

GENERAL NOTES:

1. SERIES 21000 HIGH IMPACT FIXED LAMINATED GLASS WINDOWS, SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAVE BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2023 (8th EDITION) OF THE FLORIDA BUILDING CODE. THESE WINDOWS MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (H.V.H.Z.) OR OUT OF IT (N.H.V.H.Z.). DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTIONS 1620 & 1609 OF THE ABOVE MENTIONED CODE, USING ASCE 7-22 AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW.

IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-22 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 BELOW.

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. FASTENERS SPACING IN WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH NDS 2018. THESE WINDOWS' ADEQUACY FOR IMPACT AND WIND RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTIONS 1626 & 1609.1.2 OF THE ABOVE MENTIONED CODE AS PER PROTOCOLS TAS-201, TAS-202, & TAS-203, PER FENESTRATION TESTING LAB REPORT # 6058 AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTIONS 1616 & 1604 OF THE FLORIDA BUILDING CODE. GLASS VERIFIED PER ASTM E-1300, PER SECTION 2404.1 OF THE FLORIDA BUILDING CODE.

2. MAXIMUM A.S.D. DESIGN PRESSURE RATINGS SHALL BE AS PER SCHEDULES SHOWN ON SHEETS 6, 7, 8 (FOR OPTIONAL SYSTEM #1) & 14, 15, 16 (FOR OPTIONAL SYSTEM #2). CRITERIA FOR ADDRESSING DIFFERENT SHAPES IS AS EXPLAINED ON THIS SHEET (*).

3. THESE WINDOWS WILL NOT REQUIRE A HURRICANE PROTECTION DEVICE.

4. THESE WINDOWS ARE APPROVED FOR AIR AND WATER INFILTRATION.

5. THESE WINDOWS COMPLY WITH SECTION 2406 OF THE FLORIDA BUILDING CODE.

6. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER. THE THICKNESS OF ALL EXTRUSIONS SHALL BE AS SHOWN ON SHEET 2 (FOR OPTIONAL SYSTEM #1) & 10 (FOR OPTIONAL SYSTEM #2) OF THIS DRAWING. ALL ALUMINUM EXTRUSION IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.

7. ALL SCREWS USED FOR ASSEMBLY CONNECTIONS (METAL TO METAL) TO BE STAINLESS STEEL 304 OR 316 AISI SERIES OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 AND SECTION 2411.3.3.4 OF THE FLORIDA BUILDING CODE WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH.

8. WOOD BUCKS NOT BY GENERAL IMPACT GLASS & WINDOWS, CORP. WOOD BUCKS MUST BE SOUTHERN PINE WITH G=0.55. AND SHALL COMPLY WITH SECTIONS 2411.3.3.3 & 2411.3.3.4 OF THE FLORIDA BUILDING CODE. MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

(8.1) 2 X WOOD BUCKS MUST BE PROPERLY ANCHORED TO EXISTING STRUCTURE TO TRANSFER LOADS TO IT. ANCHORAGE IS INDEPENDENT OF WINDOW FRAME ANCHORAGE. WINDOW FRAME MUST BE SEPARATELY ANCHORED TO 2 X WOOD BUCK FOLLOWING DETAILS ON THIS DRAWING.

(8.2) 1 X WOOD BUCK (OR ANY WOOD BUCK LESS THAN 2X) MUST BE PROPERLY ANCHORED TO EXISTING STRUCTURE TO TRANSFER LOADS TO IT. WINDOW FRAME ANCHOR SHALL BE USE TO ATTACH 1 X WOOD BUCK TO EXISTING STRUCTURE BY DRIVING ANCHOR THRU BOTH WINDOW FRAME & 1 X WOOD BUCK INTO EXISTING STRUCTURE W/ PROPER EMBEDMENT AND EDGE DISTANCE AS SHOWN ON THIS DRAWING.

(8.3) WINDOW FRAME MAY BE DIRECTLY CONNECTED TO EXISTING STRUCTURE WITH NO NEED OF WOOD BUCKS WHEN MASONRY OPENING IS NOT LARGER THAN ACTUAL WINDOW OVERALL DIMENSIONS. HOWEVER, SHIMS (SEE NOTE 10) MAY BE ALLOWED AT WINDOW FRAME ANCHOR LOCATION IF NEEDED.

9. ANCHOR NOTES: SEE SHEET 9 FOR MAXIMUM SPACING. EMBEDMENT AND EDGE DISTANCE ARE BEYOND ANY WALL FINISH.

(A) TO EXISTING POURED CONCRETE: (Min. f'c = 2730 psi.), MIN. EDGE DISTANCE = 2 1/2".
- 1/4"Ø ULTRACON 1 1/4" MIN. EMBEDMENT, AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.
(COMPONENT 8) FOR OPTIONAL SYSTEM #1 & #2, THRU 1" P.T. WOOD BUCK.

(A) TO EXISTING HOLLOW BLOCK WALL (Min. f'm = 1924 psi.), MIN. EDGE DISTANCE = 2 1/2".
- 1/4"Ø ULTRACON 1 1/4" MIN. EMBEDMENT, AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS.
(COMPONENT 8) FOR OPTIONAL SYSTEM #1 & #2, THRU 1" P.T. WOOD BUCK.

(A) TO EXISTING 2x P.T. WOOD BUCK. (MIN. G = 0.55) MIN. EDGE DISTANCE = 1".
- 1/4"Ø ULTRACON 1 1/2" MIN. THREADED PENETRATION, AS MANUFACTURED BY ELCO CONSTRUCTION PRODUCTS. (COMPONENT 8) FOR OPTIONAL SYSTEM #1 & #2).

(A) TO EXISTING MIN. 1/8" THICK ALUMINUM TUBE (6063-T5 ALLOY) MIN. EDGE DISTANCE = 1/2".
- 1/4"Ø-14 TEK SCREW, MIN. 3/4" LONG, AS MANUFACTURED BY ITW BUILDEX, INC.
(COMPONENT 8A) FOR OPTIONAL SYSTEM #1 & #2).

(A) TO EXISTING MIN. 12 GAGE (0.106") STEEL MEMBER (ASTM A-500, A-653 OR A-36) MIN. EDGE DISTANCE = 3/8".
- 1/4"Ø-14 TEK SCREW, MIN. 3/4" LONG, AS MANUFACTURED BY ITW BUILDEX, INC.
(COMPONENT 8A) FOR OPTIONAL SYSTEM #1 & #2).

10. PROVIDE 1/4" MAX. LOAD BEARING SHIM SPACE (TYP.).

11. REMAINING COMPONENTS FOR THESE WINDOWS SHALL BE AS INDICATED ON BILL OF MATERIALS ON SHEET 2 (FOR OPTIONAL SYSTEM #1) & SHEET 10 (FOR OPTIONAL SYSTEM #2).

12. WINDOWS' MANUFACTURER 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 UNIT.

13. (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.

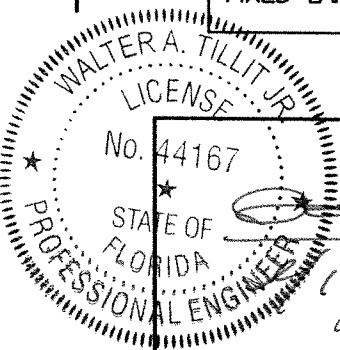
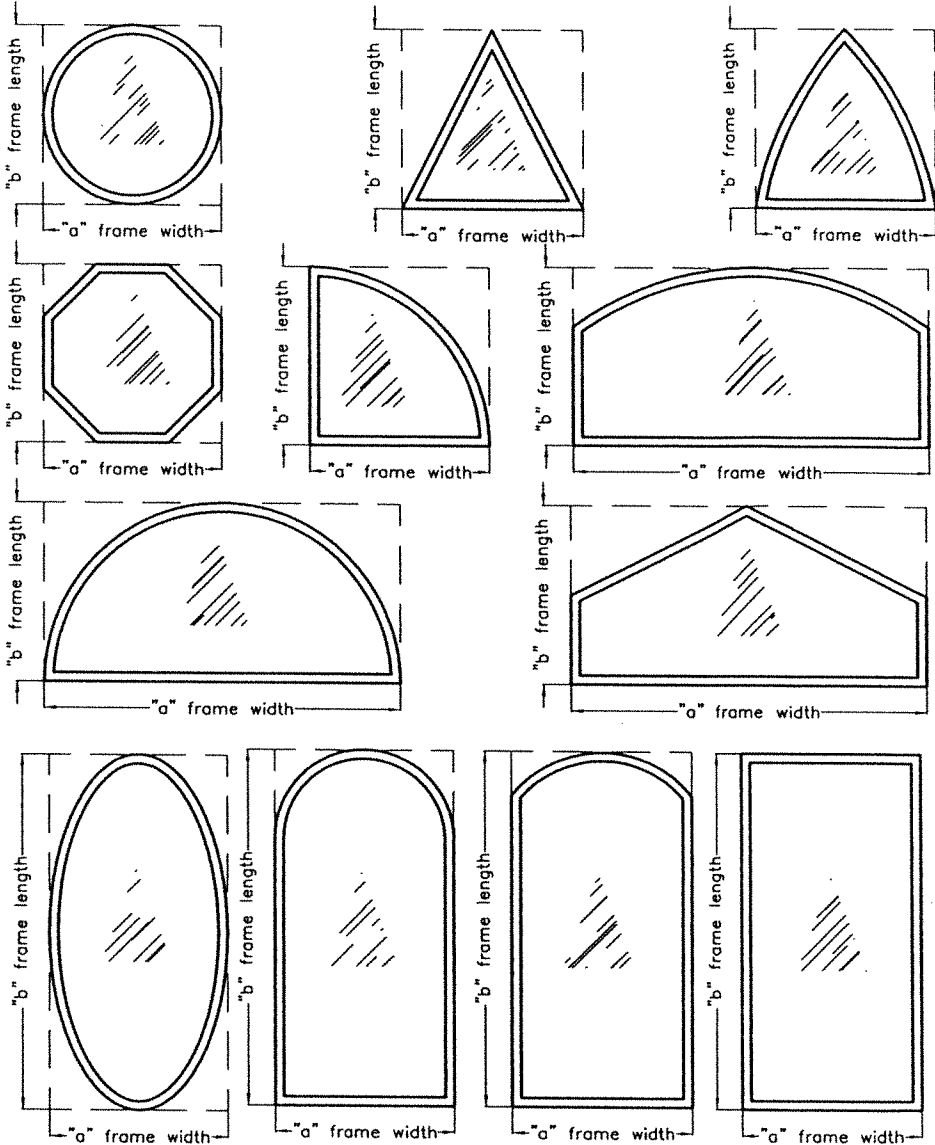
(D) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS DELEGATED ENGINEER TO THE P.E.D., SHALL SUBMIT TO THIS LATTER SITE SPECIFIC DRAWING 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.

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

INDEX:
SHEETS 1 TRHU 9: OPTIONAL SYSTEM #1
SHEETS 10 THRU 17: OPTIONAL SYSTEM #2

* MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf) FOR ALTERNATE SHAPES AS SHOWN ABOVE OR SIMILAR CAN BE DETERMINED BY INSCRIBING FIXED WINDOW SHAPE WITHIN SQUARE "a" x "b" OR RECTANGLE "a" x "b" AS SHOWN IN DOTTED LINES AND OBTAINING MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf) FOR THOSE ALTERNATE SHAPES FROM SCHEDULES ON SHEETS 6, 7 & 8 (FOR OPTIONAL SYSTEM #1) AND SHEETS 14, 15 & 16 (FOR OPTIONAL SYSTEM #2) FOR SERIES 21000 HIGH IMPACT FIXED LAMINATED GLASS WINDOWS.



P.E. SEAL/SIGNATURE/DATE

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

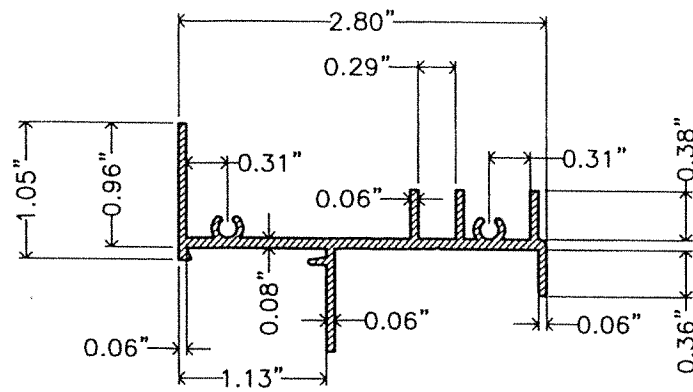
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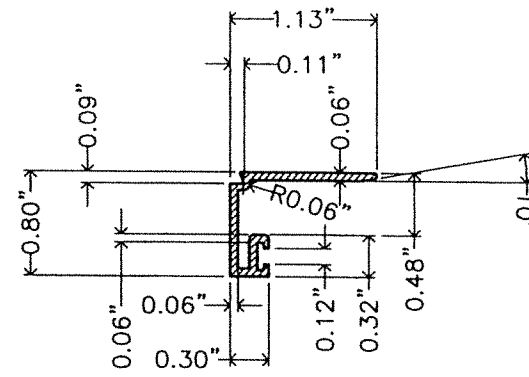
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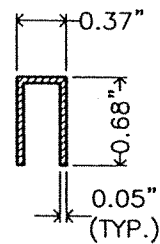
SERIES 21000 HIGH IMPACT FIXED GLASS WINDOWS						DRAWN BY: W.H	
 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com						09/01/2023 DATE	
						23-208 DRAWING No	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	SHEET 1 OF 17	
1	OLD 23-155	09/01/23	2				



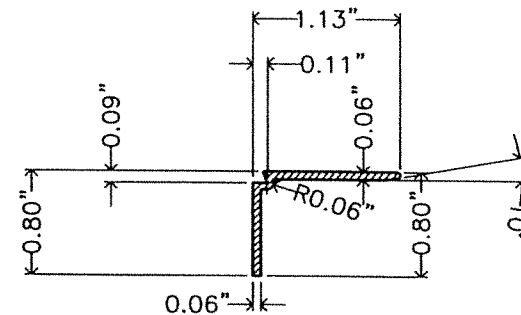
1 **FRAME HEAD & SILL
& JAMB**
6063-T6 ALLOY



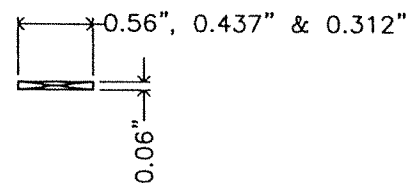
3 **GLAZING BEAD FOR FULLY
STRAIGHT FRAME WINDOWS**
6063-T6 ALLOY



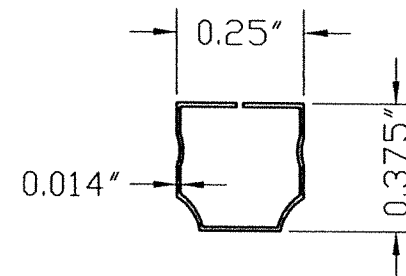
3A **GLAZING BEAD FOR CURVED
AND COMBINATION CURVED &
STRAIGHT FRAME WINDOWS**
6063-T6 ALLOY



3B **GLAZING BEAD FOR STRAIGHT,
CURVED AND COMBINATION
CURVED & STRAIGHT FRAME
WINDOWS ON
INSULATED-LAMINATED GLASS**
6063-T6 ALLOY

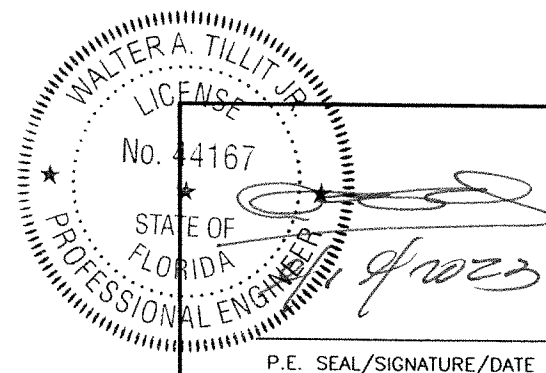


11 **SETTING BLOCK FOR
10, 10A, 10B & 10C**



16 **INSULATED GLASS SPACER**
30105-H24 ALLOY

**COMPONENTS
OPTIONAL SYSTEM #1**
SCALE: N.T.S



BILL OF MATERIALS

ITEM #	DESCRIPTION	DIMENSIONS & REMARKS	MATERIAL
1	FRAME HEAD/SILL & JAMB	(2) REQUIRED	6063-T6
3	GLAZING BEAD FOR FULLY STRAIGHT FRAME WINDOWS	(4) REQUIRED	6063-T6
3A	GLAZING BEAD FOR CURVED AND COMBINATION CURVED/STRAIGHT FRAME WINDOWS	(4) REQUIRED	6063-T6
3B	GLAZING BEAD FOR STRAIGHT, CURVED AND COMBINATION CURVED/STRAIGHT FRAME WINDOWS ON INSULATED-LAMINATED GLASS	(4) REQUIRED	6063-T6
4	WEATHER STRIPING, ULTRAFAB E-271	(4) AT GLAZING BEAD	NEOPRENE
4A	WEATHER STRIPING SOLID RUBBER	(4) AT GLAZING BEAD	NEOPRENE
4B	WEATHER STRIPING 0.296" HEIGHT, SCHLEGEL SYSTEM, INC., Q375T190	(4) AT GLAZING BEAD	NEOPRENE
5	CORNER FRAME ASSEMBLY SCREWS	(2) #8 x 1" PH SMS REQ'D.	STEEL
6	DOW CORNING 995	-----	STRUCTURAL SILICONE
6A	DOW CORNING 795	-----	STRUCTURAL SILICONE
7	WHITE COLOR SILICONE AT FIXED PANEL FRAME AND FRAME CORNERS.	ALL AROUND (EXTERIOR)	SEALANT
8	1/4"Ø ULTRACON BY DEWALT, TO POURED CONCRETE, HOLLOW BLOCK OR WOOD WALL REQ'D. (SEE SCHEDULE)	-----	CARBON STEEL
8A	1/4"Ø ITW BUILDDEX TEK SCREW TO METAL (SEE SCHEDULE)	-----	STEEL
9	0.145" HEIGHT BUMPER SPACER, CUT FROM 3/8"Ø SPHERE, CLEAR 3" FROM CORNERS MAX. AND 12" O.C. (MAX.) AT MID-GLASS BITE ELEVATION	FRANK LOWE RUBBEL, GASKET TLB-28, CLEAR.	SILICONE
9A	0.211" HEIGHT BUMPER SPACER, CUT FROM 3/8"Ø SPHERE, CLEAR 3" FROM CORNERS MAX. AND 12" O.C. (MAX.) AT MID-GLASS BITE ELEVATION	FRANK LOWE RUBBEL, GASKET FLB-38, CLEAR.	SILICONE
10	0.590" (9/16" NOMINAL) LAMINATED GLASS W/ 1/4" H.S. GLASS + 0.090" SENTRYGLAS® INTERLAYER + 1/4" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
10A	0.484" (7/16" NOMINAL) LAMINATED GLASS W/ 3/16" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 3/16" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
10B	0.326" (5/16" NOMINAL) LAMINATED GLASS W/ 1/8" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 1/8" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
10C	0.6875" (11/16" NOMINAL) INSULATED-LAMINATED GLASS W/ 1/8" TEMPERED GLASS OUTBOARD + 1/4" ARGON SPACER + 1/8" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 1/8" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
10D	0.875" (7/8" NOMINAL) INSULATED-LAMINATED GLASS W/ 3/16" TEMPERED GLASS OUTBOARD + 1/4" ARGON SPACER + 3/16" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 3/16" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
11	SETTING BLOCK	1/16"x9/16" OR 7/16" OR 5/16" FOR 10, 10A, 10B, 10C, 10D	SILICONE
16	INSULATED GLASS SPACER	SEE DETAIL	3105-H24 ALLOY

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

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**SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS**



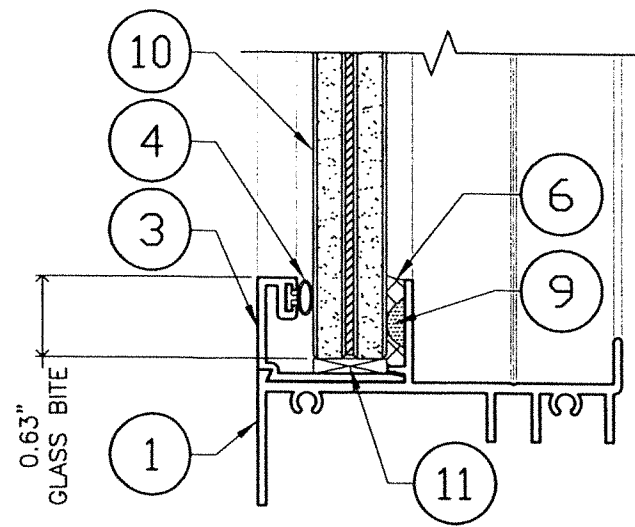
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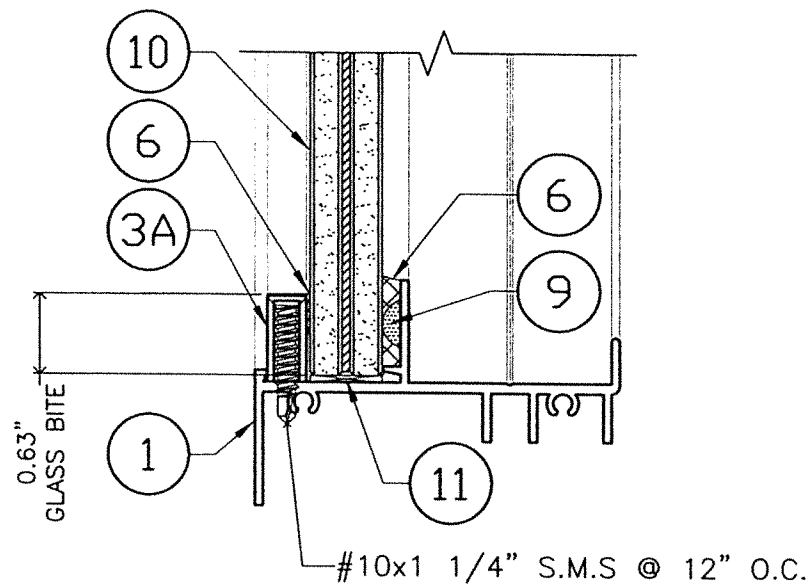
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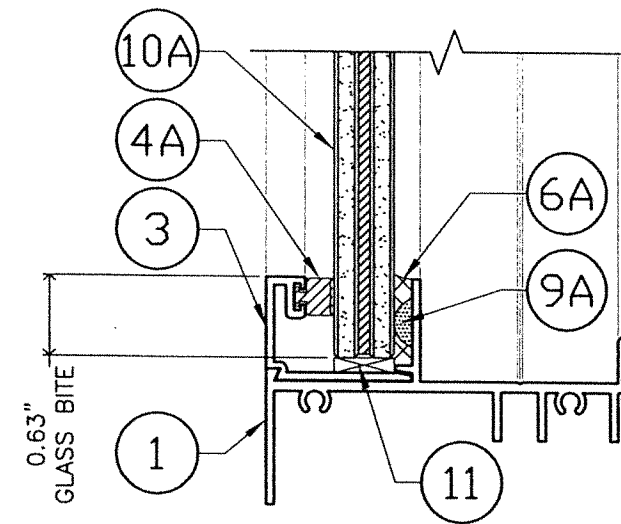
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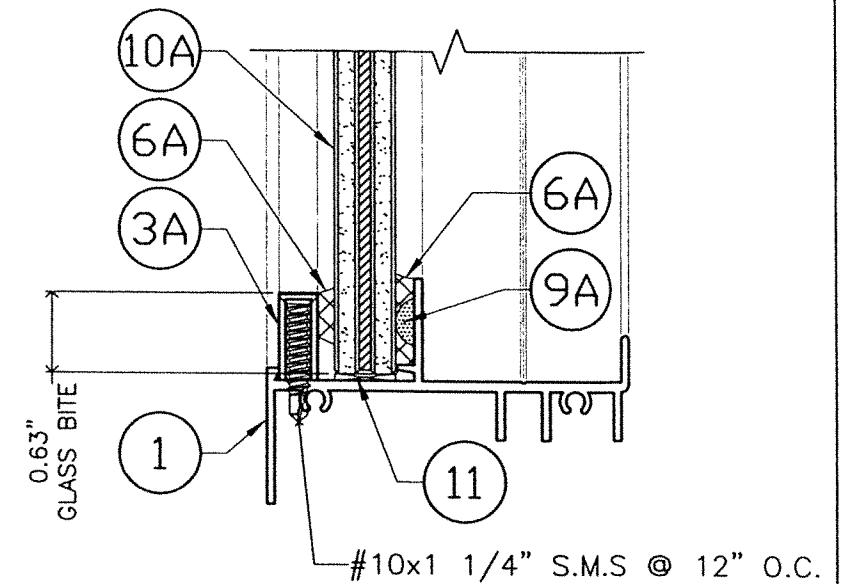
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10 W/ 3



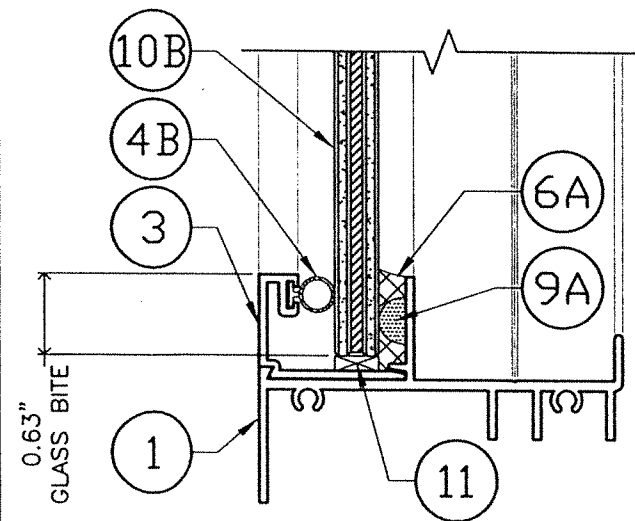
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10 W/ 3A



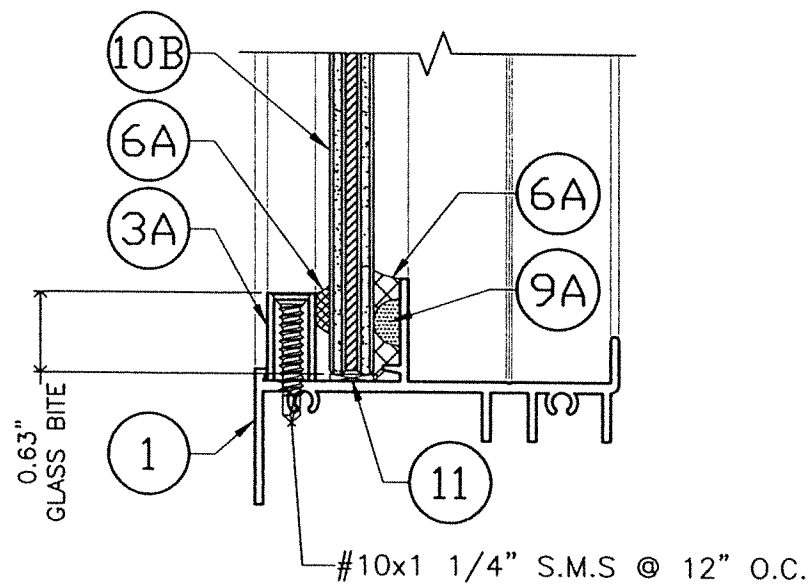
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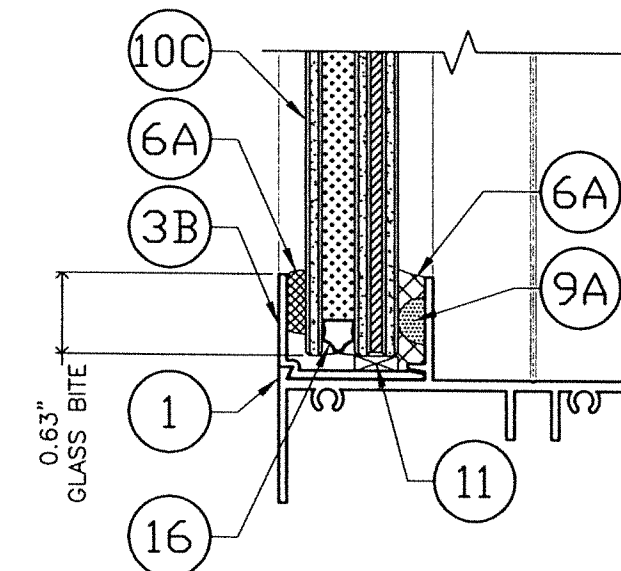
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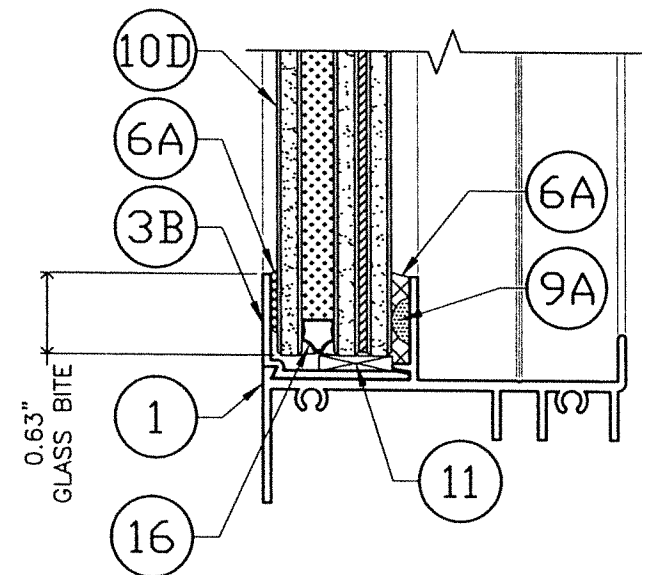
GLAZING DETAIL FOR
10B W/ 3



GLAZING DETAIL FOR
10B W/ 3A

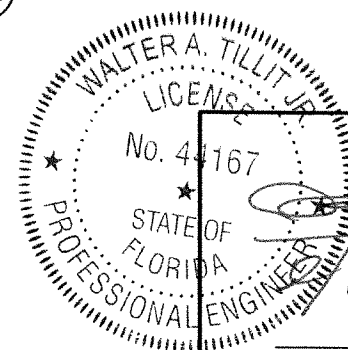


GLAZING DETAIL FOR
10C W/ 3B



GLAZING DETAIL FOR
10D W/ 3B

GLAZING DETAILS OPTIONAL SYSTEM #1 SCALE: N.T.S



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SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS



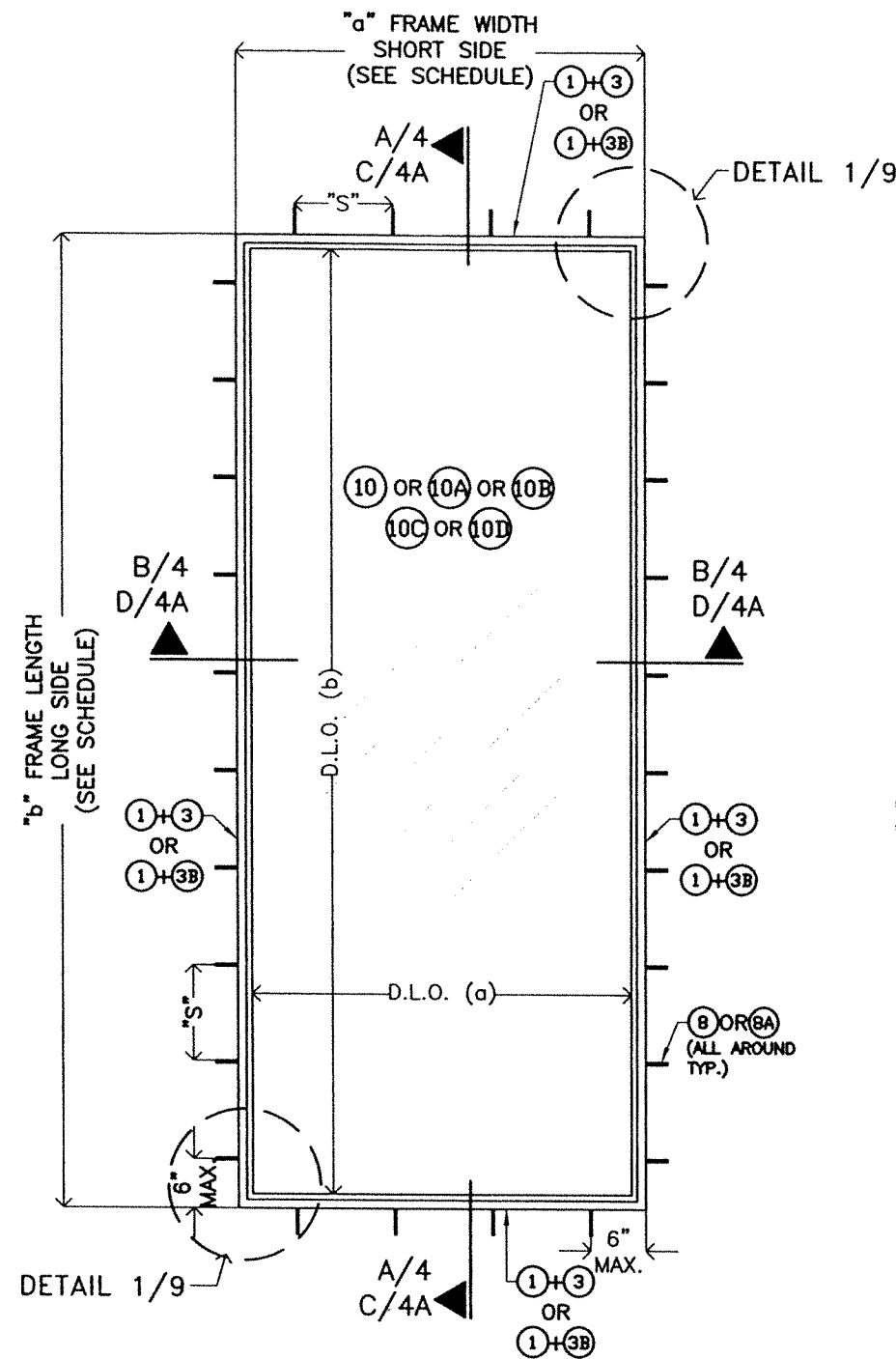
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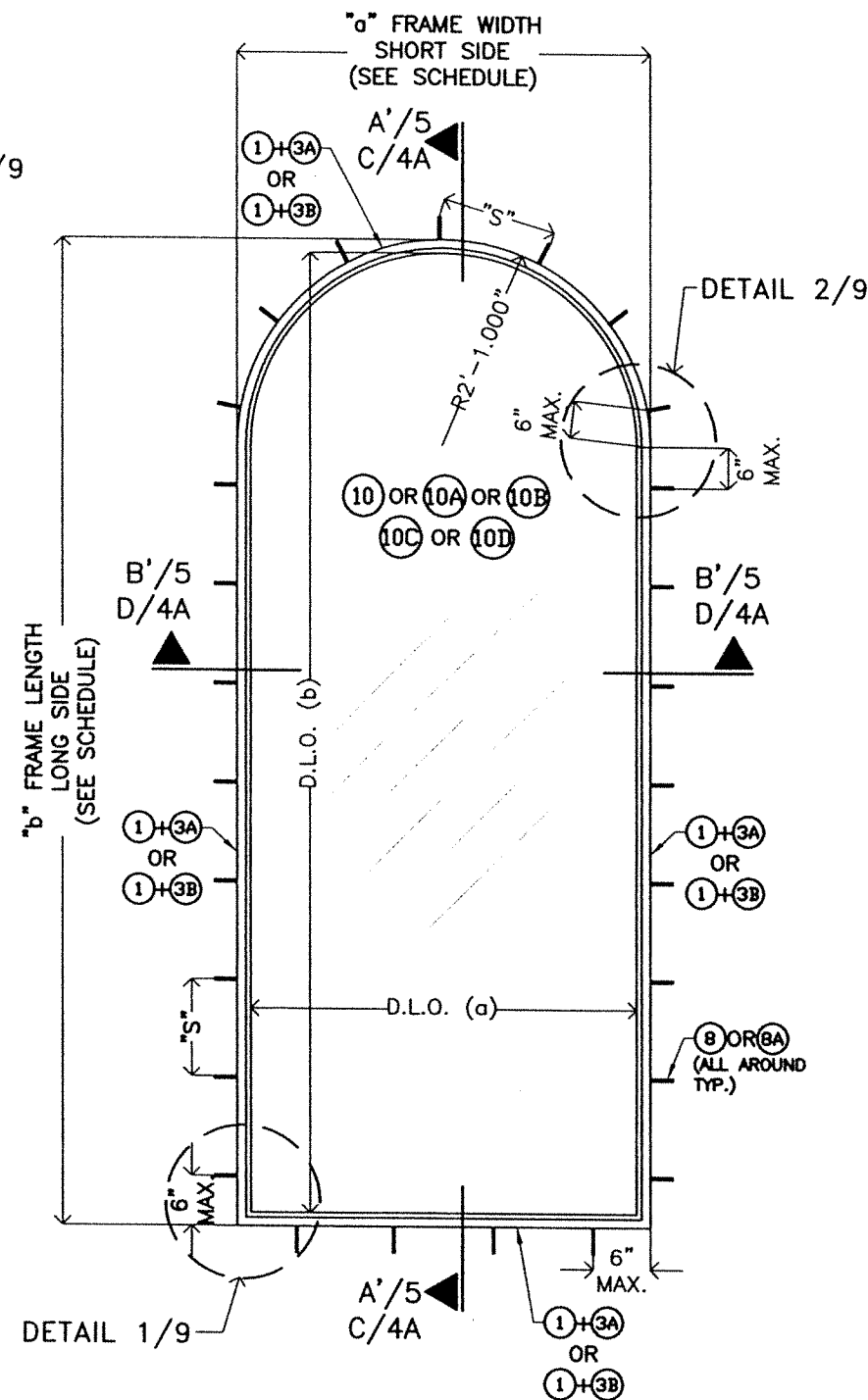
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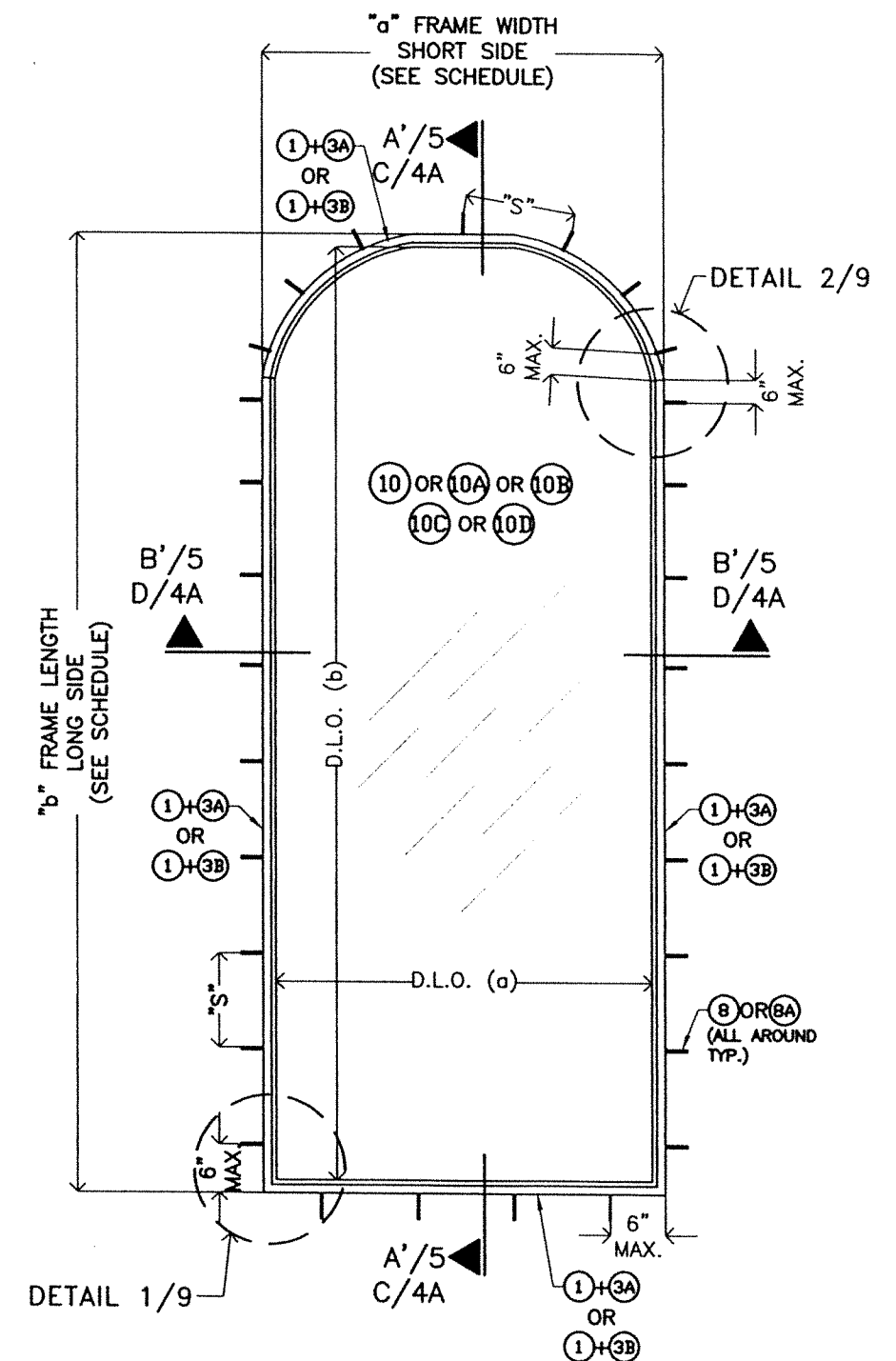
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CASE 1: RECTANGULAR
N.T.S



CASE 2: HALF ROUND TOP
N.T.S



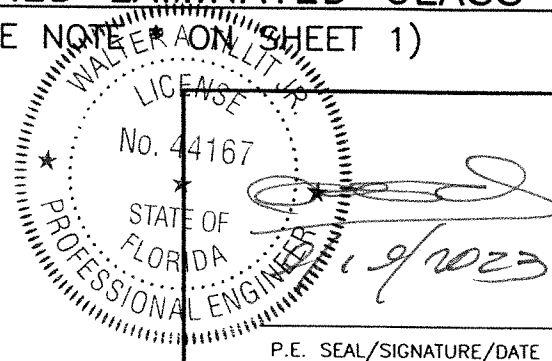
CASE 3: EYEBROW
N.T.S

**TYPICAL EXTERIOR ELEVATIONS FOR SERIES 21000
HIGH IMPACT FIXED LAMINATED GLASS WINDOW**
(SEE NOTE * ON SHEET 1)

"S" = MAX. ANCHOR SPACING
(SEE SCHEDULE ON SHEET 9)

FOR "a" FRAME WIDTH (SHORT SIDE),
"b" FRAME LENGTH (LONG SIDE) AND
MAX. D.L.O. (a) AND MAX. D.L.O. (b)
SEE SCHEDULES ON SHEETS 6, 7 & 8.

OPTIONAL SYSTEM #1



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W.H

09/01/2023
DATE

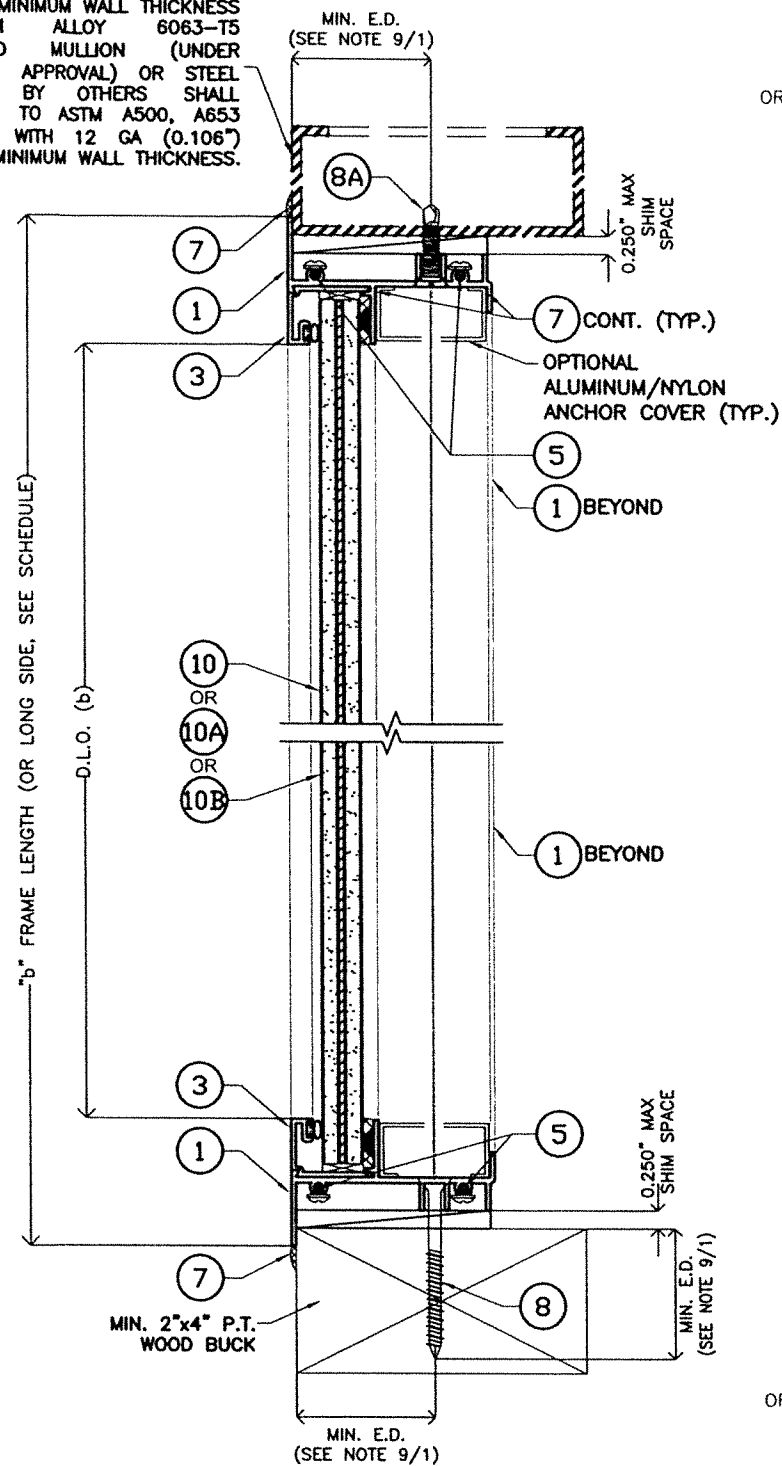
23-208
DRAWING No

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 3 OF 17

1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
APPROVED MULLION (UNDER
SEPARATE APPROVAL) OR STEEL
MEMBER BY OTHERS SHALL
CONFORM TO ASTM A500, A653
OR A36 WITH 12 GA (0.106")
MINIMUM WALL THICKNESS.

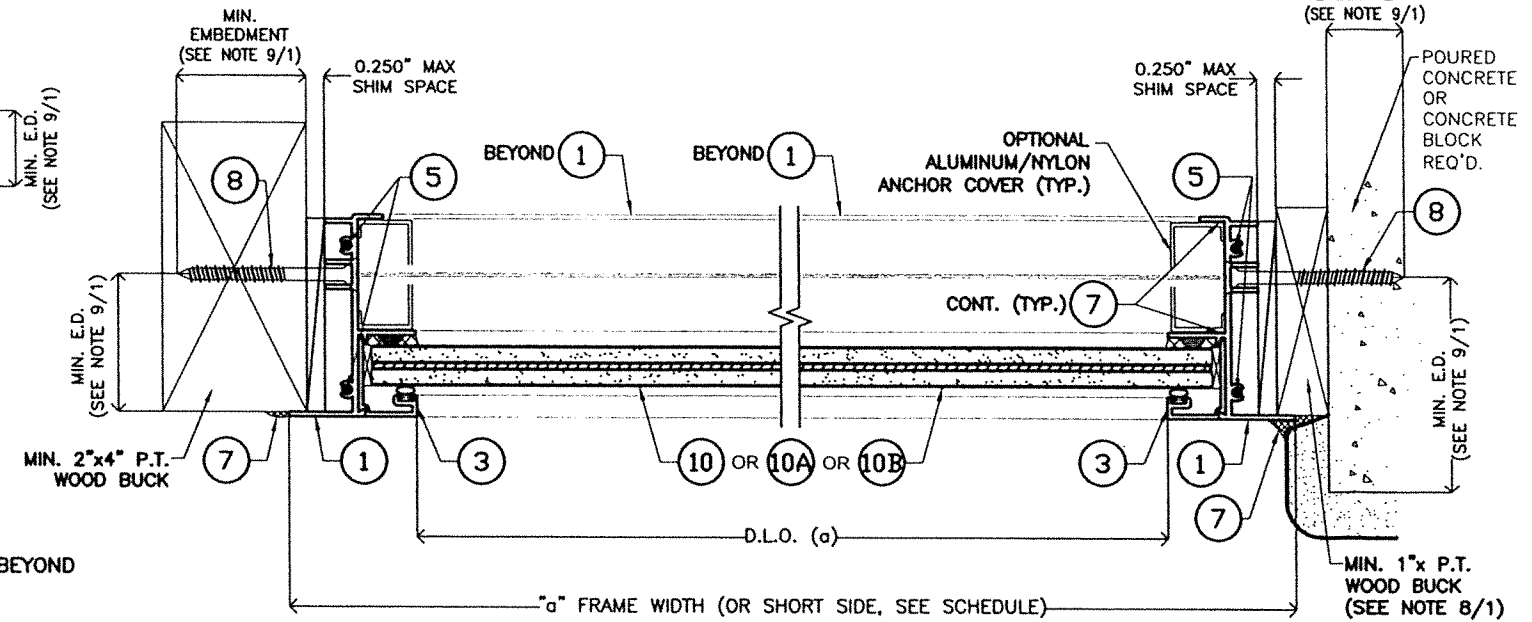
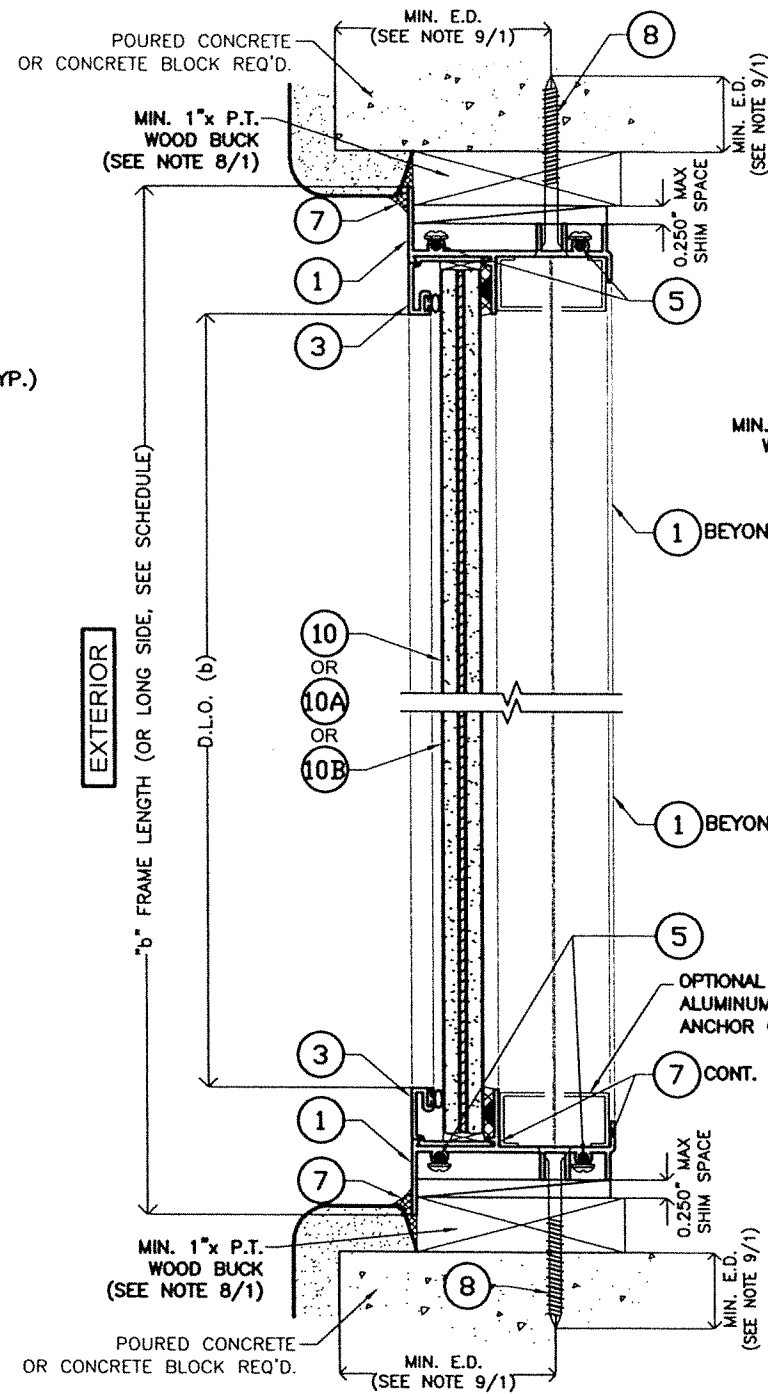
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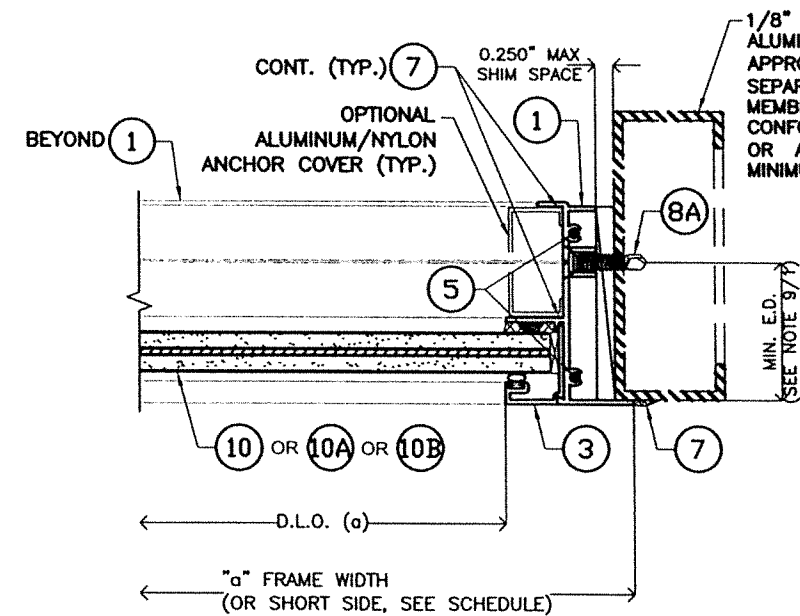
SECTION A-A

SCALE: N.T.S

OPTIONAL SYSTEM #1



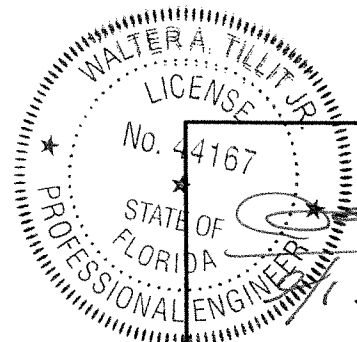
EXTERIOR



EXTERIOR

SECTION B-B

SCALE: N.T.S



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e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS



290 WEST 78 ROAD
HIALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
www.gigwindows.com

DRAWN BY:
W.H

09/01/2023
DATE

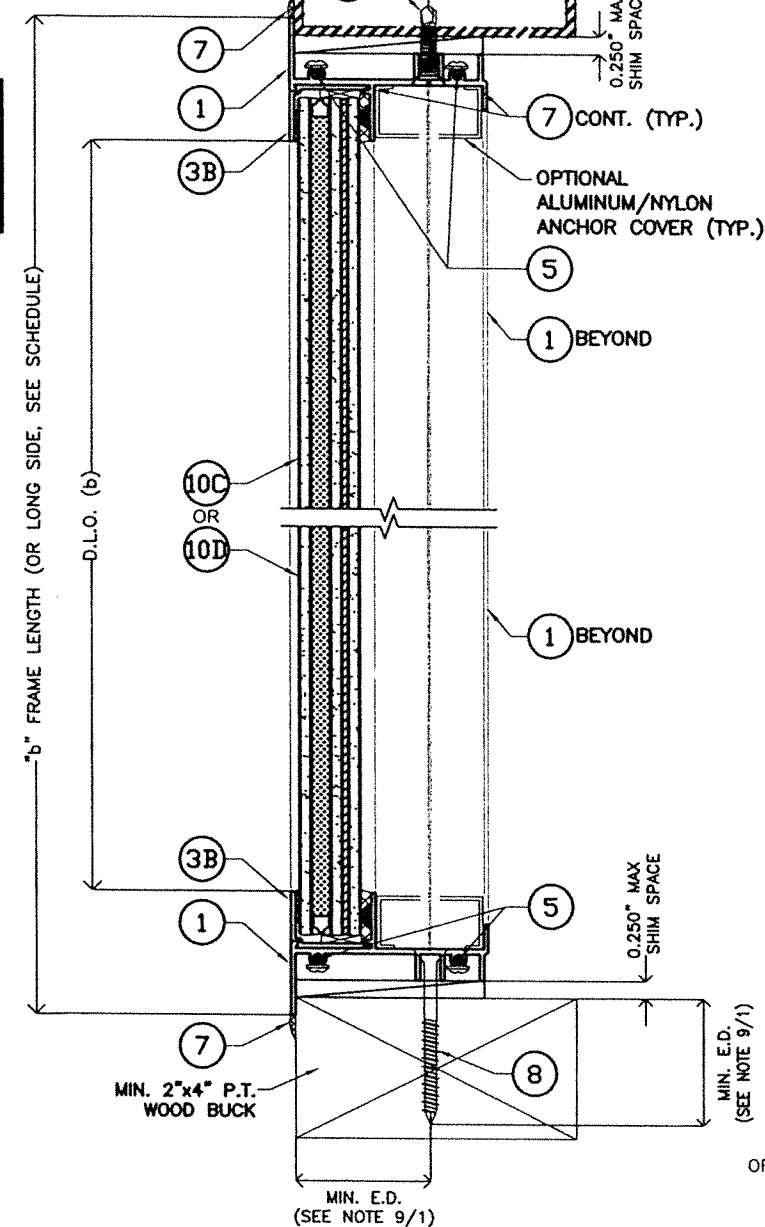
23-208
DRAWING No

REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 4 OF 17

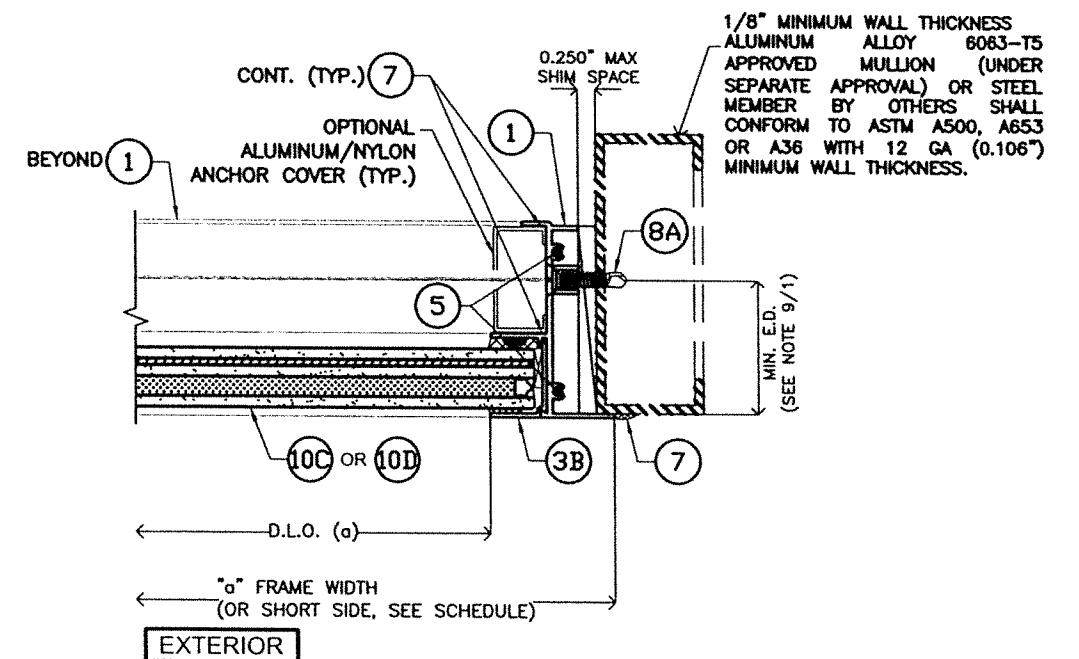
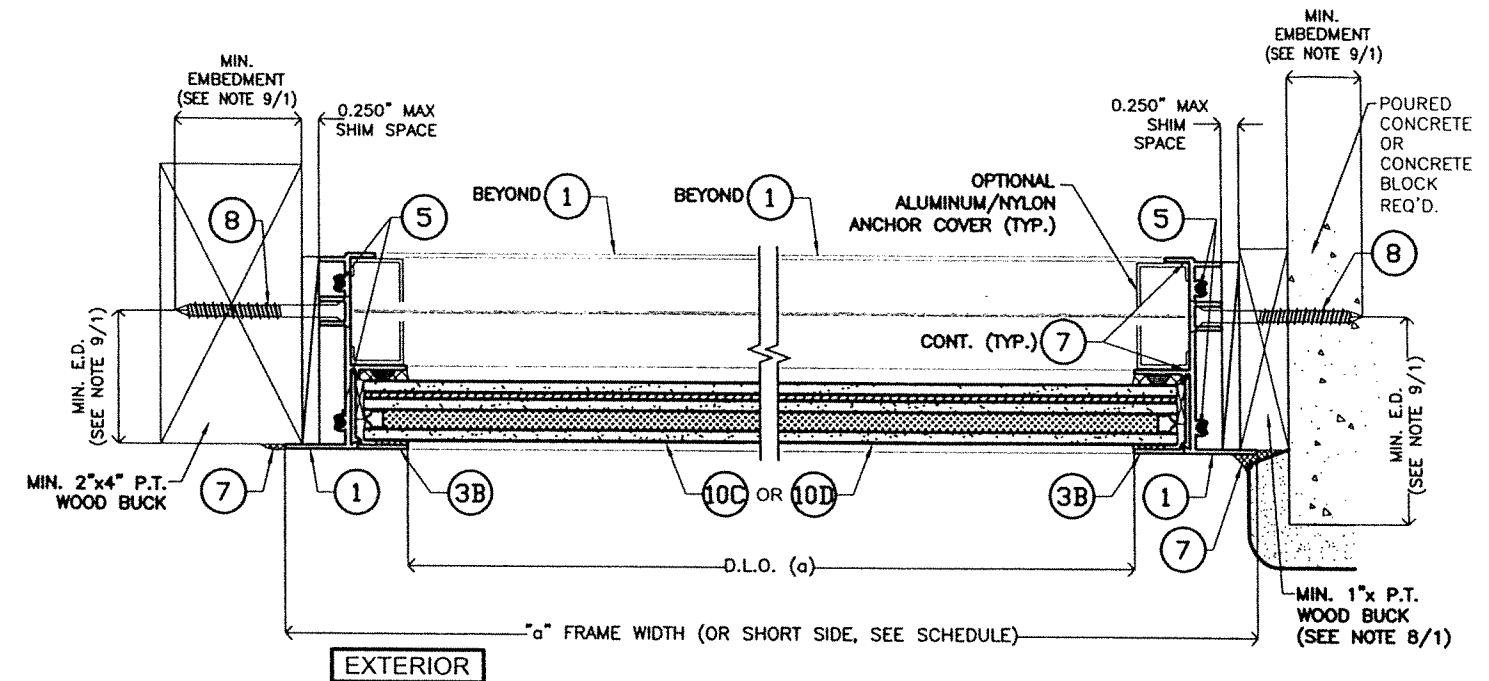
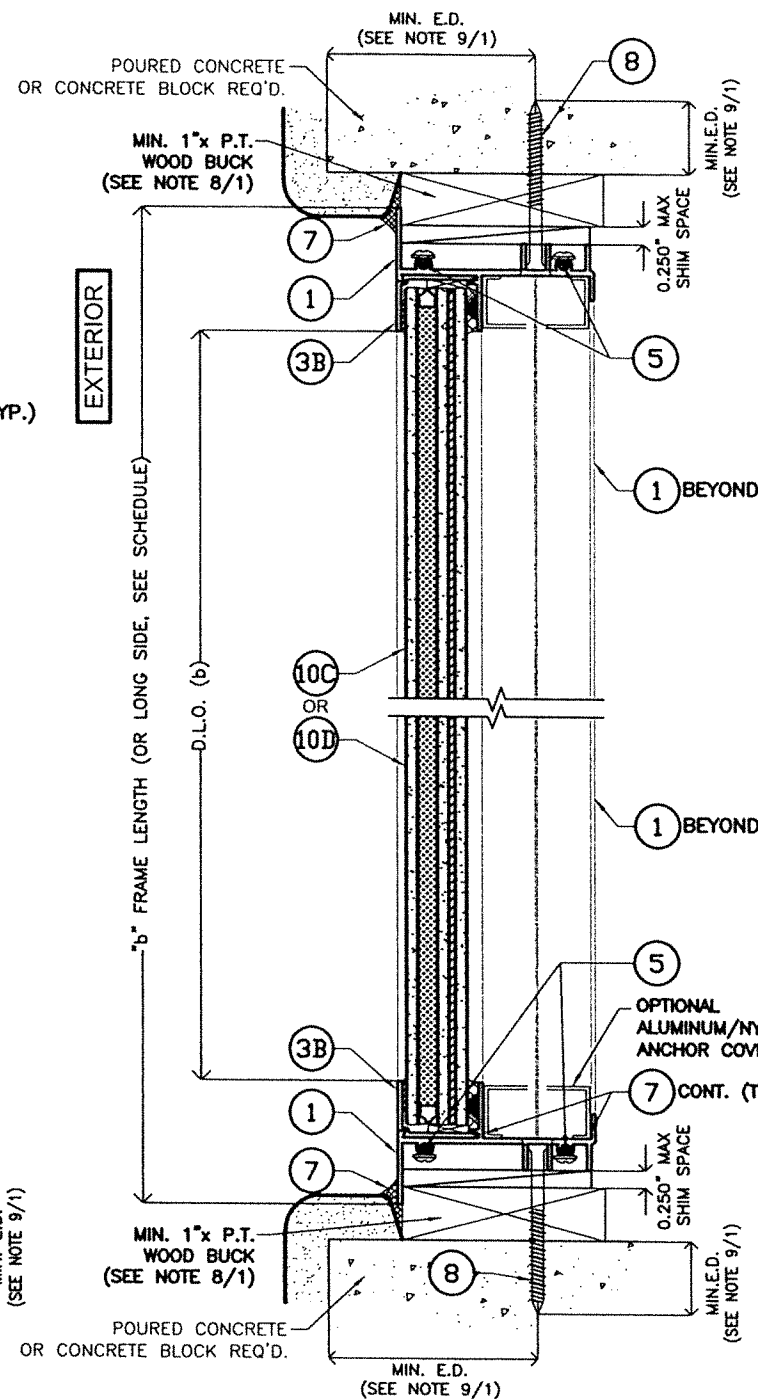
1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
APPROVED MULLION (UNDER
SEPARATE APPROVAL) OR STEEL
MEMBER BY OTHERS SHALL
CONFORM TO ASTM A500, A653
OR A36 WITH 12 GA (0.106")
MINIMUM WALL THICKNESS.

EXTERIOR



SECTION C-C

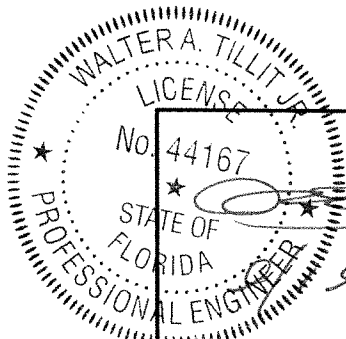
SCALE: N.T.S



SECTION D-D

SCALE: N.T.S

OPTIONAL SYSTEM #1



P.E. SEAL/SIGNATURE/DATE

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

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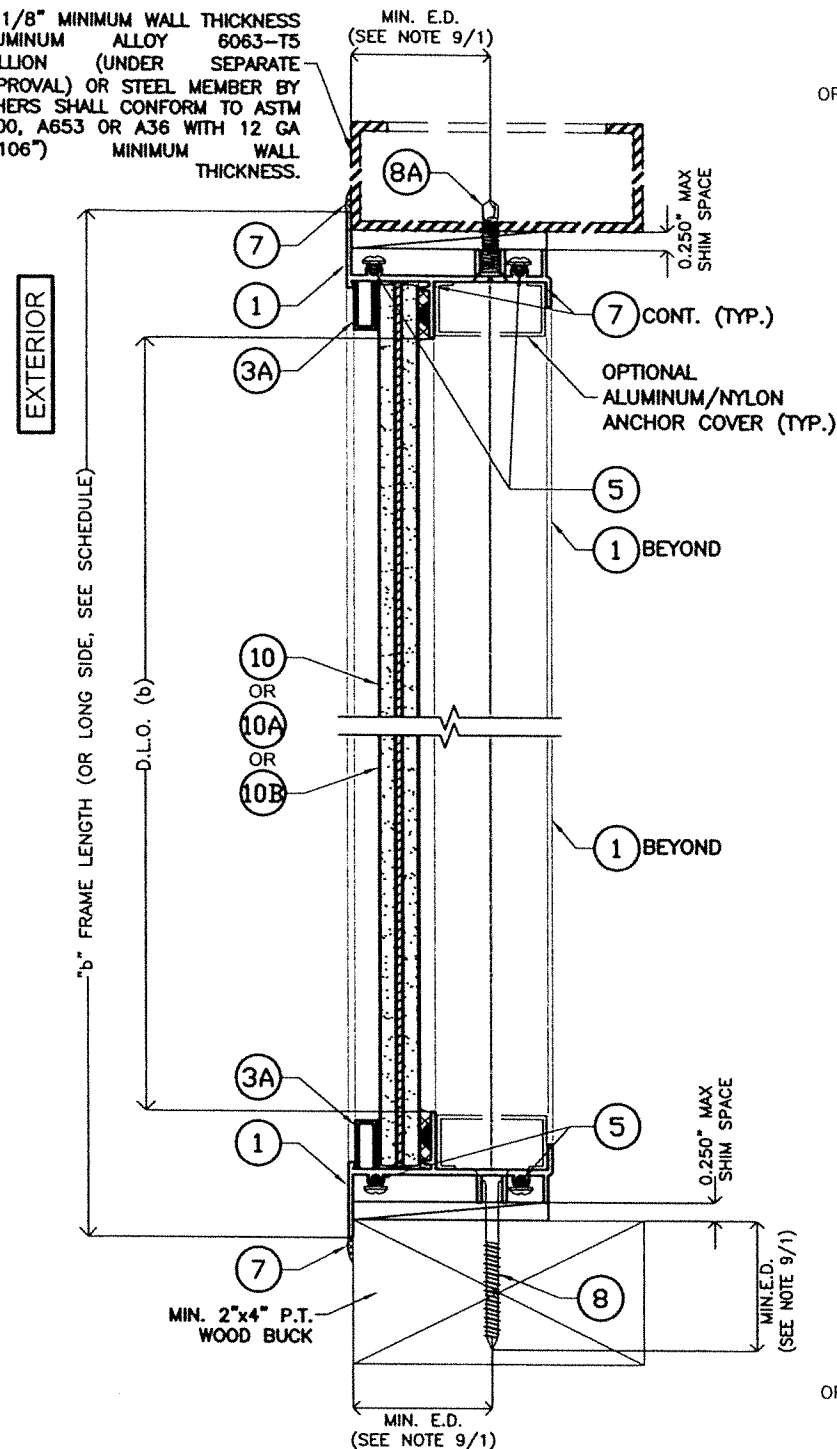
09/01/2023
DATE

23-208
DRAWING No

REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 4A OF 17

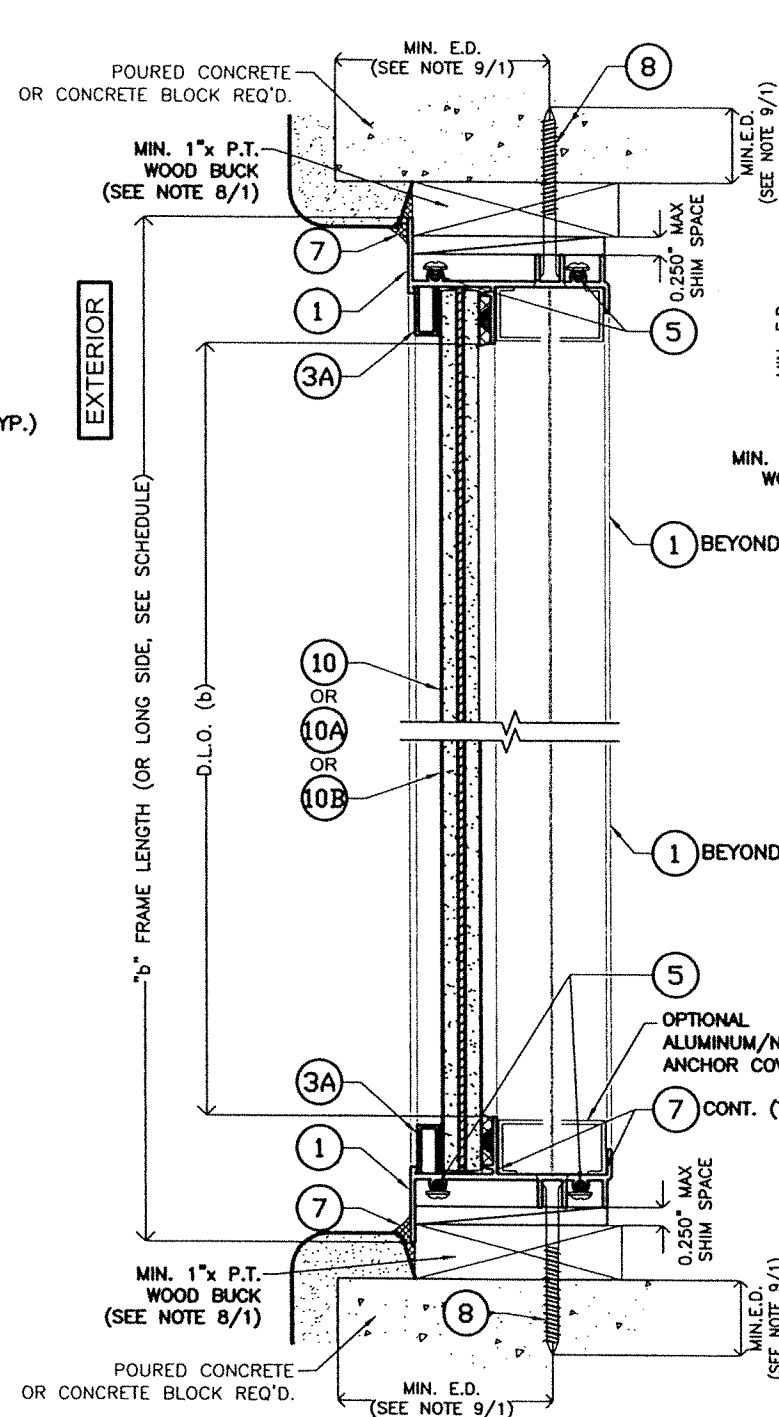
1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
MULLION (UNDER SEPARATE
APPROVAL) OR STEEL MEMBER BY
OTHERS SHALL CONFORM TO ASTM
A500, A653 OR A36 WITH 12 GA
(0.106") MINIMUM WALL
THICKNESS.



SECTION A'-A'

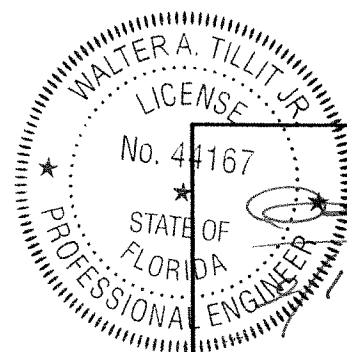
SCALE: N.T.S.

OPTIONAL SYSTEM #1



SECTION B'-B'

SCALE: N.T.S.



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GLASS WINDOWS



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W.H

09/01/2023
DATE

23-208
DRAWING No

REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 5 OF 17

MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE

RATING "W" SCHEDULE VALID FOR ALL SHAPES WITH GLASS (10)

"a"	"b"	W psf +	W psf -
18'	18'	130	154
	24'	130	154
	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154

"a"	"b"	W psf +	W psf -
24'	24'	130	154
	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154

"a"	"b"	W psf +	W psf -
30'	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	144'	130	154

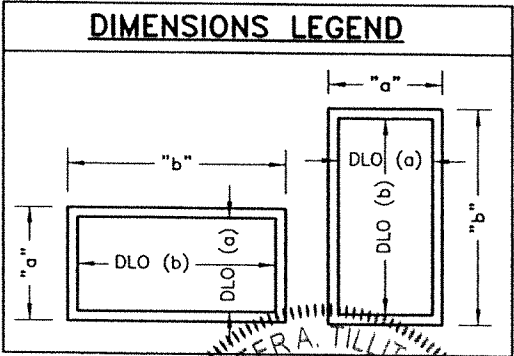
"a"	"b"	W psf +	W psf -
36'	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	144'	130	154
	150'	130	154

"a"	"b"	W psf +	W psf -
42'	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	142'	130	154
	48'	130	154
	54'	130	154

"a"	"b"	W psf +	W psf -
54'	54'	120.3	142.5
	60'	120.3	142.5
	66'	120.3	142.5
	72'	120.3	142.5
	78'	120.3	142.5
	84'	120.3	142.5
	90'	120.3	142.5
	96'	120.3	142.5
	102'	120.3	142.5
	108'	120.3	142.5
60'	111'	120.3	139
	60'	108.3	128.3
	66'	108.3	128.3
	72'	108.3	128.3
	76'	108.3	128.3
	78'	108.3	128.3
	84'	108.3	128.3
	90'	108.3	128.3
	96'	108.3	128.3
	100'	108.3	128.3
66'	66'	98.5	116.67
	72'	98.5	116.67
	78'	98.5	116.6
	84'	98.5	116.6
	90'	98.5	116.6
72'	72'	90.3	106.9
	78'	90.3	106.9
	83'	90.3	106.9

MAXIMUM DAY LIGHT OPENING (D.L.O.) FOR A GIVEN COMPONENT AT EACH END OF GLASS

SIDE	COMPONENTS • EACH END OF GLASS	MAX. DAY LIGHT OPENING
		(D.L.O.) Formula
MAX. D.L.O. (a) (SHORT SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"a"-3.526"
MAX. D.L.O. (b) (LONG SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"b"-3.526"



WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
12/1/2023
P.E. SEAL/SIGNATURE/DATE

OPTIONAL SYSTEM #1

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

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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 21000 HIGH IMPACT FIXED GLASS WINDOWS				DRAWN BY: W.H	
 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com				09/01/2023 DATE	
				23-208 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		
SHEET 6 OF 17					

MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE
RATING "W" SCHEDULE VALID FOR ALL SHAPES WITH GLASS (10A) & (10D)

"a"	"b"	W psf +	W psf -
18'	18'	90	90
	24'	90	90
	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90
	150'	90	90
	156'	90	90
	162'	90	90
	168'	90	90
	174'	90	90
	180'	90	90

"a"	"b"	W psf +	W psf -
24'	24'	90	90
	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90
	150'	90	90
	156'	90	90
	162'	90	90
	168'	90	90
	174'	90	90
	180'	90	90
	186'	90	90
	191'	90	90

"a"	"b"	W psf +	W psf -
30'	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90
	150'	90	90
	153'	90	90
	156'	90	90
	162'	90	90
	168'	90	90
	174'	90	90
	179'	90	90

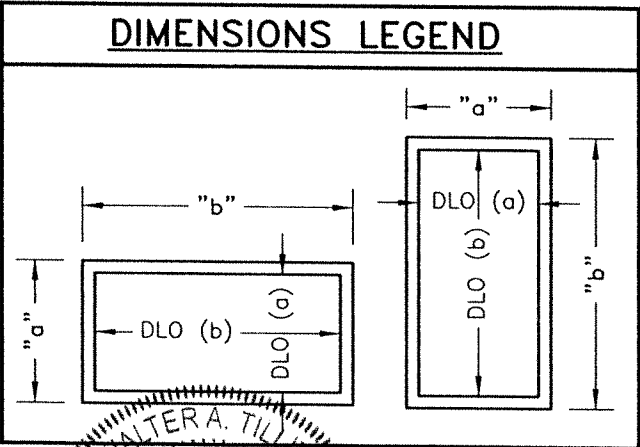
"a"	"b"	W psf +	W psf -
36'	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90
	150'	90	90
	152'	90	90

"a"	"b"	W psf +	W psf -
42'	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	130'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
48'	78'	90	90
	84'	90	90
	90'	90	90
	95'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90

"a"	"b"	W psf +	W psf -
54'	54'	83.3	83.3
	60'	83.3	83.3
	66'	83.3	83.3
	72'	83.3	83.3
	78'	83.3	83.3
	84'	83.3	83.3
	90'	83.3	83.3
	96'	83.3	83.3
	101'	83.3	83.3
	60'	75	75
60'	66'	75	75
	72'	75	75
	76'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	66'	68.2	68.2
	72'	68.2	68.2
	76'	68.2	68.2
	78'	68.2	68.2
66'	83'	68.2	68.2
	72'	62.5	62.5
	76'	62.5	62.5
	72'	62.5	62.5

MAXIMUM DAY LIGHT OPENING
(D.L.O.) FOR A GIVEN COMPONENT
AT EACH END OF GLASS

SIDE	COMPONENTS @ EACH END OF GLASS	MAX. DAY LIGHT OPENING
		(D.L.O.) Formula
MAX. D.L.O. (a) (SHORT SIDE)	(1)+(3), (1)+(3)	"a"-3.526"
	OR (1)+(3A), (1)+(3A)	
	OR (1)+(3B), (1)+(3B)	
MAX. D.L.O. (b) (LONG SIDE)	(1)+(3), (1)+(3)	"b"-3.526"
	OR (1)+(3A), (1)+(3A)	
	OR (1)+(3B), (1)+(3B)	



OPTIONAL SYSTEM #1

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

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

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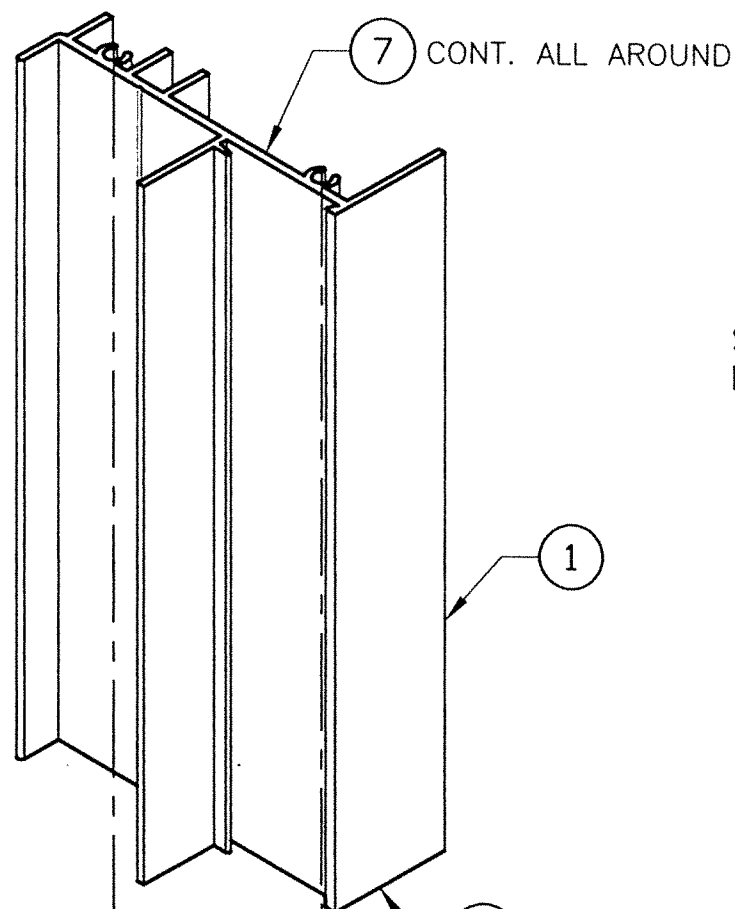
SERIES 21000 HIGH IMPACT FIXED GLASS WINDOWS				DRAWN BY: W.H	
 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com				09/01/2023 DATE	
WINDOWS & DOORS				23-208 DRAWING No	
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	08/01/23	2		
SHEET 7 OF 17					

MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE
RATING "W" SCHEDULE VALID FOR ALL SHAPES WITH GLASS 10B & 10C

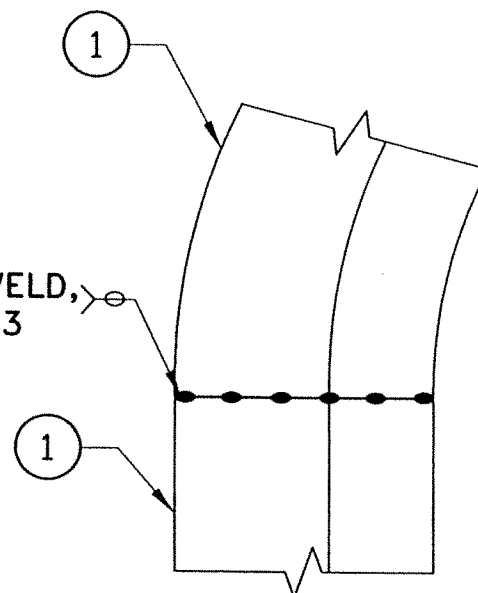
"a"	"b"	W psf +	W psf -
18'	18'	75	75
	24'	75	75
	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	75	75
	132'	75	75
	138'	75	75
	144'	75	75
	150'	75	75
	156'	75	75
	162'	75	75
	168'	75	75
	174'	75	75
	180'	75	75

"a"	"b"	W psf +	W psf -
24'	24'	75	75
	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	75	75
	132'	75	75
	138'	75	75
	144'	75	75
	150'	75	75
	156'	75	75
	162'	75	75
	168'	75	75
	174'	75	75
	180'	75	75
	185'	75	75

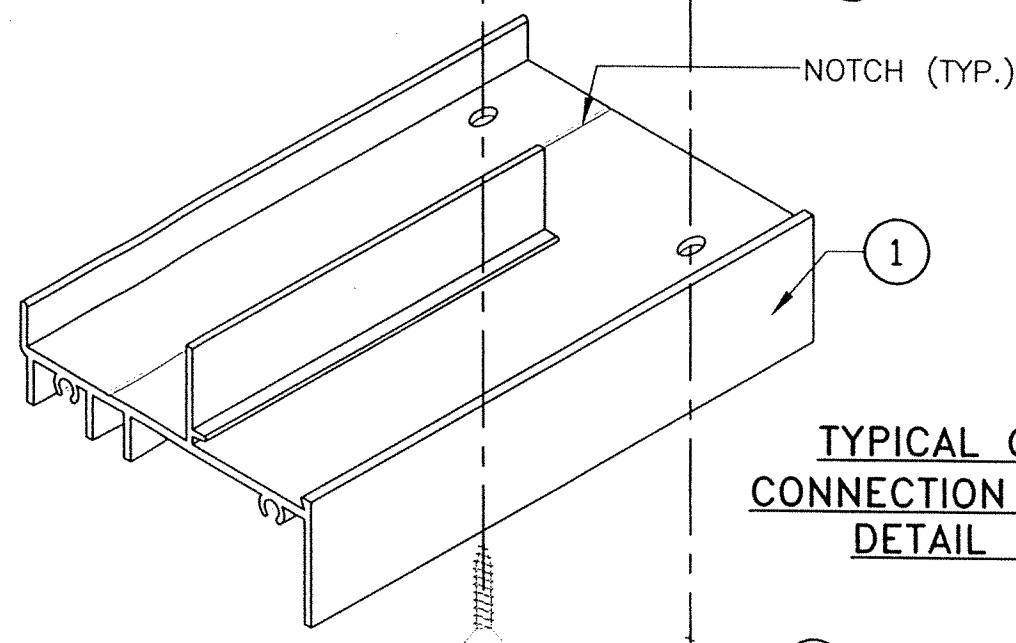
"a"	"b"	W psf +	W psf -
30'	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	74	74
	132'	72	72
	138'	71	71
	144'	71	71
148'	70	70	



SPOT WELD,
ER-4043



**TYPICAL CORNER FRAME
CONNECTION (TOP)
DETAIL 2 : ELEVATION
N.T.S**

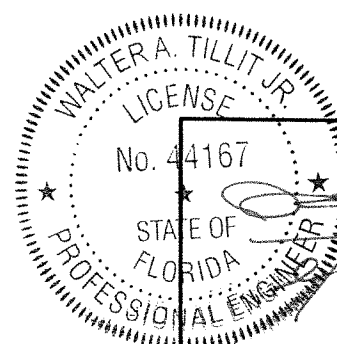


**TYPICAL CORNER FRAME
CONNECTION (TOP & BOTTOM)
DETAIL 1: ISOMETRIC
N.T.S**

OPTIONAL SYSTEM #1

MAXIMUM ANCHOR SPACING SCHEDULE "S"

SUBSTRATE	ANCHOR TYPE	NEGATIVE DESIGN LOAD (psf)	HEAD/SILL	JAMB
CONCRETE OR BLOCK (SEE NOTE 9A & 9B/1)	1/4"Ø ULTRACON (8)	75 or less	9" O.C.	12" O.C.
		> 75 up to 90	9" O.C.	11 1/2" O.C.
		> 90 up to 130	8" O.C.	8" O.C.
		> 130 up to 154	6 1/2" O.C.	6 1/2" O.C.
WOOD (SEE NOTE 9C/1)	1/4"Ø ULTRACON (8)	75 or less	9" O.C.	9 1/2" O.C.
		> 75 up to 90	8" O.C.	8" O.C.
		> 90 up to 130	5 1/2" O.C.	5 1/2" O.C.
		> 130 up to 154	4 1/2" O.C.	4 1/2" O.C.
METAL (SEE NOTE 9D/1 & 9E/1)	1/4"Ø TEK SCREW (8A)	75 or less	9" O.C.	12" O.C.
		> 75 up to 90	9" O.C.	12" O.C.
		> 90 up to 130	8" O.C.	8" O.C.
		> 130 up to 154	7" O.C.	7" O.C.



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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS



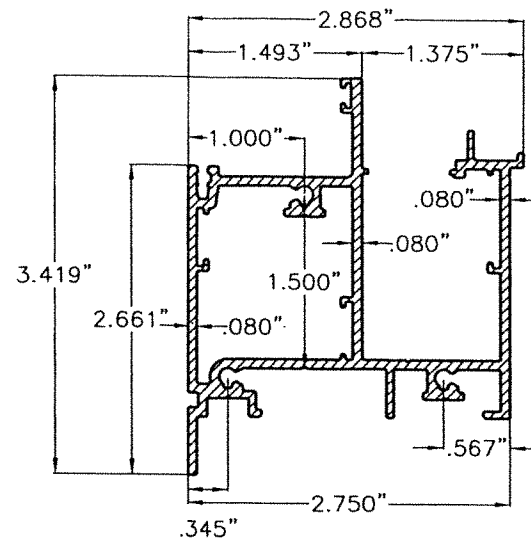
290 WEST 78 ROAD
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W.H

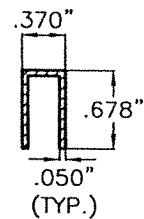
09/01/2023
DATE

23-208
DRAWING No

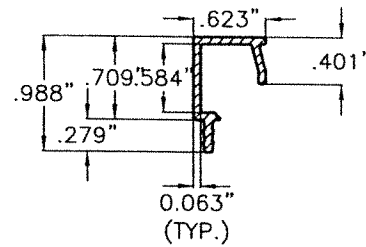
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1 OLD 23-155 09/01/23 2
SHEET 9 OF 17



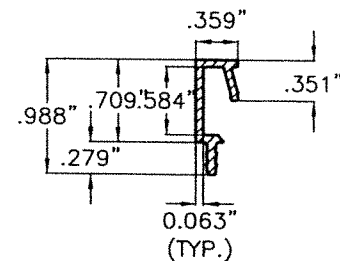
① FRAME HEAD & SILL
& JAMB
6063-T6 ALLOY



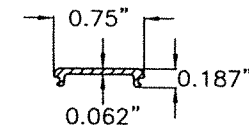
③A GLAZING BEAD FOR
CURVED AND COMBINATION
CURVED & STRAIGHT
FRAME WINDOWS
6063-T6 ALLOY



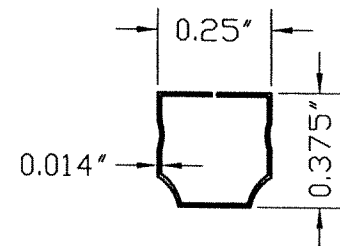
③ GLAZING BEAD FOR FULLY STRAIGHT FRAME WINDOWS
6063-T6 ALLOY



(iii.)
3B GLAZING BEAD FOR
STRAIGHT, CURVED AND
COMBINATION CURVED &
STRAIGHT FRAME WINDOWS ON
INSULATED—LAMINATED GLASS
 6063—T6 ALLOY



⑫ SCREW COVER



16 INSULATED GLASS SPACER
30105-H24 ALLOY

COMPONENTS
OPTIONAL SYSTEM #2
SCALE: N.T.S

BILL OF MATERIALS			
ITEM #	DESCRIPTION	DIMENSIONS & REMARKS	MATERIAL
(1)	FRAME HEAD/SILL & JAMB.	(2) REQUIRED	6063-T6
(3)	GLAZING BEAD FOR FULLY STRAIGHT FRAME WINDOWS	(4) REQUIRED	6063-T6
(3A)	GLAZING BEAD FOR CURVED AND COMBINATION CURVED/STRAIGHT FRAME WINDOWS	(4) REQUIRED	6063-T6
(3B)	GLAZING BEAD FOR STRAIGHT, CURVED AND COMBINATION CURVED/STRAIGHT FRAME WINDOWS ON INSULATED-LAMINATED GLASS	(4) REQUIRED	6063-T6
(4)	WEATHER STRIPING, ULTRAFAB E-271	(4) AT GLAZING BEAD	NEOPRENE
(4A)	WEATHER STRIPING SOLID RUBBER	(4) AT GLAZING BEAD	NEOPRENE
(4B)	WEATHER STRIPING 0.296" HEIGHT, SCHLEGEL SYSTEM, INC., Q375T190	(4) AT GLAZING BEAD	NEOPRENE
(5)	CORNER FRAME ASSEMBLY SCREWS	(2) #8 x 1" PH SMS REQ'D.	STEEL
(6)	DOW CORNING 995	-----	STRUCTURAL SILICONE
(6A)	DOW CORNING 795	-----	STRUCTURAL SILICONE
(7)	WHITE COLOR SILICONE AT FIXED PANEL FRAME AND FRAME CORNERS.	ALL AROUND (EXTERIOR)	SEALANT
(8)	1/4"Ø ULTRACON BY DEWALT, TO POURED CONCRETE, HOLLOW BLOCK OR WOOD WALL REQ'D. (SEE SCHEDULE)	-----	CARBON STEEL
(8A)	1/4"Ø ITW BUILDEX TEK SCREW TO METAL (SEE SCHEDULE)	-----	STEEL
(9)	0.145" HEIGHT BUMPER SPACER, CUT FROM 3/8"Ø SPHERE, CLEAR 3" FROM CORNERS MAX. AND 12" O.C. (MAX.) AT MID-GLASS BITE ELEVATION	FRANK LOWE RUBBEL, GASKET TLB-28, CLEAR.	SILICONE
(9A)	0.211" HEIGHT BUMPER SPACER, CUT FROM 3/8"Ø SPHERE, CLEAR 3" FROM CORNERS MAX. AND 12" O.C. (MAX.) AT MID-GLASS BITE ELEVATION	FRANK LOWE RUBBEL, GASKET FLB-38, CLEAR.	SILICONE
(10)	0.590" (9/16" NOMINAL) LAMINATED GLASS W/ 1/4" H.S. GLASS + 0.090" SENTRYGLAS® INTERLAYER + 1/4" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
(10A)	0.484" (7/16" NOMINAL) LAMINATED GLASS W/ 3/16" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 3/16" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
(10B)	0.326" (5/16" NOMINAL) LAMINATED GLASS W/ 1/8" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 1/8" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
(10C)	0.6875" (11/16" NOMINAL) INSULATED-LAMINATED GLASS W/ 1/8" TEMPERED GLASS OUTBOARD + 1/4" ARGON SPACER + 1/8" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 1/8" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
(10D)	0.875" (7/8" NOMINAL) INSULATED-LAMINATED GLASS W/ 3/16" TEMPERED GLASS OUTBOARD + 1/4" ARGON SPACER + 3/16" H.S. GLASS + 0.090" TROSIFOL PVB. INTERLAYER + 3/16" H.S. GLASS	INTERLAYER BY: KURARAY AMERICA, INC.	GLASS
(11)	SETTING BLOCK	1/8"x9/16" OR 7/16" OR 5/16" FOR (10) (10A) (10B) (10C) & (10D)	SILICONE
(12)	SCREW COVER	AS REQUIRED	6063-T6
(13)	EQUAL LEG ADAPT.	(2) REQUIRED	6063-T6
(14)	CORNER LOCK 0.050" THK. X 1.7430" X 1.7430" X 0.473"	SULLIVAN ASSOCIATES	ST. STEEL
(15)	CORNER LOCK 0.058" THK. X 2.75" X 2.75" X 0.84"	SULLIVAN ASSOCIATES	ST. STEEL
(16)	INSULATED GLASS SPACER	SEE DETAIL	3105-H24 ALLOY

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

16 INSULATED GLASS SPACER

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

12/2/2023

P.E. SEAL/SIGNATURE/DATE

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SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS



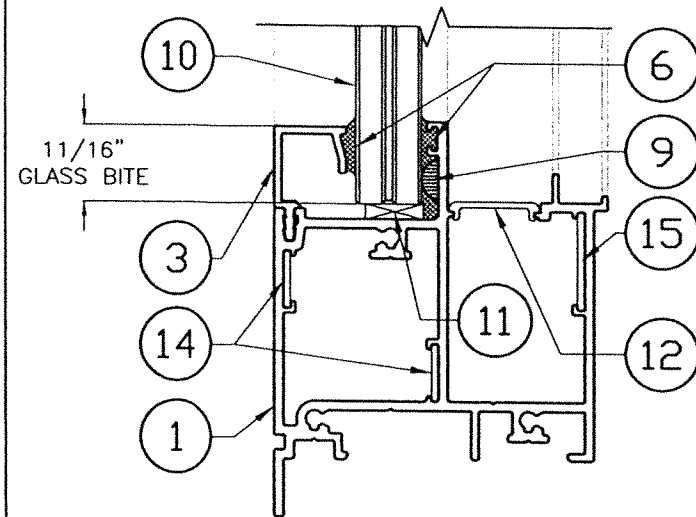
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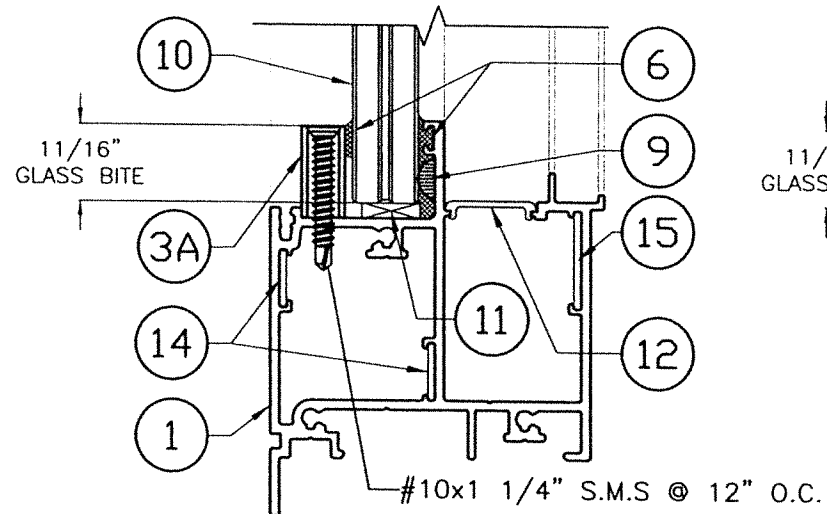
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09/01/2023 DATE
23-208 DRAWING No

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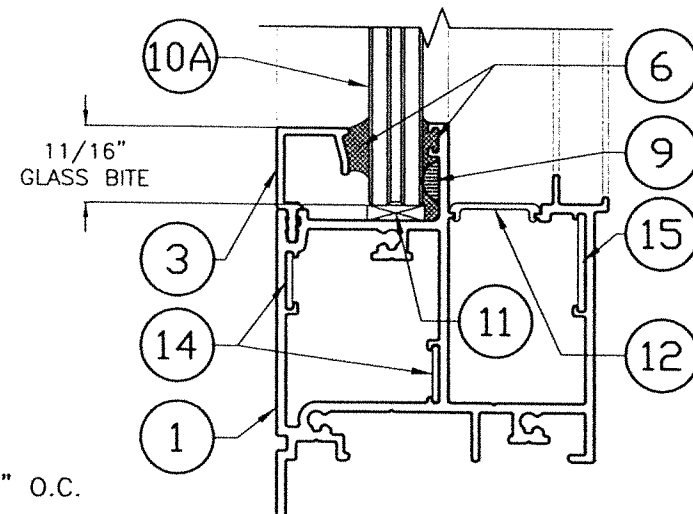
SHEET 10 OF 17



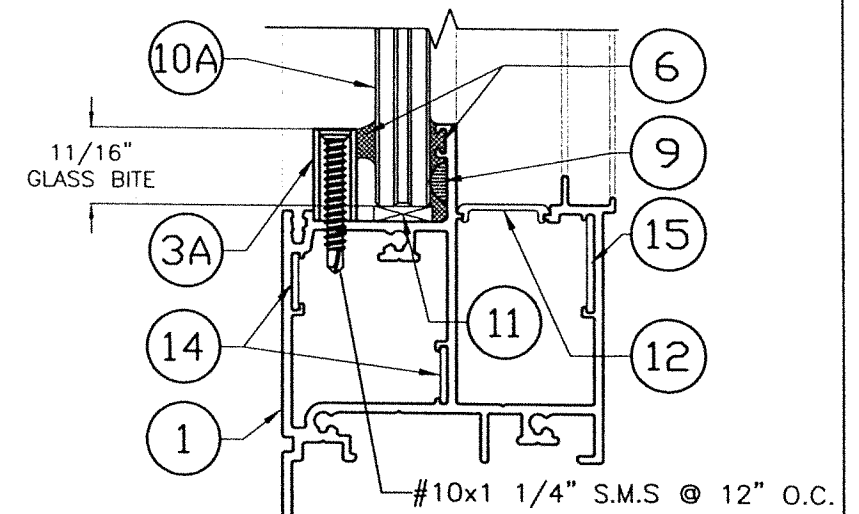
GLAZING DETAIL FOR
10 W/ 3



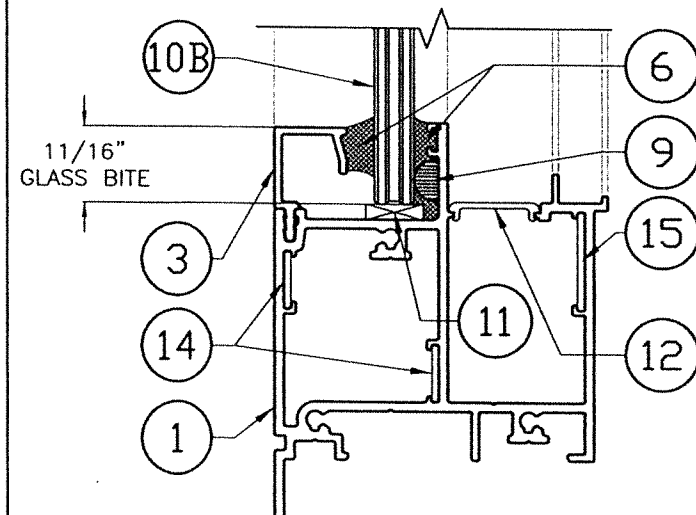
GLAZING DETAIL FOR
10 W/ 3A



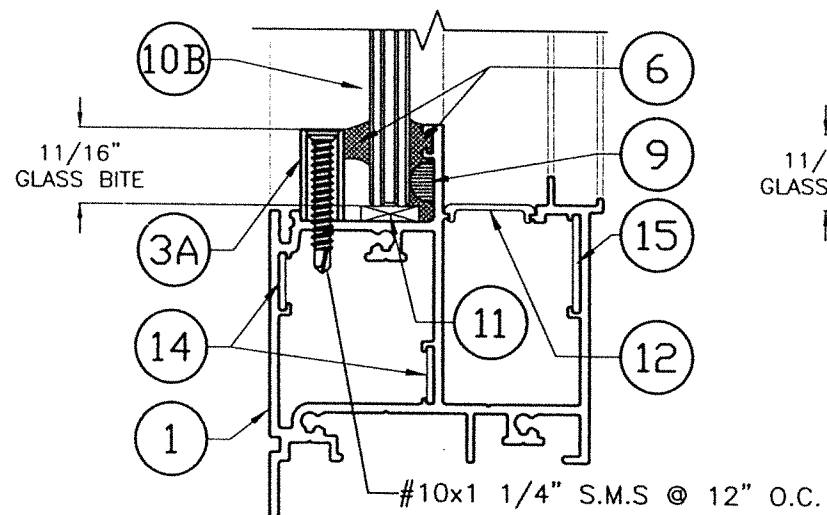
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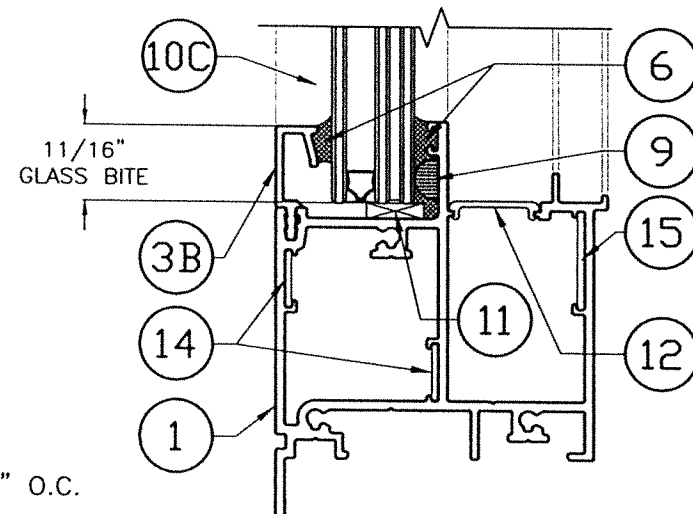
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10A W/ 3A



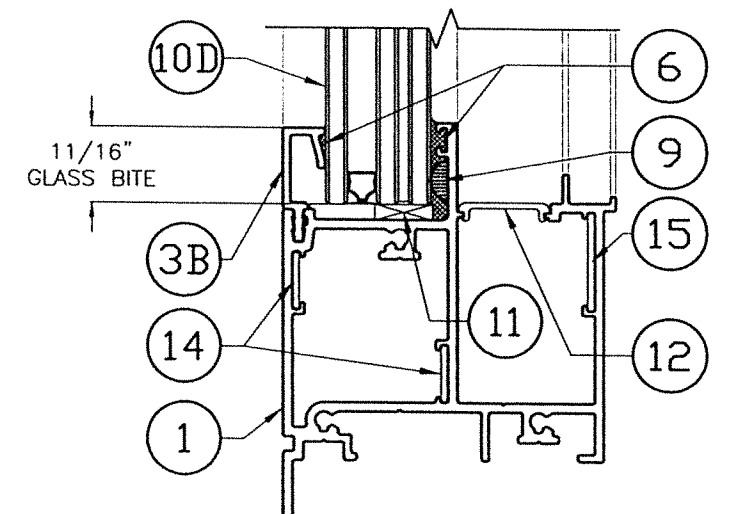
GLAZING DETAIL FOR
10B W/ 3



GLAZING DETAIL FOR
10B W/ 3A

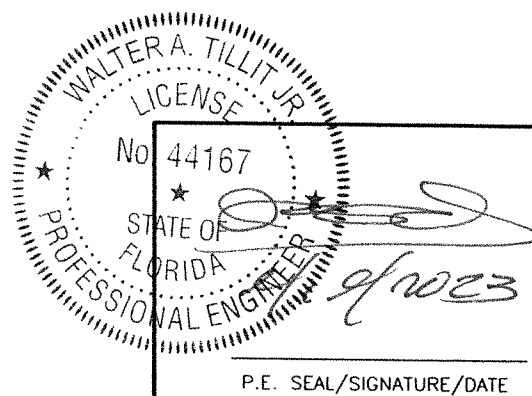


GLAZING DETAIL FOR
10C W/ 3B



GLAZING DETAIL FOR
10D W/ 3B

GLAZING DETAILS OPTIONAL SYSTEM #2 SCALE: N.T.S



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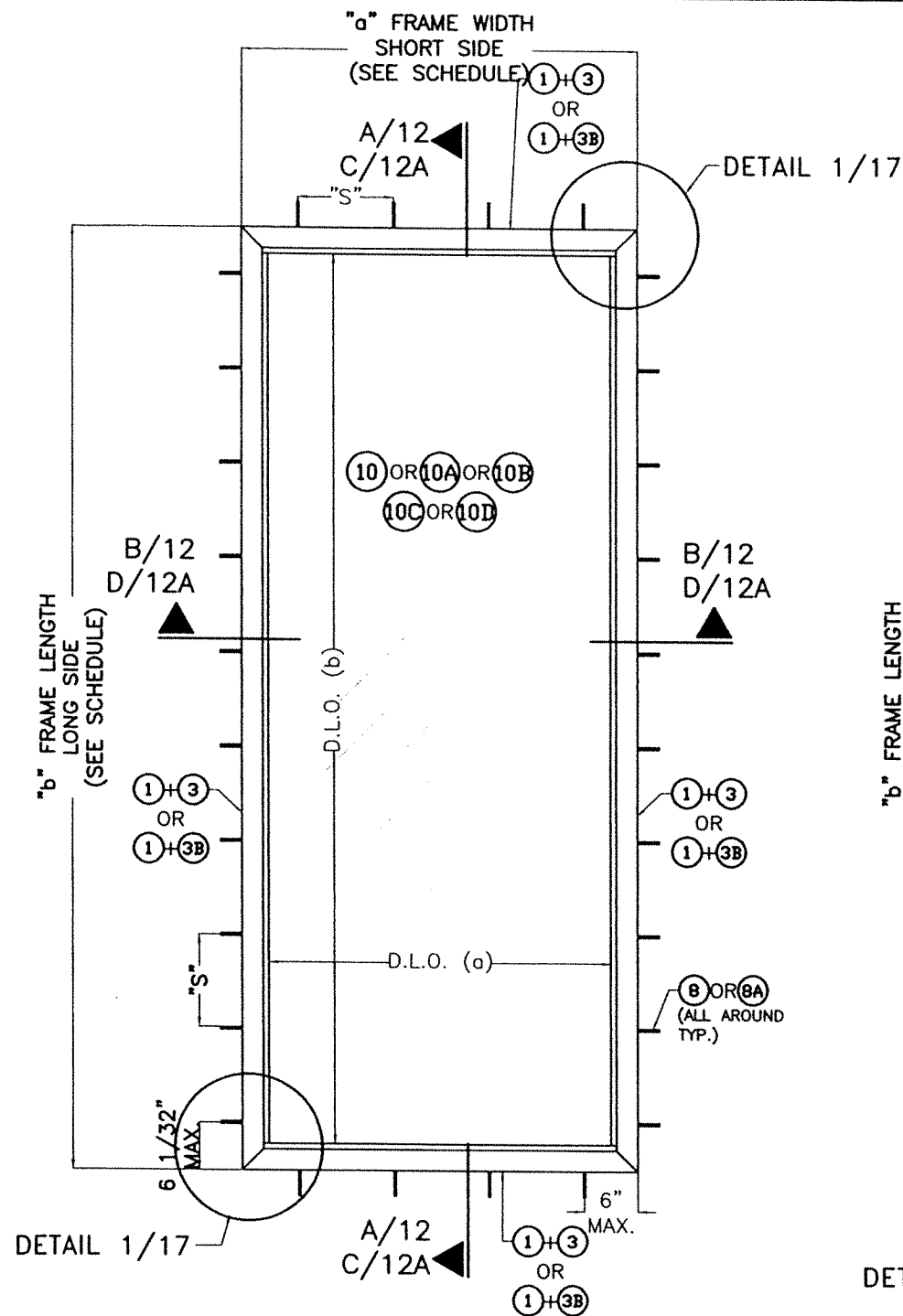
e-mail: tilteco@aol.com

CA-0006719

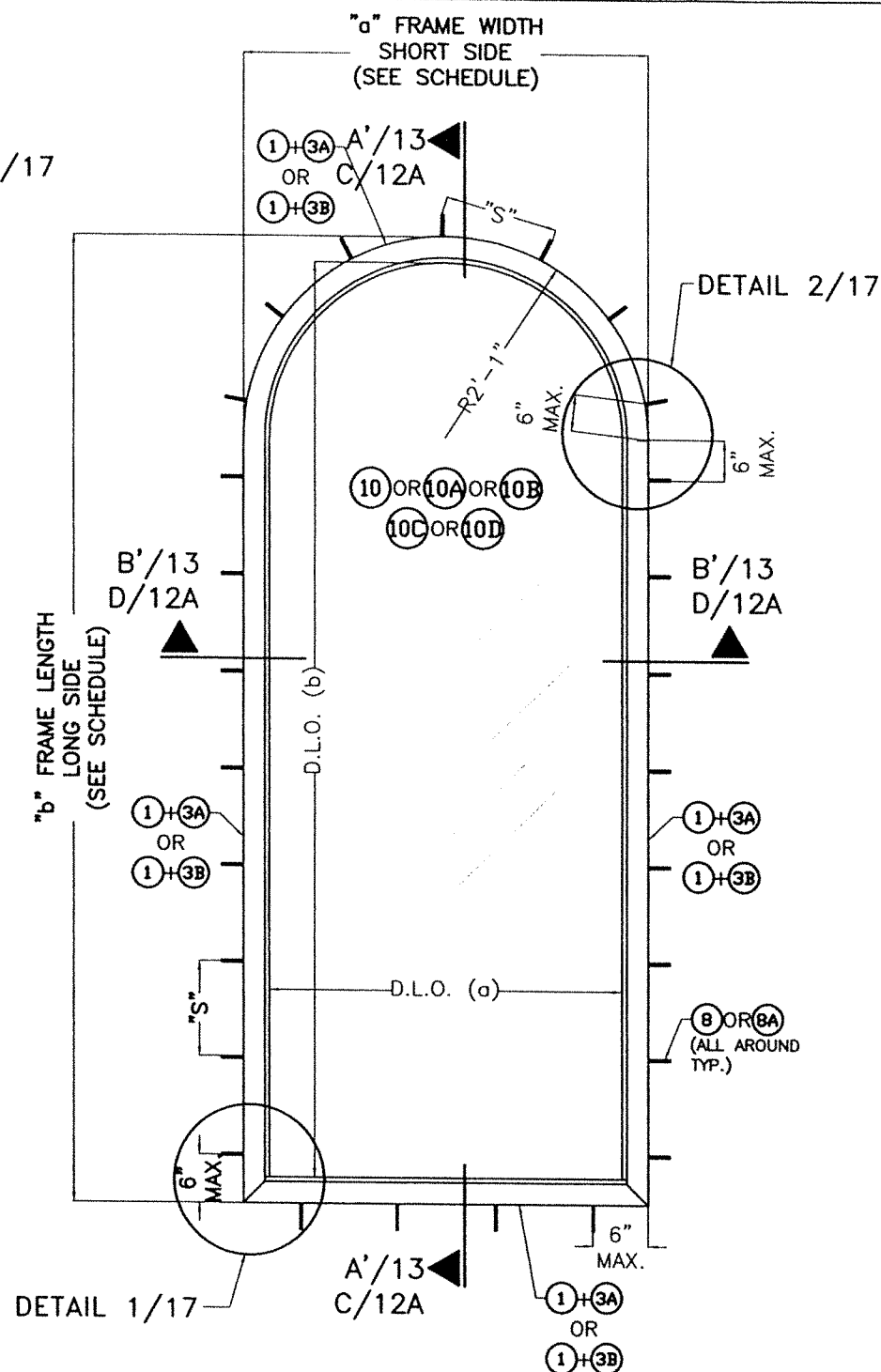
WALTER A. TILLIT JR., P.E.

FLORIDA Lic. 44167

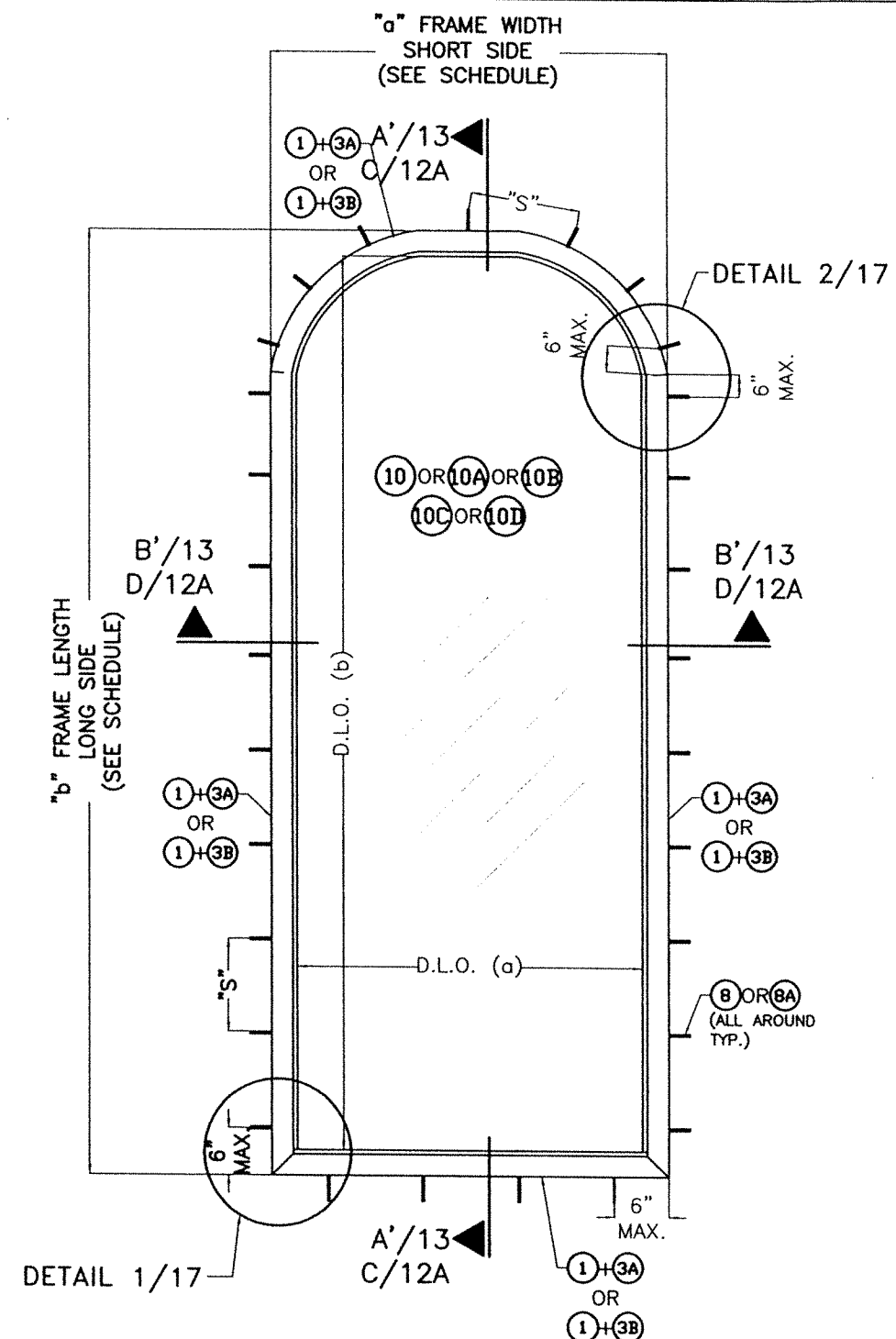
SERIES 21000 HIGH IMPACT FIXED GLASS WINDOWS			DRAWN BY: W.H		
 290 WEST 78 ROAD HIALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com			09/01/2023 DATE		
			23-208 DRAWING No		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		



CASE 1: RECTANGULAR
SCALE: N.T.S



CASE 2: HALF ROUND TOP
SCALE: N.T.S



CASE 3: EYEBROW
SCALE: N.T.S

**TYPICAL EXTERIOR ELEVATIONS FOR SERIES 21000
HIGH IMPACT FIXED LAMINATED GLASS WINDOW**

(SEE NOTES ON SHEET 1)

"S" = MAX. ANCHOR SPACING
(SEE SCHEDULE ON SHEET 17)

FOR "a" FRAME WIDTH (SHORT SIDE),
"b" FRAME LENGTH (LONG SIDE) AND
MAX. D.L.O. (a) AND MAX. D.L.O. (b)
SEE SCHEDULES ON SHEETS 14, 15 & 16.

OPTIONAL SYSTEM #2

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

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DRAWING No

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1	OLD 23-195	09/01/23	2		

MIN. E.D.
(SEE NOTE 971)



OPTIONAL SYSTEM #2

POURED CONCRETE
OR CONCRETE BLOCK REQ'D.

MIN. 1"x P.T.
WOOD BUCK
(SEE NOTE 8/1)

MIN. E.D.
(SEE NOTE 9/1)

MIN.
EMBEDMENT
(SEE NOTE 9/1)

EXTERIOR

_____ "b" FRAME LENGTH (OR LONG SIDE, SEE SCHEDULE) _____

MIN. 1"x P.T.
WOOD BUCK
(SEE NOTE 8/1)

POURED CONCRETE
CONCRETE BLOCK REQ'D.

MIN. E.D.
(SEE NOTE 9/1)

A circular professional engineer seal for the State of Florida. The outer ring contains the text "WALTER A. TILLIT JR." at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars on each side. Inside this ring, the word "LICENSE" is at the top and "STATE OF FLORIDA" is at the bottom, also separated by two stars. In the center, the license number "No. 44167" is displayed. A signature, which appears to be "W. A. Tillit Jr.", is written across the bottom half of the seal, overlapping the "STATE OF FLORIDA" text. A vertical line, likely from a scanner, runs through the center of the seal.

MIN.
EMBEDMENT
(SEE NOTE 9/

1) 1/4" MAX
SHIM

MIN. E.D.
(SEE NOTE 9/1)

MIN. 2"x4" P.T.—
WOOD BUCK

EXTERIOR

SECTION B-B

1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
APPROVED MULLION (UNDER
SEPARATE APPROVAL) OR STEEL
MEMBER BY OTHERS SHALL
CONFORM TO ASTM A500, A653
OR A36 WITH 12 GA (0.106")
MINIMUM WALL THICKNESS.



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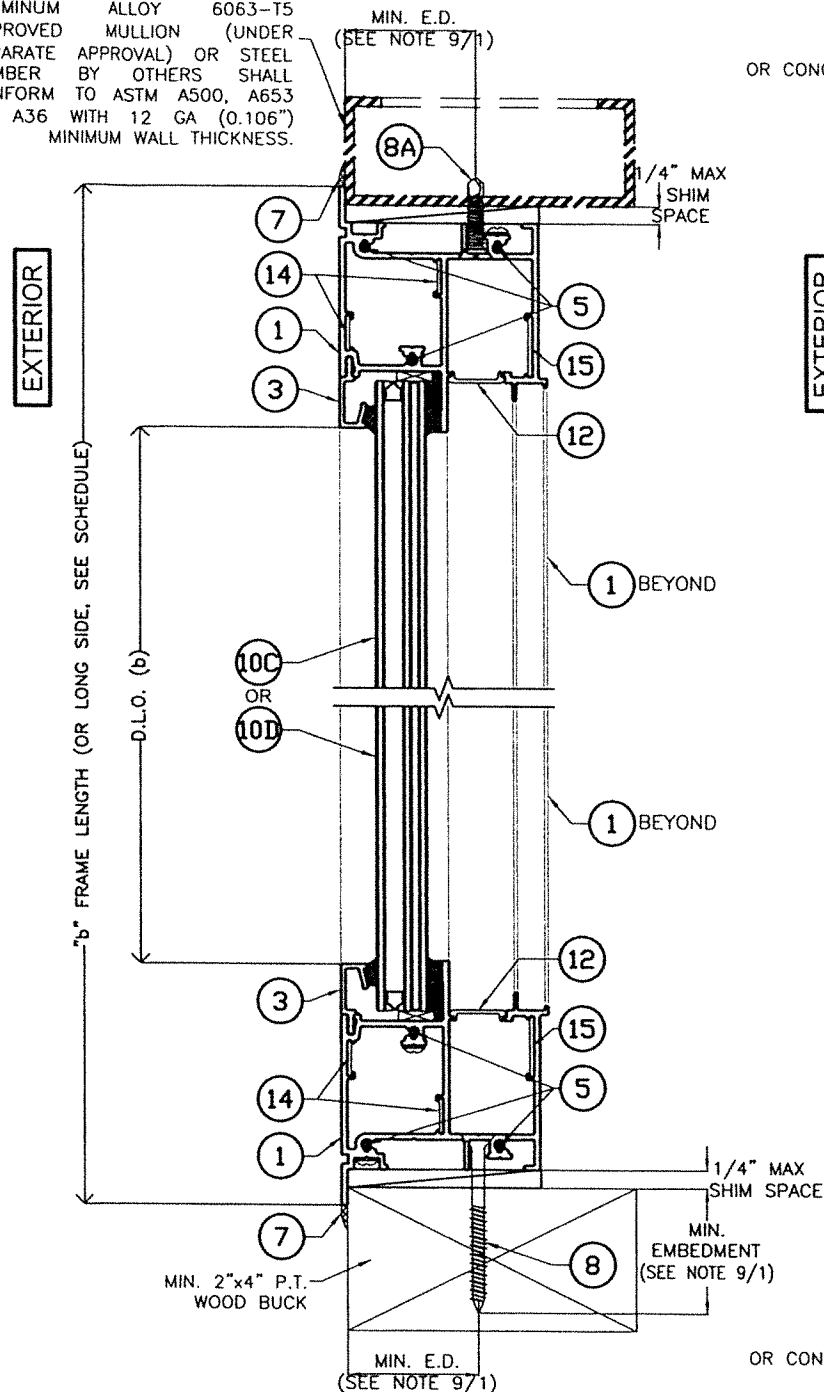
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DRAWING No

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 12 OF 17

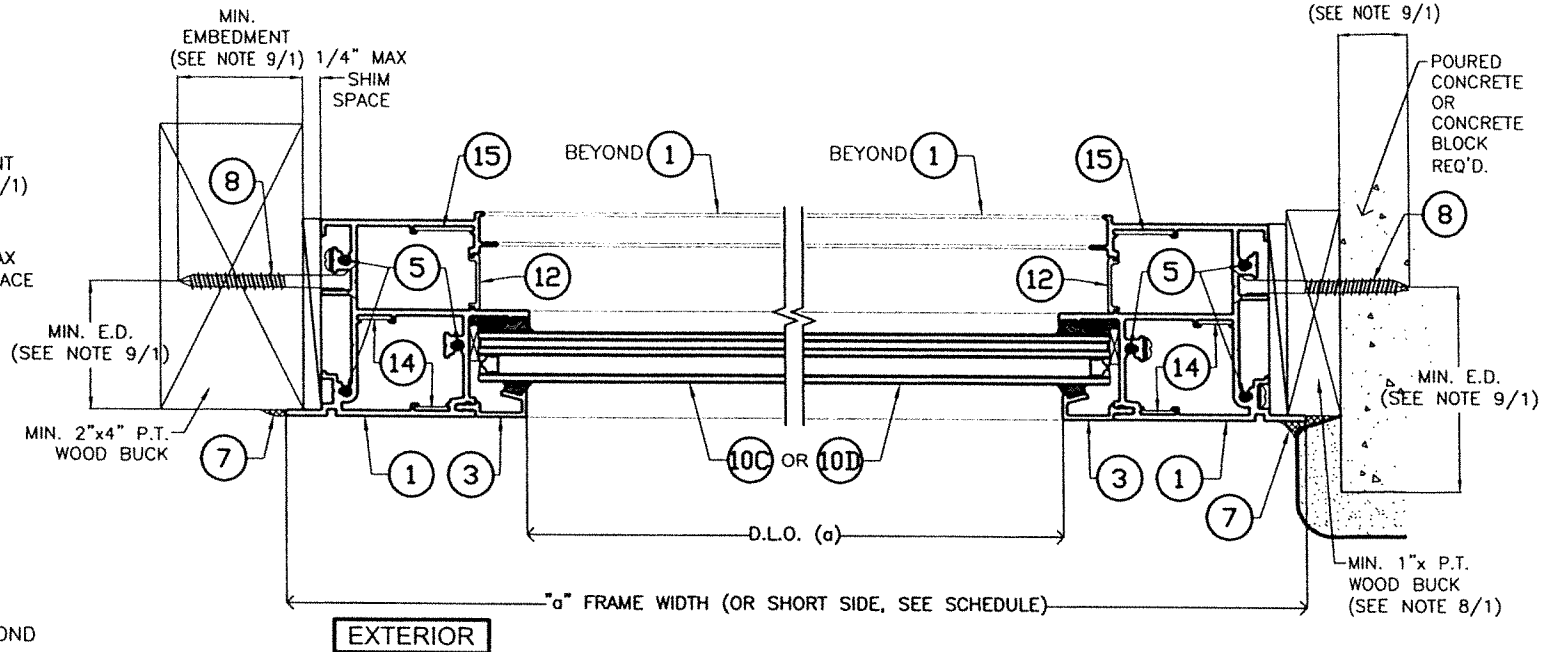
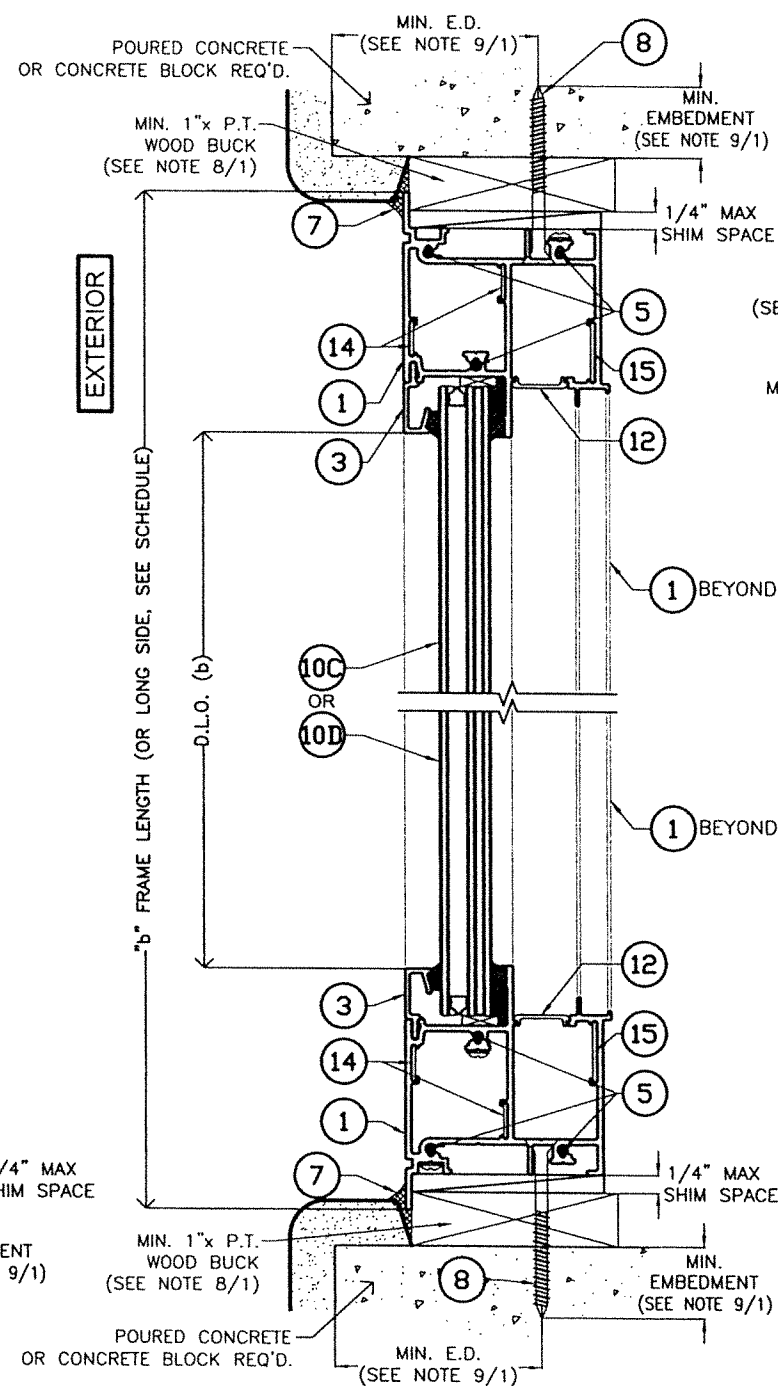
1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
APPROVED MULLION (UNDER
SEPARATE APPROVAL) OR STEEL
MEMBER BY OTHERS SHALL
CONFORM TO ASTM A500, A653
OR A36 WITH 12 GA (0.106")
MINIMUM WALL THICKNESS.



SECTION C-C

SCALE: N.T.S.

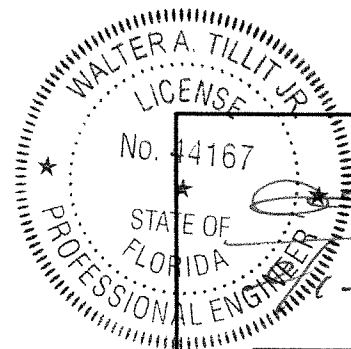
OPTIONAL SYSTEM #2



SECTION D-D

SCALE: N.T.S.

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SERIES 21000 HIGH IMPACT FIXED
GLASS WINDOWS



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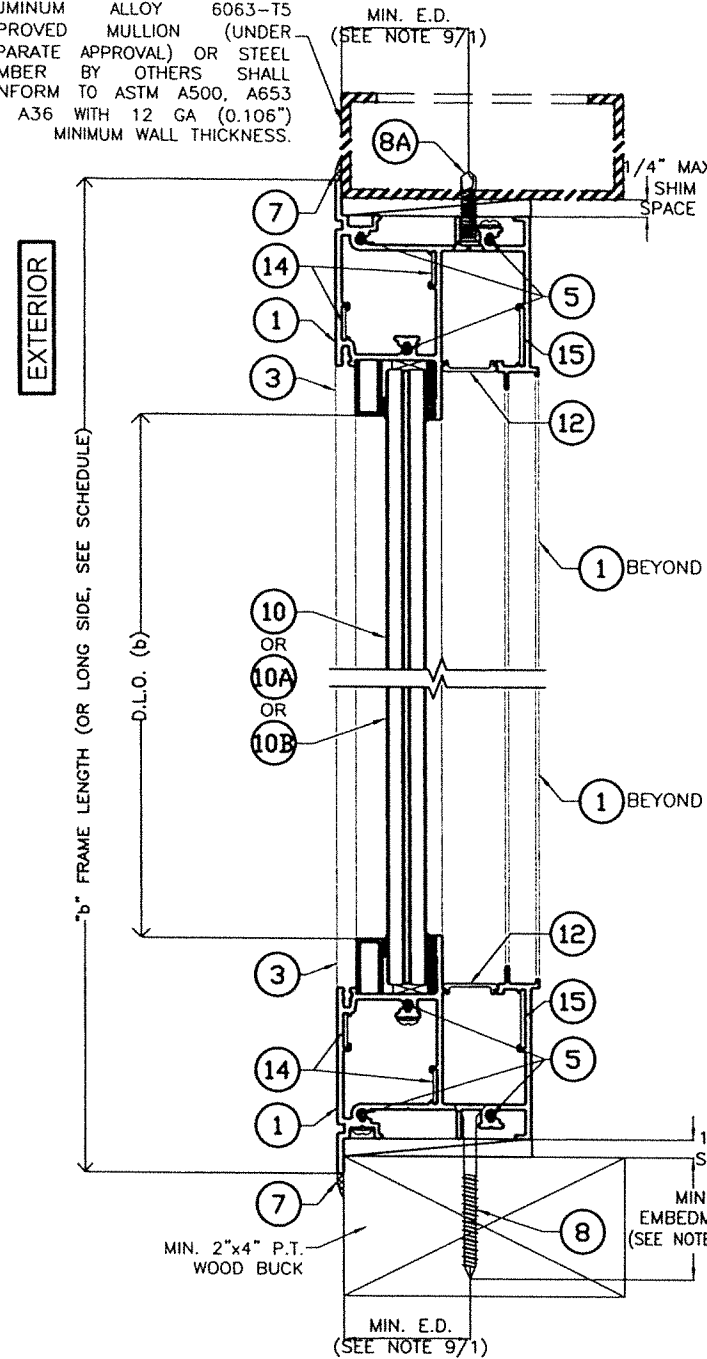
09/01/2023
DATE

23-208
DRAWING No

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SHEET 12A OF 17

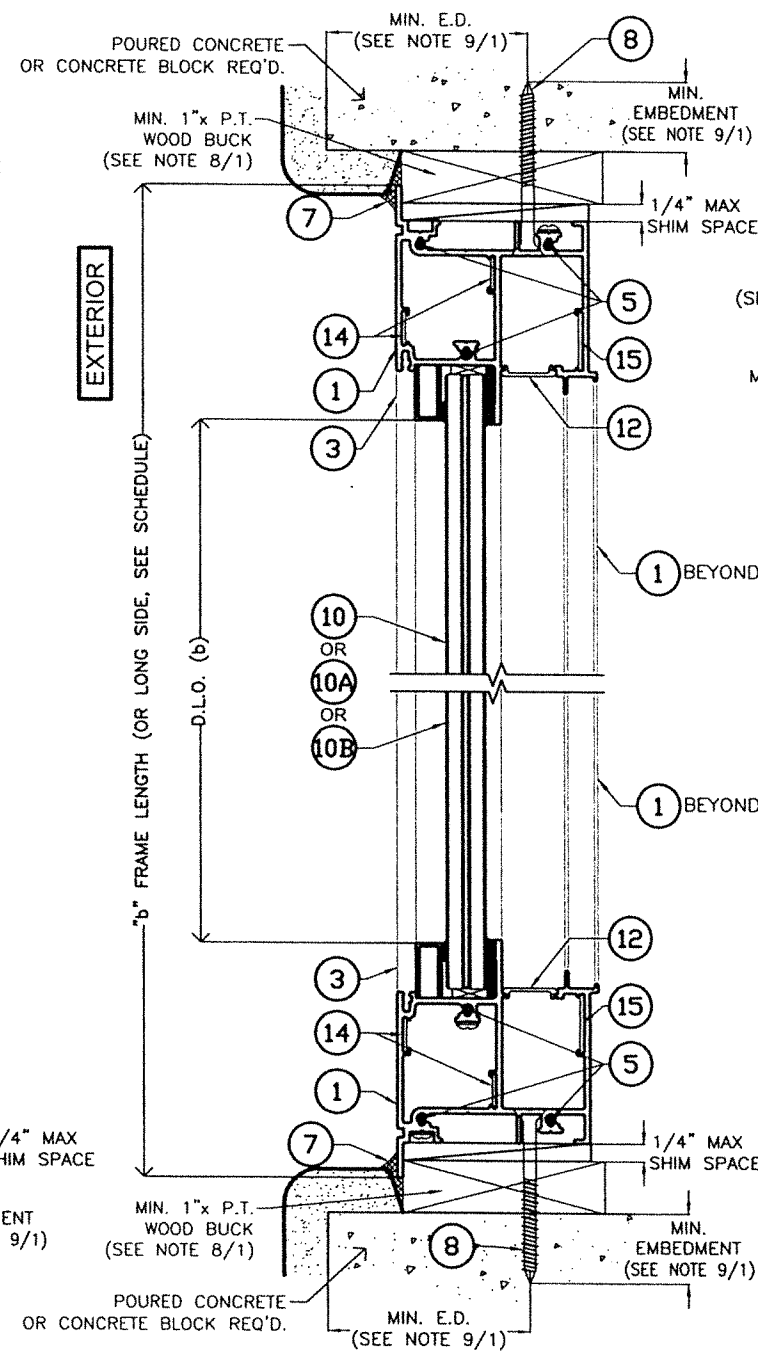
1/8" MINIMUM WALL THICKNESS
ALUMINUM ALLOY 6063-T5
APPROVED MULLION (UNDER
SEPARATE APPROVAL) OR STEEL
MEMBER BY OTHERS SHALL
CONFORM TO ASTM A500, A653
OR A36 WITH 12 GA (0.106")
MINIMUM WALL THICKNESS.



SECTION A'-A'

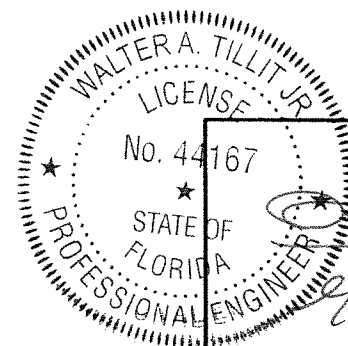
SCALE: N.T.S

OPTIONAL SYSTEM #2



SECTION B'-B'

SCALE: N.T.S



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SERIES 21000 HIGH IMPACT FIXED
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1	OLD 23-155	09/01/23	2		

SHEET 13 OF 17

MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE RATING "W"

SCHEDULE VALID FOR ALL SHAPES WITH GLASS 10

"a"	"b"	W psf +	W psf -
18'	18'	130	154
	24'	130	154
	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	144'	130	154
	150'	130	154
	156'	130	154
	162'	130	154
	168'	130	154
	174'	130	154
	180'	130	154

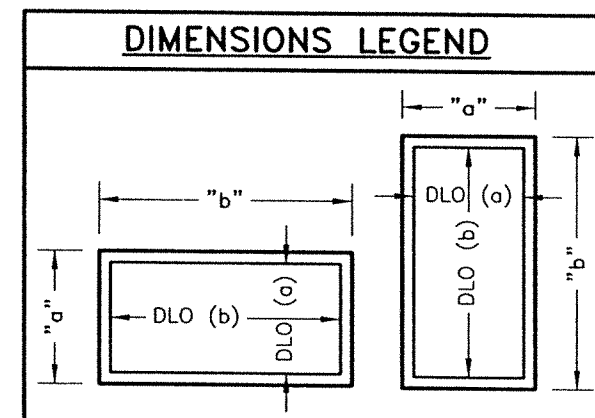
"a"	"b"	W psf +	W psf -
24'	24'	130	154
	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	144'	130	154
	150'	130	154
	156'	130	154
	162'	130	154
	168'	130	154
	174'	130	154
	180'	130	154
	186'	130	154
	192'	130	154
	196'	130	154

"a"	"b"	W psf +	W psf -
30'	30'	130	154
	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
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	153'	130	154
	156'	130	154
	162'	130	154
	168'	130	154
	174'	130	154
	180'	130	154
	186'	130	154
	192'	130	154
	196'	130	154

"a"	"b"	W psf +	W psf -
36'	36'	130	154
	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	144'	130	154
	150'	130	154
	156'	130	154
	162'	130	154
	166'	130	154

"a"	"b"	W psf +	W psf -
42'	42'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	96'	130	154
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	108'	130	154
	114'	130	154
	120'	130	154
	126'	130	154
	132'	130	154
	138'	130	154
	142'	130	154
	48'	130	154
	54'	130	154
	60'	130	154
	66'	130	154
48'	72'	130	154
	78'	130	154
	84'	130	154
	90'	130	154
	95'	130	154
	96'	130	154
	102'	130	154
	108'	130	154
	114'	130	154
	120'	130	154
	125'	130	152

"a"	"b"	W psf +	W psf -
54'	54'	120.3	142.5
	60'	120.3	142.5
	66'	120.3	142.5
	72'	120.3	142.5
	78'	120.3	142.5
	84'	120.3	142.5
	90'	120.3	142.5
	96'	120.3	142.5
	102'	120.3	142.5
	108'	120.3	142.5
	111'	120.3	139
60'	60'	108.3	128.3
	66'	108.3	128.3
	72'	108.3	128.3
	76'	108.3	128.3
	78'	108.3	128.3
	84'	108.3	128.3
	90'	108.3	128.3
	96'	108.3	128.3
	100'	108.3	128.3
	66'	98.5	116.67
66'	72'	98.5	116.67
	78'	98.5	116.6
	84'	98.5	116.6
	90'	98.5	116.6
	72'	90.3	106.9
72'	78'	90.3	106.9
	83'	90.3	106.9

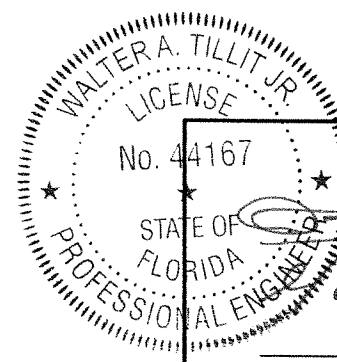


MAXIMUM DAY LIGHT OPENING (D.L.O.) FOR A GIVEN COMPONENT AT EACH END OF GLASS

SIDE	COMPONENTS @ EACH END OF GLASS	MAX. DAY LIGHT OPENING (D.L.O.) Formula
MAX. D.L.O. (a) (SHORT SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"a" - 6.7408"
MAX. D.L.O. (b) (LONG SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"b" - 6.7408"

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 14 OF 17

MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE RATING "W"
SCHEDULE VALID FOR ALL SHAPES WITH GLASS (10A) & (10D)

"a"	"b"	W psf +	W psf -
18'	18'	90	90
	24'	90	90
	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90

"a"	"b"	W psf +	W psf -
24'	24'	90	90
	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90

"a"	"b"	W psf +	W psf -
30'	30'	90	90
	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90

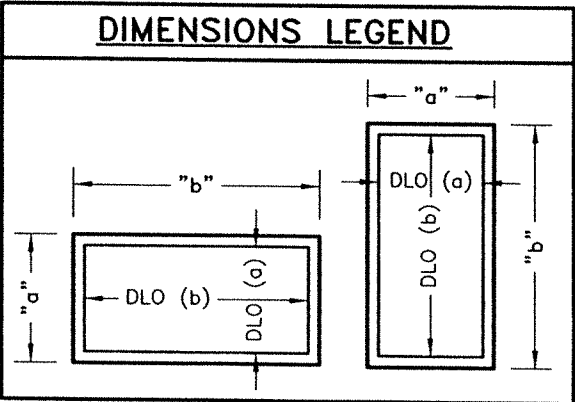
"a"	"b"	W psf +	W psf -
36'	36'	90	90
	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	132'	90	90
	138'	90	90
	144'	90	90
	150'	90	90

"a"	"b"	W psf +	W psf -
42'	42'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90
	72'	90	90
	78'	90	90
	84'	90	90
	90'	90	90
	96'	90	90
	102'	90	90
	108'	90	90
	114'	90	90
	120'	90	90
	126'	90	90
	130'	90	90
	48'	90	90
	54'	90	90
	60'	90	90
	66'	90	90

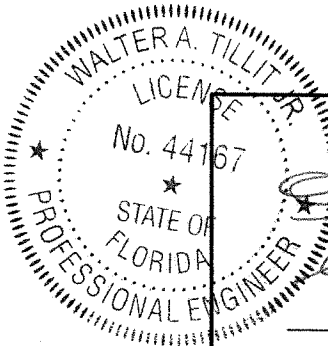
"a"	"b"	W psf +	W psf -
54'	54'	83.3	83.3
	60'	83.3	83.3
	66'	83.3	83.3
	72'	83.3	83.3
	78'	83.3	83.3
	84'	83.3	83.3
	90'	83.3	83.3
	96'	83.3	83.3
	101'	83.3	83.3
	60'	75	75

MAXIMUM DAY LIGHT OPENING (D.L.O.)
FOR A GIVEN COMPONENT AT EACH END OF GLASS

SIDE	COMPONENTS @ EACH END OF GLASS	MAX. DAY LIGHT OPENING
		(D.L.O.) Formula
MAX. D.L.O. (a) (SHORT SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"a" - 6.7408"
MAX. D.L.O. (b) (LONG SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"b" - 6.7408"



OPTIONAL SYSTEM #2



P.E. SEAL/SIGNATURE/DATE

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GLASS WINDOWS



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23-208
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MAXIMUM FRAME WIDTH "a" AND LENGTH "b" VERSUS DESIGN PRESSURE RATING "W"

SCHEDULE VALID FOR ALL SHAPES WITH GLASS 10B & 10C

"a"	"b"	W psf +	W psf -
18'	18'	75	75
	24'	75	75
	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	75	75
	132'	75	75
	138'	75	75
	144'	75	75
	150'	75	75
	156'	75	75
	162'	75	75
	168'	75	75
	174'	75	75
	180'	75	75

"a"	"b"	W psf +	W psf -
24'	24'	75	75
	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	75	75
	132'	75	75
	138'	75	75
	144'	75	75
	150'	75	75
	156'	75	75
	162'	75	75
	168'	75	75
	174'	75	75
	180'	75	75
	185'	75	75

"a"	"b"	W psf +	W psf -
30'	30'	75	75
	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	75	75
	102'	75	75
	108'	75	75
	114'	75	75
	120'	75	75
	126'	74	74
	132'	72	72
	138'	71	71
	144'	71	71
	148'	70	70

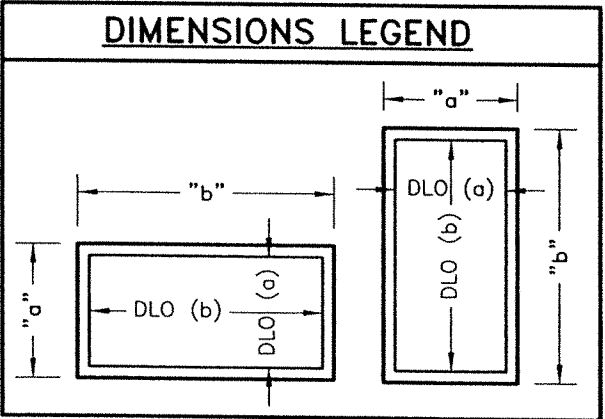
"a"	"b"	W psf +	W psf -
36'	36'	75	75
	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	74	74
	102'	69	69
	108'	65	65
	114'	62	62
	120'	59	59
	123'	58	58

"a"	"b"	W psf +	W psf -
42'	42'	75	75
	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	75	75
	96'	69	69
	102'	63	63
	105'	61	61

"a"	"b"	W psf +	W psf -
48'	48'	75	75
	54'	75	75
	60'	75	75
	66'	75	75
	72'	75	75
	78'	75	75
	84'	75	75
	90'	70	70
	92'	69	69
54'	54'	69.4	69.4
	60'	69.4	69.4
	66'	69.4	69.4
	72'	69.4	69.4
	78'	69.4	69.4
	82'	69.4	69.4
60'	60'	62.5	62.5
	66'	62.5	62.5
	72'	62.5	62.5
	74'	62.5	62.5

MAXIMUM DAY LIGHT OPENING (D.L.O.)
FOR A GIVEN COMPONENT AT EACH END OF GLASS

SIDE	COMPONENTS @ EACH END OF GLASS	MAX. DAY LIGHT OPENING
		(D.L.O.) Formula
MAX. D.L.O. (a) (SHORT SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"a"-6.7408"
MAX. D.L.O. (b) (LONG SIDE)	(1)+(3), (1)+(3) OR (1)+(3A), (1)+(3A) OR (1)+(3B), (1)+(3B)	"b"-6.7408"



OPTIONAL SYSTEM #2

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STATE OF
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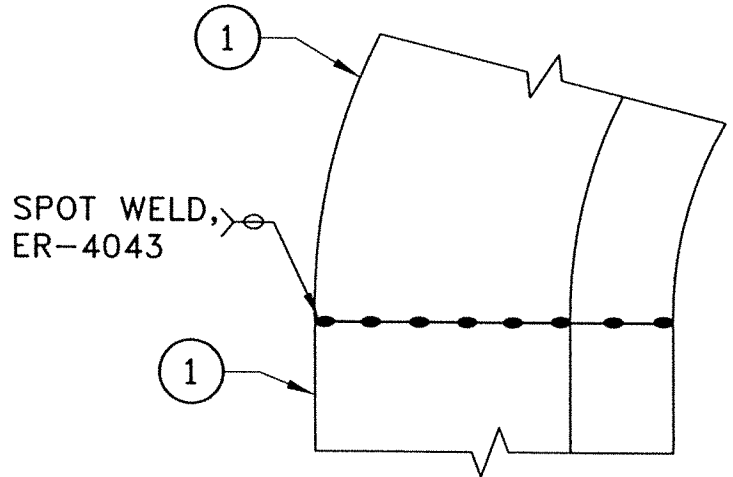
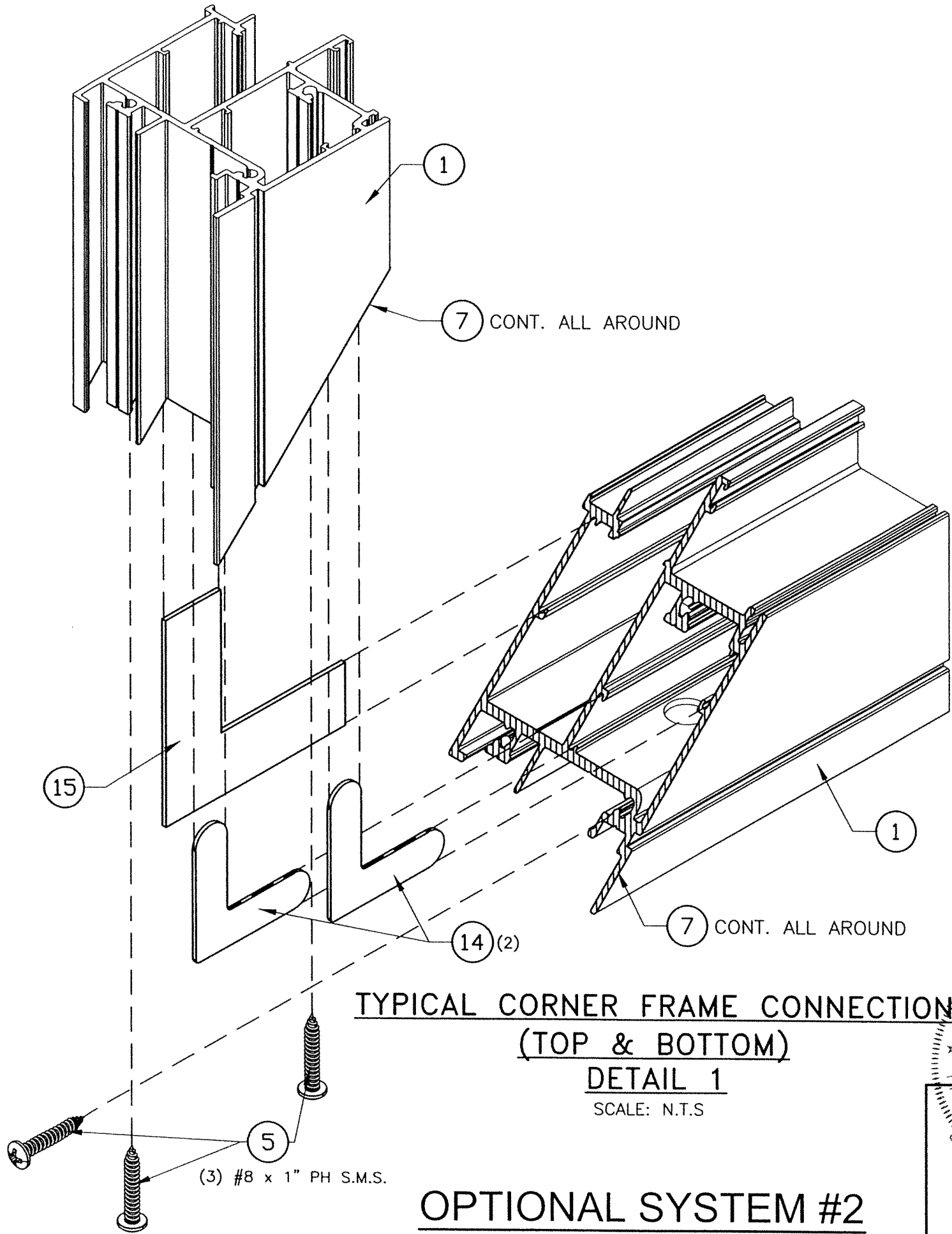
23-208
DRAWING No

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 23-155	09/01/23	2		

SHEET 16 OF 17

MAXIMUM ANCHOR SPACING SCHEDULE "S"

SUBSTRATE	ANCHOR TYPE	NEGATIVE DESIGN LOAD (psf)	HEAD/SILL	JAMB
CONCRETE OR BLOCK (SEE NOTE 9A & 9B/1)	1/4"Ø ULTRACON (8)	75 or less	9" O.C.	12" O.C.
		> 75 up to 90	9" O.C.	11 1/2" O.C.
		> 90 up to 130	8" O.C.	8" O.C.
		> 130 up to 154	6 1/2" O.C.	6 1/2" O.C.
WOOD (SEE NOTE 9C/1)	1/4"Ø ULTRACON (8)	75 or less	9" O.C.	9 1/2" O.C.
		> 75 up to 90	8" O.C.	8" O.C.
		> 90 up to 130	5 1/2" O.C.	5 1/2" O.C.
		> 130 up to 154	4 1/2" O.C.	4 1/2" O.C.
METAL (SEE NOTE 9D/1 & 9E/1)	1/4"Ø TEK SCREW (8A)	75 or less	9" O.C.	12" O.C.
		> 75 up to 90	9" O.C.	12" O.C.
		> 90 up to 130	8" O.C.	8" O.C.
		> 130 up to 154	7" O.C.	7" O.C.



TYPICAL CORNER FRAME CONNECTION
(TOP & BOTTOM)
DETAIL 1
SCALE: N.T.S.

TYPICAL CORNER FRAME
CONNECTION (TOP) DETAIL 2
SCALE: N.T.S.

WALTER A. TILLIT JR.
LICENSE
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