

PRODUCT APPROVAL SPECIFICATION SHEET

As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, please provide the information and approval numbers on the building components listed below if they will be utilized on the construction project for which you are applying for a building permit. We recommend you contact your local product supplier should you not know the product approval number for any of the applicable listed products. Statewide approved products are listed online at www.floridabuilding.org.

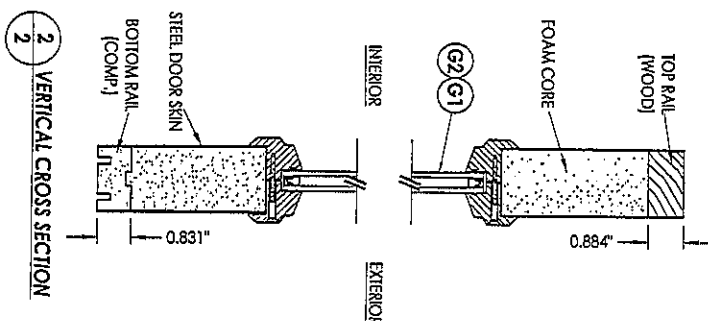
Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
1. EXTERIOR DOORS			
A. SWINGING	HUTTIG	FIBERGLASS/STEEL PREHUNG	FL20461, FL20461.1, FL20461.11
B. SLIDING			FL21131.1, FL21131.11
C. SECTIONAL/ROLL UP	WAYNE DALTON	SERIES 8000/DS200 + DS350	FL1421, FL1672
D. OTHER			
2. WINDOWS			
A. SINGLE/DOUBLE HUNG	ATRIUM	VINYL WINDOWS	FL20100
B. HORIZONTAL SLIDER			
C. CASEMENT	ATRIUM	VINYL WINDOWS	FL11821
D. FIXED			
E. MULLION			
F. SKYLIGHTS			
G. OTHER			
3. PANEL WALL			
A. SIDING	JAMESHARDIE	FIBER CEMENT LAP & VERTICAL	FL13192, FL13223, FL13192
B. SOFFITS	KAYCAN	ALUMINUM & VINYL	FL16503-R3, FL24564-R0,
C. STOREFRONTS			FL12192-R5, FL12198-R5
D. GLASS BLOCK			FL15867-R3
E. OTHER	ALLURRA	FIBER CEMENT LAP & VERTICAL	FL20742-R3
4. ROOFING PRODUCTS			
A. ASPHALT SHINGLES	TAMKO	35 YEAR ARCHITECTURAL	183551
B. NON-STRUCT METAL	union	MASTER RIB GALVALUME	FL7271.5-R5, FL7271.7-R5
C. ROOFING TILES			FL9555.3-R5, FL9555.4-R5
D. SINGLE PLY ROOF			FL9557.4R5, FL7271.6-R5
E. OTHER	ABT	MASTER RIB GALVALUME	FL31804-R1
5. STRUCT COMPONENTS			
A. WOOD CONNECTORS	SIMPSON STRONGTIE	STRAPS & CONNECTORS	FL10456-R5, FL10531-R5, FL10860-R5
B. WOOD ANCHORS			FL13872-R4, FL11498-R5, FL13975-R6
C. TRUSS PLATES			
D. INSULATION FORMS			
E. LINTELS			
F. OTHERS			
6. NEW EXTERIOR			
A. ENVELOPE PRODUCTS			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector on the jobsite; (1) copy of the product approval (2) performance characteristics which the product was tested and certified to comply with (3) copy of the applicable manufacturer's installation requirements. Further, I understand these products may have to be removed if approval cannot be demonstrated during inspection.

APPLICANT SIGNATURE

DATE

Plan 3 – Rev 8/15

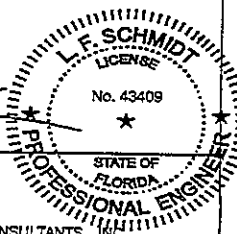


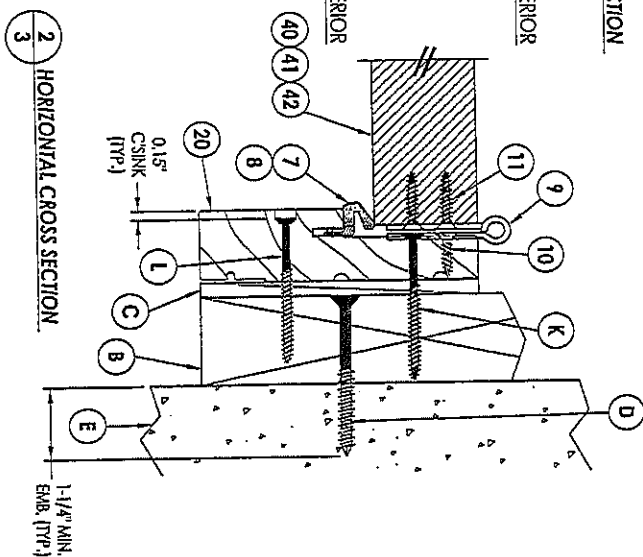
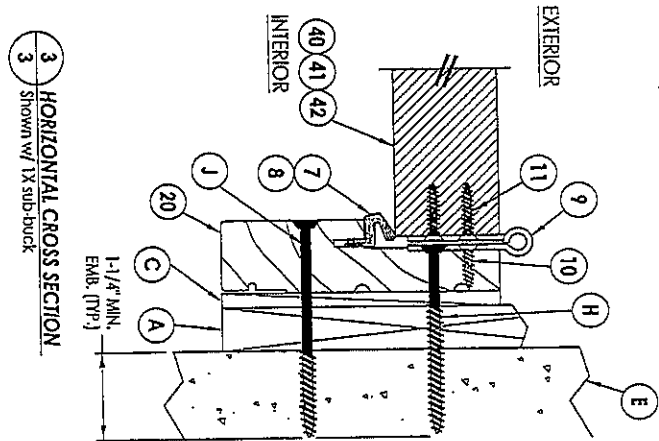
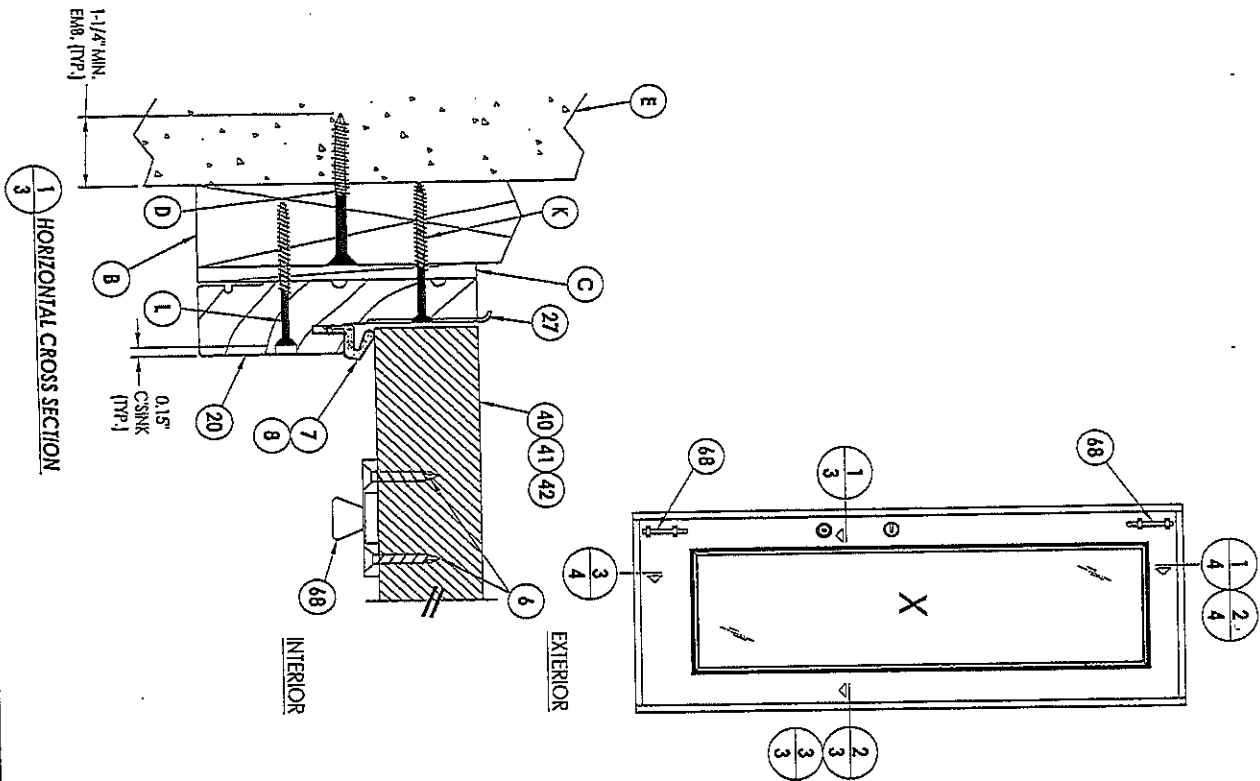
HARDWARE TABLE	
MANUFACTURER	MODEL
KWIKSET	KNOB: KWIKSET SERIES DEADBOLT: KWIKSET SERIES (669)

July 14, 2020
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

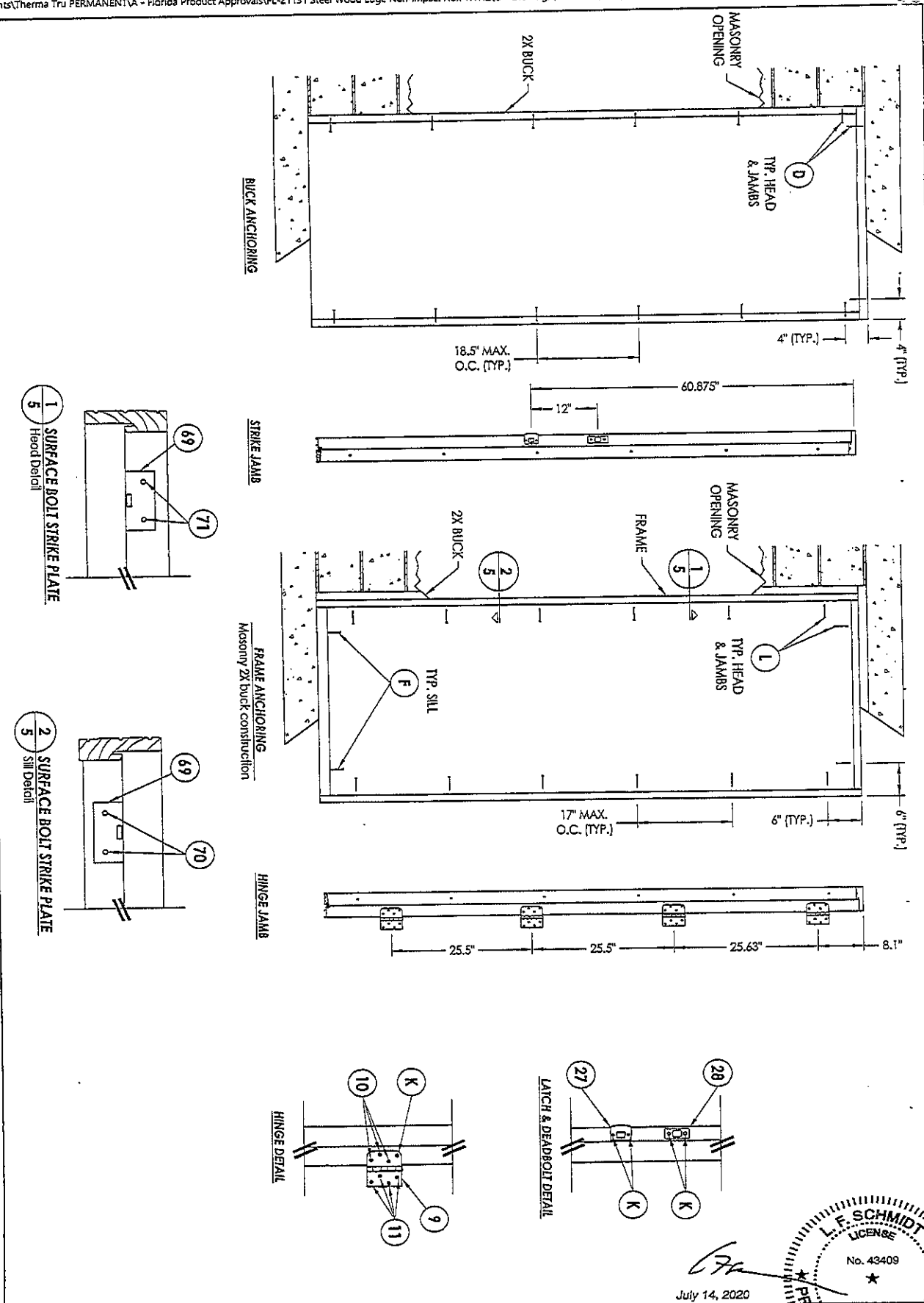
STATE OF
FLORIDA
PROFESSIONAL P

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813





SHEET 3 of 7	FL-21131.10	CHK. BY: LFS	DWG. BY: JK	SCALE: N.T.S.	DATE: 10/12/17	NO.	DATE	1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS	BY	REVISIONS	PRODUCT:	THERMA-TRU STEEL DOOR	PART OR ASSEMBLY:	HORIZONTAL CROSS SECTIONS	Documents Prepared By:	Lyndon F. Schmidt	P.E. No. 43409	July 14, 2020	Rw BUILDING CONSULTANTS, INC.	P.O. Box 230, Valrico, FL 33595	Phone No.: 813.659.9197	FBPE Registry No. 9813	L.F. SCHMIDT LICENSE No. 43409 STATE OF FLORIDA PROFESSIONAL ENGINEER
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1	SURFACE BOLT STRIKE PLATE
5	Head Detail

2	SURFACE BOLT STRIKE PLATE
5	Sill Detail

STRIKE JAMES

FRAME ANCHORING
Masonry 2X buck construction

HINGE JAMB

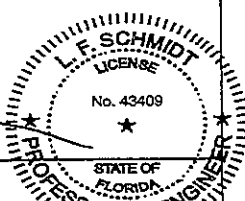
HINGE DETAIL

LATCH & DEADBOLT DETAIL

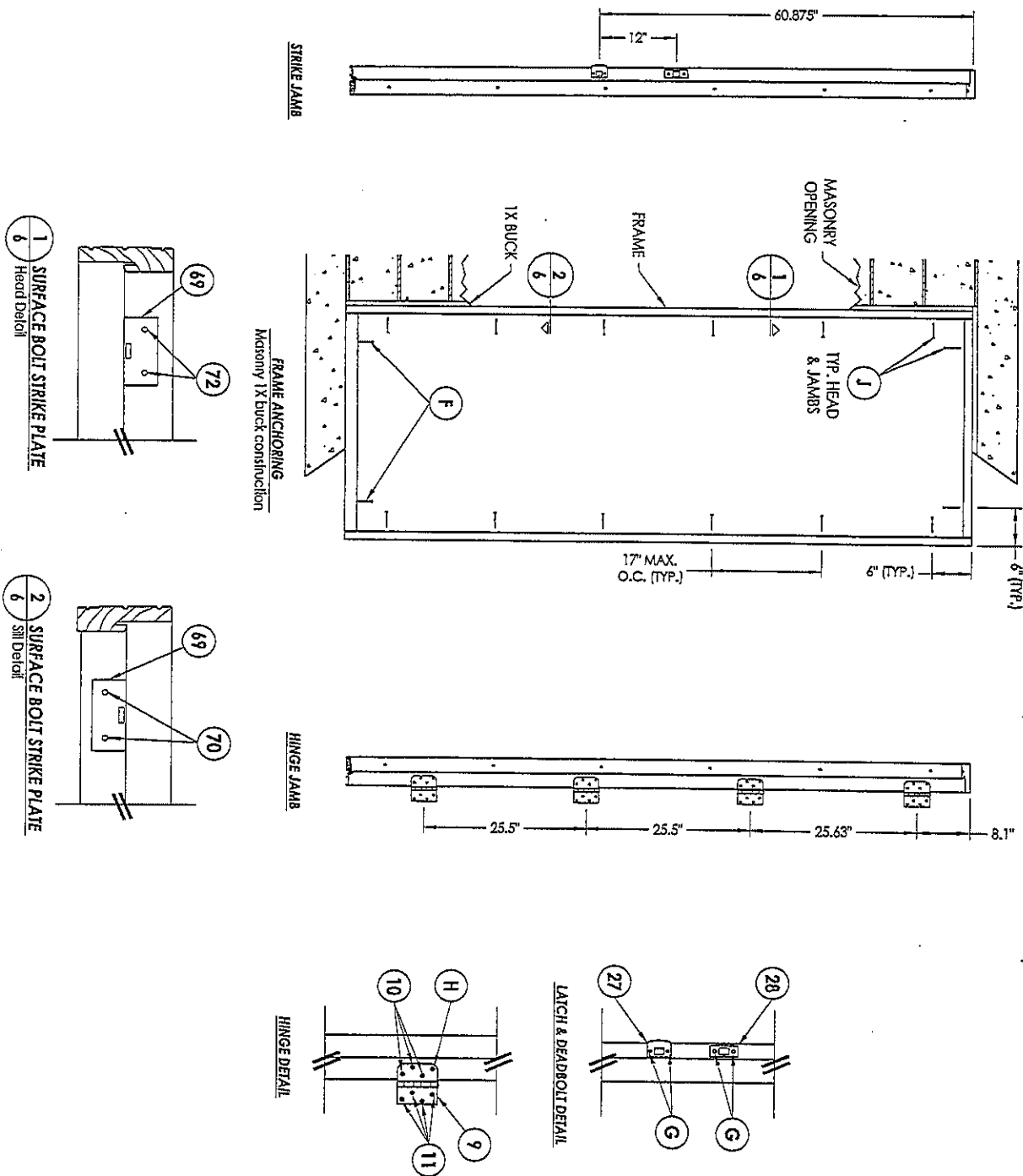
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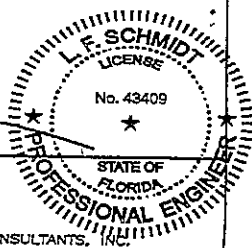
DATE 10/19/2017		SCALE: N.T.S.		DWG. BY: JK		CHK. BY: LFS		DRAWING NO.: FL-21131.10		SHEET 5 OF 7	
										PRODUCT: THERMA-TRU STEEL DOOR	
										PART OR ASSEMBLY:	
										BUCK AND FRAME ANCHORING 2	
										BUCK MASONRY CONSTRUCTION	
										REVISIONS	
										LFS BY	
										NO. DATE	
										1 7/14/20 UPDATE TO 7TH ED (2020) FBC	



July 14, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

Rw BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
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FBPE Registry No. 9813



PRODUCT:

THERMA-TRU
STEEL DOOR

PART OR ASSEMBLY:

FRAME ANCHORING 1X BUCK
MASONRY CONSTRUCTION

NO.	DATE	REVISIONS	BY
1	7/14/20	UPDATE TO 7TH ED. (2020) FBC	LFS

DATE 10/12/17

SCALE: N.T.S.

CHK. BY: JK

DRWG. NO.: FL-21131.10

SHEET 6 OF 7

Product Evaluation Report**Report No.: FL-21131.1****Date: July 14, 2020**

Product Category	Sub Category	Manufacturer	Product Name
Exterior Doors	Swinging Exterior Door Assemblies	Therma-Tru Corporation 118 Industrial Dr Edgerton, OH 43517 Phone 419-298-1740	Profiles and Traditions Wood Edge Opaque Steel Single Door Inswing / Outswing "Non-Impact"

Scope: Product Evaluation report issued by R W Building Consultants, Inc. & Lyndon F. Schmidt, P.E. (System ID # 1998) for Therma-Tru Corporations, based on Rule Chapter No. 61G20-3, Method 1D of the State of Florida Product Approval, Dept. of Business & Professional Regulation.

RW Building Consultants and Lyndon F. Schmidt, P.E. do not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named herein.

Limitations:

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. When used in areas requiring wind borne debris protection, this product is required to be protected with an impact resistant covering that complies with FBC Sections 1609.1.2 & R301.2.1.2.
4. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
5. Site conditions that deviate from the details of drawing FL-21131.1 require further engineering analysis by a licensed engineer or registered architect.
6. See drawing FL-21131.1 for size and design pressure limitations.

Supporting Documents:

- | | |
|---|--|
| 1. <u>Test Report No.</u>
TEL 01460145
TEL 01460554 | <u>Test Standard</u>
ASTM E330-02 & ASTM E331-00
ASTM E330-02 & ASTM E331-00 |
| 2. <u>Drawing No.</u>
No. FL-21131.1 | <u>Prepared by</u>
RW Building Consultants, Inc. (#9813) |
| 3. <u>Calculations</u>
Anchoring | <u>Prepared by</u>
RW Building Consultants, Inc. (#9813) |

Testing Laboratory
 Testing Evaluation Lab., Inc.
 Testing Evaluation Lab., Inc.

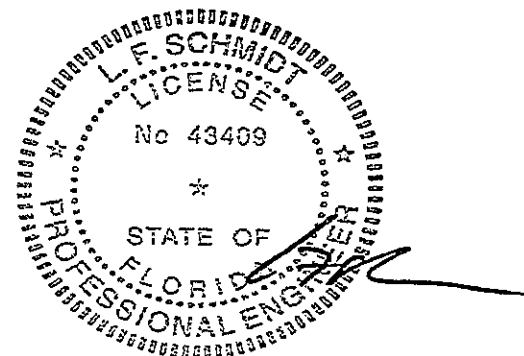
Signed by
 V.K. Wright
 V.K. Wright

Signed & Sealed by
 Lyndon F. Schmidt, P.E.

Signed & Sealed by
 Lyndon F. Schmidt, P.E.

4. Quality Assurance

Certificate of Participation issued by National Accreditation & Management Institute, certifying that Therma-Tru Corporations is manufacturing products within a quality assurance program that complies with ISO/IEC 17020 and Guide 53.



Lyndon F. Schmidt, P.E.
 FL PE No. 43409
 7/14/2020

THERMA-TRU® DOORS

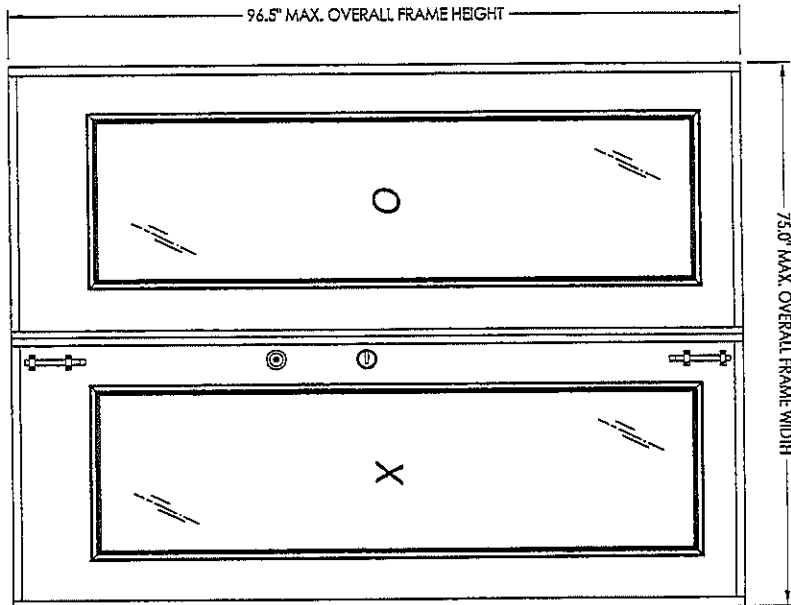
Traditions

WOOD EDGE GLAZED STEEL SINGLE DOOR W/ SIDELITE OUTSWING "NON-IMPACT"

GENERAL NOTES

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. When used in areas requiring wind borne debris protection, this product is required to be protected with an impact resistant covering that complies with FBC Sections 1609.1.2 & R301.2.1.2.
4. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
5. Site conditions that deviate from the details of this drawing require further engineering analysis by a licensed engineer or registered architect.

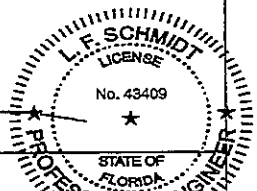
TABLE OF CONTENTS	
SHEET #	DESCRIPTION
1	Typical elevations, design pressures & general notes
2	Door panel details
3	Sidelite panel details & glazing details
4	Horizontal cross sections
5	Vertical cross sections
6	Vertical cross sections
7	Buck and frame anchoring - 2x buck masonry construction
8	Frame anchoring - 1x buck masonry construction
9	Bill of Materials & Components



CONFIGURATION	DESIGN PRESSURE (psf)	
	POSITIVE	NEGATIVE
OX, XO	+48.0	-51.0

July 14, 2020

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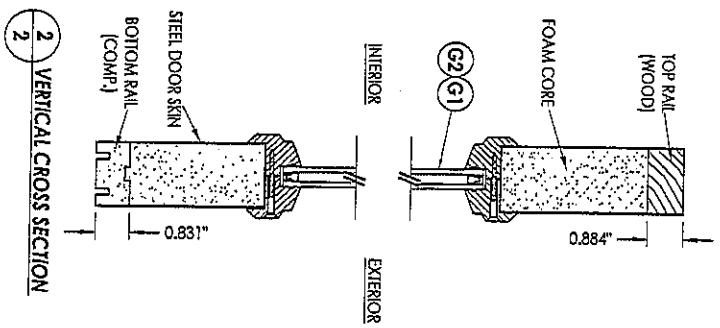
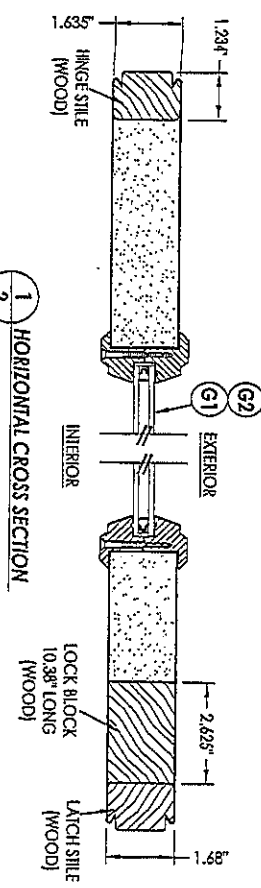
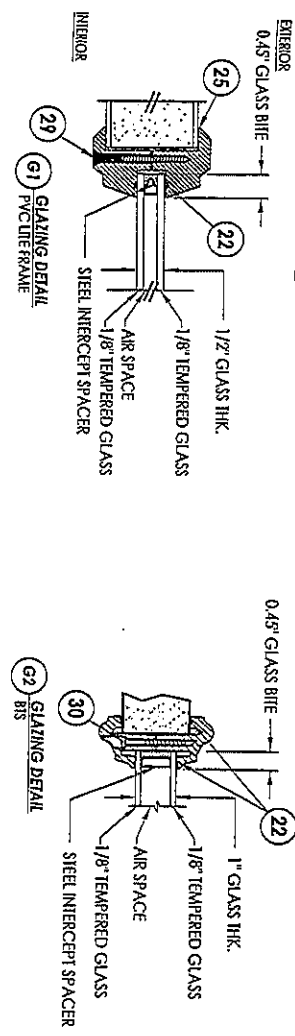
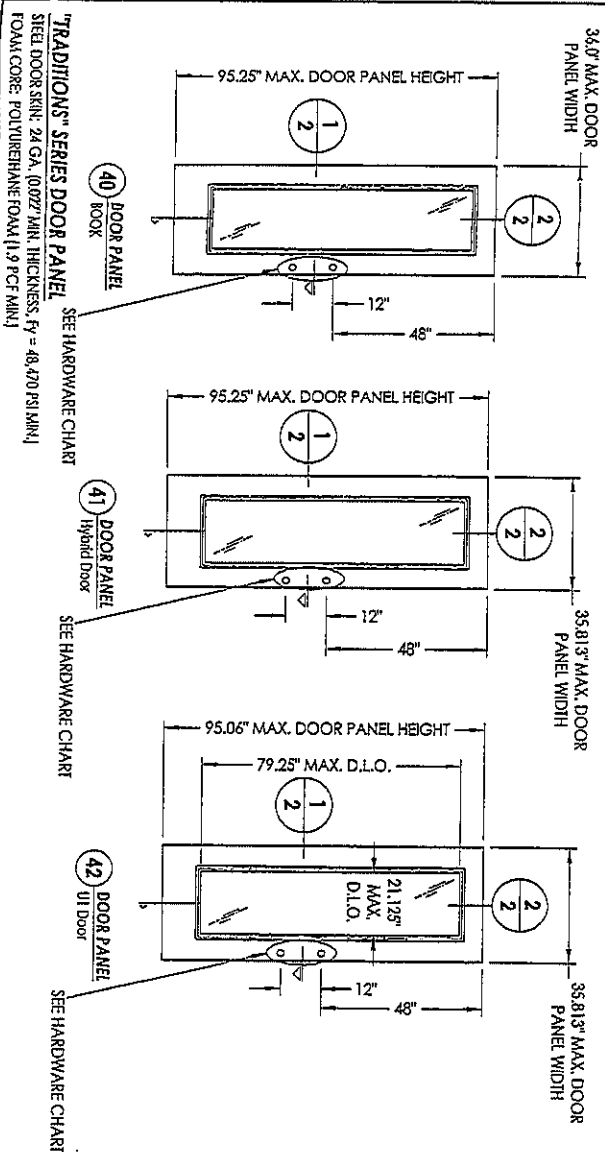


BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
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PRODUCT:
THERMA-TRU
STEEL DOOR

PART OR ASSEMBLY:
TYPICAL ELEVATION, DESIGN
PRESSURES & GENERAL NOTES

NO.	DATE	REVISIONS	BY
1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS



HARDWARE TABLE	
MANUFACTURER	MODEL
Kwikset	Kwikset Series
Deadbolt:	Kwikset Series (660)

DATE: 10/12/17	SCALE: N.T.S.	CHK. BY: JIK	DATE: 7/14/20	UPDATE TO 7TH ED (2020) FBC	NO. 1
FL-21131.11	FL-21131.11	FL-21131.11	FL-21131.11	FL-21131.11	FL-21131.11
REVISIONS					
PRODUCT: THERMA-TRU STEEL DOOR					
PART OR ASSEMBLY: "TRADITIONS" DOOR PANEL AND GLAZING DETAILS					
DRAWING NO.: FL-21131.11					
SHEET 2 OF 9					

July 14, 2020

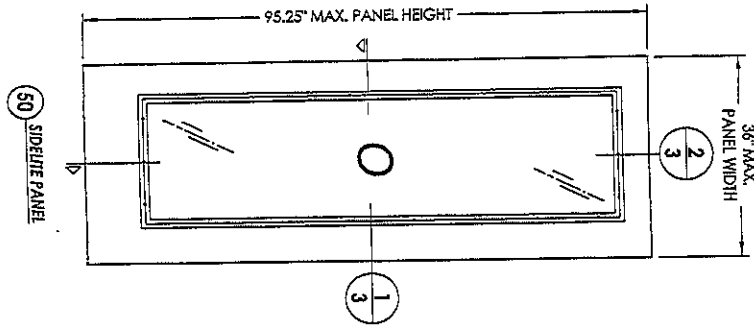
Documents Prepared By: Lyndon F. Schmidt P.E. No. 43409

STATE OF FLORIDA PROFESSIONAL ENGINEER

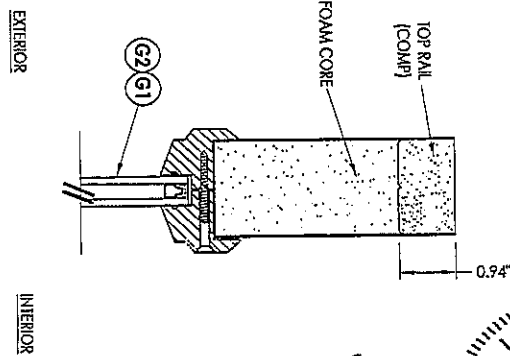
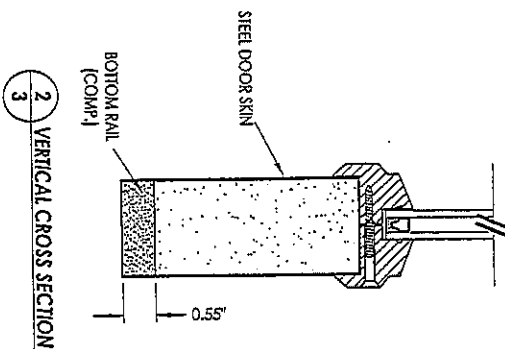
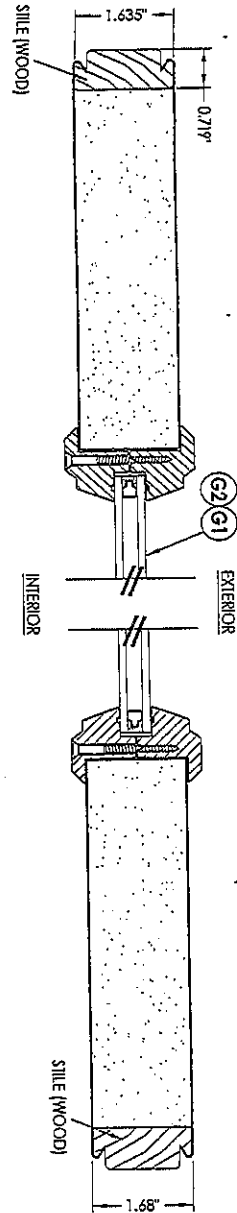
L. F. SCHMIDT LICENSE No. 43409

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SIDELITE PANEL
 STEEL SKIN (TYPICAL): 24 GA. (0.027 MIN. THICKNESS, F_y = 48,470 PSI MIN.)
 FOAM CORE: POLYURETHANE FOAM (1.9 PCF MIN.)



1 HORIZONTAL CROSS SECTION

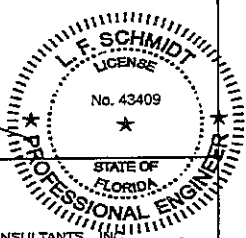


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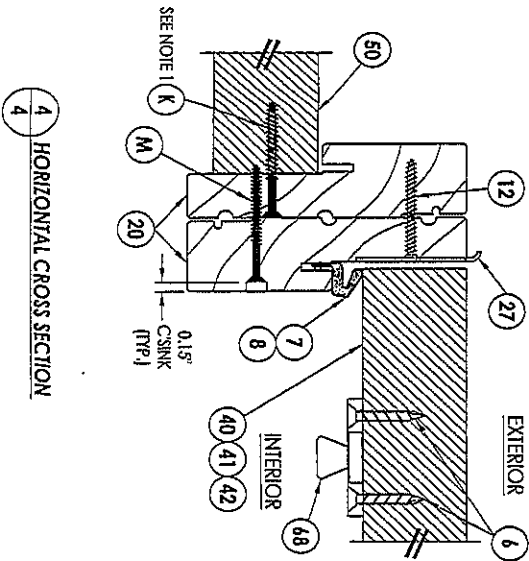
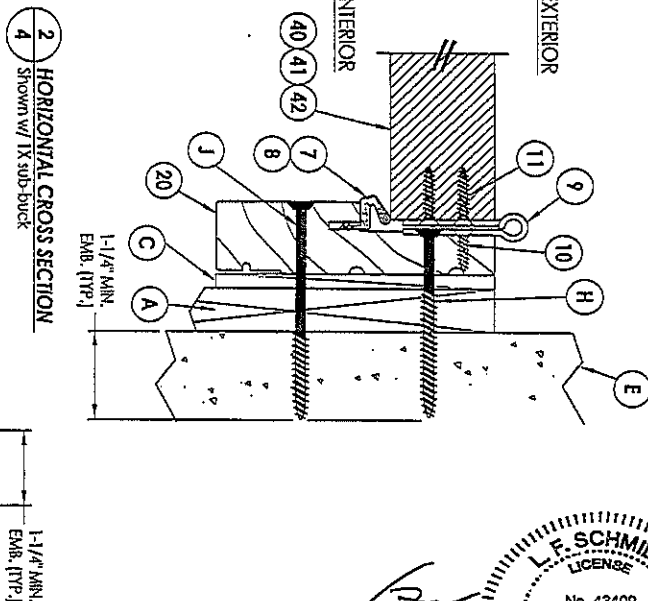
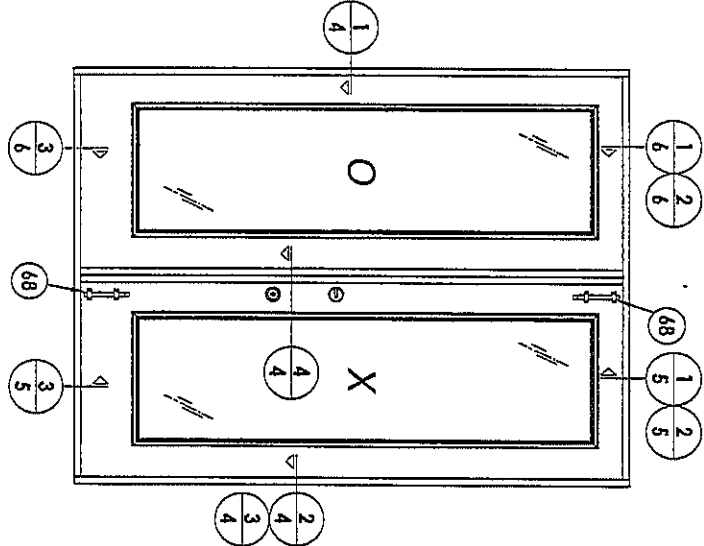
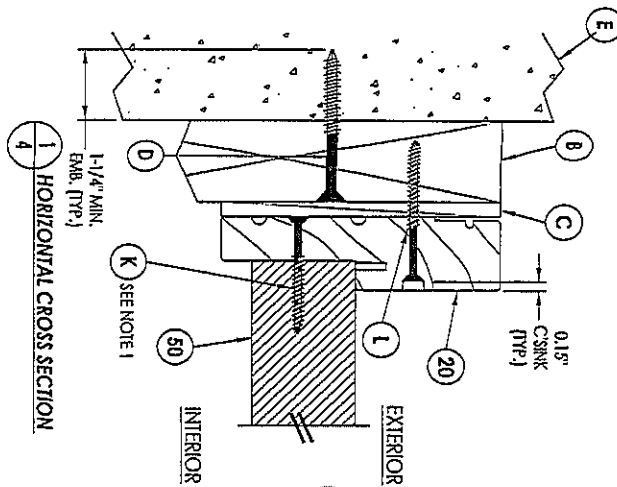
Documents Prepared By:
 Lyndon F. Schmidt
 P.E. No. 43409

RW

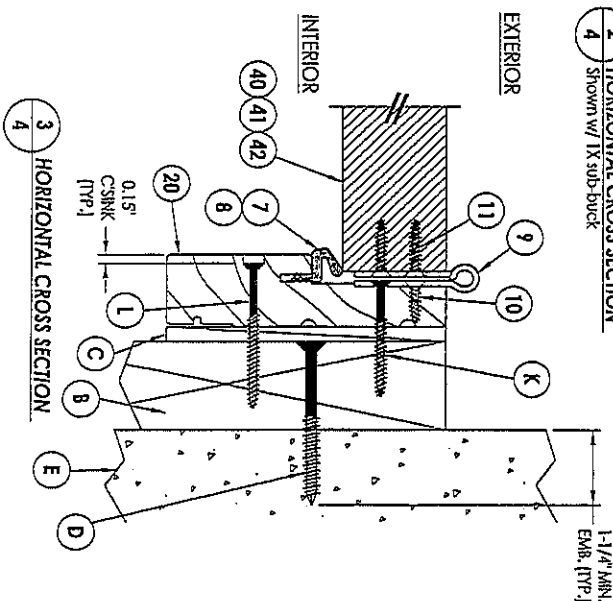
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 P.O. Box 230, Valrico, FL 33595
 Phone No.: 813.659.9197
 FBPE Registry No. 9813



PRODUCT:		THERMA-TRU STEEL DOOR	
PART OR ASSEMBLY:		SIDELITE PANEL DETAILS	
NO.	DATE	REVISIONS	BY
1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS



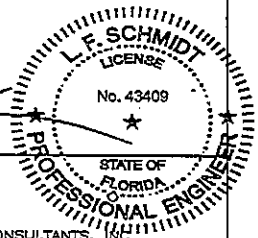
NOTES:
1. The sidelite is direct set into the jamb with item JK of 6\"/>



July 14, 2020

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Lyndon F. Schmidt
P.E. No. 43409

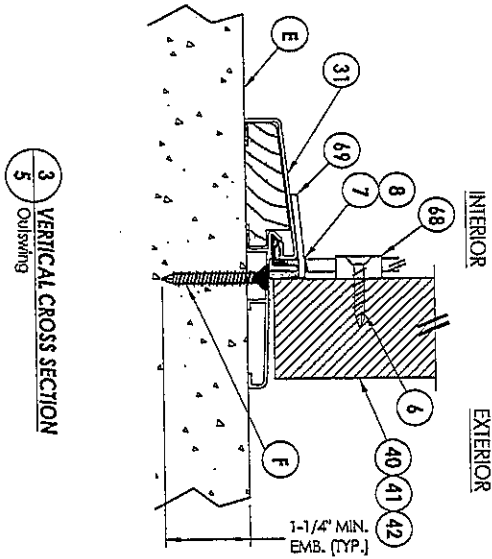
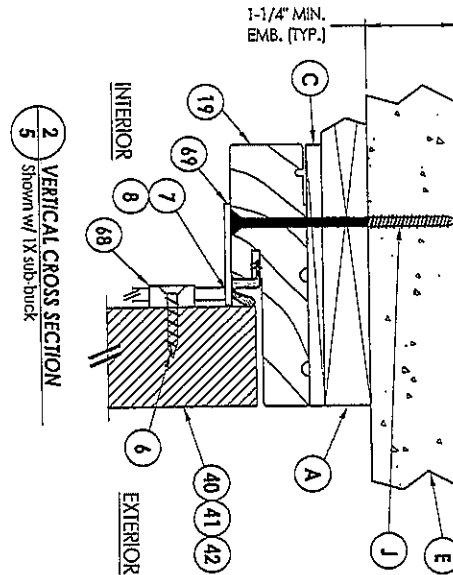
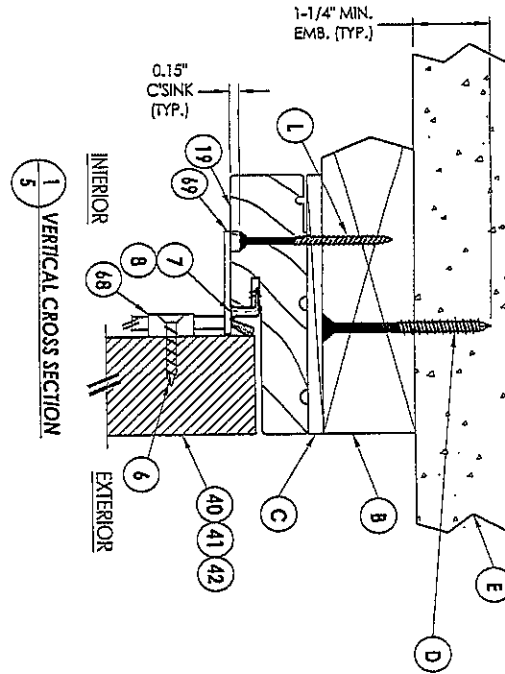
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Phone No.: 813.659.9197
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PRODUCT:
THERMA-TRU
STEEL DOOR
PART OR ASSEMBLY:
HORIZONTAL
CROSS SECTIONS

NO.	DATE	REVISIONS	BY
1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS

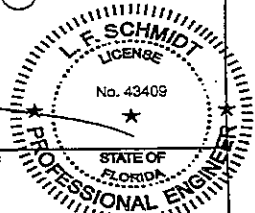
SHEET 4 OF 9



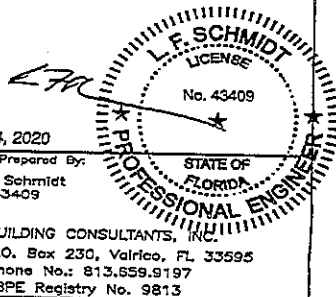
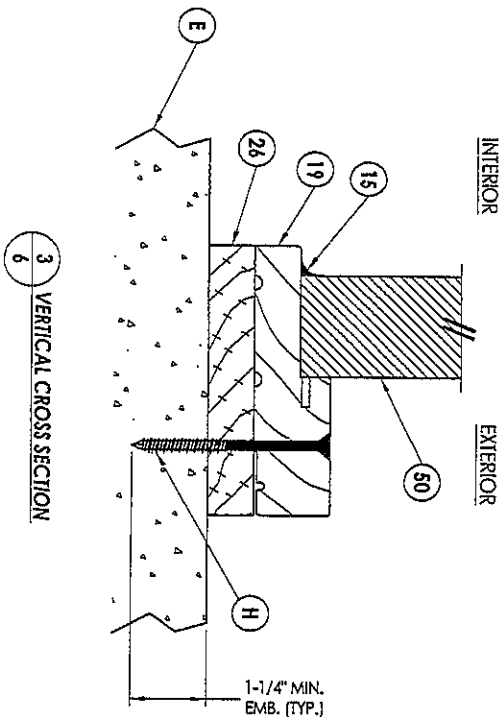
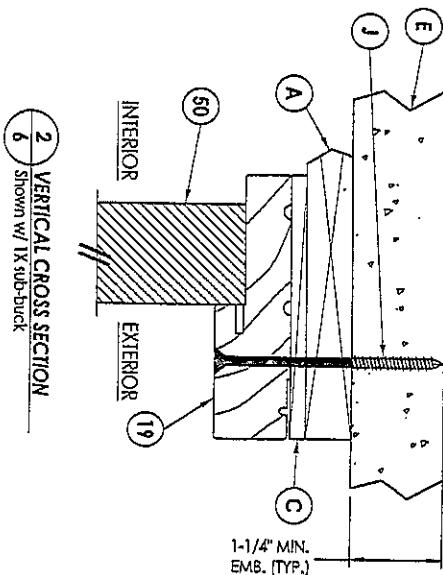
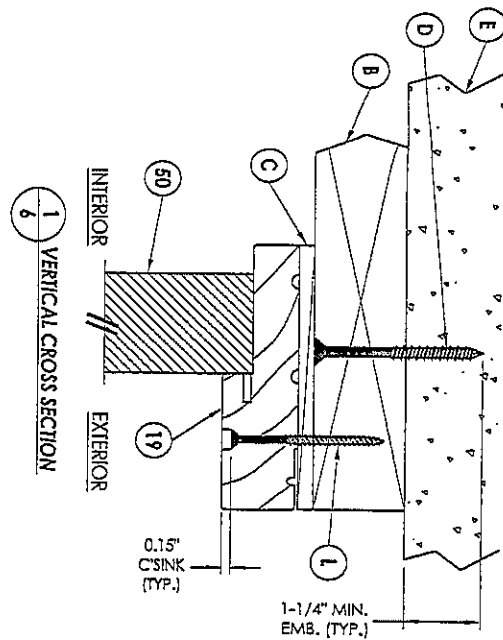
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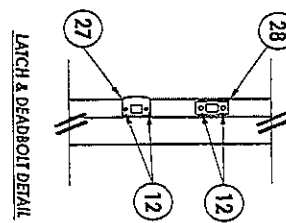
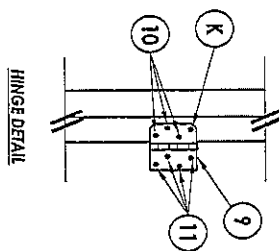
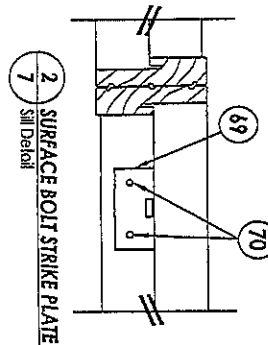
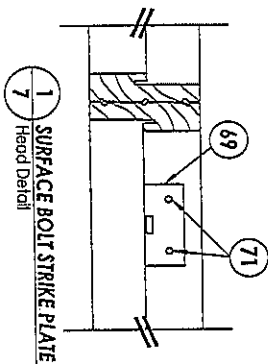
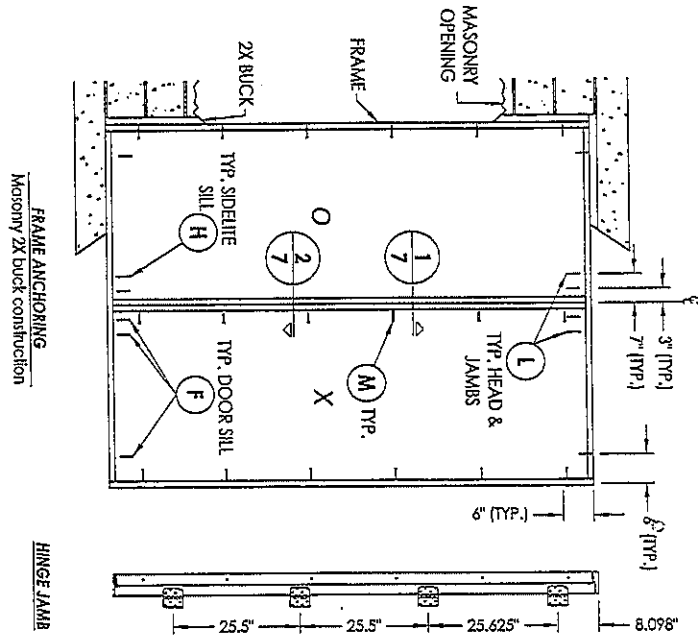
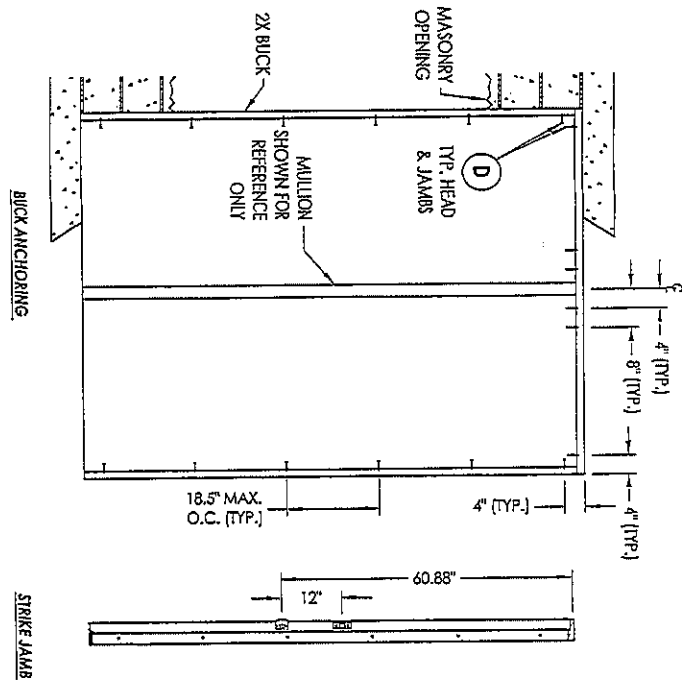
RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813



PRODUCT:		THERMA-TRU STEEL DOOR	
PART OR ASSEMBLY:		VERTICAL CROSS SECTIONS	
NO.	DATE	REVISIONS	BY
1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS
5			



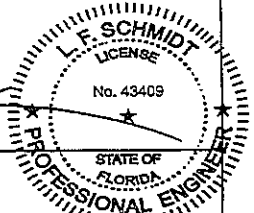
SHEET 6 of 9		July 14, 2020		Documents Prepared By:		BUILDING CONSULTANTS, INC.	
PRODUCT:		THERMA-TRU		Lyndon F. Schmidt		P.O. Box 230, Valrico, FL 33595	
PART OR ASSEMBLY:		STEEL DOOR		P.E. No. 43409		Phone No.: 813.659.9197	
VERTICAL		CROSS SECTIONS		R.W.		FBPE Registry No. 9813	
NO.		DATE		BY		REVISIONS	
1		7/14/20		UPDATE TO 7TH ED (2020) FBC		LFS	
DATE		10/12/17		SCALE: N.T.S.		CHK. BY: LFS	
DRAWING NO:		FL-21131.11		DWG. BY: JK		© 2017 R.W. BUILDING CONSULTANTS INC.	



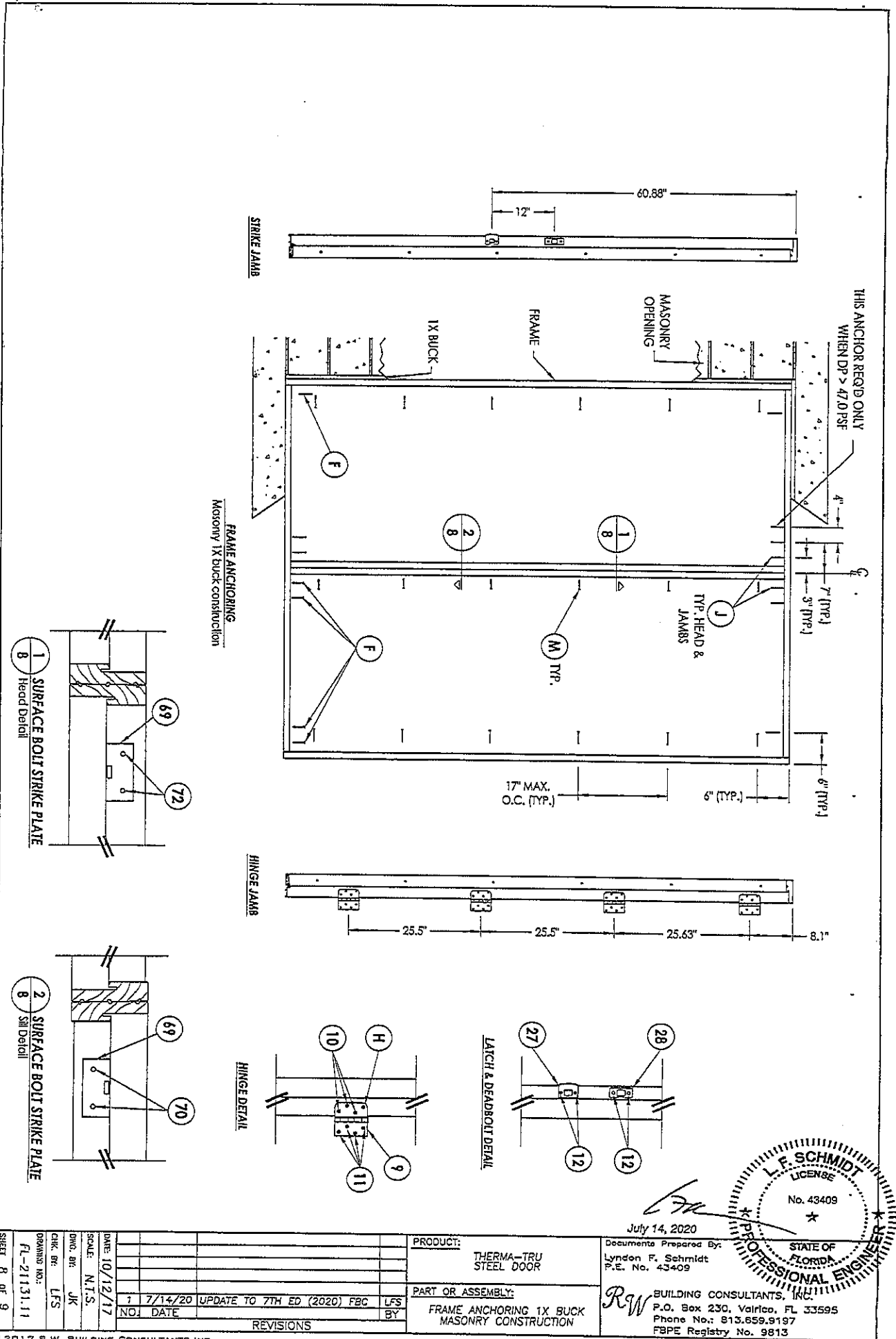
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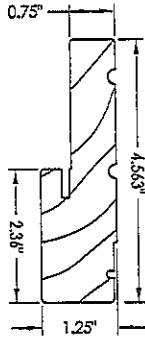


PRODUCT:	THERMA-TRU STEEL DOOR
PART OR ASSEMBLY:	BUCK & FRAME ANCHORING 2X BUCK MASONRY CONSTRUCTION
DATE:	7/14/20
BY:	LFS
REVISIONS:	UPDATE TO 7TH ED (2020) FBC
NO:	1
DATE:	7/14/20
DATE:	10/12/17
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	FL-21131.11
SHEET:	7 OF 9

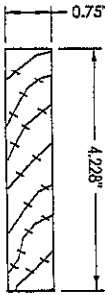


NOTE: DOOR & SIDELITE WOOD COMPONENTS: PINE (SG >= 0.42)

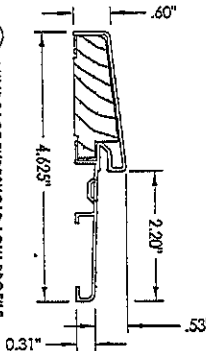
ITEM	DESCRIPTION	MATERIAL	ITEM	DESCRIPTION	MATERIAL
A	1X BUCK SG >= 0.55	WOOD	22	1/8" THK. CELLULAR GLAZING TAPE (SIK-I TAPE)	SILICONE
B	2X BUCK SG >= 0.55	WOOD	25	GLAZING COMPOUND (BOSIK HOT-MELT)	WOOD
C	MAX. 1/4" SHIM SPACE	WOOD	26	3/4" THK. PRESURE TREATED SIDELITE PAD	WOOD
D	1/4" X 2-3/4" PHH ELCO CONCRETE SCREW	STEEL	27	LATCH STRIKE PLATE	STEEL
E	MASONRY - 3.192 RI MIN. CONCRETE CONFORMING TO ACI 308 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE	28	DEADBOLT PLATE	STEEL
F	1/4" X 1-3/4" PHH CONCRETE SCREW	STEEL	29	#6-18 X 1-3/4" PHH SCREW	STEEL
G	1/4" X 3-1/4" PHH CONCRETE SCREW	STEEL	30	#8-10 X 1-1/2" PHH PLASCREW	ALUM. / WOOD
H	3/16" X 3-1/4" PHH CONCRETE SCREW	STEEL	31	BUMP FACE THRESHOLD LOW PROFILE	-
I	1/4" X 3-3/4" PHH CONCRETE SCREW	STEEL	40	DOOR PANEL (BOOK) - "TRADITIONS"	-
J	1/4" X 3-3/4" PHH CONCRETE SCREW	STEEL	41	DOOR PANEL (HYBRID) - "TRADITIONS"	-
K	#10 X 2" PHH WOOD SCREW	STEEL	42	DOOR PANEL (UI) - "TRADITIONS"	-
L	#10 X 2-1/2" PHH WOOD SCREW (1.15" MIN. EMBEDMENT)	STEEL	50	SIDELITE PANEL - SEE SIDELITE PANEL DETAILS SHEET FOR DETAILS	-
M	#8 X 2" PHH WOOD SCREW	STEEL	68	IVES SURFACE BOLT (.25 STEEL)	STEEL
N	#10 X 1-1/4" L.G. TYPE A FLAHEAD	STEEL	69	SURFACE BOLT STRIKE PLATE (10" STEEL)	STEEL
O	SHORT REACH COMPRESSION WEATHER STRIP	FOAM	70	3/16" X 2-1/4" PHH CONCRETE SCREW	STEEL
P	LONG REACH COMPRESSION WEATHER STRIP	FOAM	71	#8 X 2-1/2" PHH WOOD SCREW	STEEL
Q	4" X 4" HINGE .097" THK.	STEEL	72	3/16" X 3-3/4" PHH CONCRETE SCREW	STEEL
R	#10 X 3/4" PHH WOOD SCREW (HINGE TO FRAME)	STEEL			
S	#10 X 1" PHH WOOD SCREW	STEEL			
T	#10 X 1-3/4" PHH WOOD SCREW	STEEL			
U	LATEX CAULK	LATEX			
V	HEADER JAMB (PINE, SG >= 0.42)	WOOD			
W	SIDE JAMB (PINE, SG >= 0.42)	WOOD			



19 HEAD & SIDE JAMB



20 SIDELITE PAD



31 BUMP FACE THRESHOLD LOW PROFILE

CONCRETE ANCHOR NOTES:

1. Concrete anchor locations at the corners may be adjusted to maintain the min. edge distance to mortar joints.
2. Concrete anchor locations noted as "MAX. ON CENTER" must be adjusted to maintain the min. edge distance to mortar joints, additional concrete anchors may be required to ensure the "MAX. ON CENTER" dimension are not exceeded.
3. Concrete anchor table:

ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW TAPCON®	1/4"	1-1/4"	2"	4"
ELCO ULTRACON®	1/4"	1-1/4"	1"	4"
ITW TAPCON®	3/16"	1-1/4"	3"	1-1/2"

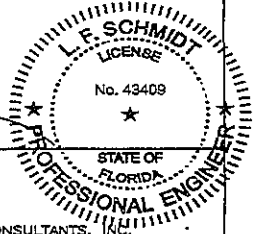
WOOD SCREW INSTALLATION NOTES:

1. Maintain a minimum 5/8" edge distance, 1" end distance, & 1" o.c. spacing of wood screws to prevent the splitting of wood.

July 14, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Vero Beach, FL 33595
Phone No.: 813.658.9197
FBPE Registry No. 9813



PRODUCT: THERMA-TRU STEEL DOOR
PART OR ASSEMBLY: BILL OF MATERIALS & COMPONENTS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7/14/20	UPDATE TO 7TH ED (2020) FBC	LFS

DATE: 10/12/17
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-21131.11
SHEET 9 OF 9

THERMA-TRU[®]

DOORS

Fiber-Classic, & Smooth-Star[®]

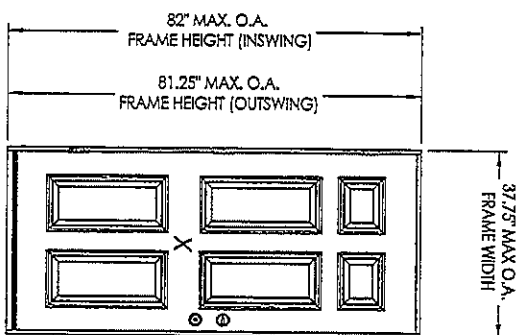
COMPOSITE EDGE OPAQUE FIBERGLASS SINGLE DOOR INSWING/OUTSWING "NON-IMPACT"

GENERAL NOTES

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
4. Site conditions that deviate from the details of this drawing require further engineering analysis by a licensed engineer or registered architect.
5. Fiber-Classic & Smooth-Star Door panels require the use of "J" part numbers and must be stored or painted within six months of installation.

TABLE OF CONTENTS

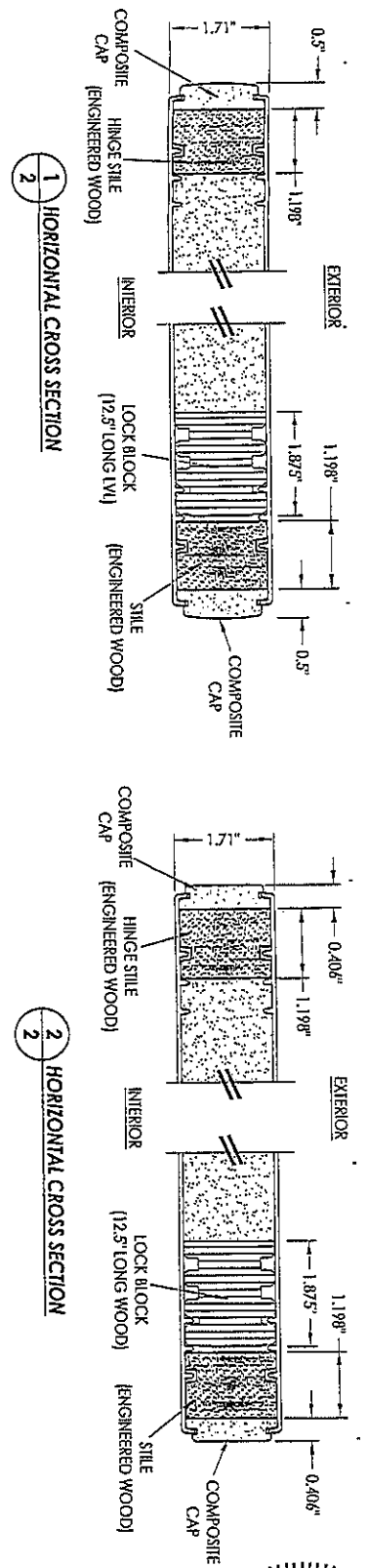
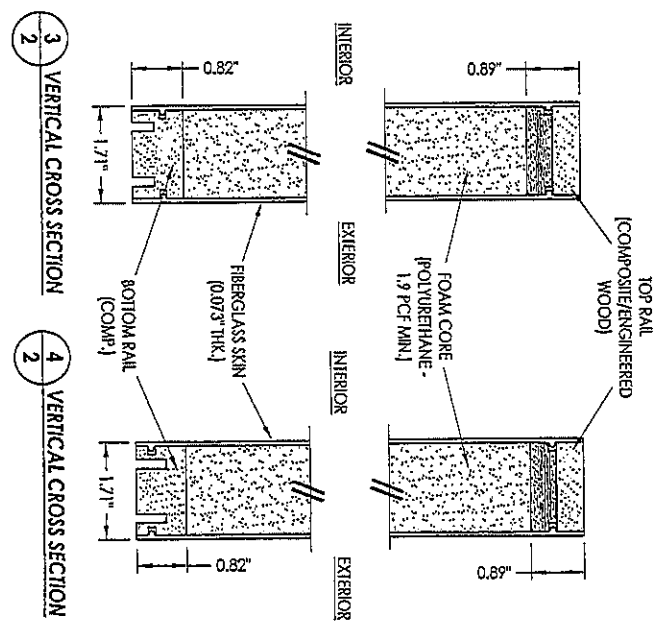
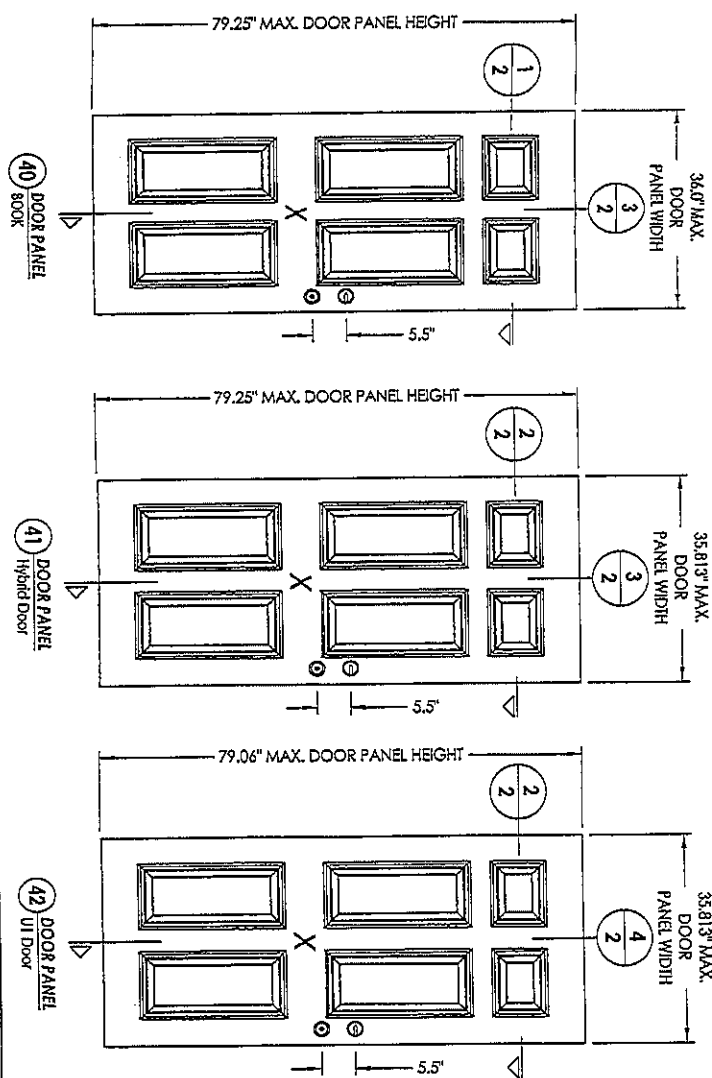
SHEET #	DESCRIPTION
1	Typical Elevation, Design Pressures & General Notes
2	Door Panel Details
3	Elevations
4	Horizontal & Vertical Cross Sections (2x Buck)
5	Horizontal & Vertical Cross Sections (1x Buck)
6	Horizontal & Vertical Cross Sections (Direct To Masonry)
7	Vertical Cross Sections (Threshold)
8	Buck & Frame Anchoring
9	Hardware Details
10	Components
11	Bill of Materials



CONFIGURATION	LOCK HARDWARE	DESIGN PRESSURE (psf)		DESIGN PRESSURE (psf)	
		INSWING	OUTSWING	POSITIVE	NEGATIVE
X	Latch & Deadbolt	+70.0	-75.0	+67.0	-67.0
X	Multipoint	+80.0	-80.0	+80.0	-80.0

See Sheet 3 for Hardware Specifications

DATE: 5/26/16	SCALE: N.T.S.	CHK. BY: LFS	DATE: 7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
DATE: 10/09/18	REV. DOOR PANEL OPTION NOTE	MT	DATE: 11/15/17	RECESSED PANEL NOTATION	JK
DATE: 7/7/17	UPDATE TO 6th ED (2017) FBC	JK	DATE: 7/7/17	UPDATE TO 6th ED (2017) FBC	JK
NO. 1	DATE	BY	NO. 1	DATE	BY
PRODUCT:	THERMA-TRU FIBERGLASS DOOR	PART OR ASSEMBLY:	TYPICAL ELEVATION, DESIGN PRESSURES & GENERAL NOTES	DATE: 7/22/2020	REVISIONS
Documents Prepared By:	Lyndon F. Schmidt P.E. No. 43409	Building Consultants, Inc.	P.O. Box 230, Vero Beach, FL 33595 Phone No.: 813.659.9197 FBPE Registry No. 9813	STATE OF FLORIDA L.F. SCHMIDT LICENSE No. 43409 PROFESSIONAL ENGINEER	© 2016 R.W. BUILDING CONSULTANTS INC.



July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, LLC
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

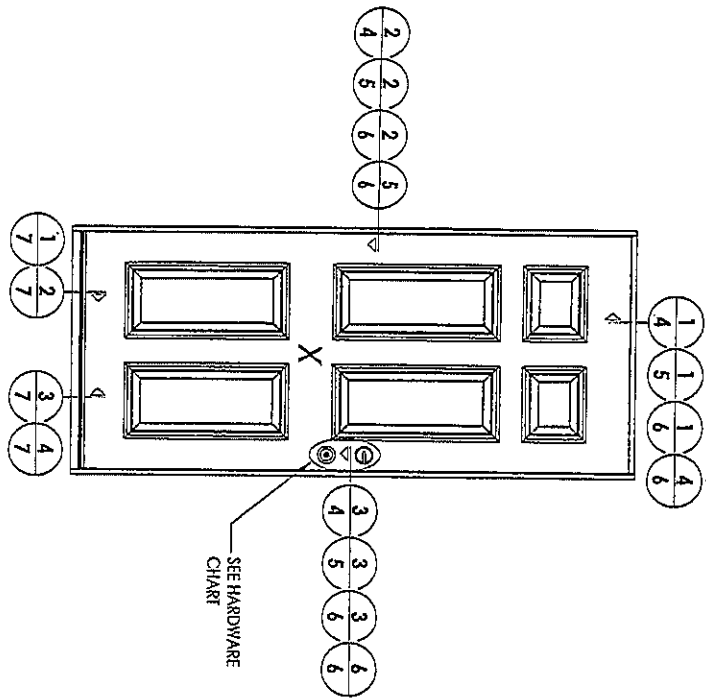
L. F. SCHMIDT
LICENSE
No. 43409
★
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE: 5/26/16		SCALE: N.T.S.		DATE: 7/21/20		UPDATE TO 7th ED (2020) FBC		LFS	
DATE: 10/09/18		REV. DOOR PANEL OPTION NOTE		3		10/09/18		MT	
DATE: 11/15/17		RECESSED PANEL NOTATION		2		11/15/17		JK	
DATE: 7/7/17		UPDATE TO 6th ED (2017) FBC		1		7/7/17		JK	
NO.		DATE		BY		BY		BY	
REVISIONS									

PRODUCT:		THERMA--TRU FIBERGLASS DOOR	
PART OR ASSEMBLY:		DOOR PANEL DETAILS	

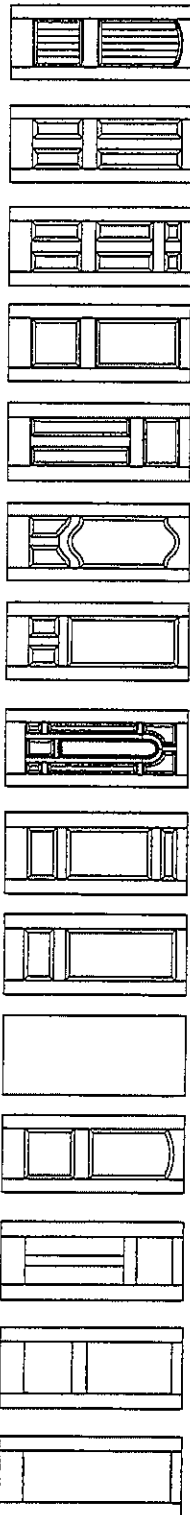
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SHEET 2 of 11	
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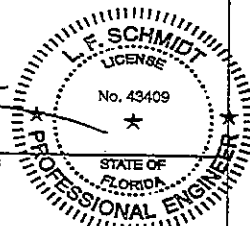
HARDWARE TABLE	
MANUFACTURER	MODEL
SCHLAGE	KNOB: F51 DEADBOLT: B60
KWIKSET	KNOB: SIGNATURE SERIES DEADBOLT: SIGNATURE SERIES (980)
HOPPE (THERMA-TRU)	MULTIPOINT: MPDGART (3 pt. Manual Tongue)

Fiber-Classic/Smooth-Star Door Panel Options
 Products approved include all embossed and recessed panel doors.
 Similar glazed panel configurations are allowed.
 Panels shown are for illustration and are representative only.



July 22, 2020

Documents Prepared By:
 Lyndon F. Schmidt
 P.E. No. 43409



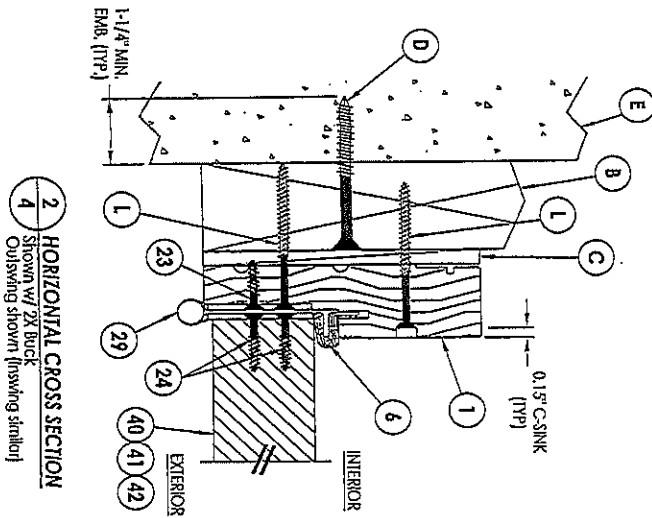
RW BUILDING CONSULTANTS, INC.
 P.O. Box 230, Valrico, FL 33595
 Phone No.: 813.659.9197
 FBPE Registry No. 9813

PRODUCT:
 THERMA-TRU
 FIBERGLASS DOOR

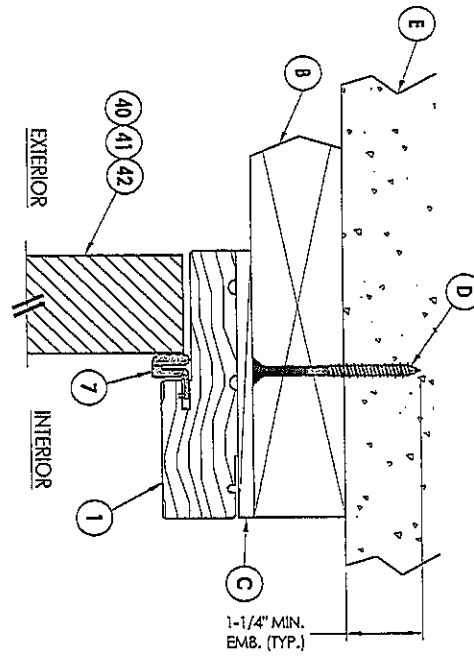
PART OR ASSEMBLY:
 ELEVATIONS

NO.	DATE	REVISIONS	BY
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT
2	11/15/17	RECESSED PANEL NOTATION	JK
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK

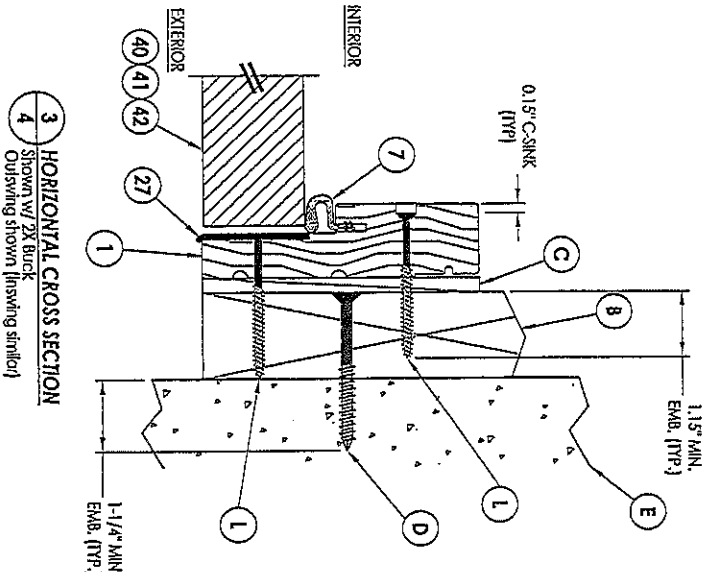
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 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: FL-20461.1
 SHEET 3 OF 11



2 HORIZONTAL CROSS SECTION
4 Shown w/ 2X Buck
Outswing shown (finishing similar)



1 VERTICAL CROSS SECTION
4 Shown w/ 2X Buck
Outswing shown (finishing similar)

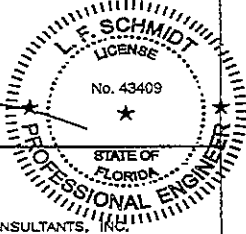


3 HORIZONTAL CROSS SECTION
4 Shown w/ 2X Buck
Outswing shown (finishing similar)

July 22, 2020

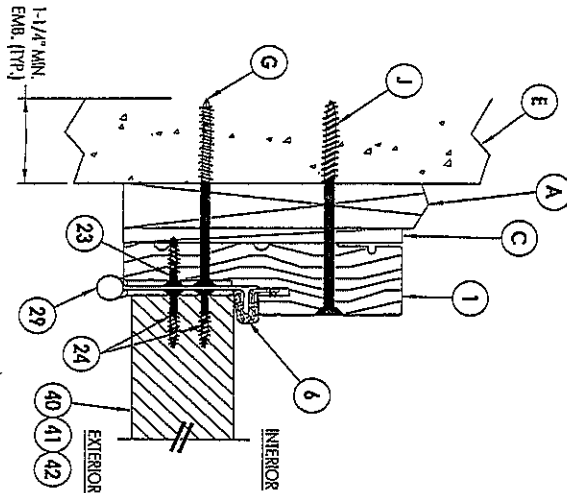
Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

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P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

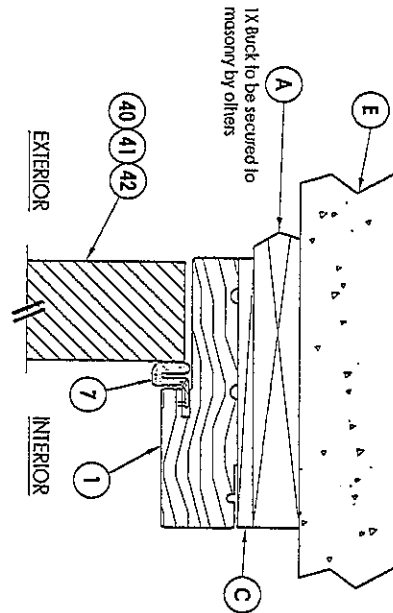


REVISIONS		
NO.	DATE	BY
1	7/7/17	UPDATE TO 6th ED (2017) FBC
2	11/15/17	RECESSED PANEL NOTATION
3	10/09/18	REV. DOOR PANEL OPTION NOTE
4	7/21/20	UPDATE TO 7th ED (2020) FBC
DATE: 5/26/16		
SCALE: N.T.S.		
DWG. BY: JK		
CHK. BY: LFS		
DRAWING NO.: FL-20461.1		
SHEET 4 OF 11		

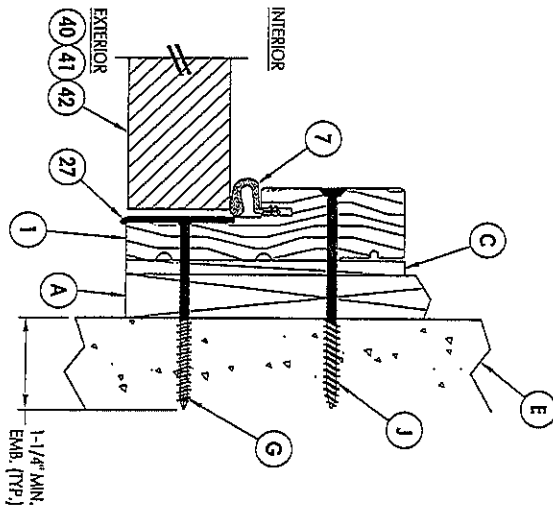
2 HORIZONTAL CROSS SECTION
Shown w/ 1X sub-buck
Outswing shown (finishing similar)



1 VERTICAL CROSS SECTION
Shown w/ 1X sub-buck
Outswing shown (finishing similar)



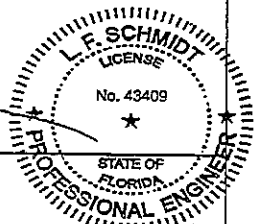
3 HORIZONTAL CROSS SECTION
Shown w/ 1X sub-buck
Outswing shown (finishing similar)



July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813



PRODUCT:
THERMA-TRU
FIBERGLASS DOOR

PART OR ASSEMBLY:
HORIZONTAL & VERTICAL
CROSS SECTIONS (1X BUCK)

NO.	DATE	REVISIONS	BY
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT
2	11/15/17	RECESSED PANEL NOTATION	JK
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK

DATE: 5/26/16

SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DESIGNED BY: FL-20461.1

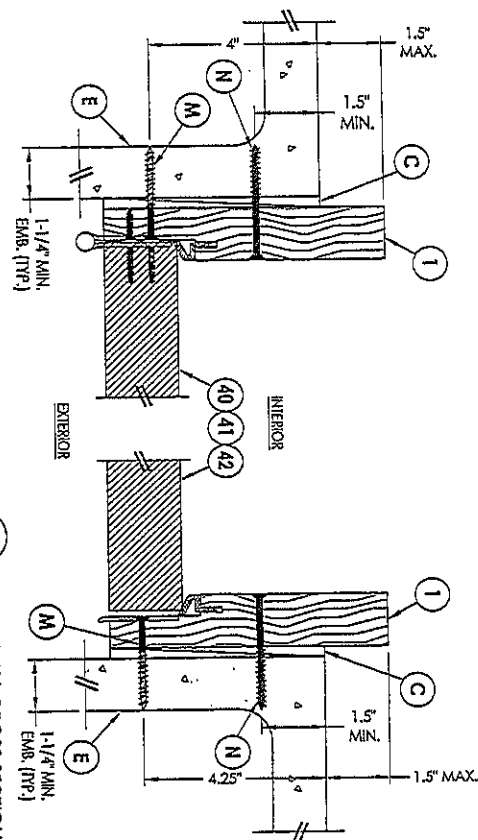
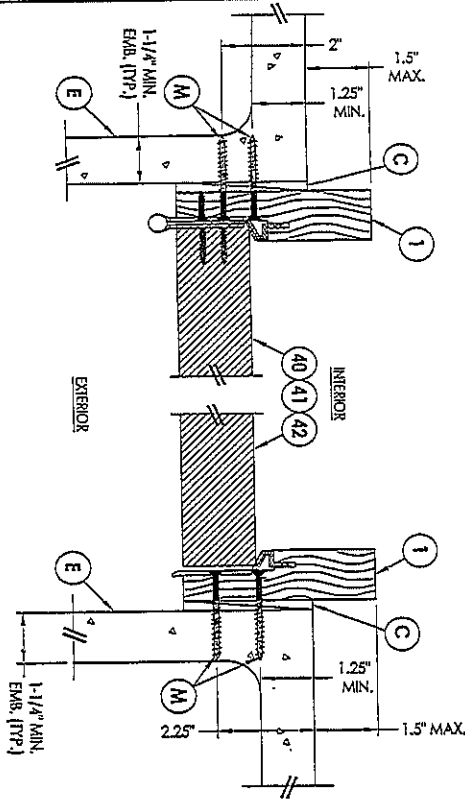
SHEET 5 of 11

2 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb

3 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb

5 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb

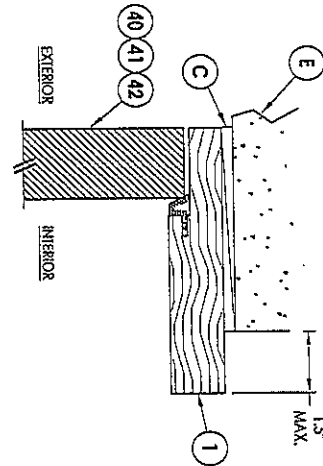
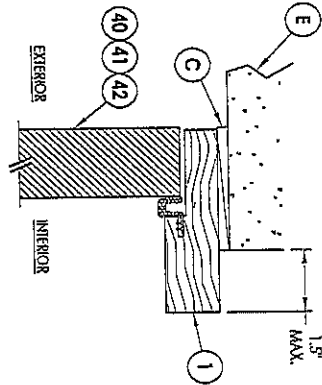
6 HORIZONTAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb



1 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 4-9/16" jamb

DIRECT TO MASONRY MAX. DESIGN PRESSURE:
w/ STANDARD STRIKE = ± 55 PSF
w/ SECURITY STRIKE = ± 65 PSF

4 VERTICAL CROSS SECTION
Shown Direct to Masonry
Outswing only w/ 6-9/16" jamb



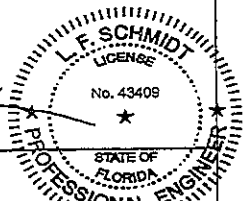
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3/10/09/18	MT	REV. DOOR PANEL OPTION NOTE	MT
2/11/15/17	JK	RECESSED PANEL NOTATION	JK
1/7/7/17	JK	UPDATE TO 6th ED (2017) FBC	JK
NO DATE	BY		

PRODUCT:
THERMA-TRU
FIBERGLASS DOOR

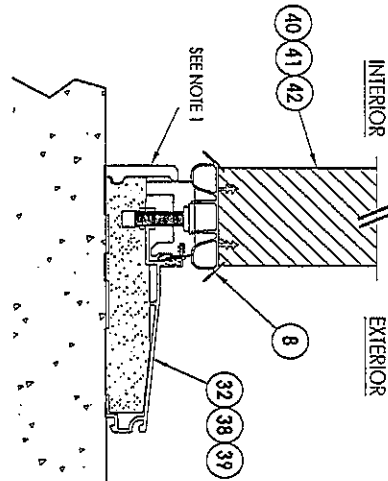
PART OR ASSEMBLY:
HORIZONTAL & VERTICAL
SECTIONS (DIRECT TO MASONRY)

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

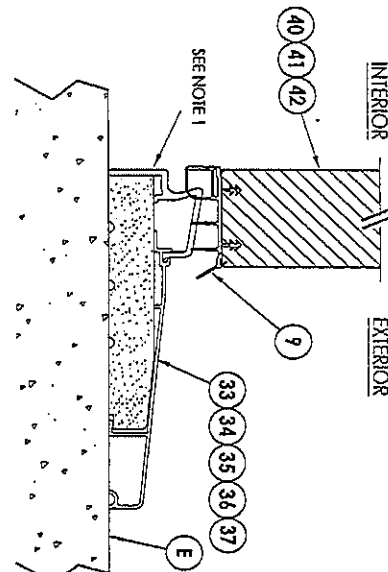
RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813



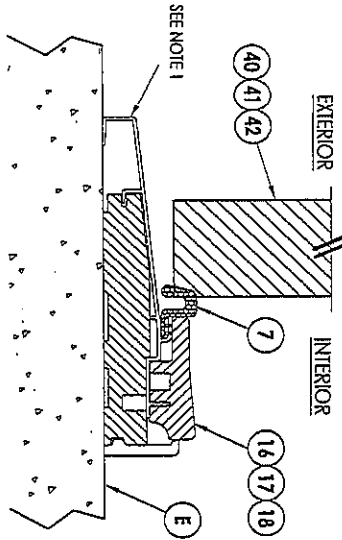
Notes:
1. Sill Item #s 17, 18, 32, 34, 35, 36, 37, 38 & 39 are attached to joints w/ (3) #8 X 2-1/2" phl screws at each end.
Sill Item #s 16 & 33 are attached to joints w/ (2) #8 X 2-1/2" phl screws at each end.
Sill Item #15 is attached to joints utilizing (2) #10 X 2" phl S&S at each end.



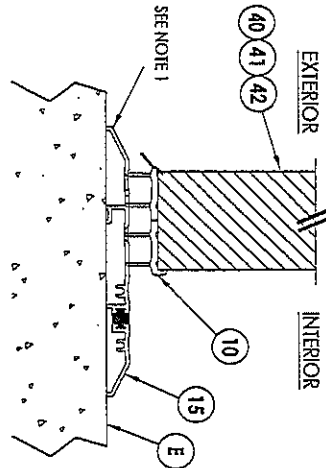
1 VERTICAL CROSS SECTION
7 Inswing Sill



2 VERTICAL CROSS SECTION
7 Inswing Sill



3 VERTICAL CROSS SECTION
7 Outswing Sill

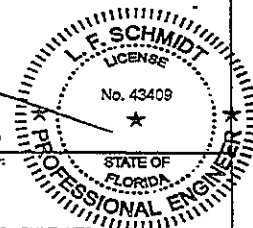


4 VERTICAL CROSS SECTION
7 Public Access Sill

July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

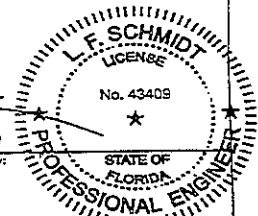
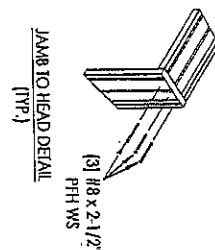
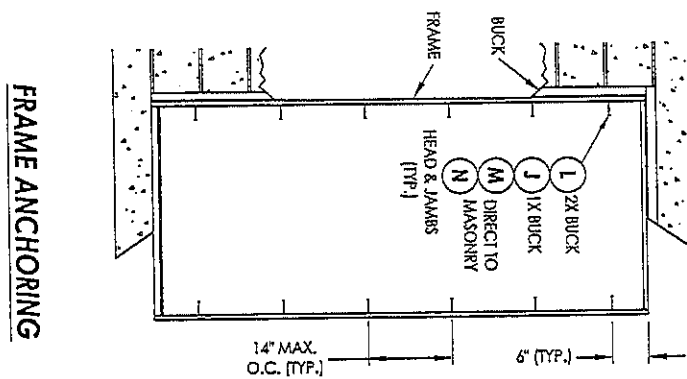
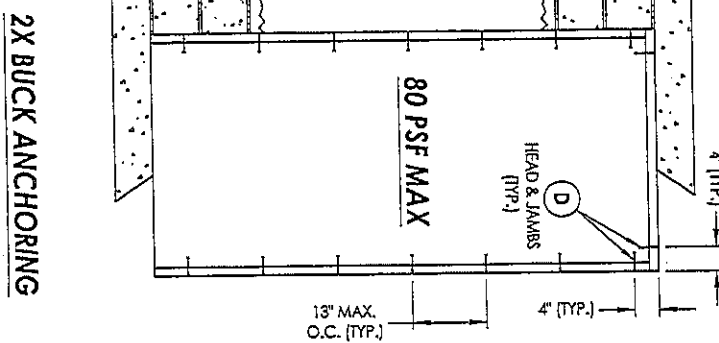
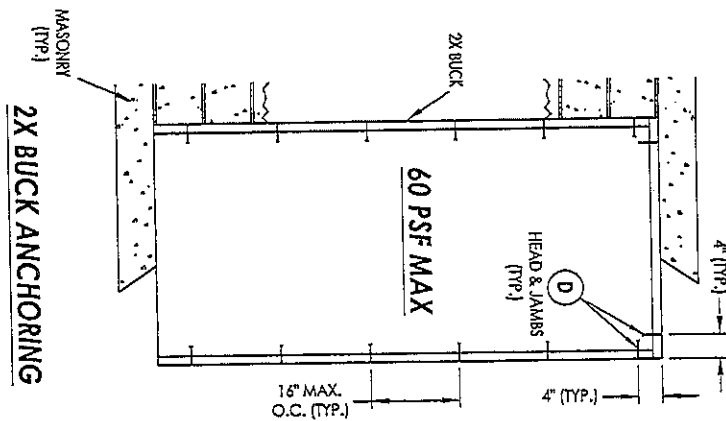


PRODUCT:
THERMA-TRU
FIBERGLASS DOOR

PART OR ASSEMBLY:
VERTICAL CROSS
SECTIONS (THRESHOLDS)

NO.	DATE	REVISIONS	BY
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT
2	11/15/17	RECESSED PANEL NOTATION	JK
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK

DATE: 5/26/16
SCALE: N.T.S.
DWN. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-20461.1
SHEET 7 OF 11

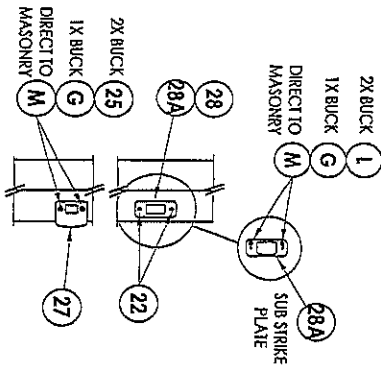
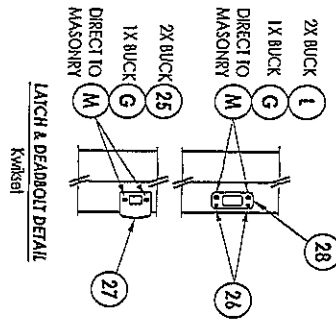


July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

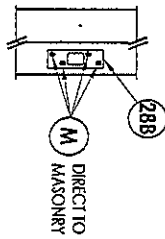
RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

						PRODUCT:	
						THERMA-TRU FIBERGLASS DOOR	
						PART OR ASSEMBLY:	
						BUCK & FRAME ANCHORING	
DATE 5/28/16							
NO.	DATE	REVISIONS				BY	
4	7/21/20	UPDATE TO 7th ED (2020) FBC				LFS	
3	10/09/18	REV. DOOR PANEL OPTION NOTE				MT	
2	11/15/17	RECESSED PANEL NOTATION				JK	
1	7/7/17	UPDATE TO 6th ED (2017) FBC				JK	
SCALE: N.T.S.							
DIMS. IN: JK							
CRK. BY: LFS							
DRAWING NO.: FL-2046.1							
SHEET B OF 11							

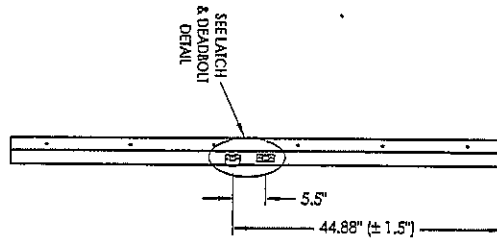


LATCH & DEADBOLT STRIKE DETAILS (Standard Deadbolt Strike Plate)

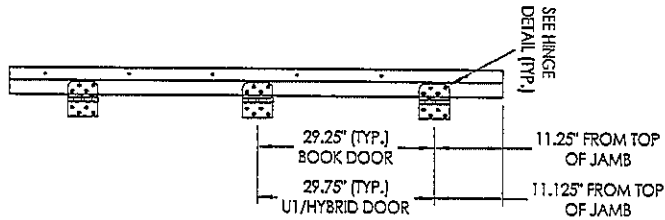
LATCH & DEADBOLT DETAIL
Schlage



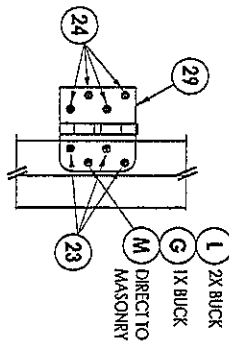
DEADBOLT STRIKE DETAILS (Security Deadbolt Strike Plate)



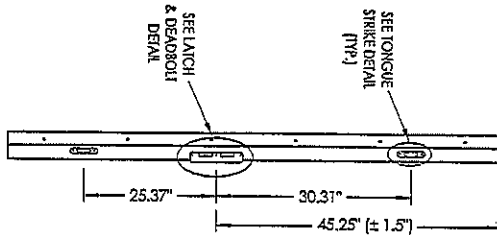
STRIKE JAMB
Latch and Deadbolt



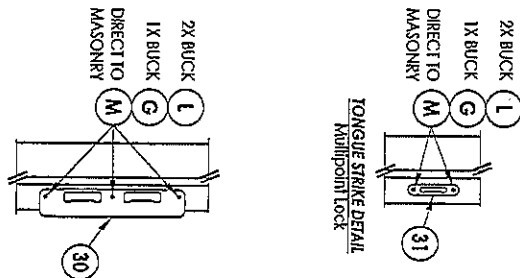
HINGE JAMB



HINGE DETAIL



STRIKE JAMB
Multipoint Lock



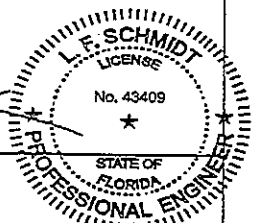
MULTIPOINT LOCK STRIKE DETAILS

LATCH & DEADBOLT DETAIL
Multipoint Lock

July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

R.W. BUILDING CONSULTANTS, INC.
P.O. Box 230, Vero Beach, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

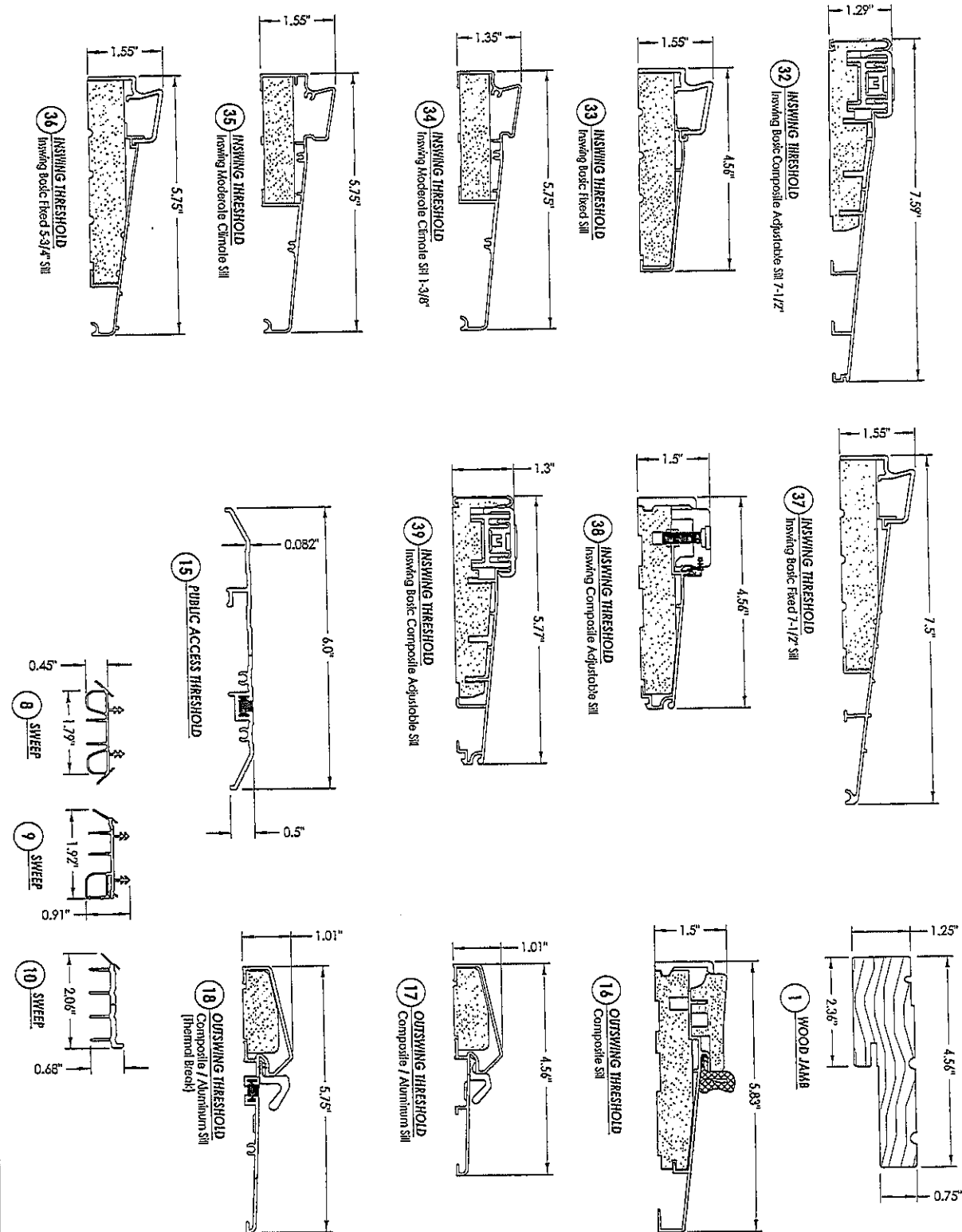


PRODUCT:
THERMA-TRU
FIBERGLASS DOOR

PART OR ASSEMBLY:
HARDWARE DETAILS

NO.	DATE	REVISIONS	BY
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT
2	11/15/17	RECESSED PANEL NOTATION	JK
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK

DATE: 5/26/16
SCALE: N.T.S.
DWN. BY: JK
CHK. BY: LFS
DRAWING NO.: FL-20461.1
SHEET 9 OF 11



July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

RW BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

REVISIONS				COMPONENTS	
NO.	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS		
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT		
2	11/15/17	RECESSED PANEL NOTATION	JK		
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK		

PRODUCT: THERMA-TRU FIBERGLASS DOOR

PART OR ASSEMBLY:

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BILL OF MATERIALS			BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL	ITEM #	DESCRIPTION	MATERIAL
A	1X BUCK (SG >= 0.42)	WOOD	25	#8 x 2-1/2" PFH WOOD SCREW	STEEL
B	2X BUCK (SG >= 0.42)	WOOD	26	#8 x 5/8" PFH WOOD SCREW	STEEL
C	1/4" MAX. SHIM SPACE		27	LATCH STRIKE PLATE	STEEL
D	1/4" X 2-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL	28	DEADBOLT STRIKE PLATE (STANDARD)	STEEL
E	MASONRY 3,000 PSI MIN. CONCRETE CONFORMING TO ACI 301 OR HOLLOW BLOCK CONFORMING TO ASTM C90	CONCRETE	28A	DEADBOLT SUB STRIKE PLATE	STEEL
G	3/16" X 3-1/4" ITW CONCRETE SCREW	STEEL	28B	DEADBOLT STRIKE PLATE (SECURITY)	STEEL
J	1/4" X 3-3/4" PFH ELCO OR ITW CONCRETE SCREW	STEEL	29	4" X 4" HINGE	STEEL
L	#10 X 2-1/2" PFH WOOD SCREW (1.15" MIN. EMBEDMENT)	STEEL	30	LATCH & DEADBOLT STRIKE PLATE (TONGUE SYSTEM)	ALUM/COMP
M	3/16" X 2-1/4" ITW CONCRETE SCREW	STEEL	31	MULTIPOINT STRIKE PLATE (TONGUE SYSTEM)	ALUM/COMP
N	3/16" X 2-3/4" ITW CONCRETE SCREW	STEEL	32	INSWING THRESHOLD	ALUM/COMP
1	JAMB (FINGER JOINT PINE)	WOOD	33	INSWING THRESHOLD	ALUM/COMP
6	WEATHERSTRIP (MEDIUM REACH)	FOAM	34	INSWING THRESHOLD	ALUM/COMP
7	WEATHERSTRIP (LONG REACH)	FOAM	35	INSWING THRESHOLD	ALUM/COMP
8	SWEEP	FOAM	36	INSWING THRESHOLD	ALUM/COMP
9	SWEEP (USE W/ MODERATE CLIMATE THRESHOLD)	VINYL	37	INSWING THRESHOLD	ALUM/COMP
10	SWEEP (USE W/ PUBLIC ACCESS THRESHOLD)	VINYL	38	INSWING THRESHOLD	ALUM/COMP
15	PUBLIC ACCESS THRESHOLD	VINYL	39	INSWING THRESHOLD	ALUM/COMP
16	OUTSWING THRESHOLD	ALUM	40	DOOR PANEL (BOOK)	ALUM/COMP
17	OUTSWING THRESHOLD	ALUM/COMP	41	DOOR PANEL (HYBRID)	ALUM/COMP
18	OUTSWING THRESHOLD	ALUM/COMP	42	DOOR PANEL (U)	
22	#8 x 3/4" PFH WOOD SCREW	STEEL			
23	#10 x 3/4" PFH WOOD SCREW	STEEL			
24	#10 x 1" PFH WOOD SCREW	STEEL			

CONCRETE ANCHOR NOTES:

- Concrete anchor locations of the corners may be adjusted to maintain the min. edge distance to mortar joints.
- Concrete anchor locations noted as "MAX. ON CENTER" must be adjusted to maintain the min. edge distance to mortar joints, additional concrete anchors may be required to ensure the "MAX. ON CENTER" dimension are not exceeded.
- Concrete anchor label:

ANCHOR TYPE	ANCHOR SIZE	MIN. EMBEDMENT	MIN. CLEARANCE TO MASONRY EDGE	MIN. CLEARANCE TO ADJACENT ANCHOR
ITW	1/4"	1-1/4"	2"	4"
ELCO	1/4"	1-1/4"	1"	4"
ULTRACON	1/4"	1-1/4"	AS SHOWN	1-1/2"
ITW	3/16"	1-1/4"	AS SHOWN	1-1/2"
TAPCON	3/16"	1-1/4"	AS SHOWN	1-1/2"

WOOD SCREW INSTALLATION NOTES:

- Maintain a minimum 5/8" edge distance, 1" end distance, & 1" o.c. spacing of wood screws to prevent the splitting of wood.

July 22, 2020

Documents Prepared By:
Lyndon F. Schmidt
P.E. No. 43409

STATE OF FLORIDA
PROFESSIONAL ENGINEER
BUILDING CONSULTANTS, INC.
P.O. Box 230, Valrico, FL 33595
Phone No.: 813.659.9197
FBPE Registry No. 9813

PRODUCT:
THERMA-TRU
FIBERGLASS DOOR

PART OR ASSEMBLY:
BILL OF MATERIALS

NO.	DATE	REVISIONS	BY
4	7/21/20	UPDATE TO 7th ED (2020) FBC	LFS
3	10/09/18	REV. DOOR PANEL OPTION NOTE	MT
2	11/15/17	RECESSED PANEL NOTATION	JK
1	7/7/17	UPDATE TO 6th ED (2017) FBC	JK

Product Evaluation Report

Report No.: FL-20461.1
Date: July 21, 2020

Product Category	Sub Category	Manufacturer	Product Name
Exterior Doors	Swinging Exterior Door Assemblies	Therma-Tru Corporation 118 Industrial Dr Edgerton, OH 43517 Phone 419-298-1740	Fiber-Classic and Smooth-Star Composite Edge Opaque Fiberglass Single Door Inswing / Outswing "Non-Impact"

Scope: Product Evaluation report issued by R W Building Consultants, Inc. & Lyndon F. Schmidt, P.E. (System ID # 1998) for Therma-Tru Corporations, based on Rule Chapter No. 61G20-3, Method 1D of the State of Florida Product Approval, Dept. of Business & Professional Regulation.

RW Building Consultants and Lyndon F. Schmidt, P.E. do not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named herein.

Limitations:

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
4. Site conditions that deviate from the details of drawing FL-20461.1 require further engineering analysis by a licensed engineer or registered architect.
5. Fiber-Classic & Smooth-Star Door panels require the use of "J" part numbers and must be stained or painted within six months of installation.
6. See drawing FL-20461.1 for size and design pressure limitations.

Supporting Documents:

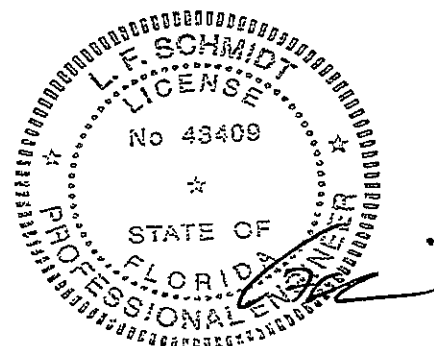
- | | |
|--|--|
| 1. <u>Test Report No.</u>
TEL 01460145
TEL 01461573 | <u>Test Standard</u>
ASTM E330-02 & ASTM E331-00
ASTM E330-02 & ASTM E331-00 |
| 2. <u>Drawing No.</u>
No. FL-20461.1 | <u>Prepared by</u>
RW Building Consultants, Inc. (#9813) |
| 3. <u>Calculations</u>
Anchoring | <u>Prepared by</u>
RW Building Consultants, Inc. (#9813) |
| 4. <u>Quality Assurance</u>
Certificate of Participation issued by National Accreditation & Management Institute, certifying that Therma-Tru Corporations is manufacturing products within a quality assurance program that complies with ISO/IEC 17020 and Guide 53. | |

Testing Laboratory
 Testing Evaluation Lab., Inc.
 Testing Evaluation Lab., Inc.

Signed by
 V.K. Wright
 V.K. Wright

Signed & Sealed by
 Lyndon F. Schmidt, P.E.

Signed & Sealed by
 Lyndon F. Schmidt, P.E.



Lyndon F. Schmidt, P.E.
 FL PE No. 43409
 7/22/2020

Product Evaluation Report**Report No.:** FL-20461.11**Date:** July 21, 2020

Product Category	Sub Category	Manufacturer	Product Name
Exterior Doors	Swinging Exterior Door Assemblies	Therma-Tru Corporation 118 Industrial Dr Edgerton, OH 43517 Phone 419-298-1740	Fiber-Classic and Smooth-Star Composite Edge Glazed Fiberglass Double Door w/ or w/out Sidelites Inswing / Outswing "Non-Impact"

Scope: Product Evaluation report issued by R W Building Consultants, Inc. & Lyndon F. Schmidt, P.E. (System ID # 1998) for Therma-Tru Corporations, based on Rule Chapter No. 61G20-3, Method 1D of the State of Florida Product Approval, Dept. of Business & Professional Regulation.

RW Building Consultants and Lyndon F. Schmidt, P.E. do not have nor will acquire financial interest in the company manufacturing or distributing the product or in any other entity involved in the approval process of the product named herein.

Limitations:

1. This product has been evaluated and is in compliance with the 7th Edition (2020) Florida Building Code (FBC) structural requirements excluding the "High Velocity Hurricane Zone" (HVHZ).
2. Product anchors shall be as listed and spaced as shown on details. Anchor embedment to base material shall be beyond wall dressing or stucco.
3. When used in areas requiring wind borne debris protection, this product is required to be protected with an impact resistant covering that complies with FBC Sections 1609.1.2 & R301.2.1.2.
4. For 2x stud framing construction, anchoring of these units shall be the same as that shown for 2x buck masonry construction.
5. Site conditions that deviate from the details of drawing FL-20461.11 require further engineering analysis by a licensed engineer or registered architect.
6. Fiber-Classic & Smooth-Star Door and Sidelite panels require the use of "J" part numbers and must be stained or painted within six months of installation
7. See drawing FL-20461.11 for size and design pressure limitations.

Supporting Documents:

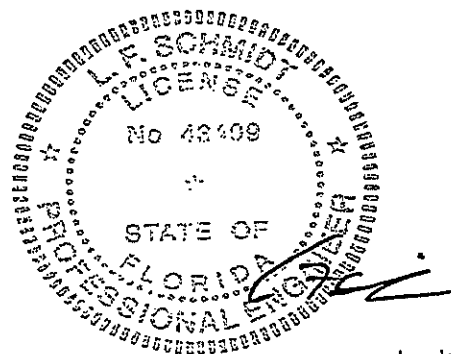
- | | |
|--|--|
| 1. <u>Test Report No.</u>
TEL 01460145
TEL 01461573
TEL 01461721 | <u>Test Standard</u>
ASTM E330-02
ASTM E330-02 & ASTM E331-00
ASTM E330-02 & ASTM E331-00 |
| 2. <u>Drawing No.</u>
No. FL-20461.11 | <u>Prepared by</u>
RW Building Consultants, Inc. (CA #9813) |
| 3. <u>Calculations</u>
Anchoring | <u>Prepared by</u>
RW Building Consultants, Inc. (CA #9813) |
| 4. <u>Quality Assurance</u>
Certificate of Participation issued by National Accreditation & Management Institute, certifying that Therma-Tru Corporations is manufacturing products within a quality assurance program that complies with ISO/IEC 17020 and Guide 53. | |

Testing Laboratory
Testing Evaluation Lab., Inc.
Testing Evaluation Lab., Inc.
Testing Evaluation Lab., Inc.

Signed by
V.K. Wright
V.K. Wright
V.K. Wright

Signed & Sealed by
Lyndon F. Schmidt, P.E.

Signed & Sealed by
Lyndon F. Schmidt, P.E.



Lyndon F. Schmidt, P.E.
FL PE No. 43409
7/22/2020

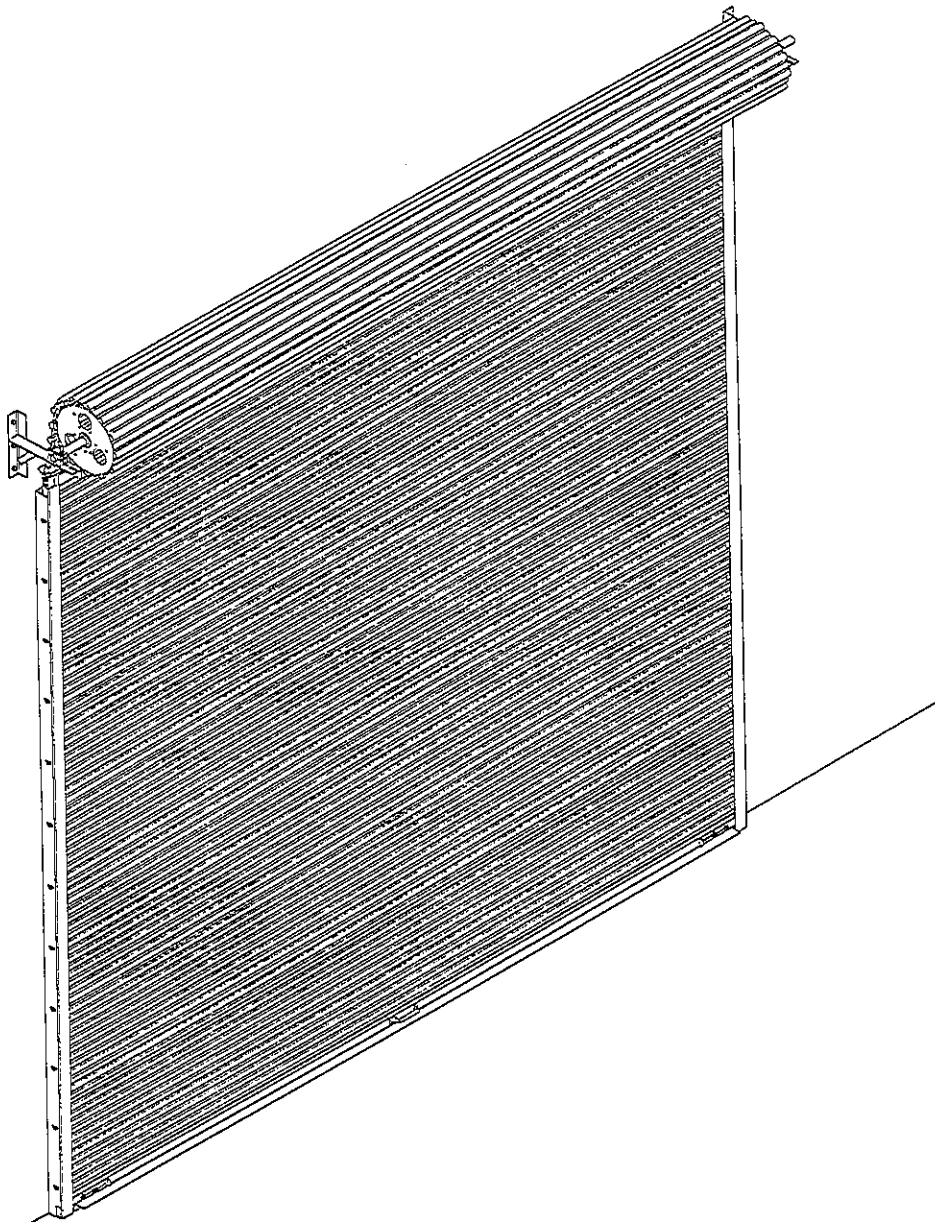


Division of Overhead Door

DS-350 COMMERCIAL ROLL-UP DOORS

WINDLOAD RATED

INSTALLATION INSTRUCTIONS



IMPORTANT NOTICE!!

Read the enclosed instructions carefully before attempting to install this door. Pay close attention to all warnings and important safety notices.

This manual MUST be attached to the wall in close proximity of the door.

IMPORTANT SAFETY NOTICES

Read the enclosed instructions carefully before attempting installation. If there are any questions about any of the procedures, do not perform the work. Instead, have a qualified door agency do the installation or repairs.

1. Operate the door **ONLY** when it is properly adjusted and free of all obstructions.
2. The door is constantly under **EXTREME SPRING TENSION**. Repairs, adjustments, installation and removal, **ESPECIALLY** of **SPRINGS AND RELATED PARTS**, are dangerous so that such work should be performed **ONLY** by qualified door service people.
3. **DO NOT PERMIT** children to play with the door. Children could get caught between the door and the floor causing **severe injury or death**.
4. Avoid standing in the open doorway or walking through the doorway while the door is moving. One could get caught between the door and the floor causing **severe injury or death**.
5. Should the door become hard to operate or completely inoperative, it is recommended that a qualified door agency correct the problem to prevent possible injuries or door damage.
6. Avoid installing the door on windy days. The door could fall causing door damage or injury.
7. To prevent injuries due to loose components, at least monthly check all bolted connections to make sure they are secure.
8. To prevent injuries, never place hands or fingers between the curtain and the guides while the door is being operated.
9. This manual is **not** intended to provide "take-down" instructions for existing doors. Consult your local door agency if this is required, before new doors are to be installed.
10. Thoroughly familiarize yourself with the construction codes in your region before initiating work.
11. Wear the proper protective safety gear at all times when installing, adjusting, and/or repairing doors.
12. Consider using a 2-person (or larger) crew for installing, adjusting and/or repairing larger doors.
13. To prevent injury or death due to falling, use scaffolding or mechanical lifts, rather than ladders, when installing, adjusting, and/or repairing larger doors.
14. Definitions of key words used in this manual are as follows:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



WARNING

WARNING indicates a potential hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT!

IMPORTANT! indicates a required step for safe and proper door operation.

NOTE:

NOTE: indicates information assuring proper installation of the door.

HINT:

HINT: indicates a suggested step to simplify installation based on experience.

INTRODUCTION

This manual's main function is to assist the installer in correctly mounting doors with due regard for safety, operation, and sound construction practices. Reference must be made to construction codes in your area.

All Wayne-Dalton DS-350 Windload Rated Commercial Roll-Up Doors follow the general instructions contained herein. Additional installation information for the specific door shipped is found with the packing slip and on supplementary drawings. There are also bolt and small sealed parts bags with accessory lists, describing proper application.

PREPARATION

Read the installation instructions thoroughly to become familiar with the names of the various components and their relation to each other. It is necessary for the installer to determine the following:

- Method of operation (push-up, hand chain, or motor operated).
- Type of jamb (masonry or steel) on which the door mounting angles mount and the fasteners required.
- The dimensions for the opening width, opening height, headroom, and side room.

MATERIAL

Inspect your door for possible damage or shortage of parts. Report any shortages to your door supplier immediately, or transit related damage claims to your freight carrier.

CLEARANCES

Check the door opening dimensions and available clearances versus the dimensions listed on the packing slip. Be sure that the dimensions are correct for the opening you are working on, taking special note of the opening **width** and **height**. Be sure that the required clearances listed on the Dimension Tables in this manual are available prior to installation.

TOOLS

The tools recommended for proper installation of each door will vary, but commonly used tools are:

- Electric drill with 3/8" or 1/2" chuck with nut driver bits
- Masonry drill or impact hammer and bits.
- Chain hoist and sling for raising barrel and curtain assembly.
- Scaffolding, Mechanical Lift, and/or Ladders (ladders not recommended for larger doors).
- Hammer.
- Channel Lock Pliers
- Center punch.
- Screwdrivers.
- Drills.
- Wrenches, vise grips, C-clamps, torque wrench, and a large pipe wrench.
- Plumb line, tape measure, chalk line, and a water level.

STEP 1 UNPACKING DOORS

Doors shipped by common carrier arrive at the job site packed in cardboard. Before removing the door from the packaging, inspect the door and packaging for visible signs of damage. If damage is noted, file a freight claim with the freight company immediately.

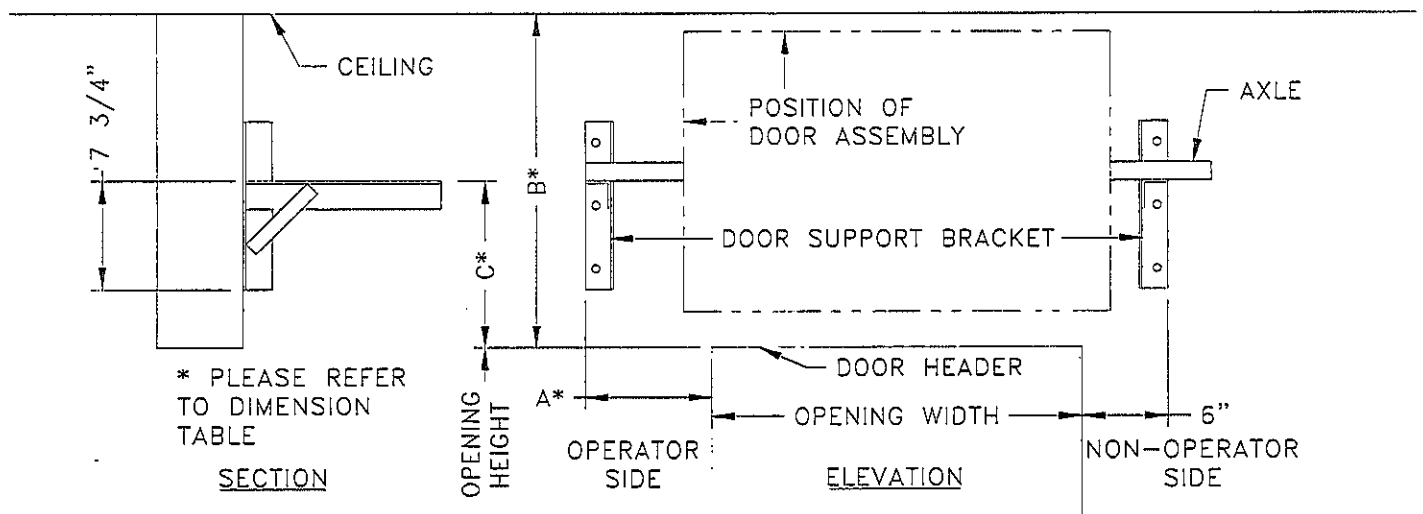
IMPORTANT!

Do not remove cardboard or cut tape that holds door in a roll. You will be told later when to do this.

No guarantee will be given by Wayne-Dalton if the door is not erected as instructed. For best operation, follow the instructions step by step. Please review all instructions thoroughly before starting installation.

STEP 2 CHECK THE DOOR OPENING

Verify the opening measurements with the door packing slip. Consult the factory if the actual opening width varies from that shown on the packing slip by more than 2 inches. Check door jambs, header, and floor for plumb/level condition. Check that there is sufficient clearance at jambs and head (see Dimension Tables below).



NOTE:

Left hand operated door shown above. Right hand is opposite.

OPERATION	A
PUSH-UP	6"
DIRECT DRIVE CHAIN/MOTOR	9"
REDUCED DRIVE CHAIN	8"

OPENING HEIGHT	B	C
UP TO 8' HIGH	20"	10"
FROM 8' TO 10' HIGH	22"	11"
OVER 10' HIGH	24"	12"

DIMENSION TABLES - MINIMUM OVERHEAD CLEARANCE (B) INDICATED

STEP 3 INSTALLING MOUNTING ANGLES, GUIDES, AND BOTTOM BAR STOPS

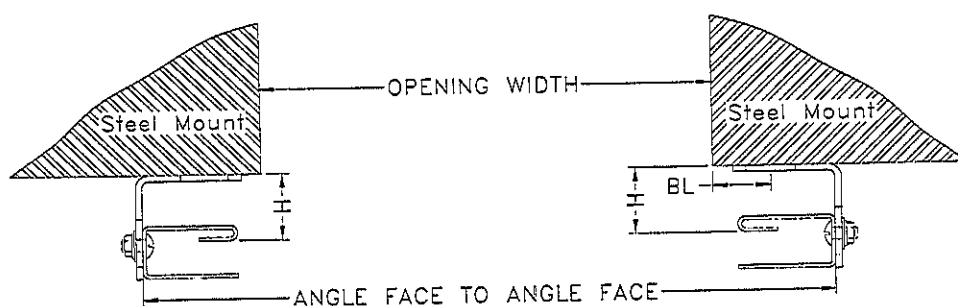
Obtain the appropriate Bolt Line (BL) measurement from the chart below. Use **Opening Width** listed on packing slip. Any variation between the actual opening width and the width listed on the packing slip is to be ignored.

OPENING WIDTH	BL (STEEL)	BL (MASONRY)	ANGLE FACE TO ANGLE FACE
UP TO 10' WIDE	1-9/16"	4-15/16"	OPENING WIDTH + 6-11/16"
OVER 10' WIDE	1-7/16"	4-7/8"	OPENING WIDTH + 6-7/16"

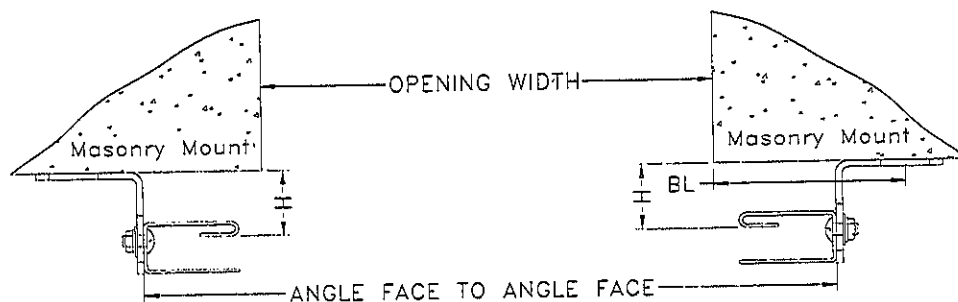
IMPORTANT!

Use BL measurement to locate wall mounting angle for one jamb only. Second angle will be located using Angle Face to Angle Face measurement.

Using the BL measurement, loosely clamp the right hand wall angle to the right hand jamb. Position the wall angle such that the BL measurement falls near the center of the slots. Adjust the wall angle so that it is level and tighten the clamp. Install wall angle fasteners in the centers of the top and bottom slots only and tighten.



Select the appropriate Angle Face to Angle Face equation from the chart above. Add the **opening width listed on the packing slip** to obtain the Angle Face to Angle Face measurement. Use this measurement to locate the left hand wall angle on the left hand jamb and clamp in place. Install the top and bottom bolts in the wall angle. Verify that both wall angles are level and double check the angle to angle measurement at the top, middle, and bottom to ensure that the wall angles are properly located. Using a string and a level, ensure that the mounting angles are parallel to each other, shimming if necessary, to achieve both vertical and horizontal leveling. Now install the remaining bolts in both wall angles.



IMPORTANT!

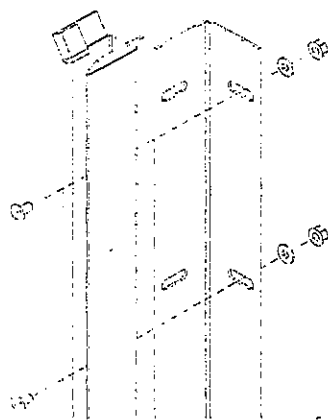
Angle Face to Angle Face measurement must be held to ensure proper door operation and resistance to windload.

IMPORTANT!

Use of any other fasteners than those provided must be approved by manufacturer or building authority and cannot be of lesser diameter or grade.

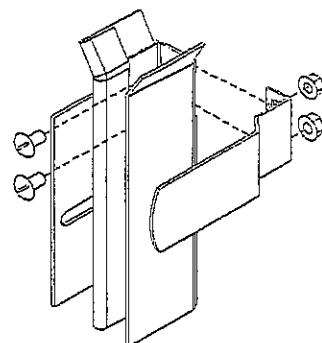
IMPORTANT!

Ensure guide is oriented properly on the mounting angle as seen in the above picture or door will bind in guides.



Align the guide slots with the slots in the wall angles and fasten guides with the interior windlock return towards the door jamb using the 5/16-18 x 5/8" truss head bolts, washers, and flange nuts. Slide guides to set the "H" dimension as shown above at 1-3/4" prior to tightening the guide fasteners.

Install the bottom bar stops with the same 5/16-18 x 5/8" truss head bolts and flange nuts used to assemble the guides (no washer). Leave the fasteners loose to allow the bottom bar stops to pivot out of the way of the bottom bar angle when the curtain will be pulled into the guides. You will be instructed to tighten the bottom bar stop fasteners in step #7.



STEP 4 INSTALL BRACKETS, DRIVE COMPONENTS, AND TENSIONERS

From the Dimension Tables on page 4, mark the width location of each bracket by using dimension A for the operator side and 6" for the non-operator side. If the actual opening width varies from the packing slip width, adjust these dimensions by adding or subtracting 1/2 of the difference to each dimension. Subtract if the opening is larger and add if smaller. Mark the height location of the brackets by using dimension C. Verify the ceiling clearance minimum from dimension B. Use a string and a level to verify that the brackets are level with each other. Adjust bracket height as needed to level. Drill anchor holes and fasten the brackets with the anchors provided.

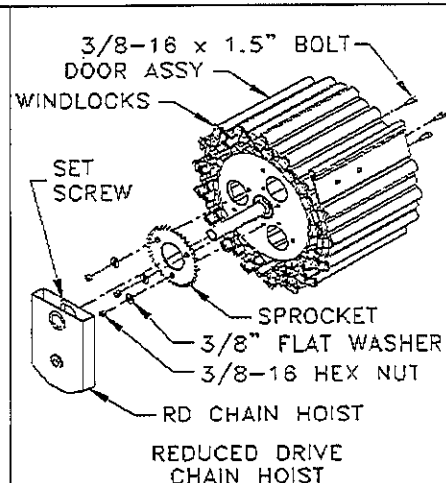
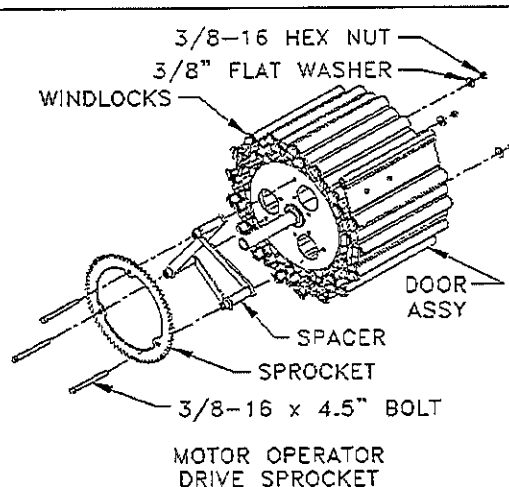
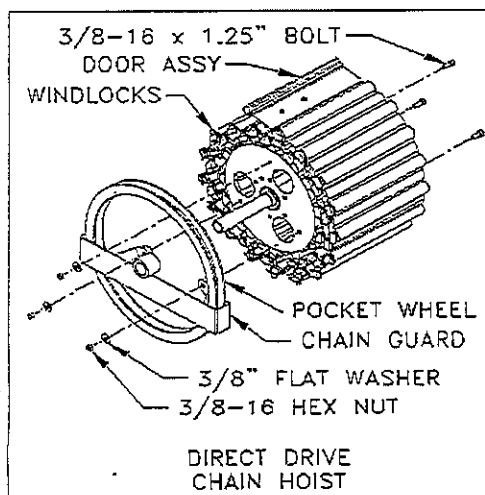
IMPORTANT!

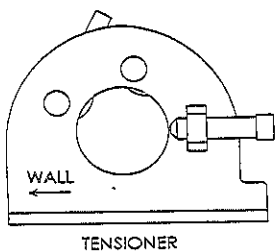
Brackets must be level to each other with respect to height. Failure to level bracket heights will prevent door from operating properly.

If the door is to be chain hoist or motor operated, install the components shown below to the operator side of the curtain at this time. Do not tighten set screws at this time, you will be instructed to tighten these in step #9.

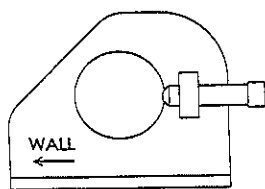
WARNING

Keep loose clothing, fingers, hands and arms away from all moving mechanisms, or serious injury or death could result.





TENSIONER



TENSIONER SUPPORT

After installing the brackets and drive components, install the axle tensioner devices. On the non-operator side of the curtain slide the tensioner device on the axle and ensure the arrow pointing to the wall on the device will point to the wall when the door is installed. Next, slide the tensioner support device on the opposite side of the axle, again making sure that the arrow on the device points to the wall.

IMPORTANT!

Tension holding assemblies must be oriented correctly in order to hold tension on the door.

STEP 5 LIFTING THE DOOR ASSEMBLY

⚠ WARNING

Door assembly is extremely heavy. Do not allow door assembly to fall from lifting mechanism, or serious injury or death could result.

Lift the curtain assembly up to the support brackets. Align tensioner devices with the brackets so that when door is lowered down to the brackets, both devices will sit on top of the brackets. Be sure that the door is able to revolve without scraping against door header or guides. Rotate curtain assembly so that bottom bar angle is at the bottom of the curtain roll. Now, remove the cardboard packaging from the door.

⚠ WARNING

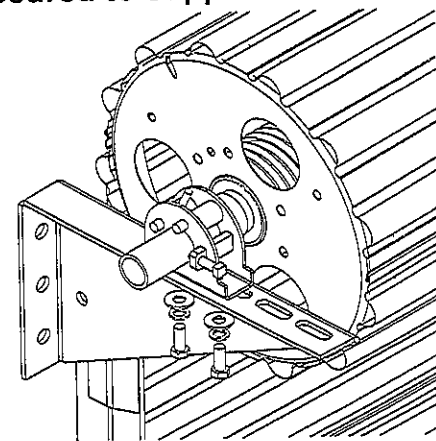
To avoid serious injury or death, never walk, stand, or work below door assembly before it is secured to support brackets.

STEP 6 SECURE TENSIONERS TO BRACKETS

Ensure that the bottom bar angle is at the bottom of the curtain roll and secure the tension devices to the brackets using the (2) 3/8"x1" bolts, lock washers, and washers. Tighten bolts 1/2 turn past snug.

IMPORTANT!

Tensioners must be installed as close to header as possible per step #5.



STEP 7 APPLY INITIAL TENSION TO THE DOOR SPRINGS

Start with the bottom bar angle at the bottom of the curtain roll and use a pipe wrench to rotate the axle approximately 1 turn to pre-tension the door. The amount of tension required may vary slightly. Final adjustment, if necessary, will be made in Step #10.

IMPORTANT!

Tighten the set screws on both tensioners before operating the door.

⚠ WARNING

Always stand to one side of wrench when applying tension, to avoid injury if you lose control of wrench.

Cut the tape that holds the door in a roll and gently pull the curtain down into the guides on both sides until the bottom bar is below the bottom bar stops. Do not pry on the bottom bar stops to get bottom bar past, loosen fasteners

until bottom bar angle easily clears stops. If the door has a tendency to close, secure in position using clamps. If the door has a tendency to rise, secure in position using a wood prop. While the door is secured from moving, tighten the bottom bar stop fasteners on both guide assemblies.

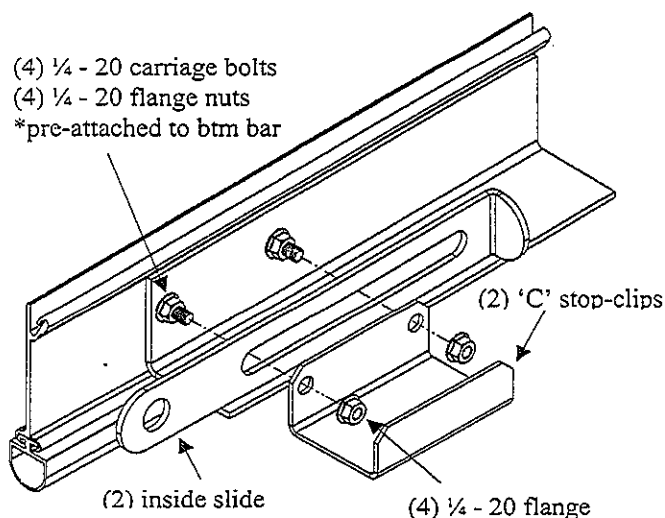
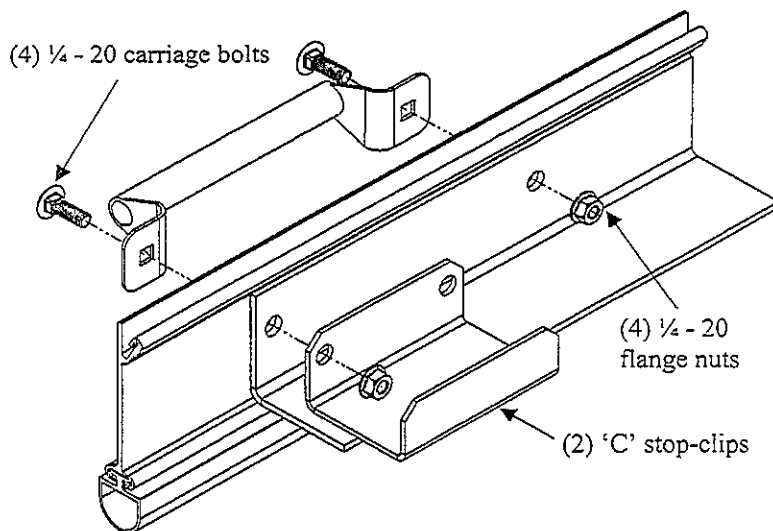
WARNING

Spring tension can cause curtain roll to rotate rapidly. Securely hold curtain roll from rotating while applying pretension or serious injury or death could result.

STEP 8 INSTALL STOP CLIPS AND SLIDE BOLT LOCKS

I: 'C' Stop-Clip Attachment:

For doors with an aluminum bottom bar, a 'C' stop-clip will need to be installed. Only one bolt is required to secure the stop-clip to the bottom bar when attaching a lift handle on that side. Repeat assembly procedure for opposite side. Install lift handle and pull rope at the center of the bottom bar.



II: 'C' Stop-Clip w/ Inside Slide Bolt Attachment:

For doors with inside slide bolt locks, install the 'C' stop-clips as shown on the right. The bottom bar will have (4) carriage bolts & flange nuts pre-attached. **Verify that the flat sides of the nuts are horizontal to the bottom bar.** This ensures smooth operation of the slide bolt. Place the slide bolt lock so that the slot rides on the flange nuts. Then, add the stop-clip and attach, using the flanged nuts. Repeat assembly procedure for opposite side. Install lift handle and pull rope at the center of the bottom bar.

WARNING

Failure to properly install stop-clips to the bottom of the door may result in serious injury or death

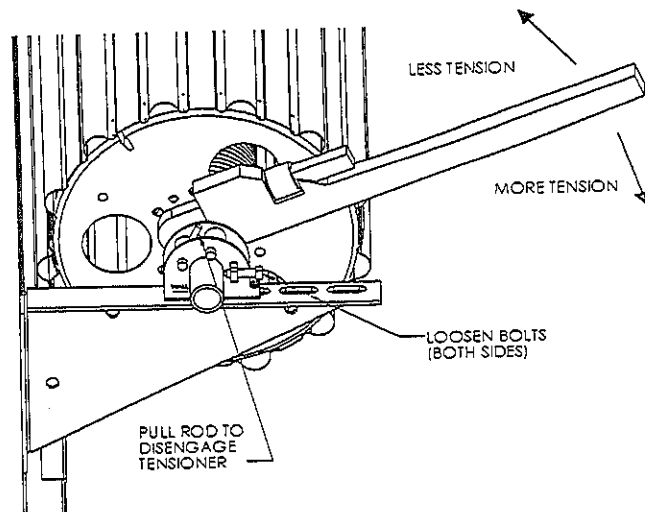
STEP 9 LUBRICATE AND ADJUST THE GUIDES

Lubricate the insides of the guides and wearstrips with weather resistant lubricating spray. Be sure to spray lubricant over the flares at the tops of the guides. Move the door up and down to check for proper operation. Adjust the guides and mounting angles if necessary to allow for proper clearance and operation.

STEP 10 CHECK AND ADJUST SPRING BALANCE

Lower and raise the door to check the counterbalance. If the door lowers easily and raises hard, more spring tension is required. If the door lowers hard and raises easily, less spring tension is required. First, open the door fully and fasten vise grips to guides below bottom bar. Then, loosen the set screws on both tensioners.

To remove tension, slightly pull down on the pipe wrench to unlock the tensioner. Then, pull and hold the small rod on the top of the tensioner to completely disengage the tensioner. Slowly release tension by allowing the wrench to rotate. Release the tensioner rod to lock the axle in place while re-adjusting the pipe wrench.



Before operating the door, re-tighten the set screws on the tensioners. Remember to tighten all 3 square-headed locking bolts on the tensioner devices when finished to maintain desired adjustment.

Repeat the above procedure if further adjustments are required. Once all adjustments have been made and the door is operating properly, recheck all fasteners and bolted connections to ensure that they are in place and properly tightened. Verify that all set screws in the components installed in step #4 have been tightened.

WARNING

Securely hold door curtain until bottom bar stop fasteners have been tightened. If not securely held, door may raise or drop, possibly causing injury or death.

WARNING

Never remove bottom bar stops when adjusting tension, otherwise, door can spin uncontrollably resulting in serious injury or death.

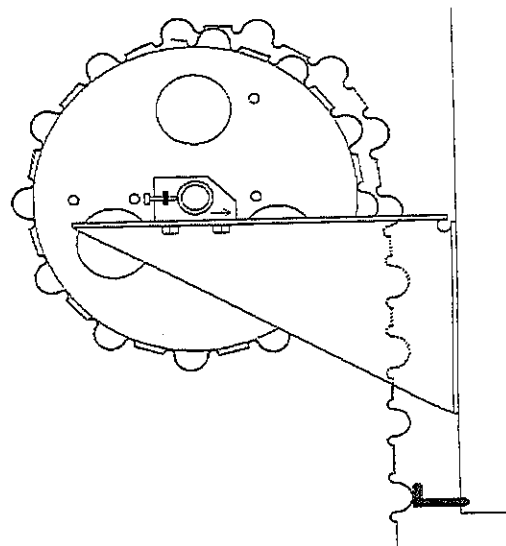
WARNING

Once the tensioner rod is disengaged, hold wrench securely. Springs can cause serious injury if not controlled properly.

STEP 11 INSTALLATION OF TOP DRAFT STOP

Close the door and secure it in the down position. Use a pencil to mark the door panel corrugation that is parallel with the bottom of the header/lintel from the outside of the opening. If this corrugation protrudes below the header, mark the one just above. Open the door until the marked corrugation is accessible.

Stretch the top draft stop across the door and attach it to the curtain on the marked corrugation using the #8 x 1/2" self-drilling screws, locating the screws every 12" on center. Trim the Top Draft Stop to clear the guides if required. When the door is closed, the draft-stop should seal on the header.



NOTE:

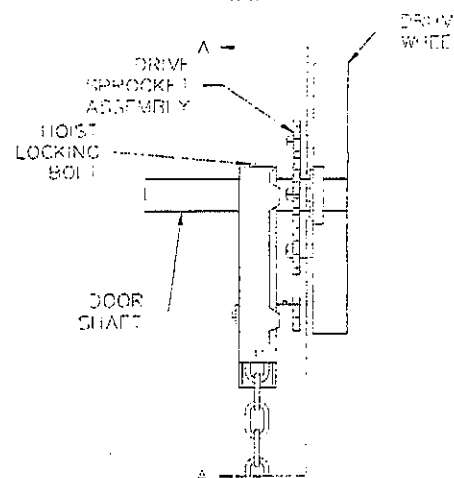
Top Draft Stop may not seal on header if not installed on a corrugation as shown.

REDUCED DRIVE CHAIN HOIST INSTALLATION INSTRUCTIONS (if applicable)

STEP 11 ALIGN THE SPROCKETS

Feed the hand chain through the pocket wheel assembly (installed in step #4), around the cast iron hand chain wheel, and connect the two end links.

Align the chain hoist so that the 41B9 sprocket on the pocket wheel assembly is in line with the 41A40 sprocket bolted to the barrel. Next, tighten the hoist-locking bolts to lock the pocket wheel assembly to the shaft to prevent it from shifting or rocking.



WARNING

Hoist locking bolts must be tight to ensure hoist cannot shift and permit roller chain to come off, thereby allowing door to drop possibly causing severe injury or death.

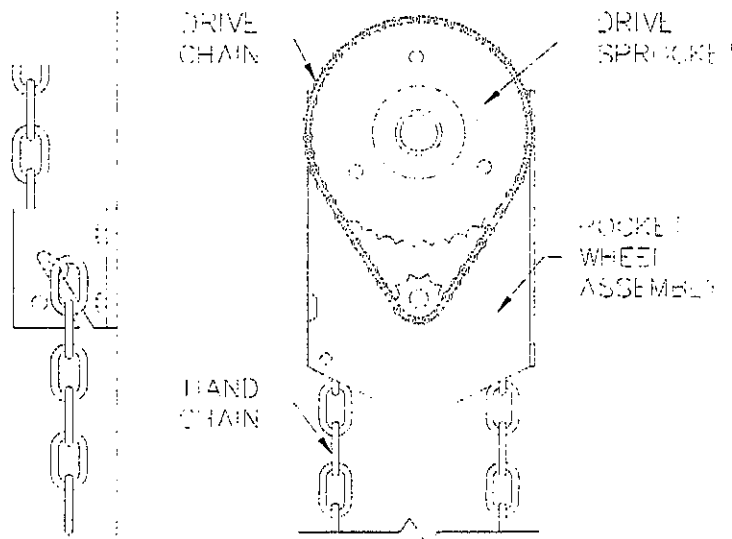
Next, connect the #41 roller chain between the pocket wheel assembly sprocket and the barrel sprocket. Now run the door up and down several times to ensure that the roller chain does not come off. If it does, go back and check the alignment of the sprockets.

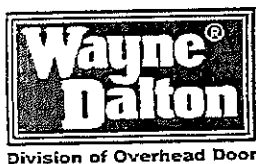
WARNING

Keep loose clothing, fingers, hands, and arms away from all moving mechanisms and places where chain meets either sprocket, or serious injury or death could result.

STEP 12 INSTALL THE CHAIN KEEPER

Now install the hand chain keeper to the wall approximately four feet above the finished floor with the hardware provided. Refer to the figure in step #7 of this manual for an additional view.





Roll-Up Sheet Door LIMITED WARRANTY

Wayne-Dalton
P.O. Box 67- Mt. Hope, Ohio 44660

The Manufacturer warrants the ROLL-UP SHEET DOOR and hardware fittings for a period of ONE YEAR from the time of delivery against any defects in workmanship or material. Manufacturer shall, upon notification, correct such nonconformity at its option, by repairing or replacing any defective part or parts.

NO EMPLOYEE, DISTRIBUTOR, OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THE FOREGOING WARRANTIES IN ANY WAY OR GRANT ANY OTHER WARRANTY ON BEHALF OF MANUFACTURER.

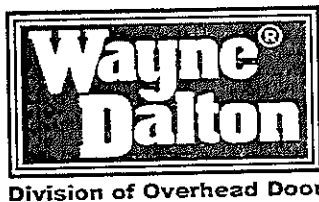
The Manufacturer shall not be responsible for any damage resulting to or caused by its products by reason of installation, improper storage, unauthorized service, alteration of products, neglect or abuse, or attempt to use the products for other than the customary usage or for their intended purposes. The ROLL-UP SHEET DOOR warranty becomes null and void if other than Manufacturer's specified holes are drilled. The above warranty does not cover wear or any damage beyond Manufacturer's control or replacement labor.

THIS WARRANTY COVERS A COMMERCIAL PRODUCT. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES AND NO REPRESENTATIONS, GUARANTEES, OR WARRANTIES, EXPRESSED OR IMPLIED, (INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE), ARE MADE BY MANUFACTURER IN CONNECTION WITH MANUFACTURE OR SALE OF ITS PRODUCTS.

Claims for defects in material and workmanship covered by this warranty shall be made in writing to the dealer from whom the product was purchased within the warranty period. Manufacturer may either send a service representative or have the product returned to the Manufacturer at Buyer's expense for inspection. If judged by Manufacturer to be defective in material or workmanship, the product will be replaced or repaired at the option of Manufacturer, free from all charges except authorized transportation and replacement labor.

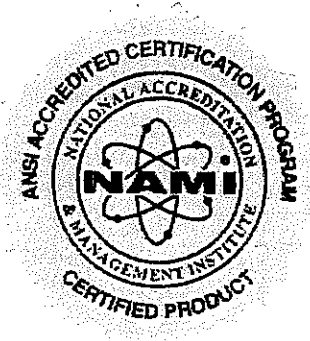
THE REMEDIES OF BUYER SET FORTH HEREIN ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER REMEDIES. THE LIABILITY OF MANUFACTURER, WHETHER IN CONTRACT, TORT, UNDER ANY WARRANTY, OR OTHERWISE, SHALL NOT EXTEND BEYOND ITS OBLIGATION TO REPAIR OR REPLACE. AT ITS OPTION, ANY PRODUCT OR PART FOUND BY MANUFACTURER TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP. MANUFACTURER SHALL NOT BE LIABLE FOR COST OF REMOVAL OR INSTALLATION OR SHALL NOT BE RESPONSIBLE FOR ANY DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY NATURE.

This warranty gives you specific legal rights which may vary from state to state. However, some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.



Wayne-Dalton
Door & Systems Division
2589 County Road 168
Dundee, OH 44624
1-800-795-5095

NOTICE OF PRODUCT CERTIFICATION



CERTIFICATION NO: NI012954.03-R1
DATE: 12/07/2015
CERTIFICATION PROGRAM: Structural
COMPANY: Atrium
CODE: 1373-1
REVISION DATE: 06/04/2019

To verify that the "Notice of Product Certification" is valid, please visit www.NAMICertification.com to assure that the product is active and currently listed. This certification represents product conformity to the applicable specification and that certification criteria has been satisfied. A NAMI approved certification label must be applied to the product to claim certification status. Please review and advise NAMI if any corrections are required to this document.

COMPANY NAME AND ADDRESS	PRODUCT DESCRIPTION
Atrium Companies, Inc. 9001 Ambassador Row Dallas, TX 75247	Series "150/160" Triple Vinyl Single Hung Window w/Fin Installation Configuration: O/X//O/X//O/X Glazing: Insulating Glass (Annealed) Frame: W-2743mm(108") H-1880mm(74") Sash: W-835mm(32.88") H-914mm(36") DLO: W-784mm(30.88") H-852mm(33.56")

SPECIFICATION	PRODUCT RATING
AAMA/WDMA/CSA 101/I.S.2/A440-08 AAMA/WDMA/CSA 101/I.S.2/A440-05	Class LC-PG50 2743 x 1880 (108 x 74)-H H-LC50 2743 x 1880 (108 x 74) Design Pressure: ± 2400 Pa (50 psf) Water Penetration Resistance Test Pressure: 360 Pa (7.52 psf)

Product Tested By: Architectural Testing, Inc.
Report No: C1748.01-801-47/B8797.01-801-47
Expiration Date: December 31, 2021

Administrator's Signature: _____

NATIONAL ACCREDITATION AND MANAGEMENT INSTITUTE, INC.

4794 George Washington Memorial Highway
Hayes, VA 23072
Tel: (804) 684-5124
Fax: (804) 684-5122

ATRIUM COMPANIES, INC.

SERIES 700/720/750/760

VINYL CASEMENT WINDOW, X, XX, OX, XO, XOX, & XOOX (NON-HVHZ)(NON-IMPACT)

INSTALLATION NOTES:

- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION OF THE MAXIMUM SIZE LISTED.
- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF $\pm 1/2$ INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
- SHIM AS REQUIRED AT EACH INSTALLATION ANCHOR WITH LOAD BEARING SHIMS). MAXIMUM ALLOWABLE SHIM STACK TO BE 1/4 INCH. SHIM WHERE SPACE OF 1/16 INCH OR GREATER OCCURS. SHIMS SHALL BE CONSTRUCTED OF HIGH DENSITY PLASTIC OR BETTER.
- FOR NAIL FIN INTO WOOD BUCK: USE #8 WOOD SCREWS THROUGH THE FIN OF SUFFICIENT LENGTH TO ACHIEVE 1 1/2 INCH MINIMUM EMBEDMENT INTO WOOD SUBSTRATE.
- FOR NAIL FIN INTO STEEL STUD: USE #8 TEK SCREWS GRADE 5 THROUGH THE FIN OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 3 THREADS PENETRATION BEYOND METAL FRAME SUBSTRATE.
- FOR THRU FRAME INTO WOOD BUCK: USE #10 WOOD SCREWS THROUGH THE FRAME OF SUFFICIENT LENGTH TO ACHIEVE 1 1/2 INCH MINIMUM EMBEDMENT INTO WOOD SUBSTRATE.
- FOR THRU FRAME INTO CONCRETE/MASONRY: FOR INSTALLATION THROUGH 1X BUCK TO CONCRETE/MASONRY, OR DIRECTLY INTO CONCRETE/MASONRY, USE 3/16 INCH DIAMETER ITW TAPCONS OF SUFFICIENT LENGTH TO ACHIEVE 1 1/4 INCH MINIMUM EMBEDMENT.
- FOR THRU FRAME INTO STEEL STUD: USE #10 TEK SCREWS GRADE 5 THROUGH THE FRAME OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 3 THREADS PENETRATION BEYOND METAL FRAME SUBSTRATE.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- FOR HOLLOW BLOCK AND GROUT FILLED BLOCK, DO NOT INSTALL INSTALLATION ANCHORS INTO MORTAR JOINTS. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
- INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
 - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.42.
 - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
 - GROUT-FILLED CMU - UNIT STRENGTH CONFORMS TO ASTM C-90 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AND GROUT CONFORMS TO ASTM C 476, MINIMUM GROUT COMPRESSIVE STRENGTH OF 2000 PSI.
 - HOLLOW BLOCK CMU - UNIT STRENGTH CONFORMS TO ASTM C-90 WITH MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
 - STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM 20 GA. WALL THICKNESS.

GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT EDITION FLORIDA BUILDING CODE (FBC), EXCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
 - AAMA WDMA/CSA101/1.5-2/A440-08/11
- ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY AND 2X FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT IN NON-HVHZ AREAS.
- APPROVED IMPACT PROTECTIVE SYSTEM IS REQUIRED ON THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
- WINDOW FRAME MATERIAL: PVC
- GLASS SHALL MEET THE REQUIREMENTS OF ASTM E 1300 GLASS CHARTS. SEE SHEET 5 FOR GLAZING DETAIL.
- PRODUCT MAY BE MULLED USING AN APPROVED MULLION.
- DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:
 - X: OPERABLE PANEL
 - O: FIXED PANEL

TABLE OF CONTENTS	
SHEET	SHEET DESCRIPTION
1	GENERAL & INSTALLATION NOTES
2	X ELEVATION & ANCHOR LAYOUTS
3	XX ELEVATION & ANCHOR LAYOUTS
4	XOXX ELEVATION & ANCHOR LAYOUTS
5	VERTICAL SECTIONS & GLAZING DETAIL
6	HORIZONTAL SECTIONS
7	HORIZONTAL SECTIONS

OVERALL SIZE		CONFIGURATION	DESIGN PRESSURE	IMPACT RATING
WIDTH	HEIGHT			
120"	72"	XOXX, XOX, XX, XO, OX	+/- 35 PSF	NON IMPACT
72"	72"	XX, XO, OX	+/- 50 PSF	NON IMPACT
36"	72"	X	+/- 50 PSF	NON IMPACT

ATRIUM
WINDOWS AND DOORS
ATRIUM COMPANIES, INC.
180 Veterans Center Blvd.
Wilmington, NC 27414
800-342-9118

GENERAL & INSTALLATION NOTES
TITLE: SERIES 700/720/750/760
VINYL CASEMENT WINDOWS
(NON-HVHZ)(NON-IMPACT)
PREPARED BY:
BUILDING DROPS, INC.
330 E. DANVA BEACH BLVD., STE. 338
DANVA BEACH, FL 32004
PH: (954) 939-8478
FAX: (954) 939-8478
WEB: www.buildingdrops.com

REMARKS
FBC 2017 CODE CHANGE AG 10.03.1
FBC UPDATE NUS 08.13.2

BY DATE
AG 10.03.1
NUS 08.13.2

THIS INSTALLATION DETAILS ARE SUBJECT TO THE FLORIDA BUILDING CODE AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT IN NON-HVHZ AREAS.

Reason: I am approving this document
Date: 2020/08/11 11:49:00

HERNANDEZ, NOBLE
No 71776
STATE OF FLORIDA
PROFESSIONAL ENGINEER
398 DANVA BEACH BLVD., STE. 338
DANVA BEACH, FL 32004
FEE CERT. OF AUTHORIZATION No. 22578

FL #: FL11821

DATE: 10.03.17

DWG. BY: AR/AG
CHK. BY: HFN

SCALE: NTS

DWG. #: ATR108

SECTION:

ATRIUM CORPORATION

SERIES 150/160

SINGLE HUNG WINDOW

INSTALLATION NOTES:

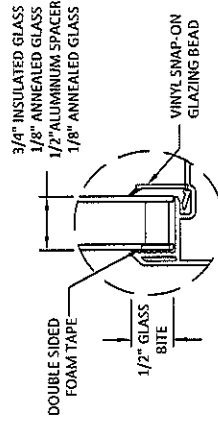
- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN.
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- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF $\pm 1/2$ INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
- SHIMS AS REQUIRED TO ACHIEVE SQUARE AND PLUMB INSTALLATION WITH LOAD BEARING SHIMS). MAXIMUM ALLOWABLE SHIM STACK TO BE 1/4 INCH. SHIM WHERE SPACE OF 1/16 INCH OR GREATER OCCURS. SHIM(S) SHALL BE CONSTRUCTED OF HIGH DENSITY PLASTIC OR BETTER.
- NAIL FIN INSTALLATION: FOR INSTALLATION INTO WOOD FRAMING USE #10 WOOD SCREWS OF SUFFICIENT LENGTH TO ACHIEVE 1 1/2 INCH MINIMUM EMBEDMENT INTO WOOD SUBSTRATE.
- NAIL FIN INSTALLATION: FOR INSTALLATION INTO METAL STUD, USE #8 GR. 5 SELF TAPPING SCREWS THROUGH THE FRAME OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 3 THREADS. PENETRATION BEYOND METAL FRAME SUBSTRATE.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIOING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
 - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
 - STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM 18 GA. WALL THICKNESS.
 - ALUMINUM - MINIMUM ALLOY 6063-T5. MINIMUM WALL THICKNESS OF 1/16" (0.0625").

GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE CURRENT IRC/IBC AND CURRENT FLORIDA BUILDING CODE (FBC), EXCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
 - AAMA/WDMA/CSA 1071.5.2/A440-05/08
- ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY AND 2X FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
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- THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT IN NON-HVHZ AREAS.
- APPROVED IMPACT PROTECTIVE SYSTEM IS REQUIRED ON THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
- WINDOW FRAME MATERIAL: PVC
- GLASS SHALL MEET THE REQUIREMENTS OF ASTM E 1300 GLASS CHARTS. SEE SHEET 1 FOR GLAZING DETAIL.

TABLE OF CONTENTS		
SHEET	REVISION	SHEET DESCRIPTION
1	-	GENERAL & INSTALLATION NOTES AND GLAZING DETAIL
2	-	ELEVATIONS & ANCHOR LAYOUT (NAIL FIN INSTALLATION)
3	-	VERTICAL SECTIONS (NAIL FIN INSTALLATION)
4	-	HORIZONTAL SECTIONS (NAIL FIN INSTALLATION)

MAX O.A. SIZE		CONFIGURATION	DESIGN PRESSURE		MISSILE IMPACT RATING
WIDTH	HEIGHT		NEGATIVE	POSITIVE	
108.00"	74.00"	TRIPLE 0.175" / 0.175" / 0.175" (MULTIPLY WITH STIFFENER)	50 PSF	50 PSF	NON-IMPACT
108.00"	74.00"	TRIPLE 0.175" / 0.175" / 0.175" (MULTIPLY W/O STIFFENER)	30 PSF	30 PSF	NON-IMPACT



GLAZING DETAIL 1

NOTE:

- GLASS THICKNESS AND TYPE SHALL COMPLY WITH ASTM E1300 REQUIREMENTS GLASS CHARTS.
- ALL GLAZING CONFIGURATIONS SHALL COMPLY WITH SAFETY GLAZING REQUIREMENTS OBTAINED IN CURRENT FBC

ATRIUM
WINDOWS AND DOORS
15000 S. 3000 S. RD.
DALLAS, TEXAS 75247
PH: (214) 357-1656 FAX: (214) 424-8734

TITLE: SERIES 150/160
TRIPLE HUNG WINDOW
INSTALLATION & GENERAL NOTES

PREPARED BY: BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., STE. 338
DANIA BEACH, FL 33004
PH: (954) 939-4734
FAX: (954) 939-4734
WWW.BUILDINGDROPS.COM



REMARKS

BY DATE

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Reason for this document: Delivered to the client for their review and approval.

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398 E. DANIA BEACH BLVD., STE. 338
DANIA BEACH, FL 33004
PH: (954) 939-4734
FAX: (954) 939-4734
WWW.BUILDINGDROPS.COM

PROFESSIONAL ENGINEER
STATE OF FLORIDA
No. 73778
7/3/18

REASON FOR THIS DOCUMENT: Delivered to the client for their review and approval.

FL #:

FL20100

DATE: 02/14/2020

DWG. BY: YC

CHK. BY: HFN

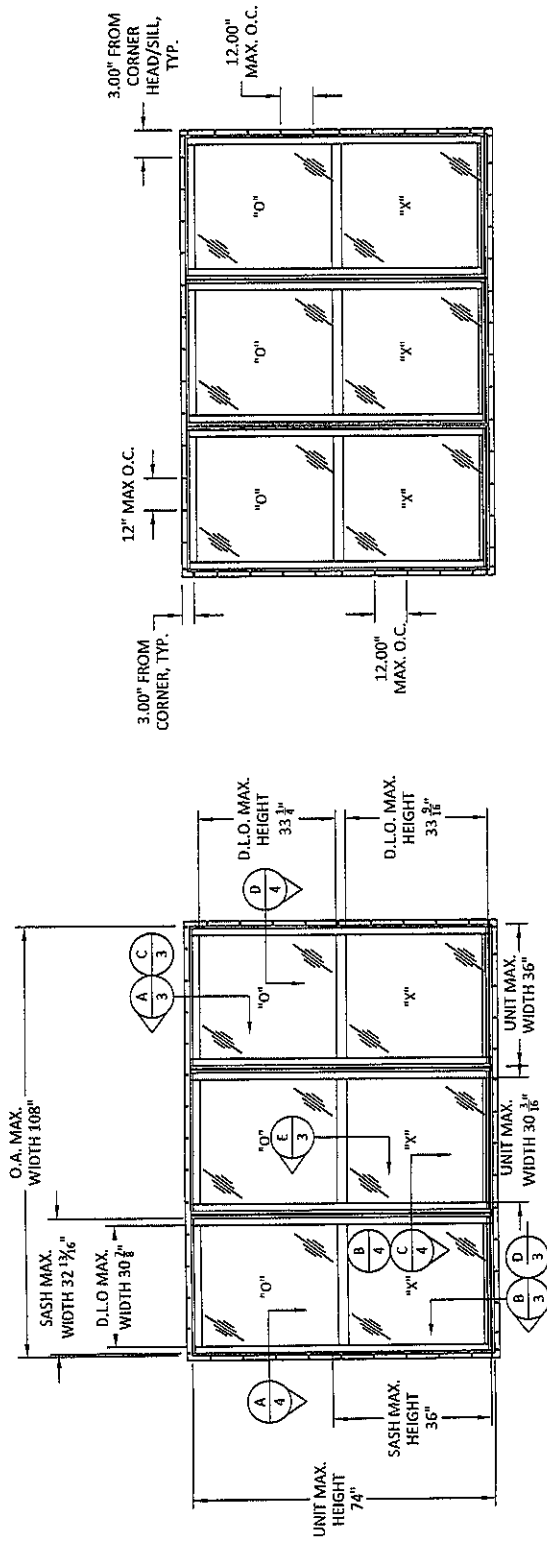
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DWG. #: ATR132

SECTION:

1

OF 4



TYPICAL ELEVATION
MULLED TRIPLE SINGLE HUNG

ANCHOR LAYOUT
MULLED TRIPLE SINGLE HUNG (NAIL FIN INSTALLATION)



TITLE: REMARKS BY DATE

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HERBERT A. WOODRUFF
LICENSED PROFESSIONAL ENGINEER
No. 73778
STATE OF FLORIDA
BUILDING DROPS, INC.
396 C. DANIA BEACH BLVD., STE. 300
DANIA BEACH, FL 33024
FAX: (954) 944-4738
FIVE CREDIT OF AUTHORIZATION No. 29378

FL #:

DATE: 02/14/2020

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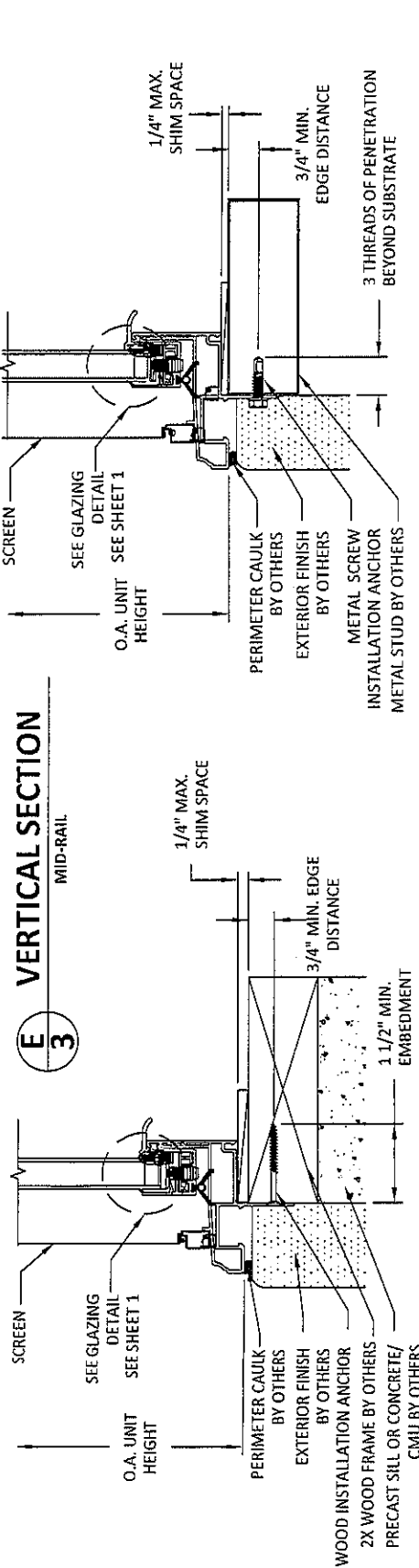
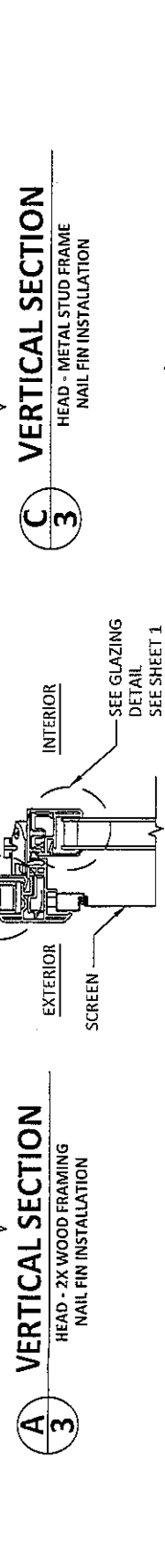
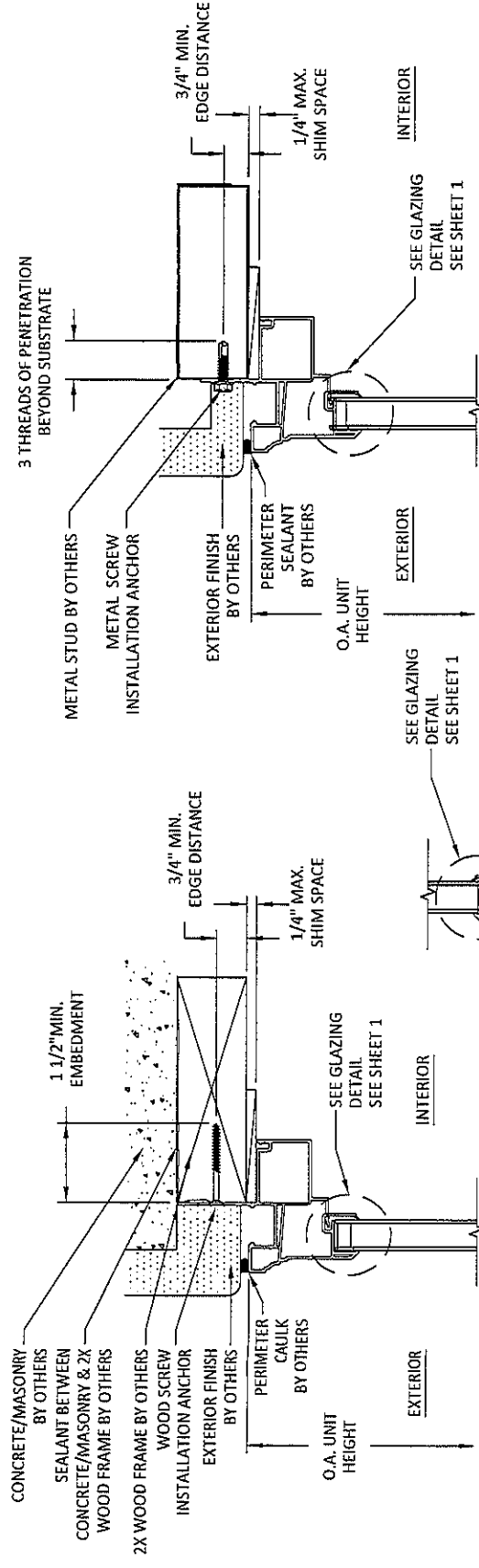
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OF 4

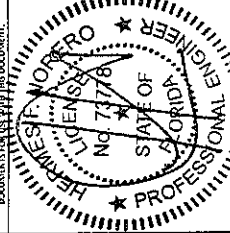




TITLE: SER TRIPLE H (NAME) PREPARED BY:

REMARKS	BY	DATE
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FLORIDA P.E. No. 73778
BUILDING GROUPS, INC.
390 E. DANIA BEACH BLVD. # 330
DANIA BEACH, FL 33004
FBIHQ CONT. OF AUTHORIZATION No. 293578

FL#: FL20100

DATE: 02/14/2020

DWG. BY: VC	CHK. BY: HEN
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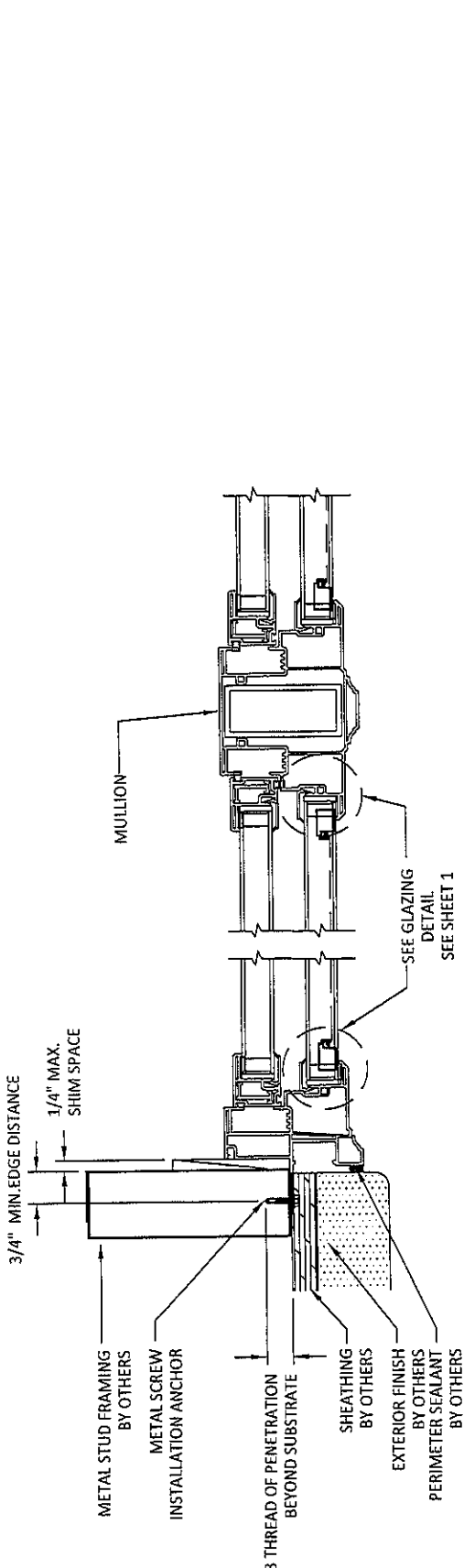
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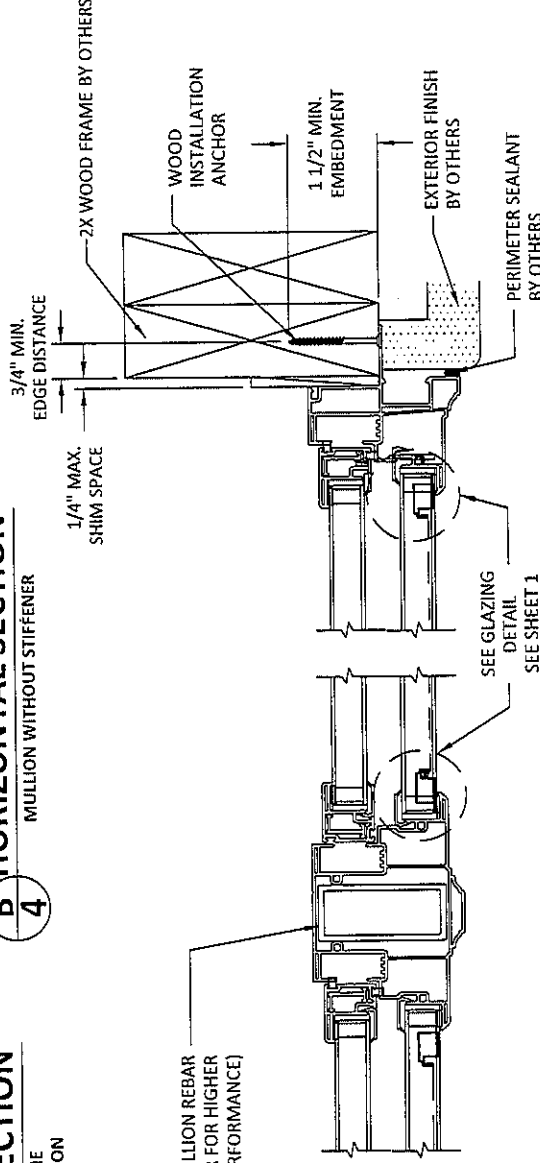
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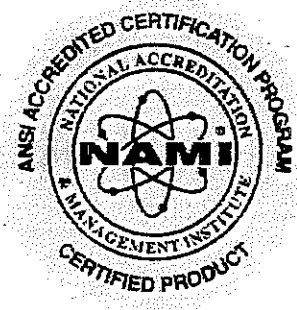
B HORIZONTAL SECTION



C HORIZONTAL SECTION
4 MULLION WITH STIFFENER

D **HORIZONTAL SECTION**
2X WOOD FRAME
SUSPENSION INSTALLATION

NOTICE OF PRODUCT CERTIFICATION



CERTIFICATION NO: NI012651-R3
DATE: 05/11/2015
CERTIFICATION PROGRAM: Structural
COMPANY: Atrium
CODE: 1373-1
DATE: 03/05/2020

To verify that the "Notice of Product Certification" is valid, please visit www.NAMICertification.com to assure that the product is active and currently listed. This certification represents product conformity to the applicable specification and that certification criteria has been satisfied. A NAMI approved certification label must be applied to the product to claim certification status. Please review and advise NAMI if any corrections are required to this document.

COMPANY NAME AND ADDRESS	PRODUCT DESCRIPTION
Atrium Companies, Inc. 9001 Ambassador Row Dallas, TX 75247	Series "700/720/750/760" Vinyl Casement w/Fin & Finless Installation Configuration: X Glazing: Insulating Glass (Annealed) Frame: W-914mm(36") H-1829mm(72") Vent: W-864mm(34") H-1780mm(70.06") DLO: W-756mm(29.75") H-1667mm(65.63")

SPECIFICATION	PRODUCT RATING
AAMA/WDMA/CSA 101/IS.2/A440-11 AAMA/WDMA/CSA 101/IS.2/A440-08	Class LC-PG50 914 x 1829 (36 x 72)-C Design Pressure: ± 2400 Pa (50 psf) Water Penetration Resistance Test Pressure: 440 Pa (9.19 psf)

Product Tested By: Architectural Testing, Inc.
Report No: E1438.01-801-47
Expiration Date: October 31, 2023

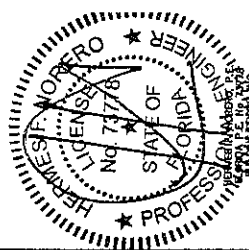
Administrator's Signature: _____

NATIONAL ACCREDITATION AND MANAGEMENT INSTITUTE, INC.

4794 George Washington Memorial Highway
Hayes, VA 23072
Tel: (804) 684-5124
Fax: (804) 684-5122



REMARKS	BY	DATE
FBC 2017 CODE CHANGE	AG	10.03.17
FBC UPDATE	MUS	08.13.12



FL #:

DATE: 10.03.17

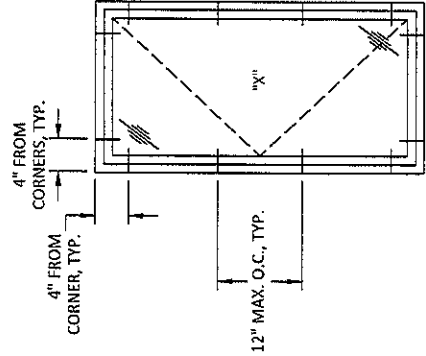
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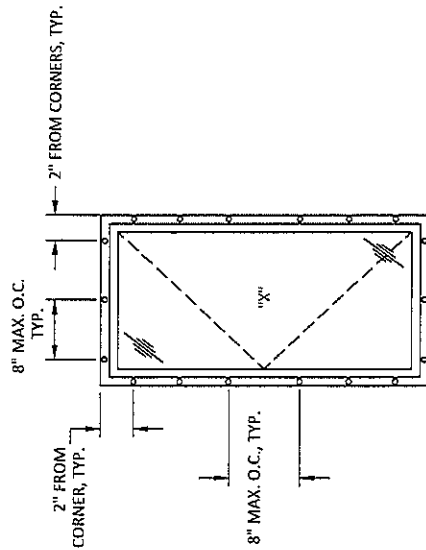
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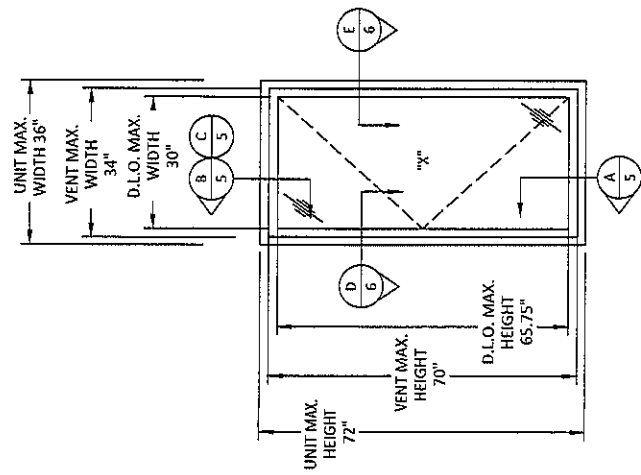
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ANCHOR LAYOUT
X UNIT- THROUGH FRAME



ANCHOR LAYOUT
X UNIT- NAILING FIN



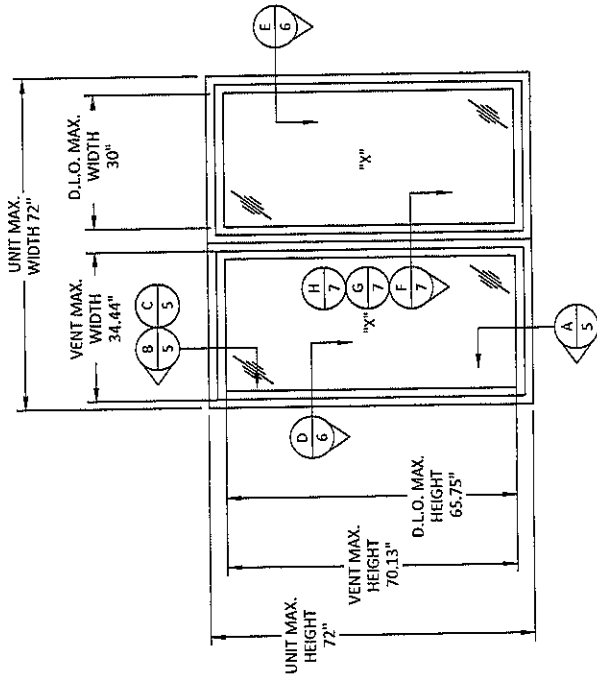
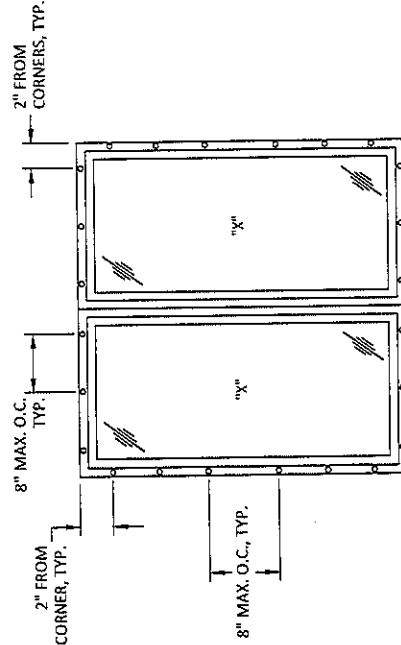
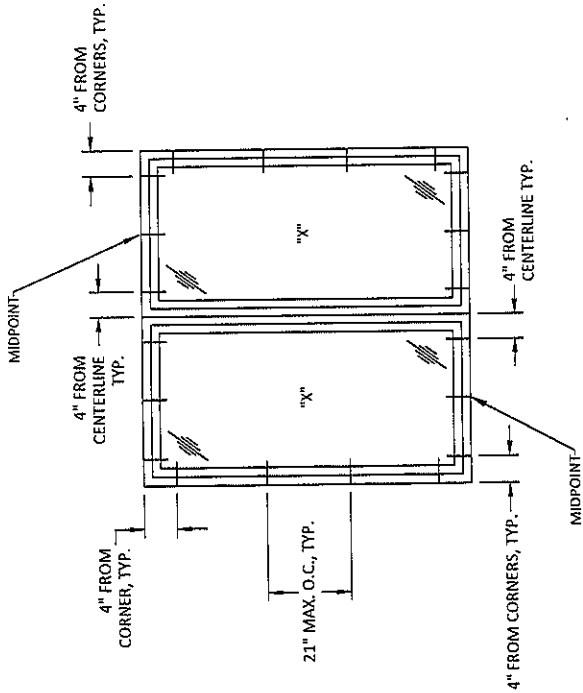
TYPICAL ELEVATION
X UNIT



REMARKS	BY	DATE
FBC 2017 CODE CHANGE	AG	10.01.17
FBC UPDATE	NUS	08.13.12

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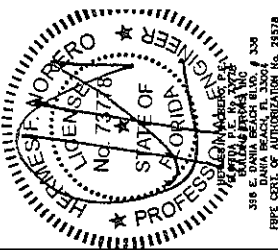
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DATE: 10.03.17
DWG. BY: AR/AG
CHK. BY: HFN
SCALE: NTS
DWG. #: ATR108
SECTION:



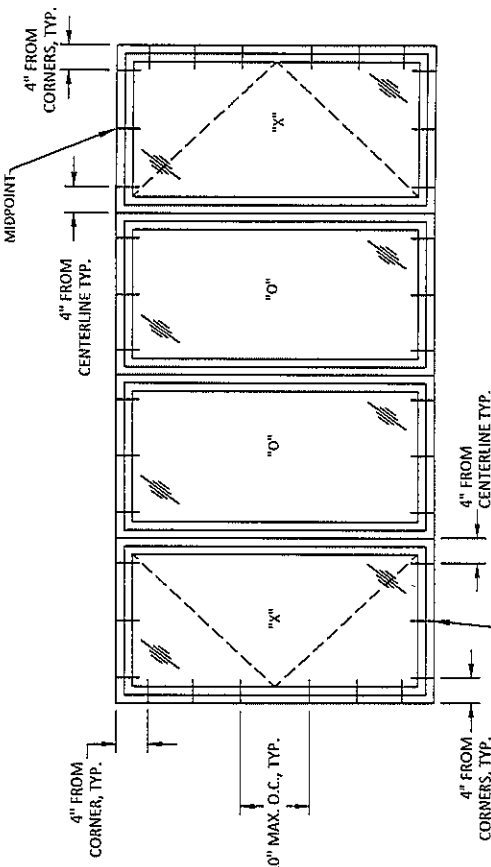


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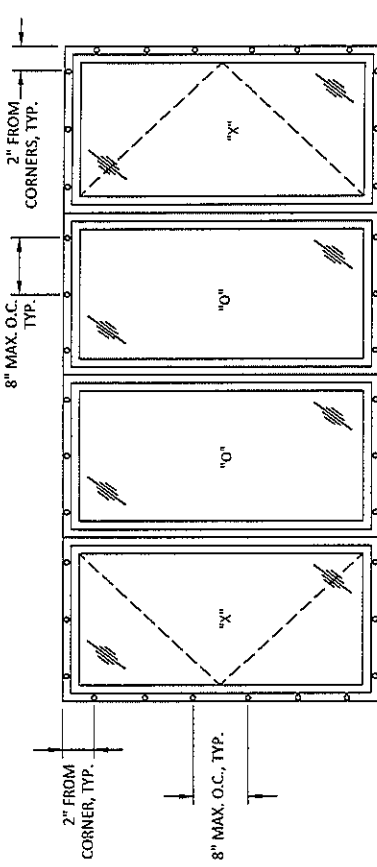
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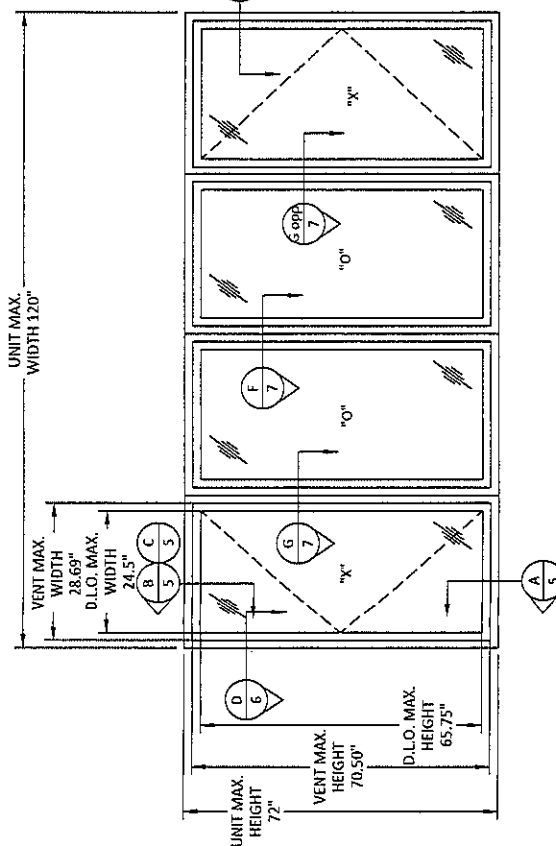
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SCALE:	NTS
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SECTION:	



ANCHOR LAYOUT
XOOX UNIT - THROUGH FRAME



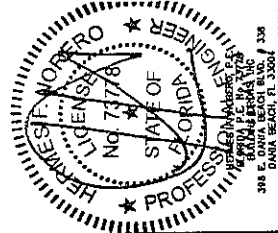
ANCHOR LAYOUT
XOOX UNIT - NAILING FIN



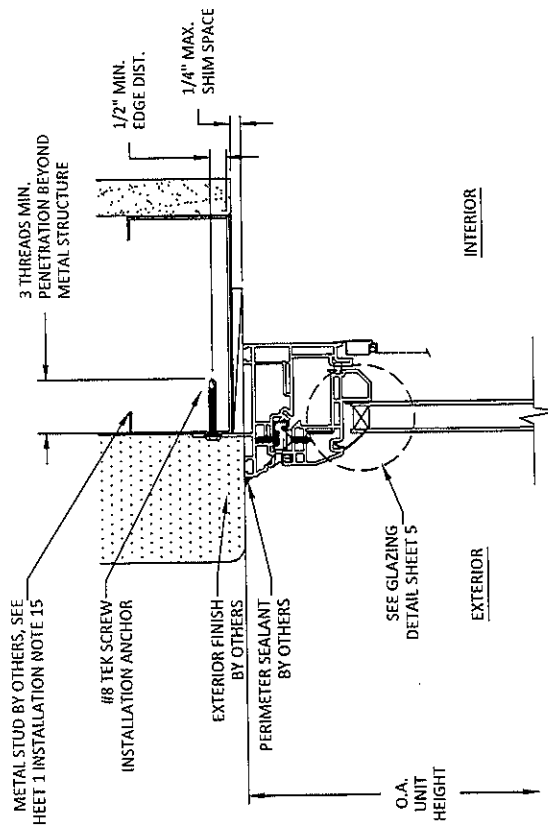
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XOOX UNIT

REMARKS	BY	DATE
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FBC UPDATE	NUS	08.13.22

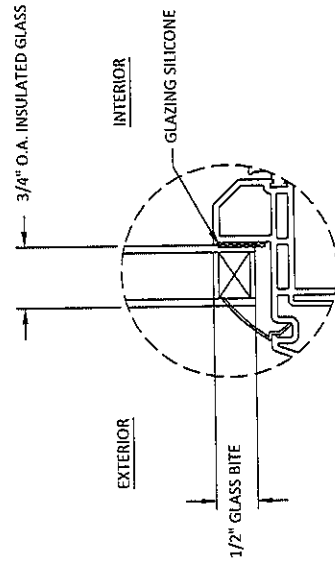
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FL #11821
DATE: 10.03.17
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CHK. BY: HFN
SCALE: NTS
DWG. #: ATR108
SECTION: 5

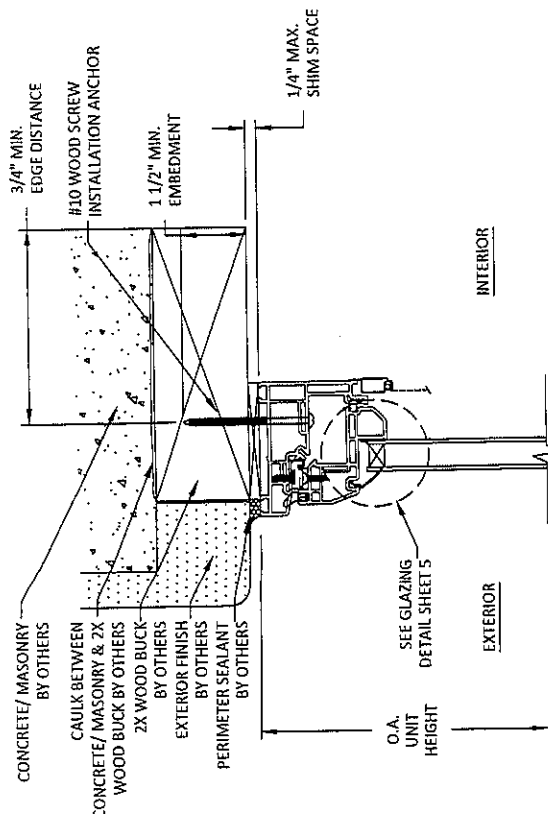


C VERTICAL SECTION
HEAD - FIXED - METAL STUD
MAILING FIN

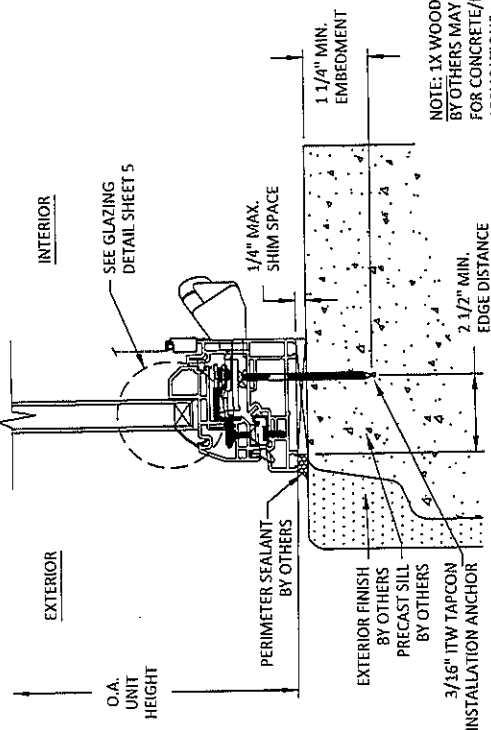


GLAZING DETAIL 1

NOTE:
GLASS TYPE & THICKNESS SHALL MEET THE REQUIREMENTS OF ASTM E 1300 GLASS CHARTS



B VERTICAL SECTION
HEAD - VENT - 2X WOOD BUCK
THROUGH FRAME



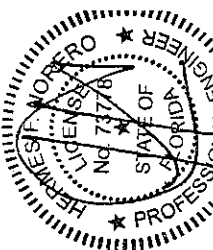
A VERTICAL SECTION
SILL - VENT - CONCRETE/MASONRY
THROUGH FRAME

NOTE: 1X WOOD BUCK BY OTHERS MAY BE ADDED FOR CONCRETE/MASONRY APPLICATIONS



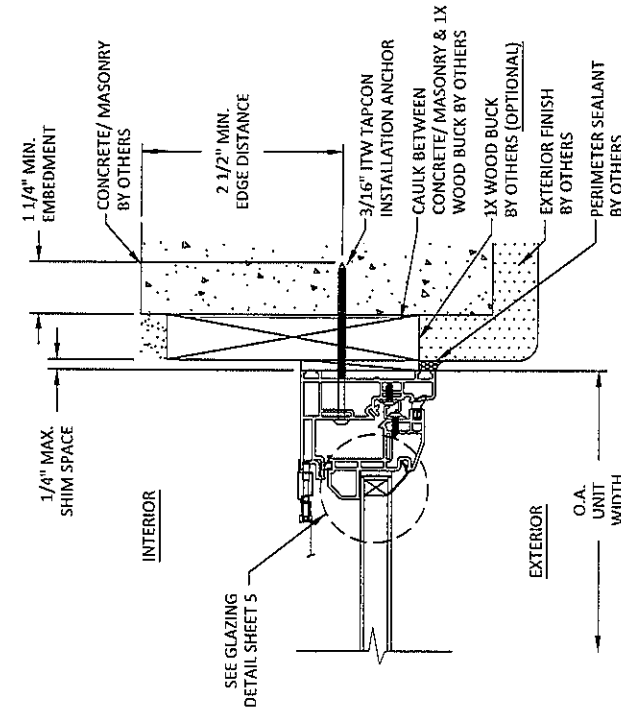
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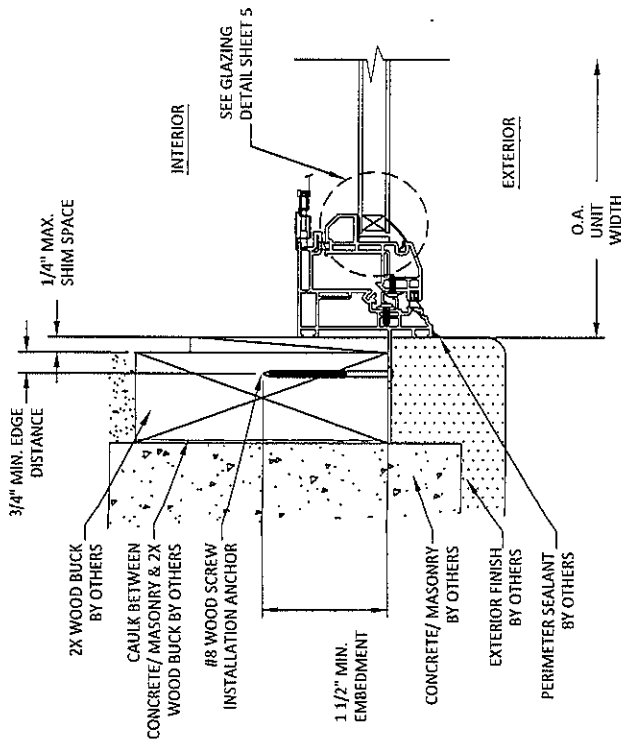


FL #:
DATE: 10.03.17
DWG BY: AR/AG
CHK BY: HFN
SCALE: NTS
DWG. #: ATR108
SECTION:

FL11821



E HORIZONTAL SECTION
JAMB - CONCRETE/MASONRY THROUGH FRAME



D HORIZONTAL SECTION
JAMB - 2X WOOD BUCK NAILING FIN



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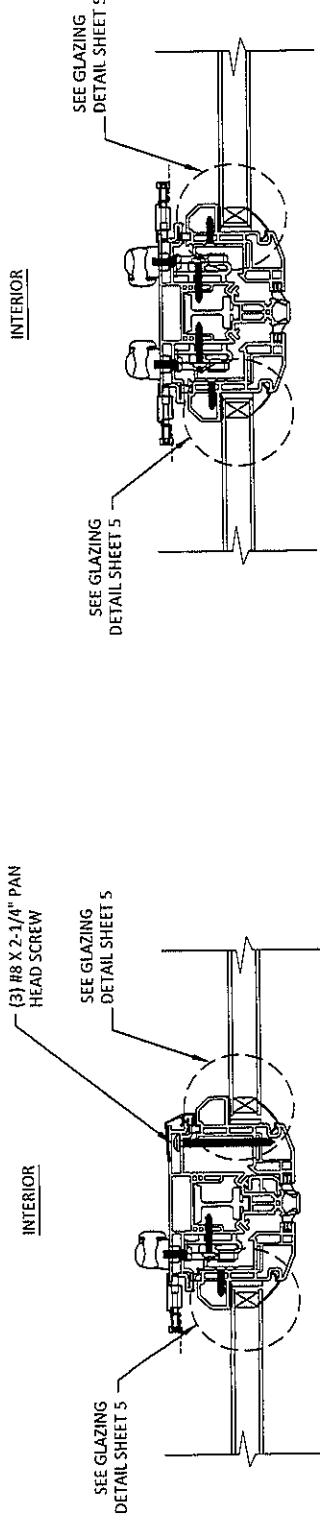
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FL11821

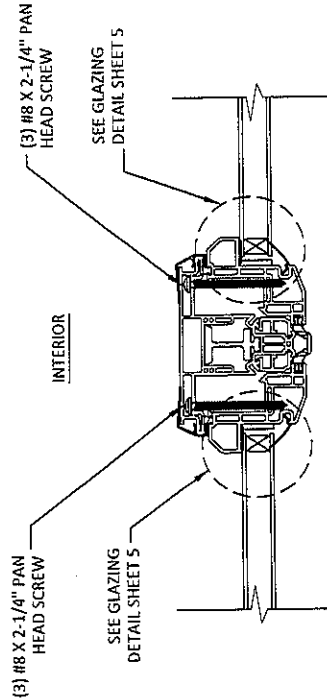
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SECTION: 7

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SCALE: NTS
DWG. #: ATR108
SECTION: 7

DATE: 10.03.17
CHK. BY: AR/AG HFN
SCALE: NTS
DWG. #: ATR108
SECTION: 7



H HORIZONTAL SECTION
MEETING STILE / CASEMENT TO CASEMENT



F HORIZONTAL SECTION
MEETING STILE / FIXED TO FIXED

G HORIZONTAL SECTION
MEETING STILE / CASEMENT TO FIXED

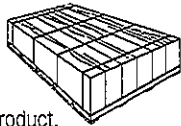


SMOOTH - CEDARMILL® - SELECT SIERRA 8 - STUCCO

IMPORTANT: FAILURE TO INSTALL AND FINISH THIS PRODUCT IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND JAMES HARDIE WRITTEN APPLICATION INSTRUCTIONS MAY LEAD TO PERSONAL INJURY, AFFECT SYSTEM PERFORMANCE, VIOLATE LOCAL BUILDING CODES, AND VOID THE PRODUCT ONLY WARRANTY. BEFORE INSTALLATION, CONFIRM THAT YOU ARE USING THE CORRECT HARDIEZONE INSTRUCTIONS. INSTALLATION OF HZ10™ PRODUCTS OUTSIDE AN HZ10™ LOCATION WILL VOID YOUR WARRANTY. TO DETERMINE WHICH HARDIEZONE APPLIES TO YOUR LOCATION, VISIT WWW.HARDIEZONE.COM OR CALL 1-866-942-7343 (866 9HARDIE)

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry product on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

1. Position cutting station so that wind will blow dust away from user and others in working area.
2. Use one of the following methods:
 - a. Best:
 - i. Score and snap
 - ii. Shears (manual, electric or pneumatic)
 - b. Better:
 - i. Dust reducing circular saw equipped with a HardieBlade® saw blade and HEPA vacuum extraction
 - c. Good:
 - i. Dust reducing circular saw with a HardieBlade saw blade (only use for low to moderate cutting)

INDOORS

1. Cut only using score and snap, or shears (manual, electric or pneumatic).
2. Position cutting station in well-ventilated area

- NEVER use a power saw indoors
- NEVER use a circular saw blade that does not carry the HardieBlade saw blade trademark
- NEVER dry sweep - Use wet suppression or HEPA Vacuum

Important Note: For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best"-level cutting methods where feasible.

NIOSH-approved respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.com to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information. SD080905

GENERAL REQUIREMENTS:

- HardiePanel® vertical siding can be installed over braced wood or steel studs spaced a maximum of 24" o.c. Irregularities in framing and sheathing can mirror through the finished application.
- HardiePanel vertical siding can also be installed over foam insulation/sheathing up to 1" thick. When using foam insulation/sheathing, avoid over-driving nails (fasteners), which can result in dimpling of the siding due to the compressible nature of the foam insulation/sheathing. Extra caution is necessary if power-driven nails (fasteners) are used for attaching siding over foam insulation/sheathing.
- A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration. James Hardie does manufacture HardieWrap™ Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.
- When installing James Hardie products all clearance details in figs. 5, 6, 7, 8, 9, 10 & 11 must be followed.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6" in the first 10'.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePanel vertical siding may be installed on vertical wall applications only.
- For larger projects, including commercial and multi-family projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient of thermal expansion and moisture movement of the product in their design. These values can be found in the Technical Bulletin "Expansive Characteristics of James Hardie® Siding Products" at www.JamesHardie.com.
- DO NOT use stain on James Hardie® products.

INSTALLATION:

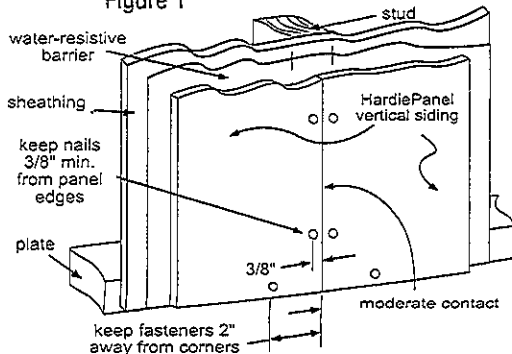
Fastener Requirements

Position fasteners 3/8" from panel edges and no closer than 2" away from corners. Do not nail into corners.

HardiePanel Vertical Siding Installation

- Framing must be provided at horizontal and vertical edges for nailing.
- HardiePanel vertical siding must be joined on stud.
- Double stud may be required to maintain minimum edge nailing distances.

Figure 1



Joint Treatment

- Vertical Joints - Install panels in moderate contact (fig. 1), alternatively joints may also be covered with battens, PVC or metal jointers or caulked (Not applicable to ColorPlus® Finish) (fig. 2).
- Horizontal Joints - Provide Z-flashing at all horizontal joints (fig. 3).

Figure 2

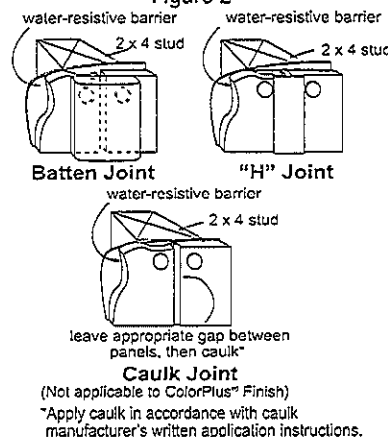


Figure 3

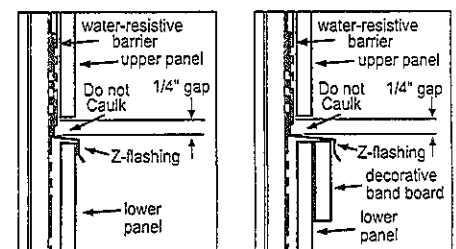
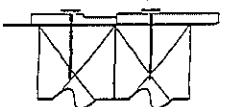


Figure 4

Recommendation: When installing Sierra 8, provide a double stud at panel joints to avoid nailing through grooves.



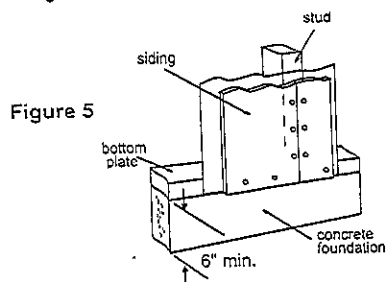
¹ For additional information on HardieWrap™ Weather Barrier, consult James Hardie at 1-866-4Hardie or www.hardiewrap.com

WARNING: AVOID BREATHING SILICA DUST

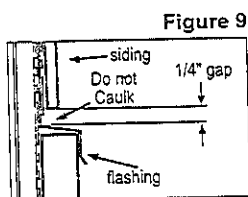
James Hardie® products contain respirable crystalline silica, which is known to the State of California to cause cancer and is considered by IARC and NIOSH to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) use fiber cement shears for cutting or, where not feasible, use a HardieBlade® saw blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area; (4) wear a properly-fitted, NIOSH-approved dust mask or respirator (e.g. N-95) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheet available at www.jameshardie.com or by calling 1-800-9HARDIE (1-800-942-7343). FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH. SD080905

CLEARANCES

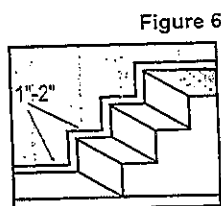
Install siding and trim products in compliance with local building code requirements for clearance between the bottom edge of the siding and the adjacent finished grade.



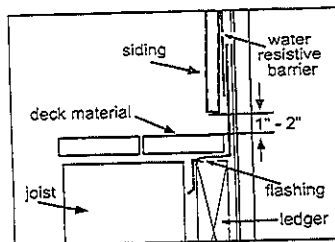
Maintain a 1/4" clearance between the bottom of James Hardie products and horizontal flashing. Do not caulk gap.



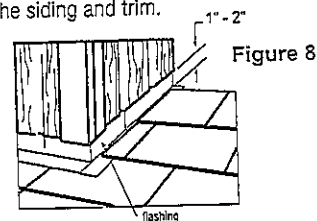
Maintain a 1" - 2" clearance between James Hardie® products and paths, steps and driveways.



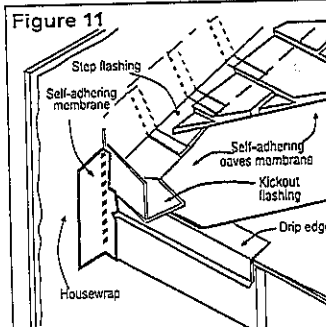
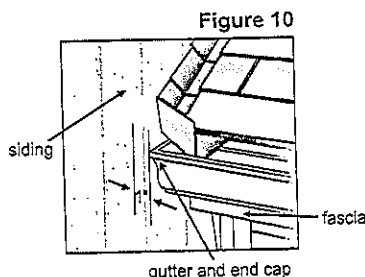
Maintain a 1" - 2" clearance between James Hardie products and decking material.



At the juncture of the roof and vertical surfaces, flashing and counterflashing shall be installed per the roofing manufacturer's instructions. Provide a 1" - 2" clearance between the roofing and the bottom edge of the siding and trim.



Maintain a minimum 1" gap between gutter end caps and siding & trim.



KICKOUT FLASHING

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding.

It is best to install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 11, Kickout Flashing* To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" of sufficient length and angle to direct the water running down the roof away from the siding.

GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).

- Consult applicable code compliance report for correct fasteners type and placement to achieve specified design wind loads.
- NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (fig. A)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, caulk nail hole and add a nail. (fig. B)
- For wood framing, under driven nails should be hit flush to the plank with a hammer (For steel framing, remove and replace nail).
- Do not use aluminum fasteners, staples, or clipped head nails.

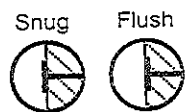


Figure A



Countersunk, Caulk & add nail



do not under drive nails



DO NOT STAPLE

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions or ASTM C1193.

PAINTING

DO NOT use stain on James Hardie® products. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.

* The illustration (figure 11) was reprinted with permission of THE JOURNAL OF LIGHT CONSTRUCTION. For subscription information, visit www.jlconline.com.

RECOGNITION: In accordance with ICC-ES Legacy Report NER-405, HardiePanel® vertical siding is recognized as a suitable alternate to that specified in: the BOCA National Building Code/1999, the 1997 Standard Building Code, the 1997 Uniform Building Code, the 1998 International One- and Two-Family Dwelling Code, the 2003 International Building Code, and the 2003 International Residential Code for One- and Two-Family Dwellings. HardiePanel vertical siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida listing PL#889, Dade County, Florida NOA No. 02-0729.02, U.S. Dept. of HUD Materials Release 1263c, Texas Department of Insurance Product Evaluation EC-23, City of New York MEA 223-93-M, and California DSA PA-019. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.

© 2010 James Hardie Technology Limited. All rights reserved. TM, SM, and ® denote trademarks or registered trademarks of James Hardie Technology Limited. ® is a registered trademark of James Hardie Technology Limited.

Additional Installation Information, Warranties, and Warnings are available at www.jameshardie.com



JamesHardie



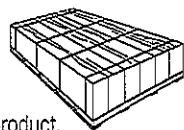
INSTALLATION REQUIREMENTS - PRIMED & COLORPLUS® PRODUCTS

**SELECT CEDARMILL® = SMOOTH - COLONIAL SMOOTH® = COLONIAL ROUGHSAWN® = BEADED CEDARMILL®
BEADED SMOOTH - STRAIGHT-EDGE SHINGLE PLANK**

IMPORTANT: FAILURE TO INSTALL AND FINISH THIS PRODUCT IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND JAMES HARDIE WRITTEN APPLICATION INSTRUCTIONS MAY LEAD TO PERSONAL INJURY, AFFECT SYSTEM PERFORMANCE, VIOLATE LOCAL BUILDING CODES, AND VOID THE PRODUCT ONLY WARRANTY. BEFORE INSTALLATION, CONFIRM THAT YOU ARE USING THE CORRECT HARDIEZONE™ PRODUCT INSTRUCTIONS. INSTALLATION OF HZ10® PRODUCTS OUTSIDE AN HZ10® LOCATION WILL VOID YOUR WARRANTY. TO DETERMINE WHICH HARDIEZONE™ APPLIES TO YOUR LOCATION, VISIT WWW.HARDIEZONE.COM OR CALL 1-866-942-7343 (866 9HARDIE)

STORAGE & HANDLING:

Store flat and keep dry and covered prior to installation. Installing siding wet or saturated may result in shrinkage at butt joints. Carry planks on edge. Protect edges and corners from breakage. James Hardie is not responsible for damage caused by improper storage and handling of the product.



CUTTING INSTRUCTIONS

OUTDOORS

1. Position cutting station so that wind will blow dust away from user and others in working area.
2. Use one of the following methods:
 - a. Best:
 - i. Score and snap
 - ii. Shears (manual, electric or pneumatic)
 - b. Better:
 - i. Dust reducing circular saw equipped with a HardieBlade® saw blade and HEPA vacuum extraction
 - c. Good:
 - i. Dust reducing circular saw with a HardieBlade saw blade (only use for low to moderate cutting)

INDOORS

1. Cut only using score and snap, or shears (manual, electric or pneumatic).
 2. Position cutting station in well-ventilated area
- NEVER use a power saw indoors
 - NEVER use a circular saw blade that does not carry the HardieBlade saw blade trademark
 - NEVER dry sweep - Use wet suppression or HEPA Vacuum

Important Note: For maximum protection (lowest respirable dust production), James Hardie recommends always using "Best"-level cutting methods where feasible.

NIOSH-approved respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.com to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

SD063105

GENERAL REQUIREMENTS:

- HardiePlank® lap siding can be installed over braced wood or steel studs spaced a maximum of 24" o.c. or directly to minimum 7/16" thick OSB sheathing. Irregularities in framing and sheathing can mirror through the finished application.
- HardiePlank® lap siding can also be installed over foam insulation/sheathing up to 1" thick. When using foam insulation/sheathing, avoid over-driving nails (fasteners), which can result in dimpling of the siding due to the compressible nature of the foam insulation/sheathing. Extra caution is necessary if power-driven nails (fasteners) are used for attaching siding over foam insulation/sheathing.
- A water-resistive barrier is required in accordance with local building code requirements. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements. James Hardie will assume no responsibility for water infiltration. James Hardie does manufacture HardieWrap® Weather Barrier, a non-woven non-perforated housewrap¹, which complies with building code requirements.
- When installing James Hardie products all clearance details in figs. 3, 4, 5, 6, 7, 8, & 9 must be followed.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6" in the first 10'.
- Do not use HardiePlank lap siding in fascia or trip applications.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePlank lap siding may be installed on flat vertical wall applications only.
- For larger projects, including commercial and multi-family projects, where the span of the wall is significant in length, the designer and/or architect should take into consideration the coefficient of thermal expansion and moisture movement of the product in their design. These values can be found in the Technical Bulletin "Expansion Characteristics of James Hardie® Siding Products" at www.JamesHardie.com.
- DO NOT use stain on James Hardie® products.

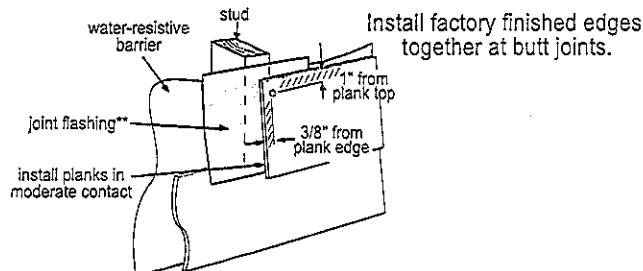
INSTALLATION:

JOINT TREATMENT*

(Required for ColorPlus® Finish, Recommended for Primed product)

James Hardie does not recommend the use of caulk at field butt joints.

Figure 2

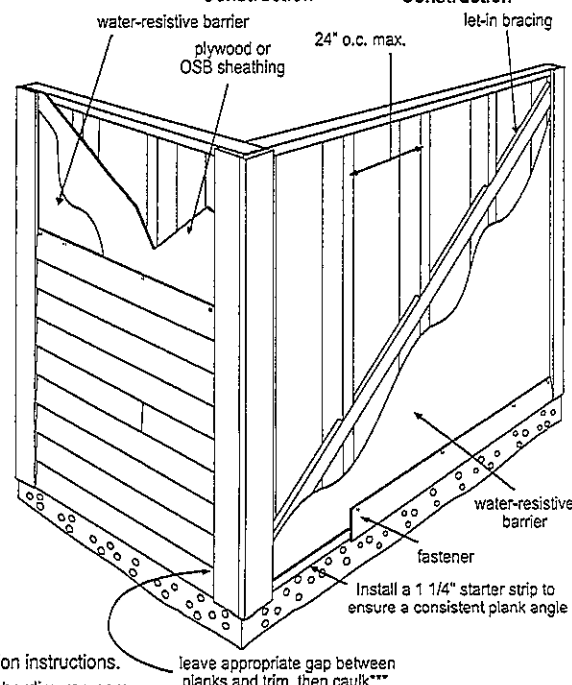


Install factory finished edges together at butt joints.

Figure 1

Double Wall Construction

Single Wall Construction



*For other jointing options, refer to local building code or NER 405

As required by local building code *Apply caulk in accordance with caulk manufacturers written application instructions.

¹For additional information on HardieWrap® Weather Barrier, consult James Hardie at 1-866-4Hardie or www.hardiewrap.com

WARNING: AVOID BREATHING SILICA DUST

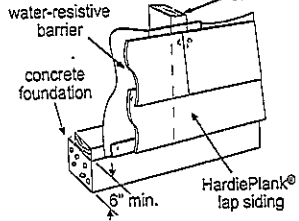
James Hardie® products contain respirable crystalline silica, which is known to the State of California to cause cancer and is considered by IARC and NIOSH to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) use fiber cement shears for cutting or, where not feasible, use a HardieBlade® saw blade and dust-reducing circular saw attached to a HEPA vacuum; (3) wear others in the immediate area; (4) wear a properly-fitted, NIOSH-approved dust mask or respirator (e.g. N-95) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheet available at www.jameshardie.com or by calling 1-800-9HARDIE (1-800-942-7343). FAILURE TO ADHERE TO OUR WARNINGS, MSDS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

SD063105

CLEARANCES

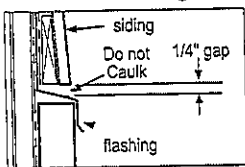
Install siding and trim products in compliance with local building code requirements for clearance between the bottom edge of the siding and the adjacent finished grade.

Figure 3



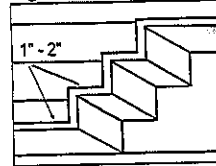
Maintain a 1/4" clearance between the bottom of James Hardie products and horizontal flashing. Do not caulk gap.

Figure 7



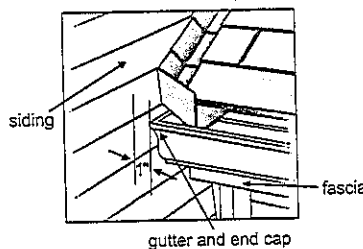
Maintain a 1" - 2" clearance between James Hardie® products and paths, steps and driveways.

Figure 4



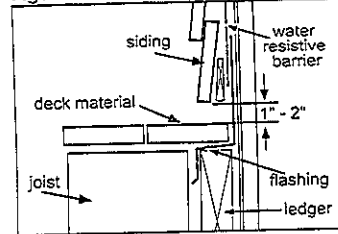
Maintain a minimum 1" gap between gutter end caps and siding & trim.

Figure 8



Maintain a 1" - 2" clearance between James Hardie products and decking material.

Figure 5



At the juncture of the roof and vertical surfaces, flashing and counterflashing shall be installed per the roofing manufacturer's instructions. Provide a 1" - 2" clearance between the roofing and the bottom edge of the siding and trim.

Figure 6

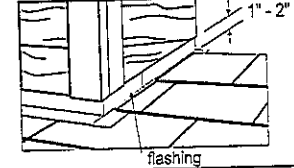
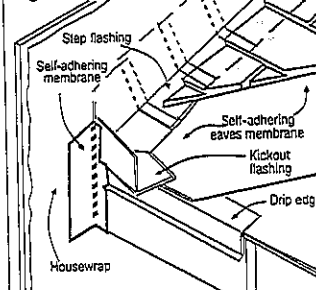


Figure 9



KICKOUT FLASHING

Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding.

It is best to install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then come back to install the kickout.

Figure 9, Kickout Flashing* To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" of sufficient length and angle to direct the water running down the roof away from the siding.

FASTENER REQUIREMENTS **

Blind Nailing is the preferred method of installation for all HardiePlank® lap siding products

BLIND NAILING

Nails - Wood Framing

- Siding nail (0.09" shank x 0.221" HD x 2" long)
- 11ga. roofing nail (0.121" shank x 0.371" HD x 1.25" long)

Screws - Steel Framing

- Ribbed Wafer-head or equivalent (No. 8 x 1 1/4" long x 0.375" HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing

- ET & F Panelfast® nails or equivalent (0.10" shank x 0.313" HD x 1-1/2" long)
- Nails must penetrate minimum 1/4" into metal framing.

OSB minimum 7/16"

- 11ga. roofing nail (0.121" shank x 0.371" HD x 1.75" long)
- Ribbed Wafer-head or equivalent (No. 8 x 1 5/8" long x 0.375" HD).

FACE NAILING

Nails - Wood Framing

- 6d (0.113" shank x 0.267" HD x 2" long)
- Siding nail (0.09" shank x 0.221" HD x 2" long)

Screws - Steel Framing

- Ribbed Bugle-head or equivalent (No. 8-18 x 1-5/8" long x 0.323" HD) Screws must penetrate 3 threads into metal framing.

Nails - Steel Framing

- ET & F pin or equivalent (0.10" shank x 0.25" HD x 1-1/2" long)
- Nails must penetrate minimum 1/4" into metal framing.

OSB minimum 7/16"

- Siding nail (0.09" shank x 0.221" HD x 1-1/2" long)*

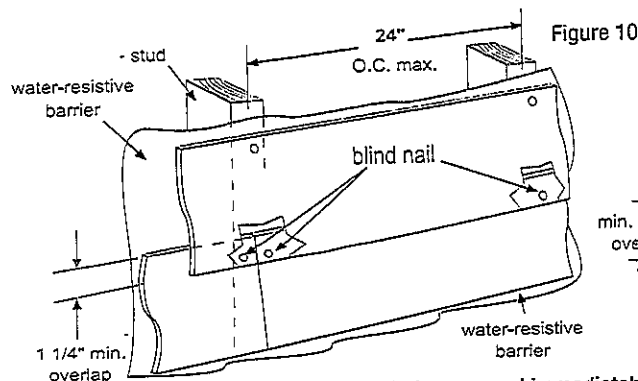


Figure 10

Minimum overlap for Both Face and Blind Nailing

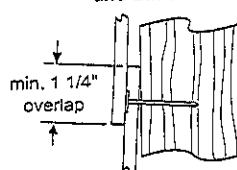
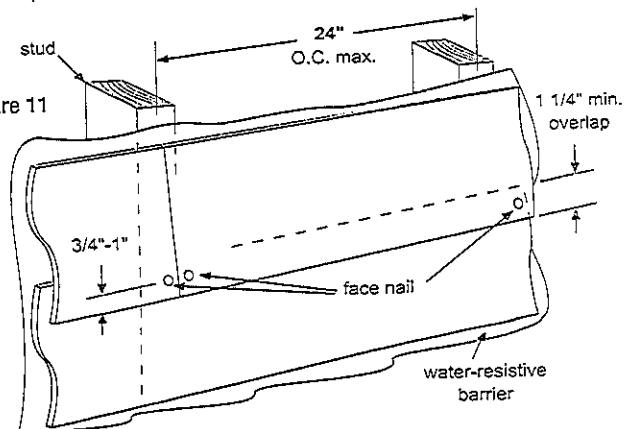


Figure 11



Laminate sheet to be removed immediately after installation of each course for ColorPlus® products.

* The illustration (figure 9) and associated text was reprinted with permission of THE JOURNAL OF LIGHT CONSTRUCTION. For subscription information, visit www.jlconline.com.

** When face nailing to OSB, planks must be no greater than 9 1/4" wide and fasteners must be 12" o.c. or less.

** Also see General Fastening Requirements; and when considering alternative fastening options refer to James Hardie's Technical Bulletin USTB 17 - Fastening Tips for HardiePlank® Lap Siding.

GENERAL FASTENING REQUIREMENTS

Fasteners must be corrosion resistant, galvanized, or stainless steel. Electro-galvanized are acceptable but may exhibit premature corrosion. James Hardie recommends the use of quality, hot-dipped galvanized nails. James Hardie is not responsible for the corrosion resistance of fasteners. Stainless steel fasteners are recommended when installing James Hardie® products near the ocean, large bodies of water, or in very humid climates.

PNEUMATIC FASTENING

James Hardie products can be hand nailed or fastened with a pneumatic tool. Pneumatic fastening is highly recommended. Set air pressure so that the fastener is driven snug with the surface of the siding. A flush mount attachment on the pneumatic tool is recommended. This will help control the depth the nail is driven. If setting the nail depth proves difficult, choose a setting that under drives the nail. (Drive under driven nails snug with a smooth faced hammer - Does not apply for installation to steel framing).

- Consult applicable code compliance report for correct fasteners type and placement to achieve specified design wind loads.
- NOTE: Published wind loads may not be applicable to all areas where Local Building Codes have specific jurisdiction. Consult James Hardie Technical Services if you are unsure of applicable compliance documentation.
- Drive fasteners perpendicular to siding and framing.
- Fastener heads should fit snug against siding (no air space). (fig. A)
- Do not over-drive nail heads or drive nails at an angle.
- If nail is countersunk, caulk nail hole and add a nail. (fig. B)
- For wood framing, under driven nails should be hit flush to the plank with a hammer (For steel framing, remove and replace nail).
- Do not use aluminum fasteners, staples, or clipped head nails.

Snug



Figure A

Flush



Countersunk,
Caulk &
add nail

Figure B



do not under
drive nails



DO NOT
STAPLE

CAULKING

For best results use an Elastomeric Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834. Caulking/Sealant must be applied in accordance with the caulking/sealant manufacturer's written instructions or ASTM C1193.

PAINTING

DO NOT use stain on James Hardie® products. James Hardie products must be painted within 180 days for primed product and 90 days for unprimed. 100% acrylic topcoats are recommended. Do not paint when wet. For application rates refer to paint manufacturers specifications. Back-rolling is recommended if the siding is sprayed.

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up paint should be used sparingly. If large areas require touch-up, replace the damaged area with new HardiePlank® lap siding with ColorPlus Technology.
- Laminate sheet must be removed immediately after installation of each course.
- Terminate non-factory cut edges into trim where possible, and caulk. Color matched caulks are available from your ColorPlus™ product dealer.
- Treat all other non-factory cut edges using the ColorPlus Technology edge coat, available from your ColorPlus product dealer.

PAINTING JAMES HARDIE® SIDING AND TRIM PRODUCTS WITH COLORPLUS® TECHNOLOGY

When repainting ColorPlus products, James Hardie recommends the following regarding surface preparation and topcoat application:

- Ensure the surface is clean, dry, and free of any dust, dirt, or mildew
- Repriming is normally not necessary
- 100% acrylic topcoats are recommended
- DO NOT use stain or oil/alkyd base paints on James Hardie® products
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature

COVERAGE CHART/ESTIMATING GUIDE

Number of 12' planks, does not include waste

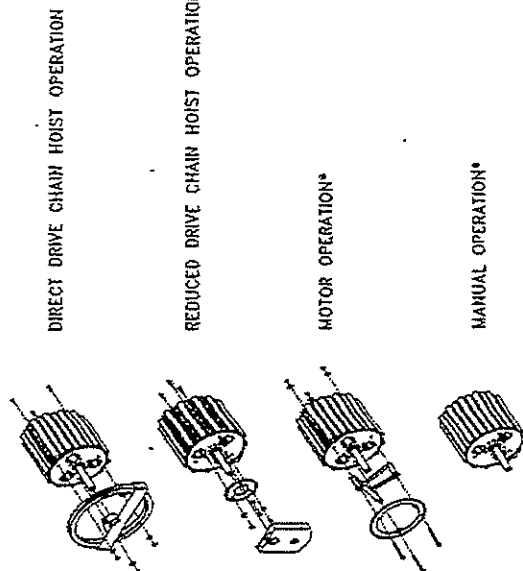
COVERAGE AREA LESS OPENINGS

HARDIEPLANK® LAP SIDING WIDTH

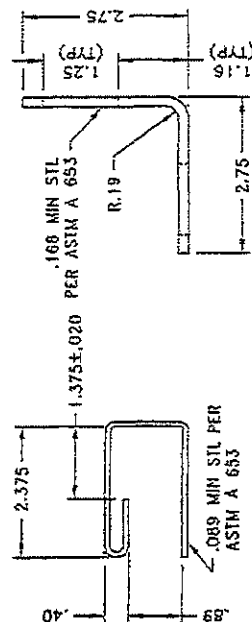
SQ (1 SQ = 100 sq.ft.)	(exposure)	5 1/4 4	6 1/4 5	7 1/4 6	7 1/2 6 1/4	8 6 3/4	8 1/4 7	9 1/4 8	9 1/2 8 1/4	12 10 3/4
1		25	20	17	16	15	14	13	13	9
2		50	40	33	32	30	29	25	25	19
3		75	60	50	48	44	43	38	38	28
4		100	80	67	64	59	57	50	50	37
5		125	100	83	80	74	71	63	63	47
6		150	120	100	96	89	86	75	75	56
7		175	140	117	112	104	100	88	88	65
8		200	160	133	128	119	114	100	100	74
9		225	180	150	144	133	129	113	113	84
10		250	200	167	160	148	143	125	125	93
11		275	220	183	176	163	157	138	138	102
12		300	240	200	192	178	171	150	150	112
13		325	260	217	208	193	186	163	163	121
14		350	280	233	224	207	200	175	175	130
15		375	300	250	240	222	214	188	188	140
16		400	320	267	256	237	229	200	200	149
17		425	340	283	272	252	243	213	213	158
18		450	360	300	288	267	257	225	225	167
19		475	380	317	304	281	271	238	238	177
20		500	400	333	320	296	286	250	250	186

This coverage chart is meant as a guide. Actual usage is subject to variables such as building design. James Hardie does not assume responsibility for over or under ordering of product.

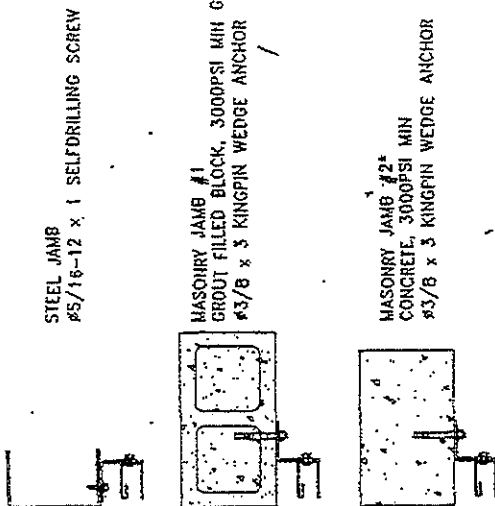
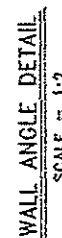
RECOGNITION: In accordance with ICC-ES Legacy Report NER-405, HardiePlank® lap siding is recognized as a suitable alternate to that specified in: the BOCA National Building Code/1999, the 1997 Standard Building Code, the 1997 Uniform Building Code, the 1998 International One- and Two-Family Dwelling Code, the 2003 International Building Code, and the 2003 International Residential Code for One- and Two-Family Dwellings. HardiePlank lap siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida listing FL#889, Dade County, Florida NOA No. 02-0729.02, U.S. Dept. of HUD Materials Release 1263c, Texas Department of Insurance Product Evaluation EC-23, City of New York MEA 223-93-M, and California DSA PA-019. These documents should also be consulted for additional information concerning the suitability of this product for specific applications.



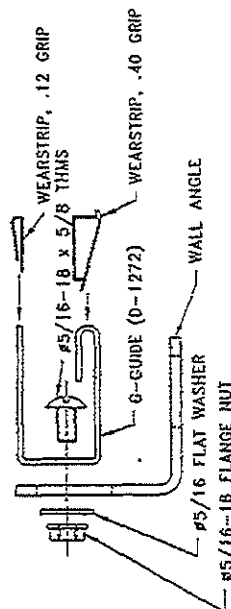
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SCALE = NONE



G-GUIDE DETAIL
SCALE = 1:2



JAMB DETAIL
SCALE = NONE



GEANT
GUIDE ASSEMBLY DETAIL
SCALE = 1:2

SCALE = 1:2



Architectural Testing

Report# 01-46885,03
Date 10-31-03 Tech# 5

UNTESTED CONFIGURATIONS APPROVED BY COMPARATIVE ANALYSIS

[illegible]

John E. Scates, Professional Engineer

August 24, 2020

Wayne-Dalton, A Division of Overhead Door Corporation
2501 S State Hwy 121 Bus, Suite 200
Lewisville, TX 75067

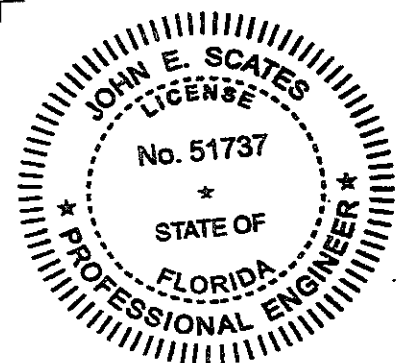
Re: FL 1421
Statement of Equivalence

To Whom It May Concern:

Within the test reports uploaded for FL 1421, the ATI reports cite ASTM E330-97, and the HETI cites ASTM E330-00. I have read these reports and affirm that the static test process used would also comply with ANSI/DASMA 108-2017.

Furthermore, I certify that I meet the requirements of "independence" as it relates to Wayne-Dalton (A Division of Overhead Door Corporation). Specifically,

- (1) I do not have, nor intend to acquire or will acquire, a financial interest in any company manufacturing or distributing these products.
- (2) I (my business) is not owned, operated or controlled by any company manufacturing or distributing these products.
- (3) I do not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the reports are being issued.
- (4) I do not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.



Digitally signed by John E. Scates, P.E.
Date: 2020.08.24 14:25:58 -05'00'

John E. Scates, P.E.
Florida PE # 51737

The digitally signed file is the original. Printed copies are not originals (just as copies of paper-signed documents are not originals).



NEMO|etc.

Certificate of Authorization #32455

353 Christian Street, Unit #13

Oxford, CT 06478

(203) 262-9245

ENGINEER

EVALUATE

TEST

CONSULT

CERTIFY

EVALUATION REPORT

PLYCEM USA LLC

Fiber Cement Products

15055 Woodham Drive

Houston, TX 77073

(281) 813-1260

Evaluation Report 9915.06.16-R3

FL20742-R3

Date of Issuance: 06/17/2016

Revision 3: 10/11/2018

SCOPE:

This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the **State of Florida**. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **6th Edition (2017) Florida Building Code** sections noted herein.

DESCRIPTION: Allura™ Fiber Cement Siding

LABELING: Labeling shall be in accordance with **FBC 1404.10** and the requirements the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO|etc. requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Evaluation Report number preceded by the words "NEMO|etc. Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 3, plus a 6-page Appendix.

Prepared by:

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/11/2018. This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO|etc. nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.



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PANEL WALLS - SIDING EVALUATION:

1. SCOPE:

Product Category: Panel Walls

Sub-Category: Siding

Compliance Statement: Allura™ Fiber Cement Siding, as produced by PLYCEM USA LLC, has demonstrated compliance with the following sections of the 6th Edition (2017) Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

<u>Section</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1404.10	Physical Properties	ASTM C1186	2012
1609.1	Wind	ASTM E330	2002

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
ERD (TST6049)	Transverse Load (Wind)	Florida Windload Testing	06/15/2016
ERD (TST6049)	Transverse Load (Wind)	7.25B/W/16	08/22/2016
ERD (TST6049)	Transverse Load (Wind)	The Cove	10/26/2016
ERD (TST6049)	Transverse Load (Wind)	7.25/B/CMU/16	12/04/2017
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1000	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1021	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1023	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1058	04/11/2002
HETI (TST1691)	Transverse Load (Wind)	HETI-01-1060	04/11/2002
ITS (TST1509)	Physical Properties	3155389COQ-004	11/24/2008
ICC-ES (EVL2396)	2012 IBC/IRC Compliance	ESR-1381	10/01/2016
QAI (CER3916)	Transverse Load (Wind)	RJ0893-5	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ0893-6	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ0893-9	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ0893-10	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ0893-11	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ0893-12	12/20/2010
QAI (CER3916)	Transverse Load (Wind)	RJ2420-P	04/18/2013
PLYCEM USA LLC	Quality Assurance	Declaration Letter	02/01/2017
QAI (QUA7628)	Quality Assurance	Inspection Report	09/14/2018

4. PRODUCT DESCRIPTION:

- 4.1 **Allura™ Fiber Cement Siding** is composed of portland cement, silica, cellulose fiber, clay or fly ash and limestone. Allura™ Fiber Cement Siding is minimum 5/16-inch thick and meets ASTM C1186, Type A, Grade II (Reference: FBC 1404.10).
- 4.1.1 **Vertical Panel Siding** is flat, fiber-cement, panel-siding available with smooth or textured exterior surfaces; 48-inch wide by 8, 9, 10 or 12 ft long.
- 4.1.2 **Lap Siding** are flat, fiber-cement, lap-siding available with smooth or textured exterior surfaces; 5¼, 6¼, 7¼, 8¼ or 9¼-inch wide by 12 ft long.
- 4.1.3 **Shapes Siding** are flat, fiber-cement, panel-siding available with smooth or textured exterior surfaces of various designs; "Random Square Strait Edge", "Random Square Staggered Edge", "Half-Rounds" and "Octagons"; 16-inch wide by 48-inch.



5. LIMITATIONS:

- 5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
- 5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.
- 5.3 This Evaluation Report does not address fire-resistance-rating performance of the completed wall assemblies.
- 5.4 **Allura™ Fiber Cement Siding** is not intended for racking or shear resistance. Walls shall be braced by other means as required by the Authority Having Jurisdiction.
- 5.5 Limitations relating to wind load resistance are outlined in Appendix 1.
- 5.5.1 "MDP" = Maximum Allowable Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to **FBC 1609** for determination of design wind loads.
- 5.5.2 Maximum Ultimate Wind Speeds shall be as defined in **1609.3(1)**, **1609.3(2)** or **1609.3(3)** of the 6th Edition (2017) **Florida Building Code**, depending on the project Risk Category (**FBC 1604.5**) and Exposure Category (**FBC 1609.4.3**), as defined by the Designer of Record and acceptable to the Authority Having Jurisdiction. Maximum Ultimate Wind Speeds are limited to projects meeting the following:
 - ✓ Maximum height of 30 ft
 - ✓ Enclosed building (Internal Pressure Coefficient, $GC_{pi} = \pm 0.18$);
 - ✓ Site conditions and location of the structure do not meet all conditions specified in Section 26.8.1 of **ASCE 7-10** ($K_{zt} = 1.0$).Analysis for buildings falling outside these constraints shall be on a project-by-project basis by a Florida Registered PE.
- 5.6 All products in the wall assembly shall have quality assurance audit in accordance with F.A.C. Rule 61G20-3.

6. INSTALLATION:

- 6.1 **Allura™ Fiber Cement Siding** shall be installed in accordance with **PLYCEM USA LLC** published installation instructions, subject to the Limitations / Conditions of Use noted herein.
- 6.2 The underlying wall substrate shall include a water-resistive barrier in accordance with **FBC 1403.2**.
- 6.3 Minimum system attachment requirements are set forth in Appendix 1, and shall not be exceeded. Fastener lengths noted are minimum lengths, and shall be adjusted as necessary for minimum 1-inch embedment into wood studs or minimum three full threads for metal framing (Reference: **FBC 1405.16**).

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction in order to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Nuevo Laredo, Mexico

9. QUALITY ASSURANCE ENTITY:

QAI Laboratories – QUA7628; (604) 527-8378; mlansdowne@qai.org

- THE SIX (6) PAGE APPENDIX THAT FOLLOWS FORMS PART OF THIS EVALUATION REPORT -



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APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND RESISTANCE

Table	Type	Application	Fastener Engage	Page
1	Allura™ Panel Siding	Face Fastened	Framing	2
2A	Allura™ Lap Siding	Blind Fastened	Framing	3
2B	Allura™ Lap Siding	Face Fastened	Framing	3
2C	Allura™ Lap Siding	Blind Fastened	Sheathing	4
2D	Allura™ Lap Siding	Blind Fastened	Framing & Furring Strips	5
2E	Allura™ Lap Siding	Blind Fastened	Vertical Battens	5
3	Allura™ Shapes Siding	Blind Fastened	Framing	6

The following notes apply to the systems outlined herein:

- Substrates shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- Fasteners shall be corrosion resistant. Fastener lengths noted are minimum lengths, and shall be adjusted as necessary for minimum 1-inch embedment into wood studs or minimum three full threads for metal framing (Reference: **FBC 1405.16**).
- Vertical joints shall occur over wall framing and shall be staggered on subsequent courses. The siding shall be applied with a minimum 1½ inch overlap. Position the fasteners ¾ inch from the top edge of the siding. Fasten 3/8 inch from butt ends. For installation over metal wall studs, a minimum of ½ inch thick gypsum shall be applied on the interior surface.
- "MDP" = Maximum Allowable Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to **FBC 1609** for determination of design wind loads.
- Maximum Ultimate Wind Speeds shall be as defined in Figures 1609.3(1), 1609.3(2) or 1609.3(3) of the 6th Edition (2017) Florida Building Code, depending on the project Risk Category (**FBC 1604.5**) and Exposure Category (**FBC 1609.4.3**), as defined by the Designer of Record and acceptable to the Authority Having Jurisdiction. Maximum Ultimate Wind Speeds are limited to projects meeting the following:
 - ✓ Maximum height of 30 ft
 - ✓ Enclosed building (Internal Pressure Coefficient, $G_{Cpi} = \pm 0.18$);
 - ✓ Site conditions and location of the structure do not meet all conditions specified in Section 26.8.1 of **ASCE 7-10** ($K_a = 1.0$).Analysis for buildings failing outside these constraints shall be on a project-by-project basis by a Florida Registered PE.



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**TABLE 1: ALLURA™ PANEL SIDING
FACE FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
1.	48	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Face fastened to framing	ITW Buildex Rock-On® Type S 2PWH HI-LO® CLC, 9-15 x 2 1/4" (Part No. 2155500)	-38	162	137	126
2.	48	2x4 Spruce-Pine-Fir with nominal 5/8" plywood sheathing	16	Face fastened to framing	6d common nails, min. 2" long x 0.113" shank dia. x 0.265" head dia.	-38	162	137	126



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**TABLE 2A: ALLURA™ LAP SIDING
BLIND FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
3.	8¼	Min. 20 ga. steel stud	16	Blind fastened to framing	Min. #8 x 1 5/8 inch long self-tapping screws with a 0.375 inch dia. wafer head	-22	123	N/A	N/A
4.	8¼	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¼" long x 0.120" shank dia. x 0.375" head dia.	-23	126	107	N/A
5.	7¼	2x4 Spruce-Pine-Fur with nominal 1/2" plywood sheathing	16	Blind fastened to framing	Ring shank roofing nails, min. 1¼" long x 0.120" shank dia. x 0.375" head dia.	-27	137	116	106
6.	6¼	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¼" long x 0.120" shank dia. x 0.375" head dia.	-36	158	133	123
7.	5¼	2x4 Spruce-Pine-Fur	16	Blind fastened to framing	Ring shank roofing nails, min. 1¼" long x 0.120" shank dia. x 0.375" head dia.	-38	162	137	126

**TABLE 2B: ALLURA™ LAP SIDING
FACE FASTENED TO FRAMING**

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
8.	9¼	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Face fastened to framing	ITW Buildex Rock-On® Type S-12 2PWH CLC, 8 x 2¼" (Part No. 2139500)	-46	178	151	139
9.	9¼	2x4 Spruce-Pine-Fur with nominal 5/8" plywood sheathing	16	Face fastened to framing	8d common nails, min. 2½" long x 0.134" shank dia. x 0.281" head dia.	-58	200	169	156



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**TABLE 2C: ALLURA™ LAP SIDING
BLIND FASTENED TO SHEATHING**

System No.	Max. Width (in)	Substrate (Note 1)			Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing	Max. Spacing (in)	Sheathing	Method	Fasteners (Note 2)	Spacing (inch o.c.)		Exposure B	Exposure C	Exposure D
10.	9½	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-33	151	128	117
11.	8½	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	12	-28	139	118	108
12.	8½	2x4 Spruce-Pine-Fur	16	Min. 7/16-inch OSB	Blind fastened to studs and to sheathing between studs	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-38	162	137	126
13.	8½	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-41	169	142	131
14.	8½	2x4 Spruce-Pine-Fur	16	Min. 7/16-inch OSB	Blind fastened to sheathing	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	6	-56	197	166	153
15.	7½	2x4 Spruce-Pine-Fur	16	Min. 15/32-inch plywood	Blind fastened to studs and to sheathing between studs	Ring shank roofing nails, min. 1¾" long x 0.120" shank dia. x 0.375" head dia.	8	-57	199	168	154



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**TABLE 2D: ALLURA™ LAP SIDING
BLIND FASTENED TO FRAMING & FURRING STRIPS**

BLIND FASTENED TO FRAILING & FURRING STRIPS												
System No.	Max. Width (in)	Substrate (Note 1)				Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing	Max. Space (in)	Sheathing	Furring Strips	Method	Fasteners (Note 2)	Spacing (inch o.c.)		Exposure B	Exposure C	Exposure D
16.	9 1/4	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	1x4-inch PT furring strips, 12-inch o.c.	Blind fastened to furring strips	Ring shank roofing nails, min. 1 1/4" long x 0.120" shank dia. x 0.375" head dia.	12	-21	121	N/A	N/A
17.	9 1/4	2x4 Spruce-Pine-Fur	24	Min. 7/16-inch OSB	1x4-inch PT furring strips, 8-inch o.c.	Blind fastened to furring strips	Ring shank roofing nails, min. 1 1/4" long x 0.120" shank dia. x 0.375" head dia.	8	-40	166	141	129

**TABLE 2E: ALLURA™ LAP SIDING
BLIND FASTENED TO VERTICAL BATTENS**

System No.	Substrate (Note 1)					Siding Attach			MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
	Max. Width (in)	Wall	Vertical Battens	Batten Spacing (inch o.c.)	Batten Fasteners	Batten Fastener Spacing (inch o.c.)	Method	Fasteners (Note 2)	Spacing (inch o.c.)	Exposure B	Exposure C	Exposure D
18.	7 1/4	CMU block	1x4-inch PT Spruce-Pine-Fir (SPF)	16	1/4" diameter threaded concrete anchor, min. 1 1/4" embedment	Max. 12	Blind fastened to battens	Ring shank roofing nails, 1 1/4" long x 0.120" shank dia. x 0.375" head dia.	16	166	141	129
19.	7 1/4	CMU block	1x4-inch PT Southern Yellow Pine (SYP)	16	1/4" diameter threaded concrete anchor, min. 1 1/4" embedment	Max. 12	Blind fastened to battens	Ring shank roofing nails, 1 1/4" long x 0.120" shank dia. x 0.375" head dia.	16	190	160	147



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TABLE 3: ALLURA™ SHAPES SIDING
BLIND FASTENED TO FRAMING

System No.	Max. Width (in)	Substrate (Note 1)		Siding Attach		MDP (psf)	Ultimate Wind Speed (mph) (Note 5)		
		Framing/Sheathing	Max. Spacing (in)	Type	Fasteners (Note 2)		Exposure B	Exposure C	Exposure D
20.	16	Min. 20 ga. steel stud with nominal 5/8" plywood sheathing	16	Blind fastened to framing	ITW Buildex Rock-On® Type S-12 2PWH CLC, 8 x 2 1/4" (Part No. 2139500)	-48	182	154	142
21.	16	2x4 Spruce-Pine-Fir with nominal 5/8" plywood sheathing	16	Blind fastened to framing	8d common nails, min. 2 1/2" long x 0.134" shank dia. x 0.281" head dia.	-48	182	154	142

UL Evaluation Report

UL ER2919-01

Issued: May 21, 2013

Revised: November 18, 2020

Visit UL, LLC's Product iQ™ database for the status of this Report.

UL Category Code: ULEZ

CSI MasterFormat®

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Sub-level 2: 07 30 00 – Steep Slope Roofing
Sub-level 3: 07 31 00 – Shingles and Shakes
Sub-level 4: 07 31 13 – Asphalt Shingles

COMPANY:

TAMKO BUILDING PRODUCTS LLC
198 FOUR STATES DRIVE
GALENA, KANSAS 66739
(417) 624-6644
www.tamko.com

1. SUBJECT: Asphalt Shingles

ELITE GLASS-SEAL,

HERITAGE, HERITAGE IR, HERITAGE PREMIUM, HERITAGE WOODGATE, HERITAGE VINTAGE,
AND HERITAGE PROLINE TITAN XT

HERITAGE VINTAGE 12 X 12 HIP AND RIDGE, 12-1/4 X 12 HIP AND RIDGE, AND 12-1/4 X 12 HERITAGE
HIP AND RIDGE IR

HERITAGE VINTAGE STARTER

2. SCOPE OF EVALUATION

- 2018, 2015, 2012, and 2009 *International Building Code* © (IBC)
- 2018, 2015, 2012, and 2009 *International Residential Code* © (IRC)
- 2020 Florida Building Code – Building
- 2020 Florida Building Code – Residential
- ICC ES Acceptance Criteria for Quality Documentation (AC10)



The products were evaluated for the following properties:

- Exterior Fire Exposure (ANSI/UL790, ASTM E108)
- Wind Resistance (ASTM D3161; ASTM D7158)
- Physical Properties (ASTM D3462)
- Impact Resistance (ANSI/UL 2218)

3. REFERENCED DOCUMENTS

- UL790 (ASTM E108), Standard Test Methods for Fire Tests of Roof Coverings
- UL 2218, Standard Test Methods for Impact Resistance of Prepared Roof Covering Materials
- ASTM D3161, Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method)
- ASTM D7158, Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)
- ASTM D3462, Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
- UL Subject 2375 Issue No. 2, Outline of Investigation for Hip and Ridge Shingles (UL Fire and Wind Tests)
- ICC-ES Acceptance Criteria for Quality Documentation (AC10)

4. USES

TAMKO asphalt shingles are used as roof coverings for new and existing roofs.

5. PRODUCT DESCRIPTION

TAMKO asphalt shingles are roof covering materials complying with the following properties when installed as described in this report. The products are three-tab shingles, laminated shingles and hip & ridge shingles.

Fire Classification: TAMKO asphalt shingles covered under this Report have been tested for fire classification Class A in accordance with UL 790 (ASTM E108). Shingles tested in accordance with UL790 (ASTM E108) qualify for use under Section 1505.1 of the 2020 Florida Building Code - Building, IBC, Section R902.1 of the IRC and 2020 Florida Building Code - Residential.

Wind Resistance: TAMKO asphalt shingles covered under this Report have been tested for wind resistance in accordance with ASTM D3161 or ASTM D7158.

Shingles tested in accordance with ASTM D3161 are classified as Class F and qualify for use under the exception to Section 1504.1.1 of the 2018 and 2015 IBC and Section 1507.2.7.1 of the 2012 and 2009 IBC and 2020 Florida Building Code - Building, the exception to Section R905.2.4.1 of the IRC, and Section R905.2.4 of 2020 Florida Building Code - Residential.

Shingles tested in accordance with ASTM D7158 are classified as Class H and qualify for use in locations as shown in Table 1507.2.7.1 of the 2012, 2009 IBC and 2020 Florida Building Code - Building, Table R905.2.4.1 of the 2012 and 2009 IRC, or Table R905.2.6.1 of the 2020 Florida Building Code - Residential, where the maximum basic wind speed is 150 mph (67 m/s) or less with exposure category of B or C (ASCE 7) and a maximum building height of 60 feet (18.3 m). Installation must be in accordance with Section 1507.2.6 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.7 of the 2015, 2012, and 2009 IBC, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable.

Physical Properties: TAMKO asphalt shingles covered under this Report have been tested for physical properties in accordance with ASTM D3462. Shingles tested in accordance with ASTM D3462 qualify for use under Section 1507.2.4 of the 2018 IBC, Section 1507.2.5 of the 2015, 2012, and 2009 IBC, Section 1507.2.5 of the 2020 Florida Building Code - Building, or Section R905.2.4 of the IRC and 2020 Florida Building Code - Residential. When installed on new construction in accordance with this report and the TAMKO Building Products LLC installation instructions, the shingles are a Class A roof covering. When the shingles are installed over existing roof coverings, the Class A fire classification is maintained.

5.1 Three-Tab Shingles – Elite Glass-Seal:

Elite Glass-Seal shingles are three-tab shingles manufactured with a single fiberglass mat, coated on both sides with asphalt, and surfaced on the weather-exposed side with mineral granules. The shingles are self-sealing and have beads of thermal-tab sealing adhesive above the shingle butt on the weather side. See [Table 2](#) for product dimensions and manufacturing locations.

5.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, and Heritage Proline Titan XT:

Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, Heritage Vintage, and Heritage Proline Titan XT shingles are laminated shingles manufactured with a double layer of fiberglass mats coated with asphalt on all sides, and surfaced on the weather-exposed side with mineral granules. See [Table 3](#), [Table 4](#), [Table 5](#), [Table 6](#), [Table 7](#), [Table 10](#), and [Table 13](#) for product dimensions and manufacturing locations.

5.3 Hip & Ridge Shingles – 12-1/4 X 12 Hip and Ridge, Heritage Vintage 12 X 12 Hip and Ridge, 12-1/4 X 12 Heritage Hip and Ridge IR:

Hip and Ridge are prefabricated hip and ridge shingles available as 12-1/4 X 12 Hip and Ridge and 12-1/4 x 12 Heritage Hip and Ridge IR. Heritage Vintage Hip and Ridge are prefabricated hip and ridge shingles available as 12 X 12 Hip and Ridge. As an alternative, Elite Glass-Seal shingles are cut into three 12-1/4 inch by 12-inch (305 mm by 305 mm) hip and ridge shingles. See [Table 8](#), [Table 9](#), and [Table 11](#) for product dimensions and manufacturing locations.

6. INSTALLATION

TAMKO asphalt shingles must be installed in accordance with the applicable code, this report and the manufacturer's published installation instructions. The shingles must be installed in accordance with Section 1507.2 of the IBC and 2020 Florida Building Code - Building, or Section R905.2 of the IRC and 2020 Florida Building Code - Residential, as applicable, except as noted in this report.

The manufacturer's published installation instructions must be available at all times on the jobsite during installation.

Minimum roof slopes must be 2:12 (16.67% slope) for the three-tab shingles described under 5.1 of this Report and for the laminated shingles described under 5.2 of this Report.

6.1 Underlayment and Ice Barriers:

For roof slopes 4:12 and greater, the roof deck must be covered with a minimum of one layer of underlayment as described in Sections 7.2 and 7.3 of this Report. Underlayment application must be in accordance with Table 1507.1.1 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015, 2012, and 2009 IBC or Section R905.2.7 of the IRC and Section 905.2.3 of the 2020 Florida Building Code - Residential, as applicable.

For roof slopes 2:12 and up to but less than 4:12, two layers of the underlayment described in Section 7.2 or one layer of the self-adhering polymer modified bitumen sheet as described in Section 7.3 of this Report are required. Underlayment application must be in accordance with Section 1507.1.1 of the 2018 IBC, 2020 Florida Building Code - Building, and Section 1507.2.8 of the 2015, 2012, and 2009 IBC, Section R905.1.1 of the IRC, and 2020 Florida Building Code - Residential, as applicable.

In areas where there has been a history of ice forming along the eaves, causing a backup of water, an ice barrier must be provided in accordance with Section 1507.1.2 of the 2018 IBC and Section 1507.2.8.2 of the 2020 Florida Building Code - Building, 2015, 2012, and 2009 IBC or Section R905.2.7 of the 2018 IRC, 2020 Florida Building Code - Residential, and Section R905.16.4.1 2015 IRC, and Section R905.2.7.1 of the 2012, and 2009 IRC, as applicable.

6.2 Starter Shingle:

A starter course, as described in Section 7.4 of this Report, must be attached to the eave edge using fasteners described in Section 7.5 of this Report, located 1-½ to 3 inches (38.1 to 76.2 mm) from the eave edge and spaced 1 inch (25.4 mm) and 12 inches (305 mm) from each end, for a total of four fasteners per shingle. Starter strips must overhang the eave and rake edges ¼ to ¾ inch (6.4 to 19.1 mm) if no drip edge flashing is present. If drip edge flashing is present, install shingles even with the drip edge or overhang the drip edge up to ¾ inch.

6.3 Asphalt Shingles:

The first course of field shingles must be installed over the starter course described in Section 7.4 of this Report.

Shingles must be installed with vertical joints offset a minimum of 4 inches (102 mm) from adjacent courses.

6.3.1 Three-Tab Shingles – Elite Glass-Seal:

For roof slopes 2:12 up to but less than 21:12 (16.67% to 175% slope), each shingle must be fastened to the roof deck using a minimum of four fasteners, spaced as shown in Table 2.

For roof slopes equal to or greater than 21:12 (175% slope), six fasteners must be used, spaced as shown in Table 2.

Fasteners must be in a nail area between 5-⁵/₈ inches and 6-⁷/₈ inches from the butt edge of the shingle.

Maximum exposure to the weather must be 5-¹/₈ inches (130 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles can be hand-sealed. A 1-in diameter (25.4 mm) spot of asphalt cement complying with ASTM D4586, Type I, Class I, should be placed under the corner of each tab (two spots per tab).

Table 4 – Heritage

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Tuscaloosa
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 1" 12-1/2" 12-3/8" 12-1/2" 1" PAINT LINE 7-7/8" 6-1/8" PREFERRED FASTENER LOCATIONS NAIL ZONE EDGE OF COMMON BOND EXPOSURE 5-5/8" ACCEPTABLE FASTENER LOCATION DO NOT FASTEN ALONG EDGE OF COMMON BOND PREFERRED FASTENER LOCATION
Fastening Pattern:	For slopes equal to or greater than 21:12 FASTENERS 6-1/8" 1" 7-1/2" 7-1/2" 7-3/8" 7-1/2" 7-1/2" 1" NAIL ZONE COMMON BOND EXPOSURE 5-5/8"

Table 5 – Heritage Premium

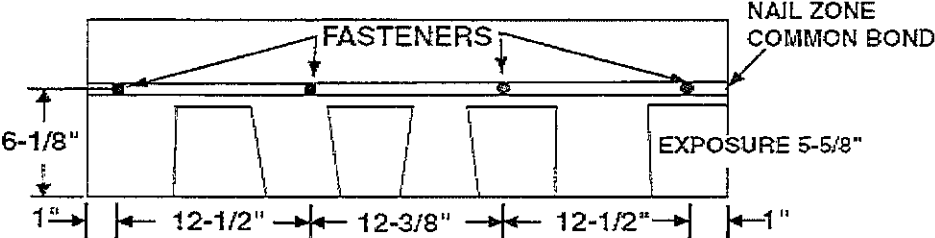
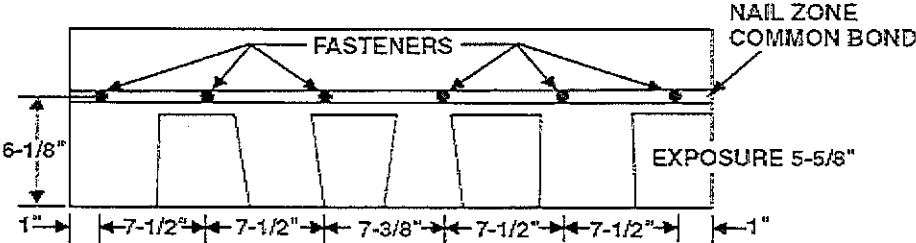
Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Phillipsburg, Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 6 – Heritage Woodgate

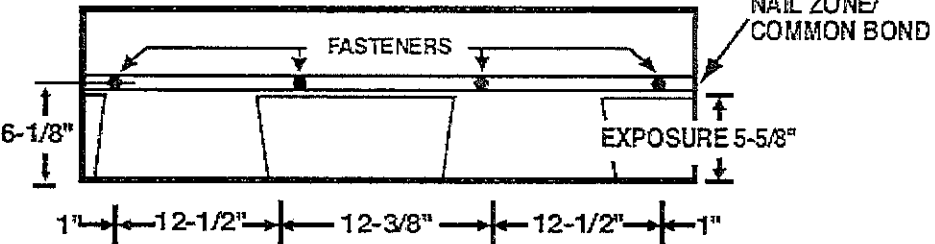
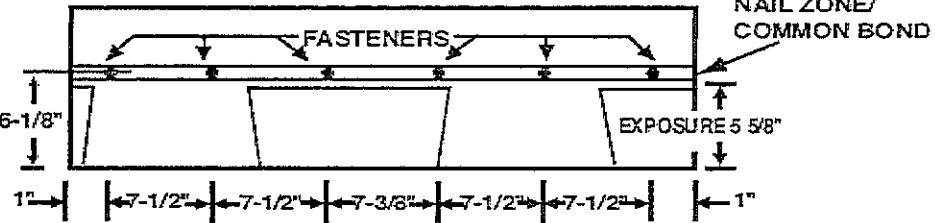
Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Dallas, Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 7 – Heritage Vintage

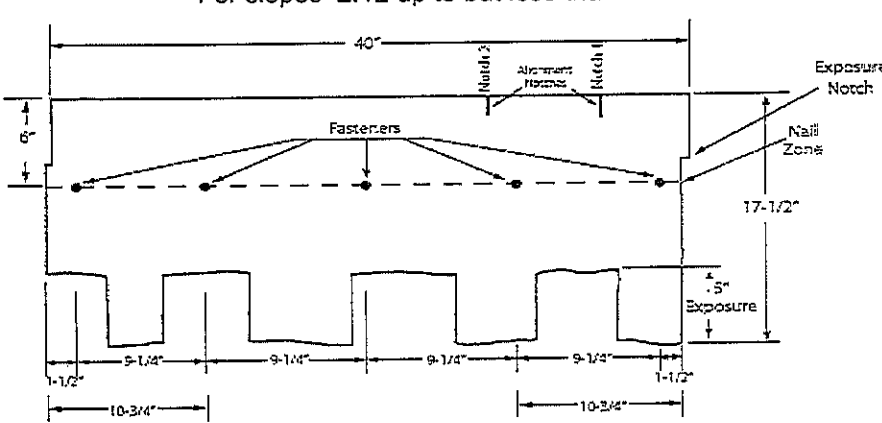
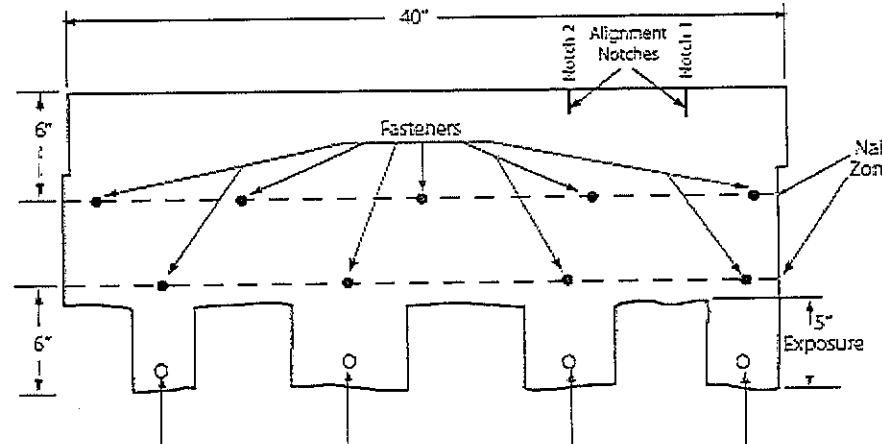
Dimensions:	17-1/2" x 40"
Plant Location(s):	Phillipsburg
Fastening Pattern:	For slopes 2:12 up to but less than 21:12  For slopes equal to or greater than 21:12  Apply under each tab 1" diameter asphalt adhesive cement.

Table 8 – Heritage Vintage 12 X 12 Hip and Ridge

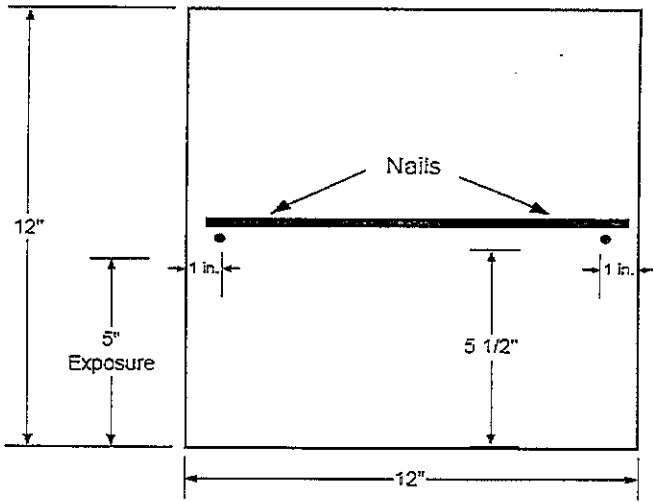
Dimensions:	12" x 12"
Plant Location(s):	Phillipsburg
Fastening Pattern:	 The diagram illustrates the fastening pattern for a 12" x 12" tile. It shows a horizontal line representing a ridge. Two nails are shown, one on each side of the ridge, with a 1-inch spacing from the edge. The distance from the bottom edge to the ridge line is 5 inches, labeled 'Exposure'. The distance from the ridge line to the top edge is 5 1/2 inches. The total width of the tile is 12 inches.

Table 9 – 12- $\frac{1}{4}$ X 12 Hip and Ridge

Dimensions:	12- $\frac{1}{4}$ " x 12"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	Diagram illustrating the fastening pattern for a 12-$\frac{1}{4}$ x 12 Hip and Ridge. The diagram shows a rectangular area with a width of 12" and a height of 12-$\frac{1}{4}$". The fastening pattern includes a horizontal line representing the ridge, with two nails indicated by dots and arrows labeled "Nails". The distance from the bottom edge to the ridge line is 5 $\frac{5}{8}$". The distance from the left edge to the first nail is 1 in., and the distance from the second nail to the right edge is 1 in. The distance from the bottom edge to the ridge line is also labeled as 5 $\frac{1}{8}$" Exposure.

Table 10 – Heritage IR

Dimensions:	13-1/4" x 39-3/8"
Plant Location(s):	Joplin, Philipsburg
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 FASTENERS NAIL ZONE COMMON BOND 6-1/8" 1" 12-1/2" 12-3/8" 12-1/2" 1" EXPOSURE 5-5/8"
Fastening Pattern:	For slopes equal to or greater than 21:12 FASTENERS NAIL ZONE COMMON BOND 6-1/8" 1" 7-1/2" 7-1/2" 7-3/8" 7-1/2" 7-1/2" 1" EXPOSURE 5-5/8"

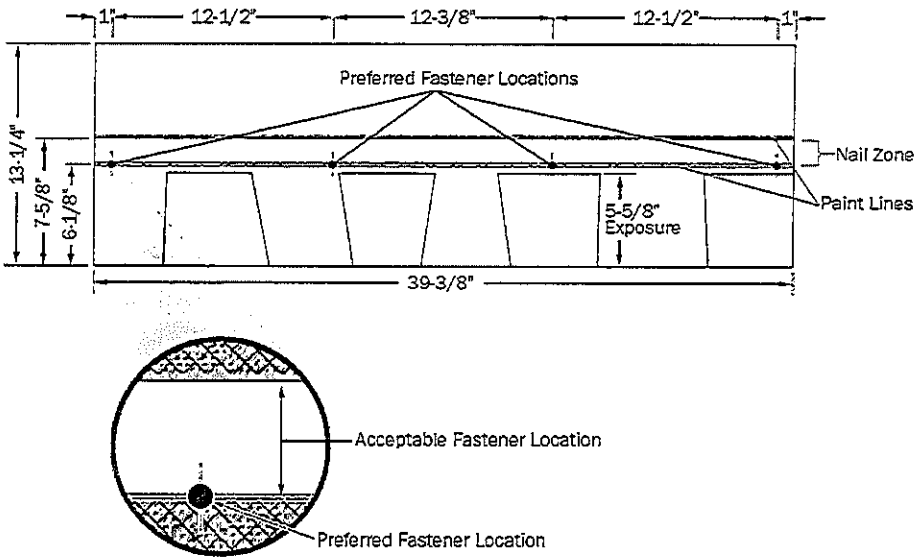
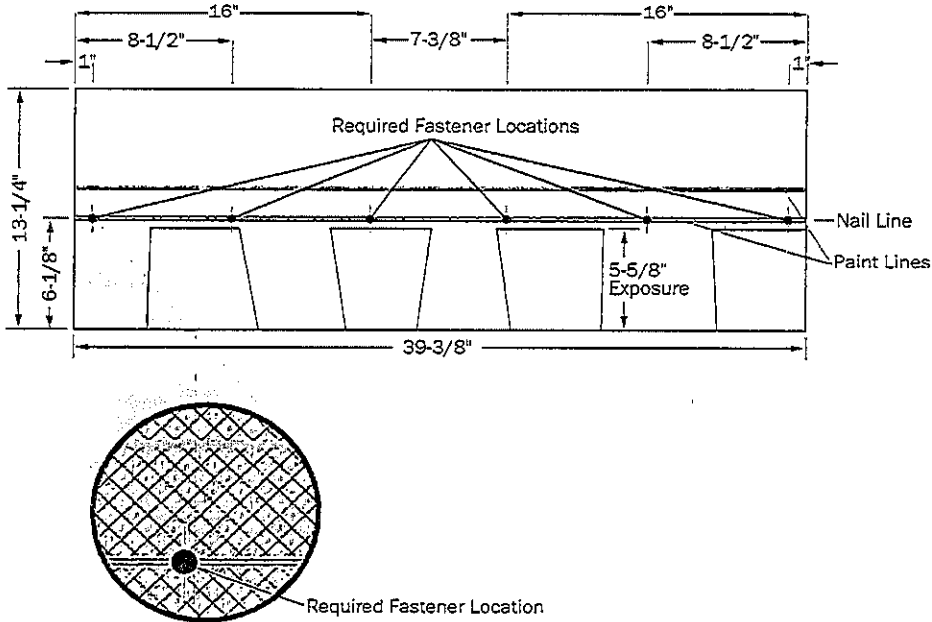
Table 11 Heritage Hip and Ridge IR

Dimensions:	12- $\frac{3}{4}$ " x 12"
Plant Location(s):	Joplin
Fastening Pattern:	

Table 12 Heritage Vintage Starter

	36.00in. $\pm$ 1/8"
12.50in. $\pm$ 1/8"	

Table 13— Heritage Proline Titan XT

Dimensions:	13- $\frac{1}{4}$ " x 39- $\frac{3}{8}$ "
Plant Location(s):	Philipsburg and Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

ABT TRUSSES
1310 SW 32ND PLACE
BELL, FL 32619
352-221-4867

29GA MIN RIB PANEL

NON HVHZ

Compliant with **CURRENT** Florida Building Code
Compliant with Florida Product Approval Rule # 61G20-3
Compliant: Keystone Certifications

Method 1-D

Product: 29GA or 26 GA Steel Grand Rib Panel

Yield strength: 80 ksi min.

36" Coverage Min. Slope Range 2:12

All materials to be Corrosion Resistant in Compliance with: FBC Sec. 1507.

Panel fastened with #10 x 1-1/2" HiLo WoodZac fasteners w/ sealing washers or equivalent into 15/32" CDX Plywood decking, or 1X4 SYP over 15/32" CDX Plywood fastened w/ #8D Ring shank nails and further fasten metal panel through to 15/32" plywood w/ #10 fastener. **ALL APPLICATIONS MUST FASTEN THROUGH TO 15/32" PLYWOOD** (penetration thru the 15/32" CDX plywood substrate decking.

Underlayment: To be compliant with **CURRENT** FBC Sec. Chart 1507. Slope in compliance with FBC Sec 1507.

Install Details: Table A Allowable Loads
DESIGN PRESSURE*

FIELD -45.0 PSF

PERIMETER -82.5 PSF

FASTENER SPACING

Woodzac10-15 X 1-1/2" HiLo
install adjacent & on one side of
ea. intermediate rib
& laps w/fastener rows@ 24"o.c,

Woodzac10-15 X 1-1/2" HiLo
install adjacent & on one side of
ea. intermediate rib
& laps w/fastener rows@ 12"o.c,

Reference Data:

PRI Construction Materials Technologies (TST-1556) FAE 022-02-01

UL 580-06/1897-04¹

1. UL 1897-04 is equivalent to test standard UL 1897-12.

**Design Pressure - Margin of Safety 2:1*

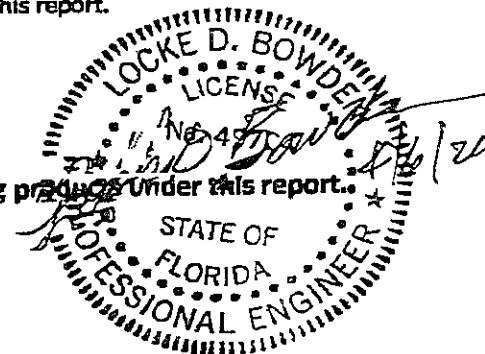
Limitations:

1. Underlayment to be compliance with current Florida Building Code (FBC). see Chart 1507. Minimum slope to be compliant with **CURRENT** Florida Building Code, and per with Manufacturer's installation reference.
2. Products are compliant with State of Florida product approval per Rule 61G20-3. Compliance Method: 1-D
3. Engineering analysis for "project specific approval" by local authorities w/jurisdiction is allowed by registered engineers.
4. Fire classification is not part of this acceptance. Shear diaphragm values are outside this report.
5. Support framing in compliance w/ **CURRENT** FBC, Chapter 22 Steel, Chapter 23 Wood and Chapter 16 Structural Loading.
7. This report does not imply warranty, installation, recommended product use outside of this report.

Certificate of Independence:

LOCKE BOWDEN, P.E., does not have and will not acquire a financial interest in any company manufacturing or distributing products under this report.

LOCKE BOWDEN, P.E., is not operated or controlled by any company or distributing products under this report.



ABT TRUSSES

1310 SW 32ND PLACE
BELL, FL 32619

352-221-4867

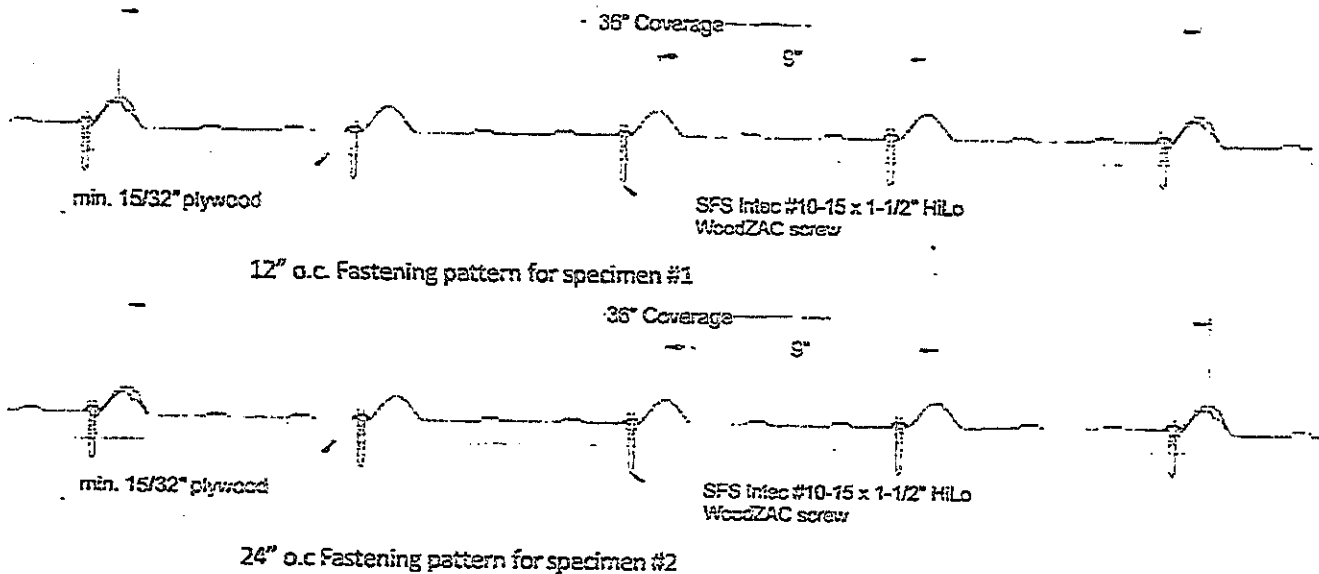
OR

352-214-2848

Use #10-15x 1-1/2" HiLo WoodZac for 15/32" Plywood -Install of Metal Panel

- 1. Use 8D Ring Shank Nails for SYP 1x4 Battens to Install over plywood**
- 2. To install Metal Panel over 1 x 4 Battens; Use #10-15 fasteners**
- 3. Must penetrate thru to the 15/32" plywood sheeting**

Install Detail



Not for use in HVHZ

Gilchrist Building Supply, Inc.

PH: 352-463-2738

FAX: 352-463-7203

BUSINESS APPLICATION FOR CREDIT

LEGAL NAME OF CORPORATION, PARTNERSHIP OR PROPRIETORSHIP _____

PHONE _____

MAILING ADDRESS _____

CITY _____

STATE _____

ZIP CODE _____

IF SUBSIDIARY, NAME AND ADDRESS OF PARENT COMPANY _____

TYPE OF BUSINESS:

- () PARTNERSHIP
() INDIVIDUAL PROPRIETORSHIP
() CORPORATION

HOW LONG IN EXISTENCE: _____

IF CORPORATION: _____

STATE INCORPORATED IN: _____

DATE INCORPORATED: _____

PRINCIPALS:

1) _____

NAME

HOME ADDRESS

SOCIAL SECURITY #

POSITION

2) _____

3) _____

FINANCIAL INFORMATION

1) _____

BANK NAME

COMPLETE ADDRESS

PHONE

2) _____

CREDIT REFERENCES

1) _____

BUSINESS NAME

COMPLETE ADDRESS

PHONE

2) _____

3) _____

4) _____

BUILDERS: COMMERCIAL _____

RESIDENTIAL _____

APARTMENTS _____

Percent of: CONTRACT _____

SPECULATIVE _____

Is Job Bonded? YES () NO ()

If so, bonding agency & address: _____

SALES TAX EXEMPT?

YES ()

NO ()

If yes, please fill out tax card.

AUTHORIZED BUYERS ON THIS ACCOUNT

(Charges will only be accepted from the following list. Any deletions or changes must be submitted in writing.)

_____	_____
_____	_____
_____	_____
_____	_____

TERMS: All accounts are due and payable on the 10th of the month following the date of purchase. Interest in the amount of 1 1/2% per month (18% annually) will be charged on any unpaid balance as of each billing period. Any return without a receipt is subject to a 10% handling fee.

I/We certify that all information on this form is correct and that credit terms set forth herein are understood and acceptable. I/We agree to pay for all charges incurred by those authorized to charge on this account as listed above and agree that any additions or deletions will be made in writing. I/We authorize you to verify this information and/or obtain additional information by securing information from a credit reporting agency. I/We guarantee payment of all correct charges and if for any reason the account is not paid when due, I will pay it and if collection is required, pay a reasonable collection and/or attorney fee.

Signature*

Signature*

Position

Date

Position

Date

*Partnership - all partners must sign. Corporation - an authorized corporate officer must sign.

PERSONAL GUARANTEE FOR CORPORATE ACCOUNTS

In consideration for the credit extended to the above listed corporation, the undersigned hereby guarantees and agrees to be personally liable for all indebtedness incurred by the corporation through any of its authorized agents listed above.

Signature

Date

Signature

Date