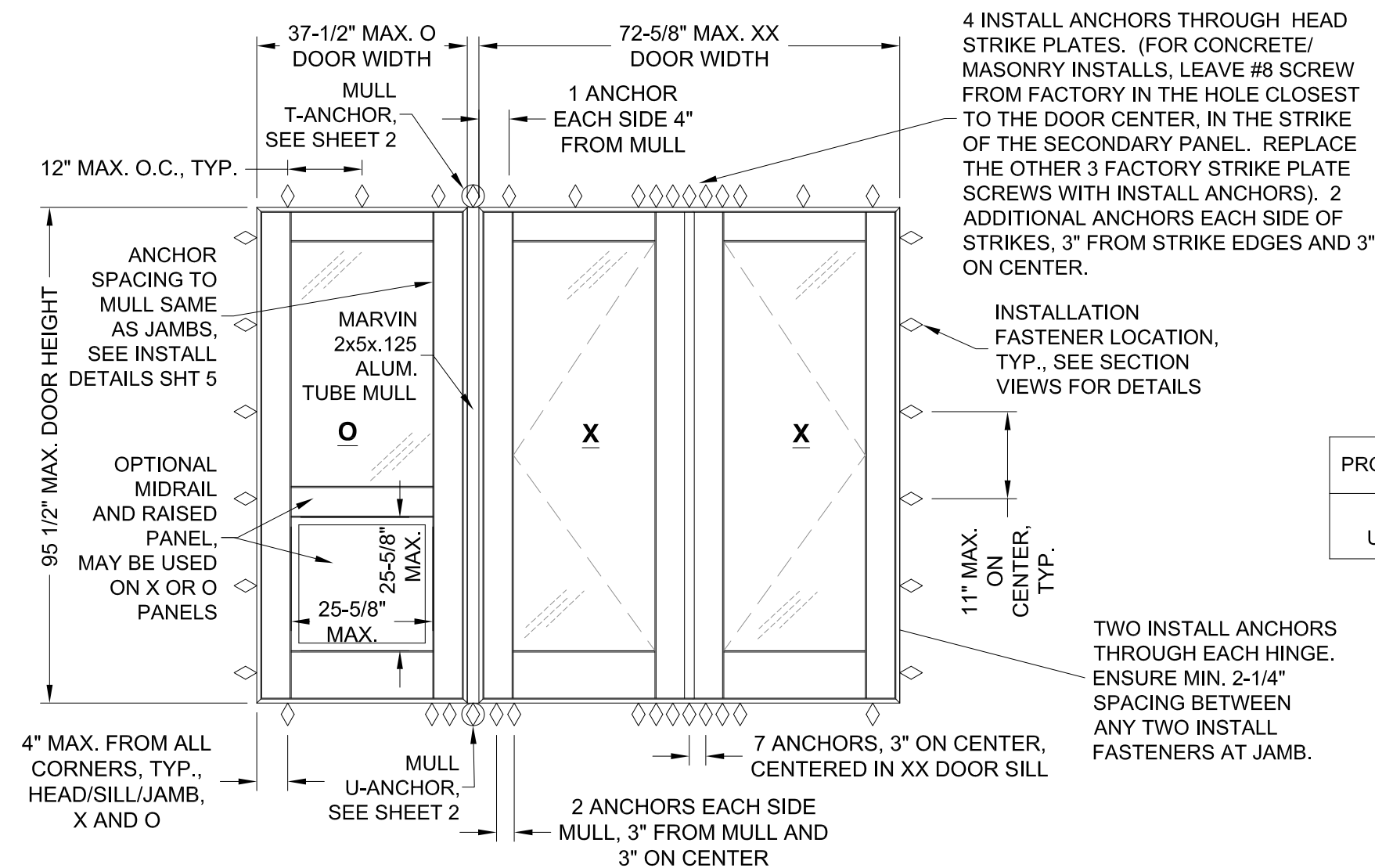


ULTIMATE OUTSWING FRENCH DOOR IZ4: O, X, XX, OR MULLED ASSEMBLY



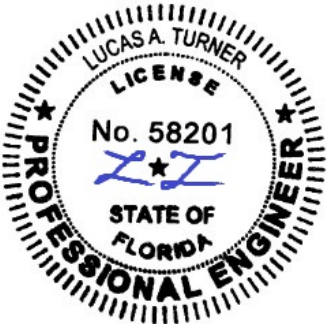
SAMPLE ELEVATION

GENERAL NOTES

1. THIS DOCUMENT ADDRESSES ONLY PRODUCT ANCHORAGE TO ACHIEVE THE INDICATED DESIGN PRESSURES AT THE INDICATED SIZES, IN CONFIGURATIONS AS DEMONSTRATED IN THE SAMPLE ELEVATION ON SHEET 1. OPERABLE AND/OR FIXED DOORS MAY BE MULLED TOGETHER HORIZONTALLY IN ANY CONFIGURATION WITH ANY NUMBER OF DOORS (EXCEPTION: XX DOORS MAY NOT BE MULLED NEXT TO XX DOORS), PROVIDED THAT THE INDIVIDUAL DOOR SIZES DO NOT EXCEED THOSE SHOWN IN THE ELEVATION. INSTALL PRODUCTS WITH MAXIMUM SHIM GAP, MINIMUM EDGE DISTANCE AND EMBEDMENT, AND WITH FASTENER TYPE AS SHOWN IN THE DETAILS SHEETS 3 THROUGH 6. FOR MULL CLIPS USE THE SAME INSTALLATION SCREWS AS OTHER LOCATIONS FOR EACH SUBSTRATE TYPE. FOR FULL PRODUCT CONSTRUCTION DETAILS SEE ATI/INTERTEK TEST REPORTS E4537.01-201-18, E4538.01-201-18, E6024.01-201-18, AND E6025.01-201-18. 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.

PRODUCT / SIZE	GLASS TYPE, SEE SHEET 2	DESIGN PRESSURE RATING, PSF	IMPACT RATING
X OR O PANEL SIZES UP TO TO 35-1/6" X 92-1/2"	A, B	+65 / -80	LARGE AND SMALL MISSILE IMPACT

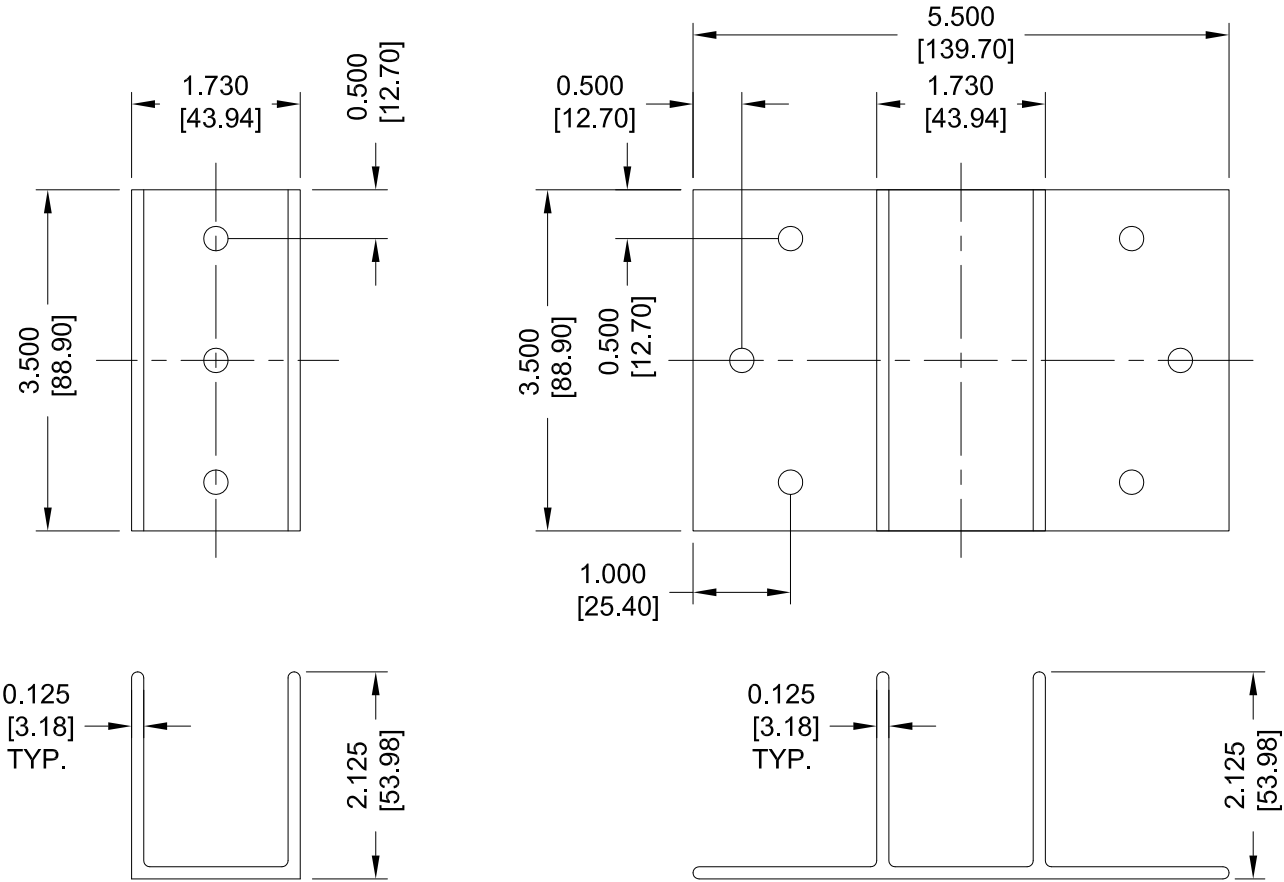
Lucas Turner
2023.11.29
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-06'00'



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

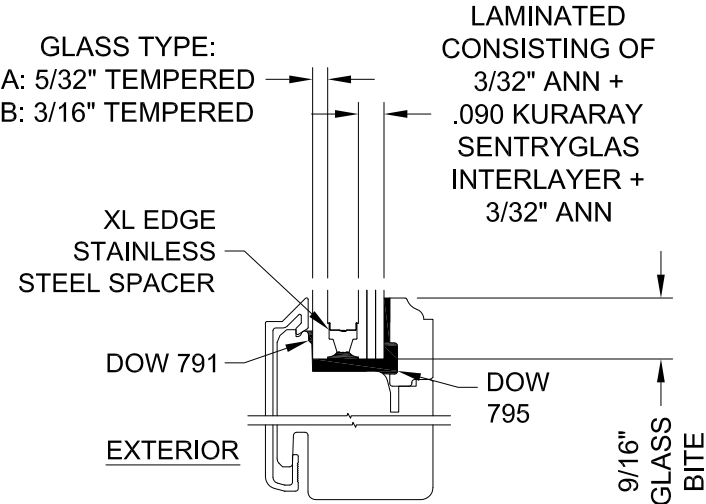
REVISION		
C	UPDATED FOR 2023 FBC	11/28/23
MARVIN  WARROAD, MN, USA (218) 386-4021		
PRODUCT CATEGORY: ULTIMATE OUTSWING FRENCH DOOR IZ4		
UNIT TYPE: UOFD IZ4		
SHEET DESCRIPTION: 		

ULTIMATE OUTSWING FRENCH DOOR IZ4: MULL CLIPS, GLAZING, RAISED PANEL

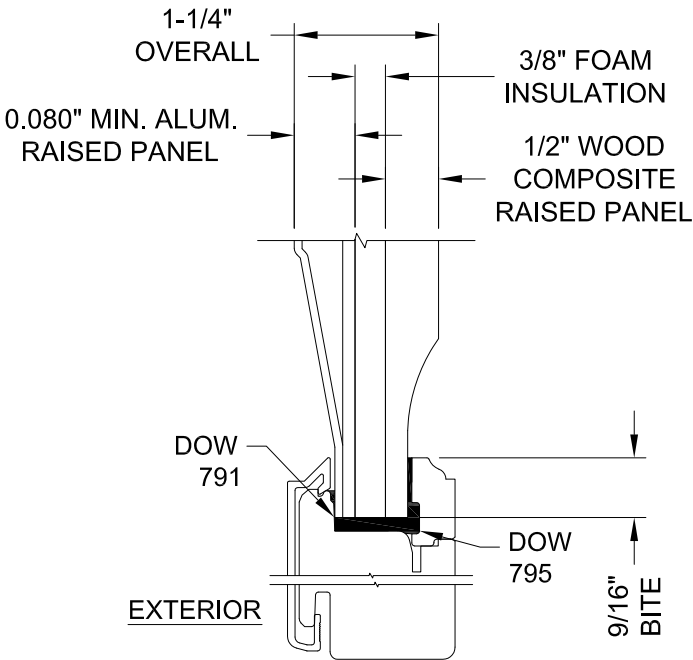


TYPICAL MULL
U-ANCHOR

TYPICAL MULL
T-ANCHOR



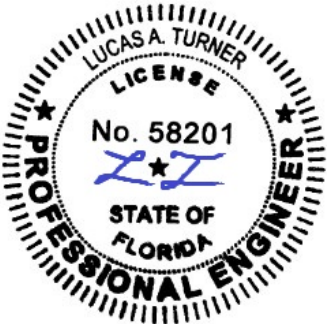
TYPICAL 1-3/4" DOOR
GLAZING DETAIL



TYPICAL 1-3/4" DOOR
RAISED PANEL DETAIL

GENERAL NOTES

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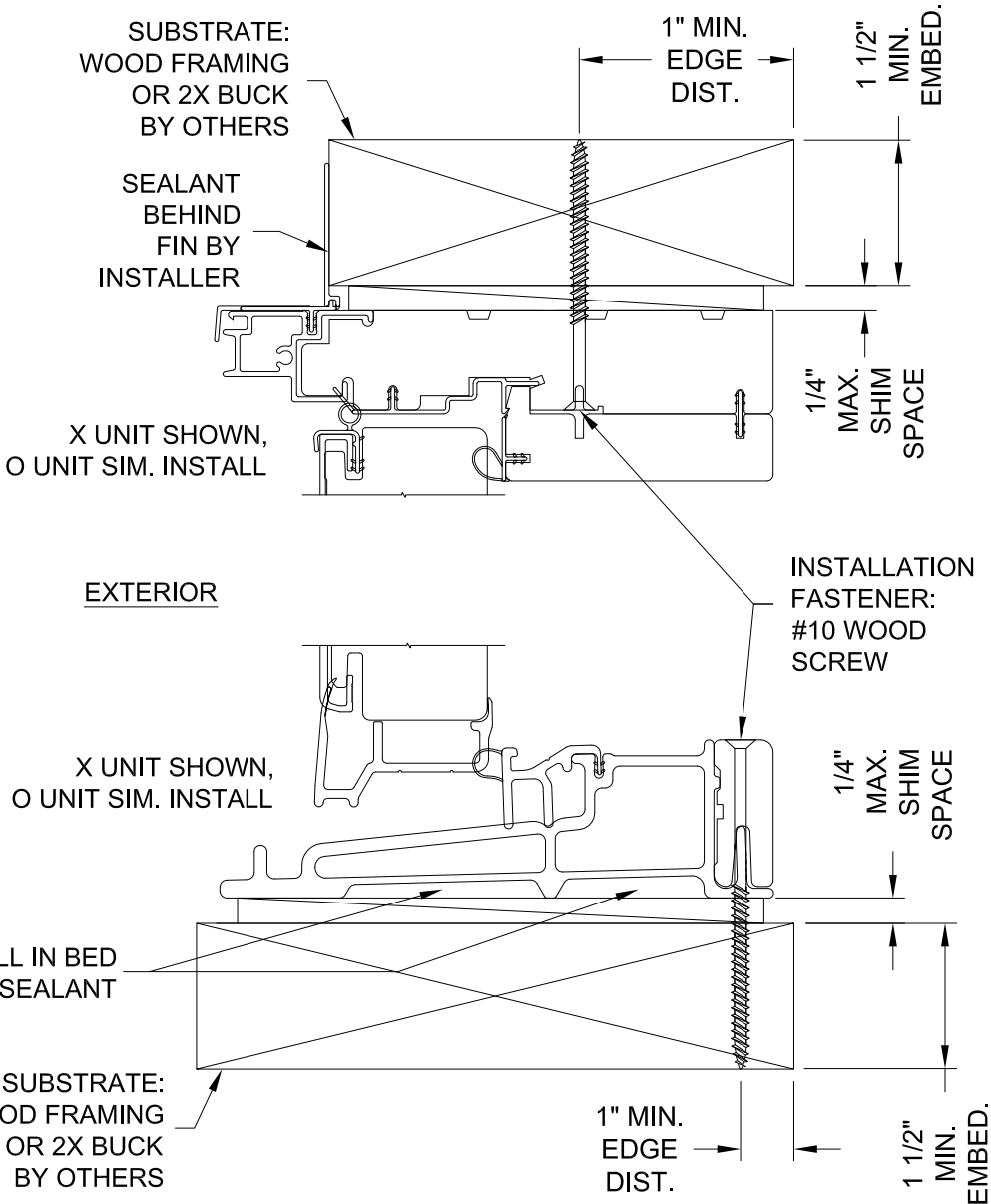
11/28/2023
LUCAS A. TURNER, P.E.
FL PE # 58201
TURNER ENGINEERING &
CONSULTING, INC.
2428 OLD NATCHEZ TRC. TRL.
CAMDEN, TN 38320
PH. 941-380-1574

REVISION		
C	UPDATED FOR 2023 FBC	11/28/23
MARVIN  WARROAD, MN, USA (218) 386-4021		
PRODUCT CATEGORY: ULTIMATE OUTSWING FRENCH DOOR IZ4		
UNIT TYPE: UOFD IZ4		
SHEET DESCRIPTION: MULL CLIPS, GLAZING/PANEL DETAILS		
SIZE: B	CLASS: ANCHOR	DWG NO: 1-3_4-OS-DOOR-FPA
SCALE: NTS	DWG BY: LAT	DATE: 07/22/2015
		SHEET: 2 of 6

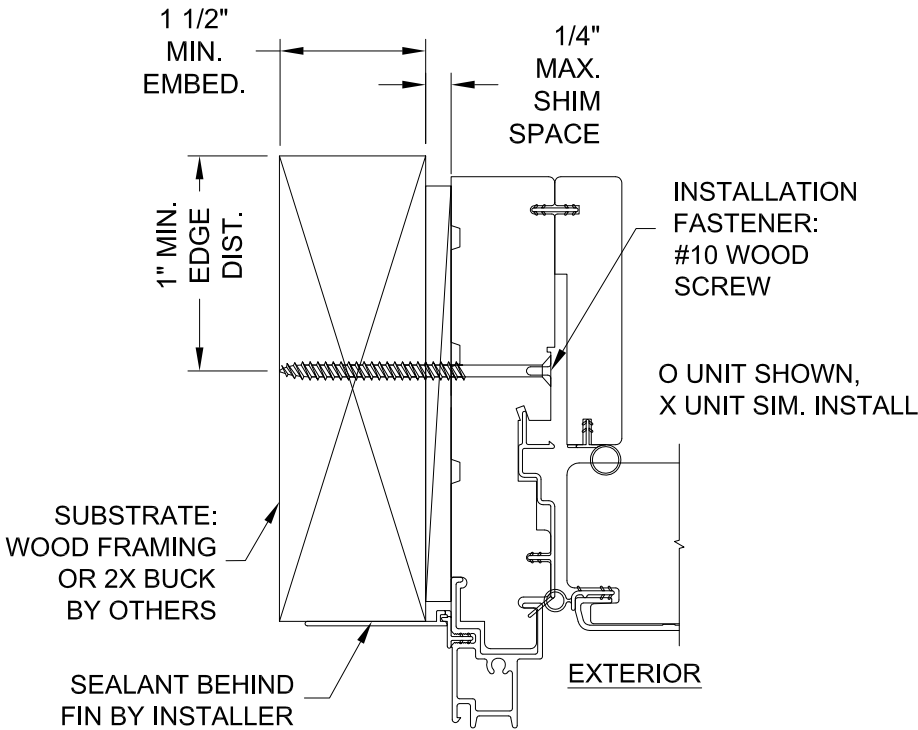
ULTIMATE OUTSWING FRENCH DOOR IZ4 THROUGH-FRAME INTO WOOD INSTALLATION

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

- ANCHOR NOTES:
1. INSTALL ONE ANCHOR AT EACH LOCATION SHOWN IN THE ELEVATION, SHEET 1.
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 6. IN XX DOORS, REPLACE THE FOUR FACTORY SCREWS IN THE HEAD STRIKES WITH INSTALLATION ANCHORS OF THE SIZE, EDGE, AND EMBEDMENT CRITERIA SHOWN ON THIS SHEET.



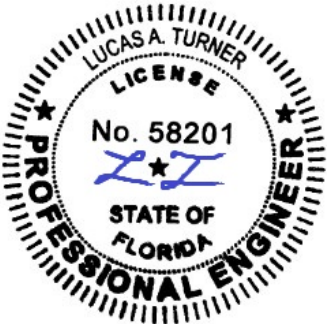
TYPICAL FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

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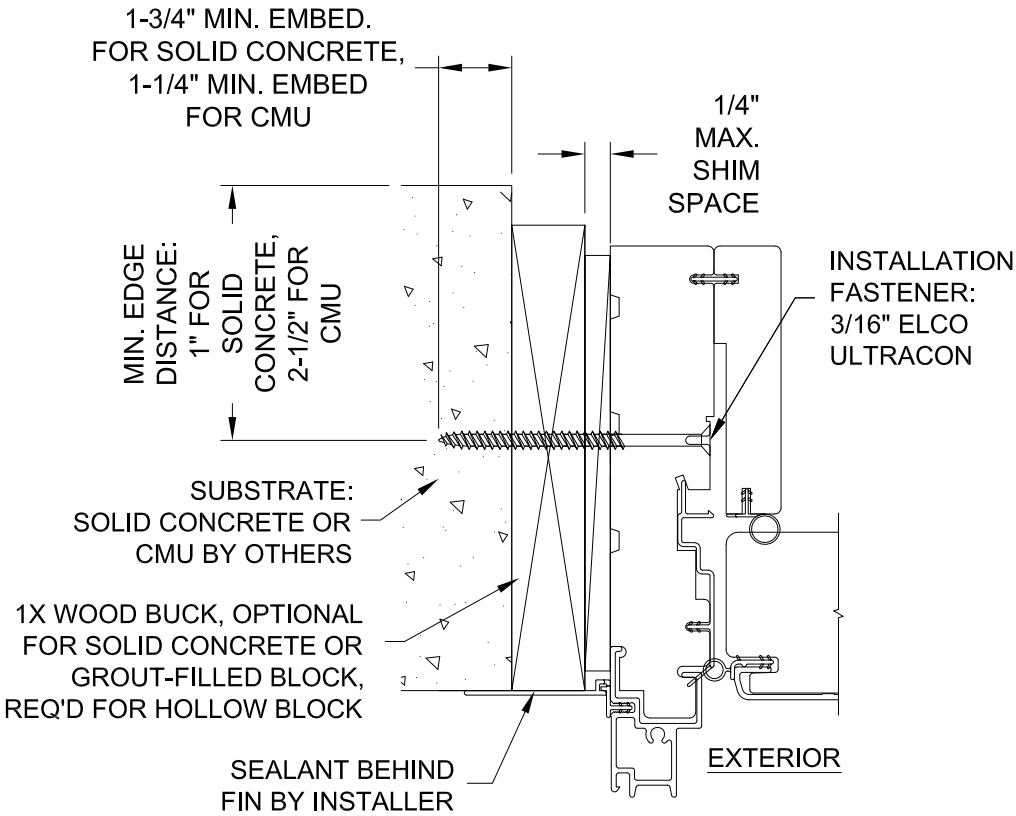
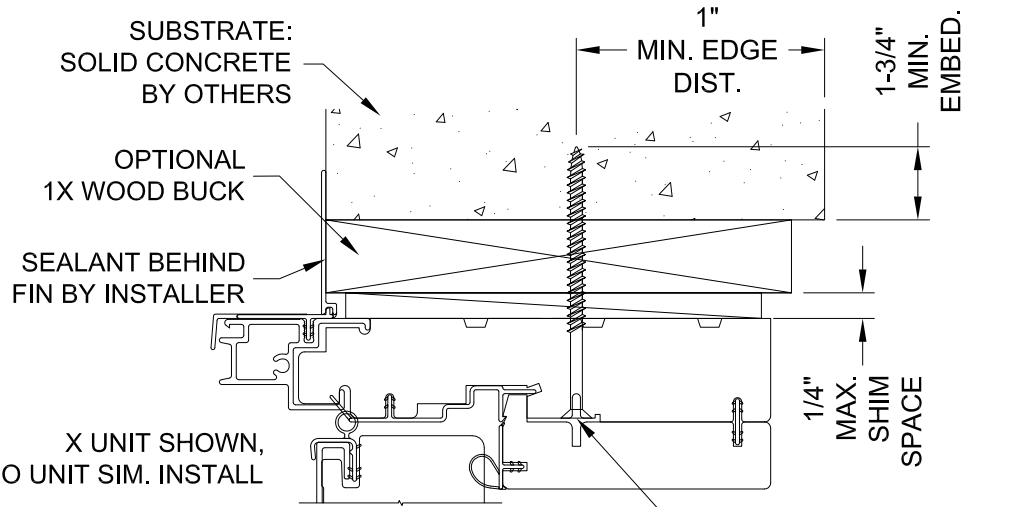


11/28/2023
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FL PE # 58201
TURNER ENGINEERING &
CONSULTING, INC.
2428 OLD NATCHEZ TRC. TRL.
CAMDEN, TN 38320
PH. 941-380-1574

REVISION			
C	UPDATED FOR 2023 FBC		11/28/23
MARVIN		WARROAD, MN, USA (218) 386-4021	
PRODUCT CATEGORY:		ULTIMATE OUTSWING FRENCH DOOR IZ4	
UNIT TYPE:		UOFD IZ4	
SHEET DESCRIPTION: THROUGH-FRAME INTO WOOD INSTALLATION			
SIZE: B	CLASS: ANCHOR	DWG NO: 1-3_4-OS-DOOR-FPA	
SCALE: NTS	DWG BY: LAT	DATE: 07/22/2015	SHEET: 3 of 6

ULTIMATE OUTSWING FRENCH DOOR IZ4 THROUGH-FRAME INTO CONCRETE/MASONRY INSTALLATION

MINIMUM SUBSTRATE: SOLID UNCRACKED CONCRETE AT HEAD AND SILL, 2850 PSI MIN. AT JAMBS, 2850 PSI UNCRACKED SOLID CONCRETE, OR ASTM C-90 CMU MASONRY



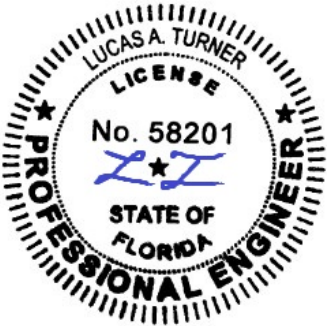
- ANCHOR NOTES:
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 3. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
 4. SHIMS SHALL BE LOAD-BEARING (PLASTIC OR METALLIC) AND CAPABLE OF TRANSFERRING LOADS TO SUBSTRATE.
 5. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.
 6. IN XX DOORS, REPLACE THE FOUR FACTORY SCREWS IN THE HEAD STRIKES WITH INSTALLATION ANCHORS OF THE SIZE, EDGE, AND EMBEDMENT CRITERIA SHOWN ON THIS SHEET.
 7. ENSURE 2-1/4" MIN. SPACING BETWEEN ANY TWO FASTENERS.

TYPICAL FRAME VERTICAL SECTION

TYPICAL JAMB HORIZONTAL SECTION

GENERAL NOTES

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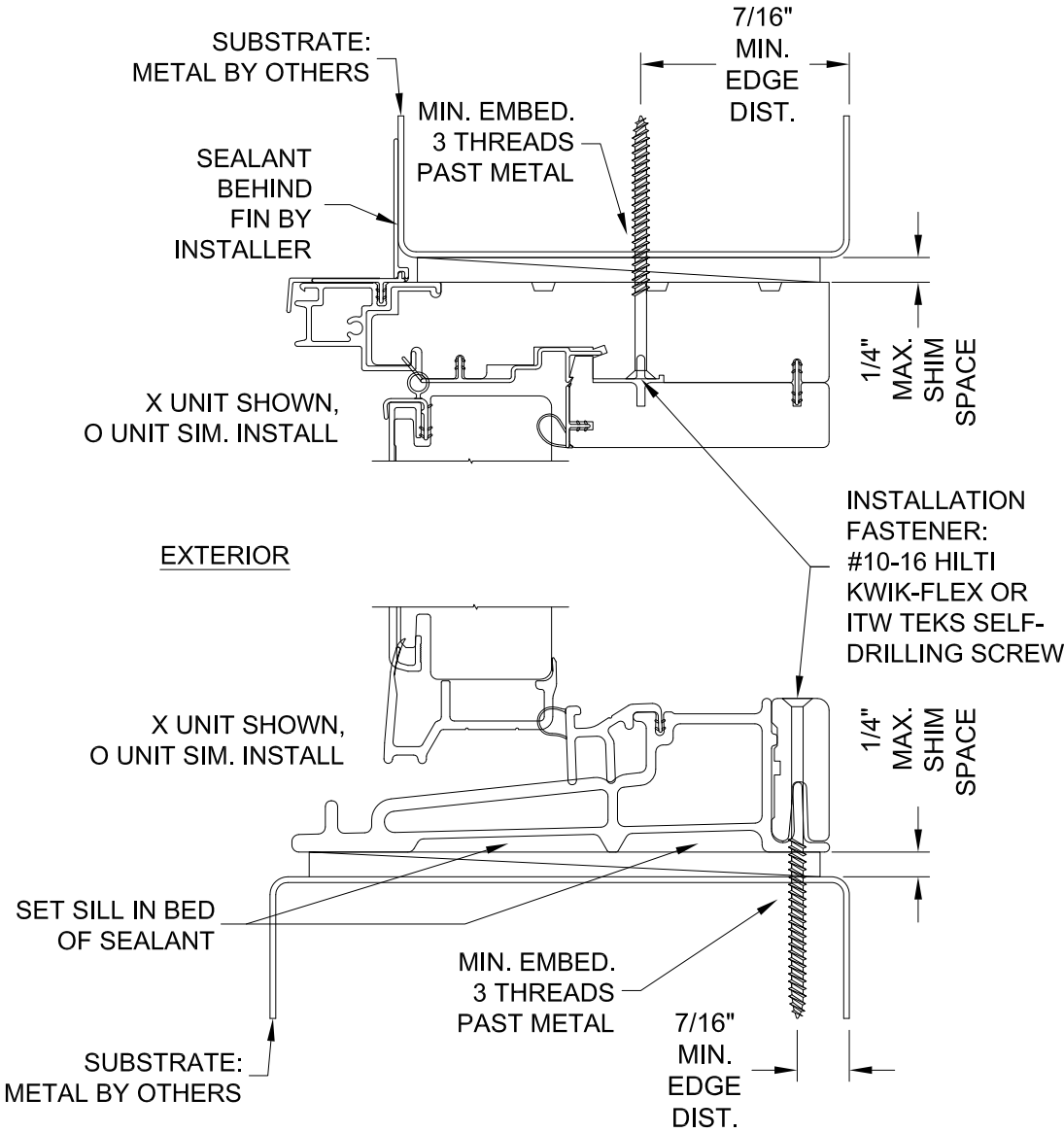


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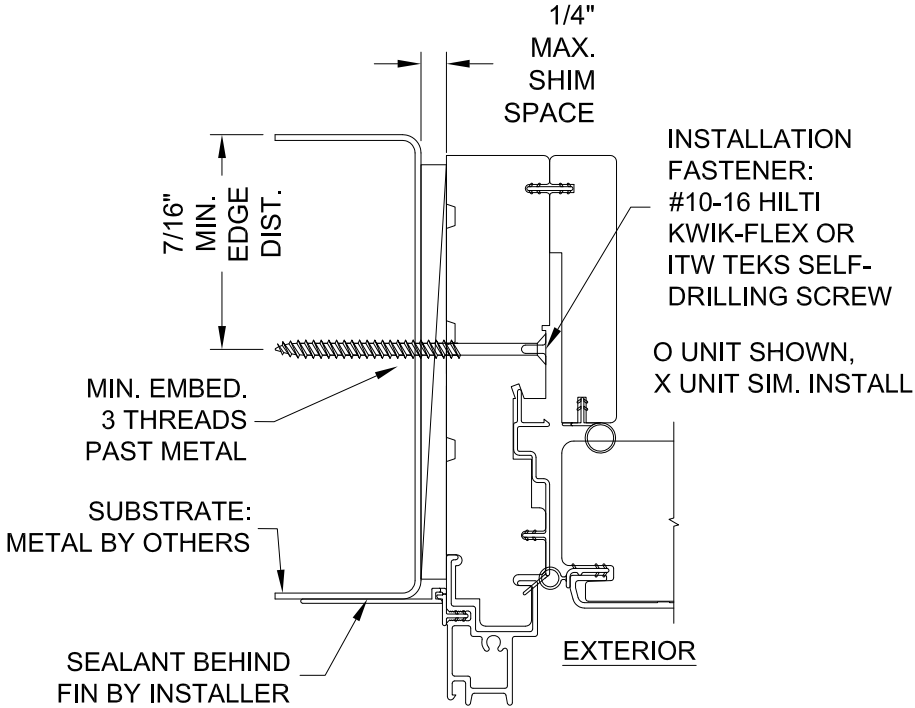
REVISION			
C	UPDATED FOR 2023 FBC		11/28/23
		WARROAD, MN, USA (218) 386-4021	
PRODUCT CATEGORY:		ULTIMATE OUTSWING FRENCH DOOR IZ4	
UNIT TYPE:		UOFD IZ4	
SHEET DESCRIPTION: THROUGH-FRAME INTO CONCRETE/MASONRY INSTALLATION			
SIZE: B	CLASS: ANCHOR	DWG NO: 1-3_4-OS-DOOR-FPA	
SCALE: NTS	DWG BY: LAT	DATE: 07/22/2015	SHEET: 4 of 6

ULTIMATE OUTSWING FRENCH DOOR IZ4 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 FRAME VERTICAL SECTION



TYPICAL JAMB HORIZONTAL SECTION

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 - 5. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.
 - 6. IN XX DOORS AT HEAD STRIKES, LEAVE #8 SCREW FROM FACTORY IN THE HOLE CLOSEST TO THE DOOR CENTER, IN THE STRIKE OF THE SECONDARY PANEL. REPLACE THE OTHER 3 FACTORY STRIKE PLATE SCREWS WITH INSTALLATION ANCHORS OF THE SIZE, EDGE, AND EMBEDMENT CRITERIA SHOWN ON THIS SHEET.

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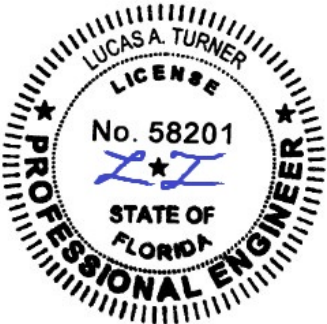
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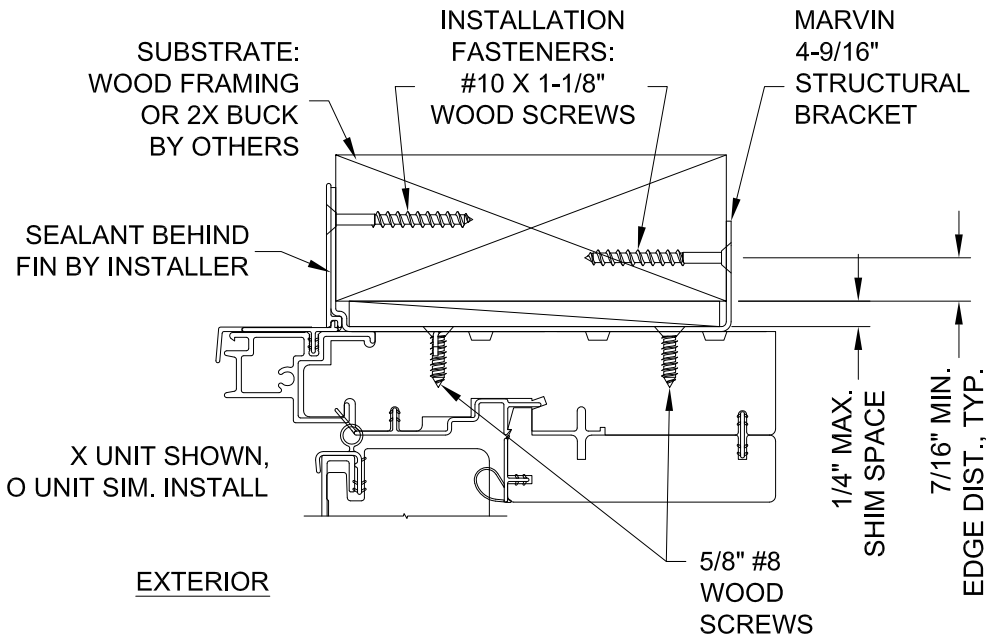


11/28/2023
LUCAS A. TURNER, P.E.
FL PE # 58201
TURNER ENGINEERING & CONSULTING, INC.
2428 OLD NATCHEZ TRC. TRL.
CAMDEN, TN 38320
PH. 941-380-1574

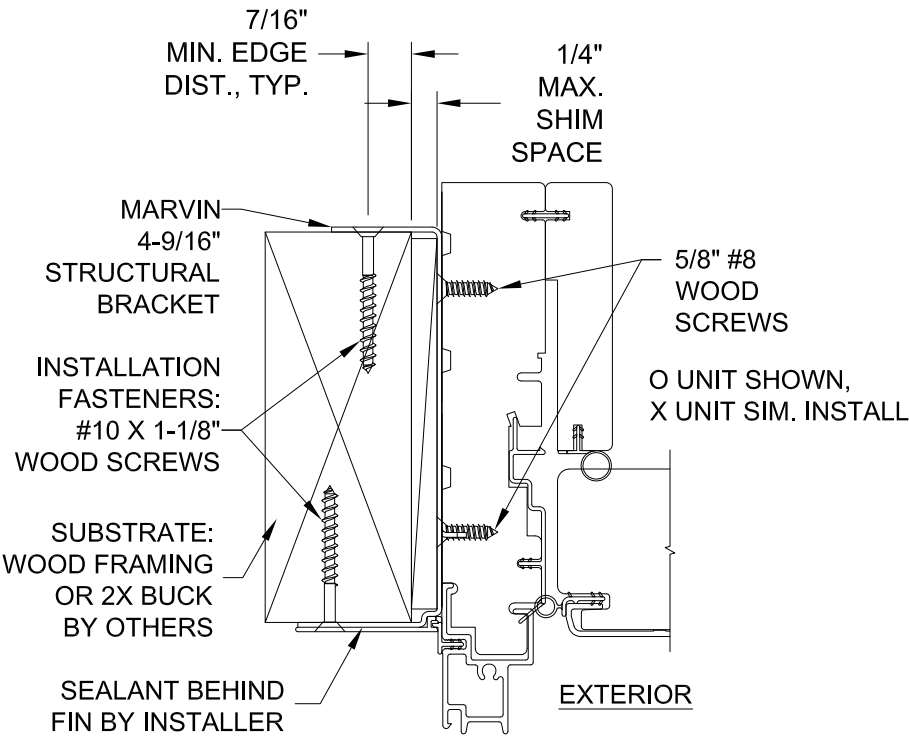
REVISION		
C	UPDATED FOR 2023 FBC	11/28/23
MARVIN  WARROAD, MN, USA (218) 386-4021		
PRODUCT CATEGORY: ULTIMATE OUTSWING FRENCH DOOR IZ4		
UNIT TYPE: UOFD IZ4		
SHEET DESCRIPTION: THROUGH-FRAME INTO METAL INSTALLATION		
SIZE: B	CLASS: ANCHOR	DWG NO: 1-3_4-OS-DOOR-FPA
SCALE: NTS	DWG BY: LAT	DATE: 07/22/2015
		SHEET: 5 of 6

ULTIMATE OUTSWING FRENCH DOOR IZ4 STRUCTURAL BRACKET INTO WOOD INSTALLATION

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



TYPICAL FRAME HEAD SECTION
(SEE SHEETS 3-5 FOR SILL)

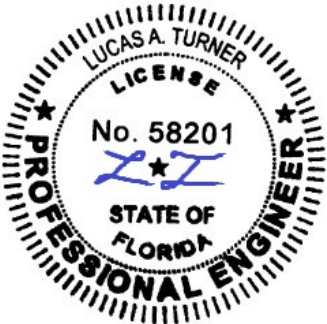


TYPICAL JAMB HORIZONTAL SECTION

- ANCHOR NOTES:
1. INSTALL ONE BRACKET WITH TWO ANCHORS INTO PRODUCT AND TWO ANCHORS INTO SUBSTRATE AT EACH LOCATION SHOWN IN THE ELEVATION, OTHER THAN HEAD ANCHORS THROUGH THE STRIKES. FOR HEAD STRIKE ANCHORS USE THE SAME INSTALLATION ANCHOR TYPE AND EDGE/EMBEDMENT AS SHOWN IN THE HEAD DETAILS ON SHEET 3.
 2. IF MARVIN 2X5 MULLS ARE USED, INSTALL ONE ANCHOR IN EACH HOLE SHOWN IN THE MULL CLIPS, SHEET 2. FOR MULL CLIPS USE THE SAME INSTALLATION ANCHOR TYPE AND EDGE/EMBEDMENT AS SHOWN IN THE HEAD/SILL DETAILS ON SHEET 3.
 3. INSTALL SHIMS AT EACH ANCHOR LOCATION WHERE A GAP OF 1/16" OR GREATER EXISTS BETWEEN PRODUCT FRAME AND SUBSTRATE.
 4. SHIMS SHALL BE LOAD-BEARING (PLASTIC OR METALLIC) AND CAPABLE OF TRANSFERRING LOADS TO SUBSTRATE.
 5. SPECIFIED ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL FINISH OR STUCCO.
 6. IN XX DOORS, REPLACE THE FOUR FACTORY SCREWS IN THE HEAD STRIKES WITH INSTALLATION ANCHORS OF THE SIZE, EDGE, AND EMBEDMENT CRITERIA SHOWN ON SHEET 3.

GENERAL NOTES

1. THIS DOCUMENT ADDRESSES ONLY PRODUCT ANCHORAGE TO ACHIEVE THE INDICATED DESIGN PRESSURES AT THE INDICATED SIZES, IN THE CONFIGURATIONS INDICATED ON SHEET1. INSTALL PRODUCTS WITH MAXIMUM SHIM GAP, MINIMUM EDGE DISTANCE AND EMBEDMENT, AND WITH FASTENER TYPE AS SHOWN IN THE DETAILS ON THIS SHEET. FOR FULL PRODUCT CONSTRUCTION DETAILS SEE ATI/INTERTEK TEST REPORTS E4537.01-201-18, E4538.01-201-18, E6024.01-201-18, AND E6025.01-201-18. 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.



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