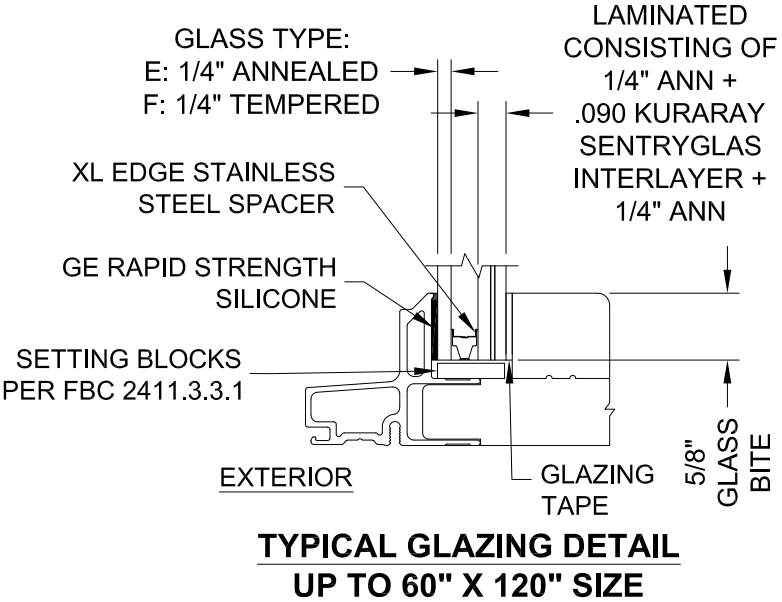
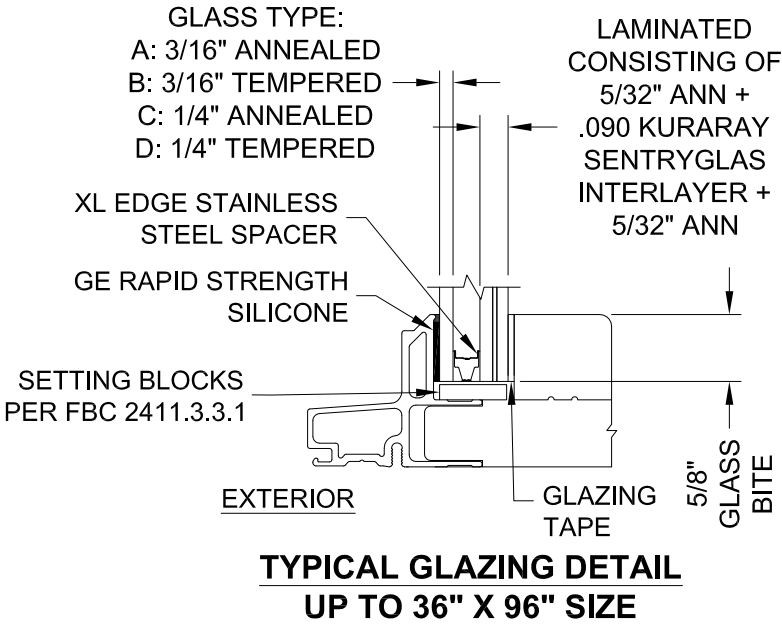
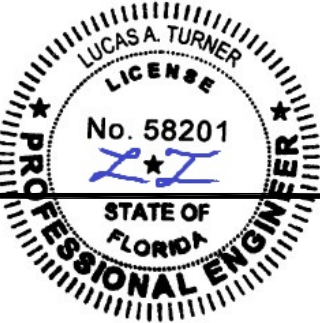


ULTIMATE DIRECT GLAZE RECTANGLE OR POLYGON IZ4 WINDOW

DESIGN PRESSURES (PSF) FOR "O" CONFIGURATION INCLUDING SHAPES							
Glass Type	Frame Height (in.)	Frame Width (in.)					
		90	96	102	108	114	120
A	30	+95 / -95	+95 / -95				
	36	+94.4 / -94.4	+91.4 / -91.4				
B, C, D	30	+95 / -95	+95 / -95				
	36	+95 / -95	+95 / -95				
E	48	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75
	54	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -70.2
	60	+70 / -75	+70 / -74.3	+70 / -70.6	+67 / -67	+64.2 / -64.2	+61.9 / -61.9
F	48	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75
	54	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75	+70 / -75
	60	+70 / -75	+70 / -75	+70 / -75	+70 / -74.5	+70 / -71.4	+68.8 / -68.8



Lucas Turner
2023.11.29
09:52:18
-06'00'



11/28/2023
LUCAS A. TURNER, P.E.
FL PE # 58201
TURNER ENGINEERING & CONSULTING, INC.
2428 OLD NATCHEZ TRC. TRL.
CAMDEN, TN 38320
PH. 941-380-1574

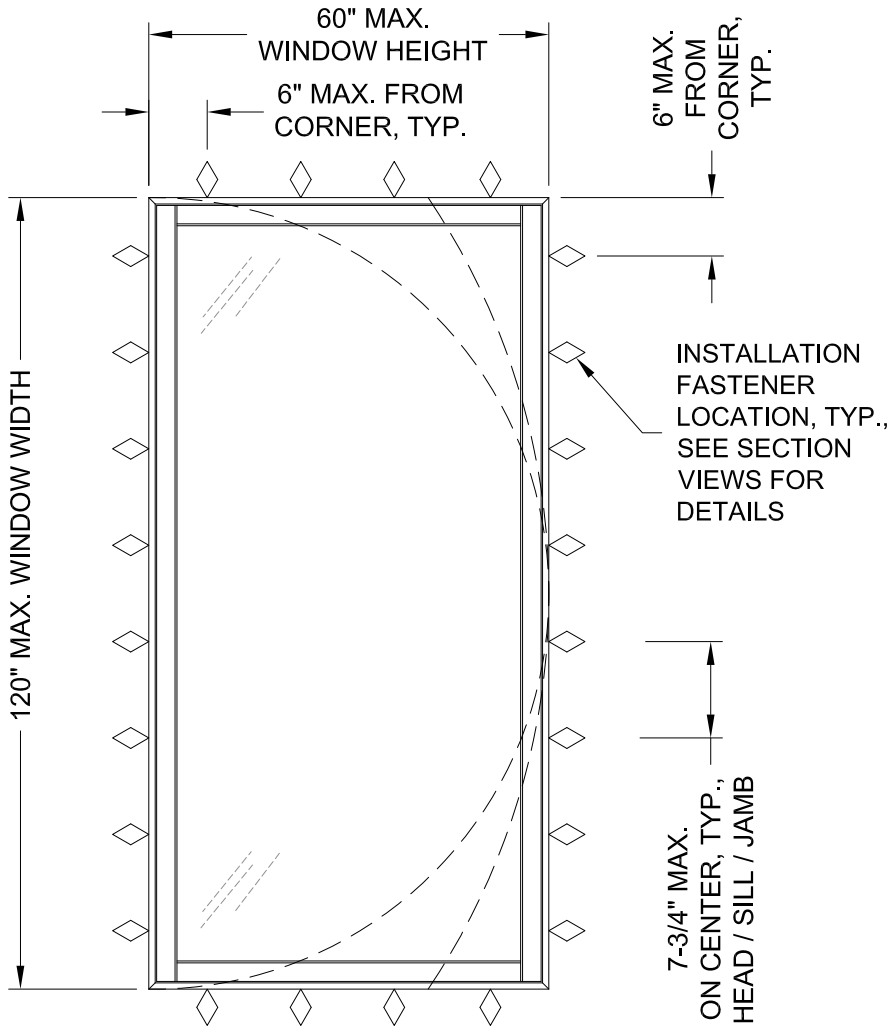
GENERAL NOTES

1. THIS DOCUMENT ADDRESSES ONLY PRODUCT ANCHORAGE TO ACHIEVE THE INDICATED DESIGN PRESSURES AT THE INDICATED SIZES, IN THE CONFIGURATION SHOWN IN THE ELEVATIONS. INSTALL PRODUCTS WITH MAXIMUM SHIM GAP, MINIMUM EDGE DISTANCE AND EMBEDMENT, AND WITH FASTENER TYPE AS SHOWN IN THE DETAILS. FOR FULL PRODUCT CONSTRUCTION DETAILS SEE ATI/INTERTEK TEST REPORTS E2618.01-201-18 AND E2621.01-201-18. FOR FULL PRODUCT INSTALLATION INSTRUCTIONS SEE WWW.MARVIN.COM.
2. THIS PRODUCT AS SHOWN AND GLAZED IN THIS DRAWING, IS LARGE MISSILE IMPACT RESISTANT AND DOES NOT REQUIRE THE USE OF IMPACT PROTECTIVE DEVICES (SHUTTERS) IN WINDBORNE DEBRIS REGIONS. THIS PRODUCT HAS BEEN TESTED TO TAS201/202/203-94, AND MEETS THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, CURRENT EDITION, INCLUDING THE HIGH VELOCITY HURRICANE ZONE.
3. THE DESIGN PRESSURE RATINGS IN THIS DRAWING ARE AS LIMITED BY ASTM E-1300 COMPLIANT GLASS CALCULATIONS, TESTED WATER, STRUCTURAL, AND CYCLIC PRESSURES.
4. THE 4/3 ALLOWABLE STRESS INCREASE FACTOR (SHORT-TERM INCREASE FACTOR) HAS NOT BEEN USED IN THE ANCHOR ANALYSIS FOR THIS SYSTEM. THE 1.6 Cd FACTOR WAS USED IN THE ANALYSIS OF ANCHORAGE INTO WOOD SUBSTRATE.
5. THE OPENING SUBSTRATE MATERIALS (FRAMING, MASONRY, BUCKS) AND ATTACHMENT OF BUCKS TO THE SUBSTRATE ARE BY OTHERS AND SHALL BE VERIFIED BY THE ARCHITECT OR ENGINEER OF RECORD OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). BUCKING, OPENINGS, & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED BY OTHERS IN ACCORDANCE WITH THE FBC TO TRANSFER SUPERIMPOSED LOADS TO THE STRUCTURE.
6. DISSIMILAR MATERIALS THAT COME INTO CONTACT SHALL BE COATED OR OTHERWISE PROTECTED PER FBC CHAPTER 20 TO PREVENT GALVANIC REACTIONS. WOOD BUCKS, IF USED, SHALL BE PRESSURE TREATED, WITH EITHER A TREATMENT OR COATING COMPATIBLE WITH THIS PRODUCT. ALL ANCHORS USED SHALL BE OF A MATERIAL OR HAVE A COATING COMPATIBLE WITH THE PRESSURE TREATED WOOD BUCKS AND ALL OTHER WINDOW MATERIALS.
7. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, OR AS APPROVED, SIGNED, AND SEALED BY A FLORIDA-REGISTERED PROFESSIONAL ENGINEER ON A SITE-SPECIFIC BASIS.
8. SEALING AND FLASHING STRATEGIES FOR OVERALL WATER INFILTRATION RESISTANCE OF THE INSTALLED PRODUCT SHALL BE THE RESPONSIBILITY OF OTHERS AND ARE NOT ADDRESSED BY THIS DOCUMENT.

REVISION			
C	UPDATED FOR 2023 FBC		11/28/23
MARVIN 		WARROAD, MN, USA (218) 386-4021	
PRODUCT CATEGORY: ULTIMATE DIRECT GLAZE RECTANGLE / POLYGON IZ4			
UNIT TYPE: UDG RECT IZ4, UDG POLY IZ4			
SHEET DESCRIPTION: DESIGN PRESSURES, GLAZING DETAIL			
SIZE: B	CLASS: ANCHOR	DWG NO: UDG-IZ4-FPA	
SCALE: NTS	DWG BY: LAT	DATE: 06/10/2015	SHEET: 1 of 5

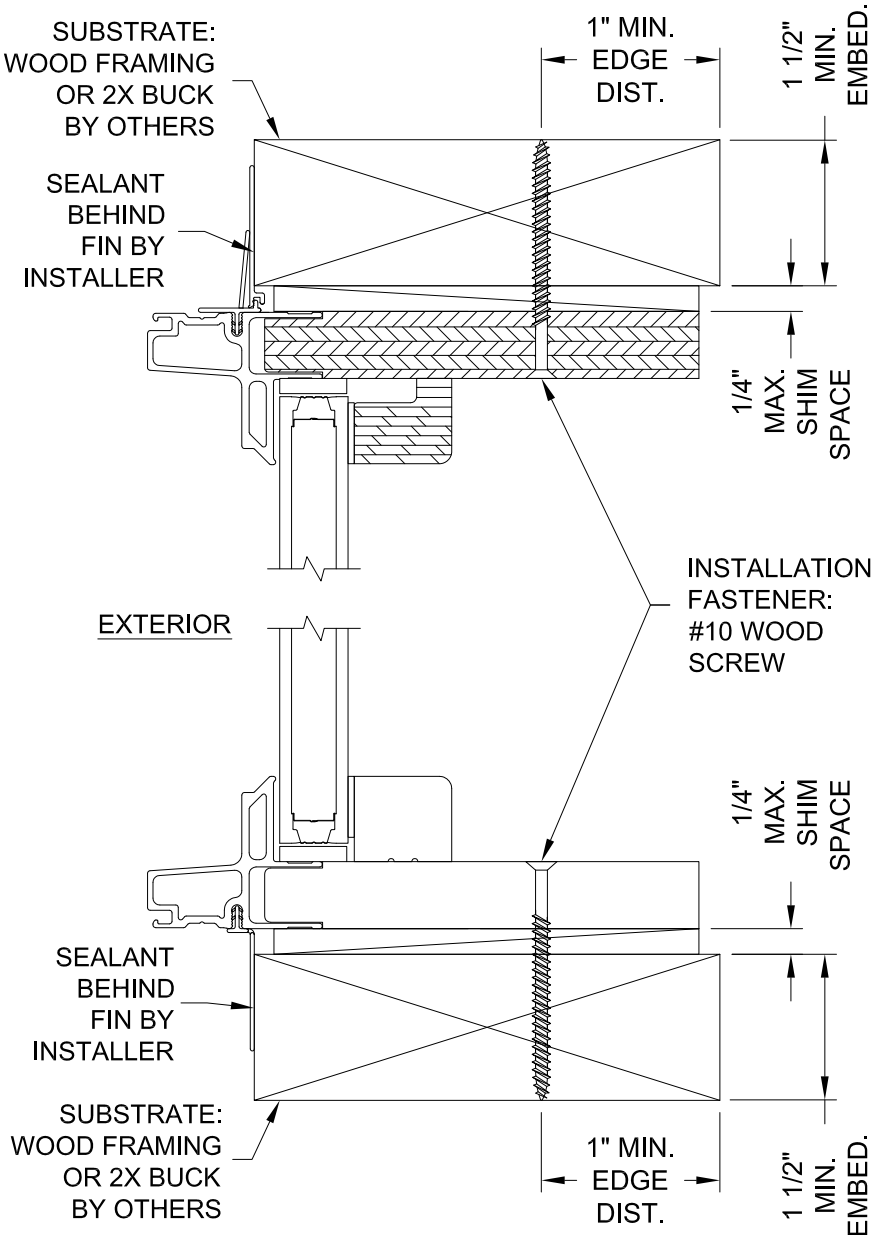
ULTIMATE DIRECT GLAZE THROUGH-FRAME INTO WOOD INSTALLATION

MINIMUM SUBSTRATE: SPRUCE-PINE-FIR (G=0.42 MIN.) WOOD

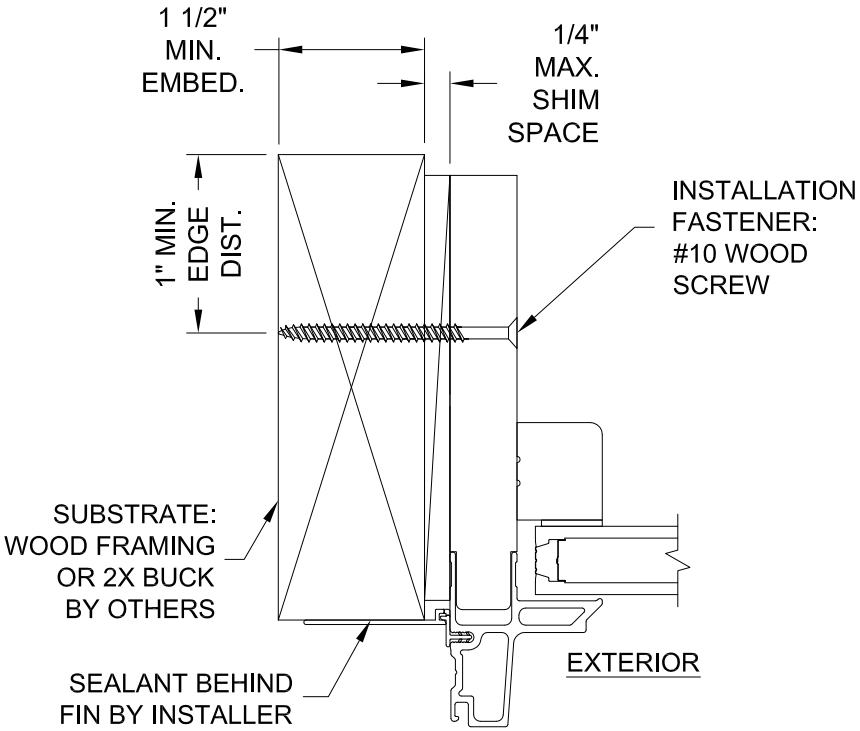


TYPICAL ELEVATION

DESIGN PRESSURE RATING	IMPACT RATING
SEE SHEET 1	LARGE AND SMALL MISSILE IMPACT

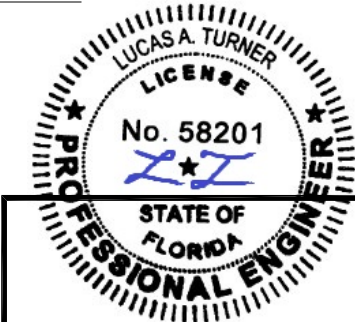


TYPICAL FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

- ANCHOR NOTES:
1. INSTALL ONE ANCHOR AT EACH LOCATION SHOWN IN THE ELEVATION.
 2. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
 3. SHIMS SHALL BE LOAD-BEARING (PLASTIC OR METALLIC) AND CAPABLE OF TRANSFERRING LOADS TO SUBSTRATE.
 4. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.



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PH. 941-380-1574

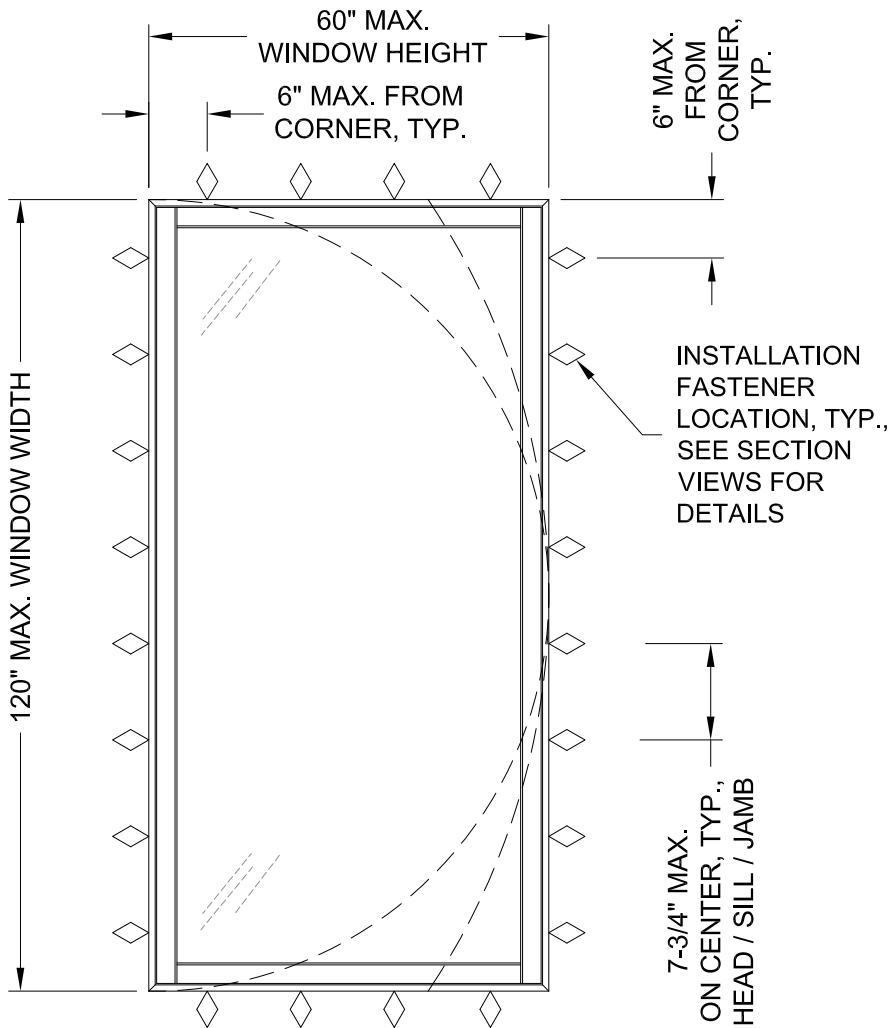
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REVISION			
C	UPDATED FOR 2023 FBC	11/28/23	
MARVIN 		WARROAD, MN, USA (218) 386-4021	
PRODUCT CATEGORY: ULTIMATE DIRECT GLAZE RECTANGLE / POLYGON IZ4			
UNIT TYPE: UDG RECT IZ4, UDG POLY IZ4			
SHEET DESCRIPTION: THROUGH-FRAME INTO WOOD INSTALLATION			
SIZE: B	CLASS: ANCHOR	DWG NO: UDG-IZ4-FPA	
SCALE: NTS	DWG BY: LAT	DATE: 06/10/2015	SHEET: 2 of 5

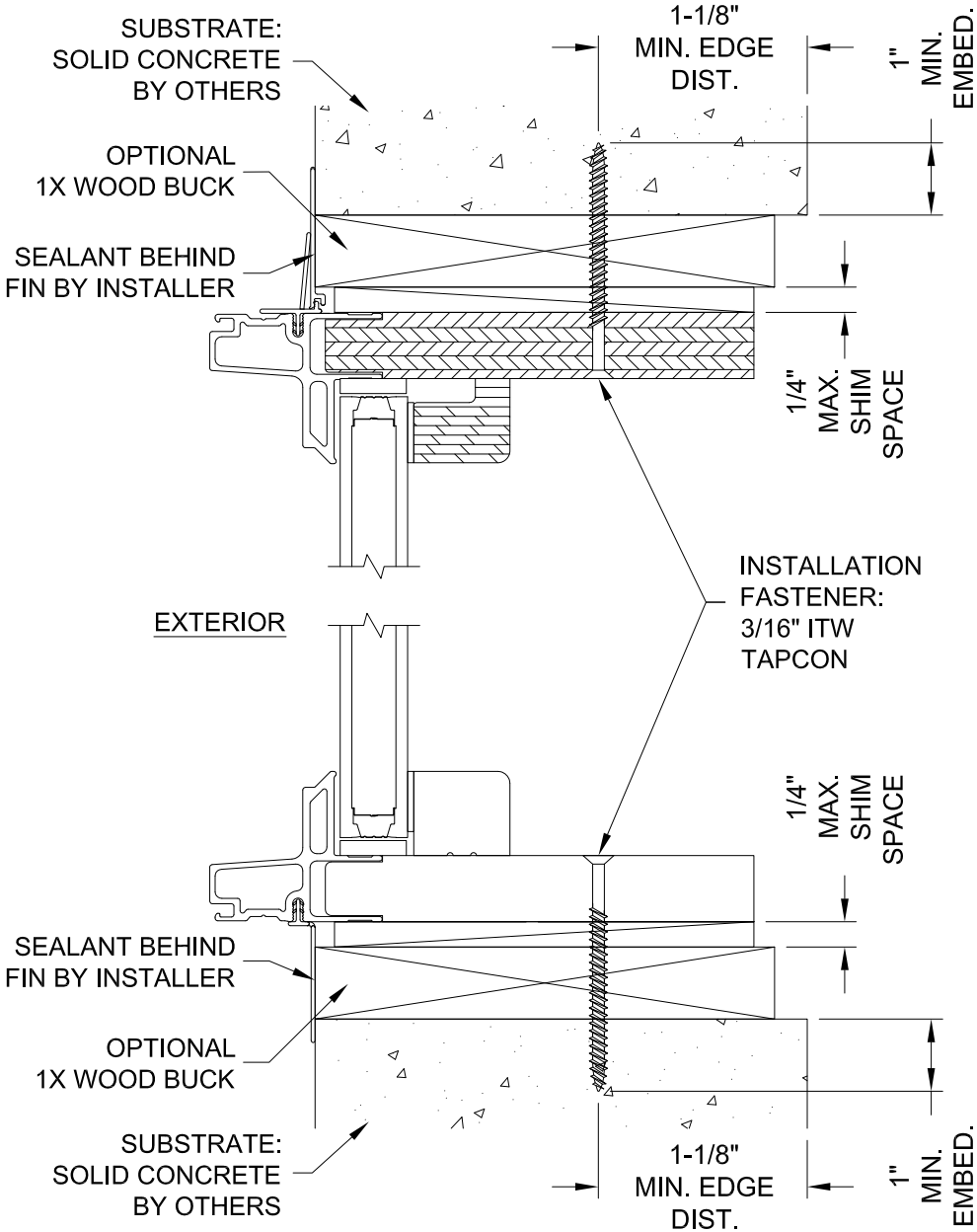
ULTIMATE DIRECT GLAZE THROUGH-FRAME INTO CONCRETE/MASONRY INSTALLATION

MINIMUM SUBSTRATE: SOLID UNCRACKED CONCRETE AT HEAD AND SILL, 2000 PSI MIN. AT JAMBS, 2000 PSI UNCRACKED SOLID CONCRETE, OR 117 PCF CMU MASONRY

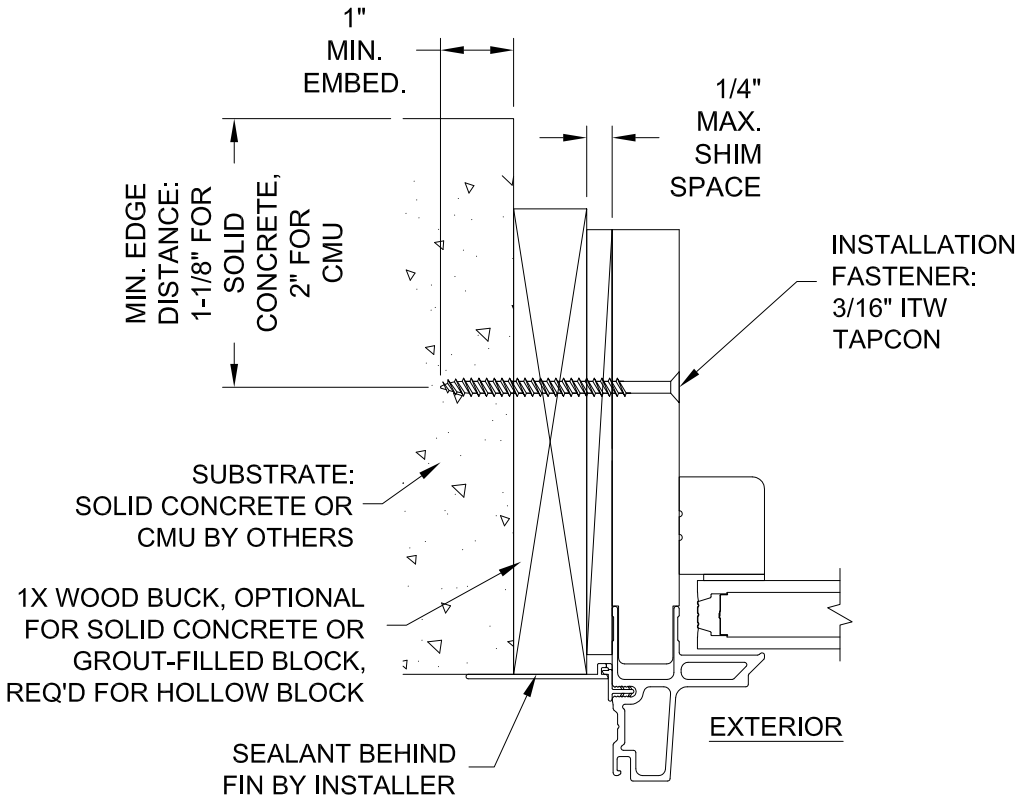


TYPICAL ELEVATION

DESIGN PRESSURE RATING	IMPACT RATING
SEE SHEET 1	LARGE AND SMALL MISSILE IMPACT

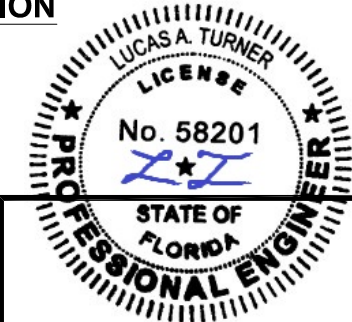


TYPICAL FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

- ANCHOR NOTES:
1. INSTALL ONE ANCHOR AT EACH LOCATION SHOWN IN THE ELEVATION.
 2. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
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PH. 941-380-1574

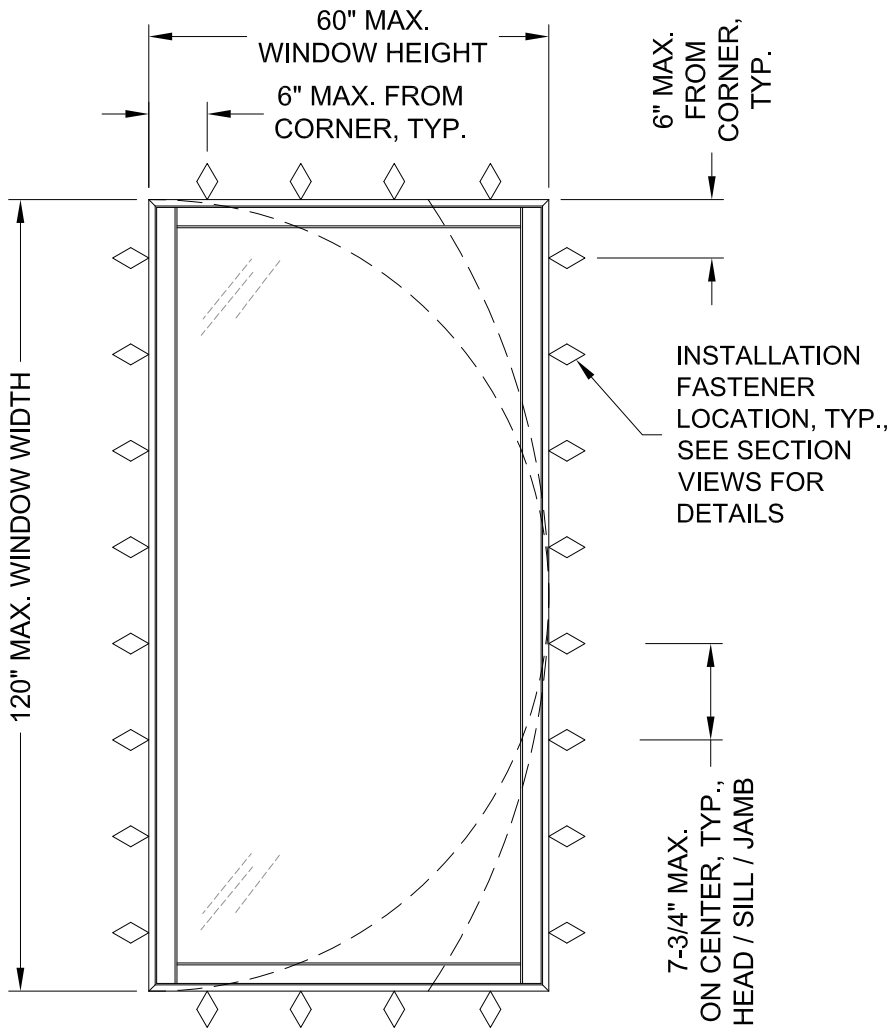
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REVISION		
C	UPDATED FOR 2023 FBC	11/28/23
MARVIN 		WARROAD, MN, USA (218) 386-4021
PRODUCT CATEGORY: ULTIMATE DIRECT GLAZE RECTANGLE / POLYGON IZ4		
UNIT TYPE: UDG RECT IZ4, UDG POLY IZ4		
SHEET DESCRIPTION: THROUGH-FRAME INTO CONCRETE/MASONRY INSTALLATION		
SIZE: B	CLASS: ANCHOR	DWG NO: UDG-IZ4-FPA
SCALE: NTS	DWG BY: LAT	DATE: 06/10/2015
		SHEET: 3 of 5

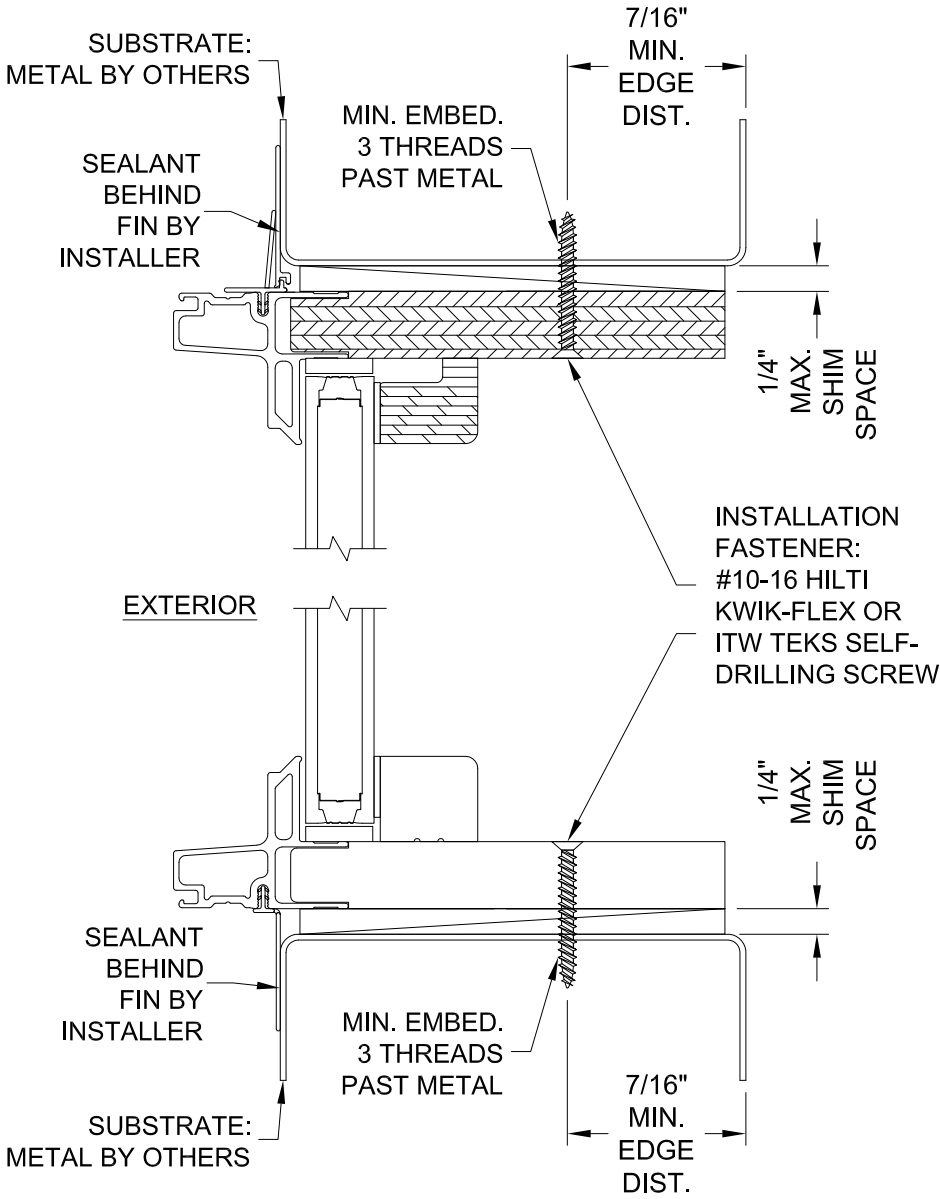
ULTIMATE DIRECT GLAZE THROUGH-FRAME INTO METAL INSTALLATION

MINIMUM SUBSTRATE: 0.060" (16 GAUGE) MIN. 33 KSI MIN. YIELD STEEL,
OR 6063-T5 MIN. 0.125" THICK MIN. ALUMINUM

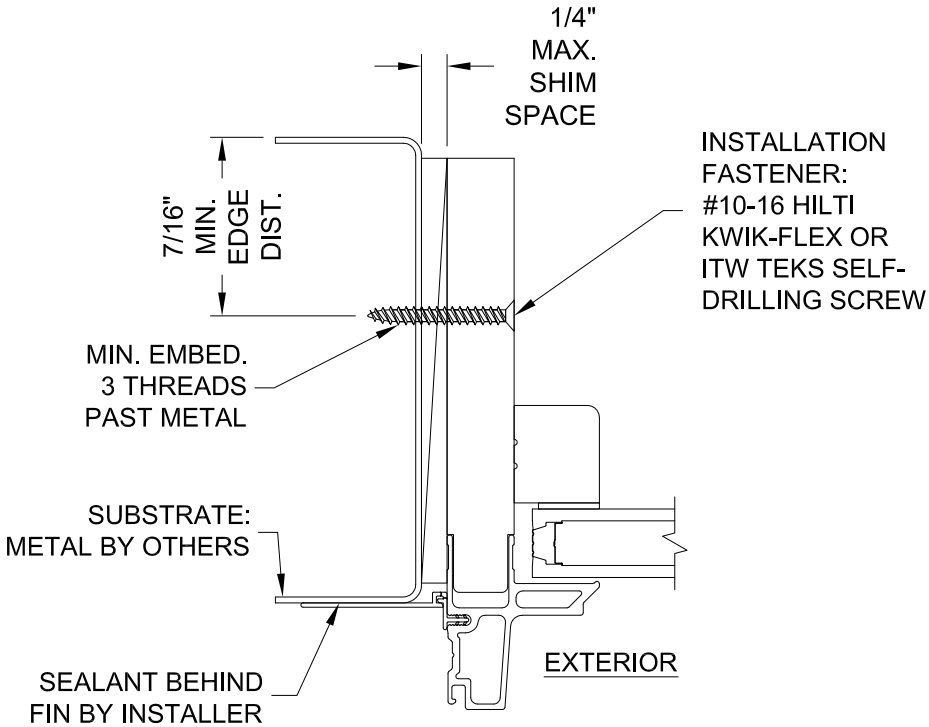


TYPICAL ELEVATION

DESIGN PRESSURE RATING	IMPACT RATING
SEE SHEET 1	LARGE AND SMALL MISSILE IMPACT

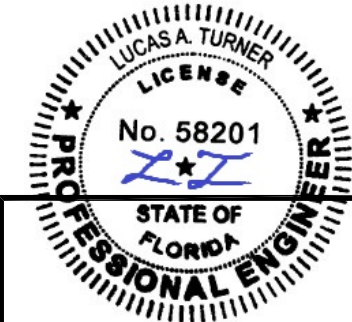


TYPICAL FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

- ANCHOR NOTES:
1. INSTALL ONE ANCHOR AT EACH LOCATION SHOWN IN THE ELEVATION.
 2. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
 3. SHIMS SHALL BE LOAD-BEARING (PLASTIC OR METALLIC) AND CAPABLE OF TRANSFERRING LOADS TO SUBSTRATE.
 4. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.



11/28/2023
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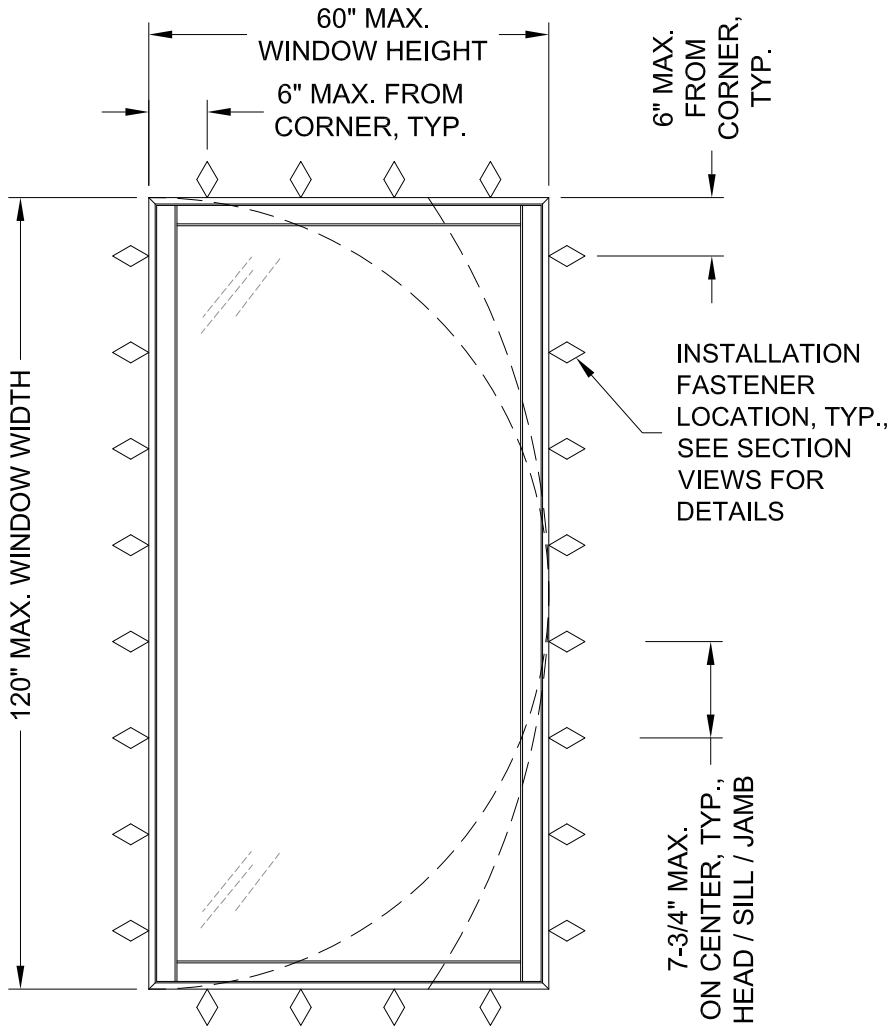
GENERAL NOTES

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3. THE DESIGN PRESSURE RATINGS IN THIS DRAWING ARE AS LIMITED BY ASTM E-1300 COMPLIANT GLASS CALCULATIONS, TESTED WATER, STRUCTURAL, AND CYCLIC PRESSURES.
4. THE 4/3 ALLOWABLE STRESS INCREASE FACTOR (SHORT-TERM INCREASE FACTOR) HAS NOT BEEN USED IN THE ANCHOR ANALYSIS FOR THIS SYSTEM. THE 1.6 Cd FACTOR WAS USED IN THE ANALYSIS OF ANCHORAGE INTO WOOD SUBSTRATE.
5. THE OPENING SUBSTRATE MATERIALS (FRAMING, MASONRY, BUCKS) AND ATTACHMENT OF BUCKS TO THE SUBSTRATE ARE BY OTHERS AND SHALL BE VERIFIED BY THE ARCHITECT OR ENGINEER OF RECORD OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). BUCKING, OPENINGS, & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED BY OTHERS IN ACCORDANCE WITH THE FBC TO TRANSFER SUPERIMPOSED LOADS TO THE STRUCTURE.
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REVISION		
C	UPDATED FOR 2023 FBC	11/28/23
MARVIN 		WARROAD, MN, USA (218) 386-4021
PRODUCT CATEGORY: ULTIMATE DIRECT GLAZE RECTANGLE / POLYGON IZ4		
UNIT TYPE: UDG RECT IZ4, UDG POLY IZ4		
SHEET DESCRIPTION: THROUGH-FRAME INTO METAL INSTALLATION		
SIZE: B	CLASS: ANCHOR	DWG NO: UDG-IZ4-FPA
SCALE: NTS	DWG BY: LAT	DATE: 06/10/2015
		SHEET: 4 of 5

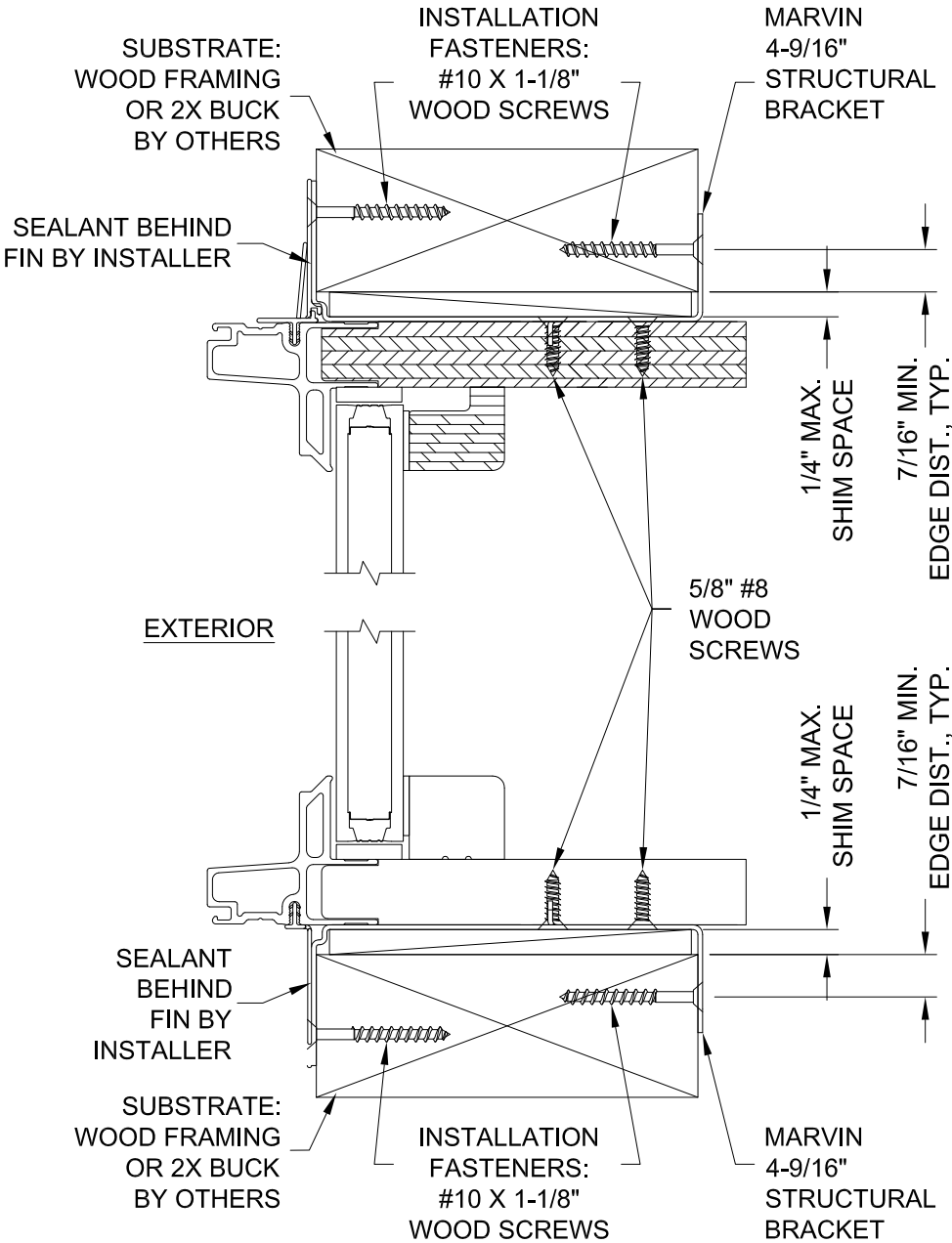
ULTIMATE DIRECT GLAZE STRUCTURAL BRACKET INTO WOOD INSTALLATION

MINIMUM SUBSTRATE: SPRUCE-PINE-FIR (G=0.42 MIN.) WOOD

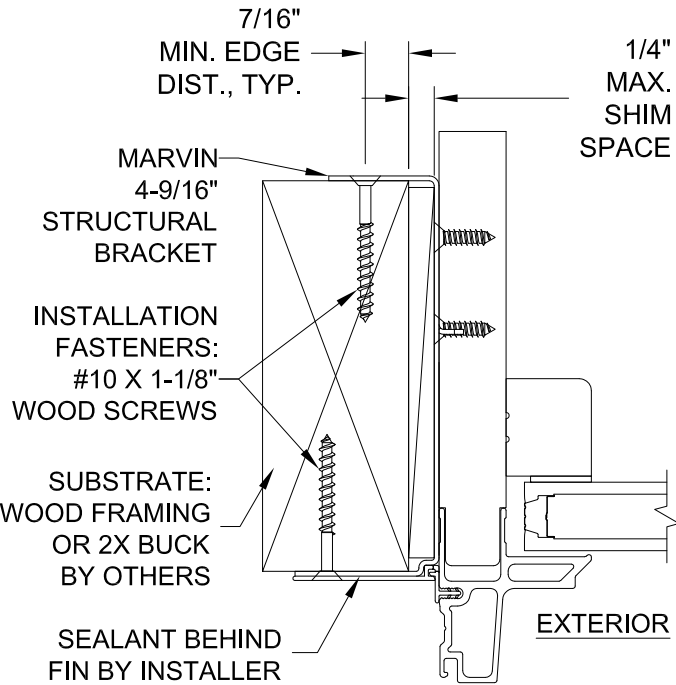


TYPICAL ELEVATION

DESIGN PRESSURE RATING	IMPACT RATING
SEE SHEET 1	LARGE AND SMALL MISSILE IMPACT

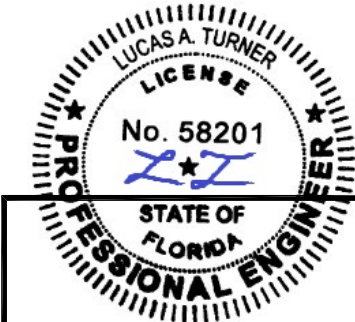


TYPICAL FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

- ANCHOR NOTES:
1. INSTALL ONE BRACKET WITH TWO ANCHORS INTO PRODUCT AND TWO ANCHORS INTO SUBSTRATE AT EACH LOCATION SHOWN IN THE ELEVATION.
 2. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
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4. THE 4/3 ALLOWABLE STRESS INCREASE FACTOR (SHORT-TERM INCREASE FACTOR) HAS NOT BEEN USED IN THE ANCHOR ANALYSIS FOR THIS SYSTEM. THE 1.6 Cd FACTOR WAS USED IN THE ANALYSIS OF ANCHORAGE INTO WOOD SUBSTRATE.
5. THE OPENING SUBSTRATE MATERIALS (FRAMING, MASONRY, BUCKS) AND ATTACHMENT OF BUCKS TO THE SUBSTRATE ARE BY OTHERS AND SHALL BE VERIFIED BY THE ARCHITECT OR ENGINEER OF RECORD OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). BUCKING, OPENINGS, & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED BY OTHERS IN ACCORDANCE WITH THE FBC TO TRANSFER SUPERIMPOSED LOADS TO THE STRUCTURE.
6. DISSIMILAR MATERIALS THAT COME INTO CONTACT SHALL BE COATED OR OTHERWISE PROTECTED PER FBC CHAPTER 20 TO PREVENT GALVANIC REACTIONS. WOOD BUCKS, IF USED, SHALL BE PRESSURE TREATED, WITH EITHER A TREATMENT OR COATING COMPATIBLE WITH THIS PRODUCT. ALL ANCHORS USED SHALL BE OF A MATERIAL OR HAVE A COATING COMPATIBLE WITH THE PRESSURE TREATED WOOD BUCKS AND ALL OTHER WINDOW MATERIALS.
7. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, OR AS APPROVED, SIGNED, AND SEALED BY A FLORIDA-REGISTERED PROFESSIONAL ENGINEER ON A SITE-SPECIFIC BASIS.
8. SEALING AND FLASHING STRATEGIES FOR OVERALL WATER INFILTRATION RESISTANCE OF THE INSTALLED PRODUCT SHALL BE THE RESPONSIBILITY OF OTHERS AND ARE NOT ADDRESSED BY THIS DOCUMENT.

REVISION			
C	UPDATED FOR 2023 FBC	11/28/23	
MARVIN 		WARROAD, MN, USA (218) 386-4021	
PRODUCT CATEGORY: ULTIMATE DIRECT GLAZE RECTANGLE / POLYGON IZ4			
UNIT TYPE: UDG RECT IZ4, UDG POLY IZ4			
SHEET DESCRIPTION: STRUCTURAL BRACKET INTO WOOD INSTALLATION			
SIZE: B	CLASS: ANCHOR	DWG NO: UDG-IZ4-FPA	
SCALE: NTS	DWG BY: LAT	DATE: 06/10/2015	SHEET: 5 of 5