

WOLTERS ENGINEERING

ENGINEERING, DRAFTING, CONSULTING

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

PRODUCT EVALUATION

PRODUCT: LUXBAUM DIRECT GLAZED WOOD FIXED WINDOWS

MANUFACTURER: LUXBAUM WINDOWS & DOORS
2400 CENTREPARK WEST DRIVE, SUITE 150
WEST PALM BEACH, FL 33409

To all concerned,

The Luxbaum Direct Glazed Wood Fixed Windows , manufactured by Luxbaum Windows & Doors, is a glazed wood window system with steel reinforced mullions. The system has been tested per TAS 201, 202, and 203 by Intertek, Inc. with results shown in test report H6254.02-450-18 R0.

Technical Documentation:

1. Drawing "DIRECT GLAZED", signed and sealed by Scott Wolters, PE.
2. Intertek test report H6254.02-450-18 R0, signed and sealed by Vinu Abraham, PE.
3. Supplemental calculations to support "DIRECT GLAZED", 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 6th Edition (2017) Florida Building Code generally, and chapters 16, 23, and 24 specifically, including the HVHZ provisions.

Limitations: This door 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:	138 in
Maximum Frame Width:	Unlimited
Maximum Panel Width:	80 in
Maximum Design Pressure:	+51/-60 psf

Glazing Options:

1 3/8" Insulated Laminated
1/4" Heat Strengthened
0.180" Sentryglas Interlayer+
1/4" Heat Strengthened
1/2" Air Space
3/16" Tempered

3/4" (min) RTD Plywood

* I have evaluated the SentryGlas interlayer (NOA# 14-0916.11) referenced above and find that it complies with the requirements of the 6th Edition (2017) Florida Building Code for use in this product.

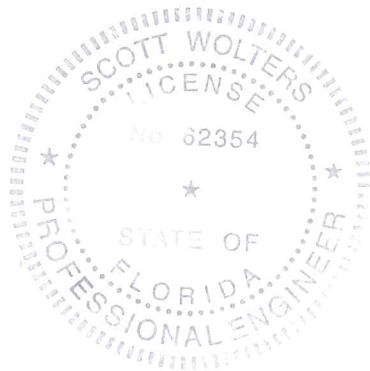
Mullion Reinforcing: 1/2" x 5" Steel, Length = Frame Height - 8".

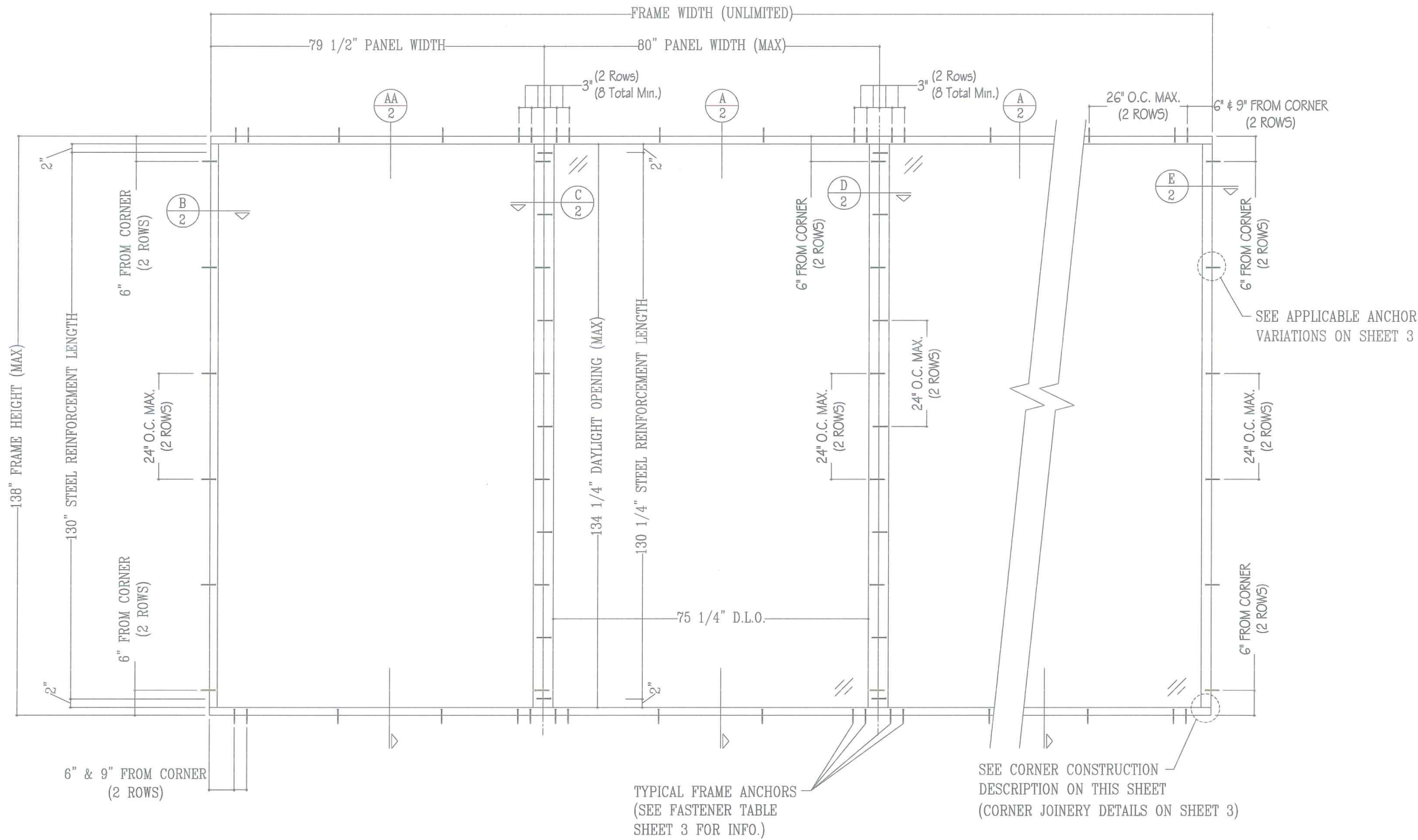
Frame Anchors: See Sheet 3 for fastener information.

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

Thank you,


Scott Wolters
FL PE# 62354
DEC 14 2017





EXTERIOR ELEVATION

(FOR SECTION CALLOUTS ONLY)

(CONFIGURATION NOT LIMITED TO 3 FRAMES AS SHOWN, PROVIDED THE OPENING IS DESIGNED TO SUPPORT THE QUANTITY OF FRAMES USED)

DESIGN PRESSURE
(+51/-60)

GENERAL NOTES:

1. ALLOWABLE DESIGN PRESSURE: +51/-60 PSF
2. ALL GLAZING AS SHOWN IN GLAZING DETAILS ON SHEET 2, AND ALL ATTACHMENT NOTES BELOW MAY BE USED IN ANY CONFIGURATION.
3. THESE DIRECT GLAZED FIXED UNITS HAVE BEEN DESIGNED AND TESTED TO TAS 201, 202, AND 203 PROTOCOLS IN ACCORDANCE WITH THE REQUIREMENTS OF THE 6TH EDITION 2017 FLORIDA BUILDING CODE (FBC) INCLUDING THE HVHZ PROVISIONS.
4. THIS PRODUCT AS SHOWN HEREIN IS LARGE AND SMALL MISSILE IMPACT RATED, SHUTTERS ARE NOT REQUIRED.
5. WOOD OR MASONRY OPENINGS, BUCKS, AND BUCK FASTENERS, BY OTHERS, SHALL BE PROPERLY DESIGNED AND INSTALLED TO TRANSFER LOADS TO THE STRUCTURE.
6. ANCHOR TYPE, SIZE, SPACING, AND EMBEDMENT SHALL BE AS INDICATED IN THIS APPROVAL. 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 $C_d = 1.6$ WAS USED FOR THE ANALYSIS OF WOOD SCREWS ONLY.
10. THE TEAK DOORS LISTED IN THIS APPROVAL ARE CONSTRUCTED OF A NATURALLY DURABLE SPECIES (SPECIE SPECIFIC GRAVITY = 0.55, $E=1.55 \times 10^6$ PSI). OTHER NATURALLY DURABLE WOOD SPECIES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR ALL WOOD COMPONENTS.
11. MEMBERS NOTCHED AS NEEDED TO FIT STEEL REINFORCEMENT.

CORNER CONSTRUCTION

RAIL TO STILE CORNERS: MEMBERS ARE OF TONGUE AND GROOVE CONSTRUCTION AND MECHANICALLY FASTENED WITH FOUR(4) NO. 14 X 3" SMS SCREWS PER CORNER, 1/2" FROM EDGE. CORNERS AND TONGUE TO GROOVE LOCATIONS ARE SEALED WITH SIKAFLEX 15 LM POLYURETHANE SEALANT.

RAIL TO GANGED STILE CORNERS: TOP RAILS ARE COPED, BUTTED, FULLY GLUED WITH WOOD GLUE (61) AND DOWELED WITH FOUR(4) 5/8" DIA. x 3 1/8" LONG MERBAU WOOD DOWELS.

DATE: 12/11/2017

DATE

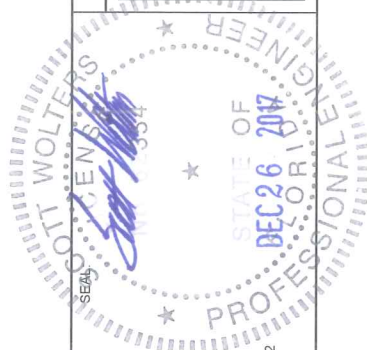
REVISION DESCRIPTION

NO.

WOOD DIRECT GLAZED FIXED UNITS

LUXBAUM, LLC
WINDOWS + DOORS

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

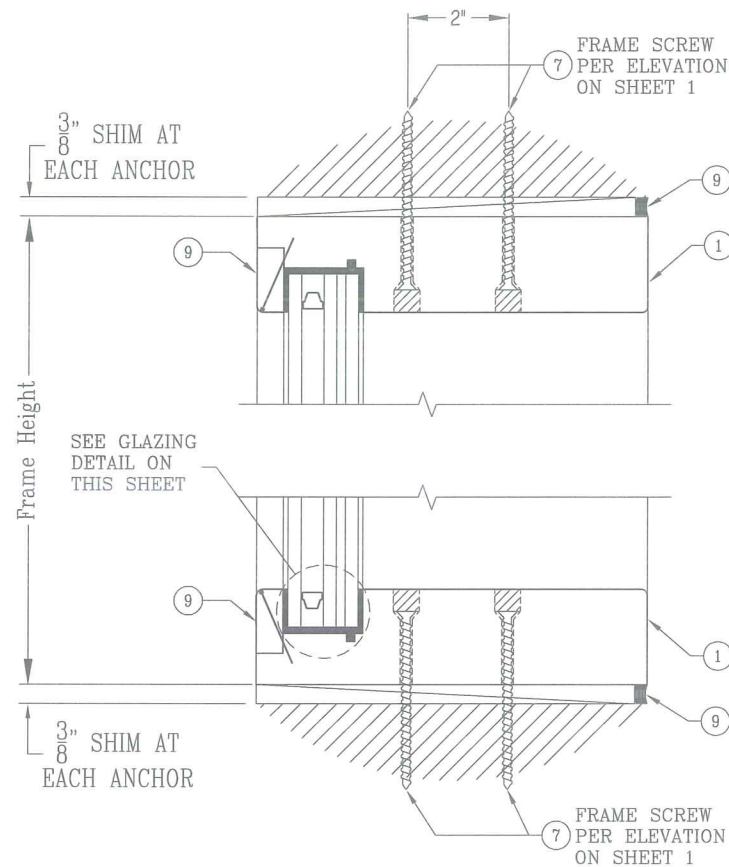


SCOTT WOLTERS
FL REG# 62354

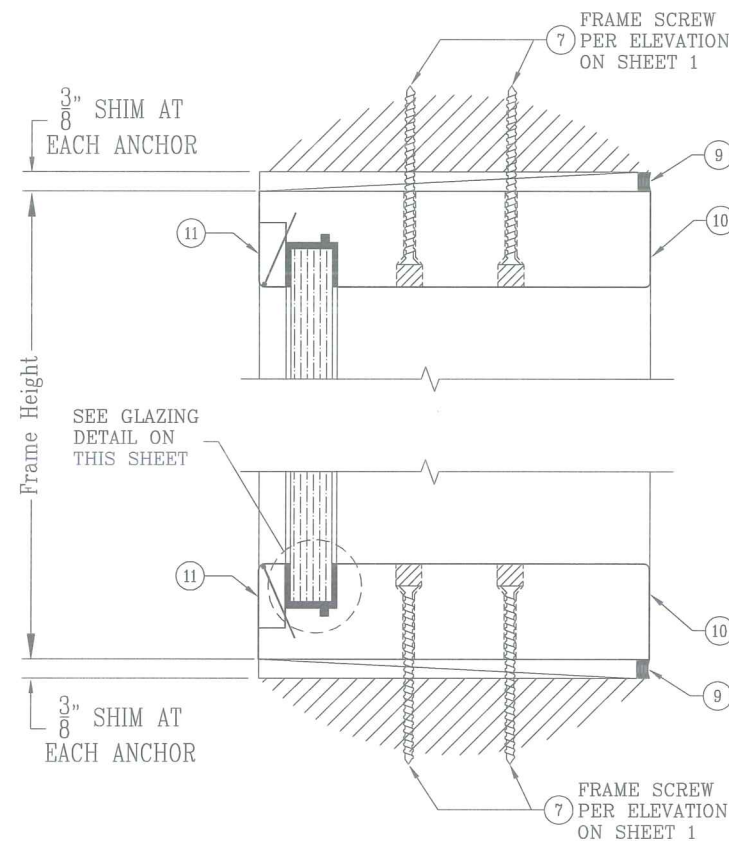
WOLTERS ENGINEERING
(CO.# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412

DRAWING NO.
DIRECT GLAZED

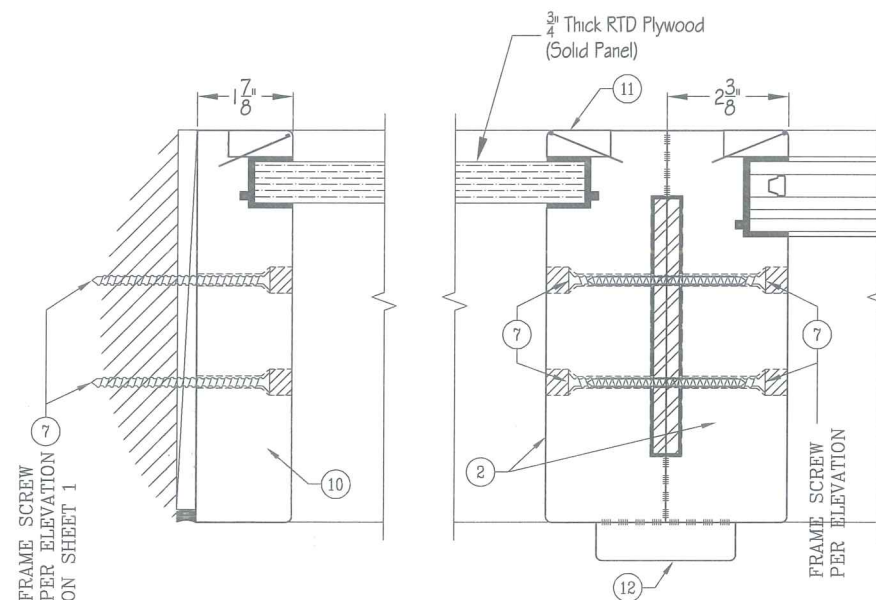
SHEET NO.
1 OF 3



SECTION A
(TEAK DIRECT GLAZED HEADER & SILL)

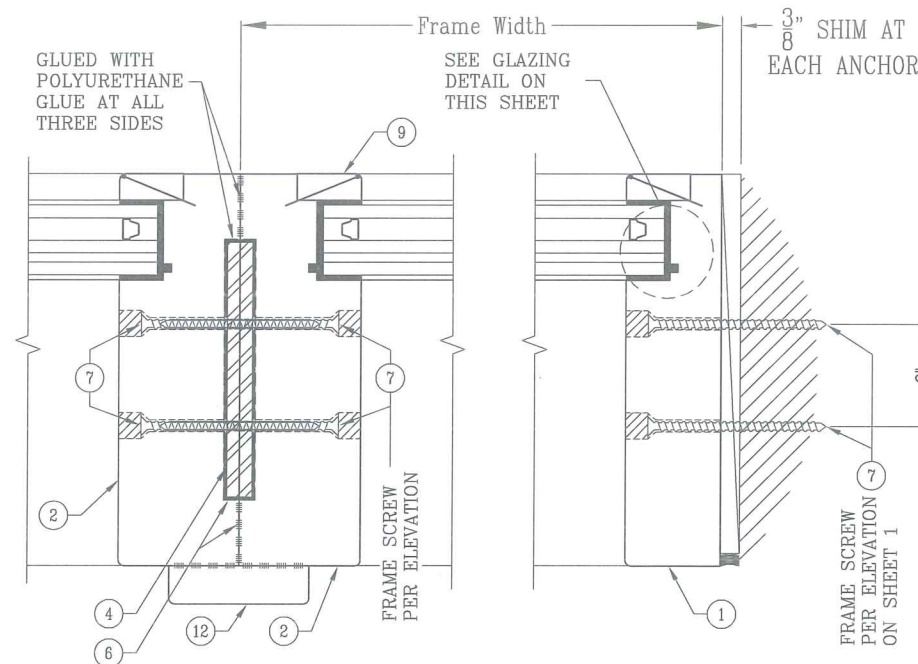


SECTION AA
(PINE DIRECT GLAZED HEADER & SILL)



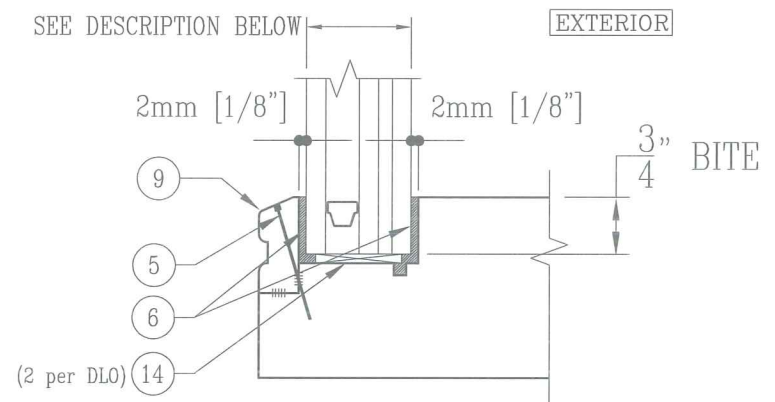
SECTION B
(DIRECT GLAZED GANGED STILE)

SECTION C
(DIRECT GLAZED GANGED STILE)

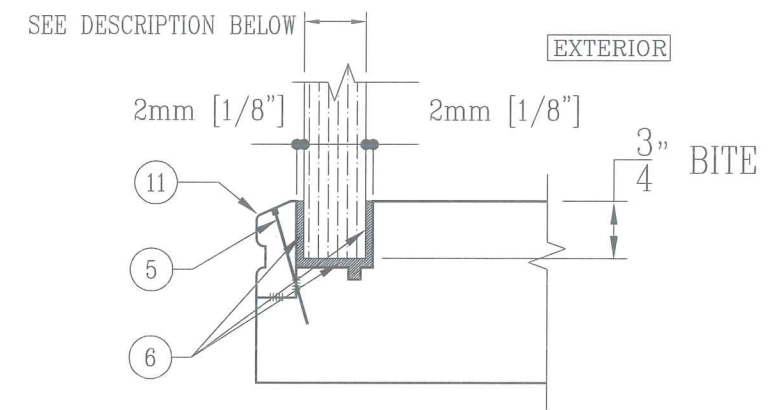


SECTION D
(DIRECT GLAZED GANGED STILE)

SECTION E
(DIRECT GLAZED STILE)



TYPICAL I.G. GLAZING
1 3/8" LAMINATED I.G. WITH
1/4" H.S.+0.180 SGP+1/4" H.S.+1/2" AIR SPACE
W/ALUM. SPACER (BLACK)+3/16" TEMPERED.



SOLID PANEL GLAZING
3/4" THICK RTD PLYWOOD

DATE: 12/11/2017

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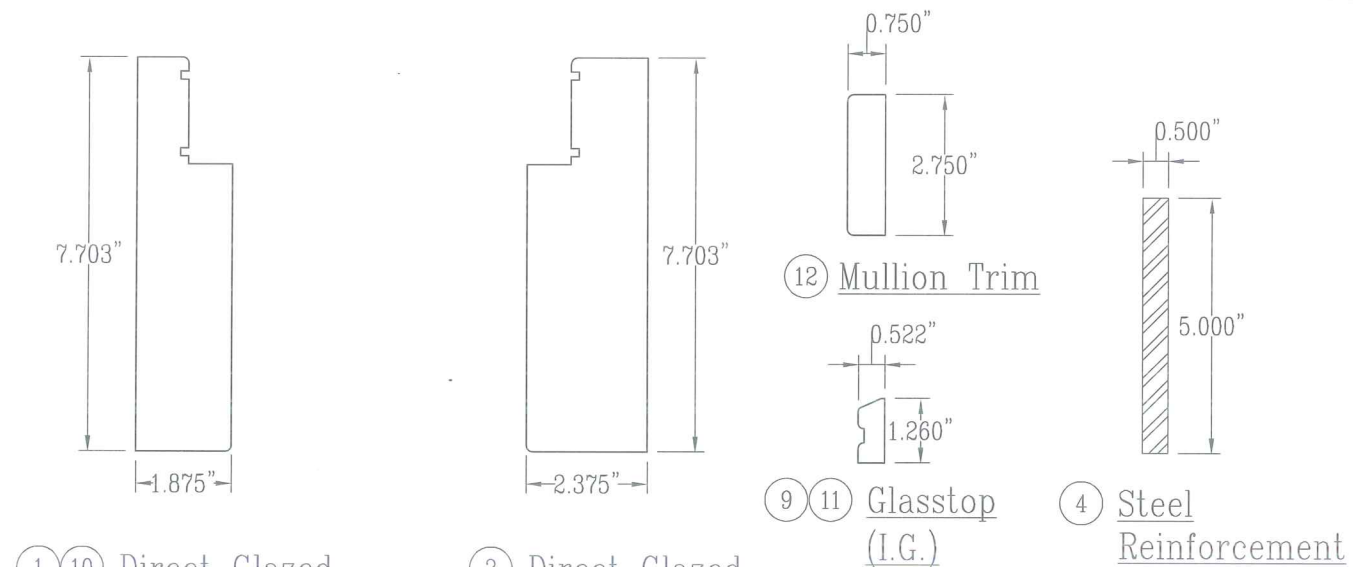


SCOTT WALTERS
FL PE# 62354

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DRAWING NO.
DIRECT GLAZED

SHEET NO.
2 OF 3



①⑩ Direct Glazed Header, Sill, Stile Component

② Direct Glazed Ganged Stile Component

⑨⑪ Glasstop (I.G.)

④ Steel Reinforcement

1x OR 2x WOOD BUCKS MUST BE PROPERLY ATTACHED TO SUBSTRATE, AND MUST TRANSFER LOADS IMPOSED BY GLAZING SYSTEM TO THE BUILDING STRUCTURE.

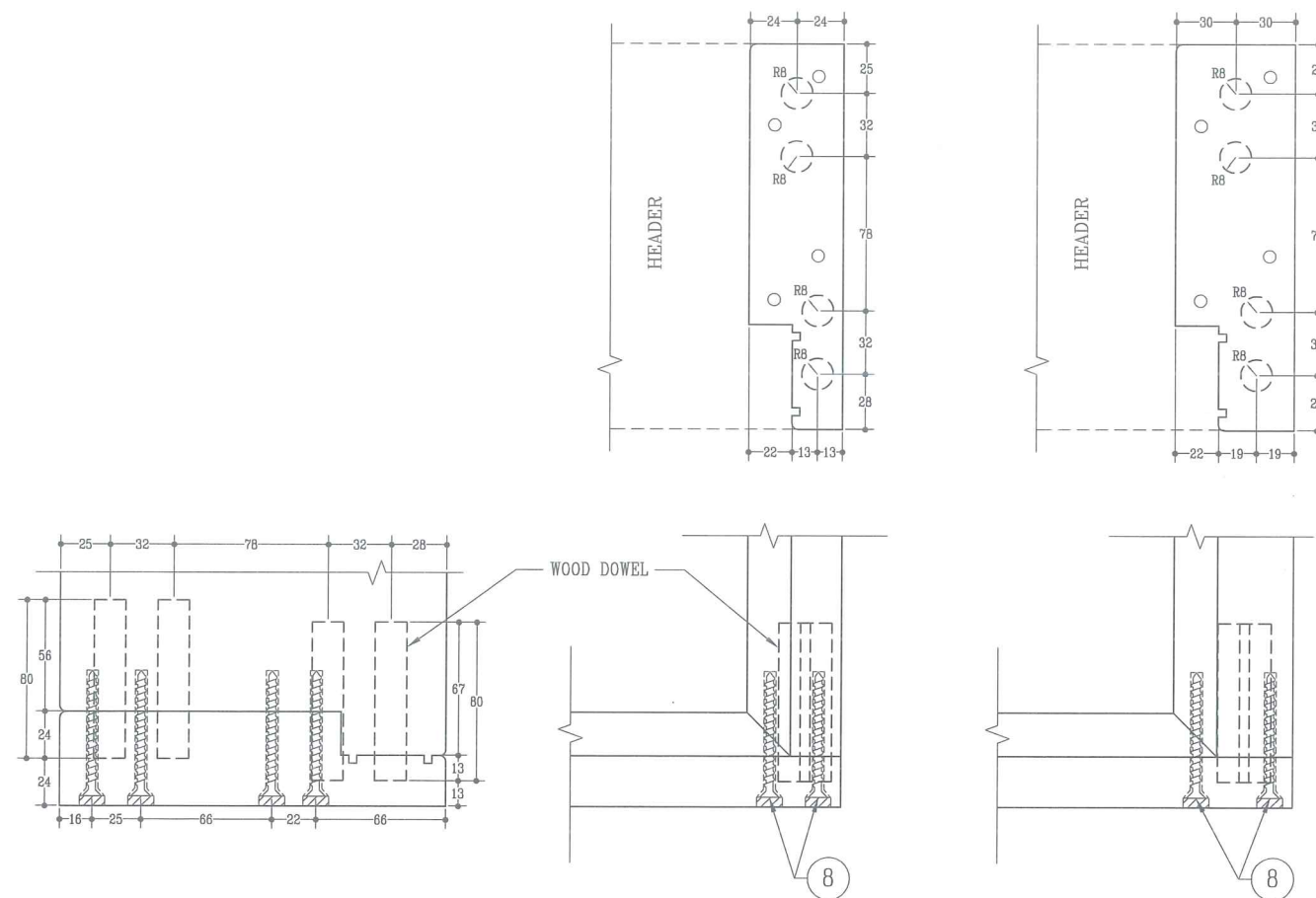
TYPICAL ANCHORS

WOOD (2x6 MIN. TYPICALLY) (2X8 MIN. WITH CLIP)	-	#14 FH WOOD OR SHEET METAL SCREW (GR. 5 MIN.) WITH 1 3/8" MIN. EMBEDMENT AND 7/8" EDGE DISTANCE.
CONCRETE (3000 PSI MIN)	-	1/4" DIA. FH ITW TAPCON OR ELCO ULTRACON WITH 1 3/4" MIN. EMBEDMENT AND 2 1/2" MIN. EDGE DISTANCE.
CMU (ASTM C90) (JAMBS ONLY)	-	1/4" DIA. FH ITW TAPCON OR ELCO ULTRACON WITH 1 1/4" MIN. EMBEDMENT AND 2 1/2" MIN. EDGE DISTANCE.
STEEL (16 Ga. 33 KSI MIN)	-	#12 FH F-TYPE (GR. 5) THREAD FORMING SCREW WITH FULL EMBEDMENT AND 1/2" MIN. EDGE DISTANCE.
ALUMINUM (1/8" MIN, 6063-T5)	-	#12 FH F-TYPE (GR.5) THREAD FORMING SCREW WITH FULL EMBEDMENT AND 1/2" MIN. EDGE DISTANCE.

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
1	DIRECT GLAZED HEADER, SILL, STILE COMPONENT	TEAK
2	DIRECT GLAZED GANGED STILE	TEAK
3		
4	STEEL REINFORCEMENT	1/2" x 5" GALVANIZED STEEL FLATBAR
5	23 GAUGE BRAD NAIL	2" FROM CORNERS & 8" O.C.
6	DOW 995 (GLAZING BEAD)	DOW CORNING (3 SIDES OF GLAZING POCKET)
7	#12 X 3 1/2" S/S WOOD SCREW (FRAME ANCHOR SCREW)	6" FROM END & 12" O.C. MAX (2 ROWS STAGGERED)
8	#14 X 3" S/S WOOD SCREW (CORNER JOINERY SCREW)	6" FROM END & 12" O.C. MAX (2 ROWS STAGGERED)
9	GLASSTOP (I.G.)	TEAK
10	DIRECT GLAZED HEADER, SILL, STILE COMPONENT	PRESSURE TREATED PINE
11	GLASSTOP	PRESSURE TREATED PINE
12	MULLION TRIM	TEAK
14	1/8" x 1 1/8" x 4" SETTING BLOCK, 2 per DLO	NEOPRENE (70-90 SHORE A DURAMETER HARDNESS)

TEAK WOOD: Specific Gravity = 0.55
Modulus of Elasticity = 1.55×10^6 psi

MERBAU WOOD: Specific Gravity = 0.68
Modulus of Elasticity = 2.6×10^6 psi



TYPICAL CORNER JOINERY
(RAIL TO STILE)

GANGED CORNER JOINERY
(RAIL TO GANGED STILE)

DATE: 12/11/2017

DATE

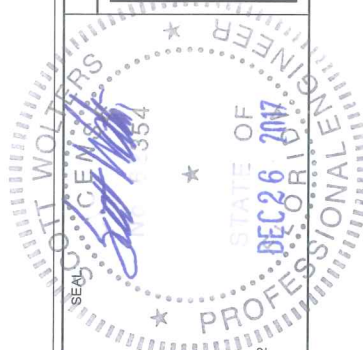
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3 OF 3