN "L"(FT) FOR A GIVEN MULLION EFFECTIVE SPACING "b", FOR SINGLE AND TWIN SPANS ON SCHEDULES ON SHEETS 9 AND 10.
- STEP 4:** USING SCHEDULES ON SHEETS 12 THRU 15 SELECT ANCHOR OPTION FOR MULLIONS AND JAMBS WITH A.S.D. DESIGN PRESSURE RATING EQUAL OR GRATER THAN A.S.D. DESIGN LOAD SPECIFIED IN STEP 1.
- STEP 5:** THE LOWEST VALUE OF A.S.D. DESIGN PRESSURE RATING RESULTING FROM STEPS 2, 3 & 4 SHALL APPLY TO THE ENTIRE SYSTEM.

THIS DRAWING SHALL ONLY BE USED TO
OBTAIN PERMITS IN THE STATE OF FLORIDA

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS

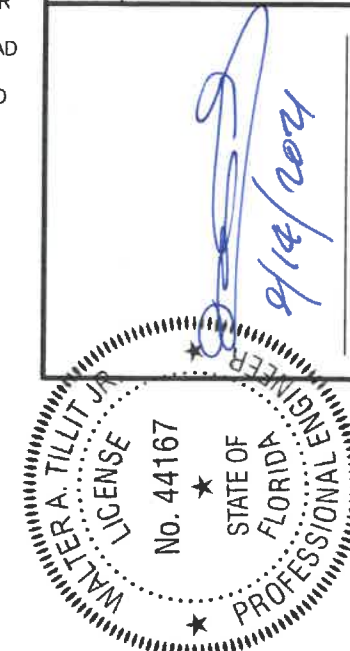
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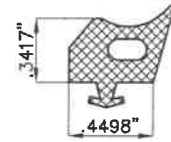
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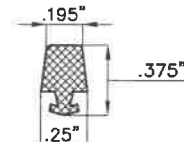
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HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE W/ INSULATING LAMINATED GLASS COMPONENTS

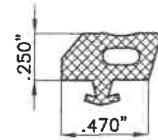
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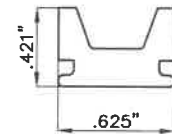
① **EXTERIOR GLAZING GASKET**
GP-118
SCALE : 1" = 1"



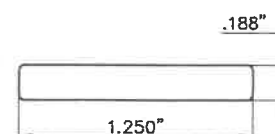
② **INTERIOR SPACER GASKET**
FG-5185
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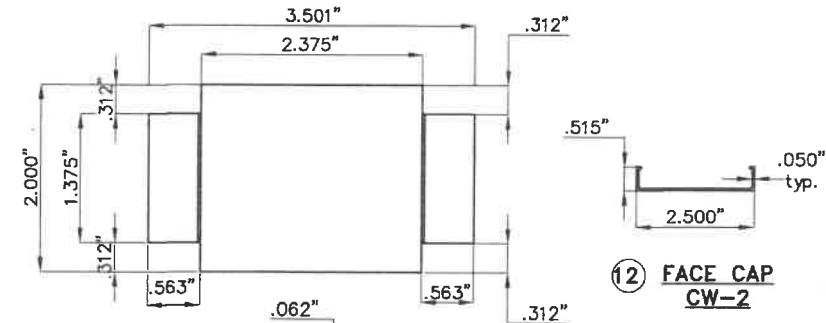
④ **EXTERIOR PERIMETER GASKET**
GP-103
SCALE : 1" = 1"



⑤ **THERMAL ISOLATOR**
CW-6H
SCALE : 1" = 1"

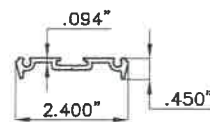


⑥ **SETTING BLOCK**
CW-2102
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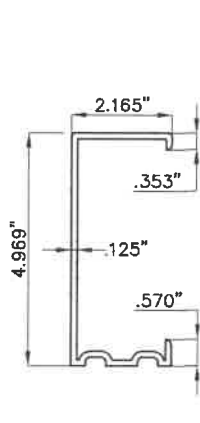


⑫ **FACE CAP**
CW-2

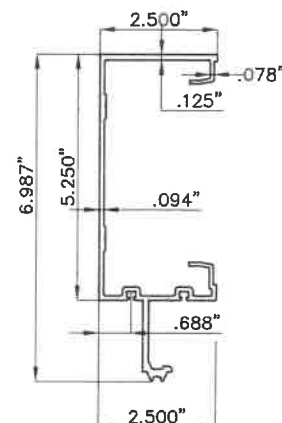
⑬ **MULLION END CAP**
HR-FP-4
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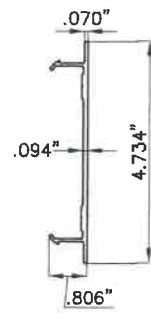
⑬ **PRESSURE BAR**
ZG-60



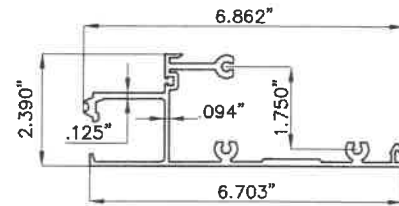
⑭ **JAMB MULLION SPLICE**
CW-1991



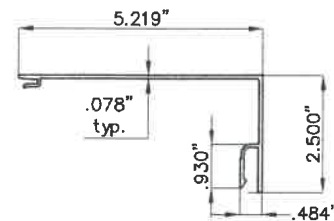
⑮ **JAMB MULLION**
CW-2023



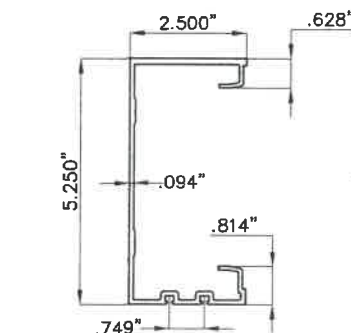
⑯ **MULLION FILLER**
CW-1996



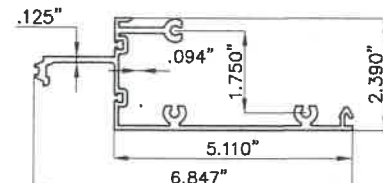
⑰ **HEAD/SILL**
CW-2024



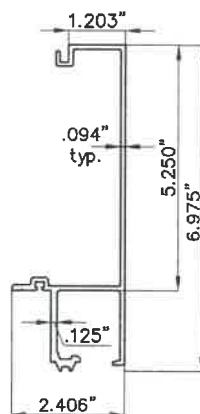
⑱ **HEAD/SILL/HORIZONTAL TRIM**
CW-1998



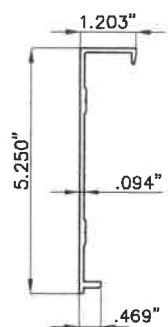
⑲ **SSG MULLION**
CW-1999



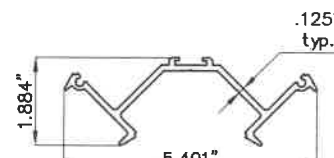
⑳ **OPEN BACK HORIZONTAL**
CW-2156



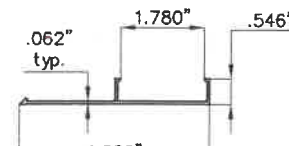
㉑ **TWO PIECE JAMB FEMALE HALF**
CW-2026



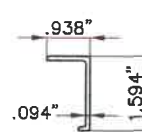
㉒ **TWO PIECE JAMB MALE HALF**
CW-2002



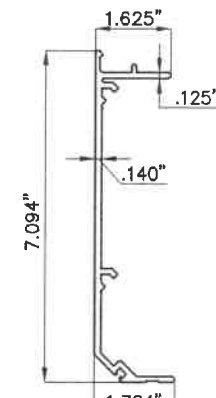
㉓ **CORNER PRESSURE PLATE**
CW-2183



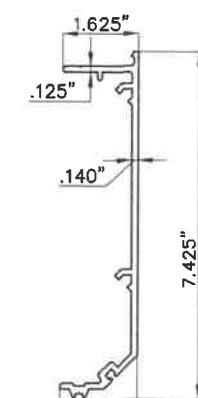
㉔ **CORNER FACE CAP**
CW-2188



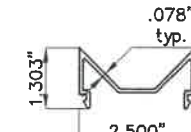
㉕ **POCKET FILLER**
CW-691



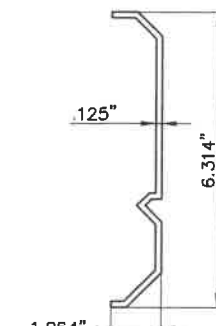
㉖ **CORNER MULLION FEMALE HALF**
CW-2018



㉗ **CORNER MULLION MALE HALF**
CW-2019



㉘ **MULLION FILLER**
CW-2020



㉙ **CORNER SPLICE**
CW-2021

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HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS

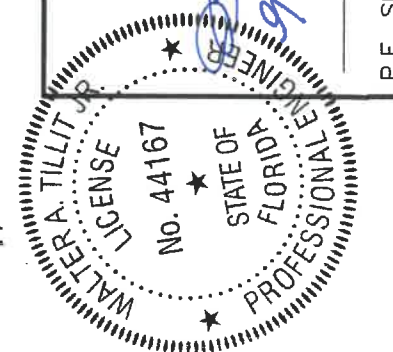
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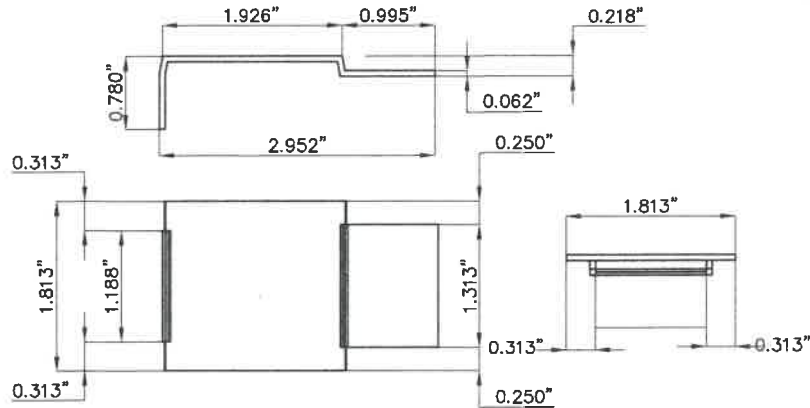
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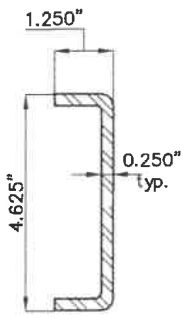
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HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE W/ INSULATING LAMINATED GLASS
COMPONENTS (CONTINUED)

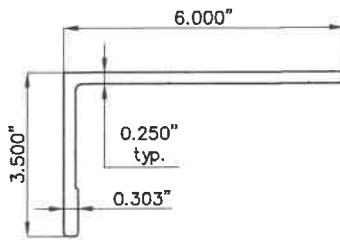
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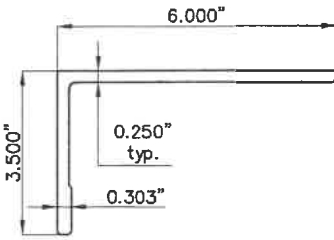
③① LEFT & RIGHT JAMB
END CAP HR-FP-5
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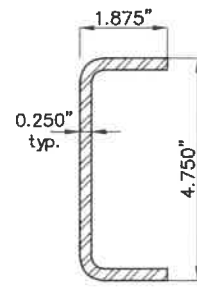
③② STEEL REINFORCING
FG5000-PP-8



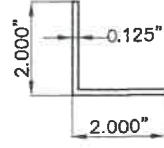
③③ HEAD ANCHOR LEFT
HR-FP-24



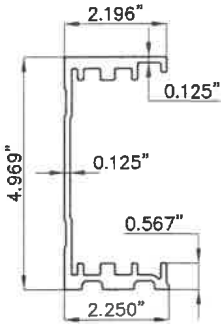
③③A HEAD ANCHOR RIGHT
HR-FP-25



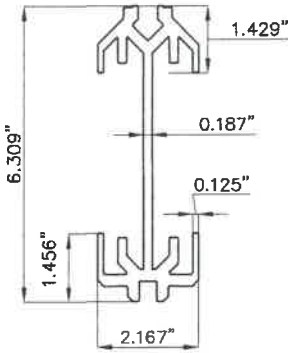
③④ STEEL REINFORCING
RS-25



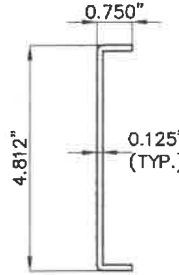
③⑤ EXTRUDED ANGLE
AN-52



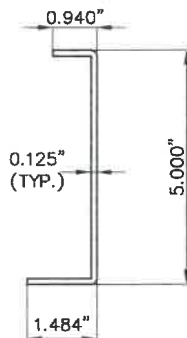
③⑥ HEAD ANCHOR SLEEVE
HR-FP-15



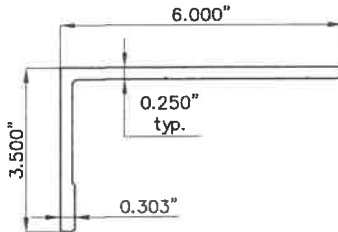
③⑦ HEAD ANCHOR SLEEVE
CORNER HR-FP-17



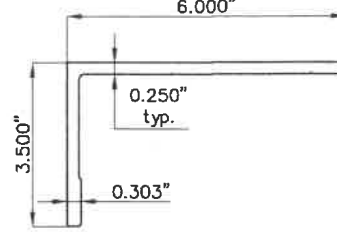
③⑧ BREAK METAL SPLICE
HR-FP-13



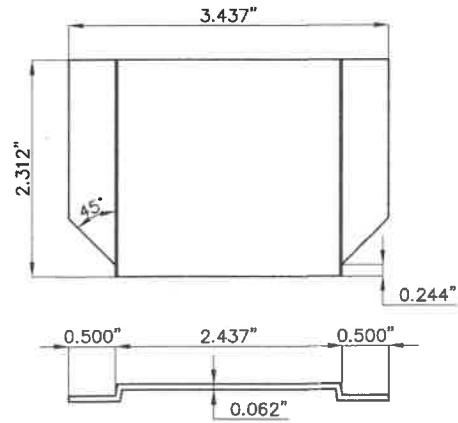
③⑨ BRAKE METAL SPLICE
HR-FP-14



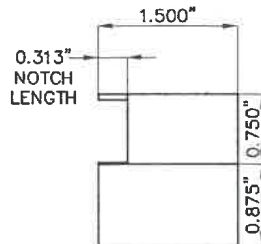
④④ HEAD ANCHOR
CORNER LEFT
HR-FP-22



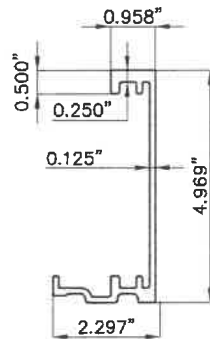
④⑤ HEAD ANCHOR
CORNER RIGHT
HR-FP-23



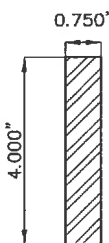
④⑦ 90 DEG. MULLION END CAP
HR-FP-8
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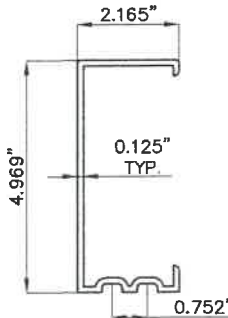
④⑧ WATER DIVERTER
HR-FP-12



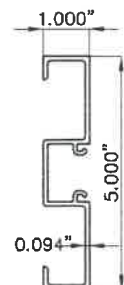
⑤① JAMB HEAD
ANCHOR SLEEVE
HR-FP-16



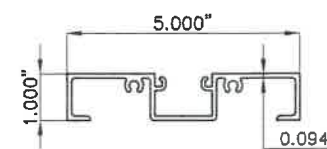
⑤② STEEL REINFORCING
RS-17



⑥① SSG MULLION
SPLICE



⑥② DOOR JAMB
D-226



⑥②A SUB-FRAME HEADER
D-231

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

M.P. DRAWN BY	04/15/2021 DATE	21-056 DRAWING NO	SHEET 3 OF 33
HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS			
Oldcastle BuildingEnvelope™ 803 Airport Rd - Terrell, TX 75160 www.OldcastleBE.com - Phone 800-869-4667			
REV. No	DESCRIPTION	DATE	REV. No
-	OLD 18-030	04/13/21	-
-	GLASS SHT. 8	9/14/21	-

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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 38th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 - Fax : (305)871-1531
e-mail: tilteco@col.com
CA-0006719
WALTER A. TILLIT JR., P.E.
FLORIDA LIC. # 44167

P.E. SEAL/SIGNATURE/DATE

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

BILL OF MATERIALS

ITEM No.	PART NUMBER	DESCRIPTION	DIMENSIONS	MATERIAL	MANUFACTURER	NOTES
1.	GP-118	EXTERIOR GLAZING GASKET	.342 X .450	VINYL	EPG	70 DUROMETER
2.	FG-5185	INTERIOR SPACER GASKET	.25 X .375	VINYL	EPG	
3.	DOW 995	STRUCTURAL SILICONE	FILL SPACE	SILICONE	DOW CORNING	
4.	GP-103	EXTERIOR PERIMETER GASKET	.150 X .470	VINYL	EPG	
5.	CW-6H	THERMAL ISOLATOR	.625 X .421	RIGID VINYL	OLDCASTLE BUILDINGENVELOPE	
6.	CW-2102	SETTING BLOCK	1.250 X .188 X 4" LONG	RIGID VINYL	EPG	
7.	HR-FP-4	MULLION END CAPS	3.5 X 2.00 X .062	RIGID VINYL	OLDCASTLE BUILDINGENVELOPE	SEE NOTE # 2 BELOW
8.	795	PERIMETER SEALANT	FILL SPACE	SILICONE	DOW CORNING	
9.	FS-8	SPLINE ASSEMBLY SCREW	#14 X 1 HHSTS FS-322 (STALGARD COATED BY ELCO)	STEEL	ELCO	
10.	FS-7	JAMB SCREW	#10 X 3/4" PFH TYPE B	STEEL	VARIES	(2)⊙ EA. HORIZ. 12" O.C.⊙ 2PC JAMB
11.	FS-322	PRESSURE PLATE SCREW	#12-14 X 1" HWH #3 FS-322 (STALGARD COATED BY ELCO)	STEEL	ELCO	(1) ⊙ EA. 24" O.C.
12.	CW-2	FACE CAP	.515 X 2.5 X .050	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
13.	ZG-60	PRESSURE BAR	2.40 X .450 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	SEE NOTE: # 1 BELOW
14.	CW-1991	JAMB MULLION SPLICE	2.16" X 4.96" X .125	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
15.	CW-2023	JAMB MULLION	2.50 X 6.987 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
16.	CW-1996	MULLION FILLER	.806 X 4.734 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
17.	CW-2024	HEAD/SILL	2.39 X 6.862 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
18.	CW-1998	HEAD/SILL/HORIZONTAL TRIM	2.50 X 5.219 X .078	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
19.	CW-1999	SSG MULLION	2.50 X 5.25 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
20.	CW-2156	HORIZONTAL	2.39 X 6.847 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
21.	CW-2026	TWO PIECES JAMB FEMALE HALF	6.975 X 2.406 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
22.	CW-2002	TWO PIECES JAMB MALE HALF	1.203 X 5.25 X .094	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
23.	CW-2183	CORNER PRESSURE PLATE	1.884 X 5.401 X .125	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
24.	CW-2188	CORNER FACE CAP	.546 X 4.062 X .062	6063-T5 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
25.	CW-691	POCKET FILLER	.938 X 1.594 X .094	6063-T5 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
26.	CW-2018	CORNER MULLION FEMALE HALF	1.724 X 7.094 X .140	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
27.	CW-2019	CORNER MULLION MALE HALF	1.724 X 7.094 X .140	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
28.	CW-2020	CORNER MULLION FILLER	1.302 X 2.50 X .078	6063-T5 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
29.	CW-2021	CORNER SPLICE	1.064 X 6.3147 X .125	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	

NOTE #1: ALL VERTICAL PRESSURE PLATES SHALL BE CUT $\frac{1}{4}$ " SHORT IN LENGTH TO ALLOW FOR WEEP SLOT

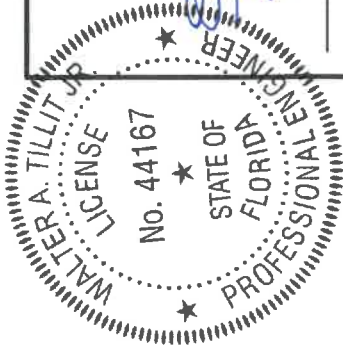
NOTE #2-BEAD OF DOW CORNING 995 SILICONE SHALL BE APPLIED TO FRAME SURFACE BEFORE PART IS INSTALLED

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

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WALTER A. TILLIT JR.
P.E. SEAL/SIGNATURE/DATE

M.P. DRAWN BY

04/15/2021 DATE

21-056 DRAWING No

SHEET 4 OF 33

BILL OF MATERIALS (CONTINUED)

ITEM No.	PART NUMBER	DESCRIPTION	DIMENSIONS	MATERIAL	MANUFACTURER	NOTES
30.	HR-FP-5	LEFT AND RIGHT HAND JAMB END CAPS	2.96 X 0.78 X .062	RIGID VINYL	OLDCASTLE BUILDINGENVELOPE	SEE NOTE # 2 BELOW
31.	FG5000-PP-8	REINFORCING STEEL	4 5/8" X 1 1/4" X 1/4" CHANNEL	A36 STEEL	VARIES	USED • VERTICAL CORNER MULLION, COAT ZINC RICH PRIMER
32.	FASTENER	STEEL REINFORCING ATTACHMENT BOLT	1/4-20 X 2" BOLT WITH WASHER AND NUT	STEEL	VARIES	ZINC COATED, PER ASTM B-633
33.	HR-FP-24	HEAD ANCHOR LEFT	3 1/2" x 6" x 4 1/4" LONG	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
33A.	HR-FP-25	HEAD ANCHOR RIGHT	3 1/2" x 6" x 4 1/4" LONG	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
34.	RS-25	REINFORCING STEEL	4 3/4" X 1 7/8" X 1/4" CHANNEL	A36 STEEL	VARIES	COAT ZINC RICH PRIMER
35.	AN-52	EXTRUDED ANGLE	2.00" X 2.00" X 1/8" ANGLE	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	APPLY WITH DOUBLE SIDED TAPE
36.	HR-FP-15	HEAD ANCHOR SLEEVE	2 3/16" X 4 15/16" X 2 1/2" LONG	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
37.	HR-FP-17	HEAD ANCHOR SLEEVE CORNER	2 3/16" X 6 3/16" X 3" LONG	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	USED • JAMBS
38.	HR-FP-13	BRAKE METAL SPLICE	.75 X 4.812 X .75 X .125 X 8" LONG	3030 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	USED • JAMBS
39.	HR-FP-14	BRAKE METAL SPLICE	.94 X 5.00 X 1.437 X .125 X 8" LONG	3030 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	USED • JAMBS
40.	FASTENER	ANCHOR BOLT	5/8-11 X 4 1/2" SAE GRD 5 BOLT, HEX NUT AND WASHER	STEEL	VARIES	ZINC COATED, PER ASTM B-633
41.	**	STEEL DEADLOAD ANCHOR	4" X 6" X 5/16" X 5" LONG	A36 STEEL	VARIES	ZINC COATED, PER ASTM B-633.
42.	**	SLIP PAD	4" X 4" X .063	VINYL	KORALATH	USED • MID POINT ANCHORS
43.	FASTENER	JAMB ANCHOR BOLT	5/8-11 X 1 1/2" SAE GRD 5 BOLT	STEEL	VARIES	ZINC COATED, PER ASTM B-633
44.	HR-FP-22	CORNER HEAD ANCHOR LEFT	2.147" X 6.314" X .25"	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
45.	HR-FP-23	CORNER HEAD ANCHOR RIGHT	2.147" X 6.314" X .25"	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
46.	**	STEEL DEADLOAD ANCHOR • CORNER	4" X 8" X 1/4" X 5" LONG	A36 STEEL	VARIES	
47.	HR-FP-8	90 DEG MULLION END CAP	4.615 X 3.195 X .062	RIGID VINYL	OLDCASTLE BUILDINGENVELOPE	TOP & BOTTOM OF MULLION SEE NOTE # 2 BELOW
48.	HR-FP-12	WATER DIVERTER	.0875 X 1.061 X .875	VINYL	OLDCASTLE BUILDINGENVELOPE	1.50 LONG SEE NOTE # 2 BELOW
49.	SM-5601	JOINT SEALANT TAPE	.125 X .750 X VARIES	BUTYL	SCHNEE-MOREHEAD	USED AT END OF INTERMEDIATE HORIZONTALS
50.	HR-FP-16	JAMB HEAD ANCHOR SLEEVE	2 3/16" X 5 5/16" X 5 1/8" LONG	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	USED AT JAMBS
52.	RS-17	STEEL REINFORCING INCLUDES RS-25	3/4" X 4" STEEL BAR WITH RS-25	A36 STEEL	VARIES	USED AT DOOR MULLION
54.	FASTENER	STEEL REINFORCING ATTACHMENT BOLT	1/4-20 X 1 1/2" SAE GRADE 5 BOLT WITH WASHER AND NUT	STEEL	VARIES	THROUGH-BOLT • INT HORIZONTALS
55.	HR-FP-10	BRIDGE	3.75 X 1.75 X .125	MOLDED PLASTIC	VARIES	
59.	FASTENER	ATTACHMENT BOLT	1/4-20 X 2 1/4" BOLT WITH WASHER AND NUT	STEEL	VARIES	ZINC COATED, PER ASTM B-633
60.	FASTENER	STEEL REINFORCING ATTACHMENT BOLT	1/4-20 X 3 1/2" SAE GRADE 5 BOLT WITH WASHER AND NUT	STEEL	VARIES	THROUGH-BOLT • INT HORIZONTALS
61.	**	SSG MULLION SPLICE	4.969" X 2.500" X 0.125"	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
62.	D-226	DOOR JAMB	1.00" X 5.00" X .094"	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	
62A.	D-231	SUB-FRAME HEADER	1.00" X 5.00" X .094"	6063-T6 ALUMINUM	OLDCASTLE BUILDINGENVELOPE	

** NO PART NUMBER ASSIGNED

NOTE #2-BEAD OF DOW CORNING 995 SILICONE SHALL BE APPLIED TO FRAME SURFACE BEFORE PART IS INSTALLED

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS



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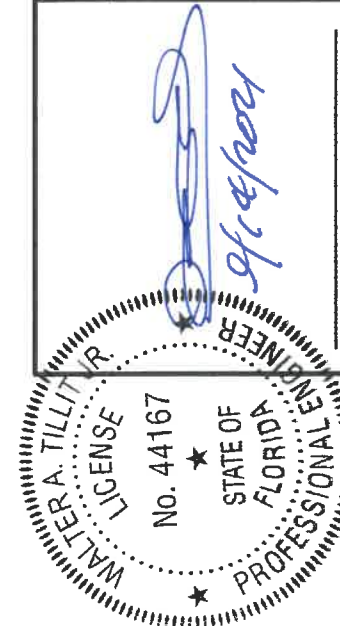
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-	04/15/21	OLD 10-060	-	04/15/21	-
-	-	GLASS SHIT. B	-	04/15/21	-

DATE
04/15/2021

M.P.
DRAWN BY

21-056
DRAWING No

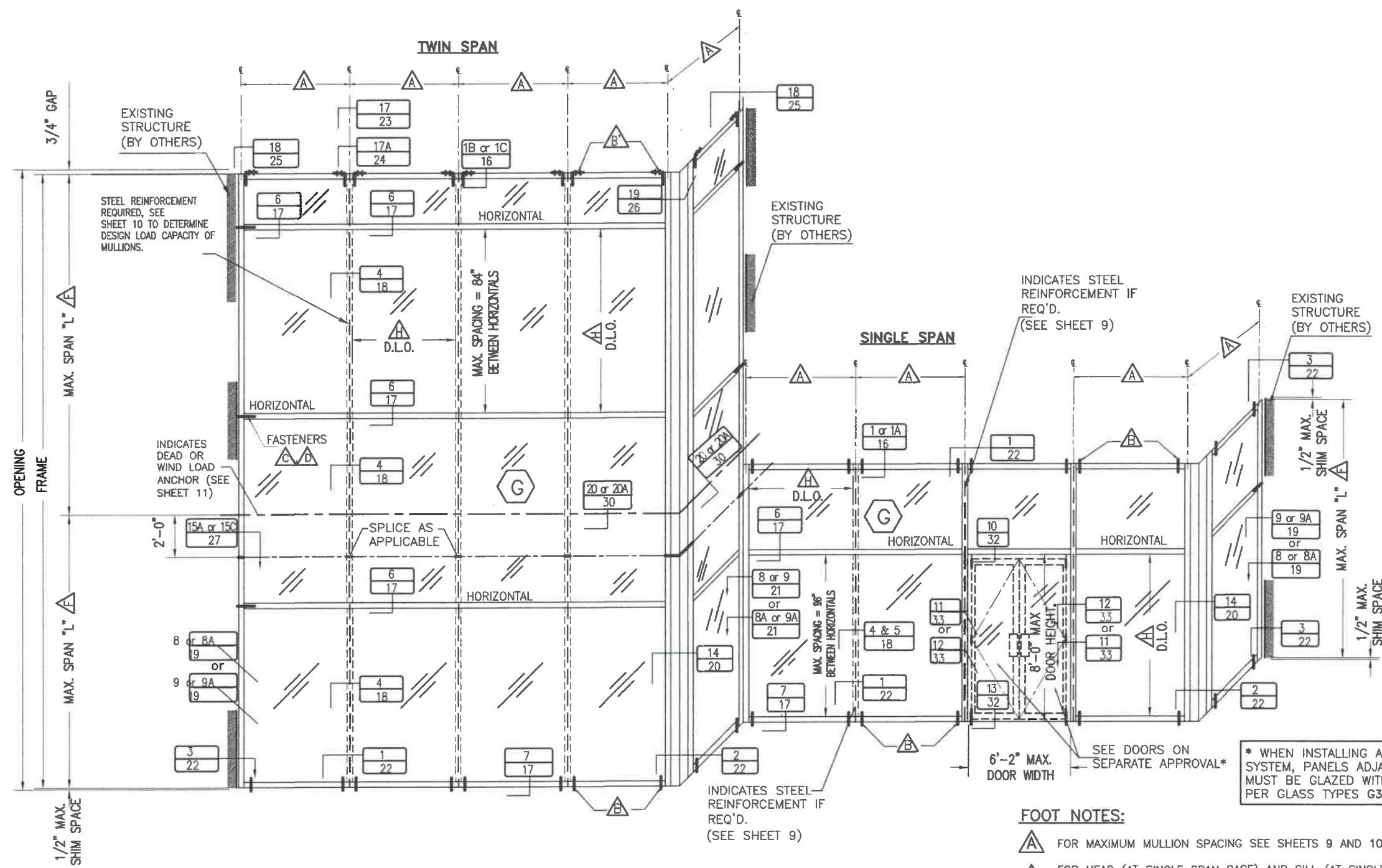
SHEET 5 OF 33



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ISOMETRIC ELEVATION FOR HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE W/
INSULATING LAMINATED GLASS

N.T.S.



FOOT NOTES:

- A** FOR MAXIMUM MULLION SPACING SEE SHEETS 9 AND 10.
- B** FOR HEAD (AT SINGLE SPAN CASE) AND SILL (AT SINGLE AND TWIN SPAN CASES), FASTENERS QUANTITY, TYPES AND SPECS SEE SHEET 12.
- B** FOR HEAD (AT TWIN SPAN), FASTENERS QUANTITY, TYPES AND SPECS SEE SHEET 13.
- C** FOR JAMB FASTENERS QUANTITY, TYPES AND SPECS SEE SHEETS 14 & 15.
- D** SEE SHEETS 14 THRU 15 FOR MAXIMUM A.S.D. PRESSURE RATING FOR JAMBS CONNECTED TO EXISTING STRUCTURE.
- F** FOR MAXIMUM MULLION SPAN SEE SHEETS 9 AND 10.
- G** FOR GLAZING DETAILS AND GLASS SCHEDULE SEE SHEET 7.
- H** FOR MAXIMUM D.L.O. AND PRESSURE RATING FOR GLASS SEE SCHEDULE ON SHEET 8.

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

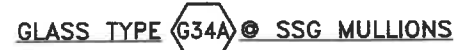
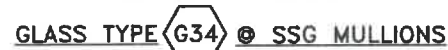
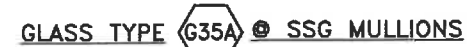
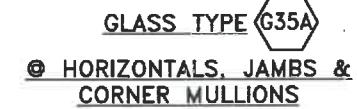
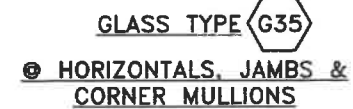
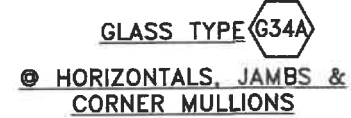
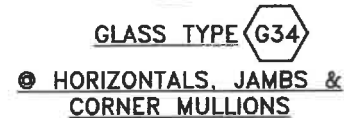
HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS						M.P. DRAWN BY		04/15/2021 DATE		21-056 DRAWING No		SHEET 6 OF 33	
 Oldcastle BuildingEnvelope™ 803 Airport Rd - Terrell, TX 75160 www.OldcastleBE.com - Phone 800-889-4567													
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE								
-	OLD 18-030	04/15/21	-	-	-								
-	GLASS SHT. 8	9/14/21	-	-	-								

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WALTER A. TILLIT JR. P.E.
FLORIDA Lic. # 44167

Professional Engineer Seal for Walter A. Tillit Jr., P.E., License No. 44167, State of Florida. The seal is circular with the text 'WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER' around the perimeter. A signature is written across the seal.

P.E. SEAL/SIGNATURE/DATE

SCALE 1/2" = 1"



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FLORIDA Lic. # 44167

WALTER A. ILLI
FLORIDA Lic. # 44167
Jr. P.E.

FLORIDA LIC. # 44167

1000

**HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS**



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DESCRIPTION	DATE	REV. NO.	DESCRIPTION
P. 08 - P. 09	04/16/74		

16-030	04/10/21	-
SS SHT. 8	0/14/21	-

04/15/2021
DATE

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950-17

DRAWING No.

SHEET 7 OF 30

1

MAXIMUM FRAME WIDTH "a" AND FRAME LENGTH "b" VERSUS DESIGN PRESSURE RATING "W" (psf) SCHEDULE *

GLASS TYPES		
G34 , G34A , G35 & G35A		
DIMENSION "a"	DIMENSION "b"	MAXIMUM DESIGN PRESSURE RATING "W"(psf)
24"	from 24" to 96"	±90.0
30"	from 30" to 96"	±90.0
36"	from 36" to 96"	±90.0
42"	from 42" to 96"	±90.0
48"	from 48" to 96"	±90.0
52.1"	from 52.1" to 96"	±90.0
54"	from 54" to 92"	±86.8
60"	from 60" to 83"	±78.0
66"	from 66" to 75"	±71.0
70.5"	from 70.5" to 70.5"	±66.5

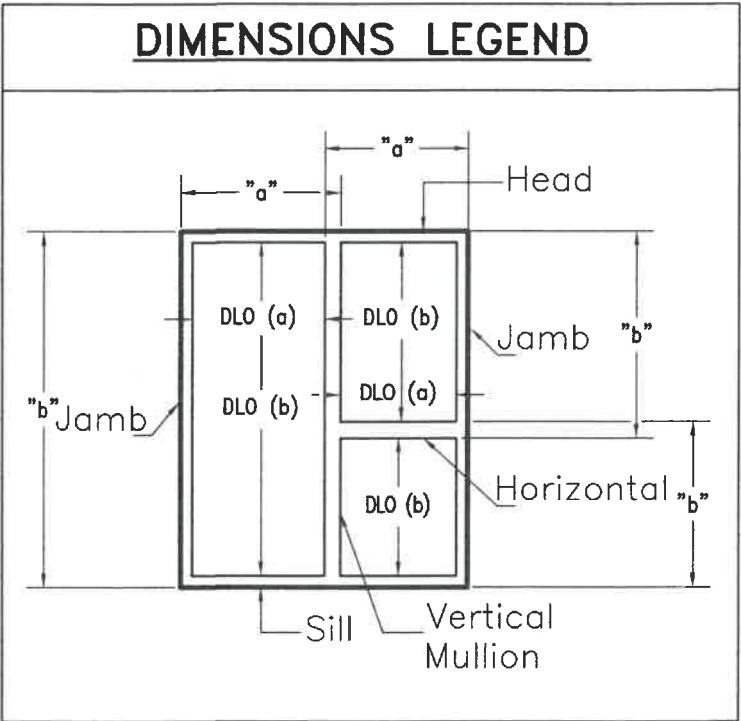
* DETERMINATION OF MAXIMUM DAY LIGHT OPENING (D.L.O.) AT EACH END OF GLASS GIVEN "a" & "b"

SIDE	MAX. DAY LIGHT OPENING	
	(D.L.O.) Formula at vertical & jamb mullions	(D.L.O.) Formula at horizontal, head & sill frames
MAX. D.L.O. (a) (SHORT SIDE)	"a" - 5.00"	--
MAX. D.L.O. (b) (LONG SIDE)	--	"b" - 5.00"

** SIDE "a" IS ALWAYS EQUAL OR SHORTER THAN "b". "a", "b" ,MAY BE ORIENTED IN ANY DIRECTION.

NOTES:

1. SEE SHEET 7 FOR GLAZING DETAILS AND GLASS SCHEDULE.



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M.P. DRAWN BY

04/15/2021 DATE

21-056 DRAWING No

SHEET 8 OF 33

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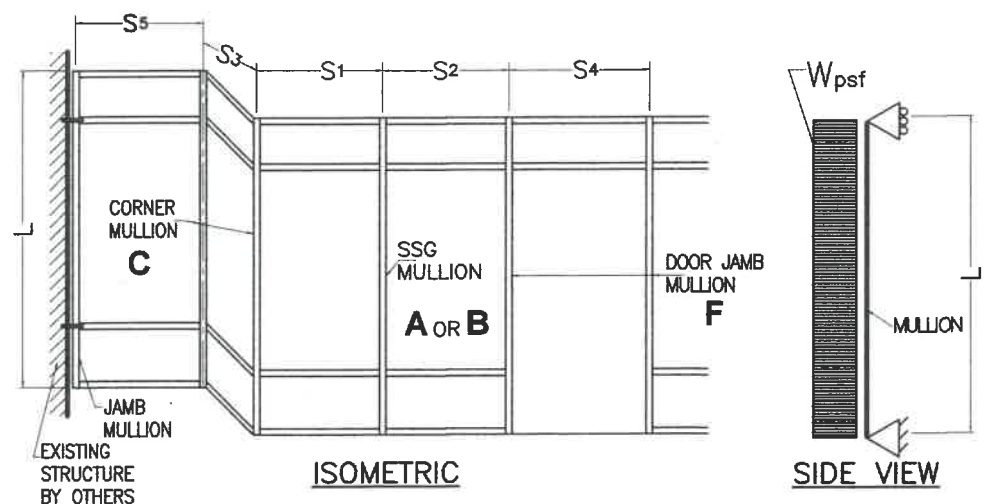
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STATE OF FLORIDA
PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

4/14/2021

HR-251 SSG SINGLE SPAN MULLION



L = MULLION SPAN ; S1, S2, S3, S4 & S5 = MULLION SPACING

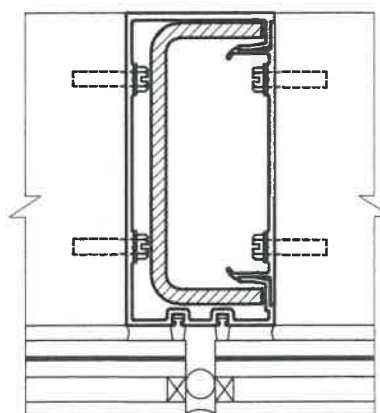
EFFECTIVE SPACING $b = \frac{S1 + S2}{2}$
(FOR STANDARD MULLION)

EFFECTIVE SPACING $b = \frac{S1 + S3}{2}$
(FOR CORNER MULLION)

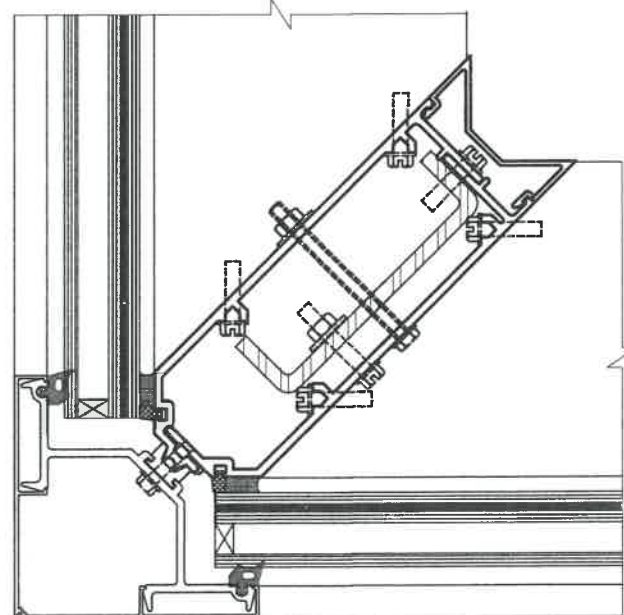
EFFECTIVE SPACING $b = \frac{S2 + S4}{2}$
(FOR DOOR JAMB MULLION)

EFFECTIVE SPACING $b = \frac{S5}{2}$
(FOR JAMB MULLION)

B CASE-2
LIGHT MULLION (19) + (18)
W/ STEEL CHANNEL (34)
IN TERMS OF ALUM.
Ix= 24.5170 in⁴
Sx= 9.0837 in³



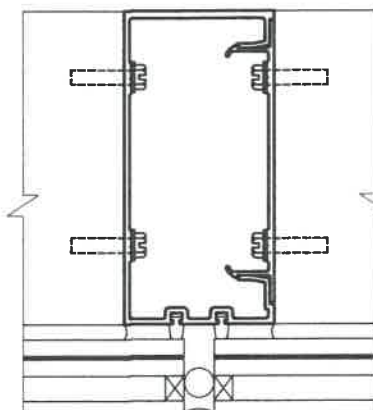
C CASE-3
CORNER MULLION (26) + (27)
W/ STEEL CHANNEL (31)
IN TERMS OF ALUM.
Ix= 35.138 in⁴
Sx= 9.0422 in³



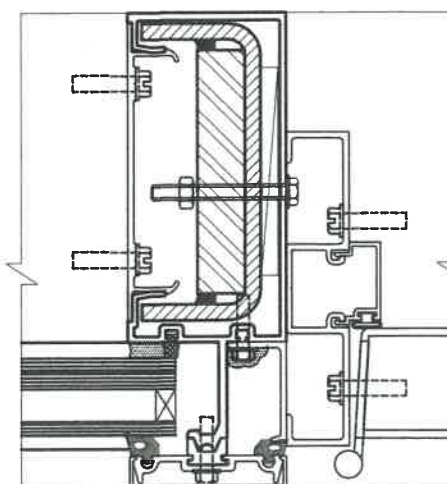
CASE DEFINITIONS

- CASE 1** : SINGLE SPAN UNREINFORCED SSG MULLION **A**
(SEE DET. 5/18)
- CASE 2** : SINGLE SPAN REINFORCED SSG MULLION **B** FULL
HEIGHT. (SEE DET. 4/18)
- CASE 3** : SINGLE SPAN REINFORCED CORNER MULLION **C**
FULL HEIGHT. (SEE DET. 14/20)
- CASE 6** : SINGLE SPAN REINFORCED DOOR JAMB MULLION **F**
FULL HEIGHT. (SEE DET. 12/33)

A CASE-1
LIGHT MULLION (19) + (18)
IN TERMS OF ALUM.
Ix= 7.031 in⁴
Sx= 2.6713 in³



F CASE-6
LIGHT MULLION (15) + (16)
W/ STEEL CHANNEL (34) &
3/4"x4" STEEL BAR (52)
IN TERMS OF ALUM.
Ix= 40.604 in⁴
Sx= 9.2970 in³



MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR SSG, DOOR

JAMB & CORNER MULLIONS *

MAXIMUM MULLION SPAN "L"(FT) SCHEDULE FOR A
GIVEN A.S.D. DESIGN PRESSURE RATING (psf) AND A
GIVEN MULLION EFFECTIVE SPACING "b"

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	EFFECTIVE SPACING "b" (Ft-in)	SINGLE SPAN MULLIONS			
		CASE 1 MULLION: A "L" (Ft-in)	CASE 2 MULLION: B "L" (Ft-in)	CASE 3 MULLION: C "L" (Ft-in)	CASE 6 MULLION: F "L" (Ft-in)
60.0	3' - 0"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	12' - 0"
65.0	3' - 0"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	8' - 0"	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	12' - 0"
67.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	12' - 0"
70.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	12' - 0"
75.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	11' - 6"
80.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	10' - 10"
85.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	10' - 2"
90.0	3' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	3' - 6"	-	12' - 0"	12' - 0"	12' - 0"
	4' - 0"	-	12' - 0"	12' - 0"	12' - 0"
	5' - 0"	-	-	-	9' - 7"

* MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR SSG,
DOOR JAMB & CORNER MULLION WILL
AUTOMATICALLY QUALIFY A.S.D. DESIGN PRESSURE
RATINGS FOR JAMBS FOR ANY GIVEN MULLION
SPACING.
MAXIMUM JAMB SPAN (DISTANCE BETWEEN
ANCHORAGE POINTS) IS 96", AND JAMB ANCHORAGE
SHALL BE PERFORMED AT HORIZONTAL RAIL
LOCATIONS.

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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CA-0006719
WALTER A. TILLIT JR., P.E.
FLORIDA LIC. # 44167

HR-251 SSG CAPTURED CURTAIN WALL
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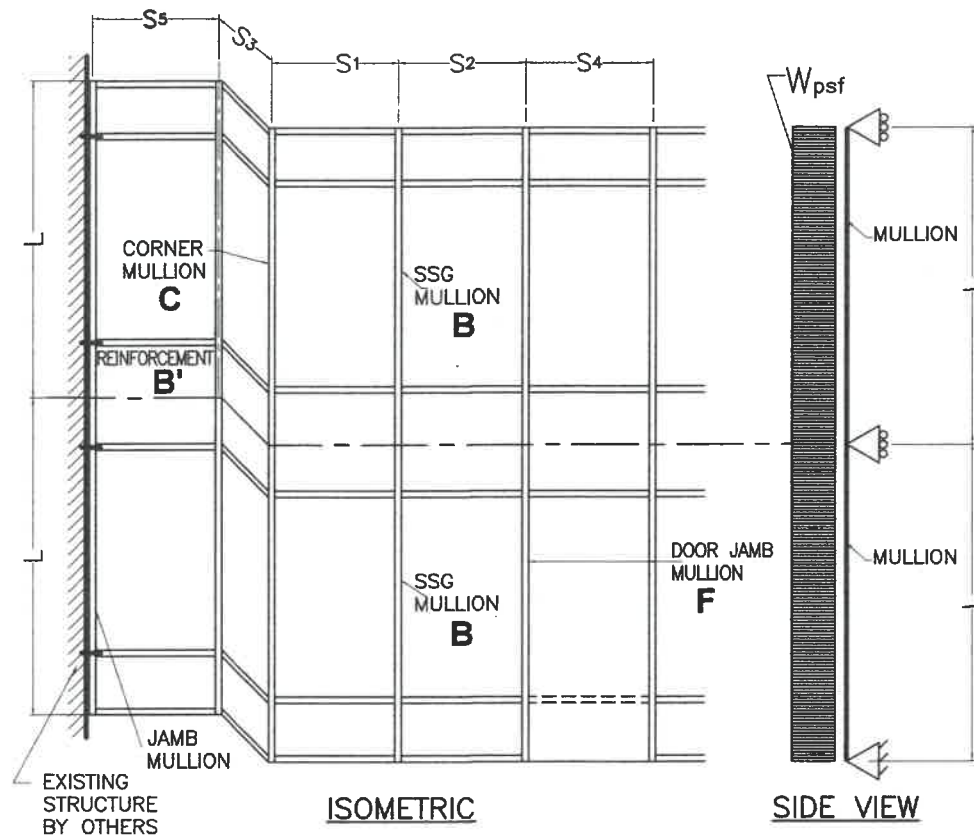
SHEET 9 OF 33

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

HR-251 SSG TWIN SPAN MULLION

CASE DEFINITIONS

- CASE 4 :** TWIN SPAN REINFORCED SSG MULLION **B** FULL HEIGHT. (SEE DET. 4/18).
- CASE 5 :** TWIN SPAN REINFORCED CORNER MULLION **C** FULL HEIGHT. (SEE DET. 14/20).
- CASE 6 :** REINFORCED DOOR JAMB MULLION **F** FULL HEIGHT. (SEE DET. 12/33)



L = MULLION SPAN ; S1, S2, S3, S4 & S5 = MULLION SPACING

EFFECTIVE SPACING $b = \frac{S1 + S2}{2}$
(FOR STANDARD MULLION)

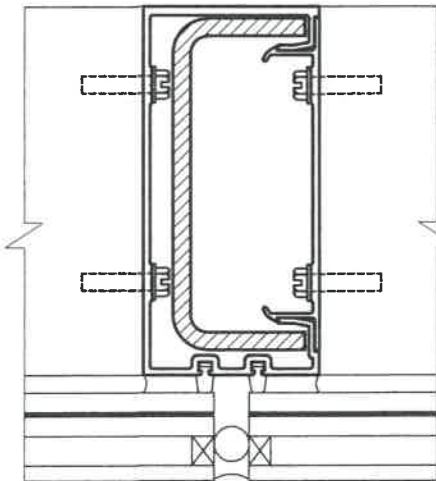
EFFECTIVE SPACING $b = \frac{S1 + S3}{2}$
(FOR CORNER MULLION)

EFFECTIVE SPACING $b = \frac{S2 + S4}{2}$
(FOR DOOR JAMB MULLION)

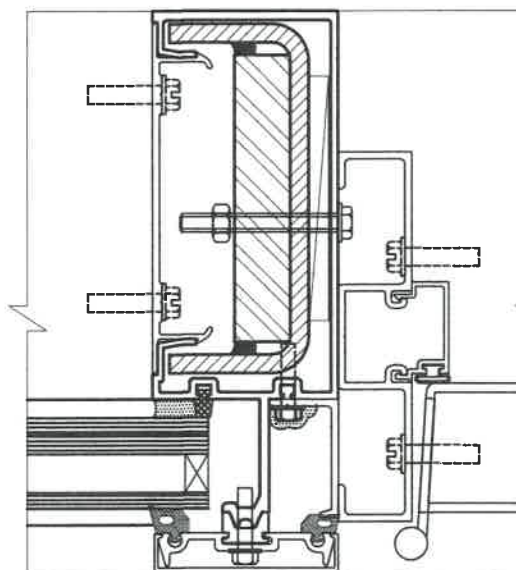
EFFECTIVE SPACING $b = \frac{S5}{2}$
(FOR JAMB MULLION)

CASE 3
C CORNER MULLION (26) + (27)
W/ STEEL CHANNEL (31)
Ix= 35.138 in⁴
Sx= 9.0422 in³
IN TERMS OF ALUM.

CASE 4
B LIGHT MULLION (19) + (16)
W/ STEEL CHANNEL (34)
Ix= 24.517 in⁴
Sx= 9.084 in³
IN TERMS OF ALUM.



CASE 6
F LIGHT MULLION (15) + (16)
W/ STEEL CHANNEL (34) &
3/4"x4" STEEL BAR (52)
Ix= 40.604 in⁴
Sx= 9.2970 in³
IN TERMS OF ALUM.



◇ THIS MULLION SHALL BE USED FULL HEIGHT, i.e. ON BOTH SPANS OF THE TWIN SPAN CONDITION.

MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR SSG, DOOR

JAMB & CORNER MULLIONS *

MAXIMUM MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) AND A GIVEN MULLION EFFECTIVE SPACING "b"

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	EFFECTIVE SPACING "b" (Ft-in)	TWIN SPAN MULLIONS		
		CASE 4 MULLION: B "L" (Ft-in)	CASE 5 MULLION: C "L" (Ft-in)	CASE 6 MULLION: F "L" (Ft-in)
60.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 6"
65.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 6"
67.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 6"
70.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 6"
75.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 4"
80.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	12' - 0"
85.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	11' - 7"
90.0	3' - 0"	12' - 6"	12' - 6"	12' - 6"
	3' - 6"	12' - 6"	12' - 6"	12' - 6"
	4' - 0"	12' - 6"	12' - 6"	12' - 6"
	4' - 1"	-	12' - 6"	12' - 6"
	5' - 0"	-	-	11' - 3"

* MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR SSG, DOOR JAMB & CORNER MULLION WILL AUTOMATICALLY QUALIFY A.S.D. DESIGN PRESSURE RATINGS FOR JAMBS FOR ANY GIVEN MULLION SPACING.
MAXIMUM JAMB SPAN (DISTANCE BETWEEN ANCHORAGE POINTS) IS 84", AND JAMB ANCHORAGE SHALL BE PERFORMED AT HORIZONTAL LOCATIONS.

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

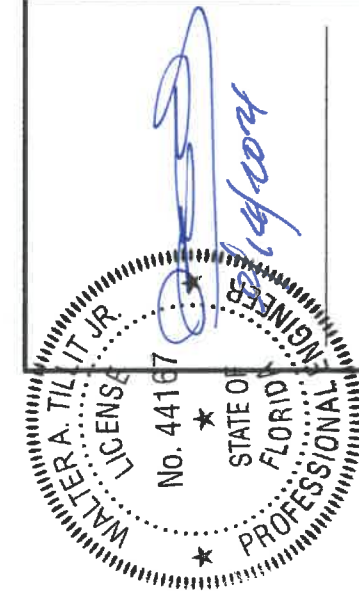
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WALTER A. TILIT JR., P.E.
FLORIDA Lic. # 44167

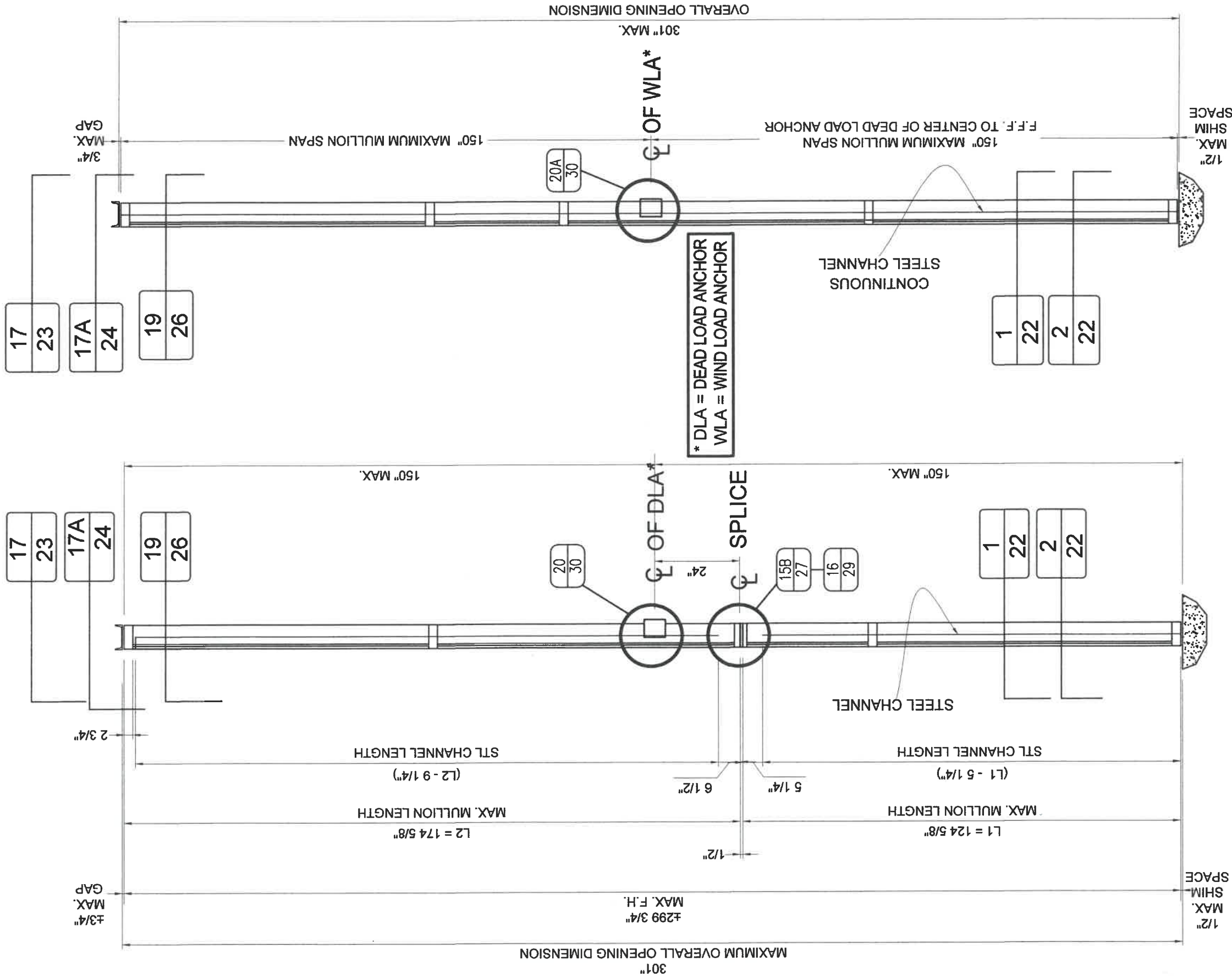
HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

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OPTIONS FOR TWIN SPAN STANDARD AND CORNER MULLIONS
INSTALLATION FOR HR-251 SSG CURTAIN WALL SYSTEM

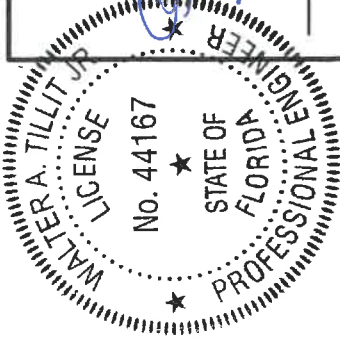


OPTION # 1

MULLION W/ SPLICE
(TWIN SPAN JAMBS MUST BE ALWAYS BE SPLICED
@ LOCATION SHOWN ON ISOMETRIC ON SHEET 6,
INCLUDING PROVISIONS FOR EXPANSION JOINTS)

OPTION # 2:

CONTINUOUS MULLION W/O SPLICE



Walter A. Tillit Jr.

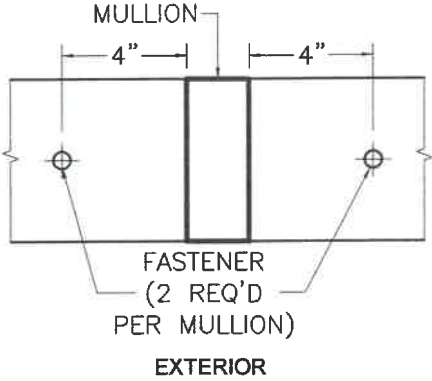
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				21-056
				DRAWING No
				SHEET 11 OF 33

MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR SINGLE SPAN (HEAD & SILL) & TWIN SPAN (SILL ONLY) MULLION CONNECTIONS (SEE ALSO SHEET 13)

SINGLE SPAN MULLION: HEAD & SILL CONNECTION *						
MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			1/4" Min. THK ASTM A-36 STEEL SUBSTRATE	
		FASTENERS TYPES			FASTENERS	
"L" (ft-in)	"b" (ft-in)	A	B	C	D	
8	' - 0 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
8	' - 6 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
9	' - 0 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
9	' - 6 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
10	' - 0 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
10	' - 6 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
11	' - 0 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
11	' - 6 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
12	' - 0 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	90.0	90.0
12	' - 6 "	3' - 0 "	90.0	90.0	90.0	90.0
		3' - 6 "	90.0	90.0	90.0	90.0
		4' - 0 "	90.0	90.0	90.0	90.0
		5' - 0 "	90.0	90.0	88.5	90.0

TWIN SPAN MULLION:			SILL CONNECTION *			
MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			1/4" Min. THK ASTM A-36 STEEL SUBSTRATE	
		FASTENERS TYPES			FASTENERS	
"L" (ft-in)	"b" (ft-in)	A	B	C	D	
8	'- 0 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
8	'- 6 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
9	'- 0 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
9	'- 6 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
10	'- 0 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
10	'- 6 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
11	'- 0 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
11	'- 6 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
12	'- 0 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	90.0	90.0	90.0
12	'- 6 "	3'- 0 "	90.0	90.0	90.0	90.0
		3'- 6 "	90.0	90.0	90.0	90.0
		4'- 0 "	90.0	90.0	90.0	90.0
		4'- 1 "	90.0	90.0	90.0	90.0
	5'- 0 "	90.0	90.0	88.5	90.0	90.0

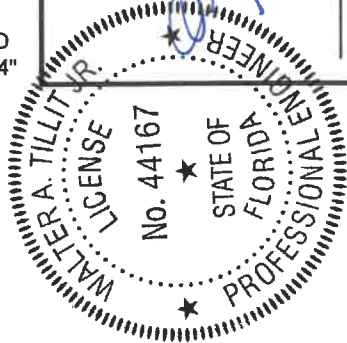


SCHEMATIC CONNECTION DETAIL *

* SEE CONNECTION DETAILS ON SHEETS 16 & 22 FOR FASTENERS QUANTITY & LOCATIONS AT MULLION.

FASTENERS TYPES & SUBSTRATES REQUIREMENTS

- A - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO 8" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 6" MIN. EDGE DISTANCE.
- B - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO 6" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 7 1/2" MIN. EDGE DISTANCE.
- C - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO 4" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 3 3/4" MIN. EDGE DISTANCE.
- D - 1/2"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" Min. EDGE DISTANCE OR 1/2"Ø-13 SAE GALVANIZED STEEL GRADE 5 HHB THRU BOLT W/ NUT & LOCK WASHER TO 1/4" Min. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE.



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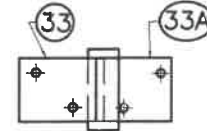
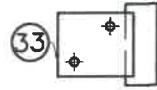
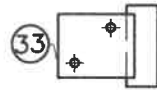
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-	-	8/14/21	-	-	-

21-056

DRAWING No

SHEET 12 OF 33

MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR TWIN SPAN MULLION & JAMB MULLION HEAD ANCHOR CONNECTIONS



TWIN SPAN JAMB MULLION : HEAD CONNECTION *						
W/ (1) 6"x 3 1/2" x 4 1/4" LONG ANCHOR #33						
TYPE 1 **		MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
MAXIMUM MULLION SPAN	EFFECTIVE SPACING	POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			1/4" Min. THK ASTM A-36 STEEL SUBSTRATE	
		FASTENERS TYPES			FASTENERS	
"L" (ft-in)	"b" (ft-in)	A	B	C	D	
8'-0"	3'-0"	81.4	84.9	90.0	90.0	
	3'-6"	69.8	72.8	89.8	90.0	
	4'-0"	61.0	63.7	78.6	90.0	
	4'-1"	60.0	62.6	77.3	90.0	
	5'-0"	48.8	50.9	62.9	90.0	
8'-6"	3'-0"	76.6	79.9	90.0	90.0	
	3'-6"	65.6	68.5	84.5	90.0	
	4'-0"	57.4	59.9	74.0	90.0	
	4'-1"	56.5	59.0	72.8	90.0	
	5'-0"	46.0	48.0	59.2	90.0	
9'-0"	3'-0"	72.3	75.5	90.0	90.0	
	3'-6"	62.0	64.7	79.8	90.0	
	4'-0"	54.3	56.6	69.9	90.0	
	4'-1"	53.4	55.7	68.7	90.0	
	5'-0"	43.4	45.3	55.9	90.0	
9'-6"	3'-0"	68.5	71.5	88.2	90.0	
	3'-6"	58.7	61.3	75.6	90.0	
	4'-0"	51.4	53.6	66.2	90.0	
	4'-1"	50.5	52.7	65.1	90.0	
	5'-0"	41.1	42.9	52.9	90.0	
10'-0"	3'-0"	65.1	67.9	83.8	90.0	
	3'-6"	55.8	58.2	71.9	90.0	
	4'-0"	48.8	50.9	62.9	90.0	
	4'-1"	48.0	50.1	61.8	90.0	
	5'-0"	39.1	40.8	50.3	90.0	
10'-6"	3'-0"	62.0	64.7	79.8	90.0	
	3'-6"	53.1	55.5	68.4	90.0	
	4'-0"	46.5	48.5	59.9	90.0	
	4'-1"	45.7	47.7	58.9	90.0	
	5'-0"	37.2	38.8	47.9	90.0	
11'-0"	3'-0"	59.2	61.8	76.2	90.0	
	3'-6"	50.7	52.9	65.3	90.0	
	4'-0"	44.4	46.3	57.2	90.0	
	4'-1"	43.7	45.6	56.2	90.0	
	5'-0"	35.5	37.1	45.7	90.0	
11'-6"	3'-0"	56.6	59.1	72.9	90.0	
	3'-6"	48.5	50.6	62.5	90.0	
	4'-0"	42.5	44.3	54.7	90.0	
	4'-1"	41.8	43.6	53.8	90.0	
	5'-0"	34.0	35.4	43.7	90.0	
12'-0"	3'-0"	54.3	56.6	69.9	90.0	
	3'-6"	46.5	48.5	59.9	90.0	
	4'-0"	40.7	42.5	52.4	90.0	
	4'-1"	40.0	41.8	51.5	90.0	
	5'-0"	32.6	34.0	41.9	90.0	
12'-6"	3'-0"	52.1	54.3	67.1	90.0	
	3'-6"	44.6	46.6	57.5	90.0	
	4'-0"	39.1	40.8	50.3	90.0	
	4'-1"	38.4	40.1	49.5	90.0	
	5'-0"	31.2	32.6	40.2	90.0	

TWIN SPAN JAMB MULLION : HEAD CONNECTION *					
W/ (1) 6"x 3 1/2" x 4 1/4" LONG ANCHOR #33					
TYPE 2 **		MAXIMUM A.S.D DESIGN PRESSURE RATING (psf)			
MAXIMUM MULLION SPAN	EFFECTIVE SPACING	POURED CONCRETE (Min. fc = 3ksi) SUBSTRATE			1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENERS TYPES			FASTENERS
"L" (ft-in)	"b" (ft-in)	A	B	C	D
8'-0"	3'-0"	72.7	75.8	90.0	90.0
	3'-6"	62.3	65.0	80.2	90.0
	4'-0"	54.5	56.9	70.2	90.0
	4'-1"	53.6	55.9	69.0	90.0
	5'-0"	43.6	45.5	56.1	90.0
8'-6"	3'-0"	68.4	71.4	88.1	90.0
	3'-6"	58.6	61.2	75.5	90.0
	4'-0"	51.3	53.5	66.0	90.0
	4'-1"	50.4	52.6	65.0	90.0
	5'-0"	41.0	42.8	52.8	90.0
9'-0"	3'-0"	64.6	67.4	83.2	90.0
	3'-6"	55.4	57.8	71.3	90.0
	4'-0"	48.4	50.5	62.4	90.0
	4'-1"	47.6	49.7	61.3	90.0
	5'-0"	38.8	40.4	49.9	90.0
9'-6"	3'-0"	61.2	63.8	78.8	90.0
	3'-6"	52.4	54.7	67.5	90.0
	4'-0"	45.9	47.9	59.1	90.0
	4'-1"	45.1	47.1	58.1	90.0
	5'-0"	36.7	38.3	47.3	90.0
10'-0"	3'-0"	58.1	60.7	74.9	90.0
	3'-6"	49.8	52.0	64.2	90.0
	4'-0"	43.6	45.5	56.1	90.0
	4'-1"	42.9	44.7	55.2	90.0
	5'-0"	34.9	36.4	44.9	90.0
10'-6"	3'-0"	55.4	57.8	71.3	90.0
	3'-6"	47.4	49.5	61.1	90.0
	4'-0"	41.5	43.3	53.5	90.0
	4'-1"	40.8	42.6	52.6	90.0
	5'-6"	30.2	31.5	38.9	89.5
11'-0"	3'-0"	52.8	55.1	68.0	90.0
	3'-6"	45.3	47.3	58.3	90.0
	4'-0"	39.6	41.4	51.0	90.0
	4'-1"	39.0	40.7	50.2	90.0
	5'-0"	31.7	33.1	40.8	90.0
11'-6"	3'-0"	50.5	52.7	65.1	90.0
	3'-6"	43.3	45.2	55.8	90.0
	4'-0"	37.9	39.6	48.8	90.0
	4'-1"	37.3	38.9	48.0	90.0
	5'-0"	30.3	31.6	39.1	89.9
12'-0"	3'-0"	48.4	50.5	62.4	90.0
	3'-6"	41.5	43.3	53.5	90.0
	4'-0"	36.3	37.9	46.8	90.0
	4'-1"	35.7	37.3	46.0	90.0
	5'-0"	29.1	30.3	37.4	86.1
12'-6"	3'-0"	46.5	48.5	59.9	90.0
	3'-6"	39.9	41.6	51.3	90.0
	4'-0"	34.9	36.4	44.9	90.0
	4'-1"	34.3	35.8	44.2	90.0
	5'-0"	27.9	29.1	35.9	82.7

TWIN SPAN MULLION: HEAD CONNECTION:					
W/ (2) 6"x 3 1/2" x 4 1/4" LONG ANCHOR #33					
TYPE 1 & 2 **		MAXIMUM A.S.D DESIGN PRESSURE RATING (psf)			
MAXIMUM MULLION SPAN	EFFECTIVE SPACING	POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENERS TYPES			FASTENERS
"L" (ft-in)	"b" (ft-in)	A	B	C	D
8'-0"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
8'-6"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
9'-0"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
9'-6"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
10'-0"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
10'-6"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
11'-0"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
11'-6"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
12'-0"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0
12'-6"	3'-0"	90.0	90.0	90.0	90.0
	3'-6"	90.0	90.0	90.0	90.0
	4'-0"	90.0	90.0	90.0	90.0
	4'-1"	90.0	90.0	90.0	90.0
	5'-0"	90.0	90.0	90.0	90.0

* SEE CONNECTION DETAILS ON SHEETS 23, 24 & 25 FOR FASTENERS QUANTITY & LOCATIONS AT MULLION ‡.

** TYPE 1 CONNECTION:

CORRESPONDS TO CONTINUOUS TWIN MULLION SPAN INSTALLATIONS.

TYPE 2 CONNECTION:

CORRESPONDS TO SPLICED TWIN MULLION SPAN INSTALLATIONS.

FASTENERS TYPES & SUBSTRATES REQUIREMENTS

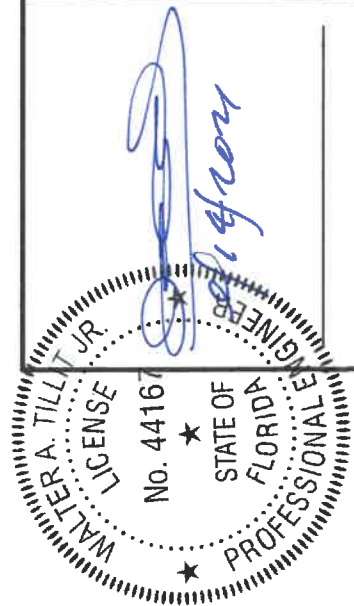
- A - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO 8" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 6" MIN. EDGE DISTANCE.
- B - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO 6" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 7 1/2" MIN. EDGE DISTANCE.
- C - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO 4" Min. THICK POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 3 3/4" MIN. EDGE DISTANCE.
- D - 1/2"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE OR 1/2"Ø -13 SAE GALVANIZED STEEL GRADE 5 HHB THRU BOLT W/ NUT & LOCK WASHER TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE.

‡ MAX. PRESSURE RATING FOR JAMB CONNECTION @ HEAD W/ ANCHOR (33) IS ± 100 psf FOR SINGLE SPAN CURTAIN WALL AND ±90 psf FOR TWIN SPAN CURTAIN WALL, VALID FOR ALL EFFECTIVE WIDTHS. SEE CONNECTION DETAILS ON SHEET 25 FOR FASTENERS QUANTITY AND LOCATION AT JAMB.

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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SHEET 13 OF 33

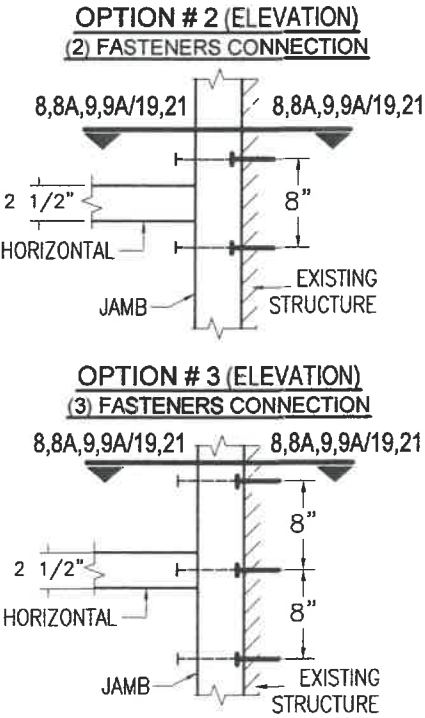
MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR JAMBS AT SINGLE SPAN CURTAIN WALL FASTENED TO EXISTING STRUCTURE W/ 3/8"Ø FASTENERS (SEE ALSO SHEET 15)

OPTION #2 : 2 FASTENERS CONNECTION							
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _s /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)					
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES	FASTENER TYPES	FASTENER	
"L" (ft-in)	"b" (ft-in)	E	F	G	H	I	J
8'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	78.5	90.0	78.5	90.0
	3'-3"	74.0	74.0	60.4	74.0	60.4	83.8
8'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	73.9	90.0	73.9	90.0
	3'-3"	69.7	69.7	56.8	69.7	56.8	78.9
9'-0"	2'-0"	90.0	90.0	87.2	90.0	87.2	90.0
	2'-6"	85.5	85.5	69.8	85.5	69.8	90.0
	3'-3"	65.8	65.8	53.7	65.8	53.7	74.5
9'-6"	2'-0"	90.0	90.0	82.6	90.0	82.6	90.0
	2'-6"	81.0	81.0	66.1	81.0	66.1	90.0
	3'-3"	62.3	62.3	50.9	62.3	50.9	70.6
10'-0"	2'-0"	90.0	90.0	78.5	90.0	78.5	90.0
	2'-6"	77.0	77.0	62.8	77.0	62.8	87.2
	3'-3"	59.2	59.2	48.3	59.2	48.3	67.0
10'-6"	2'-0"	90.0	90.0	74.8	90.0	74.8	90.0
	2'-6"	73.3	73.3	59.8	73.3	59.8	83.0
	3'-3"	56.4	56.4	46.0	56.4	46.0	63.9
11'-0"	2'-0"	87.5	87.5	71.4	87.5	71.4	90.0
	2'-6"	70.0	70.0	57.1	70.0	57.1	79.2
	3'-3"	53.8	53.8	43.9	53.8	43.9	60.9
11'-6"	2'-0"	83.7	83.7	68.3	83.7	68.3	90.0
	2'-6"	66.9	66.9	54.6	66.9	54.6	75.8
	3'-3"	51.5	51.5	42.0	51.5	42.0	58.3
12'-0"	2'-0"	80.2	80.2	65.4	80.2	65.4	90.0
	2'-6"	64.2	64.2	52.3	64.2	52.3	72.6
	3'-3"	49.4	49.4	40.3	49.4	40.3	55.9

OPTION #3 : 3 FASTENERS CONNECTION							
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _s /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)					
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES	FASTENER TYPES	FASTENER	
"L" (ft-in)	"b" (ft-in)	E	F	G	H	I	J
8'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	90.0	90.0
8'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	85.3	90.0	85.3	90.0
9'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	80.5	90.0	80.5	90.0
9'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	76.3	90.0	76.3	90.0
10'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	88.8	88.8	72.5	88.8	72.5	90.0
10'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	89.7	90.0	89.7	90.0
	3'-3"	84.6	84.6	69.0	84.6	69.0	90.0
11'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	85.7	90.0	85.7	90.0
	3'-3"	80.8	80.8	65.9	80.8	65.9	90.0
11'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	81.9	90.0	81.9	90.0
	3'-3"	77.2	77.2	63.0	77.2	63.0	87.4
12'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	78.5	90.0	78.5	90.0
	3'-3"	74.0	74.0	60.4	74.0	60.4	83.8

FASTENER TYPES & SUBSTRATES REQUIREMENTS:

- E - 3/8"Ø HILTI KWIK BOLT TZ ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- F - 3/8"Ø HILTI KWIK BOLT 3 ANCHOR W/ 2 1/2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- G - 3/8"Ø HILTI HUS-H SCREW ANCHOR W/ 2 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 5" MIN. EDGE DISTANCE.
- H - 3/8"Ø HILTI KWIK BOLT 3 ANCHOR W/ 2 1/2" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- I - 3/8"Ø HILTI HUS-H SCREW ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- J - 3/8"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE OR 3/8"Ø-13 SAE GRADE 5, GALVANIZED STEEL BOLT W/ LOCK WASHER & NUT TO 1/4" MIN. THK. ASTM A-36 STEEL & MIN. E.D. = 3/4".



MAXIMUM A.S.D. PRESSURE RATING FOR JAMBS AT SINGLE SPAN CURTAIN WALL FASTENED TO EXISTING STRUCTURE W/ 1/2"Ø FASTENERS (SEE ALSO SHEET 15)

OPTION #2 : 2 FASTENER CONNECTION							
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _s /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)					
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES	FASTENER TYPES	FASTENER	
"L" (ft-in)	"b" (ft-in)	K	L	M	N	O	P
8'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	73.1	90.0
8'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	89.4	90.0
	3'-3"	90.0	90.0	90.0	90.0	68.8	90.0
9'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	84.4	90.0
	3'-3"	90.0	90.0	90.0	90.0	65.0	90.0
9'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	80.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	61.5	90.0
10'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	76.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	58.5	90.0
10'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	72.4	90.0
	3'-3"	90.0	90.0	90.0	90.0	55.7	90.0
11'-0"	2'-0"	90.0	90.0	90.0	90.0	86.4	90.0
	2'-6"	90.0	90.0	90.0	90.0	69.1	90.0
	3'-3"	90.0	90.0	90.0	90.0	53.1	90.0
11'-6"	2'-0"	90.0	90.0	90.0	90.0	82.6	90.0
	2'-6"	90.0	90.0	90.0	90.0	66.1	90.0
	3'-3"	90.0	90.0	90.0	90.0	50.8	90.0
12'-0"	2'-0"	90.0	90.0	90.0	90.0	79.2	90.0
	2'-6"	90.0	90.0	90.0	90.0	63.3	90.0
	3'-3"	90.0	90.0	90.0	90.0	48.7	90.0

OPTION #3 : 3 FASTENER CONNECTION							
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _s /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.)					
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE			GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES	FASTENER TYPES	FASTENER	
"L" (ft-in)	"b" (ft-in)	K	L	M	N	O	P
8'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	90.0	90.0
8'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	90.0	90.0
9'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	90.0	90.0
9'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	90.0	90.0
10'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	87.7	90.0
10'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	83.5	90.0
11'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	79.7	90.0
11'-6"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	76.3	90.0
12'-0"	2'-0"	90.0	90.0	90.0	90.0	90.0	90.0
	2'-6"	90.0	90.0	90.0	90.0	90.0	90.0
	3'-3"	90.0	90.0	90.0	90.0	73.1	90.0

FASTENER TYPES & SUBSTRATES REQUIREMENTS:

- K - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- L - 1/2"Ø HILTI KWIK BOLT 3 ANCHOR W/ 3 1/2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- M - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- N - 1/2"Ø HILTI KWIK BOLT 3 ANCHOR W/ 3 1/2" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- O - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.
- P - 1/2"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE OR 1/2"Ø-13 SAE GRADE 5, GALVANIZED STEEL BOLT W/ LOCK WASHER & NUT TO 1/4" MIN. THK. ASTM A-36 STEEL & MIN. E.D. = 1".

* SEE SHEET 9 FOR EFFECTIVE SPACING DEFINITION AT ISOMETRIC

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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04/15/2021
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SHEET 14 OF 33

HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

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P.E. SEAL/SIGNATURE/DATE

MAXIMUM A.S.D DESIGN PRESSURE RATING FOR JAMBS AT TWIN SPAN CURTAIN WALL FASTENED TO EXISTING STRUCTURE W/ 3/8"Ø FASTENERS

OPTION #1 : 3 FASTENERS CONNECTION						
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _E /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE		GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK. ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES		FASTENER
"L" (ft-in)	"b" (ft-in)	E	F	G	H	I
8' - 0"	2' - 0"	71.8	71.8	58.6	71.8	58.6
	2' - 6"	57.5	57.5	46.9	57.5	46.9
	3' - 3"	44.2	44.2	36.1	44.2	36.1
8' - 6"	2' - 0"	71.2	71.2	58.1	71.2	58.1
	2' - 6"	57.0	57.0	46.5	57.0	46.5
	3' - 3"	43.8	43.8	35.7	43.8	35.7
9' - 0"	2' - 0"	69.8	69.8	56.9	69.8	56.9
	2' - 6"	55.8	55.8	45.5	55.8	45.5
	3' - 3"	42.9	42.9	35.0	42.9	35.0
9' - 6"	2' - 0"	67.9	67.9	55.4	67.9	55.4
	2' - 6"	54.4	54.4	44.3	54.4	44.3
	3' - 3"	41.8	41.8	34.1	41.8	34.1
10' - 0"	2' - 0"	65.9	65.9	53.8	65.9	53.8
	2' - 6"	52.7	52.7	43.0	52.7	43.0
	3' - 3"	40.6	40.6	33.1	40.6	33.1
10' - 6"	2' - 0"	63.8	63.8	52.0	63.8	52.0
	2' - 6"	51.0	51.0	41.6	51.0	41.6
	3' - 3"	39.3	39.3	32.0	39.3	32.0
11' - 0"	2' - 0"	61.7	61.7	50.3	61.7	50.3
	2' - 6"	49.3	49.3	40.3	49.3	40.3
	3' - 3"	38.0	38.0	31.0	38.0	31.0
11' - 6"	2' - 0"	59.6	59.6	48.6	59.6	48.6
	2' - 6"	47.7	47.7	38.9	47.7	38.9
	3' - 3"	36.7	36.7	29.9	36.7	29.9
12' - 0"	2' - 0"	57.6	57.6	47.0	57.6	47.0
	2' - 6"	46.1	46.1	37.6	46.1	37.6
	3' - 3"	35.4	35.4	28.9	35.4	28.9
12' - 6"	2' - 0"	55.7	55.7	45.4	55.7	45.4
	2' - 6"	44.5	44.5	36.3	44.5	36.3
	3' - 3"	34.3	34.3	28.0	34.3	28.0

OPTION #2 : 4 FASTENERS CONNECTION						
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _E /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE		GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK. ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES		FASTENER
"L" (ft-in)	"b" (ft-in)	E	F	G	H	I
8' - 0"	2' - 0"	90.0	90.0	78.1	90.0	78.1
	2' - 6"	76.6	76.6	62.5	76.6	62.5
	3' - 3"	58.9	58.9	48.1	58.9	48.1
8' - 6"	2' - 0"	90.0	90.0	77.5	90.0	77.5
	2' - 6"	76.6	76.6	62.0	76.6	62.0
	3' - 3"	58.4	58.4	47.7	58.4	47.7
9' - 0"	2' - 0"	90.0	90.0	75.9	90.0	75.9
	2' - 6"	74.4	74.4	60.7	74.4	60.7
	3' - 3"	57.3	57.3	46.7	57.3	46.7
9' - 6"	2' - 0"	90.0	90.0	73.9	90.0	73.9
	2' - 6"	72.5	72.5	59.1	72.5	59.1
	3' - 3"	55.7	55.7	45.5	55.7	45.5
10' - 0"	2' - 0"	87.9	87.9	71.7	87.9	71.7
	2' - 6"	70.3	70.3	57.3	70.3	57.3
	3' - 3"	54.1	54.1	44.1	54.1	44.1
10' - 6"	2' - 0"	85.1	85.1	69.4	85.1	69.4
	2' - 6"	68.0	68.0	55.5	68.0	55.5
	3' - 3"	52.3	52.3	42.7	52.3	42.7
11' - 0"	2' - 0"	82.2	82.2	67.1	82.2	67.1
	2' - 6"	65.8	65.8	53.7	65.8	53.7
	3' - 3"	50.6	50.6	41.3	50.6	41.3
11' - 6"	2' - 0"	79.5	79.5	64.8	79.5	64.8
	2' - 6"	63.6	63.6	51.9	63.6	51.9
	3' - 3"	48.9	48.9	39.9	48.9	39.9
12' - 0"	2' - 0"	76.8	76.8	62.7	76.8	62.7
	2' - 6"	61.4	61.4	50.1	61.4	50.1
	3' - 3"	47.3	47.3	38.6	47.3	38.6
12' - 6"	2' - 0"	74.2	74.2	60.6	74.2	60.6
	2' - 6"	59.4	59.4	48.5	59.4	48.5
	3' - 3"	45.7	45.7	37.3	45.7	37.3

FASTENER TYPES & SUBSTRATES REQUIREMENTS:

E - 3/8"Ø HILTI KWIK BOLT TZ ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

F - 3/8"Ø HILTI KWIK BOLT 3 ANCHOR W/ 2 1/2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

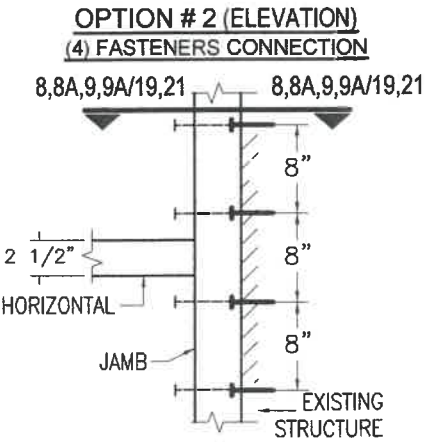
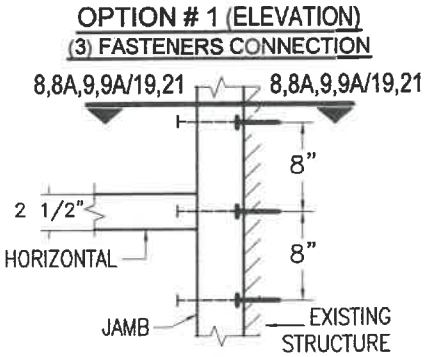
G - 3/8"Ø HILTI HUS-H SCREW ANCHOR W/ 2 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 5" MIN. EDGE DISTANCE.

H - 3/8"Ø HILTI KWIK BOLT 3 ANCHOR W/ 2 1/2" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

I - 3/8"Ø HILTI HUS-H SCREW ANCHOR W/ 3 1/4" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

J - 3/8"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE OR 3/8"Ø-13 SAE GRADE 5, GALVANIZED STEEL BOLT W/ LOCK WASHER & NUT TO 1/4" MIN. THK. ASTM A-36 STEEL & MIN. E.D. = 3/4".

FASTENERS LOCATION



MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR JAMBS AT TWIN SPAN CURTAIN WALL FASTENED TO EXISTING STRUCTURE W/ 1/2"Ø FASTENERS

OPTION #1 : 3 FASTENERS CONNECTION						
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _E /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE		GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK. ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES		FASTENER
"L" (ft-in)	"b" (ft-in)	K	L	M	N	O
8' - 0"	2' - 0"	90.0	90.0	90.0	90.0	70.9
	2' - 6"	90.0	90.0	90.0	90.0	56.7
	3' - 3"	90.0	90.0	90.0	90.0	43.6
8' - 6"	2' - 0"	90.0	90.0	90.0	90.0	70.3
	2' - 6"	90.0	90.0	90.0	90.0	56.2
	3' - 3"	90.0	90.0	90.0	90.0	43.3
9' - 0"	2' - 0"	90.0	90.0	90.0	90.0	68.9
	2' - 6"	90.0	90.0	90.0	90.0	55.1
	3' - 3"	90.0	90.0	90.0	90.0	42.4
9' - 6"	2' - 0"	90.0	90.0	90.0	90.0	67.1
	2' - 6"	90.0	90.0	90.0	90.0	53.7
	3' - 3"	90.0	90.0	88.2	90.0	41.3
10' - 0"	2' - 0"	90.0	90.0	90.0	90.0	65.1
	2' - 6"	90.0	90.0	90.0	90.0	52.0
	3' - 3"	90.0	90.0	85.6	90.0	40.0
10' - 6"	2' - 0"	90.0	90.0	90.0	90.0	63.0
	2' - 6"	90.0	90.0	90.0	90.0	50.4
	3' - 3"	90.0	90.0	82.8	90.0	38.7
11' - 0"	2' - 0"	90.0	90.0	90.0	90.0	60.9
	2' - 6"	90.0	90.0	90.0	90.0	48.7
	3' - 3"	90.0	90.0	80.1	90.0	37.5
11' - 6"	2' - 0"	90.0	90.0	90.0	90.0	58.8
	2' - 6"	90.0	90.0	90.0	90.0	47.1
	3' - 3"	90.0	90.0	77.4	90.0	36.2
12' - 0"	2' - 0"	90.0	90.0	90.0	90.0	56.9
	2' - 6"	90.0	90.0	90.0	90.0	45.5
	3' - 3"	90.0	90.0	74.8	90.0	35.0
12' - 6"	2' - 0"	90.0	90.0	90.0	90.0	55.0
	2' - 6"	90.0	90.0	90.0	90.0	44.0
	3' - 3"	90.0	90.0	72.3	90.0	33.8

OPTION #2 : 4 FASTENERS CONNECTION						
MAXIMUM MULLION SPAN	EFFECTIVE SPACING b = S _E /2 *	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
		POURED CONCRETE (Min. f _c = 3ksi) SUBSTRATE		GROUT FILLED CONCRETE BLOCK SUBSTRATE		1/4" Min. THK. ASTM A-36 STEEL SUBSTRATE
		FASTENER TYPES		FASTENER TYPES		FASTENER
"L" (ft-in)	"b" (ft-in)	K	L	M	N	O
8' - 0"	2' - 0"	90.0	90.0	90.0	90.0	90.0
	2' - 6"	90.0	90.0	90.0	90.0	75.6
	3' - 3"	90.0	90.0	90.0	90.0	58.2
8' - 6"	2' - 0"	90.0	90.0	90.0	90.0	90.0
	2' - 6"	90.0	90.0	90.0	90.0	75.0
	3' - 3"	90.0	90.0	90.0	90.0	57.7
9' - 0"	2' - 0"	90.0	90.0	90.0	90.0	90.0
	2' - 6"	90.0	90.0	90.0	90.0	73.5
	3' - 3"	90.0	90.0	90.0	90.0	56.5
9' - 6"	2' - 0"	90.0	90.0	90.0	90.0	89.4
	2' - 6"	90.0	90.0	90.0	90.0	71.5
	3' - 3"	90.0	90.0	90.0	90.0	55.0
10' - 0"	2' - 0"	90.0	90.0	90.0	90.0	86.7
	2' - 6"	90.0	90.0	90.0	90.0	69.4
	3' - 3"	90.0	90.0	90.0	90.0	53.4
10' - 6"	2' - 0"	90.0	90.0	90.0	90.0	84.0
	2' - 6"	90.0	90.0	90.0	90.0	67.2
	3' - 3"	90.0	90.0	90.0	90.0	51.7
11' - 0"	2' - 0"	90.0	90.0	90.0	90.0	81.2
	2' - 6"	90.0	90.0	90.0	90.0	64.9
	3' - 3"	90.0	90.0	90.0	90.0	50.0
11' - 6"	2' - 0"	90.0	90.0	90.0	90.0	78.4
	2' - 6"	90.0	90.0	90.0	90.0	62.8
	3' - 3"	90.0	90.0	90.0	87.8	48.3
12' - 0"	2' - 0"	90.0	90.0	90.0	90.0	75.8
	2' - 6"	90.0	90.0	90.0	90.0	60.7
	3' - 3"	90.0	90.0	90.0	84.9	46.7
12' - 6"	2' - 0"	90.0	90.0	90.0	90.0	73.3
	2' - 6"	90.0	90.0	90.0	90.0	58.6
	3' - 3"	90.0	90.0	90.0	82.0	45.1

FASTENER TYPES & SUBSTRATES REQUIREMENTS:

K - 1/2"Ø HILTI KWIK BOLT TZ ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

L - 1/2"Ø HILTI KWIK BOLT 3 ANCHOR W/ 3 1/2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

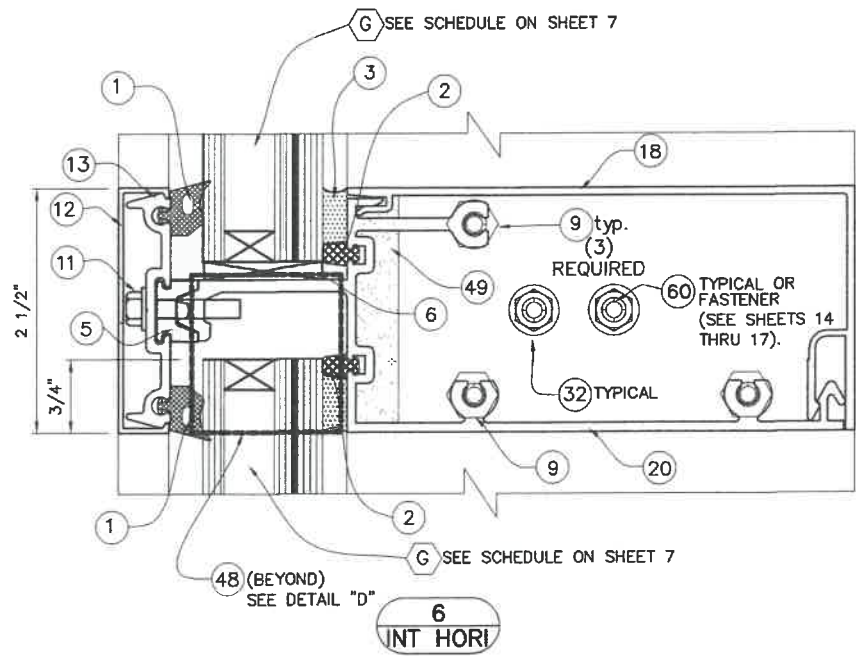
M - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO POURED CONCRETE (Min. f_c = 3 ksi) BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

N - 1/2"Ø HILTI KWIK BOLT 3 ANCHOR W/ 3 1/2" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

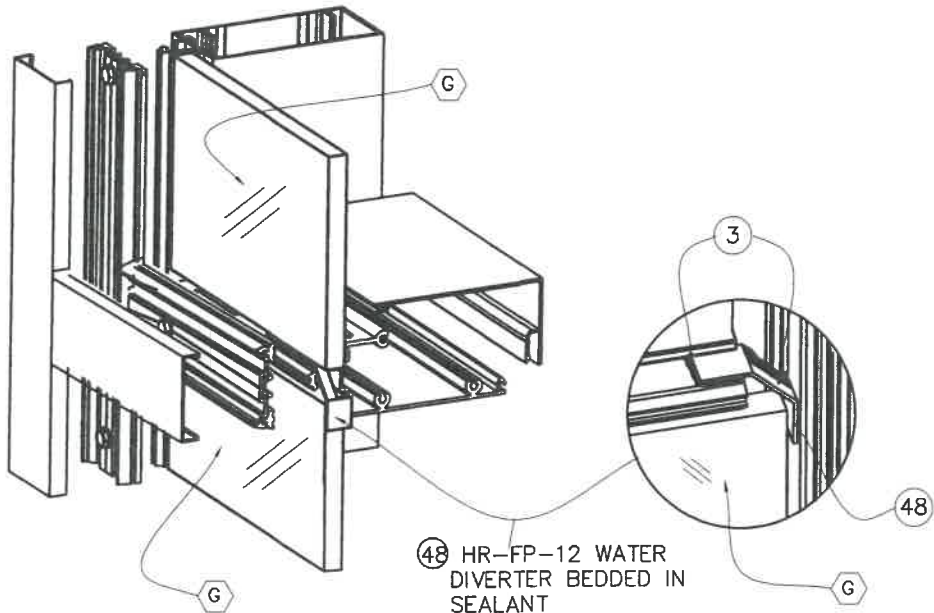
O - 1/2"Ø HILTI HUS-H SCREW ANCHOR W/ 3" Min. EMBEDMENT INTO GROUT FILLED CONCRETE BLOCK BEYOND ANY FINISH MATERIAL, W/ 4" MIN. EDGE DISTANCE.

P - 1/2"Ø-13 TYPE "F" GRADE 5 BOLT TO 1/4" MIN. THK. ASTM A-36 STEEL W/ 1" MIN. EDGE DISTANCE OR 1/2"Ø -13 SAE GALVANIZED STEEL GRADE 5 HUB THRU BOLT W/ NUT &

HORIZONTAL CONNECTION DETAILS (SIDE VIEWS)

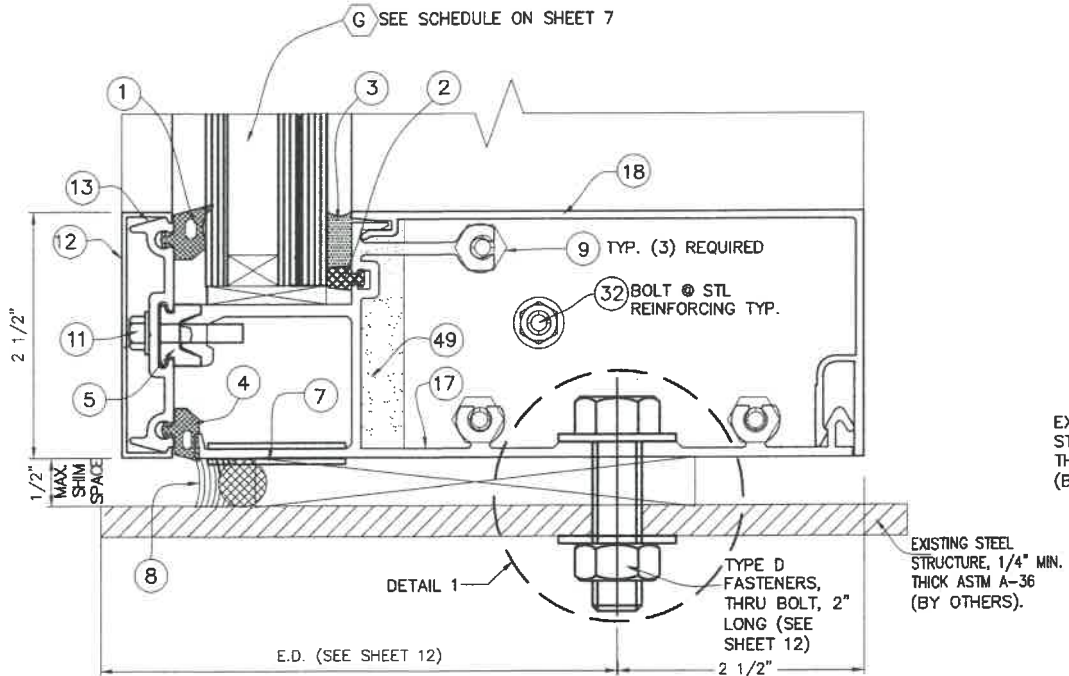


AT SINGLE OR TWIN SPAN

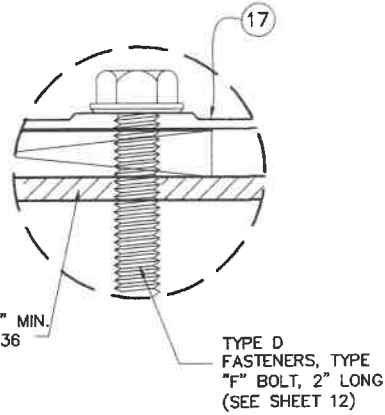


DETAIL "D"

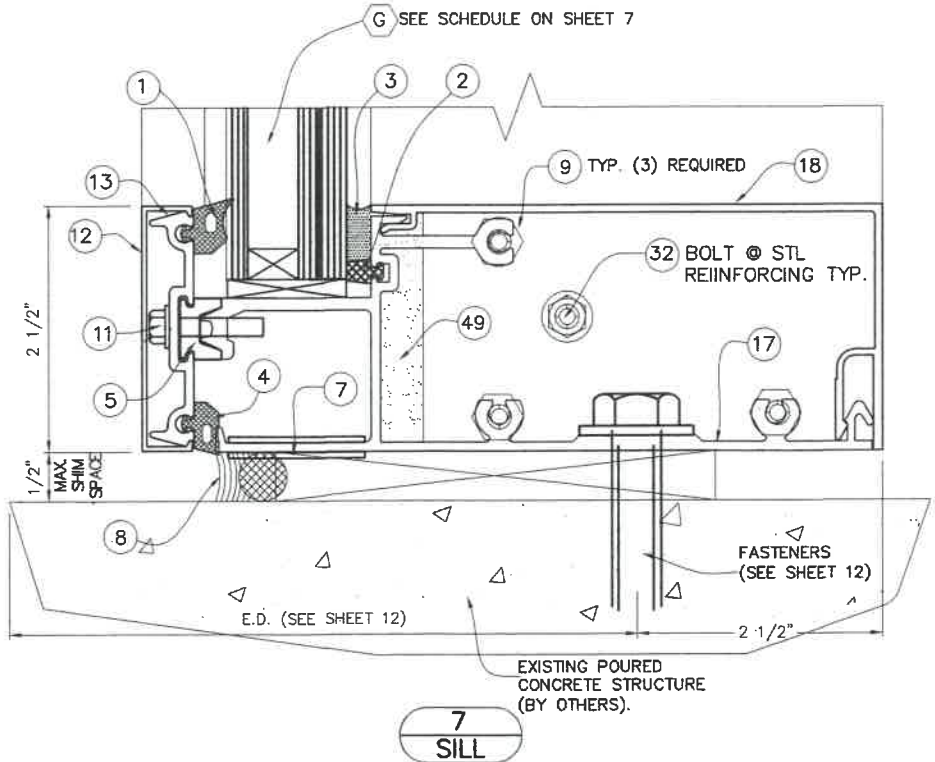
SILL CONNECTION DETAILS (SIDE VIEWS)



CONNECTION TO STEEL STRUCTURE



ALTERNATE FASTENER DETAIL 1



CONNECTION TO POURED CONCRETE STRUCTURE

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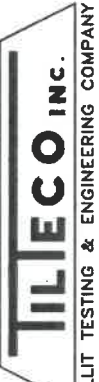
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DATE 04/15/21
DESCRIPTION -
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DATE 04/15/21
DESCRIPTION -
GLASS SHT. 8

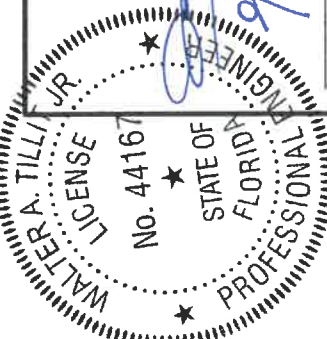
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21-056
DRAWING No
SHEET 17 OF 33



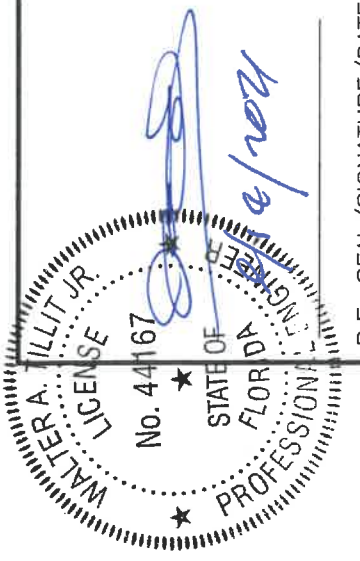
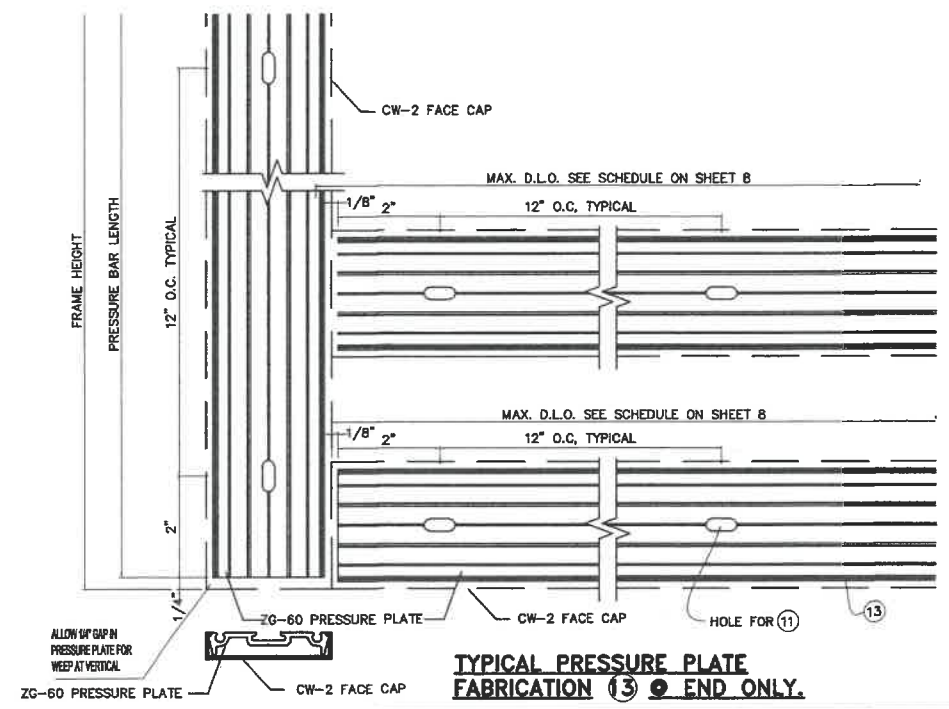
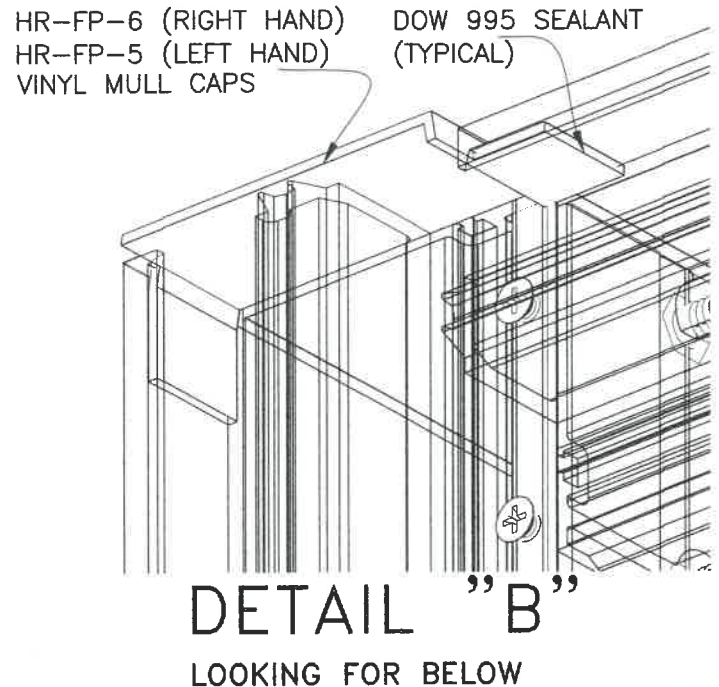
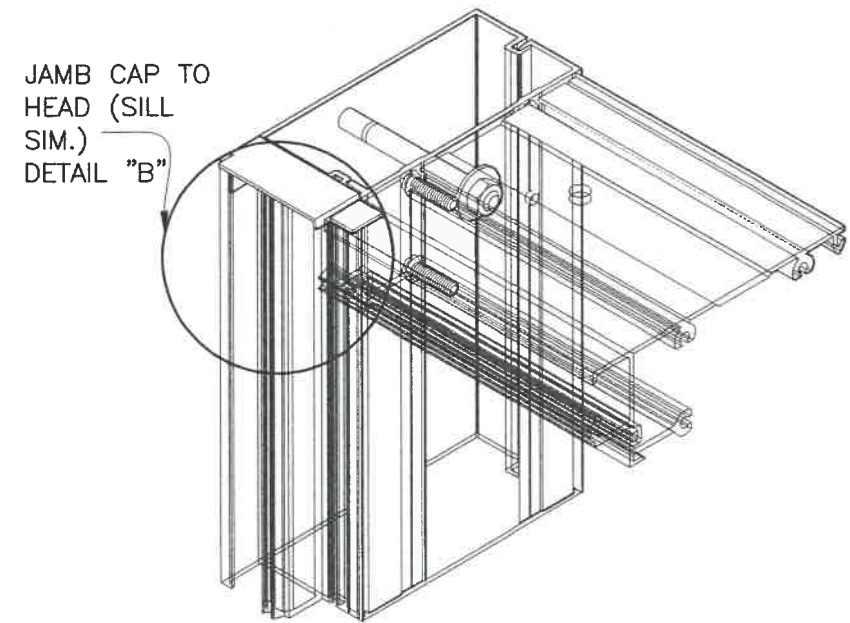
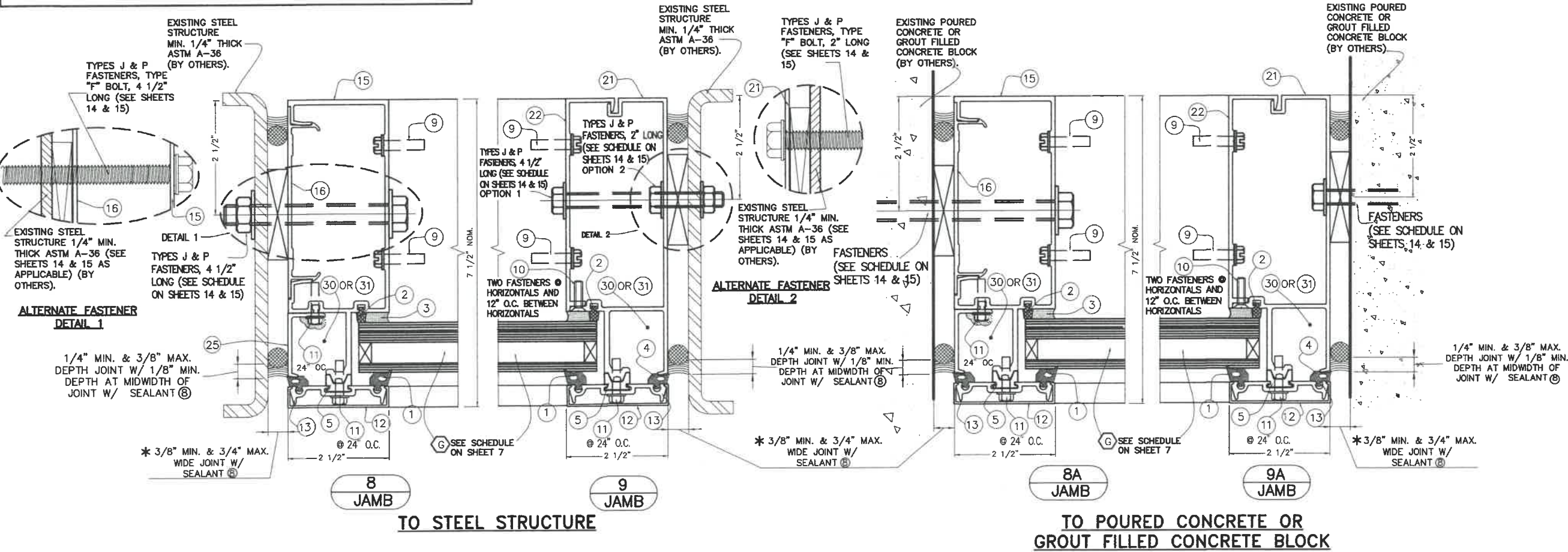
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FLORIDA LIC. # 44167



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* **NOTE:** INDICATED MAXIMUM AND MINIMUM VALUES FOR SPECIFIED SEALANT VERTICAL JOINT WIDTH AT JAMBS CONNECTED TO WALL HAVE BEEN DETERMINED ONLY TAKING INTO CONSIDERATION THE ACTUAL MOVEMENT OF GLASS WALL AT JAMBS DUE TO THERMAL, WIND AND ITS OWN CONSTRUCTION TOLERANCE, AND NOT PERFORMANCE FACTORS FROM THE SURROUNDING STRUCTURE.

JAMB CONNECTIONS AT HORIZONTALS (PLAN)



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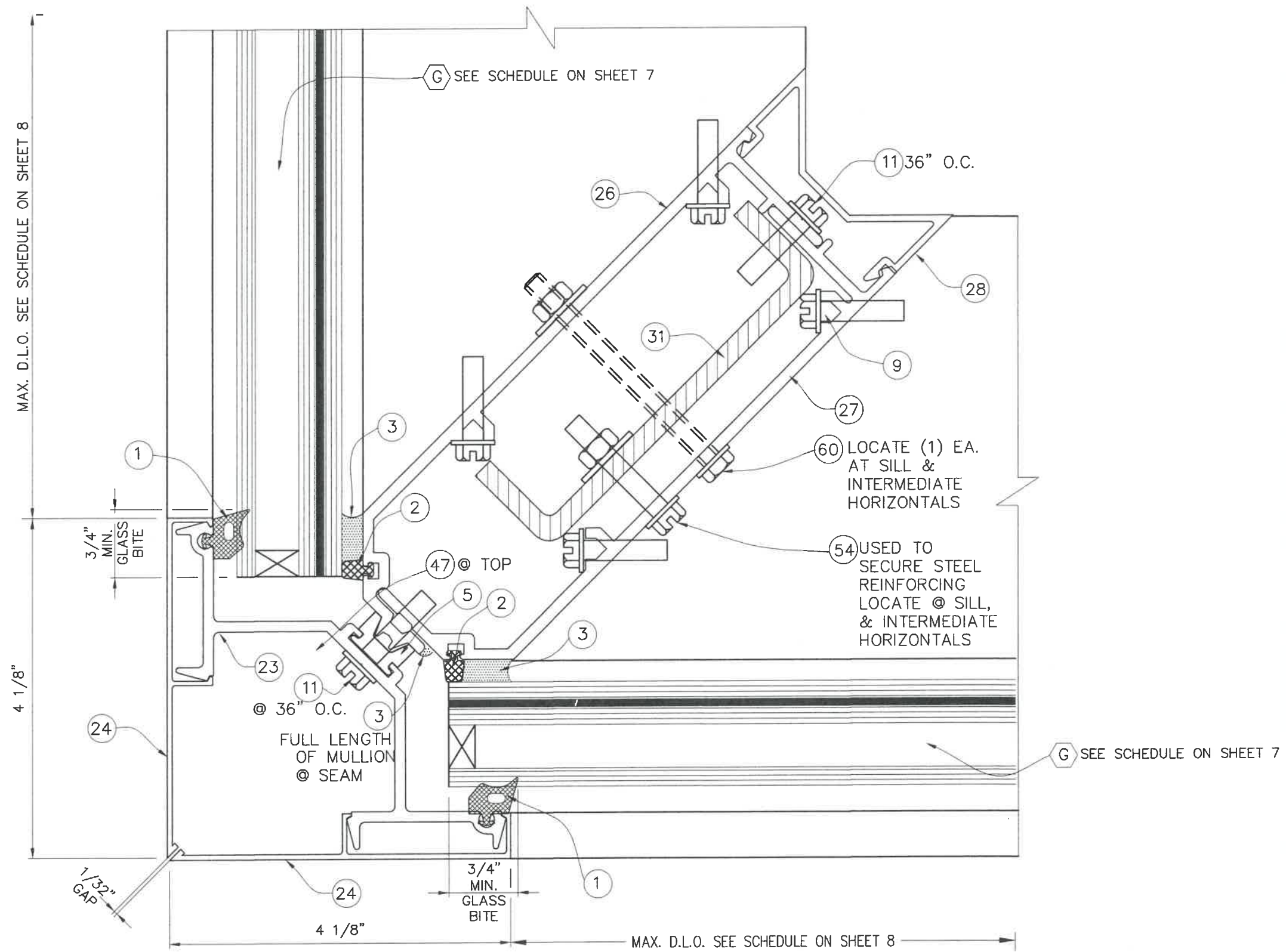
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21-056
DRAWING No.

SHEET 19 OF 33

CORNER MULLION DETAILS (PLAN)



14
90 DEG CORNER
CAPTURED
PLAN

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e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT JR., P.E.
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-	GLASS SHT. B	9/14/21	-	-	-

21-056
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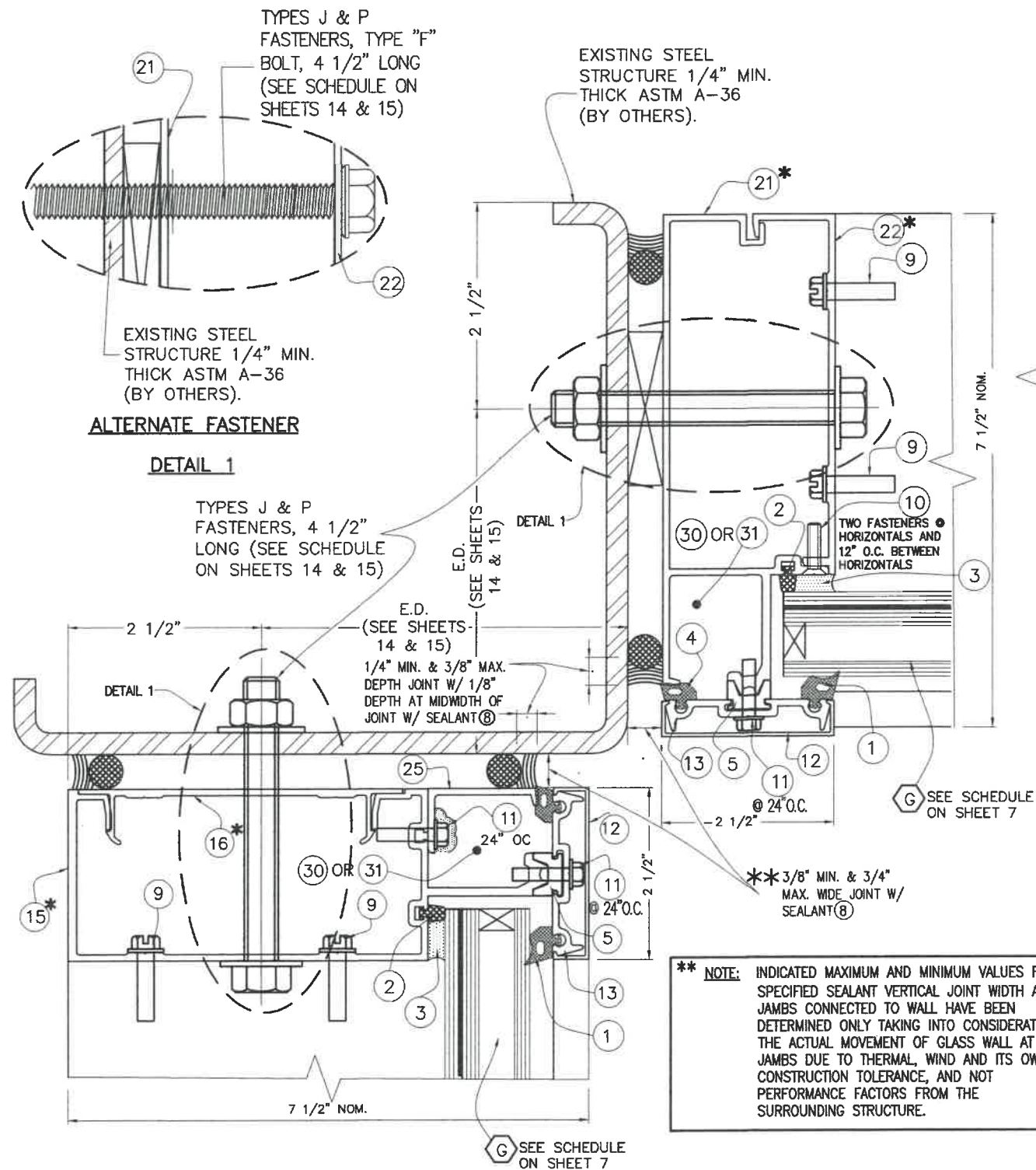
SHEET 20 OF 33

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10/14/2021

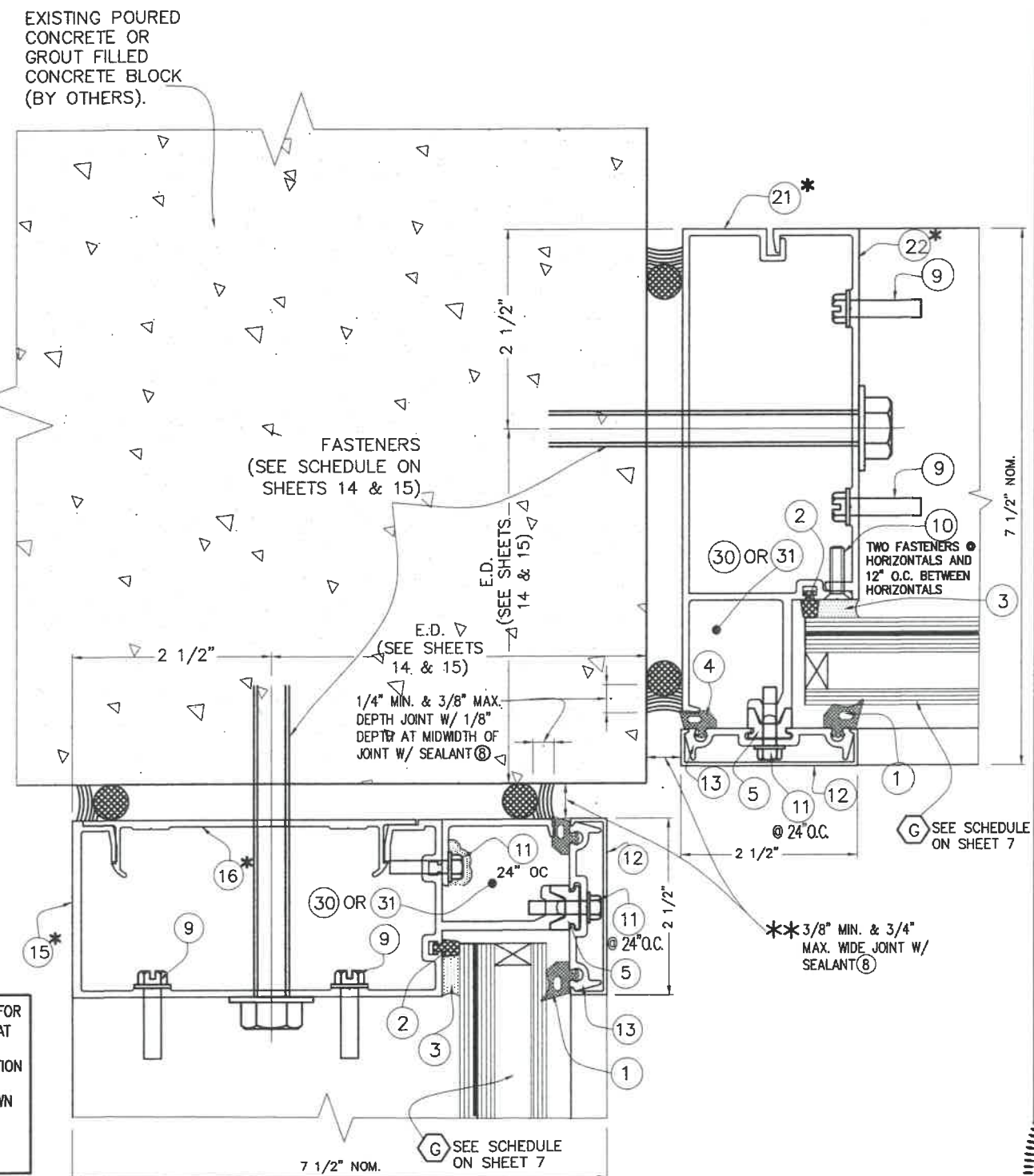
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LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

JAMBS CONNECTIONS AT INSIDE CORNER (PLAN)



8, 9 @ INSIDE CORNER
JAMB TO EXISTING
STEEL (PLAN)

* JAMBS MAY BE
 ⑮ + ⑯ OR ⑰ + ⑱
 INTERCHANGEABLE



8A, 9A @ INSIDE CORNER
JAMB TO POURED
CONCRETE (PLAN)

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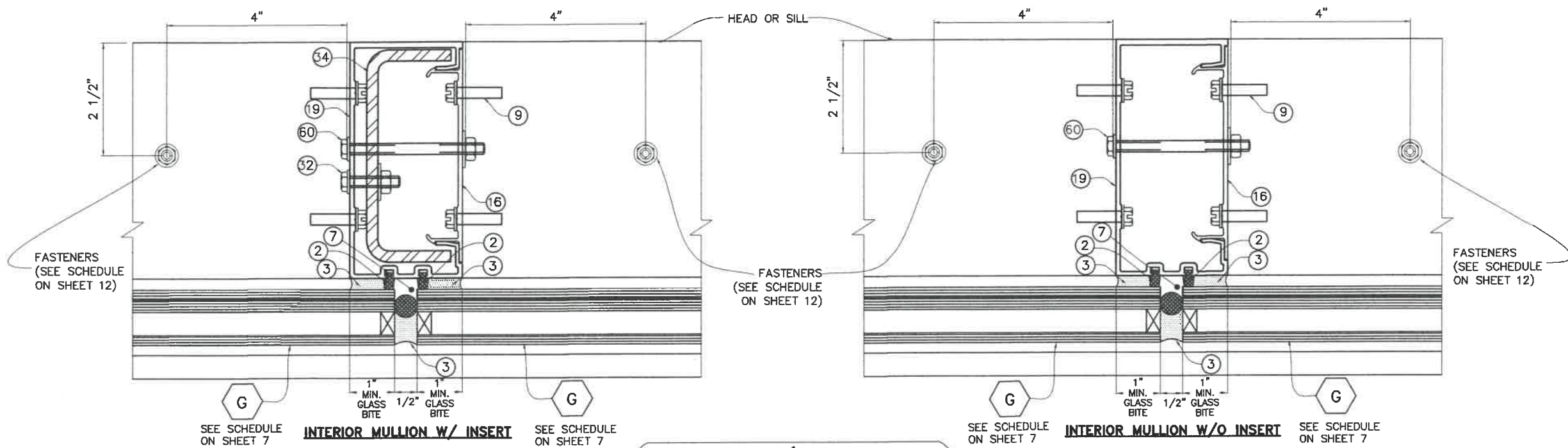
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1	CLASS SMT, 8	9/14/21	-	-
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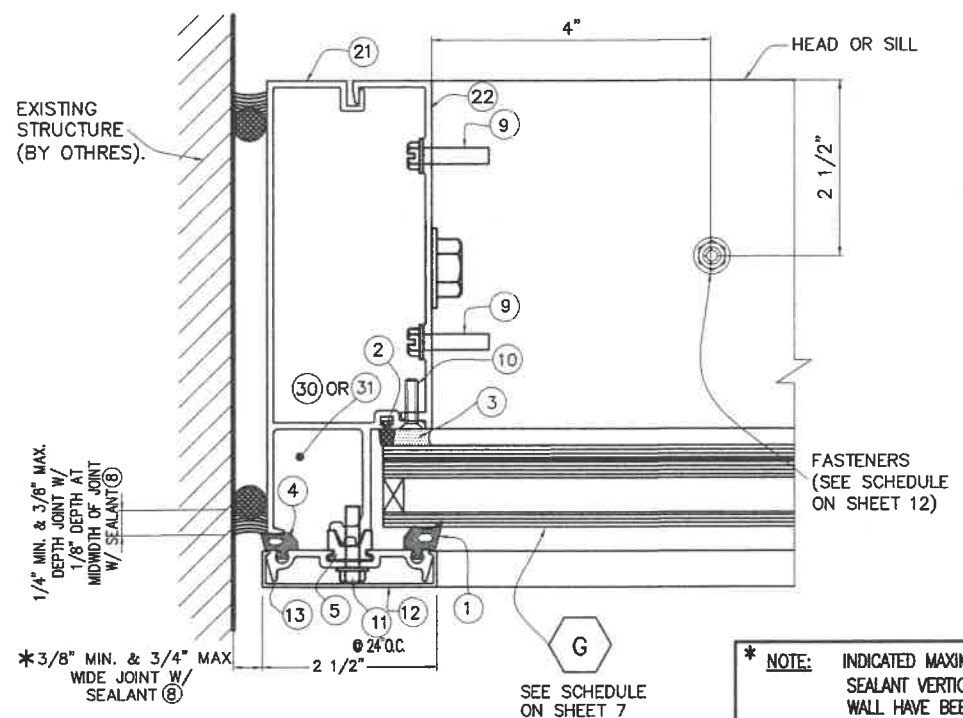
P.E. SEAL/SIGNATURE/DATE

F.E. SEAL/ SIGNATURE/ DATE

SILL & HEAD CONNECTION DETAILS FOR SINGLE SPAN
& SILL CONNECTION DETAIL FOR TWIN SPAN (PLANS)



1
CONNECTION AT INTERIOR MULLION



3
CONNECTION AT JAMBS

2
CONNECTION AT CORNER MULLION

* NOTE: INDICATED MAXIMUM AND MINIMUM VALUES FOR SPECIFIED SEALANT VERTICAL JOINT WIDTH AT JAMBS CONNECTED TO WALL HAVE BEEN DETERMINED ONLY TAKING INTO CONSIDERATION THE ACTUAL MOVEMENT OF GLASS WALL AT JAMBS DUE TO THERMAL, WIND AND ITS OWN CONSTRUCTION TOLERANCE, AND NOT PERFORMANCE FACTORS FROM THE SURROUNDING STRUCTURE.

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SHEET 22 OF 33

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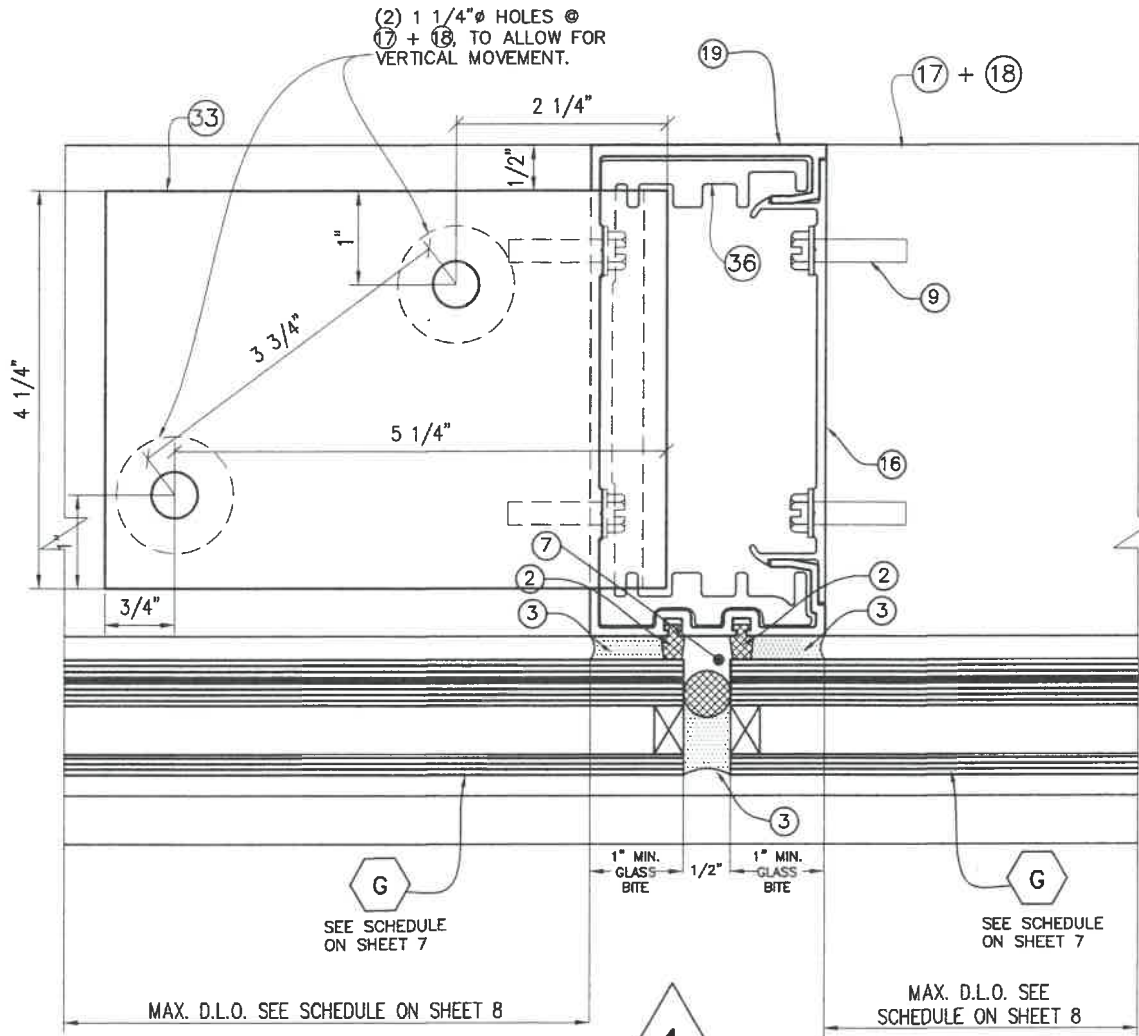
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LICENSE No. 44167
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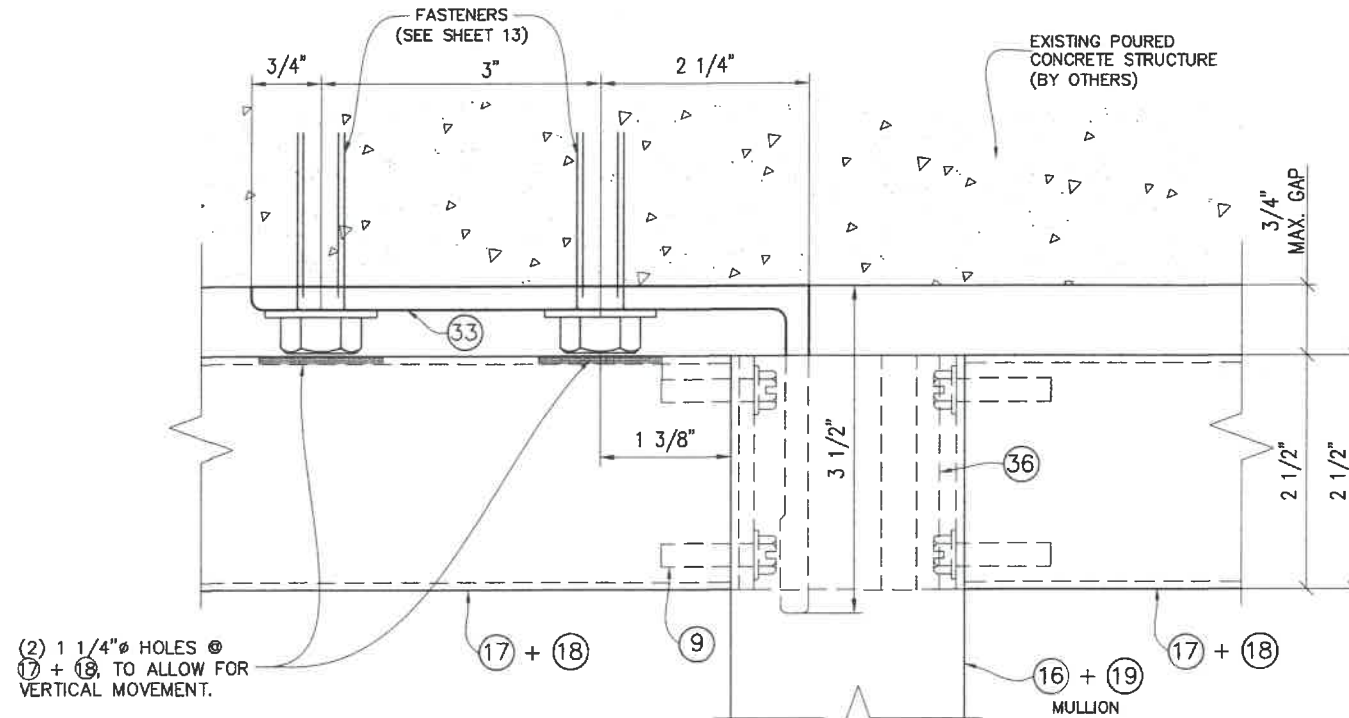
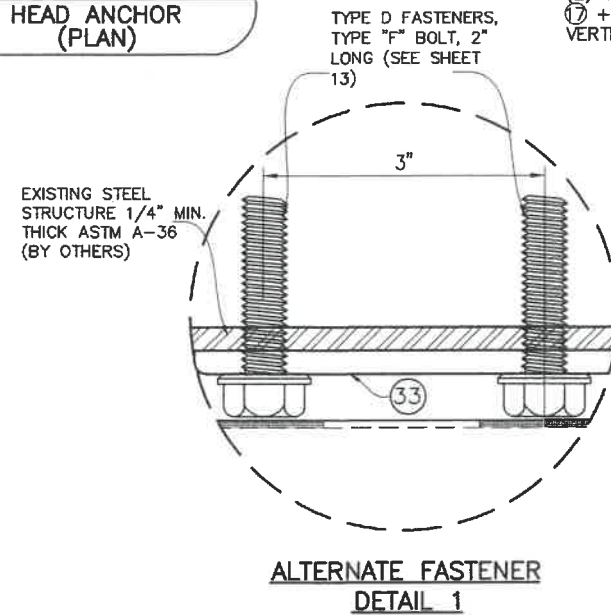
Walter A. Tillit Jr.
4/16/2021

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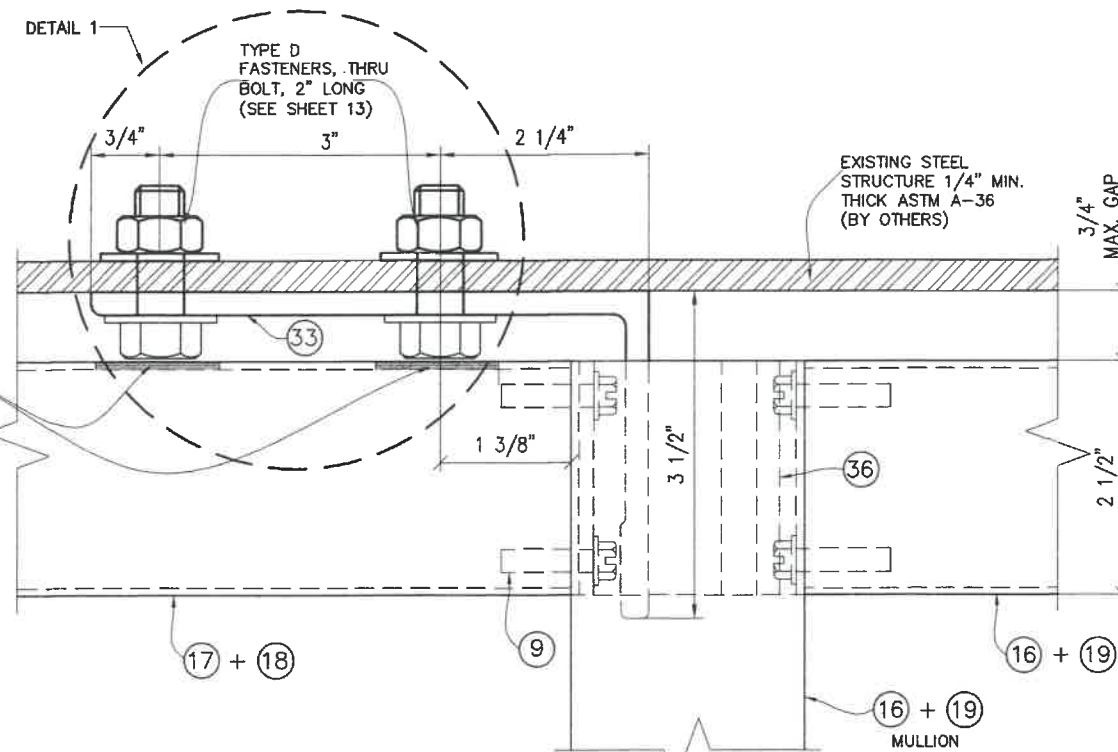
OPTION #1 FOR HEAD CONNECTION OF TWIN SPAN SSG MULLIONS



17
HEAD ANCHOR
(PLAN)



TO EXISTING POURED CONCRETE STRUCTURE



TO EXISTING STEEL STRUCTURE

EXTERIOR ELEVATIONS

1

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CA-0008719
WALTER A. TILIT Jr. P.E.

**HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS**

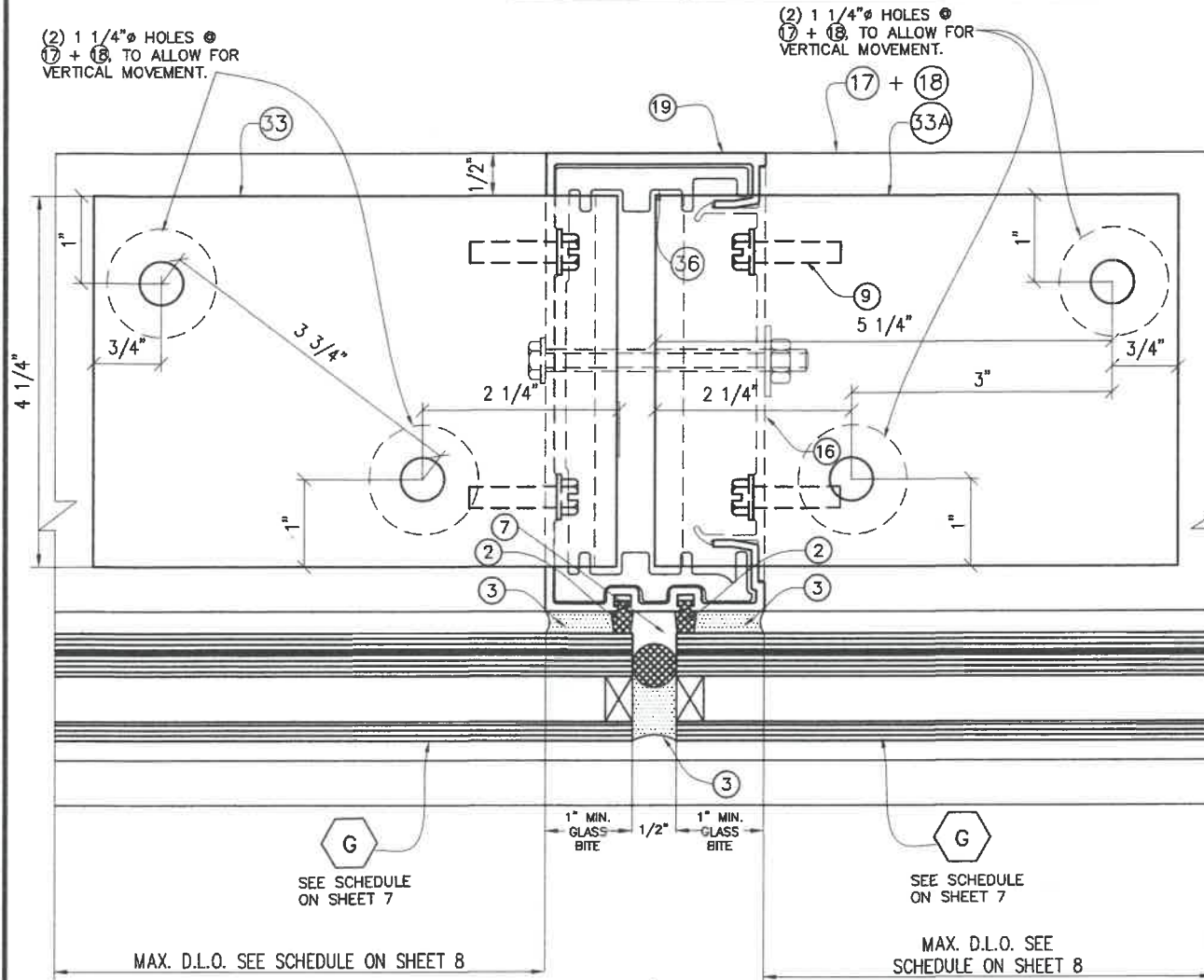
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SHEET 23 OF 33

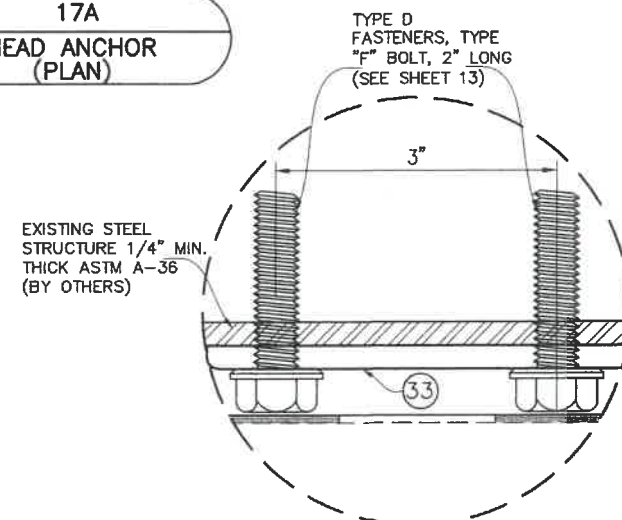
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OPTION #2 FOR HEAD CONNECTION OF TWIN SPAN SSG MULLIONS

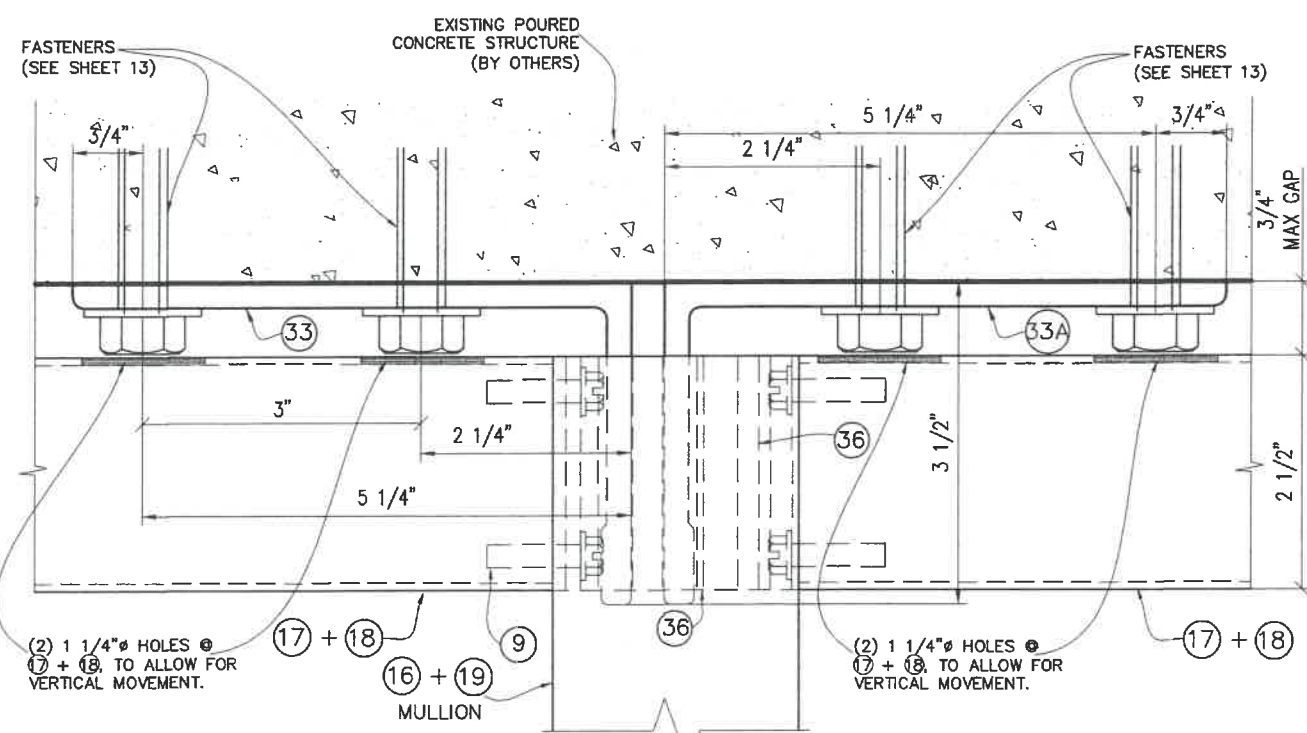


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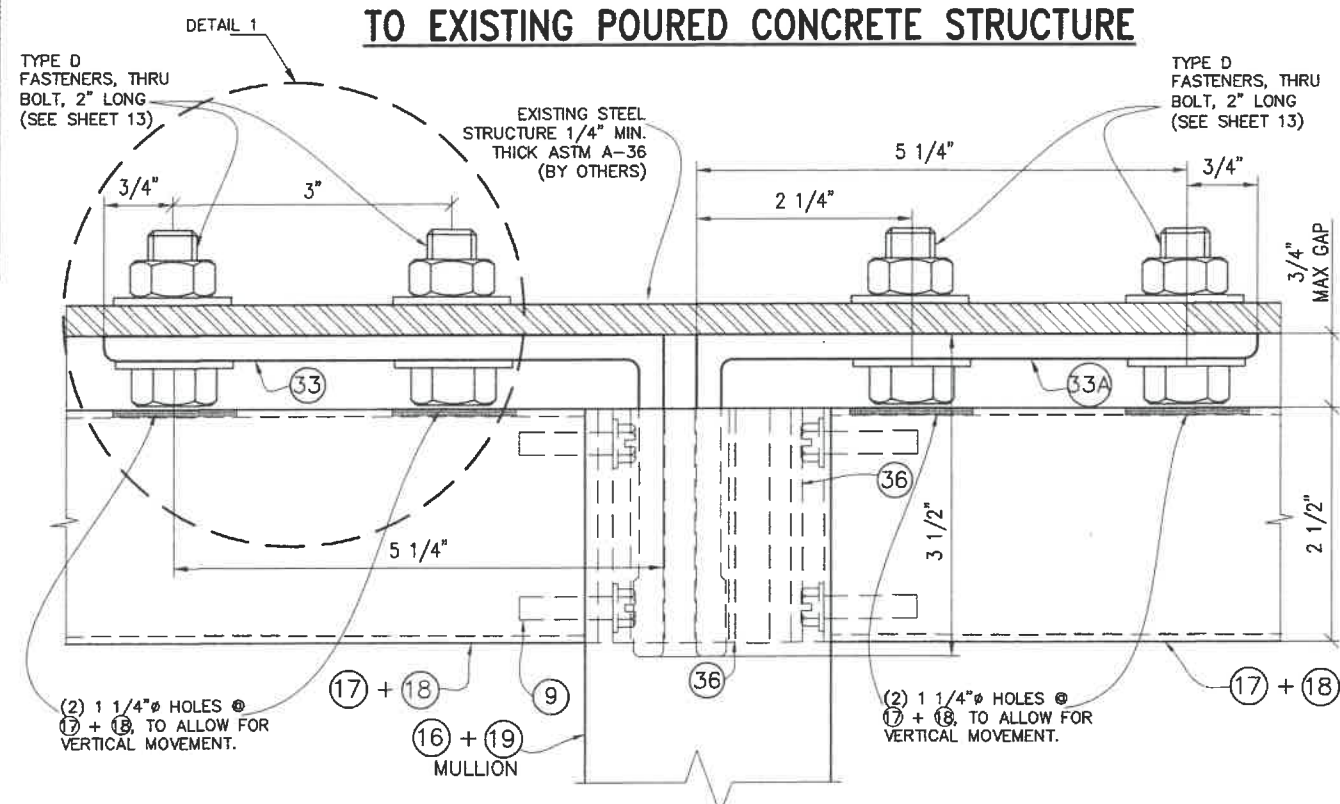
17A
HEAD ANCHOR
(PLAN)



ALTERNATE FASTENER
DETAIL 1



TO EXISTING POURED CONCRETE STRUCTURE



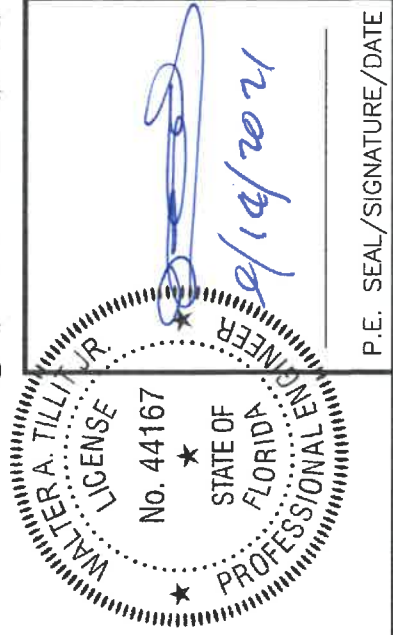
TO EXISTING STEEL STRUCTURE

EXTERIOR ELEVATIONS

1

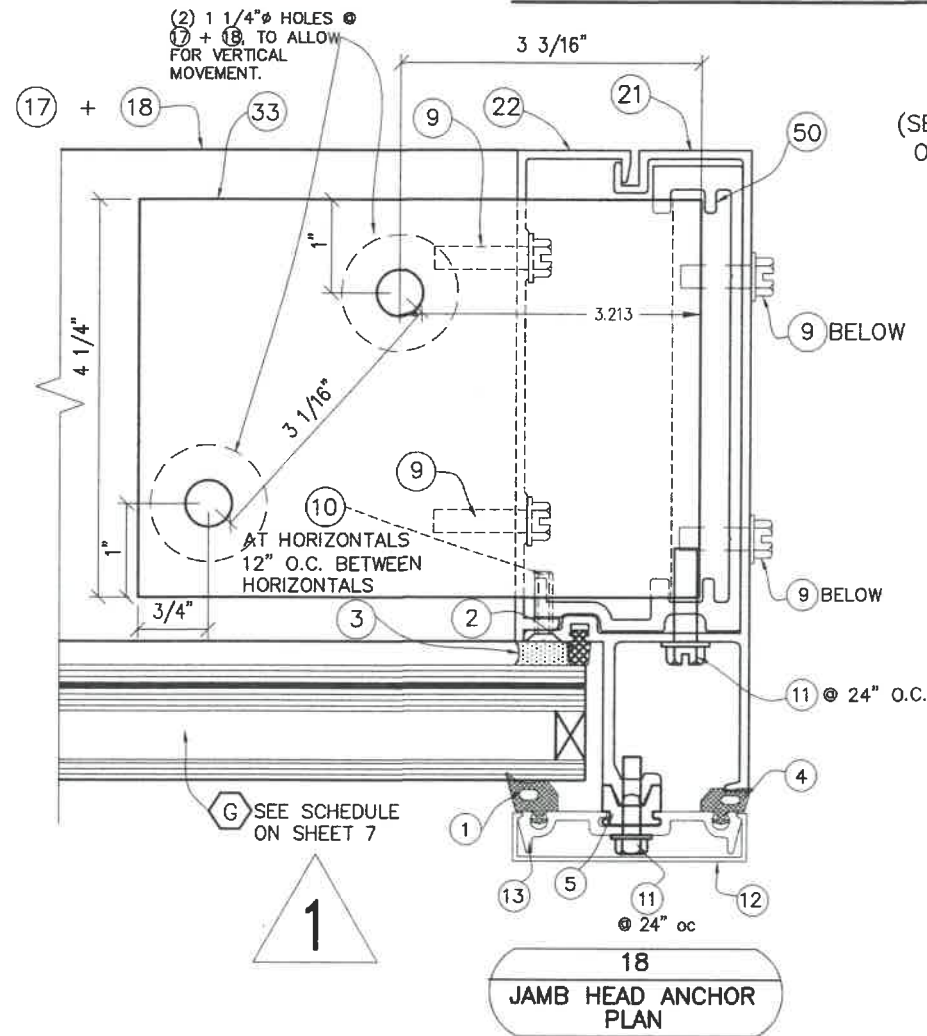
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HEAD CONNECTION OF TWIN SPAN JAMBS



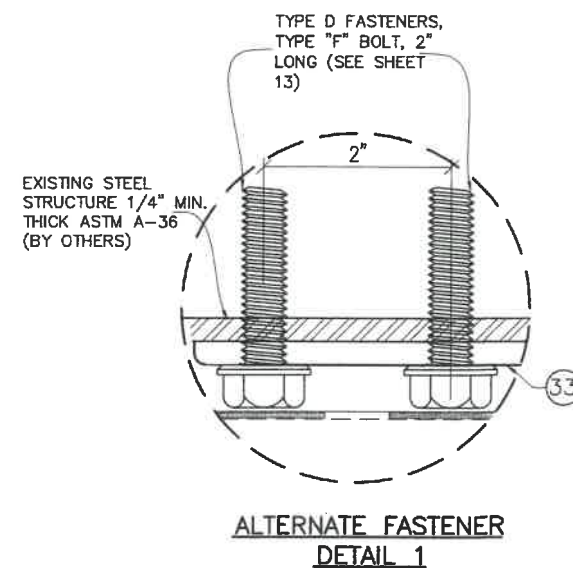
FASTENERS (SEE SCHEDULE ON SHEET 13)

(2) 1 1/4" Ø HOLES (17) + (18) TO ALLOW FOR VERTICAL MOVEMENT.

TO EXISTING POURED CONCRETE STRUCTURE

TYPE D FASTENERS, THRU BOLT, 2" LONG (SEE SHEET 13)

EXISTING STEEL STRUCTURE 1/4" MIN. THICK ASTM A-36 (BY OTHERS)



(2) 1 1/4" Ø HOLES (17) + (18) TO ALLOW FOR VERTICAL MOVEMENT.

TO EXISTING STEEL STRUCTURE

EXTERIOR ELEVATIONS 1

EXISTING POURED CONCRETE OR GROUT FILLED CONCRETE BLOCK (BY OTHERS)

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

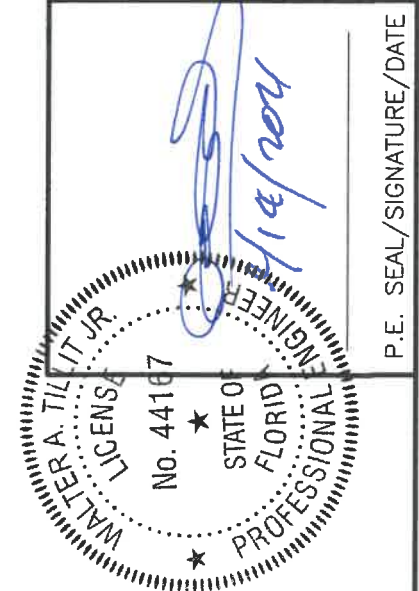
HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

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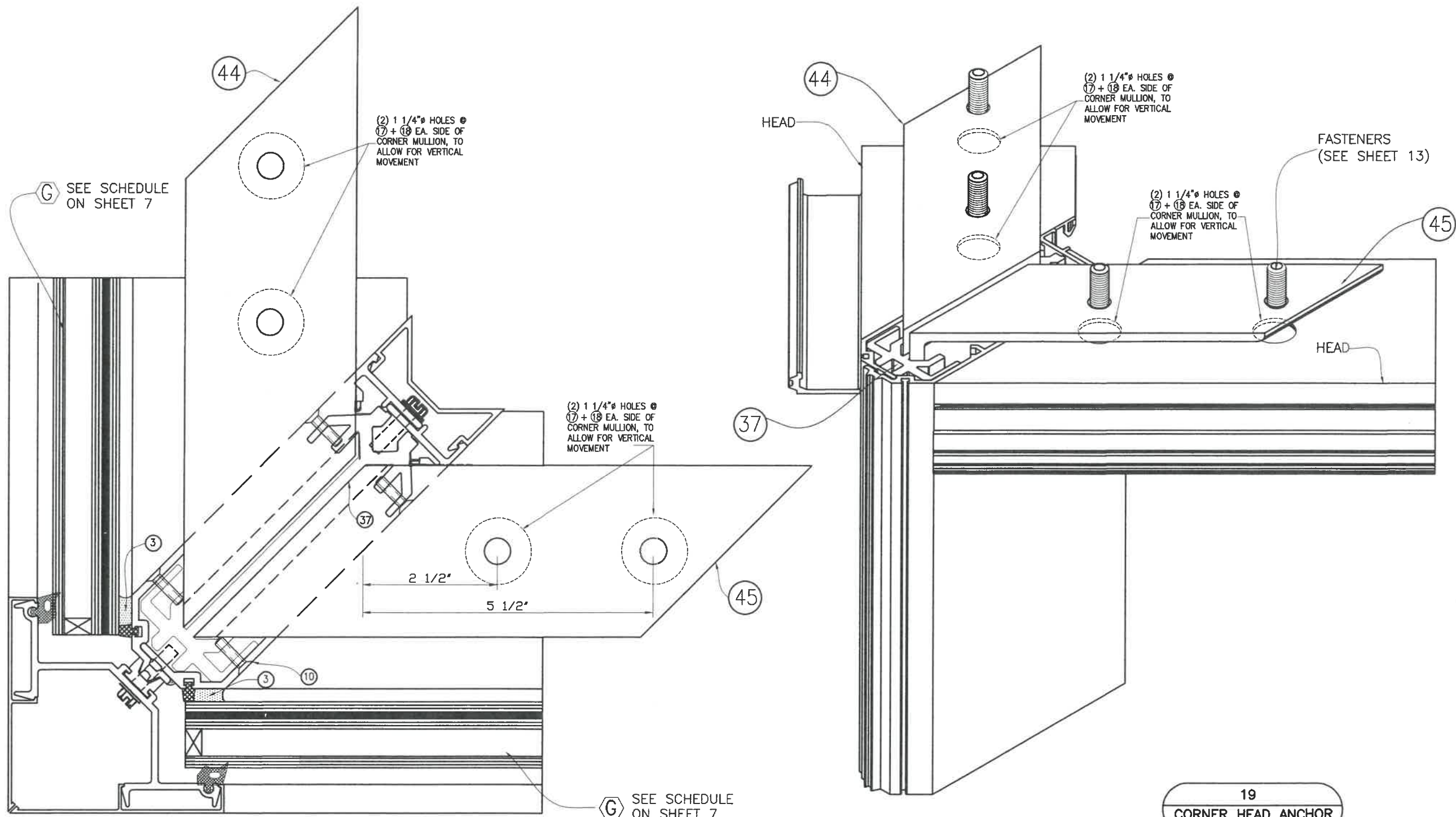
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SHEET 25 OF 33



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HEAD CONNECTION DETAIL FOR
TWIN SPAN CORNER MULLION



19
CORNER HEAD ANCHOR
(PLAN)

19
CORNER HEAD ANCHOR
ISOMETRIC

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

REV. No

DESCRIPTION

DATE

REV. No

DESCRIPTION

DATE

1

2

3

4

5

6

1

2

3

4

5

6

21-056

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SHEET 26 OF 33

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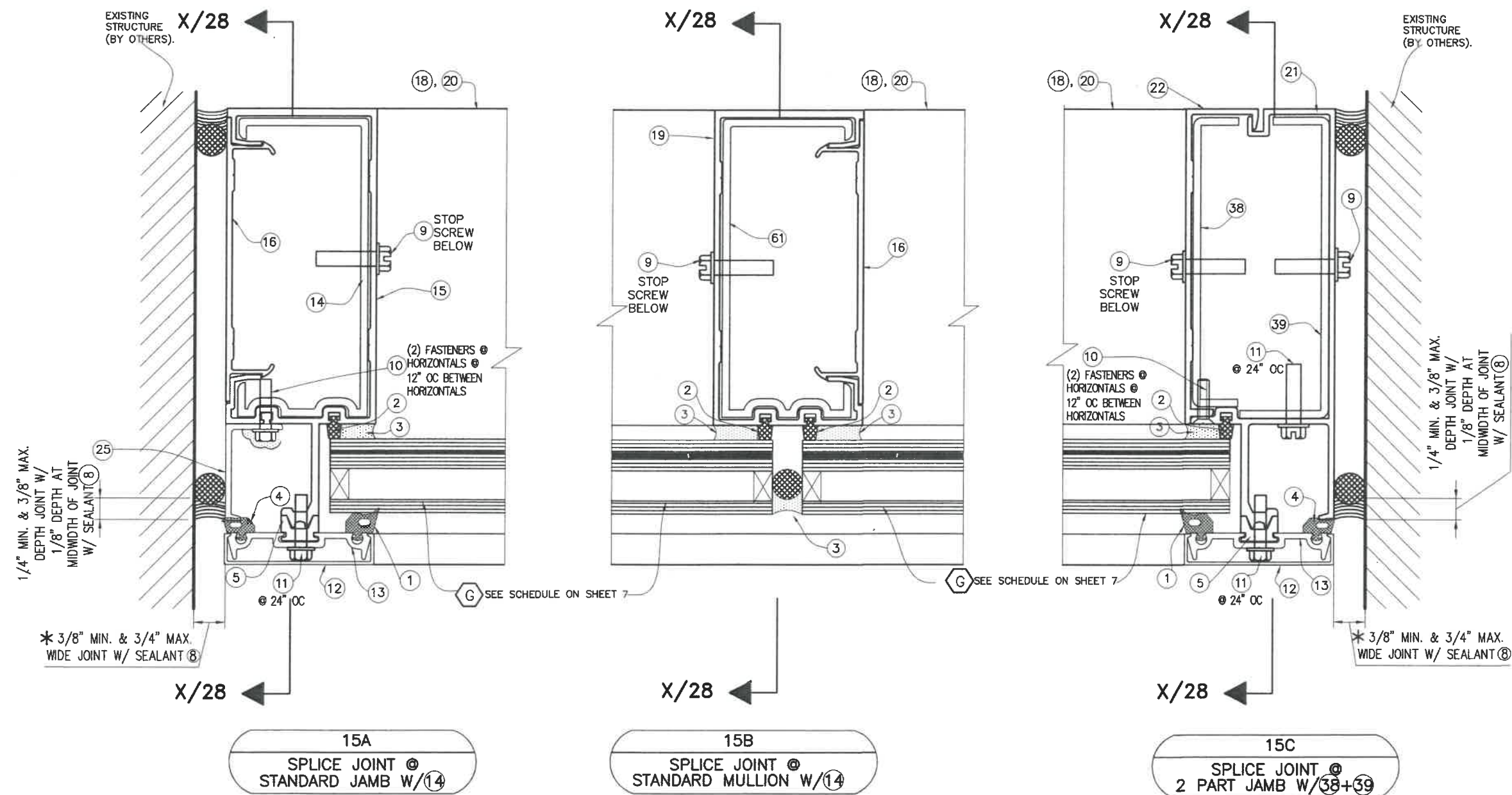
STATE OF FLORIDA

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2/14/2021

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MULLION AND JAMB SPLICES FOR TWIN SPAN ONLY (PLAN)



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WALTER A. TILLIT JR., P.E.
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HR-251 SSG CAPTURED CURTAIN WALL,
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-	GLASS SHT. 8	9/14/21	-	-	-

M.P.
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04/15/2021
DATE

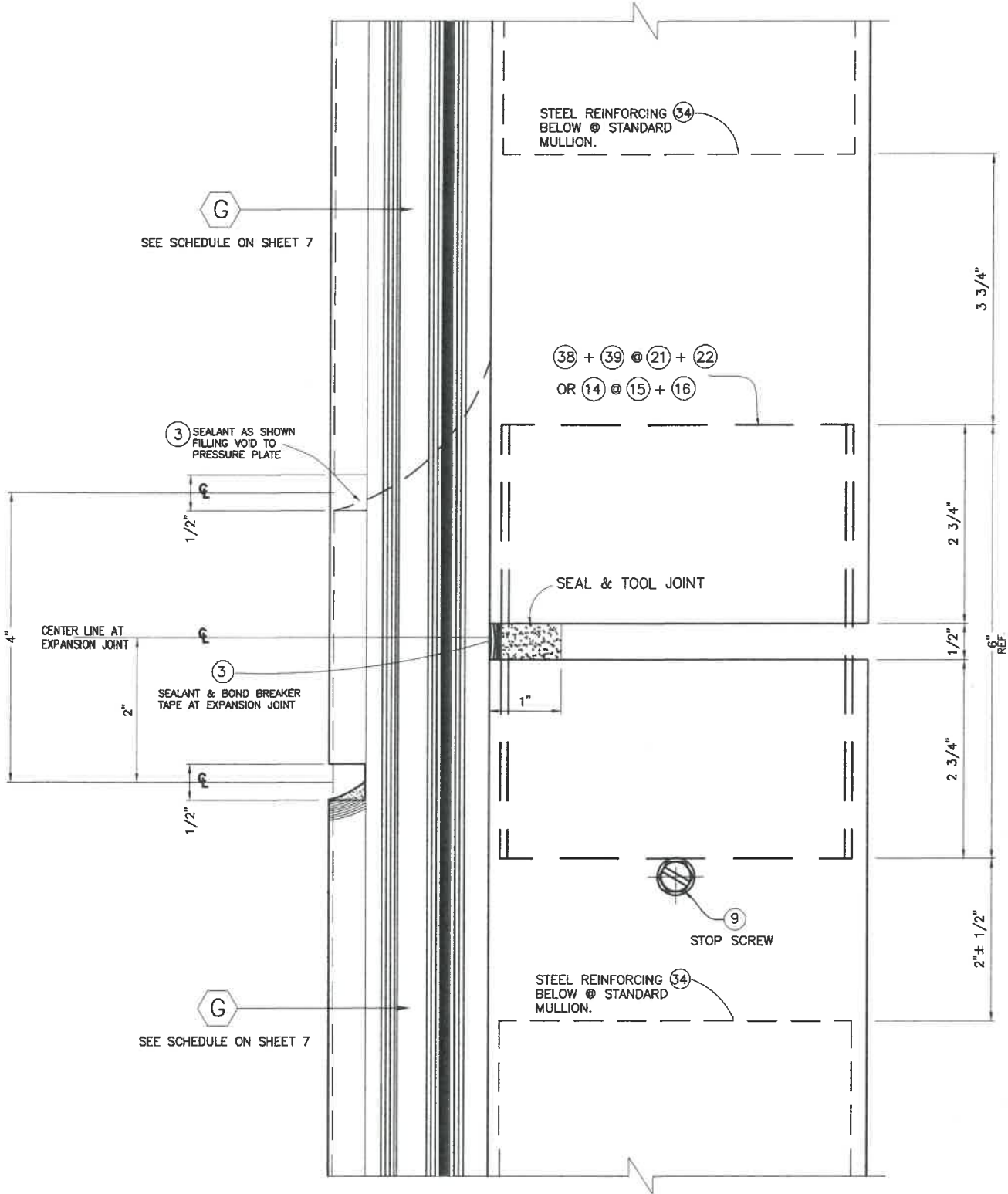
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SHEET 27 OF 33

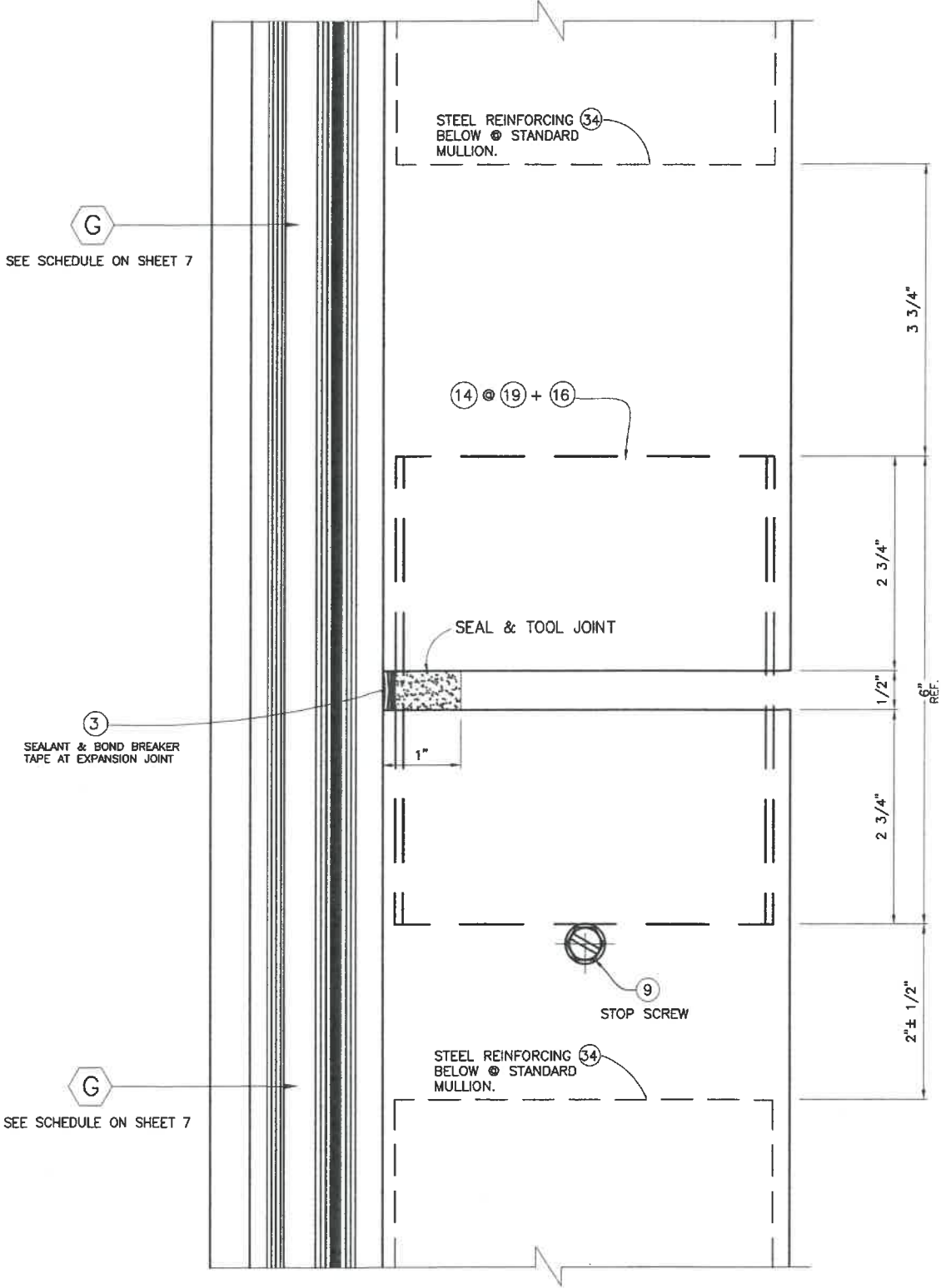
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PROFESSIONAL ENGINEER

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MULLION AND JAMB SPLICES FOR TWIN SPAN ONLY (SIDE VIEW)



SECTION X-X
SPLICE JOINT @
STD MULLION/JAMB



SECTION X-X
SPLICE JOINT @
BUTT GLAZE MULLION

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS		DATE		REV. No		DATE	
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803 Airport Rd - Terrell, TX 75160		DATE		DATE		DATE	
www.OldcastleBE.com - Phone 800-869-4567		DATE		DATE		DATE	
REV. No		DATE		DATE		DATE	
DESCRIPTION		DESCRIPTION		DESCRIPTION		DESCRIPTION	
OLD 18-030		OLD 18-030		OLD 18-030		OLD 18-030	
GLASS SHT. 8		GLASS SHT. 8		GLASS SHT. 8		GLASS SHT. 8	

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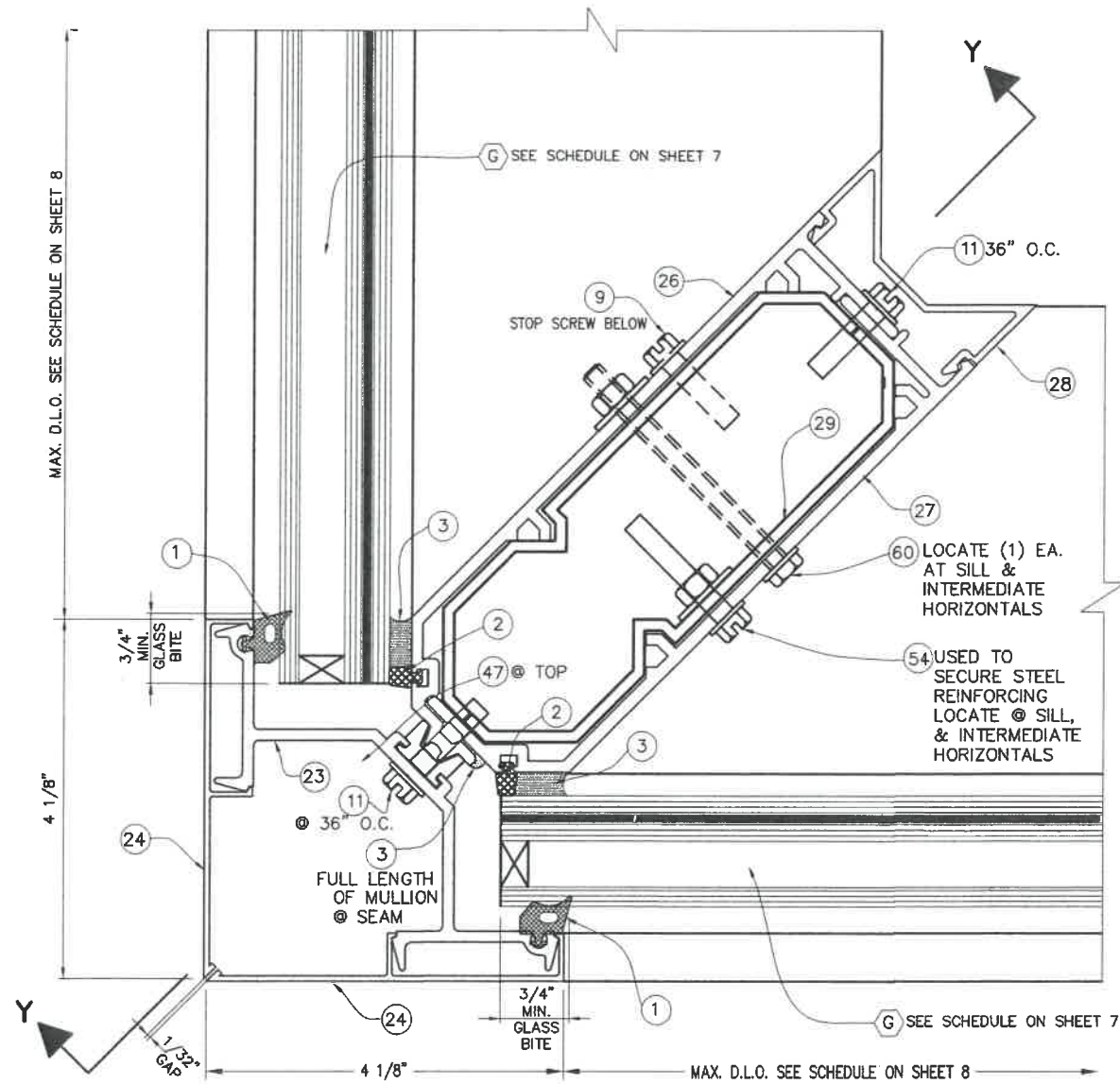
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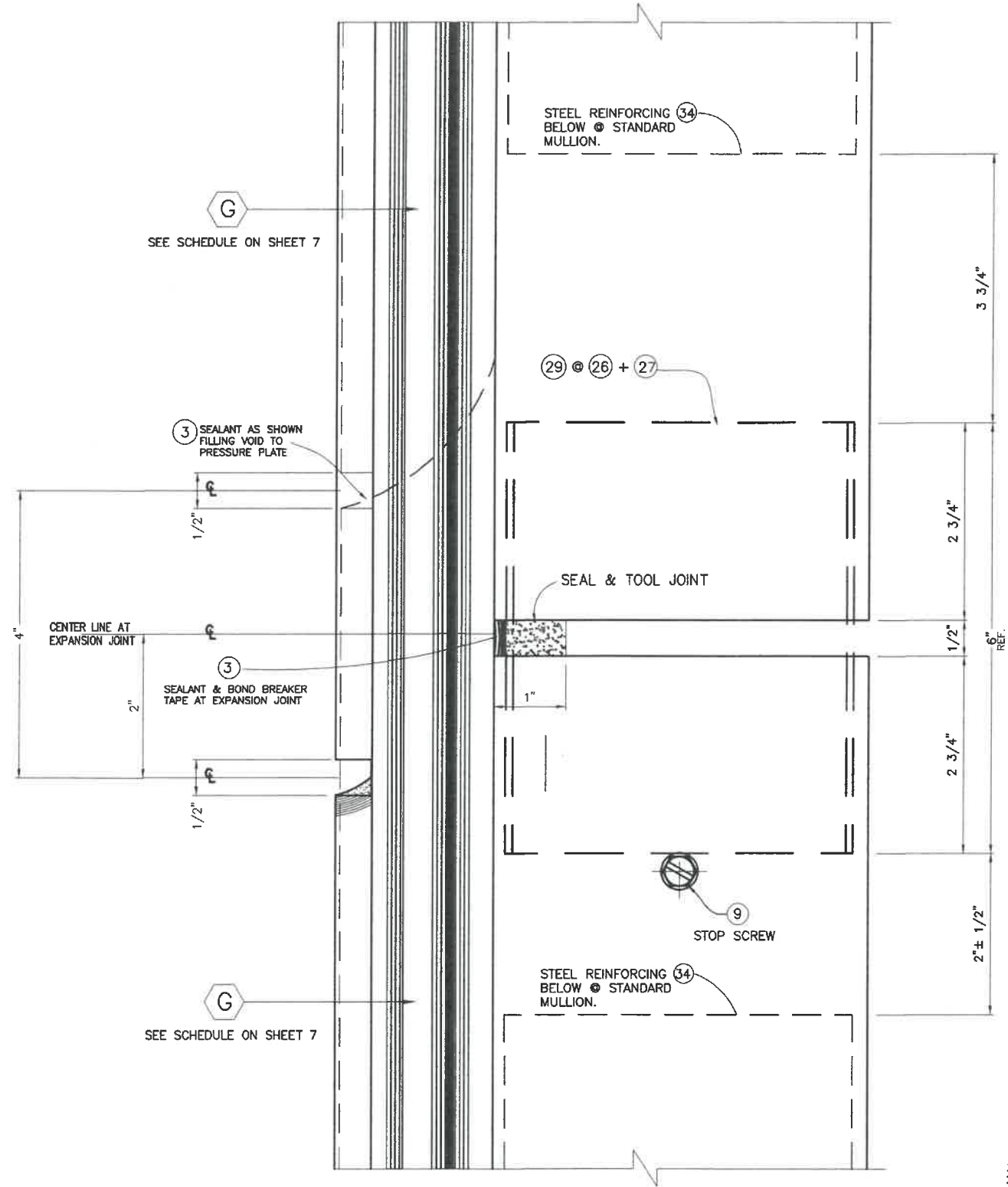
2/18/2022

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STATE OF
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CORNER MULLION SPLICE FOR TWIN SPAN ONLY (PLAN)



16
SPlice JOINT @
90 DEG. CORNER
PLAN



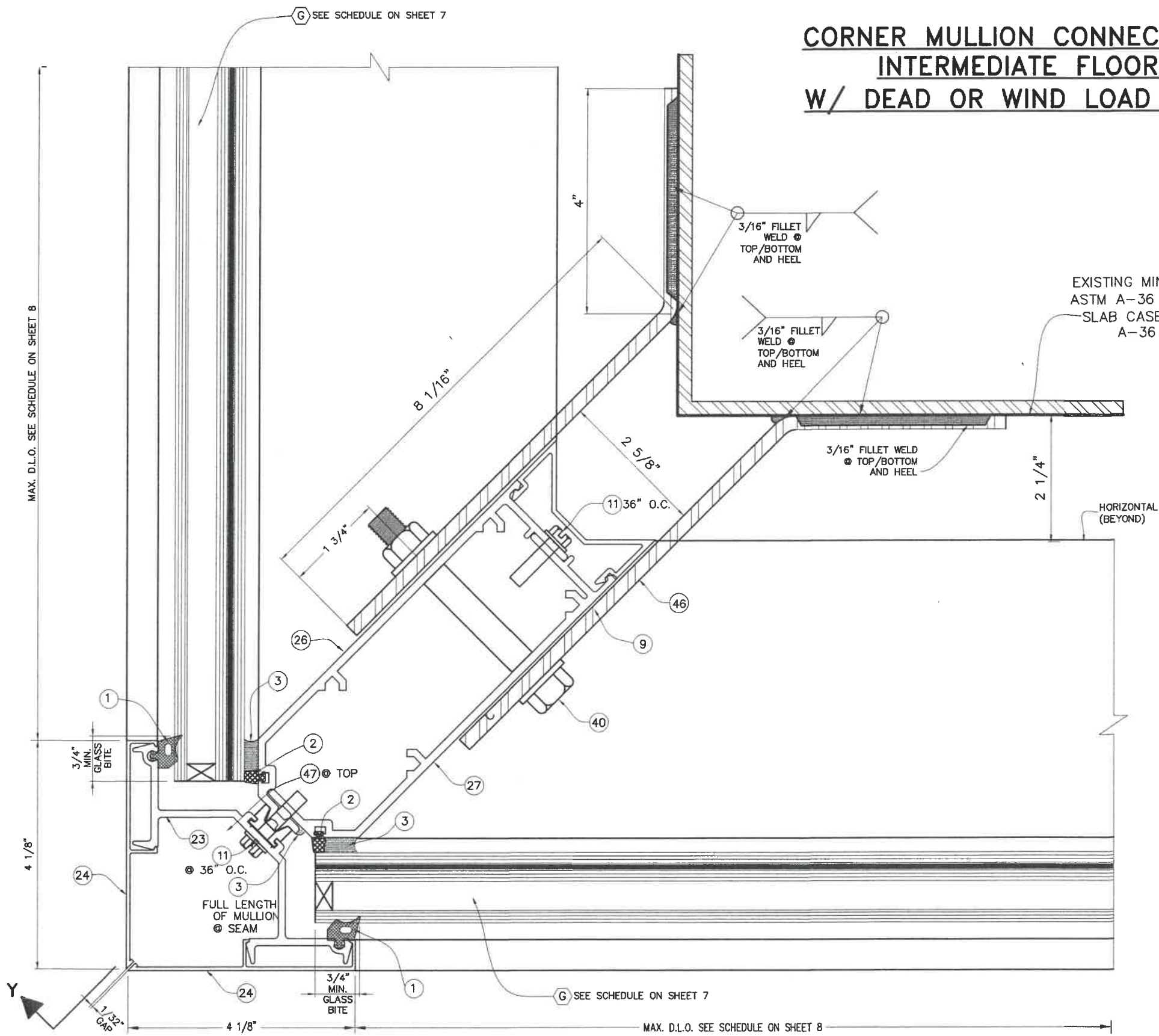
16
SPlice JOINT @
90 DEG. CORNER
SECTION Y-Y

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS		M.P. DRAWN BY	04/15/2021 DATE
Oldcastle BuildingEnvelope™		21-056 DRAWING No	SHEET 29 OF 33
803 Airport Rd - Terrell, TX 75160		www.OldcastleBE.com - Phone 800-969-4567	
REV. No	DESCRIPTION	DATE	REV. No
1	OLD 18-030	04/15/21	1
2	GLASS SHT. 8	9/14/21	2

TILECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)971-1530 ; Fax : (305)971-1531
e-mail: tiltcco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. # 44167

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE
9/14/2021



**CORNER MULLION CONNECTION TO EXISTING
INTERMEDIATE FLOOR STRUCTURE
W/ DEAD OR WIND LOAD ANCHORS (PLAN)**

SECTION "E-E" @ CORNER MULLION

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

Walter A. Tillit Jr.
04/14/2021

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

HR-251 SSG CAPTURED CURTAIN WALL SYSTEM LARGE & SMALL MISSILE WITH INSULATED LAMINATED GLASS

TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
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CA-0006719
WALTER A. TILLIT JR. P.E.
FLORIDA Lic. # 44167

M.P. DRAWN BY

DATE 04/15/2021

21-056
DRAWING No

SHEET 31 OF 33

FLORIDA	BUILDING CODE (High & Non	High	Velocity	Hurricane Zone)
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**HR-251 SSG CAPTURED CURTAIN WALL
SYSTEM LARGE & SMALL MISSILE WITH
INSULATED LAMINATED GLASS**



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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
-	OLD 16-030	04/15/21	-	-	-
-	GLASS SHIT. 8	9/14/21	-	-	-

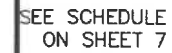
DRAWING NO
SHEET 32 OF 33

SHEET 32 OF 33

SHEET 32 OF 33

P.E. SEAL/SIGNATURE/DATE

DOOR MULLION "F"
(SEE SHEET 9 FOR
DEFINITION)



11
DOOR JAMB TO CURTAIN WALL JAMB

FASTENERS (SEE
SHEET 12) @ 4"
FROM JAMB TYP.
EA. SIDE.



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INSULATED LAMINATED GLASS



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No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
-	OLD 18-030	04/15/21	-	-	-
-	GLASS SHIT. 8	9/14/21	-	-	-

21-056
DRAWING No
SHEET 33 OF 33

1. L. SEAL/ SIGNATURE/ DATE

