City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

PERMIT CARD – PLEASE POST AT JOB SITE

THIS DOCUMENT BECOMES YOUR PERMIT WHEN PROPERLY VALIDATED

Per FBC 105.3.3: An enforcing authority may not issue a building permit for any building construction, erection, alteration, modification, repair or addition unless the permit either includes on its face or there is attached to the permit the following statement: **"NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies."** The issuance of this permit does not grant permission to violate any applicable City, Orange County, State of Florida and/or Federal codes and/or ordinances. Separate permits are required for Signs, Roofing, Electrical, Gas, Plumbing and Mechanical services. This permit becomes VOID if the work authorized is not commenced within 6 months, or is suspended or abandoned for a period of 6 months after commencement. WORK SHALL BE CONSIDERED SUSPENDED IF AN APPROVED INSPECTION HAS NOT BEEN MADE WITHIN A 6 MONTH PERIOD. PERMISSION IS GRANTED TO DO THE FOLLOWING WORK ACCORDING TO THE CONDITIONS HEREON AND THE APPROVED PLANS AND SPECIFICATIONS, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF BELLE ISLE, FLORIDA.

Scope of Work: BUILDING: 10 x 12 shed

Comments: None

Project Information
Address: 1903 Hoffner Ave, Belle Isle, FL 32812
Parcel ID: 18-23-30-5120-00-560
Property Owner: Hoenstine, Clarence
Phone Number: 321 689 3346

****

Company Name: BY OWNER
Contractor Name:
License Number:
Address:
Phone Number:

Permit Number: 2017-04-012
Date of Application: 04/03/2017
Date Permit Issued: 04/04/2017

***WARNING TO OWNER*: "YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT." ON THE JOB INSPECTION(S) MUST BE MADE BEFORE PROCEEDING WITH SUBSEQUENT WORK. THIS CARD MUST BE DISPLAYED OUTSIDE AND BE PROTECTED FROM THE WEATHER WHILE BEING VISIBLE FROM THE STREET UNTIL THE FINAL INSPECTIONS HAVE BEEN APPROVED.**

BUILDING FEATURES

IMPACT FEES
School $
Traffic $

ZONING FEES
Zoning Fee $30.00

UNIVERSAL ENG - BUILDING FEES

Boat Dock $
Boat House $
Building $
Demo $
Door(s) $
Driveway $
Electrical $55.50
Fence $
Gas $
Irrigation $
Low Voltage $
Mechanical $
Plumbing $
Pool $
Roofing $
Screen Encl $
Shed $
Temp Pole $
Window(s) $

SURCHARGE FEES

Surcharge Fee $2.00
Surcharge Fee $2.00

TOTAL FEES $89.50

Date Paid 4-13-17
CC or Check # VISA 1799
Amount Paid $89.50

The person accepting this permit shall conform to the terms of the application on file and construction shall conform to the requirements of the Florida Building Code (FS 553).

BUILDING INSPECTOR USE ONLY

IF APPLICABLE:
Have Zoning Approval Conditions Been Met? YES NO **Have Stormwater Approval Conditions Been Met?** YES NO **Silt fencing in place?** YES NO **Turbidity Barrier in place?** YES NO

☐ **BUILDING**
1st _____ (Footing/Foundation)
Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? ____

2nd _____ (Slab)

3rd _____ (Lintel)(Wall Reinforcing on Masonry Building)

4th _____ (Exterior Framing)(Roof/Wall Sheathing)

5th _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins & Windows/Doors Installed)

6th _____ (Insulation to be Made After Roof Installed)

7th _____ (Drywall)

8th _____ (Sidewalk/Driveway)

9th _____ (Other)

10th _____ (Final – After MEP and Other Applicable Finals)

☐ **ROOFING** **OSHA APPROVED ACCESS MUST BE MADE AVAILABLE TO INSPECTOR**
1ST ROOFING Deck Nailing/Dry-in/Flashing _____

2nd ROOFING Covering In-Progress _____

3rd ROOFING Covering Final _____

☐ **PLUMBING** (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...)
☐
1ST _____ (Underground) 2nd _____ (Sewer)

3rd _____ (Rough-In/Tub Set) 4th _____ (Final)

CHECK APPROPRIATE BOX
☐ **GAS** __**Natural** ___**LP** ☐ **MECHANICAL** ☐**ELECTRICAL** ☐ **LOW VOLTAGE**

1st _____ (Rough-In) 2nd _____ (Final)

Inspection requests are to be emailed to BIDscheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. Next-Day Inspection requests must be made by 4pm. Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed.

For a copy of your permit, or to check inspection results, please visit https://universalengineering.sharefile.com

login ID = cobi@universalengineering.com password = universal13

City of Belle Isle

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Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

RECEIVED
APR 03 2017
BY:

Building Permit (Land Use) Application

DATE: 3/29/17

PERMIT # 2017-04-012

PROJECT ADDRESS 1903 Hoffner AVE, Orl, FL. 32809 Belle Isle, FL 32809 ✓ 32812

PROPERTY OWNER Clarence Hoenstine PHONE 321-689-3346 VALUE OF WORK (labor &material) $ 3500.00

PLEASE LIST THE NATURE OF YOUR PROPOSED IMPROVEMENTS

10'x12' garden shed

Please provide information, if applicable.

- **SINGLE FAMILY RESIDENCE:** 8.5"x11" Plat Survey, Plot Plan of Home and Floor Plans of New Construction/Revision Required
- **BOAT DOCK:** DEP Clearance Required with Application (Call 407-897-4100); please provide a copy of their report
- **SEPTIC SYSTEM (RESIDENTIAL):** – Provide verification of OC Health Dept approval for on-site septic tank system, per FAC Chap. 64E-6
- Homeowners will be required to have a contractor on record for homes that are rented and/or not homestead

Please Complete for the City of Belle Isle Zoning Review: **Parcel Id Number:** 18-23-30-5120-00-560

To obtain this information, please visit http://www.ocpafl.org/Searches/ParcelSearch.aspx

ZONING APPROVED
Date: 4/12/17 By:
DATE City of Belle Isle

SPECIAL CONDITIONS: STRUCTURES MAY NOT ENCROACH INTO ANY EASEMENT OR REQUIRED SETBACK. Survey specific foundation plan required to show compliance with zoning setbacks. Note: this Zoning Approval MAY or MAY NOT be in conflict with your Deed Restrictions. For New Single Family Residence, a Traffic Impact Fee and School Impact will be assessed.

PLANNING & ZONING APPROVAL: _____

Wind Exposure Category: B____ C____ D____

PLEASE COMPLETE for Building Review (min. of 2 sets of signed/sealed plans required)

CONSTRUCTION TYPE Wood Framing

OCCUPANCY GROUP _____ **Comm** **Res:** _____ **Single Fam** _____ **Multi Fam**

#BLDG. _____ #UNITS _____ #STORIES _____ **TOTAL SQ.FT.** 120 sq ft.

MAX. FLOOR LOAD _____ MAX. OCCUPANCY _____

MIN. FLOOD ELEV. _____ LOW FLOOR ELEV. _____

WATER SERVICE _____ **WELL** _____ **SEPTIC** _____

BUILDING REVIEWER _____ **DATE** _____

VERIFIED CONTRACTOR'S LICENSE & INSURANCE ARE ON FILE _____ **DATE** _____

SPRINKLERS REQ'D		Y	N ____
If Required – SUBMIT COPY OF PLANS FOR FIRE REVIEW	**Date:** Sent _____	RCD _____	
ZONING	(Y)	N	$ 30.00
CERT OF OCC	Y	N	$ _____
TRAFFIC	Y	N	$ _____
SCHOOL	Y	N	$ _____
FIRE	Y	N	$ _____
SWIMMING POOL	Y	N	$ _____
SCREEN ENCLOSURE	Y	N	$ _____
ROOFING	Y	N	$ _____
BOAT DOCK	Y	N	$ _____
BUILDING	Y	N	$ _____
WINDOW(S)	Y	N	$ _____
DOOR(S)	Y	N	$ _____
FENCE	Y	N	$ _____
SHED	(Y)	N	$ 55.50
DRIVEWAY	Y	N	$ _____
OTHER _____	Y	N	$ _____
3% FL SURCHARGE			4.00
TOTAL			89.00
By Owner Form	Y	NA	
Notice of Commencement	Y	NA	
Power of Attorney	Y	NA	
Contractor Packet Incuded?	Y	N	
OTHER PERMITS REQUIRED:			
ELECTRICAL	Y	NA	
PREPOWER	Y	NA	
MECHANICAL	Y	NA	
PLUMBING	Y	NA	
ROOFING	Y	NA	
GAS	Y	NA	

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Republic Services is by legal contract the sole authorized provider of garbage, recycling, yard waste, and commercial garbage and construction debris collection and disposal services with the city limits of the City. Contractors, homeowners and commercial businesses may contact Republic Services at 407-293-8000 to setup accounts for Commercial, Construction Roll Off, or other services needed Rates are fixed by contract and are available at City Hall or from Republic Services. The City enforces the contract through its code enforcement office. Failure to comply will result in a stop work order.

SEPARATE PERMITS ARE REQUIRED FOR ROOFING ELECTRICAL PLUMBING GAS MECHANICAL SIGNS POOLS ENCLOSURES ETC.

DT KC
3x4

25
12
37÷2
18.50
55.50

City of Belle Isle

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RECEIVED APR 03 2017

Building Permit (Land Use) Application

DATE: 3/29/17

PERMIT # BY: 2017-04-012

PROJECT ADDRESS 1903 Hoffner AVE, Orl, FL. 32809 Belle Isle, FL 32809 ✓ 32812

PROPERTY OWNER Clarence Hoenstine PHONE 321-689-3346 VALUE OF WORK (labor &material) $ 3500.00

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SPECIAL CONDITIONS: STRUCTURES MAY NOT ENCROACH INTO ANY EASEMENT OR REQUIRED SETBACK. Survey specific foundation plan required to show compliance with zoning setbacks. Note: this Zoning Approval MAY or MAY NOT be in conflict with your Deed Restrictions. For New Single Family Residence, a Traffic Impact Fee and School Impact will be assessed.

PLANNING & ZONING APPROVAL: _____
DATE

PLEASE COMPLETE for Building Review (min. of 2 sets of signed/sealed plans required)

CONSTRUCTION TYPE Wood Framing

OCCUPANCY GROUP _____ **Comm** **Res:** _____ **Single Fam** _____ **Multi Fam**

#BLDG. _____ #UNITS _ #STORIES _____ **TOTAL SQ.FT.** 120 sq ft.

MAX. FLOOR LOAD _____ MAX. OCCUPANCY _____

MIN. FLOOD ELEV. _____ LOW FLOOR ELEV. _____

WATER SERVICE _____ **WELL** _____ **SEPTIC** _____

BUILDING REVIEWER _____ **DATE** 4-3-17

VERIFIED CONTRACTOR'S LICENSE & INSURANCE ARE ON FILE _____ **DATE** 4-4-17 o/13 disclosure

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SEPARATE PERMITS ARE REQUIRED FOR ROOFING, ELECTRICAL, PLUMBING, GAS, MECHANICAL, SIGNS, POOLS, ENCLOSURES, ETC.

Wind Exposure Category: B____ C____ D____

SPRINKLERS REQ'D	Y	N	_____
If Required – SUBMIT COPY OF PLANS FOR FIRE REVIEW	**Date:** Sent _____	RCD _____	
ZONING	(Y)	N	$ 30.00
CERT OF OCC	Y	N	$ _____
TRAFFIC	Y	N	$ _____
SCHOOL	Y	N	$ _____
FIRE	Y	N	$ _____
SWIMMING POOL	Y	N	$ _____
SCREEN ENCLOSURE	Y	N	$ _____
ROOFING	Y	N	$ _____
BOAT DOCK	Y	N	$ _____
BUILDING	Y	N	$ _____
WINDOW(S)	Y	N	$ _____
DOOR(S)	Y	N	$ _____
FENCE	Y	N	$ _____
SHED	(Y)	N	$ 55.50
DRIVEWAY	Y	N	$ _____
OTHER _____	Y	N	$ _____
3% FL SURCHARGE			4.00
TOTAL			89.50

By Owner Form	Y	NA
Notice of Commencement	Y	NA
Power of Attorney	Y	NA
Contractor Packet Incuded?	Y	N

OTHER PERMITS REQUIRED:

ELECTRICAL	Y	NA
PREPOWER	Y	NA
MECHANICAL	Y	NA
PLUMBING	Y	NA
ROOFING	Y	NA
GAS	Y	NA

PT K
3x4

25
12
37 ÷ 2
18.50
55.50

79948

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Building Permit (Land Use) Application
To be completed as required by State Statute Section 713 and other applicable sections.

PERMIT # 20170406

Owner's Name Clarence Hoenstine

Owner's Address 1903 Hoffner AVE, Orl, FL. 32809

Contractor Name	Clarence Hoenstine	**Company Name**	Hoenstine Enterprise LLC
License #	CGC1516101	**Company Address**	1903 Hoffner AVE
Contact Phone/Cell	321-689-3346	**City, State, ZIP**	Orl, FL. 32809
Contact Email	CmHoenstine@Gmail.com	**Contact Fax**	407-857-6544

WARNING TO OWNER: Your failure to record a Notice of Commencement may result in your paying twice for improvements to your property. A notice of commencement must be recorded if job is $2500(+) or if A/C Replacement $7500(+) and posted on the job site before the first inspection. If you intend to obtain financing, consult with your lender or an attorney before recording your Notice of Commencement.

I hereby make Application for Permit as outlined above, and if same is granted I agree to conform to all Division of Building Safety Regulations (www.floridabuilding.org) and City Ordinances (www.municode.com) regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable City and/or State of Florida codes and /or ordinances. Application is hereby made to obtain a permit to do the work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards of all laws regulating construction in this jurisdiction. I understand that a **separate** permit must be secured for all other construction including ROOFING, ELECTRICAL, MECHANICAL, PLUMBING, GAS, SIGNS, POOLS, SCREEN ENCLOSURES, ETC.

OWNER'S AFFIDAVIT: *I certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.*

Owner Signature _____

The foregoing instrument was acknowledged before me this 3/3/17
by Clarence Hoenstine who is personally known to me
and who produced _____
as identification and who did not take an oath.

Notary as to Owner _____
State of Florida
County of Orange

YANKO FINDZHIKOV
MY COMMISSION # FF236562
EXPIRES June 02, 2019
FloridaNotaryService.com

Contractor Signature _____

COMPANY NAME _____

The foregoing instrument was acknowledged before me this 3/3/17
by Clarence Hoenstine who is personally known to me
and who produced _____
as identification and who did not take an oath.

Notary as to Owner _____
State of Florida
County of Orange

YANKO FINDZHIKOV
MY COMMISSION # FF236562
EXPIRES June 02, 2019
FloridaNotaryService.com

Impervious Surface Ratio Worksheet
Development Zoned A-1, A-2, R-1-AAA, R-1-AA, R-1-A, R-1 per City Code, Section 50-74: Impervious Surface Ratio

1. Total Lot Area (sqft) X 0.35 = Allowable Impervious Area (BASE).
   Total Lot Area _____ X 0.35=
   Allowable Impervious Area (BASE)_____
2. Calculate the "proposed" impervious area on the lot. This includes the sum of all areas that do not allow direct percolation of rainwater. *Examples include house, pool, deck, driveway, accessory building, etc*
   - **House** _____
   - **Driveway** _____
   - **Walkway** _____
   - **Accessory Buildings** _____
   - **Pool & Spa** _____
   - **Deck & Patio** _____
   - **Other** _____

   Actual Impervious Area (AIA) _____
3. If AIA is less than BASE, subtract AIA from BASE to determine the amount of impervious area that may be added without providing onsite retention.
4. If AIA is greater than BASE, then onsite retention **must be provided.**

Assuming 7.5 inches of rainfall based on a 24hr 10 year Rain Event (TP40), the formula is: **(7.5 inches rainfall/12 inches p/foot) X (result from line 4) = cubic feet of storage volume needed**

Record Notarized Document at OC Comptroller's Office - 109 E. Church Street, Suite 300, Orlando

Permit Number: _____
Folio/Parcel Identification Number: 18-23-30-5120-00-560
Prepared by: Clarence Hoenstine
1903 Hoffner Ave
Orlando, Fl. 32809
Return to: Clarence Hoenstine
1903 Hoffner Ave
Orlando, Fl. 32809

DOC# 20170175183
03/31/2017 12:15:47 PM Page 1 of 1
Rec Fee: $10.00
Phil Diamond, Comptroller
Orange County, FL
MB - Ret To: CLARENCE HOENSTINE

NOTICE OF COMMENCEMENT

State of Florida, County of Orange
The undersigned hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. **Description of property** (legal description of the property, and street address if available)
   18-23-30-5120-00-560 / 1903 Hoffner Ave, Orl, Fl. 32809
2. **General description of improvement**
   10x12 Shed
3. **Owner information or Lessee information if the Lessee contracted for the improvement**
   Name Clarence Hoenstine
   Address 1903 Hoffner Ave, Orlando, Fl. 32809
   Interest in Property 100%
   Name and address of fee simple titleholder (if different from Owner listed above)
   Name N/A
   Address _____
4. **Contractor**
   Name Clarence Hoenstine Telephone Number 321-689-3346
   Address 1903 Hoffner Ave, Orlando, Fl. 32809
5. **Surety** (if applicable, a copy of the payment bond is attached)
   Name N/A Telephone Number _____
   Address _____ Amount of Bond $ _____
6. **Lender**
   Name N/A Telephone Number _____
   Address _____
7. **Persons within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by §713.13(1)(a)7, Florida Statutes.**
   Name _____ Telephone Number _____
   Address _____
8. **In addition to himself or herself, Owner designates the following to receive a copy of the Lienor's Notice as provided in §713.13(1)(b), Florida Statutes.**
   Name _____ Telephone Number _____
   Address _____
9. **Expiration date of notice of commencement** (the expiration date may not be before the completion of construction and final payment to the contractor, but will be 1 year from the date of recording unless a different date is specified) _____

State of FLORIDA, County of ORANGE
I hereby certify that this is a true copy of the document as recorded in the Official Records
PHIL DIAMOND, COMPTROLLER
BY: _____ D.C.
DATED: 3/31/17

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

Under penalty of perjury, I declare that I have read the foregoing notice of commencement and that the facts stated in it are true to the best of my knowledge and belief.

Clarence Hoenstine
Signature of Owner or Lessee, or Owner's or Lessee's Authorized Officer/Director/Partner/Manager — Signatory's Title/Office

The foregoing instrument was acknowledged before me this 30th day of March/2017 by Clarence Hoenstine
month/year — name of person

as _____ for _____
Type of authority, e.g., officer, trustee, attorney in fact — Name of party on behalf of whom instrument was executed

_____ — Signature of Notary Public – State of Florida
_____ — Print, type, or stamp commissioned name of Notary Public

Personally Known ✓ OR Produced ID ____
Type of ID Produced _____

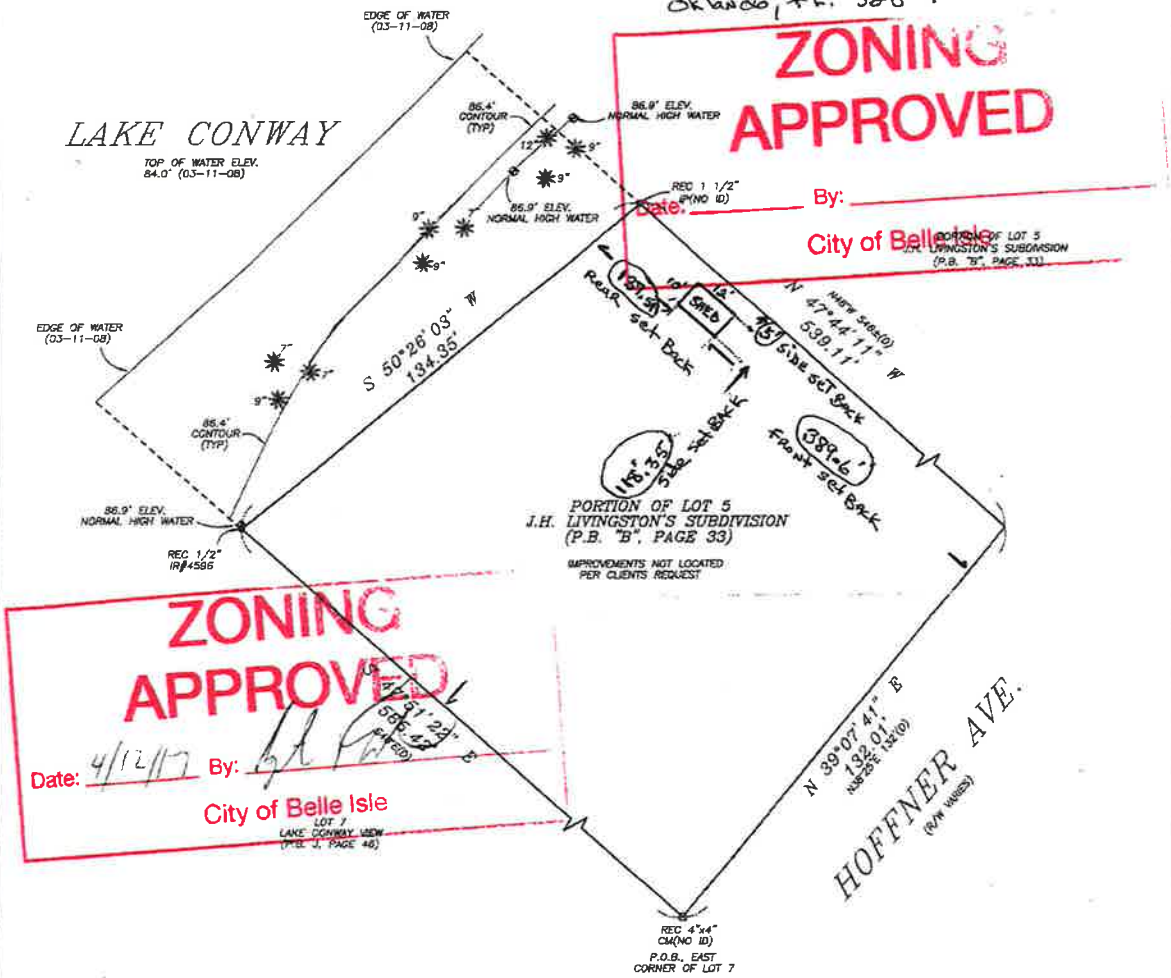
YANKO FINDZHIKOV
MY COMMISSION # FF236562
EXPIRES June 02, 2019
(407) 398-0153 FloridaNotaryService.com

Form Revised: September 26, 2011

DESCRIPTION AS FURNISHED: FROM THE EXTREME EAST CORNER OF LOT 7, LAKE CONWAY VIEWS, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT ABOOK J, PAGE 46 OF ORANGE COUNTY, FLORIDA, RUN NORTH 38 DEGREES 25 MINUTES EAST ALONG COUNTY ROAD KNOWN AS HOFFNER AVENUE OR CONWAY ROAD 132 FEET; THENCE NORTH 48 DEGREES WEST PARALLEL TO NORTHEASTERLY LINE OF LOT 5 OF J.H. LIVINGSTON'S SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK B, PAGE 33, OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA, 546 FEET MORE OR LESS TO 86.4 FOOT CONTOUR LINE AS SET OUT IN DEED FROM TRUSTEES OF INTERNAL IMPROVEMENT FUND, RECORDED IN DEED BOOK 961, PAGE 375, PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA; THENCE SOUTHWESTERLY ALONG SAID CONTOUR LINE TO A POINT NORTH 48 DEGREES WEST OF THE POINT OF BEGINNING; THENCE SOUTH 48 DEGREES EAST PARALLEL TO NORTHEASTERLY LINE OF SAID LOT 5 OF J.H. LIVINGSTON'S SUBDIVISION AND ALONG THE NORTHEASTERLY SIDE LINE OF LOT 7, OF LAKE CONWAY VIEWS TO THE POINT OF BEGINNING, AND ALL LAND LYING BETWEEN AN EXTENSION OF THE SIDE LINE OF SAID PROPERTY NORTHWESTERLY TO THE WATERS OF LAKE CONWAY; SAID LANDS BEING SOUTHWESTERLY 132 FEET OF THE NORTHEASTERLY 167 FEET OF LOT 5 OF J.H. LIVINGSTON'S SUBDIVISION EXTENDED NORTHWESTERLY TO THE WATERS OF LAKE CONWAY.

BOUNDARY SURVEY FOR / CERTIFIED TO: Clarence M. Hoenstine

1903 Hoffner Ave.
Orlando, Fl. 32809



SPECIFIC PURPOSE SURVEY TO LOCATE CONTOUR LINE & PALM TREES FOR/CERTIFIED TO: CLARENCE M. HOENSTINE

✱ = PALM TREE (TYP)

BOUNDARY AS SHOWN BASED ON SURVEY BY HARLING LOCKLIN-JOB#0228 DATED (07-11-02)

GRUSENMEYER-SCOTT & ASSOC., INC. - LAND SURVEYORS

LEGEND -

P	= PLAT	R	= RADIUS
F	= FIELD	L	= ARC LENGTH
I.P.	= IRON PIPE	D	= DELTA
I.R.	= IRON ROD	C	= CHORD
C.M.	= CONCRETE MONUMENT	C.B.	= CHORD BEARING
SET L.B.	= 1/2" I.R. w/LB 4586	P.O.L.	= POINT ON LINE
REC.	= RECOVERED	TYP.	= TYPICAL
P.O.B.	= POINT OF BEGINNING	P.R.C.	= POINT OF REVERSE CURVATURE
P.O.C.	= POINT OF COMMENCEMENT	P.C.C.	= POINT OF COMPOUND CURVATURE
℄	= CENTERLINE	RAD.	= RADIAL
N&D	= NAIL & DISK	N.R.	= NON-RADIAL
R/W	= RIGHT-OF-WAY	W.P.	= WITNESS POINT
ESMT.	= EASEMENT	CALC.	= CALCULATED
DRAIN.	= DRAINAGE	P.R.M.	= PERMANENT REFERENCE MONUMENT
UTIL.	= UTILITY	F.F.	= FINISHED FLOOR ELEVATION
C.L.F.	= CHAIN LINK FENCE	B.S.L.	= BUILDING SETBACK LINE
W.O.F.	= WOOD FENCE	B.M.	= BENCHMARK
C/B	= CONCRETE BLOCK	B.S.	= BASE BEARING
P.C.	= POINT OF CURVATURE		
P.T.	= POINT OF TANGENCY		
DESC.	= DESCRIPTION		

NORTH

THIS BUILDING/PROPERTY IS WITHIN THE ESTABLISHED 100 YEAR FLOOD PLANE AS PER "FIRM"
ZONE PANEL #

5400 E. COLONIAL DR. ORLANDO, FL. 32807 (407)-277-3232 FAX (407)-658-1436

NOTES:
1. THE UNDERSIGNED DOES HEREBY CERTIFY THAT THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61G17-6 FLORIDA ADMINISTRATIVE CODE PURSUANT SECTION 472-027 FLORIDA STATUTES.
2. UNLESS EMBOSSED WITH SURVEYOR'S SEAL, THIS SURVEY IS NOT VALID AND IS PRESENTED FOR INFORMATIONAL PURPOSES ONLY.
3. THIS SURVEY WAS PREPARED FROM TITLE INFORMATION FURNISHED TO THE SURVEYOR. THERE MAY BE OTHER RESTRICTIONS OR EASEMENTS THAT AFFECT THIS PROPERTY.
4. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED UNLESS OTHERWISE SHOWN.
5. THIS SURVEY IS PREPARED FOR THE SOLE BENEFIT OF THOSE CERTIFIED TO AND SHOULD NOT BE RELIED UPON BY ANY OTHER ENTITY.
6. DIMENSIONS SHOWN FOR THE LOCATION OF IMPROVEMENTS HEREON SHOULD NOT BE USED TO RECONSTRUCT BOUNDARY LINES.
7. BEARINGS, ARE BASED ASSUMED DATUM AND ON THE LINE SHOWN AS (BASE BEARING (B.B.))
8. ELEVATIONS, IF SHOWN, ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929, UNLESS OTHERWISE NOTED.
9. CERTIFICATE OF AUTHORIZATION No. 4586

SCALE 1" = 30' | DRAWN BY:

DATE: SPECIFIC PURPOSE SURVEY 03-11-08

ORDER No. 426-08

CERTIFIED BY:

TOM X. GRUSENMEYER, R.L.S. 4714
JAMES W. SCOTT, R.L.S # 4801
JOSEPH E. WILLIAMSON, R.L.S. # 6573

City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

OWNER BUILDER DISCLOSURE STATEMENT

Per Florida Statue 455.228:

Homeowners hiring unlicensed Contractors may be subject a fine of up to $5,000.00!

Before me this day personally appeared Clarence M Hoenstine & Debbie A Hoenstine, who being duly sworn, deposes, and says as follows. "I hereby acknowledge that I have read and fully understand the individual provisions of this instrument."

1. I understand that state law requires construction to be done by a licensed contractor and have applied for an owner-builder permit under an exemption from the law. The exemption specifies that I, as the owner of the property listed, may act as my own contractor with certain restrictions even though I do not have a license CMH DAH Initial

2. I understand that building permits are not required to be signed by a property owner unless he or she is responsible for the construction and is not hiring a licensed contractor to assume responsibility. CMH DAH Initial

3. I understand that, as an owner-builder, I am the responsible party of record on a permit. I understand that I may protect myself from potential financial risk by hiring a licensed contractor and having the permit filed in his or her name instead of my own name. I also understand that a contractor is required by law to be licensed in Florida and to list his or her license numbers on permits and contracts. CMH DAH Initial

4. I understand that I may build or improve a one-family or two-family residence or a farm outbuilding. I may also build or improve a commercial building if the costs do not exceed $75,000.00. The building or residence must be for my own use or occupancy. It may not be built or substantially improved for sale or lease. If a building or residence that I have built or substantially improved myself is sold or leased within 1 year after the construction is complete, the law will presume that I built or substantially improved it for sale or lease, which violates the exemption. CMH DAH Initial

5. I understand that, as the owner-builder, I must provide direct, onsite supervision of the construction. Initial CMH DAH

6. I understand that I may not hire an unlicensed person to act as my contractor or to supervise persons working on my building or residence. It is my responsibility to ensure that the persons whom I employ have the licenses required by law and by county or municipal ordinance. CMH DAH Initial

7. I understand that it is a frequent practice of unlicensed persons to have the property owner obtain an owner-builder permit, that erroneously implies that the property owner is providing his or her own labor and materials. I, as an owner-builder, may be held liable and subjected to serious financial risk for any injuries sustained by an unlicensed person or his or her employees while working on my property. My homeowner's insurance may not provide coverage for those injuries. I am willfully acting as an owner-builder and am aware of the limits of my insurance coverage for injuries to workers on my property. CMH DAH Initial

8. I understand that I may not delegate the responsibility for supervising work to a licensed contractor who is not licensed to perform the work being done. Any person working on my building who is not licensed must work under my direct supervision and must be employed by me, which means that I must comply with laws requiring the withholding of federal income tax and social security contributions under the Federal Insurance Contributions Act (FICA) and must provide workers' compensation for the employee. I understand that my failure to follow these laws may subject me to serious financial risk. CMH DAH Initial

9. I agree that, as the party legally and financially responsible for this proposed construction activity, I will abide by all applicable laws and requirements that govern owner-builders as well as employers. I also understand that the construction must comply with all applicable laws, ordinances, building codes, and zoning regulations. CMH DAH Initial

10. I understand that I may obtain more information regarding my obligations as an employer from the Internal Revenue Service, the United States Small Business Administration, the Florida Department of Financial Services, and the Florida Department of Revenue. I also understand that I may contact the Florida Construction Industry Licensing Board at (850)487-1395 or www.Call.Center@dbpr.state.fl.us for more information about licensed contractors. CMH DAH Initial

11. I am aware of, and consent to, an owner-builder building permit applied for in my name and understand that I am the party legally and financially responsible for the proposed construction activity at the following address:
Project Address: 1903 Hoffner Ave ORl, FL. 32809 CHH DAH Initial

12. I agree to notify the City of Belle Isle Building/Zoning Department immediately of any additions, deletions, or changes to any of the information that I have provided on this disclosure. CHH DAH Initial

13. FBC 105.3.6 requires asbestos abatement to be done by licensed contractors. You have applied for a permit under an exemption to that law. The exemption allows you, as the owner of your property, to act as your own asbestos abatement contractor even though you do not have a license. You must supervise the construction yourself. You may move, remove or dispose of asbestos-containing materials on a residential building where you occupy the building and the building is not for sale or lease, or the building is a farm outbuilding on your property. If you sell or lease such building within 1 year after the asbestos abatement is complete, the law will presume that you intended to sell or lease the property at the time the work was done, which is a violation of this exemption. You may not hire an unlicensed person as your contractor. Your work must be done according to all local, state and federal laws and regulations which apply to asbestos abatement projects. It is your responsibility to make sure that people employed by you have licenses required by state law and by county or municipal licensing ordinances CHH DAH Initial

Licensed contractors are regulated by laws designed to protect the public. If you contract with a person who does not have a license, the Construction Industry Licensing Board and Department of Business and Professional Regulation may be unable to assist you with financial loss that you sustain as a result of a complaint. Your only remedy against an unlicensed contractor may be in civil court. It is also important for you to understand that, if any unlicensed contractor or employee of an individual or firm is injured while working on your property, you may be held liable for damages. If you obtain an owner-builder permit and wish to hire a licensed contractor, you will be responsible for verifying whether the contractor is property licensed and the status of the contractor's workers' compensation coverage.

Before a building permit can be issued, this disclosure statement must be completed and signed by the property owner and returned to the local permitting agency responsible for issuing the permit. A copy of the property owner's driver license, the notarized signature of the property owner, or other type of verification acceptable to the local permitting agency is required when the permit is issued.

Signature: _____ Print: Clarence M Hoenstine
(Signature of the property owner) (Name of the property owner)

Signature: _____ Print: Debbie A. Hoenstine
(Signature of the property owner) (Name of the property owner)

Owner's Address: 1903 Hoffner AVE, ORlando, FL. 32809

The foregoing instrument was acknowledged before me this 04 / 03 / 2017

by Clarence & Debbie Hoenstine who is personally known to me / who produced the following

_____ as identification and who did not take an oath.

State of Florida / County of Orange

Notary Signature _____

Seal:

YANKO FINDZHIKOV
MY COMMISSION # FF236582
EXPIRES June 02, 2019
FloridaNotaryService.com

ICC EVALUATION SERVICE

ICC Evaluation Service, LLC
Los Angeles Business/Regional Office
5360 Workman Mill Road
Whittier, CA 90601
tel: 562.699.0543
fax: 562.695.4694
www.icc-es.org

Certification of Independence for Evaluation

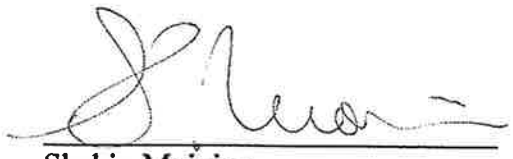
ICC Evaluation Service, LLC

1). ICC Evaluation Service, LLC, does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products for which evaluations are issued.

2). ICC Evaluation Service, LLC, is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.

3). ICC Evaluation Service, LLC, does not have, nor will acquire, a financial interest in any company manufacturing or distributing products for which reports are being issued.

4). ICC Evaluation Service, LLC, does not have, nor will it acquire, a financial interest in any other entity involved in the approval process of the product.



Shahin Moinian
President, ICC Evaluation Service, LLC

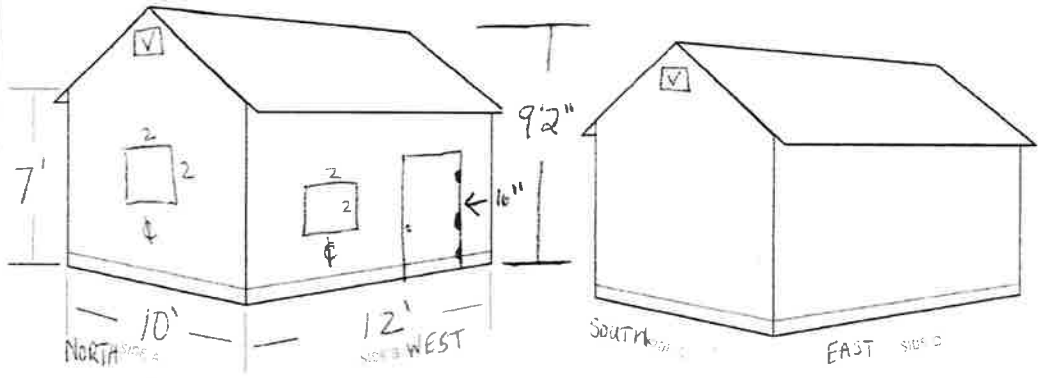
TUFF SHED

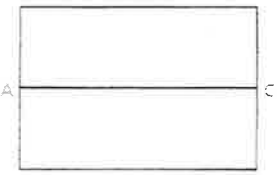
BUILDER'S HELPER

SO #: 1112351

Sales Consultant: Peter Burke **Customer Name:** Hoenstine

RANCH MODEL: TR700 10x12 **INSTALL DATE:**





OVERHEAD VIEW

Base Paint:

Trim Paint:

Accent Paint(AP):

AP Location:

Shingle:

Drip/Vent Color: Brown

Options (List):
(2) 16" x 8" vents
Endwall Eave upgrade
(2) 2x2 window

Initials

Customer or responsible individual will be at site at time of delivery?	YES NO	___
Is site clean and level? *(Customer understands a leveling fee may apply if site is more than 4" out of level.)*	YES NO	___
Is there 18" clearance around all 4 sides of the building?	YES NO	___
Is there clear access to the building site?	YES NO	___
Is there a 110-volt/20 AMP power outlet within 100'?	YES NO	___
Customer understands building permits, fees and all related cost of site readiness are customer's responsibility?	YES NO	___
Customer has been presented the "What to Expect" document?	YES NO	___
Customer understands that changes, cancellations or postponement will result in restocking/rescheduling fee?	YES NO	___
Is this a NO FLOOR option?	YES NO	___
Does the Customer plan to insulate this building?	YES NO	___
How close to the build site can we park our vehicle?	___ ft.	___

Special Instructions:

CUSTOMER APPROVAL:

Signature: **Date:**

UNINHABITED UTILITY SHED UP TO 12' WIDE x UP TO 24' LONG
SR600, TR700, PR

NOTES:

1. **BUILDING CODE:**
   FLORIDA BUILDING CODE, 5th EDITION (2014)
   BUILDINGS ARE NOT FOR HIGH-VELOCITY HURRICANE ZONES (HVHZ)
2. **DESIGN LOADING:**

WIND SPEED (T1609.3.1): V_{ult} = 155
V_{asd} = 120
EXPOSURE: C
ROOF LIVE LOAD: 20 PSF
ROOF DEAD LOAD: 10 PSF
FLOOR LIVE LOAD: MIN. 50 PSF (SEE NOTE 5, DETAIL 1, SHEET 3)
IMPORTANCE FACTOR: (I_w): 1.0
RISK CATEGORY: I
COMPONENT AND CLADDING: ROOF: 29 PSF (ZONE 1)
WIND PRESSURE (psf) (ASD VALUES) 59 PSF (ZONE 2, 3)
(BASED ON 10 SQ FT) WALL: 34 PSF (ZONE 4)
42 PSF (ZONE 5)
INTERNAL WIND PRESSURE COEFFICIENT: +0.18
(ENCLOSED BUILDING) -0.18

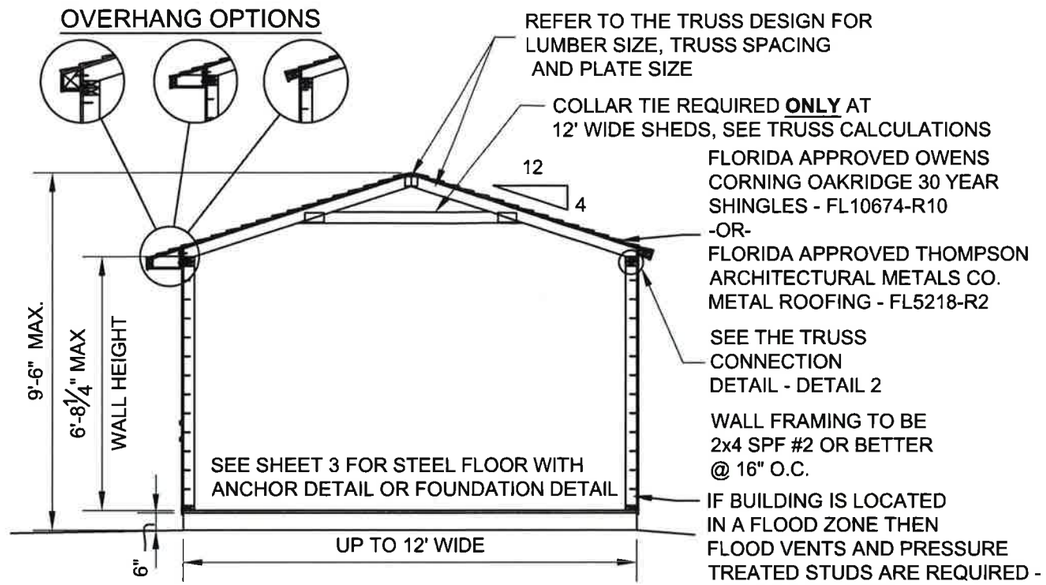
FLORIDA BUILDING APPROVAL NUMBERS--
1. WINDOWS BY CROFT LLC - FLORIDA BUILDING APPROVAL #FL15585-R2.
2. LP SMARTSIDE SIDING - FLORIDA BUILDING APPROVAL #FL9190.6.
3. SHINGLES BY OWENS CORNING - FLORIDA BUILDING APPROVAL #FL10674-R10.
4. ROOF UNDERLAYMENT BY WOODLAND INDUSTRIES INC. - FLORIDA BUILDING APPROVAL #FL17206.2.
5. THOMPSON ARCHITECTURAL METALS CO. METAL ROOFING - FLORIDA BUILDING APPROVAL #FL5218-R2.
6. INNOVATIONS MANUFACTURING, INC. TRANSOM WINDOWS - FLORIDA BUILDING APPROVAL #FL17667.
7. FLOOD SOLUTIONS, LLC FLOOD VENTS (IF REQ'D)- FLORIDA BUILDING APPROVAL #FL17588.1.

HEADER NAILING:
HEADER TO STUD - 4-16d END NAIL DOUBLED HEADER
- 16d @ 16" STAGGERED FACE NAIL

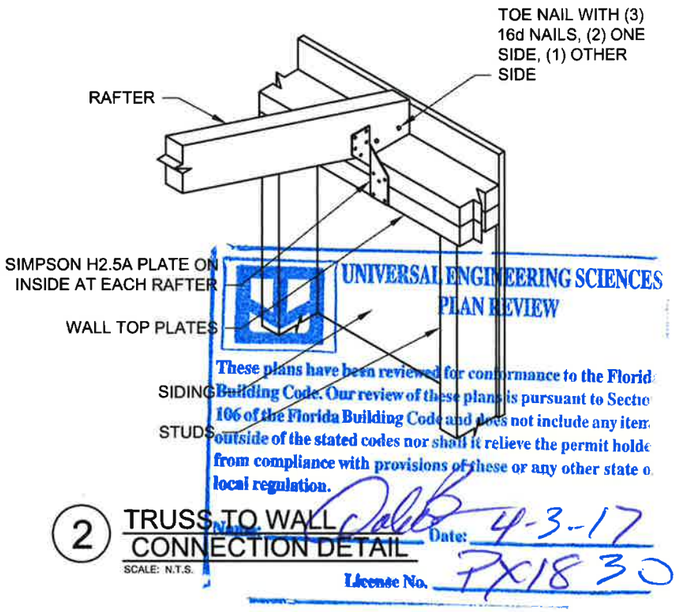
NAILING:

REFER TO SHEET 2 FOR WALL AND ROOF SHEATHING NAILING.

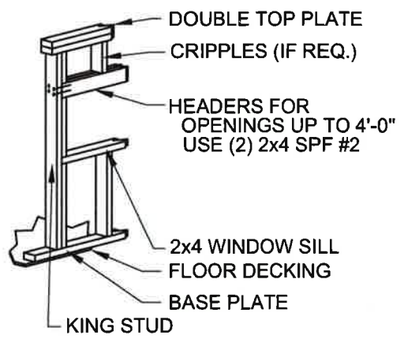
MAX WALL HEIGHT FOR EACH SHED:
SR600 - 5'-8 1/4" (68 1/4")
TR700 - 6'-8 1/4" (80 1/4")
PR - 6'-4 1/2" (76 1/2")



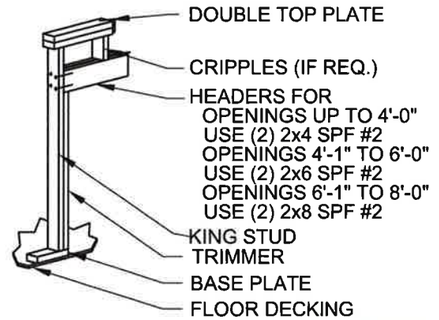
1 BUILDING SECTION
SCALE: N.T.S.



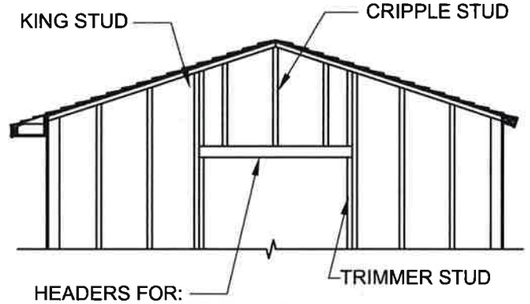
2 TRUSS TO WALL CONNECTION DETAIL
SCALE: N.T.S.



FOR WINDOW OPENINGS UP TO 4'-0"
3A WINDOW HEADER DETAIL FOR SIDE WALLS
SCALE: N.T.S.



FOR OPENINGS UP TO 8'-0"
3B DOOR HEADER DETAIL FOR SIDE WALLS
SCALE: N.T.S.



HEADERS FOR:
OPENINGS UP TO 6'-0" USE (2) 2x4 SPF #2
OPENINGS 6'-1" TO 8'-0" USE (2) 2X6 SPF #2
REFER TO THE DOOR DETAIL (SHEET 2) FOR THE DOOR DESIGN
4 HEADER DETAIL FOR END WALLS
SCALE: N.T.S.

UNIVERSAL ENGINEERING SCIENCES
PLAN REVIEW
These plans have been reviewed for conformance to the Florid Building Code. Our review of these plans is pursuant to Sectio 106 of the Florida Building Code and does not include any item outside of the stated codes nor shall it relieve the permit holde from compliance with provisions of these or any other state o local regulation.
Name: Date: 4-3-17
License No. PX1830

Reviewed for Code Compliance Universal Engineering Sciences

TUFF SHED
Storage Buildings & Garages
TUFF SHED, MFG. FACILITIES

Order #.
Customer:
Site Address:
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

P.O. #
Drawn By: PK
Date: 8/15/16
Checked By:
Date:
Scale: N.T.S.

TUFF SHED, INC.
ENGINEERING DEPARTMENT
RICHARD J. WILLS, P.E.
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 5618

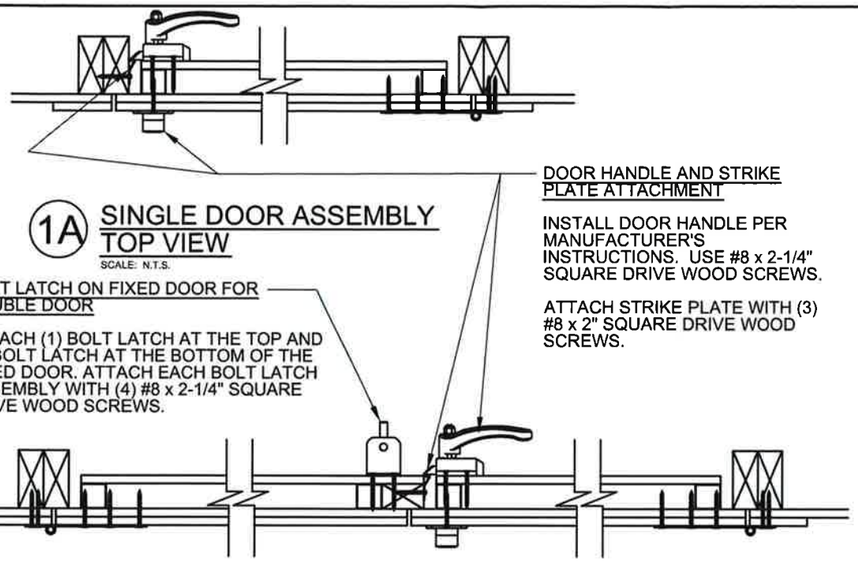
This item has been electronically signed and sealed by Richard Wills, PE. On the date shown using a Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

RICHARD WILLS LICENSE No. 76835 STATE OF FLORIDA PROFESSIONAL ENGINEER

TITLE
BUILDING SECTIONS
HEADER FRAMING DETAILS
FBC, 5th EDITION (2014)
155C

DRAWING NO. FL-PR-SR-TR-01
REV. LEVEL 01
SHEET 1
PAGE 1 **OF** 4

22 AUG 2016



DOOR HANDLE AND STRIKE PLATE ATTACHMENT

INSTALL DOOR HANDLE PER MANUFACTURER'S INSTRUCTIONS. USE #8 x 2-1/4" SQUARE DRIVE WOOD SCREWS.

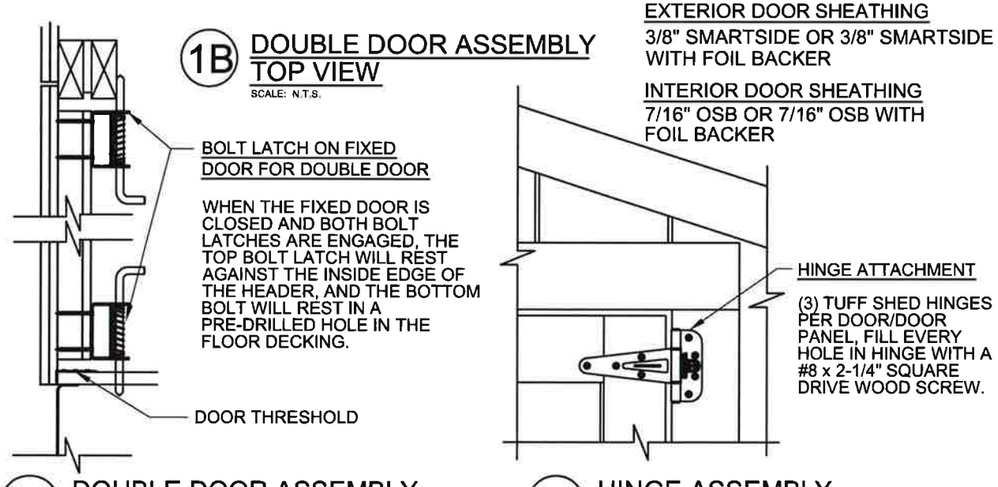
ATTACH STRIKE PLATE WITH (3) #8 x 2" SQUARE DRIVE WOOD SCREWS.

BOLT LATCH ON FIXED DOOR FOR DOUBLE DOOR

ATTACH (1) BOLT LATCH AT THE TOP AND (1) BOLT LATCH AT THE BOTTOM OF THE FIXED DOOR. ATTACH EACH BOLT LATCH ASSEMBLY WITH (4) #8 x 2-1/4" SQUARE DRIVE WOOD SCREWS.

1A SINGLE DOOR ASSEMBLY TOP VIEW

SCALE: N.T.S.



BOLT LATCH ON FIXED DOOR FOR DOUBLE DOOR

WHEN THE FIXED DOOR IS CLOSED AND BOTH BOLT LATCHES ARE ENGAGED, THE TOP BOLT LATCH WILL REST AGAINST THE INSIDE EDGE OF THE HEADER, AND THE BOTTOM BOLT WILL REST IN A PRE-DRILLED HOLE IN THE FLOOR DECKING.

DOOR THRESHOLD

1B DOUBLE DOOR ASSEMBLY TOP VIEW

SCALE: N.T.S.

EXTERIOR DOOR SHEATHING

3/8" SMARTSIDE OR 3/8" SMARTSIDE WITH FOIL BACKER

INTERIOR DOOR SHEATHING

7/16" OSB OR 7/16" OSB WITH FOIL BACKER

2 DOUBLE DOOR ASSEMBLY SIDE VIEW

SCALE: N.T.S.

HINGE ATTACHMENT

(3) TUFF SHED HINGES PER DOOR/DOOR PANEL, FILL EVERY HOLE IN HINGE WITH A #8 x 2-1/4" SQUARE DRIVE WOOD SCREW.

3 HINGE ASSEMBLY FRONT VIEW

SCALE: N.T.S.

DOORS:
STANDARD DOOR CONSTRUCTION FOR TUFF SHED DOORS UP TO 48" x 80 1/4" ON SINGLE HUNG DOORS AND 96" x 80 1/4" ON DOUBLE DOORS EXCEED ALL LOAD REQUIREMENTS FOR THE LOAD CRITERIA ON SHEET 1.

3/8 SMART SIDE NAILING REQUIREMENTS

USE THESE NAILING TABLES FOR THE SR600, TR700 AND PR DRAWINGS

SIDE WALL EDGE NAILING REQUIREMENTS

MARK WALLS BEING USED	END WALL WIDTH	SIDE WALL LENGTH	EDGE NAILING	MAX. COMB. OPENING (NOTE 2)	MIN TOTAL COMBINED SHEAR WALL
NO OPENINGS ALONG THE WALL					
	6'	6'-18'	8d NAILS @ 6" O.C.	0'	6'-18'
	8'	8'-24'	8d NAILS @ 6" O.C.	0'	8'-24'
	10'	10'-24'	8d NAILS @ 6" O.C.	0'	10'-24'
	12'	12'-24'	8d NAILS @ 6" O.C.	0'	12'-24'
▪MIN 2'-0" RTN WALLS ON EACH END OF WALL-				**▪MIN 2'-0" WALL SEGMENT**	
	6'	6'-24'	8d NAILS @ 6" O.C.	UP TO 12'	4'
	8'	8'-20'	8d NAILS @ 6" O.C.	UP TO 12'	4'
	8'	22'-24'	8d NAILS @ 4" O.C.	UP TO 12'	4'
	10'	10'-24'	8d NAILS @ 4" O.C.	UP TO 12'	4'
	12'	12'-22'	8d NAILS @ 4" O.C.	UP TO 12'	4'
	12'	24'	8d NAILS @ 3" O.C.	UP TO 12'	4'

END WALL EDGE NAILING REQUIREMENTS

MARK WALLS BEING USED	END WALL WIDTH	SIDE WALL LENGTH	EDGE NAILING	MAX. COMB. OPENING	MIN TOTAL COMBINED SHEAR WALL
NO OPENINGS ALONG THE WALL					
	* 6'	6'	8d NAILS @ 6" O.C.	SEE NOTE 3	
	* 6'	8'-9'	8d NAILS @ 4" O.C.	SEE NOTE 3	
	6'	10'-14'	8d NAILS @ 6" O.C.	0'	6'
	6'	16'-20'	8d NAILS @ 4" O.C.	0'	6'
	6'	22'-24'	8d NAILS @ 3" O.C.	0'	6'
	8'	8'-18'	8d NAILS @ 6" O.C.	0'	8'
	8'	20'-24'	8d NAILS @ 4" O.C.	0'	8'
	10'	10'-22'	8d NAILS @ 6" O.C.	0'	10'
	10'	24'	8d NAILS @ 4" O.C.	0'	10'
	12'	12'-24'	8d NAILS @ 6" O.C.	0'	12'
▪MIN 2'-0" RTN WALLS ON EACH END OF WALL-				**▪MIN 2'-0" WALL SEGMENT**	
	6'	6'-9'	8d NAILS @ 6" O.C.	3'	SEE NOTE 3
	6'	10'-12'	8d NAILS @ 6" O.C. (BS)	3'	2' (RE: NOTE 6)
	6'	14'-18'	8d NAILS @ 4" O.C. (BS)	3'	2' (RE: NOTE 6)
	8'	8'-10'	8d NAILS @ 6" O.C.	3'	5'
	8'	12'-16'	8d NAILS @ 4" O.C.	3'	5'
	8'	18'-20'	8d NAILS @ 3" O.C.	3'	5'
	8'	8'	8d NAILS @ 6" O.C.	4'	4'
	8'	10'-12'	8d NAILS @ 4" O.C.	4'	4'
	8'	14'-16'	8d NAILS @ 3" O.C.	4'	4'
	10'	10'-14'	8d NAILS @ 6" O.C.	3'	7'
	10'	16'-22'	8d NAILS @ 4" O.C.	3'	7'
	10'	24'	8d NAILS @ 3" O.C.	3'	7'
	10'	10'-12'	8d NAILS @ 6" O.C.	4'	6'
	10'	14'-18'	8d NAILS @ 4" O.C.	4'	6'
	10'	20'-24'	8d NAILS @ 3" O.C.	4'	6'
	10'	10'-12'	8d NAILS @ 4" O.C.	6'	4'
	10'	14'-16'	8d NAILS @ 3" O.C.	6'	4'
	12'	12'-16'	8d NAILS @ 6" O.C.	4'	8'
	12'	18'-24'	8d NAILS @ 4" O.C.	4'	8'
	12'	12'	8d NAILS @ 6" O.C.	6'	6'
	12'	14'-18'	8d NAILS @ 4" O.C.	6'	6'
	12'	20'-24'	8d NAILS @ 3" O.C.	6'	6'
	12'	12'	8d NAILS @ 4" O.C.	8'	4'
	12'	14'-16'	8d NAILS @ 3" O.C.	8'	4'

ROOF SHEATHING (7/16" OSB)

WIDTH	LENGTH	FIELD NAILING	EDGE NAILING
6'	6'-18'	8d NAILS @ 12" O.C	8d NAILS @ 4" O.C.
8'	8'-24'	8d NAILS @ 12" O.C	8d NAILS @ 4" O.C.
10'	10'-24'	8d NAILS @ 12" O.C	8d NAILS @ 4" O.C.
12'	12'-24'	8d NAILS @ 12" O.C	8d NAILS @ 4" O.C.

NOTES:
1. USE 8d COMMON OR GALVANIZED BOX NAILS.

TABLE NOTES:

1. NAILING IS FOR 3/8" SMARTSIDE PANEL OR 3/8" SMARTSIDE WITH FOIL BACKER.
2. NO SINGLE OPENING GREATER THAN 8'-0"
3. * 6' WIDE X 6'-9' LENGTH BUILDINGS ARE BASED ON 3-SIDED DIAPHRAGM.
   THE END WALL OPPOSITE OF THE OPENING MUST BE FULLY SHEATHED, IN THE
   3-SIDED DIAPHRAGM CASES. THE END WALL WITH THE OPENING DOES NOT HAVE
   A MIN. RETURN WALL ON EACH SIDE OF THE OPENING.
4. USE COMMON OR GALVANIZED BOX NAILS.
5. FIELD NAILING FOR 3/8" SMARTSIDE: 8d @ 12" O.C.
6. ON THESE BUILDINGS 6' X 10'-18' THE 3' DOOR IN THE END WALL WILL NEED TO BE
   OFF SET. THERE WILL BE A 2' PANEL ON ONE SIDE AND A 1' PANEL ON THE OTHER SIDE
   OF THE DOOR.
7. (BS) - DESIGNATES WALLS THAT NEED TO BE SHEATHED ON BOTH SIDES.

Reviewed for Code Compliance
Universal Engineering Sciences

TUFF SHED
Storage Buildings & Garages
TUFF SHED, MFG. FACILITIES

Order #.
Customer:
Site Address:
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

P.O. #
Drawn By: PK
Date: 8/15/16
Checked By:
Date:
Scale: N.T.S.

TUFF SHED, INC.
ENGINEERING DEPARTMENT
RICHARD J. WILLS, P.E.
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 5618

This item has been electronically signed and sealed by Richard Wills, PE. On the date shown using a Digital Signature.

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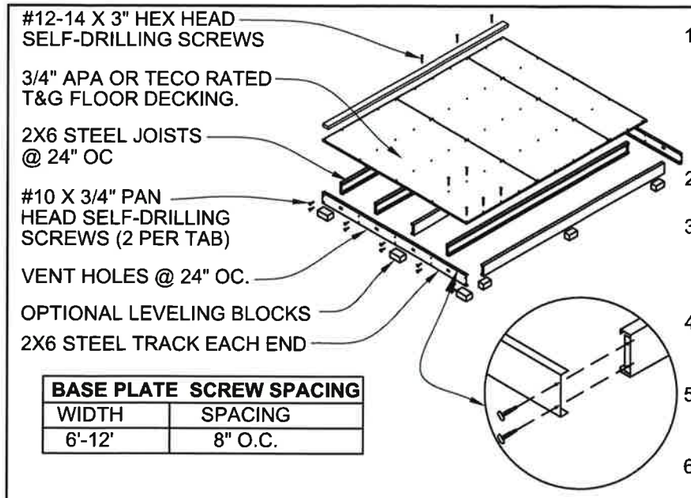
RICHARD WILLS LICENSE No. 76835 STATE OF FLORIDA PROFESSIONAL ENGINEER

TITLE
DOOR DETAILS
NAILING REQUIREMENTS
FBC, 5th EDITION (2014)
155C

DRAWING NO. FL-PR-SR-TR-01
REV. LEVEL 01
SHEET 2
PAGE 2 OF 4

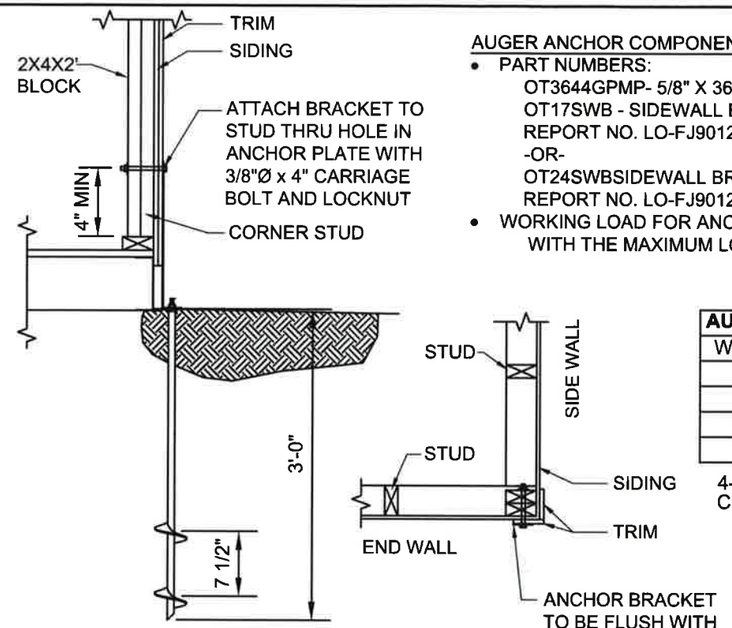
22 AUG 2016



BASE PLATE SCREW SPACING	
WIDTH	SPACING
6'-12'	8" O.C.

1. STEEL SHED FOUNDATION:
   600T125-054 - 16 GAUGE STEEL TRACKS G140 ZINC COATED
   600S137-054 - 16 GAUGE STEEL JOISTS G140 ZINC COATED @ 24" O.C.
   (SUPPLIER: ALLIED STUDCO (JOIST: 600S137-054 / TRACK: 600T125-054) ICC ER-4943P.
2. 3/4" APA OR TECO RATED TONGUE AND GROOVE FLOOR DECKING. 24" MAX PANEL SPAN. STAGGER PANEL LAYOUT.
3. FASTEN FLOOR DECKING TO JOIST & TRACKS USING #8 x 1-5/8" ZINC PLATED SCREWS @ 12" O.C.
   NO BLOCKING REQUIRED. ALL EDGES SHALL LIE ON FLOOR JOISTS. STAGGER PANEL LAYOUT PER APA CONDITION 1.
4. FASTEN SOLE PLATE THROUGH FLOOR DECKING INTO JOISTS OR TRACKS WITH #12-14 X 3" GALVANIZED SELF-DRILLING SCREWS. REFERENCE SPACING CHART.
5. ALLOWABLE FLOOR LIVE LOAD: 75 PSF FOR STEEL JOISTS CONTINUOUSLY SUPPORTED. 50 PSF FOR JOISTS ON BLOCKS AS SHOWN.
6. USE OPTIONAL CONCRETE BLOCKS AS REQUIRED TO LEVEL BUILDING:
   SUGGESTED SIZES: 2" x 8" x 16", 4" x 8" x 16", OR 8" x 8" x 16".
   BLOCKS UNDER JOISTS SPACED @ 8'-0" O.C. MAXIMUM.
   BLOCKS UNDER TRACK SPACED @ 4'-0" O.C. MAXIMUM.

1 STEEL SHED BASE DETAIL
SCALE: N.T.S.



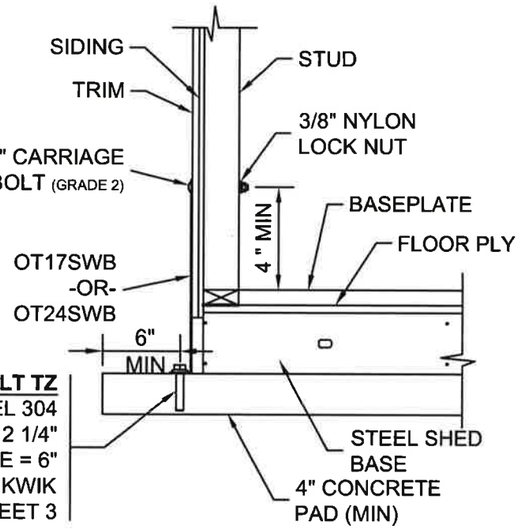
AUGER ANCHOR COMPONENTS BY OLIVER TECHNOLOGIES

- PART NUMBERS:
  OT3644GPMP- 5/8" X 36" (36" IMBED) GALVANIZED AUGER
  OT17SWB - SIDEWALL BRACKET FOR USE WITH THRU BOLTS
  REPORT NO. LO-FJ90129-A
  -OR-
  OT24SWBSIDEWALL BRACKET FOR USE WITH THRU BOLTS
  REPORT NO. LO-FJ90129-B
- WORKING LOAD FOR ANCHOR SYSTEM IS 3,150 LBS WITH THE MAXIMUM LOAD OF 5,080 LBS

AUGER ANCHORS		
WIDTH	LENGTH	# OF ANCHORS
6'	6'-18'	4 ANCHORS
8'	8'-24'	4 ANCHORS
10'	10'-24'	4 ANCHORS
12'	12'-24'	4 ANCHORS

4-ANCHORS PROVIDE (1) AT EA. CORNER OF THE BUILDING.

2 AUGER ANCHOR DETAIL
SCALE: N.T.S.



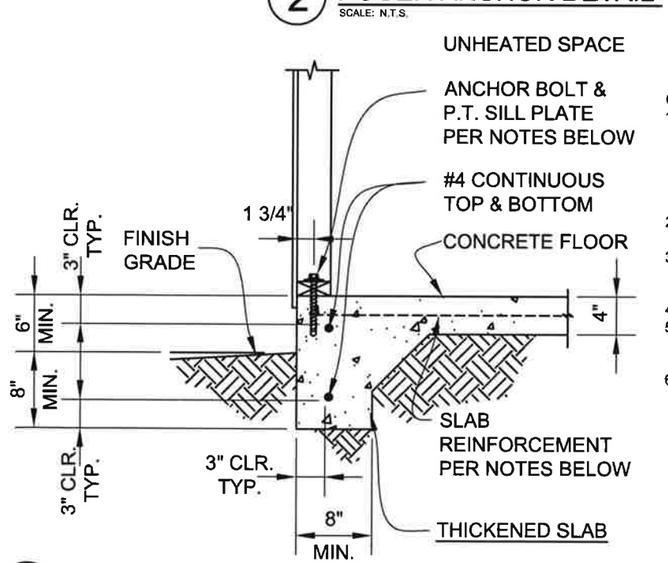
1/2" HILTI KWIK BOLT TZ
STAINLESS STEEL 304
EMBEDMENT DEPTH = 2 1/4"
MIN. EDGE DISTANCE = 6"
ANCHOR SPACING: RE: KWIK BOLT ANCHORS TABLE, SHEET 3

KWIK BOLT ANCHORS (INTO CONCRETE) RE: DETAIL 3 SHEET 3		
WIDTH	LENGTH	QTY
6'	6'-10'	6
6'	12'-18'	8
8'	8'-14'	6
8'	16'-20'	8
8'	22'-24'	10
10'	10'-16'	6
10'	18'-24'	8
12'	12'-18'	6
12'	20'-24'	8

NOTES:
1. ANCHORS TO BE KWIK BOLT TZ, 304 SS

2. PROVIDE (1) ANCHOR AT EA. CORNER OF THE BUILDING. THE REMAINING ANCHORS EQUALLY SPACED ALONG THE LENGTH OF THE BUILDING. (1/2 THE REMAINING ANCHORS ON EA. LENGTH SIDE EQUALLY SPACED).

3 SIDEWALL BRACKET DETAIL
SCALE: N.T.S.



CONTINUOUS FOOTING NOTES
1. TOP OF SLAB TO BE 6" MIN. ABOVE GRADE. SLAB REINFORCEMENT SHALL BE WWF 6X6 W1.4xW1.4 . LOCATE AT MID-DEPTH OF SLAB.
   -OR-
   SLAB REINFORCEMENT SHALL BE FIBERMESH 150 OR BLENDED FIBERMESH150. FIBERMESH SHOULD BE DISPERSED UNIFORMLY THROUGH CONCRETE W/ MIN. 1 POUND PER CUBIC YARD OF CONCRETE.
2. ALL FOOTING FORMS SHALL BE INSPECTED FOR SIZE AND REINFORCING BEFORE POURING CONCRETE.
3. FOOTINGS SHALL BEAR ON UNDISTURBED NATURAL, COMPETENT SOIL, OR PROPERLY COMPACTED STRUCTURAL FILL. ALLOWABLE SOIL BEARING PRESSURE IS 1000 PSF AT 12" BELOW GRADE.
4. CONCRETE: MINIMUM 28 DAY COMPRESSIVE STRENGTH, f'_c = 2500 PSI.
5. REINFORCING STEEL: A615, GRADE 40 OR GRADE 60. ALL REINFORCING STEEL SHOWN TO BE CONTINUOUS MAY BE LAPPED A MINIMUM OF 38 BAR DIAMETERS OR 24" MINIMUM, WHICHEVER IS LARGER.
6. SEISMIC DESIGN CATEGORY: A
   A. ATTACH PRESSURE TREATED SOLE PLATE TO THE FOOTING USING 1/2" DIA X 8" LONG SIMPSON TITEN HD ANCHOR WITH WASHERS.
   B. EXPANSION BOLTS SHALL BE EMBEDDED AT LEAST 5" INTO THE CONCRETE AND SHALL BE SPACED NOT MORE THAN 6' OC.
   C. THERE SHALL BE A MINIMUM OF 2 BOLTS PER SOLE PLATE PIECE WITH 1 BOLT LOCATED NOT MORE THAN 12" NOR LESS THAN 7 BOLT DIAMETERS FROM EACH END OF EACH PIECE.

Reviewed for Code Compliance
Universal Engineering Sciences

4 CONCRETE FOUNDATION DETAIL
SCALE: N.T.S.

TUFF SHED
Storage Buildings & Garages
TUFF SHED, MFG. FACILITIES

Order #.
Customer:
Site Address:
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

P.O. #
Drawn By: PK
Date: 8/15/16
Checked By:
Date:
Scale: N.T.S.

TUFF SHED, INC.
ENGINEERING DEPARTMENT
RICHARD J. WILLS, P.E.
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 5618

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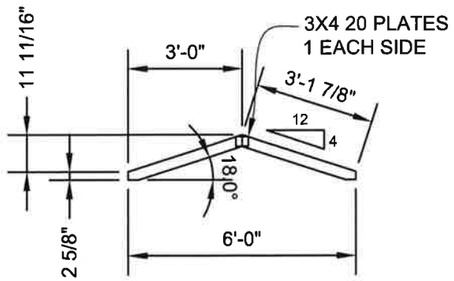
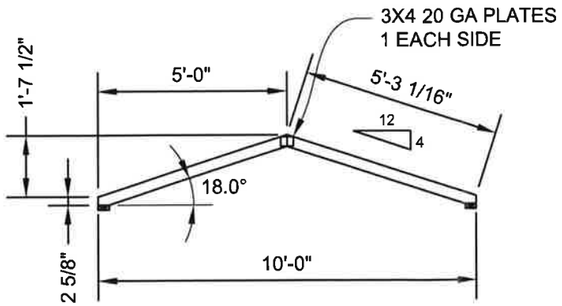
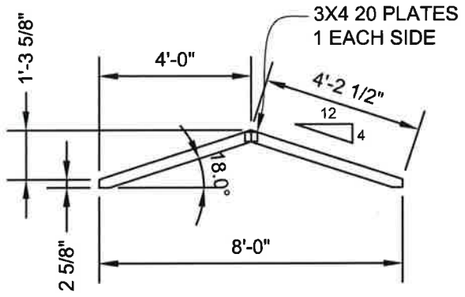
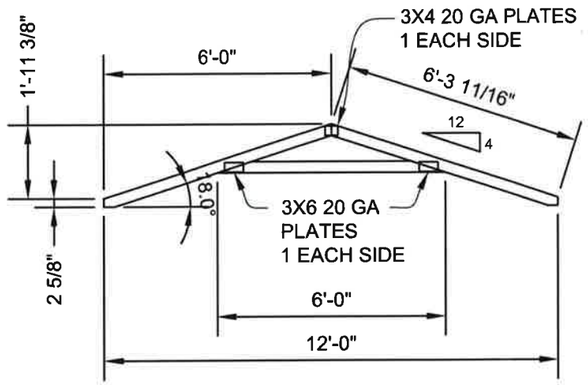
SHEET 3
PAGE 3 OF 4

22 AUG 2016









6' SPAN
REACTIONS:
MAX. VERTICAL: 205 LBS.
MAX. UPLIFT: -160 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 12FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

10' SPAN
REACTIONS:
MAX. VERTICAL: 510 LBS.
MAX. UPLIFT: -250 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 20FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

8' SPAN
REACTIONS:
MAX. VERTICAL: 255 LBS.
MAX. UPLIFT: -195 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 14FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

12' SPAN
REACTIONS:
MAX. VERTICAL: 630 LBS.
MAX. UPLIFT: -285 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 24FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

MAXIMUM DEFLECTION (12 FT. SPAN)
VERT LL: 0.06 in.
VERT TL: 0.08 in.

DESIGN LOADS:
TOP CHORD LIVE LOAD = 20 PSF
TOP CHORD DEAD LOAD = 10 PSF
COLLAR TIE DEAD LOAD = 5 PSF

NOTES:
FBC, 5th EDITION (2014)
ANSI/TPI 1-2007
TRUSSES TO BE SPACED @ 24" OC
MATERIAL TO BE 2X4 SOUTHERN PINE GRADE #2 OR BETTER
PLATES ARE TO BE PRESSED IN THE WOOD PER TPI.

REP MEMBER INCREASE: YES
LUMBER D.O.L.: 1.25

WIND:
ASCE 7-10, 155 mph, Exposure C, D.O.L.=1.60

PLATES ARE MANUFACTURED BY EAGLE METAL PRODUCTS, ICC-ES #ESR-1082.

ALL PERSONS FABRICATING, HANDLING, ERECTING OR INSTALLING THIS TRUSS ARE TO DO SO IN ACCORDANCE TO THE RECOMMENDATIONS OF THE LATEST VERSION OF THE BCSI.

Reviewed for Code Compliance
Universal Engineering Sciences

TUFF SHED
Storage Buildings & Garages
TUFF SHED, MFG. FACILITIES

Order #. _____
Customer: _____
Site Address: _____
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

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TUFF SHED, INC.
ENGINEERING DEPARTMENT

RICHARD J. WILLS, P.E.

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22 AUG 2016

EXTERIOR RESEARCH & DESIGN, LLC.
Certificate of Authorization #9503
353 CHRISTIAN STREET, UNIT #13
OXFORD, CT 06478
PHONE: (203) 262-9245
FAX: (203) 262-9243

EVALUATION REPORT

Owens Corning
One Owens Corning Parkway
Toledo, OH 43659

Evaluation Report O37940.02.12-R7
FL10674-R12
Date of Issuance: 02/06/2012
Revision 7: 04/18/2016

SCOPE:
This Evaluation Report is issued under Rule 61G20-3 and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the 5th Edition (2014) Florida Building Code sections noted herein.

DESCRIPTION: Owens Corning Asphalt Roof Shingles

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

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

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

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

This Evaluation Report consists of pages 1 through 8.

Prepared by:

Robert J.M. Nieminen, P.E.
Florida Registration No. 59166, Florida DCA ANE1983

The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 04/18/2016. This does not serve as an electronically signed document. Signed, sealed hardcopies have been transmitted to the Product Approval Administrator and to the named client

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

ROOFING SYSTEMS EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Asphalt Shingles
Compliance Statement: Owens Corning Asphalt Roof Shingles, as produced by Owens Corning, have demonstrated compliance with the following sections of the Florida Building Code and Florida Building Code, Residential Volume through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1507.2.5, R905.2.4	Physical Properties	ASTM D3462	2009
1507.2.7.1, R905.2.6.1	Wind Resistance	ASTM D3161	2009
1507.2.7.1, R905.2.6.1	Wind Resistance	ASTM D7158	2008

3. REFERENCES:

Entity	Examination	Reference	Date
UL LLC (CER9626)	Physicals & Wind Resistance	File R2453, Vol. 3	02/15/2007
UL LLC (CER9626)	Physicals & Wind Resistance	20120516-R2453	05/16/2012
UL LLC (TST9628)	Physical Properties	06CA20263	04/18/2006
UL LLC (TST9628)	Wind Resistance	11CA34308	02/18/2012
UL LLC (TST9628)	Physicals & Wind Resistance	4786093137	02/01/2014
UL LLC (TST9628)	Wind Resistance	4786126532	02/10/2014
UL LLC (TST9628)	Physical Properties	Classification letter	02/13/2014
UL LLC (TST9628)	Physical Properties	Classification letter	10/02/2015
Miami-Dade (CER1592)	FBC HVHZ Compliance	Various NOAs	Various
UL LLC (QUA9625)	Quality Control	Service Confirmation, R2453	Exp. 08/20/2017

4. PRODUCT DESCRIPTION:

4.1 Asphalt Shingles:

4.1.1 Classic® and Supreme® are fiberglass reinforced, 3-tab asphalt roof shingles.

4.1.2 Berkshire® are fiberglass reinforced, 4-tab asphalt roof shingles.

4.1.3 Devonshire™ are fiberglass reinforced, 5-tab asphalt roof shingles.

4.1.4 Duration®, TruDefinition® Duration®, Duration® Premium Cool, TruDefinition® Duration® Designer Color Collection, TruDefinition® Oakridge®, Oakridge® and WeatherGuard® HP are fiberglass reinforced, laminated asphalt roof shingles.

4.2 Berkshire® Hip & Ridge Shingles, High Ridge, WeatherGuard® HP Hip & Ridge Shingles, ProEdge Hip & Ridge Shingles and DuraRidge™ Hip & Ridge Shingles are fiberglass reinforced, hip and ridge asphalt roof shingles.

4.3 Starter Strip Shingle, Starter Strip Plus and Starter Shingle Roll are starter strips for asphalt roof shingles.

5. LIMITATIONS:

5.1 This is a building code evaluation. Neither Trinity|ERD nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

5.2 This Evaluation Report is not for use in the HVHZ.

5.3 Fire Classification is not part of this Evaluation Report; refer to current Approved Roofing Materials Directory for fire ratings of this product.

5.4 Wind Classification:

5.4.1 All Owens Corning shingles noted herein are Classified in accordance with FBC Tables 1507.2.7.1 and R905.2.6.1 to ASTM D3161, Class F and/or ASTM D7158, Class H, indicating the shingles are acceptable for use in all wind zones up to V_{asd} = 150 mph (V_{ult} = 194 mph). Refer to Section 6 for installation requirements to meet this wind rating.

5.4.2 All Owens Corning hip & ridge shingles, Starter Strip Shingle and Starter Strip Plus noted herein are Classified in accordance with FBC Tables 1507.2.7.1 and R905.2.6.1 to ASTM D3161, Class F, indicating the shingles are acceptable for use in all wind zones up to V_{asd} = 150 mph (V_{ult} = 194 mph). Refer to Section 6 for installation requirements to meet this wind rating.

5.4.3 Classification by ASTM D7158 applies to exposure category B or C and a building height of 60 feet or less. Calculations by a qualified design professional are required for conditions outside these limitations. Contact the shingle manufacturer for data specific to each shingle.

5.4.4 Refer to Owens Corning published information on wind resistance and installation limitations.

5.5 All products in the roof assembly shall have quality assurance audit in accordance with the Florida Building Code and F.A.C. Rule 61G20-3.

6. INSTALLATION:

6.1 Underlayment:

6.1.1 Underlayment shall be acceptable to Owens Corning and shall hold current Florida Statewide Product Approval, or be Locally Approved per Rule 61G20-3, per FBC Sections 1507.2.3, 1507.2.4 or R905.2.3.

6.2 Asphalt Shingles:

6.2.1 Installation of asphalt shingles shall comply with the manufacturer's current published instructions, using minimum four (4) nails per shingle in accordance with FBC Sections 1507.2 or R905.2, with the following exceptions:

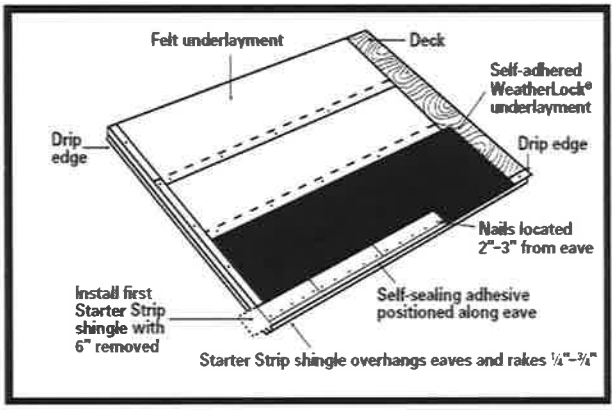
- Berkshire® shingles require minimum five (5) nails per shingle.
- WeatherGuard® HP shingles require minimum six (6) nails per shingle.
- Devonshire™ shingles require minimum six (6) nails per shingle.
- Starter Strip Shingle and Starter Strip Plus require minimum five (5) nails per strip.

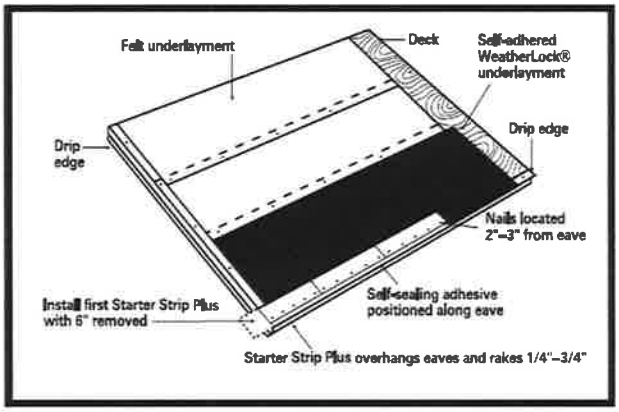
Refer to Owens Corning published information on wind resistance and installation limitations.

6.2.2 Fasteners shall be in accordance with the manufacturer's published requirements, but not less than FBC 1507.2.6 or R905.2.5. Staples are not permitted.

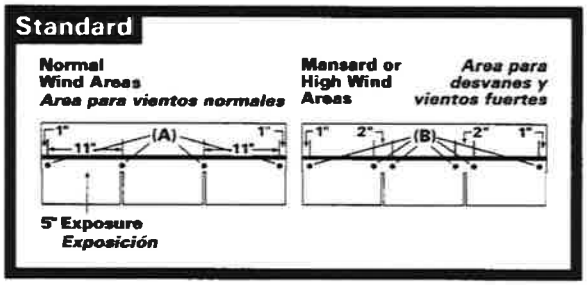
6.2.4 Where the roof slope exceeds 21 units vertical in 12 units horizontal, special methods of fastening are required. See figures below for details.

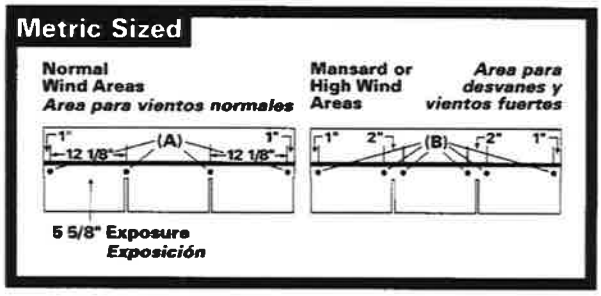
6.2.5 Minimum Nailing – Starter Strip Shingle and Starter Strip Plus:



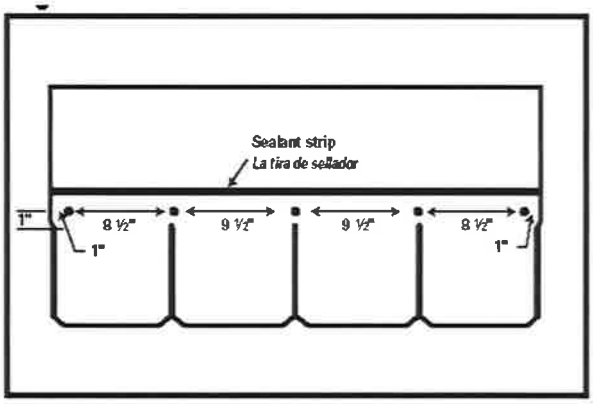


6.2.6 Minimum Nailing – Classic® & Supreme:

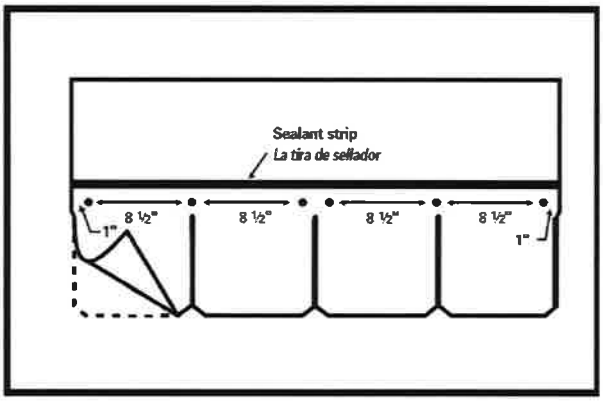




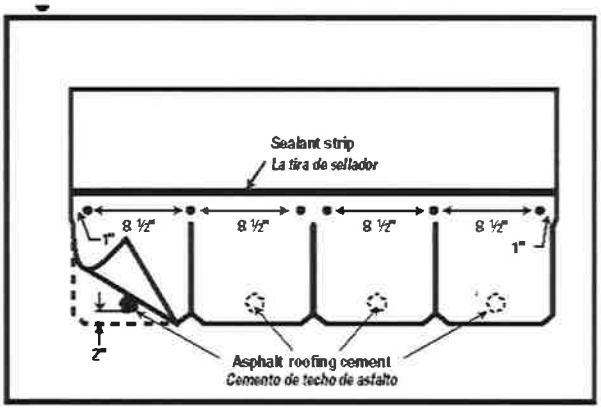
6.2.7 Minimum Nailing – Berkshire®:



Standard Fastening Pattern

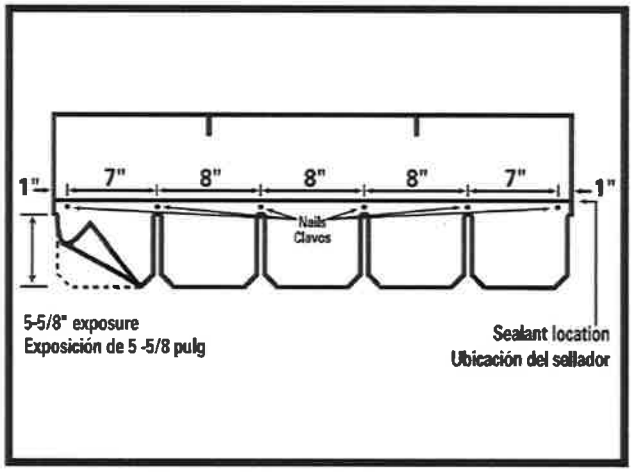


6-Nail Fastening Pattern

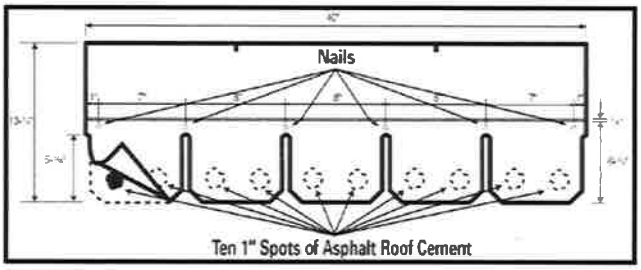


Mansard or Steep Slope Fastening Pattern

6.2.8 Minimum Nailing – Devonshire™:

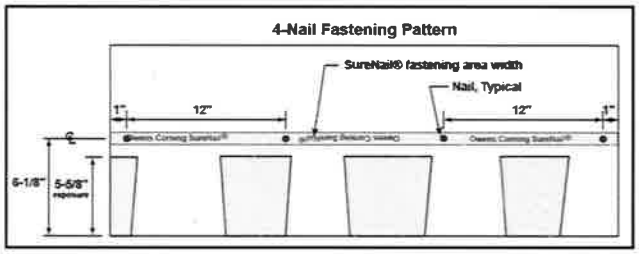


Standard 6-Nail Fastening Pattern

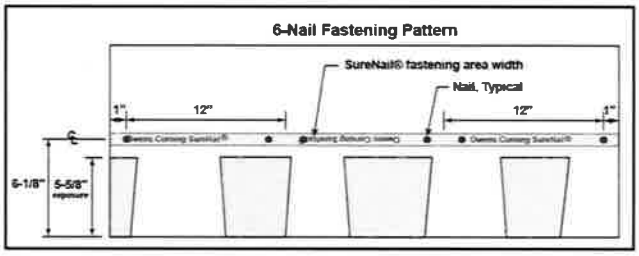


Mansard or Steep Slope Fastening Pattern

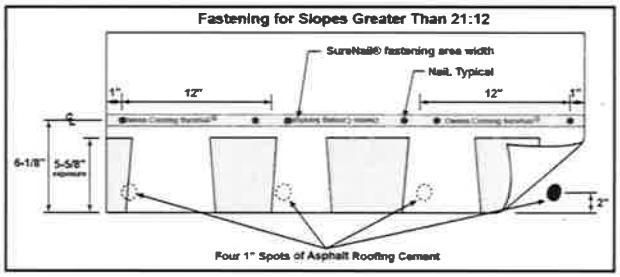
6.2.9 Minimum Nailing – Duration®, TruDefinition® Duration, Duration® Premium Cool & TruDefinition® Duration® Designer Color Collection:



Standard Fastening Pattern

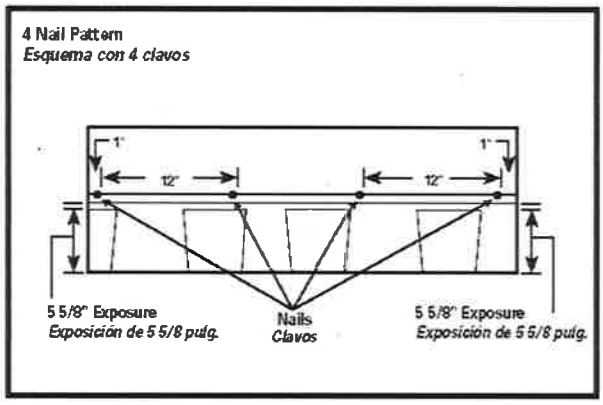


6-Nail Fastening Pattern

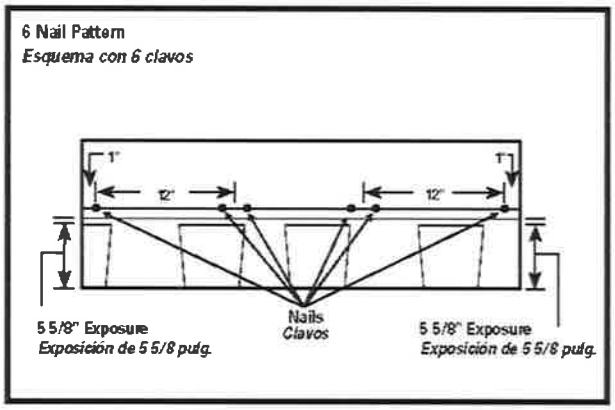


Mansard or Steep Slope Fastening Pattern

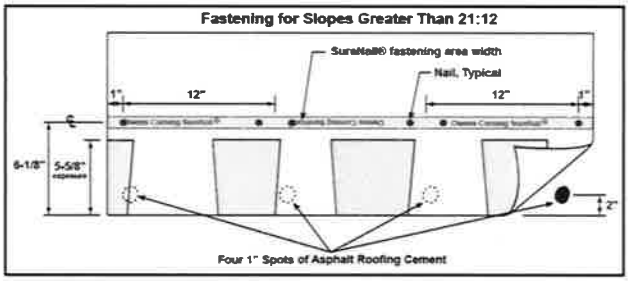
6.2.1 Minimum Nailing – TruDefinition® Oakridge®, Oakridge®:



Standard Fastening Pattern

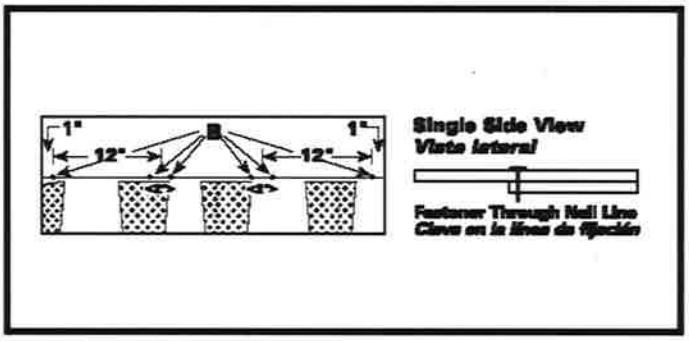


6-Nail Fastening Pattern



Mansard or Steep Slope Fastening Pattern

6.2.1 Minimum Nailing – WeatherGuard® HP:

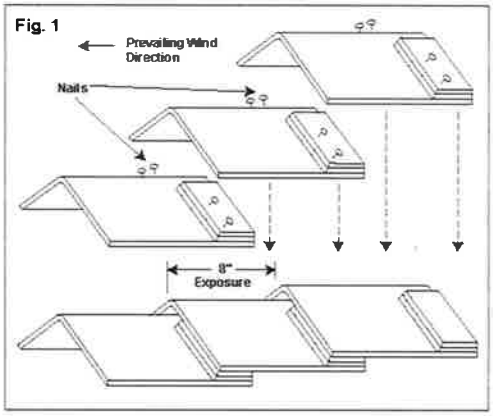


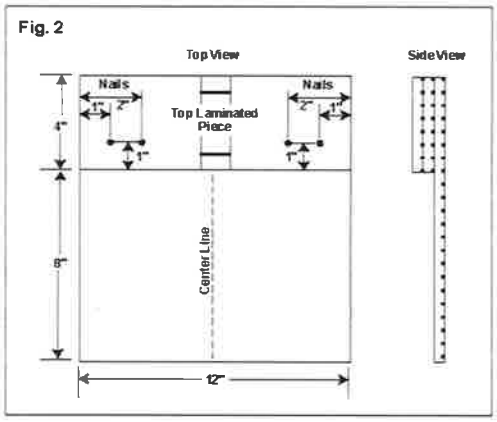
6.3 Hip & Ridge Shingles:

6.3.1 Installation of Berkshire® Hip and Ridge Shingles, High Ridge, WeatherGuard® HP Hip and Ridge Shingles and ProEdge Hip & Ridge Shingles shall comply with the manufacturer's current published instructions, using four (4) nails per shingle. Installation of DuraRidge™ Hip & Ridge Shingles shall comply with the manufacturer's current published instructions, using two (2) nails per shingle. Refer to Owens Corning published information on wind resistance and installation limitations, including the use of hand-sealing for wind warranties.

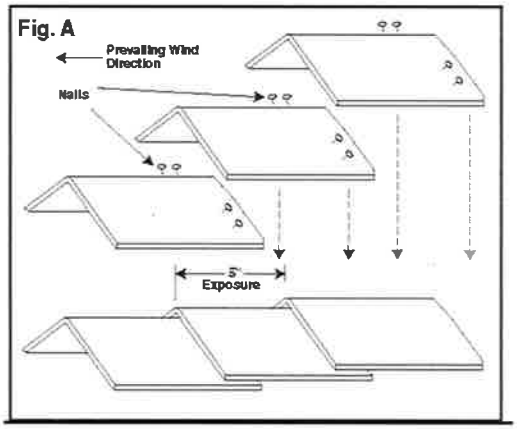
6.3.2 Fasteners shall be in accordance with the manufacturer's published requirements, but not less than FBC 1507.2.6 or R905.2.5. Staples are not permitted.

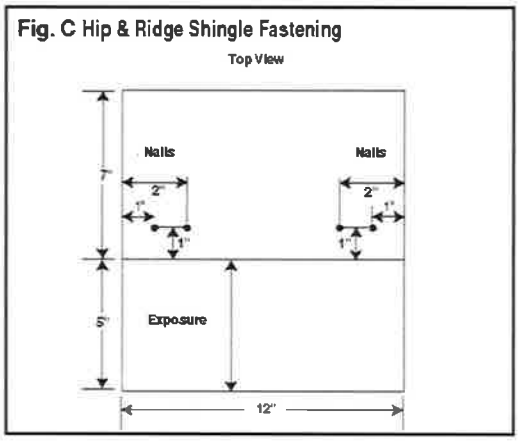
6.3.3 Minimum Nailing – Berkshire® Hip & Ridge and High Ridge:



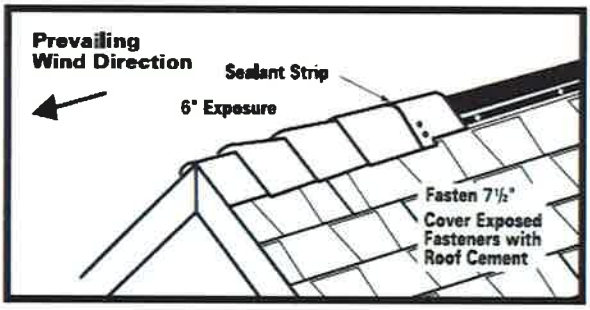


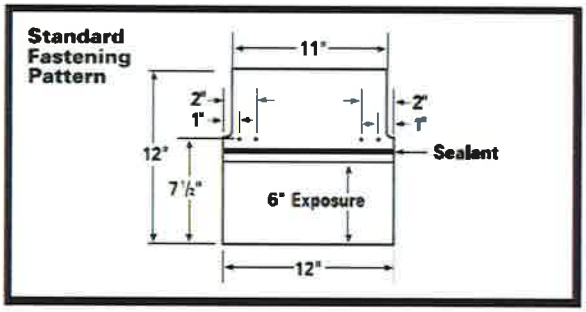
6.3.4 Minimum Nailing – WeatherGuard® HP Hip and Ridge:





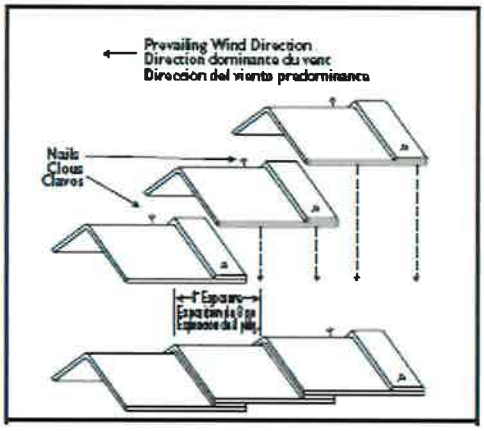
6.3.5 Minimum Nailing - ProEdge Hip & Ridge Shingles:

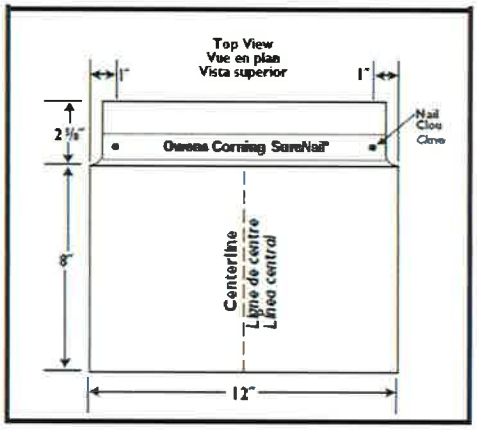




6.3.6 Minimum Nailing – DuraRidge™ Hip & Ridge Shingles:

Note: The drawings below pertain to minimum, as-tested attachment requirements. Refer to Owens Corning published installation instructions for their minimum requirements.





7. LABELING:

7.1 Labeling shall be in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

7.2 Asphalt shingle wrappers shall indicate compliance with one of the required classifications detailed in FBC Table 1507.2.7.1 / R905.2.6.1.

8. BUILDING PERMIT REQUIREMENTS:

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

9. MANUFACTURING PLANTS:

Contact the named QA entity for information on which plants produce products covered by Florida Rule 9N-3 QA requirements.

10. QUALITY ASSURANCE ENTITY:

UL LLC– QUA9625 ; (414) 248-6409; karen.buchmann@ul.com

- END OF EVALUATION REPORT -

INSTALLATION INSTRUCTIONS
MODELS: FS AND FS-HEX
ICC-ES CERTIFIED - ENGINEERED
FEMA COMPLIANT FLOOD VENTS

What you'll need:
- 1" Concrete/wood/metal screws which is dependent on what type of wall you will be fastening into
- 1" Anchors for concrete wall installation
- Power Drill
- 1/4" Masonry Bit or 1/4" wood drill bit (dependent on what type of wall you will be fastening into)
- Screwdriver
- Hammer
- Level
- Exterior Caulking
- Flashing, if needed, for an opening with a cavity in the wall (optional)

INSTRUCTIONS:

******NOTE: BE SURE THAT BOTTOM OF OPENING IS LESS THAN 12" ABOVE THE ADJACENT GRADE.******

Step 1: PROVIDE A CLEAN, SQUARE AND LEVEL ROUGH OPENING
Step 2:APPLY FLASHING AROUND THE INTERIOR OF THE WALL OPENING IF THERE IS A CAVITY IN THE WALL (optional)
Step 3: LAYOUT THE VENT SO THE OPEN AREAS OF THE VENT HAVE A CLEAR OPENING BEHIND THEM.
Step 4: MAKE SURE VENT IS LEVEL
Step 5: MARK HOLES ON WALL AND THEN REMOVE VENT FROM OPENING

FOR CONCRETE WALLS: Use Concrete Screws and Anchors
FOLLOW STEPS 1-5 ABOVE
Step 5: DRILL HOLES 1-1/4"DEEP INTO CONCRETE/BLOCK WALL.
Step 6: FULLY INSERT ANCHORS INTO WALL, TAPPING ANCHORS INTO PLACE USING A HAMMER MAKING SURE ANCHORS ARE FLUSH TO THE WALL
Step 8: REPLACE VENT INTO OPENING
Step 9: SECURE ALL SCREWS THROUGH HOLES IN VENT INTO ANCHORS SET IN WALL
Step 10: CAULK AROUND PERIMETER OF VENT TO HELP PREVENT WATER FROM SEEPING BEHIND THE FLANGE FRAME

FOR WOOD WALLS: Use Wood Screws
FOLLOW STEPS 1-5 ABOVE
Step 5: DRILL HOLES 1/2" DEEP INTO THE WOOD WALL
Step 6: REPLACE VENT OVER THE OPENING
Step 7: SECURE ALL SCREWS THROUGH HOLES IN VENT INTO THE WOOD WALL
Step 8: CAULK AROUND PERIMETER OF VENT TO HELP PREVENT WATER FROM SEEPING BEHIND THE FRAME

FOR INSTALLATION INTO DOORS:
FOLLOW STEPS 1-5 ABOVE
Step 5: IF THE DOOR IS NOT A SOLID DOOR, USE ALUMINUM FLASHING AROUND THE PERIMETER OF THE HOLE
Step 6: DRIVE WOOD OR METAL SCREWS THROUGH PREDRILLED HOLES IN VENTS INTO WOOD FRAMING
Step 7: CAULK AROUND PERIMETER OF VENT TO HELP PREVENT WATER FROM SEEPING BEHIND THE FLANGE FRAME

FLOOD SOLUTIONS, LLC.
One Industrial Park Drive
Bldg. 27
Pelham NH, 03076
Toll Free: 1-800-325-9775
In NH: 603-595-5222
Fax: 603-595-4778
www.floodsolutions.com
info@floodsolutions.com

CROFT, LLC

SERIES 96 SINGLE HUNG WINDOW

INSTALLATION NOTES:

1. *ONE (1)* INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
2. THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
3. INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF ±1/2 INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
4. **36" X 72" UNIT:** FOR INSTALLATION INTO 2X WOOD BUCK, USE #8 WOOD SCREWS OF SUFFICIENT LENGTH TO ACHIEVE 1 1/2 INCH MINIMUM EMBEDMENT INTO WOOD SUBSTRATE.
5. **FIN/FLANGE FRAMES:** FOR INSTALLATION INTO 2X WOOD BUCK, USE #10 WOOD SCREWS OF SUFFICIENT LENGTH TO ACHIEVE *1 1/2* INCH MINIMUM EMBEDMENT INTO WOOD SUBSTRATE.
6. **FLANGE FRAMES:** FOR INSTALLATION THROUGH 1X BUCK TO CONCRETE/MASONRY, OR DIRECTLY INTO CONCRETE/ MASONRY, USE ONE (1) *3/16 INCH ITW TAPCON* PER INSTALLATION CLIP OF SUFFICIENT LENGTH TO ACHIEVE *1 1/4* INCH MINIMUM EMBEDMENT INTO CONCRETE/MASONRY SUBSTRATE.
7. **FIN/FLANGE FRAMES:** FOR INSTALLATION THROUGH STEEL STUD USE #10 SELF-TAPPING SCREWS OF SUFFICIENT LENGTH TO ACHIEVE *3 THREADS* MINIMUM PENETRATION BEYOND STEEL STRUCTURE.
7. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
8. INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
9. FOR HOLLOW BLOCK AND GROUT FILLED BLOCK, DO NOT INSTALL INSTALLATION ANCHORS INTO MORTAR JOINTS. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
10. INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
11. INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
    A. WOOD - MINIMUM SPECIFIC GRAVITY OF *0.55*.
    B. CONCRETE -MINIMUM COMPRESSIVE STRENGTH OF *3192 PSI*.
    C. MASONRY - STRENGTH CONFORMANCE TO ASTM C-90.
    D. STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM WALL THICKNESS OF 33 MILS. (20 GUAGE)

GENERAL NOTES:

1. THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 5TH EDITION 2014 FLORIDA BUILDING CODE (FBC) EXCLUDING HVHZ AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
    - AAMA/WDMA/CSA 101/I.S.2/A440-08
2. ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, 2X AND METAL STUD FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
3. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
4. THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.
5. APPROVED IMPACT PROTECTIVE SYSTEM IS REQUIRED TO PROTECT THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
6. WINDOW FRAME MATERIAL: *6063-T5 ALUMINUM*
7. GLASS SHALL MEET REQUIREMENTS OF ASTM E1300-04 GLASS CHARTS. SEE SHEET *4* FOR GLAZING DETAILS..
8. *DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:*
    X: OPERABLE PANEL
    O: FIXED PANEL

TABLE OF CONTENTS

FRAME TYPE	OVERALL SIZE		DP RATING	MISSILE IMPACT RATING
	WIDTH	HEIGHT		
FLANGE	52"	76"	+/- 35 PSF	NON-IMPACT
FIN	48"	72"	+/- 35 PSF	NON-IMPACT
	36"	72"	+/- 40 PSF	NON-IMPACT

Digitally signed by Hermes F Norero, P.E.
Reason: I am approving this document
Date: 2016.02.22 11:40:00 -05'00'

CROFT
Est. 1920
P.O. BOX 826
MCCOMB, MS 39649
PH: 601-684-6121 FX: 601-783-3188

TITLE: SERIES 96 SINGLE-HUNG GENERAL & INSTALLATION NOTES

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., #338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

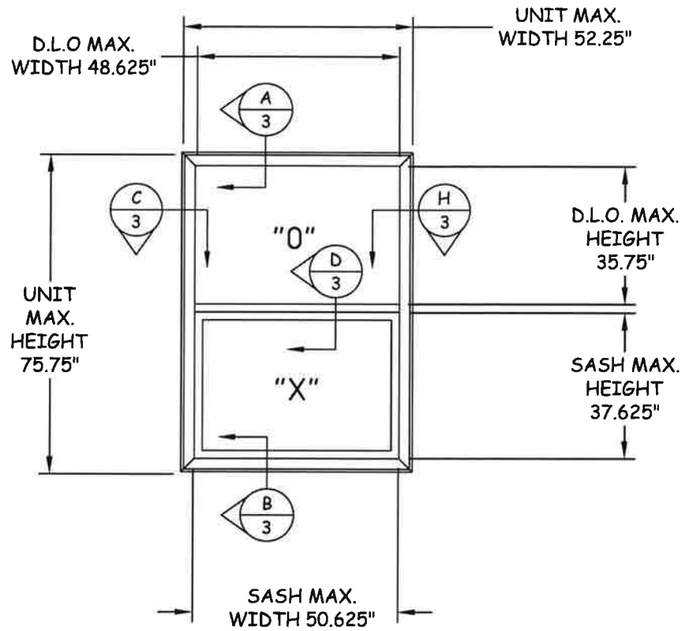
REVISIONS

NO.	DESCRIPTION	BY	DATE
A	5TH EDITION 2014 FBC REVISION	LS	02/11/16

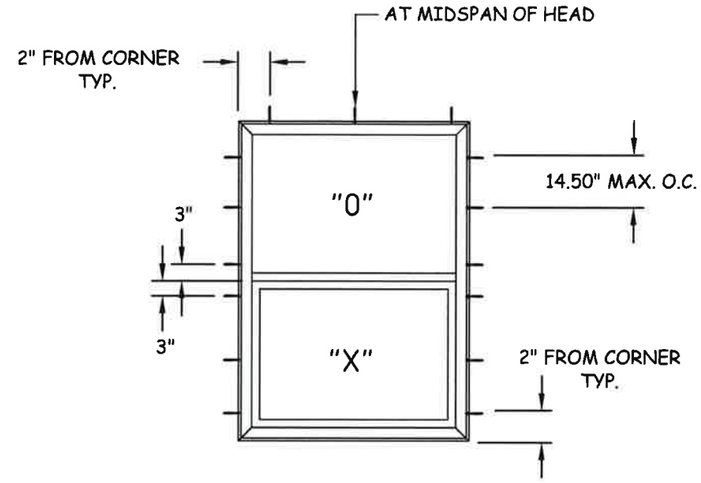
HERMES F. NORERO LICENSE No. 73778 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE: 08.08.13
DWN BY: MSS
CHK BY: HFN
SCALE: NTS

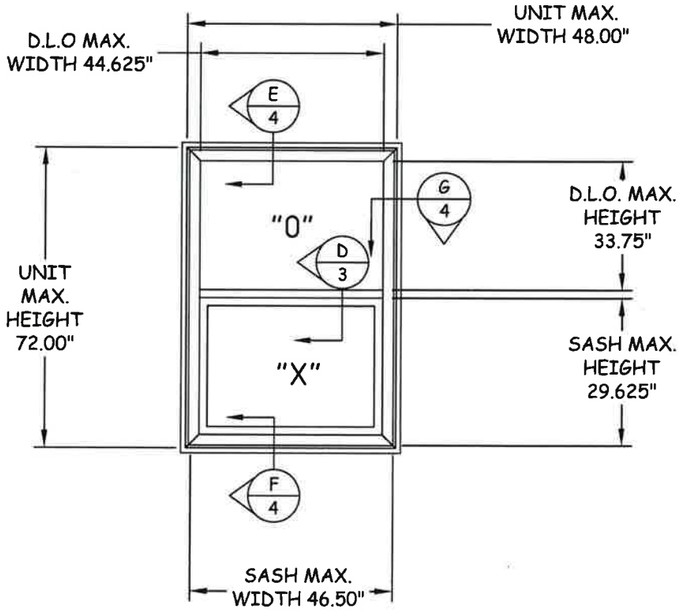
DWG #: CRF014



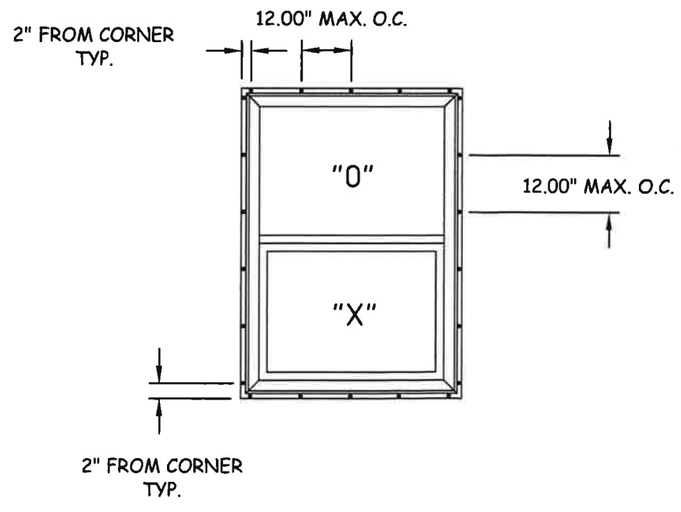
ELEVATION
FLANGE FRAME



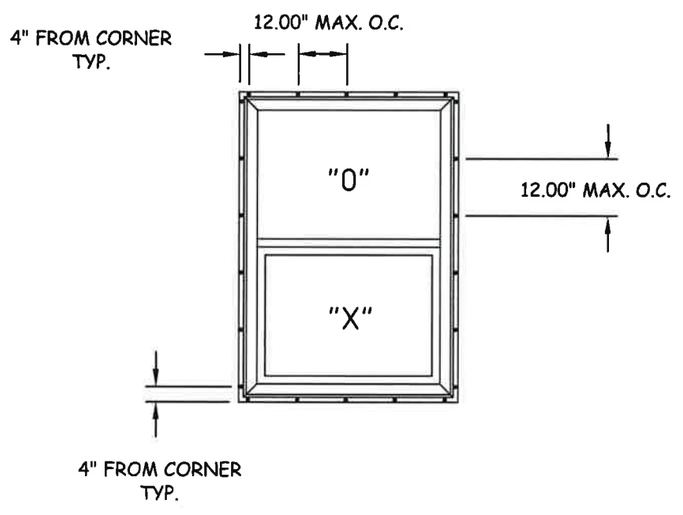
ANCHOR LAYOUT
FLANGE FRAME



ELEVATION
FIN FRAME
48" x 72" UNIT



ANCHOR LAYOUT
FIN FRAME
48" X 72" UNIT



ANCHOR LAYOUT
FIN FRAME
36" X 72" UNIT

CROFT
P.O. BOX 826
MCCOMB, MS 39649
PH: 601-684-6121 FX: 601-783-3188

TITLE:
SERIES 96 SINGLE-HUNG
ELEVATIONS & ANCHOR LAYOUTS

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., #338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS

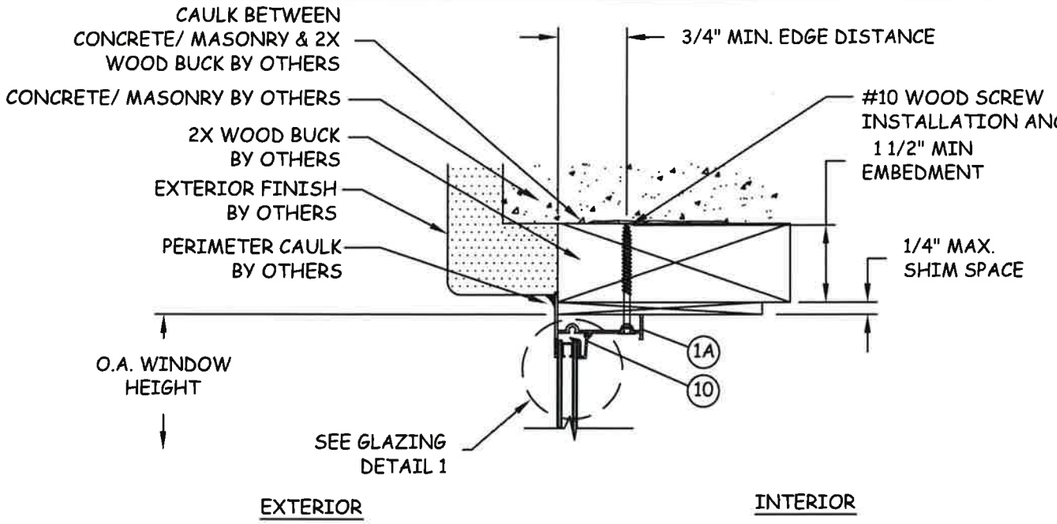
NO.	DESCRIPTION	BY	DATE

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

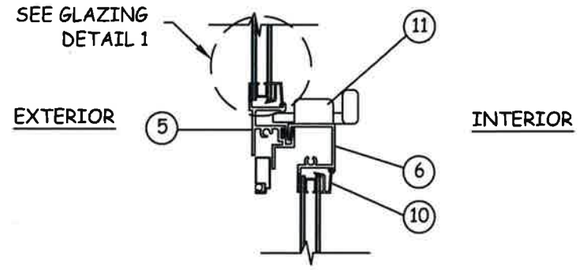
DATE:	DWN BY:	CHK BY:	SCALE:
08.08.13	MSS	HFN	NTS

DWG #: CRF014

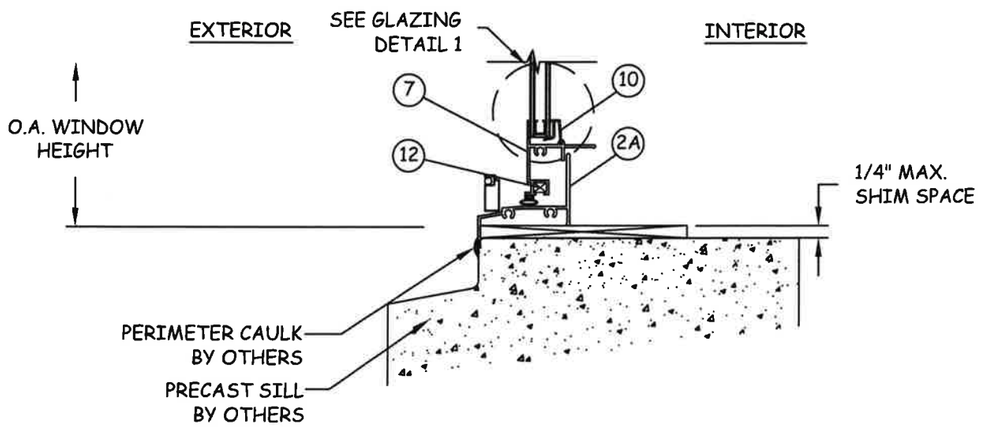
SHEET: 2 OF 5



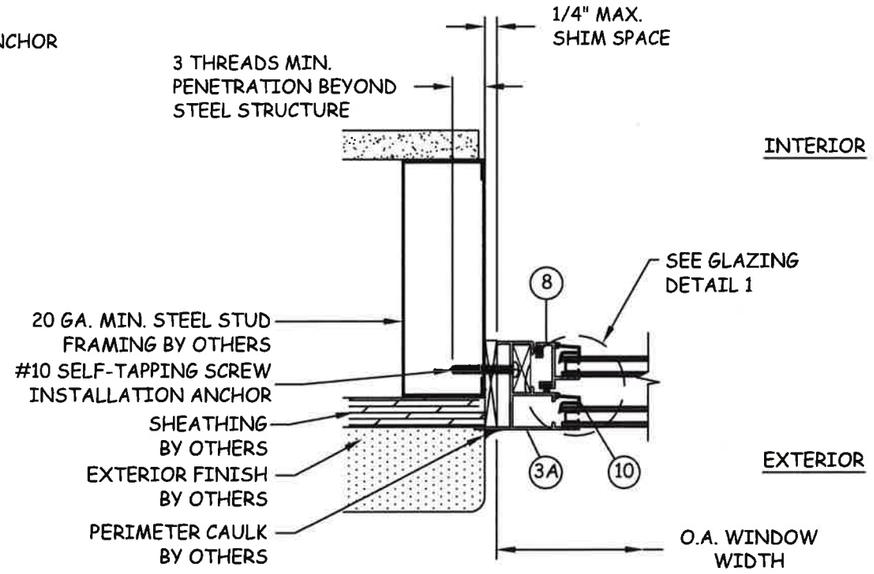
A/3 VERTICAL SECTION
HEAD - 2X WOOD BUCK
FLANGE FRAME



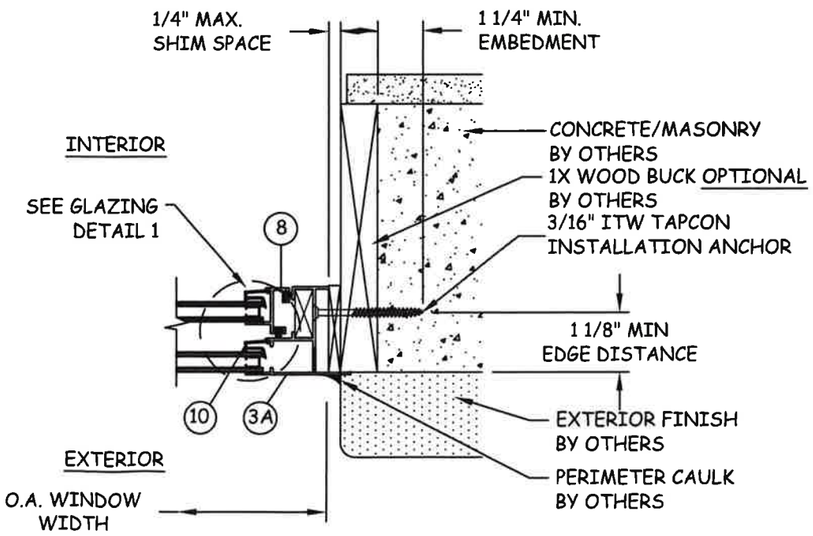
D/3 VERTICAL SECTION
MEETING RAIL



B/3 VERTICAL SECTION
SILL - PRECAST CONCRETE
FLANGE FRAME



C/3 HORIZONTAL SECTION
JAMB - STEEL STUD FRAME
FLANGE FRAME



H/3 HORIZONTAL SECTION
JAMB - 1X BUCK/CONCRETE/MASONRY
FLANGE FRAME

CROFT
Est. 1920
P.O. BOX 826
MCCOMB, MS 39649
PH: 601-684-6121 FX: 601-783-3188

TITLE:
SERIES 96 SINGLE-HUNG
INSTALLATION DETAILS - FLANGE FRAME

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., #338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS

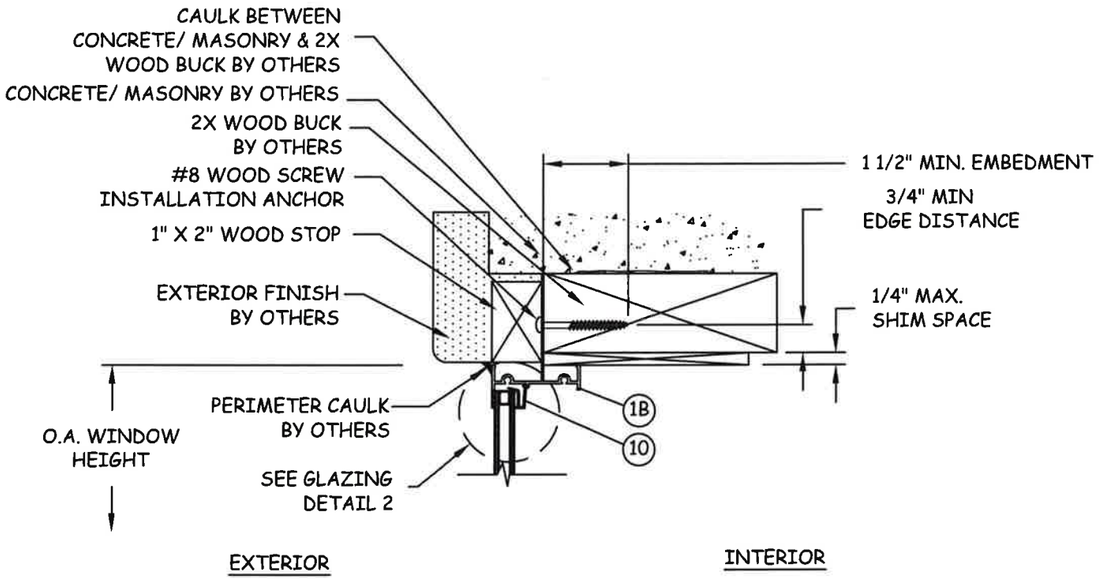
NO.	DESCRIPTION	BY	DATE

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

DATE: 08.08.13
DWN BY: MSS
CHK BY: HFN
SCALE: NTS

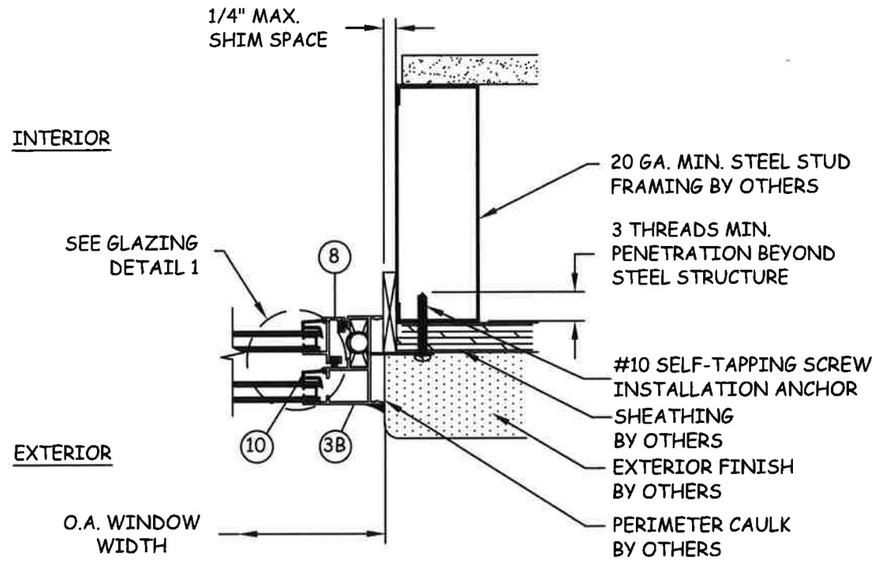
DWG #: CRF014

SHEET: 3 OF 5



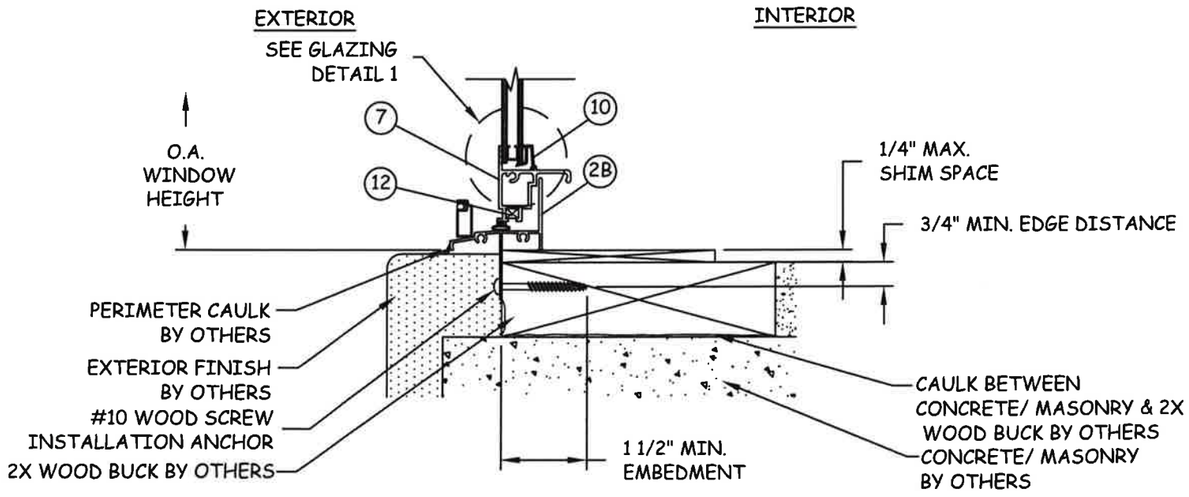
E/4 VERTICAL SECTION

HEAD - 2X WOOD BUCK
FIN FRAME - 36" X 72" UNIT



G/4 HORIZONTAL SECTION

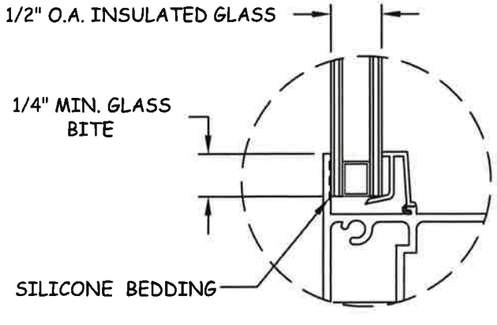
JAMB - STEEL STUD FRAME
FIN FRAME - 48" X 72" UNIT



F/4 VERTICAL SECTION

SILL - 2X WOOD BUCK
FIN FRAME - 48" X 72" UNIT

GLAZING DETAIL 1



GLAZING DETAIL 2

NOTE:
GLASS THICKNESS AND TYPE MAY VARY PER ASTM E 1300-04 GLASS CHART REQUIREMENTS AND REQUIREMENTS SET FORTH IN THE CURRENT FLORIDA BUILDING CODE.

Est. 1926
CROFT
P.O. BOX 826
MCCOMB, MS 39649
PH: 601-684-6121 FX: 601-783-3188

TITLE: SERIES 96 SINGLE-HUNG GLAZING & INSTALLATION DETAILS - FIN FRAME

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., #338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS

NO.	DESCRIPTION	BY	DATE

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

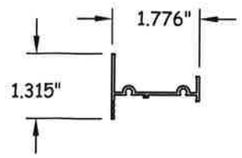
DATE: 08.08.13
DWN BY: MSS
CHK BY: HFN
SCALE: NTS

DWG #: CRF014

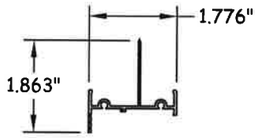
SHEET: 4 OF 5

BILL OF MATERIAL			
ITEM #	DESCRIPTION	MATERIAL	MANUFACTURER
1A	FRAME HEAD - FLANGE	6063-T5 ALUMINUM	CROFT, LLC
1B	FRAME HEAD - FIN	6063-T5 ALUMINUM	CROFT, LLC
2A	FRAME SILL - FLANGE	6063-T5 ALUMINUM	CROFT, LLC
2B	FRAME SILL - FIN	6063-T5 ALUMINUM	CROFT, LLC
3A	FRAME JAMB (LH) - FLANGE	6063-T5 ALUMINUM	CROFT, LLC
3B	FRAME JAMB (LH) - FIN	6063-T5 ALUMINUM	CROFT, LLC
4A	FRAME JAMB (RH) - FLANGE	6063-T5 ALUMINUM	CROFT, LLC
4B	FRAME JAMB (RH) - FIN	6063-T5 ALUMINUM	CROFT, LLC
5	MEETING RAIL	6063-T5 ALUMINUM	CROFT, LLC
6	VENT HEAD	6063-T5 ALUMINUM	CROFT, LLC
7	VENT SILL	6063-T5 ALUMINUM	CROFT, LLC
8	VENT JAMB	6063-T5 ALUMINUM	CROFT, LLC
9	VENT STOP	6063-T5 ALUMINUM	CROFT, LLC
10	GLAZING BEAD	RIGID PVC	CROFT, LLC
11	CAM LOCK	-	CROFT, LLC
12	PIVOT BAR	-	CROFT, LLC
13	BALANCE ASSEMBLY	-	CROFT, LLC
14	VINYL SEAL	-	CROFT, LLC
15	WOOLPILE	-	CROFT, LLC

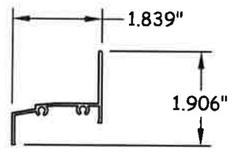
1A FRAME HEAD - FLANGE
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



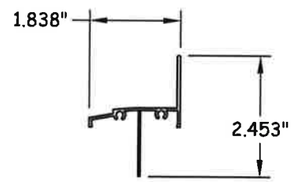
1B FRAME HEAD - FIN
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



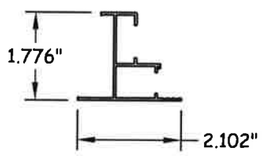
2A FRAME SILL - FLANGE
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



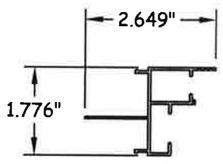
2B FRAME SILL - FIN
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



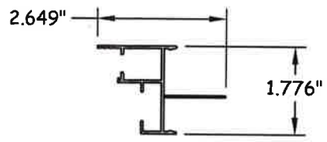
3A 4A FRAME JAMB (LH/RH) - FLANGE
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



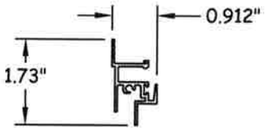
3B FRAME JAMB (LH) - FIN
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



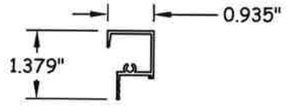
4B FRAME JAMB (RH) - FIN
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



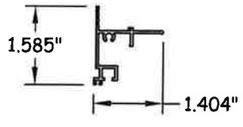
5 MEETING RAIL
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



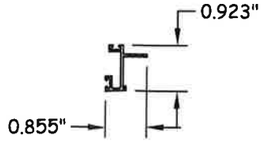
6 VENT HEAD
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



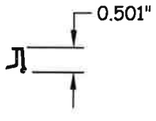
7 VENT SILL
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



8 VENT JAMB
6063-T5 AL.
TYPICAL WALL THICKNESS: .050"



10 GLAZING BEAD
RIGID PVC



CROFT
Est. 1926
P.O. BOX 826
MCCOMB, MS 39649
PH: 601-684-6121 FX: 601-783-3188

TITLE: SERIES 96 SINGLE-HUNG COMPONENTS & BILL OF MATERIALS

PREPARED BY:
BUILDING DROPS, INC.
398 E. DANIA BEACH BLVD., #338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS

NO.	DESCRIPTION	BY	DATE

HERMES F. NORERO LICENSE No. 73778 STATE OF FLORIDA PROFESSIONAL ENGINEER
HERMES F. NORERO, P.E. No. 73778 STATE OF FLORIDA
398 E. DANIA BEACH BLVD., #338 DANIA BEACH, FL 33004
BPE CERT. OF AUTHORIZATION No. 28578

DATE:	DWN BY:	CHK BY:	SCALE:
08.08.13	MSS	HFN	NTS

DWG #: CRF014

SHEET: 5 OF 5

Technical Note No. 014

LP BUILDING PRODUCTS

Installing LP® SmartSide® Trim and Lap Siding on Concrete or Masonry Walls over Furring Strips in Florida (V_{ult} Wind Speeds)

This Technical Note is an addendum to the LP® SmartSide® Trim and Fascia, and LP® SmartSide® Lap siding Application Instructions ("Instructions"). It is intended to provide an alternative fastening option for LP SmartSide trim and lap siding on concrete or masonry walls over furring strips. The Instructions remain effective except as may be modified by this Note. Refer to the Instructions for all other aspects of product installation.

Trim and lap siding may be installed on concrete or masonry walls over furring strips:

- Trim and lap siding must be installed over a minimum 1x4 nominal size Southern Pine furring strips with a specific gravity greater than or equal to 0.55.
    - Install furring strips no more than 16"o.c. in wind speed areas less than or equal to 200 MPH[1]
- Siding shall be installed to safely support all loads, including wind loads, of the locally adopted building codes. The installation of siding shall result in a system that provides a load path that meets the requirements for the transfer of loads from their point of origin through the load-resisting elements to the structure. The mechanical connection of the furring strip to the concrete or masonry structure is the responsibility of a design professional. LP assumes no liability for any loss or damage caused by the design of the mechanical connection of the furring strip to the concrete or masonry structure and is expressly released by the purchaser or owner from any such loss or liability.
- Minimum Fastener Type:
    - Corrosion Resistant – Hot Dipped Galvanized or equal (ASTM A153)[2]
    - Ring Shank[3]
    - Shank diameter = 0.120 inch
    - Head diameter = 0.270 inch
    - Length = fastener shall fully penetrate a minimum 1/2 inch into nailable furring **Caution:** fastener shall not bottom out on masonry wall leaving the fastener head less than flush with the face of trim or siding.

ADDRESS 414 Union Street
Suite 2000
Nashville, TN
TEL (615) 986-5600
FAX (615) 986-5666
WEB www.lpcorp.com

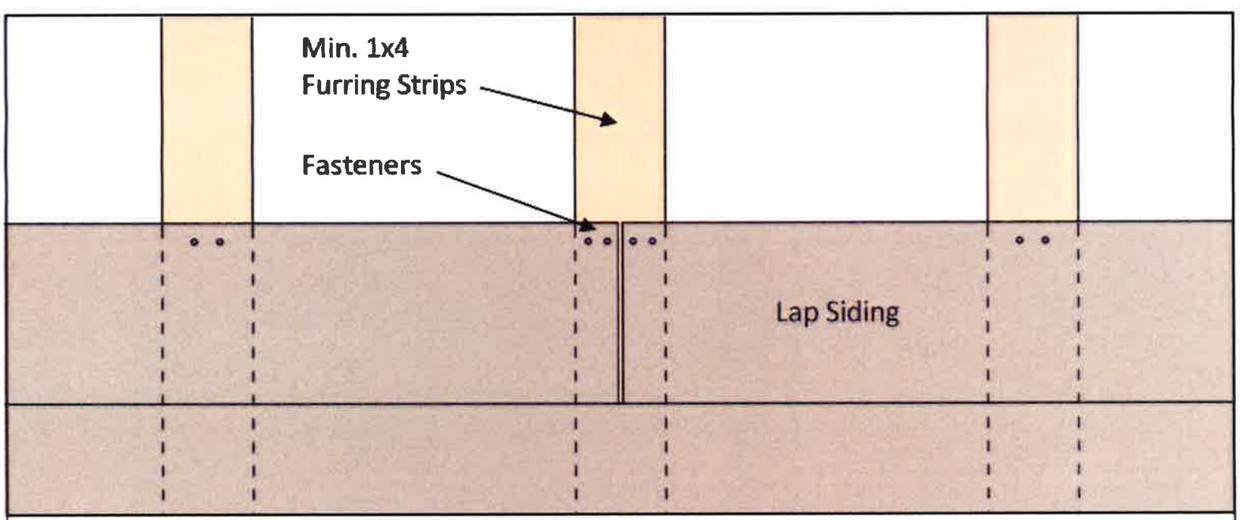
BUILD WITH US.®

Date Created: 12/04/2015
Last Revision: 12/17/2015
Expiration Date: 06/2017

- The 2012 IRC and 2014 Florida Residential Code require a water-resistant barrier be used on all exterior walls, except over concrete or masonry walls per Exception 1 in Section R703.1.1 of both Codes. LP always requires the use of a WRB behind LP® SmartSide® products. LP has no responsibility for any damage arising from a failure to use a WRB.

Lap Siding

- Limitations:
  - For use with Strand substrate lap (all widths) and/or Fiber substrate lap (up to 8 inches wide only)
  - Excluding Cedar Shake Fiber Lap, Bold Profiles Fiber Lap, Self-Aligning Fiber Lap, and SmartLock™ Strand Lap
- Fastening Requirements:
  - Place fasteners 3/4 inch from top edge of lap siding
  - Increase minimum lap siding overlap to 1-1/8 inch
  - Blind nail two fasteners per furring strip **(every 16" o.c.)**



- 2 nails per furring (4 nails at butt joints)
- Nails spaced 3/4" from top edge of lap and 3/8" from ends of lap (approximately 1" apart)
- 1-1/8" min. lap siding overlap.

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Trim

- Limitations:
    - In Florida where high negative wind loads are a concern, box or common nails should be used.
        - Trim nails may be used in Non-Hurricane-Prone Regions with the following cautions: Do not overdrive or counter sink the fastener, nail flush with the surface of trim. Detachment of trim is not covered by the LP® SmartSide® limited warranty whether common, box, or trim nails are used.
- Fastening Requirements:
    - Two fasteners spaced a maximum of every 24 inches o.c. along the length of the trim, or two fasteners at both ends with additional fasteners spaced a maximum of every 12 inches o.c. along alternating edges the length of the trim.
    - Trim under 7 inches wide use a minimum of 2 nails per width. Trim 7 to 12 inches wide use a minimum of 3 nails per width. Trim over 12 inches wide use a minimum of 4 nails per width.

[1] Wind speed is Ultimate Design Wind Speed/ Zone 5/ 10 ft^2/ 30 foot height. See 2014 FRC.
[2] Corrosion resistance and capable of preventing rust, stain and deterioration of the fasteners under normal outdoor environmental conditions for a period of no less than 50 years. For further information or guidance, consult your nail supplier/manufacturer.
[3] Ring shank nails shall be capable of the performance specified in Table 1A Ring-Shank Nail Withdrawal Loads of APA publication TT-109, *Wood Structural Panels Used as Nailable Sheathing* when tested in accordance with ASTM D 1761, *Standard Test Method for Mechanical Fasteners in Wood* and NDS-2015. For further information or guidance, consult your nail supplier/manufacturer.

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Last Revision: 12/17/2015
Expiration Date: 06/2017

LP SMARTSIDE®
TRIM & SIDING

PRECISION 38, 76 AND 190 SERIES PRIMED PANEL SIDING INCLUDING SILVERTECH & SMARTFINISH

General

- At the time of manufacture, siding meets or exceeds the performance standards set forth in ICC-ES-AC321 and has achieved code recognition under ESR-1301, CCNC 11826, APA recognition under PR-N124, and HUD recognition under HUD-MR-1318. For copies of ESR-1301, call LP Customer Support at 1-800-648-6893 or go online at http://www.ice-es.org/reports/pdf_files/ICC-ES/ESR-1301.pdf or http://www.apawood.org.
- Precision Series panel siding with SILVERTECH or SMARTFINISH is specifically for sheds and other outdoor structures where the interior wall cavities will remain permanently exposed.
- Minimum 6 in. clearance must be maintained between siding and finish grade.
- Siding applied adjacent to porches, patios, walks, etc. must have a clearance of at least 1 in. mm above any surface.
- Minimum 1 in. clearance at intersection with roof line
- Apply siding in a manner that prevents moisture intrusion and water buildup.
- All exposed wood substrate must be sealed in a manner that prevents moisture intrusion and water buildup.
- LP does not recommend LP SmartSide Panel for use in ICF and SIP assemblies. If used, LP will not warrant for Buckling and Shrinkage. However, balance of warranty does remain intact.
- DO NOT USE STAPLES
- SIDING MUST NOT BE IN DIRECT CONTACT WITH MASONRY, CONCRETE, BRICK, STONE, STUCCO OR MORTAR.

Storage

- Store off the ground well supported, on a flat surface, under a roof or separate waterproof covering
- Keep siding clean and dry. Inspect prior to application.

Stud Spacing

- Precision 38 and 76 Series panel siding must be installed on 16 in. O.C. framing only. When installing on 24 in. O.C. framing, Precision Series 190 Series panel siding is required.
- In all installations over masonry or concrete walls, the wall shall be furred out and open at the top and bottom of the wall to allow for convective ventilation between framing spaced 16 in. O.C. The framing shall be of adequate thickness to accept 1-1/2 inches of nail penetration. A properly installed breathable water-resistant barrier is required between the siding and masonry or concrete walls.

Moisture

- Moisture control and water vapor control are critical elements of proper housing design. Check your local building codes for application procedures for handling moisture and water vapor in your area.
- When using wet blown cellulose insulation, the insulation must not be in direct contact with the siding and it must be allowed to dry a minimum of 24 hours or longer if specified by the insulation manufacturer.
- As with all wood products, do not apply engineered wood siding to a structure having excessive moisture conditions such as drying concrete, plaster or wet blown cellulose insulation. If such conditions exist, the building should be well ventilated to allow it to dry prior to the application of the siding.
- Siding must not be applied to green or crooked structural framing members. Do not apply siding over rain-soaked or buckled sheathing materials.
- Gutters are recommended for control of roof water run off.

Secondary Water-Resistant Barrier

- A properly installed breathable water-resistive barrier is required behind the siding. Consult your local building code for details.
- LP will assume no responsibility for water penetration.
- Precision Series panel siding with SILVERTECH or SMARTFINISH does not require a secondary water-resistant barrier. Limited to sheds and other outdoor structures.

Gaps & Sealants

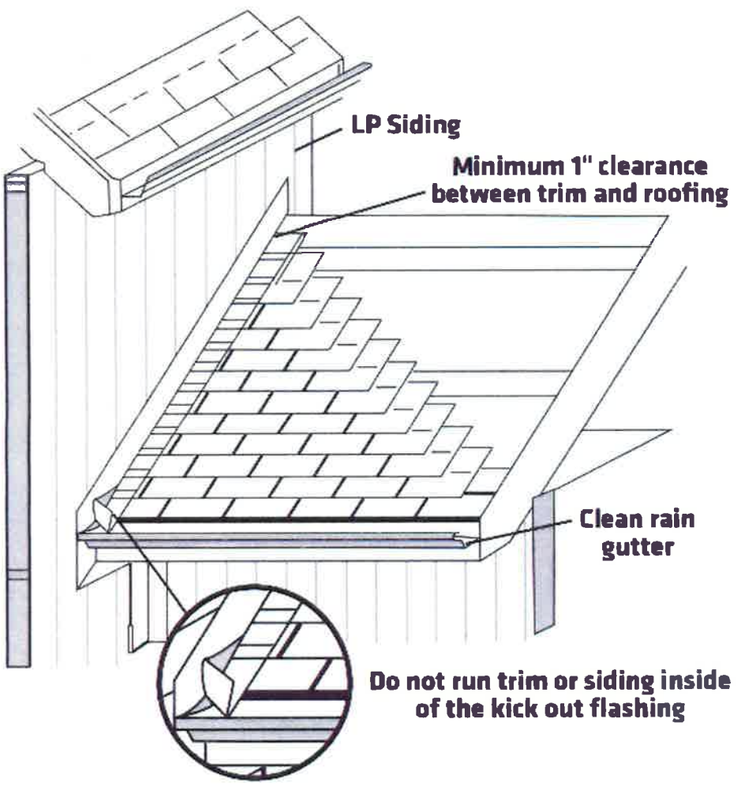
- Seal all gaps with a high-quality, non-hardening, paintable sealant. Follow the sealant manufacturer's instructions for application.
- Use a high-quality exterior sealant meeting the ASTM C920, minimum Class 25 sealant.

Flashing, Windows, Doors & Openings

- All openings must be properly sealed or flashed in a manner that prevents moisture intrusion or buildup. Several examples that accomplish this are shown on the following pages.

Kick-Out Flashing

- Install kick-out flashing to direct the water into the gutter
- Install step flashing with minimum 4 in. upper leg
- Properly integrate flashing with the secondary water-resistive barrier. Use housewrap, flashing tape, z-flashing, or other items as needed to maintain the counterflashing principle.
- DO NOT extend the siding or trim into the kick-out flashing or gutter
- Maintain a clearance between the end of the gutter and the adjoining wall to allow for proper maintenance of the siding
- Prime and paint ALL exposed cut edges



Trim

Trim should be thick enough so the siding does not extend beyond the face of the trim.

- Trim and fascia must be applied in a manner that will not allow moisture intrusion or water buildup.
- LP® SmartSide® siding is not designed and/or manufactured to be used as trim or fascia. LP SmartSide trim and fascia are available in a variety of dimensions.

Finishing Instructions

DO

- **Prime and paint all exposed surfaces including all drip edges or where water will hang.**
- Apply finish coat as soon as possible or within 180 days of application.

Application instructions (cont.)

- High-quality acrylic latex paint, specially formulated for use on wood and engineered wood substrates, is highly recommended. Semi-gloss or satin finish oil or alkyd paints are acceptable. For flat alkyd paint, please check with the coating manufacturer for their recommendations for use on composite wood siding.
- Follow the coating manufacturer's application and maintenance instructions.

DO NOT USE

- Semi-transparent and transparent stains.
- Shake and shingle paints.
- Vinyl-based resin formulas such as vinyl acetate, PVA, vinyl acetate/acrylic copolymer paints.

HANDLE PREFINISHED LP SMARTSIDE PRODUCTS WITH EXTREME CARE DURING STORAGE AND APPLICATION. TOUCH UP ANY DAMAGE TO THE FINISH THAT MAY OCCUR DURING APPLICATION PER PREFINISHERS SPECIFICATIONS.

Nailing Instructions

- In braced wall assemblies, use minimum 6d (0.113 in. shank diameter, 0.270 head diameter), hot-dipped galvanized nails for 38 and 76 Series panels and minimum 8d (0.131 in. shank diameter, 0.290 head diameter) for 190 Series panels. Do not use electroplated fasteners. Refer to your local building code to verify the minimum allowable fastener size.
- Penetrate structural framing or wood structural panels and structural framing a minimum of 1-1/2 in.
- For 38 Series panels, double nailing procedure meets wall bracing requirements and $^{5}/_{16}$ in. shear wall design values.

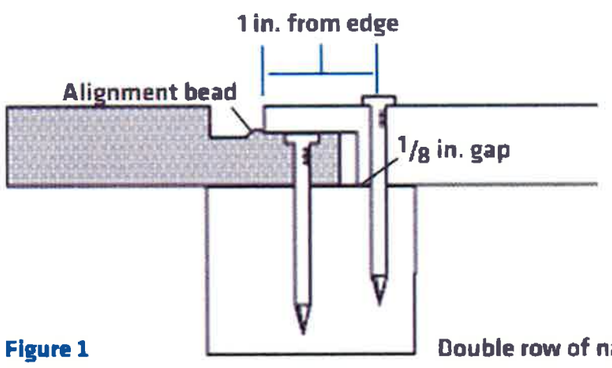


Figure 1

- For 76 and 190 Series panels, single nailing meets wall bracing requirements. To meet the equivalent $^{3}/_{8}$ in. shear wall design values, double nailing procedures must be used. It may be necessary to angle drive the second nail in order to penetrate the framing. Seal nails driven below the surface.

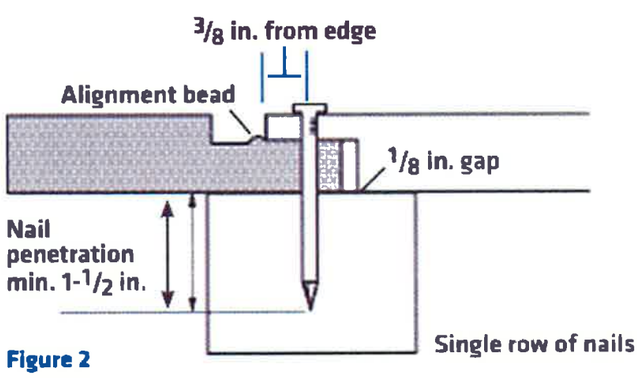


Figure 2

- Shear values for panels applied directly to studs shall be no greater than noted in Table 1 of the ICC-ES Report ESR-1301 or Table 1 of APA PR-N 124.
- **Not warranted for application on SIP and ICF assemblies.**

CAUTION

- 38 and 76 Series panels must be installed on 16 in. O.C. framing only. When installing on 24 in. O.C. framing, 190 Series panels are required.
- Backside of panel must not come in contact with masonry or concrete foundation.
- Do not force siding into place. Maintain the illustrated 1/8 in. space behind the joint to allow for expansion while the panel equilibrates with the local environment.
- LP® SmartSide® Panel siding must not be attached by stapling.
- DO NOT INSTALL OVER ALIGNMENT BEAD. Install panels in light contact to the edge of alignment bead. (see Figure 1 and Figure 2)
- Climb cut the surface of the siding such that the rotation of the blade cuts downward on the primed or prefinished surface.
- Where siding butts window trim, door casings and masonry, etc. leave a 3/16 in. gap and seal.

Insulated Sheathings

LP SmartSide Sidings may be installed over low-compression rigid foam or exterior gypsum. The following precautions must be followed:

a) Adequate bracing of the wall in accordance with the International Codes or other ruling building code is required.

b) For rigid foam sheathing up to 1" (25.4 mm) thick, siding may be nailed directly to the foam sheathing unless a drainage plane is required by the local building code. Nail length must be increased to ensure a minimum 1-1/2" (38.1 mm) fastener penetration into the structural framing.

c) For rigid foam sheathing greater than 1 in. (25.4 mm), a minimum 1-1/2 in. (38.1 mm) thick by 3-1/2 in. (88.9 mm) wide vertical strapping or furring strip must be installed over the sheathing to provide a solid, level nailing base for the siding. The strapping must be securely fastened to structural framing spaced no greater than 16 in. O.C. (406 mm) with a minimum nail penetration of 1-1/2 in. (38.1 mm) and a maximum nail spacing no greater than the width of the siding.

Louisiana-Pacific will assume no responsibility for any damage or condition arising from the use of rigid foam or exterior gypsum.

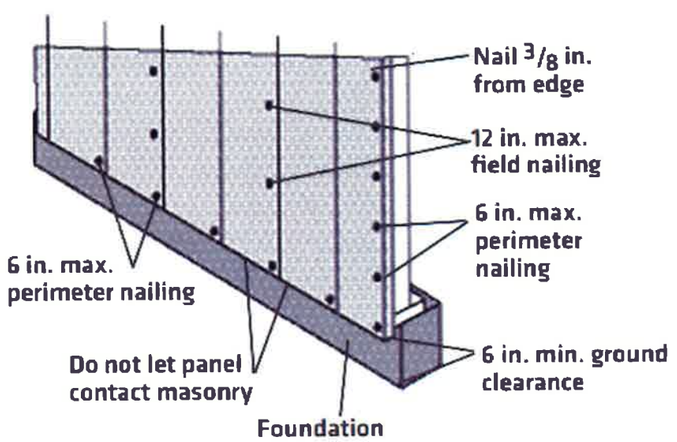
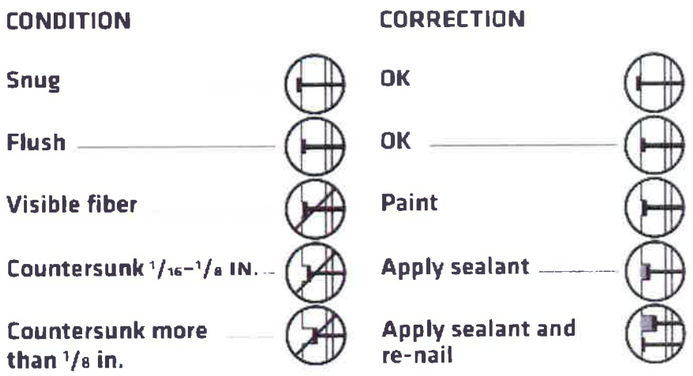


Figure 3



1 IN. ROOF & CHIMNEY CLEARANCE

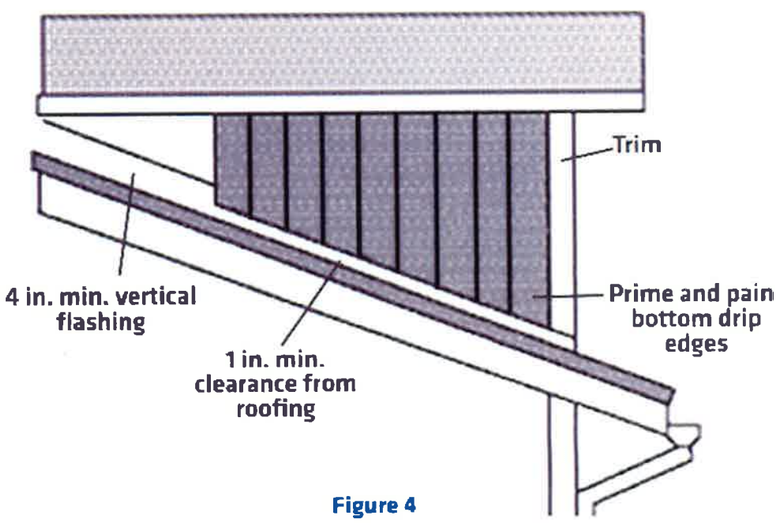


Figure 4

LP SMARTSIDE PANEL SIDING JOINT DETAILS

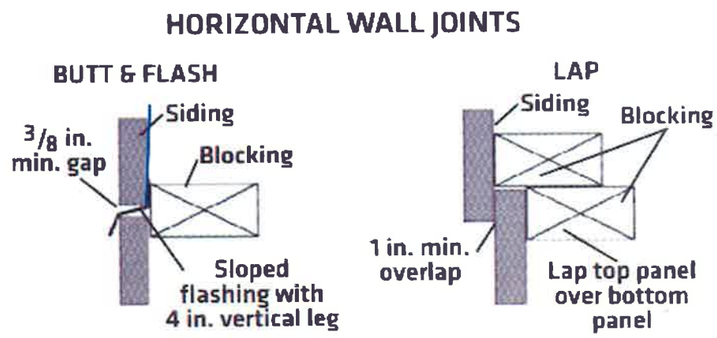


Figure 5A

Figure 5B

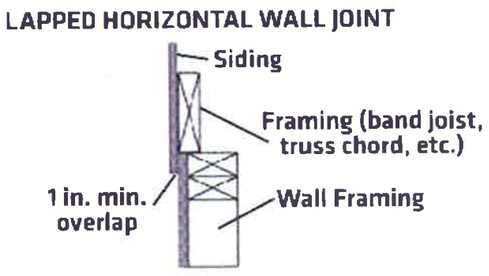


Figure 5C

LP SmartSide Panel Siding Joint Details (cont.)

HORIZONTAL BELTLINE JOINTS

For multi-story buildings, make provisions at horizontal joints for "setting" shrinkage of framing, especially when applying siding directly to studs.

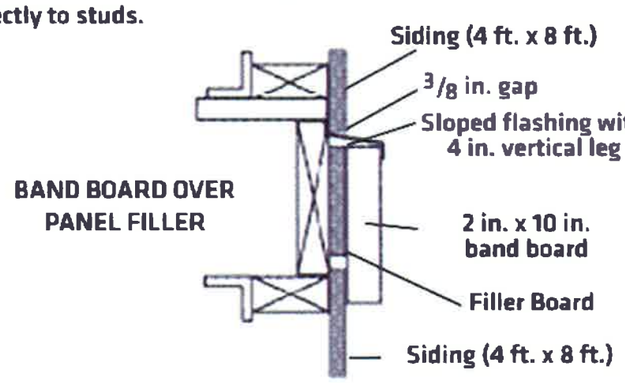


Figure 6

Siding Must Not Contact Masonry

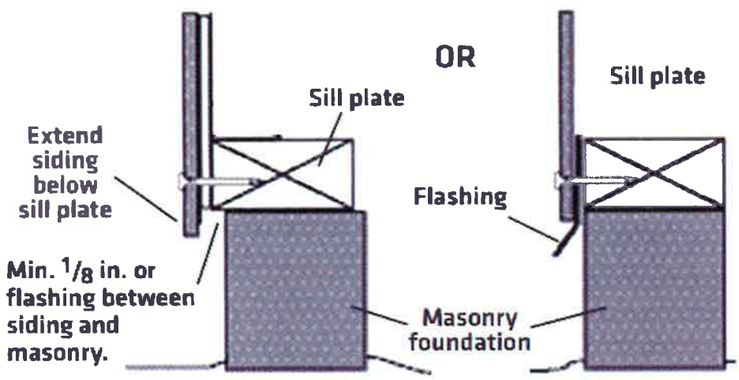


Figure 7A Figure 7B

Gap, Flash Doors & Windows

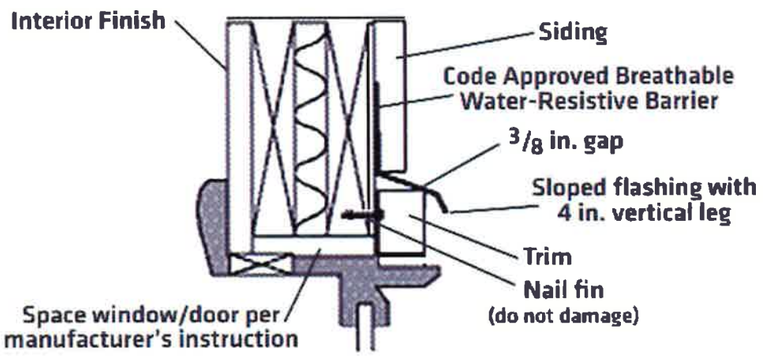
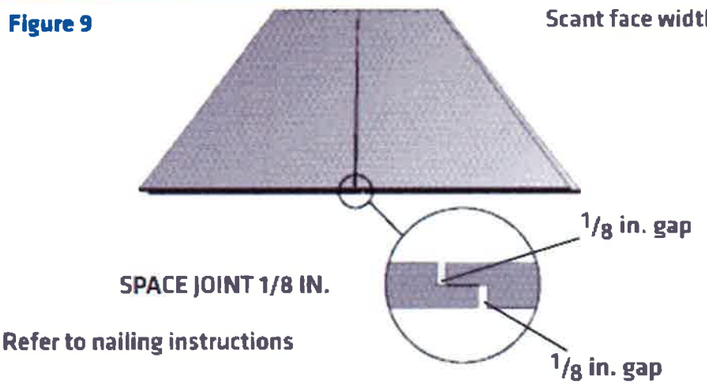


Figure 8

4 ft. x 8 ft. Ungrooved Shiplap Panel

Figure 9



LP panel sidings are accepted by the State of California as category 8140- Exterior wall siding and sheathing for Wildland Urban Interface (WUI) applications. For WUI compliance, install LP panel sidings in accordance with Louisiana-Pacific's printed installation instructions with the addition of fire retardant seal (UL Listed fire caulk, nominal ¼"bead) in the vertical joint and nailing pattern of 3" OC perimeter nailing/8" OC field nailing. Look for the California State Fire Marshal Office label on our siding.

The Louisiana-Pacific Corporation ("LP") LP SmartSide Siding (the "Products") limited warranty (the "Warranty") applies only to structures on which the Products have been applied, finished and maintained in accordance with the published application, finishing and maintenance instructions in effect at the time of application. The failure to follow such application, finishing or maintenance instructions will void the Warranty as to the portion of the Products affected by the variance (the "Affected Products").

LP assumes no liability for any loss or damage sustained by the Affected Products and is expressly released by the purchaser or owner from any such loss or liability.

Any modification of the Warranty's application, finishing or maintenance requirements is void and unenforceable unless approved in writing prior to application by the Siding General Manager or his designee and a member of the LP Legal Department.

For a copy of the warranty or for installation and technical support, visit the LP SmartSide product support Web site at:

www.lpsmartside.com

or for additional support call 800-450-6106.

WARRANTY REMEDIES ARE NOT AVAILABLE IF REQUIREMENTS ARE NOT FOLLOWED.

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.

LP BUILDING PRODUCTS SmartSide® TRIM & SIDING

NOTE: Louisiana-Pacific Corporation periodically updates and revises its product information. To verify that this version is current, call 800-450-6106.

LPZB0512 1/14

Figure 10

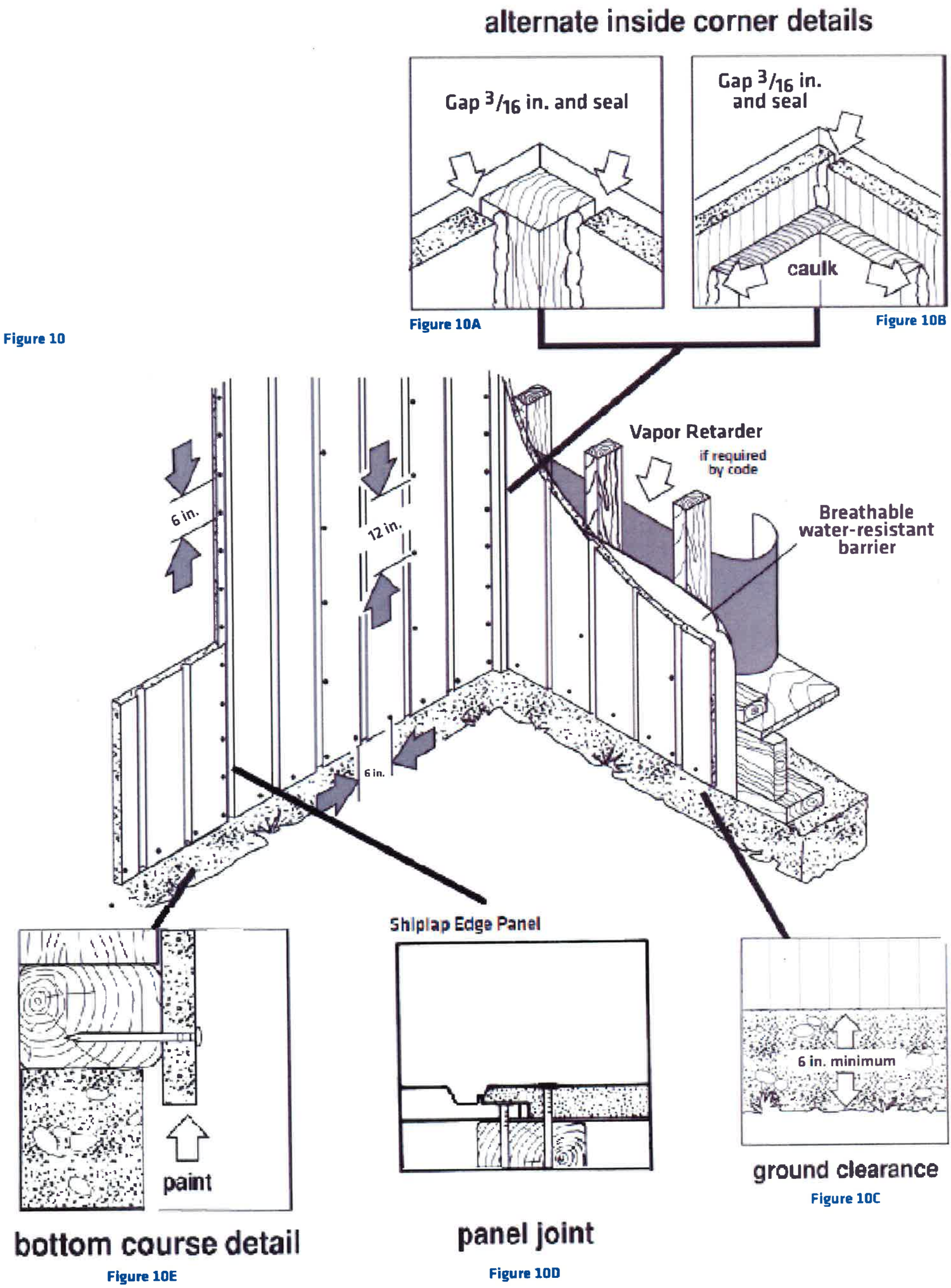


Figure 10A

Figure 10B

Figure 10C

Figure 10D

Figure 10E

CONSTRUCTION MATERIALS TECHNOLOGIES

ACCREDITED

LABORATORY TEST REPORT

Report for: Woodland Industries, Inc.
1520 Kalamazoo Drive
Griffin, GA 30224

Date: March 22, 2011

Attention: Pam Herring

Product Name: Type I Asphalt-Saturated Organic Felt	**Manufacturer:** Woodland Industries, Inc.
Project No.: WII-007-02-01	**Source:** Woodland Industries, Inc.
Date Received: March 3, 2011	**Dates Tested:** March 11-18, 2011
Miami-Dade Notification No.: PRI11018	

Subject: The purpose of this project was to test Woodland Industries' Type I felt for compliance with the requirements of ASTM D 226-97a and ASTM D 226-05: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing, Type I.*

Test Methods: Testing was performed in accordance with ASTM D 226: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing,* ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*, and ASTM D 727: *Test Method for Kerosine Number of Roofing and Flooring Felt by the Vacuum Method.*

Sampling: Product samples were received from Woodland Industries, Inc., Griffin, GA on March 3, 2011.

PRI Construction Materials Technologies, LLC. 6408 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pricmt.com

Results:

Property	Test Method	Result	Requirements	
			Type I	Type II
Materials and Manufacture				
Materials and Manufacture *[Pass/Fail]*	ASTM D 226	Pass	Free from lumps or particles of foreign substances	Free from lumps or particles of foreign substances
Physical Requirements				
Unrolling @ 40°F and 140°F *[Pass/Fail]*		Pass	No Damage	No Damage
Avg. Breaking Strength (lbf/in-width) 10 specimens; 1" x 6"; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min	ASTM D 146			
MD		47	≥ 30	≥ 40
CMD		23	≥ 15	≥ 20
Pliability *[Pass/Fail]* 5 specimens; 1" x 8"; Cond. WI 10-15min @ 77±1.8°F; Test 90° over 1/2" (or 1/4") r in 2s @ 77°F; Visual Inspection in "flexed" position	ASTM D 146			
MD		No cracking	No Cracking ½" radius	No Cracking ¼" radius
CMD		No cracking	No Cracking ½" radius	No Cracking ¼" radius
Loss on Heating (%) 2 specimens; 12" x 6"; Test Cond. 5h±3min @ 221±5°F	ASTM D 146	2.2	≤ 4	≤ 4
Width of Roll; *[Report]* (in)	ASTM D 146	36.0	36[A] ± 0.7%	36[A] ± 0.7%
Area of Roll; min (ft^2)		428.1	216 or 432[A]	216[A]
Moisture, at point of manufacture; max (%)	ASTM D 95 / ASTM D 146	2.8	4.3	4.1
Net Mass of Saturated Felt; min ($lb/100ft^2$)	ASTM D 146	12.9	11.5	26
Mass of Saturant; min ($lb/100ft^2$)	ASTM D 146	6.9	6.2	15.0
Mass of Desaturated Felt; min ($lb/100ft^2$)	ASTM D 146	5.8	5.2	10.0
Saturation; min (%)	ASTM D 226	124[B]	120	150
Ash; max (%)	ASTM D 146	4.6	10.0	10.0
Workmanship, Finish, and Appearance				
Workmanship, Finish, and Appearance; *[Pass/Fail]*	ASTM D 226	Pass	Finished product shall be thoroughly and uniformly saturated, free of coating, talc, or other that may interfere with adhesion, and free of visible external defects.	Finished product shall be thoroughly and uniformly saturated, free of coating, talc, or other that may interfere with adhesion, and free of visible external defects.

Note A: Or As Agreed Upon by Purchaser and Seller
Note B: Saturation efficiency is 72%. Minimum requirement is 70% for Type I.

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CONSTRUCTION MATERIALS TECHNOLOGIES

ACCREDITED

LABORATORY TEST REPORT

Report for: Woodland Industries, Inc.
1520 Kalamazoo Drive
Griffin, GA 30224

Date: March 22, 2011

Attention: Pam Herring

Product Name: Type II Asphalt-Saturated Organic Felt	**Manufacturer:** Woodland Industries, Inc.
Project No.: WII-007-02-02	**Source:** Woodland Industries, Inc.
Date Received: March 3, 2011	**Dates Tested:** March 11-18, 2011
Miami-Dade Notification No.: PRI11018	

Subject: The purpose of this project was to test Woodland Industries' Type II felt for compliance with the requirements of ASTM D 226-97a and ASTM D 226-05: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing, Type II.*

Test Methods: Testing was performed in accordance with ASTM D 226: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing,* ASTM D 146: *Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing*, and ASTM D 727: *Test Method for Kerosine Number of Roofing and Flooring Felt by the Vacuum Method.*

Sampling: Product samples were received from Woodland Industries, Inc., Griffin, GA on March 3, 2011.

PRI Construction Materials Technologies, LLC. 6408 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pricmt.com

Results:

Property	Test Method	Result	Requirements	
			Type I	Type II
Materials and Manufacture				
Materials and Manufacture *[Pass/Fail]*	ASTM D 226	Pass	Free from lumps or particles of foreign substances	Free from lumps or particles of foreign substances
Physical Requirements				
Unrolling @ 40°F and 140°F *[Pass/Fail]*		Pass	No Damage	No Damage
Avg. Breaking Strength (lbf/in-width) 10 specimens; 1" x 6"; Cond. 2h @ 73.4±3.6°F; Test @ 73.4±3.6°F; Rate = 2in/min	ASTM D 146			
MD		80	≥ 30	≥ 40
CMD		36	≥ 15	≥ 20
Pliability *[Pass/Fail]* 5 specimens; 1" x 8"; Cond. WI 10-15min @ 77±1.8°F; Test 90° over 1/2" (or 1/4") r in 2s @ 77°F; Visual Inspection in "flexed" position	ASTM D 146			
MD		No cracking	No Cracking ½" radius	No Cracking ¼" radius
CMD		No cracking	No Cracking ½" radius	No Cracking ¼" radius
Loss on Heating (%) 2 specimens; 12" x 6"; Test Cond. 5h±3min @ 221±5°F	ASTM D 146	1.8	≤ 4	≤ 4
Width of Roll; *[Report]* (in)	ASTM D 146	36.0	36 [A] ± 0.7%	36 [A] ± 0.7%
Area of Roll; min (ft^2)		214	216 or 432 [A]	216 [A]
Moisture, at point of manufacture; max (%)	ASTM D 95 / ASTM D 146	1.2	4.3	4.1
Net Mass of Saturated Felt; min ($lb/100ft^2$)	ASTM D 146	27.5	11.5	26
Mass of Saturant; min ($lb/100ft^2$)	ASTM D 146	16.4	6.2	15.0
Mass of Desaturated Felt; min ($lb/100ft^2$)	ASTM D 146	11.1	5.2	10.0
Saturation; min (%)	ASTM D 226	152	120	150
Ash; max (%)	ASTM D 146	4.7	10.0	10.0
Workmanship, Finish, and Appearance				
Workmanship, Finish, and Appearance; *[Pass/Fail]*	ASTM D 226	Pass	Finished product shall be thoroughly and uniformly saturated, free of coating, talc, or other that may interfere with adhesion, and free of visible external defects.	Finished product shall be thoroughly and uniformly saturated, free of coating, talc, or other that may interfere with adhesion, and free of visible external defects.

Note A: Or As Agreed Upon by Purchaser and Seller

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Statement of Compliance:

This product complies with the requirements of ASTM D 226-97a and ASTM D 226-05: *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing*, Type II.

Signed: _____
Zach Priest
Director

Date: Mar 22, 2011

Signed: _____
Duc T. Nguyen
Florida Registered Professional Engineer
P.E. Number: 65034

Date: 3/22/2011

PRI Construction Materials Technologies, LLC. 6408 Badger Drive Tampa, FL 33610 Tel: 813-621-5777 Fax: 813-621-5840 e-mail: materialstesting@pricmt.com WebSite: http://www.pricmt.com

APA PRODUCT REPORT

LP® SmartSide® Precision Series Treated-Engineered-Wood Lap & Panel Siding
Louisiana-Pacific Corporation

PR-N124

Revised July 2, 2014

Product: LP® SmartSide® Precision Series Treated-Engineered-Wood Lap and Panel Siding
Louisiana-Pacific Corporation, 414 Union Street, Suite 2000, Nashville, TN 37219
(800) 450-6106
www.lpcorp.com

1. Basis of the product report:
   - 2012 and 2009 International Building Code: Section 104.11 Alternative Materials
   - 2012 and 2009 International Residential Code: Section R104.11 Alternative Materials
   - ANSI/AF&PA SDPWS-2008 Special Design Provisions for Wind and Seismic
   - ASCE 7-10 and ASCE 7-05 Minimum Design Loads for Buildings and Other Structures
   - ICC-ES Acceptance Criteria for Treated-Engineered-Wood Siding, AC321
   - APA PRP-108 Performance Standards and Qualification Policy for Structural-Use Panels
   - NES Evaluation Protocol for Determination of Flood-Resistance Properties of Building Elements
   - APA Reports R&D 87Q-1, T87Q-45, T91Q-11, T91Q-20, T97Q-4, T97Q-10, T98Q-13, T98Q-17, T99Q-23, T2008Q-12, T2008P-73, T2008P-74, T2009Q-54, T2011Q-59, T2012P-22, and other qualification data.

2. Product description:
   Louisiana-Pacific Corporation (LP®) SmartSide® Precision Treated-Engineered-Wood Lap and Panel siding is overlaid with a resin treated paper and is available with either a smooth or embossed surface texture. The siding is available as laps or panels. The siding is treated with Zinc Borate for decay and insect resistance. All edges are factory sealed with a primer.

   LP® SmartSide® Precision Series Treated-Engineered-Wood lap siding is available in 3/8 and 7/16 Performance Categories, in nominal widths of 6, 8 and 12 inches and in lengths up to 16 feet.

   LP® SmartSide® Precision Series panel siding is available in 3/8, 7/16 and 19/32 Performance Categories, 4-foot width and in lengths of 8, 9, and 10 feet. The 3/8 Performance Category panels are available without grooves or with grooves spaced 8 inches on center. The 7/16 and 19/32 Performance Category panels are available without grooves or with grooves spaced either 4 or 8 inches on center. Minimum thicknesses at the groove and shiplap are documented in the plant Quality Manual.

3. Design properties:
   Allowable racking loads for LP® SmartSide® Precision Series panel siding are listed in Table 1. For 3/8 Performance Category panels nailed at shiplap edges, use 5/16 Performance Category shear values. For 7/16 and 19/32 Performance Category panel sidings nailed at shiplap edges, use 3/8 Performance Category shear values. Design wind loads LP® SmartSide® Precision Series lap and panel siding are listed in Tables 2 and 3, respectively.

4. Product installation:
   LP® SmartSide® Precision Series Treated-Engineered-Wood Lap and Panel sidings shall be installed in accordance with recommendations provided by the manufacturer (www.lpcorp.com/smartside/lap/ and www.lpcorp.com/smartside/panel/) and APA *Engineered Wood Construction Guide*, Form E30 (www.apawood.org/publications). The

maximum span shall be in accordance with the Span Rating shown in the trademark. The LP® SmartSide® Precision Series lap siding shall be permitted to be installed over the facer of structural insulated panels (SIPs) in accordance with Table 4.

5. Fire-resistant construction:
Wood structural panels that are not fire-retardant-treated have been shown to meet a Class III (or C) category for flame spread. Unless otherwise specified, fire-resistant construction shall be in accordance with the recommendations in APA *Fire-Rated Systems*, Form W305 (see link above).

6. Flood resistance evaluation:
Selected properties critical to flood resistance of 3/8 and 7/16 Performance Category panel siding, including uniform loads, concentrated static loads, concentrated hard body and soft body impact loads, fastener performance, wall racking resistance, edge thickness swell, linear expansion, hygroscopicity, exterior bond performance and large panel and small specimen bending properties were evaluated at a 16 o.c. Span Rating in accordance with *NES Evaluation Protocol for Determination of Flood-Resistance Properties of Building Elements*. Test results in the dry (as-received) condition and after moisture cycling in accordance with the NES protocol were compared to the requirements specified in ICC Evaluation Service (ICC-ES) *Acceptance Criteria for Treated-Engineered-Wood Siding* (AC321).

7. Limitations:
   a) LP® SmartSide® Precision Series Treated-Engineered-Wood Lap and Panel siding used outdoors must be finished in accordance with recommendations provided by the manufacturer (see links above) and APA *Engineered Wood Construction Guide*, Form E30 (see link above).
   b) LP® SmartSide® Precision Series Treated-Engineered-Wood panel siding is flood resistant on the following properties: uniform loads, concentrated static loads, concentrated hard body and soft body impact loads, fastener performance, wall racking resistance, edge thickness swell, linear expansion, hygroscopicity, exterior bond performance and large panel and small specimen bending properties. This evaluation applies to 3/8 and 7/16 Performance Category panel siding at a 16 o.c. Span Rating.
   c) LP® SmartSide® Precision Series Treated-Engineered-Wood Lap and Panel siding is produced at Louisiana-Pacific Corporation facilities at Hayward, WI, Newberry, MI, Tomahawk, WI, and Two Harbors, MN under a quality assurance program audited by APA.
   d) This report is subject to re-examination in one year.

8. Identification:
LP® SmartSide® Precision Series Treated-Engineered-Wood Lap and Panel siding described in this report is identified by a label bearing the manufacturer's name (Louisiana-Pacific Corporation) and/or trademark, the APA assigned plant number (357 for the Hayward plant, 416 for the Newberry plant, 435 for the Tomahawk plant, or 399 for the Two Harbors plant), the product Performance Category, the Span Rating, the Exposure Rating, the APA logo, the report number PR-N124, and a means of identifying the date of manufacture.

Table 1. Allowable Racking Shear (plf) for LP® SmartSide® Precision Series Treated-Engineered-Wood Panel Siding – Sheathing Shear Walls with Framing of Douglas-Fir-Larch or Southern Pine for Wind or Seismic Loading[1,2,3]

Performance Category	Minimum Nail Penetration In Framing (in.)	Panels Applied Directly to Framing					Panels Applied over 1/2-inch or 5/8-inch Gypsum Sheathing				
		Nail Size (Common or Galvanized Box)	Nail Spacing at Panel Edges (in.)				Nail Size (Common or Galvanized Box)	Nail Spacing at Panel Edges (in.)			
			6	4	3	2[4]		6	4	3	2[4]
5/16[5,6]	1-1/4	6d	180	270	350	450	8d	180	270	350	450
3/8[5,6]			200	300	390	510		200	300	390	510
3/8[5,6]	1-1/2	8d	220	320	410	530	10d	260	380	490[4]	640
7/16[5]			240	350	450	585		260	380	490[4]	640
19/32[5]	1-5/8	10d	340	510	665[4]	870	-	-	-	-	-

For SI: 1 inch = 25.4 mm, 1 plf = 14.6 N/m.

(1) For framing of other species: (a) Find specific gravity for species of lumber in AF&PA National Design Specification; (b) find shear value from table for nails size; (c) multiply value by 0.82 for species with specific gravity greater than or equal to 0.42 but less than 0.49, or 0.65 for species with specific gravity less than 0.42.

(2) All panel edges must be backed with 2-inch nominal or wider framing. Panels must be installed with the long dimension oriented in the vertical direction. Space nails 6 inches o.c. along intermediate framing members for 3/8 and 7/16 Performance Category panels installed on studs spaced 24 inches o.c. For other conditions and panel Performance Categories, space nails 12 inches o.c. on intermediate supports.

(3) For shear loads of normal or permanent load duration, the values in the table shall be multiplied by 0.63 or 0.56, respectively.

(4) Framing at panel edges must be 3 inches nominal or wider and nails must be staggered where nails are spaced 2 inches o.c., and where 10d nails having penetration into framing of more than 1-5/8 inches are spaced 3 inches or less, o.c. **Exception:** Unless otherwise required, 2-inch nominal framing may be used where full nailing surface is available and nails are staggered.

(5) Except as noted in Footnote 7, panel thickness at point of nailing at panel edges determines applicable shear values, except that 3/8 Performance Category panels nailed at shiplap edges use 5/16 Performance Category shear values, and 7/16 and 19-/32 Performance Category panel sidings nailed at shiplap edges use 3/8 Performance Category shear values.

(6) Shiplap edges must be double-nailed; one nail must be placed in the underlap and a second nail must be placed in the overlap at the nail spacing specified for the applicable shear value.

(7) Fasteners must not be installed in panel siding grooves in the field of the panel siding or when the panel siding grooves occur at cut edges of the panel siding.

Table 2a. Lap Siding – **Maximum nominal (allowable) design wind speed, V_{asd}**[1]

Performance Category	Maximum Wall Stud Spacing[2] (in.)	Siding Width (in.)	Maximum Allowable Wind Pressure (psf)	Maximum Nominal (Allowable) Wind Speed, V_{asd}[3] (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	6	80	170	150	140
		8	79	170	150	140
		12	50	140	120	110
7/16	16	6	80	170	150	140
		8	76	170	150	130
		12	49	140	120	110
	24	6	71	170	145	130
		8	51	145	120	110
		12	32	110	90	90

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

(1) One fastener per stud located 3/4 inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

(2) Wall studs must have a minimum specific gravity of 0.42.

(3) Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 2b. Lap Siding – **Maximum ultimate design wind speed, V_{ult}**[1]

Performance Category	Maximum Wall Stud Spacing[2] (in.)	Siding Width (in.)	Maximum Ultimate Wind Pressure (psf)	Maximum Ultimate Design Wind Speed, V_{ult}[3] (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	6	133	200	180	180
		8	131	200	180	180
		12	83	180	150	140
7/16	16	6	133	200	180	180
		8	127	200	180	160
		12	81	180	150	140
	24	6	119	200	180	160
		8	85	180	150	140
		12	54	140	120	115

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

(1) One fastener per stud located 3/4 inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).

(2) Wall studs must have a minimum specific gravity of 0.42.

(3) Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

APA – The Engineered Wood Association is an approved national standards developer accredited by American National Standards Institute (ANSI). APA publishes ANSI standards and Voluntary Product Standards for wood structural panels and engineered wood products. APA is an accredited certification body under ISO 65 by Standards Council of Canada (SCC), an accredited inspection agency under ISO/IEC 17020 by International Code Council (ICC) International Accreditation Service (IAS), and an accredited testing organization under ISO/IEC 17025 by IAS. APA is also an approved Product Certification Agency, Testing Laboratory, Quality Assurance Entity, and Validation Entity by the State of Florida, and an approved testing laboratory by City of Los Angeles and Miami-Dade County.

APA – THE ENGINEERED WOOD ASSOCIATION
HEADQUARTERS
7011 So. 19th St. • Tacoma, Washington 98466
Phone: (253) 565-6600 • Fax: (253) 565-7265 • Internet Address: www.apawood.org

PRODUCT SUPPORT HELP DESK
(253) 620-7400 • *E-mail Address*: help@apawood.org

DISCLAIMER

ICC EVALUATION SERVICE

APA

Joint Evaluation Report

ESR-1301

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Valid: 02/14 to 02/16

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

SECTION: 06 16 00—SHEATING

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

SECTION: 07 46 23—WOOD SIDING

REPORT HOLDER:

LOUISIANA-PACIFIC CORPORATION

414 UNION STREET, SUITE 2000
NASHVILLE, TENNESSEE 37219

EVALUATION SUBJECT:

LP SMARTSIDE® PRECISION LAP SIDING AND LP SMARTSIDE® PRECISION PANEL SIDING

ICC-ES ICC-ES PMG ICC-ES LISTED

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Table 3a. Panel Siding – **Maximum nominal (allowable) design wind speed, V_{asd}**

Performance Category	Maximum Wall Stud Spacing[2] (in.)	Fastener Spacing[1] (in. o.c.)		Maximum Allowable Wind Pressure	Maximum Nominal (Allowable) Wind Speed, V_{asd}[3] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	46	130	110	105
			6	80	170	150	140
	24	6	12	31	110	90	85
			6	61	150	130	120
7/16	16	6	12	45	130	110	105
			6	80	170	150	140
	24	6	12	30	110	90	85
			6	59	150	130	120
19/32	16	6	12	41	130	110	100
			6	80	170	150	140
	24	6	12	27	105	90	-
			6	55	150	125	110

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

(1) Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
(2) Wall studs must have a minimum specific gravity of 0.42.
(3) Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 3b. Panel Siding – **Maximum ultimate design wind speed, V_{ult}**

Performance Category	Maximum Wall Stud Spacing[2] (in.)	Fastener Spacing[1] (in. o.c.)		Maximum Ultimate Wind Pressure (psf)	Maximum Ultimate Design Wind Speed, V_{ult}[3] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	77	160	150	130
			6	133	200	180	180
	24	6	12	51	140	120	110
			6	102	200	160	150
7/16	16	6	12	74	160	140	130
			6	133	200	180	180
	24	6	12	50	140	120	110
			6	99	200	160	150
19/32	16	6	12	69	160	140	130
			6	133	200	180	180
	24	6	12	46	130	115	-
			6	92	180	160	150

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

(1) Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
(2) Wall studs must have a minimum specific gravity of 0.42.
(3) Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

Table 4a. Lap Siding Installed Over the Facer of SIPs[1] – **Maximum nominal (allowable) design wind speed, V_{asd}[2]**

Performance Category	Maximum Ring Shank Nail Spacing[3] (in.)	Maximum Wood Screw Spacing[4] (in.)	Siding Width (in.)	Maximum Allowable Wind Pressure (psf)	Maximum Nominal (Allowable) Wind Speed, V_{asd}[5] (mph)		
					Wind Exposure Category		
					B	C	D
3/8	8	12	6	80	170	150	140
			8	63	150	130	125
			12	40	125	105	90
7/16	12	16	6	58	150	130	120
			8	42	130	110	100
			12	27	105	85	-

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

[1] The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.

[2] The tabulated values represent the capacity of the LP Lap Siding installed in accordance with the requirements of this table. **The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.**

[3] One 6d ring shank nail (0.120 inch in diameter) located 1/2 inch from the top edge of the siding. The ring shank nails must have a minimum head diameter of 0.297 inch, a minimum shank diameter of 0.120 inch and a minimum length of 2 inches.

[4] One #8 wood screw (0.164 inch in diameter) located 1/2 inch from the top edge of the siding may be used. The wood screws must have a minimum head diameter of 0.297 inch, a minimum shank diameter of 0.164 inch and a minimum length of 2 inches.

[5] Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

Table 4b. Lap Siding Installed Over the Facer of SIPs[1] – **Maximum ultimate design wind speed, V_{ult}[2]**

Performance Category	Maximum Ring Shank Nail Spacing[3] (in.)	Maximum Wood Screw Spacing[4] (in.)	Siding Width (in.)	Maximum Ultimate Wind Pressure (psf)	Maximum Ultimate Design Wind Speed, V_{ult}[5] (mph)		
					Wind Exposure Category		
					B	C	D
3/8	8	12	6	133	200	180	180
			8	105	200	160	160
			12	67	160	140	120
7/16	12	16	6	97	200	160	150
			8	70	160	140	130
			12	45	130	115	-

For **SI**: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

[1] The facer of the structural insulated panels (SIPs) shall be 7/16 Performance Category or thicker OSB sheathing meeting DOC PS2 requirements.

[2] The tabulated values represent the capacity of the LP Lap Siding installed in accordance with the requirements of this table. **The tabulated wind speed shall not exceed the SIP capacity for wind load resistance.**

[3] One 6d ring shank nail (0.120 inch in diameter) located 1/2 inch from the top edge of the siding. The ring shank nails must have a minimum head diameter of 0.297 inch, a minimum shank diameter of 0.120 inch and a minimum length of 2 inches.

[4] One #8 wood screw (0.164 inch in diameter) located 1/2 inch from the top edge of the siding may be used. The wood screws must have a minimum head diameter of 0.297 inch, a minimum shank diameter of 0.164 inch and a minimum length of 2 inches.

[5] Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

ICC EVALUATION SERVICE

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Joint Evaluation Report

ESR-1301*

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 16 00—Sheathing

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 46 23—Wood Siding

REPORT HOLDER:

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EVALUATION SUBJECT:

LP SMARTSIDE® PRECISION LAP SIDING AND LP SMARTSIDE® PRECISION PANEL SIDING

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012, 2009, 2006, and 2003 *International Building Code®* (IBC)
- 2012, 2009, 2006, and 2003 *International Residential Code®* (IRC)

Properties evaluated:

- Exterior siding
- Structural

2.0 USES

LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding are used as exterior wall covering materials on buildings where combustible materials are permitted.

LP SmartSide® Precision Panel Siding may be used as bracing method 3 for conventional wood-framed walls as specified in IBC Section 2308.9.3 and IRC Section R602.10.

LP SmartSide® Precision Panel Siding may be used as sheathing for wood structural panel shear walls having allowable shear loads specified for PS2-compliant wood-based sheathing in accordance with 2003/2006 IBC Section 2306.4.1, and 2009/2012 IBC Section 2306.3.

3.0 DESCRIPTION

3.1 General:

LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding are engineered-wood exterior wall covering materials that are suitable for long-term exposure to weather or conditions of similar severity, when fastened to vertical supports or approved nailable wood substrates in accordance with their span ratings and this evaluation report. The lap siding and panel siding products consist of a mat-formed wood substrate preservatively treated with zinc borate in accordance with AWPA Standard T1, and a resin-impregnated overlay material bonded to the face of the lap and panel siding products intended to be exposed to the weather. Additionally, all panel and lap siding edges are factory-sealed with a sealer in accordance with the approved quality control manual.

3.2 LP SmartSide® Precision Lap Siding:

LP SmartSide® Precision Lap Siding is available in widths of 6, 8 and 12 inches (152, 203 and 305 mm); categories $^{3}/_{8}$ and $^{7}/_{16}$; and lengths of 12 to 16 feet (3658 to 4877 mm). The 8-inch-wide (203 mm), $^{7}/_{16}$ category lap siding is also available with an optional self-alignment edge.

3.3 LP SmartSide® Precision Panel Siding:

LP SmartSide® Precision Panel Siding is 4 feet (1219 mm) wide and 4, 6, 7, 8, 9 or 10 feet (1219, 1829, 2134, 2438, 2743 or 3048 mm) in length. LP SmartSide® Precision Panel Siding is available in $^{3}/_{8}$, $^{7}/_{16}$, and $^{19}/_{32}$ - categories. The $^{3}/_{8}$ category panel has grooves spaced at 8 inches (203 mm), with a minimum thickness at the grooves of 0.164 inch (4 mm) and a minimum thickness at the shiplap of 0.136 inch (4 mm). The $^{7}/_{16}$ category panel has grooves spaced at 4 or 8 inches (102 or 203 mm), with a minimum thickness at the grooves of 0.235 inch (6 mm) and a minimum thickness at the shiplap of 0.150 inch (4 mm). The $^{19}/_{32}$ category panel has grooves spaced at 4 or 8 inches (102 or 203 mm), with a minimum thickness at the grooves of 0.311 inch (8 mm) and a minimum shiplap thickness of 0.194 inch (5 mm).

LP SmartSide® Precision Panel Siding is classified as Exterior Rated Siding or Exterior Rated Siding—Sheathing. The classification is noted in the label on the panel. Exterior Rated Siding is intended to be installed in applications in accordance with IBC Section 2308.9.3 and IRC Section R602.10 as an exterior siding suitable for long-term exposure to weather or conditions of similar severity. In addition to the intended application for Exterior

Rated Siding, Exterior Rated Siding—Sheathing is intended to be installed in applications in accordance with 2003/2006 IBC Section 2306.4.1, and 2009/2012 IBC Section 2306.3.

4.0 INSTALLATION

4.1 General:

LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding must be installed in accordance with the manufacturer's published installation instructions (titled *Application Instructions LP SmartSide® Precision Lap LP SmartSide® Precision Panel Siding*) and this report. In the event of conflicts, this report governs. A copy of the manufacturer's installation instructions must be on the jobsite at all times during installation.

LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding must be installed with an approved water-resistive barrier as required by the applicable code. Openings in, penetrations through, and terminations of the LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding are outside the scope of this report and must be specifically approved by the code official in accordance with the applicable code.

Unless otherwise noted in this report, fasteners and fastener spacing must be as noted in the applicable code.

4.2 LP SmartSide® Precision Lap Siding:

LP SmartSide® Precision Lap Siding must be attached to framing members spaced a maximum of 16 inches (406 mm) on center for $^{3}/_{8}$ category siding and a maximum of 24 inches (610 mm) on center for $^{7}/_{16}$ category siding.

Self-aligning LP SmartSide® Precision Lap Siding is installed with nails placed at the top of the LP SmartSide® Precision Lap Siding, $^{1}/_{2}$ inch (13 mm) down from the upper edge. Each successive course of lap siding must rest on the back rabbet and must self-align at an overlap of $^{13}/_{16}$ inch (21 mm).

Nails must be of sufficient length to penetrate a minimum of $1^{1}/_{2}$ inches (38 mm) through the sheathing and into framing at each stud location.

4.3 LP SmartSide® Precision Panel Siding:

LP SmartSide® Precision Panel Siding must be installed with its long dimension oriented vertically.

When LP SmartSide® Precision Panel Siding is applied directly to the framing, the maximum spacing of the framing must be consistent with the span rating of the LP SmartSide® Precision Panel Siding, which is identified on the panel's label.

Allowable loads for shearwalls sheathed with LP SmartSide® Precision Panel Siding—Sheathing are noted in Table 1.

Four-foot-by-8-foot (1219 mm by 2438 mm) LP SmartSide® Precision Panel Siding—Sheathing installed vertically, directly to framing, with a single row of nails penetrating both laps, spaced 6 inches on center at panel edges and 12 inches (305 mm) on center at intermediate supports may be used to satisfy the wall bracing requirements for conventional light frame construction specified in the code for prescriptive construction. Install per code requirements for method 3 bracing with wood structural panels.

All LP SmartSide® Precision Panel Siding joints must occur at framing members and must be protected with a continuous wood batt, approved caulking, flashing, or vertical or horizontal shiplap, or otherwise made waterproof.

4.4 Component and Cladding Wind Pressure Capacity:

Maximum allowable component and cladding wind loads (wall, zone 5) for LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding based on a minimum fastener schedule, are provided in Tables 2 through 5. Tables 2 and 3, for lap and panel siding, respectively, are based on full fastener penetration into the wall studs, i.e., fastener penetration = fastener length - siding thickness. Tables 4 and 5, for lap and panel siding, respectively, are based on a minimum fastener penetration into the wall studs of $1^{1}/_{2}$ inches.

5.0 CONDITIONS OF USE

The LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 LP SmartSide® Precision Lap Siding must not be used to satisfy the bracing requirements specified in the code.

5.2 LP SmartSide® Precision Panel Siding—Sheathing, when installed as set forth in this report, may be used as method 3 bracing specified in Section 2308.9 of the IBC and Section R602.10 of the IRC.

5.3 In areas where seismic analysis is required by the applicable code, the applicable code requirements for wood structural panel shear walls must be consulted for additional detailing requirements, restrictions concerning certain usages, required modifications to the allowable shear loads tabulated in this report, and additional inspection requirements.

5.4 LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding must not be installed in contact with concrete or masonry.

5.5 LP SmartSide® Lap Siding and LP SmartSide® Precision Panel Siding must be installed with a minimum 6 inches (152 mm) of clearance from finished grade.

5.6 When field cuts are made to LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding, all exposed surfaces must be finished according to the paint or caulk/sealant manufacturers' specifications.

5.7 LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding are manufactured by Louisiana-Pacific Corporation in Hayward, Wisconsin (Mill No. 357); Newberry, Michigan (Mill No. 416); Tomahawk, Wisconsin (Mill No. 435); and Two Harbors, Minnesota (Mill No. 399); under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Treated-engineered-wood Siding (AC321), dated October 2005.

7.0 IDENTIFICATION

LP SmartSide® Precision Lap Siding and LP SmartSide® Precision Panel Siding must be labeled with the product designation and the name of Louisiana-Pacific Corp. The stamp shall provide the following information:

1. Mill number.
2. The evaluation report number (ESR-1301).
3. Grade/exposure.
4. Span rating.
5. Performance category (based on customary inch fractions).

TABLE 1—ALLOWABLE RACKING SHEAR (plf) FOR LP SmartSide® Precision PANEL SIDING—SHEATHING SHEAR WALLS WITH FRAMING OF DOUGLAS FIR–LARCH OR SOUTHERN PINE FOR WIND OR SEISMIC LOADING[1,2,3]

PERFORMANCE CATEGORY	MINIMUM NAIL PENETRATION IN FRAMING (Inches)	PANELS APPLIED DIRECTLY TO FRAMING				
		Nail Size (Common or Galvanized Box)	Nail Spacing at Panel Edges (Inches)			
			6	4	3	2[4]
$^5/_{16}$[5,6]	$1^1/_4$	6d	180	270	350	450
$^3/_8$[5,6]			200	300	390	510
$^3/_8$[5,6]	$1^1/_2$	8d	220	320	410	530
$^7/_{16}$[5]			240	350	450	585
$^{19}/_{32}$[5]	$1^5/_8$	10d	340	510	665[4]	870

For **SI:** 1 inch = 25.4 mm, 1 plf = 14.6 N/m.

[1]For framing of other species: (a) Find specific gravity for species of lumber in AF & PA National Design Specification; (b) find shear value from table for nails size; c) multiply value by 0.82 for species with specific gravity greater than or equal to 0.42 but less than 0.49, or 0.65 for species with specific gravity less than 0.42.
[2]All panel edges must be backed with 2-inch nominal or wider framing. Panels must be installed with the long dimension oriented in the vertical direction. Space nails 6 inches o.c. along intermediate framing members for $^3/_8$ category and $^7/_{16}$ category panels installed on studs spaced 24 inches o.c. For other conditions and panel thicknesses, space nails 12 inches o.c. on intermediate supports.
[3]The values are for short-term loads due to wind or earthquake (133% increase) and must be reduced by 25 percent for normal duration of loading.
[4]Framing at panel edges must be 3 inches nominal or wider and nails must be staggered where nails are spaced 2 inches o.c., and where 10d nails having penetration into framing of more than $1^5/_8$ inches are spaced 3 inches, or less, o.c. **Exception:** Unless otherwise required, 2-inch nominal framing may be used where full nailing surface is available and nails are staggered.
[5]Except as noted in Footnote 7, panel thickness at point of nailing at panel edges determines applicable shear values, except that $^3/_8$ category panels nailed at shiplap edges use shear values for $^5/_{16}$ category panels, and $^7/_{16}$ and $^{19}/_{32}$ category panel sidings nailed at shiplap edges use shear values for $^3/_8$ category panels.
[6]Shiplap edges must be double-nailed; one nail must be placed in the underlap and a second nail must be placed in the overlap at the nail spacing specified for the applicable shear value.
[7]Fasteners must not be installed in panel siding grooves in the field of the panel siding or when the panel siding grooves occur at cut edges of the panel siding.

TABLE 2a—LAP SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}[1,2]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[3] (inches)	SIDING WIDTH (inches)	MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}[4] (mph)		
				Wind Exposure Category		
				B	C	D
$^3/_8$	16	6	80	170	150	140
		8	79	170	150	140
		12	50	140	120	110
$^7/_{16}$	16	6	80	170	150	140
		8	76	170	150	130
		12	49	140	120	110
	24	6	71	170	145	130
		8	51	155	120	110
		12	32	110	90	90

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]One fastener per stud located ¾ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[2]Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.
[3]Wall studs must have a minimum specific gravity of 0.42.
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 2b—LAP SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult}[1,2]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[3] (Inches)	SIDING WIDTH (inches)	MAXIMUM ULTIMATE WIND PRESSURE (psf)	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}[4] (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	6	133	200	180	180
		8	131	200	180	180
		12	83	180	150	140
7/16	16	6	133	200	180	180
		8	127	200	180	160
		12	81	180	150	140
	24	6	119	200	180	160
		8	85	180	150	140
		12	54	140	120	115

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]One fastener per stud located ¾ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[2]Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.
[3]Wall studs must have a minimum specific gravity of 0.42.
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

TABLE 3a—PANEL SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}[1]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[2] (inches)	FASTENER SPACING[3] (inches o.c.)		MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}[4] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	46	130	110	105
			6	80	170	150	140
	24	6	12	31	110	90	85
			6	61	150	130	120
7/16	16	6	12	45	130	110	105
			6	80	170	150	140
	24	6	12	30	110	90	85
			6	59	150	130	120
19/32	16	6	12	41	130	110	100
			6	80	170	150	140
	24	6	12	27	105	90	-
			6	55	150	125	110

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.
[2]Wall studs must have a minimum specific gravity of 0.42.
[3]Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 3b—PANEL SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult}[1]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[2] (inches)	FASTENER SPACING[3] (inches o.c.)		MAXIMUM ULTIMATE WIND PRESSURE (psf)	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}[4] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	77	160	150	130
			6	133	200	180	180
	24	6	12	51	140	120	110
			6	102	200	160	150
7/16	16	6	12	74	160	140	130
			6	133	200	180	180
	24	6	12	50	140	120	110
			6	99	200	160	150
19/32	16	6	12	69	160	140	130
			6	133	200	180	180
	24	6	12	46	130	115	-
			6	92	180	160	150

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]Tabulated values assume full penetration of the fastener into the wall studs, i.e., fastener penetration = fastener length – siding thickness.
[2]Wall studs must have a minimum specific gravity of 0.42.
[3]Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

TABLE 4a—LAP SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}[1,2]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[3] (inches)	SIDING WIDTH (inches)	MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}[4] (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	6	78	170	150	130
		8	56	150	125	110
		12	35	120	100	90
7/16	16	6	78	170	150	130
		8	56	150	125	110
		12	35	120	100	90
	24	6	52	145	120	110
		8	37	120	100	90
		12	24	90	-	-

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]One fastener per stud located ¾ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[2]Tabulated values assume a fastener penetration of 1½ inches into the wall studs.
[3]Wall studs must have a minimum specific gravity of 0.42.
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 4b—LAP SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult}[1,2]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[3] (inches)	SIDING WIDTH (inches)	MAXIMUM ULTIMATE WIND PRESSURE (psf)	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}[4] (mph)		
				Wind Exposure Category		
				B	C	D
3/8	16	6	130	200	180	180
		8	93	180	160	150
		12	59	150	130	120
7/16	16	6	130	200	180	180
		8	93	180	160	150
		12	59	150	130	120
	24	6	86	180	160	140
		8	62	160	130	120
		12	39	120	-	-

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]One fastener per stud located ¾ inch from the top edge of the siding. Each successive course of lap siding must overlap a minimum of 1 inch. Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[2]Tabulated values assume a fastener penetration of 1 1/2 inches into the wall studs.
[3]Wall studs must have a minimum specific gravity of 0.42.
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.

TABLE 5a—PANEL SIDING - MAXIMUM NOMINAL (ALLOWABLE) COMPONENT AND CLADDING DESIGN WIND SPEED, V_{asd}[1]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[2] (inches)	FASTENER SPACING[3] (Inches o.c.)		MAXIMUM ALLOWABLE WIND PRESSURE (psf)	MAXIMUM NOMINAL (ALLOWABLE) WIND SPEED, V_{asd}[4] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	32	110	90	90
			6	65	150	130	125
	24	6	12	22	90	-	-
			6	43	130	110	100
7/16	16	6	12	32	110	90	90
			6	65	150	130	125
	24	6	12	22	90	-	-
			6	43	130	110	100
19/32	16	6	12	32	110	90	90
			6	65	150	130	125
	24	6	12	22	90	-	-
			6	43	130	110	100

For **SI:** 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]Tabulated values assume a fastener penetration of 1 1/2 inches into the wall studs.
[2]Wall studs must have a minimum specific gravity of 0.42.
[3]Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet in Zone 5 with smallest effective area per Chapter 6 of ASCE 7-05, Section R301.2 of the 2009/2012 IRC, and Section 1609.1.1 of the 2009 IBC.

TABLE 5b—PANEL SIDING - MAXIMUM ULTIMATE COMPONENT AND CLADDING DESIGN WIND SPEED, V_{ult}[1]

PERFORMANCE CATEGORY	MAXIMUM WALL STUD SPACING[2] (inches)	FASTENER SPACING[3] (inches o.c.)		MAXIMUM ULTIMATE WIND PRESSURE (psf)	MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult}[4] (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	54	140	120	115
			6	108	200	160	160
	24	6	12	36	120	-	-
			6	72	160	140	130
7/16	16	6	12	54	140	120	115
			6	108	200	160	160
	24	6	12	36	120	-	-
			6	72	160	140	130
19/32	16	6	12	54	140	120	115
			6	108	200	160	160
	24	6	12	36	120	-	-
			6	72	160	140	130

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 1.6 kph.

[1]Tabulated values assume a fastener penetration of 1 1/2 inches into the wall studs.
[2]Wall studs must have a minimum specific gravity of 0.42.
[3]Fastener must have a minimum head diameter of 0.297 inch, a minimum shaft diameter of 0.113 inch and a minimum length of 2.5 inches (8d box nail).
[4]Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-feet height in Zone 5 with smallest effective area per Chapter 26 of ASCE 7-10 and Section 1609.1.1 of the 2012 IBC.