

L. Roberto Lomas P.E.

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Danville, VA 24541

434-688-0609

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Engineering Evaluation Report

Report No.: 512636A

Manufacturer: MI Windows and Doors
1001 W. Crosby RD.
Carrollton, Texas 75006

Product Line: Series 5500 SH Twin Window Non-Impact Continuous Head And Sill

Compliance:

The above mentioned product has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61G20-3.005 method 1(d). The product listed herein complies with requirements of the current Florida Building Code.

Supporting Technical Documentation:

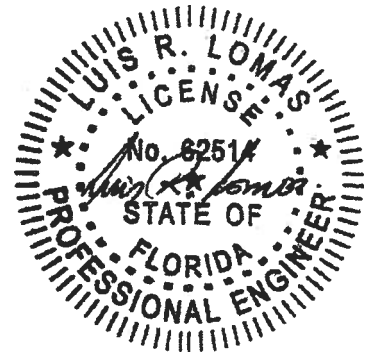
1. Approval document: drawing number 08-01928, Revision A, prepared, signed and sealed by Luis Roberto Lomas P.E.
2. Test report No.: CCLI-12-224 signed by Wesley Wilson
Construction Consulting Laboratory International, Carrollton, TX
AAMA/WDMA/CSA 101/I.S.2/A440-08
Design pressure: ± 50.0 psf
Water penetration resistance 7.5psf
3. Comparative analysis with anchor calculation, report number 512636-1 and -2, prepared, signed and sealed by Luis Roberto Lomas P.E.

Limitations and Conditions of use:

- Maximum design pressure: ± 50.0 psf (For smaller units refer to installation instructions)
- Maximum panel size: 84" x 84"
- Units must be glazed per ASTM E1300-04.
- This product is not rated to be used in the HVHZ.
- This product is not impact resistant and requires impact protection in wind borne debris regions.
- Frame material to be rigid PVC.

Installation: Units must be installed in accordance with approval document, 08-01928, Revision A.

Certification of Independence: Please note that I don't have nor will acquire a financial interest in any company manufacturing or distributing the product(s) for which this report is being issued. Also, I don't have nor will acquire a financial interest in any other entity involved in the approval process of the listed product(s).





INSTALLATION INSTRUCTIONS FOR NEW CONSTRUCTION VINYL FIN WINDOWS

READ THESE INSTRUCTIONS COMPLETELY BEFORE BEGINNING. Please inspect your MI Windows and Doors, Inc. product thoroughly before beginning installation. Inspect the opening and the product, and do not install if there is any observable damage or other irregularity. The product specification sheet and warranty include important information regarding your product and may include product-specific installation requirements (for example, types of fasteners to be used with impact resistant windows and limitations on the height at which the product may be installed). If you did not obtain copies please contact MI Windows and Doors, Inc. Local building codes may impose additional requirements, and those codes supersede these instructions.

FAILURE TO FOLLOW THESE INSTRUCTIONS, AND BUILDING CODE REQUIREMENTS, MAY AFFECT THE REMEDIES AVAILABLE UNDER YOUR WARRANTY.

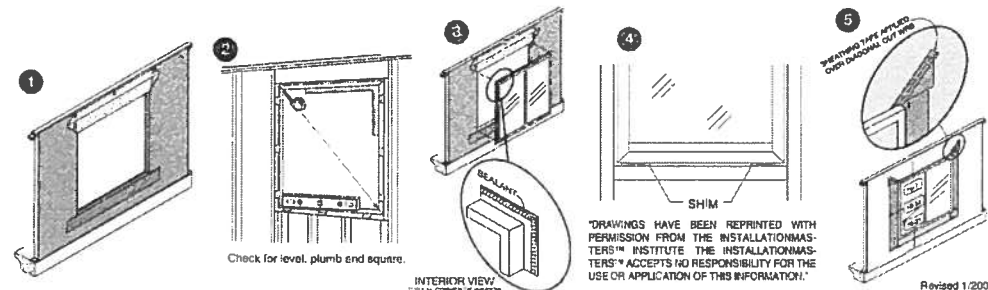
- IF THE BUILDING HAS A WEATHER RESISTANT BARRIER (WRB) I.E. HOUSE WRAP, PREPARE THE OPENING ACCORDING TO WRB MANUFACTURER'S INSTRUCTIONS. AT EACH TOP CORNER MAKE A 45° CUT IN THE WRB. FOLD UP THE WRB SO THAT THE TOP NAIL FIN OF THE UNIT CAN BE INSTALLED UNDERNEATH IT. (See Figure 1 below) FLASHING OF THE WINDOW OPENING IS RECOMMENDED AND MAY BE REQUIRED BY SOME BUILDING CODES.
- MAKE SURE THE ROUGH OPENING IS PLUMB, SQUARE AND THE SILL PLATE IS LEVEL. ROUGH OPENINGS SHOULD BE 1/2" LARGER THAN WINDOW FRAME IN WIDTH & HEIGHT. (See Figure 2 below)
- CLOSE & LOCK THE SASH THROUGHOUT INSTALLATION. KEEP THE SIDE JAMBS PLUMB & SQUARE WITH HEAD AND SILL. BE CAREFUL NOT TO "CROWN UP" OR "BOW DOWN" THE SILL OR HEAD. CONSTANTLY CHECK WIDTH AT THE MEETING RAILS OF SINGLE AND DOUBLE HUNG (CENTER POINT ON CASEMENTS) TO AVOID A "BOWED OUT" INSTALLATION. WHEN USING FLASHING APPLY THE BOTTOM PIECE BEFORE INSTALLING THE WINDOW. (See Figure 1 below) FLASHING MUST BE RATED TO MEET ASTM D-779, 24 HOUR WATER RESISTANCE TEST.
- APPLY A CONTINUOUS 3/8" BEAD OF PREMIUM GRADE, COMPATIBLE EXTERIOR SEALANT TO THE INTERIOR (BACKSIDE) OF THE NAIL FIN NEAR THE OUTSIDE EDGE IN LINE WITH THE PRE-PUNCHED HOLES ON ALL SIDES PRIOR TO SETTING THE WINDOW INTO THE ROUGH OPENING. (See Figure 3 below)
- PLACE 1/4" FLAT SHIMS ON THE ROUGH OPENING SILL PLATE UNDER THE BOTTOM CORNERS OF THE WINDOW (See Figure 4 below). DO NOT PLACE SHIMS OR BLOCK UNDER THE SILL EXCEPT AT THE FRAME CORNERS. SET THE WINDOW ONTO THE SHIMS CENTERING THE WINDOW IN THE OPENING ALLOWING EQUAL SPACE ON EITHER SIDE. FOR WINDOWS WITH INTERMEDIATE JAMBS AND ALL SLIDER WINDOWS, CONTINUOUS SHIM OR HORIZONTAL SHIMS ARE RECOMMENDED UNDER EACH INTERMEDIATE JAMB AND MEETING RAIL TO ENSURE SILL IS LEVEL. THESE SILL SHIMS SHOULD REMAIN AFTER INSTALLATION IS COMPLETE. APPLY ADDITIONAL SHIMS AS NECESSARY TO MAINTAIN A LEVEL SILL THROUGHOUT INSTALLATION.
- PLACE A TEMPORARY FASTENER IN THE SLOT PROVIDED IN THE NAIL FIN ON EACH TOP CORNER, CHECK LEVEL AND SQUARE OF THE WINDOW BY MEASURING THE DIAGONALS. OPEN BOTTOM SASH, CHECK THE "REVEAL" (SPACE) BETWEEN THE BOTTOM OF THE SASH AND THE WINDOW SILL. CLOSE AND RELOCK THE SASH, ADJUST IF NECESSARY. PLACE ADDITIONAL FASTENERS IN THE BOTTOM CORNERS CHECKING WINDOW AGAIN FOR LEVEL, PLUMB AND SQUARE.
- SECURE THE WINDOW WITH FASTENERS THAT PENETRATE THE FRAMING BY A MINIMUM OF 1". CARE SHOULD BE TAKEN TO INSTALL FASTENERS STRAIGHT, NOT ANGLED. KEEP THE SASH LOCKED UNTIL ALL SIDES ARE SECURE. PRIOR TO FASTENING THE SILL AND HEAD BE SURE THEY ARE STRAIGHT AND LEVEL. FASTENERS SHOULD BE APPLIED SECURELY INTO EVERY OTHER SLOT ON ALL SIDES, DO NOT DISTORT THE NAIL FIN WITH THE FASTENERS.
- APPLY SEALANT OVER EXPOSED FASTENER HEADS, ANY UNUSED SLOTS AND THE OUTSIDE EDGE OF THE NAIL FIN WHERE IT COMES IN CONTACT WITH THE WRB/SHEATHING. **OR IF FLASHING (WINDOW TAPE) IS BEING USED** - NOTE: SILL FLASHING SHOULD HAVE BEEN APPLIED PRIOR TO INSTALLING THE WINDOW. APPLY THE SIDE FLASHING ON TOP OF THE NAIL FIN, OVERLAPPING THE SILL FLASHING AND EXTENDING UP PAST THE TOP NAIL FIN APPROXIMATELY 2". THEN APPLY THE TOP FLASHING ALSO OVER THE NAIL FIN, OVERLAPPING THE SIDE PIECES AND EXTENDING PAST THE SIDE FLASHING BY APPROXIMATELY 1". LASTLY FOLD DOWN THE WRB FLAP OVER THE FLASHING, TAPE THE DIAGONAL CUTS ABOVE EACH CORNER. (SEE FIGURE #5 BELOW)
- PLACE SHIMS AT THE MEETING RAIL/CHECK RAIL ON THE SIDE JAMBS TO PREVENT BOWING. THESE SHIMS SHOULD REMAIN AFTER INSTALLATION. CAUTION SHOULD BE TAKEN AS TO NOT OVER SHIM, CAUSING DEFLECTION OF THE FRAME AND HINDER SASH OPERATION. CHECK THE FRAME WIDTH AT TOP, MIDDLE AND BOTTOM, IF NOT THE SAME, SHIM ACCORDINGLY. UNLOCK AND OPERATE THE SASH(S). VISUALLY INSPECT ALL SIGHT LINES. ADJUST OR SHIM AS REQUIRED TO ASSURE CONSISTENT SASH REVEAL AND EASE OF OPERATION.
- INSULATE BETWEEN THE WINDOW FRAME & ROUGH OPENING WITH FIBERGLASS INSULATION OR EQUAL. THE SPACE MAY BE EFFECTIVELY FILLED WITH MEASURED USE OF LOW EXPANSION FOAM BUT ONLY AFTER DETERMINING THAT FOAM WILL NOT EXERT PRESSURE AGAINST THE FRAME, WHICH CAN IMPAIR OPERATION. DISTORTION OF THE FRAME WILL AFFECT THE USER'S RIGHTS UNDER THE WARRANTY.
- ALLOW A 1/4" GAP BETWEEN THE EXTERIOR CLADDING, SIDING, BRICK, STUCCO OR STONE AND THE WINDOW FRAME ON ALL SIDES (EXCEPT VINYL J CHANNEL). THE GAP (EXPANSION JOINT) SHOULD BE FILLED WITH CORRECT SIZE BACKER ROD, THEN SEALED WITH A HIGH GRADE EXTERIOR SEALANT AND WILL NEED TO BE MAINTAINED.

CAUTION:

- USE OF SOLVENTS OR ACIDS WILL DAMAGE COMPONENTS OF THIS PRODUCT AND WILL LIMIT RIGHTS UNDER THE WARRANTY.
- VINYL WINDOWS HAVE PRE-PUNCHED SLOTS FOR INSTALLATION - FASTENING IN ANY OTHER PORTION MAY PERMANENTLY DAMAGE UNIT WHICH WILL LIMIT RIGHTS UNDER THE WARRANTY.
- IT IS THE SOLE RESPONSIBILITY OF THE OWNER, ARCHITECT, AND/OR BUILDER TO SELECT CORRECT PRODUCTS TO BE IN COMPLIANCE WITH APPLICABLE LAWS, SITE REQUIREMENTS AND BUILDING CODES AND TO ENSURE THAT INSTALLATION IS IN COMPLIANCE WITH APPLICABLE LAWS, SITE REQUIREMENTS AND BUILDING CODES.
- DO NOT STORE IN THE SUN OR LAY FLAT BEFORE OR DURING INSTALLATION.
- ANY PENETRATIONS (e.g. ALARM SENSORS) MADE THROUGH ANY PORTION OF ANY M.I., BETTERBILT OR CAPITOL PRODUCT MAY AFFECT RIGHTS UNDER THE MANUFACTURER'S WARRANTY.
- SOME LAWS AND BUILDING CODES REQUIRE SAFETY GLASS. THE ORDERING PARTY IS RESPONSIBLE TO SPECIFY SAFETY GLASS AND ENSURE COMPLIANCE WITH LOCAL LAWS AND BUILDING CODES.

THESE INSTRUCTIONS ARE MINIMUM REQUIREMENTS ONLY, CHECK STATE AND LOCAL CODE RESTRICTIONS FOR ADDITIONAL COMPLIANCE ON INSTALLATION AND/OR FASTENING. IF UNIT HAS EXTERIOR TRIM (BRICKMOLD/J CHANNEL, ETC.) THE UNIT MUST BE SEALED BEHIND THE NAIL FIN. THE TRIM IS PROVIDED FOR AESTHETIC PURPOSES ONLY, AND NOT DESIGNED TO BE WATER TIGHT. INSTALLATION INTO MASONRY OR REPLACEMENT OPENINGS MUST BE SEALED TO THE OPENINGS USING AN APPROVED, PROPER METHOD. REFER TO AAMA 2400 AND/OR ASTM 2112 STANDARDS.

These installation instructions are provided for information only; no representation and warranty is made that these instructions set forth all of the information necessary for proper installation of the product. Given the variety of field conditions, primary responsibility for product installation rests with the installer. Do not proceed unless you have addressed the factors necessary to achieve weather-tight installation of a properly functioning product. MI Windows and Doors, Inc. assumes no liability for any personal injury or property damage incurred in installation. These instructions, together with the product specifications and warranty set forth the entire liability of MI Windows and Doors, Inc. with regard to the product.



Individual products may be subject to a variation in performance

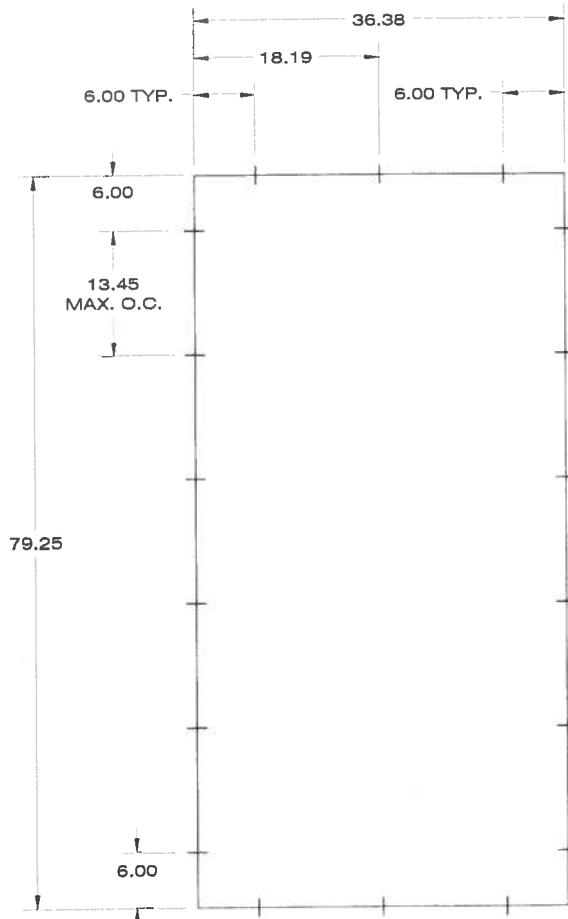
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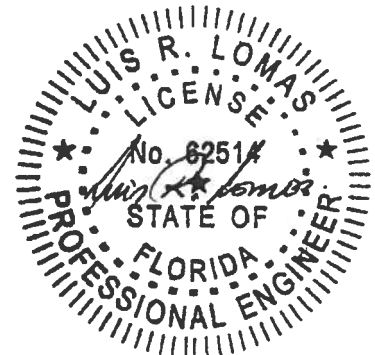
Manufacturer: Masonite
Report #: 504B
Date: 05/21/2015

Anchor Locations:



Note:

Anchor locations indicated in this document are the minimum required for the described product exposed at the design pressure indicated herein.



Luis R. Lomas P.E.
FL No.: 62514
5/28/2015

Luis R. Lomas P.E.

233 W Main St
 Danville, VA 24541
 434-688-0609
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Manufacturer: Masonite
 Report #: 504B
 Date: 05/21/2015

Product: Single Door 3'x6'8"

Scope:

This analysis provides calculations, quantities, and spacing requirements for installing product to substrate, and it applies only to the product described herein. These calculations comply with requirements of the Florida Building Code.

Drawings verification:

This analysis verifies anchoring for the following drawings:

DWG-MA-FL0120-05	DWG-MA-FL0130-05	DWG-MA-FL0153-06	DWG-MA-FL0168-07
DWG-MA-FL0122-05	DWG-MA-FL0132-05	DWG-MA-FL0155-06	DWG-MA-FL0170-07
DWG-MA-FL0124-05	DWG-MA-FL0134-05	DWG-MA-FL0156-06	DWG-MA-FL0172-07
DWG-MA-FL0126-05	DWG-MA-FL0140-05	DWG-MA-FL0160-07	DWG-MA-FL0174-07
DWG-MA-FL0128-05	DWG-MA-FL0151-06	DWG-MA-FL0162-07	DWG-MA-FL0175-07

Anchor to be qualified:

- #10 Wood screw, for installation in wood frame substrates.
- 1/4" Tapcon, for masonry installation

Anchor capacity in shear condition:

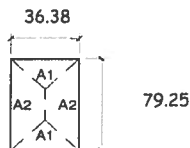
Solid members w/ & w/out gap:

Fastener type: #10 wood screw		(NDS 2012, TR12)	Gap:	g:	0.0000 in
Root diameter:	Dr:	0.152 in	Moment arm:		0.0000 in
Minimum required penetration:	p:	1.140 in	Screw bending yield strength:	F _{yb}	80,000 psi
Side member: Douglas Fir-Larch			Main member: Spruce-Pine-Fir		
Side member thickness:	t _s	1.000 in	Main member thickness:	t _m	1.500 in
Side member dowel bearing strength:	F _{es}	4,650 psi	Main member dowel bearing strength:	F _{em}	3,350 psi
Side member dowel bearing length:	l _s	1.000 in	Main member dowel bearing length:	l _m	1.140 in

Mode I _m	Mode I _s	Mode II	Mode III _m	Mode III _s	Mode IV
q _m = 509.2 lbs/in	q _s = 707 lbs/in	A: 0.0008	A: 0.00120	A: 0.00134	A: 0.001689
P = 580.5 lbs	P = 707 lbs	B: 1.07	B: 0.57	B: 0.5	B: 0.000
K _D = 2.200	K _D = 2.200	C: -342.139	C: -212.263	C: -223.524	C: -93.6
Z _m = 264 lbs	Z _s = 321 lbs	P = 265 lbs	M _s = 46.8 in-lbs	M _m = 46.8 in-lbs	
		K _D = 2.2	P = 246 lbs	P = 263 lbs	P = 235 lbs
Min. Design value:	Z = 107 lbs	Z = 120 lbs	K _D = 2.2	K _D = 2.2	K _D = 2.2
Duration Factor:	C _D = 1.6		Z = 112 lbs	Z = 119 lbs	Z = 107 lbs
Allowable Design Value (Z _{C_D}):		Z' = 171 lbs/anchor			

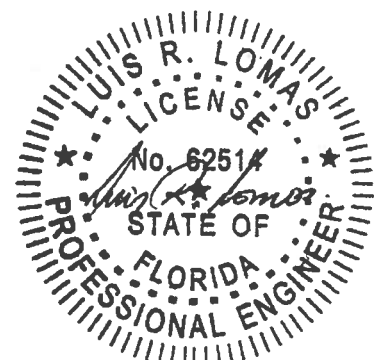
Fastener type: 1/4" ITW Tapcon			N.O.A. 12-0816.06		
Substrate: Hollow block			Minimum embedment: 1.25 in		
Edge distance:	4.00 in	Tabulated shear design value:	Z =	202 lbs	
Edge distance:	2.00 in	Tabulated shear design value:	Z =	161 lbs	
Actual edge distance:	2.50 in	Reduction factor:		0.85	
Spacing:	4.00 in	Tabulated shear design value:	Z =	202 lbs	
Spacing:	2.00 in	Tabulated shear design value:	Z =	166 lbs	
Actual spacing:	3.00 in	Reduction factor:		0.91	
Allowable Design Value (Z _{fAD}):	Z'' =	156 lbs/anchor			
Minimum anchor capacity:	156 lbs/anchor				

Note: Anchors with the least capacity is used for calculations to qualify anchors with higher capacity.

Anchor calculations, minimum required anchors

Design pressure: 85.0 psf

Zone	Area (ft²)	Load (lbs)	Ind. (in)	Max. O.C. (in)	Anchor			Result
					Cap. (lbs)	Qty	Load (lbs)	
A ₁	2.3	195	N/A	N/A	156	2	98	OK
A ₂	7.7	656	6.00	18.00	156	5	131	OK



Luis R. Lomas P.E.
 FL No.: 62514
 5/28/2015



COLUMBIA COUNTY BUILDING DEPARTMENT RESIDENTIAL CHECK LIST

MINIMUM PLAN REQUIREMENTS: FLORIDA BUILDING CODE RESIDENTIAL 2017 EFFECTIVE 1 JANUARY 2018
AND THE NATIONAL ELECTRICAL 2014 EFFECTIVE 1 JANUARY 2018

ALL REQUIREMENTS ARE SUBJECT TO CHANGE

ALL BUILDING PLANS MUST INDICATE COMPLIANCE WITH THE CURRENT FLORIDA BUILDING CODES RESIDENTIAL AND THE NATIONAL ELECTRICAL CODE. ALL PLANS OR DRAWINGS SHALL PROVIDE CALCULATIONS AND DETAILS THAT HAVE THE SEAL AND SIGNATURE OF A CERTIFIED ARCHITECT OR ENGINEER REGISTERED IN THE STATE OF FLORIDA, OR ALTERNATE METHODOLOGIES, APPROVED BY THE STATE OF FLORIDA BUILDING COMMISSION FOR ONE-AND-TWO FAMILY DWELLINGS, FBC 1609.3.1 THRU 1609.3.3.

FOR DESIGN PURPOSES THE FOLLOWING BASIC WIND SPEEDS ARE PER FLORIDA BUILDING CODE FIGURE 1609-A THROUGH 1609-C ULTIMATE DESIGN WIND SPEEDS FOR RISK CATEGORY AND BUILDINGS AND OTHER STRUCTURES
Revised 7/1/18

Website: <http://www.columbiacountyfla.com/BuildingandZoning.asp>

Items to Include-
Each Box shall be
Circled as
Applicable

GENERAL REQUIREMENTS:

APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL

Select From Drop down

1	Two (2) complete sets of plans containing the following:	<input checked="" type="checkbox"/>			
2	All drawings must be clear, concise, drawn to scale, details that are not used shall be marked void	<input checked="" type="checkbox"/>			
3	Condition space (Sq. Ft.) 2051	Total (Sq. Ft.) under roof 2540	Yes	No	NA

Designers name and signature shall be on all documents and a licensed architect or engineer, signature and official embossed seal shall be affixed to the plans and documents as per the FLORIDA BUILDING CODES RESIDENTIAL 107.1.

Site Plan information including:

4	Dimensions of lot or parcel of land	Yes		
5	Dimensions of all building set backs	Yes		
6	Location of all other structures (include square footage of structures) on parcel, existing or proposed well and septic tank and all utility easements.	Yes		
7	Provide a full legal description of property.	Yes		

Wind-load Engineering Summary, calculations and any details are required.

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL		Items to Include- Each Box shall be Circled as Applicable		
8	Plans or specifications must show compliance with FBCR Chapter 3	Yes	No	NA
		Select From Drop down		
9	Basic wind speed (3-second gust), miles per hour	Yes		
10	(Wind exposure – if more than one wind exposure is used, the wind exposure and applicable wind direction shall be indicated)	Yes		
11	Wind importance factor and nature of occupancy	Yes		
12	The applicable internal pressure coefficient, Components and Cladding	Yes		
13	The design wind pressure in terms of psf (kN/m ²), to be used for the design of exterior component, cladding materials not specifiically designed by the registered design professional.	Yes		

Elevations Drawing including:

14	All side views of the structure	Yes		
15	Roof pitch	Yes		
16	Overhang dimensions and detail with attic ventilation	Yes		
17	Location, size and height above roof of chimneys	NA		
18	Location and size of skylights with Florida Product Approval	NA		
19	Number of stories	Yes		
20	Building height from the established grade to the roofs highest peak	Yes		

Floor Plan Including:

21	Dimensioned area plan showing rooms, attached garage, breeze ways, covered porches, deck, balconies	Yes		
22	Raised floor surfaces located more than 30 inches above the floor or grade	NA		
23	All exterior and interior shear walls indicated	Yes		
24	Shear wall opening shown (Windows, Doors and Garage doors)	Yes		
25	Show compliance with Section FBCR 310 Emergency escape and rescue opening shown in each bedroom (net clear opening shown) and Show compliance with Section FBC 1405.13.2 where the opening of an operable window is located more than 72 inches above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which the window is located. Glazing between the floor and 24 inches shall be fixed or have openings through which a 4-inch-diameter sphere cannot pass.	NA		
26	Safety glazing of glass where needed	Yes		
27	Fireplaces types (gas appliance) (vented or non-vented) or wood burning with Hearth (see chapter 10 and chapter 24 of FBCR)	Yes		
28	Show stairs with dimensions (width, tread and riser and total run) details of guardrails, Handrails	NA		
29	Identify accessibility of bathroom (see FBCR SECTION 320)	Yes		

All materials placed within opening or onto/into exterior walls, soffits or roofs shall have Florida product approval number and mfg. installation information submitted with the plans (see Florida product approval form)

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable
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FBCR 403: Foundation Plans

		Select From Drop down		
30	Location of all load-bearing walls footings indicated as standard, monolithic, dimensions, size and type of reinforcing.	Yes		
31	All posts and/or column footing including size and reinforcing	Yes		
32	Any special support required by soil analysis such as piling.	NA		
33	Assumed load-bearing value of soil _____ Pound Per Square Foot	NA		
34	Location of horizontal and vertical steel, for foundation or walls (include # size and type) For structures with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an grounding electrode system. Per the National Electrical Code article 250.52.3	Yes		

FBCR 506: CONCRETE SLAB ON GRADE

35	Show Vapor retarder (6mil. Polyethylene with joints taped 6 inches and sealed)	Yes		
36	Show control joints, synthetic fiber reinforcement or welded wire fabric reinforcement and Supports	Yes		

FBCR 318: PROTECTION AGAINST TERMITES

37	Indicate on the foundation plan if soil treatment is used for subterranean termite prevention or Submit other approved termite protection methods. Protection shall be provided by registered termiticides	Yes		
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FBCR 606: Masonry Walls and Stem walls (load bearing & shear Walls)

38	Show all materials making up walls, wall height, and Block size, mortar type	Yes		
39	Show all Lintel sizes, type, spans and tie-beam sizes and spacing of reinforcement	Yes		

Metal frame shear wall and roof systems shall be designed, signed and sealed by Florida Prof. Engineer or Architect

Floor Framing System: First and/or second story

40	Floor truss package shall including layout and details, signed and sealed by Florida Registered Professional Engineer	NA		
41	Show conventional floor joist type, size, span, spacing and attachment to load bearing walls, stem walls and/or piers	NA		
42	Girder type, size and spacing to load bearing walls, stem wall and/or piers	Yes		
43	Attachment of joist to girder	Yes		
44	Wind load requirements where applicable	Yes		
45	Show required under-floor crawl space	NA		
46	Show required amount of ventilation opening for under-floor spaces	NA		
47	Show required covering of ventilation opening	NA		
48	Show the required access opening to access to under-floor spaces	NA		
49	Show the sub-floor structural panel sheathing type, thickness and fastener schedule on the edges & intermediate of the areas structural panel sheathing	NA		
50	Show Draftstopping, Fire caulking and Fire blocking	Yes		
51	Show fireproofing requirements for garages attached to living spaces, per FBCR section 302.6	Yes		
52	Provide live and dead load rating of floor framing systems (psf).	NA		

FBCR CHAPTER 6 WOOD WALL FRAMING CONSTRUCTION

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL		Items to Include- Each Box shall be Circled as Applicable		
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Select from Drop down

53	Stud type, grade, size, wall height and oc spacing for all load bearing or shear walls	Yes		
54	Fastener schedule for structural members per table FBC-R602.3.2 are to be shown	Yes		
55	Show wood structural panel's sheathing attachment to studs, joist, trusses, rafters and structural members, showing fastener schedule attachment on the edges & intermediate of the areas structural panel sheathing	Yes		
56	Show all required connectors with a max uplift rating and required number of connectors and oc spacing for continuous connection of structural walls to foundation and roof trusses or rafter systems	Yes		
57	Show sizes, type, span lengths and required number of support jack studs, king studs for shear wall opening and girder or header per FBC-R602.7.	Yes		
58	Indicate where pressure treated wood will be placed	Yes		
59	Show all wall structural panel sheathing, grade, thickness and show fastener schedule for structural panel sheathing edges & intermediate areas	Yes		
60	A detail showing gable truss bracing, wall balloon framing details or/ and wall hinge bracing detail	Yes		

FBCR :ROOF SYSTEMS:

61	Truss design drawing shall meet section FBC-R 802.10. 1 Wood trusses	Yes		
62	Include a layout and truss details, signed and sealed by Florida Professional Engineer	Yes		
63	Show types of connector's assemblies' and resistance uplift rating for all trusses and rafters	Yes		
64	Show gable ends with rake beams showing reinforcement or gable truss and wall bracing details	Yes		
65	Provide dead load rating of trusses	Yes		

FBCR 802:Conventional Roof Framing Layout

66	Rafter and ridge beams sizes, span, species and spacing	NA		
67	Connectors to wall assemblies' include assemblies' resistance to uplift rating	NA		
68	Valley framing and support details	Yes		
69	Provide dead load rating of rafter system	NA		

FBCR 803 ROOF SHEATHING

70	Include all materials which will make up the roof decking, identification of structural panel sheathing, grade, thickness	Yes		
71	Show fastener Size and schedule for structural panel sheathing on the edges & intermediate areas	Yes		

ROOF ASSEMBLIES FRC Chapter 9

72	Include all materials which will make up the roof assembles covering	Yes		
73	Submit Florida Product Approval numbers for each component of the roof assembles covering	Yes		

FBCR Chapter 11 Energy Efficiency Code for Residential Building

Residential construction shall comply with this code by using the following compliance methods in the FBCR Chapter 11 Residential buildings compliance methods. **Two of the required forms are to be submitted, N1100.1.1.1 As an alternative to the computerized Compliance Method A, the Alternate Residential Point System Method hand calculation, Alternate Form 600A, may be used. All requirements specific to this calculation are located in Sub appendix C to Appendix G. Buildings complying by this alternative shall meet all mandatory requirements of this chapter. Computerized versions of the Alternate Residential Point System Method shall not be acceptable for code compliance.**

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL		Items to Include- Each Box shall be Circled as Applicable	
<i>Select from Drop Down</i>			
74	Show the insulation R value for the following areas of the structure	Yes	
75	Attic space	Yes	
76	Exterior wall cavity	Yes	
77	Crawl space	NA	

HVAC information

78	Submit two copies of a Manual J sizing equipment or equivalent computation study	Yes		
79	Exhaust fans shown in bathrooms Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous required	Yes		
80	Show clothes dryer route and total run of exhaust duct	Yes		

Plumbing Fixture layout shown

81	All fixtures waste water lines shall be shown on the foundation plan	Yes		
82	Show the location of water heater	Yes		

Private Potable Water

83	Pump motor horse power	Yes		
84	Reservoir pressure tank gallon capacity	Yes		
85	Rating of cycle stop valve if used	Yes		

Electrical layout shown including

86	Show Switches, receptacles outlets, lighting fixtures and Ceiling fans	Yes		
87	Show all 120-volt, single phase, 15- and 20-ampere branch circuits outlets required to be protected by Ground-Fault Circuit Interrupter (GFCI) Article 210.8 A	Yes		
88	Show the location of smoke detectors & Carbon monoxide detectors	Yes		
89	Show service panel, sub-panel, location(s) and total ampere ratings	Yes		
90	On the electrical plans identify the electrical service overcurrent protection device for the main electrical service. This device shall be installed on the exterior of structures to serve as a disconnecting means for the utility company electrical service. Conductors used from the exterior disconnecting means to a panel or sub panel shall have four-wire conductors, of which one conductor shall be used as an equipment ground. Indicate if the utility company service entrance cable will be of the overhead or underground type. For structures with foundation which establish new electrical utility companies service connection a Concrete Encased Electrode will be required within the foundation to serve as an Grounding electrode system. Per the National Electrical Code article 250.52.3	Yes		
91	Appliances and HVAC equipment and disconnects	Yes		
92	Show all 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling unit family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, or similar rooms or areas shall be protected by a listed Combination arc-fault circuit interrupter, Protection device.	Yes		

Notice Of Commencement:

A notice of commencement form **RECORDED** in the Columbia County Clerk Office is required to be filed with the Building Department **BEFORE ANY INSPECTIONS** can be performed.

GENERAL REQUIREMENTS: APPLICANT – PLEASE CHECK ALL APPLICABLE BOXES BEFORE SUBMITTAL	Items to Include- Each Box shall be Circled as Applicable
---	---

****ITEMS 95, 96, & 98 Are Required After APPROVAL from the ZONING DEPT.****

Select from Drop down

93	Building Permit Application A current Building Permit Application is to be completed, by following the Checklist all supporting documents must be submitted. There is a \$15.00 application fee. The completed application with attached documents and application fee can be mailed.	Yes		
94	Parcel Number The parcel number (Tax ID number) from the Property Appraisers Office (386) 758-1083 is required. A copy of property deed is also required. www.columbiacountyfla.com	Yes		
95	Environmental Health Permit or Sewer Tap Approval A copy of a approved Columbia County Environmental Health (386) 758-1058	Yes		
96	City of Lake City A City Water and/or Sewer letter. Call 386-752-2031	NA		
97	Toilet facilities shall be provided for all construction sites	Yes		
98	Town of Fort White (386) 497-2321 If the parcel in the application for building permit is within the Corporate city limits of Fort White, an approval land use development letter issued by the Town of Fort is required to be submitted with the application for a building permit.	NA		
99	Flood Information: All projects within the Floodway of the Suwannee or Santa Fe Rivers shall require permitting through the Suwannee River Water Management District, before submitting a application to this office. Any project located within a flood zone where the base flood elevation (100 year flood) has been established shall meet the requirements of Section 8.5.2 of the Columbia County Land Development Regulations. Any project located within a flood zone where the base flood elevation has not been established (Zone A) shall meet the requirements of Section 8.5.3 of the Columbia County Land Development Regulations (Municode.com)	NA		
100	CERTIFIED FINISHED FLOOR ELEVATIONS will be required on any project where the approved FIRM Flood Maps show the property is in a AE, Floodway, and AH flood zones. Additionally One Foot Rise letters are required for AE and AH zones. In the Floodway Flood zones a Zero Rise letter is required.	NA		
101	A Flood development permit is also required for AE, Floodway & AH. Development permit cost is \$50.00	-		
102	Driveway Connection: If the property does not have an existing access to a public road, then an application for a culvert permit (\$25.00) must be made. County Public Works Dept. determines the size and length of every culvert before instillation and completes a final inspection before permanent power is granted. If the applicant feels that a culvert is not needed, they may apply for a culvert waiver (\$50.00) Separate Check when issued. If the project is to be located on an F.D.O.T. maintained road, then an F.D.O.T. access permit is required.	Yes		
103	911 Address: An application for a 911 address must be applied for and received through the Columbia County Emergency Management Office of 911 Addressing Department (386) 758-1125.	Yes		

Ordinance Sec. 90-75. - Construction debris. (e) It shall be unlawful for any person to dispose of or discard solid waste, including construction or demolition debris at any place within the county other than on an authorized disposal site or at the county's solid waste facilities. The temporary storage, not to exceed seven days of solid waste (excluding construction and demolition debris) on the premises where generated or vegetative trash pending disposition as authorized by law or ordinance, shall not be deemed a violation of this section. The temporary storage of construction and demolition debris on the premises where generated or vegetative trash pending disposition as authorized by law or ordinance shall not be deemed in violation of this section; provided, however, such construction and demolition debris must be disposed of in accordance with this article prior to the county's issuance of a certificate of occupancy for the premises. The burning of lumber from a construction or demolition project or vegetative trash when done so with legal and proper permits from the authorized agencies and in accordance with such agencies' rules and regulations, shall not be deemed a violation of this section. No person shall bury, throw, place, or deposit, or cause to be buried, thrown, placed, or deposited, any solid waste, special waste, or debris of any kind into or on any of the public streets, road right-of-way, highways, bridges, alleys, lanes, thoroughfares, waters, canals, or vacant lots or lands within the county. No person shall bury any vegetative trash on any of the public streets, road right-of-way, highways, bridges, lanes, thoroughfares, waters, canals, or lots less than ten acres in size within the county.

Disclosure Statement for Owner Builders:

If you as the Applicant will be acting as your own contractor or owner/builder under section 489.103(7) Florida Statutes, you must submit the required notarized Owner Builder Disclosure Statement form.

****This form can be printed from the Columbia County Website on the Building and Zoning page under Documents. Web address is - <http://www.columbiacountyfla.com/BuildingandZoning.asp>**

Section 105 of the Florida Building Code defines the:

Time limitation of application.

An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a permit has been issued; except that the building official is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

Single-family residential dwelling.

Section 105.3.4 A building permit for a single-family residential dwelling must be issued within 30 working days of application therefor unless unusual circumstances require a longer time for processing the application or unless the permit application fails to satisfy the Florida Building Code or the enforcing agency's laws or ordinances.

Permit intent.

Section 105.4.1: A permit issued shall be constructed to be a license to proceed with the work and not as authority to violate, cancel, alter or set aside any of the provisions of the technical codes, nor shall issuance of a permit prevent the building official from thereafter requiring a correction of errors in plans, construction or violations of this code. Every permit issued shall become invalid unless the work authorized by such permit is commenced within six months after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of six months after the time the work is commenced.

If work has commenced.

Section 105.4.1.1: If work has commenced and the permit is revoked, becomes null and void, or expires because of lack of progress or abandonment, a new permit covering the proposed construction shall be obtained before proceeding with the work.

New Permit.

Section 105.4.1.2: If a new permit is not obtained within 180 days from the date the initial permit became null and void, the building official is authorized to require that any work which has been commenced or completed be removed from the building site. Alternately, a new permit may be issued on application, providing the work in place and required to complete the structure meets all applicable regulations in effect at the time the initial permit became null and void and any regulations which may have become effective between the date of expiration and the date of issuance of the new permit.

Work Shall Be:

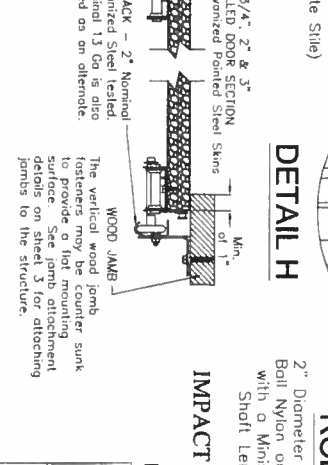
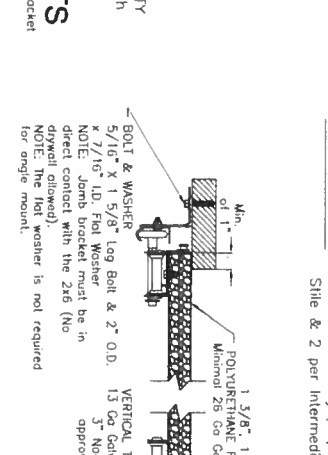
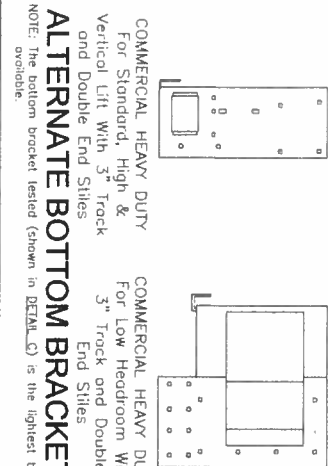
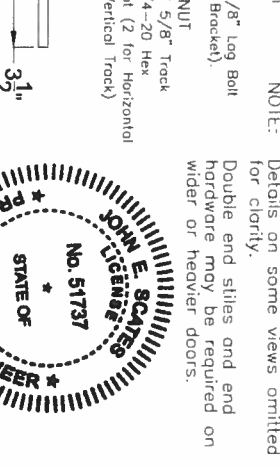
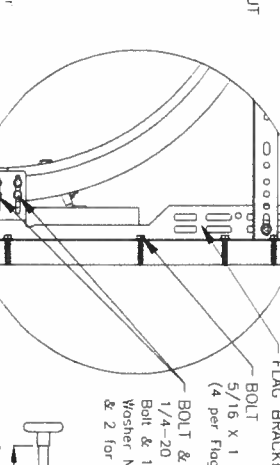
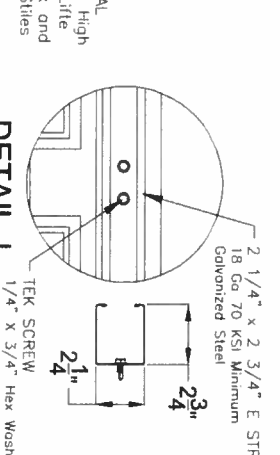
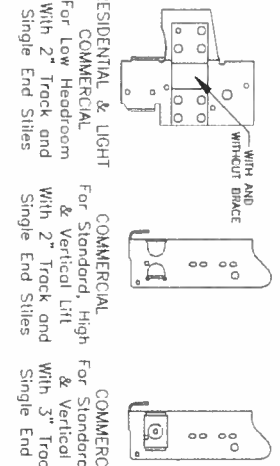
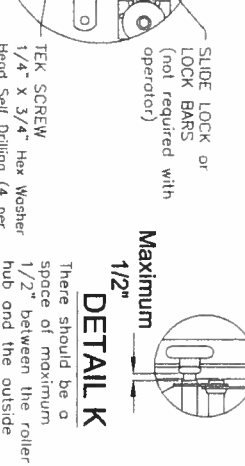
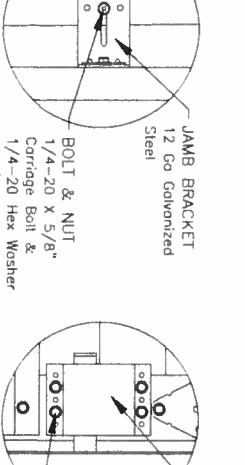
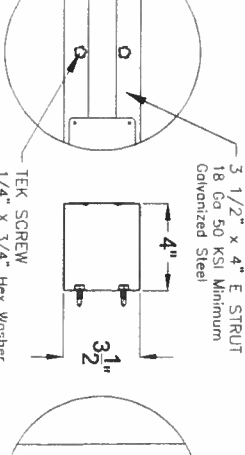
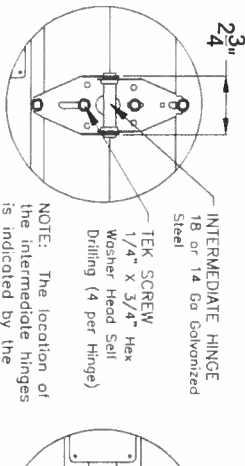
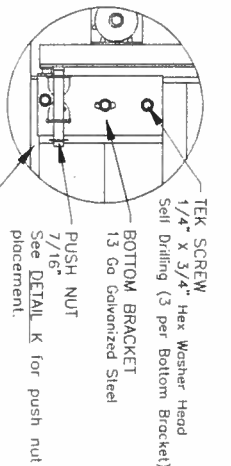
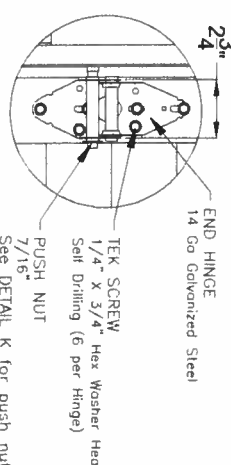
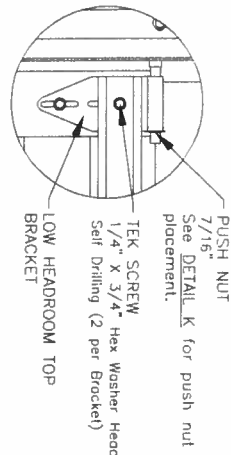
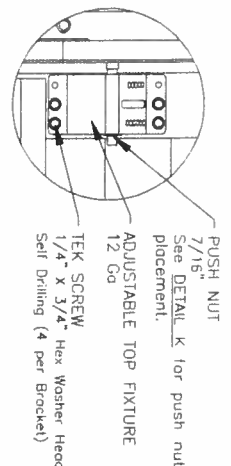
Section 105.4.1.3: Work shall be considered to be in active progress when the permit has received an approved inspection within 180 days. This provision shall not be applicable in case of civil commotion or strike or when the building work is halted due directly to judicial injunction, order or similar process.

The Fee:

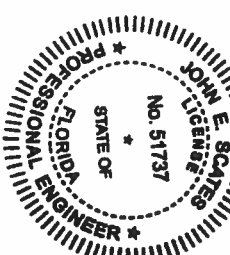
Section 105.4.1.4: The fee for renewal reissuance and extension of a permit shall be set forth by the administrative authority.

Notification:

When the application is approved for permitting the applicant will be notified by phone as to the status by the Columbia County Building & Zoning Department.



NOTE: The bottom bracket tested (shown in DETAIL C) is the lightest bracket available.



IMPACT RESISTANT

FL #16660.33

Professional Engineer seal provided only for verification of wind load construction details.

DESCRIPTION: 17\"/>

DATE ENCL: 7/27/15 DRAWN BY: NWS MODEL(S): See Sheet 3

Door Width 18'-2" Shown
See chart below for other door widths

Top Bracket
Detail A (sheet 2 of 3)

Strut & Strut Attachment
Detail J (sheet 2 of 3)

NOTE: For impact resistant file options see Sheet 3 of 3.

SINGLE STEEL END STILE
16 Ga Galvanized Steel

Slide Lock or Lock Bars
Detail G (sheet 2 of 3)
Manual door locks are required unless an automatic operator is installed.

Jamb Bracket
Detail F (sheet 2 of 3)

Bottom Bracket
Detail C (sheet 2 of 3)

End Hinge
Detail B (sheet 2 of 3)

Strut & Strut Attachment
Detail E (sheet 2 of 3)

Intermediate Hinge
Detail D (sheet 2 of 3)

4" +/- 3"

22 1/2" +/- 3"

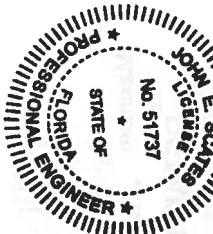
38 1/2" +/- 3"

54 1/2" +/- 3"

66 1/2" +/- 3"

NOTE: Track configuration above the door opening does not affect the wind load rating of the door.

Digitally signed by John E. Scates P.E.
Date: 2017.09.29 15:59:12 -05'00'



John E. Scates, P.E.
2560 King Arthur Blvd, Ste 124-54
Lewisville, Texas 75056
Florida P.E. # 51737

IMPACT RESISTANT

FL #16660.33

Professional Engineer seal provided only for verification of wind load construction details.

Harsco Door
A Harsco Corporation

228 Business Center Dr
© Copyright 2014

DESIGNING FOR THE 2009 & 2012 IBC WIND LOAD REQUIREMENTS
DESIGN PRESSURE: 1.00-3.19 PSF
DATE: 09/29/17
MODEL: 727715
SHEET: 1 OF 3
REV: 0

Door Widths	Design Pressures	End Backers	Slits	Hinges	Slits	Hinges	Slits	Hinges	Impact Resistant
Up To	+ psf	- psf	4	3	3	3	3	3	NO
14'-2"	36.4	-43.4	Single	4	3	3	3	3	NO
16'-2"	33.7	-38.1	Single	5	3	3	3	3	YES
18'-2"	30.0	-33.9	Single	5	3	3	3	3	NO
20'-2"	24.3	-27.5	Single	7	5	3	5	3	YES
22'-2"	20.1	-22.7	Single	8	6	3	9	5	NO
14'-2"	30.0	-33.9	Single	4	3	3	3	3	YES
16'-2"	30.0	-33.9	Single	5	3	3	3	3	YES

This product is designed and sold by PSF. The AHJ or Engineer of Record is responsible for determining the PSF required for any given site.

This product has been evaluated per ANSI/DASMA 108-05 (and -12) for static air pressure.
This product has been evaluated per ANSI/DASMA 115-05 (and -12) for large missile impact and cyclic wind pressure.

Job bracket quantities shown are for use with grade 2 or better southern pine jambs.
Supporting structural elements are to be designed by a registered professional engineer for specific wind loads.

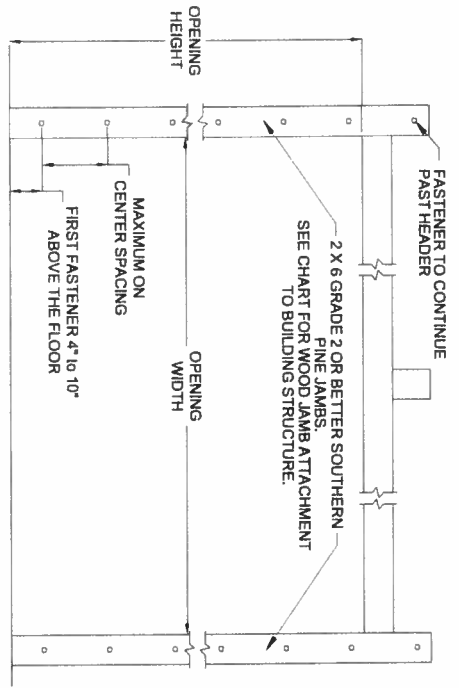
Door Height	Total No. of Sections	Total # of Slits (When the section is for the section at the top)	Jamb Brkts/Slide
6'-0"	3	6	5
6'-3"	4	7	5
6'-6"	4	7	5
6'-9"	4	7	6
7'-0"	4	7	6
7'-3"	4	7	6
7'-6"	4	7	6
7'-9"	5	9	6
8'-0"	5	9	6
8'-3"	5	9	6

Maximum section height is 24 in.
All doors, even those above the tested height, are available with jamb brackets or commercial full angle. The maximum spacing of the jamb brackets/track clips should be maintained.

NOTICE: These drawings are a supplement to the installation instructions for a standard door and only covers those procedures that vary from standard door installation. If these specific procedures are not followed, the door may not perform as designed.

NOTICE: The file section of this door may be replaced with a section with another file style or a solid section, in either case the strut and stile configuration should remain the same.

NOTICE: Only one file section per door is permitted. The file section can be used anywhere except for the bottom section. If the file section is not the top section then the struts must be located as shown in the STRUT CONFIGURATION on page 3 of 3.



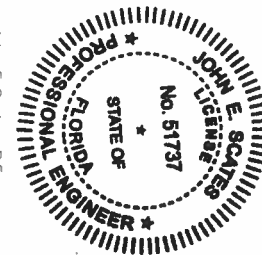
WOOD JAMB ATTACHMENT						
Building Structure	Fastener Type	Minimum Embedment Depth	Minimum Spacing	Maximum Spacing	Maximum Jamb Width	Maximum Jamb Height
Min. 2500 PSI to 4000 PSI Concrete	Tapcon® (PLUS)	2"	2.50"	5.00"	24"	551"
Southern Pine	3/8" Lag w/ 1 1/8" OD washer	1.50"	1.50"	1.50"	24"	620"
Spruce Pine Fir	3/8" Lag w/ 1 1/8" OD washer	1.50"	1.50"	1.50"	24"	482"

NOTE: 2X6 mounted to the wall must be Southern Pine Grade 2 or better.

MODEL NUMBERS AND IMPACT LITE OPTIONS

MODEL NUMBERS AVAILABLE	LITE OPTIONS AVAILABLE				
	CARRIAGE HOUSE	RANCH	STANDARD	UNDER COMMERCIAL 24 x 12	SMALL COMMERCIAL 24 x 6
HT _14 & 2 _14 SERIES					
HT _16 & 2 _16 SERIES					
HT _32 & 2 _32 SERIES					
HT _33 & 2 _33 SERIES					
HT _10 & 2 _10 SERIES	X	X	X		
HT _12 & 2 _12 SERIES					
HT _60 & 2 _60 SERIES	X				
HT _61 & 2 _61 SERIES	X				
HT _63 & 2 _63 SERIES	X				
HT _64 & 2 _64 SERIES	X				
HT _70 & 2 _70 SERIES		X			
HT _71 & 2 _71 SERIES		X			
HT _72 & 2 _72 SERIES		X			
HT _73 & 2 _73 SERIES		X			
HT _74 & 2 _74 SERIES		X			
HT _80 & 2 _80 SERIES			X		
HT _81 & 2 _81 SERIES			X		
HT _82 & 2 _82 SERIES			X		
HT _90 & 2 _90 SERIES			X		
HT 900 SERIES W/O LITES					
	38 1/2" x 12 1/2"	38 1/4" x 10 1/4"	17 3/8" x 10 3/8"		
	DAY LIGHT OPENING (R.O.) - WIDE x TALL				

NOTE: ALL LITES CONSIST OF INSIDE AND OUTSIDE ALUMINUM FRAMES AND A LEXAN INSERT WITH MACHINED GROOVES.



IMPACT RESISTANT

FL #16660.33

H2AS
Hazardous Area Systems

DESCRIPTION:
18\"/>

DATE: 7/27/15 **DESIGNER:** MVS **REV:** B

