

WOLTERS ENGINEERING

ENGINEERING, DRAFTING, CONSULTING

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

PRODUCT EVALUATION

PRODUCT: LUXBAUM DOUBLE HUNG WOOD WINDOWS

MANUFACTURER: LUXBAUM WINDOWS & DOORS
1501 NORTHPOINT PARKWAY, SUITE 101
WEST PALM BEACH, FL 33407

To all concerned,

The Luxbaum Double Hung Wood 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 0271-0304-07.

Technical Documentation:

1. Drawing "DOUBLE HUNG", 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 "DOUBLE HUNG", 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.

Limitations: This window is approved for use inside and outside of the HVHZ. It is large and small impact resistant. Shutters are not required. The window is limited as detailed in drawing "DOUBLE HUNG"

<u>Overall Dimensions:</u>	Maximum Frame Height:	108" (Single) 168" (With Transom)
	Maximum Frame Width:	62" (Single – windows can be mulled together in unlimited widths)
	Maximum Design Pressure:	+/- 75 psf


Glazing Options:

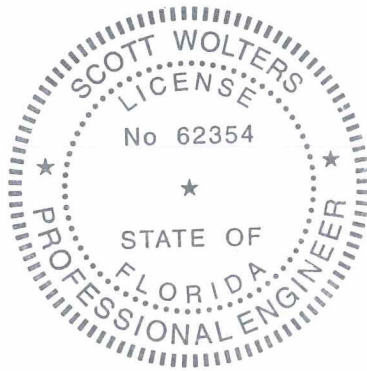
1 1/8" Insulated Laminated
3/16" Heat Strengthened
0.090" SentryGlas Interlayer
3/16" Heat Strengthened
1/2" Air Space
3/16" Tempered

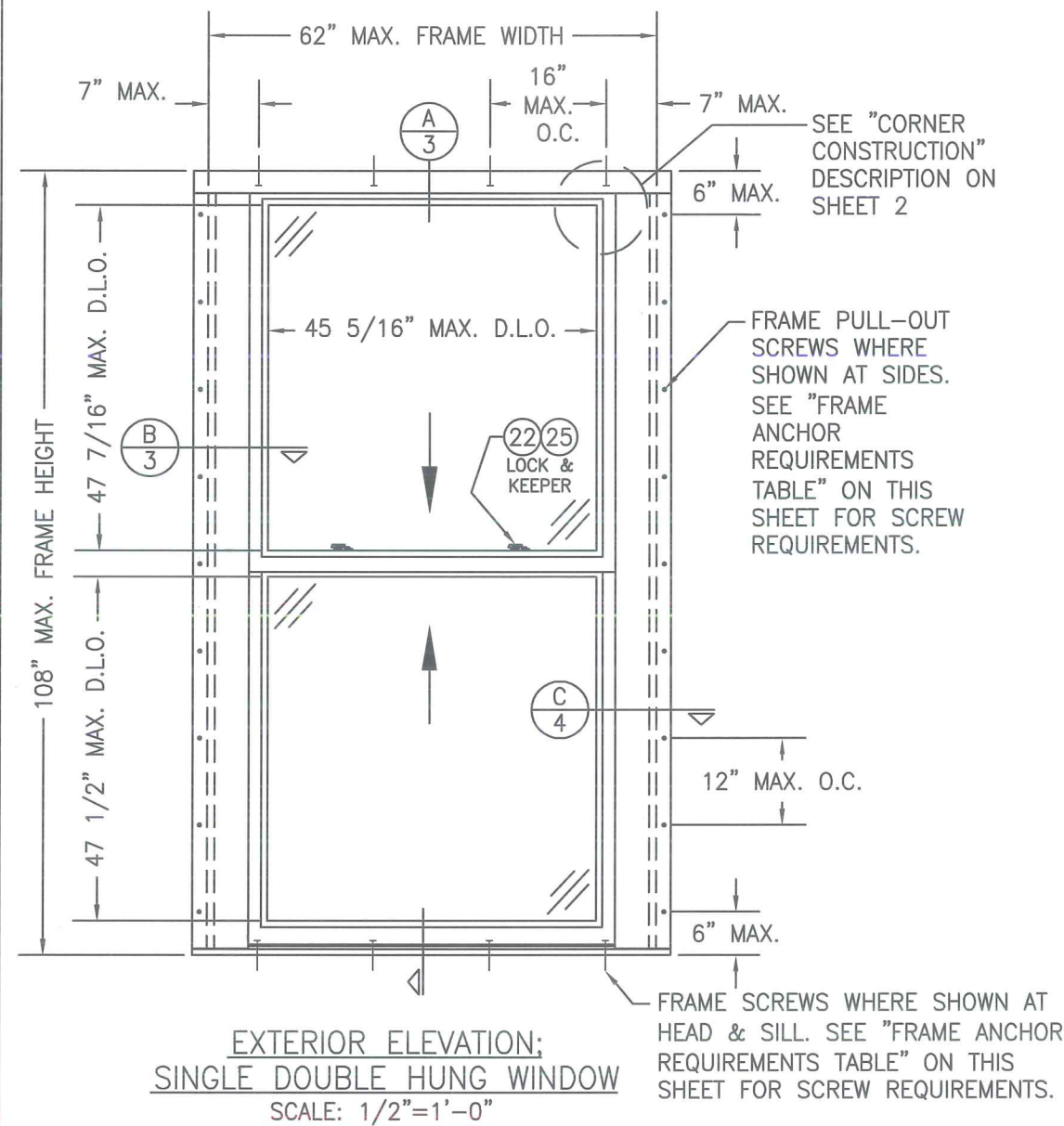
9/16" Monolithic Laminated
1/4" Heat Strengthened
0.090" SentryGlas Interlayer
1/4" Heat Strengthened

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

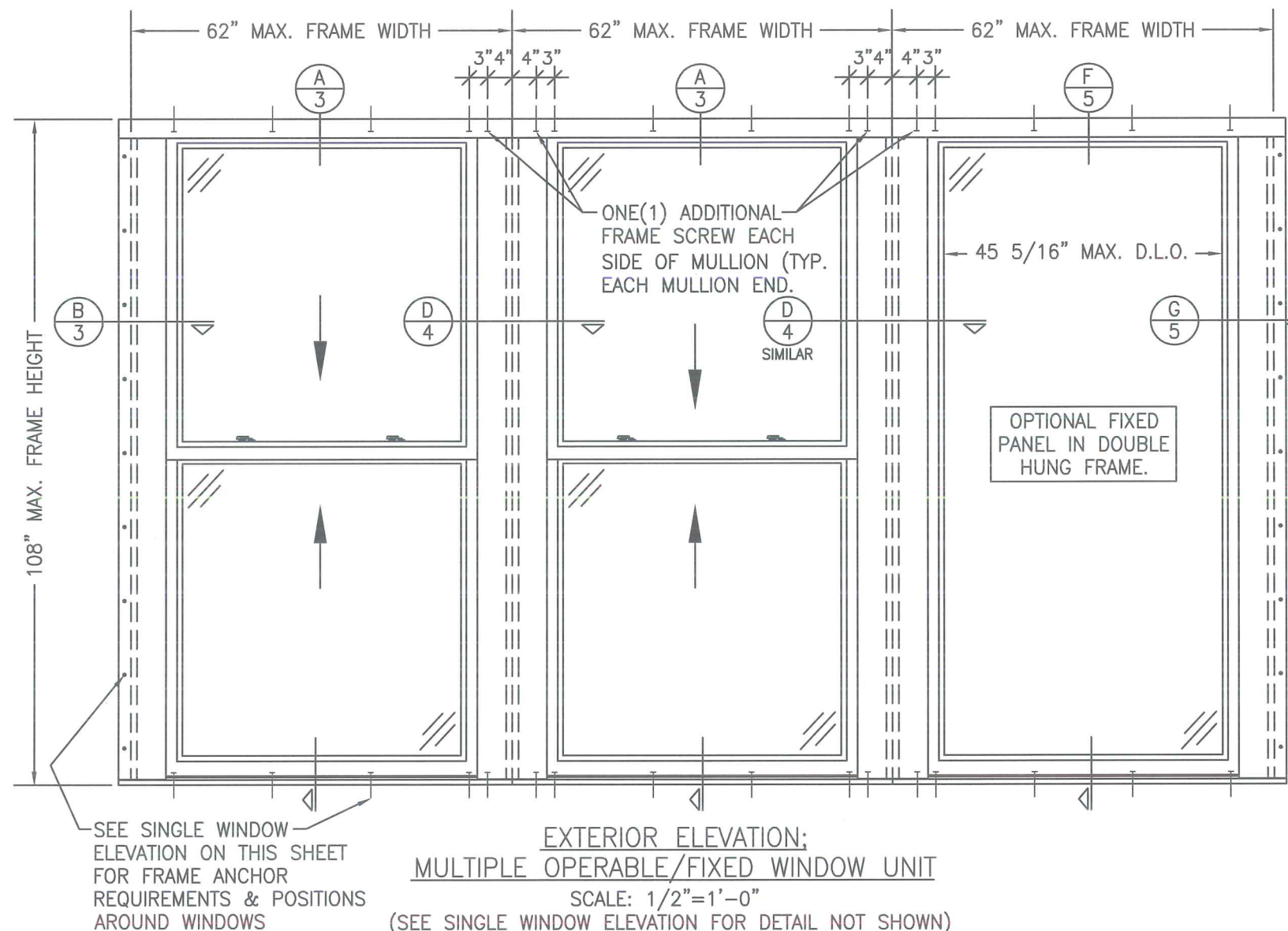
Thank you,


Scott Wolters
FL PE# 62354
OCT 30 2015





EXTERIOR ELEVATION;
SINGLE DOUBLE HUNG WINDOW
SCALE: 1/2"=1'-0"



EXTERIOR ELEVATION;
MULTIPLE OPERABLE/FIXED WINDOW UNIT
SCALE: 1/2"=1'-0"

(SEE SINGLE WINDOW ELEVATION FOR DETAIL NOT SHOWN)
NOTE: THERE IS NO LIMIT ON THE NUMBER OF WINDOWS THAT MAY BE COMBINED IN ONE DIRECTION INTO ONE OPENING PROVIDING THE OPENING IS DESIGNED TO SUPPORT ALL LOADS TRANSFERRED FROM THE WINDOWS & THEIR MULLIONS.

GENERAL NOTES

1. THESE WINDOW SYSTEMS HAVE BEEN TESTED, ANALYZED AND APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN LOADS" TABLE(S).
2. BUCKING, OPENINGS & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
3. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS.
4. THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH THE CURRENT EDITION OF THE FLORIDA BUILDING CODE PROTOCOLS TAS-201, 202 & 203 FOR LARGE MISSILE IMPACT WINDOWS.
5. THESE WINDOW SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT EDITION OF THE FLORIDA BUILDING CODE (FBC) INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ) PROVISIONS.
6. IMPACT SHUTTERS ARE NOT REQUIRED WITH THESE WINDOWS.
7. ALL ANCHORS SHALL BE INSTALLED AS SPECIFIED ON THESE DRAWINGS. SPECIFIED EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
8. ALL FRAME ANCHORS SECURING WINDOW/DOOR FRAME TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
9. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE FLORIDA BUILDING CODE, CHAPTERS 20 & 23.
10. DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE & GOVERNING WIND VELOCITY.
11. NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT. WIND LOAD DURATION FACTOR $C_d = 1.6$ WAS USED FOR WOOD SCREW DESIGN.

ALLOWABLE DESIGN PRESSURE	
+65/-72 PSF	
ALL SINGLE AND MULLED UNITS	

FRAME ANCHOR REQUIREMENTS TABLE			
PULL-OUT SCREWS (SIDES)			
OPENING TYPE (SUBSTRATE)	FRAME TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
2X8 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 10 SMS OR WOOD SCREW	1 1/2"	1/2"
FRAME SCREWS (HEAD & SILL)			
2X8 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 14 SMS/WOOD SCREW OR 1/4" BTI SCREW	1 1/4"	3/4"
MIN. 3000 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 1/4"	2 1/2"
(1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS, ITW RAMSET/RED HEAD TAPCONS, HILTI KWIK-CON II'S, OR POWERS RAWL TAPPERS (HARDENED STEEL OR S.S.).			

DATE: 8/26/14

DATE

10/30/15

REVISION DESCRIPTION

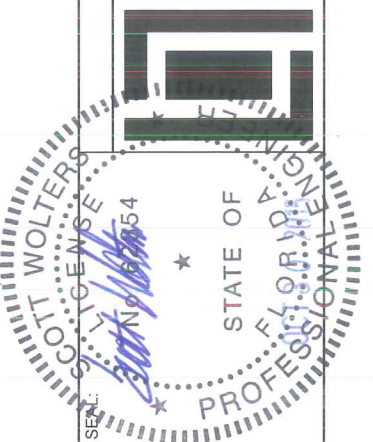
2014 FBC CODE UPDATE

NO.

1

DOUBLE HUNG WOOD WINDOWS

LUXBAUM LLC
WINDOWS + DOORS
1501 NORTHPOINT PARKWAY, SUITE 101
WEST PALM BEACH, FL 33407
Ph: (561) 684-1500
www.luxbaum.com



SCOTT WOLTERS
FL PE# 62354

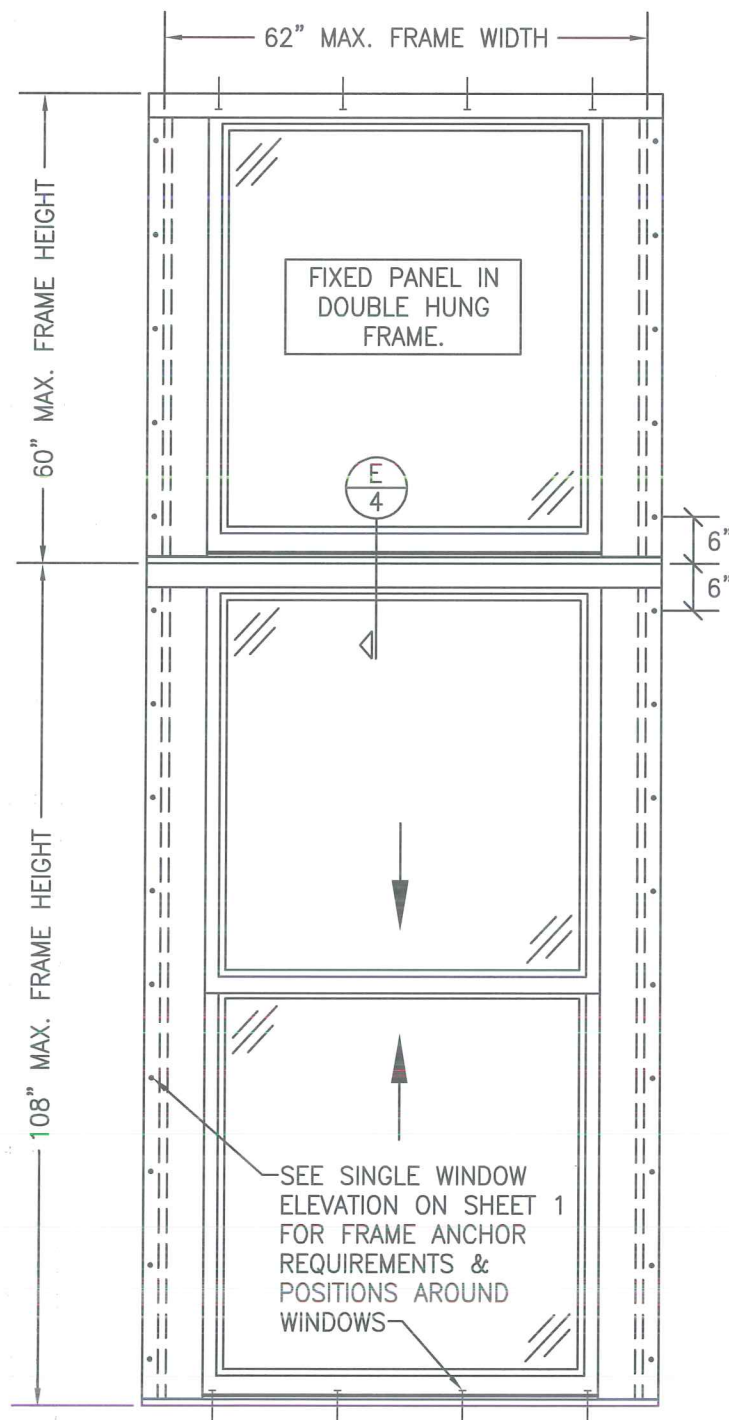
WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412

DRAWING NO.

DOUBLE HUNG

SHEET NO.

1 OF 6



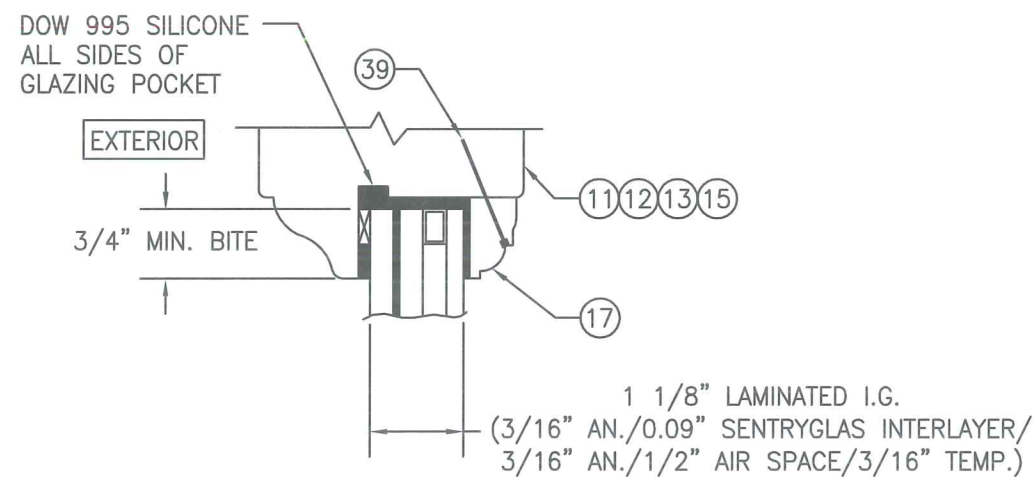
EXTERIOR ELEVATION;
SINGLE DOUBLE HUNG WINDOW WITH TRANSOM
SCALE: 1/2"=1'-0"
(SEE SINGLE WINDOW ELEVATION FOR DETAIL NOT SHOWN)

CORNER CONSTRUCTION

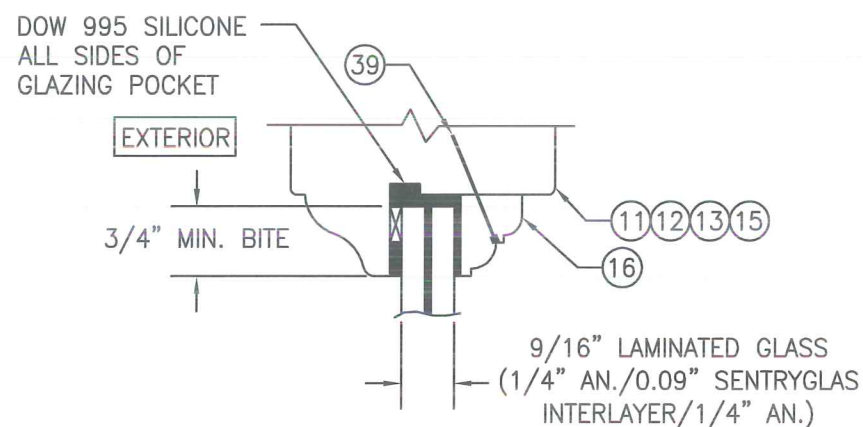
HEAD JAMB CORNERS: THE SECONDARY JAMB (ITEM #3B) & HEAD (ITEM #1) MEMBERS ARE SQUARE CUT & BUTTED TOGETHER. THE SECONDARY JAMB MEMBERS ARE MECHANICALLY ATTACHED TO THE HEAD USING TWO (2) NO. 10 X 2 1/2" SMS. THE PRIMARY JAMB (ITEM #3A) MEMBERS ARE COPED, BUTTED, & SECURED INTO THE HEAD USING TWO (2) NO. 10 X 3 1/2" SMS.

SILL JAMB CORNERS: THE SECONDARY JAMB (ITEM #3B) & SILL (ITEM #2) MEMBERS ARE SQUARE CUT & BUTTED TOGETHER. THE SECONDARY JAMB MEMBERS ARE MECHANICALLY ATTACHED TO THE SILL USING TWO (2) NO. 10 X 2 1/2" SMS. THE PRIMARY JAMB (ITEM #3A) MEMBERS ARE COPED, BUTTED, & SECURED INTO THE SILL USING TWO (2) NO. 10 X 3 1/2" SMS.

SASH CORNERS: THE VERTICAL SASH MEMBERS WERE COPED, BUTTED & MECHANICALLY FASTENED TO THE HORIZONTAL SASH MEMBERS USING ONE (1) #5/8" X 3" LONG & TWO (2) #1/2" X 3" LONG MERBAU DOWELS



I.G. GLAZING DETAIL



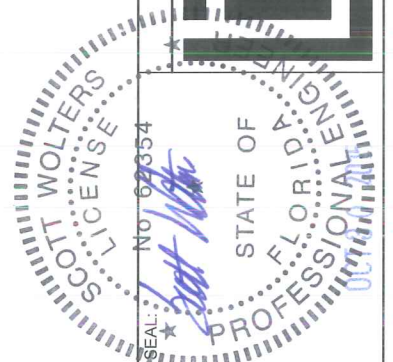
NON-I.G. GLAZING DETAIL

DATE: 8/26/14

NO.	REVISION DESCRIPTION	DATE

DOUBLE HUNG WOOD WINDOWS

LUXBAUM, LLC
WINDOWS + DOORS
1501 NORTHPOINT PARKWAY, SUITE 101
WEST PALM BEACH, FL 33407
Ph: (561) 684-1500
www.luxbaum.com

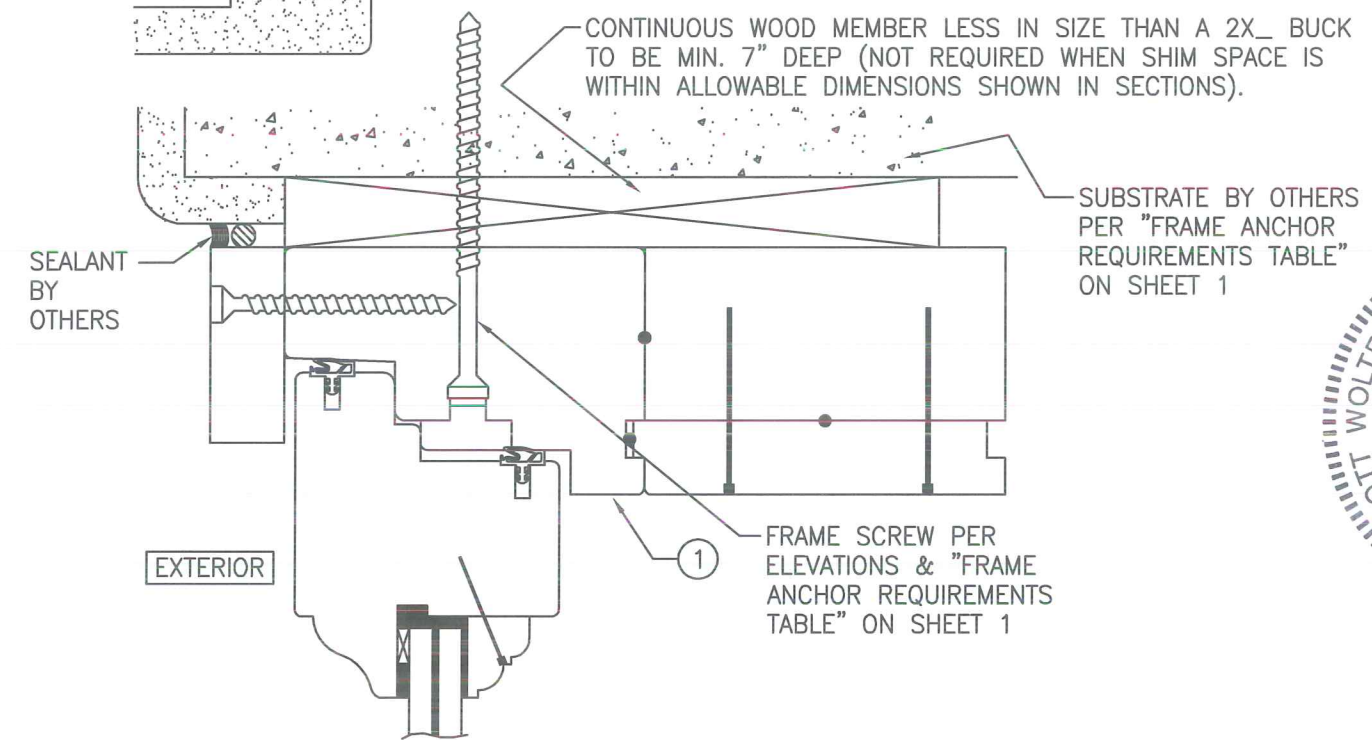
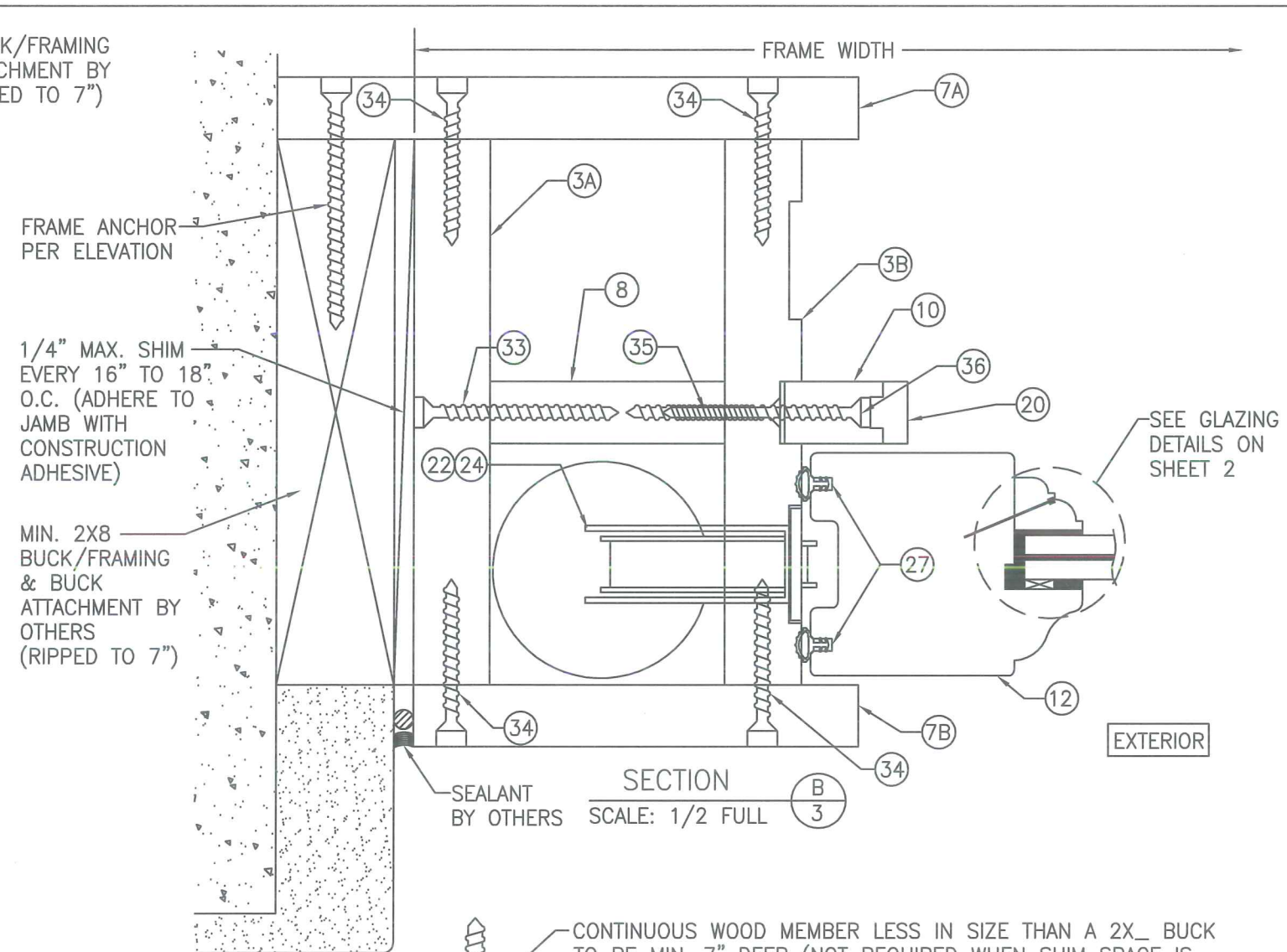
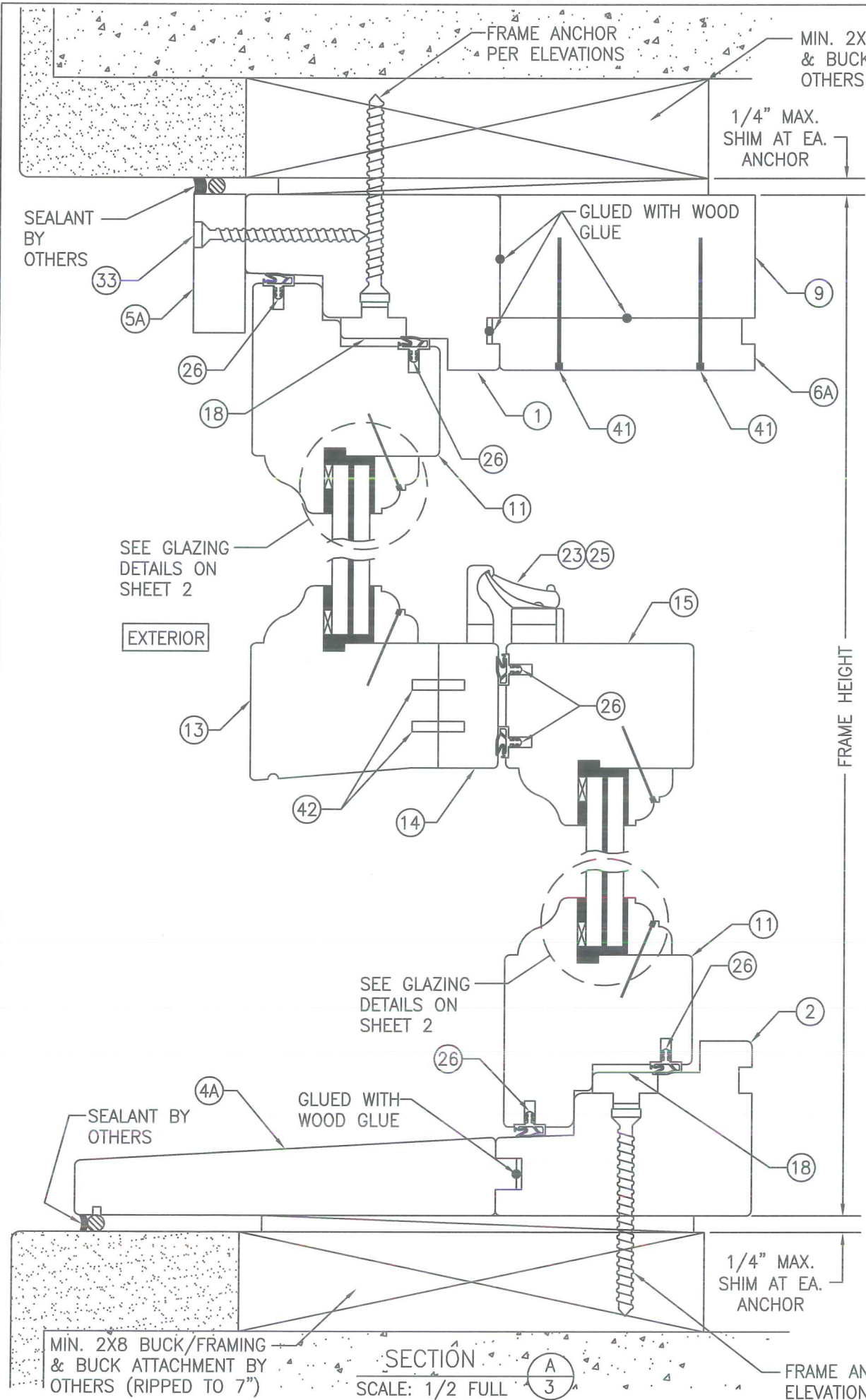


SCOTT WALTERS
FL PE# 62354

WALTERS ENGINEERING
(CO.# 27194)
15211 97TH ROAD, N
WEST PALM BEACH, FL 33412

DRAWING NO. DOUBLE HUNG

SHEET NO. 2 OF 6



OPTIONAL DIRECT MOUNT DETAIL
TO SUBSTRATE WITH SPACER
(HEAD SECTION SHOWN, SILL INSTALLED THE SAME)
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)

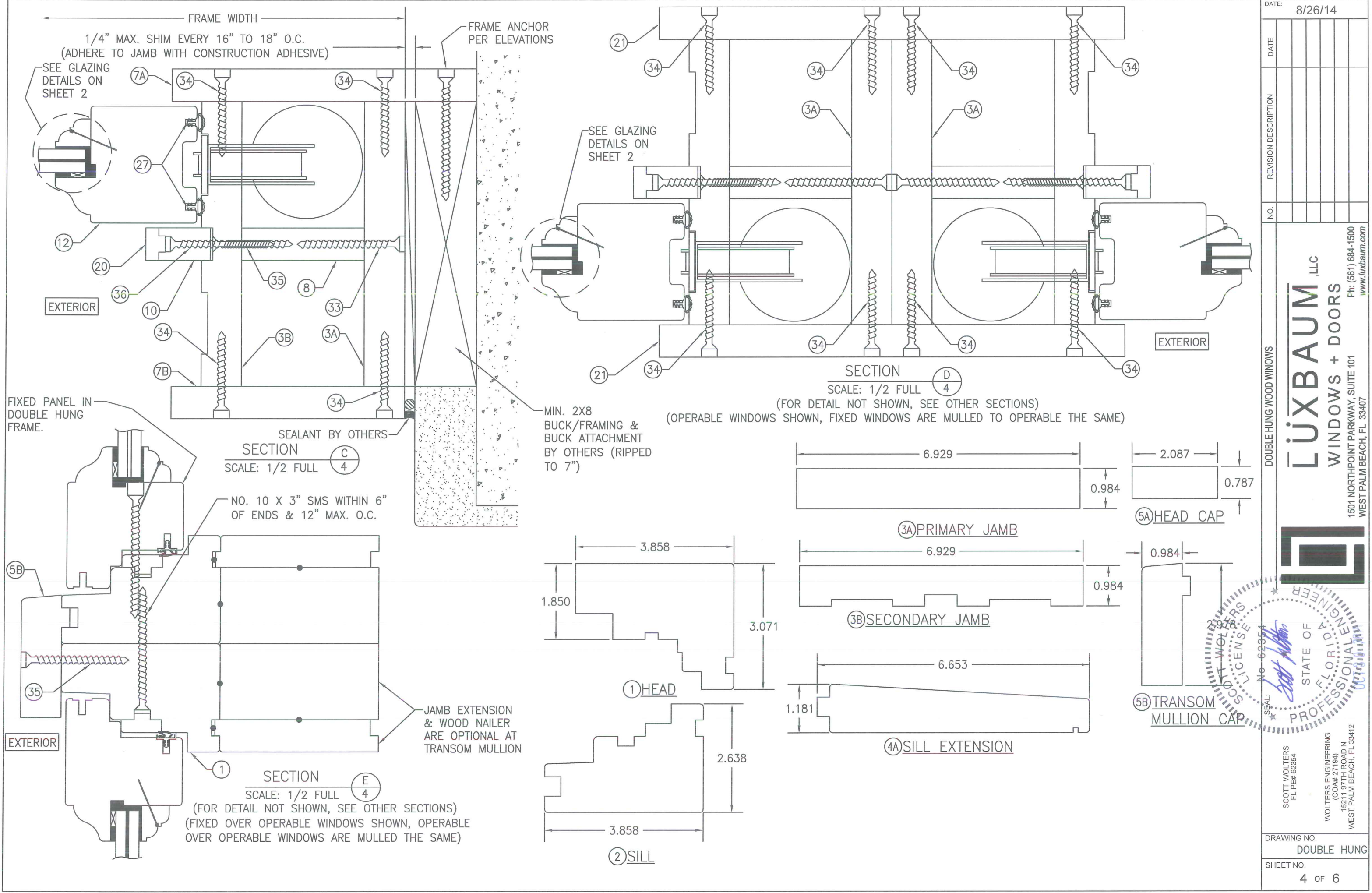
DATE:	8/26/14
DATE	
REVISION DESCRIPTION	
NO.	

DOUBLE HUNG WOOD WINDOWS

LUXBAUM, LLC
WINDOWS + DOORS
1501 NORTHPOINT PARKWAY, SUITE 101
WEST PALM BEACH, FL 33407
Ph: (561) 684-1500
www.luxbaum.com

SCOTT WOLTERS
FL PER 62354
WOLTERS ENGINEERING
(COA# 27184)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412

DRAWING NO. DOUBLE HUNG
SHEET NO. 3 OF 6



DATE: 8/26/14

NO.	REVISION DESCRIPTION	DATE

DOUBLE HUNG WOOD WINDOWS

LUXBAUM, LLC

WINDOWS + DOORS

1501 NORTHPOINT PARKWAY, SUITE 101
WEST PALM BEACH, FL 33407

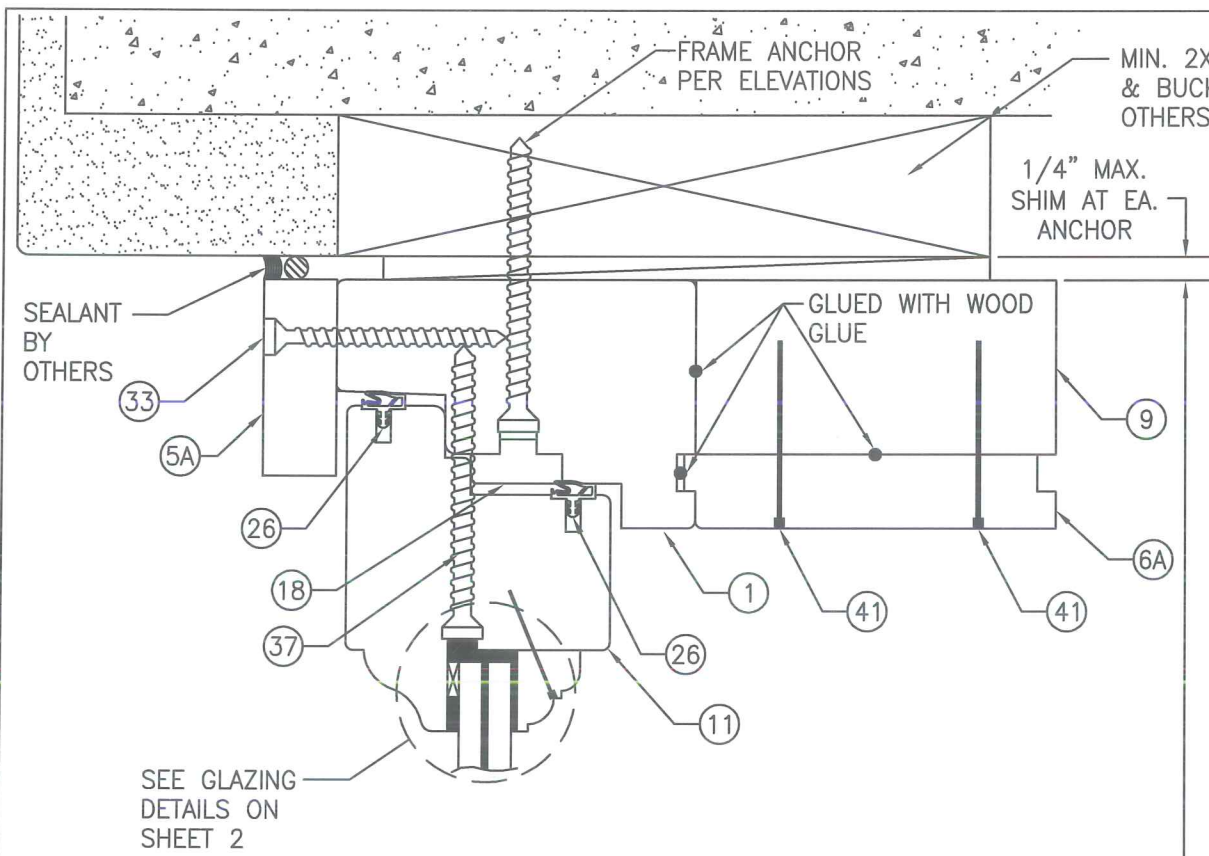
Ph: (561) 684-1500
www.luxbaum.com

SCOTT WOLTERS
FL PE# 62354

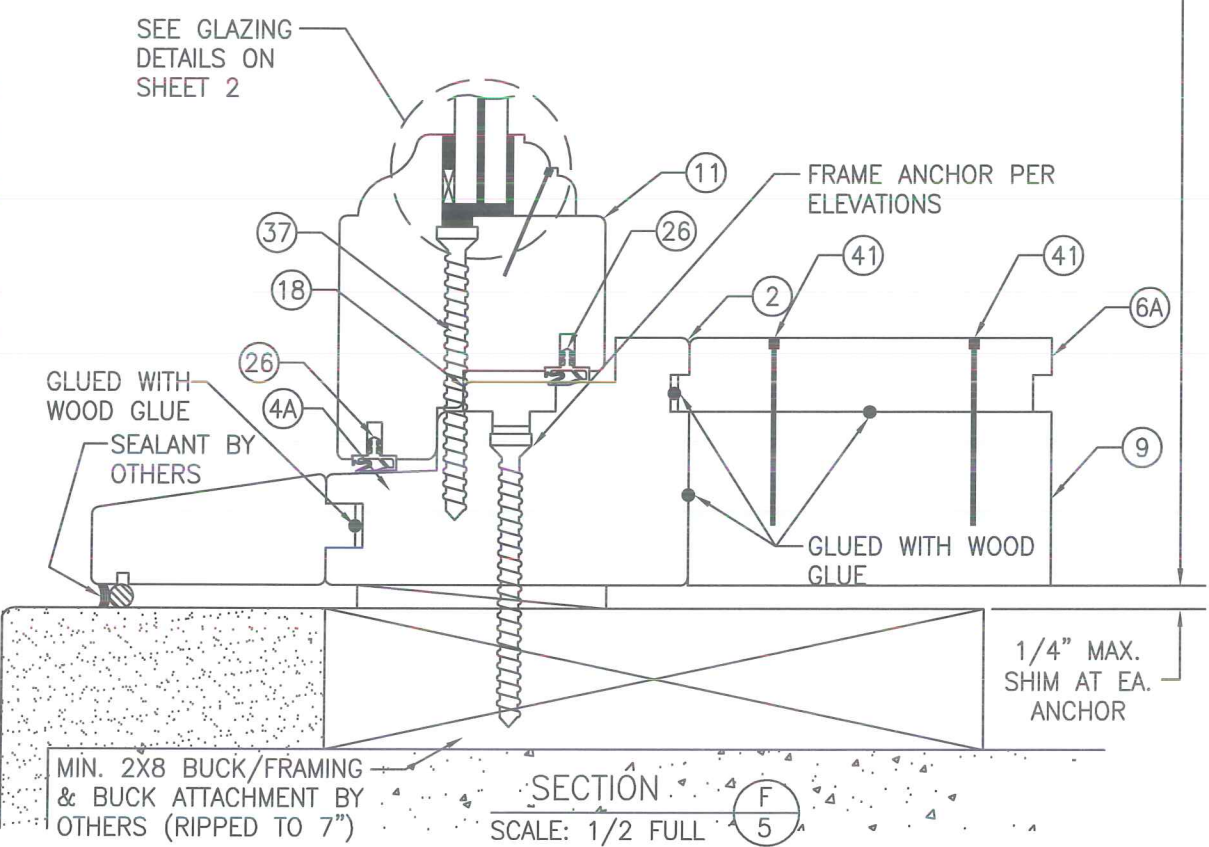
WOLTERS ENGINEERING
(COAF# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412

DRAWING NO. DOUBLE HUNG

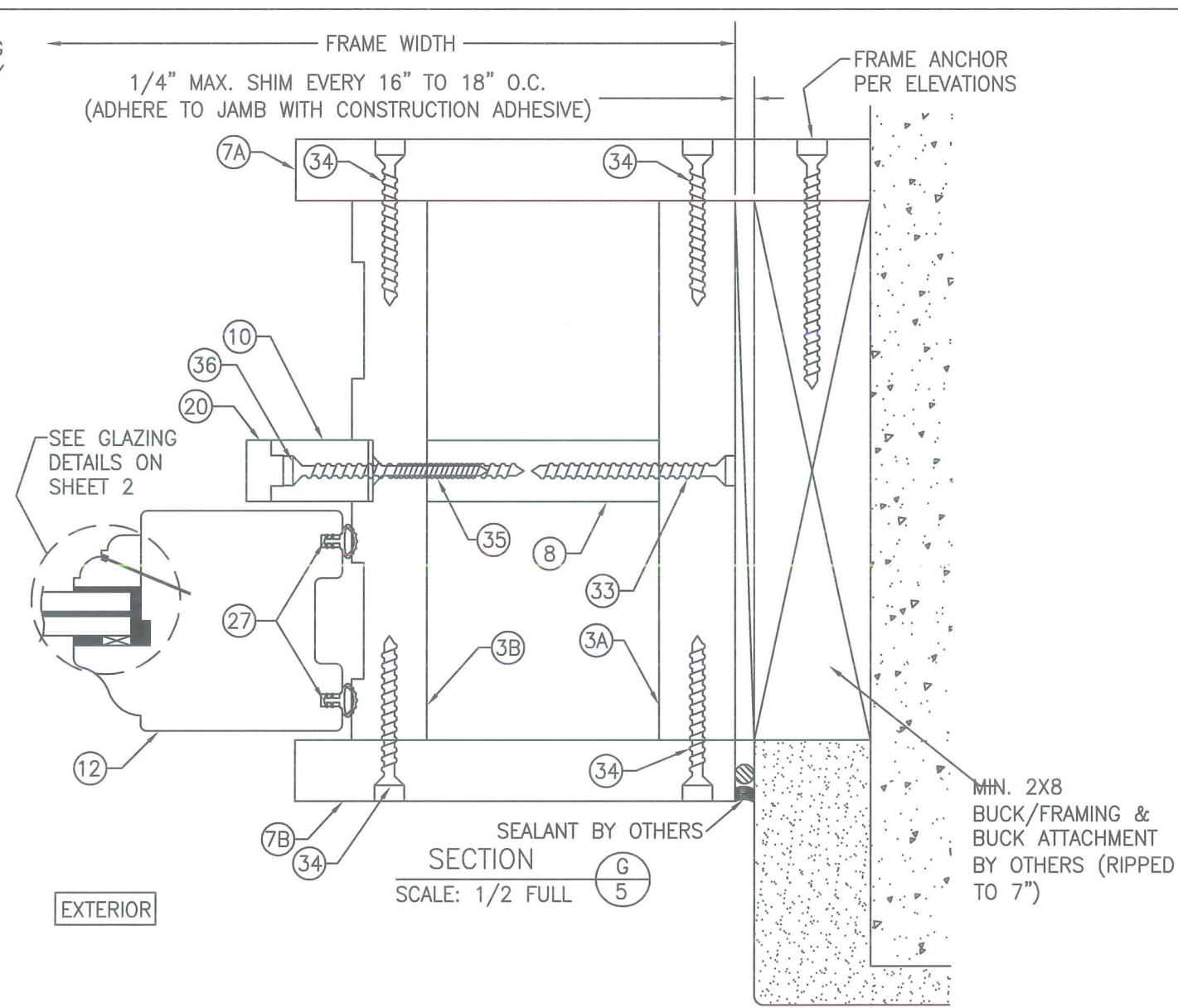
SHEET NO. 4 OF 6



EXTERIOR

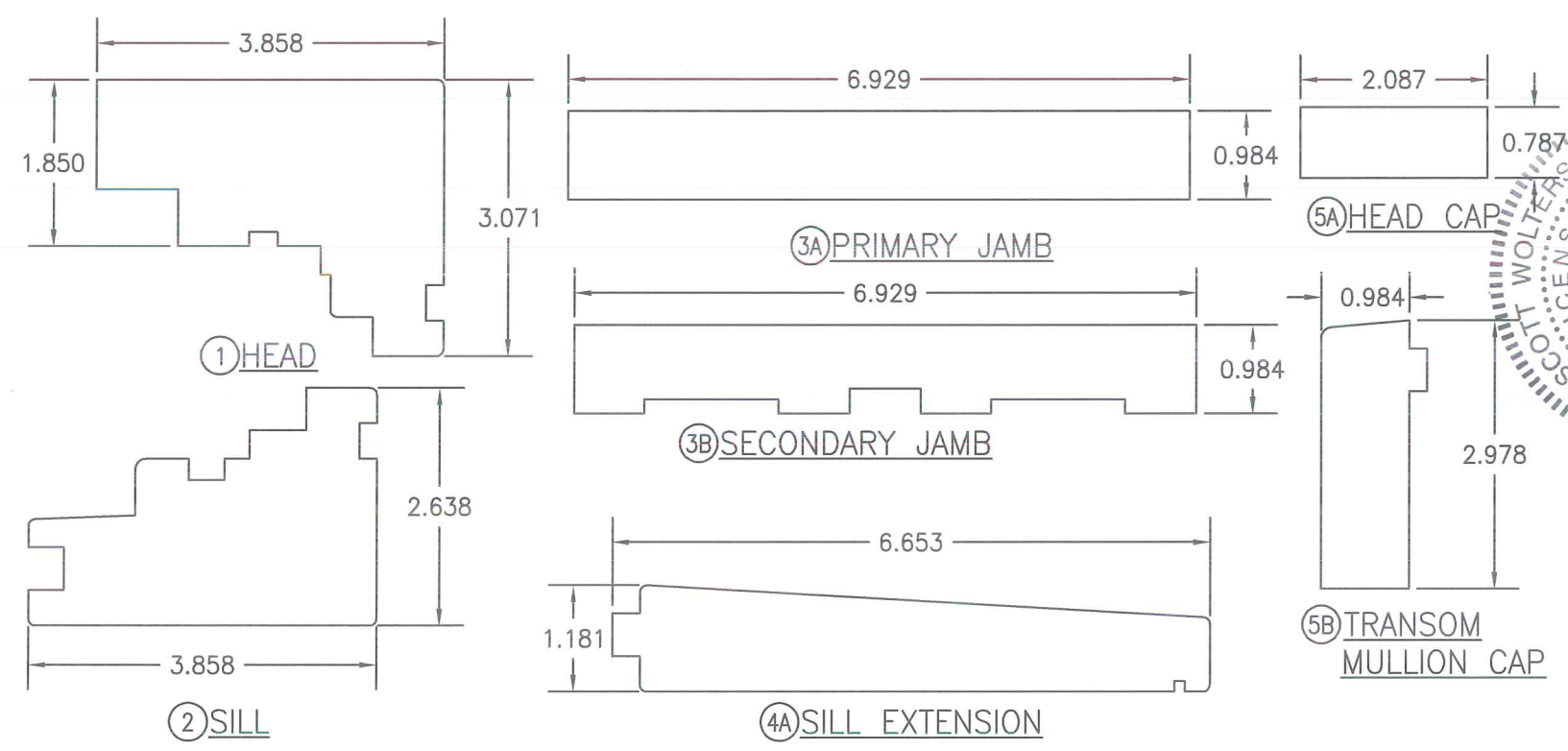


SECTION F
SCALE: 1/2 FULL



EXTERIOR

SECTION G
SCALE: 1/2 FULL



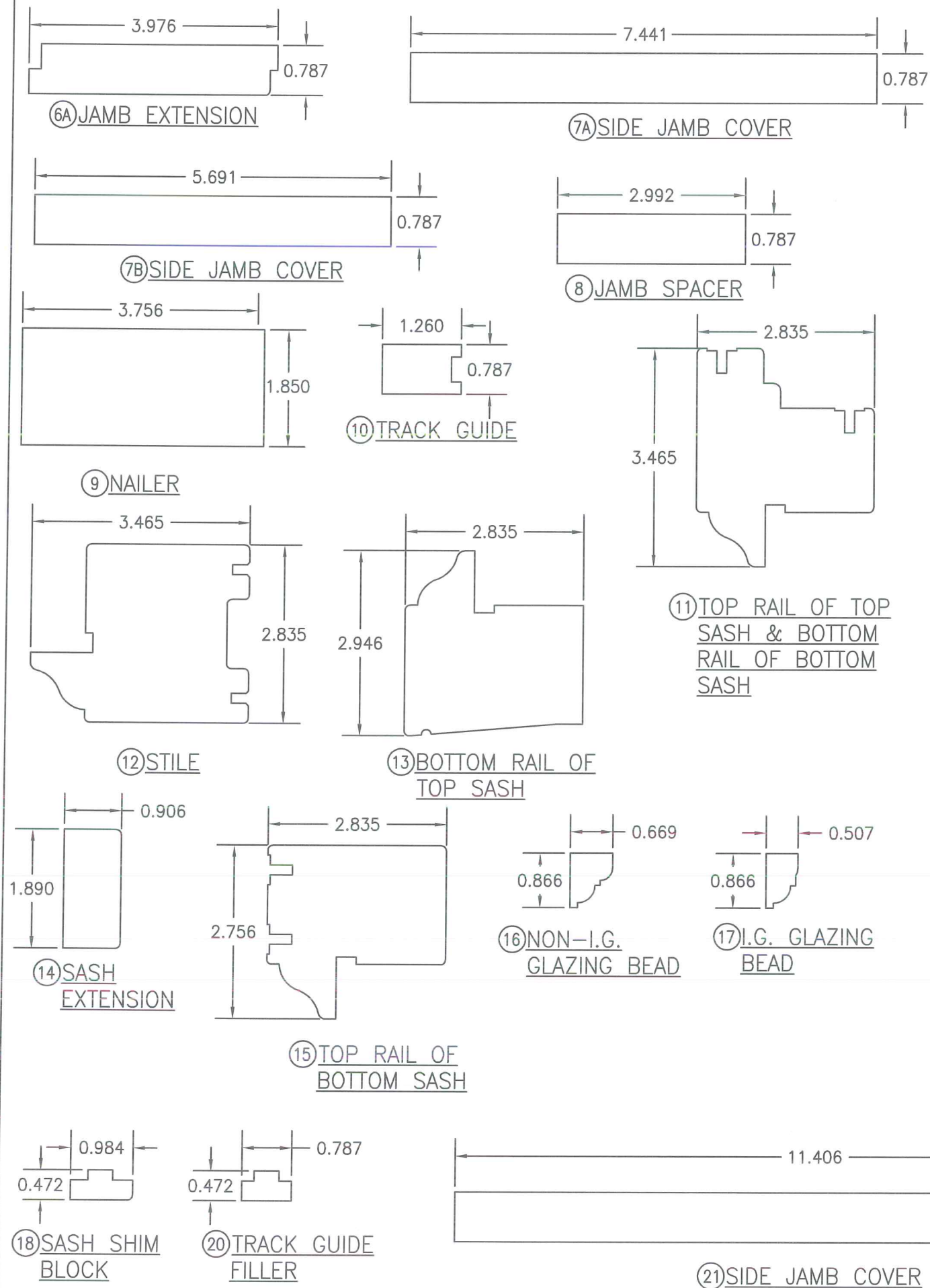
DATE: 8/26/14	
DATE	REVISION DESCRIPTION

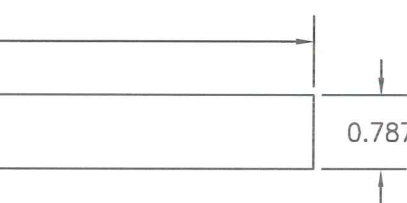


DOUBLE HUNG WOOD WINDOWS

LUXBAUM LLC
WINDOWS + DOORS
 1501 NORTHPOINT PARKWAY, SUITE 101
 WEST PALM BEACH, FL 33407
 Ph: (561) 684-1500
 www.luxbaum.com

SCOTT WOLTERS
 FL PE# 62354
 WOLTERS ENGINEERING
 (CO.# 27184)
 15211 97TH ROAD N
 WEST PALM BEACH, FL 33412

DRAWING NO. DOUBLE HUNG
 SHEET NO. 5 OF 6



ITEM #	PART #	ITEM DESCRIPTION	MANUFACTURER/NOTES	DATE:	8/26/14
PARTS				DATE	
1	DH-(B)9867-L	HEAD	* WOOD		
2	DH-(A)9867-L	SILL	* WOOD		
3A	DH-(A)25176-A	PRIMARY JAMB	* WOOD		
3B	DH-(A)25176-A	SECONDARY JAMB	* WOOD		
4A	DH-30169-Q	SILL EXTENSION	* WOOD		
5A	DH-2053-F	HEAD CAP	* WOOD		
5B	DH-2053-F	TRANSOM MULLION CAP	* WOOD		
6A	DH-20101-B	JAMB EXTENSION	* WOOD		
7A	DH-20189-A	SIDE JAMB COVER	* WOOD		
7B	DH-20145-A	SIDE JAMB COVER	* WOOD		
8	DH-2076-M	JAMB SPACER	* WOOD		
9	-	NAILER	* WOOD		
10	DH-2032-M	TRACK GUIDE	* WOOD		
11	DH-A7288-C	TOP RAIL OF TOP SASH & BOTTOM RAIL OF BOTTOM SASH	* WOOD		
12	DH-B7288-V	STILE	* WOOD		
13	DH-7275-V	BOTTOM RAIL OF TOP SASH	* WOOD		
14	DH-2348-C	SASH EXTENSION	* WOOD		
15	DH-7270-C	TOP RAIL OF BOTTOM SASH	* WOOD		
16	DH-1722-M	NON-I.G. GLAZING BEAD	* WOOD		
17	DH-1322-M	I.G. GLAZING BEAD	* WOOD		
18	DH-1225-M	SASH SHIM BLOCK	* WOOD		
20	DH-1220-M	TRACK GUIDE FILLER	* WOOD		
21	DH-20290-A	SIDE JAMB COVER	* WOOD		
HARDWARE				NO.	
22	7114	SASH PULLEY (TYPE A)	BY: ARCHITECTURAL RESOURCE CENTER		
23	-9	SASH LOCK (TYPE A)	BY: ARCHITECTURAL RESOURCE CENTER		
24	-	SASH PULLEY (TYPE B)	BY: PHELPS COMPANY		
25	LK 395	SASH LOCK (TYPE B)	BY: PHELPS COMPANY		
SEALS AND SEALANTS				REVISION DESCRIPTION	
26	-	COMPRESSION SEAL	BY: DEVENTER; DS 6577		
27	-	COMPRESSION SEAL	BY: DEVENTER; E 06A/07		
FASTENERS				DOUBLE HUNG WOOD WINDOWS	
33	-	NO. 10 X 2 1/2" SMS	WITHIN 3" OF ENDS & 8" MAX. O.C.		
34	-	NO. 10 X 2 1/2" SMS	WITHIN 6" OF ENDS & 12" MAX. O.C.		
35	-	NO. 8 X 1 1/2" SMS	WITHIN 3" OF ENDS & 16" MAX. O.C.		
36	-	NO. 8 X 3" SMS	WITHIN 6" OF ENDS & 8" MAX. O.C.		
37	-	NO. 10 X 3 1/2" SMS	WITHIN 4" OF ENDS & 12" MAX. O.C.		
39	-	23 GA. X 1 1/4" BRAD NAIL	WITHIN 2" OF ENDS & 4" MAX. O.C.		
41	-	14 GA. FINISH NAILS (2 ROWS)	WITHIN 2" OF ENDS & 6" MAX. O.C.		
42	-	NO. 20 WOOD BISCUIT	WITHIN 4" OF ENDS & 12" MAX. O.C.		
<p>* ALL WOOD USED WITH TESTED UNITS IS MIN. GRADE 2 MERBAU. ALTERNATE WOOD SPECIES TO MERBAU ARE MIN. GRADE 2 OAK, CHERRY, MAPLE, SOUTHERN PINE, CYPRUS, REDWOOD, FIR, HICKORY, BIRCH & DOUGLAS FIR</p> <p>NOTE: ALL WOOD IS RECEIVED BY LUXBAU, L.L.C. AS GRADE 2, BUT IS MACHINED BY LUXBAU, L.L.C. TO A SELECT GRADE USE.</p>					
				 <p>LUXBAUM, LLC WINDOWS + DOORS 1501 NORTHPOINT PARKWAY, SUITE 101 WEST PALM BEACH, FL 33407 Ph: (561) 684-1500 www.luxbaum.com</p>	
					
				SCOTT WOLTERS FL PE# 62354	
				WOLTERS ENGINEERING (COA# 27194) 15211 97TH ROAD N WEST PALM BEACH, FL 33412	
DRAWING NO.				DOUBLE HUNG	
SHEET NO.				6 OF 6	