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 @ www.floridabuilding.org

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
1. EXTERIOR DOORS			
A. SWINGING	JELD-WEN	EXTERIOR ENTRY DOOR	14569.5
B. SLIDING	SIMONTON	EXTERIOR SLIDER	7612.1
C. SECTIONAL/ROLL UP	RAYNOR	RESIDENTIAL SECTIONAL GARAGE DOOR	15212.5
D. OTHER			
2. WINDOWS			
A. SINGLE/DOUBLE HUNG	SIMONTON	REFLECTION 5500 DH	5167.1
B. HORIZONTAL SLIDER	SIMONTON	REFLECTIONS 5500 FIXED	5177.1
C. CASEMENT			
D. FIXED			
E. MULLION			
F. SKYLIGHTS			
G. OTHER			
3. PANEL WALL			
A. SIDING	JAMES HARDIE	VERTICAL SIDING PANEL	13223R5
B. SOFFITS			
C. STOREFRONTS			
D. GLASS BLOCK			
E. OTHER	JAMES HARDIE	TRIM	32103 R1
		SOFFITS	13265.2
4. ROOFING PRODUCTS			
A. ASPHALT SHINGLES	TAMKO	ASPHALT SHINGLES	35321.1
B. NON-STRUCT METAL			
C. ROOFING TILES			
D. SINGLE PLY ROOF			
E. OTHER			
5. STRUCT COMPONENTS			
A. WOOD CONNECTORS			
B. WOOD ANCHORS			
C. TRUSS PLATES			
D. INSULATION FORMS			
E. LINTELS			
F. OTHERS			
6. NEW EXTERIOR 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 manufacturers installation requirements.
Further, I understand these products may have to be removed if approval cannot be demonstrated during inspection.

8/8/2023

NOTES: _____

Columbia County, Florida
Building Department
135 NE Hernando Avenue
Lake City, Florida 32055
Phone: 386-758-1008
www.columbiacountyfla.com

ROOFING UNDERLAYMENT AFFIDAVIT

REQUIRED FOR WALK-IN OR PAPER SUBMITTALS

Job Address: 481 SW LEGION DR. LAKE CITY, FL 32024

I (Print Name) CURTIS JONES, as a Florida license Roofing Contractor or an Owner Builder, I understand to comply with the 2020 Florida Building Code 7th Edition underlayment requirements, I must select an option for sealing the roof deck.

The options are summarized below...

☐ **a self-adhering polymer-modified bitumen underlayment complying with ASTM D1970 applied over the entire roof.**

☒ **a minimum 4-inch wide strip of selfadhering polymer-modified bitumen complying with ASTM D1970 or a minimum 3 ¾ - inch wide strip of selfadhering flexible flashing tape complying with AAMA 711, applied over all joints in the roof decking. A felt underlayment complying with ASTM D226 Type II, ASTM D4869 Type III or IV, or ASTM D6757, or a synthetic underlayment meeting the performance requirements specified, is required to be applied over the strips/tape over the entire roof.**

☐ **two layers of felt underlayment comply ASTM 0226 Type II or ASTM D4869 Type III or IV, or two layers of a synthetic underlayment meeting the performance requirements specified, lapped and fastened as specified.**

☐ **Other (explain)** _____

Contractor/Owners Signature _____

FINAL INSPECTION & CERTIFICATE OF COMPLETION:

This completed form and photographs must be uploaded to your permit via online at the Application Submission login (link) Welcome to Columbia County Online (columbiacountyfla.com).

Clearly visible in the Photographs must be the permit number or address and must include a ruler or measuring device to confirm nail spacing and overlaps including drip edge and valley flashing.

HardiePanel® Vertical Siding

EFFECTIVE DECEMBER 2019

V. ANDREW TAN LICENSE exp. 2/28/21 No 81561 STATE OF FLORIDA PROFESSIONAL ENGINEER 12/14/20

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE WRITTEN INSTALLATION INSTRUCTIONS AND COMPLY WITH APPLICABLE BUILDING CODES MAY VIOLATE LOCAL LAWS, AFFECT BUILDING ENVELOPE PERFORMANCE AND MAY AFFECT WARRANTY COVERAGE. FAILURE TO COMPLY WITH ALL HEALTH AND SAFETY REGULATIONS WHEN CUTTING AND INSTALLING THIS PRODUCT MAY RESULT IN PERSONAL INJURY. BEFORE INSTALLATION, CONFIRM YOU ARE USING THE CORRECT HARDIEZONE® PRODUCT INSTRUCTIONS BY VISITING HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE)

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 airflow blows dust away from the user and others near the cutting area.
2. Cut using one of the following methods:
   a. Best: Circular saw equipped with a HardieBlade® saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, not recommended for products thicker than 7/16 in.
   b. Better: Circular saw equipped with a dust collection feature (e.g. Roan® saw) and a HardieBlade saw blade.
   c. Good: Circular saw equipped with a HardieBlade saw blade.

INDOORS

DO NOT grind or cut with a power saw indoors. Cut using shears (manual, pneumatic or electric) or the score and snap method, not recommended for products thicker than 7/16 in.

- DO NOT dry sweep dust; use wet dust suppression or vacuum to collect dust.
- For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. Always follow the equipment manufacturer's instructions for proper operation.
- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade® saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

GENERAL REQUIREMENTS:

- These instructions to be used for single family installations only. **For Commercial / Multi-Family installation requirements go to www.JamesHardieCommercial.com
- HardiePanel® vertical siding can be installed over braced wood or steel studs, 20 gauge (33 mils) minimum to 16 gauge (54 mils) maximum, spaced a maximum of 24 in o.c. or directly to minimum 7/16 in thick OSB sheathing. See General Fastening Requirements. Irregularities in framing and sheathing can mirror through the finished application. Correct irregularities before installing siding.
- Information on installing James Hardie products over non-nailable substrates (ex: gypsum, foam, etc.) can be located in JH Tech Bulletin 19 at www.jamehardie.com
- 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 housewrap[1], which complies with building code requirements.
- Adjacent finished grade must slope away from the building in accordance with local building codes - typically a minimum of 6 in. in the first 10 ft.
- Do not use HardiePanel vertical siding in Fascia or Trim applications.
- Do not install James Hardie products, such that they may remain in contact with standing water.
- HardiePanel vertical 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.
- James Hardie Building Products provides installation/wind load information for buildings with a maximum mean roof height of 85 feet. For information on installations above 60 feet, please contact JH technical support.
- Minimum standard panel design size is 12" x 16". Note: Panels may be notched and cut to size to fit between windows, doors, corners, etc.

Figure 1

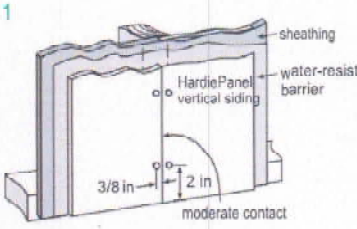
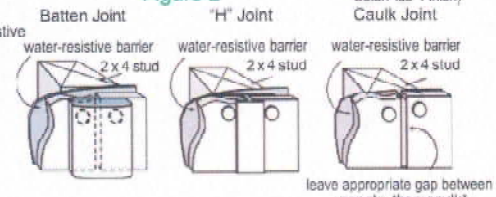


Figure 2



*Apply caulk in accordance with caulk manufacturer's written application instructions.

**James Hardie recommends installing a rainscreen (an air gap) between the HardiePanel siding and the water-resistive barrier as a best practice. James Hardie recommends that you consult your design professional if you have questions regarding the use of rainscreen on your single family project.

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

INSTALLATION:

Fastener

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

- HardiePanel vertical siding must be joined on stud.
- Double stud may be required to maintain minimum edge nailing distances.
- When screws are used to attach panels to steel studs/furring, the screws shall have wing tips. If screws do not have wing tips, then pre-drilling is required. (Not applicable when using pins) Follow chart below for pre-drilling:

SCREW	PRE-DRILL	HEAD DIAMETER
No. 8	7/32 in	Min 0.323 in
No. 10	1/4 in	Min 0.323 in

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 3

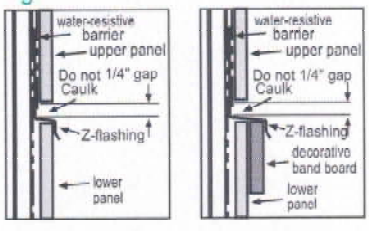


Figure 4

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

JamesHardie™

SMOOTH | CEDARMILL® | STUCCO | SIERRA 8

Visit jameshardiepros.com for the most recent version.

CLEARANCE AND FLASHING REQUIREMENTS

Figure 3
Roof to Wall

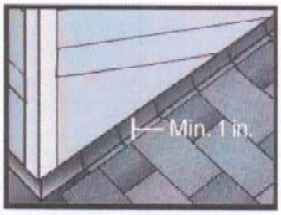


Figure 4
Horizontal Flashing

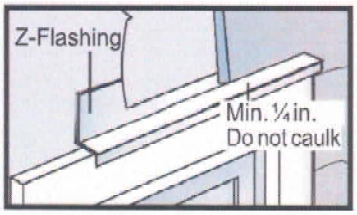


Figure 5
Kickout Flashing

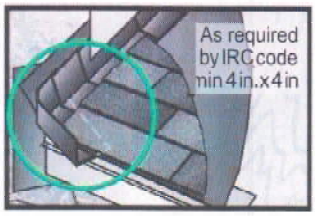


Figure 6
Slabs, Path, Steps to Siding

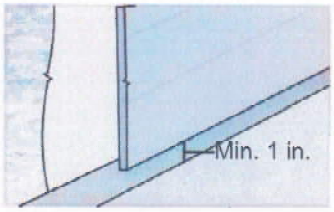


Figure 7
Deck to Wall

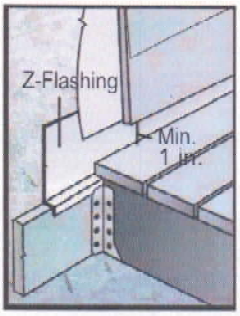


Figure 8
Ground to Siding

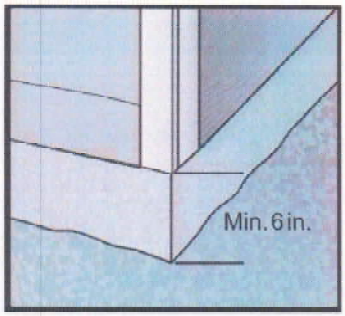


Figure 9
Gutter to Siding

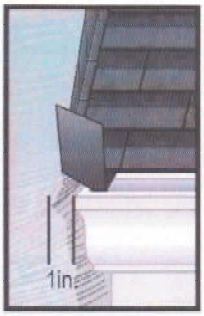


Figure 10
Sheltered Areas

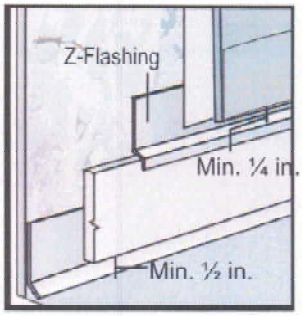


Figure 11
Mortar/Masonry

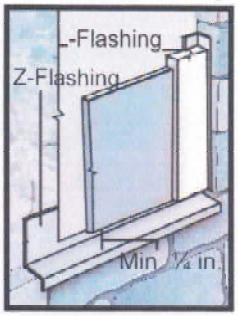


Figure 12
Drip Edge

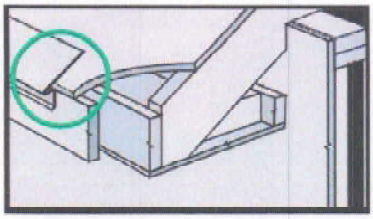


Figure 13
Block Penetration
(recommended in HZ10)

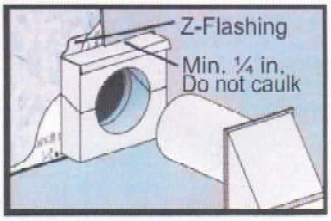
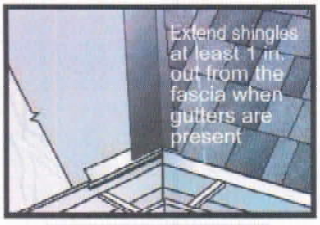
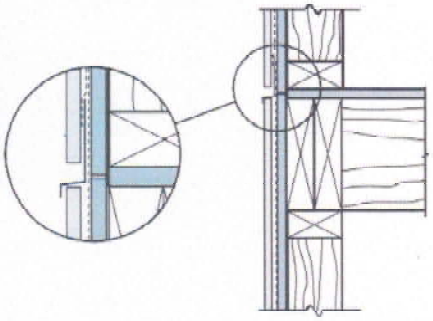


Figure 14
Valley/Shingle Extension



Do not bridge floors with HardiePanel® siding. Horizontal joints should always be created between floors, see below).



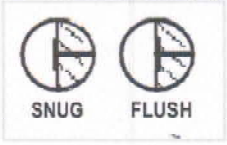
GENERAL FASTENING REQUIREMENTS

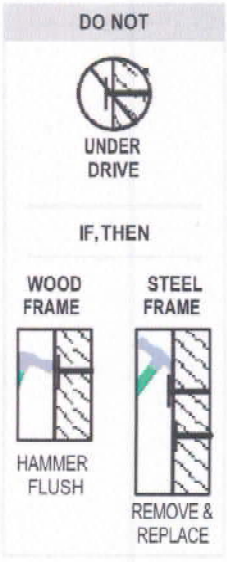
Refer to the applicable ESR report online to determine which fastener meets your wind load design criteria.

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.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2018 IRC R317.3 or 2018 IBC 2304.10.5

- Consult applicable product evaluation or listing 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).
- NOTE: Whenever a structural member is present, HardiePanel® should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.





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).

CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

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. Note: some caulking manufacturers do not allow "tooling".

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating 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.

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, oil/alkyd base paint, or powder coating on James Hardie® Products.
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie ColorPlus® products. During installation use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
- Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up should be used sparingly. If large areas require touch-up, replace the damaged area with a new piece of 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 coaters, available from your ColorPlus product dealer.

Note: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

HS1236 P3/3 12/19

DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

WARNING: This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-1844, HardiePanel® vertical siding is recognized as a suitable alternate to that specified in the 2006, 2009, 2012 & 2015 International Residential Code for One-and Two-Family Dwellings and the 2006, 2009, 2012 & 2015 International Building Code. HardiePanel vertical siding is also recognized for application in the following: City of Los Angeles Research Report No. 24862, State of Florida Product Approval FL#13223, Miami-Dade County Florida NOA No. 17-0406.06, U.S. Dept. of HUD Materials Release 1263f, 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.

Product warranties, safety information and additional installation information are available at jameshardiepros.com

JamesHardie™

EVALUATION SUBJECT

HardiePanel® Siding

James Hardie Product Trade Names covered in this evaluation:
HardiePanel® Siding, Cempanel® Siding, Prevail™ Panel Siding

EVALUATION SCOPE:

ASCE 7-10 and ASCE 7-16
2017 Florida Building Code (6th Edition) and 2020 Florida Building Code (7th Edition)
2015 and 2018 International Building Code

EVALUATION PURPOSE:

This analysis is to determine the maximum design 3-second gust wind speed to be resisted by an assembly of HardiePanel (Cempanel, Prevail Panel) siding fastened to wood or metal framing with nails or screws.

REFERENCE REPORTS:

1. Intertek Report 3067913 (ASTM C1186) Material properties HardiePanel Siding

2. Ramtech Laboratories Report IC-1270-94 (ASTM E330) Transverse Load Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 16 inches on center with a 6d common galvanized nail

3. Ramtech Laboratories Report IC-1271-94 (ASTM E330) Transverse Load Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 24 inches on center with a 6d common galvanized nail

4. Ramtech Laboratories, Inc. Report 10868-97/1475 (ASTM E330) Transverse Load Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Group III SG=0.36 wood studs spaced at 16 inches on center with a 4d, 0.091 inch shank by 0.225 inch head diameter by 1.5 inch long ring shank nail

5. Ramtech Laboratories, Report IC-1054-89 (ASTM E330) Transverse Load Test, 1/4" Thick by 48 inch wide HardiePanel Siding installed on 20gauge Metal studs spaced at 16 inches on center with a No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw

6. Ramtech Laboratories, Report IC-1055-89 (ASTM E330) Transverse Load Test, 1/4" Thick by 48 inch wide HardiePanel Siding installed on 20gauge Metal studs spaced at 24 inches on center with a No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw

7. Ramtech Laboratories, Report 11149-98/1554d (ASTM E330) Transverse Load Test, 1/4" Thick by 48 inch wide HardiePanel Siding installed on 20gauge Metal studs spaced at 16 and 24 inches on center with a ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener

8. Ramtech Laboratories Report IC-1273-94 (ASTM E72) Racking Shear Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 16 inches on center with a 6d common galvanized nail

9. Ramtech Laboratories Report IC-1274-94 (ASTM E72) Racking Shear Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 24 inches on center with a 6d common galvanized nail

10. Ramtech Laboratories, Inc. Report 10868-97/1475 (ASTM E72) Racking Shear Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Group III SG=0.36 wood studs spaced at 16 inches on center with a 4d, 0.091 inch shank by 0.225 inch head diameter by 1.5 inch long ring shank nail

11. Ramtech Laboratories Report IC-1057-89 (ASTM E72) Racking Shear Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 16 and 24 inches on center with a No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw

12. Ramtech Laboratories Report 11284-99/1580 (ASTM E72) Racking Shear Test, 5/16" Thick by 48 inch wide HardiePanel Siding installed on 2X4 Hem-Fir wood studs spaced at 16 and 24 inches on center with a ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener

TEST RESULTS:

Table 1A - Results of Transverse Load Testing

Report Number	Test Agency	Thickness (in.)	Width (in.)	Frame Type	Frame Spacing (in.)	Fastener Spacing (in.)		Fastener Type	Ultimate Load (PSF)	Allowable Design Load[1] (PSF)
						Perimeter Supports	Field Supports			
IC-1270-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	16	6	6	6d common	-149	-49.7
IC-1270-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	16	4	4	6d common	-236	-78.7
IC-1271-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	24	6	6	6d common	-94	-31.3
IC-1271-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	24	4	4	6d common	-143	-47.7
10868-97/1475	Ramtech	0.3125	48	2X4 wood, SG ≥ 0.36	16	4	8	4d ring shank nail, 0.091 in. shank x 0.225 in. HD x 1.5 in.	-90	-30.0
IC-1054-89	Ramtech	0.25	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	16	6	6	No. 8, 1 in. long x 0.323 HD ribbed bugle head screw	-169.9	-56.6
IC-1055-89	Ramtech	0.25	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	24	6	6	No. 8, 1 in. long x 0.323 HD ribbed bugle head screw	-91.9	-30.6
11149-98/1554d	Ramtech	0.3125	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	16	4	8	ET&F 0.100 in. knurled shank x 1.5 in. long x 0.25 in. HD pin fastener	-170	-56.7
11149-98/1554d	Ramtech	0.3125	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	24	4	8	ET&F 0.100 in. knurled shank x 1.5 in. long x 0.25 in. HD pin fastener	-101	-33.7
3148104COQ-002	Intertek	0.3125	48	7/16" OSB over 2X4 wood frame	16	6	12	No. 8, 1-5/8 in. long x 0.375" HD ribbed wafer head screw directly to OSB	-161.3	-53.8

Table 1A Footnotes:
1. Allowable Load is the Ultimate Load divided by a Factor of safety of 3.
2. HardiePanel Siding complies with ASTM C1186, *Standard Specification for Grade II, Type A Non-asbestos Fiber-Cement Flat Sheets.*

The fastener load as tested based on the allowable design loads in Table 1A above are verified to not exceed the NDS-2018 calculated allowable fastener withdrawal load as summarized in Table 1B below:

Table 1B - Fastener Load Analysis

Fastener Type and Spacing / Stud Spacing	Shank Dia., D (in.)	Fastener Penetration into Framing, P (in.)	Load Durtaion Factor C_d	Wood Framing Specific Gravity, G[4]	NDS Adjusted Withdrawal Capacity[1] W' (lb.)	Tested Design Pressure (from Table 1A above) (psf)	Fastener Tributary Area (ft^2)	Single Fastener Load, as tested[2] (lb.)	Fastener Load @ Design Pressure Exceeds W' (Yes/No)	Adjusted Design Pressure[3] (psf)
6d common at 6" perimater, 6" vertically along studs / 16" oc	0.120	1.688	1.6	0.43	54.2	49.7	0.667	33.1	No	No Adjustment
6d common at 4" perimater, 4" vertically along studs / 16" oc	0.120	1.688	1.6	0.43	54.2	78.7	0.444	35.0	No	No Adjustment
6d common at 6" perimater, 6" vertically along studs / 24" oc	0.120	1.688	1.6	0.43	54.2	31.3	1.000	31.3	No	No Adjustment
6d common at 4" perimater, 4" vertically along studs / 24" oc	0.120	1.688	1.6	0.43	54.2	47.7	0.667	31.8	No	No Adjustment
4d ring shank nails at 4" perimeter, 8" vertical along studs / 16" oc	0.091	1.188	1.6	0.36	40.3	30.0	0.889	26.7	No	No Adjustment
No. 8, 1-5/8 in. long x 0.375" HD ribbed wafer head screw	0.164	0.438	1.6	0.50	81.8	56.6	0.667	37.8	No	No Adjustment

(1) The adjusted fastener load (W') is calculated using the following equations in NDS-2018:
Equ. 12.2-5 (deformed shank nails): $W' = 1800 \times G^2 \times D \times P \times C_d$
Equ. 12.2-3 (smooth shank nails): $W' = 1380 \times G^{2.5} \times D \times P \times C_d$
Equ. 12.2-2 (wood screws): $W' = 2850 \times G^2 \times D \times P \times Cd$
where $C_d = 1.6$ for wind and earthquake
(2) Fastener load as tested is determined by multiplying the the design pressure by the fastener tributary area.
(3) If fastener load as tested exceeds W', the allowable design load is adjusted as follows: Adjusted Design Load = W'/Fastener Tributary Area

Table 1C - Allowable Panel Racking Shear Load [1,2]

Report Number	Test Agency	Thickness (in.)	Width (in.)	Frame Type	Frame Spacing (in.)	Fastener Spacing (in.)		Fastener Type	Ultimate Load[3] (plf)	Allowable Load[3] (plf)
						Perimeter Supports	Field Supports			
IC-1273-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	16	6	6	6d common	603.8	201.3
IC-1273-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	16	4	4	6d common	698.8	232.9
IC-1274-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	24	6	6	6d common	460.0	153.3
IC-1274-94	Ramtech	0.3125	48	2X4 wood Hem-Fir	24	4	4	6d common	637.5	212.5
10868-97/1475	Ramtech	0.3125	48	2X4 wood, SG ≥ 0.36	16	4	8	4d, 0.091 in. shank X 0.225 in. HD X 1.5 in. long ring shank nail	595.4	198.5
IC-1057-89	Ramtech	0.25	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	16 & 24	6	6	Min. No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw	123.8	123.8
11284-99/1580	Ramtech	0.3125	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	16	4	8	ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener	153.4	153.4
11284-99/1580	Ramtech	0.3125	48	Min. No. 20 gauge X 3.625 in. X 1.375 in metal stud	24	4	8	ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener	132.5	132.5

1. All board edges shall be supported by framing. Panels shall be applied with the long dimension either parallel or perpendicular to studs.
2. The maximum height-to-length ratio for construction in this Table is 2:1.
3. In the steel framed assemblies the ultimate load values as noted are based on the average load at 1/8 inch net deflection limitation.

DESIGN WIND LOAD PROCEDURES:

Fiber-cement siding transverse load capacity (wind load capacity) is determined from transverse load testing in accordance with ASTM E330 or E72 as noted in Section 4.0 of the ICC ES AC90, Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding (approved October 2018). The allowable/design capacity from the testing is based on a factor of safety of 3 applied to the ultimate test load per AC90. The wind load values are determined from the ASCE 7 equations.

Since the allowable design load is based on factor of safety of 3, allowable design loads on fiber-cement siding correlate directly to required design pressures for Allowable Stress Design, and therefore should be used with combination loading equations for Allowable Stress Design (ASD).

By using the combination loading equations for Allowable Stress Design (ASD), the tested allowable design loads for fiber-cement siding are aligned with the wind speed requirements in ASCE 7-10 (Figures 26.5-1A, 26.5-1B, and 26.5-1C) and ASCE 7-16 (Figures 26.5-1A to -1D, 26.5-2A to -2D), or the figures in the building code as applicable.

Equation 1, $q_z=0.00256*K_z*K_{zt}*K_d*V^2$ *{ref. ASCE 7-10 Eq. 30.3-1}*

$q_z=0.00256*K_z*K_{zt}*K_d*K_e*V^2$ *{ref. ASCE 7-16 Eq. 26.10-1}*

q_z , velocity pressure at height z

K_z , velocity pressure exposure coefficient evaluated at height z

K_{zt} , topographic factor

K_d , wind directionality factor

K_e , ground elevation factor, permitted to take K_e = 1.0

V , basic wind speed (3-second gust MPH) as determined from:
ASCE 7-10 Figures 26.5-1A, B, or C

ASCE 7-16 Figures 26.5-1A, B, or 26.5-2A, B,C or D
2018 IBC Figures 1609.3(1) - 1609.3(8)

Equation 2,

$V=V_{ult}$

V_{ult} , ultimate design wind speeds (3-second gust MPH) determined from 2017 FBC Figures 1609.3(1) - 1609.3(3);
2020 FBC Figures 1090.3(1) - 1609.3(4)

Equation 3, $p=q_h*(GC_p-GC$ h <= 60 ft *{ref. ASCE 7-10 Eq. 30.4-1 or ASCE 7-16 Eq. 30.3-1}*

q_h , velocity pressure evaluated at mean roof height *h*

GC_p , product of external pressure coefficient and gust-effect factor *{ref. ASCE 7-10 Fig. 30.4-1 or ASCE 7-16 Fig. 30.3-1}*

GC_{pi} , product of internal pressure coefficient and gust-effect factor *{ref. ASCE 7-10 Fig. 30.4-1 or ASCE 7-16 Fig. 30.3-1}*

p , design pressure (PSF) for siding (allowable design load for siding)

To determine design pressure, substitute q_h into Equation 3,

Equation 4, $p=0.00256*K_z*K_{zt}*K_d*K_e*V^2*(GC_p-GC_{pi})$ *{ref. 2015 and 2018 IBC}*

or $p=0.00256*K_z*K_{zt}*K_d*V_{ult}^{2}*(GC_p-GC_{pi})$ *{ref. 2017 and 2020 FBC}*

Allowable Stress Design, ASCE 7-10 Section 2.4.1, load combination 7,

Equation 5, 0.6D + 0.6W *{ref. ASCE 7-10 and ASCE 7-16 section 2.4.1, load combination 7}*

D , dead load

W , wind load (load due to wind pressure)

To determine the Allowable Stress Design Pressure, apply the load factor for W (wind) from Equation 4 to p (design pressure) determined from equation 4

Equation 6, $p_{asd} = 0.6*[p]$

Equation 7, $p_{asd} = 0.6*[0.00256*K_z*K_{zt}*K_d*V_{ult}^{2}*(GC_p-GC_{pi})]$

Equation 7 is used to populate Table 4, 5, and 6.

To determine the allowable ultimate basic wind speed for Hardie Siding in Table 7, solve Equation 7 for V_{ult}.

Equation 8, $V_{ult} = (p_{asd}/0.6*0.00256*K_z*K_{zt}*K_d*(GC_p-GC_{pi}))^{0.5}$

Applicable to methods specified in Exceptions 1 through 3 of [2015 IBC, 2017 FBC] Section 1609.1.1., to determine the allowable nominal design wind speed (Vasd) for Hardie Siding in Table 7, apply the conversion formula below,

Equation 9, $V_{asd} = V_{ult} * (0.6)^{0.5}$ *{ref. 2015 IBC, 2017 and 2020 FBC Eq. 16-33}*

$V_{asd} = V * (0.6)^{0.5}$ *{ref. 2018 IBC Eq. 16-33}*

V_{asd} , Nominal design wind speed (3-second gust, mph)

V , Basic design wind speed (3-second gust, mph)

Table 2, Coefficients and Constants used in Determining V and p,

	K_z					Wall Zone 5			
Height (ft)	Exp B (ASCE 7-16)	Exp B	Exp C	Exp D		K_{zt}	K_d	GC_p	GC_{pi}
0-15	0.57	0.7	0.85	1.03	h≤60	1	0.85	-1.4	0.18
20	0.62	0.7	0.9	1.08		1	0.85	-1.4	0.18
25	0.66	0.7	0.94	1.12		1	0.85	-1.4	0.18
30	0.70	0.7	0.98	1.16		1	0.85	-1.4	0.18
35	0.73	0.73	1.01	1.19		1	0.85	-1.4	0.18
40	0.76	0.76	1.04	1.22		1	0.85	-1.4	0.18
45	0.785	0.785	1.065	1.25		1	0.85	-1.4	0.18
50	0.81	0.81	1.09	1.27		1	0.85	-1.4	0.18
55	0.83	0.83	1.11	1.29		1	0.85	-1.4	0.18
60	0.85	0.85	1.13	1.31		1	0.85	-1.4	0.18
100	0.99	0.99	1.26	1.43	h>60	1	0.85	-1.8	0.18

The coefficients and constants listed in Table 2 above were consistent for ASCE 7-10 and ASCE 7-16 except for Kz at Exposure B under 30 ft, where ASCE 7-16 allows to use lower exposure coefficient that previous codes used a more conservative values (resulted in higher design pressure). For the simplicity of the tables, the tables in the following sheet was populated using the more conservative ASCE 7-10 coefficients.

Table 3, Allowable Stress Design - Component and Cladding (C&C) Pressures (PSF) to be Resisted at Various Wind Speeds - Wind Exposure Category B,														
Wind Speed (3-second gust)	100	105	110	115	120	130	140	150	160	170	180	190	200	210
Height (ft)	Exposure B													
0-15	-14.4	-15.9	-17.5	-19.1	-20.8	-24.4	-28.3	-32.5	-37.0	-41.7	-46.8	-52.1	-57.8	-63.7
20	-14.4	-15.9	-17.5	-19.1	-20.8	-24.4	-28.3	-32.5	-37.0	-41.7	-46.8	-52.1	-57.8	-63.7
25	-14.4	-15.9	-17.5	-19.1	-20.8	-24.4	-28.3	-32.5	-37.0	-41.7	-46.8	-52.1	-57.8	-63.7
30	-14.4	-15.9	-17.5	-19.1	-20.8	-24.4	-28.3	-32.5	-37.0	-41.7	-46.8	-52.1	-57.8	-63.7
35	-15.1	-16.6	-18.2	-19.9	-21.7	-25.4	-29.5	-33.9	-38.6	-43.5	-48.8	-54.4	-60.2	-66.4
40	-15.7	-17.3	-19.0	-20.7	-22.6	-26.5	-30.7	-35.3	-40.1	-45.3	-50.8	-56.6	-62.7	-69.1
45	-16.2	-17.9	-19.6	-21.4	-23.3	-27.4	-31.7	-36.4	-41.5	-46.8	-52.5	-58.5	-64.8	-71.4
50	-16.7	-18.4	-20.2	-22.1	-24.1	-28.2	-32.7	-37.6	-42.8	-48.3	-54.1	-60.3	-66.8	-73.7
55	-17.1	-18.9	-20.7	-22.6	-24.7	-28.9	-33.6	-38.5	-43.8	-49.5	-55.5	-61.8	-68.5	-75.5
60	-17.5	-19.3	-21.2	-23.2	-25.2	-29.6	-34.4	-39.5	-44.9	-50.7	-56.8	-63.3	-70.1	-77.3
100	-25.6	-28.2	-31.0	-33.8	-36.9	-43.3	-50.2	-57.6	-65.5	-74.0	-82.9	-92.4	-102.4	-112.9

Table 4, Allowable Stress Design - Component and Cladding (C&C) Pressures (PSF) to be Resisted at Various Wind Speeds - Wind Exposure Category C,														
Wind Speed (3-second gust)	100	105	110	115	120	130	140	150	160	170	180	190	200	210
Height (ft)	Exposure C													
0-15	-17.5	-19.3	-21.2	-23.2	-25.2	-29.6	-34.4	-39.5	-44.9	-50.7	-56.8	-63.3	-70.1	-77.3
20	-18.6	-20.5	-22.5	-24.6	-26.7	-31.4	-36.4	-41.8	-47.5	-53.7	-60.2	-67.0	-74.3	-81.9
25	-19.4	-21.4	-23.5	-25.6	-27.9	-32.8	-38.0	-43.6	-49.6	-56.0	-62.8	-70.0	-77.6	-85.5
30	-20.2	-22.3	-24.5	-26.7	-29.1	-34.2	-39.6	-45.5	-51.8	-58.4	-65.5	-73.0	-80.9	-89.2
35	-20.8	-23.0	-25.2	-27.6	-30.0	-35.2	-40.8	-46.9	-53.3	-60.2	-67.5	-75.2	-83.3	-91.9
40	-21.5	-23.7	-26.0	-28.4	-30.9	-36.3	-42.0	-48.3	-54.9	-62.0	-69.5	-77.4	-85.8	-94.6
45	-22.0	-24.2	-26.6	-29.1	-31.6	-37.1	-43.1	-49.4	-56.2	-63.5	-71.2	-79.3	-87.9	-96.9
50	-22.5	-24.8	-27.2	-29.7	-32.4	-38.0	-44.1	-50.6	-57.6	-65.0	-72.9	-81.2	-89.9	-99.2
55	-22.9	-25.2	-27.7	-30.3	-33.0	-38.7	-44.9	-51.5	-58.6	-66.2	-74.2	-82.7	-91.6	-101.0
60	-23.3	-25.7	-28.2	-30.8	-33.6	-39.4	-45.7	-52.4	-59.7	-67.4	-75.5	-84.1	-93.2	-102.8
100	-32.6	-35.9	-39.4	-43.1	-46.9	-55.0	-63.8	-73.3	-83.4	-94.1	-105.5	-117.6	-130.3	-143.6

Table 5, Allowable Stress Design - Component and Cladding (C&C) Pressures (PSF) to be Resisted at Various Wind Speeds - Wind Exposure Category D,														
Wind Speed (3-second gust)	100	105	110	115	120	130	140	150	160	170	180	190	200	210
Height (ft)	Exposure D													
0-15	-21.2	-23.4	-25.7	-28.1	-30.6	-35.9	-41.6	-47.8	-54.4	-61.4	-68.8	-76.7	-85.0	-93.7
20	-22.3	-24.6	-27.0	-29.5	-32.1	-37.7	-43.7	-50.1	-57.0	-64.4	-72.2	-80.4	-89.1	-98.2
25	-23.1	-25.5	-28.0	-30.6	-33.3	-39.0	-45.3	-52.0	-59.1	-66.8	-74.9	-83.4	-92.4	-101.9
30	-23.9	-26.4	-29.0	-31.6	-34.5	-40.4	-46.9	-53.8	-61.3	-69.2	-77.5	-86.4	-95.7	-105.5
35	-24.5	-27.1	-29.7	-32.5	-35.3	-41.5	-48.1	-55.2	-62.8	-70.9	-79.5	-88.6	-98.2	-108.3
40	-25.2	-27.7	-30.5	-33.3	-36.2	-42.5	-49.3	-56.6	-64.4	-72.7	-81.5	-90.9	-100.7	-111.0
45	-25.7	-28.3	-31.1	-34.0	-37.0	-43.4	-50.3	-57.8	-65.7	-74.2	-83.2	-92.7	-102.7	-113.3
50	-26.2	-28.9	-31.7	-34.6	-37.7	-44.3	-51.3	-58.9	-67.1	-75.7	-84.9	-94.6	-104.8	-115.5
55	-26.6	-29.3	-32.2	-35.2	-38.3	-45.0	-52.2	-59.9	-68.1	-76.9	-86.2	-96.1	-106.4	-117.4
60	-27.0	-29.8	-32.7	-35.7	-38.9	-45.7	-53.0	-60.8	-69.2	-78.1	-87.6	-97.6	-108.1	-119.2
100	-37.0	-40.8	-44.7	-48.9	-53.2	-62.5	-72.5	-83.2	-94.6	-106.8	-119.8	-133.4	-147.9	-163.0

Tables 3, 4, and 5 are based on ASCE 7-10 and ASCE 7-16, and consistent with the 2015/2018 IBC, 2017 FBC and 2020 FBC

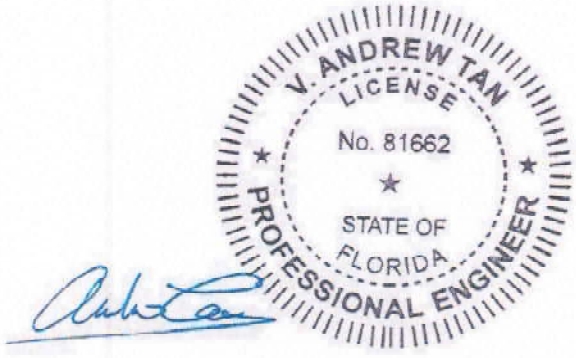
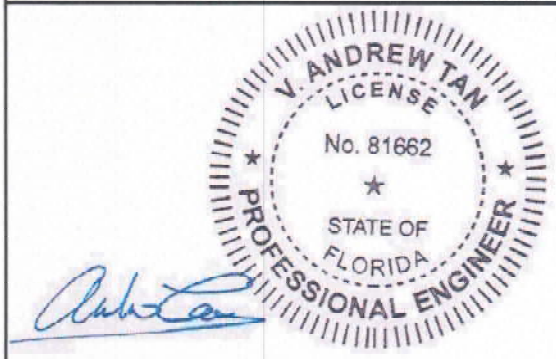
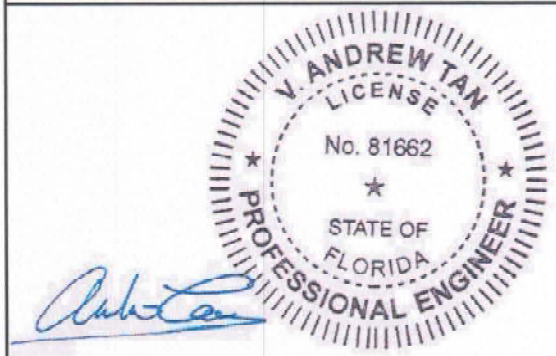


TABLE 6 - MAXIMUM WIND SPEEDS (MPH) FOR HARDIEPANEL SIDING [1]



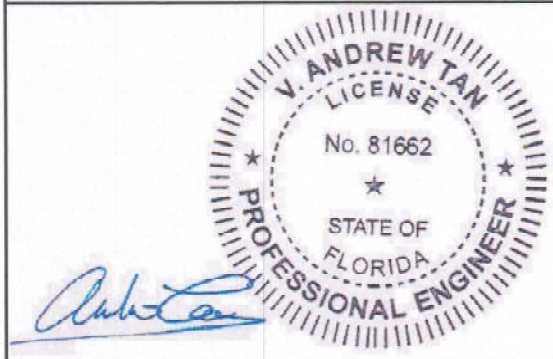
								2015 IBC, 2017/2020 FBC (Ultimate Design Wind, Speed, V_{ult} [5,6]), 2018 IBC (Basic Design Wind Speed, V[5,6])			2017 FBC/ 2020 FBC AND 2015/ 2018 IBC (Nominal Design Wind, Speed, V_{asd} [4,7,9])										
								Applicable to methods specified in Section 1609.1.1. of 2017/2020 FBC or 2015/2018 IBC, as applicable			Applicable to methods specified in Exceptions 1 through 3 of Section 1609.1.1 of 2017 FBC, 2020 FBC, 2015 IBC and 2018 IBC										
								Wind exposure category			Wind exposure category			Siding	Coefficients used for calculations [6]							
															K_z							
Product	Product Thickness (inches)	Width (inches)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (inches)	Building Height [3] (feet)	B	C	D	B	C	D	Design Load (PSF)	Exp B	Exp C	Exp D		K_{zt}	K_d	GC_p	GC_{pi}
HardiePanel®	5/16	48	6d common	6	2X4 wood Hem-Fir	16	0-15	185	168	153	144	130	118	-49.7	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	185	164	149	144	127	116	-49.7	0.7	0.9	1.08		1	0.9	-1	0.2
							25	185	160	147	144	124	114	-49.7	0.7	0.94	1.12		1	0.9	-1	0.2
							30	185	157	144	144	121	112	-49.7	0.7	0.98	1.16		1	0.9	-1	0.2
							35	182	154	142	141	120	110	-49.7	0.73	1.01	1.19		1	0.9	-1	0.2
							40	178	152	140	138	118	109	-49.7	0.76	1.04	1.22		1	0.9	-1	0.2
							45	175	150	139	136	116	108	-49.7	0.79	1.07	1.25		1	0.9	-1	0.2
							50	172	149	138	134	115	107	-49.7	0.81	1.09	1.27		1	0.9	-1	0.2
							55	170	147	137	132	114	106	-49.7	0.83	1.11	1.29		1	0.9	-1	0.2
							60	168	146	136	130	113	105	-49.7	0.85	1.13	1.31		1	0.9	-1	0.2
							100	139	123	116	108	96	90	-49.7	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	6d common	4	2X4 wood Hem-Fir	16	0-15	233	212	192	181	164	149	-78.7	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	233	206	188	181	159	146	-78.7	0.7	0.9	1.08		1	0.9	-1	0.2
							25	233	201	185	181	156	143	-78.7	0.7	0.94	1.12		1	0.9	-1	0.2
							30	233	197	181	181	153	140	-78.7	0.7	0.98	1.16		1	0.9	-1	0.2
							35	229	194	179	177	151	139	-78.7	0.73	1.01	1.19		1	0.9	-1	0.2
							40	224	191	177	174	148	137	-78.7	0.76	1.04	1.22		1	0.9	-1	0.2
							45	220	189	175	171	147	136	-78.7	0.79	1.07	1.25		1	0.9	-1	0.2
							50	217	187	173	168	145	134	-78.7	0.81	1.09	1.27		1	0.9	-1	0.2
							55	214	185	172	166	144	133	-78.7	0.83	1.11	1.29		1	0.9	-1	0.2
							60	212	184	171	164	142	132	-78.7	0.85	1.13	1.31		1	0.9	-1	0.2
							100	175	155	146	136	120	113	-78.7	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	6d common	6	2X4 wood Hem-Fir	24	0-15	147	134	121	114	104	94	-31.3	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	147	130	119	114	101	92	-31.3	0.7	0.9	1.08		1	0.9	-1	0.2
							25	147	127	116	114	98	90	-31.3	0.7	0.94	1.12		1	0.9	-1	0.2
							30	147	124	114	114	96	89	-31.3	0.7	0.98	1.16		1	0.9	-1	0.2
							35	144	123	113	112	95	88	-31.3	0.73	1.01	1.19		1	0.9	-1	0.2
							40	141	121	112	110	94	86	-31.3	0.76	1.04	1.22		1	0.9	-1	0.2
							45	139	119	110	108	93	86	-31.3	0.79	1.07	1.25		1	0.9	-1	0.2
							50	137	118	-	106	91	-	-31.3	0.81	1.09	1.27		1	0.9	-1	0.2
							55	135	117	-	105	91	-	-31.3	0.83	1.11	1.29		1	0.9	-1	0.2
							60	134	116	-	104	90	-	-31.3	0.85	1.13	1.31		1	0.9	-1	0.2
							100	111	-	-	86	-	-	-31.3	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	6d common	4	2X4 wood Hem-Fir	24	0-15	182	165	150	141	128	116	-47.7	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	182	160	146	141	124	113	-47.7	0.7	0.9	1.08		1	0.9	-1	0.2
							25	182	157	144	141	121	111	-47.7	0.7	0.94	1.12		1	0.9	-1	0.2
							30	182	154	141	141	119	109	-47.7	0.7	0.98	1.16		1	0.9	-1	0.2
							35	178	151	139	138	117	108	-47.7	0.73	1.01	1.19		1	0.9	-1	0.2
							40	174	149	138	135	115	107	-47.7	0.76	1.04	1.22		1	0.9	-1	0.2
							45	172	147	136	133	114	106	-47.7	0.79	1.07	1.25		1	0.9	-1	0.2
							50	169	146	135	131	113	104	-47.7	0.81	1.09	1.27		1	0.9	-1	0.2
							55	167	144	134	129	112	104	-47.7	0.83	1.11	1.29		1	0.9	-1	0.2
							60	165	143	133	128	111	103	-47.7	0.85	1.13	1.31		1	0.9	-1	0.2
							100	136	121	114	106	94	88	-47.7	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	4d, 0.091 in. shank X 0.225 in. HD X 1.5 in. long ring shank nail	4 edge 8 field	2X4 wood SG≥0.36	16	0-15	144	131	119	112	101	92	-30.0	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	144	127	116	112	98	90	-30.0	0.7	0.9	1.08		1	0.9	-1	0.2
							25	144	124	114	112	96	88	-30.0	0.7	0.94	1.12		1	0.9	-1	0.2
							30	144	122	112	112	94	87	-30.0	0.7	0.98	1.16		1	0.9	-1	0.2
							35	141	120	111	109	93	86	-30.0	0.73	1.01	1.19		1	0.9	-1	0.2
							40	138	118	-	107	92	-	-30.0	0.76	1.04	1.22		1	0.9	-1	0.2
							45	136	117	-	105	91	-	-30.0	0.79	1.07	1.25		1	0.9	-1	0.2
							50	134	116	-	104	89	-	-30.0	0.81	1.09	1.27		1	0.9	-1	0.2
							55	132	114	-	103	89	-	-30.0	0.83	1.11	1.29		1	0.9	-1	0.2
							60	131	113	-	101	88	-	-30.0	0.85	1.13	1.31		1	0.9	-1	0.2
							100	-	-	-	-	-	-	-30.0	0.99	1.26	1.43	h>60	1	0.9	-2	0.2

TABLE 6 - MAXIMUM WIND SPEEDS (MPH) FOR HARDIEPANEL SIDING [7]



								2015 IBC, 2017/2020 FBC (Ultimate Design Wind, Speed, V_{ult} [5,6]), 2018 IBC (Basic Design Wind Speed, V[6,8])			2017 FBC/ 2020 FBC AND 2015/ 2018 IBC (Nominal Design Wind, Speed, V_{asd} [4,7,8])							
								Applicable to methods specified in Section 1609.1.1. of 2017/2020 FBC or 2015/2018 IBC, as applicable			Applicable to methods specified in Exceptions 1 through 3 of Section 1609.1.1 of 2017 FBC, 2020 FBC, 2015 IBC and 2018 IBC							
								Wind exposure category			Wind exposure category			Siding	Coefficients used for calculations[6]			
															K_z			
Product	Product Thickness (inches)	Width (inches)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (inches)	Building Height[3] (feet)	B	C	D	B	C	D	Design Load (PSF)	Exp B	Exp C	Exp D		K_{zt}	K_d	GC_p	GC_{pi}
HardiePanel®	1/4	48	Min. No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw[2]	6	Min. No. 20 ga. (33 mil, fy = 33 ksi) steel stud	16	0-15	198	180	163	153	139	126	-56.6	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	198	175	159	153	135	123	-56.6	0.7	0.9	1.08		1	0.9	-1	0.2
							25	198	171	157	153	132	121	-56.6	0.7	0.94	1.12		1	0.9	-1	0.2
							30	198	167	154	153	130	119	-56.6	0.7	0.98	1.16		1	0.9	-1	0.2
							35	194	165	152	150	128	118	-56.6	0.73	1.01	1.19		1	0.9	-1	0.2
							40	190	162	150	147	126	116	-56.6	0.76	1.04	1.22		1	0.9	-1	0.2
							45	187	161	148	145	124	115	-56.6	0.79	1.07	1.25		1	0.9	-1	0.2
							50	184	159	147	143	123	114	-56.6	0.81	1.09	1.27		1	0.9	-1	0.2
							55	182	157	146	141	122	113	-56.6	0.83	1.11	1.29		1	0.9	-1	0.2
							60	180	156	145	139	121	112	-56.6	0.85	1.13	1.31		1	0.9	-1	0.2
							100	149	132	124	115	102	96	-56.6	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	1/4	48	Min. No 8 X 1 in. long X 0.323 in head diameter ribbed bugle head screw[2]	6	Min. No. 20 ga. (33 mil, fy = 33 ksi) steel stud	24	0-15	146	132	120	113	102	93	-30.6	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	146	128	117	113	99	91	-30.6	0.7	0.9	1.08		1	0.9	-1	0.2
							25	146	126	115	113	97	89	-30.6	0.7	0.94	1.12		1	0.9	-1	0.2
							30	146	123	113	113	95	88	-30.6	0.7	0.98	1.16		1	0.9	-1	0.2
							35	143	121	112	110	94	87	-30.6	0.73	1.01	1.19		1	0.9	-1	0.2
							40	140	119	110	108	93	85	-30.6	0.76	1.04	1.22		1	0.9	-1	0.2
							45	138	118	-	107	91	-	-30.6	0.79	1.07	1.25		1	0.9	-1	0.2
							50	135	117	-	105	90	-	-30.6	0.81	1.09	1.27		1	0.9	-1	0.2
							55	134	116	-	104	90	-	-30.6	0.83	1.11	1.29		1	0.9	-1	0.2
							60	132	115	-	102	89	-	-30.6	0.85	1.13	1.31		1	0.9	-1	0.2
							100	-	-	-	-	-	-	-30.6	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener[2]	4 edge 8 field	Min. No. 20 ga. (33 mil, fy = 33 ksi) steel stud	16	0-15	198	180	163	153	139	126	-56.7	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	198	175	159	153	135	124	-56.7	0.7	0.9	1.08		1	0.9	-1	0.2
							25	198	171	157	153	132	121	-56.7	0.7	0.94	1.12		1	0.9	-1	0.2
							30	198	167	154	153	130	119	-56.7	0.7	0.98	1.16		1	0.9	-1	0.2
							35	194	165	152	150	128	118	-56.7	0.73	1.01	1.19		1	0.9	-1	0.2
							40	190	163	150	147	126	116	-56.7	0.76	1.04	1.22		1	0.9	-1	0.2
							45	187	161	149	145	124	115	-56.7	0.79	1.07	1.25		1	0.9	-1	0.2
							50	184	159	147	143	123	114	-56.7	0.81	1.09	1.27		1	0.9	-1	0.2
							55	182	157	146	141	122	113	-56.7	0.83	1.11	1.29		1	0.9	-1	0.2
							60	180	156	145	139	121	112	-56.7	0.85	1.13	1.31		1	0.9	-1	0.2
							100	149	132	124	115	102	96	-56.7	0.99	1.26	1.43	h>60	1	0.9	-2	0.2
HardiePanel®	5/16	48	ET&F 0.100 in. knurled shank X 1.5 in. long X 0.25 in. head diameter pin fastener[2]	4 edge 8 field	Min. No. 20 ga. (33 mil, fy = 33 ksi) steel stud	24	0-15	153	139	126	118	107	98	-33.7	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	153	135	123	118	104	95	-33.7	0.7	0.9	1.08		1	0.9	-1	0.2
							25	153	132	121	118	102	94	-33.7	0.7	0.94	1.12		1	0.9	-1	0.2
							30	153	129	119	118	100	92	-33.7	0.7	0.98	1.16		1	0.9	-1	0.2
							35	150	127	117	116	98	91	-33.7	0.73	1.01	1.19		1	0.9	-1	0.2
							40	147	125	116	114	97	90	-33.7	0.76	1.04	1.22		1	0.9	-1	0.2
							45	144	124	114	112	96	89	-33.7	0.79	1.07	1.25		1	0.9	-1	0.2
							50	142	122	113	110	95	88	-33.7	0.81	1.09	1.27		1	0.9	-1	0.2
							55	140	121	112	109	94	87	-33.7	0.83	1.11	1.29		1	0.9	-1	0.2
							60	139	120	112	107	93	86	-33.7	0.85	1.13	1.31		1	0.9	-1	0.2
							100	115	-	-	89	-	-	-33.7	0.99	1.26	1.43	h>60	1	0.9	-2	0.2

TABLE 6 - MAXIMUM WIND SPEEDS (MPH) FOR HARDIEPANEL SIDING [7]



								2015 IBC, 2017/2020 FBC (Ultimate Design Wind, Speed, V_{ult} [5,6]), 2018 IBC (Basic Design Wind Speed, V [6,8])			2017 FBC/ 2020 FBC AND 2015/ 2018 IBC (Nominal Design Wind, Speed, V_{asd} [4,7,9])								
								Applicable to methods specified in Section 1609.1.1. of 2017/2020 FBC or 2015/2018 IBC, as applicable			Applicable to methods specified in Exceptions 1 through 3 of Section 1609.1.1 of 2017 FBC, 2020 FBC, 2015 IBC and 2018 IBC								
								Wind exposure category			Wind exposure category			Siding	K_z			Coefficients used for calculations [6]				
Product	Product Thickness (inches)	Width (inches)	Fastener Type	Fastener Spacing	Frame Type	Stud Spacing (inches)	Building Height [3] (feet)	B	C	D	B	C	D	Design Load (PSF)	Exp B	Exp C	Exp D		K_{zt}	K_d	GC_p	GC_{pi}
HardiePanel®	5/16	48	No. 8, 1-5/8 in. long x 0.375" HD ribbed wafer head screw	6" vert. 12" horiz.	7/16" WSP sheathing over 2x4 wood framing [10]	16	0-15	193	175	159	149	136	123	-53.8	0.7	0.85	1.03	h≤60	1	0.9	-1	0.2
							20	193	170	155	149	132	120	-53.8	0.7	0.9	1.08		1	0.9	-1	0.2
							25	193	167	153	149	129	118	-53.8	0.7	0.94	1.12		1	0.9	-1	0.2
							30	193	163	150	149	126	116	-53.8	0.7	0.98	1.16		1	0.9	-1	0.2
							35	189	161	148	146	124	115	-53.8	0.73	1.01	1.19		1	0.9	-1	0.2
							40	185	158	146	143	123	113	-53.8	0.76	1.04	1.22		1	0.9	-1	0.2
							45	182	156	145	141	121	112	-53.8	0.79	1.07	1.25		1	0.9	-1	0.2
							50	179	155	143	139	120	111	-53.8	0.81	1.09	1.27		1	0.9	-1	0.2
							55	177	153	142	137	119	110	-53.8	0.83	1.11	1.29		1	0.9	-1	0.2
							60	175	152	141	136	118	109	-53.8	0.85	1.13	1.31		1	0.9	-1	0.2
							100	145	128	121	112	100	93	-53.8	0.99	1.26	1.43	h>60	1	0.9	-2	0.2

1. Installation must be in accordance with siding manufacturer's instructions.
2. Screws must penetrate steel framing at minimum 3 full threads. Knurled shank pins shall penetrate the metal framing at least 1/4 inch.
3. Building height = mean roof height (in feet) of a building, except that eave height shall be used for roof angle Θ less than or equal to 10° (2-12 roof slope). Linear interpolation of building height (≤ 60 ft) and wind speed is permitted.
4. V_{asd} = nominal design wind speed
5. V_{ult} = ultimate design wind speed
6. Wind speed design coefficient assumptions per Section 30.4 of ASCE 7-10 and ASCE 7-16: K_{zt}=1, K_d=0.85, GC_p=-1.4 (h≤60), GC_p=-1.8 (h>60), GC_{pi}=0.18.
7. 2017 and 2020 FBC Section 1609.3.1 Eq. 16-33, $V_{asd} = V_{ult}(0.6)^{0.5}$
8. V = basic design wind speed
9. 2018 IBC Section 1609.3.1 Eq. 16-33, $V_{asd} = V(0.6)^{0.5}$
10. Attachment of wood structural panel (WSP) sheathing to framing is the responsibility of an engineer and must be designed to resist the required wind loads noted in this table.

LIMITATIONS OF USE:

1) Fastener pullout must be evaluated when installed a species of wood studs other than that which was tested.
2) In High Velocity Hurricane Zones (HVHZ) install per Miami-Dade County Florida. NOA 17-0406.06

MODEL DESIGNATION: Simonton Double Hung Series 07-09 / 07-10 / 07-20 Vinyl Window

MAXIMUM OVERALL NOMINAL SIZE: See Size Chart

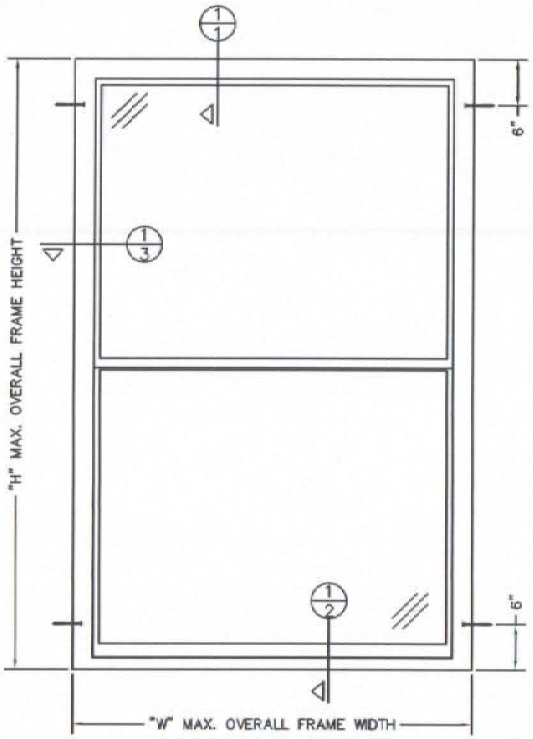
DESIGN PRESSURE RATING: See Size Chart

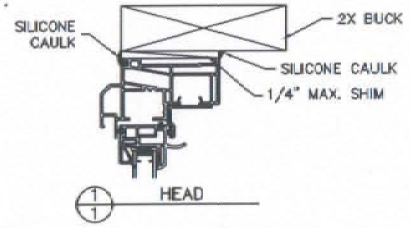
USABLE CONFIGURATIONS: X / X

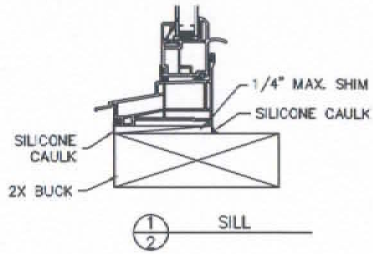
GENERAL DESCRIPTION: The head, sill, and side jambs are extruded PVC. The wall thickness through which the anchor screw penetrates is a minimum of 0.070".

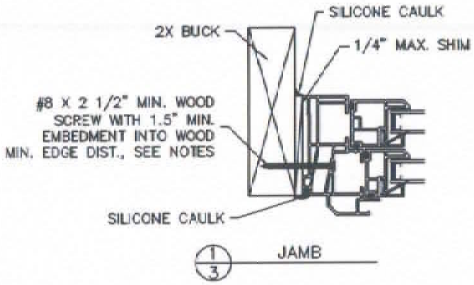
NO P.E. SEAL REQUIRED
INSTALLATION SUPPORTED
BY AAMA TEST REPORTS

REV. #	REVISIONS:	REVISED BY:	DATE:
13	UPDATED SIZES PER NEW TESTING.	T.D.D.	08/10/12
14	UPDATED SIZES PER NEW TESTING.	T.D.D.	02/20/13
15	ADDED MIN. EDGE DIST., NOTES.	LMH	05/20/15
16	ADDED NOTES 12 & 13 - AAMA 800	LMH	08/18/16
17	UPDATED SIZE CHART.	LMH	04/20/20









SIZE CHART		
OVERALL SIZE		DP RATING
WIDTH "W"	HEIGHT "H"	
48"	80"	±25 PSF
56"	84"	
36"	63"	±50 PSF
44"	64"	
47"	71"	
53"	76"	
37"	84"	±60 PSF
37"	76"	±65 PSF

NOTES:

1. This installation has been evaluated for use in locations adhering to the Florida Building Codes and where pressure requirements as determined by ASCE 7 Minimum Design Loads for Buildings and Other Structures do not exceed the design pressure ratings herein, for use outside the H.V.H.Z.
2. All exterior perimeter surfaces of the window must be caulked. Interior caulking is optional unless noted otherwise.
3. Anchors shall be as specified and spaced as shown. Anchor embedment to base material shall be beyond wall dressing or stucco and into wood.
4. The responsibility for selection of Simonton products to meet any applicable local laws, building codes, ordinances, or other safety requirements rests solely with the architect, building owner, or contractor.
5. Shims are optional. Max. shim stack is 1/4".
6. Wood bucks (by others) must be engineered and anchored properly to transfer loads to the structure.
7. When used in areas requiring impact protection this product REQUIRES the use of approved impact resistant shutters or other external protection.
8. Flashing should be applied using the ASTM E 2112 methodology appropriate for the opening into which the window is being installed.
9. Installation screws must be at least 3/4" from the edge of the wood.
10. Installation screws may be placed in the interior or exterior track of the jamb. Screws should be flush with the vinyl.
11. Glazing shall comply with ASTM E 1300.
12. Use 100% pure silicone caulk compliant with AAMA 800 Section 1 - Sealant Specifications for use with Architectural Fenestration Products.
13. Use a backer rod on all joints >3/4" deep and/or wider than 1/4". Finished caulk joint should be a minimum of 3/8" deep.

FILE: FL 5167

MATERIAL:
RMS FINISH: EXCEPT AS NOTED
ALLOY & TEMPER:
WEIGHT: VOLUME:
SURFACE AREA: PERIMETER:
FINISH TREATMENT:

Dimensional Tolerances Unless Otherwise Specified

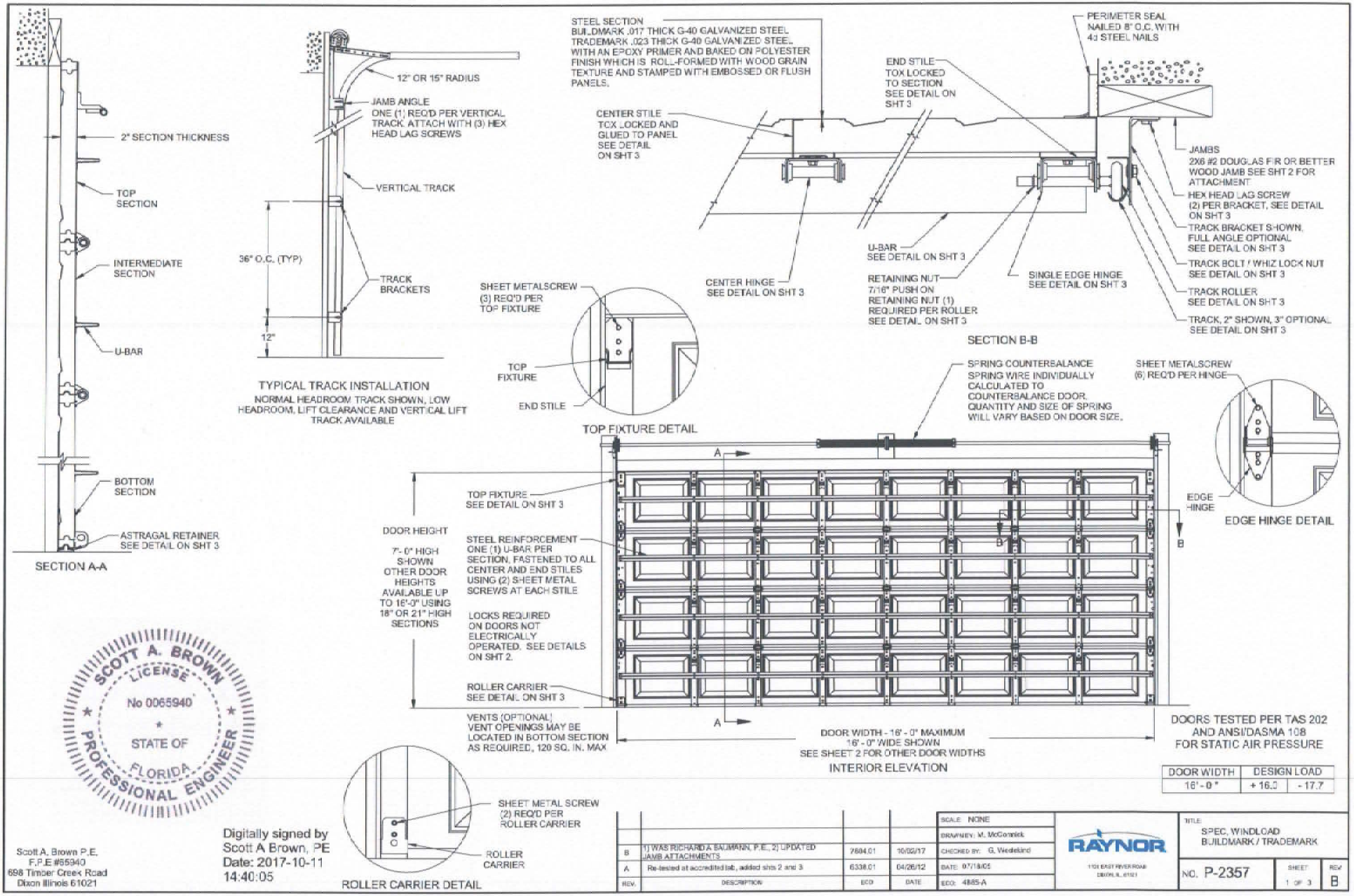
Decimals	Angles
.X ± .03	0° 30 min.
.XX ± .01	
.XXX ± .005	

SIMONTON WINDOWS
1 Cochrane Avenue
Penasboro, WV 26415

SIZE:	DRAWING NO.:	REV.:
B	IN0067	17
DRAWN BY: G.L.S.	DATE: 3/22/06	
CHECKED BY:	DATE:	
SCALE: FIT	SHEET: 1 of 1	APPRVD BY: DATE:

SERIES: 07-09 / 07-10 / 07-20 DOUBLE HUNG

TITLE: 2X BUCK INSTALLATION



DOOR WIDTH	DESIGN LOAD	
16' - 0"	+ 16.0	- 17.7

SCOTT A. BROWN LICENSE No 0065940 STATE OF FLORIDA PROFESSIONAL ENGINEER

Scott A. Brown P.E.
F.P.E #65940
698 Timber Creek Road
Dixon Illinois 61021

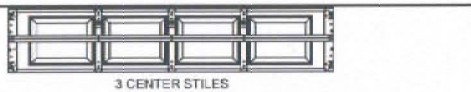
Digitally signed by Scott A Brown, PE
Date: 2017-10-11 14:40:05

REV.	DESCRIPTION	ECO	DATE
B	1) WAS RICHARD A. BAUMANN, P.E., 2) UPDATED JAMB ATTACHMENTS	7684.01	10/03/17
A	Re-tested at accredited lab, added shts 2 and 3	6338.01	04/26/12

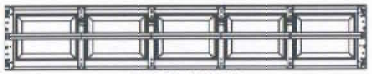
SCALE: NONE
DRAWN BY: M. McCormick
CHECKED BY: G. Wiedeking
DATE: 07/18/05
ECO: 4885-A

RAYNOR
1101 EAST RIVER ROAD
DIXON, IL. 61021

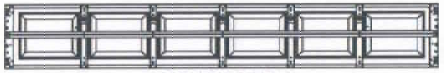
TITLE: SPEC, WINDLOAD BUILDMARK / TRADEMARK
NO. P-2357
SHEET: 1 OF 3
REV: B



3 CENTER STILES
8' AND 9' WIDE

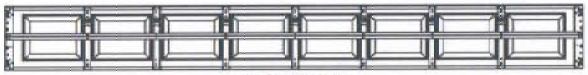


4 CENTER STILES
10' AND 11' WIDE



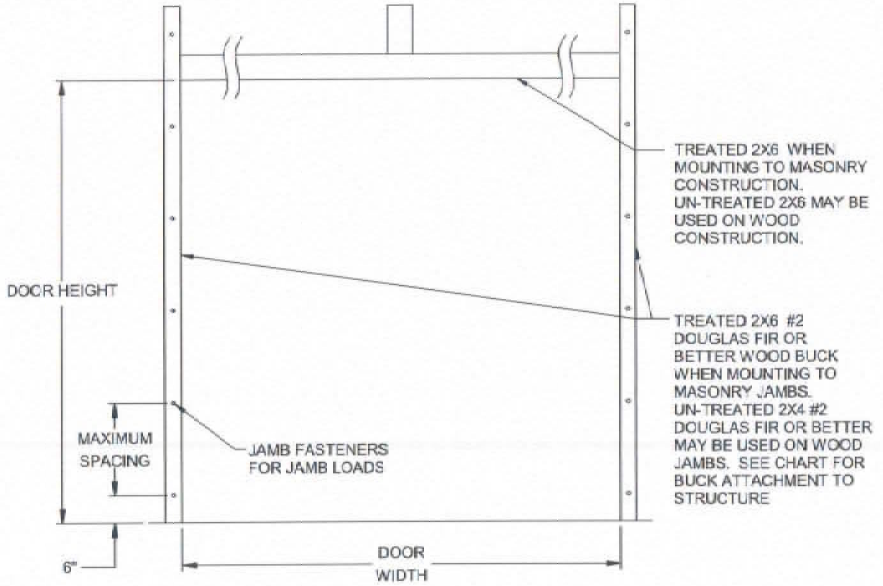
5 CENTER STILES
12' AND 13' WIDE

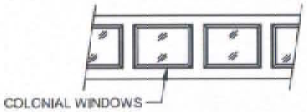
6 CENTER STILES
14' AND 15' WIDE



7 CENTER STILES
16' WIDE

CENTER STILE LAYOUT INTERIOR VIEW

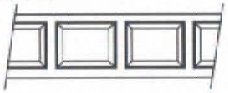




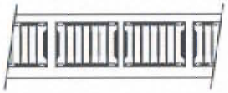
COLONIAL WINDOWS

GLASS PANEL

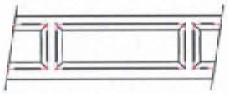
GLASS OPTIONS:
1/8" DSB
1/8" ACRYLIC
1/8" TEMPERED
1/2" INSULATED GLASS



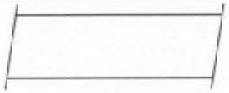
COLONIAL PANEL



CARRIAGE HOUSE PANEL



RANCH PANEL



FLUSH PANEL

PANEL OPTIONS
EXTERIOR VIEW

JAMB ATTACHMENT NOTES

1. MAXIMUM POSITIVE LOAD PER JAMB = (16'-0" X 16.0 PSF) / 2 = 128 LBS PER FOOT
2. MAXIMUM NEGATIVE LOAD PER JAMB = (16' -0" X -17.7 PSF) / 2 = 142 LBS PER FOOT.
3. DESIGN OF THE SUPPORTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOADS LISTED IN NOTES 1 AND 2.
4. ALTERNATE JAMB ATTACHMENTS MAY BE USED IF APPROVED BY A REGISTERED PROFESSIONAL ENGINEER.
5. DASMA TECHNICAL DATA SHEET TDS-161 MAY BE USED FOR ALTERNATE JAMB ATTACHMENTS.
6. 3/8" DIAMETER LAG SCREWS REQUIRED 1/16" PILOT HOLE AND 1-1/2" MINIMUM EDGE DISTANCE.

2X6 ATTACHMENT TO STRUCTURE

STRUCTURE TYPE	FASTENER TYPE	MINIMUM EMBEDMENT	MINIMUM EDGE DISTANCE	MINIMUM ON CENTER SPACING	DIMENSION A (MAXIMUM ON CENTER SPACING)	ALLOWABLE TENSION LOAD
2500 PSI MIN. CONCRETE	1/4" TAPCON+ (PLUS) WITH 1-1/8" OD WASHER	2"	2.5	6"	24"	691
SOUTHERN PINE	3/8" X 3" LAG WITH 1-1/8" OD WASHER	1.50"	1.50"	1.50"	24"	855
SPRUCE PINE FIR	3/8" X 3" LAG WITH 1-1/8" OD WASHER	1.50"	1.50"	1.50"	24"	462

SCOTT A. BROWN
LICENSE
No 0065940
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Scott A. Brown P.E.
F.P.E #65940
698 Timber Creek Road
Dixon Illinois 61021

Digitally signed by Scott A Brown, PE
Date: 2017-10-11 14:41:11

REV.	DESCRIPTION	ECO	DATE

SCALE: NONE
DRAWN BY: G. WEDEKIND
CHECKED BY: G. WEDEKIND
DATE: 04/25/12
ECO: 6338.31

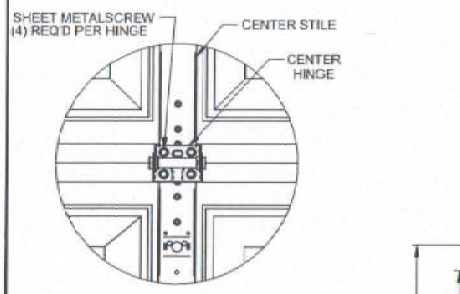
RAYNOR
1101 EAST RIVER ROAD
DIXON, IL 61021

TITLE: SPEC, WINDLOAD BUILDMARK / TRADEMARK

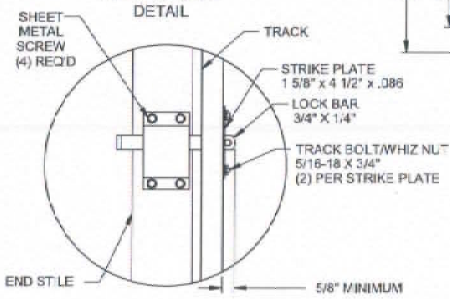
NO. P-2357

SHEET 2 OF 3

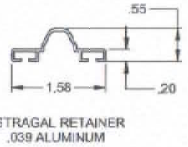
REV B



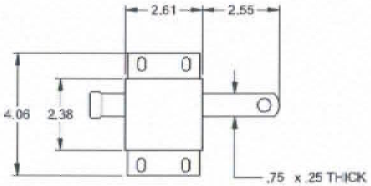
CENTER HINGE
DETAIL



OPTIONAL INTERIOR LOCK
DETAIL

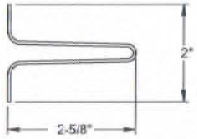


ASTRAGAL RETAINER
.039 ALUMINUM

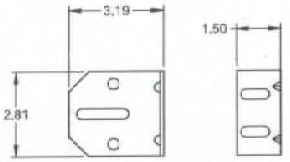


SLIDE LOCK
CASE .086 GALV. STEEL

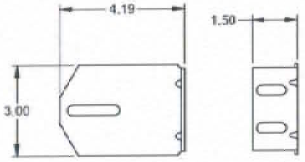
OPTIONAL INTERIOR LOCK
DETAIL



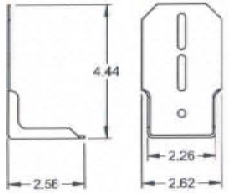
STEEL U-BAR DETAIL
.049" MIN GALVANIZED
HIGH TENSILE STEEL
80 KSI MINIMUM YIELD



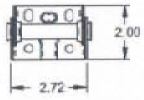
3" TRACK BRACKET
.116 GALV STEEL



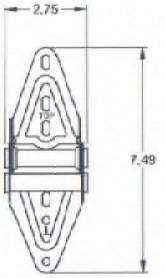
4" TRACK BRACKET
.116 GALV. STEEL



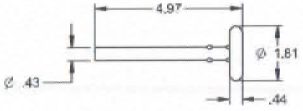
TOP FIXTURE
.086 GALV. STEEL



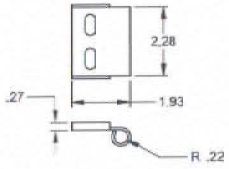
CENTER HINGE
.045 GALV. STEEL



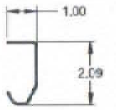
EDGE HINGE
.086 GALV.STEEL



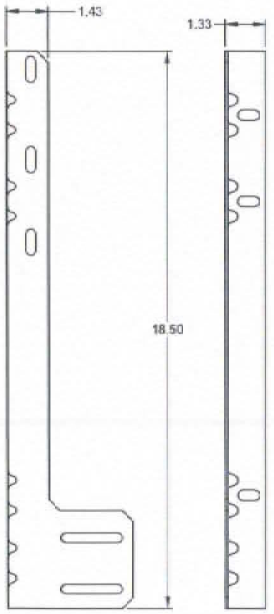
TRACK ROLLER



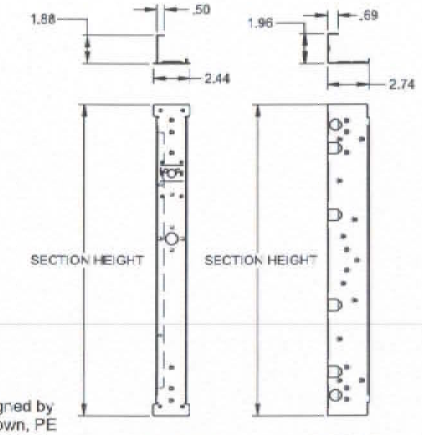
ROLLER CARRIER
.086 GALV. STEEL
ATTACHED TO TOP FIXTURE WITH
(2) TRACK BOLTS AND WHIZ NUTS



TRACK
.055 GALV. STEEL

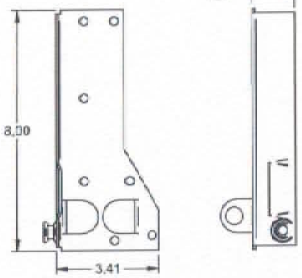


JAMB ANGLE
.078 GALV. STEEL

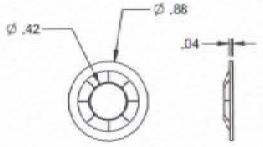


CENTER STILE
.034 GALV. STEEL

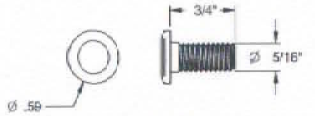
END STILE
.043 GALV. STEEL



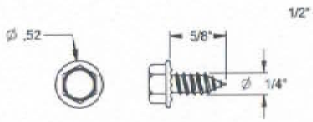
CORNER BRACKET
.036 GALV. STEEL



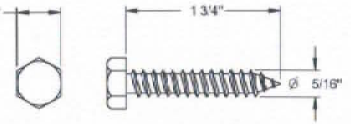
RETAINING NUT



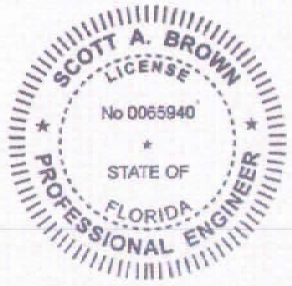
TRACK BOLT



SHEET METAL SCREW



HEX HEAD LAG SCREW



Scott A. Brown P.E.
F.P.E #65940
899 Timber Creek Road
Dixon Illinois 61021

Digitally signed by
Scott A Brown, PE
Date: 2017-10-11
14:42:21

REV.	DESCRIPTION	ECO	DATE

SCALE: NONE
DRAWN BY: G. WEDEKIND
CHECKED BY: G. WEDEKIND
DATE: 04/26/12
ECO: 5338.01

RAYNOR
1101 EAST RIVERROAD
DIXON, IL 61021

TITLE:
SPEC, WINDLOAD
BUILDMARK / TRADEMARK

NO. P-2357 | SHEET 3 OF 3 | REV B

Florida Product Approval

HardieSoffit® Panel

- For use inside HVHZ:
  - HardieSoffit Panel fastener types, fastening schedule, and installation shall be in accordance with the Miami-Dade County Florida NOA 20-0730.06. Consult the HardieSoffit product installation instructions on the following pages for all other installation requirements.

- For use outside of HVHZ,
  - HardieSoffit Panel fastener types, fastening schedule, and installation shall be in accordance with Engineering Evaluation Report ER 2001-13.1 or 2001-13.2. Consult the HardieSoffit product installation instructions on the following pages for all other installation requirements.

HardieSoffit® Panels

EFFECTIVE APRIL 2019

IMPORTANT: FAILURE TO FOLLOW JAMES HARDIE [illegible] BUILDING ENVELOPE PERFORMANCE AND MAY [illegible] THIS PRODUCT MAY RESULT IN PERSONAL [illegible] HARDIEZONE.COM OR CALL 1-866-942-7343 (866-9-HARDIE).

ES MAY VIOLATE LOCAL LAWS, AFFECT
LATIONS WHEN CUTTING AND INSTALLING
UCT INSTRUCTIONS BY VISITING

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 airflow blows dust away from the user and others near the cutting area.
2. Cut using one of the following methods:
   - a. Best: Circular saw equipped with a HardieBlade™ saw blade and attached vacuum dust collection system. Shears (manual, pneumatic or electric) may also be used, not recommended for products thicker than 7/16 in.
   - b. Better: Circular saw equipped with a dust collection feature (e.g. Roar® saw) and a HardieBlade saw blade.
   - c. Good: Circular saw equipped with a HardieBlade saw blade.

INDOORS

DO NOT grind or cut with a power saw indoors. Cut using shears (manual, pneumatic or electric) or the score and snap method, not recommended for products thicker than 7/16 in.

- DO NOT dry sweep dust; use wet dust suppression or vacuum to collect dust.
- For maximum dust reduction, James Hardie recommends using the "Best" cutting practices. Always follow the equipment manufacturer's instructions for proper operation.
- For best performance when cutting with a circular saw, James Hardie recommends using HardieBlade™ saw blades.
- Go to jameshardiepros.com for additional cutting and dust control recommendations.

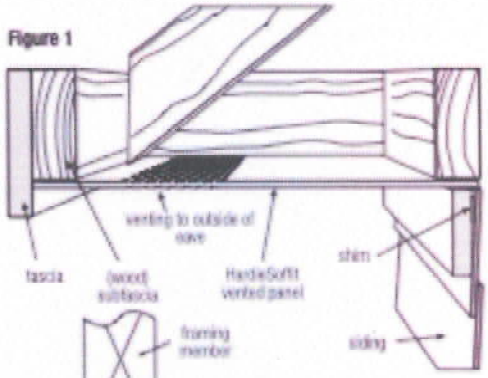
IMPORTANT: The Occupational Safety and Health Administration (OSHA) regulates workplace exposure to silica dust. For construction sites, OSHA has deemed that cutting fiber cement with a circular saw having a blade diameter less than 8 inches and connected to a commercially available dust collection system per manufacturer's instructions results in exposures below the OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica, without the need for additional respiratory protection.

If you are unsure about how to comply with OSHA silica dust regulations, consult a qualified industrial hygienist or safety professional, or contact your James Hardie technical sales representative for assistance. James Hardie makes no representation or warranty that adopting a particular cutting practice will assure your compliance with OSHA rules or other applicable laws and safety requirements.

GENERAL REQUIREMENTS:

- HardieSoffit® panels may be installed as a soffit or ceiling over either wood or steel 20 gauge (33 mils) minimum to 16 gauge (54 mils) framing complying with the local building code. See general fastening requirements. Install soffits to nominal 2 x 4 framing members spaced a maximum of 24 inches on center (fig.1), with the long dimension perpendicular to the rafter or joist framing.
- All edges must be supported by framing. (figs. 3 & 4)
- Install water barriers and air barriers as required by local building codes. James Hardie will assume no responsibility for moisture infiltration.
- Ensure gutters have end caps. Maintain a minimum 1 in gap between end caps and siding & trim (fig.5).
- Install kickout flashing at roof-wall junctions. (fig 6.)
- James Hardie Building Products provides installation/wind load information for buildings with a maximum mean roof height of 85 feet. For information on installations above 60 feet, please contact JH technical support.

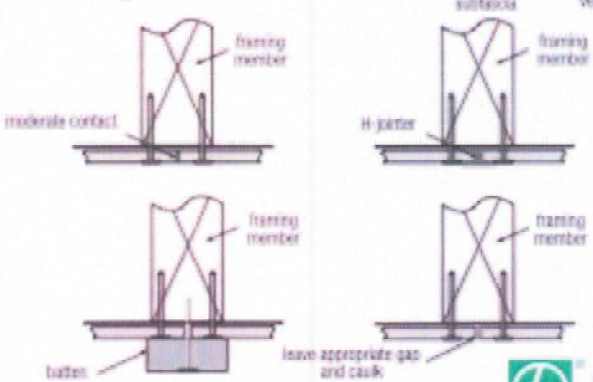
Figure 1



INSTALLATION:

- HardieSoffit panels must be fastened to a solid, nailable substrate such as a wood 2x subfascia.
- Additional framing may be needed to ensure proper fastening.
- Soffits can be installed as shown in figure 1. Position the vent holes toward the outside of the eave for optimal airflow.
- 12 in to 24 in wide HardieSoffit® Vented panels provide 5.0; and HardieSoffit® VentedPlus™ panels provde 12.6 square inches of net free ventilation per lineal foot
- Alternatively vents can be installed into non-vented soffit.
- If necessary, an insect screen can be installed using construction adhesive. Note: net free ventilation will be reduced.

Figure 2



Jointing Methods

- Install panels in moderate contact at ends, provide PVC or metal jointers, battens or leave appropriate gap and caulk (fig 2).

Fastener Positioning

- Position fasteners 3/8 in from panel edges and no closer than 2 in away from corners when using soffit greater than 12 in wide (fig. 4) and no closer than 1 in away from corners when using soffit that is less than or equal to 12 in wide (fig. 3).

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

JamesHardie

Figure 3

less than or equal to 12 in Wide Soffit

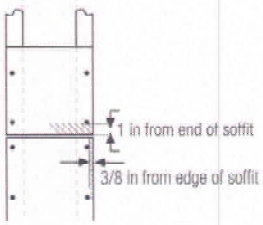


Figure 4

Greater than 12 in Wide Soffit

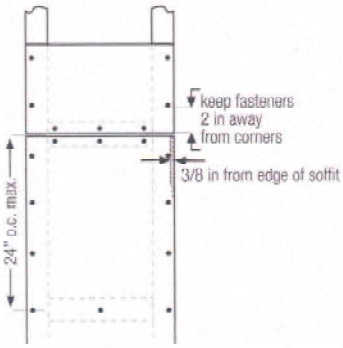


Figure 5

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

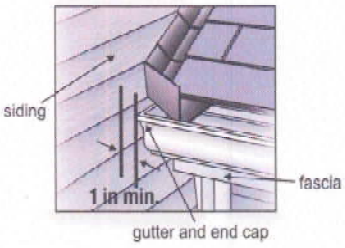
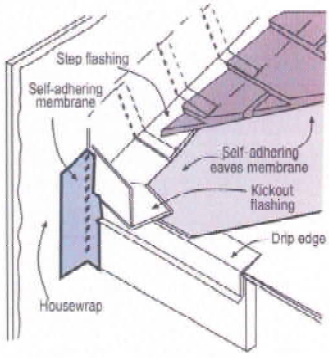


Figure 6



FASTENER REQUIREMENTS

- For wood frame construction a minimum 4d common nails spaced 8 in o.c. at panel edges and intermediate framing members spaced up to 24 in on center are suitable in most locations*.
- For conventional 20ga - 16ga steel frame construction a minimum No. 8-18 x 0.323 in HD x 1 in long ribbed bugle screws spaced 6 in o.c. at panel edges and intermediate framing members spaced up to 24 in on center are suitable in most locations*.

*Minimum Basic Wind Speed differs by locality. Where specified levels of wind resistance are required, refer to applicable Building Code Compliance Reports.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5."

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.

Manufacturers of ACQ and CA preservative-treated wood recommend spacer materials or other physical barriers to prevent direct contact of ACQ or CA preservative-treated wood and aluminum products. Fasteners used to attach HardieTrim Tabs to preservative-treated wood shall be of hot dipped zinc-coated galvanized steel or stainless steel and in accordance to 2009 IRC R317.3 or 2009 IBC 2304.9.5

- Consult applicable product evaluation or listing 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).
- NOTE: Whenever a structural member is present, HardiePlank should be fastened with even spacing to the structural member. The tables allowing direct to OSB or plywood should only be used when traditional framing is not available.

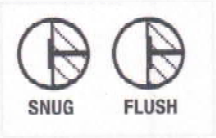
KICKOUT FLASHING

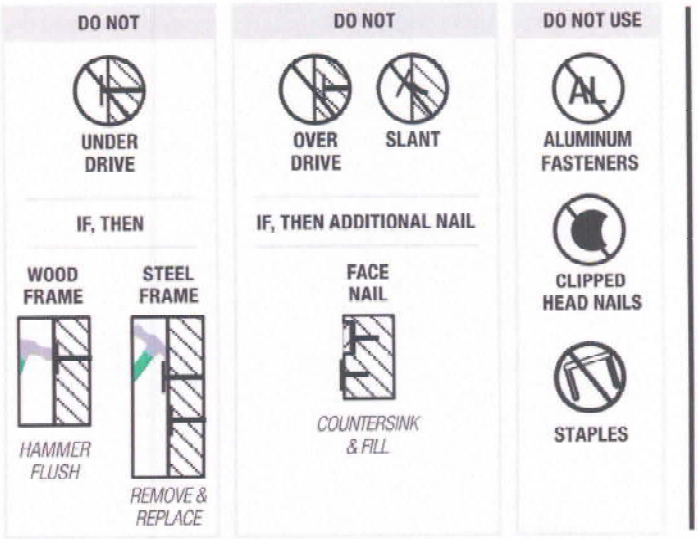
Because of the volume of water that can pour down a sloped roof, one of the most critical flashing details occurs where a roof intersects a sidewall. The roof must be flashed with step flashing. Where the roof terminates, install a kickout to deflect water away from the siding. It is best to install 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 6, Kickout Flashing To prevent water from dumping behind the siding and the end of the roof intersection, install a "kickout" as required by IRC code R905.2.8.3 : "...flashing shall be a min. of 4" high and 4" wide." James Hardie recommends the kickout be angled between 100° - 110° to maximize water deflection

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).





CUT EDGE TREATMENT

Caulk, paint or prime all field cut edges. James Hardie touch-up kits are required to touch-up ColorPlus products.

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.

Note: some caulking manufacturers do not allow "tooling".

PAINTING

DO NOT use stain, oil/alkyd base paint, or powder coating on James Hardie® Products. Factory-primed James Hardie products must be painted within 180 days of installation. 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.

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, oil/alkyd base paint, or powder coating on James Hardie® Products.
- Apply finish coat in accordance with paint manufacturers written instructions regarding coverage, application methods, and application temperature
- DO NOT caulk nail heads when using ColorPlus products, refer to the ColorPlus touch-up section

COLORPLUS® TECHNOLOGY CAULKING, TOUCH-UP & LAMINATE

- Care should be taken when handling and cutting James Hardie® ColorPlus® products. During installation use a wet soft cloth or soft brush to gently wipe off any residue or construction dust left on the product, then rinse with a garden hose.
- Touch up nicks, scrapes and nail heads using the ColorPlus® Technology touch-up applicator. Touch-up 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 coaters, available from your ColorPlus product dealer.

Note: James Hardie does not warrant the usage of third party touch-up or paints used as touch-up on James Hardie ColorPlus products.

Problems with appearance or performance arising from use of third party touch-up paints or paints used as touch-up that are not James Hardie touch-up will not be covered under the James Hardie ColorPlus Limited Finish Warranty.

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SILICA WARNING

DANGER: May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product. Refer to the current product Safety Data Sheet before use. The hazard associated with fiber cement arises from crystalline silica present in the dust generated by activities such as cutting, machining, drilling, routing, sawing, crushing, or otherwise abrading fiber cement, and when cleaning up, disposing of or moving the dust. When doing any of these activities in a manner that generates dust you must (1) comply with the OSHA standard for silica dust and/or other applicable law, (2) follow James Hardie cutting instructions to reduce or limit the release of dust; (3) warn others in the area to avoid breathing the dust; (4) when using mechanical saw or high speed cutting tools, work outdoors and use dust collection equipment; and (5) if no other dust controls are available, wear a dust mask or respirator that meets NIOSH requirements (e.g. N-95 dust mask). During clean-up, use a well maintained vacuum and filter appropriate for capturing fine (respirable) dust or use wet clean-up methods - never dry sweep.

⚠ **WARNING:** This product can expose you to chemicals including respirable crystalline silica, which is known to the State of California to cause cancer. For more information go to P65Warnings.ca.gov.

RECOGNITION: In accordance with ICC-ES Evaluation Report ESR-2273, HardieSoffit® panel is recognized as a suitable alternate to that specified in the 2006, 2009, 2012 & 2015 International Residential Code for One and Two-Family Dwellings, and the 2006, 2009, 2012 & 2015 International Building Code. HardieSoffit panel is also recognized for application in the following: State of Florida Product Approval FL13265, Miami-Dade County Florida NOA No. 17-0406.06, U.S. Dept. of HUD Materials Release 1263f, 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.

Product warranties, safety information and additional installation information are available at jameshardiepros.com

JamesHardie

UL Evaluation Report

UL ER2919-02

Issued: April 25, 2014

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 Shingle

COMPANY:

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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, 12-¼ X 12 HIP AND RIDGE AND 12-¼ 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)
- ICC ES Acceptance Criteria for Alternative Asphalt Roofing Shingles (AC438)

The products were evaluated for the following properties:

- Exterior Fire Exposure (UL790, ASTM E108)
- Wind Resistance (ASTM D3161; ASTM D7158)
- Physical Properties (ASTM D3462, ICC ES AC438)
- Impact Resistance (UL 2218)

3. REFERENCED DOCUMENTS

- UL790 (ASTM E108), Standard Test Methods for Fire Tests of Roof Coverings Eighth Edition, dated October 19, 2018
- 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)
- UL Subject 2375 Issue No. 2, Outline of Investigation for Hip and Ridge Shingles (UL Fire and Wind Tests)
- ICC ES Acceptance Criteria for Alternative Asphalt Roofing Shingles (AC438)
- ICC ES Acceptance Criteria for Quality Documentation (AC10)

4. USES

TAMKO asphalt shingles described in this report are alternatives to asphalt shingles complying with 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, and are Class A 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 and 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 and Section 1507.2.7 of the 2015, 2012, and 2009 IBC, or Section R905.2.6 of the 2018, 2015, 2012, and 2009 IRC, as applicable.

Physical Properties: TAMKO asphalt shingles covered under this Report have been tested for physical properties in accordance with ICC ES AC438. Shingles tested in accordance with ICC ES AC438 qualify as an alternative roof covering 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 – 12-¼ X 12 Hip and Ridge, Heritage Vintage 12 X 12 Hip and Ridge, 12-¼ X 12 Heritage Hip and Ridge IR:

12-¼ X 12 Hip and Ridge, Heritage Vintage 12 X 12 Hip and Ridge, and 12-¼ x 12 Heritage Hip and Ridge IR shingles are prefabricated hip and ridge shingles. Heritage Vintage 12 X 12 Hip and Ridge shingles are perforated so they can be torn into three 12-inch by 12-inch shingles. The 12-¼ X 12 Hip and Ridge and 12-¼ X 12 Heritage Hip and Ridge IR shingles are perforated so they can be torn into three 12-¼ inch by 12-inch shingles. As an alternative, Elite Glass-Seal shingles are cut into three 12-¼ inch by 12-inch 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 in 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 Tables 2 and 3.

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 5-⅝ inches (143 mm) and 6-⅞ inches (175 mm) from the butt edge of the shingle.

Maximum exposure to the weather must be 5-⅛ 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).

6.3.2 Laminated Shingles – Heritage, Heritage IR, Heritage Premium, Heritage Woodgate, and Heritage Proline XT:

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 Tables 3, 4, 5, 6, 10 and 13.

For roof slopes over 21:12 (175% slope), six fasteners must be used, spaced as shown in Tables 3, 5, 6, 10, and 13.

Maximum exposure to the weather must be 5-⅝ inches (143 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. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (76 mm) above the butt edge.

6.3.3 Laminated Shingles – Heritage Vintage:

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 five fasteners, spaced as shown in Table 7.

For roof slopes equal to or greater than 21:12 (175% slope), nine fasteners must be used, spaced as shown in Table 7.

Fasteners must be located 6 and 11-½ inches (152 and 292 mm) above the butt edge of the shingles.

Maximum exposure to the weather must be 5 inches (127 mm).

In colder climates or wind regions where it is questionable whether the thermal-sealing adhesive will activate to seal the shingles, the shingles must be hand-sealed. Four evenly spaced 1-inch diameter (25.4 mm) spots of cement should be placed under the exposed portion of the shingle, approximately 1 inch (127 mm) above the butt edge.

6.4 Valley Construction and Other Flashing:

Valleys must consist of woven, open valley or closed-cut construction and must be flashed in accordance with Section 1507.2.8.2 of the 2018 IBC, and Section 1507.2.9.2 of the 2020 Florida Building Code - Building, 2015, 2012, and 2009 IBC or Section R905.2.8.2 of the IRC and 2020 Florida Building Code - Residential. Other flashings must be in accordance with Sections 1503.2 and 1507.2.8 of 2020 Florida Building Code - Building, 2018 IBC, Section 1507.2.9 of the 2015, 2012, and 2009 IBC, or Section R903.2 and Section R905.2.8 of the IRC and 2020 Florida Building Code - Residential, as applicable.

6.5 Hip and Ridge Application:

Hip and ridge shingles must be placed evenly over hips and ridges, and must be fastened to the roof deck using two fasteners, one located on either side of the shingle, 5-½ inches (140 mm) or 5-⅝ inches (143 mm) from the exposed end, and 1 inch (25.4 mm) in from the edge as shown in Tables 8 and 9. Fasteners must be a minimum ¼ inch (6.4 mm) longer than those used in the field of the roof, as specified in Section 7.5 of this report. The 12-¼ X 12 Hip and Ridge and 12-¼ x 12 Heritage Hip and Ridge IR prefabricated hip and ridge shingles must be installed with a maximum exposure of 5-⅛ in. (130 mm). Heritage Vintage 12 X 12 Hip and Ridge prefabricated hip and ridge shingles must be installed with a maximum exposure of 5 in. (127 mm). Hip and ridge shingles are installed starting at the bottom of the hip or from the end of the ridge opposite the direction of the prevailing wind.

6.6 Reroofing:

The existing asphalt shingle roof covering must be inspected in accordance with the provisions and limitations of Section 1510 of the IBC, Section 1511 of the 2020 Florida Building Code - Building, Section R908.1 of the IRC, or Section 901.1 of the 2020 EBC-Residential, as applicable. Prior to the reroofing, hip and ridge coverings must be removed.

Except as noted in this section, the shingles must be installed in accordance with Section 6.3 and 6.5 of this Report. Fasteners must be of sufficient length to penetrate $^3/_4$ inch (19.1 mm) into the sheathing, or through the sheathing where the sheathing is less than $^3/_4$ inch (19.1 mm) thick. Flashing and edging must comply with Section 6.4 and with Section1511.6 of the 2018 and 2015 IBC and 2020 Florida Building Code - Building, Section 1510.6 of the 2012, and 2009 IBC and Section R908.6 of the 2018 and 2015 IRC, 2020 Florida Building Code - Residential, and R907.6 of the 2012, and 2009 IRC, as applicable.

7. INSTALLATION MATERIALS

7.1 Sheathing:

The roof deck must be code-complying, minimum $^3/_8$-inch thick (9.5 mm), exterior plywood complying with DOC PS-1; rated sheathing complying with DOC PS-2; or solid sheathing using minimum nominally 1 by 6 lumber.

7.2 Underlayment:

Under the IBC or IRC, underlayment must comply with ASTM D226, Type I (minimum), ASTM D4869, Type I (minimum) or ASTM D6757 as specified in Section 1507.1.1 of the 2020 Florida Building Code - Building, Section 1507.2.3 of the IBC or Section R905.1.1 of the IRC, and 2020 Florida Building Code - Residential.

7.3 Self-adhering Polymer Modified Bitumen Sheet:

The self-adhering polymer modified bitumen sheet must comply with ASTM D1970.

7.4 Starter Shingles:

The starter course shingle consists of either TAMKO 10-inch starter, TAMKO Shingle Starter, TAMKO Perforated Starter, or a self-sealing three-tab shingle. If self-sealing three-tab shingles are used, remove the exposed tab portion and install with factory-applied sealant adjacent to the eaves.

Heritage Vintage requires a Heritage Vintage starter shown in Table 12 is to be installed over the starter course at the eave edge.

7.5 Fasteners:

Fasteners must be minimum No. 12 gage [0.105 inch (2.7 mm)], $^3/_8$-inch diameter head (9.5 mm), galvanized, stainless steel, aluminum or copper corrosion-resistance nails. Fasteners must be of sufficient length to penetrate into the sheathing ¾-inch (19.1 mm), or through the sheathing, where the sheathing is less than ¾-inch (19.1 mm) thick. Fasteners must be compliant with ASTM F1667.

7.6 Asphalt Cement:

Asphalt cement must comply with ASTM D 4586, Type I, Class I.

8. CONDITIONS OF USE

The TAMKO Asphalt Shingles described in this Report comply with, or are suitable alternatives to, what is specified in those codes listed in Section 2 of this Report, subject to the following conditions:

8.1 Materials and methods of installation shall comply with this Report and the manufacturer's published installation instructions. In the event of a conflict between the installation instructions and this Report, this Report governs.

8.2 The products are manufactured at the locations listed in Table 1 of this Report under the UL LLC Classification and Follow-Up Service Program, which includes regular audits in accordance with quality elements of ICC-ES Acceptance Criteria for Quality Documentation, AC10.

8.3 See UL Product iQ™ database for Prepared Roof-Covering Materials (TFWZ).

9. SUPPORTING EVIDENCE

9.1 Manufacturer's descriptive product literature, including installation instructions.

9.2 See UL Product iQ™ database for the following:

9.2.1 UL test reports and Classification in accordance with UL 790, Class A and UL Subject 2375 for Roof-Covering Materials (TFWZ).

9.2.2 UL test reports and Classification in accordance with ICC ES Acceptance Criteria for Alternative Asphalt Roofing Shingles, AC438. (TFWZ).

9.2.3 UL test reports and Classification in accordance with ASTM D7158, Class H for Prepared Roof-Covering Materials (TGAH).

9.2.4 UL test reports and Classification in accordance with ASTM D3161, Class F Prepared Roof-Covering Materials (TFWZ).

9.3 Quality Documentation in accordance with ICC-ES Acceptance Criteria for Quality Documentation, AC10.

10. IDENTIFICATION

TAMKO asphalt shingles described in this Evaluation Report are identified by a marking on each package bearing the report holder's name (TAMKO Building Products LLC), the plant identification, the product name, the UL Listing/Classification Mark and the evaluation report number UL ER2919-02. The validity of this Evaluation Report is contingent upon this identification appearing on the package.

11. USE OF UL EVALUATION REPORT

11.1 The approval of building products, materials or systems is under the responsibility of the applicable authorities having jurisdiction.

11.2 UL Evaluation Reports shall not be used in any manner that implies an endorsement of the product, material or system by UL.

11.3 The status of this report, as well as a complete directory of UL Evaluation Reports may be found at UL.com via the Product iQ™ database.

Table 1 – Manufacturing Locations

LISTEE	LOCATION	FACTORY ID
TAMKO BUILDING PRODUCTS LLC	7910 S CENTRAL EXPY DALLAS TX 75216	D
TAMKO BUILDING PRODUCTS LLC	4500 TAMKO DR FREDERICK MD 21704	F
TAMKO BUILDING PRODUCTS LLC	601 N HIGH ST JOPLIN MO 64801	J
TAMKO BUILDING PRODUCTS LLC	1598 HWY 183 PHILLIPSBURG KS 67661	P
TAMKO BUILDING PRODUCTS LLC	KAUL INDUSTRIAL PARK 2300 35TH ST TUSCALOOSA AL 35401	T

Table 2 – Elite Glass-Seal

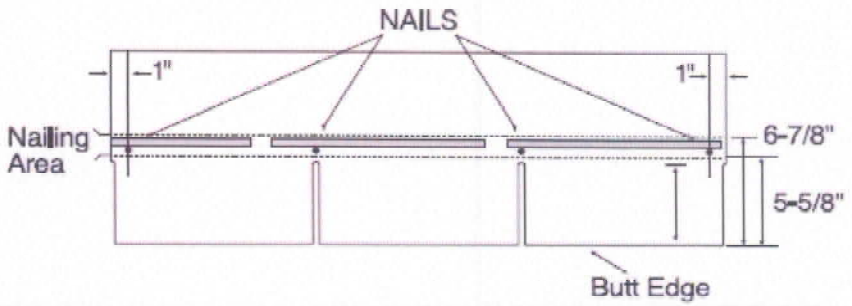
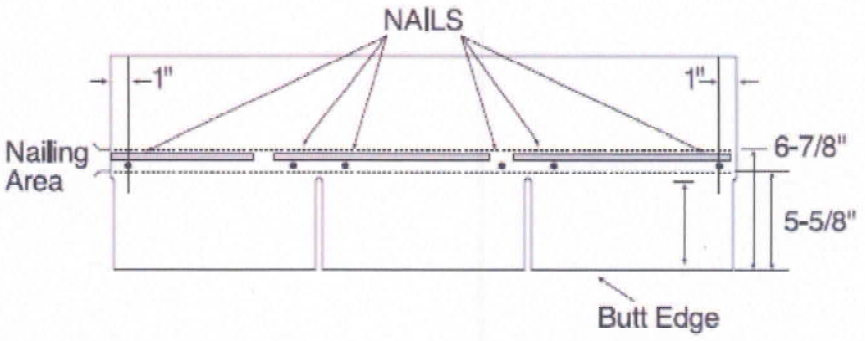
Dimensions:	12-¼" x 36"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 3 – Heritage

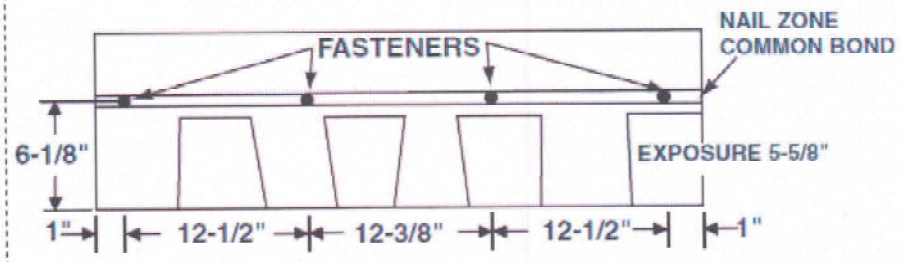
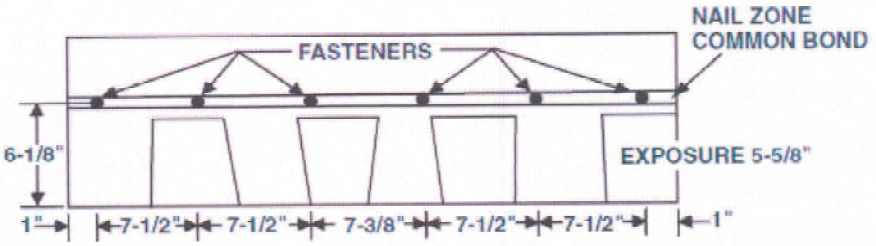
Dimensions:	13-¼" x 39-⅜"
Plant Location(s):	Dallas, Frederick, Joplin, Phillipsburg
Fastening Pattern:	For slopes between 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 4 – Heritage

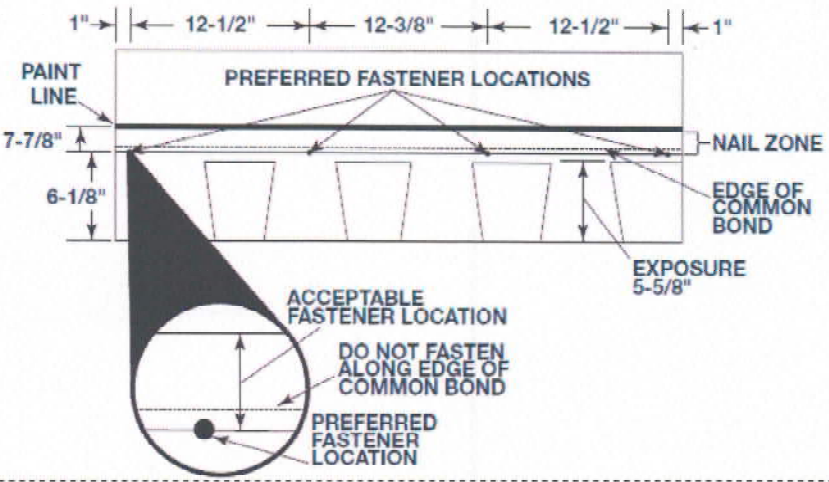
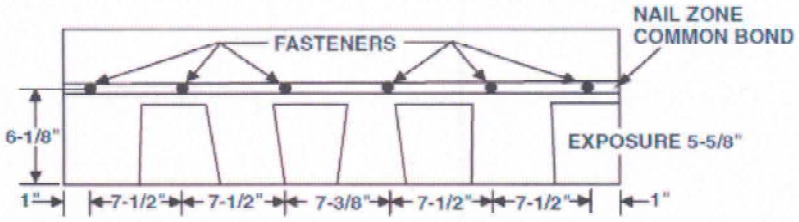
Dimensions:	13-¼" x 39-3/8"
Plant Location(s):	Tuscaloosa
Fastening Pattern:	For slopes between 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 5 – Heritage Premium

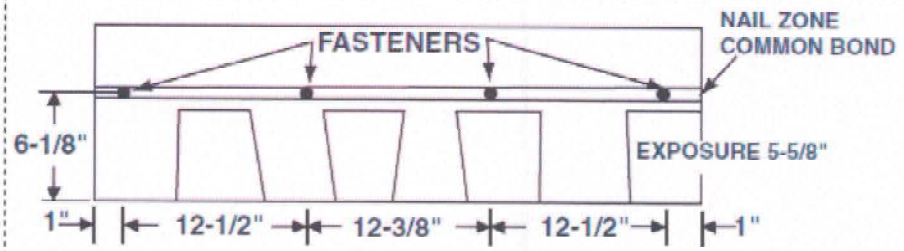
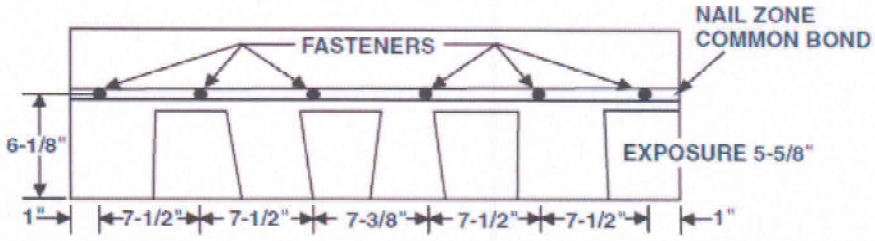
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Phillipsburg, Frederick
Fastening Pattern:	For slopes between 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 6 – Heritage Woodgate

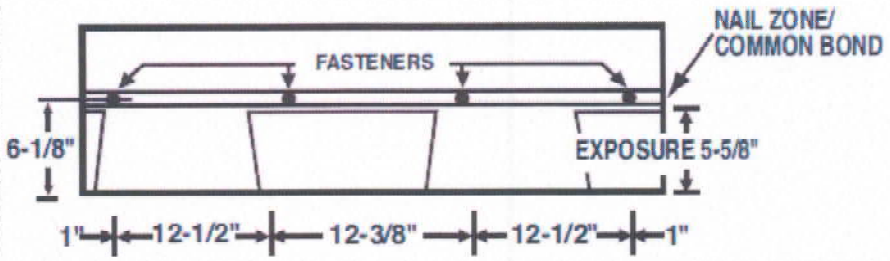
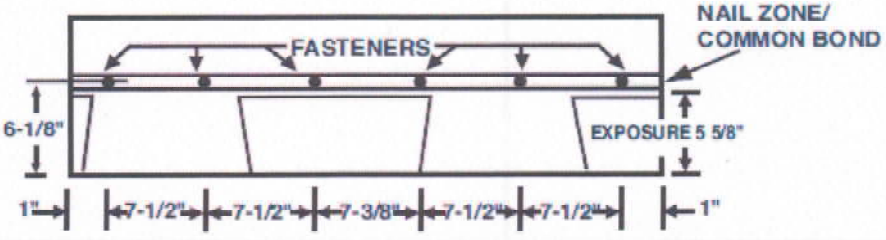
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Dallas, Frederick
Fastening Pattern:	For slopes of 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 7 – Heritage Vintage

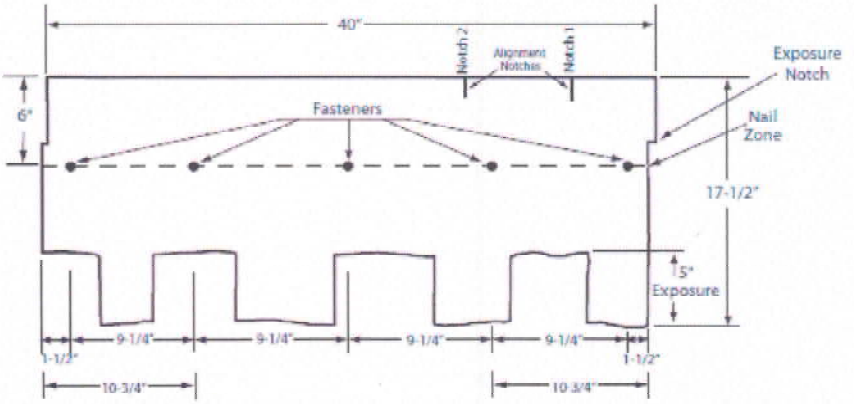
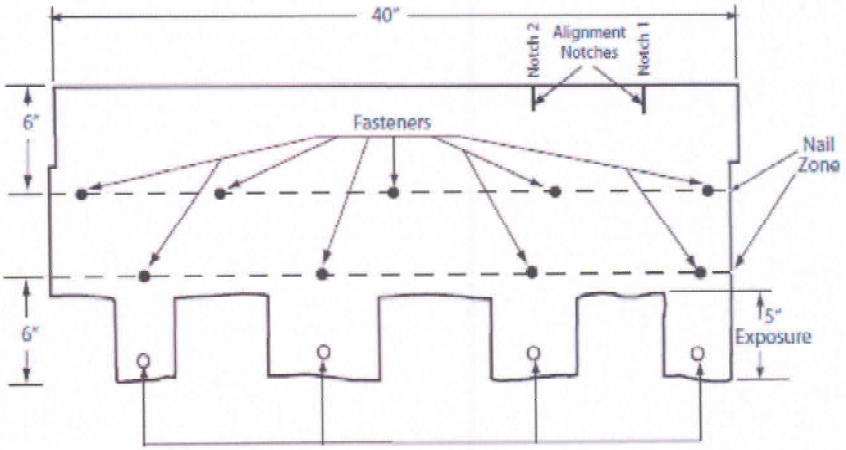
Dimensions:	17-1/2" x 40"
Plant Location(s):	Phillipsburg
Fastening Pattern:	For slopes between 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12  Apply under each tab 1" diameter asphalt adhesive cement.

Table 8 – Heritage Vintage 12 X 12 Hip and Ridge

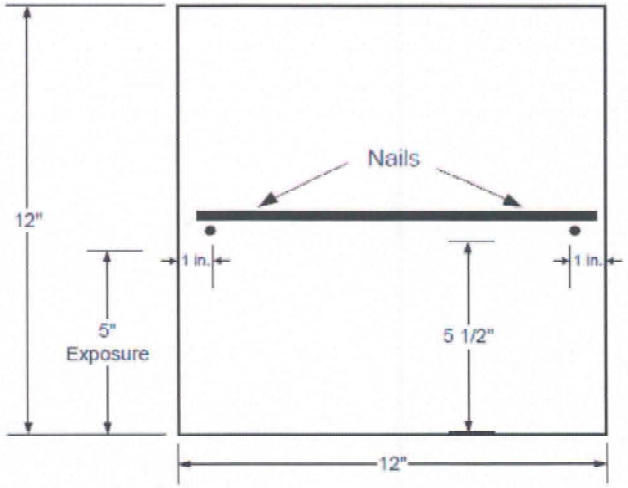
Dimensions:	12" x 12"
Plant Location(s):	Phillipsburg
Fastening Pattern:	

Table 9 – 12-¼ X 12 Hip and Ridge

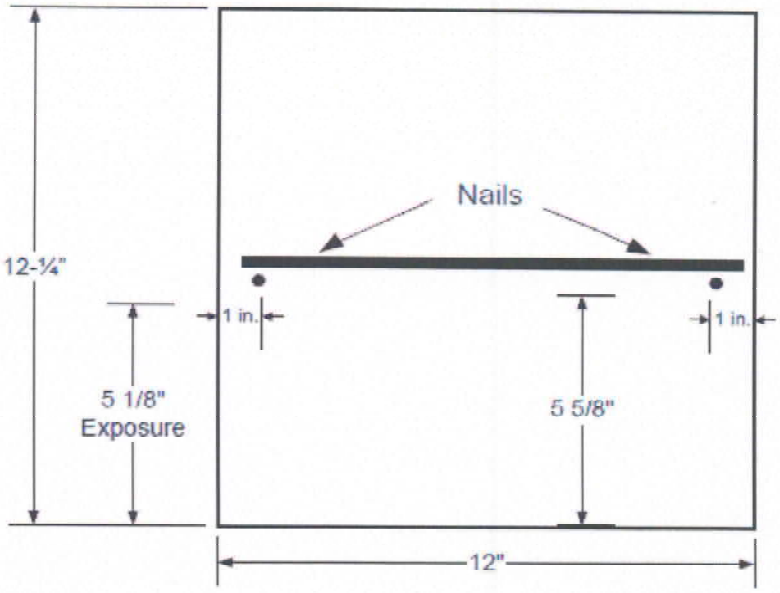
Dimensions:	12-¼" x 12"
Plant Location(s):	Frederick, Joplin
Fastening Pattern:	

Table 10 – Heritage IR

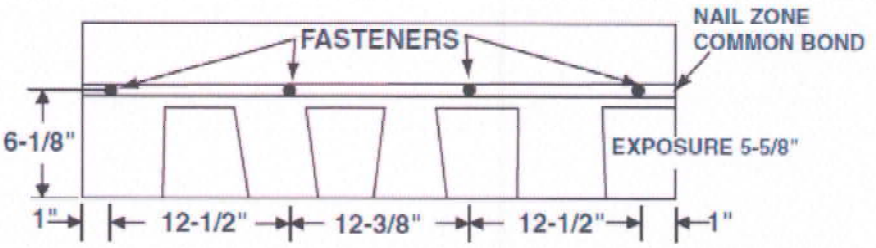
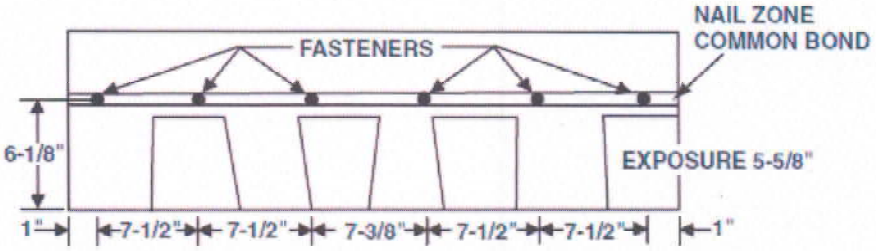
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Joplin, Philipsburg
Fastening Pattern:	For slopes between 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

Table 11 Heritage Hip and Ridge IR

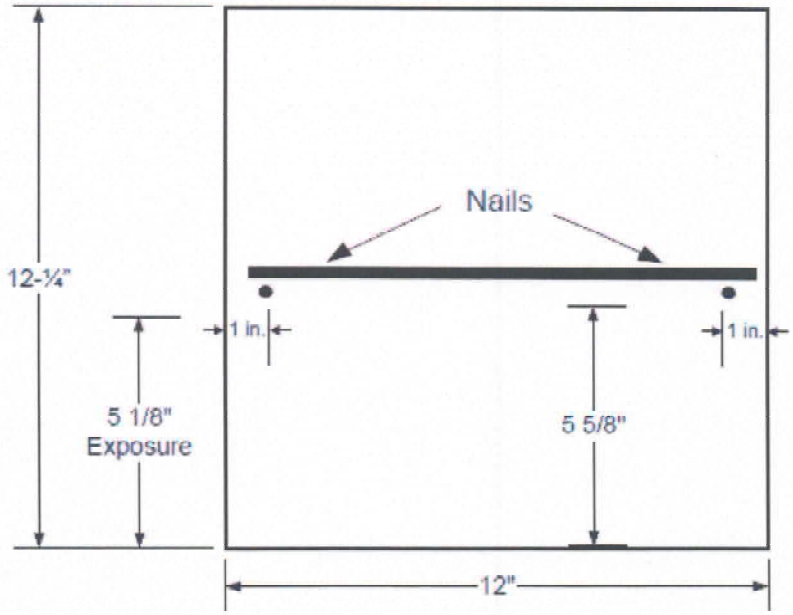
Dimensions:	12-¼" x 12"
Plant Location(s):	Joplin
Fastening Pattern:	

Table 12 Heritage Vintage Starter

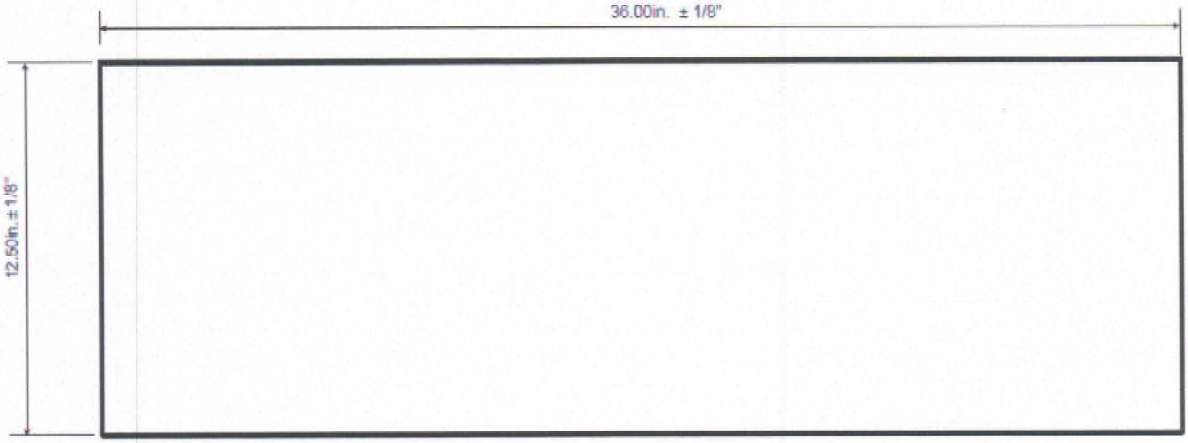
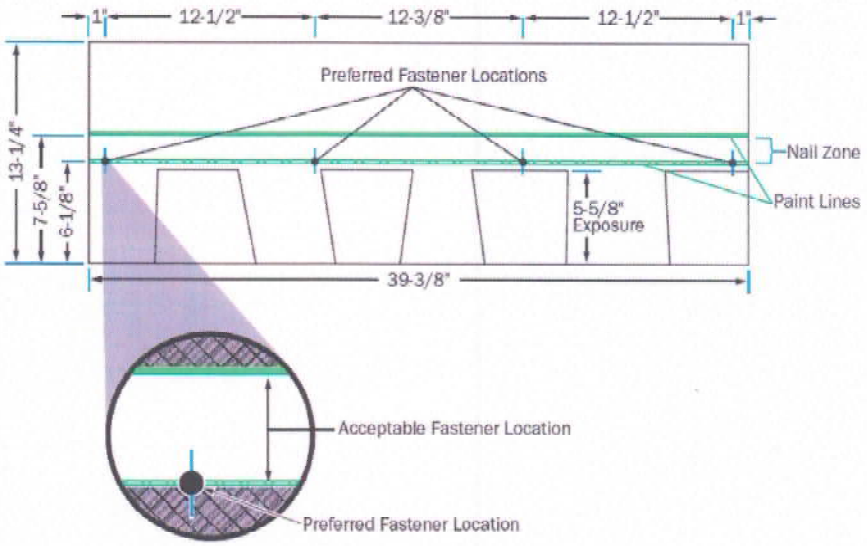
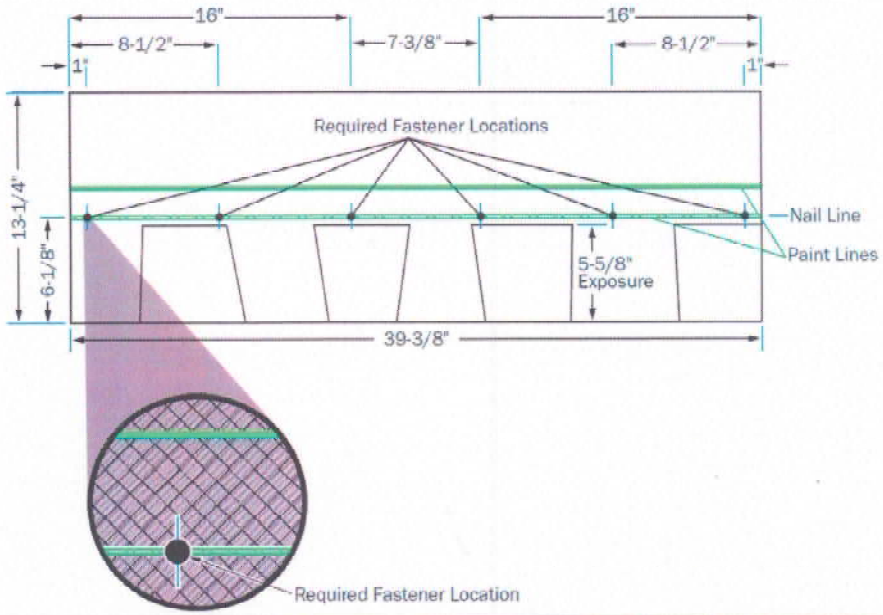


Table 13– Heritage Proline Titan XT

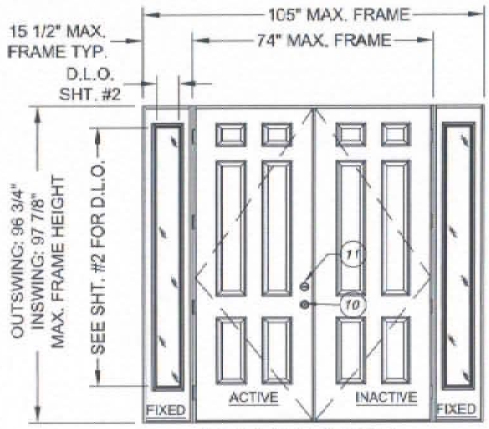
Dimensions:	13-¼" x 39-$^{3}/_{8}$"
Plant Location(s):	Philipsburg and Frederick
Fastening Pattern:	For slopes 2:12 up to but less than 21:12 
Fastening Pattern:	For slopes equal to or greater than 21:12 

JELD-WEN DOOR INSTALLATION DETAILS
STEEL 24 GA. WOOD EDGE
OPAQUE & GLAZED
UP TO 8'-4" X 8'-0"
OUTSWING/INSWING

GENERAL NOTES

1. THIS PRODUCT IS DESIGNED TO COMPLY WITH CURRENT INTERNATIONAL BUILDING CODE (I.B.C.) & INTERNATIONAL RESIDENTIAL CODE (I.R.C.) AND THE CURRENT FLORIDA BUILDING CODES (FBC). PRODUCT HAS BEEN TESTED TO TAS 201-94, TAS 202-94 AND TAS 203-94. PRODUCT ALSO MEETS "HIGH VELOCITY HURRICANE ZONE" (HVHZ) REQUIREMENTS.
2. 1X AND 2X WOOD BUCKS BY OTHERS AND MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE. BUCK MATERIAL MUST HAVE A SPECIFIC GRAVITY OF 0.55 OR GREATER.
3. PRODUCT ANCHOR TYPES AND SPACING ARE SHOWN ON SHEET 7. DIMENSIONS SHOWN FOR ANCHOR SPACING ARE ALWAYS FROM EDGE OF UNIT FRAME. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
4. THIS DOCUMENT SUPERCEDES OTHER ANCHOR INSTALLATION INSTRUCTIONS FOR IMPACT RATED DOORS. FOR OTHER IMPORTANT INSTALLATION INSTRUCTIONS, REFER TO JELD-WEN DOCUMENT #JII105 (INSTALLATION INSTRUCTIONS FOR PRE-HUNG ENTRY DOORS) FOUND ON THE JELD-WEN WEBSITE: *JELD-WEN.COM/LEARN/RESOURCES/INSTALLATION & FINISHING/.*
5. FLORIDA APPROVED IMPACT RESISTANCE SHUTTERS ARE REQUIRED ON NON-IMPACT GLASS SIDELITES.
6. FOR DESIGN PRESSURE RATINGS, SEE TABLE 1, SHEET 1.
7. ALL FASTENERS IN WOOD SHALL BE COUNTERSUNK 3/16" DEEP.

EXAMPLE: 3/16"



8-4 X 8-0 ELEVATION
DOUBLE DOOR W/ 1'-4 SIDELITES (OXXO)

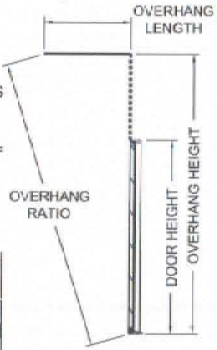
TABLE 1

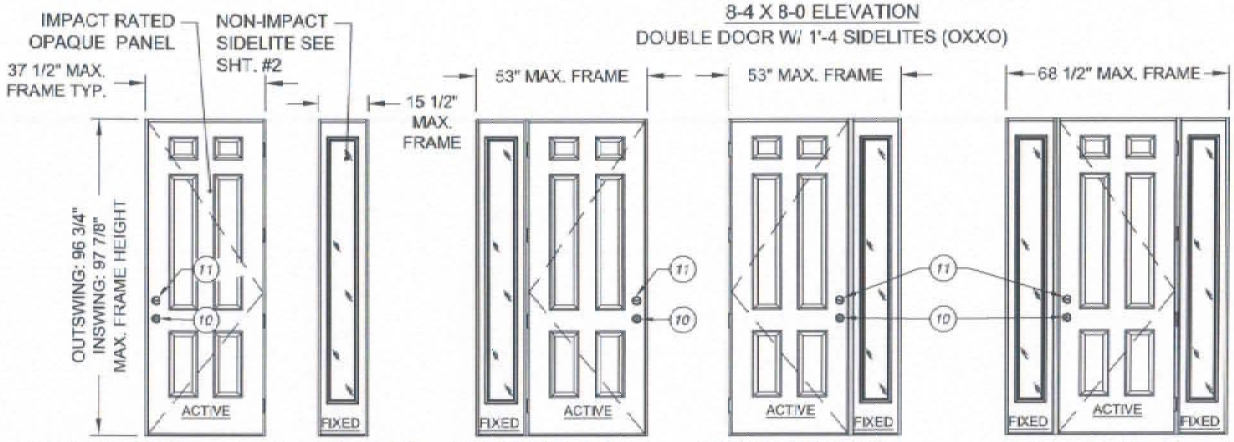
HVHZ APPROVED SYSTEMS: O, X, OO, XO or OX, OXO, OOO, OXX or XXO, OXXO, OOO W/ BOXED SIDELITES		
SIZE		QUALIFIES: OPAQUE ACTIVE PANELS AND NON-IMPACT GLASS SIDELITES 5
MAX. PANEL WIDTH = 35 3/4"		8-0 TALL SYSTEMS:
		(X) (OXO) (XX) (XXO) (OXXO)
OUTSWING	POSITIVE	+ 45*
	NEGATIVE	- 45*
INSWING	POSITIVE	+ 45*
	NEGATIVE	- 45*

COMPONENT LIST

ITEM	DESCRIPTION	MATERIAL	QTY.
1	NON-COMPRESSION SHIM (0.25" MAX. THK.)	WOOD	AS REQ.
2	2x WOOD SUB BUCK (S.G. MUST BE 0.55 OR GREATER)	WOOD	AS REQ.
3	1x WOOD SUB BUCK (S.G. MUST BE 0.55 OR GREATER)	WOOD	AS REQ.
4	#10 WOOD INSTALLATION SCREW W/ 1 1/2" MIN. EMBEDMENT	STEEL	AS REQ.
5	3/16" ITW TAPCON ANCHOR W/ 1 1/4" MIN. EMBEDMENT	STEEL	AS REQ.
6	#9 X 2 1/2" PHILLIPS FLATHEAD WOOD SCREW	STEEL	4 OR 8
7	#8 X 2" PHILLIPS FLATHEAD WOOD SCREW	STEEL	AS REQ.
8	#9 X 3/4" PHILLIPS FLATHEAD WOOD SCREW	STEEL	28 OR 56
9	1" OVERALL PLASTIC FRAME NON-IMPACT GLAZING IG BY ODL	PVC	1
10	LOCK SERIES 400	STEEL	1
11	DEADBOLT SERIES 780	STEEL	1
12	FLAT LITE KIT	ALUMINUM	1
13	ADA THRESHOLD	ALUMINUM	1

* NOTE: PRODUCT HAS NOT BEEN RATED FOR WATER INFILTRATION. IF AUTHORITY HAVING JURISDICTION REQUIRES THAT PRODUCT MEETS THIS REQUIREMENT, PRODUCT SHALL BE USED WHEN INSTALLED AT LOCATION PROTECTED BY OVERHANG SUCH THAT OVERHANG (OH) RATIO = OH LENGTH ÷ OH HEIGHT IS ≥ 1.0





3-0 X 8-0 ELEVATION SINGLE (X)
1-4 X 8-0 ELEVATION SINGLE (O)
4-2 X 8-0 ELEVATION DOUBLE (OX)
4-2 X 8-0 ELEVATION DOUBLE (XO)
5-4 X 8-0 ELEVATION TRIPLE (OXO)
8-0 X 8-0 ELEVATION DOUBLE (XX)

SHEET INDEX

NO.	DATE	REVISIONS	BY
1	01/29/20	DWG NUM. CHANGE FROM D0372012FL TO D015858. ADA THRESHOLD ADDED	TB

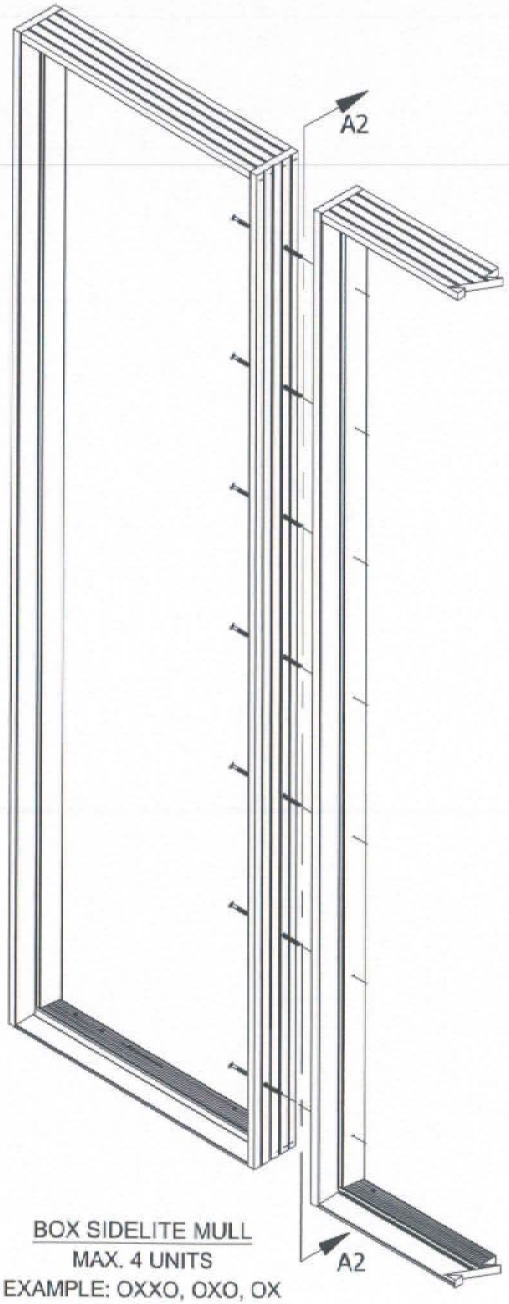
Digitally signed by Hermes F Norero
Reason: I am approving this document
Date: 2020.09.26 08:03:39 +02'00'

HERMES F. NORERO LICENSE NO. 73778 STATE OF FLORIDA PROFESSIONAL ENGINEER

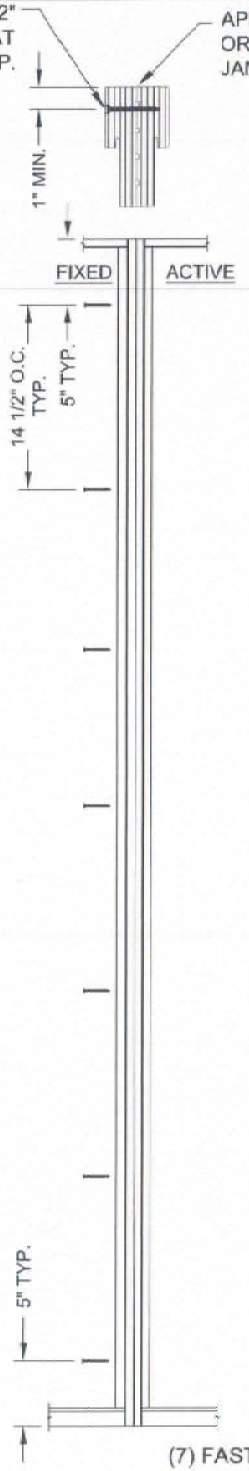
HERMES F. NORERO
FLORIDA P.E. NO. 73778
398 E. DANIA BEACH BLVD. STE. 338
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

JELD-WEN WINDOWS & DOORS
3737 Lakeport Blvd.
Klamath Falls, OR 97601
Phone: (541) 882-3451
Fax: (541) 850-2609

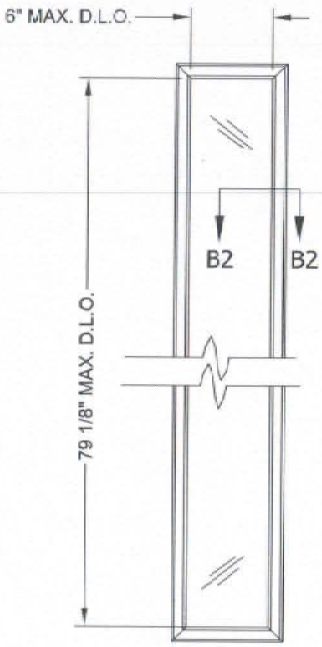
PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES
PART OR ASSEMBLY: GENERAL NOTES, ELEVATIONS, DP RATINGS AND B.O.M.
DATE: 1/20/2012
SCALE: NONE
DWG. BY: G.LUBBECKE
CHK. BY: S.SAFFELL
DRAWING No.: D015858
SHEET 1 OF 7



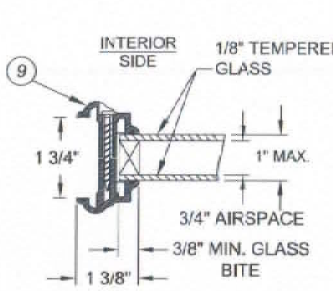
BOX SIDELITE MULL
MAX. 4 UNITS
EXAMPLE: OXXO, OXO, OX



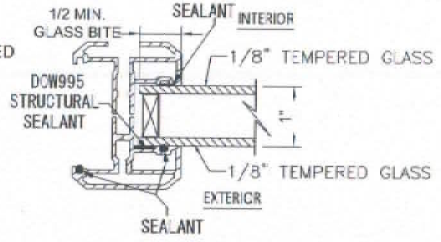
DETAIL A2
(7) FASTENER LOCATIONS AT
DOUBLE-BACK JAMB ATTACHMENT



ODL LIP-LITE NON-IMPACT
1-4 X 8-0 SHOWN



DETAIL B2
ODL NON-IMPACT GLAZING DETAIL
MAX. D.L.O: 6" X 79 1/8"



DETAIL
20 1/2" MAX D.L.O. WIDTH
62 5/8" MAX D.L.O. HEIGHT

HERMES F. NORERO
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STATE OF FLORIDA
PROFESSIONAL ENGINEER

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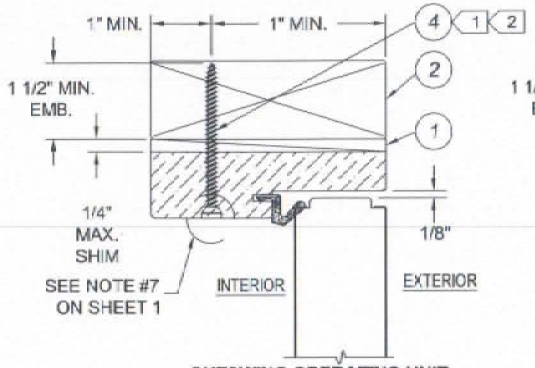
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

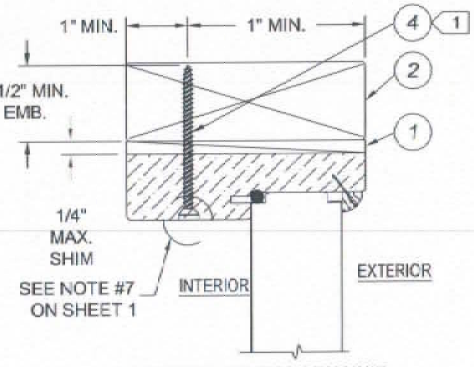
JELD-WEN WINDOWS & DOORS
3737 Lakeport Blvd.
Klamath Falls, OR 97601
Phone: (541) 882-3451
Fax: (541) 850-2609

PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES
PART OR ASSEMBLY: MULLING DETAILS AND GLAZING OPTIONS

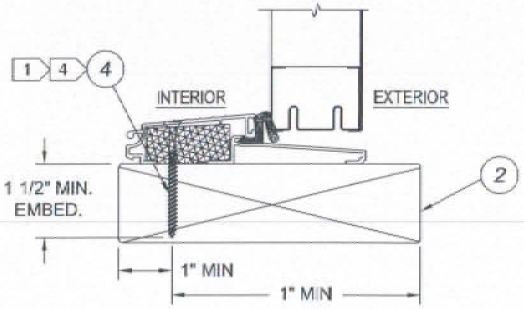
DATE: 1/20/2012
SCALE: NONE
DWG. BY: G.LUBBECKE
CHK. BY: S.SAFFELL
DRAWING No.: D015858
SHEET 2 OF 7



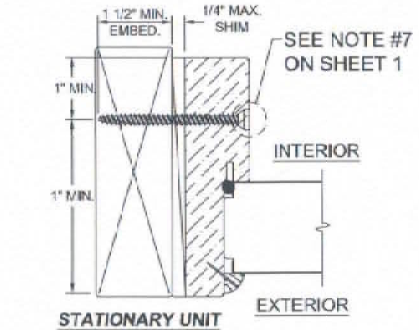
OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
HEAD JAMB



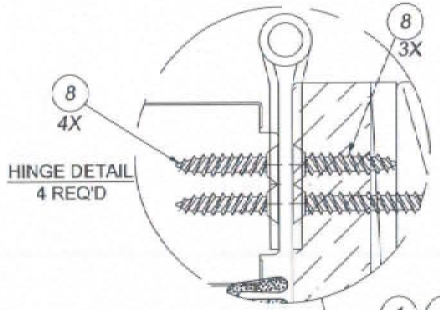
OUTSWING STATIONARY UNIT
VERTICAL CROSS SECTION
HEAD JAMB

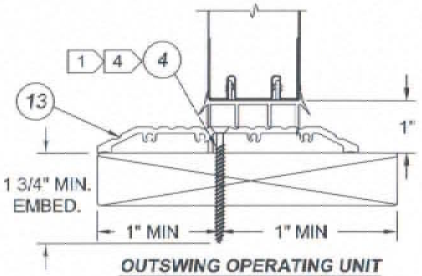


OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
SILL

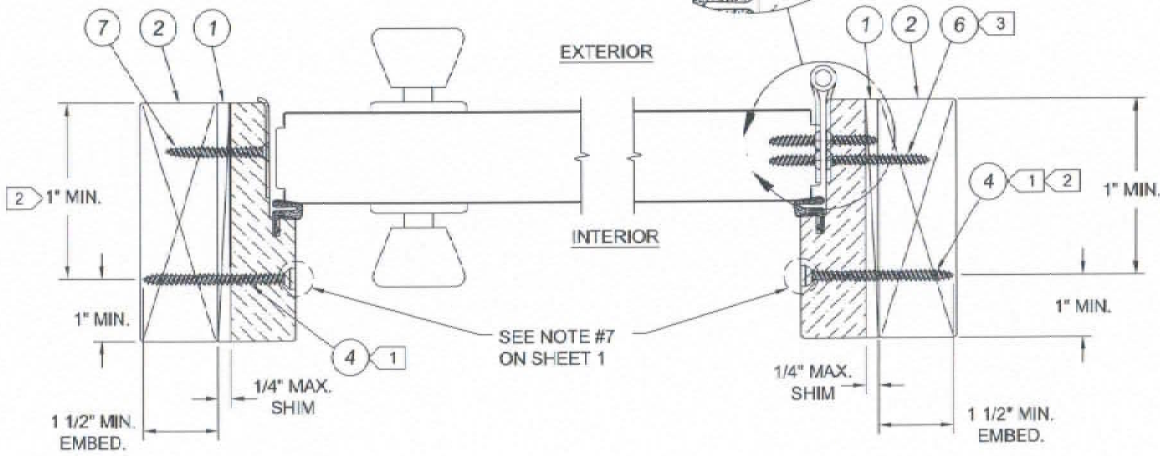


STATIONARY UNIT
HORIZONTAL CROSS SECTION
OUTSWING SHOWN





OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
ADA SILL



OUTSWING LATCH JAMB AT FRAME
HORIZONTAL CROSS SECTION

OUTSWING HINGE JAMB AT FRAME
HORIZONTAL CROSS SECTION

NOTES:

1. FOR PLACEMENT OF ITW TAPCON ANCHORS IN 2X BUCK OR 1X BUCK CONCRETE/MASONRY OPENINGS, SEE SHEET 3
2. OPTIONALLY, ANCHOR CAN BE PLACED IN NARROW SECTION OF HEAD OR JAMB AS LONG AS MINIMUM EMBEDMENT IS ACHIEVED.
3. ITEM #6, (#9 X 2 1/2") ONE SCREW TO BE INSTALLED IN EACH HINGE AT JOB SITE, CLOSEST TO WEATHERSTRIP.
4. AT SILL, PLACE ANCHOR IN SILL BASE LATERAL FOR MAXIMUM SUPPORT.

HERMES F. NORIEGA
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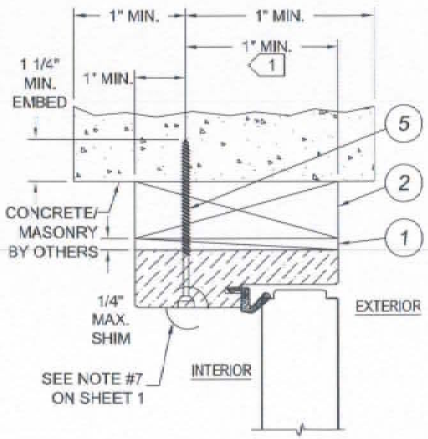
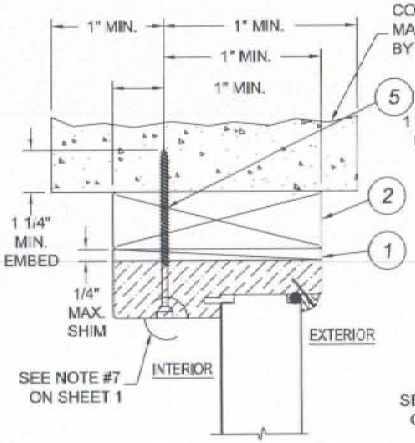
Phone: (541) 882-3451
Fax: (541) 850-2609

PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES
PART OR ASSEMBLY: OUTSWING VERTICAL AND HORIZONTAL SECTIONS IN WOOD

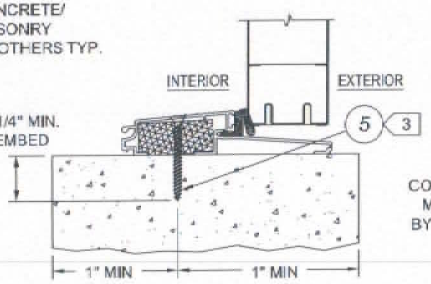
DATE: 1/20/2012
SCALE: NONE
DWG. BY: G.LUBBECKE
CHK. BY: S.SAFFELL
DRAWING No.: D015858
SHEET 3 OF 7



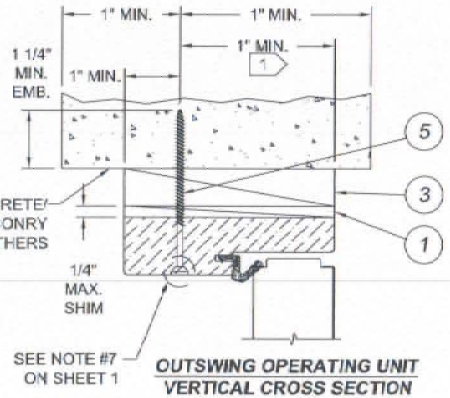
OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
HEAD JAMB



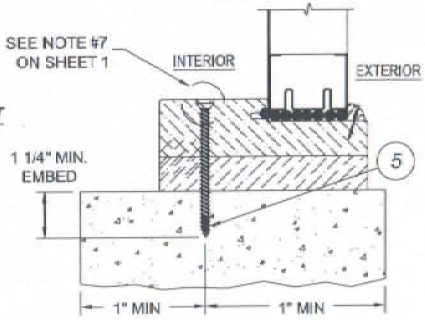
OUTSWING STATIONARY UNIT
VERTICAL CROSS SECTION
HEAD JAMB



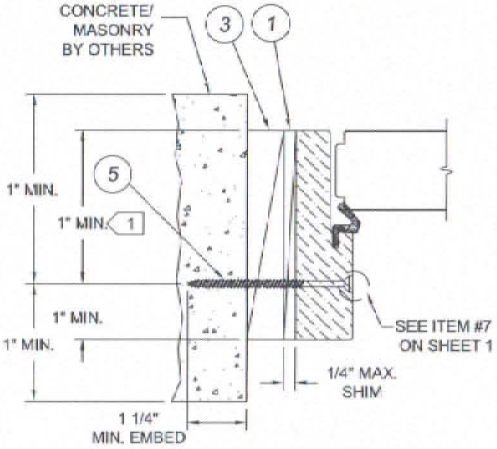
OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
SILL



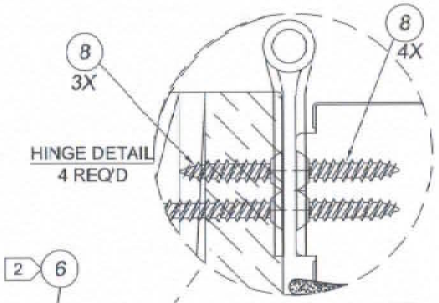
OUTSWING OPERATING UNIT
VERTICAL CROSS SECTION
OPTIONAL 1" BUCK

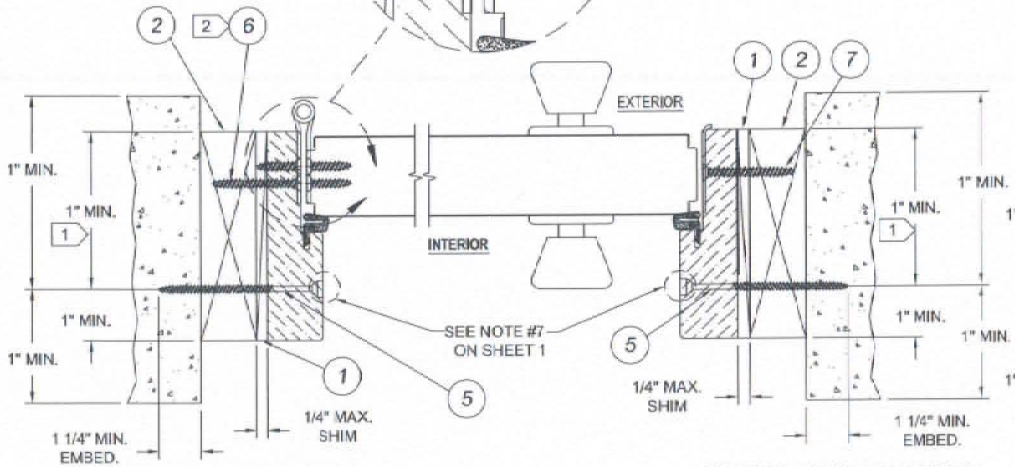


OUTSWING STATIONARY UNIT
VERTICAL CROSS SECTION
BOXED SIDELITE SILL



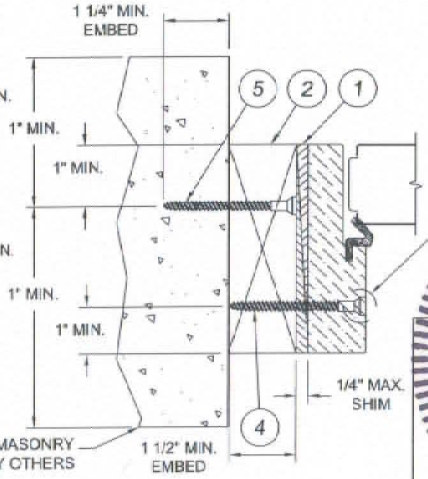
OUTSWING OPERATING UNIT
HORIZONTAL CROSS SECTION
OPTIONAL 1" BUCK





OUTSWING HINGE JAMB AT FRAME
HORIZONTAL CROSS SECTION

OUTSWING LATCH JAMB AT FRAME
HORIZONTAL CROSS SECTION



OPTIONAL MASONRY/CONCRETE INSTALL
CROSS SECTION OF HEAD JAMB OR SIDE JAMB

NOTES:

1. OPTIONALLY, ANCHOR CAN BE PLACED IN NARROW SECTION OF HEAD OR JAMB AS LONG AS MINIMUM EMBEDMENT IS ACHIEVED.
2. ITEM #6, (#9 X 2 1/2") ONE SCREW TO BE INSTALLED IN EACH HINGE AT JOB SITE , CLOSEST TO WEATHERSTRIP.
3. AT SILL, PLACE ANCHOR IN SILL BASE MATERIAL FOR MAXIMUM SUPPORT.

HERMES F. NORIEGA
LICENSE
No. 73778
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

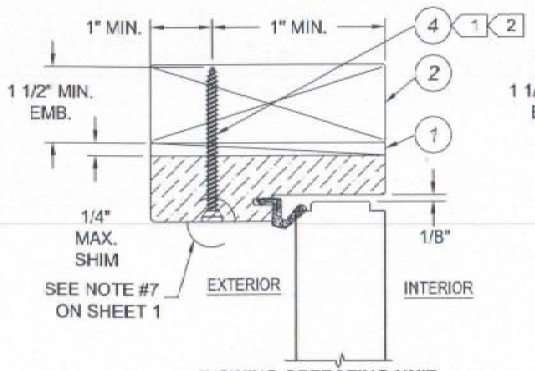
HERMES F. NORIEGA
FLORIDA P.E. NO. 73778
398 E. DANIA BEACH BLVD. STE. 338
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

JELD-WEN WINDOWS & DOORS
3737 Lakeport Blvd.
Klamath Falls, OR 97601
Phone: (541) 882-3451
Fax: (541) 850-2609

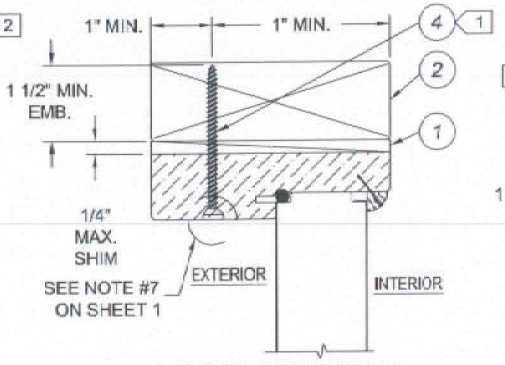
PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES

PART OR ASSEMBLY: OUTSWING VERTICAL AND HORIZONTAL SECTIONS IN MASONRY/CONCRETE

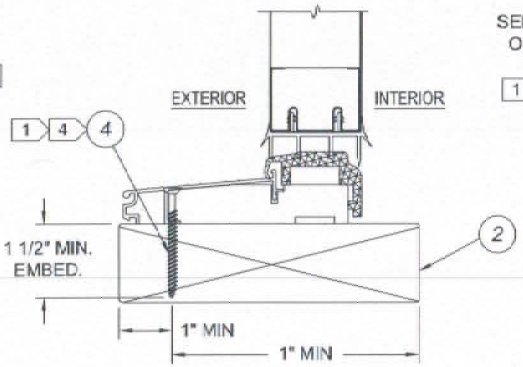
DATE: 1/20/2012
SCALE: NONE
DWG. BY: G.LUBBECKE
CHK. BY: S.SAFFELL
DRAWING No.: D015858
SHEET 4 OF 7



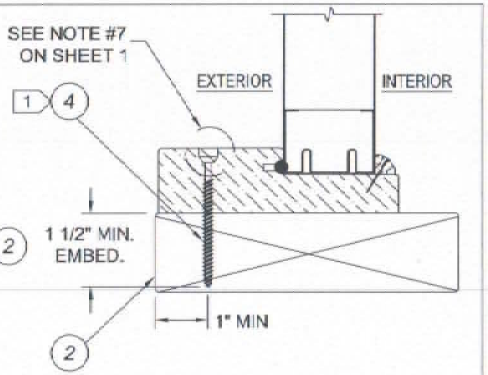
INSWING OPERATING UNIT
VERTICAL CROSS SECTION
HEAD JAMB



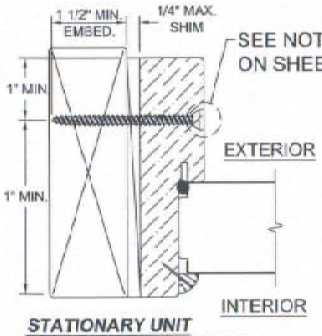
INSWING STATIONARY UNIT
VERTICAL CROSS SECTION
HEAD JAMB



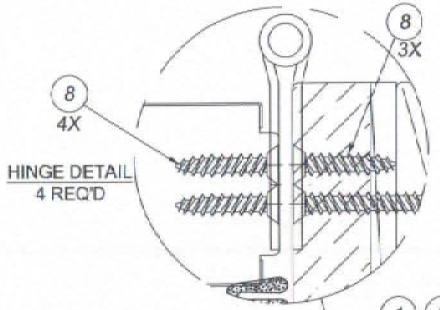
INSWING OPERATING UNIT
VERTICAL CROSS SECTION
SILL

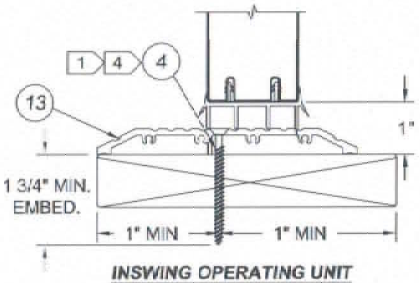


INSWING STATIONARY UNIT
VERTICAL CROSS SECTION
BOXED SIDELITE SILL

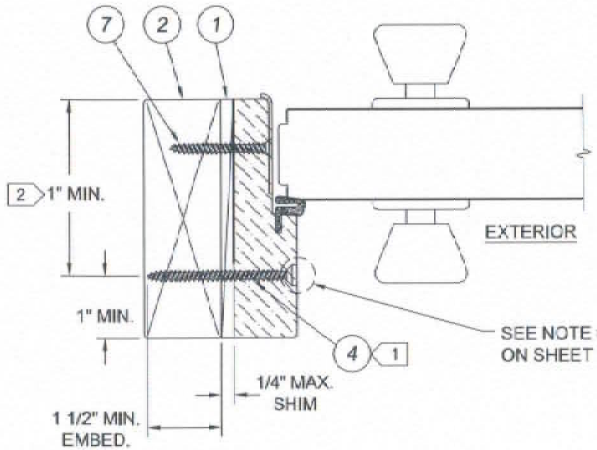


STATIONARY UNIT
HORIZONTAL CROSS SECTION
INSWING SHOWN

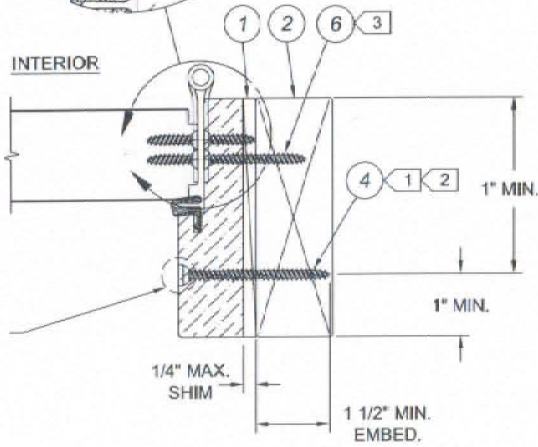




INSWING OPERATING UNIT
VERTICAL CROSS SECTION
ADA SILL



INSWING LATCH JAMB AT FRAME
HORIZONTAL CROSS SECTION



INSWING HINGE JAMB AT FRAME
HORIZONTAL CROSS SECTION

NOTES:

1. FOR PLACEMENT OF ITW TAPCON ANCHORS IN 2X BUCK OR 1X BUCK CONCRETE/MASONRY OPENINGS, SEE SHEET 3
2. OPTIONALLY, ANCHOR CAN BE PLACED IN NARROW SECTION OF HEAD OR JAMB AS LONG AS MINIMUM EMBEDMENT IS ACHIEVED.
3. ITEM #6, (#9 X 2 1/2") ONE SCREW TO BE INSTALLED IN EACH HINGE AT JOB SITE, CLOSEST TO WEATHERSTRIP.
4. AT SILL, PLACE ANCHOR IN SILL BASE MATERIAL FOR MAXIMUM SUPPORT.

HERMES E. NORIEGA
LICENSE
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STATE OF FLORIDA
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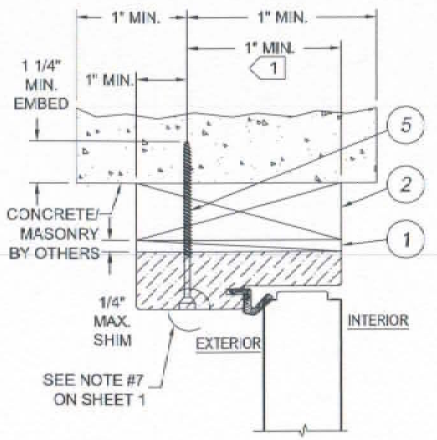
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

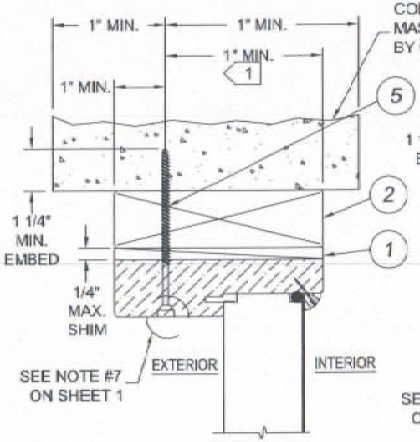
JELD-WEN WINDOWS & DOORS
3737 Lakeport Blvd.
Klamath Falls, OR 97601
Phone: (541) 882-3451
Fax: (541) 850-2609

PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES
PART OR ASSEMBLY: INSWING VERTICAL AND HORIZONTAL SECTIOINS IN WOOD

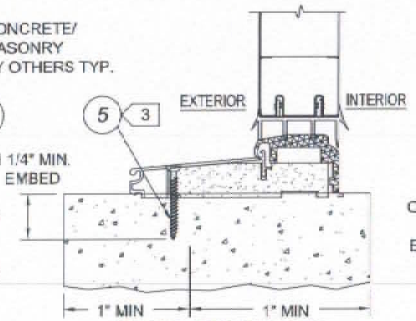
DATE:	1/20/2012
SCALE:	NONE
DWG. BY:	G.LUBBECKE
CHK. BY:	S.SAFFELL
DRAWING No.:	D015858
SHEET	5 OF 7



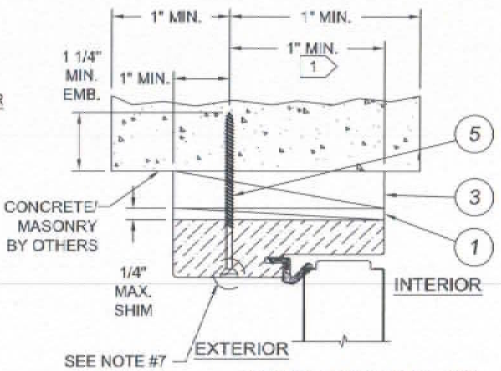
INSWING OPERATING UNIT
VERTICAL CROSS SECTION
HEAD JAMB



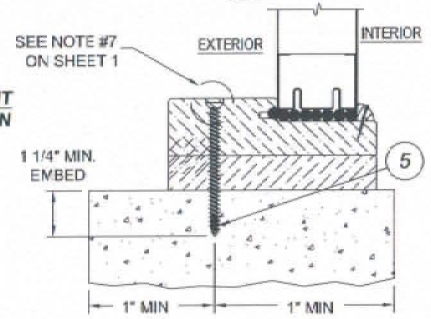
INSWING STATIONARY UNIT
VERTICAL CROSS SECTION
HEAD JAMB



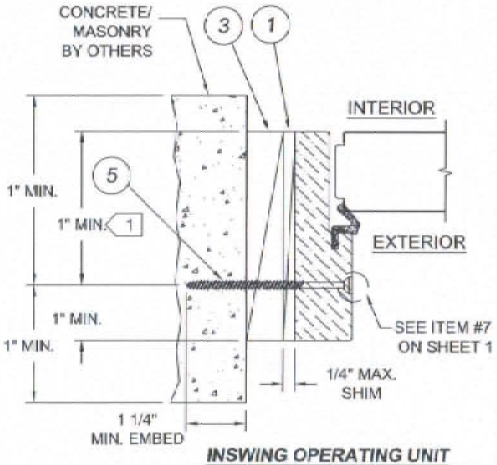
INSWING OPERATING UNIT
VERTICAL CROSS SECTION
SILL



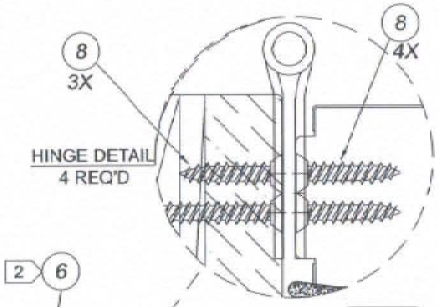
INSWING OPERATING UNIT
VERTICAL CROSS SECTION
OPTIONAL 1" BUCK

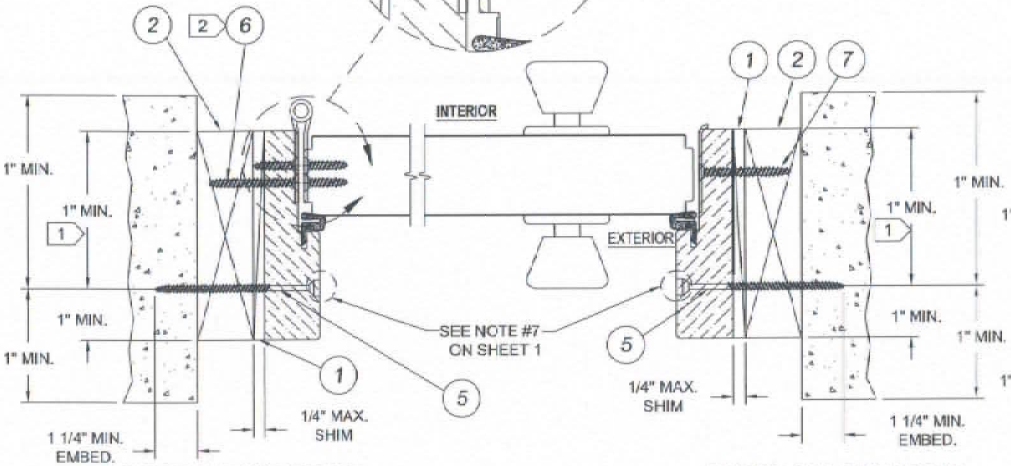


INSWING STATIONARY UNIT
VERTICAL CROSS SECTION
BOXED SIDELITE SILL



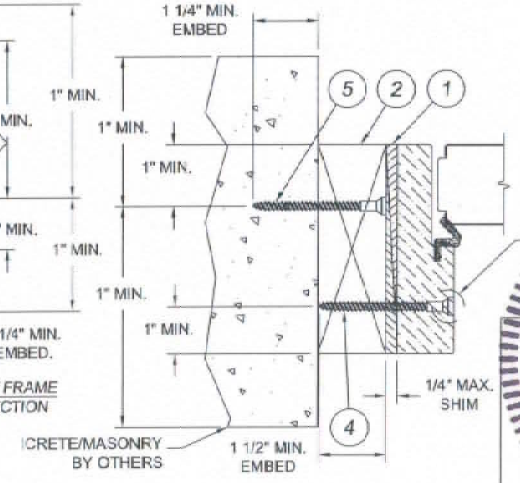
INSWING OPERATING UNIT
HORIZONTAL CROSS SECTION
OPTIONAL 1" BUCK





INSWING HINGE JAMB AT FRAME
HORIZONTAL CROSS SECTION

INSWING LATCH JAMB AT FRAME
HORIZONTAL CROSS SECTION



OPTIONAL MASONRY/CONCRETE INSTALL
CROSS SECTION OF HEAD JAMB OR SIDE JAMB

NOTES:

1. OPTIONALLY, ANCHOR CAN BE PLACED IN NARROW SECTION OF HEAD OR JAMB AS LONG AS MINIMUM EMBEDMENT IS ACHIEVED.
2. ITEM #6, (#9 X 2 1/2") ONE SCREW TO BE INSTALLED IN EACH HINGE AT JOB SITE, CLOSEST TO WEATHERSTRIP.
3. AT SILL, PLACE ANCHOR IN SILL BASE MATERIAL FOR MAXIMUM SUPPORT.

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Fax: (541) 850-2609

PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES

PART OR ASSEMBLY: INSWING VERTICAL AND HORIZONTAL SECTIONS IN MASONRY/CONCRETE

DATE: 1/20/2012

SCALE: NONE

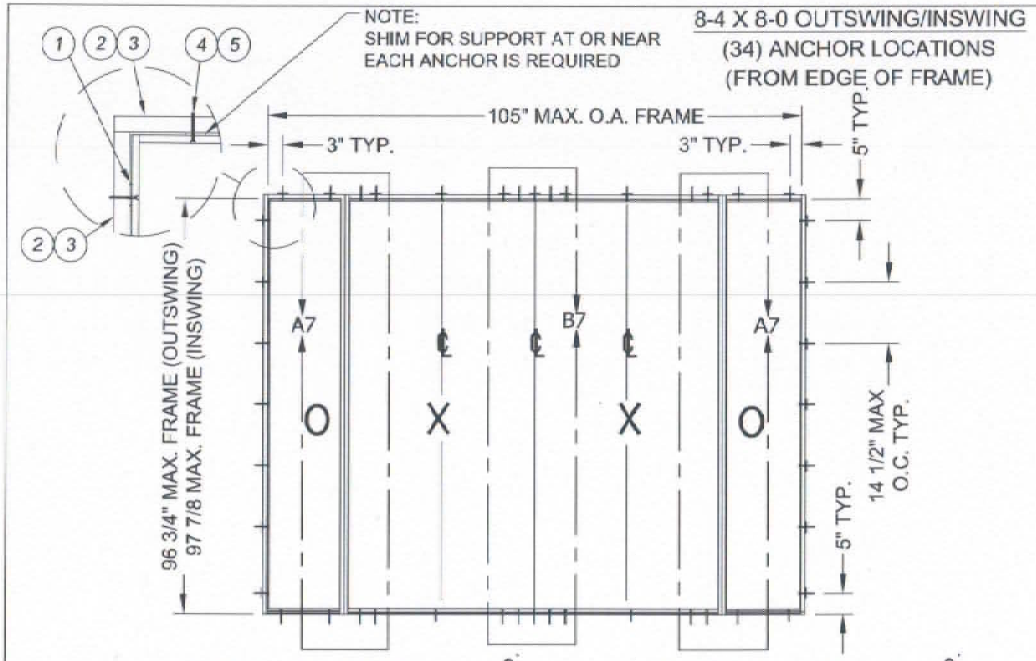
DWG. BY: G.LUBBECKE

CHK. BY: S.SAFFELL

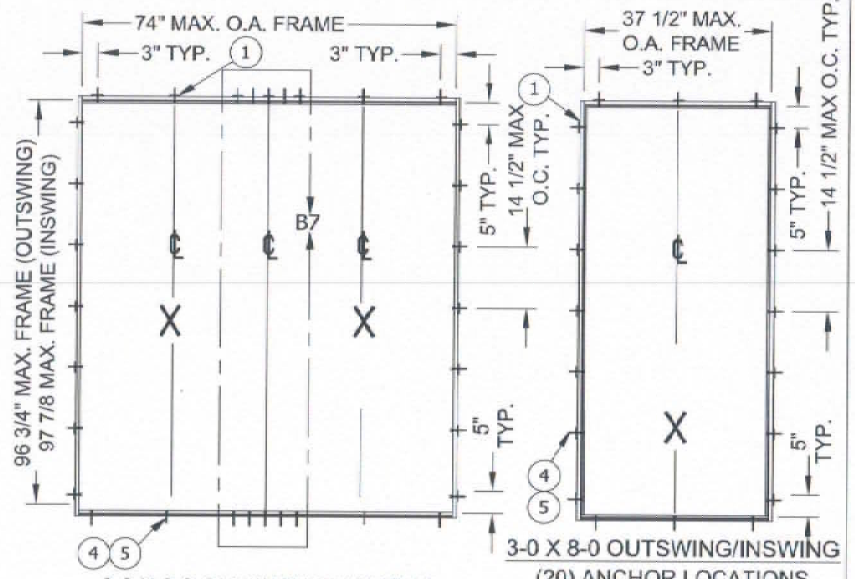
DRAWING No.: D015858

SHEET 6 OF 7

HERMES F. NORIEGA
LICENSED
No. 73778
STATE OF FLORIDA
PROFESSIONAL ENGINEER
HERMES F. NORIEGA
FLORIDA P.E. NO. 73778
398 E. DANIA BEACH BLVD. STE. 338
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

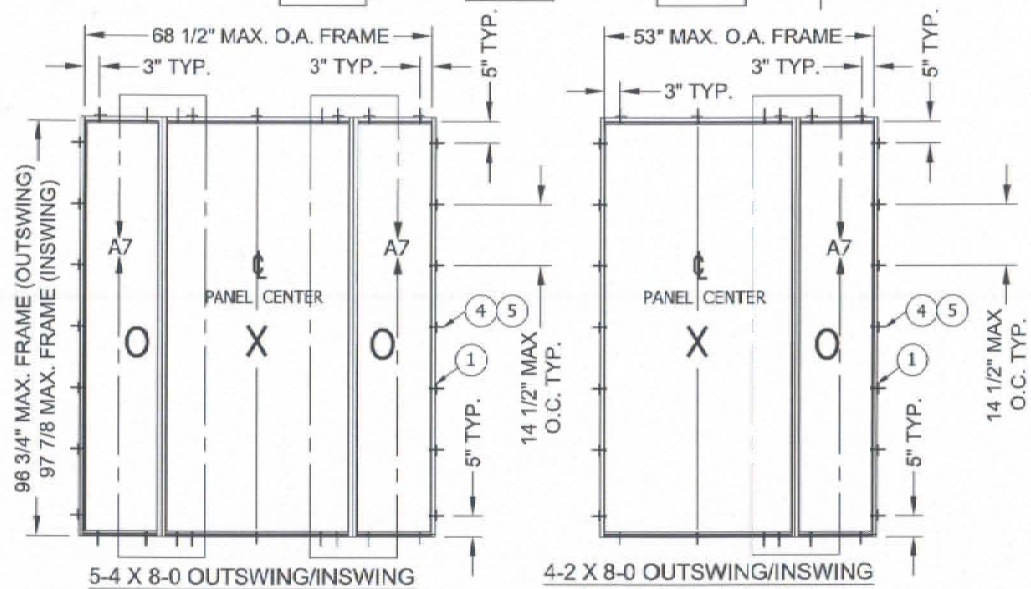


8-4 X 8-0 OUTSWING/INSWING
(34) ANCHOR LOCATIONS
(FROM EDGE OF FRAME)



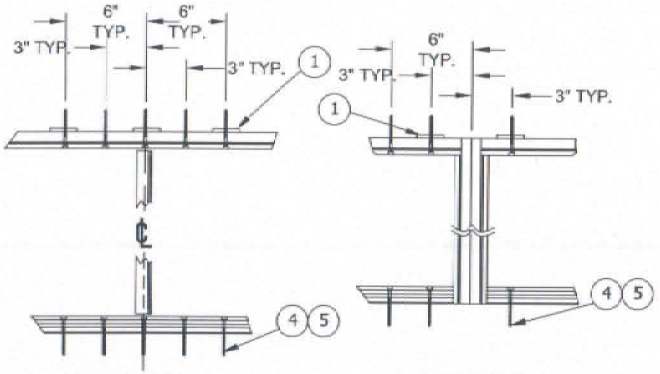
6-0 X 8-0 OUTSWING/INSWING
(32) ANCHOR LOCATIONS
(FROM EDGE OF FRAME)

3-0 X 8-0 OUTSWING/INSWING
(20) ANCHOR LOCATIONS
(FROM EDGE OF FRAME)



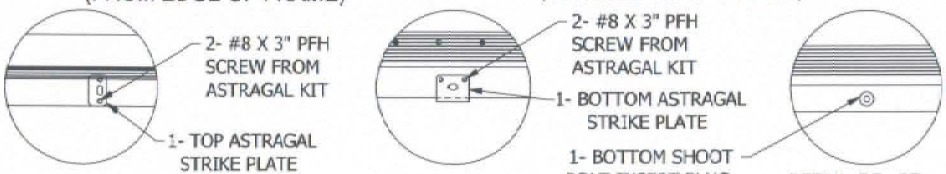
5-4 X 8-0 OUTSWING/INSWING
(32) ANCHOR LOCATIONS
(FROM EDGE OF FRAME)

4-2 X 8-0 OUTSWING/INSWING
(26) ANCHOR LOCATIONS
(FROM EDGE OF FRAME)



DETAIL B7
(10) ANCHOR LOCATIONS
AT ASTRAGAL

DETAIL A7
(6) ANCHOR LOCATIONS AT MULL
(XO SHOWN, OX OPPOSITE SHOWN)



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Fax: (541) 850-2609

PRODUCT: 24 GA. STEEL W.E. UP TO 8-4 X 8-0 OPAQUE OP. WITH NON-IMPACT SIDELITES

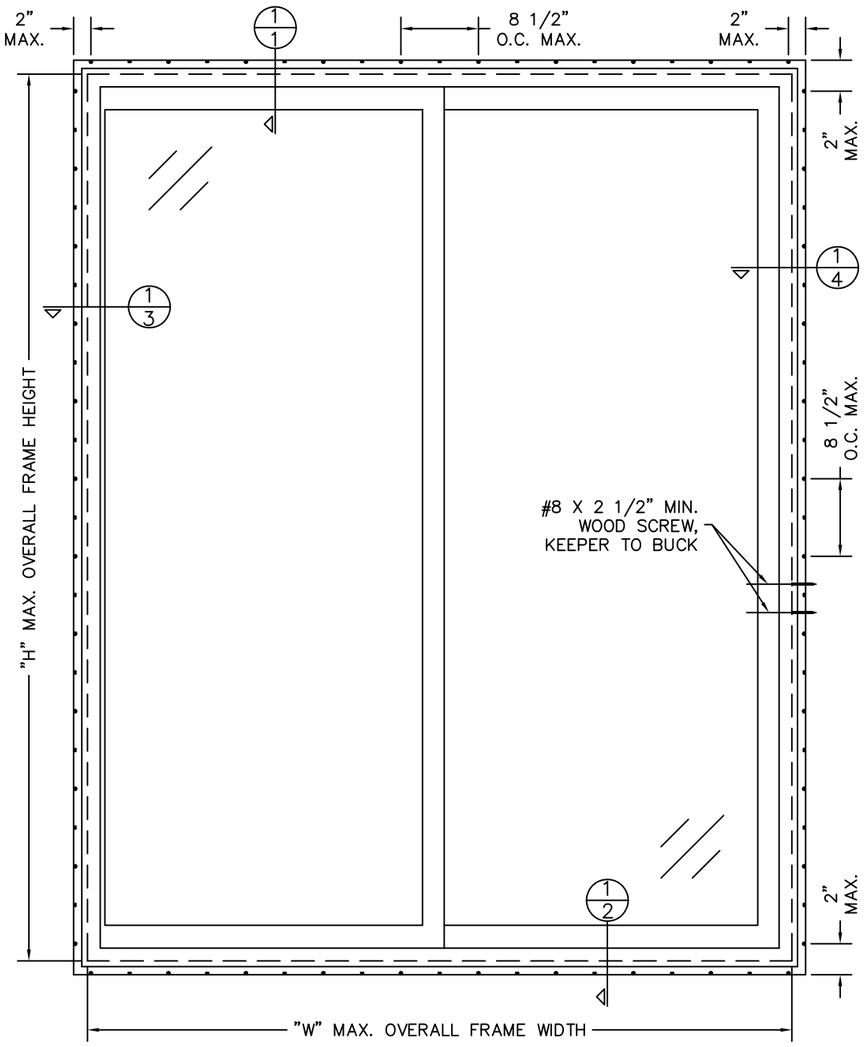
PART OR ASSEMBLY: INSWING AND OUTSWING ANCHORING DETAILS

DATE: 1/20/2012
SCALE: NONE
DWG. BY: G.LUBBECKE
CHK. BY: S.SAFFELL
DRAWING No.: D015858
SHEET 7 OF 7

HERMES F. NORERO LICENSE No. 73778 STATE OF FLORIDA PROFESSIONAL ENGINEER

HERMES F. NORERO
FLORIDA P.E. NO. 73778
398 E. DANIA BEACH BLVD. STE. 338
DANIA BEACH, FL 33004
FBPE CERT. OF AUTH. NO. 29578

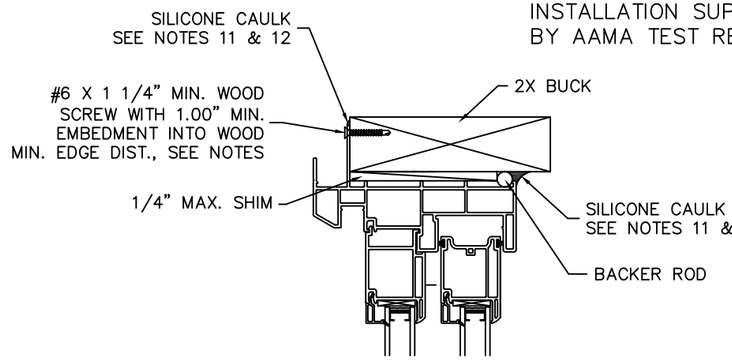
MODEL DESIGNATION:	Simonton Series 06–05 2–Panel Vinyl Patio Door
MAXIMUM OVERALL NOMINAL SIZE:	See Size Chart
DESIGN PRESSURE RATING:	See Size Chart
USABLE CONFIGURATIONS:	XO, OX
GENERAL DESCRIPTION:	The head, sill, and side jambs are extruded PVC. The wall thickness through which the anchor screw penetrates is a minimum of 0.070".



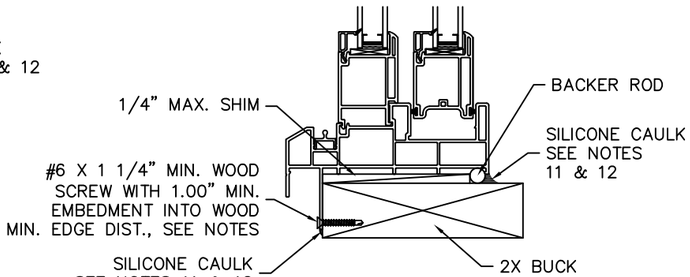
SIZE CHART		
OVERALL SIZE		
WIDTH "W"	HEIGHT "H"	DP RATING
77"	84"	±30 PSF
71"	80"	±35 PSF
71"	96"	
95"	80"	
71"	80"	±50 PSF

NO P.E. SEAL REQUIRED
INSTALLATION SUPPORTED
BY AAMA TEST REPORTS

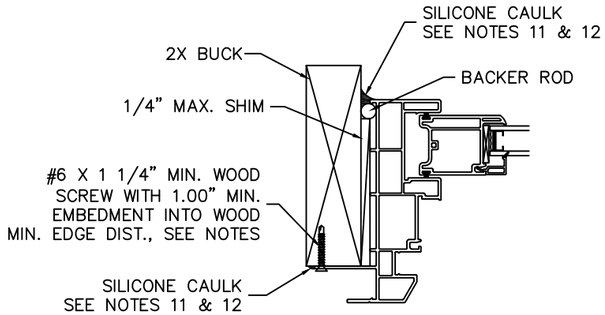
REV. #:	REVISIONS:	REVISED BY:	DATE:
3	ADDED GLAZING DETAILS.	T.D.D.	06/16/11
4	ADDED GLAZING NOTE.	T.D.D.	03/11/13
5	ADDED MIN. EDGE DIST. NOTE.	B.J.S.	06/17/15
6	ADDED AAMA 800 NOTES 11 & 12	LMH	05/26/16
7	UPDATED NOTES 9 & 12	LMH	11/08/17



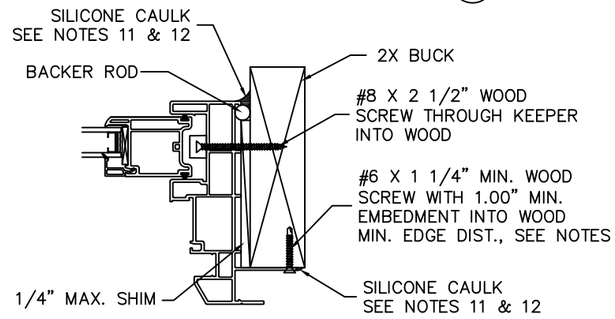
1/1 HEAD



1/2 SILL



1/3 FIXED PANEL JAMB



1/4 KEEPER JAMB

NOTES:

1. This installation has been evaluated for use in locations adhering to the Texas & Florida Building Codes and where pressure requirements as determined by ASCE 7 Minimum Design Loads for Buildings and Other Structures do not exceed the design pressure ratings herein, for use outside the H.V.H.Z.
2. All exterior perimeter surfaces of the door must be caulked. Interior caulking is optional unless noted otherwise.
3. Anchors shall be as specified and spaced as shown. Anchor embedment to base material shall be beyond wall dressing or stucco and into wood. Anchors must be at least 1/2" from the edge of the wood.
4. The responsibility for selection of Simonton products to meet any applicable local laws, building codes, ordinances, or other safety requirements rests solely with the architect, building owner, or contractor.
5. Shims are optional. Max. shim stack is 1/4".
6. Wood bucks (by others) must be engineered and anchored properly to transfer loads to the structure.
7. When used in areas requiring impact protection this product REQUIRES the use of approved impact resistant shutters or other external protection.
8. Flashing should be applied using the ASTM E 2112 method appropriate for the opening into which the door is being installed.
9. Glazing shall comply with ASTM E 1300 and safety glazing requirements per Florida Building Code section 2406.
10. Installation screws must be at least 1/2" from edge of the wood.
11. Use 100% pure silicone caulk compliant with AAMA 808 Section 5 - Sealant Specifications for use with Architectural Fenestration Products. Make sure surfaces are completely free from all old caulk, damaged wood, wood fibers, grease, oil dirt, rust, mold or similar contaminants. Vacuum and clean opening surfaces completely. A fully primed surface is recommended, but not required. Cleaning of all surfaces should be done the same day of which the silicone caulk is to applied. For more details visit Simonton.com.
12. Caulk application: recommended air and surface temperatures at the time of application are to be between 40 and 90 degrees F. Insure all contact surfaces are clean and dry including the new window(s). Use a backer rod on all joints >3/4" deep and/or wider than 1/4". Finished caulk joint should be a minimum of 3/8" deep and make full contact with both the new window and structural opening surfaces. Silicone caulk should be forced into joint or compressed to assure full contact on both surfaces an

FILE: IN0340

MATERIAL:	
RMS FINISH: EXCEPT AS NOTED	
ALLOY & TEMPER:	
WEIGHT:	VOLUME:
SURFACE AREA:	PERIMETER:
FINISH TREATMENT:	

Dimensional Tolerances
Unless Otherwise Specified

Decimals	Angles
.X ± .03	
.XX ± .01	0° 30 min.
.XXX ± .005	

SIMONTON® WINDOWS
1 Cochrane Avenue
Pennsboro, WV 26415

SIZE:	DRAWING NO.:	REV.:
B	IN0340	7
DRAWN BY: T.D.D.	DATE: 09/25/08	
CHECKED BY:	DATE:	
SCALE: FIT	SHEET: 1 of 1	
APPRV'D BY:	DATE:	

SERIES: 06–05 2–PANEL PATIO DOOR

TITLE: 2X BUCK INSTALLATION (AS TESTED)

REV. #:	REVISIONS:	REVISED BY:	DATE:
A	E.O.R CHANGE	LMS	08/26/16
B	UPDATED TO 7TH EDITION (2020) FBC	LMH	02/19/21

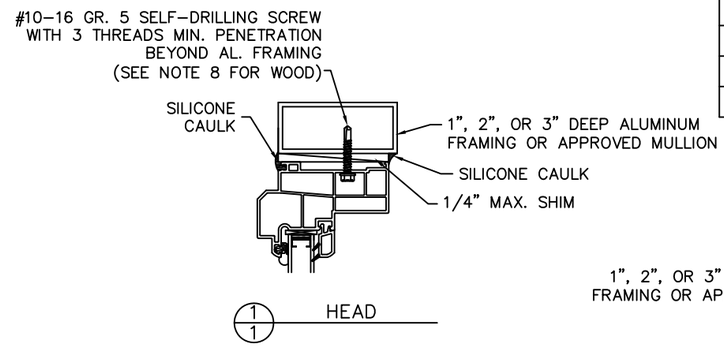
MODEL DESIGNATION: Simonton Series 07–09 / 07–10 / 07–20 Vinyl Fixed Window

MAXIMUM OVERALL NOMINAL SIZE: See Size Chart

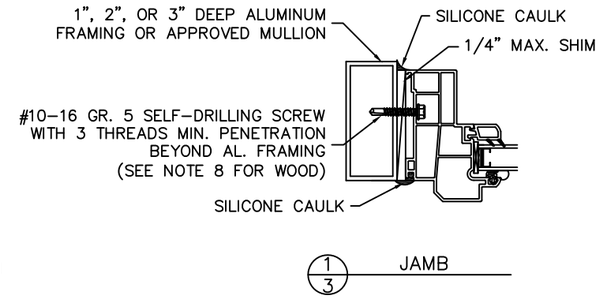
DESIGN PRESSURE RATING: See Size Chart

USABLE CONFIGURATIONS: O

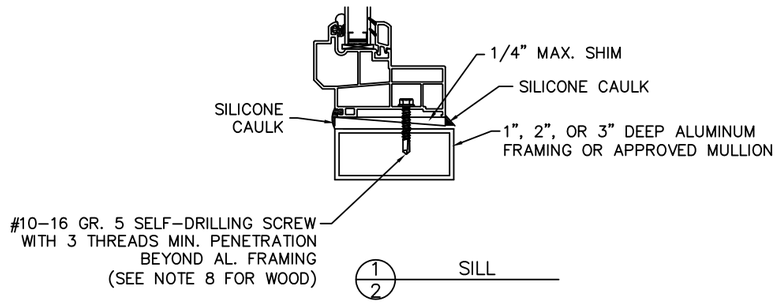
GENERAL DESCRIPTION: The head, sill, and side jambs are extruded PVC. The wall thickness through which the anchor screw penetrates is a minimum of 0.070".



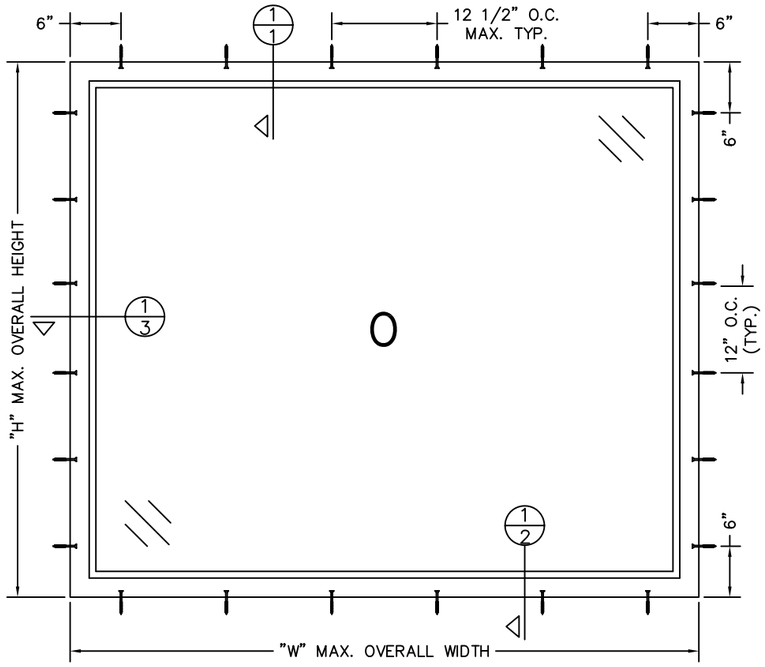
1/1 HEAD



1/3 JAMB



1/2 SILL



NOTES:

1. THIS INSTALLATION HAS BEEN EVALUATED FOR USE IN LOCATIONS ADHERING TO THE FLORIDA BUILDING CODE AND WHERE DESIGN PRESSURE REQUIREMENTS AS DETERMINED BY ASCE 7 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES DO NOT EXCEED THE DESIGN PRESSURE RATINGS LISTED HEREIN.
2. FOR INSTALLATION INTO ALUMINUM TUBE SUBSTRATES OR APPROVED ALUMINUM MULLIONS, USE #10-16 SAE GR. 5 SELF-DRILLING SCREWS OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM OF 3 THREADS PENETRATION BEYOND ALUMINUM FRAME SUBSTRATE. ANCHORS SHOULD BE A MINIMUM OF ½" FROM THE EDGE OF ALUMINUM SUBSTRATE.
3. ALL INTERIOR AND EXTERIOR PERIMETER SURFACES OF THE WINDOW MUST BE CAULKED.
4. WHEN THE OPTIONAL HEAD EXPANDERS ARE USED, THE INSTALLER MUST ADJUST THE ANCHOR LENGTHS TO MAINTAIN THE REQUIRED MINIMUM EMBEDMENT/PENATRATION INTO THE SUBSTRATE.
5. ANCHORS SHALL BE SPECIFIED AND SPACED AS SHOWN. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO AND INTO WOOD OR ALUMINUM SUBSTRATE.
6. WOOD BUCKS AND ALUMINUM FRAMING (BY OTHERS) MUST BE ENGINEERED AND ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE. BUCKS AND ALUMINUM FRAMING SHALL EXTEND BEYOND INTERIOR FACE OF FRAME SUCH THAT FULL SUPPORT OF THE FRAME IS PROVIDED.
7. THE RESPONSIBILITY FOR SELECTION OF SIMONTON PRODUCTS TO MEET ANY APPLICABLE LOCAL LAWS, BUILDING CODES, ORDINANCES, OR OTHER SAFETY REQUIREMENTS RESTS SOLELY WITH THE ARCHITECT, BUILDING OWNER, OR CONTRACTOR.
8. FOR WOODBUCK SUBSTRATES, USE #10 WOOD SCREWS WITH 1 1/2" MIN. EMBEDMENT INTO WOOD, UNLESS OTHERWISE NOTED. SCREWS SHOULD BE A MINIMUM OF 3/4" FROM THE EDGE OF THE WOOD.
9. A. WOOD – MINIMUM SPECIFIC GRAVITY = 0.55.
   B. ALUMINUM – MINIMUM ALLOY 6063-T5. MINIMUM WALL THICKNESS 0.040"
10. SHIMS ARE OPTIONAL. MAX. SHIM STACK IS 1/4".
11. WHEN USING A #10-16 SELF DRILLING OR #10 WOOD SCREW THROUGH THE WINDOW FRAME, PRE-DRILL THE THRU HOLE AT SPECIFIED INSTALLATION SCREW LOCATIONS.
12. WHEN USED IN AREAS REQUIRING IMPACT PROTECTION, THIS PRODUCT DOES REQUIRE THE USE OF APPROVED IMPACT RESISTANT SHUTTERS OR OTHER EXTERNAL PROTECTION.
13. FLASHING SHOULD BE APPLIED USING THE ASTM E 2112 METHOD APPROPRIATE FOR THE OPENING INTO WHICH THE WINDOW IS BEING INSTALLED.
15. GLAZING SHALL COMPLY WITH ASTM E 1300.
16. DESIGNATION "X" AND "O" STAND FOR THE FOLLOWING: X: OPERABLE PANEL - O: FIXED PANEL

SIZE CHART		
OVERALL SIZE		DP RATING
WIDTH	HEIGHT	
37"	84"	±50 PSF
74"	63"	±55 PSF
96"	72"	±45 PSF

Digitally signed by Hermes F Norero
Reason: I am approving this document
Date: 2021.03.30 22:54:42 -02'00'

HERMES F. NORERO LICENSE No. 73778 STATE OF FLORIDA PROFESSIONAL ENGINEER

Hermes F. Norero, P.E.
Florida P.E. No. 73778
Building Drops, Inc.
396 E. Dania Beach Blvd. Suite 338
Dania Beach, FL 33004
FBPE Cert. of Authorization No. 29578

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FILE: FL 5177

MATERIAL:		
RMS FINISH: EXCEPT AS NOTED		
ALLOY & TEMPER:		
WEIGHT:	VOLUME:	
SURFACE AREA:	PERIMETER:	
FINISH TREATMENT:		

Dimensional Tolerances
Unless Otherwise Specified

Decimals	Angles
.X ± .03	0° 30 min.
.XX ± .01	
.XXX ± .005	

SIMONTON WINDOWS
1 Cochrane Avenue
Pennsboro, WV 26415

SIZE:	DRAWING NO.:	REV.:
B	IN0532	B

DRAWN BY: T.D.D.	DATE: 01/26/11
CHECKED BY:	DATE:
SCALE: FIT	SHEET: 1 of 1
APPRV'D BY:	DATE:

SERIES: 07–09 / 07–10 / 07–20 PICTURE (FIXED) WINDOW

TITLE: ALUMINUM INSTALLATION