WOLTERS ENGINEERING

ENGINEERING, DRAFTING, CONSULTING

15211 97th Road N West Palm Beach, FL 33412 Ph/Fx: (561) 225-1982

PRODUCT EVALUATION

PRODUCT: LUXBAUM EUROPEAN SERIES WOOD FIXED CASEMENT WINDOWS

MANUFACTURER: LUXBAUM WINDOWS & DOORS

2400 CENTREPARK WEST DRIVE, SUITE 150

WEST PALM BEACH, FL 33409

To all concerned,

The Luxbaum European Series Fixed Casement Window, manufactured by Luxbaum Windows & Doors, is a glazed wood window set in a wood frame. The window has been tested per TAS 201, 202, and 203 by Hurricane Test Lab, Inc. with results shown in test reports 0271-0406.05, 0271-0519-05, and 0271-0119-03.

Technical Documentation:

- 1. Drawing "EURO FIXED WINDOW", signed and sealed by Scott Wolters, PE.
- 2. Test Reports listed above by Hurricane Test Lab, Inc. signed and sealed by Vinu Abraham, PE.
- 3. Supplemental calculations to support "EURO FIXED WINDOW", signed and sealed by Scott Wolters, PE.

I have reviewed this submittal per the requirements of FAC Product Approval Rule Chapter 61G20-3.005 (4). Based on the limitations listed below and those provided in the documents above, this product meets all the requirements of the 5th Edition (2014) Florida Building Code generally, and chapters 10, 11, 16, 23, and 24 specifically, including the HVHZ provisions.

<u>Limitations</u>: This window is approved for use inside and outside of the HVHZ. It is large and small impact

resistant. Shutters are not required.

Overall Dimensions:

Maximum Frame Height: Varies – See elevations on Sheets 1-3.

Maximum Frame Width: Varies – See elevations on Sheets 1-3.

Maximum Design Pressure: See Design Pressure Table on Sheet 2

And elevations on Sheets 2-3.

Glazing Options:

9/16" Monolithic Laminated

1/4" Annealed

0.100" Saf-Glas Interlayer*

1/4" Annealed

9/16" Monolithic Laminated

1/4" Heat Strengthened

0.100" Saf-Glas Interlayer+

1/4" Heat Strengthened

9/16" Monolithic Laminated

1/4" Annealed

0.090" SGP Interlayer**

1/4" Annealed

1 1/8" Insulated Laminated
3/16" Heat Strengthened
0.090" SGP Interlayer**
3/16" Heat Strengthened
1/2" Air Space
3/16" Tempered

5/8" (min) CDX Plywood

- ⁺ I have evaluated the Saf-Glas interlayer (NOA# 13-1102.10) referenced above and find that is complies with the requirements of the 5th Edition (2014) Florida Building Code for use in this product.
- ⁺⁺ I have evaluated the SentryGlas interlayer (NOA# 11-0624.02) referenced above and find that is complies with the requirements of the 5th Edition (2014) Florida Building Code for use in this product.

If you have any questions or need more information concerning this approval please contact me.

Thank you,

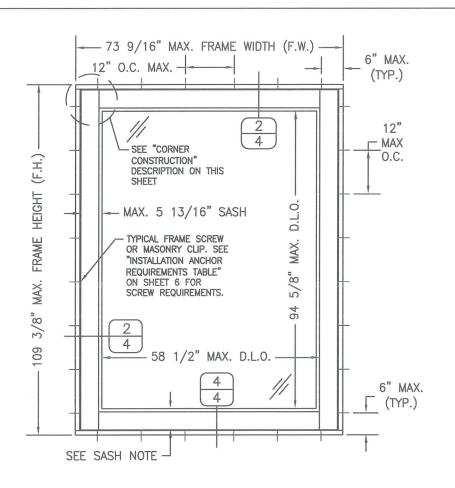
No 62354

Scott Wolters
FL PE# 62354

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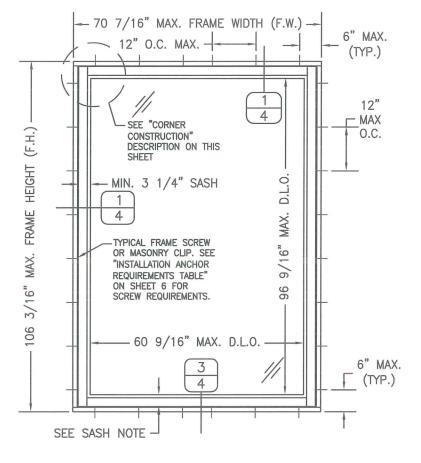
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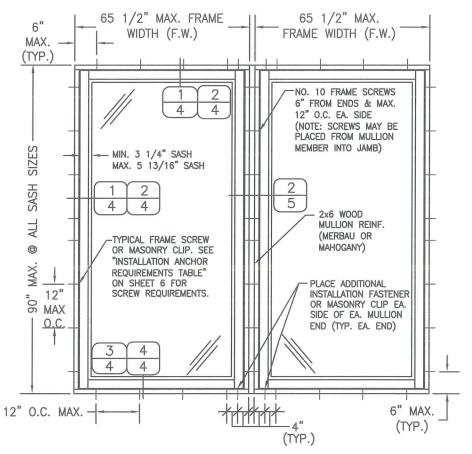
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EXTERIOR ELEVATION

SINGLE WINDOW WITH 5 13/16" SASH





EXTERIOR ELEVATION
SINGLE WINDOW WITH 3 1/4" SASH

EXTERIOR ELEVATION MULTIPLE WINDOW UNIT

(MAX. FOUR UNITS MAY BE COMBINED) SEE OTHER ELEVATIONS FOR WINDOW DETAILS

3. STACKING MAY BE HORIZONTAL OR VERTICAL

MULTIPLE UNIT NOTES:

- 1. TOTAL WIDTH OF ANY TWO MULLED WINDOWS SHALL BE 85 1/2" MAX. INCLUDING MULLION. ALL WINDOWS ARE RESTRICTED BY THE DIMENSIONS SPECIFIED.
- 2. THE MAXIMUM ALLOWABLE PRESSURE FOR A COMBINED UNIT IS RESTRICTED BY THE LESSER OF THE INDIVIDUAL WINDOW ALLOWABLE PRESSURE (SEE DESIGN PRESSURE TABLE ON SHEET 2) OR THE ALLOWABLE MULLION PRESSURE OF +65/-70 PSF

GENERAL NOTES

- 1. THIS APPROVAL APPLIES TO FIXED SINGLE (0) OR DOUBLE (00) IMPACT RESISTANT FIXED CASEMENT WINDOWS OR FIXED DOOR WINDOWS, CONSTRUCTED AND GLAZED AS INDICATED HEREIN.
- 2. ALLOWABLE DESIGN PRESSURES FOR THE SINGLE WINDOW ELEVATIONS ON SHEET 1 ARE AS SHOWN IN THE "ALLOWABLE WINDOW DESIGN PRESSURE TABLE" ON SHEET 2. FOR ALL OTHER ELEVATIONS THE ALLOWABLE DESIGN PRESSURES ARE AS NOTED BELOW FACH WINDOW FLEVATION.
- 3. THESE WINDOWS HAVE BEEN DESIGNED AND TESTED TO TAS 201, 202 & 203 PROTOCOLS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THEFLORIDA BUILDING CODE (FBC) INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ) PROVISIONS.
- 4. THESE WINDOWS AS SHOWN HEREIN ARE LARGE AND SMALL MISSILE IMPACT RATED, SHUTTERS ARE NOT REQUIRED.
- 5. WOOD OR MASONRY OPENINGS, 1x OR 2x WOOD BUCKS, AND BUCK FASTENERS, BY OTHERS, SHALL BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS IMPOSED BY THE GLAZING SYSTEM TO THE BUILDING STRUCTURE.
- 6. ANCHOR TYPE, SIZE, SPACING, AND EMBEDMENT SHALL BE AS SPECIFIED IN THESE DRAWINGS. ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL DRESSING OR STUCCO.
- 7. ALL FASTENERS PENETRATING INTO PRESSURE TREATED WOOD SHALL BE CAPABLE OF PREVENTING CORROSION DUE TO REACTION WITH PRESSURE TREATMENT CHEMICALS.
- 8. DISSIMILAR MATERIALS THAT COME INTO CONTACT SHALL BE PROTECTED TO PREVENT REACTIONS IN ACCORDANCE WITH FBC CHAPTERS 20 AND 23.
- 9. A WIND LOAD DURATION FACTOR Cd = 1.6 WAS USED FOR THE ANALYSIS OF WOOD SCREWS ONLY.
- 10. THE MERBAU WINDOWS LISTED IN THIS APPROVAL ARE CONSTRUCTED OF A NATURALLY DURABLE SPECIES (SPECIE SPECIFIC GRAVITY = 0.68) IN COMPLIANCE WITH FBC CHAPTER 23. OTHER NATURALLY DURABLE WOOD SPECIES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR ALL WOOD COMPONENTS.
- 11. MEMBERS NOTCHED AS NEEDED TO FIT HARDWARE AS SHOWN HEREIN.
- 12. RECTANGULAR WINDOWS SHOWN IN ELEVATIONS ON SHEETS 1 THRU 3 MAY ALSO BE OTHER SHAPES AS INDICATED IN APPROVED SHAPES BOX ON SHEET 2. ANCHORAGE OF SHAPED WINDOWS IS THE SAME AS RECTANGULAR, WITH REQUIRED ANCHOR SPACING ALONG THE FRAME RADIUS CIRCUMFERENCE BEING THE SAME AS SPECIFIED FOR A STRAIGHT FRAME.
- 13. THE LONG DIMENSION OF THE WINDOW MAY BE HORIZONTAL OR VERTICAL (WIDTH AND HEIGHT AS INDICATED IN THIS DRAWING MAY BE INTERCHANGED)
- 14. WHEN THIS WINDOW IS USED AS A DOOR SIDE LIGHT, THE SILL SASH HEIGHT MAY BE INCREASED TO EQUAL THE DOOR PANEL BOTTOM RAIL HEIGHT (PER SEPARATE APPROVAL).
- 15. SUBSTRATES SHALL MEET THE MINIMUM STRENGTH REQUIREMENTS AS SHOWN IN INSTALLATION ANCHOR REQUIREMENTS TABLE ON SHEET 2. CONCRETE OR MASONRY SUBSTRATES SHALL NOT BE CRACKED. FOR INSTALLATION TO METAL SUBSTRATES, ANCHORS SHALL BE LONG ENOUGH TO BE FULLY THREADED THROUGH THE METAL THICKNESS WITH AN ADDITIONAL 3/16" MIN. OF THREADS BEYOND.

ALLOWABLE DESIGN PRESSURES:

SEE NOTE 2

CORNER CONSTRUCTION

JAMB & SILL CORNERS: VERTICAL JAMB ENDS ARE COPED AND BUTTED TO HORIZONTAL JAMBS WITH JOINT FULLY GLUED WITH WOOD GLUE AND DOWELED WITH (3) 1/2" DIA. x 3 5/16" LONG MERBAU WOOD DOWELS. PANEL CORNERS: HORIZONTAL SASH ENDS ARE COPED AND BUTTED TO VERTICAL SASH PROFILES WITH JOINT FULLY GLUED WITH WOOD GLUE AND DOWELED WITH (4) 1/2" DIA. x 3 7/16" AND (3) 5/8" DIA. x 3 1/4" MERBAU WOOD DOWELS.

BOTTOM RAIL TO STILE CORNERS: HORIZONTAL SASH ENDS ARE COPED AND BUTTED TO VERTICAL SASH PROFILES WITH JOINT FULLY GLUED WITH WOOD GLUE AND DOWELED WITH (7) 1/2" DIA. x 3 7/16" AND (5) 5/8" DIA. x 3 1/4" MERBAU WOOD DOWELS.

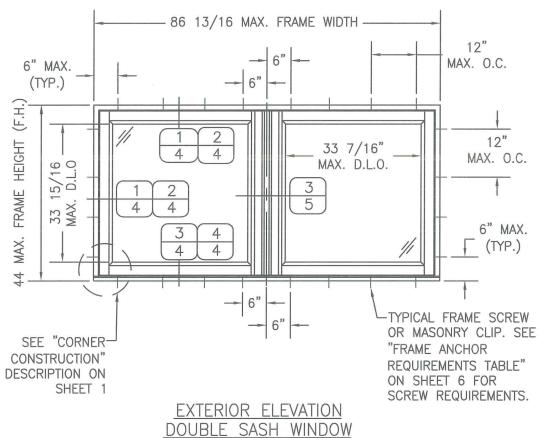
FIXED PANEL SASH CORNERS: HORIZONTAL SASH ENDS ARE COPED AND BUTTED TO VERTICAL SASH PROFILES WITH JOINT FULLY GLUED WITH WOOD GLUE AND DOWELED WITH (2) 1/2" DIA. x 3 7/16" AND (1) 5/8" DIA. x 3 1/4" MERBAU WOOD DOWELS.



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	(A		ALLOWABLE W				N PSF)	
(APPLICABLE TO SINGLE WINDOWS SHOWN ON SHEET 1, PRESSURES IN PSF) WINDOW WIDTH (IN.)								
5 13/16" SASH GLASS OPTION			78 & BELOW	84	90	96	102	109 3/8
	I	1 OR 3	±75	±75	±75	±75	±75	±75
	48 & BELOW	2	±75	±75	±75	±75	±75	±75
		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
		1 OR 3	±75	±75	±75	±75	±75	±75
∵	54	2	±75	±75	±75	±75	±75	±75
	0-1	4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
도		1 OR 3	±75	±75	±75	±75	±75	±72.6
EIC	60	2	±75	±75	±75	±75	±75	±75
WINDOW HEIGHT (IN.)		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
Ó		1 OR 3	±75	±75	±75	±75	±70.7	±65.3
Ĭ	66	2	±75	±75	±75	±75	±75	±75
>	00		75.5			+65/-70	+65/-70	+65/-70
		4	+65/-70	+65/-70	+65/-70			
	73 9/16	1 OR 3	±75	±75	±73.2	±68.5	±64	±59.1
		2	±75	±75	±75	±75	±75	±75
		4	÷65/-70	+65/-70	+65/-70	+65/-70	+65/-70	÷65/-70
3 1/A" SASH		GLASS	WINDOW WIDTH (IN.)					
		OPTION	78 & BELOW	84	90	96	102	106 3/16
	48 & BELOW	1 OR 3	±75	±75	±75	±75	±75	±75
		2	±75	±75	±75	±75	±75	±75
		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
_	54	1 OR 3	±75	±75	±75	±75	±75	±72.6
Ä.		2	±75	±75	±75	±75	±75	±75
Ė		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
<u>ত</u>	60	1 OR 3	±75	±75	±75	±72.2	±67.9	±64.9
뿐		2	±75	±75	±75	±75	±75	±75
8		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
MINDOW HEIGHT (IN.)		1 OR 3	±75	±75	±71.2	±66.7	±62.1	±59.5
\geq	66	2	±75	±75	±75	±75	±75	±75
		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70
		1 OR 3	±75	±72.5	±67.6	±62.9	±59.3	±56.5
	70 7/16	2	±75	±75	±75	±75	±75	±75
		4	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70	+65/-70

DESIGN PRESSURE NOTES:
1. GLASS OPTIONS 1
THRU 4 ARE AS SHOWN
IN DETAILS ON SHEET 5.
2. HEIGHT & WIDTH MAY
BE INTERCHANGED SUCH
THAT LONG DIMENSION IS
HORIZONTAL OR VERTICAL.



ALLOWABLE DESIGN PRESSURE FOR THIS WINDOW = +/-75 PSF

SCALE: 1/2"=1'-0"

APPROVED SHAPES

APPROVED SHAPES

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NOTES:

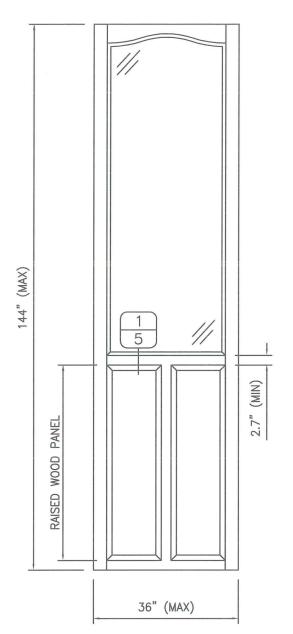
1. OTHER SHAPES MAY APPLY PROVIDED THEY ARE SIMILAR TO THOSE SHOWN & HAVE CORNER CONSTRUCTION AS DESCRIBED ON SHEET 1.

2. ALL SHAPED UNITS MUST FIT INSCRIBED INTO THE ALLOWABLE RECTANGULAR UNITS & BE GOVERNED BY THE ALLOWABLE PRESSURE OF THE RESPECTIVE RECTANGULAR UNIT.

TYPICAL FRAME SCREW OR MASONRY CLIP. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON SHEET 6 FOR SCREW REQUIREMENTS.	EUROPEAN SERIES WOOD FIXED CASE	WINDOWS 2400 CENTREPARK WEST DR, SUITE 11 WEST PALM BEACH, FL 33409
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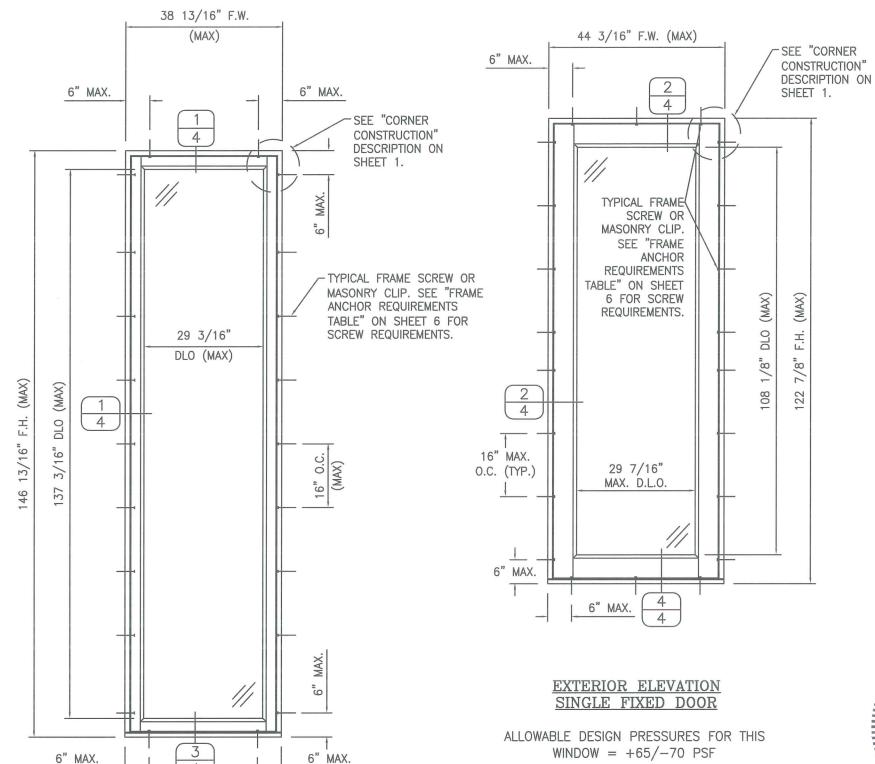
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EXTERIOR ELEVATION PARTIAL RAISED PANEL WITH STANDARD MID-RAILS

ALLOWABLE DESIGN PRESSURES FOR THIS WINDOW = +65/-70 PSF

- 1. TOP & MID RAILS MAY BE OF ANY CONFIGURATION PROVIDING THE SMALLEST CROSS SECTION OF RAILS IS EQUAL TO OR LARGER THAN THAT DETAILED IN DRAWINGS.
- 2. MULTIPLE MID RAIL (BOTH HORIZONTAL & VERTICAL) MAY BE USED WITH THESE PANELS.
- 3. STANDARD PARTIAL PANEL CONDITION IS SHOWN ABOVE. OTHER PARTIAL PANEL CONFIGURATIONS ARE ALSO PART OF THIS APPROVAL, PROVIDING THEY ARE SIMILAR IN CONSTRUCTION TO THAT SHOWN ABOVE.
- 4. PANEL ONLY IS SHOWN. FOR INSTALLATION INTO FRAME, SEE OTHER ELEVATIONS.



EXTERIOR ELEVATION ALTERNATE SINGLE FIXED PANEL

ALLOWABLE DESIGN PRESSURES FOR THIS WINDOW = +65/-70 PSF

WINDOW = +65/-70 PSF

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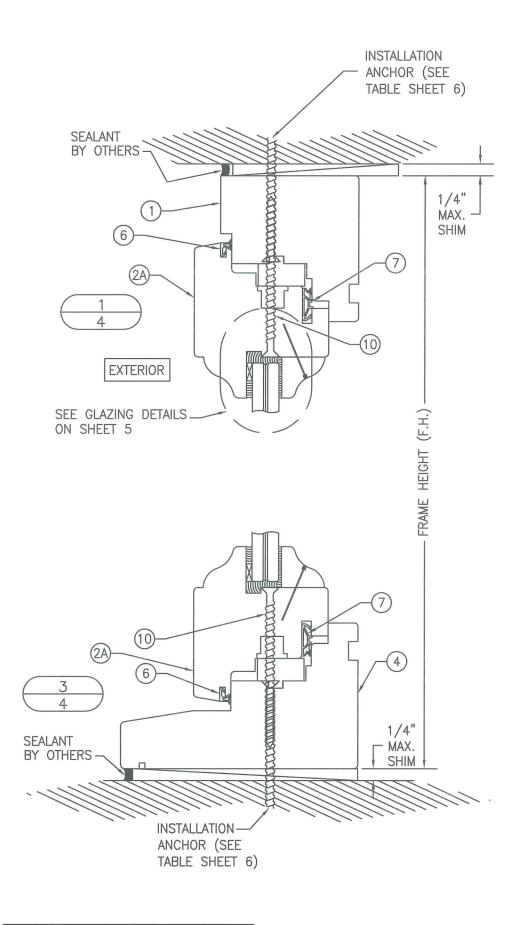
WINDOW

EURO FIXED WINDOW

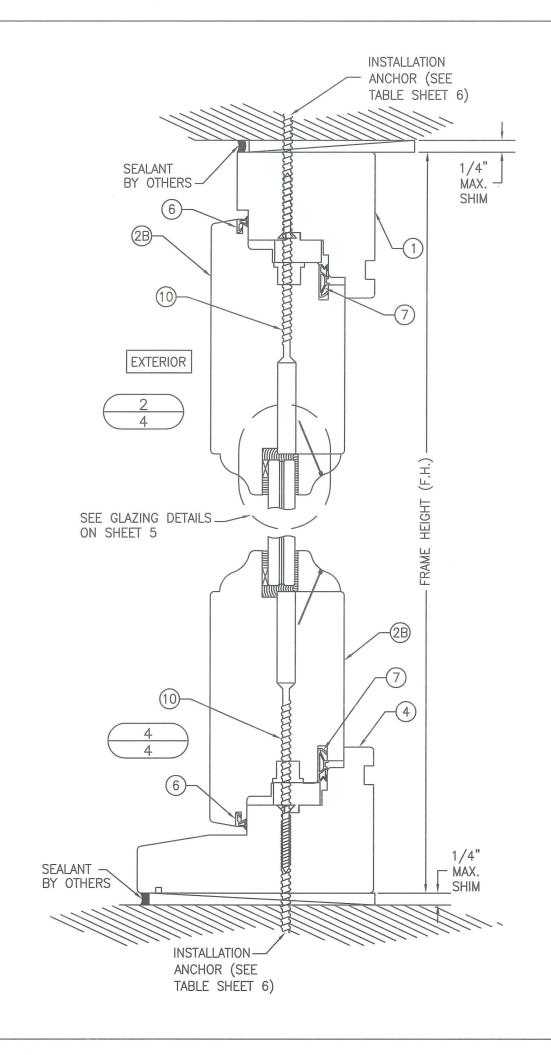
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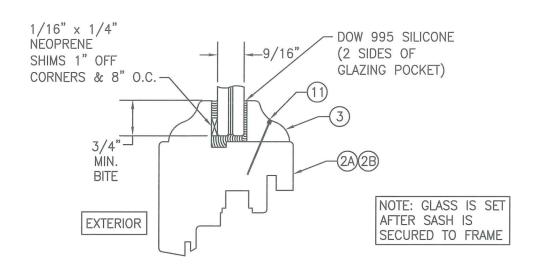
3 of 7



NOTE: BRICK MOLDS MAY BE PLACED WITH WINDOW & ARE OPTIONAL (NOT SHOWN)



	DATE: 5/2/14								
	DATE	6/12/15							
	REVISION DESCRIPTION	1 UPDATED TO 2014 FBC							
	NO.	-							
	EUROPEAN SERIES WOOD FIXED CASEMENT WINDOWS				AGOOG + AWOONIW		2400 CENTREPARK WEST DR, SUITE 150 Ph: (561) 684-1500	■ WEST PALM BEACH, FL 33409 www.luxbaum.com	
MINITED WOLLD	SEALT	SCOTT WOLTERS	The same of the sa	k Pi	WOLTERS ENGINEERING STATE OF COMPANY (COA# 77194)	15211 97TH ROAD N	WEST PALM BEACH, FL 33412		MALLIN
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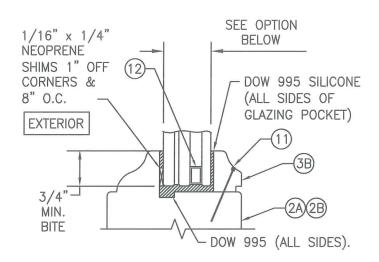


GLAZING DETAIL

OPTION 1: 9/16" SAF-GLAS POLYCARBONATE LAMINATED GLASS (1/4" A.N./0.015 ADHESIVE/0.07 POLYCARBONATE/0.015 ADHESIVE/1/4" A.N.)

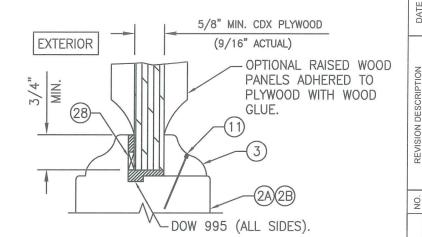
OPTION 2: 9/16" SAF-GLAS POLYCARBONATE LAMINATED GLASS (1/4" HT.ST./0.015 ADHESIVE/0.07 POLYCARBONATE/0.015 ADHESIVE/1/4" HT.ST.)

OPTION 3: 9/16" DUPONT SENTRYGLAS IONOPLAST LAMINATED GLASS (1/4" A.N./0.09 SGP/1/4" A.N.)



I.G. GLAZING DETAIL

OPTION 4: 1 1/8" INSULATED LAMINATED GLASS (3/16" H.S./0.09 SGP/3/16" H.S. EXTERIOR & 1/2" AIR SPACE & 3/16" TEMPERED INTERIOR)



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WINDOW

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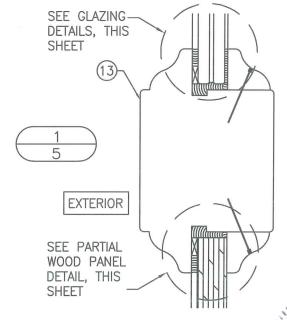
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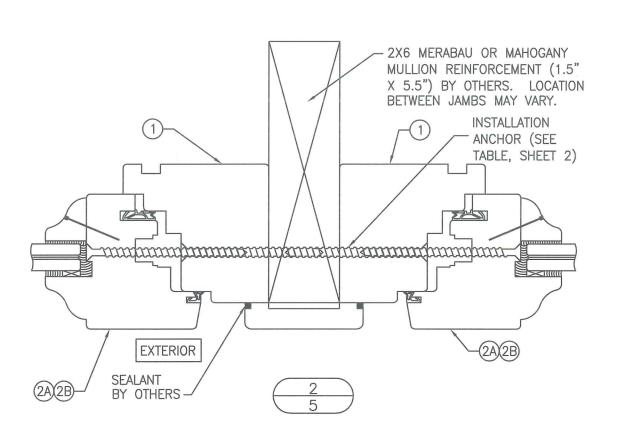
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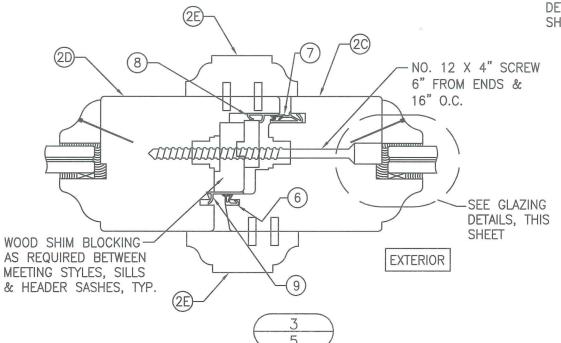
EURO FIXED WINDOW

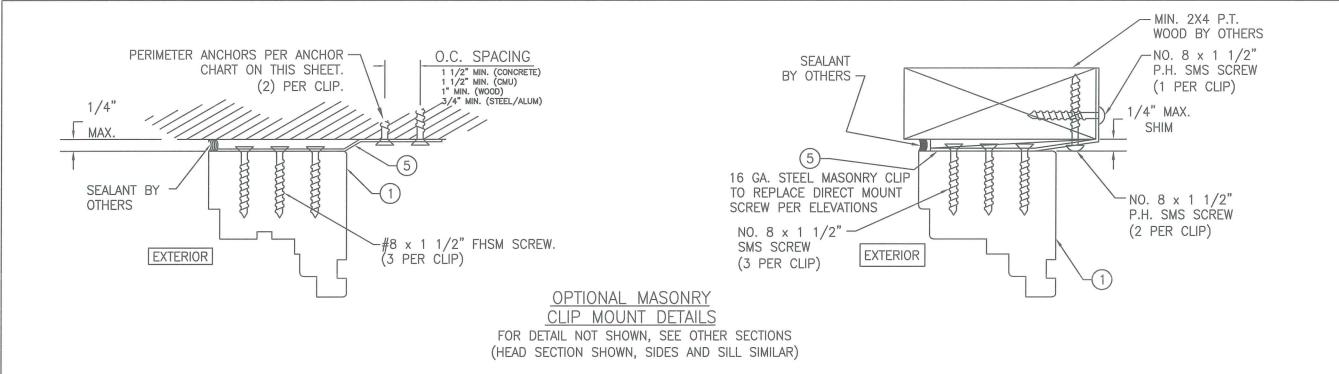
5 of 7

PARTIAL WOOD PANEL DETAIL



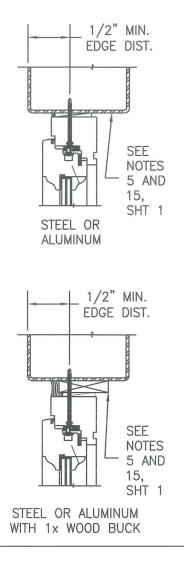






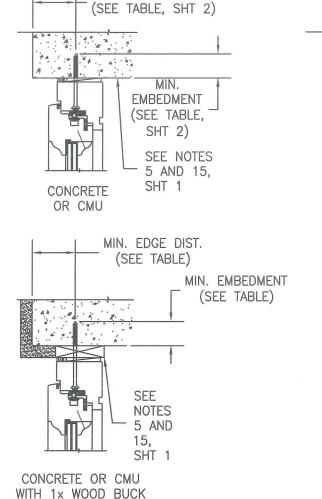
INSTALLATION ANCHOR REQUIREMENTS TABLE

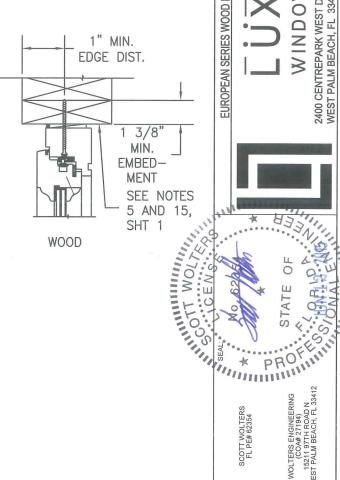
ID	SUBSTRATE	ANCHOR	MIN. EMBEDMENT	MIN. EDGE DISTANCE
Α	CONCRETE OR GROUT- FILLED CMU (2000 PSI MIN)	1/4" ITW COATED CARBON STEEL TAPCON	1 1/2"	3"
В	CONCRETE (3000 PSI MIN)	1/4" ITW 410 STAINLESS TAPCON	1 3/4"	2 1/2"
С	CONCRETE OR GROUT- FILLED CMU (2850 PSI MIN)	1/4" ELCO COATED CARBON STEEL ULTRACON	1 3/4"	2 1/2"
D	CONCRETE (3000 PSI MIN)	1/4" HILTI COATED CARBON STEEL OR STAINLESS STEEL KWIK-CON II	1"	2 1/2"
Е	HOLLOW OR GROUT- FILLED CMU (ASTM C-90)	1/4" HILTI COATED CARBON STEEL OR STAINLESS STEEL KWIK-CON II	1"	2 1/2"
F	2×MIN. SOUTHERN PINE WOOD (G=0.55 MIN)	#12 GRADE 5 WOOD SCREW	1 3/8"	1"
G	16 GAUGE (0.060") MIN. STEEL STUD 33 KSI YIELD MIN.	#12-24 ITW TEKS SELF-DRILLING SCREW	SEE NOTE 15, SHEET 1	1/2"
Н	1/8" ALUM. 6063-T5 MIN. OR 1/8" STEEL 33 KSI MIN.	#12 GRADE 5 SELF-TAPPING / DRILLING SCREW	SEE NOTE 15, SHEET 1	1/2"



TYPICAL ANCHOR CONDITIONS

MIN. EDGE DIST.





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WINDOW

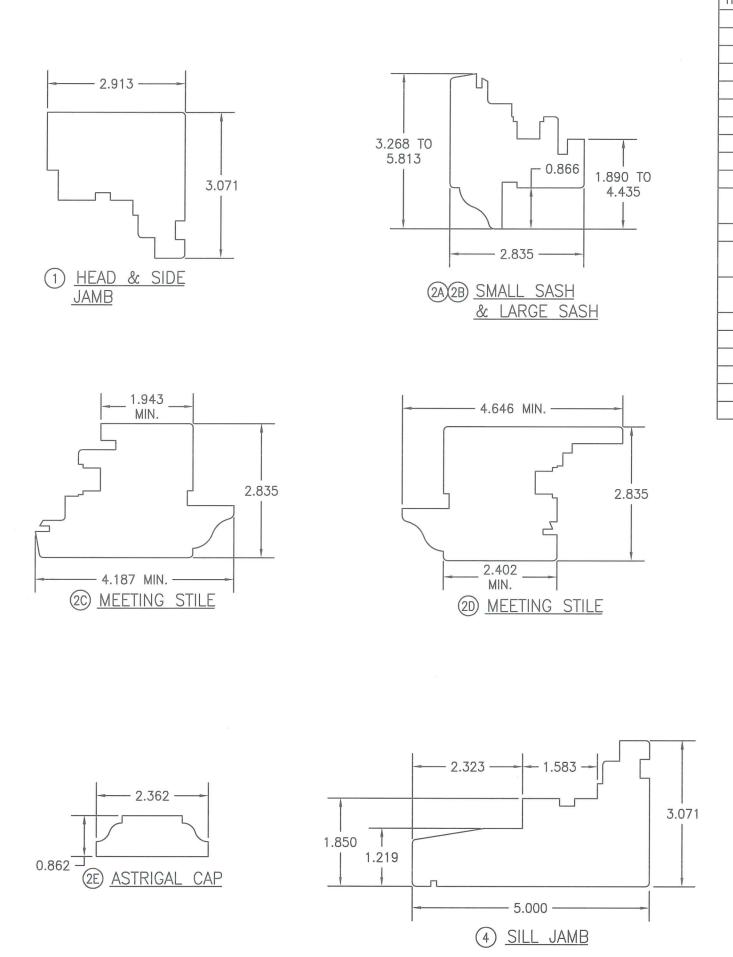
DRAWING NO.

SHEET NO.

EURO FIXED WINDOW

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	ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES				
	PARTS							
	1	7478	FRAME HEAD & SIDE JAMB	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	DATE			
	2A	7283	SMALL SASH	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY				
	2B	72148	LARGE SASH	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY				
	2C	72106	MEETING STYLE SASH	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	z			
	2D	72118	MEETING STYLE SASH	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	PTIO			
	2E	2260	ASTRIGAL CAP	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	REVISION DESCRIPTION			
L	3	2223	GLAZING BEAD / GLASS STOP	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	I DE			
	3B	1522	I.G. GLAZING BEAD / GLASS STOP	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	SION			
	4	78127	SILL JAMB	MIN. SELECT STRUCTURAL MERBAU OR MAHOGANY	ZEVI			
	5	-	1 5/8" WIDE x 0.05" THK. x MIN. 5" LONG	ASTM A653 MIN. 33 KSI GALV.				
			MASONARY CLIP	STEEL				
L			SEALS AND SEALANTS		Ö			
	6	SV-33/	COMPRESSION SEAL	DEVENTER/G-U				
L		ACF-4527						
	7	SV-12/	COMPRESSION SEAL	DEVENTER/G-U				
		ACF-6950						
	8	S6544	COMPRESSION SEAL	DEVENTER/G-U	S			
L	9	S6544	COMPRESSION SEAL	DEVENTER/G-U				
L	MISCELLANEOUS PARTS AND FASTENERS							
L	10	_	#12 x 4" PFH SMS SCREW	4" FROM CORNERS & 12" O.C.				
L	11	_	1/4" x 1 1/4" BRAD NAIL	2" FROM CORNERS & 4" O.C.				
L	12	_	ALUMINUM INS. GLASS SPACER	CARDINAL I.G.				
					IXED CASEMENT WINDOWS			

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OORS Ph: (561) 68

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SCOTT WOLTERS FL PE# 62354

SHEET NO.

DRAWING NO.

EURO FIXED WINDOW

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