Date Received at PFS: 11-22-19
IBC Transmittal No. (by PFS):
Project No. (by PFS): 5313

ADDITIONAL OR MODIFIED ACCEPTANCE (MODULARS/PANELIZED)

This form is to be used only when the manufacturer is seeking acceptance of an additional model, modified model or model name change which uses a previously accepted building system.

Current PFS Building System Acceptance #:
Model Name/ No. 23-3276-16
Manufacturer's Name: CHAMPION HOME BUILDERS
Plant(s) at which model will be produced PLANT #23 LILLINGTON, NC

Check One: Y NEW MODEL ____ Revised Model*

TECHNICAL DATA

	Conforms		
	Yes	No	N/A
Floor Plan Showing:			
Braced Wall Method or Shearwalls	Y		
Building Size (LxW Dimensions)	Y		
Room Sizes, Light & Ventilation Schedule	Y		
Exit Requirements	Y		
Electrical Outlet Spacing & Smoke Detector	Y		
Location of Labels & Data Plates	Y		
Use Group, Type Const., Total Sq.Ft. Area	Y		
Plumbing System Design or Reference No. (PROVIDED ON PP-101)	Y		
Heat Loss Calculations or Reference No. (PROVIDED ON RS-101)	Y		
HVAC/Furnace Size/Model No. (BY OTHERS)	Y		
Thermal Performance Calculations or Reference No. (PROVIDED ON RS-101)	Y		
Electrical Load Calculations or Reference No. (PROVIDED ON EP-101)	Y		
Service Size and Location (200A/UTILITY)	Y		
Applicable Building Codes SEE GE-101	Y		

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

Submit model to the followingstates: NC

*Description of Modification:

Requested by: JON TYNDALL/MICHAEL GOLLIVER Date: 11-18-19
(designer)

For PFS Use

Staff Plan Reviewer Sharron Barry IBC Certification #: Date: 11-23-19

Structural Calculation(s) Reviewed By: P.E. #: Date:
Remarks:

**(1) copy sent to IBC within 15 days of approval.*

VERBAL APPROVAL GIVEN ☐ By Whom: To Whom Date:
MODEL WAS DEVIATED ☐ Revision Number:

THIS FORM SHALL BE FILLED OUT COMPLETELY WITH EACH MODEL ACCEPTANCE OR MODIFICATION PRIOR TO SUBMITTAL TO PFS.

cc:

RES*check* Software Version 4.6.5

Inspection Checklist

Energy Code: 2015 IECC

Requirements: 0.0% were addressed directly in the RES*check* software

Text in the "Comments/Assumptions" column is provided by the user in the REScheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Pre-Inspection/Plan Review	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
103.1, 103.2 [PR1][1]	Construction drawings and documentation demonstrate energy code compliance for the building envelope. Thermal envelope represented on construction documents.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
103.1, 103.2, 403.7 [PR3][1]	Construction drawings and documentation demonstrate energy code compliance for lighting and mechanical systems. Systems serving multiple dwelling units must demonstrate compliance with the IECC Commercial Provisions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
302.1, 403.7 [PR2][2]	Heating and cooling equipment is sized per ACCA Manual S based on loads calculated per ACCA Manual J or other methods approved by the code official.	Heating: Btu/hr____ Cooling: Btu/hr____	Heating: Btu/hr____ Cooling: Btu/hr____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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PFS CORPORATION
Cottage Grove, WI

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Foundation Inspection	Complies?	Comments/Assumptions
303.2.1 [FO11][2]	A protective covering is installed to protect exposed exterior insulation and extends a minimum of 6 in. below grade.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.9 [FO12][2]	Snow- and ice-melting system controls installed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.3.4 [FR1][1]	Door U-factor.	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.* FACTORY
402.1.1, 402.3.1, 402.3.3, 402.5 [FR2][1]	Glazing U-factor (area-weighted average).	U-____	U-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.* FACTORY
303.1.3 [FR4][1]	U-factors of fenestration products are determined in accordance with the NFRC test procedure or taken from the default table.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
402.4.1.1 [FR23][1]	Air barrier and thermal barrier installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
402.4.3 [FR20][1]	Fenestration that is not site built is listed and labeled as meeting AAMA /WDMA/CSA 101/I.S.2/A440 or has infiltration rates per NFRC 400 that do not exceed code limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.5 [FR16][2]	IC-rated recessed lighting fixtures sealed at housing/interior finish and labeled to indicate ≤2.0 cfm leakage at 75 Pa.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
405.2 [FR25][1]	All ducts in unconditioned spaces or outside the building envelope are insulated to ≥R-6.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.5 [FR15][3]	Building cavities are not used as ducts or plenums.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4 [FR17][2]	HVAC piping conveying fluids above 105 ºF or chilled fluids below 55 ºF are insulated to ≥R-3.	R-____	R-____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.4.1 [FR24][1]	Protection of insulation on HVAC piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6 [FR19][2]	Automatic or gravity dampers are installed on all outdoor air intakes and exhausts.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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DATE 12/4/19
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PFS CORPORATION
Cottage Grove, WI

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.1 [IN13][2]	All installed insulation is labeled or the installed R-values provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
402.1.1, 402.2.6 [IN1][1]	Floor insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.* FACTORY
303.2, 402.2.7 [IN2][1]	Floor insulation installed per manufacturer's instructions and in substantial contact with the underside of the subfloor, or floor framing cavity insulation is in contact with the top side of sheathing, or continuous insulation is installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
402.1.1, 402.2.5, 402.2.6 [IN3][1]	Wall insulation R-value. If this is a mass wall with at least ½ of the wall insulation on the wall exterior, the exterior insulation requirement applies (FR10).	R-____ ☐ Wood ☐ Mass ☐ Steel	R-____ ☐ Wood ☐ Mass ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.* FACTORY
303.2 [IN4][1]	Wall insulation is installed per manufacturer's instructions.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY

Additional Comments/Assumptions:

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Cottage Grove, WI

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
402.1.1, 402.2.1, 402.2.2, 402.2.6 [FI1][1]	Ceiling insulation R-value.	R-____ ☐ Wood ☐ Steel	R-____ ☐ Wood ☐ Steel	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.* FACTORY
303.1.1.1, 303.2 [FI2][1]	Ceiling insulation installed per manufacturer's instructions. Blown insulation marked every 300 ft².			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
402.2.3 [FI22][2]	Vented attics with air permeable insulation include baffle adjacent to soffit and eave vents that extends over insulation.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
402.4.1.2 [FI17][1]	Blower door test @ 50 Pa. <=5 ach in Climate Zones 1-2, and <=3 ach in Climate Zones 3-8.	ACH 50 =____	ACH 50 =____	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.4 [FI4][1]	Duct tightness test result of <=4 cfm/100 ft2 across the system or <=3 cfm/100 ft2 without air handler @ 25 Pa. For rough-in tests, verification may need to occur during Framing Inspection.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.3 [FI27][1]	Ducts are pressure tested to determine air leakage with either: Rough-in test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the system including the manufacturer's air handler enclosure if installed at time of test. Postconstruction test: Total leakage measured with a pressure differential of 0.1 inch w.g. across the entire system including the manufacturer's air handler enclosure.	____ cfm/100 ft²	____ cfm/100 ft²	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.3.2.1 [FI24][1]	Air handler leakage designated by manufacturer at <=2% of design air flow.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.1.1 [FI9][2]	Programmable thermostats installed for control of primary heating and cooling systems and initially set by manufacturer to code specifications.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY
403.1.2 [FI10][2]	Heat pump thermostat installed on heat pumps.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1 [FI11][2]	Circulating service hot water systems have automatic or accessible manual controls.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.6.1 [FI25][2]	All mechanical ventilation system fans not part of tested and listed HVAC equipment meet efficacy and air flow limits.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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Cottage Grove, WI

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
403.2 [FI26][2]	Hot water boilers supplying heat through one- or two-pipe heating systems have outdoor setback control to lower boiler water temperature based on outdoor temperature.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.1 [FI28][2]	Heated water circulation systems have a circulation pump. The system return pipe is a dedicated return pipe or a cold water supply pipe. Gravity and thermos-syphon circulation systems are not present. Controls for circulating hot water system pumps start the pump with signal for hot water demand within the occupancy. Controls automatically turn off the pump when water is in circulation loop is at set-point temperature and no demand for hot water exists.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.1.2 [FI29][2]	Electric heat trace systems comply with IEEE 515.1 or UL 515. Controls automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.2 [FI30][2]	Water distribution systems that have recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe have a demand recirculation water system. Pumps have controls that manage operation of the pump and limit the temperature of the water entering the cold water piping to 104ºF.	PFS APPROVED Sharron Barry DATE 12/4/19 Approval Limited to Factory Built Portion Only PFS CORPORATION Cottage Grove, WI		☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
403.5.4 [FI31][2]	Drain water heat recovery units tested in accordance with CSA B55.1. Potable water-side pressure loss of drain water heat recovery units < 3 psi for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units < 2 psi for individual units connected to three or more showers.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1 [FI6][1]	75% of lamps in permanent fixtures or 75% of permanent fixtures have high efficacy lamps. Does not apply to low-voltage lighting.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
404.1.1 [FI23][3]	Fuel gas lighting systems have no continuous pilot light.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
401.3 [FI7][2]	Compliance certificate posted.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection Provisions	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
303.3 [FI18][3]	Manufacturer manuals for mechanical and water heating systems have been provided.			☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	FACTORY

Additional Comments/Assumptions:

All items checked off in the list above are to be installed, verified and inspected in the factory.
All items in the list that are applicable to this model and NOT checked off MUST be inspected in the field and Approved by the Local Build Official.

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DATE 12/4/19
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PFS CORPORATION
Cottage Grove, WI

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

NORTH CAROLINA
MODULAR PLANS REVIEW CHECKLIST

		PAGE 1 of 3	revised May 2011
Manufacturer		Champion Home Builders, Inc.	
Model number/name		23-3276-16	
3rd Party		PFS Corporation	
Review Date			
Reviewer			
		Plan Sheet Page # and NOTES	
	QC MANUAL (current and complete)	8-15-19	
	APPENDIX B (required and attached)	N/A	
	PLAN SHEETS		
	Each plan sheet third-party stamped with approver's name		
	Each plan sheet is numbered and/or indexed		
	GENERAL (cover sheet)		
	Code References	GE-101	
	Statement regarding connection to public utilities	GE-101	
	Statement regarding bathrooms if not included	N/A	
	Construction type	GE-101	
	Occupancy classification	GE-101	
	Fire resistance ratings (if required)	GE-101	
	Floor live load	GE-101	
	Roof live load	GE-101	
	Design wind velocity	GE-101	
	Seismic information (commercial projects)	GE-101	
	Thermal zones	RS-101/GE-101 UNDER GENERAL NOTES	
	Notice to inspections department regarding items to be site installed	GE-101	
	FLOOR PLANS		
	Interior and exterior wall layouts	AP-101	
	Door and window schedule	AP-101	
	Light and Ventilation requirements	AP-101	
	Attic access (size and locaiton)	AP-101	
	Non-prescriptive headers	AP-101/Page 23-25 in Calculations	
	Safety glazing requirements	ap-101	
	Fire rating of Exterior walls (if applicable)	N/A	
	EXTERIOR ELEVATIONS		
	Exterior materials	EV-101-EV-104/SE-101	
	Attic ventilation requirements	SE-101/AP-101/WORKSHEET 1	
	PLUMBING		
	Plan	PP-101/WP-101	
	All fixtures furnished by mfg. shown on plans	PP-101/WP-101/GE-101	
	Materials (water supply & distribution, DWV, storm drainage)	PP-101/WP-101	
	Supply and waste risers, including DWV system (generic) beneath the building	PP-101/WP-101	
	Water heater (type and capacity)	WP-101	

11/24/2019
Sharron Barry
QA MANUAL
Current and complete
PLAN SHEETS
3rd Party stamped
Numbered and/or indexed

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Sharron Barry
DATE 12/4/19
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Cottage Grove, WI

NORTH CAROLINA			
MODULAR PLANS REVIEW CHECKLIST			
		PAGE 2 of 3	revised May 2011
		Plan Sheet Page # and NOTES	
	MECHANICAL		
	Design calculations	BY OTHERS	
	Installed unit capacity	BY OTHERS	
	Supply and returns (locations and sizes)	AP-101	
	Duct sizes	BY OTHERS	
	Specifications (units, ducts)	BY OTHERS	
	All appliances furnished by mfg. shown on plans	AP-101/EP-101	
	ELECTRICAL		
	Plan	EP-101	
	Location of all electrical boxes	EP-101	
	Electrical panel location	EP-101	
	Note regarding main disconnect (if applicable)	GE-101	
	Exterior lighting and receptacles	EP-101	
	Ground level receptacles (if applicable)	BY OTHERS	
	Smoke detector location(s)	EP-101	
	Electrical load calculations	EP-101	
	Electrical panel layout (breaker and wire sizes, circuit schedule)	EP-101	
	Panel and service entrance sizes	GE-101/EP-101	
	All fixtures furnished by mfg. shown on plans	EP-101	
	ACCESSIBILITY		
	(for other than 1 & 2 family dwellings)		
	Entrances and means of egress	N/A	
	Doors, doorways, and door hardware	N/A	
	Stairs and handrails	N/A	
	Toilet rooms, plumbing fixtures, grab bars, etc	N/A	
	Bathrooms and shower rooms	N/A	
	Occupancy specific requirements	N/A	
	Multi-family dwellings: Type A and B units	N/A	
	FLOOR X-SECTION		
	Joist and beam sizes and spacing	SE-101/Calculation Page 31	
	Materials species and grade	SE-101/Calculation Page 31	
	Sheathing, decking, and concrete as applicable	SE-101	
	Fastening instructions	SE-101	
	Insulation	SE-101	
	Details as required for clarification	SE-101	
	WALL X-SECTION		
	Stud and column sizes and spacing	SE-101	
	Materials species and grade	SE-101/Calculation Page 28-29	
	Sheathing and bracing	AP-101/SE-101	
	Headers and lintels	AP-101/SE-101	
	Finishes	AP-101	
	Fastening instructions	AP-101	
	Insulation	AP-101	
	Details as required for clarificaiton	AP-101	

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NORTH CAROLINA
MODULAR PLANS REVIEW CHECKLIST

		PAGE 3 of 3	revised May 2011
		Plan Sheet Page # and NOTES	
	CEILING/ROOF X-SECTION		
	Truss, rafter, and beam spacing	AP-101/TR-101	
	Lumber species and grade	SE-101/TR-101	
	Sheathing and decking	SE-101/TR-101	
	Finishes	SE-101	
	Fastening instructions	SE-101	
	Insulation	SE-101	
	Details including NC sealed truss designs or manual reference	TR-101	
	FOUNDATION PLAN		
	Footings, pier, and curtain wall locations and specifications	F-101	
	X-sections with dimensions	F-101	
	Anchorage - sill plate to piers and curtain wall	F-102-103	
	Anchorage - building to sill plate	F-102-103	
	Anchorage - tie downs (lateral and longitudinal)	N/A	
	Soil bearing capacity	F-103	
	Minimum concrete compressive strength	F-103	
	Motar type	F-103	
	Ventilation requirements (with and without vapor barrier)	F-101	
	Crawl space access requirements	F-101	
	ENERGY COMPLIANCE		
	Demonstrate compliance	RS-101	
	SET-UP INSTRUCTIONS		
	Floor and ceiling connections	GE-101/SE-101	
	Marriage wall connections	N/A	
	Roof set-up connections	GE-101/SE-101/SET UP MANUAL	
	Plumbing connections	GE-101/SE-101SET UP MANUAL	
	Mechanical connections	GE-101/SE-101/SET UPMANUAL	
	Electrical connections	GE-101/SE-101/SET UP MANUAL	
	Fire stopping	GE-101/SE-101/SET UP MANUAL	
	Air infiltration elimination	GE-101/SE-101/SET UP MANUAL	
	Notice to inspections department attachment if set-up instructions are by attachment	GE-101/SE-101	
	ITEMS NOT INSPECTED IN PLANT		
	List of items not inspected by 3rd. Party	GE-101	
	Notice to inspections department	GE-101	

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Cottage Grove, WI

CHAMPION

4055 HIGHWAY 401 SOUTH
LILLINGTON, NC 27546

"23-3276-16"
4 BEDROOM 3 BATH
2176 SQ. FT.

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code
06/15/2022
Harnett COUNTY NORTH CAROLINA

A HOME DESIGNED FOR:

* ANY COUNTY THAT MEETS REQUIREMENTS OF GE-101.

* SEE GE-101 FOR MAXIMUM WIND SPEED

SHEET INDEX

SHEET INDEX-CONT.

PFS
PFS CORPORATION
Approval Limited to Factory Built Portion Only

State:	**North Carolina**
Signature:	Sharron Barry
Title:	**Staff Plan Reviewer**
Date:	**12/4/19**

*** THIS MODEL NOT DESIGNED FOR OCEAN HIGH HAZARD AREAS OR SPECIAL MOUNTAIN REGIONS OR FLOOD ZONES OR SPECIAL WIND REGIONS.**

CP- 1 Revised or Added page per PFS review of 11-24-19

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

TITLE: COVER SHEET
MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH
DATE: 01-13-16
SCALE:
DRAWN BY: STAFF
REVISED:
REVISIONS
SHEET NO: CP-101
PAGE:

STATE	GENERAL:	ELECTRICAL:	PLUMBING:	MECHANICAL:	ENERGY:
NC CODES	✔ 2018 NC RESIDENTIAL CODE WITH CURRENT NC AMENDMENTS	✔2017 NC ELECTRICAL CODE WITH CURRENT NC AMENDMENTS	2018 NC PLUMBING CODE FROM 2012 NC RESIDENTIAL CODE	2018 NC MECHANICAL CODE FROM 2012 NC RESIDENTIAL CODE	✔ 2018 NORTH CAROLINA ENERGY CONSERVATION CODE WITH CURRENT NC AMENDMENTS
					* 2015 IECC for REScheck used for code compliance (with attic decking) N1102.1.2 and Appendex E used for code compliance (without attic decking)

GENERAL NOTES

- ALL GLAZING WITHIN 24 INCH ARC OF DOORS, WHOSE BOTTOM EDGE IS LESS THAN 60 INCHES ABOVE THE FLOOR, AND ALL GLAZING IN DOORS SHALL BE SAFETY, TEMPERED or ACRYLIC PLASTIC SHEET.
- OCCUPANT LOAD IS BASED ON 1 PERSON PER 200 SQUARE FEET OF FLOOR AREA.
- ALL STEEL STRAPS REFERENCED ON FLOOR PLAN SHALL BE 1.5 INCH x 26 GA. MIN.
- CEILING FANS SHALL BE 80 INCHES MIN. FROM BOTTOM OF BLADES TO FINISH FLOOR.
- MINIMUM CORRIDOR WIDTH IS 36 INCHES
- ALL WINDOWS SHALL BE DOUBLE GLAZED.
- EXTERIOR DOORS SHALL HAVE AN INSULATION VALUE OF R-1.66 MINIMUM.
- FIRE STOPPING AND AIR INFILTRATION BARRIER BETWEEN UNITS SHALL BE PROVIDED BY DRAFTSTOP BRAND NONCOMBUSTIBLE FILLER COMPOUND OR EQUAL MEETING ASTM-E136, R602.8
- HOMES GOING INTO RADON AREAS WILL HAVE A 3" VTR AND SWITCH LEG TO SWITCH LABELED "RADON" ON TRIM PLATE. LOCATION MAY VARY PER MODEL
- THIS HOME DESIGNED FOR ,UP TO, CLIMATE ZONE 4 FOR NC & SC AND CLIMATE ZONE 4A FOR VA THE MANUFACTURER MUST BE INFORMED IF HOME IS TO BE LOCATED IN HIGHER CLIMATE ZONE.
- THE MANUFACTURER MUST BE INFORMED IF THE HOME IS TO BE LOCATED IN THE CITY OF CHARLESTON, S.C.
- THE MANUFACTURER MUST BE INFORMED IF THE HOME IS TO BE LOCATED IN ANY SPECIAL MOUNTIAN REGION.
- THIS PLAN MAY BE FLIPPED END TO END AND/OR MIRRORED

PLUMBING NOTES

- THIS UNIT MUST BE CONNECTED TO PUBLIC WATER SUPPLY AND SEWAGE SYSETM IF THESE SERVICES ARE AVAILABLE
- ALL PLUMBING FIXTURES SHALL HAVE SEPERATE SHUT-OFF VALVES.
- WATER HEATER SHALL HAVE A SAFETY PAN WITH 1 INCH DRAIN TO EXTERIOR.
- WATER PIPES INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED ATTIC SHALL BE INSULATED WITH AN INSULATION OF R-6.5 MINIMUM.
- DWV SYSTEM SHALL EITHER ABS or PVC -DWV
- WATER SUPPLY LINES SHALL BE POLYETHYLENE (PEX), CPVC, OR COPPER, WHEN POLYETHYLENE (PEX), SUPPLY LINES ARE INSTALLED THE MAXIMUM WATER HEATER SETTING IS 180 deg F. THE POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES LIMITATIONS AND INSTRUCTIONS.
- BUILDING DRAIN AND CLEANOUTS ARE DESIGNED AND SITE INSTALLED BY OTHERS, SUBJECT TO LOCAL JURISDICTION APPROVAL.
- TUB ACCESS PROVIDED UNDER HOME UNLESS OTHERWISE NOTED.
- SHOWER STALLS SHALL BE COVERED w/ NON-ABSORBANT MATERIAL TO A HEIGHT OF 72 INCHES ABOVE FINISH FLOOR.
- T&P RELIEF VALVE w/DRAIN TO EXTERIOR AND SHUT-OFF WITH-IN 3' of WATER SUPPLY AT WATER HEATER
- WATER HAMMER ARRESTERS SHALL BE INSTALLED AT EACH QUICK CLOSING VALVE ie. ICE MAKERS, DISH WASHERS, AND CLOTHES WASHERS (WHEN REQUIRED).
- WATER HEATERS LIST ON Q.C. 04.01.01
- ALL PLUMBING FIXTURES/PIPING SHALL COMPLY WITH SECTIONS: P2608, P2701 & TABLES P2701.1, P2904.4.1 & P2904.6 OF INTERNATIONAL RESIDENTIAL CODE OR SECTIONS 303, 402 & TABLES 605.3, 605.4, 605.5 OF NORTH CAROLINA PLUMBING.
- ALL TUBS AND SHOWER SHALL HAVE TEMPERATURE LIMITING VALVES PER IRC AND NC PLUMBING.

ELECTRICAL NOTES

- ALL CIRCUITS AND EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE APPROPRIATE ARTICLES OF THE NATIONAL ELECTRIC CODE (NEC).
- WHEN LIGHT FIXTURES ARE INSTALLED IN CLOSETS THEY SHALL BE SURFACE MOUNTED OR RECESSED. INCANDESCENT FIXTURES SHALL HAVE COMPLETELY ENCLOSED LAMPS. SURFACE MOUNTED INCANDESENT FIXTURES SHALL HAVE A MINIMUM OF 12 INCHES AND ALL OTHER FIXTURES SHALL HAVE A CLEARANCE OF 6 INCHES FROM "STORAGE" AREA AS DEFINED BY NEC 410-16(C)
- WHEN WATER HEATERS, DISH WASHERS, AND WALL OVENS ARE INSTALLED, THEY SHALL BE PROVIDED WITH READILY ACCESSIBLE DISCONNECTS. THE BRANCH CIRCUIT SWITCH OR CIRCUIT BREAKER SHALL BE PERMITTED TO SERVE AS THE DISCONNECTING MEANS ONLY WHERE THE SWITCH OR CIRCUIT BREAKER IS WITHIN SIGHT FROM THE APPLIANCE OR IS CAPABLE OF BEING LOCKED IN THE OPEN POSITION.
- HVAC EQUIPMENT SHALL BE PROVIDED w/ READILY ACCESSIBLE DISCONNECTS ADJACENT TO THE EQUIPMENT SERVED. A UNIT SWITCH WITH A MARKED "OFF" POSITION THAT IS PART OF THE HVAC EQUIPMENT AND DISCONNECTS ALL UNGROUNDED CONDUCTORS SHALL BE PERMITED AS THE DISCONNECTING MEANS WHERE OTHER DISCONNECTING MEANS ARE ALSO PROVIDED BY A READILY ACCESSIBLE CIRCUIT BREAKER.
- PRIOR TO ENERGIZING THE ELECTRICAL SYSTEM THE INTERRUPTING RATING OF THE MAIN BREAKER MUST BE DESIGNED AND VERIFIED AS BEING IN COMPLIANCE WITH SECTION 110-9 OF THE NEC BY LOCAL ELECTRICAL CONSULTANT.
- THE MAIN ELECTRICAL PANEL(DISCONNECT) AND FEEDERS ARE DESIGNED BY OTHERS, SITE INSTALLED AND SUBJECT TO LOCAL JURISDICTION APPROVAL.
- SMOKE DETECTORS SHALL BE WIRED SO THAT THE OPERATION OF ANY ONE SMOKE DETECTOR WILL CAUSE SIMULTANEOUS ACTIVATION OF ALL OTHERS.
- ALL CIRCUITS CROSSING OVER MODULE MATING LINE(S) SHALL BE SITE CONNECTED IN APPROVED ACCESSIBLE JUNCTION BOXES OR WITH APPROVED CABLE CONNECTIONS.
- ALL WIRING SHALL BE NMC
- ANY STRIP RECEPT MOUNTED BENEATH A COUNTER SHALL BE WITHIN 6" OF THE EDGE
- ALL BRANCH CIRCUITS SUPPLYING 15 & 20 AMPRE OUTLETS IN LIVING AREAS ARE PROTECTED BY AN ARC-FAULT CIRCUIT INTERUPTER IN ACCORDANCE WITH SECTION 210.12, NEC
- ALL ELECTRICAL FIXTURES/WIRING SHALL COMPLY WITH SECTION E3303.3 (SC & VA)
- IT IS THE BUILDERS RESPONSIBILITY TO PROVIDE ELECTRICAL PROVISIONS FOR ANY "MOBILE" WORKSTATION IF IT IS PERMANENTLY MOUNTED.
- FACTORY INSTALLED SUB PANEL BOX SHALL HAVE 2" MIN. CONDUIT FOR WIRE FEEDERS

MECHANICAL NOTES

- ALL AIR SUPPLY REGISTERS ARE ADJUSTABLE EXCEPT WHERE OTHERWISE SPECIFIED
- INTERIOR DOORS SHALL BE UNDERCUT 1" MIN ABOVE FINISHED FLOOR FOR AIR RETURN
- BATHROOMS SHALL BE PROVIDED WITH A WINDOW OR A MIN. 50 CFM VENT FAN. VA. REQUIRES A MINIMUM OF .35 AIR CHANGE EVERY HOUR.
- BATH VENT FANS SHALL BE DUCTED TO THE EXTERIOR AND TERMINATE AT AN APPROVED VENT CAP
- HVAC EQUIPMENT SHALL BE EQUIPPED WITH OUTSIDE FRESH AIR INTAKES BY OTHERS.
- HVAC SUPPLY DUCTS AND CALCULATIONS DESIGNED AND INSTALLED BY OTHERS
- ALL DUCTS SHALL HAVE A MIN. OF R-8 INSULATION
- ALL REGISTER BOOTS SHALL BE TAPED OR SEALED OTHERWISE.
- ALL RETURN GRILLS BY FACTORY UNLESS SPECIFIED
- * OPTIONAL FURNACE TO BE FACTORY INSTALLED. OPTIONAL FURNACE KW SIZING TO BE VERIFIED BY OTHERS WITH SITE PROVIDED MANUAL D & J.
- * OPTIONAL FURNACE USED FOR SUPPLEMENTAL HEATING ONLY. FOR OPTIMAL EFFICIENCY, A HEAT PUMP SHOULD BE INSTALLED.

ON-SITE CONNECTIONS

- ON-SITE STRUCTURAL CONNECTIONS: FOR SITE CONNECTIONS REFER TO SECTION DRAWINGS, FOUNDATION PLANS, AND TIE DOWN PLAN (ON-FRAME)
- ON-SITE ELECTRICAL CONNECTIONS: MULTI-SECTION UNITS WILL HAVE THE ELECTRICAL CROSSOVERS LOCATED EITHER IN THE FLOOR NEAR THE MARRIAGE LINE OR IN THE ENDWALLS NEAR THE CENTER OF THE UNIT. LOCATE THE JUNCTION BOXES AND CONNECT THE CONDUCTORS TOGETHER. THE CONDUCTORS SHOULD BE COLOR CODED OR MARKED FOR EASY IDENTIFICATION. DO NOT INTERCONNECT CIRCUITS OR CROSS CONDUCTORS.
- ON-SITE PLUMBING CONNECTIONS:

  WATER LINES:
- LOCATE AND CONNECT WATER LINE CROSS-OVERS LOCATED UNDER THE FLOOR AT THE MARRIAGE LINE. TURN THE WATER ON AND CHECK FOR LEAKS.

  DRAIN LINES:
- CONNECT DRAIN DROP-OUTS TO THE MAIN DRAIN. BE SURE ALL CONNECTIONS ARE MADE TO COMPLY WITH LOCAL PLUMBING CODES.

  TWO STORY DESIGNS:
- SOME 2 STORY MODELS WILL REQUIRE ADDITIONAL VERTICAL CONNECTIONS SEE PLAN SHEETS FOR LOCATIONS AND ACCESS POINTS
- INTEGRITY OF MARRIAGE LINE RIDGE BEAM SHALL NOT BE COMPROMISED UNLESS SPECIFICALLY DESIGNED FOR AND SHOWN ON APPROVED PLANS.

  ON-SITE GAS CONNECTIONS (IF APPLICABLE):
- LOCATE "QUICK DISCONNECT" AND CONNECT. THE "QUICK DISCONNECT" IS LOCATED UNDER THE FLOOR AT THE MARRIAGE LINE. VERIFY THAT ALL CONNECTIONS ARE TIGHT AND HAVE BEEN CHECKED FOR LEAKS.

* ATTENTION LOCAL INSPECTIONS DEPARTMENT

THE FOLLOWING ITEMS HAVE NOT BEEN COMPLETED
BY CHAMPION HOMES, HAVE NOT BEEN INSPECTED
BY P.F.S., AND ARE NOT CERTIFIED BY THE
STATE MODULAR CERTIFICATION LABEL. CODE COMPLIANCE
MUST BE DETERMINED AT THE LOCAL LEVEL.

SITE CONNECTION OF ROOFS,FLOORS,WALLS(setup manual pages 11-13, pages AP-101, SE-101-102, CALCULATION SHEETS in plan set)
FOUNDATIONS, PORCHES, DECKS, EXTERIOR STAIRS
ELECTRICAL CONNECTIONS ON SITE(pages 26-28 setup manual), PLUMBING CONNECTIONS ON SITE(pages 23-25 setup manual),
4X10 REGISTERS/BOOTS PROVIDED IN TYPICAL LOCATIONS (SEE AP-101)
* TRUNKLINE ,MANUAL D & J BY OTHERS ON SITE. DRYER VENTING BY OTHERS (page 20 setup manual).
* BLOWER DOOR TEST TO BE COMPLETED BY OTHERS ON SITE.
**ON BASEMENT ENTRY HOMES, FLOOR INSULATION IS NOT PROVIDED BY FACTORY.
ALL BASEMENT WORK, INCLUDING FOUNDATION DESIGN, STAIRS, HVAC AND
CONNECTION OF SMOKE DETECTOR AND REQUIRED OUTLETS, DONE BY OTHERS.
PROVISIONS FOR EGRESS FROM BASEMENT MUST BE PROVIDED ON SITE BY OTHERS.
ALL ENERGY COMPLIANCE FOR BASEMENTS MUST BE DONE ON SITE BY OTHERS
* * RODENT PROOFING TO BE COMPLETED ON-SITE BY OTHERS PER RP-101 (IN HOME OWNERS PACKET)
IN WINDBORNE DEBRIS AREAS, WINDOW/DOOR PROTECTION PROVIDED BY OTHERS PER LOCAL CODE
ANY SITE INSTALLED ATTIC ACCESS SHOWN ON AP-101
NO SPRINKLER SYSTEMS REQUIRED FOR UNIT. A FIRE EXTIGUISHER TO BE PROVIDED ON SITE BY OTHERS
SEE ENERGY CODE INSPECTION CHECKLIST FOR FACTORY COMPLETED ITEMS AND SITE COMPLETED ITEMS

ALL FALL PROTECTION DEVICES REQUIRED PER R612.2, MUST BE INSTALLED ON SITE BY OTHERS

* ATTENTION LOCAL INSPECTIONS DEPARTMENT

SET-UP INSTRUCTIONS ARE INCLUDED ON THE PLAN SHEETS & IN SET-UP MANUAL INCLUDED IN HOMES.
SEE NOTES, CROSS SECTION AND FOUNDATION PAGES (ITEMS NOT COMPLETE AT FACTORY MARKED WITH★ ON CROSS SECTION)
IF CHAMPION HOMES INSTALLATION MANUAL IS NOT INCLUDED THESE PLANS ARE INCOMPLETE.

* ATTENTION LOCAL INSPECTIONS DEPARTMENT

IF THIS STRUCTURE IS IN A THERMAL ZONE MORE STRINGENT THAT THAT LISTED ON THESE PLANS,IS SET ON PILINGS, OR IS INSTALLED AT A MOUNTAIN REGION OR COASTAL HGH HAZARD SITE SUCH THAT WIND OR OTHER DESIGN PARAMETERS ARE INCREASED, THE DESIGN MUST BE DETERMINED TO BE ADEQUATE FOR ACTUAL SITE CONDITIONS. ALTERATIONS MAY BE REQUIRED TO BRING THE HOME INTO COMPLIANCE WITH THE MORE STRINGENT CONDITIONS.

ANY MODEL DESIGNED FOR 150 MPH Vult MAY BE LOCATED IN AREAS OF 4500 FT OR ABOVE

ALL OPERABLE WINDOWS TO INCLUDE INSECT SCREENS.
ALL PATIO AND ATRIUM DOORS TO INCLUDE INSECT SCREENS.

IF HOME IS EQUIPPED WITH WOOD BURNING FIREPLACE, SEE PAGE 22 OF SET UP MANUAL AND MANUFACTURE'S INSTALLATION MANUAL FOR REQUIRED SITE INSTALLATION.

VIRGINIA MODS TO HAVE ICE DAM PROTECTION AS REQUIRED BY STATE/LOCAL CODES.

APPROVAL STAMP

PFS

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: Sharron Barry
Title: Staff Plan Reviewer
Date: 12/4/19

DESIGN INFORMATION

OCCUPANCY	SINGLE FAMILY ✔
CONSTRUCTION TYPE	VB UNP
MAXIMUM WIND SPEED	130 MPH Vult ✔
WIND EXPOSURE	C
SEISMIC CATEGORY	C
FLOOR LIVE LOAD	40 PSF
2ND FLOOR LIVE LOAD (for homes with fixed walkup staircases)	30 PSF
FLOOR DEAD LOAD	10 PSF
ROOF LIVE LOAD	20 PSF STANDARD 30 PSF OPTIONAL
ROOF DEAD LOAD	10 PSF
GROUND SNOW LOAD	30 PSF
FIRE RATING EXT WALL	0 Hrs.
TENANT SEPARATION	0 Hrs.
MAX MEAN ROOF HT.	20.00' ✔

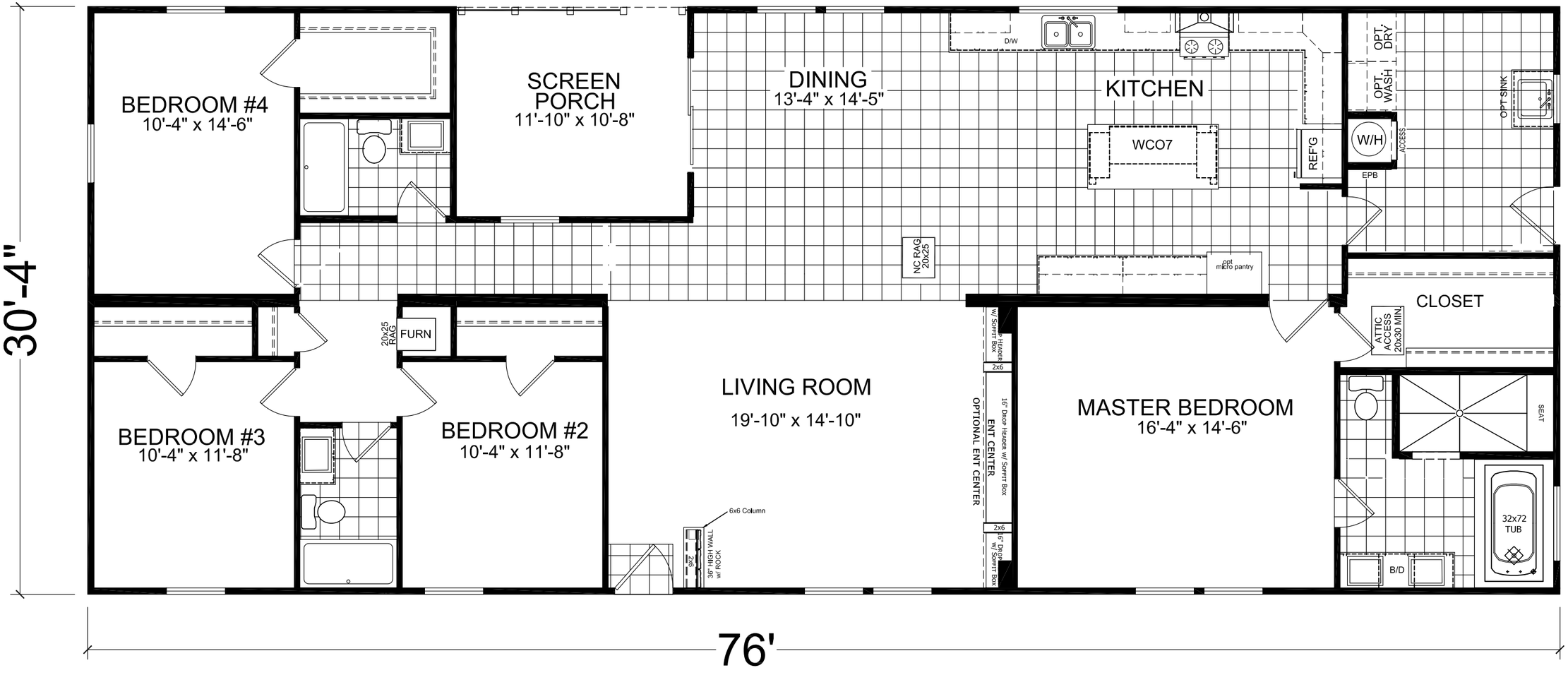
NOTE: ALL HIGH WIND DESIGNS, CONSTRUCTION, FASTENING, ETC, BUILT PER CALCULATION MANUAL OR SPECIFIC ENGINEERING (MEETING OR EXCEEDING CHAPTER 45- NC)

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

TITLE: NOTES
MODEL: ANY MODEL
DATE: 04-15-03
SCALE: NOT TO SCALE
DRAWN BY: CDB
REVISED:
REVISIONS
SHEET NO: GE-101
PAGE:

MODEL 23-3276-16

4 BDRM, 3 BATH
ACTUAL SIZE: 30'-4"X 76'-0"
TOTAL AREA: 2176 SQ.FT.



MATERIALS AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE FOR PRODUCTION AND CODE PURPOSES. ALL DIMENSIONS ARE NOMINAL AND APPROXIMATE. SQUARE FOOTAGE IS MEASURED FROM EXTERIOR WALL TO EXTERIOR WALL AND IS A APPROXIMATE FIGURE. THIS DRAWING IS A RENDERING AND IS MEANT FOR SALE PURPOSES ONLY.

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: LITERATURE PLAN

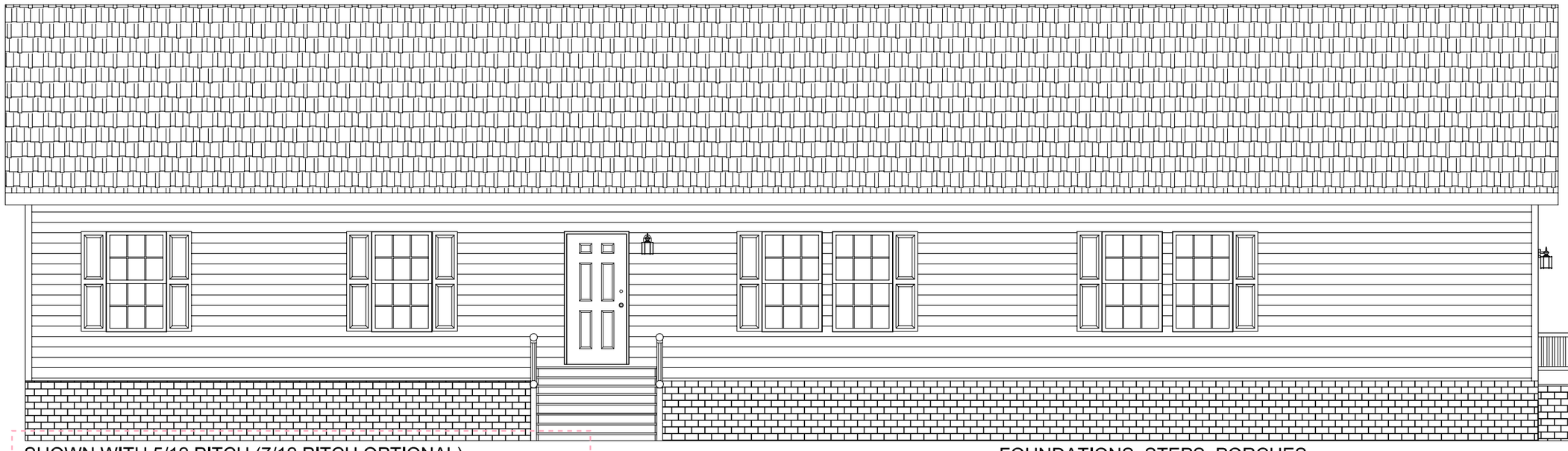
MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE:
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO: L-101

PAGE:



SHOWN WITH 5/12 PITCH (7/12 PITCH OPTIONAL)
SHOWN WITH STANDARD DOOR & WINDOW CONFIGURATION

FOUNDATIONS, STEPS, PORCHES
AND RAILS DONE ON SITE BY OTHERS

FRONT ELEVATION

CP- 1 Revised or Added page per PFS review of 11-24-19

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
ELEVATIONS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

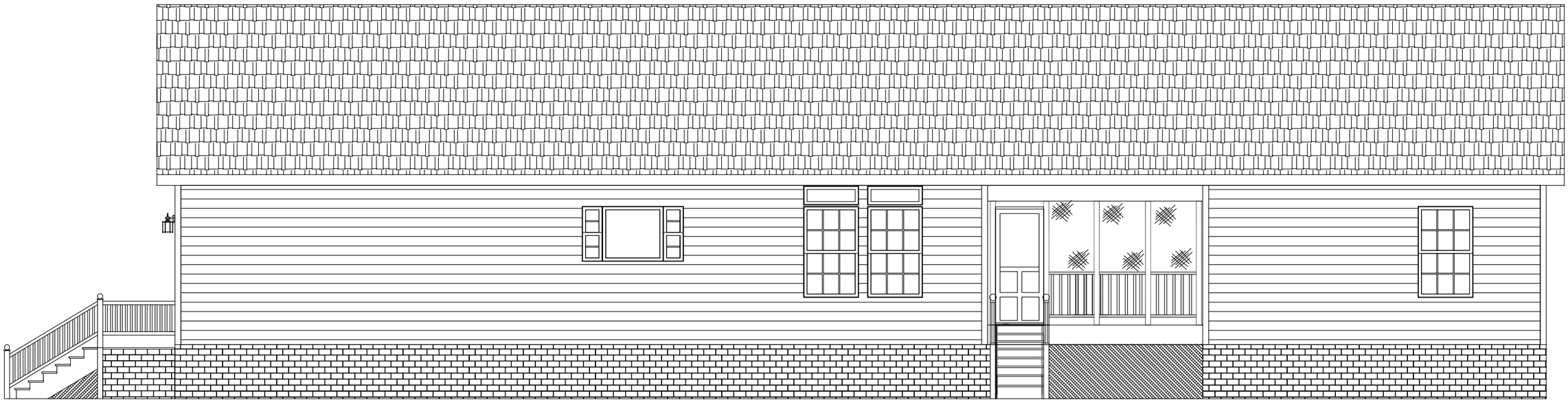
REVISIONS

SHEET NO:
EV-101

PAGE:

RIDGE VENT

COMPOSITE SHINGLE



FOUNDATIONS, STEPS, PORCHES
AND RAILS DONE ON SITE BY OTHERS

REAR ELEVATION

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
ELEVATIONS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO:
EV-102

PAGE:

RIGHT ELEVATION

FOUNDATIONS, STEPS, PORCHES
AND RAILS DONE ON SITE BY OTHERS

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
ELEVATIONS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO:
EV-103

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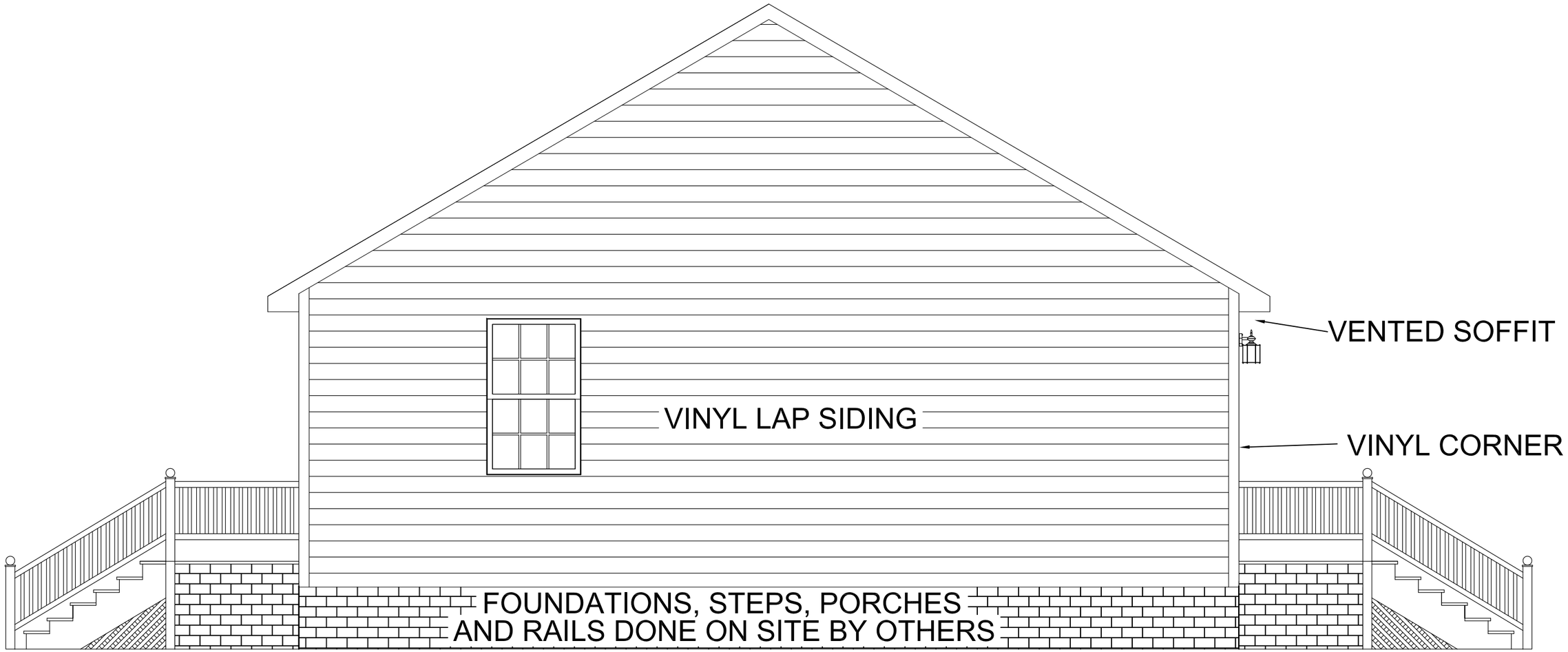


RIGHT ELEVATION

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
ELEVATIONS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO:
EV-104

PAGE:

DESCRIPTION	GLAZING SQ. FT.	VENTING SQ. FT.	DESIGN PRESSURE	MANUFACTURER
WINDOWS				
36" X 61" EGRESS opt. SAFETY GLAZED	12,2	6,14	DP 50/DP 66	KINRO
30" X 36"	5,55	2,76	DP 66	KINRO
46" X 61" EGRESS	16,07	8,01	DP 25	KINRO
42" X 34" BLOCK GLASS	6,28	0	DP 50	HY-LITE
36" X 12" TRANSOM (MAY FLIP)	1,7	0	DP 66	KINRO
24" X 48" opt. SAFETY GLAZED	4,85	2,44	DP 66	KINRO
14" X 40" opt. SAFETY GLAZED	2,48	1,29	DP 66	KINRO
62" X 40" PICTURE	14,35	6,11	DP 50	KINRO
46" X 38" ARCH SAFETY GLAZED	8,26	3,58	DP 50	KINRO
30" X 8" TRANSOM	1,3	0	DP 66	KINRO
30" X 61"	9,95	5,85	DP 50	KINRO
30" X 72" FIXED PANEL SAFETY GLAZED	13,1	0	DP 50	KINRO
EXTERIOR DOORS				
74" X 80" ATRIUM DOOR with 15 LITE WINDOWS	24,96	19,45	DP 50	LIPPERT
72" X 78" SLIDING GLASS	34,37	19,45	DP 50	LIPPERT
36" X 80" EXTERIOR DOOR with 9 LITE WINDOW	4,4	19,45	DP 50	LIPPERT
36" X 80" EXTERIOR DOOR with 15 LITE WINDOW	14,68	19,45	DP 50	LIPPERT
36" X 80" EXTERIOR DOOR	0	0	DP 50	LIPPERT

DOOR SCHEDULE	WINDOW SCHEDULE
36" x 80" EXTERIOR	36" x 61" EGRESS
34" x 76" EXTERIOR	31 3/4" X 26" = 5,7 SQ FT 2 STEP EGRESS
30" x 80" INTERIOR	36" x 8" TRANSOM
24" x 80" INTERIOR	30" x 36"
72" x 80" SG GLASS DOOR	46" x 61" EGRESS
48" x 80" BIFOLD	34" x 42" BLOCK SAFETY GLAZED
60" x 80" BIFOLD	24" x 48" SAFETY GLAZED
74" x 80" ATRIUM DOOR	62" X 40" PICTURE
36" x 80" INTERIOR	14" x 40" OBSCURED S.G.
	30" x 61"
	30" x 8" TRANSOM
	46" X 38" ARCH SAFETY GLAZED
	12" x 36" TRANSOM

COLUMN SUPPORT

(1) 1-2x4's
(2) 2-2x4's
(3) 3-2x4's

ALL COLUMN STUDS SHALL BE GLUED TOGETHER WITH 100% PVA GLUE COVERAGE

EACH COLUMN STUDS SHALL BE NAILED TO ADJACENT COLUMN STUD WITH .131 x 2½" NAILS SPACED 4" O.C. STAGGERED OR APPROVED ALTERNATE FASTENING.

RIDGE BEAMS TO CONTINUOUS PAST COLUMN STUDS

STUDS SHALL BE MINIMUM SPF#2

AREA	
1st FLOOR	2176 SQ. FT
2nd FLOOR	N/A
GLAZING	190.0 SQFT

TRUSS LOCATED IN SECTION 1 PAGE 5 & 11

ALL BEAMS REFERENCED TO CHAMPION HOMES OF LILLINGTON
SYSTEM PACKAGE SECTION 2, PAGE 30
AS PREPARED BY BARLOW ENGINEERING
MATEWALL
LIVE LOAD = 198 PLF TOTAL LOAD = 367 PLF

ALL BEAMS REFERENCED TO CHAMPION HOMES OF LILLINGTON
SYSTEM PACKAGE SECTION 2, PAGE 28
AS PREPARED BY BARLOW ENGINEERING
SIDEWALL
LIVE LOAD = 201 PLF TOTAL LOAD = 378 PLF

(WORST CASE - 5/12)

ATTIC VENTALATION:
SEE WORKSHEET #1 CALCULATIONS

SHEARWALLS

WIND VELOCITY SHEARWALLS
REFERENCED TO ATTACHED CALCULATIONS FROM BARLOW ENGINEERING
SYSTEM PACKAGE

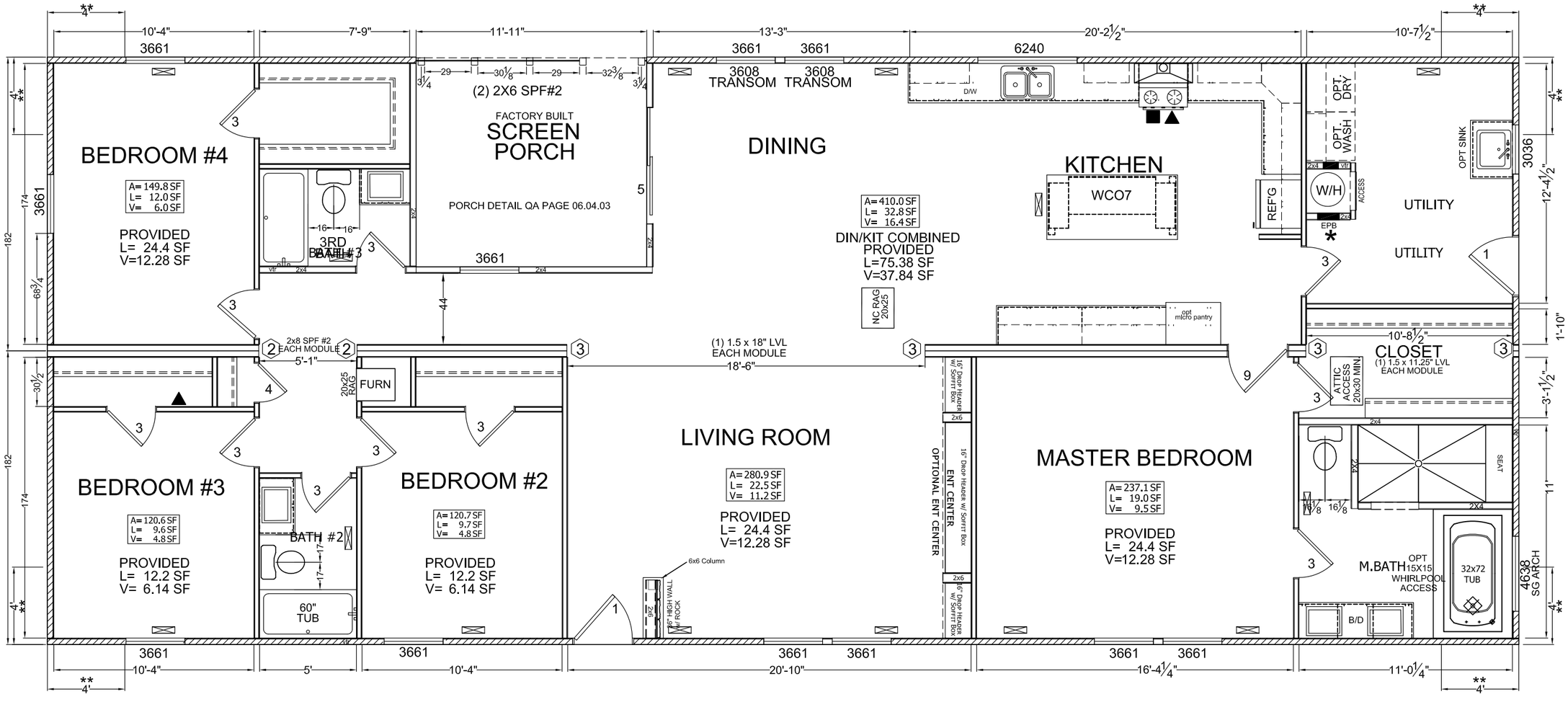
DRYER VENT TO BE INSTALLED ONSITE

4X10 REGISTER
TYPICAL REGISTER(S) INSTALLED IN EACH ROOM
IF ADDITIONAL REQUIRED, BY OTHERS ON SITE.

DATA PLATE

* ENERGY CERTIFICATION LABEL

▲ LABEL LOCATIONS (STATE & PFS)



** 12" O.C. STUDS W/ 9' 2X4 ONLY ALL OTHER, 16" O.C.

NOTE: ALL OPERABLE WINDOWS, PATIO DOORS AND ATRIUM DOORS ARE TO INCLUDE SCREENS FOR VENTILATION AND INSECTS.

CP- 2 Revised or Added page per PFS review of 12-03-19

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: FLOOR PLAN

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: 3/16" = 1'-0"
DRAWN BY: STAFF
REVISED:

REVISIONS

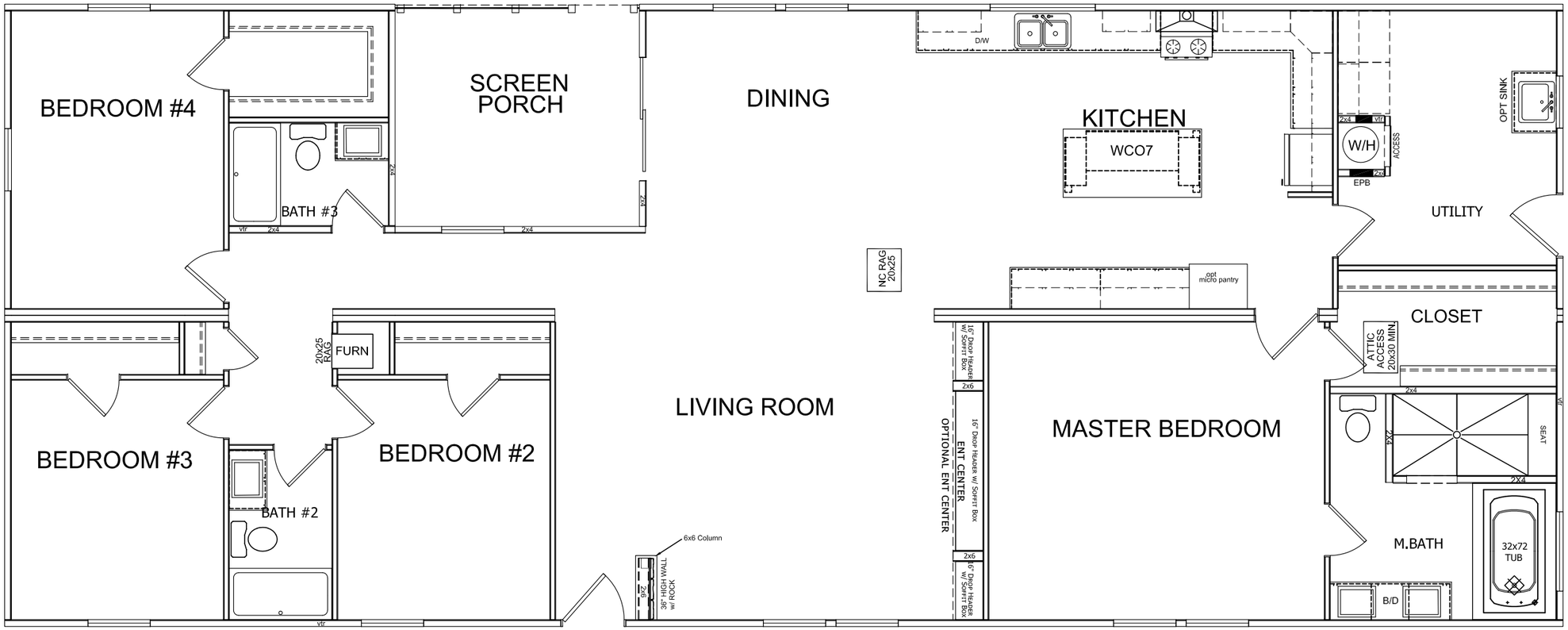
SHEET NO:
AP-101

PAGE:

SEE STRUCTURAL BRACING SUMMARY AP202 FOR MORE DETAILS

SIDEWALL # 2 CONNECTION SUMMARY # F4

ENDWALL #2 CONNECTION SUMMARY # F/S 2



ENDWALL #1 CONNECTION SUMMARY # F/S 1

SIDEWALL # 1 CONNECTION SUMMARY # F3

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharon Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
STRUCTURAL BRACING & CONNECTIONS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

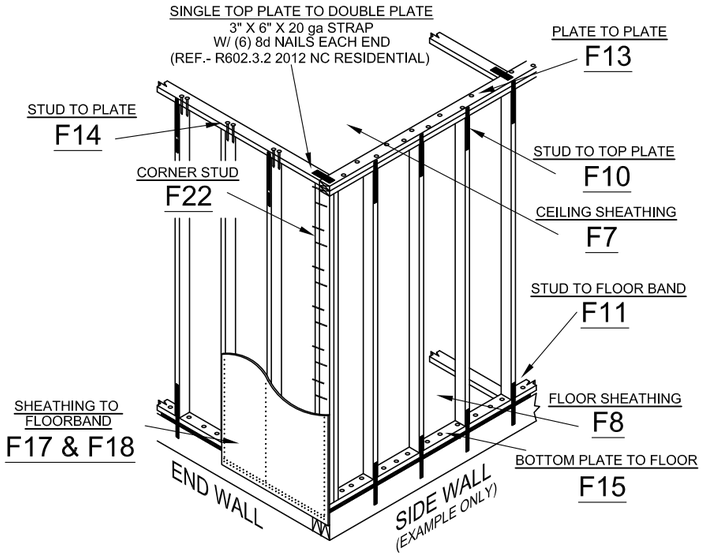
DATE: 01-13-16
SCALE: 1/8" = 1'-0"
DRAWN BY: STAFF
REVISED:

REVISIONS

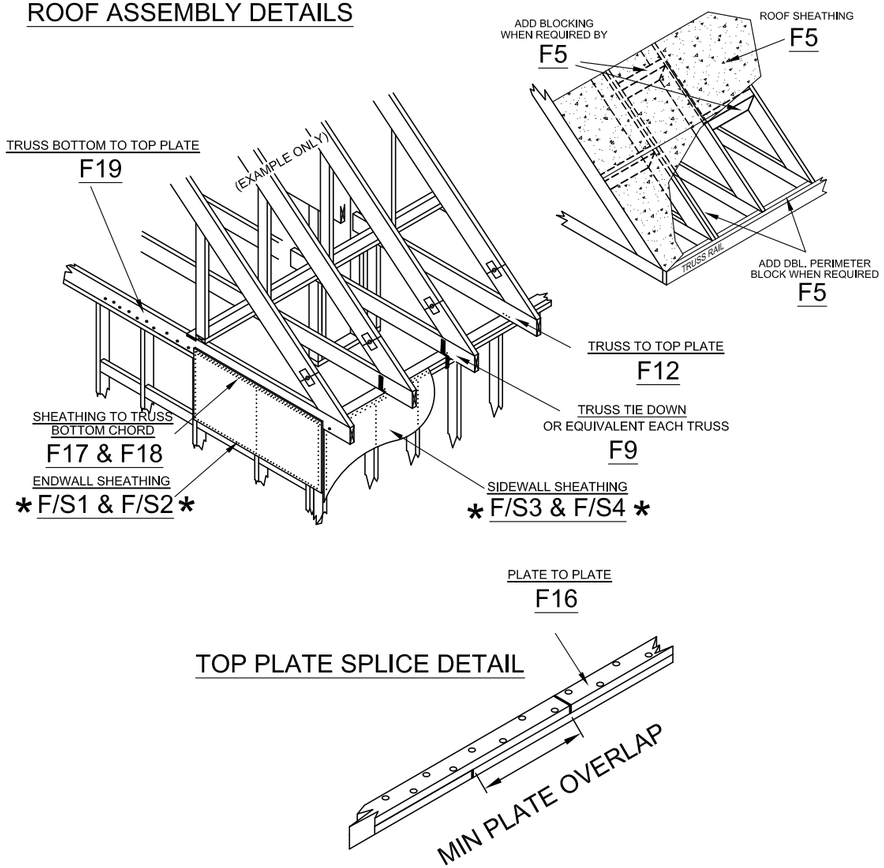
SHEET NO:
AP-201

PAGE:

SIDEWALL/ENDWALL DETAIL



ROOF ASSEMBLY DETAILS



*GABLE ENDWALL OSB TO BE FASTENED PER F/S1 & F/S2

SHEAR CALCULATIONS

MODEL No.: 23-3969 011316 (23-3276-16)
SERIAL No.:
WIND SPEED.: 130 VULT
✔ ROOF 5 OR 7 /12

DESIGNED BY .: BARLOW ENGINEERING
DATE .: 11/13/2019
CHECKED BY .: BARLOW ENGINEERING

SHEARWALL DIAPHRAGM PANEL SUMMARY

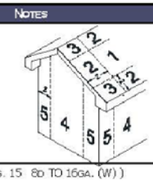
BY	CHK'D	LOCATION	EDGE FASTENING* 8D	EDGE FASTENING* 16 GA.	FIELD FASTENING* 8D	FIELD FASTENING* 16 GA.	NOTES		CONN. #
		ENDWALL #1 (HITCH)		4.0		8.0	7/16" OSB BLOCKED	(MASTER BEDROOM)	F/S1
		ENDWALL #2 (REAR)		6.0		12.0	7/16" OSB BLOCKED	(BEDROOM 3)	F/S2
		SIDEWALL #1 (A MODULE)		6.0		12.0	7/16" OSB BLOCKED	(LIVING)	F3
		SIDEWALL #2 (B MODULE)		6.0		12.0	7/16" OSB BLOCKED	(KITCHEN / DINING)	F4
		ROOF SHEATHING		6.0		12.0	7/16" OSB UNBLOCKED		F5
		INCREASE TO		6.0		12.0	7/16" OSB UNBLOCKED		
		WITH		6.0			O.C. FASTENERS AT PERIMETER		
		BLOCKING DISTANCE	0		0		FROM ENDWALLS (ROOF DIAPHRAGM SHEATHNING CONNECTION : 297 PLF)		
			5D		5D				
		CEILING SHEATHING	7.0		7.0		1/2" GWB UNBLOCKED (FOAM ADHESIVE MEETS REQUIRED FASTENING)		F7
			8D	15 GA.	8D	15 GA.			
		FLOOR SHEATHING	6.0		12.0		19/32" OSB MIN.		F8

* 8D COMMON NAILS (.131" x 2.5")
*ROOF (16 GA. STAPLES)
*FLOOR (8D COMMON NAILS (.131" x 2.5"))
¹ 16 GA. STAPLE (REF. SEC 16 PG. 14 8D TO 16GA. (Z))
¹ROOF (15 GA. STAPLE (REF. SEC 16 PG. 15 14GA. TO 16GA. (Z))
¹FLOOR (15 GA. STAPLE (REF. SEC 16 PG. 14 10D TO 15GA. (Z))

SUCTION FASTENER SPACING MUST BE NO GREATER THAN SHEAR DIAPHRAGM FASTENER SPACING

BY	CHK'D	LOCATION	FASTENING *	ALT. FASTENER¹
		ROOF ZONE 1	12	8
		ROOF ZONE 2	12	7
		ROOF ZONE 3	12	7
		ROOF ZONE 3 O/H	8	4
		WALL ZONE 4	12	10
		WALL ZONE 5	12	9
		EDGE DIMENSION (Z)	3.03'	3.03'

NOTES



* 8D COMMON NAILS (.131" x 2.5")
¹ 16 GA. STAPLE (1" MIN. PEN) (REF. SEC 16 PG. 15 8D TO 16GA. (W))

UPLIFT CONNECTIONS

BY	CHK'D	LOCATION	UPLIFT #	FASTENING *		ALT. FASTENING *		CONN. #
		TRUSS TIE DOWN	594	(2) SIMPSON SDWC 15600	-	(1) SIMPSON H10A 1015# U.P. 285# LAT**		F9
		TRUSS TIE DOWN (FLAT STRAP)	594	(1) 1 1/2 x 20GA STRAP W/ (8) 0.113 NAILS				
		STUD TO TOP PLATE/CEILING BAND	396	(1) 1 1/2 x 20GA STRAP W/ (7) 0.113 NAILS	STRAP CAPACITY 569.58 LBS			F10
		STUD TO TOP PLATE ALT (OSB)	396	9 16 GA STAPLES EA. STUD	OR	(8) 15 GA STAPLES EA STUD		
		STUD TO FLOOR BAND	307	(1) 1 1/2 x 20GA STRAP W/ (4) 0.113 NAILS	STRAP CAPACITY 379.72 LBS			F11
		STUD TO FLOOR BAND ALT (OSB)	307	9 16 GA STAPLES EA. STUD	OR	(8) 15 GA STAPLES EA. STUD		

(REF. SEC 18 PG. 17 20GA. STRAP/NAILS)
(REF. SEC 18 PG. 17 20GA. STRAP/NAILS)
* QUANTITIES ARE EACH END
** 56TH ED. USP CATALOG
** C-2011 ED. SIMPSON CATALOG
**LFP BULL 06-05

LATERAL CONNECTIONS

BY	CHK'D	LOCATION	LOAD (PLF) AT IN. O.C.		LOAD (LBS)	FASTENING *	ALT. FASTENING *	CONN. #
		TRUSS TO TOP PLATE	.888	24	376	(1) #10 X 5" TSCREW EA TRUSS	(1) #10 X 5" TSCREW EA TRUSS	F12
		PLATE TO PLATE				15GA. X 2 1/2" STAPLES AT 7" O.C	FACE NAILED	F13
		PLATE TO STUD				(3) 15GA. X 2 1/2" STAPLES EACH END	END NAILED	F14
		BOTTOM PLATE TO FLOOR				15GA. X 2 1/2" STAPLES AT 10" O.C.	FACE NAILED	F15

* STRAP NAIL/STAPLE QUANTITIES ARE EACH END
(SUBSTITUTION REF. SEC 16 PG. 14 .162 TO .113 & 15GA. (Z))
(SUBSTITUTION REF. SEC 16 PG. 14 .131 TO 15 GA. (Z))
(SUBSTITUTION REF. SEC 16 PG. 14 .131 TO #8 WS (Z))

TOP PLATE SPLICES

BY	CHK'D	LOCATION	FASTENING	NOTES	CONN. #
		PLATE TO PLATE	(2) ROWS 15GA. X 2 1/2" STAPLES AT 1" O.C.	FACE NAILED 4' MIN SPLICE	F16
				(SUBSTITUTION REF. SEC 16 PG. 15 .162 TO 15 GA. (Z))	

UNIT SHEAR & UPLIFT CONNECTIONS

BY	CHK'D	LOCATION / LOAD	FASTENING	CONN. #
		ENDWALLS	SHEATHING SHEAR CONN. TO FLOOR BAND AND BOTTOM CHORD W/ (2) ROWS OF 16GA. STAPLES AT (2) IN O.C.	F17
		ENDWALLS	SHEATHING UPLIFT CONN. TO FLOOR BAND AND BOTTOM CHORD W/ (2) ROWS OF 16GA. STAPLES AT (2) IN O.C.	F18
		ENDWALLS	BOTTOM CHORD TO TOP PLATE W/ .131 X 3" TOENAILS AT 3" IN O.C. OR SIMPSON LTP4 PLATE @ 15"O.C.	F19
		SIDEWALLS	SHEATHING SHEAR CONN. TO FLOOR BAND W/ (1) ROWS OF 16GA. STAPLES AT (6) IN O.C.	F20
		SIDEWALLS	SHEATHING UPLIFT CONN. TO FLOOR BAND W/ (1) ROWS OF 16GA. STAPLES AT (6) IN O.C.	F21

(SUBSTITUTION REF. SEC 16 PG. 14 .131 TO 16 GA. (Z))
(SUBSTITUTION REF. SEC 20 PG. 14 .162 TO .113 (Z))

CORNER CONNECTIONS

BY	CHK'D	LOCATION	FASTENING *	NOTES	CONN. #
		ALL EXTERIOR WALL INTERSECTIONS	(1) ROW(S) #8 SCREWS AT 15.8" O.C	FACE NAILED/SCREWED	F22
		ALTERNATE FASTENER	(1) ROW(S) 3/8" LAG AT 16" O.C		
				(SUBSTITUTION REF. SEC 20 PG. 14 .162 TO .113 (Z))	

CORNER HOLDOWNS

BY	CHK'D	LOCATION	FASTENING *	NOTES	CONN. #
		ALL EXTERIOR WALL CORNERS	SEE F-101 FOR HOLDDOWN REQUIREMENTS	HOLD DOWNS REQUIRED	F23

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Shannon Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: WALL FASTENING

MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: 1/8" = 1'-0"
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO: AP-202

PAGE:

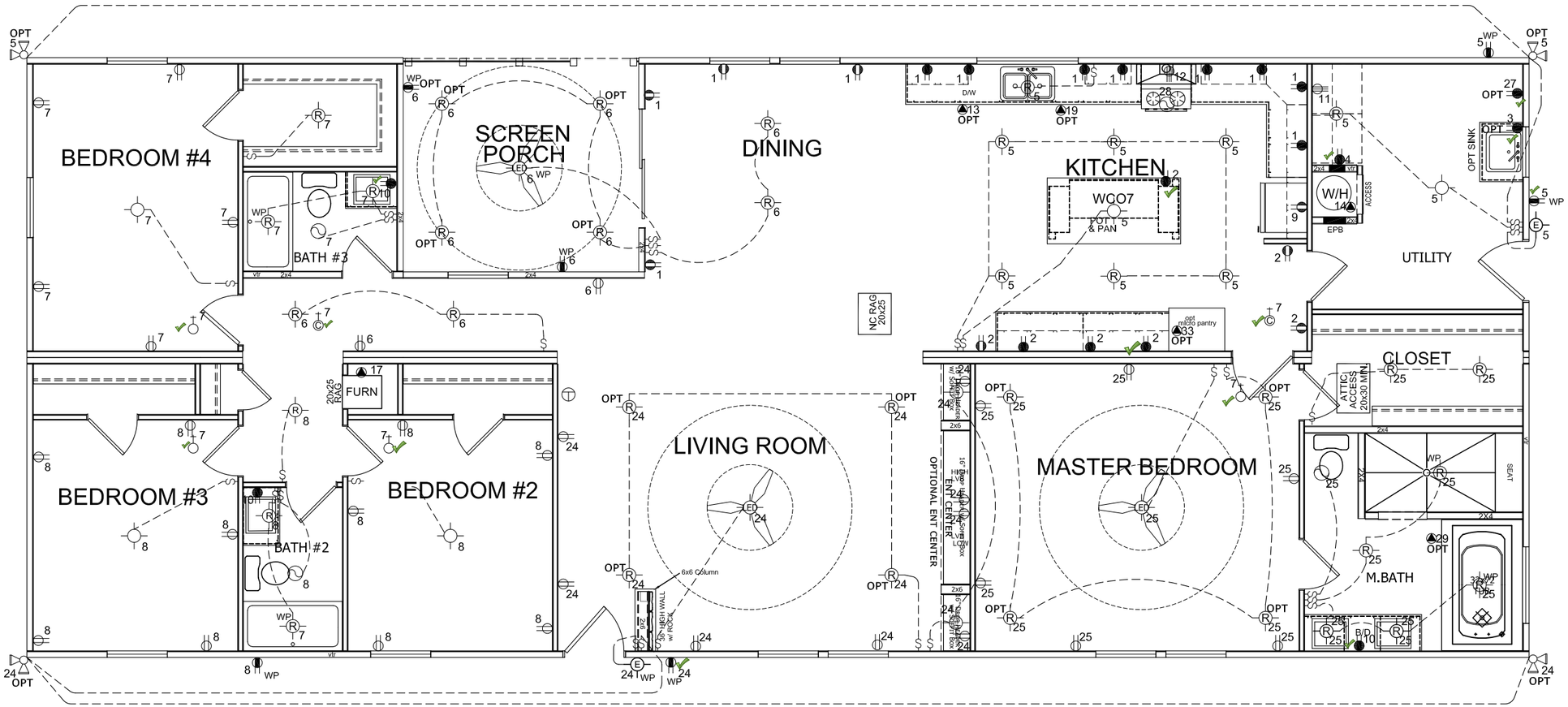
SEE Q/A MANUAL FOR APPROVED
ELECTRICAL FIXTURES
SECTION 4 PAGE 4

NC NOTE:

PER NC ECC 404.1, A MINIMUM OF 75% OF LAMPS INSTALLED IN PERMANENTLY INSTALLED FIXTURES MUST BE HIGH-EFFICIENT LAMPS (EXAMPLE. CFL'S)

ALL BULBS TO BE PROVIDED ON SITE BY OTHERS.

- RECEPT TO BE INSTALLED FOR WHIRLPOOL TUB WITHIN 12" OF ACCESS IN DIRECT VIEW FOR DISCONNECT OF APPLIANCE.
- BREAKER LOCKOUT TO BE INSTALLED FOR DISHWASHER, WATER HEATER
- RANGE HOOD EXHAUST FAN IS A NON VENTED RECIRCULATION TYPE (CHARCOAL)
- CO/SMOKE DETECTOR COMPLIES WITH UL 217 AND UL 2034 FIRST ALERT MODEL #SC9120B (NC,SC)
- * INSTALLED PANEL BOX IS TO BE CONSIDERED SUB PANEL BOX. MAIN PANEL W/ DISCONNECTED TO BE INSTALLED ON SITE BY OTHERS.



ALL APPLIANCES TO MEET OR EXCEED THEREQUIREMENTS OF APPLICABLE BUILDING CODES.

FURNACE NOTE: 15KW NORDYNE E6 FURNACE WITH 53,00 BTUH PROVIDED BY CHAMPION HOMES. THE BUILDER IS TO PROVIDE HVAC LAYOUT AND MANUAL D & J TO BE APPROVED BY LOCAL JURISDICTION.

ELECTRICAL LEGEND

GENERAL RECEPTACLE 120 VOLT - 15 AMP	INCANDESCENT CEILING LIGHT	FLUORESCENT LIGHT	PHONE JACK
G.F.I. PROTECTED RECEP. 120 VOLT-15 AMP	WALL LIGHT	DIRECTLY WIRED CONNECTION	TV/CABLE JACK
120 VOLT - 20 AMP	CEILING VENT FAN W/LIGHT (2 SWITCHES)	THERMOSTAT	HEAT TAPE RECEPT 120 VOLT-15 AMP
120 VOLT - 20 AMP G.F.I. PROTECTED	EXHAUST FAN	SMOKE DETECTOR or (SD)	JUNCTION BOX
220 VOLT RECEPT.	SINGLE POLE SWITCH	MAIN PANEL	(R) or (C) RECESSED LIGHT
(E) WATERPROOF EXTERIOR LIGHT	FLOOD LIGHT	TRACK LIGHTING	(c) or (C) SMOKE DETECTOR/ CO COMBINATION

NOTE:

1. CIRCUIT NUMBERS MAY VARY AND NOT ALL CIRCUITS ARE IN USE
2. ARC-FAULT CIRCUIT INTERRUPTERS SHALL BE IN ACCORDANCE WITH SECTION 210.12 (A) OF THE CURRENT NEC.
3. OPTIONAL 220 VOLT RECEPTACLE PROVIDED FOR RANGE AND DRYER.
4. POWER RANGE HOOD STANDARD.
5. ALL CLOSET LIGHTS TO BE A MIN. 12" OFF OF SHELF.
6. DWELLING UNIT RECEPTACLE MUST BE RATED AS TAMPER RESISTANT ACCORDANCE WITH SECTION 406.12, NEC
7. WATER PROOF COVERS REQUIRED FOR OUTDOOR SWITCHES AND RECEPTACLE ACCORDANCE WILL SECTION 404.4 AND 404.9, NEC
8. OUTLET, DEVICE, PULL, AND JUNCTION ARE IN ACCORDANCE TO ARTICLE 314
9. ATTIC LIGHT TO BE INSTALLED, IF ATTIC TO BE USED FOR STORAGE, ON SITE

ELECTRICAL SCHEDULE

BRKR	CIR #	NOMENCLATURE	VOLTS	WIRE
20 AF	1 GFI	PORTABLE APPLIANCE	120	12/2
20 AF	2 GFI	PORTABLE APPLIANCE	120	12/2
20	3 OPT	PORTABLE APPLIANCE	120	12/2
20	4	WASHER	120	12/2
15	5 AF	UTILITY/KIT	120	14/2
15 SD	6 AF	DINING	120	14/2
15	7 AF	BDR#4/BATH#3	120	14/2
15	8AF/SD	BDR#2/BTH#2/BDR#3	120	14/2
20	9 OPT	PORTABLE APPLIANCE	120	12/2
20	10 GFI	BATH GFI's	120	12/2
30	11	DRYER	240	10/3
40	12	RANGE	240	8/3
15	13 OPT	DISH WASHER	120	14/2
25	14	WATER HEATER	240	10/2
30	15 OPT	COUNTER TOP RANGE	PER MANF	
15	16 OPT	FURNACE (GAS)	120	14/2
60/35	17	FURNACE (ELECTRIC)	240	6/6/8
20	18 OPT	TRASH COMPACTOR	120	12/2
15	19 OPT	DISPOSAL	120	14/2

ELECTRICAL SCHEDULE – CONT –

BRKR	CIR #	NOMENCLATURE	VOLTS	WIRE
15	24 AF	LIVING ROOM	120	14/2
15	25 OPT	M.BDR/M.BATH	120	14/2
OPT	26 GFI	OUTDOOR HYDRO MASSAGE SPA	PER MANF	
20	27 OPT	FREEZER	120	12/2
15	28 OPT	GEN LIGHTING	120	14/2
20 OPT	29 GFI	INDOOR HYDRO MASSAGE SPA	120	12/2
20	33 GFI	MICROWAVE	120	12/2

WIRE SIZING MAY INCREASE DUE TO DISTANCE FROM PANEL BOX

*GFI	GROUND FAULT PROTECTED
*AF	ARC FAULT PROTECTED
*SD	SMOKE DETECTOR
*OPT	OPTIONAL

ARC FAULT FOR VA BEDROOMS ONLY

PANEL SIZING

DESCRIPTION	KVA	
MAX. FLOOR AREA 2305 X 3VA. /1000		6,9 KVA
2 SMALL APPLIANCES @ 1500VA. / 1000		3 KVA
RANGE @ 12.0 KW.		12 KVA
WATER HEATER @ 4.5 KW.		4.5 KVA
DISH WASHER @ 1,4 KW.		1,4 KVA
WASHER @ 1500VA. / 1000		1,5 KVA
DRYER @ 5.0 KW.		5,0 KVA
DISPOSAL @ 1,4 KW.		1,4 KVA
W/P TUB @ 1500VA. / 1000		1,5 KVA
W/P TUB @ 1500VA. / 1000		1,5 KVA
2 SMALL APPLIANCES @ 1500VA. / 1000 FOR MAX LOAD USED FOR CALCULATION PURPOSES		3 KVA
~		KVA
~		
TOTAL LOAD		41,7 KVA
1st 10 KVA @ 100%		10 KVA
REMAINDER @ 40%		12,68 KVA
HVAC @ 100%		10,5 KVA
	TOTAL	33,18

33,18 X 1000 /240 = 138,3
INSTALL 200 AMP PANEL

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharon Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: ELECTRICAL PLAN

MODEL: 23-3276-16
30'-4" X 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: 3/16" = 1'-0"
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO: EP-101

PAGE:

DWV PLUMBING PLAN

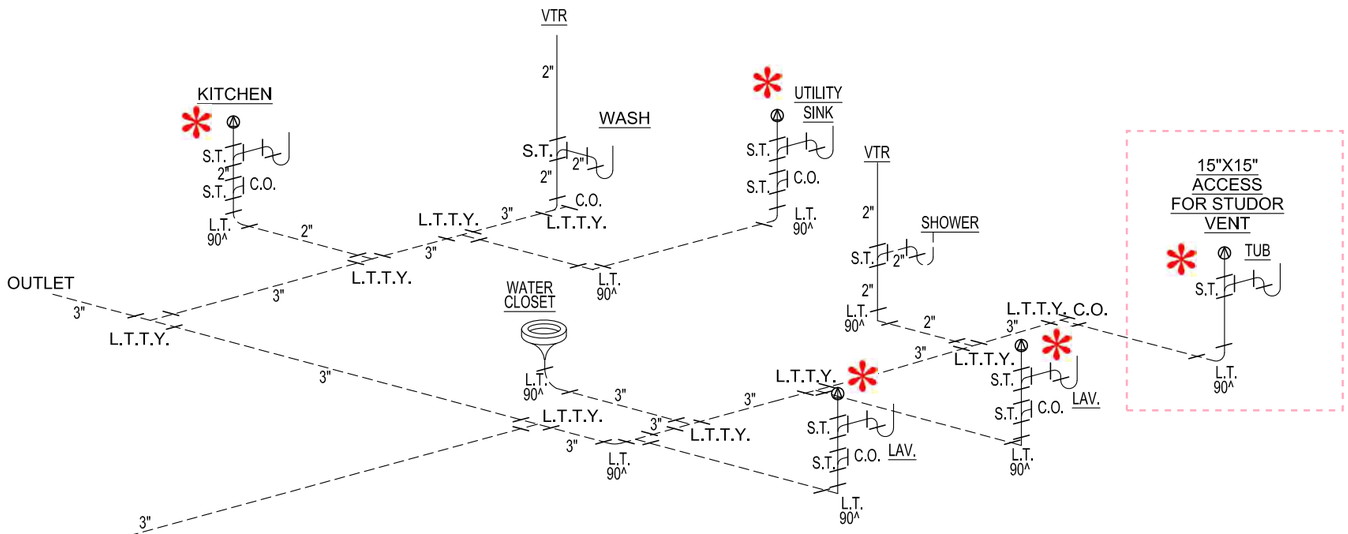
NOTES:

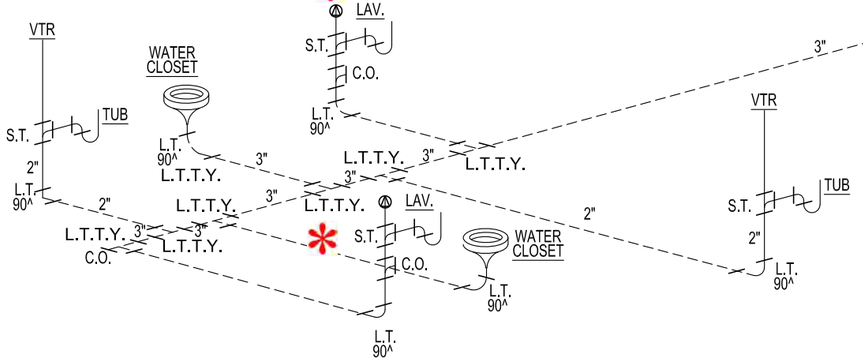
1-ALL PIPE SIZES ARE 1 1/2" UNLESS OTHERWISE SPECIFIED.
2-ONE FIXTURE IN "BATHROOM GROUP" MAY BE ELIMINATED WITHOUT AFFECTING PIPE SIZING.
3-ALL PIPES SHOWN IN DASHED LINE ARE FIELD INSTALLED BY OTHERS SUBJECT TO LOCAL JURISDICTION.
4-AUTO VENTS TO BE INSTALLED ON SITE AFTER COMPLETE PLUMBING SYSTEM TEST.
5-WATER STAND TEST MUST BE DONE ON SITE AFTER COMPLETION OF PLUMBING SYSTEM.
6-ALL VENT PIPES MUST TERMINATE MIN. 6" ABOVE ROOF. WITH APPROVED WATER TIGHT FLASHING.(P904.1 & P904.3)
7-IF HOME LOCATED IN AREA WHERE 97.5% FOR OUTSIDE DESIGN TEMPERATURE IS 0° OR LESS, EVERY VENT EXTENSION SHALL BE MIN. 3". THIS TO BE DONE ON SITE BY OTHERS. (P904.2)
8-RODENT PROOFING AT ALL SHOWERS, TUBS, TUB/SHOWER TO BE COMPLETED ON SITE BY OTHERS AFTER PLUMBING TEST COMPLETED.

SEE Q/A MANUAL FOR APPROVED PLUMBING FIXTURES SECTION 4 PAGE 5

PIPE SUPPORT TO BE AS FOLLOWS:
MAX HORIZONTAL SPACING = 4' MAX VERTICAL SPACING = 10'

REFERENCE IPC TABLE 308.5





*

****ATTN. LOCAL BUILDING OFFICAL****

ALL P-TRAPS AT TUBS, SHOWERS & TUB/SHOWERS MUST BE RODENT PROOFED AND FINAL DRAFT STOPPING COMPLETED ON SITE BY OTHERS AFTER COMPLETION OF ALL PLUMBING TESTS. ALL OTHER RODENT PROOFING AND DRAFT STOPPING AT FLOOR LEVEL DONE AT FACTORY.

SEE PAGE AE-101 IN SETUP MANUAL IN HOME FOR DETAILS (SECTION 5, PG 36 QA MANUAL).

(1)	1 1/2" PVC OR ABS
(2)	2" PVC OR ABS
(3)	3" PVC OR ABS
△	APPROVED AUTOVENT
S/O	STUB OUT
VTR	VENT THROUGH ROOF
-------	INSTALLED ON SITE

CP- 1 Revised or Added page per PFS review of 11-24-19

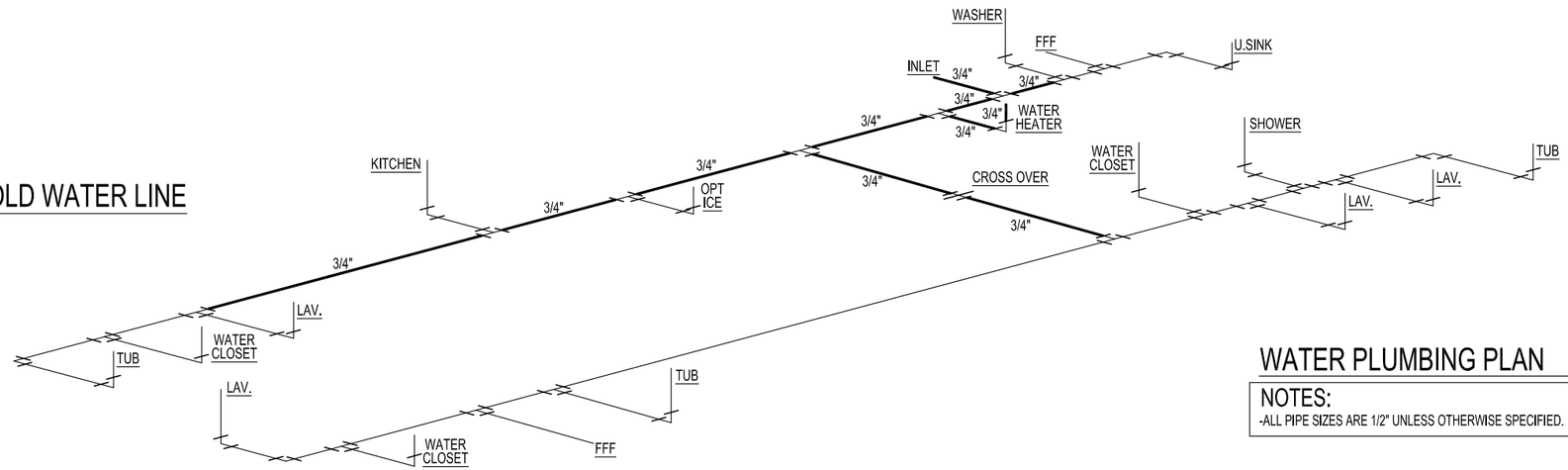
CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

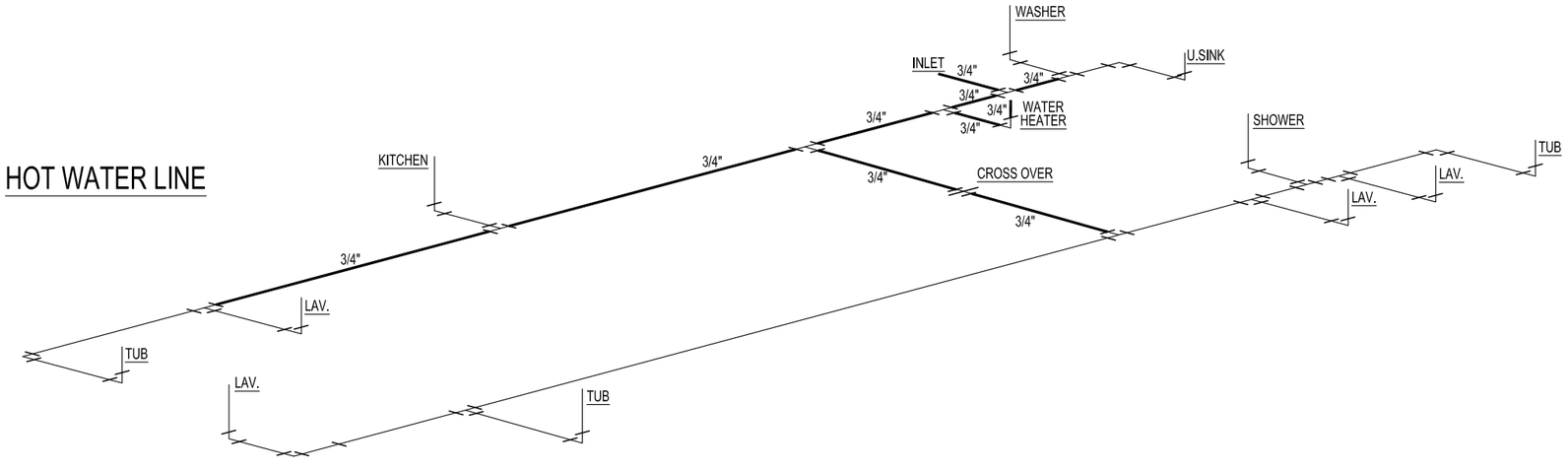
APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: DWV PLAN OFF-FRAME
MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH
DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:
REVISIONS
SHEET NO: PP-101
PAGE:

COLD WATER LINE



HOT WATER LINE

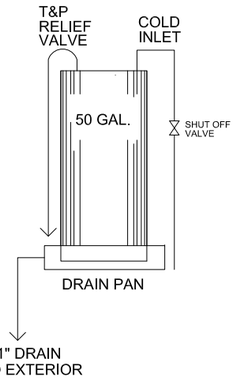


WATER PLUMBING PLAN

NOTES:
-ALL PIPE SIZES ARE 1/2" UNLESS OTHERWISE SPECIFIED.

WATER HEATER SECURED IN PLACE FOR TRANSIT WITH METAL SHIPPING STRAPS FROM WALL TO WALL

STATE WATER HEATER
MODEL # SC 152 DORTE 3 (ELECTRIC)
CO1094 IM 50 NHDST 2 (GAS)
MANF. INFORMATION LOCATED IN Q.A. MANUAL, SECTION 4, PAGE 04.01.01



SUPPLY AT WATER HEATER

1. ALL PLUMBING FIXTURES HAVE SEPARATE SHUTOFF VALVES.
2. WATER HEATER SHALL HAVE A SAFETY PAN WITH 1 INCH DRAIN TO EXTERIOR.
3. WATER PIPES INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION. WATER PIPING INSTALLED IN AN UNCONDITIONED ATTIC SHALL BE INSULATED WITH AN INSULATION OF R-6.5 MINIMUM.
4. DWV SYSTEM SHALL EITHER ABS or PVC -DWV
5. WATER SUPPLY LINES SHALL BE POLY-ETHYLENE (PEX), CPVC, OR COPPER. WHEN POLYETHYLENE SUPPLY LINES ARE INSTALLED THE MAXIMUM WATER HEATER SETTING IS 180 deg F. THE POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES LIMITATIONS AND INSTRUCTIONS.
6. BUILDING DRAIN AND CLEANOUTS ARE DESIGNED AND SITE INSTALLED BY OTHERS, SUBJECT TO LOCAL JURISDICTION APPROVAL.
7. TUB ACCESS PROVIDED UNDER HOME UNLESS OTHERWISE NOTED.
8. SHOWER STALLS SHALL BE COVERED w/ NON-ABSORANT MATERIAL TO A HEIGHT OF 72 INCHES ABOVE FINISH FLOOR.
9. T&P RELIEF VALVE w/DRAIN TO EXTERIOR OR PAN and SHUT-OFF WITHIN 3' of WATER SUPPLY AT WATER HEATER
10. THIS UNIT MUST BE CONNECTED TO PUBLIC WATER SUPPLY AND SEWAGE SYSTEM IF THESE ARE AVAILABLE
11. WATER PIPE DESIGNED FOR MAXIMUM INLET PRESSURE OF 80 PSI. SEE SETUP MANUAL SECTION 6.1

SEE Q/A MANUAL FOR APPROVED PLUMBING FIXTURES SECTION 4 PAGE 5

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharon Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: WATER LINE PLAN

MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO: WP-101

PAGE:

ATTN LOCAL BUILDING OFFICAL:
SEE INSULATION CERTIFICATE AT PANEL BOX FOR ACTUAL INSULATION VALUE USED.
APPENDIX E USED FOR 5/12 AND 7/12 w/o DECKING. REScheck IS USED FOR 7/12 WITH DECKING.

SHINGLE OVER RIDGE VENT
INSTALL PER MANUFACTURERS INSTRUCTIONS

200 LB. OR BETTER ASPHALT OR FIBERGLASS SHINGLES WITH SHINGLE UNDERLAYMENT

ATTIC VENTILATION REQUIREMENT OF 1/300th OF TOTAL ROOF AREA IS ACCOMPLISHED WITH 50% OR MORE OF THE NET VENT AREA PROVIDED THROUGH ROOF VENTILATORS, RIDGE VENTS OR GABLE VENTS LOCATED IN THE UPPER 1/3 OF THE TRUSS HEIGHT AND THE REMAINDER OF THE NET VENT AREA PROVIDED BY SOFFIT VENTS. SEE NOTE ON AP101 AND WORKSHEET 1

* ON SITE CONNECTION

12 / 7 max

APPROVED TRUSS
(SEE AP-101 FOR REFERENCE)
24" O.C. STANDARD, 16" O.C. OPTIONAL

FASTENING OF ROOF SHEATHING
SEE PAGE AP-202

*Soffit materials for this unit assume that the building face will be 10 feet or greater from the property line when installed on site. Where the building face is less than 10 feet from the property line, underlayment materials and ventilation in accordance with **Section R703.11.3, NC Residential Code**, must be provided and installed at the site and inspected by the local jurisdiction.*

* ON SITE CONNECTION

* ON SITE CONNECTION

ROOF COVERING OVER APA RATED SHEATHING
SIZED PER ATTACHED CALCULATION PAGE 42

1 x 4 BLOCKING BETWEEN TRUSSES FOR FIELD FASTENING OF SHEATHING (PER TRUSS DESIGN)

* ON SITE CONNECTION
SEE TRUSS SETUP & GABLE ENDWALL PAGES.

BAFFLE TO PROVIDE 1" AIR SPACE.

2 x FASCIA BD.
(PAINTED HARDI, WOOD OR METAL COVERED)

* ON SITE CONNECTION

CEILING INSULATION
R-30 BLOWN INSULATION - REScheck
R-38 BLOWN INSULATION - APPENDIX E

* ON SITE CONNECTION

12" ROOF OVERHANG

CONNECTION DETAILS
FASTENED PER AP-202.

WOOD COMPRESSION STRIP
(1/2" x 1 1/2" PLYWOOD OR EQUAL AS REQUIRED)

CONTINUOUS VINYL VENTED SOFFIT

CEILING INTERIOR FINISH
SMOOTH FINISHED, STIPPLE FINISH, OR BLOWN FINISH

VAPOR BARRIER PAINT
(MAX TRANSMISSION RATE OF 1 PERM.)

1/2" GYPSUM CLG. FIN.

WOOD COMPRESSION STRIP
(1/2" x 1 1/2" PLYWOOD OR EQUAL AS REQUIRED)

DOUBLE 2x4 OR 2x6 #3
GRADE SPF TOP PLATE

7/16" OSB SHEATHING SHALL BE INSTALLED ON THE ENTIRE EXTERIOR OF THE HOME.
ALL SHEATHING TO BE FASTENED WITH 8d BOX NAILS OR EQUAL
FASTENED PER AP-202.

EXTERIOR SIDING PER ORDER, VINYL, WOOD OR ALUMINUM.

SHEATHING PAPER OR APPROVED WATERPROOF MEMBERANE MUST INSTALLED UNDER EXTERIOR SIDING (EX. HOUSE WRAP).

EXTERIOR SIDING MAY BE SITE INSTALLED WITH LOCAL INSPECTION

2x4 SPF #2 MARRIAGE WALL W/ STUDS @ 16" O.C.

1/2" GYPSUM

NOTE:
GYPSUM WALLBOARD USED IN DAMP LOCATIONS (TUB ENCLOSURE'S WITH SHOWER HEAD) MUST BE WATER RESISTANT BOARD.
WATER RESISTANT BOARD NOT REQUIRED WITH ONE PIECE FIBERGLASS TUB ENCLOSURE 6 FT HIGH OR HIGHER.

WALL INSULATION
KRAFT FACED-WARM SIDE FIBERGLASS BATT
INSULATION (R-15 2X4)
INSULATION (R-19 2X6)
SEE APPENDIX E or REScheck

19/32" OSB FLOOR DECKING FASTENED PER AP-202.

2X10 SPF#2 FLOOR JOIST @ 16" O.C.

FLOOR INSULATION
R-30 FIBERGLASS BATT INSULATION SEE APPENDIX E or REScheck

(2)2X10 SYP#2 GIRDER JOIST

* 1.5 X 20 GA. STRAP AT EACH ENDWALL W/ 2-8d NAILS EACH END
REFERENCE:
ATTACHED CALCULATION PAGES sect 4,PAGE 43.

2X4 SPF #2 STUDS @ 16" O.C.
or 2X6 SPF #2 STUDS @ 16" O.C.

1/2" GYPSUM

2X4 or 2X6 BOTTOM PLATE

* TYPICAL HEAT REGISTER INSTALLED IN EACH ROOM
ANY ADDITIONAL REGISTER REQUIRED BY OTHERS IS TO BE DONE ONSITE

8' TO 9' MAX

MEAN ROOF HEIGHT
20.00'

CONNECTIONS
FASTENED PER AP-202.

FLOOR DECKING IS TO BE CONTINUOS OVER JOINT. FASTENED TO FLOOR RIM JOIST PER AP-202.

CONTINUOUS TO FLOOR DECKING

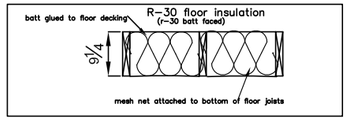
SEE FOUNDATION DESIGN FOR PERIMETER WALL AND FOOTING DETAILS
SEE F101-103

FASTEN GIRDER TOGETHER IN THE FIELD WITH 3/8" X 6" LAG SCREWS AT 32" O.C. ALTERNATE DIRECTIONS

SEE FOUNDATION DESIGN FOR COLUMN/JACKPOST DESIGN, SIZE, AND SPACING.
SEE F101-103

* REFERENCE: ATTACHED CALC PAGE 24, sects, 6 & 8
64'-0" / 11 = 5'-9" X 0.575 = 3'-4"

GROUND LEVEL VAPOR BARRIER TO BE INSTALL BY OTHERS



NOTES:
1. ALL FINISH MATERIAL TO HAVE CLASS "C" FIRE RATING.
2. ALL PENETRATIONS THROUGH FLOOR OR CEILING FIRE STOPPED
3. SEE FOUNDATION PLAN FOR SUPPORT AND TIE DOWN REQUIREMENTS.

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
CROSS SECTION

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 10/7/03
SCALE: 1/8" = 1'-0"
DRAWN BY: JPT
REVISED: 04-13-04

REVISIONS	
CDB	ADDED DORMER INFORMATION
SFA	ADDED P-TRAP RODENT PROOF

SHEET NO:
SE-101

PAGE:

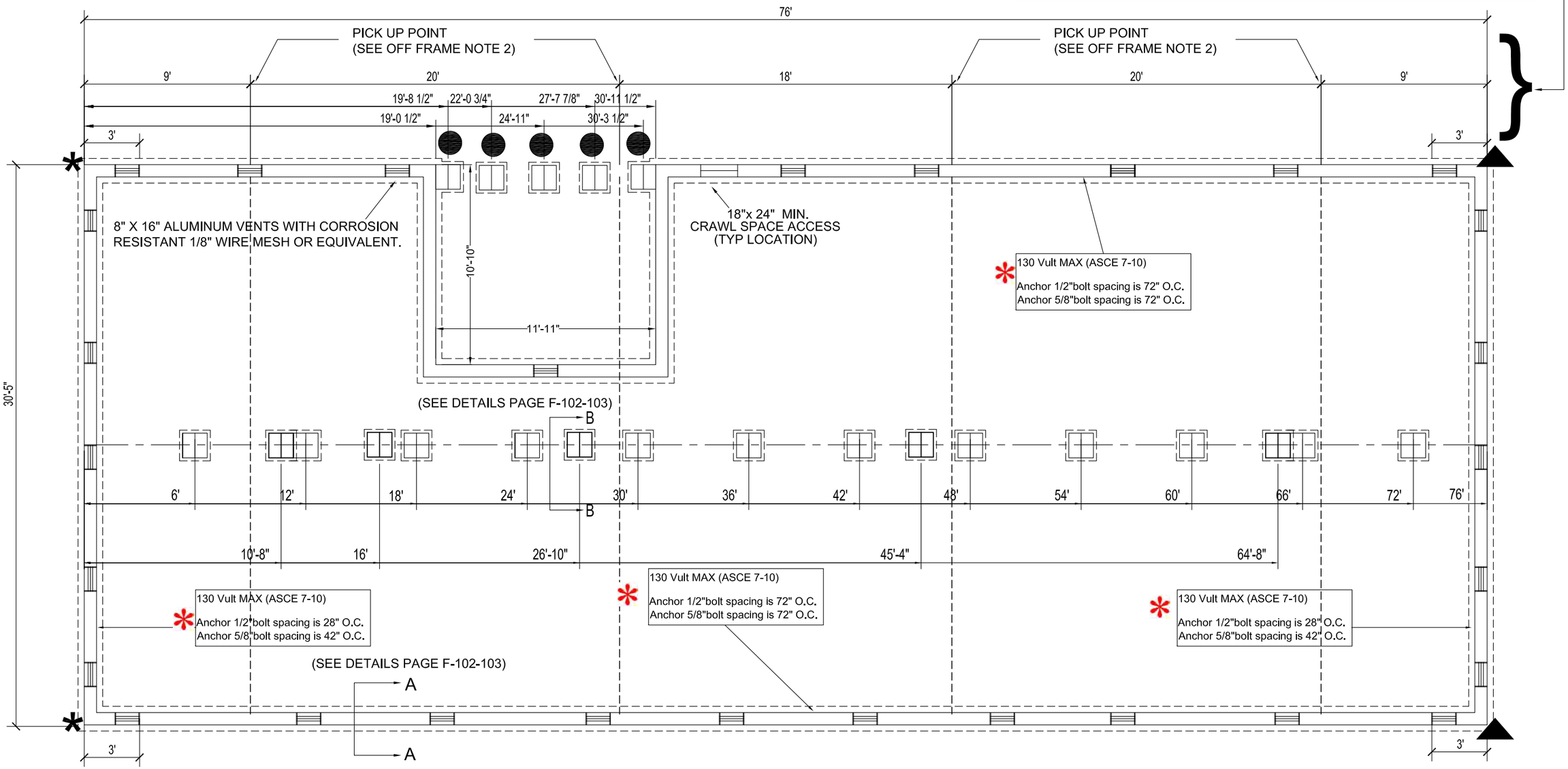
FOUNDATION VENT TO PROVIDE 1sf OF VENT PER EACH 1500sf OF CRAWL SPACE AREA

2176 SF / 150 SF = 14.5

8"x16" (TYP) VENT= APPROX .5 SF
14.5/ .5 = APPROX. 29 VENTS

NOTES:
1. SPLICES IN MATE LINE GIRDERS MUST FALL ON A SUPPORT PIER.
2. PIERS OR POSTS TO BE SPACED PER CHART AND LOCATED UNDER OPENING COLUMN SUPPORTS WHEN OPENING WIDTH IS 4' OR GREATER.
3. FOR SEISMIC DESIGN CATEGORY D0, D1 & D2 FOUNDATION DESIGNED BY OTHERS

OFF FRAME LIFTING NOTES:
1. IF LIFTING POINTS ARE MORE THAN 32' FEET APART (TYPICAL OF UNIT LENGTHS GREATER THAN 64'), A THIRD AND FOURTH LIFTING POINT IS REQUIRED. THIRD AND FOURTH LIFTING POINT IS TO BE BETWEEN OUTER LIFTING POINTS AND MEET THE REQUIREMENTS OF NOTE 2.
2. PICK UP POINT MUST NOT BE LOCATED UNDER A WALL OPENING. IF AN OPENING CANNOT BE AVOIDED, A TEMPORARY WALL MUST BE INSTALLED.



NOTE:
1" ADDED TO OVERALL WIDTH TO ACCOMMODATE LIFT STRAPS

HOLD DOWN CAPABLE OF 1351 LB OF UPLIFT
INSTALL PER MANUFACTURE INSTRUCTIONS

HOLD DOWN CAPABLE OF 1607 LB OF UPLIFT
INSTALL PER MANUFACTURE INSTRUCTIONS

HOLD DOWN CAPABLE OF 3742 LB OF UPLIFT
INSTALL PER MANUFACTURE INSTRUCTIONS

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
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PFS CORPORATION
Cottage Grove, WI

TITLE:
PERIMETER FOUNDATION PLAN

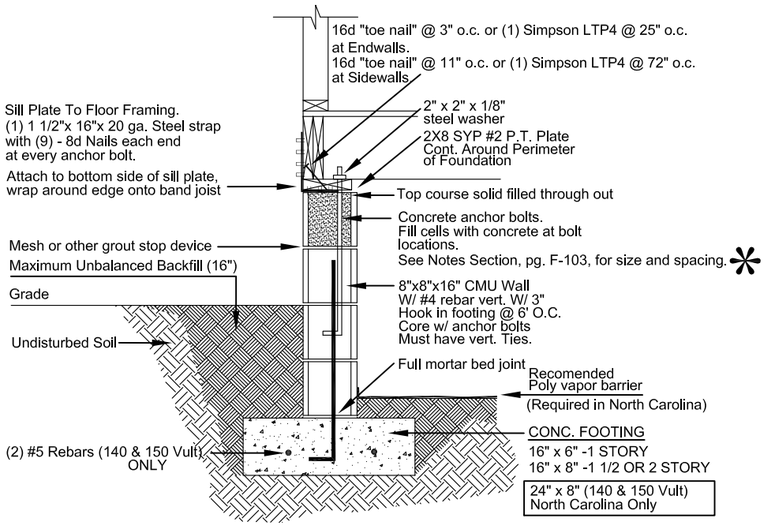
MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO:
F-101

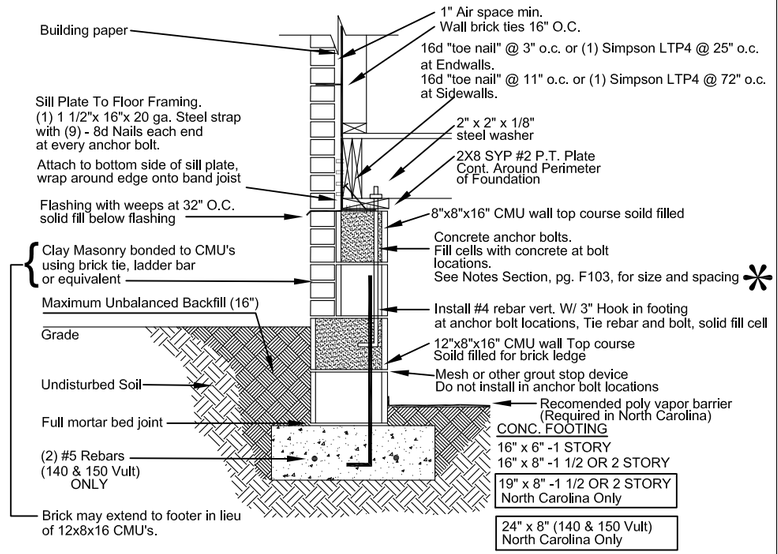
PAGE:



● If nail spacing is 2" or less, plates are recommended, since plate splitting may occur.

SECTION A-A

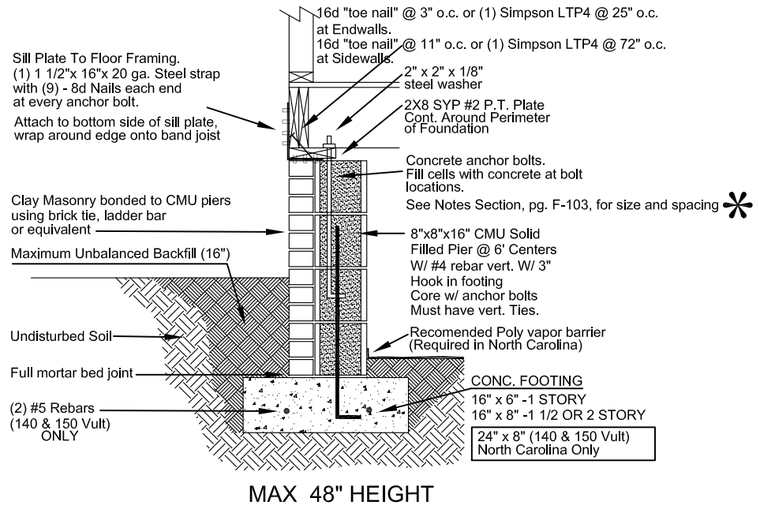
BLOCK WALL



● If nail spacing is 2" or less, plates are recommended, since plate splitting may occur.

SECTION A-A

BRICK VENEER WALL

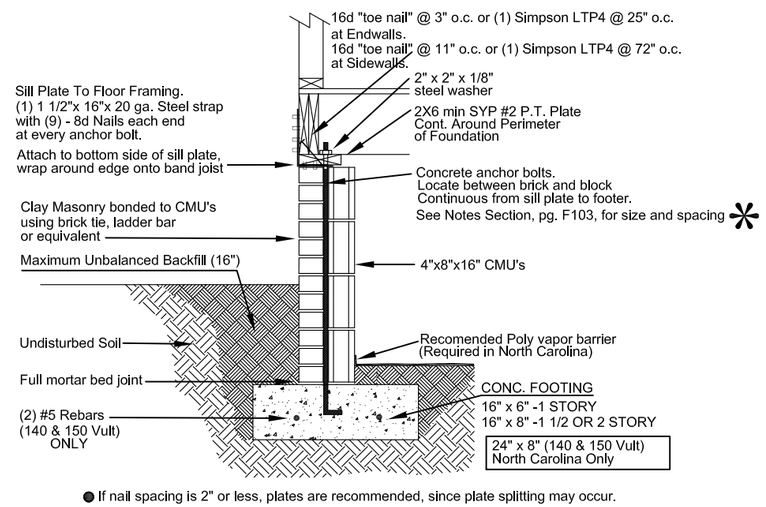


MAX 48" HEIGHT

● If nail spacing is 2" or less, plates are recommended, since plate splitting may occur.

SECTION A-A

PIER & CURTAIN WALL



● If nail spacing is 2" or less, plates are recommended, since plate splitting may occur.

SECTION A-A

CONTINUOUS 8" MASONRY WALL

CHAMPION

4055 HWY. 401 SOUTH LILLINGTON, NC 27546

PROJECT

APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: PERIMETER FOUNDATION DETAILS

MODEL:
23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH

DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS

SHEET NO:
F-102

PAGE:

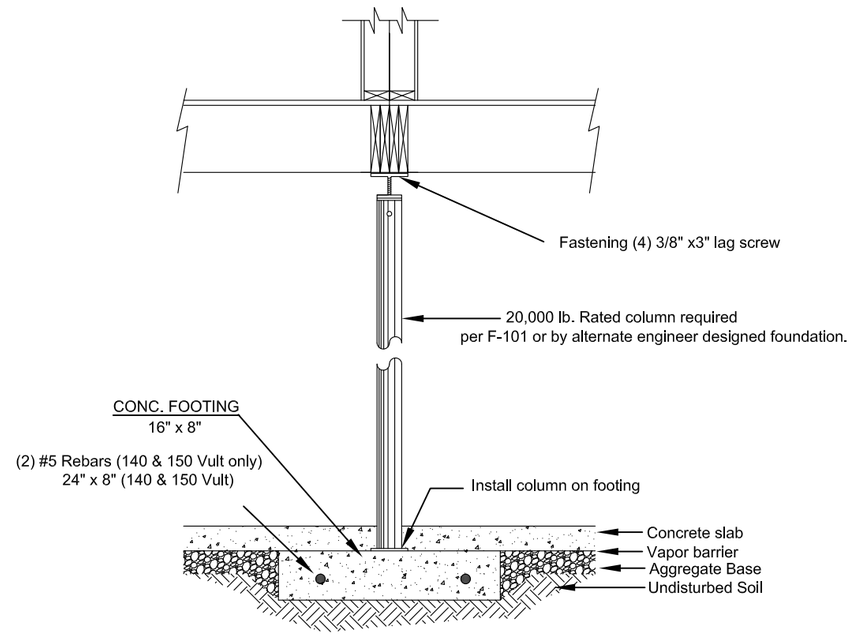
TYPICAL FOUNDATION NOTES :

- Foundation and its structural elements shall be capable of accommodating all superimposed live, dead, and other loads in accordance with applicable codes and all lateral loads in accordance with accepted design practices.
- Lots shall be provided with adequate drainage and shall be graded so as to drain surface water away from foundation walls - by lot owner.
- Materials shall conform to applicable standards and codes.
- Concrete subject to weathering shall have a minimum compressive strength and air content in accordance with code - 2500 psi concrete minimum.
- All exterior walls, bearing walls, columns, and piers shall be supported on continuous solid concrete footings which shall be of sufficient design to support safely the loads imposed as determined from the character of the soil, and shall in all cases, extend below the frost line. Top surface shall be level and bottom not exceeding 1 in 40 slope. Footings shall be not less than shown on drawings for 2000 psf soil.
- Foundation walls shall be constructed in accordance with the code and not less than as shown on the Drawings.
- Foundations shall extend not less than 12 inches below the finished natural grade or engineered fill and in no case less than the frost line depth. Footings on soil with a lower allowable soil pressure shall be designed in accordance with accepted engineering practice. However, where there is evidence that the groundwater table can rise to within 6 inches of the finished grade at the building perimeter or where there is evidence that the surface water does not readily drain from the building site, the building official may require that the grade in the under-floor space be as high as the outside finished grade, unless an approved drainage system is provided. Termite shields and/or protection shall be provided as per code. Local and state requirements for footings may exceed that shown on drawings. If there are any questions, contact your local building inspections department.
- Crawl space ventilation and access space shall be by openings in the foundation walls {cross-ventilation as required by code and/or as follows}. Provide 1 sq. Ft. of ventilation area for each 150 sq. Ft. of crawl space floor area. Use 8"x16" foundation vents with corrosion resistant wire mesh (1/8" mesh) or equal.
- Mortar shall be type "m" or "s".
- Minimum soil bearing capacity shall be 2000 psf.
- Anchorbolt length to be: masonry wall-20",
- Poured concrete footing w/two #5 rebar (120 & 130 only) continuous w'a minimun 25" lap. Place bars 3" from bottom.
- This foundation plan is provided for reference as a typical. Actual foundation conditions must be evaluted for applicability if this plan is to be used. Alternate foundation plans may be designed by others in accordance with the requirements of the jurisdiction having authority.

* Vertical wall reinforcement or continuous anchorage is as follows:

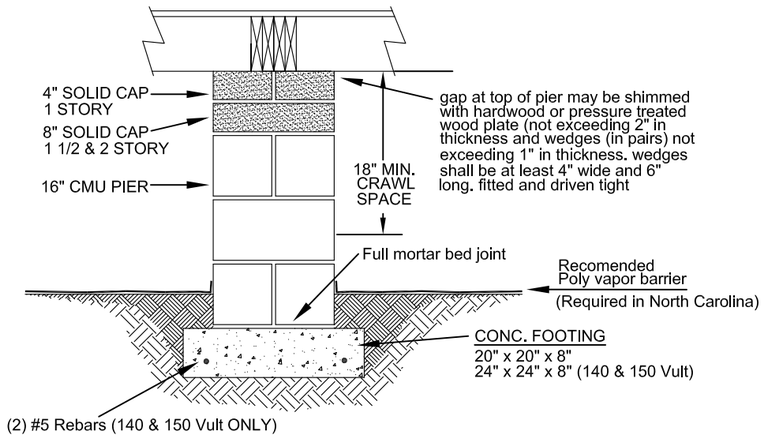
- Sidewall anchor bolt spacing see F-101
- Endwall anchor bolt spacing see F-101

There shall be a minimum of (2) bolts per sill plate section, with one bolt located not more than 12" from each end of the plate section.



SECTION B-B

BASEMENT WALL



SECTION B-B

PIER & CURTAIN WALL, BLOCK WALL
& BRICK VENEER WALL
(where required on module mate lines)

CHAMPION
4055 HWY. 401 SOUTH LILLINGTON, NC 27546

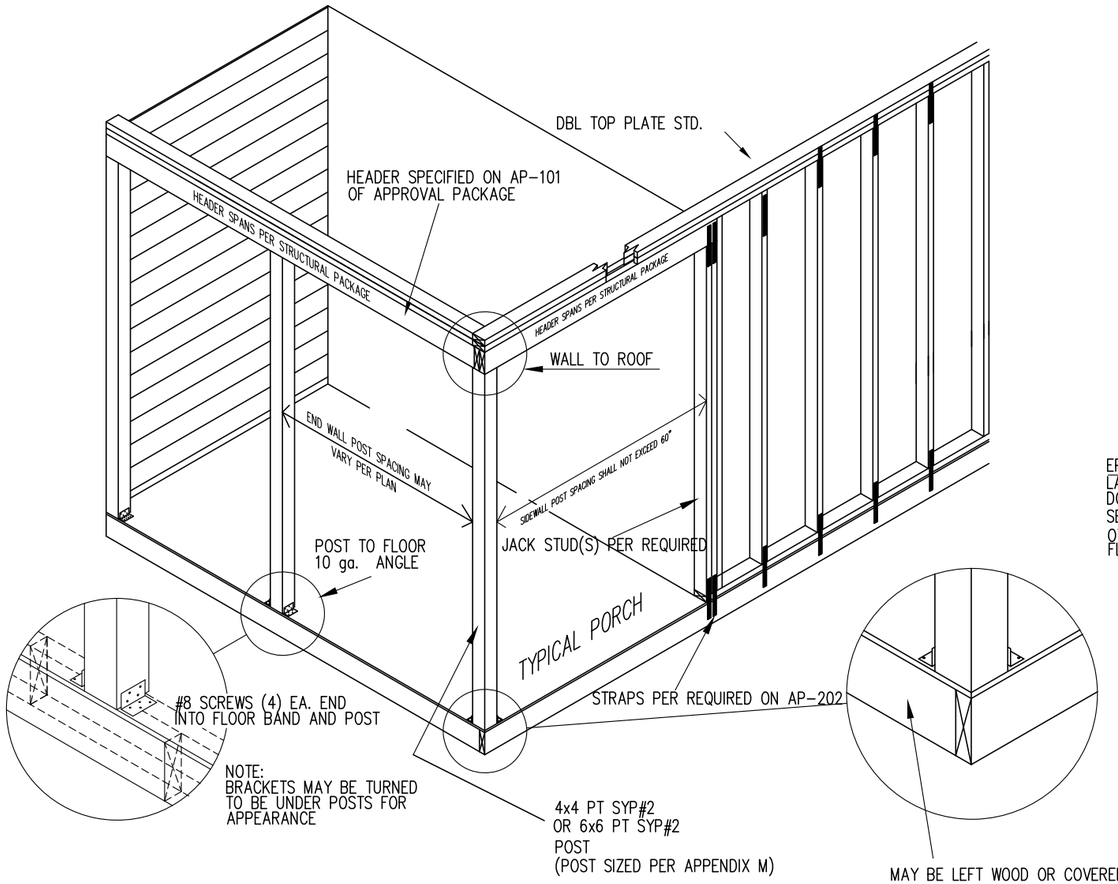
PROJECT

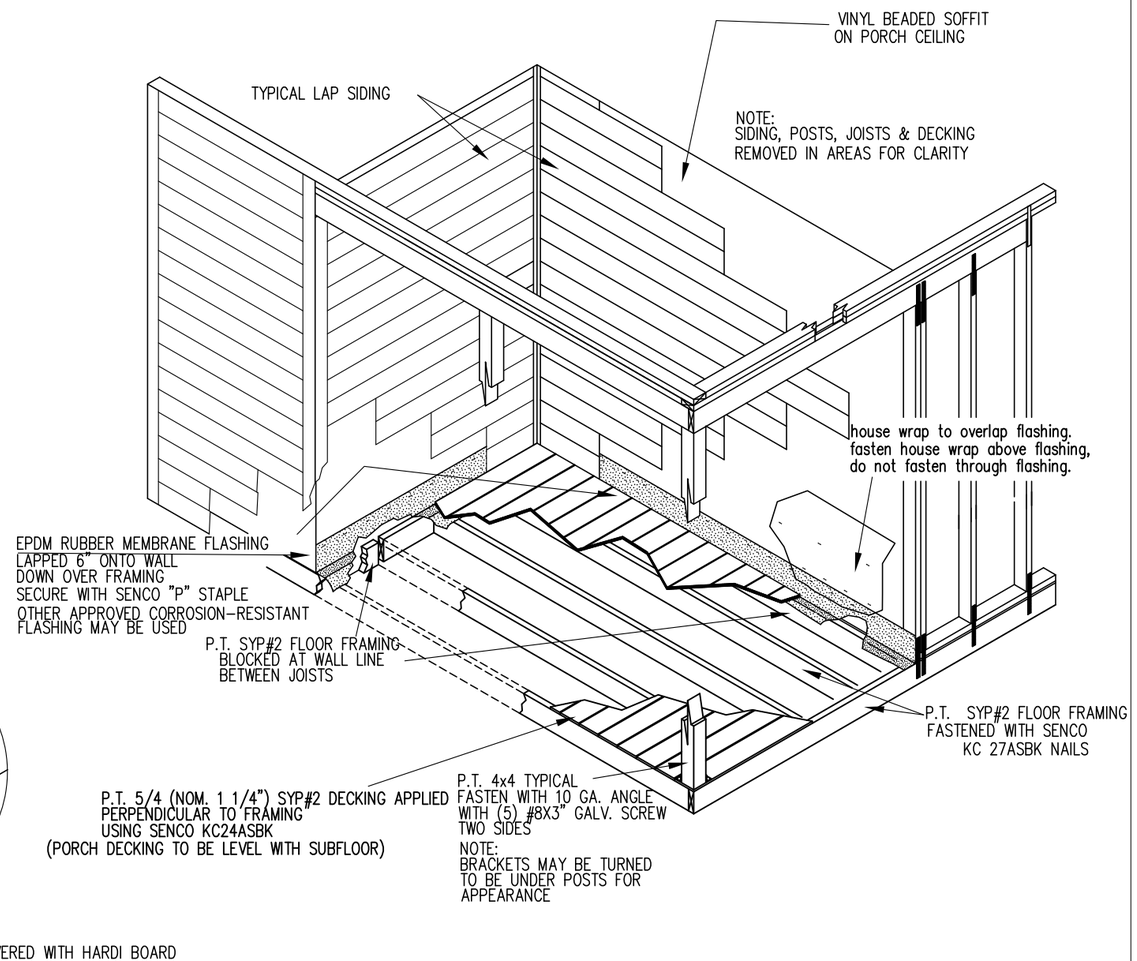
APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE: PERIMETER FOUNDATION DETAILS
MODEL: 23-3276-16
30'-4" x 76'-0" 4 BEDROOM 3 BATH
DATE: 01-13-16
SCALE: NTS
DRAWN BY: STAFF
REVISED:
REVISIONS
SHEET NO: F-103
PAGE:

PORCH TYPICAL

NOTE:
IF HANDRAILS ARE TO BE INCLUDED/INSTALLED SEE PAGE AP–101 OF APPROVAL PACKAGE





NOTE:
NC –– PORCHES AND DECKS TO COMPLY WITH APPENDIX M

CHAMPION
MANUFACTURED BEAUTIFULLY™
755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48084
PHONE: 248-614-8200

PROJECT

APPROVED
Sharon Barry
PFS
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

TITLE:
CONSTRUCTION DETAILS

MODEL:
PORCH CONSTRUCTION
TYPICAL PORCH DETAILS

DATE: 02-22-06
SCALE: NTS
DRAWN BY: STAFF
REVISED:

REVISIONS
1) REV. PORCH HEADER 02-26-07 SA

SHEET NO: 3.6

PAGE:

CP- 1 Revised or Added page per PFS review of 11-24-19

REScheck Software Version 4.6.5

Compliance Certificate

Project 23-3276-16

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

Energy Code:	**2015 IECC**
Location:	**Hendersonville, North Carolina**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Orientation:	**Unspecified**
Conditioned Floor Area:	**2,176 ft2**
Glazing Area	**15%**
Climate Zone:	**4 (4203 HDD)**
Permit Date:	
Permit Number:	

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **0.8% Better Than Code** Maximum UA: **367** Your UA: **364** Maximum SHGC: **0.40** Your SHGC: **0.28**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Ceiling 1: Flat Ceiling or Scissor Truss	2,176	38.0	0.0	0.030	65
Wall 1: Wood Frame, 16" o.c. Orientation: Front	684	15.0	0.0	0.077	44
Window: 3661: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Front	92			0.350	32
Door 1: Solid Orientation: Front	20			0.140	3
Wall 2: Wood Frame, 16" o.c. Orientation: Back	684	15.0	0.0	0.077	40
Window: 3661: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Back	30			0.350	11
Window: 1236: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Back	6			0.350	2
Window: 62X40: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Back	17			0.350	6
Window: 3608: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Back	3			0.350	1
Window: 3661: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Back	61			0.350	21

CP- 1 Revised or Added page per PFS review of 11-24-19

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	U-Factor	UA
Door 2: Glass SHGC: 0.28 Orientation: Back	40			0.350	14
Wall 3: Wood Frame, 16" o.c. Orientation: Right side	273	15.0	0.0	0.077	18
Window: 4638: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Right side	12			0.350	4
Window: 3036: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Right side	8			0.350	3
Door 3: Solid Orientation: Right side	20			0.140	3
Wall 4: Wood Frame, 16" o.c. Orientation: Left side	273	15.0	0.0	0.077	20
Window: 3661: Vinyl/Fiberglass Frame, Double Pane with Low-E SHGC: 0.28 Orientation: Left side	15			0.350	5
Floor 1: All-Wood Joist/Truss:Over Unconditioned Space	2,176	30.0	0.0	0.033	72

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 IECC requirements in RES*check* Version 4.6.5 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title	Signature	Date
	JON TYNDALL	12-2-19

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

CP- 1 Revised or Added page per PFS review of 11-24-19

2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	15.00
Below-Grade Wall	0.00
Floor	30.00
Ceiling / Roof	38.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.35	0.28
Door	0.35	0.28

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: JON TYNDALL **Date:** 12-2-19

Comments

PFS APPROVED
Sharron Barry
DATE 12/4/19
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Cottage Grove, WI

CP- 1 Revised or Added page per PFS review of 11-24-19

BUILDER MUST FINISH APPENDIX, FACTORY DONE MARKED IN RED

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

APPENDIX E

(E-1 THROUGH E-4)
RESIDENTIAL REQUIREMENTS FOR ENERGY CONSERVATION

This appendix is a North Carolina addition and not part of the 2015 *International Residential Code*. There will be no underlined text.

(The provisions contained in this appendix are adopted as part of this code.)

APPENDIX E-1 Energy Efficiency Certificate (Section N1101.14)

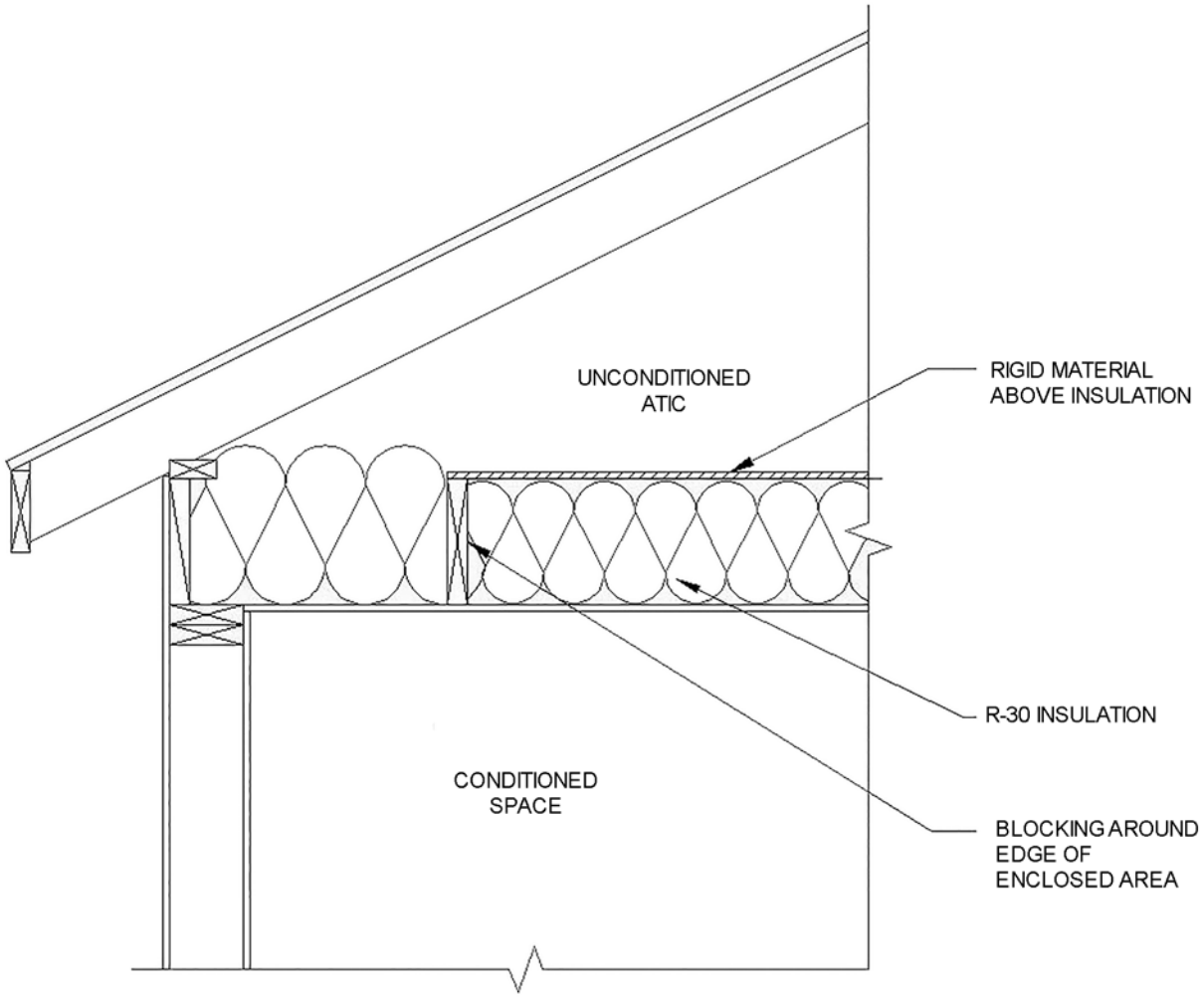
ENERGY EFFICIENCY CERTIFICATE (N1101.14)

Builder, Permit Holder or Registered Design Professional Print Name: Signature:	
Property Address:	
Date:	
Insulation Rating – List the value covering largest area to all that apply	***R*-Value**
Ceiling/roof:	R- 38
Wall:	R- 15 min
Floor:	R- 22
Closed crawl space wall:	R-
Closed crawl space floor:	R-
Slab:	R-
Basement wall:	R-
Fenestration:	
U-Factor	0.35
Solar Heat Gain Coefficient (SHGC)	0.28
Building Air Leakage	
❑ Visually inspected according to N1102.4.2.1 OR	
❑ Building air leakage test results (Sec. N1102.4.2.2) ACH50 [Target: 5.0] or CFM50/SFSA [Target: 0.30]	
Name of Tester/Company: Date: Phone:	
Ducts:	
Insulation	R- 8 flex only by factory
Total duct leakage test result (Sect. N1103.3.3) Circle one: Total duct leakage test (CFM25 Total/100SF) [Target: 5] or Duct leakage to the outside test (CFM25 Total/100SF) [Target: 4]	
Name of Tester or Company: Date: Phone:	
Certificate to be displayed permanently	

APPENDIX E-2
INSULATION AND AIR SEALING DETAILS

APPENDIX E-2.1

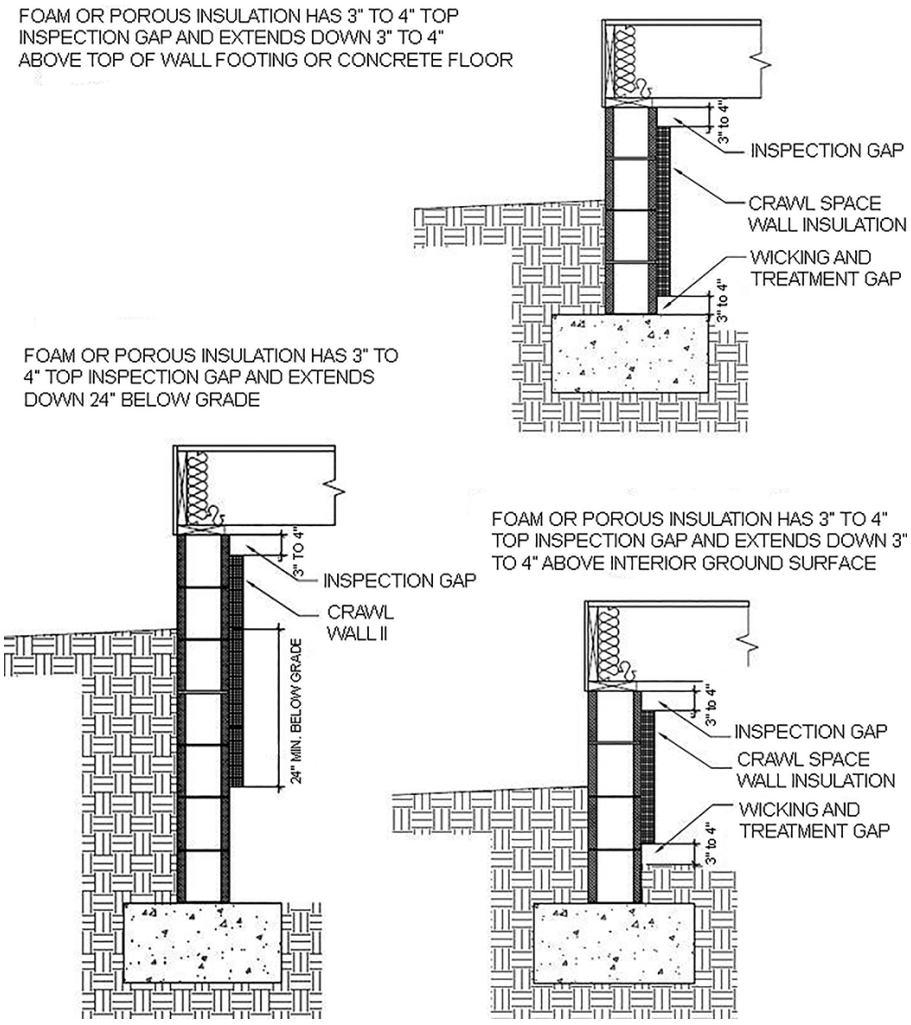
N1102.2.1 Ceilings with attic spaces: Exception for fully enclosed attic floor systems



SECTION VIEW OF CEILING WITH ATTIC SPACE

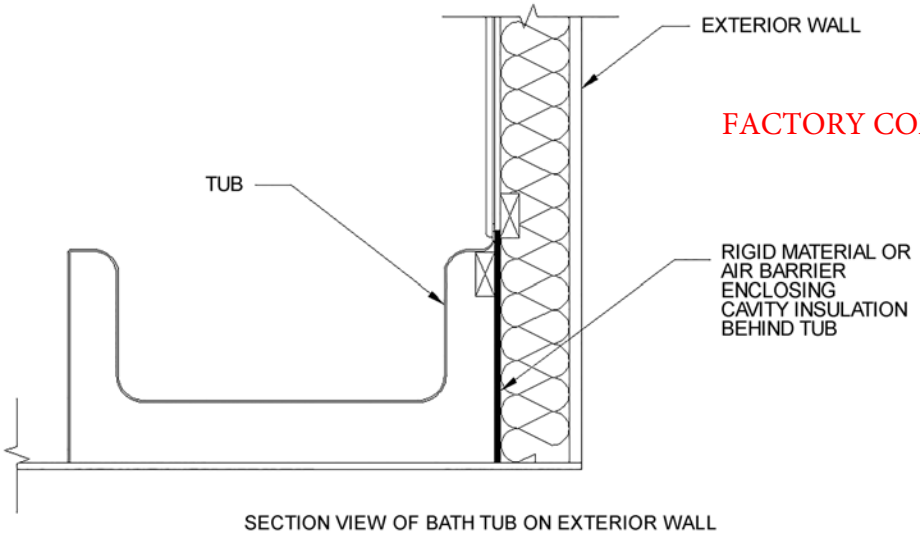
APPENDIX E-2.2

N1102.2.11 Closed crawl space walls. Insulation illustrations



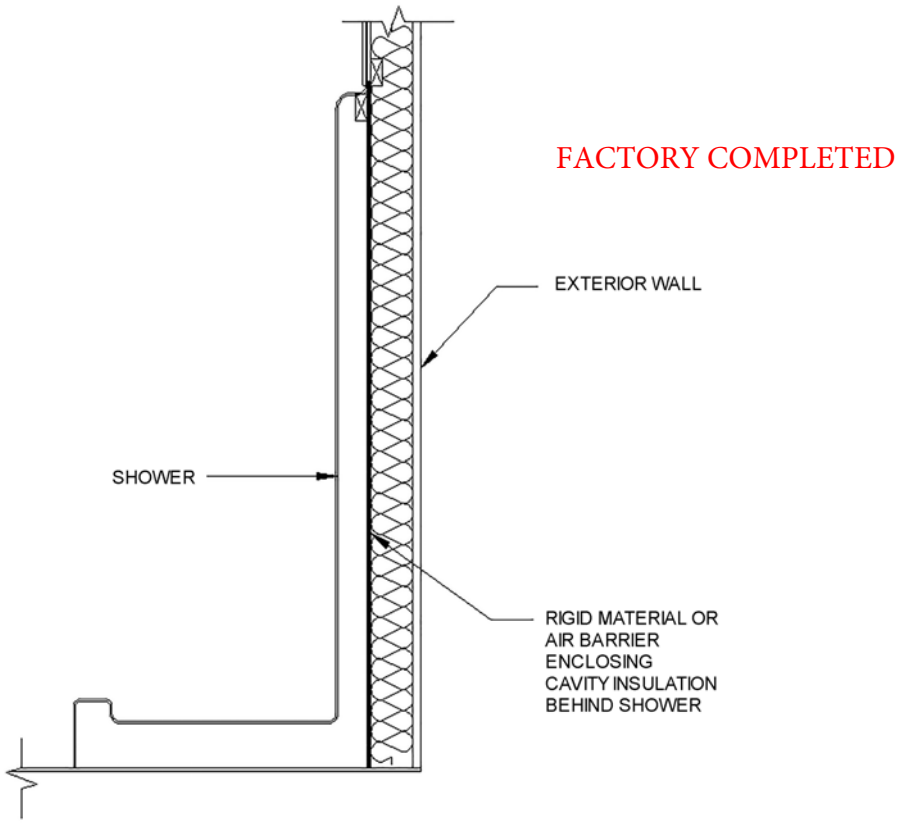
APPENDIX E-2.3

N1102.2.14 Framed cavity walls. Insulation enclosure—1. Tubs



SECTION VIEW OF BATH TUB ON EXTERIOR WALL

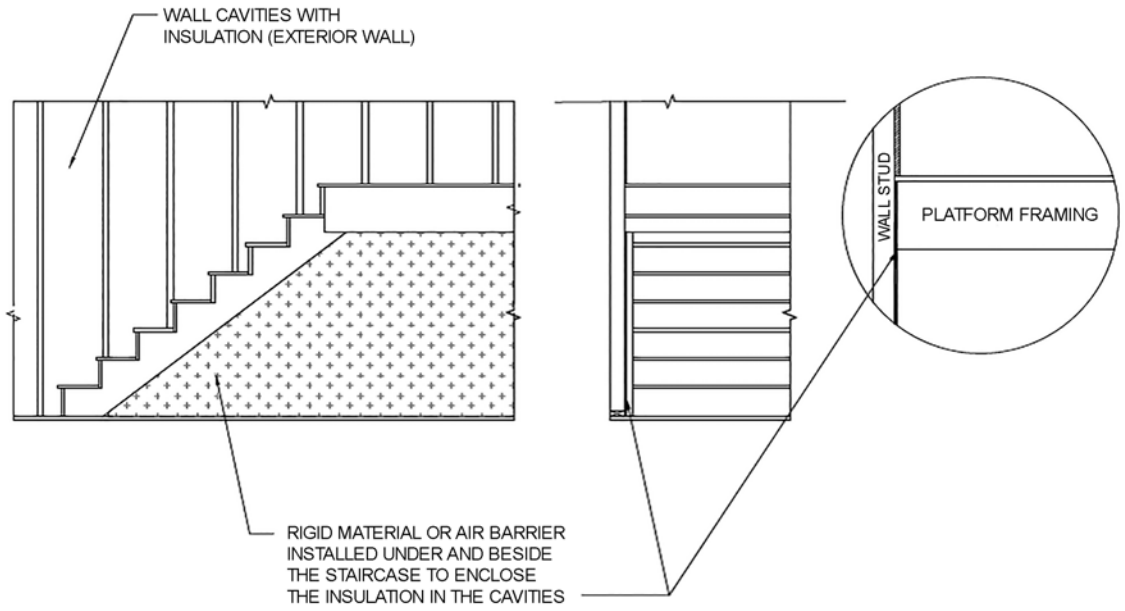
N1102.2.14 Framed cavity walls. Insulation enclosure—2. Showers



SECTION VIEW OF SHOWER ON EXTERIOR WALL

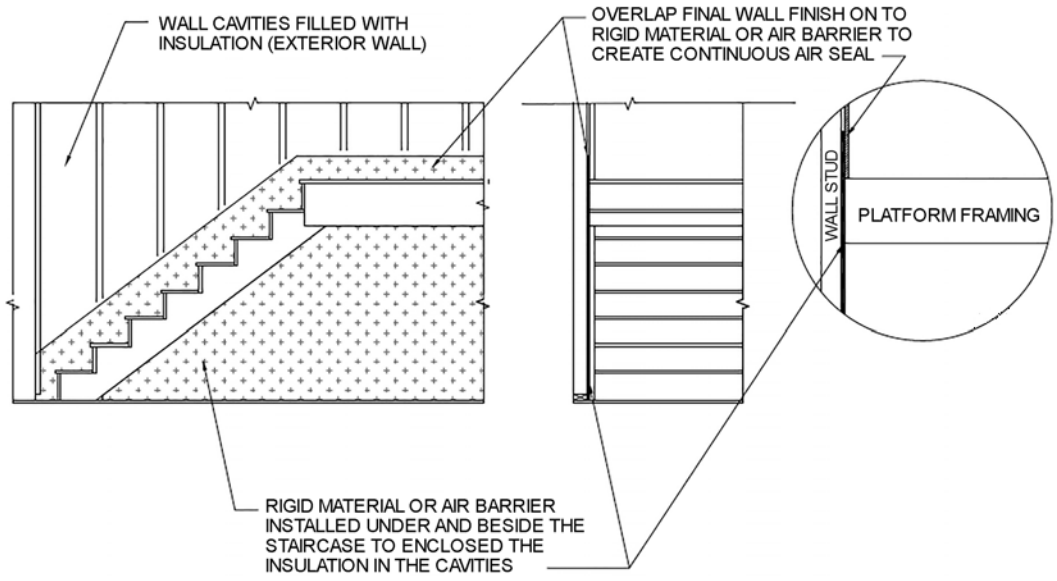
N1102.2.14 Framed cavity walls. Insulation enclosure—3. Stairs

FACTORY COMPLETED, IF APPLICABLE



SECTION VIEW OF INTERIOR STAIRCASE ON EXTERIOR WALL (OPTION 1)

N1102.2.14 Framed cavity walls. Insulation enclosure—3. Stairs

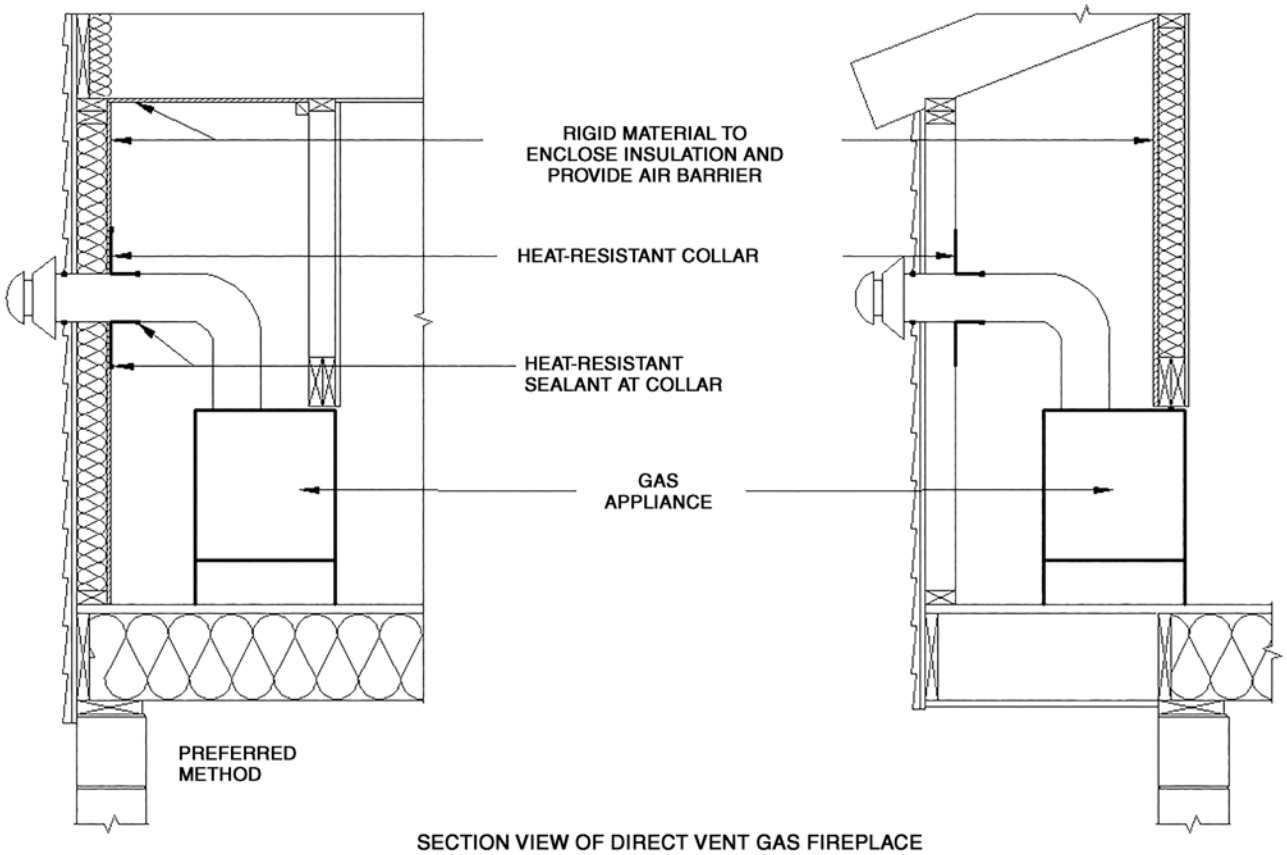


SECTION VIEW OF INTERIOR STAIRCASE ON EXTERIOR WALL (OPTION 2)

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

N1102.2.14 Framed cavity wall. Insulation enclosure—4. Direct vent gas fireplace

N/A BY FACTORY

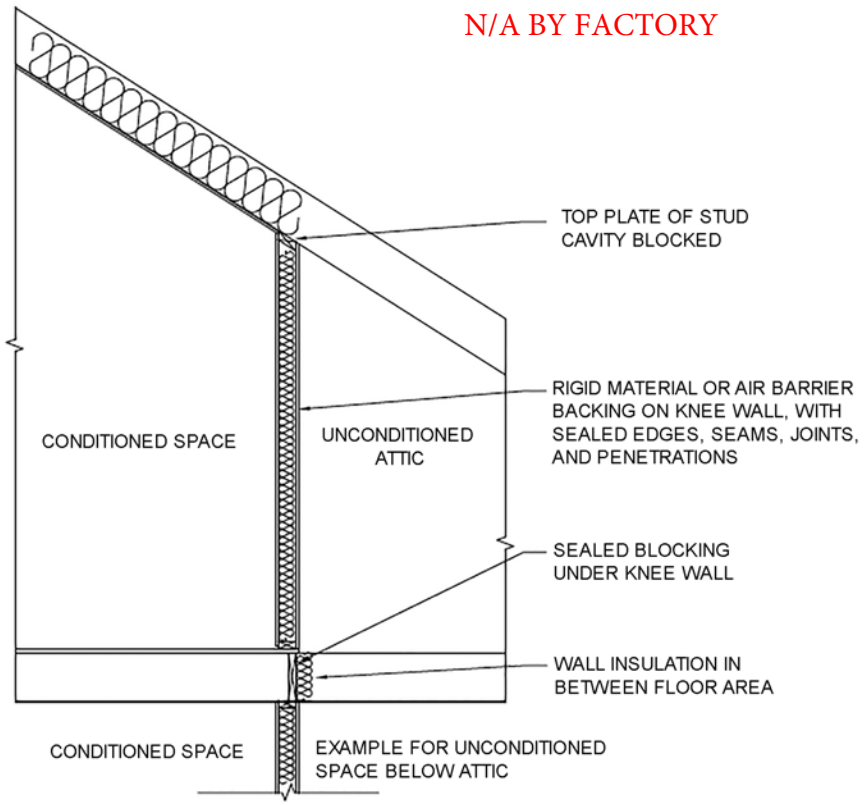


SECTION VIEW OF DIRECT VENT GAS FIREPLACE

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

N1102.2.15 Framed cavity walls. Insulation enclosure—5. Walls that adjoin attic spaces

N/A BY FACTORY

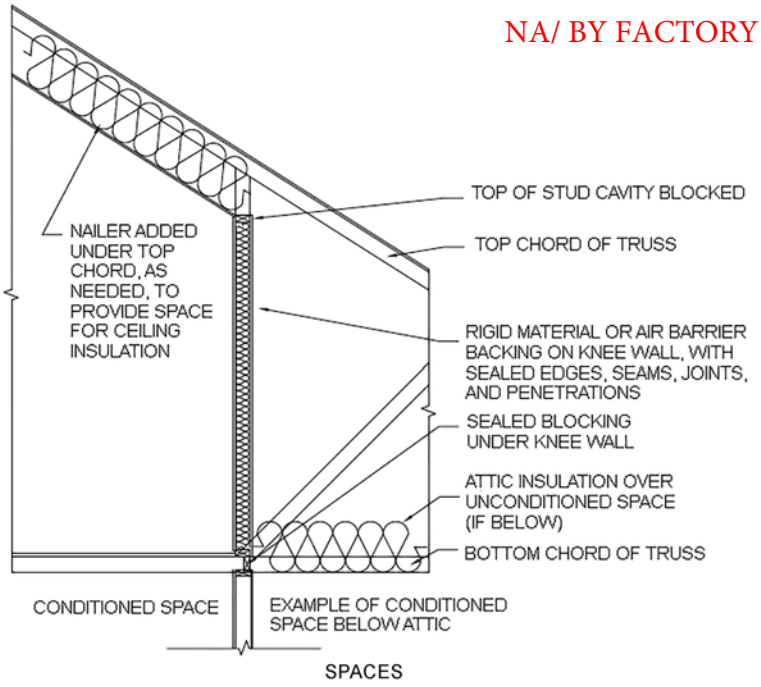


SECTION VIEW OF WALL ADJOINING ATTIC SPACE WITH STICK FRAMED ROOF

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

N1102.2.15 Framed cavity walls. Insulation enclosure—5. Walls that adjoin attic spaces

NA/ BY FACTORY

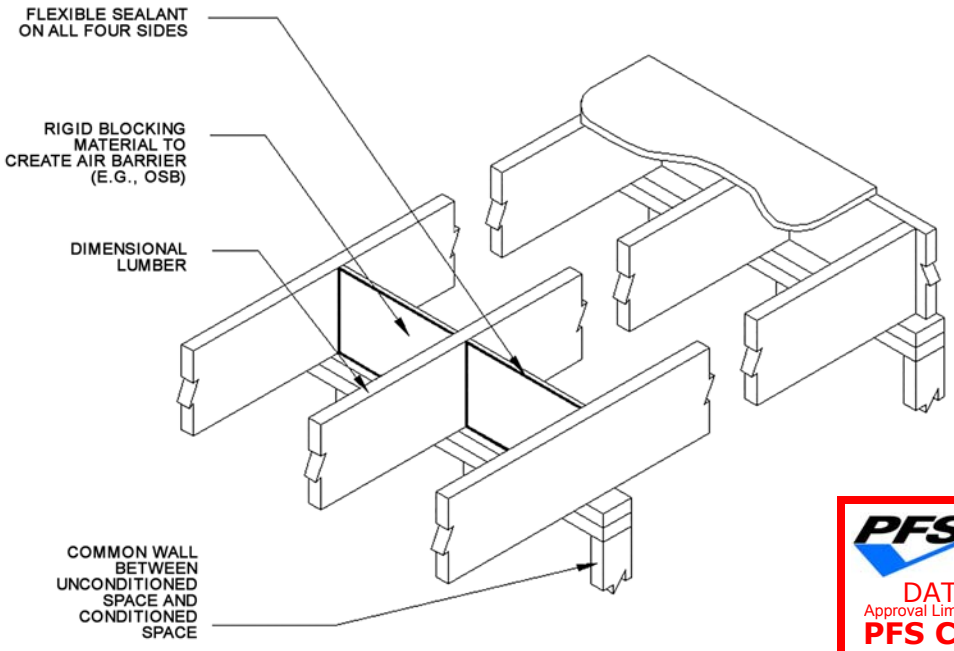


SECTION VIEW OF WALL ADJOINING ATTIC SPACE WITH TRUSS ROOF

APPENDIX E-2.4

N1102.4.1 Building thermal envelope.—1. Block and seal floor/ceiling systems

N/A BY FACTORY

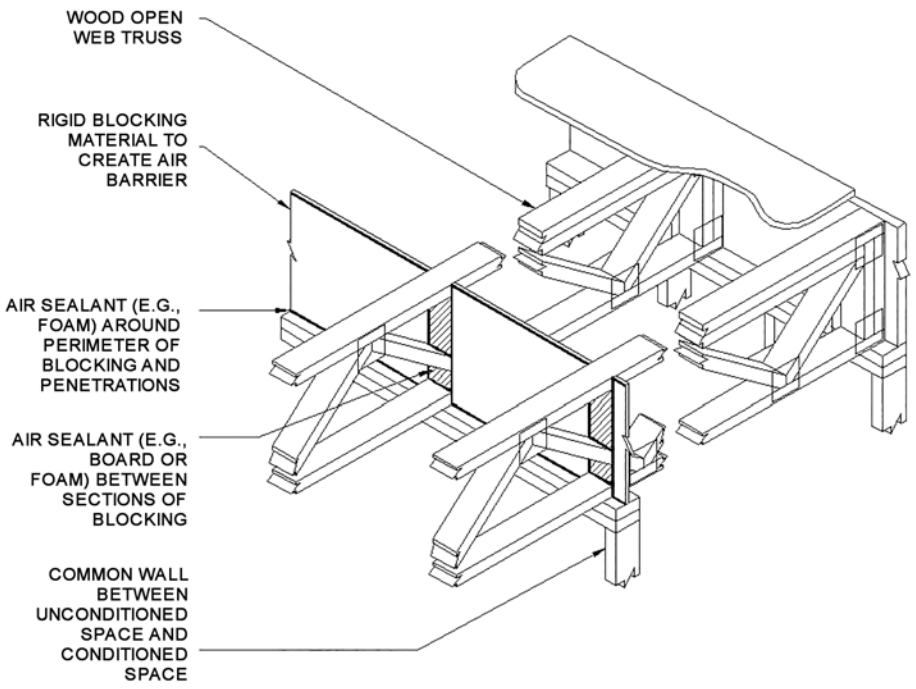


ISOMETRIC VIEW OF DIMENSIONAL LUMBER FLOOR/CEILING SYSTEM ABOVE COMMON WALL BETWEEN UNCONDITIONED AND CONDITIONED SPACE

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

N1102.4.1 Building thermal envelope.—1. Block and seal floor/ceiling systems

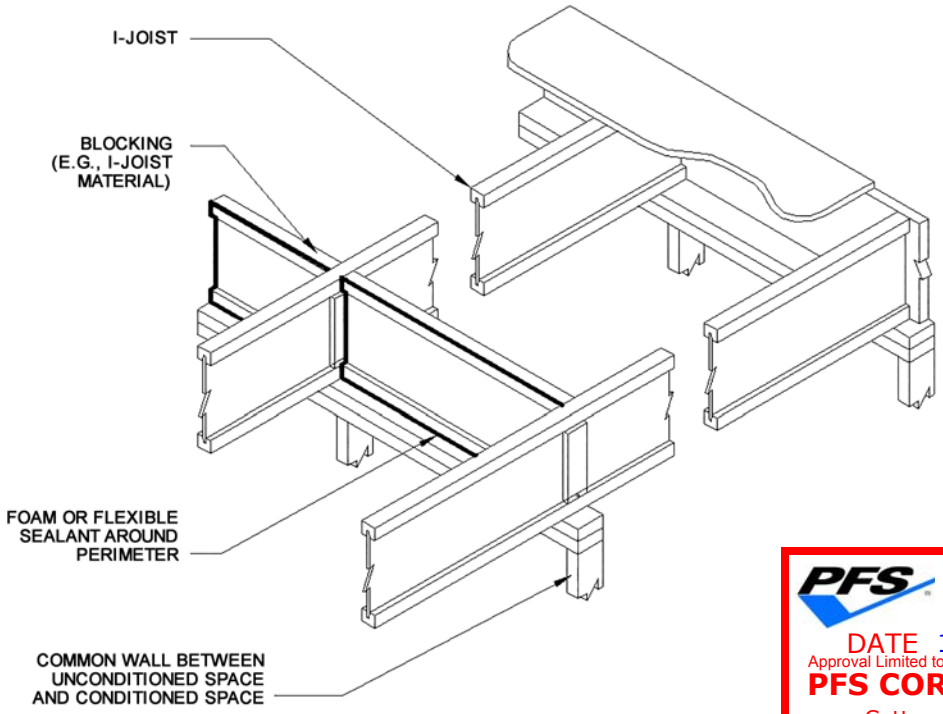
N/A BY FACTORY



ISOMETRIC VIEW OF WOOD TRUSS FLOOR/CEILING SYSTEM ABOVE COMMON WALL BETWEEN UNCONDITIONED AND CONDITIONED SPACE

N1102.4.1 Building thermal envelope. —1. Block and seal floor/ceiling systems

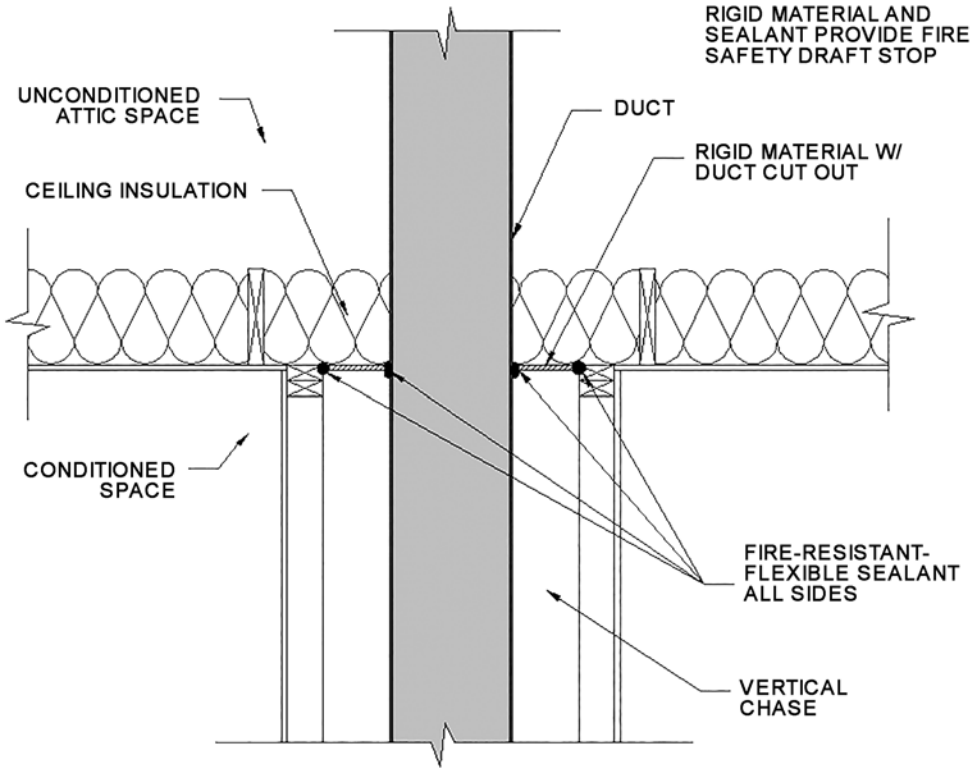
N/A BY FACTORY

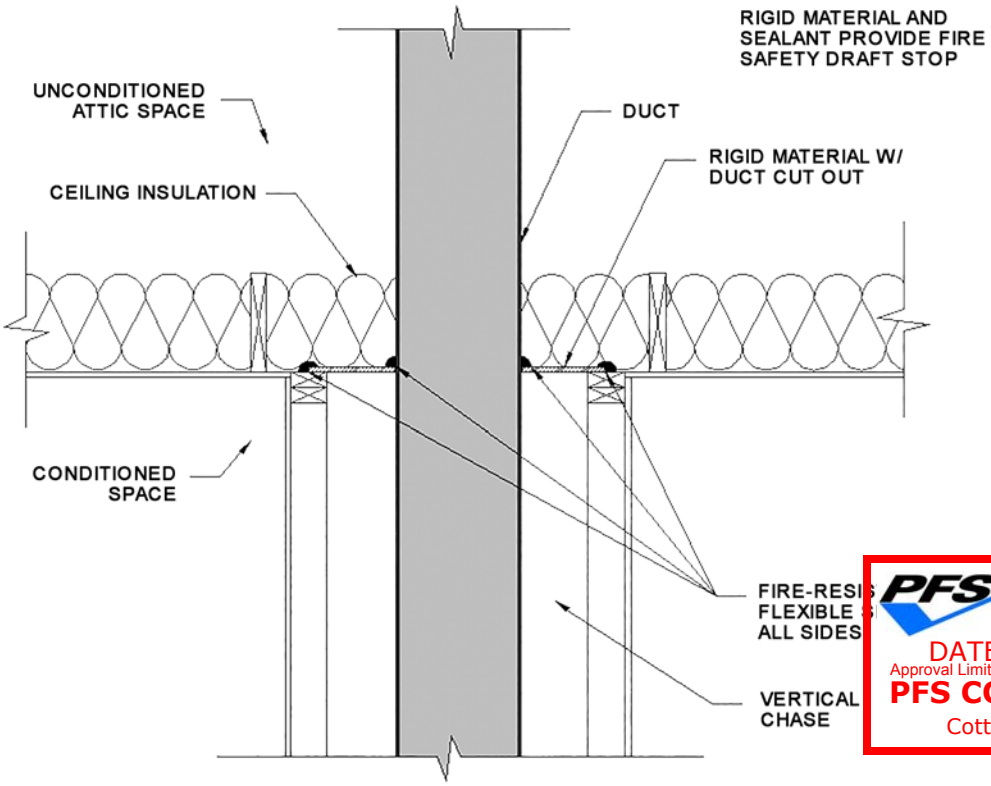


PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

ISOMETRIC VIEW OF I-JOIST FLOOR/CEILING SYSTEM ABOVE COMMON WALL BETWEEN UNCONDITIONED AND CONDITIONED SPACE

N1102.4.1 Building thermal envelope—2. Cap and seal shafts and chases BY OTHERS IF APPLICABLE





SECTION VIEWS OF DUCT PENETRATING INTO ATTIC

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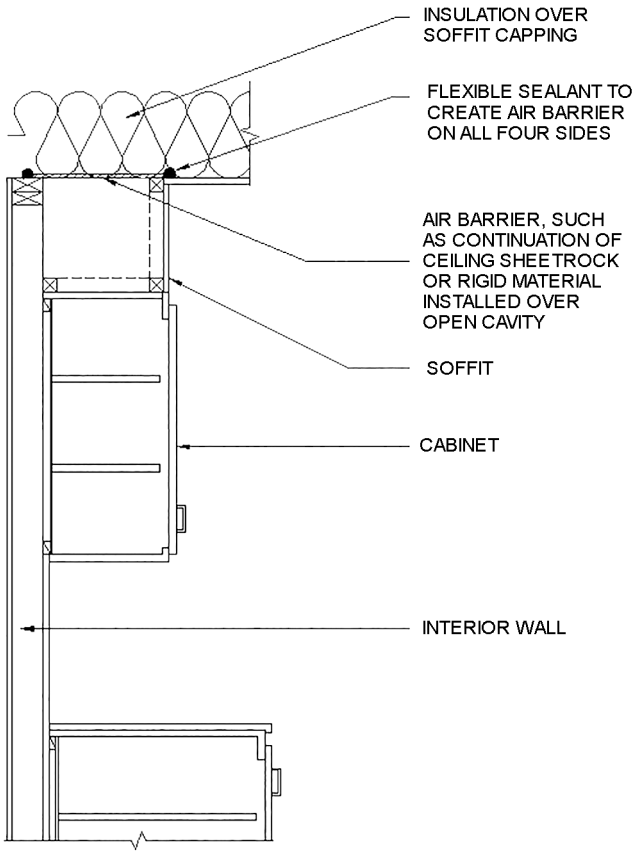
N1102.4.1 Building thermal envelope. —3. Cap and seal soffit or dropped ceiling N/A



SECTION VIEW OF SOFFIT OVER CABINET

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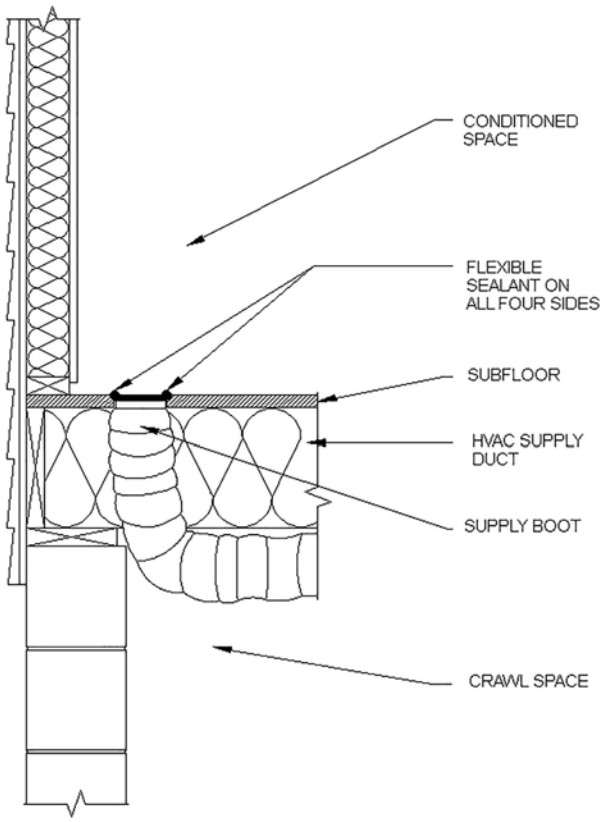
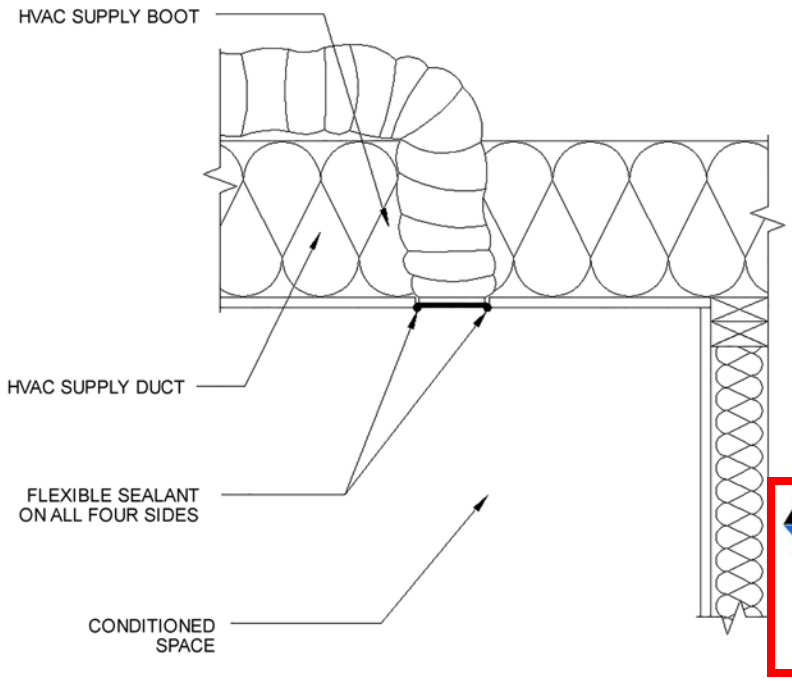
N1102.4.1 Building thermal envelope.—4. Seal HVAC boot penetration—floor FACTORY COMPLETED



SECTION VIEW OF FLOOR HVAC BOOT PENETRATION

N1102.4.1 Building thermal envelope.—4. Seal HVAC boot penetration—ceiling



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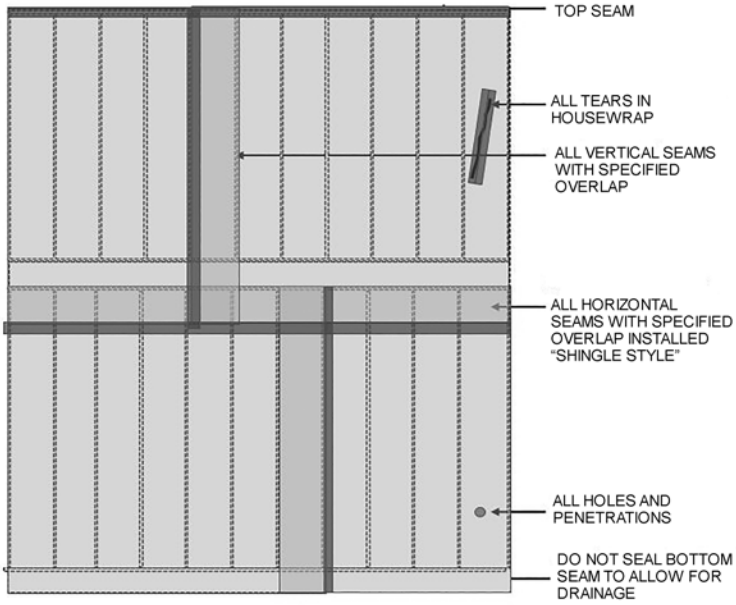
SECTION VIEW OF CEILING HVAC BOOT PENETRATION

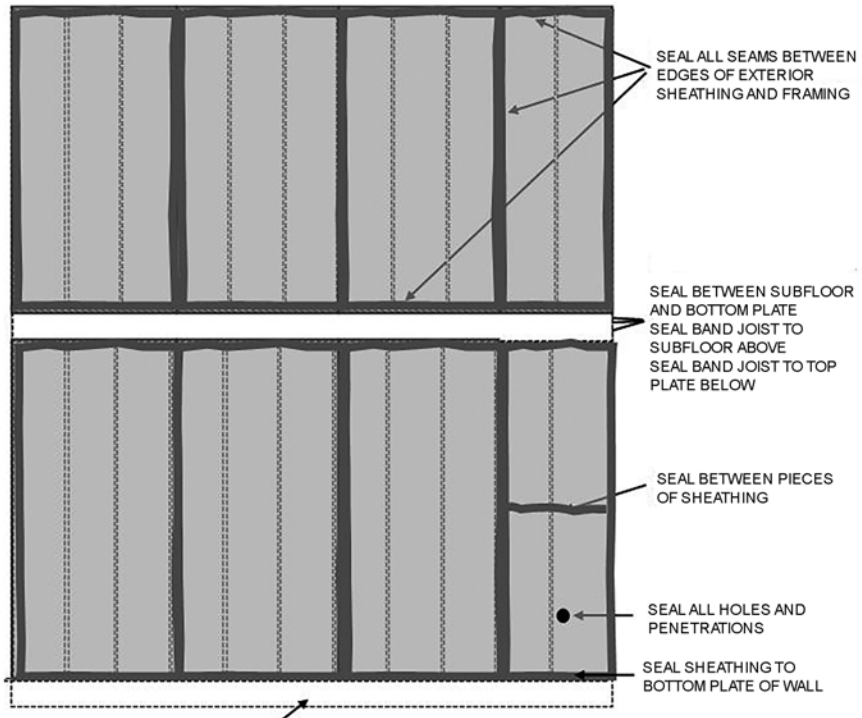
MUST BE INSPECTED ON SITE BY OTHERS FOR TEARS

N1102.4.1 Building thermal envelope.—5. Sealed exterior air barrier with housewrap

Follow manufacturer's instructions for sealing air barrier-rated housewrap, including choice of materials, to provide an exterior air barrier at the following locations:



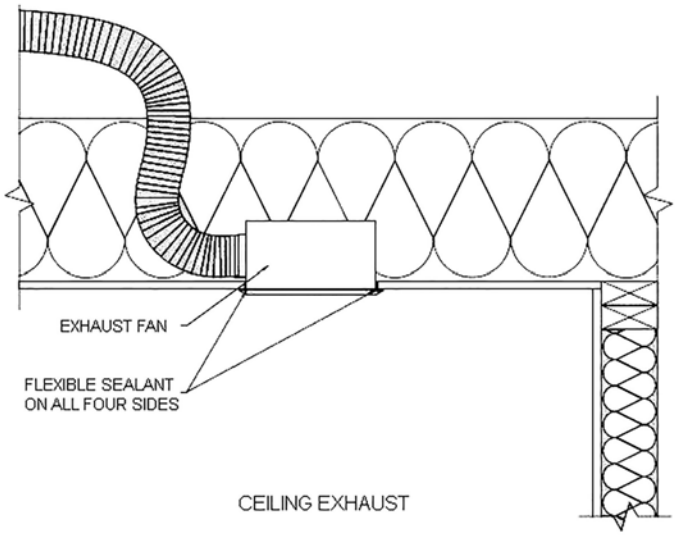
N1102.4.1 Building thermal envelope.—5. Sealed exterior air barrier with sheathing



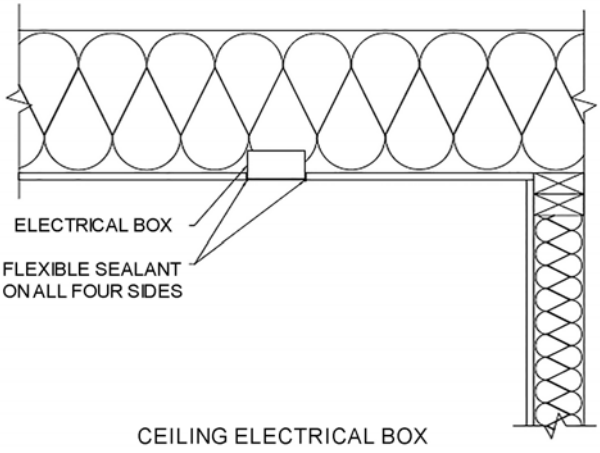
1) IF FIRST FLOOR IS SLAB-ON-GRADE, INSTALL SEAL SEALER UNDER BOTTOM PLATE OF EXTERIOR WALL.
2) IF FIRST FLOOR IS OVER UNCONDITIONED CRAWL SPACE OR BASEMENT, INSTALL SEAL SEALER UNDER BOTTOM PLATE AND SEAL SUBFLOOR TO BAND JOIST.
3) IF FIRST FLOOR IS OVER CONDITIONED BASEMENT OR CLOSED CRAWL SPACE WITH CRAWL SPACE WALL INSULATION BELOW, SEAL BETWEEN SUBFLOOR AND BOTTOM PLATE, SEAL BAND JOIST TO SUBFLOOR ABOVE, AND SEAL BAND JOIST TO TOP PLATE BELOW.

N1102.4.2.1 Visual inspection option. —Table N1102.4.2 Seal ceiling mechanical box penetrations

FACTORY COMPLETED



N1102.4.2.1 Visual inspection option. — Table N1102.4.2 Seal ceiling electrical box penetrations FACTORY COMPLETED



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APPENDIX E-3:
SAMPLE WORKSHEETS FOR RESIDENTIAL AIR AND DUCT LEAKAGE TESTING

APPENDIX E-3A
AIR SEALING: VISUAL INSPECTION OPTION (Section N1102.4.2.1)

SAMPLE WORKSHEET

N1102.4.2 Air sealing. Building envelope air tightness shall be demonstrated by Section N1102.4.2.1 or N1102.4.2.2.

N1102.4.2.1 Visual inspection option. Building envelope tightness shall be considered acceptable when items providing insulation enclosure in Section N1102.2.14 and enclosure and air sealing in Section N1102.2.15 and air sealing in Section N1102.4.1 are addressed and when the items listed in Table N1102.4.2, applicable to the method of construction, are certified by the builder, permit holder or *registered design professional* via the certificate in Appendix E-1.

TABLE N1102.4.2
AIR BARRIER INSPECTION

COMPONENT	CRITERIA
factory done Ceiling/attic	Sealants or gaskets provide a continuous air barrier system joining the top plate of framed walls with either the ceiling drywall or the top edge of wall drywall to prevent air leakage. Top plate penetrations are sealed. For ceiling finishes that are not air barrier systems such as tongue-and-groove planks, air barrier systems (for example, taped house wrap), shall be used above the finish. **Note:** It is acceptable that sealants or gaskets applied as part of the application of the drywall will not be observable by the code official.
Walls	Sill plate is gasketed or sealed to subfloor or slab. factory done
Windows and doors	Space between window and exterior door jambs and framing is sealed. factory done
Floors (including above-garage and cantilevered floors)	Air barrier system is installed at any exposed edge of insulation. factory done
Penetrations	Utility penetrations through the building thermal envelope, including those for plumbing, electrical wiring, ductwork, security and fire alarm wiring, and control wiring, shall be sealed. factory done
Garage separation	Air sealing is provided between the garage and conditioned spaces. An air barrier system shall be installed between the ceiling system above the garage and the ceiling system of interior spaces.
Ceiling penetrations	Ceiling electrical box penetrations and ceiling mechanical box penetrations shall be caulked, gasketed, or sealed at the penetration of the ceiling finish. See Appendix E-2.4. factory done **Exception:** Ceiling electrical boxes and ceiling mechanical boxes not penetrating the building thermal envelope
Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. factory done **Exception:** Fixtures in conditioned space.

Attic Access insulated and weatherstripped per N1102.2.2.4

Property Address:

_____

N1102.4.2.1 Visual Inspection Option. The inspection information including tester name, date, and contact shall be included on the certificate described in Section N1101.14.

_____ _____

Signature Date

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MUST BE COMPLETED BY BUILDER ON SITE

APPENDIX E-3B
Air sealing: Testing option (Section N1102.4.2.2)

Sample Worksheet

N1102.4.2 Air sealing. Building envelope air tightness shall be demonstrated by Section N1102.4.2.1 or N1102.4.2.2:

N1102.4.2.2 Testing option. Building envelope tightness shall be considered acceptable when items providing insulation enclosure in Section N1102.2.14 and enclosure and air sealing in Section N1102.2.15 and air sealing in Section N1102.4.1 are addressed and when tested air leakage is less than or equal to one of the two following performance measurements:

1. 0.30 CFM50/Square Foot of Surface Area (SFSA) or
2. Five (5) air changes per hour (ACH50)

When tested with a blower door fan assembly, at a pressure of 33.5 psf (50 Pa). A single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the blower door fan assembly has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E779—03. Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances. Testing shall be reported by the permit holder, a North Carolina licensed general contractor, a North Carolina licensed HVAC contractor, a North Carolina licensed Home Inspector, a *registered design professional*, a certified *BPI Envelope Professional* or a certified *HERS rater*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed;
2. Dampers shall be closed, but not sealed, including exhaust, backdraft, and flue dampers;
3. Interior doors shall be open;
4. Exterior openings for continuous ventilation systems, air intake ducted to the return side of the conditioning system, and energy or heat recovery ventilators shall be closed and sealed;
5. Heating and cooling system(s) shall be turned off; and
6. Supply and return registers shall not be sealed.

The air leakage information, including building air leakage result, tester name, date, and contact information, shall be included on the certificate described in Section N1101.14.

For Test Criteria 1 in this section, the report shall be produced in the following manner: Perform the blower door test and record the *CFM50* _____. Calculate the total square feet of surface area for the building thermal envelope, all floors, ceilings, and walls (this includes windows and doors) and record the area_____. Divide *CFM50* by the total square feet and record the result below. If the result is less than or equal to **[0.30 CFM50/SFSA]** the envelope tightness is acceptable; or

For Test Criteria 2, the report shall be produced in the following manner: Perform a blower door test and record the *CFM50* _____. Multiply the *CFM50* by 60 minutes to create CFHour50 and record _____. Then calculate the total conditioned volume of the home and record_____. Divide the CFH50 by the total volume and record the result below. If the result is less than or equal to **[5 ACH50]** the envelope tightness is acceptable.

Property Address: _____

Fan attachment location _____ Company Name _____

Contact Information: _____

_____

Signature of Tester _____ Date _____

Permit Holder, NC Licensed General Contractor, NC Licensed HVAC Contractor,
NC Licensed Home Inspector, *Registered Design Professional*,
Certified *BPI Envelope Professional*, or Certified *HERS Rater*
(circle one).

APPENDIX E-3C
Duct sealing. Duct air leakage test (Section N1103.2.2 & Section N1103.3.3)

Sample Worksheet

N1103.3.2 Sealing (Mandatory Requirements). Ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. Joints and seams shall comply with either the *International Mechanical Code* or *International Residential Code*, as applicable.

N1103.3.3 Duct leakage (Prescriptive) and duct testing (Mandatory). Duct testing and duct leakage shall be verified by compliance with either Section N1103.3.3.1 or N1103.3.3.2. Duct testing shall be verified using one of the two following methods:

N1103.3.3.1 Total duct leakage. Total duct leakage shall be less than or equal to 5 CFM (12 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area served by that system when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure.

During testing:

1. Block, if present, ventilation air duct(s) connected to the conditioning system.
2. The duct air leakage testing equipment shall be attached to the largest return in the system or to the air handler.
3. The filter shall be removed and the air handler power shall be turned off.
4. Supply boots or registers and return boxes or grilles shall be taped, plugged, or otherwise sealed air tight.
5. The hose for measuring the 25 Pascals of pressure differential shall be inserted into the boot of the supply that is nominally closest to the air handler.
6. Specific instructions from the duct testing equipment manufacturer shall be followed to reach duct test pressure and measure duct air leakage.

N1103.3.3.2 Duct leakage to the outside. Conduct the test using fan pressurization of distribution system and building at a fixed reference pressure for combined supply and return leaks. Duct leakage to the outside shall be less than or equal to 4 CFM (12 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area served by that system when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, relative to the outside, including the manufacturer's air handler enclosure.

During testing:

1. Block, if present, the ventilation air duct(s) connected to the conditioning system.
2. The duct air leakage testing equipment shall be attached to the largest return in the system or to the air handler.
3. The filter shall be removed and the air handler power shall be turned off.
4. Supply boots or registers and return boxes or grilles shall be taped, plugged, or otherwise sealed air tight or as tight as possible.
5. The hose for measuring the 25 Pascals of pressure differential shall be inserted into the boot of the supply that is nominally closest to the air handler.
6. Open all interconnecting doors in the building, close dampers for fireplaces and other operable dampers.
7. Set up an envelope air moving/flow-regulating/flow measurement assembly, such as a blower door, following the manufacturer's prescribed procedure.
8. Specific instructions from the duct testing equipment manufacturer shall be followed to reach duct test pressure and measure duct air leakage used in combination with a blower door. Typical steps are as follows:
    a. Depressurize the ductwork system to 25 Pa using the measurement hose in Step 5 above.
    b. Depressurize the house to 25 Pa using an envelope air moving/flow-regulating/flow measurement assembly, such as a blower door.
    c. Correct the duct pressure to measure 0 Pa of pressure differential between the house and the ductwork system.
    d. Read the CFM of duct leakage using the procedures for the specific equipment being used. (Note that most automatically calculating pressure gauges cannot compute the CFM25 automatically with a duct-to-house difference in pressure of 0 Pa, so the gauge setting should be set to read CFM instead of CFM25).

Testing shall be performed and reported by the permit holder, a North Carolina licensed general contractor, a North Carolina licensed HVAC contractor, a North Carolina licensed Home Inspector, a registered design professional, a certified BPI Envelope Professional or a certified HERS rater. A single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the duct testing fan assembly(s) has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E1554-07.

The duct leakage information, including duct leakage test selected and result, tester name, date, and contact information, shall be included on the certificate described in Section N1101.14.

For the Test Criteria, the report shall be produced in the following manner: perform the HVAC system air leakage test and record the CFM25. Calculate the total square feet of Conditioned Floor Area (CFA) served by that system. Multiply CFM25 by 100, divide the result by the CFA and

record the result. If the result is less than or equal to 5 CFM25/100SF for the "Total duct leakage test" or less than or equal to 4 CFM25/100SF for the "Duct leakage to the outside" test, then the HVAC system air tightness is acceptable.

Complete one duct leakage report for each HVAC system serving the home:

Property Address: _____

Test Performed: Total duct leakage or Duct leakage to the outside (circle one)

HVAC System Number: _____ Describe area of home served: _____

CFM25 Total _____. Conditioned Floor Area (CFA) served by system: _____ s.f.

CFM25 × 100 divided by CFA = ____ CFM25/100SF (e.g. 100 CFM25 × 100/2,000 CFA = 5 CFM25/100SF)

Fan attachment location _____

Company Name _____

Contact Information: _____

_____

_____ _____

Signature of Tester Date

Permit Holder, NC Licensed General Contractor, NC Licensed HVAC Contractor,
NC Licensed Home Inspector, *Registered Design Professional*,
Certified *BPI Envelope Professional,* or Certified *HERS Rater*
(circle one)

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Cottage Grove, WI

MUST BE COMPLETED BY BUILDER ON SITE

E-4D:

SAMPLE WORKSHEETS FOR RESIDENTIAL AIR AND DUCT LEAKAGE TESTING

E-4D.1
AIR SEALING: TESTING
(Section N1102.4.2.2)
Sample Worksheet for Alternative Residential Energy Code for Higher Efficiency

Air sealing. Building envelope air tightness shall be demonstrated by Section N1102.4.2.2:

Air sealing: Testing option (Section N1102.4.2.2) Sample Worksheet for Alternative Residential Energy Code for Higher Efficiency

N1102.4.2.2 Testing. Building envelope tightness shall be considered acceptable when items providing insulation enclosure in Section N1102.2.14 and enclosure air sealing in Section N1102.2.15 and air sealing in Section N1102.4.1 are addressed and when tested air leakage is less than or equal to one of the two following performance measurements:

1. 0.24 CFM50 (6.8 L/min)/square foot of surface area (SFSA) or
2. Four (4) air changes per hour (ACH50)

When tested with a blower door fan assembly, at a pressure of 0.2 inches water gauge (50 Pa), a single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the blower door fan assembly has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E779—03. Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances. Testing shall be reported by the permit holder, a North Carolina licensed general contractor, a North Carolina licensed HVAC contractor, a North Carolina licensed Home Inspector, a r*egistered design professional*, a certified *BPI Envelope Professional* or a certified *HERS rater*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed;
2. Dampers shall be closed, but not sealed, including exhaust, backdraft, and flue dampers;
3. Interior doors shall be open;
4. Exterior openings for continuous ventilation systems, air intake ducted to the return side of the conditioning system, and energy or heat recovery ventilators shall be closed and sealed;
5. Heating and cooling system(s) shall be turned off; and
6. Supply and return registers shall not be sealed.

The air leakage information, including building air leakage result, tester name, date, and contact information, shall be included on the certificate described in Section N1101.14.

F**or Test Criteria 1** in this section, the report shall be produced in the following manner: Perform the blower door test and record the *CFM50*_____. Calculate the total square feet of surface area for the building thermal envelope, all floors, ceilings, and walls (this includes windows and doors) and record the area_____. Divide *CFM50* by the total square feet and record the result below. If the result is less than or equal to **[0.24 CFM50/SFSA]** the envelope tightness is acceptable; or

For Test Criteria 2, the report shall be produced in the following manner: Perform a blower door test and record the *CFM50* = _____. Multiply the *CFM50* by 60 minutes to create CF/Hour50 and record = _____. Then calculate the total conditioned volume of the home and record = _____cubic feet. Divide the CF/Hour50 by the total volume and record the result = _____ ACH50. If the result is less than or equal to **[4 ACH50]** the envelope tightness is acceptable.

Property Address: _____

Fan attachment location _____ Company Name _____

Contact Information: _____

_____

_____ _____

Signature of Tester Date

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Cottage Grove, WI

Permit Holder, NC Licensed General Contractor, NC Licensed HVAC Contractor,
NC Licensed Home Inspector, *Registered Design Professional*,
Certified *BPI Envelope Professional,* or Certified *HERS Rater*
(circle one)

E-4D.2
DUCT SEALING. Duct air leakage test (Section N1103.3.3)
Sample Worksheet for Alternative Residential Energy Code for Higher Efficiency

N1103.3.3 Duct leakage (Prescriptive) and duct testing (Mandatory). Duct testing and duct leakage shall be verified by compliance with either Section N1103.3.3.1 or N1103.3.3.2. Duct testing shall be performed and reported by the permit holder, a NC licensed general contractor, a NC licensed HVAC contractor, a NC licensed Home Inspector, a *registered design professional*, a certified *BPI Envelope Professional* or a certified *HERS rater*. A single point depressurization, not temperature corrected, test is sufficient to comply with this provision, provided that the duct testing fan assembly(s) has been certified by the manufacturer to be capable of conducting tests in accordance with ASTM E1554—07.

The duct leakage information, including duct leakage test selected and result, tester name, date, and contact information, shall be included on the certificate described in Section N1101.3.

For the Test Criteria, the report shall be produced in the following manner: perform the HVAC system air leakage test and record the CFM25. Calculate the total square feet of Conditioned Floor Area (CFA) served by that system. Multiply CFM25 by 100, divide the result by the CFA and record the result. If the result is less than or equal to 4 CFM25/100SF for the "Total duct leakage test or less than or equal to 3 CFM25/100SF for the Duct leakage to the outside" test, then the HVAC system air tightness is acceptable.

Exceptions to testing requirements:

1. Duct systems or portions thereof inside the building thermal envelope shall not be required to be leak tested.
2. Installation of a partial system as part of replacement, renovation or addition does not require a duct leakage test.

1103.3.3.1 Total duct leakage. Total duct leakage less than or equal to 4 CFM (113 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area served by that system when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. During testing:

1. Block, if present, ventilation air duct(s) connected to the conditioning system.
2. The duct air leakage testing equipment shall be attached to the largest return in the system or to the air handler.
3. The filter shall be removed and the air handler power shall be turned off.
4. Supply boots or registers and return boxes or grilles shall be taped, plugged, or otherwise sealed air tight.
5. The hose for measuring the 25 Pascals of pressure differential shall be inserted into the boot of the supply that is nominally closest to the air handler.
6. Specific instructions from the duct testing equipment manufacturer shall be followed to reach duct test pressure and measure duct air leakage.

1103.3.3.2 Duct leakage to the outside. Conduct the test using fan pressurization of distribution system and building at a fixed reference pressure for combined supply and return leak. Duct leakage to the outside shall be less than or equal to 3 CFM (85 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area served by that system when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, relative to the outside, including the manufacturer's air handler enclosure.

During testing:

1. Block, if present, the ventilation air duct(s) connected to the conditioning system.
2. The duct air leakage testing equipment shall be attached to the largest return in the system or to the air handler.
3. The filter shall be removed and the air handler power shall be turned off.
4. Supply boots or registers and return boxes or grilles shall be taped, plugged, or otherwise sealed air tight or as tight as possible.
5. The hose for measuring the 25 Pascals of pressure differential shall be inserted into the boot of the supply that is nominally closest to the air handler.
6. Open all interconnecting doors in the building, close dampers for fireplaces and other operable dampers.
7. Set up an envelope air moving/flow-regulating/flow measurement assembly, such as a blower door, following the manufacturer's prescribed procedure.
8. Specific instructions from the duct testing equipment manufacturer shall be followed to reach duct test pressure and measure duct air leakage used in combination with a blower door. Typical steps are as follows:
    a. Depressurize the ductwork system to 25 Pa using the measurement hose in Step 5 above.
    b. Depressurize the house to 25 Pa using an envelope air moving/flow-regulating/flow measurement assembly, such as a blower door.
    c. Correct the duct pressure to measure 0 Pa of pressure differential between the house and the ductwork system.
    d. Read the CFM of duct leakage using the procedures for the specific equipment being used. (Note that most automatically calculating pressure gauges cannot compute the CFM25 automatically with a duct-to-house difference in pressure of 0 Pa, so the gauge setting should be set to read CFM instead of CFM25).

MUST BE COMPLETED BY BUILDER ON SITE

APPENDIX E

Complete one duct leakage report for each HVAC system serving the home:

Property Address: _____

HVAC System Number: _____ Describe area of home served: _____

CFM25 Total _____. Conditioned Floor Area (CFA) served by system: _____ s.f.

CFM25 × 100 divided by CFA = _____ CFM25/100 SF

(e.g. 50 CFM25 × 100/ 2,000 CFA = 2.5 CFM25/100SF)

Fan attachment location _____

Company Name _____

Contact Information: _____

_____

_____ _____

Signature of Tester Date

Permit Holder, NC Licensed General Contractor, NC Licensed HVAC Contractor,
NC Licensed Home Inspector, *Registered Design Professional*,
Certified *BPI Envelope Professional*, or Certified *HERS Rater*
(circle one)

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Required Ventilation

Model Number: 23-3276-16

Floor Length: 76 ft.

Floor Type

( ) 28 Wide (•) 32 Wide ( ) Triple Wide ( ) T-Ranch

[ ] Check if pod

Manufactor Specifications

Ridge Vent: **18 sq. in. per lf.**

Soffit Vent: **5.89 sq. in. per lf.**

House Required Ventilation

Required Ventilation for House:	1106.56	sq. in.
Inches Required for Soffit Ventilation:	553.28	sq. in.
Inches Required for Ridge Ventilation:	553.28	sq. in.
Number of Ridge Vents Required:	7.684444	pc.
	30.73778	**lf. of Ridge Vent**

Ventilatioin in House

Soffit Ventilation in house:	874	sq. in.	
Ridge Ventilatiion in house:	576	sq. in.	**52.05% through Ridge Vent**
Number of Ridge Vents in house:	8	pc.	
	32	**lf. of Ridge Vent**	

Code can be found at R806.2 in the NC Residential and the IRC

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HIGH WIND CALCULATIONS

FOR

CHAMPION
HOME BUILDERS

LILLINGTON, NC

CHAMPION 23-3969
5/12 , 7/12 PITCH
130 MPH
WIND EXPOSURE: C
ASCE 7-10

PREPARED BY:
BARLOW ENGINEERING. P.C.
6512 SIX FORKS RD, SUITE 203-B
RALEIGH, NC 27615

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CP- 1 Revised or Added page per PFS review of 11-24-19

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NARRATIVE

190568
Champion – 23-3969-011316
33’-4” x 76’-0” One Story
5/12,7/12
130 mph
Exposure C
NC
11/13/2019

The structure was analyzed at 130 mph (Vult) wind per ASCE 7-10 for the state of North Carolina.

It was assumed that the structure will be on a basement foundation. Ensure that the foundation is structurally adequate for the shear, uplift and downward point loads imposed at corner connections and similar locations. This house has 2 pitched roofs for means of conservatism the shear calculations have been done for the higher pitch. Porch calculations are also included.

Holdown calculations are provided. Please see the mark up plan for location of holdowns.

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Sharron Barry
DATE 12/4/19
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Cottage Grove, WI

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SECTION 1

ASCE 7-10 TRUSS CALCULATIONS

CP- 1 Revised or Added page per PFS review of 11-24-19

Job	Truss	Truss Type	Qty	Ply	Champion Homes 315 NC #108
90954	CC557327	HINGED ATTIC	1	1	Ref. #3157393

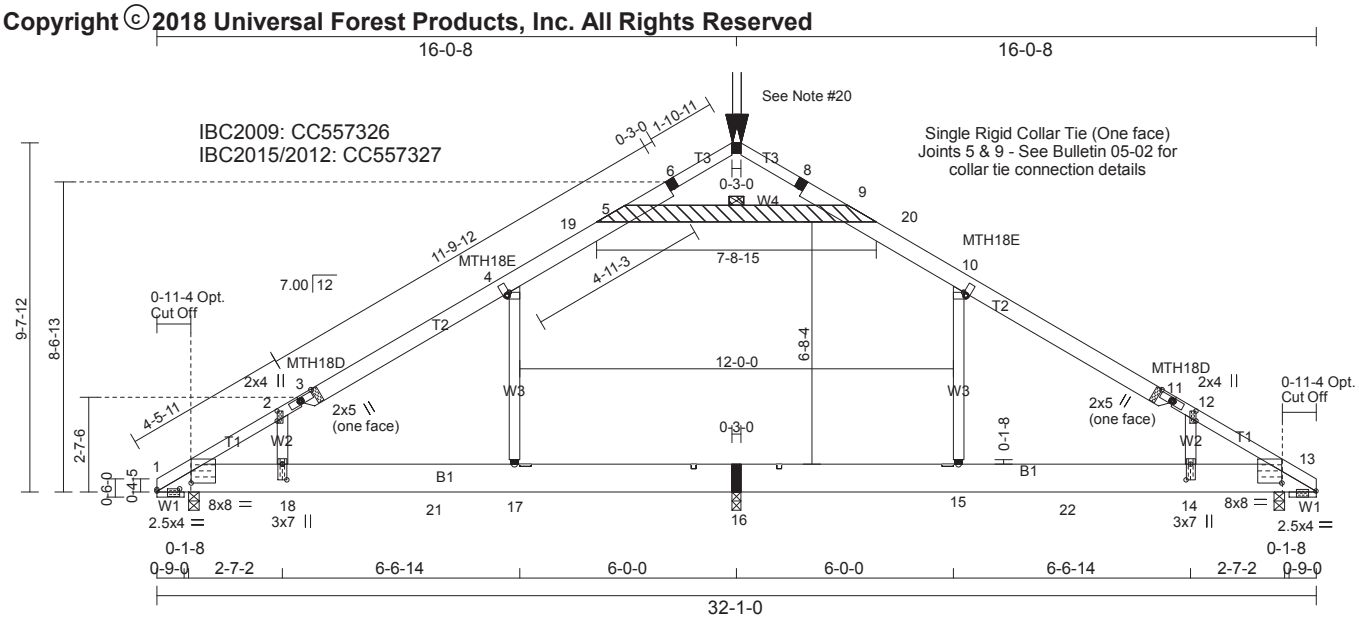

Plate Offsets (X,Y)-- [1:0-11-6,0-2-7], [2:0-2-0,0-0-0], [3:0-1-8,0-5-6], [3:0-0-11,0-0-0], [4:0-0-11,0-1-2], [10:0-0-11,0-1-2], [11:0-0-11,0-0-0], [11:0-1-8,0-5-6], [12:0-2-0,0-0-0], [13:0-11-6,0-2-7], [14:0-5-4,0-1-8], [18:0-5-4,0-1-8], [18:2-10-14,0-8-6], [18:3-5-10,0-8-6]

LOADING (psf)		**SPACING-**	2-0-0	**CSI.**		**DEFL.**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
TCLL	23.1	Plate Grip DOL	1.15	TC	0.73	Vert(LL)	0.55	17-18	>344	240	MT20	197/144
(Ground Snow=30.0)		Lumber DOL	1.15	BC	0.95	Vert(CT)	-0.52	17-18	>369	180	MT18HS	197/144
TCDL	7.0	Rep Stress Incr	NO	WB	0.94	Horz(CT)	0.02	13	n/a	n/a		
BCLL	0.0 *	Code	IBC2015/TPI2014	Matrix-R		Attic	-0.35	16-17	421	360	Weight: 215 lb	
BCDL	7.0		IBC2012/TPI2007								FT = 0%	

LUMBER-
TOP CHORD 2x4 SP No.2 or 2x4 SPF No.2 *Except* T2: 2x6 SP No.1 or 2x6 SPF No.2
BOT CHORD 2x10 SP No.1 or 2x10 SPF No.2
WEBS 2x4 SP No.2 or 2x4 SPF No.2 *Except* W4: 2x6 SP No.2 or 2x6 SPF No.2, W1: 1-1/2x1-11/16 SPF Stud

BRACING-
TOP CHORD Structural wood sheathing directly applied or 4-4-5 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-11-2 oc bracing.
WEBS 1 Row at midpt 5-9

REACTIONS. (lb/size) 1=1151/0-3-8 (min. 0-1-13), 13=1150/0-3-8 (min. 0-1-13), 16=359/0-3-0 (min. 0-1-8)
Max Horz 1=497(LC 8)
Max Uplift 1=-789(LC 9), 13=-791(LC 10), 16=-189(LC 9)
Max Grav 1=1151(LC 1), 13=1150(LC 1), 16=675(LC 2)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1411/840, 2-3=-1502/1077, 3-4=-1469/1065, 4-35=-1287/1114, 5-35=-1188/1128, 5-6=-371/286, 6-7=-271/296, 7-8=-268/293, 8-9=-368/285, 9-36=-1187/1127, 10-36=-1287/1113, 10-11=-1469/1065, 11-12=-1502/1077, 12-13=-1411/835
BOT CHORD 1-18=-686/1191, 18-37=-686/1191, 19-37=-686/1191, 17-19=-686/1191, 17-24=-686/1191, 24-25=-686/1191, 25-26=-686/1191, 22-26=-686/1191, 20-22=-686/1191, 20-21=-686/1191, 21-23=-686/1191, 16-23=-686/1191, 16-29=-686/1191, 27-29=-686/1191, 27-28=-686/1191, 28-30=-686/1191, 30-33=-686/1191, 31-33=-686/1191, 31-32=-686/1191, 15-32=-686/1191, 15-34=-686/1191, 34-38=-686/1191, 14-38=-686/1191, 13-14=-686/1191
WEBS 10-15=-143/262, 2-18=-350/526, 12-14=-351/526, 4-17=-148/261, 5-9=-1012/983

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Tension (lb)/ Shear (lb)/ Moment (lb-in)
5=1012/983/106/7091, 6=315/292/82/0, 7=212/247/162/0, 8=311/289/80/0, 9=1012/983/105/7175, 15=143/262/0/0, 16=686/1191/385/0, 17=148/261/0/0

NOTES-
1) Dado: 0-1-8 length x 0-1-8 deep dado, 1-0-0 to right edge from joint 16 on the top face.
2) Dado: 0-3-10 length x 0-0-12 deep dado, 5-6-14 to right edge from joint 16 on the top face.
3) Dado: 0-1-8 length x 0-1-8 deep dado, 1-0-0 to left edge from joint 16 on the top face.

PFS APPROVED Sharron Barry
DATE 12/4/19
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PFS CORPORATION
Cottage Grove, WI

E-signed by Kevin Freeman

SOUTH CAROLINA REGISTERED 20654 PROFESSIONAL ENGINEER KEVIN W. FREEMAN
2/15/2018

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

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4) Dado: 0-3-10 length x 0-0-12 deep dado, 5-6-14 to left edge from joint 16 on the top face.
5) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=2.8psf; BCDL=2.8psf; h=30ft; Cat. II; Exp C; enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
6) TCLL: ASCE 7-10; Pg=30.0 psf (ground snow); Ps=23.1 psf (roof snow); Category II; Exp C; Partially Exp.; Ct=1.1
7) Roof design snow load has been reduced to account for slope.
8) Unbalanced snow loads have been considered for this design.
9) All plates are MT20 plates unless otherwise indicated.
10) See HINGE PLATE DETAILS for plate placement.
11) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
12) All additional member connections shall be provided by others for forces as indicated.
13) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
14) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 7.0psf.
15) Ceiling dead load (5.0 psf) on member(s). 4-5, 9-10, 5-9
16) Bottom chord live load (30.0 psf) and additional bottom chord dead load (0.0 psf) applied only to room. 16-17, 15-16
17) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 789 lb uplift at joint 1, 791 lb uplift at joint 13 and 189 lb uplift at joint 16.
18) Fixity of member 5 - 9 has been changed.
19) This truss is designed in accordance with the 2015 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
20) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 180 lb down and 238 lb up at 16-0-2 on top chord. The design/selection of such connection device(s) is the responsibility of others.
21) Attic room checked for L/360 deflection.
22) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).
23) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
24) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
25) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
26) Reference UFP Engineering Bulletin 06-06 for information on re-grading ripped lumber.
27) Based on: CC557326
28) Revision: IBC2015/2012 version

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Cottage Grove, WI

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Universal Forest Products, Inc. 2801 EAST BELTLINE RD, NE
PHONE (616)-364-6161 FAX (616)-365-0060 GRAND RAPIDS, MI 49525

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Universal Forest Products®

Job	Truss	MFG	Customer
90954	CC557327	315	CHAMPION HOMES

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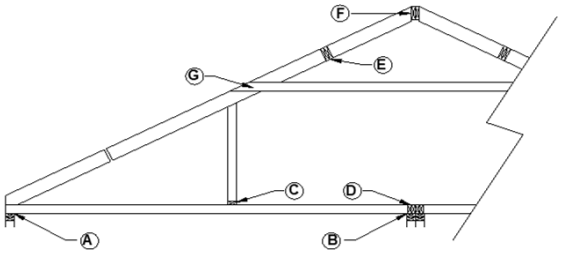
Cottage Grove, WI

TRUSS CONNECTIONS

TRUSS NUMBER : **CC557327**
PROJECT NUMBER : **190284**
TRUSS PITCH : **7/12**
MODULE WIDTH : **15'-2"**
TRUSS WIDTH : **32'-1"**



UPLIFT CONNECTIONS (MWFRS LOADS):

150 / 119 mph									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H6 TWIST STRAP
791	WIND	1.6	NO GOOD	N/A	N/A	OK	3	8	OK
	ALTERNATE:		(9) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (6) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(2) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(4) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP
95	WIND	1.6	OK	2	2	OK	2	2	OK
	ALTERNATE:		(2) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
130 / 101 mph (ADJUSTED)									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H6 TWIST STRAP
594	WIND	1.6	NO GOOD	N/A	N/A	OK	2	6	OK
	ALTERNATE:		(7) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (5) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(2) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(3) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H3 TWIST STRAP
71	WIND	1.6	OK	2	2	OK	2	2	OK
	ALTERNATE:		(2) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
115 / 90 mph (ADJUSTED)									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H8 TWIST STRAP
464	WIND	1.6	OK	3	5	OK	2	5	OK
	ALTERNATE:		(6) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (4) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(1) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(2) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H3 TWIST STRAP
56	WIND	1.6	OK	2	2	OK	2	2	OK
	ALTERNATE:		(2) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						

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Cottage Grove, WI

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

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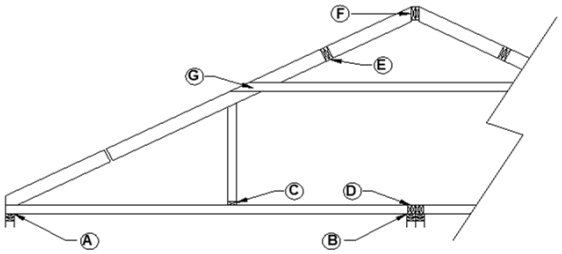
TRUSS CONNECTIONS

TRUSS NUMBER : **CC557327**
PROJECT NUMBER : **190284**
TRUSS PITCH : **7/12**
MODULE WIDTH : **15'-2"**
TRUSS WIDTH : **32'-1"**



MAXIMUM OF DL + LL + 30 psf GSL & 150 / 119 mph WIND									
CONDITION "C" - KNEEWALL TO BOTTOM CHORD:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
261	SNOW	1.15	OK	3	3	OK	2	3	OK	3
CONDITION "D" - BOTTOM CHORD AT MATING LINE:										
			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS16 STRAP	10 d NAILS
1191	SNOW	1.15	NO GOOD	N/A	N/A	NO GOOD	N/A	N/A	OK	11
		ALTERNATE:	USE (10) 16 d NAILS THROUGH DECKING EACH SIDE							
SHEAR (lbs)	CASE	CD								
385	SNOW	1.15	USE (5) 16 d NAILS TOENAILED INTO BEAM (WHERE NO BEARING WALL BELOW)							
		ALTERNATE:	OK FOR SIMPSON L90 ANGLE							
CONDITION "E" - TOP CHORD FLIP:										
TENSION (lbs)	CASE	CD								
289	SNOW	1.15	USE (6) 6 d NAILS THROUGH SHEATHING EACH SIDE							
		ALTERNATE:	USE (7) 16 ga STAPLE THROUGH SHEATHING EACH SIDE							
SHEAR (lbs)	CASE	CD								
80	SNOW	1.15	USE (2) 16 d NAILS TOENAILED EACH END PLUS USE 10 d NAILS AT 24 in O.C. THROUGH PLATES							
CONDITION "F" - RIDGE:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
247	SNOW	1.15	OK	2	3	OK	2	3	OK	3
SHEAR (lbs)	CASE	CD								
162	SNOW	1.15	USE (2) 16 d NAILS TOENAILED INTO BEAM EACH RAFTER							
CONDITION "G" - COLLAR TIE:			SEE UFP BULLETIN 05-02							

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RALEIGH, NC 27615

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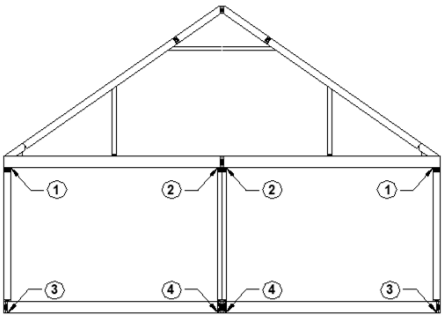
COMPONENT LOAD SUMMARY

EXTERIOR WALL DEAD LOAD =	12	psf	x	10	ft	=	120 plf
MATING WALL DEAD LOAD =	8	psf	x	10	ft	=	80 plf
FLOOR DEAD LOAD =	10	psf	x	16	ft / 2 =		80 plf
FLOOR LIVE LOAD =	40	psf	x	16	ft / 2 =		320 plf
CEILING DEAD LOAD =	5	psf	x	16	ft / 2 =		40 plf

LOCATION 1 =	EXT. WALL HEADER & EXT. WALL STUD
LOCATION 2 =	M. WALL HEADER & M. WALL STUD
LOCATION 3 =	PERIMETER BAND
LOCATION 4 =	CENTER GIRDER
LOCATIONS 3 & 4 MAY BE USED TO GENERATE FOUNDATION LOADS	

* CROSS SECTION IS FOR REFERENCE ONLY
AND MAY NOT REFLECT ACTUAL TRUSS



TRUSS CC557327, 7/12 PITCH, 32'-1" WIDTH

COMPONENT LOADS (lbs/ft)

30 psf GROUND SNOW (MATING WALL LOADS ARE PER SIDE OF LINE)

LOCATION	1	2	3	4
DEAD LOAD	294	86	494	246
LIVE LOAD	282	83	602	403
TOTAL LOAD	576	169	1096	649

C & C UPLIFT

LOCATION	1	2	3	4
UPLIFT (0.6) DEAD LOAD	176	52	296	148
150 / 119 mph UPLIFT	396	47	-100	-
130 / 101 mph UPLIFT	297	36	-1	-
115 / 90 mph UPLIFT	232	28	-	-

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RALEIGH, NC 27615

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Job	Truss	Truss Type	Qty	Ply	Champion Homes 315 NC
89373	HM773855	HINGE MONO	1	1	Ref. #3157316

Universal Forest Products Inc., Grand Rapids, MI 49525, Weston Gorby 8.030 e Apr 8 2017 MiTek Industries, Inc. Fri Sep 22 13:38:30 2017 Page 1 of 2

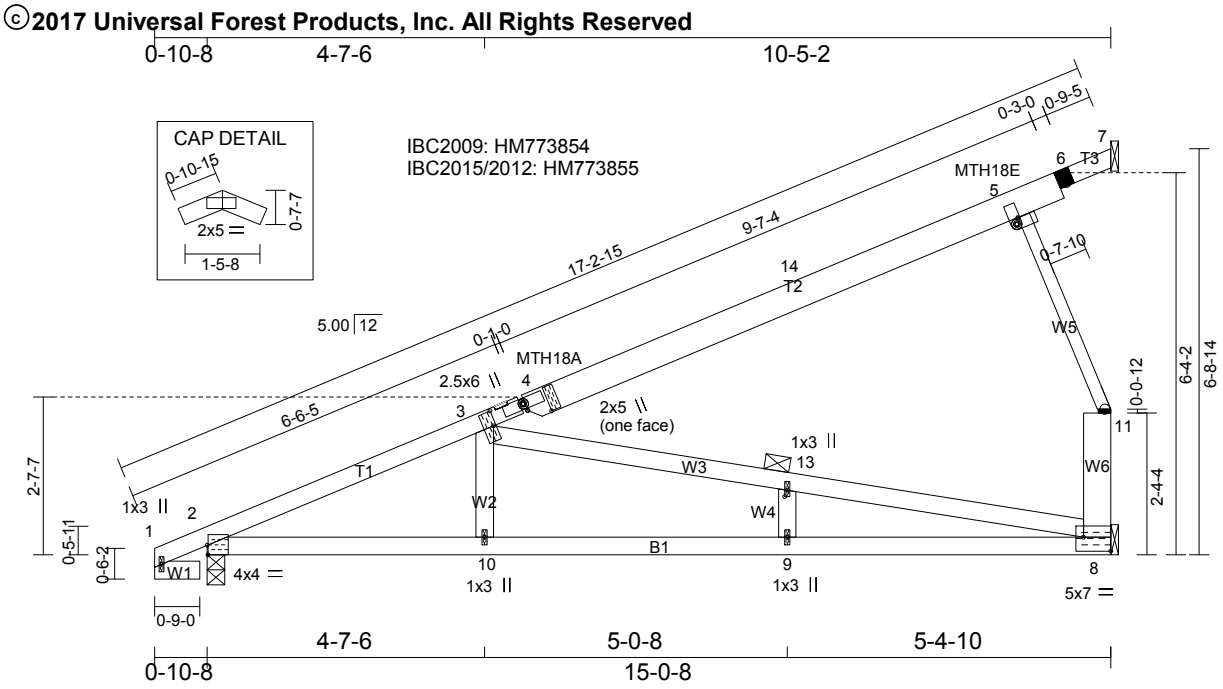

Plate Offsets (X,Y)-- [2:0-0-3,Edge], [3:0-3-0,0-0-8], [4:0-0-5,0-1-9], [4:0-1-15,0-4-6], [5:0-0-11,0-1-2], [8:Edge,0-2-12], [13:0-1-4,0-0-8]

SPACING-: 2-0-0		SPACING-: 1-4-0		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
LOADING (psf)		LOADING (psf)		Plate Grip DOL	1.15	TC	0.90	Vert(LL)	-0.22	8-9	>808	240	MT20	197/144
TCLL	23.1	TCLL	34.7	Lumber DOL	1.15	BC	0.85	Vert(CT)	-0.40	8-9	>442	180	MT18HS	197/144
(Ground Snow=30.0)		(Ground Snow=45.0)		Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.02	8	n/a	n/a		
TCDL	10.0	TCDL	15.0	Code	IBC2015/TPI2014	Matrix-R							Weight: 83 lb	
BCLL	0.0	BCLL	0.0		IBC2012/TPI2007								FT = 0%	
BCDL	10.0	BCDL	15.0											

LUMBER-
TOP CHORD 2x4 SP No.1 *Except*
T2: 2x6 SP No.1 or 2x6 SPF No.2, T3: 2x4 SPF No.2
BOT CHORD 2x4 SP No.1
WEBS 2x4 SP No.2 *Except*
W3: 2x4 SP No.2 or 2x4 SPF No.2
W6: 2x6 SP No.1 or 2x6 SPF No.2, W5: 2x3 SPF Stud
W1: 2x4 SPF Stud

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 5-2-10 oc bracing.
JOINTS 1 Brace at Jt(s): 11, 13

REACTIONS. (lb/size) 2=721/0-3-8 (min. 0-1-8), 8=622/Mechanical, 7=-0/Mechanical
Max Horz 2=419(LC 9), 7=-62(LC 14)
Max Uplift 2=-392(LC 9), 8=-497(LC 9)
Max Grav 2=752(LC 14), 8=733(LC 14)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/21, 2-15=-1319/623, 3-15=-1219/625, 3-16=-326/0, 16-17=-322/0, 4-17=-318/0, 4-14=-338/22, 5-14=-225/32, 5-6=-111/49, 6-7=-70/57, 8-11=-404/414
BOT CHORD 2-10=-960/1108, 9-10=-960/1108, 8-9=-960/1108
WEBS 3-10=0/330, 3-13=-973/825, 8-13=-975/815, 5-11=-433/443, 9-13=0/76

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Tension (lb)/ Shear (lb)/ Moment (lb-in)
6=86/55/38/0, 11=433/443/157/0

NOTES-
1) Dado: 0-2-10 length x 0-0-12 deep dado, 0-2-4 to right edge from joint 4 on the top face.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph @24in o.c.; TCDL=4.0psf; BCDL=4.0psf; (Alt. 180mph @16in o.c.; TCDL=6.0psf; BCDL=6.0psf); h=30ft; Cat. II; Exp C; enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

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GEORGIA REGISTERED No.26639 PROFESSIONAL ENGINEER KEVIN W. FREEMAN
2/22/2019

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use in a specific state. The final determination on whether a truss design is acceptable under the locally adopted building code rest with the building official or designated appointee.

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3) TCLL: ASCE 7-10; Pg=30.0 psf (ground snow); Ps=23.1 psf (roof snow); Category II; Exp C; Partially Exp.; Ct=1.1
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 19.0 psf or 2.00 times flat roof load of 23.1 psf on overhangs non-concurrent with other live loads.
7) All plates are MT20 plates unless otherwise indicated.
8) See HINGE PLATE DETAILS for plate placement.
9) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
10) All additional member connections shall be provided by others for forces as indicated.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 392 lb uplift at joint 2 and 497 lb uplift at joint 8.
13) This truss is designed in accordance with the 2015 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
14) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
15) Take precaution to keep the chords in plane, any bending or twisting of the hinge plate must be repaired before the building is put into service.
16) The field-installed members are an integral part of the truss design. Retain a design professional to specify final field connections and temporary supports. All field-installed members must be properly fastened prior to applying any loading to the truss. This design anticipates the final set position.
17) Based on: HM773854
18) Revision: IBC2015/2012 Version

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Universal Forest Products®

Job	Truss	MFG	Customer
89373	HM773855	315	CHAMPION HOMES

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Corporate Engineering
2801 East Beltline, NE Grand Rapids, MI 49525-9736 (616) 364-6161 Fax (616) 365-0060

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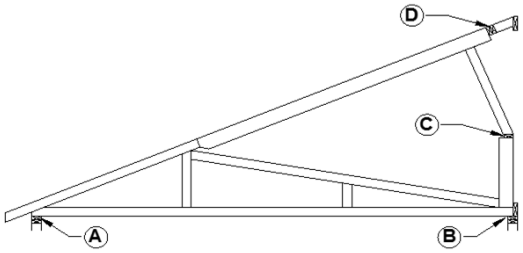
2019

TRUSS CONNECTIONS

TRUSS NUMBER : **HM773855**
PROJECT NUMBER : **190127**
TRUSS PITCH : **5/12**
TRUSS SPAN : **15'-2"**
UNIT WIDTH : **30'-4"**



UPLIFT CONNECTIONS (MWFRS LOADS):

150 / 119 mph									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H8 TWIST STRAP
392	WIND	1.6	OK	3	4	OK	2	4	OK
	ALTERNATE:		(5) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(1) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(2) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP
497	WIND	1.6	NO GOOD	N/A	N/A	OK	2	5	OK
	ALTERNATE:		(6) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (4) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
130 / 101 mph (ADJUSTED)									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H3 TWIST STRAP
294	WIND	1.6	OK	2	3	OK	2	3	OK
	ALTERNATE:		(4) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(1) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(2) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H8 TWIST STRAP
373	WIND	1.6	OK	3	4	OK	2	4	OK
	ALTERNATE:		(5) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
115 / 90 mph (ADJUSTED)									
CONDITION "A" - EXTERIOR WALL:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H3 TWIST STRAP
231	WIND	1.6	OK	2	3	OK	2	3	OK
	ALTERNATE:		(3) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (2) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						
	ALTERNATE:		(1) SIMPSON SDWC15600 SCREW						
	ALTERNATE:		(2) #10 x 5" WOOD SCREW WITH MINIMUM 2 in PENETRATION						
CONDITION "B" - MATING WALL (PER SIDE):			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP
UPLIFT (lbs / PER SIDE)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON H3 TWIST STRAP
292	WIND	1.6	OK	2	3	OK	2	3	OK
	ALTERNATE:		(4) 16 d NAILS TOENAILED THROUGH BC INTO BAND PLUS (3) 16 d NAILS THROUGH SHEATHING INTO BAND AND STUD						

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RALEIGH, NC 27615

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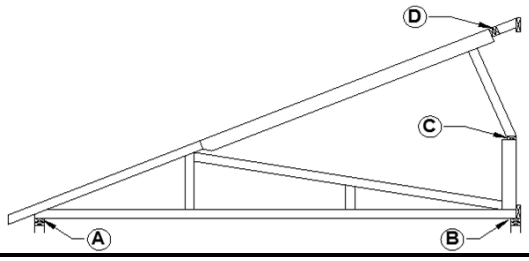
TRUSS CONNECTIONS

TRUSS NUMBER : **HM773855**
PROJECT NUMBER : **190127**
TRUSS PITCH : **5/12**
TRUSS SPAN : **15'-2"**
UNIT WIDTH : **30'-4"**



MAXIMUM OF DL + LL + 30 psf GSL & 150 / 119 mph WIND

CONDITION "C" - KNEEWALL TO WEB MEMBER:			CHECK STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END	QTY / END	CHECK ALT. STRAP	QTY / END
TENSION (lbs)	CASE	CD	1 1/2" x 26ga STRAP	10 d NAILS	16 ga STAPLE	1 1/2" x 20 ga STRAP	10 d NAILS	16 ga STAPLE	SIMPSON CS20 STRAP	10 d NAILS
443	SNOW	1.15	OK	4	5	OK	2	5	OK	5
SHEAR (lbs)	CASE	CD								
157	SNOW	1.15	USE (3) 8 d NAILS TOENAILED KNEEWALL TO PLATE AND WEB MEMBER TO PLATE							
CONDITION "D" - TOP CHORD FLIP:										
TENSION (lbs)	CASE	CD								
55	SNOW	1.15	USE (2) 6 d NAILS THROUGH SHEATHING EACH SIDE							
			ALTERNATE: USE (2) 16 ga STAPLE THROUGH SHEATHING EACH SIDE							
SHEAR (lbs)	CASE	CD								
38	SNOW	1.15	USE (2) 16 d NAILS TOENAILED EACH END PLUS USE 10 d NAILS AT 24 in O.C. THROUGH PLATES							

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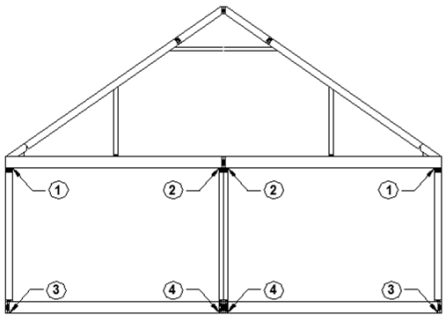
COMPONENT LOAD SUMMARY

EXTERIOR WALL DEAD LOAD =	12	psf	x	10	ft	=	120 plf
MATING WALL DEAD LOAD =	8	psf	x	10	ft	=	80 plf
FLOOR DEAD LOAD =	10	psf	x	15.16	ft / 2 =		75.8 plf
FLOOR LIVE LOAD =	40	psf	x	15.16	ft / 2 =		303.2 plf
CEILING DEAD LOAD =	5	psf	x	15.16	ft / 2 =		37.9 plf

LOCATION 1 =	EXT. WALL HEADER & EXT. WALL STUD
LOCATION 2 =	M. WALL HEADER & M. WALL STUD
LOCATION 3 =	PERIMETER BAND
LOCATION 4 =	CENTER GIRDER
LOCATIONS 3 & 4 MAY BE USED TO GENERATE FOUNDATION LOADS	

* CROSS SECTION IS FOR REFERENCE ONLY AND MAY NOT REFLECT ACTUAL TRUSS



TRUSS HM773855, 5/12 PITCH, 15'-2" WIDTH

COMPONENT LOADS (lbs/ft)

30 psf GROUND SNOW (MATING WALL LOADS ARE PER SIDE OF LINE)

LOCATION	1	2	3	4
DEAD LOAD	175	171	371	327
LIVE LOAD	201	196	505	500
TOTAL LOAD	376	367	876	827

C & C UPLIFT

LOCATION	1	2	3	4
UPLIFT (0.6) DEAD LOAD	105	103	223	196
150 / 119 mph UPLIFT	196	249	-	-53
130 / 101 mph UPLIFT	147	187	-	-
115 / 90 mph UPLIFT	116	146	-	-

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SECTION 2

STRUCTURAL CALCULATIONS

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101/130 mph WIND, 7/12 PITCH, FIELD PRESSURE (27.73 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 4 SPF STUD GRADE	12	740	0.23	9 ft	2 x 4 SPF STUD GRADE	12	295	0.376	10 ft	2 x 4 SPF STUD GRADE	12	**NG**	-
		16	295	0.306			16	**NG**	-			16	**NG**	-
		19.2	295	0.367			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SPF #2	12	1555	0.197		2 x 4 SPF #2	12	1025	0.322		2 x 4 SPF #2	12	**NG**	-
		16	1255	0.262			16	730	0.43			16	**NG**	-
		19.2	1020	0.315			19.2	**NG**	-			19.2	**NG**	-
		24	665	0.394			24	**NG**	-			24	**NG**	-
	2 x 4 SYP #2	12	1385	0.197		2 x 4 SYP #2	12	855	0.322		2 x 4 SYP #2	12	**NG**	-
		16	1030	0.262			16	495	0.43			16	**NG**	-
		19.2	750	0.315			19.2	**NG**	-			19.2	**NG**	-
		24	295	0.394			24	**NG**	-			24	**NG**	-
	2 x 6 SPF STUD GRADE	12	4770	0.059		2 x 6 SPF STUD GRADE	12	3580	0.097		2 x 6 SPF STUD GRADE	12	2585	0.15
		16	4155	0.079			16	2915	0.129			16	1885	0.2
		19.2	3675	0.095			19.2	2385	0.155			19.2	1305	0.24
		24	2955	0.118			24	1560	0.194			24	320	0.3
	2 x 6 SPF #2	12	7360	0.051		2 x 6 SPF #2	12	5605	0.083		2 x 6 SPF #2	12	4260	0.129
		16	6785	0.068			16	5030	0.111			16	3695	0.172
		19.2	6355	0.081			19.2	4600	0.133			19.2	3270	0.206
		24	5740	0.101			24	3980	0.166			24	2650	0.257
	2 x 6 SYP #2	12	7265	0.051		2 x 6 SYP #2	12	5430	0.083		2 x 6 SYP #2	12	4055	0.129
		16	6610	0.068			16	4790	0.111			16	3430	0.172
		19.2	6120	0.081			19.2	4305	0.133			19.2	2950	0.206
		24	5420	0.101			24	3600	0.166			24	2240	0.257

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THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

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6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

101/130 mph WIND, 7/12 PITCH, EDGE PRESSURE (33.66 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 4 SPF STUD GRADE	12	455	0.279	9 ft	2 x 4 SPF STUD GRADE	12	**NG**	-	10 ft	2 x 4 SPF STUD GRADE	12	**NG**	-
		16	295	0.372			16	**NG**	-			16	**NG**	-
		19.2	**NG**	-			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SPF #2	12	1360	0.239		2 x 4 SPF #2	12	835	0.391		2 x 4 SPF #2	12	**NG**	-
		16	1005	0.318			16	**NG**	-			16	**NG**	-
		19.2	720	0.382			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SYP #2	12	1160	0.239		2 x 4 SYP #2	12	630	0.391		2 x 4 SYP #2	12	**NG**	-
		16	730	0.318			16	**NG**	-			16	**NG**	-
		19.2	365	0.382			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 6 SPF STUD GRADE	12	4375	0.072		2 x 6 SPF STUD GRADE	12	3155	0.118		2 x 6 SPF STUD GRADE	12	2140	0.182
		16	3645	0.096			16	2350	0.157			16	1265	0.243
		19.2	3065	0.115			19.2	1690	0.188			19.2	485	0.292
		24	2165	0.144			24	570	0.235			24	295	0.365
	2 x 6 SPF #2	12	6990	0.062		2 x 6 SPF #2	12	5235	0.101		2 x 6 SPF #2	12	3895	0.156
		16	6325	0.082			16	4575	0.134			16	3245	0.208
		19.2	5830	0.098			19.2	4070	0.161			19.2	2745	0.25
		24	5110	0.123			24	3340	0.202			24	1995	0.313
	2 x 6 SYP #2	12	6840	0.062		2 x 6 SYP #2	12	5015	0.101		2 x 6 SYP #2	12	3650	0.156
		16	6090	0.082			16	4275	0.134			16	2920	0.208
		19.2	5525	0.098			19.2	3705	0.161			19.2	2345	0.25
		24	4705	0.123			24	2865	0.202			24	1465	0.313

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RALEIGH, NC 27615

CHAMPION HOMES of NC

EXTERIOR WALL HEADER - 1 STORY & 2 / 3 STORY UPPER LEVEL (LOCATION 1) HEADERS
TRUSS CC557327 2X4 FOR (2) MEMBER HEADERS
7/12 PITCH, 32.08 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD 2x6 FOR (3) MEMBER HEADERS

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	MIN. NUMBER OF JACKSTUDS REQ'D EACH END SPF #2	SYP #2	SPF STUD	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 4 SPF #2	1	282	576	2 ' - 3"	Lb	0.049	1	1	2	396	458
2 x 6 SPF #2	1	282	576	3 ' - 4"	Lb	0.058	2	2	2	396	669
2 x 8 SPF #2	1	282	576	4 ' - 3"	Lb	0.066	2	2	2	396	849
2 x 10 SPF #2	1	282	576	5 ' - 2"	Lb	0.07	2	2	2	396	1037
2 x 12 SPF #2	1	282	576	6 ' - 0"	Lb	0.071	2	2	3	396	1202
2 x 4 SYP #2	1	282	576	2 ' - 1"	Lb	0.035	1	1	2	396	419
2 x 6 SYP #2	1	282	576	3 ' - 2"	Lb	0.045	2	2	2	396	627
2 x 8 SYP #2	1	282	576	4 ' - 0"	Lb	0.051	2	2	2	396	796
2 x 10 SYP #2	1	282	576	4 ' - 9"	Lb	0.049	2	2	2	396	945
2 x 12 SYP #2	1	282	576	5 ' - 9"	Lb	0.059	2	2	2	396	1149
1.5 x 3.5 LVL	1	282	576	3 ' - 2"	Lb	0.135	2	2	2	396	643
1.5 x 5.5 LVL	1	282	576	5 ' - 0"	Lb	0.2	2	2	2	396	996
1.5 x 7.25 LVL	1	282	576	6 ' - 6"	Lb	0.254	2	2	3	396	1302
1.5 x 9.25 LVL	1	282	576	8 ' - 3"	Lb	0.314	3	3	3	396	1648
1.5 x 11.25 LVL	1	282	576	10 ' - 0"	Lb	0.373	3	3	3	396	1991
1.5 x 12 LVL	1	282	576	10 ' - 8"	Lb	0.394	3	3	3	396	2119
1.5 x 14 LVL	1	282	576	12 ' - 5"	Lb	0.451	3	3	3	396	2461
1.5 x 16 LVL	1	282	576	14 ' - 1"	Lb	0.506	3	3	3	396	2800
1.5 x 18 LVL	1	282	576	15 ' - 10"	Lb	0.56	3	3	3	396	3137
1.5 x 20 LVL	1	282	576	17 ' - 6"	Lb	0.614	3	3	3	396	3474
1.5 x 22 LVL	1	282	576	19 ' - 2"	Lb	0.668	3	3	4	396	3810
1.5 x 24 LVL	1	282	576	20 ' - 11"	Lb	0.72	3	3	4	396	4145
2 x 4 SPF #2	2	282	576	3 ' - 3"	Lb	0.099	1	1	1	396	648
2 x 6 SPF #2	2	282	576	4 ' - 9"	Lb	0.116	1	1	1	396	946
2 x 8 SPF #2	2	282	576	6 ' - 0"	Lb	0.131	1	1	2	396	1200
2 x 10 SPF #2	2	282	576	7 ' - 4"	Lb	0.141	2	2	2	396	1466
2 x 12 SPF #2	2	282	576	8 ' - 7"	Lb	0.141	2	2	2	396	1700
2 x 4 SYP #2	2	282	576	2 ' - 11"	Lb	0.069	1	1	1	396	593
2 x 6 SYP #2	2	282	576	4 ' - 5"	Lb	0.09	1	1	1	396	887
2 x 8 SYP #2	2	282	576	5 ' - 8"	Lb	0.102	1	1	2	396	1126
2 x 10 SYP #2	2	282	576	6 ' - 8"	Lb	0.097	2	2	2	396	1336
2 x 12 SYP #2	2	282	576	8 ' - 2"	Lb	0.118	2	2	2	396	1625
1.5 x 3.5 LVL	2	282	576	4 ' - 7"	Lb	0.27	1	1	1	396	910
1.5 x 5.5 LVL	2	282	576	7 ' - 1"	Lb	0.4	2	2	2	396	1409
1.5 x 7.25 LVL	2	282	576	9 ' - 3"	Lb	0.508	2	2	2	396	1841
1.5 x 9.25 LVL	2	282	576	11 ' - 9"	Lb	0.628	2	2	3	396	2330
1.5 x 11.25 LVL	2	282	576	14 ' - 2"	Lb	0.745	3	3	3	396	2816
1.5 x 12 LVL	2	282	576	15 ' - 1"	Lb	0.788	3	3	3	396	2997
1.5 x 14 LVL	2	282	576	17 ' - 6"	Lb	0.901	3	3	3	396	3480
1.5 x 16 LVL	2	282	576	19 ' - 11"	Lb	1.012	3	3	3	396	3959
1.5 x 18 LVL	2	282	576	22 ' - 4"	Lb	1.121	3	3	3	396	4437
1.5 x 20 LVL	2	282	576	24 ' - 9"	Lb	1.228	3	3	4	396	4913
1.5 x 22 LVL	2	282	576	27 ' - 2"	Lb	1.335	3	3	4	396	5388
1.5 x 24 LVL	2	282	576	29 ' - 7"	Lb	1.44	3	3	4	396	5861
2 x 4 SPF #2	3	282	576	4 ' - 0"	Lb	0.148	1	1	1	396	793
2 x 6 SPF #2	3	282	576	5 ' - 10"	Lb	0.174	1	1	1	396	1158
2 x 8 SPF #2	3	282	576	7 ' - 5"	Lb	0.197	1	1	1	396	1470
2 x 10 SPF #2	3	282	576	9 ' - 0"	Lb	0.211	1	1	1	396	1795
2 x 12 SPF #2	3	282	576	10 ' - 6"	Lb	0.212	1	1	1	396	2082
2 x 4 SYP #2	3	282	576	3 ' - 8"	Lb	0.104	1	1	1	396	726
2 x 6 SYP #2	3	282	576	5 ' - 5"	Lb	0.134	1	1	1	396	1086
2 x 8 SYP #2	3	282	576	6 ' - 11"	Lb	0.153	1	1	1	396	1379
2 x 10 SYP #2	3	282	576	8 ' - 3"	Lb	0.146	1	1	1	396	1637
2 x 12 SYP #2	3	282	576	10 ' - 0"	Lb	0.177	1	1	1	396	1991
1.5 x 3.5 LVL	3	282	576	5 ' - 7"	Lb	0.405	1	1	1	396	1114
1.5 x 5.5 LVL	3	282	576	8 ' - 8"	Lb	0.599	1	1	1	396	1726
1.5 x 7.25 LVL	3	282	576	11 ' - 4"	Lb	0.763	1	1	1	396	2255
1.5 x 9.25 LVL	3	282	576	14 ' - 4"	Lb	0.942	1	1	1	396	2854
1.5 x 11.25 LVL	3	282	576	17 ' - 5"	Lb	1.118	1	1	2	396	3449
1.5 x 12 LVL	3	282	576	18 ' - 6"	Lb	1.182	1	1	2	396	3671
1.5 x 14 LVL	3	282	576	21 ' - 6"	Lb	1.352	1	1	2	396	4262
1.5 x 16 LVL	3	282	576	24 ' - 5"	Lb	1.518	2	2	2	396	4849
1.5 x 18 LVL	3	282	576	27 ' - 5"	Lb	1.681	2	2	2	396	5434
1.5 x 20 LVL	3	282	576	30 ' - 4"	Lb	1.843	2	2	2	396	6017
1.5 x 22 LVL	3	282	576	33 ' - 3"	Lb	2.003	2	2	3	396	6599
1.5 x 24 LVL	3	282	576	36 ' - 3"	Lb	2.16	2	2	3	396	7179

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

ALL WINDS, ALL PITCHES, LATERAL PRESSURE (5 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 3 SPF STUD GRADE	12	610	0.114	9 ft	2 x 3 SPF STUD GRADE	12	435	0.186	10 ft	2 x 3 SPF STUD GRADE	12	310	0.288
		16	540	0.151			16	370	0.248			16	295	0.385
		19.2	490	0.182			19.2	320	0.298			19.2	295	0.461
		24	420	0.227			24	295	0.372			24	**NG**	-
	2 x 3 SPF #2	12	830	0.097		2 x 3 SPF #2	12	615	0.159		2 x 3 SPF #2	12	465	0.247
		16	775	0.13			16	565	0.213			16	415	0.33
		19.2	735	0.156			19.2	525	0.255			19.2	385	0.395
		24	680	0.195			24	475	0.319			24	335	0.494
	2 x 3 SYP #2	12	800	0.097		2 x 3 SYP #2	12	585	0.159		2 x 3 SYP #2	12	435	0.247
		16	740	0.13			16	530	0.213			16	385	0.33
		19.2	695	0.156			19.2	485	0.255			19.2	345	0.395
		24	630	0.195			24	430	0.319			24	295	0.494
	2 x 4 SPF STUD GRADE	12	1920	0.041		2 x 4 SPF STUD GRADE	12	1450	0.068		2 x 4 SPF STUD GRADE	12	1110	0.105
		16	1810	0.055			16	1345	0.09			16	1010	0.14
		19.2	1725	0.066			19.2	1265	0.108			19.2	940	0.168
		24	1605	0.083			24	1155	0.136			24	830	0.21
	2 x 4 SPF #2	12	2495	0.035		2 x 4 SPF #2	12	1905	0.058		2 x 4 SPF #2	12	1485	0.09
		16	2400	0.047			16	1815	0.077			16	1400	0.12
		19.2	2330	0.057			19.2	1750	0.093			19.2	1340	0.144
		24	2230	0.071			24	1660	0.116			24	1255	0.18
	2 x 4 SYP #2	12	2450	0.035		2 x 4 SYP #2	12	1855	0.058		2 x 4 SYP #2	12	1440	0.09
		16	2340	0.047			16	1755	0.077			16	1345	0.12
		19.2	2260	0.057			19.2	1685	0.093			19.2	1280	0.144
		24	2150	0.071			24	1585	0.116			24	1185	0.18
	2 x 6 SPF STUD GRADE	12	6495	0.011		2 x 6 SPF STUD GRADE	12	5520	0.017		2 x 6 SPF STUD GRADE	12	4600	0.027
		16	6345	0.014			16	5340	0.023			16	4405	0.036
		19.2	6230	0.017			19.2	5205	0.028			19.2	4260	0.043
		24	6065	0.021			24	5010	0.035			24	4060	0.054
	2 x 6 SPF #2	12	9150	0.009		2 x 6 SPF #2	12	7445	0.015		2 x 6 SPF #2	12	6055	0.023
		16	8980	0.012			16	7260	0.02			16	5870	0.031
		19.2	8855	0.015			19.2	7125	0.024			19.2	5735	0.037
		24	8670	0.018			24	6935	0.03			24	5545	0.046
	2 x 6 SYP #2	12	9325	0.009		2 x 6 SYP #2	12	7490	0.015		2 x 6 SYP #2	12	6040	0.023
		16	9125	0.012			16	7280	0.02			16	5835	0.031
		19.2	8970	0.015			19.2	7125	0.024			19.2	5685	0.037
		24	8760	0.018			24	6910	0.03			24	5480	0.046

***** LOADS AND QUANTITIES ARE PER SIDE OF MATING WALL**

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

MATING WALL HEADER - 1 STORY & 2 / 3 STORY UPPER LEVEL (LOCATION 2)
TRUSS CC557327
7/12 PITCH, 32.08 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

HEADERS
HEADERS
2x6 FOR (3) MEMBER HEADERS

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	MIN. NUMBER OF JACKSTUDS REQ'D EACH END			UPLIFT (plf)	UPLIFT REACTION (lbs)
							SPF #2	SYP #2	SPF STUD		
2 x 4 SPF #2	1	83	169	4 ' - 3"	Lb	0.169	1	1	1	47	100
2 x 6 SPF #2	1	83	169	6 ' - 2"	Lb	0.197	1	1	1	47	147
2 x 8 SPF #2	1	83	169	7 ' - 10"	Lb	0.223	1	1	2	47	186
2 x 10 SPF #2	1	83	169	9 ' - 7"	Lb	0.24	2	2	2	47	227
2 x 12 SPF #2	1	83	169	11 ' - 2"	Lb	0.241	2	2	2	47	263
2 x 4 SYP #2	1	83	169	3 ' - 10"	Lb	0.118	1	1	1	47	92
2 x 6 SYP #2	1	83	169	5 ' - 10"	Lb	0.153	1	1	1	47	137
2 x 8 SYP #2	1	83	169	7 ' - 5"	Lb	0.173	1	1	2	47	175
2 x 10 SYP #2	1	83	169	8 ' - 9"	Lb	0.165	2	2	2	47	207
2 x 12 SYP #2	1	83	169	10 ' - 8"	Lb	0.201	2	2	2	47	252
1.5 x 3.5 LVL	1	83	169	5 ' - 11"	Lb	0.46	1	1	1	47	141
1.5 x 5.5 LVL	1	83	169	9 ' - 3"	Lb	0.681	2	2	2	47	218
1.5 x 7.25 LVL	1	83	169	12 ' - 1"	Lb	0.866	2	2	2	47	285
1.5 x 9.25 LVL	1	83	169	15 ' - 4"	Lb	1.071	2	2	2	47	361
1.5 x 11.25 LVL	1	83	169	18 ' - 6"	Lb	1.27	2	2	2	47	436
1.5 x 12 LVL	1	83	169	19 ' - 9"	Lb	1.342	2	2	2	47	464
1.5 x 14 LVL	1	83	169	22 ' - 11"	Lb	1.536	2	2	3	47	539
1.5 x 16 LVL	1	83	169	26 ' - 1"	Lb	1.724	3	3	3	47	613
1.5 x 18 LVL	1	83	169	29 ' - 3"	Lb	1.91	3	3	3	47	687
1.5 x 20 LVL	1	83	169	32 ' - 4"	Lb	2.093	3	3	3	47	761
1.5 x 22 LVL	1	83	169	35 ' - 6"	Lb	2.275	3	3	3	47	835
1.5 x 24 LVL	1	83	169	38 ' - 7"	Lb	2.454	3	3	3	47	908
2 x 4 SPF #2	2	83	169	6 ' - 0"	Lb	0.337	1	1	1	47	142
2 x 6 SPF #2	2	83	169	8 ' - 9"	Lb	0.395	1	1	1	47	207
2 x 8 SPF #2	2	83	169	11 ' - 2"	Lb	0.447	1	1	1	47	263
2 x 10 SPF #2	2	83	169	13 ' - 8"	Lb	0.479	1	1	1	47	321
2 x 12 SPF #2	2	83	169	15 ' - 10"	Lb	0.481	1	1	1	47	372
2 x 4 SYP #2	2	83	169	5 ' - 6"	Lb	0.237	1	1	1	47	130
2 x 6 SYP #2	2	83	169	8 ' - 3"	Lb	0.305	1	1	1	47	194
2 x 8 SYP #2	2	83	169	10 ' - 6"	Lb	0.347	1	1	1	47	247
2 x 10 SYP #2	2	83	169	12 ' - 5"	Lb	0.331	1	1	1	47	293
2 x 12 SYP #2	2	83	169	15 ' - 1"	Lb	0.402	1	1	1	47	356
1.5 x 3.5 LVL	2	83	169	8 ' - 3"	Ld TL - l/240	0.846	1	1	1	47	195
1.5 x 5.5 LVL	2	83	169	13 ' - 0"	Ld TL - l/240	1.33	1	1	1	47	307
1.5 x 7.25 LVL	2	83	169	17 ' - 1"	Lb	1.733	1	1	1	47	403
1.5 x 9.25 LVL	2	83	169	21 ' - 8"	Lb	2.141	1	1	2	47	511
1.5 x 11.25 LVL	2	83	169	26 ' - 3"	Lb	2.539	2	2	2	47	617
1.5 x 12 LVL	2	83	169	27 ' - 11"	Lb	2.685	2	2	2	47	657
1.5 x 14 LVL	2	83	169	32 ' - 5"	Lb	3.071	2	2	2	47	762
1.5 x 16 LVL	2	83	169	36 ' - 10"	Lb	3.448	2	2	2	47	868
1.5 x 18 LVL	2	83	169	41 ' - 4"	Lb	3.819	2	2	3	47	972
1.5 x 20 LVL	2	83	169	45 ' - 9"	Lb	4.187	3	3	3	47	1077
1.5 x 22 LVL	2	83	169	50 ' - 2"	Lb	4.55	3	3	3	47	1181
1.5 x 24 LVL	2	83	169	54 ' - 7"	Lb	4.908	3	3	3	47	1284
2 x 4 SPF #2	3	83	169	7 ' - 4"	Lb	0.506	1	1	1	47	174
2 x 6 SPF #2	3	83	169	10 ' - 9"	Lb	0.592	1	1	1	47	254
2 x 8 SPF #2	3	83	169	13 ' - 8"	Lb	0.67	1	1	1	47	322
2 x 10 SPF #2	3	83	169	16 ' - 8"	Lb	0.719	1	1	1	47	393
2 x 12 SPF #2	3	83	169	19 ' - 4"	Lb	0.722	1	1	1	47	456
2 x 4 SYP #2	3	83	169	6 ' - 9"	Lb	0.355	1	1	1	47	159
2 x 6 SYP #2	3	83	169	10 ' - 1"	Lb	0.458	1	1	1	47	238
2 x 8 SYP #2	3	83	169	12 ' - 10"	Lb	0.52	1	1	1	47	302
2 x 10 SYP #2	3	83	169	15 ' - 3"	Lb	0.496	1	1	1	47	359
2 x 12 SYP #2	3	83	169	18 ' - 6"	Lb	0.604	1	1	1	47	436
1.5 x 3.5 LVL	3	83	169	9 ' - 6"	Ld TL - l/240	0.968	1	1	1	47	224
1.5 x 5.5 LVL	3	83	169	14 ' - 11"	Ld TL - l/240	1.522	1	1	1	47	351
1.5 x 7.25 LVL	3	83	169	19 ' - 8"	Ld TL - l/240	2.006	1	1	1	47	463
1.5 x 9.25 LVL	3	83	169	26 ' - 7"	Lb	3.212	1	1	1	47	625
1.5 x 11.25 LVL	3	83	169	32 ' - 1"	Lb	3.809	1	1	1	47	756
1.5 x 12 LVL	3	83	169	34 ' - 2"	Lb	4.027	1	1	1	47	804
1.5 x 14 LVL	3	83	169	39 ' - 8"	Lb	4.607	1	1	1	47	934
1.5 x 16 LVL	3	83	169	45 ' - 2"	Lb	5.172	1	1	1	47	1063
1.5 x 18 LVL	3	83	169	50 ' - 7"	Lb	5.729	1	1	1	47	1191
1.5 x 20 LVL	3	83	169	56 ' - 1"	Lb	6.28	1	1	2	47	1319
1.5 x 22 LVL	3	83	169	61 ' - 6"	Lb	6.825	2	2	2	47	1446
1.5 x 24 LVL	3	83	169	66 ' - 11"	Lb	7.362	2	2	2	47	1573

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

PERIMETER BAND - 1 STORY & 2 / 3 STORY UPPER LEVEL (LOCATION 3)
TRUSS CC557327
7/12 PITCH, 32.08 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 8 SPF #2	1	602	1096	3 ' - 1"	Lb	0.034	-100	-155
2 x 10 SPF #2	1	602	1096	3 ' - 9"	Lb	0.037	-100	-190
2 x 12 SPF #2	1	602	1096	4 ' - 4"	Lb	0.037	-100	-220
2 x 8 SYP #2	1	602	1096	2 ' - 10"	Lb	0.027	-100	-146
2 x 10 SYP #2	1	602	1096	3 ' - 5"	Lb	0.026	-100	-173
2 x 12 SYP #2	1	602	1096	4 ' - 2"	Lb	0.031	-100	-210
1.5 x 7.25 LVL	1	602	1096	4 ' - 9"	Lb	0.134	-100	-238
1.5 x 9.25 LVL	1	602	1096	6 ' - 0"	Lb	0.165	-100	-302
1.5 x 11.25 LVL	1	602	1096	7 ' - 3"	Lb	0.196	-100	-365
2 x 8 SPF #2	2	602	1096	4 ' - 4"	Lb	0.069	-100	-220
2 x 10 SPF #2	2	602	1096	5 ' - 4"	Lb	0.074	-100	-268
2 x 12 SPF #2	2	602	1096	6 ' - 2"	Lb	0.074	-100	-311
2 x 8 SYP #2	2	602	1096	4 ' - 1"	Lb	0.053	-100	-206
2 x 10 SYP #2	2	602	1096	4 ' - 10"	Lb	0.051	-100	-245
2 x 12 SYP #2	2	602	1096	5 ' - 11"	Lb	0.062	-100	-298
1.5 x 7.25 LVL	2	602	1096	6 ' - 8"	Lb	0.267	-100	-337
1.5 x 9.25 LVL	2	602	1096	8 ' - 6"	Lb	0.33	-100	-427
1.5 x 11.25 LVL	2	602	1096	10 ' - 3"	Lb	0.392	-100	-516
2 x 8 SPF #2	3	602	1096	5 ' - 4"	Lb	0.103	-100	-269
2 x 10 SPF #2	3	602	1096	6 ' - 6"	Lb	0.111	-100	-329
2 x 12 SPF #2	3	602	1096	7 ' - 7"	Lb	0.111	-100	-381
2 x 8 SYP #2	3	602	1096	5 ' - 0"	Lb	0.08	-100	-253
2 x 10 SYP #2	3	602	1096	5 ' - 11"	Lb	0.077	-100	-300
2 x 12 SYP #2	3	602	1096	7 ' - 3"	Lb	0.093	-100	-364
1.5 x 7.25 LVL	3	602	1096	8 ' - 3"	Lb	0.401	-100	-413
1.5 x 9.25 LVL	3	602	1096	10 ' - 5"	Lb	0.495	-100	-522
1.5 x 11.25 LVL	3	602	1096	12 ' - 7"	Lb	0.587	-100	-631

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

FLOOR JOIST (10 psf DEAD LOAD / 40 psf LIVE LOAD)
ALL LEVELS

MEMBER	QTY	SPACING (in O.C.)	TOTAL LOAD (plf)	LIVE LOAD (plf)	MAX. SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)
2 x 8 SPF #2	1	12	50	40	13 ' - 6 "	Ld LL - l/360	0.563
2 x 10 SPF #2	1	12	50	40	17 ' - 2 "	Ld LL - l/360	0.719
2 x 12 SPF #2	1	12	50	40	20 ' - 7 "	Lb	0.814
2 x 8 SYP #2	1	12	50	40	13 ' - 6 "	Ld LL - l/360	0.563
2 x 10 SYP #2	1	12	50	40	16 ' - 2 "	Lb	0.559
2 x 12 SYP #2	1	12	50	40	19 ' - 8 "	Lb	0.68
2 x 8 SPF #2	1	16	66.67	53.33	12 ' - 3 "	Ld LL - l/360	0.512
2 x 10 SPF #2	1	16	66.67	53.33	15 ' - 4 "	Lb	0.607
2 x 12 SPF #2	1	16	66.67	53.33	17 ' - 10 "	Lb	0.61
2 x 8 SYP #2	1	16	66.67	53.33	11 ' - 9 "	Lb	0.44
2 x 10 SYP #2	1	16	66.67	53.33	14 ' - 0 "	Lb	0.419
2 x 12 SYP #2	1	16	66.67	53.33	17 ' - 0 "	Lb	0.51
2 x 8 SPF #2	1	19.2	80	64	11 ' - 5 "	Lb	0.472
2 x 10 SPF #2	1	19.2	80	64	14 ' - 0 "	Lb	0.506
2 x 12 SPF #2	1	19.2	80	64	16 ' - 3 "	Lb	0.509
2 x 8 SYP #2	1	19.2	80	64	10 ' - 9 "	Lb	0.366
2 x 10 SYP #2	1	19.2	80	64	12 ' - 9 "	Lb	0.35
2 x 12 SYP #2	1	19.2	80	64	15 ' - 6 "	Lb	0.425
2 x 8 SPF #2	1	24	100	80	10 ' - 3 "	Lb	0.378
2 x 10 SPF #2	1	24	100	80	12 ' - 6 "	Lb	0.405
2 x 12 SPF #2	1	24	100	80	14 ' - 6 "	Lb	0.407
2 x 8 SYP #2	1	24	100	80	9 ' - 7 "	Lb	0.293
2 x 10 SYP #2	1	24	100	80	11 ' - 5 "	Lb	0.28
2 x 12 SYP #2	1	24	100	80	13 ' - 11 "	Lb	0.34

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

CP- 1 Revised or Added page per PFS review of 11-24-19

CENTER GIRDER - 1 STORY & 2 / 3 STORY UPPER LEVEL (LOCATION 4)
TRUSS CC557327
7/12 PITCH, 32.08 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 8 SPF #2	1	403	649	4 ' - 0"	Lb	0.058	0	0
2 x 10 SPF #2	1	403	649	4 ' - 11"	Lb	0.062	0	0
2 x 12 SPF #2	1	403	649	5 ' - 8"	Lb	0.063	0	0
2 x 8 SYP #2	1	403	649	3 ' - 9"	Lb	0.045	0	0
2 x 10 SYP #2	1	403	649	4 ' - 5"	Lb	0.043	0	0
2 x 12 SYP #2	1	403	649	5 ' - 5"	Lb	0.052	0	0
1.5 x 7.25 LVL	1	403	649	6 ' - 2"	Lb	0.226	0	0
1.5 x 9.25 LVL	1	403	649	7 ' - 10"	Lb	0.279	0	0
1.5 x 11.25 LVL	1	403	649	9 ' - 5"	Lb	0.331	0	0
2 x 8 SPF #2	2	403	649	5 ' - 8"	Lb	0.116	0	0
2 x 10 SPF #2	2	403	649	6 ' - 11"	Lb	0.125	0	0
2 x 12 SPF #2	2	403	649	8 ' - 1"	Lb	0.125	0	0
2 x 8 SYP #2	2	403	649	5 ' - 4"	Lb	0.09	0	0
2 x 10 SYP #2	2	403	649	6 ' - 4"	Lb	0.086	0	0
2 x 12 SYP #2	2	403	649	7 ' - 8"	Lb	0.105	0	0
1.5 x 7.25 LVL	2	403	649	8 ' - 9"	Lb	0.451	0	0
1.5 x 9.25 LVL	2	403	649	11 ' - 1"	Lb	0.558	0	0
1.5 x 11.25 LVL	2	403	649	13 ' - 4"	Lb	0.661	0	0
2 x 8 SPF #2	3	403	649	6 ' - 11"	Lb	0.175	0	0
2 x 10 SPF #2	3	403	649	8 ' - 6"	Lb	0.187	0	0
2 x 12 SPF #2	3	403	649	9 ' - 10"	Lb	0.188	0	0
2 x 8 SYP #2	3	403	649	6 ' - 6"	Lb	0.135	0	0
2 x 10 SYP #2	3	403	649	7 ' - 9"	Lb	0.129	0	0
2 x 12 SYP #2	3	403	649	9 ' - 5"	Lb	0.157	0	0
1.5 x 7.25 LVL	3	403	649	10 ' - 8"	Lb	0.677	0	0
1.5 x 9.25 LVL	3	403	649	13 ' - 6"	Lb	0.836	0	0
1.5 x 11.25 LVL	3	403	649	16 ' - 4"	Lb	0.992	0	0

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

101/130 mph WIND, 5/12 PITCH, FIELD PRESSURE (27.47 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 4 SPF STUD GRADE	12	755	0.227	9 ft	2 x 4 SPF STUD GRADE	12	295	0.372	10 ft	2 x 4 SPF STUD GRADE	12	**NG**	-
		16	295	0.303			16	**NG**	-			16	**NG**	-
		19.2	295	0.364			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SPF #2	12	1565	0.195		2 x 4 SPF #2	12	1035	0.319		2 x 4 SPF #2	12	660	0.495
		16	1265	0.26			16	740	0.426			16	**NG**	-
		19.2	1035	0.312			19.2	**NG**	-			19.2	**NG**	-
		24	685	0.39			24	**NG**	-			24	**NG**	-
	2 x 4 SYP #2	12	1395	0.195		2 x 4 SYP #2	12	865	0.319		2 x 4 SYP #2	12	490	0.495
		16	1045	0.26			16	510	0.426			16	**NG**	-
		19.2	765	0.312			19.2	**NG**	-			19.2	**NG**	-
		24	320	0.39			24	**NG**	-			24	**NG**	-
	2 x 6 SPF STUD GRADE	12	4790	0.059		2 x 6 SPF STUD GRADE	12	3605	0.096		2 x 6 SPF STUD GRADE	12	2610	0.149
		16	4180	0.078			16	2940	0.128			16	1915	0.198
		19.2	3705	0.094			19.2	2420	0.154			19.2	1340	0.238
		24	2995	0.117			24	1605	0.192			24	375	0.298
	2 x 6 SPF #2	12	7380	0.05		2 x 6 SPF #2	12	5625	0.082		2 x 6 SPF #2	12	4275	0.128
		16	6810	0.067			16	5055	0.11			16	3720	0.17
		19.2	6380	0.08			19.2	4625	0.132			19.2	3300	0.204
		24	5770	0.1			24	4010	0.164			24	2685	0.255
	2 x 6 SYP #2	12	7285	0.05		2 x 6 SYP #2	12	5450	0.082		2 x 6 SYP #2	12	4075	0.128
		16	6635	0.067			16	4815	0.11			16	3455	0.17
		19.2	6150	0.08			19.2	4330	0.132			19.2	2980	0.204
		24	5455	0.1			24	3635	0.164			24	2275	0.255

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

101/130 mph WIND, 5/12 PITCH, EDGE PRESSURE (33.35 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 4 SPF STUD GRADE	12	470	0.276	9 ft	2 x 4 SPF STUD GRADE	12	**NG**	-	10 ft	2 x 4 SPF STUD GRADE	12	**NG**	-
		16	295	0.368			16	**NG**	-			16	**NG**	-
		19.2	**NG**	-			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SPF #2	12	1370	0.237		2 x 4 SPF #2	12	845	0.387		2 x 4 SPF #2	12	**NG**	-
		16	1020	0.316			16	**NG**	-			16	**NG**	-
		19.2	735	0.379			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 4 SYP #2	12	1170	0.237		2 x 4 SYP #2	12	640	0.387		2 x 4 SYP #2	12	**NG**	-
		16	745	0.316			16	**NG**	-			16	**NG**	-
		19.2	385	0.379			19.2	**NG**	-			19.2	**NG**	-
		24	**NG**	-			24	**NG**	-			24	**NG**	-
	2 x 6 SPF STUD GRADE	12	4395	0.071		2 x 6 SPF STUD GRADE	12	3175	0.116		2 x 6 SPF STUD GRADE	12	2160	0.181
		16	3670	0.095			16	2380	0.155			16	1300	0.241
		19.2	3095	0.114			19.2	1725	0.186			19.2	530	0.289
		24	2205	0.142			24	625	0.233			24	295	0.361
	2 x 6 SPF #2	12	7005	0.061		2 x 6 SPF #2	12	5250	0.1		2 x 6 SPF #2	12	3915	0.155
		16	6350	0.081			16	4595	0.133			16	3265	0.206
		19.2	5855	0.098			19.2	4095	0.16			19.2	2770	0.248
		24	5140	0.122			24	3370	0.2			24	2025	0.31
	2 x 6 SYP #2	12	6860	0.061		2 x 6 SYP #2	12	5035	0.1		2 x 6 SYP #2	12	3670	0.155
		16	6115	0.081			16	4300	0.133			16	2945	0.206
		19.2	5555	0.098			19.2	3735	0.16			19.2	2375	0.248
		24	4740	0.122			24	2900	0.2			24	1505	0.31

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

CHAMPION HOMES of NC

EXTERIOR WALL HEADER - 1 STORY (LOCATION 1)
TRUSS HM773855
5/12 PITCH, 30.33 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

2x3 FOR (1) MEMBER HEADERS
2x4 FOR (2) MEMBER HEADERS
2x6 FOR (3) MEMBER HEADERS

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	MIN. NUMBER OF JACKSTUDS REQ'D EACH END SPF #2	SYP #2	SPF STUD	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 4 SPF #2	1	201	378	2 ' - 10"	Lb	0.075	1	1	1	196	280
2 x 6 SPF #2	1	201	378	4 ' - 2"	Lb	0.088	2	2	2	196	409
2 x 8 SPF #2	1	201	378	5 ' - 3"	Lb	0.1	2	2	2	196	518
2 x 10 SPF #2	1	201	378	6 ' - 5"	Lb	0.107	2	2	2	196	633
2 x 12 SPF #2	1	201	378	7 ' - 5"	Lb	0.108	2	2	2	196	734
2 x 4 SYP #2	1	201	378	2 ' - 7"	Lb	0.053	1	1	1	196	256
2 x 6 SYP #2	1	201	378	3 ' - 10"	Lb	0.068	2	2	2	196	383
2 x 8 SYP #2	1	201	378	4 ' - 11"	Lb	0.078	2	2	2	196	487
2 x 10 SYP #2	1	201	378	5 ' - 10"	Lb	0.074	2	2	2	196	577
2 x 12 SYP #2	1	201	378	7 ' - 1"	Lb	0.09	2	2	2	196	702
1.5 x 3.5 LVL	1	201	378	4 ' - 0"	Lb	0.206	2	2	2	196	393
1.5 x 5.5 LVL	1	201	378	6 ' - 2"	Lb	0.304	2	2	2	196	609
1.5 x 7.25 LVL	1	201	378	8 ' - 1"	Lb	0.387	2	2	2	196	795
1.5 x 9.25 LVL	1	201	378	10 ' - 3"	Lb	0.479	2	2	3	196	1007
1.5 x 11.25 LVL	1	201	378	12 ' - 4"	Lb	0.568	3	3	3	196	1217
1.5 x 12 LVL	1	201	378	13 ' - 2"	Lb	0.6	3	3	3	196	1295
1.5 x 14 LVL	1	201	378	15 ' - 4"	Lb	0.687	3	3	3	196	1503
1.5 x 16 LVL	1	201	378	17 ' - 5"	Lb	0.771	3	3	3	196	1711
1.5 x 18 LVL	1	201	378	19 ' - 6"	Lb	0.854	3	3	3	196	1917
1.5 x 20 LVL	1	201	378	21 ' - 7"	Lb	0.936	3	3	3	196	2123
1.5 x 22 LVL	1	201	378	23 ' - 9"	Lb	1.017	3	3	3	196	2328
1.5 x 24 LVL	1	201	378	25 ' - 10"	Lb	1.097	3	3	3	196	2532
2 x 4 SPF #2	2	201	378	4 ' - 0"	Lb	0.151	1	1	1	196	396
2 x 6 SPF #2	2	201	378	5 ' - 10"	Lb	0.177	1	1	1	196	578
2 x 8 SPF #2	2	201	378	7 ' - 5"	Lb	0.2	1	1	1	196	733
2 x 10 SPF #2	2	201	378	9 ' - 1"	Lb	0.214	1	1	2	196	896
2 x 12 SPF #2	2	201	378	10 ' - 7"	Lb	0.215	2	2	2	196	1039
2 x 4 SYP #2	2	201	378	3 ' - 8"	Lb	0.106	1	1	1	196	362
2 x 6 SYP #2	2	201	378	5 ' - 6"	Lb	0.136	1	1	1	196	542
2 x 8 SYP #2	2	201	378	7 ' - 0"	Lb	0.155	1	1	1	196	688
2 x 10 SYP #2	2	201	378	8 ' - 3"	Lb	0.148	1	1	1	196	817
2 x 12 SYP #2	2	201	378	10 ' - 1"	Lb	0.18	2	2	2	196	993
1.5 x 3.5 LVL	2	201	378	5 ' - 8"	Lb	0.411	1	1	1	196	556
1.5 x 5.5 LVL	2	201	378	8 ' - 9"	Lb	0.609	1	1	2	196	861
1.5 x 7.25 LVL	2	201	378	11 ' - 5"	Lb	0.775	2	2	2	196	1125
1.5 x 9.25 LVL	2	201	378	14 ' - 6"	Lb	0.957	2	2	2	196	1424
1.5 x 11.25 LVL	2	201	378	17 ' - 6"	Lb	1.135	2	2	3	196	1721
1.5 x 12 LVL	2	201	378	18 ' - 8"	Lb	1.2	2	2	3	196	1831
1.5 x 14 LVL	2	201	378	21 ' - 8"	Lb	1.373	3	3	3	196	2126
1.5 x 16 LVL	2	201	378	24 ' - 8"	Lb	1.542	3	3	3	196	2419
1.5 x 18 LVL	2	201	378	27 ' - 7"	Lb	1.708	3	3	3	196	2711
1.5 x 20 LVL	2	201	378	30 ' - 7"	Lb	1.872	3	3	3	196	3002
1.5 x 22 LVL	2	201	378	33 ' - 7"	Lb	2.034	3	3	3	196	3292
1.5 x 24 LVL	2	201	378	36 ' - 6"	Lb	2.194	3	3	3	196	3581
2 x 4 SPF #2	3	201	378	4 ' - 11"	Lb	0.226	1	1	1	196	485
2 x 6 SPF #2	3	201	378	7 ' - 2"	Lb	0.265	1	1	1	196	708
2 x 8 SPF #2	3	201	378	9 ' - 1"	Lb	0.3	1	1	1	196	898
2 x 10 SPF #2	3	201	378	11 ' - 2"	Lb	0.321	1	1	1	196	1097
2 x 12 SPF #2	3	201	378	12 ' - 11"	Lb	0.323	1	1	1	196	1272
2 x 4 SYP #2	3	201	378	4 ' - 6"	Lb	0.159	1	1	1	196	444
2 x 6 SYP #2	3	201	378	6 ' - 9"	Lb	0.205	1	1	1	196	664
2 x 8 SYP #2	3	201	378	8 ' - 7"	Lb	0.233	1	1	1	196	843
2 x 10 SYP #2	3	201	378	10 ' - 2"	Lb	0.222	1	1	1	196	1000
2 x 12 SYP #2	3	201	378	12 ' - 4"	Lb	0.27	1	1	1	196	1216
1.5 x 3.5 LVL	3	201	378	6 ' - 11"	Lb	0.617	1	1	1	196	681
1.5 x 5.5 LVL	3	201	378	10 ' - 9"	Lb	0.913	1	1	1	196	1054
1.5 x 7.25 LVL	3	201	378	14 ' - 0"	Lb	1.162	1	1	1	196	1378
1.5 x 9.25 LVL	3	201	378	17 ' - 9"	Lb	1.436	1	1	1	196	1744
1.5 x 11.25 LVL	3	201	378	21 ' - 6"	Lb	1.703	1	1	1	196	2107
1.5 x 12 LVL	3	201	378	22 ' - 10"	Lb	1.801	1	1	1	196	2243
1.5 x 14 LVL	3	201	378	26 ' - 6"	Lb	2.06	1	1	2	196	2604
1.5 x 16 LVL	3	201	378	30 ' - 2"	Lb	2.313	1	1	2	196	2963
1.5 x 18 LVL	3	201	378	33 ' - 10"	Lb	2.561	2	1	2	196	3320
1.5 x 20 LVL	3	201	378	37 ' - 6"	Lb	2.808	2	2	2	196	3677
1.5 x 22 LVL	3	201	378	41 ' - 1"	Lb	3.052	2	2	2	196	4032
1.5 x 24 LVL	3	201	378	44 ' - 9"	Lb	3.291	2	2	2	196	4386

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

ALL WINDS, ALL PITCHES, LATERAL PRESSURE (5 psf)

HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)	HEIGHT	SIZE	SPACING	LOAD (lbs)	DEF. (in)
8 ft	2 x 3 SPF STUD GRADE	12	610	0.114	9 ft	2 x 3 SPF STUD GRADE	12	435	0.186	10 ft	2 x 3 SPF STUD GRADE	12	310	0.288
		16	540	0.151			16	370	0.248			16	295	0.385
		19.2	490	0.182			19.2	320	0.298			19.2	295	0.461
		24	420	0.227			24	295	0.372			24	**NG**	-
	2 x 3 SPF #2	12	830	0.097		2 x 3 SPF #2	12	615	0.159		2 x 3 SPF #2	12	465	0.247
		16	775	0.13			16	565	0.213			16	415	0.33
		19.2	735	0.156			19.2	525	0.255			19.2	385	0.395
		24	680	0.195			24	475	0.319			24	335	0.494
	2 x 3 SYP #2	12	800	0.097		2 x 3 SYP #2	12	585	0.159		2 x 3 SYP #2	12	435	0.247
		16	740	0.13			16	530	0.213			16	385	0.33
		19.2	695	0.156			19.2	485	0.255			19.2	345	0.395
		24	630	0.195			24	430	0.319			24	295	0.494
	2 x 4 SPF STUD GRADE	12	1920	0.041		2 x 4 SPF STUD GRADE	12	1450	0.068		2 x 4 SPF STUD GRADE	12	1110	0.105
		16	1810	0.055			16	1345	0.09			16	1010	0.14
		19.2	1725	0.066			19.2	1265	0.108			19.2	940	0.168
		24	1605	0.083			24	1155	0.136			24	830	0.21
	2 x 4 SPF #2	12	2495	0.035		2 x 4 SPF #2	12	1905	0.058		2 x 4 SPF #2	12	1485	0.09
		16	2400	0.047			16	1815	0.077			16	1400	0.12
		19.2	2330	0.057			19.2	1750	0.093			19.2	1340	0.144
		24	2230	0.071			24	1660	0.116			24	1255	0.18
	2 x 4 SYP #2	12	2450	0.035		2 x 4 SYP #2	12	1855	0.058		2 x 4 SYP #2	12	1440	0.09
		16	2340	0.047			16	1755	0.077			16	1345	0.12
		19.2	2260	0.057			19.2	1685	0.093			19.2	1280	0.144
		24	2150	0.071			24	1585	0.116			24	1185	0.18
	2 x 6 SPF STUD GRADE	12	6495	0.011		2 x 6 SPF STUD GRADE	12	5520	0.017		2 x 6 SPF STUD GRADE	12	4600	0.027
		16	6345	0.014			16	5340	0.023			16	4405	0.036
		19.2	6230	0.017			19.2	5205	0.028			19.2	4260	0.043
		24	6065	0.021			24	5010	0.035			24	4060	0.054
	2 x 6 SPF #2	12	9150	0.009		2 x 6 SPF #2	12	7445	0.015		2 x 6 SPF #2	12	6055	0.023
		16	8980	0.012			16	7260	0.02			16	5870	0.031
		19.2	8855	0.015			19.2	7125	0.024			19.2	5735	0.037
		24	8670	0.018			24	6935	0.03			24	5545	0.046
	2 x 6 SYP #2	12	9325	0.009		2 x 6 SYP #2	12	7490	0.015		2 x 6 SYP #2	12	6040	0.023
		16	9125	0.012			16	7280	0.02			16	5835	0.031
		19.2	8970	0.015			19.2	7125	0.024			19.2	5685	0.037
		24	8760	0.018			24	6910	0.03			24	5480	0.046

***** LOADS AND QUANTITIES ARE PER SIDE OF MATING WALL**

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS
EVEN IF RATIO MEETS CODE REQUIREMENTS

BARLOW ENGINEERING, P.C.
6512 SIX FORKS RD., SUITE 203-B
RALEIGH, NC 27615

CP- 1 Revised or Added page per PFS review of 11-24-19

CHAMPION HOMES of NC

MATING WALL HEADER - 1 STORY (LOCATION 2)
TRUSS HM778355
5/12 PITCH, 30.33 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

2x3 FOR (1) MEMBER HEADERS
2x4 FOR (2) MEMBER HEADERS
2x6 FOR (3) MEMBER HEADERS

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	MIN. NUMBER OF JACKSTUDS REQ'D EACH END SPF #2	SYP #2	SPF STUD	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 4 SPF #2	1	198	367	2 ' - 10"	Lb	0.078	1	1	1	249	361
2 x 6 SPF #2	1	198	367	4 ' - 2"	Lb	0.091	2	2	2	249	527
2 x 8 SPF #2	1	198	367	5 ' - 4"	Lb	0.103	2	2	2	249	668
2 x 10 SPF #2	1	198	367	6 ' - 6"	Lb	0.11	2	2	2	249	816
2 x 12 SPF #2	1	198	367	7 ' - 7"	Lb	0.111	2	2	2	249	947
2 x 4 SYP #2	1	198	367	2 ' - 7"	Lb	0.055	1	1	1	249	330
2 x 6 SYP #2	1	198	367	3 ' - 11"	Lb	0.07	2	2	2	249	494
2 x 8 SYP #2	1	198	367	5 ' - 0"	Lb	0.08	2	2	2	249	627
2 x 10 SYP #2	1	198	367	5 ' - 11"	Lb	0.076	2	2	2	249	744
2 x 12 SYP #2	1	198	367	7 ' - 3"	Lb	0.093	2	2	2	249	905
1.5 x 3.5 LVL	1	198	367	4 ' - 0"	Lb	0.212	2	2	2	249	507
1.5 x 5.5 LVL	1	198	367	6 ' - 3"	Lb	0.314	2	2	2	249	785
1.5 x 7.25 LVL	1	198	367	8 ' - 2"	Lb	0.399	2	2	2	249	1025
1.5 x 9.25 LVL	1	198	367	10 ' - 5"	Lb	0.493	2	2	3	249	1298
1.5 x 11.25 LVL	1	198	367	12 ' - 7"	Lb	0.585	3	3	3	249	1569
1.5 x 12 LVL	1	198	367	13 ' - 4"	Lb	0.618	3	3	3	249	1670
1.5 x 14 LVL	1	198	367	15 ' - 6"	Lb	0.707	3	3	3	249	1938
1.5 x 16 LVL	1	198	367	17 ' - 8"	Lb	0.794	3	3	3	249	2205
1.5 x 18 LVL	1	198	367	19 ' - 10"	Lb	0.879	3	3	3	249	2471
1.5 x 20 LVL	1	198	367	21 ' - 11"	Lb	0.964	3	3	3	249	2737
1.5 x 22 LVL	1	198	367	24 ' - 1"	Lb	1.048	3	3	3	249	3001
1.5 x 24 LVL	1	198	367	26 ' - 2"	Lb	1.13	3	3	3	249	3265
2 x 4 SPF #2	2	198	367	4 ' - 1"	Lb	0.155	1	1	1	249	510
2 x 6 SPF #2	2	198	367	5 ' - 11"	Lb	0.182	1	1	1	249	745
2 x 8 SPF #2	2	198	367	7 ' - 7"	Lb	0.206	1	1	1	249	945
2 x 10 SPF #2	2	198	367	9 ' - 3"	Lb	0.221	1	1	2	249	1155
2 x 12 SPF #2	2	198	367	10 ' - 9"	Lb	0.222	2	2	2	249	1339
2 x 4 SYP #2	2	198	367	3 ' - 9"	Lb	0.109	1	1	1	249	467
2 x 6 SYP #2	2	198	367	5 ' - 7"	Lb	0.141	1	1	1	249	699
2 x 8 SYP #2	2	198	367	7 ' - 1"	Lb	0.16	1	1	1	249	887
2 x 10 SYP #2	2	198	367	8 ' - 5"	Lb	0.152	1	1	1	249	1053
2 x 12 SYP #2	2	198	367	10 ' - 3"	Lb	0.185	1	1	2	249	1280
1.5 x 3.5 LVL	2	198	367	5 ' - 9"	Lb	0.423	1	1	1	249	717
1.5 x 5.5 LVL	2	198	367	8 ' - 10"	Lb	0.627	1	1	2	249	1110
1.5 x 7.25 LVL	2	198	367	11 ' - 7"	Lb	0.798	2	2	2	249	1450
1.5 x 9.25 LVL	2	198	367	14 ' - 8"	Lb	0.986	2	2	2	249	1836
1.5 x 11.25 LVL	2	198	367	17 ' - 9"	Lb	1.169	2	2	3	249	2218
1.5 x 12 LVL	2	198	367	18 ' - 11"	Lb	1.236	2	2	3	249	2361
1.5 x 14 LVL	2	198	367	22 ' - 0"	Lb	1.414	3	3	3	249	2741
1.5 x 16 LVL	2	198	367	25 ' - 0"	Lb	1.588	3	3	3	249	3119
1.5 x 18 LVL	2	198	367	28 ' - 0"	Lb	1.759	3	3	3	249	3495
1.5 x 20 LVL	2	198	367	31 ' - 1"	Lb	1.928	3	3	3	249	3870
1.5 x 22 LVL	2	198	367	34 ' - 1"	Lb	2.095	3	3	3	249	4245
1.5 x 24 LVL	2	198	367	37 ' - 1"	Lb	2.26	3	3	3	249	4617
2 x 4 SPF #2	3	198	367	5 ' - 0"	Lb	0.233	1	1	1	249	625
2 x 6 SPF #2	3	198	367	7 ' - 3"	Lb	0.273	1	1	1	249	913
2 x 8 SPF #2	3	198	367	9 ' - 3"	Lb	0.309	1	1	1	249	1158
2 x 10 SPF #2	3	198	367	11 ' - 4"	Lb	0.331	1	1	1	249	1414
2 x 12 SPF #2	3	198	367	13 ' - 2"	Lb	0.333	1	1	1	249	1640
2 x 4 SYP #2	3	198	367	4 ' - 7"	Lb	0.164	1	1	1	249	572
2 x 6 SYP #2	3	198	367	6 ' - 10"	Lb	0.211	1	1	1	249	856
2 x 8 SYP #2	3	198	367	8 ' - 8"	Lb	0.24	1	1	1	249	1087
2 x 10 SYP #2	3	198	367	10 ' - 4"	Lb	0.229	1	1	1	249	1289
2 x 12 SYP #2	3	198	367	12 ' - 7"	Lb	0.278	1	1	1	249	1568
1.5 x 3.5 LVL	3	198	367	7 ' - 0"	Lb	0.635	1	1	1	249	878
1.5 x 5.5 LVL	3	198	367	10 ' - 11"	Lb	0.941	1	1	1	249	1359
1.5 x 7.25 LVL	3	198	367	14 ' - 3"	Lb	1.197	1	1	1	249	1776
1.5 x 9.25 LVL	3	198	367	18 ' - 0"	Lb	1.479	1	1	1	249	2248
1.5 x 11.25 LVL	3	198	367	21 ' - 9"	Lb	1.754	1	1	1	249	2717
1.5 x 12 LVL	3	198	367	23 ' - 2"	Lb	1.855	1	1	1	249	2892
1.5 x 14 LVL	3	198	367	26 ' - 11"	Lb	2.121	1	1	2	249	3357
1.5 x 16 LVL	3	198	367	30 ' - 8"	Lb	2.382	1	1	2	249	3820
1.5 x 18 LVL	3	198	367	34 ' - 4"	Lb	2.638	1	1	2	249	4281
1.5 x 20 LVL	3	198	367	38 ' - 0"	Lb	2.892	2	2	2	249	4740
1.5 x 22 LVL	3	198	367	41 ' - 9"	Lb	3.143	2	2	2	249	5198
1.5 x 24 LVL	3	198	367	45 ' - 5"	Lb	3.39	2	2	2	249	5655

***** LOADS AND QUANTITIES ARE PER SIDE OF MATING LINE**

THE DESIGNER IS TO DETERMINE IF ACTUAL DEFLECTION IS WITHIN ACCEPTABLE LIMITS EVEN IF RATIO MEETS CODE REQUIREMENTS

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CP- 1 Revised or Added page per PFS review of 11-24-19

PERIMETER BAND - 1 STORY (LOCATION 3)
TRUSS HM773855
5/12 PITCH, 30.33 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 8 SPF #2	1	505	878	3 ' - 5"	Lb	0.043	0	0
2 x 10 SPF #2	1	505	878	4 ' - 2"	Lb	0.046	0	0
2 x 12 SPF #2	1	505	878	4 ' - 11"	Lb	0.046	0	0
2 x 8 SYP #2	1	505	878	3 ' - 3"	Lb	0.033	0	0
2 x 10 SYP #2	1	505	878	3 ' - 10"	Lb	0.032	0	0
2 x 12 SYP #2	1	505	878	4 ' - 8"	Lb	0.039	0	0
1.5 x 7.25 LVL	1	505	878	5 ' - 3"	Lb	0.167	0	0
1.5 x 9.25 LVL	1	505	878	6 ' - 8"	Lb	0.206	0	0
1.5 x 11.25 LVL	1	505	878	8 ' - 1"	Lb	0.244	0	0
2 x 8 SPF #2	2	505	878	4 ' - 10"	Lb	0.086	0	0
2 x 10 SPF #2	2	505	878	5 ' - 11"	Lb	0.092	0	0
2 x 12 SPF #2	2	505	878	6 ' - 11"	Lb	0.093	0	0
2 x 8 SYP #2	2	505	878	4 ' - 7"	Lb	0.067	0	0
2 x 10 SYP #2	2	505	878	5 ' - 5"	Lb	0.064	0	0
2 x 12 SYP #2	2	505	878	6 ' - 7"	Lb	0.077	0	0
1.5 x 7.25 LVL	2	505	878	7 ' - 6"	Lb	0.333	0	0
1.5 x 9.25 LVL	2	505	878	9 ' - 6"	Lb	0.412	0	0
1.5 x 11.25 LVL	2	505	878	11 ' - 6"	Lb	0.489	0	0
2 x 8 SPF #2	3	505	878	6 ' - 0"	Lb	0.129	0	0
2 x 10 SPF #2	3	505	878	7 ' - 4"	Lb	0.138	0	0
2 x 12 SPF #2	3	505	878	8 ' - 6"	Lb	0.139	0	0
2 x 8 SYP #2	3	505	878	5 ' - 7"	Lb	0.1	0	0
2 x 10 SYP #2	3	505	878	6 ' - 8"	Lb	0.096	0	0
2 x 12 SYP #2	3	505	878	8 ' - 1"	Lb	0.116	0	0
1.5 x 7.25 LVL	3	505	878	9 ' - 2"	Lb	0.5	0	0
1.5 x 9.25 LVL	3	505	878	11 ' - 8"	Lb	0.618	0	0
1.5 x 11.25 LVL	3	505	878	14 ' - 1"	Lb	0.733	0	0

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CENTER GIRDER - 1 STORY (LOCATION 4)
TRUSS HM778355
5/12 PITCH, 30.33 ft UNIT WIDTH, 30 psf GROUND SNOW LOAD

MEMBER	QUANTITY	HEADER LL (plf)	HEADER TL (plf)	MAXIMUM SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)	UPLIFT (plf)	UPLIFT REACTION (lbs)
2 x 8 SPF #2	1	500	827	3 ' - 6"	Lb	0.046	53	95
2 x 10 SPF #2	1	500	827	4 ' - 4"	Lb	0.049	53	116
2 x 12 SPF #2	1	500	827	5 ' - 0"	Lb	0.049	53	134
2 x 8 SYP #2	1	500	827	3 ' - 4"	Lb	0.035	53	89
2 x 10 SYP #2	1	500	827	3 ' - 11"	Lb	0.034	53	106
2 x 12 SYP #2	1	500	827	4 ' - 10"	Lb	0.041	53	128
1.5 x 7.25 LVL	1	500	827	5 ' - 5"	Lb	0.177	53	145
1.5 x 9.25 LVL	1	500	827	6 ' - 11"	Lb	0.219	53	184
1.5 x 11.25 LVL	1	500	827	8 ' - 4"	Lb	0.259	53	222
2 x 8 SPF #2	2	500	827	5 ' - 0"	Lb	0.091	53	134
2 x 10 SPF #2	2	500	827	6 ' - 2"	Lb	0.098	53	164
2 x 12 SPF #2	2	500	827	7 ' - 1"	Lb	0.098	53	190
2 x 8 SYP #2	2	500	827	4 ' - 8"	Lb	0.071	53	126
2 x 10 SYP #2	2	500	827	5 ' - 7"	Lb	0.068	53	149
2 x 12 SYP #2	2	500	827	6 ' - 10"	Lb	0.082	53	182
1.5 x 7.25 LVL	2	500	827	7 ' - 9"	Lb	0.354	53	206
1.5 x 9.25 LVL	2	500	827	9 ' - 9"	Lb	0.438	53	260
1.5 x 11.25 LVL	2	500	827	11 ' - 10"	Lb	0.519	53	315
2 x 8 SPF #2	3	500	827	6 ' - 2"	Lb	0.137	53	164
2 x 10 SPF #2	3	500	827	7 ' - 6"	Lb	0.147	53	201
2 x 12 SPF #2	3	500	827	8 ' - 9"	Lb	0.148	53	233
2 x 8 SYP #2	3	500	827	5 ' - 9"	Lb	0.106	53	154
2 x 10 SYP #2	3	500	827	6 ' - 10"	Lb	0.101	53	183
2 x 12 SYP #2	3	500	827	8 ' - 4"	Lb	0.123	53	222
1.5 x 7.25 LVL	3	500	827	9 ' - 6"	Lb	0.531	53	252
1.5 x 9.25 LVL	3	500	827	12 ' - 0"	Lb	0.656	53	319
1.5 x 11.25 LVL	3	500	827	14 ' - 6"	Lb	0.778	53	385

***** LOADS AND QUANTITIES ARE PER SIDE OF MATING LINE**

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CP- 1 Revised or Added page per PFS review of 11-24-19

FLOOR JOIST (10 psf DEAD LOAD / 40 psf LIVE LOAD)
ALL LEVELS

MEMBER	QTY	SPACING (in O.C.)	TOTAL LOAD (plf)	LIVE LOAD (plf)	MAX. SPAN	LIMITED BY	MID-SPAN DEFLECTION (in)
2 x 8 SPF #2	1	12	50	40	13 ' - 6 "	Ld LL - l/360	0.563
2 x 10 SPF #2	1	12	50	40	17 ' - 2 "	Ld LL - l/360	0.719
2 x 12 SPF #2	1	12	50	40	20 ' - 7 "	Lb	0.814
2 x 8 SYP #2	1	12	50	40	13 ' - 6 "	Ld LL - l/360	0.563
2 x 10 SYP #2	1	12	50	40	16 ' - 2 "	Lb	0.559
2 x 12 SYP #2	1	12	50	40	19 ' - 8 "	Lb	0.68
2 x 8 SPF #2	1	16	66.67	53.33	12 ' - 3 "	Ld LL - l/360	0.512
2 x 10 SPF #2	1	16	66.67	53.33	15 ' - 4 "	Lb	0.607
2 x 12 SPF #2	1	16	66.67	53.33	17 ' - 10 "	Lb	0.61
2 x 8 SYP #2	1	16	66.67	53.33	11 ' - 9 "	Lb	0.44
2 x 10 SYP #2	1	16	66.67	53.33	14 ' - 0 "	Lb	0.419
2 x 12 SYP #2	1	16	66.67	53.33	17 ' - 0 "	Lb	0.51
2 x 8 SPF #2	1	19.2	80	64	11 ' - 5 "	Lb	0.472
2 x 10 SPF #2	1	19.2	80	64	14 ' - 0 "	Lb	0.506
2 x 12 SPF #2	1	19.2	80	64	16 ' - 3 "	Lb	0.509
2 x 8 SYP #2	1	19.2	80	64	10 ' - 9 "	Lb	0.366
2 x 10 SYP #2	1	19.2	80	64	12 ' - 9 "	Lb	0.35
2 x 12 SYP #2	1	19.2	80	64	15 ' - 6 "	Lb	0.425
2 x 8 SPF #2	1	24	100	80	10 ' - 3 "	Lb	0.378
2 x 10 SPF #2	1	24	100	80	12 ' - 6 "	Lb	0.405
2 x 12 SPF #2	1	24	100	80	14 ' - 6 "	Lb	0.407
2 x 8 SYP #2	1	24	100	80	9 ' - 7 "	Lb	0.293
2 x 10 SYP #2	1	24	100	80	11 ' - 5 "	Lb	0.28
2 x 12 SYP #2	1	24	100	80	13 ' - 11 "	Lb	0.34

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SECTION 3

ASCE 7-10 WIND CALCULATIONS

DESIGN INPUTS:

FIRST FLOOR WIDTH:	30.33	ft	NO. OF STORIES:	1	
SECOND FLOOR WIDTH:	0.00	ft	1st FLOOR WALL HEIGHT:	9.00	ft
THIRD FLOOR WIDTH:	0.00	ft	2nd FLOOR WALL HEIGHT:	0.00	ft
FOURTH FLOOR WIDTH:	0.00	ft	3rd FLOOR WALL HEIGHT:	0.00	ft
FIRST FLOOR LENGTH:	76.00	ft	4th FLOOR WALL HEIGHT:	0.00	ft
SECOND FLOOR LENGTH:	0.00	ft	WIND SPEED:	130	mph
THIRD FLOOR LENGTH:	0.00	ft	WIND EXPOSURE CASE:	C	
FOURTH FLOOR LENGTH:	0.00	ft			
ROOF SPAN (RS):	30.33	ft	(WIND BORNE DEBRIS PROTECTION		
STUD SPACING:	16	in	IS REQUIRED FOR		
TRUSS SPACING:	24	in	HURRICANE PRONE REGIONS)		
ROOF PITCH:	7	/ 12			
ROOF ANGLE (Θ):	30.26	°			
RAFTER LENGTH (L) =	17.56	ft			
z =	20.00	ft			
hr =	8.85	ft			
hr / 2 =	4.43	ft			
h =	**20.00**	ft	(IF ROOF SLOPE <= 10 DEGREES, USE EAVE HEIGHT)		
WALL EFFECTIVE WIND AREA = h_s x STUD SPACING =	27.00		(EFFECTIVE WIDTH NEED NOT BE LESS THAN 9ft / 3 = 3 ft)		
ROOF EFFECTIVE WIND AREA = L x TRUSS SPACING =	102.78	ft^2	(EFFECTIVE WIDTH NEED NOT BE LESS THAN 17.56ft / 3 = 5.85 ft)		
MIN. WALL & ROOF EFFECTIVE AREA FOR FASTENERS =	0.17	ft^2	(WORST CASE: 2" o.c. FASTENERS WITH 12" o.c. FRAMING)		

a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 3 ft. (p. 54, FIG. 6-10, NOTATION 9.a)

a: 0.1W = 0.1 * 30.33 ft = 3.03 ft OR 0.4h = 0.4 * 20 ft = 8 ft

LESSER = 3.03 ft

AND NOT LESS THAN EITHER:

0.04W = 0.04 * 30.33 ft = 1.21 ft

OR 3 ft:

a = 3.03 ft

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DETERMINE WIND LOADS PER ASCE 7-10:

MAIN WIND FORCE RESISTING SYSTEM :

CONSTANTS:

WIND VELOCITY (V):	130 mph	DIRECTIONALITY FACTOR (K_d):	0.85
VEL. PRESS. EXP. COEF. (K_h):	0.94		
VEL. PRESS. EXP. COEF. (K_z):	0.94	q_h: = .00256 x K_h x K_{Zt} x Kd x V^2 =	34.57
MULT. for TOPO. FACTOR (K_1):	0.09	q_z: = .00256 x K_Z x K_{Zt} x Kd x V^2 =	34.57
MULT. for TOPO. FACTOR (K_2):	0		
MULT. for TOPO. FACTOR (K_3):	0	GUST EFFECT FACTOR (G):	0.85
K_{Zt}: = $(1 + K_1 \times K_2 \times K_3)^2$ =	1	INTERNAL PRESS. COEF. (GC_{pi1}):	0.18
			-0.18

PER TABLE 6-6, ASCE 7-05, pp 49, "EXTERNAL PRESSURE COEFFICIENTS, Cp"

WALL PRESSURE COEFICIENTS

SURFACE		Cp	USE WITH
WINDWARD WALL	ALL	0.8	qz
LEEWARD WALL	SIDE	-0.5	qh
LEEWARD WALL	END	-0.5	qh
SIDE WALL	ALL	-0.7	qh

ROOF PRESSURE COEFICIENTS FOR USE WITH qh
NORMAL TO RIDGE (WIND FROM SIDEWALL)

Cp - WINDWARD WALL	-0.55
	-0.07
Cp - LEEWARD WALL	-0.60

PARALLEL TO RIDGE (WIND FROM ENDWALL)

Cp - 0 TO h/2	-1.17
Cp - h/2 TO h	-1.17
Cp - h TO 2h	-1.17
Cp - > 2h	-0.18
Cp	0.00

LATERAL LOADS:

EXTERNAL PRESSURE COEFFICIENTS:
30.26 ° ROOF

CASE A - WIND FROM SIDE WALL:

SIDE WALL:	GC_{pf1} =	0.54	GC_{pf1E} =	0.77
SIDE WALL:	GC_{pf4} =	-0.41	GC_{pf4E} =	-0.60

LOAD CALCULATIONS (WIND FROM SIDE WALL):

P = q GCp - qi (GCpi) qh*[(Gcpf)-(Gcpi)]

EXAMPLE:

P = qh GCp - qi (GCpi) = (34.57 psf x 0.85 x 0.8) - (34.57 x 0.18) = 17.3 psf

P = qh GCp - qi (GCpi) = (34.57 psf x 0.85 x 0.8) - (34.57 x -0.18) = 29.7 psf

12.4452	20.3963		
24.8904	32.8415		
-20.3963	-26.965		
-7.9511	-14.519		

WINDWARD	P =	17.30	psf
WINDWARD	P =	29.70	psf
LEEWARD	P =	-20.90	psf
LEEWARD	P =	-8.50	psf

TOTAL SIDEWALL PRESSURE :

USE	38.20	psf WIND LOAD

CASE B - WIND FROM END WALL:

ENDWALL:	GC_{pf1} =	0.4	GC_{pf1E} =	0.61
ENDWALL:	GC_{pf4} =	-0.29	GC_{pf4E} =	-0.43

LOAD CALCULATIONS (WIND FROM END WALL):

P = q GCp - qi (GCpi)

EXAMPLE:

P = qz GCp - qi (GCpi) = (34.57 psf x 0.85 x 0.8) - (34.57 x 0.18) = 17.3 psf

P = qz GCp - qi (GCpi) = (34.57 psf x 0.85 x 0.8) - (34.57 x -0.18) = 29.7 psf

WINDWARD	P =	17.30	psf
WINDWARD	P =	29.70	psf
LEEWARD	P =	-20.90	psf
LEEWARD	P =	-8.50	psf

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TOTAL ENDWALL PRESSURE :

USE	38.20	psf WIND LOAD

LATERAL LOADING:

MAX. FLOOR WIDTH (W) =	30.33	ft
MAX. FLOOR LENGTH (L) =	76.00	ft
ROOF SPAN (RS) =	30.33	ft
ROOF PITCH:	7	/ 12
ROOF ANGLE (Θ) =	30.26	°
MAX. WALL HEIGHT (H) =	9.00	ft
RIDGE ROOF HEIGHT (hr)=	8.85	ft
EDGE ROOF HEIGHT (he)=	3.54	ft

CALCULATE LATERAL PRESSURE AT FLOOR: (PERPENDICULAR TO RIDGE)

W_{LAT} = 38.20 psf

w_{FL} = W_{LAT} * H = 38.2 psf * 9 ft=
w_{FL} = 207 **plf (w/ 0.6 FACTOR)**

CALCULATE LATERAL PRESSURE AT FLOOR: (PARALLEL TO RIDGE)

W_{LAT} = 38.20 psf

w_{FL} = W_{LAT} * H = 38.2 psf * 9 ft=
w_{FL} = 206 **plf (w/ 0.6 FACTOR)**

CALCULATE LATERAL PRESSURE @ ROOF: (PERPENDICULAR TO RIDGE)

Sin () = 0.503639764
$w_{R\text{-}PER}$ = Wmax(roof) * hr*SIN() + w_{FL} / 2 =
$w_{R\text{-}PER}$ = 40.6 psf * 4.45768709346345 ft + 207 plf / 2 =

(BUT NO LESS THAN: 207 plf / 2 = 104 plf) (ASCE 7-10 FIGURE 27.4-1 NOTE 6)

$w_{R\text{-}PER}$ = 213 **plf (w/ 0.6 FACTOR)**

CALCULATE LATERAL PRESSURE @ ROOF: (PARALLEL TO RIDGE)

GABLE AREA (A_T) = RS * hr / 2 =
A_T = 30.33 ft * 8.85 ft / 2 =
A_T = 134.21 ft^2

TOTAL WIND LOAD (P_w) = (A_T - A_e) * w_{rf}
P_w = (134.21 ft^2) * psf =
P_w = 5127 lbs

$w_{R\text{-}PAR}$ = P_w / R + W_{fl} / 2 =
$w_{R\text{-}PAR}$ = 5127 lbs / 30.33 ft + 206 plf / 2 =
$w_{R\text{-}PAR}$ = 204 **plf (w/ 0.6 FACTOR)**

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PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

DETERMINE WIND LOADS PER ASCE 7-10 FOR ALL-HEIGHT BUILDINGS:

COMPONENTS AND CLADDING :

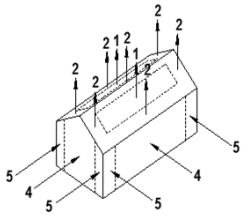
CONSTANTS:

WIND VELOCITY (V):	130	mph	DIRECTIONALITY FACTOR (K_d):	0.85
VEL. PRESS. EXP. COEF. (K_Z):	0.94			
MULT. for TOPO. FACTOR (K_1):	0.09		q_z: = .00256 x K_Z x K_{Zt} x Kd x V^2 =	34.57
MULT. for TOPO. FACTOR (K_2):	0.00		$q_i = q_h = q_z$ =	34.57
MULT. for TOPO. FACTOR (K_3):	0.00		GUST EFFECT FACTOR (G):	0.85
K_{Zt}: = $(1 + K_1 \times K_2 \times K_3)^2$ =	1.00		INTERNAL PRESS. COEF. (GC_{pi}):	0.18
				-0.18

LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL:	FIELD:	GC_{pf4} =	-1.00
	EDGE:	GC_{pf5} =	-1.16



LOAD CALCULATIONS:

$P = q_h \times (GC_{pf} - GC_{pi})$

EXAMPLE:

$P_{4i} = q_h \times (GC_{pf4} - GC_{pi4})$ = 34.57 psf * [(-1 - 0.18)] = -40.8 psf

$P_{4i} = q_h \times (GC_{pf4} - GC_{pi4})$ = 34.57 psf * [(-1 - -0.18)] = -28.35 psf

FIELD:	P_{4i} =	-40.80	psf
FIELD:	P_{4i} =	-28.35	psf
EDGE:	P_{5i} =	-46.33	psf
EDGE:	P_{5i} =	-33.88	psf

USE	**-24.48**	psf WIND LOAD FOR FIELD.
USE	**-27.80**	psf WIND LOAD FOR EDGE.

****(W/ 0.6 FACTOR)**

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

ROOF:	FIELD:	GC_{pf1} =	-0.82
	EDGE:	GC_{pf2} =	-1.05
	OVERHANG:	GC_{pf3} =	-1.85
	DOWNWARD:	GC_{pf1-3} =	0.84

LOAD CALCULATIONS:

$P_h = q_h \times (GC_p - GC_{pi})$

EXAMPLE:

$P_h = q_h \times (GC_{pf1} - GC_{pi1})$ = 34.57 psf * [(-0.82 - 0.18)] = -34.57 psf

$P_{1i} = q_h \times (GC_{pf1} - GC_{pi1})$ = 34.57 psf * [(-0.82 - -0.18)] = -22.13 psf

FIELD:	P_{1i} =	-34.57	psf
FIELD:	P_{1i} =	-22.13	psf
EDGE:	P_{2i} =	-42.53	psf
EDGE:	P_{2i} =	-30.08	psf
OVERHANG:	P_{3i} =	-70.18	psf
OVERHANG:	P_{3i} =	-57.74	psf
DOWNWARD:	P_{1-3i} =	22.82	psf
DOWNWARD:	P_{1-3i} =	35.27	psf

USE	**-20.74**	psf WIND LOAD FOR FIELD.
USE	**-25.52**	psf WIND LOAD FOR EDGE.
USE	**-42.11**	psf WIND LOAD FOR OVERHANG.
USE	**21.16**	psf DOWNWARD WIND LOAD.

****(W/ 0.6 FACTOR)**

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DETERMINE WIND LOADS PER ASCE 7-10 FOR ALL-HEIGHT BUILDINGS:

COMPONENTS AND CLADDING: FOR FASTENERS ONLY (EFFECTIVE AREA SHALL BE NO GREATER THAN FASTENER TRIBUTARY AREA):

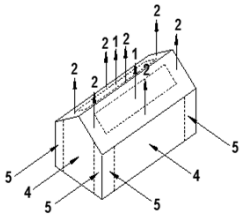
CONSTANTS:

WIND VELOCITY (V):	130 mph	DIRECTIONALITY FACTOR (K_d):	0.85
VEL. PRESS. EXP. COEF. (K_Z):	0.94		
MULT. for TOPO. FACTOR (K_1):	0.09	q_z: = .00256 x K_Z x K_{Zt} x Kd x V^2 =	34.57
MULT. for TOPO. FACTOR (K_2):	0.00	$q_i = q_h = q_z$ =	34.57
MULT. for TOPO. FACTOR (K_3):	0.00	GUST EFFECT FACTOR (G):	0.85
K_{Zt}: = $(1 + K_1 \times K_2 \times K_3)^2$ =	1.00	INTERNAL PRESS. COEF. (GC_{pi}):	0.18
			-0.18

LATERAL LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

SIDE WALL: ↄ (ZONE 4): GC_{pf4} = -1.10
EDGE (ZONE 5): GC_{pf5} = -1.40



LOAD CALCULATIONS:

$P = q_h \times (GC_{pf} - GC_{pi})$

EXAMPLE:

$P_{4i} = q_h \times (GC_{pf4} - GC_{pi4})$ = 34.57 psf * [(-1.1 - 0.18)] = -44.25 psf

$P_{4i} = q_h \times (GC_{pf4} - GC_{pi4})$ = 34.57 psf * [(-1.1 - -0.18)] = -31.81 psf

FIELD (ZONE 4):	P_{4i} =	-44.25	psf
FIELD (ZONE 4):	P_{4i} =	-31.81	psf
EDGE (ZONE 5):	P_{5i} =	-54.63	psf
EDGE (ZONE 5):	P_{5i} =	-42.18	psf

USE	**26.55**	psf WIND LOAD FOR FIELD.
USE	**32.78**	psf WIND LOAD FOR EDGE.

****(W/ 0.6 FACTOR)**

UPLIFT LOADS (COMPONENTS AND CLADDING):

EXTERNAL PRESSURE COEFFICIENTS:

ROOF: ↄ (ZONE 1): GC_{pf1} = -1.00
EDGE (ZONE 2): GC_{pf2} = -1.20
CORNER (ZONE 3): GC_{pf3} = -1.20
CORNER OH (ZONE 3): GC_{pf1-3} = -2.00

LOAD CALCULATIONS:

$P_h = q_h \times (GC_p - GC_{pi})$

EXAMPLE:

$P_h = q_h \times (GC_{pf1} - GC_{pi1})$ = 34.57 psf * [(-1 - 0.18)] = -40.8 psf

$P_{1i} = q_h \times (GC_{pf1} - GC_{pi1})$ = 34.57 psf * [(-1 - -0.18)] = -28.35 psf

FIELD (ZONE 1):	P_{1i} =	-40.80	psf
FIELD (ZONE 1):	P_{1i} =	-28.35	psf
EDGE (ZONE 2):	P_{2i} =	-47.71	psf
EDGE (ZONE 2):	P_{2i} =	-35.27	psf
CORNER (ZONE 3):	P_{3i} =	-47.71	psf
CORNER (ZONE 3):	P_{3i} =	-35.27	psf

USE	**24.48**	psf WIND LOAD FOR FIELD (ZONE 1).
USE	**28.63**	psf WIND LOAD FOR EDGE (ZONE 2).
USE	**28.63**	psf WIND LOAD FOR CORNER (ZONE 3).
USE	**45.22**	psf WIND LOAD FOR CORNER OH (ZONE 3).

****(W/ 0.6 FACTOR)**

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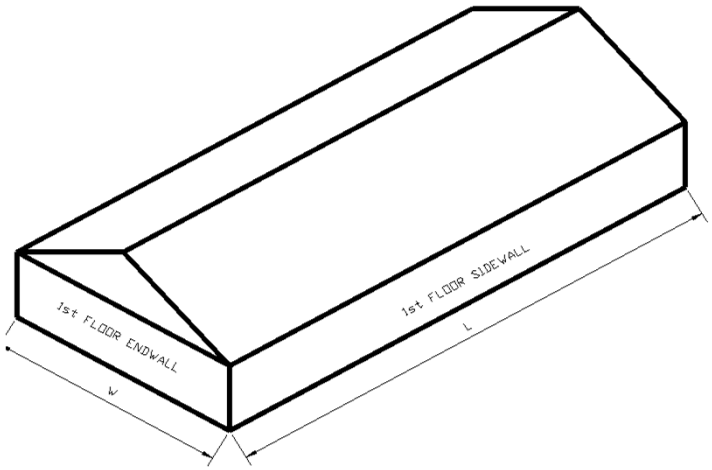
SECTION 4

SHEARWALL CALCULATIONS



BUILDING INFORMATION:

JOB NUMBER =	190568	
PLAN NAME / NUMBER =	Champion 23-3969(011316)	
FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
ROOF SPAN =	30.33	ft
TRUSS SPACING (TOC)=	24	in
STUD SPACING (SOC) =	16	in
WIND SPEED (Vult) =	130	mph
EXPOSURE FACTOR =	C	

SHEARWALL SUMMARY:

FIRST FLOOR ENDWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
MASTER BEDROOM /CLOSET END WITH 16 ga STAPLES SPACED AT 4" EDGE

FIRST FLOOR ENDWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
BEDROOM #3 #4 END WITH 16 ga STAPLES SPACED AT 6" EDGE

FIRST FLOOR SIDEWALL #1: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
KITCHEN SIDE WITH 16 ga STAPLES SPACED AT 6" EDGE

FIRST FLOOR SIDEWALL #2: 7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR
LIVING ROOM SIDE WITH 16 ga STAPLES SPACED AT 6" EDGE

ROOF SHEATHING: 7/16" OSB (UN-BLOCKED) w/ 16 ga. STAPLES @ 6"/12"
CEILING SHEATHING: 1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"
FLOOR SHEATHING: 19/32" MIN. OSB (UN-BLOCKED) w / 8 d NAILS @ 6"/12"

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SHEATHING SUCTION FASTENING:

THE BELOW REQUIRED FASTENING IS REQUIRED AT ALL FRAMING STUDS AND TRUSSES, NOT ONLY AT PANEL EDGES.
SUCTION FASTENER SPACING MUST BE NO GREATER THAN WHAT IS REQUIRED FOR SHEARWALLS AND ROOF DIAPHRAGM ABOVE

FOR ROOF ZONE 1:	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c. OR USE 16 ga. STAPLE AT 8 in o.c.
FOR ROOF ZONE 2:	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c. OR USE 16 ga. STAPLE AT 7 in o.c.
FOR ROOF ZONE 3 (CORNER):	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c. OR USE 16 ga. STAPLE AT 7 in o.c.
FOR ROOF ZONE 3OH (CORNER OVERHANG):	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 8 in o.c. OR USE 16 ga. STAPLE AT 4 in o.c.
FOR WALL ZONE 4:	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c. OR USE 16 ga. STAPLE AT 10 in o.c.
FOR WALL ZONE 5:	USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c. OR USE 16 ga. STAPLE AT 9 in o.c.
EDGE DIMENSION, a =	3.03 ft

CONNECTION SUMMARY: **CONNECTIONS TO BE AS SPECIFIED OR EQUIVALENT**

UPLIFT CONNECTIONS

MAKE ROOF TRUSS UPLIFT CONNECTIONS AT SIDEWALL AND MATEWALL

REQUIRED TRUSS TIE DOWN:	USE (2)SIMPSON SDWC15600 SCREW NO GOOD FOR SIMPSON H8 OK FOR SIMPSON H10A OK FOR (5) #10 WOOD SCREWS x 5" LENGTH (MIN. 2" OF PENETRATION) OR TRUSS CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 594 lbs
1ST FLOOR STUD TO TOP PLATE / CEILING BAND:	USE A 1.5 x 20 ga STRAP EACH STUD WITH (4) 8d NAIL(S) EACH END OR WITH (9) 16 ga. STAPLE(S) EACH END OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 396 lbs
1st FLOOR STUD TO FLOOR BAND:	USE A 1.5 x 20 ga STRAP EACH STUD WITH (4) 8d NAIL(S) EACH END OR WITH (9) 16 ga. STAPLE(S) EACH END OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 307 lbs
FLOOR BAND TO SILL PLATE CONNECTION:	USE A 1.5 x 20 ga STRAP WITH (9) 8d NAIL(S) EACH END OR WITH (23) 16 ga. STAPLE(S) EACH END WRAPPED AROUND THE SILL PLATE AT EACH ANCHOR BOLT LOCATION OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 1110 lbs

LATERAL CONNECTIONS

TRUSS TO TOP PLATE CONNECTION:	FOR SIMPSON H8 - USE (2) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS FOR SIMPSON H10A - USE (0) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS FOR #10 x 5" WOOD SCREW (TOENAILED) - USE (0) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS FOR 2SIMPSON SDWC15600 SCREW - USE (1) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS
PLATE TO PLATE CONNECTION:	ATTACH WITH 15 ga. STAPLE (FACE) AT 7" ON CENTER
PLATE TO STUD CONNECTION:	USE (3) 15 ga. STAPLE (FACE) PER STUD
BOTTOM PLATE TO FLOOR CONNECTION:	ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 10" ON CENTER

TOP PLATE SPLICES

TOP PLATE SPLICES SHALL BE A MINIMUM OF 4 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 3" o.c
OR A MINIMUM OF 14 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 12" o.c
OR A MINIMUM OF 9 ft w/ (2) ROWS 15 ga. STAPLE (FACE) 3" o.c
OR A MINIMUM OF 36 ft w/ (2) ROWS 15 ga. STAPLE (FACE) 12" o.c

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HORIZONTAL FLOOR DIAPHRAGM CONTINUITY

FIRST FLOOR
MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
USE A MIN. OF (10) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (21) 3/8" DIA. LAG SCREW

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
USE A 1.5 x 20 ga STRAP WITH (2) 8d NAIL(S) EACH END
OR WITH (5) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 234 lbs

SHEAR CONNECTIONS

FIRST FLOOR ENDWALL

UNIT SHEAR SHEATHING TO FLOOR BAND: (AND SHEATHING TO TRUSS BOTTOM CHORD)	USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8D NAILS AT 2" O.C. OR USE SHEATHING CONNECTION WITH 2 ROW(S) OF 16 ga. STAPLES AT 2" O.C. OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 568 plf
UNIT UPLIFT SHEATHING TO FLOOR BAND:	USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C. OR USE SHEATHING CONNECTION WITH 2 ROW(S) OF 16 ga. STAPLES AT 2" O.C. OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 568 plf
ALTERNATE:	FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
TRUSS BOTTOM CHORD TO TOP PLATE CONNECTION:	USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 3" ON CENTER OR USE (1) SIMPSON LTP4 PLATE AT 25" ON CENTER OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 8094 lbs
RIMBAND TO SILL PLATE CONNECTION:	USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 2" ON CENTER OR USE (1) SIMPSON LTP4 PLATE AT 16" ON CENTER OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 13062 lbs
SILL PLATE TO FOUNDATION CONNECTION:	USE 1/2" ANCHOR BOLTS AT 28" O.C OR USE 5/8" ANCHOR BOLTS AT 42" O.C OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 13062 lbs

FIRST FLOOR SIDEWALL

UNIT SHEAR SHEATHING TO RIMBAND CONNECTION:	USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 6" O.C. OR USE SHEATHING CONNECTION WITH 1 ROW(S) OF 16 ga. STAPLES AT 6" O.C. OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 97 plf
UNIT UPLIFT SHEATHING TO RIMBAND CONNECTION:	USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 6" O.C. OR USE SHEATHING CONNECTION WITH 1 ROW(S) OF 16 ga. STAPLES AT 6" O.C. OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 97 plf
ALTERNATE:	FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE
RIMBAND TO SILL PLATE CONNECTION:	USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 11" ON CENTER OR USE (1) SIMPSON LTP4 PLATE AT 72" ON CENTER OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5444 lbs
SILL PLATE TO FOUNDATION CONNECTION:	USE 1/2" ANCHOR BOLTS AT 72" O.C OR USE 5/8" ANCHOR BOLTS AT 72" O.C OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5444 lbs

HOLDDOWN CONNECTIONS

FIRST FLOOR CORNER HOLDDOWN:	NO PHYSICAL HOLDDOWN REQUIRED
	OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 0 lbs SEE MARKUPS FOR HOLD DOWN LOCATIONS
FIRST FLOOR CORNER STUD CONNECTION:	FASTEN CORNER STUDS 2 ROWS OF 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 15" ON CENTER OR USE (6) 3/8" DIA. LAG SCREWS

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DESIGN PARAMETERS

MEAN ROOF HEIGHT (MRH) =	20.00	ft
NUMBER OF STORIES =	1	
FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
BUILDING ASPECT RATIO (L/W) =	2.51	
FLOOR JOIST DEPTH =	9.25	in
MAX. VERTICAL FLOOR OFFSET =	0	in
FLOOR ASPECT RATIO (L/W) =	2.51	
MAX. FLOOR DIAPHRAGM OPENING WIDTH =	0	ft
MAX. FLOOR DIAPHRAGM OPENING LENGTH =	0	ft
FIRST FLOOR HEIGHT (H_1) =	8	ft
CEILING ASPECT RATIO (L/W) =	2.51	
MIN. SHEARWALL SEGMENT (H / 3.5) =	2.29	ft
ROOF PITCH =	7	/12

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CONNECTION INFORMATION:

TRUSS TO PLATE CONNECTORS

	UPLIFT STRENGTH:			SHEAR STRENGTH:		
SIMPSON SDWC15600 SCREW	U =	485	lbs	F2 =	148	lbs
SIMPSON H8	U =	565	lbs	F_2 =	0	lbs
SIMPSON H10A	U =	1015	lbs	F_1 =	505	lbs
SIMPSON H10	U =	850	lbs	F_2 =	235	lbs
#10 x 5" WOOD SCREW (TOENAILED)	U =	127	lbs	F_2 =	188	lbs
	200 psi MINIMUM CONSTRUCTION ADHESIVE			Z =	100	psi (END-GRAIN)
	200 psi MINIMUM CONSTRUCTION ADHESIVE			Z =	200	psi (FACE)

FLAT STRAPS	**MAXIMUM**			**FASTENERS:** 8d NAIL		16 ga. STAPLE
1.5 x 20 ga STRAP	Z =	1265	lbs	Z =	127.3	48.3 lbs
DBL 1.5 x 20 ga STRAP	Z =	2530	lbs	Z =	131.4	46 lbs
(3) 1.5 x 20 ga STRAP	Z =	3795	lbs	Z =	140.5	45.1 lbs
(2) 1.5" x 22 ga. STRAP	Z =	1620	lbs	Z =	129.4	46.4 lbs
(2) 1.5" x 20 ga. STRAP	Z =	1946	lbs	Z =	131.4	46 lbs

HOLDDOWNS w/ 1 1/2" EDGE DISTANCE **MINIMUM 8" STEM WALL** **ASSUME 3000 psi Fc CONCRETE**			
SIMPSON LSTHD8RJ	Z =	1950	lbs
SIMPSON STHD10RJ	Z =	3230	lbs
SIMPSON STHD14RJ	Z =	5150	lbs
SIMPSON PA51	Z =	2025	lbs
1/2" DIA. THRU BOLT	Z =	623	lbs
1/2" ANCHOR BOLT	Z =	1056	lbs
5/8" ANCHOR BOLT	Z =	1488	lbs
3/8" DIA. LAG SCREW	Z =	288	lbs
3/8" DIA. x 3 1/2" (3" PENETRATION) LAG SCREW	W =	669	lbs (WITHDRAWAL)
0.131" x 2.5" COMMON NAIL (FACE NAILED)	Z =	100	lbs
0.131" x 2.5" COMMON NAIL (TOENAILED)	Z =	83	lbs
0.131" x 2.5" COMMON NAIL (ENDNAILED)	Z =	67	lbs
0.162" x 3.5" COMMON NAIL (TOENAILED)	Z =	158	lbs
0.162" x 3.5" COMMON NAIL (FACE NAILED)	Z =	191	lbs
0.162" x 3.5" COMMON NAIL (ENDNAILED)	Z =	128	lbs
8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER	Z =	95	lbs
0.131" x 2.5" COMMON NAIL (FACE NAILED)	W =	69	lbs (7/16" SIDE; WITHDRAWAL)
#10 x 5" WOOD SCREW (TOENAILED)	Z =	188	lbs
#10 x 5" WOOD SCREW (TOENAILED)	W =	127	lbs (WITHDRAWAL; MIN. 2" PENETRATION)
15 ga. STAPLE (FACE)	Z =	72	lbs
16 ga. STAPLE	W =	34	lbs (7/16" SIDE; WITHDRAWAL)
16 ga. STAPLE (FACE)	Z =	63.7	lbs
(1) SIMPSON LTP4 PLATE	Z =	575	lbs
1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"	Z =	70	plf
7/16" OSB (UN-BLOCKED) w/ 16 ga. STAPLES @ 6"/12"	Z =	127	plf
7/16" OSB (BLOCKED) w/ 16 ga. STAPLES @ 6"/12"	Z =	189	plf
19/32" MIN. OSB (UN-BLOCKED) w / 8 d NAILS @ 6"/12"	Z =	305	plf
19/32" MIN. OSB (BLOCKED) w/ 16 ga STAPLES @ 6"/12"	Z =	201	plf
7/16" OSB (BLOCKED) w/ 16 ga STAPLES @ 6"/12" & 4" o.c. @ PERIMETER	Z =	258	plf
7/16" OSB (BLOCKED) w/ 16 ga STAPLES @ 4"/12" & 2 1/2" o.c. @ PERIMETER	Z =	384	plf
19/32" OSB (BLOCKED) w/ 16 ga STAPLES @ 6"/12" & 4" o.c. @ PERIMETER	Z =	269	plf
19/32" OSB (BLOCKED) w/ 16 ga STAPLES @ 4"/12" & 2 1/2" o.c. @ PERIMETER, DOUBLE FRAMING	Z =	402	plf

NOTE: SIMPSON CONNECTORS & FASTEN VALUES ASSUME SPF FRAMING MATERIAL
ANCHOR BOLT VALUES ASSUME DF/SP VALUES

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DESIGN UPLIFT LOADS

ROOF & CEILING ASSEMBLY DEAD LOAD =	15	psf
WALL DEAD LOAD (WDL) =	14	psf
FLOOR DEAD LOAD (FDL) =	10	psf
ROOF SPAN (RS) =	30.33	ft
TRUSS SPACING (TOC)=	24	in
STUD SPACING (SOC) =	16	in
FIRST FLOOR HEIGHT (H_1) =	8	ft

UPLIFT CONNECTION LOAD:

wup = 297 plf CONVERTED FROM TRUSS CC557327

REQUIRED TRUSS TIE DOWN:

$P_{up} = w_{up} * TOC =$
$P_{up} =$ 297 plf * 24 in / 12 =
$P_{up} =$ 594 lbs
NO. OF = 2
AVAILABLE UPLIFT STRENGTH = 970 lbs

USE (2)SIMPSON SDWC15600 SCREW
NO GOOD FOR SIMPSON H8
OK FOR SIMPSON H10A
OK FOR (5) #10 WOOD SCREWS x 5" LENGTH (MIN. 2" OF PENETRATION)
OR TRUSS CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 594 lbs

REQUIRED SIDEWALL STUD TIE DOWN LOADING:

1ST FLOOR STUD TO TOP PLATE / CEILING BAND: $P_{1tp} = w_{up} * SOC =$ 297 * 16 / 12 = 396 lbs

1st FLOOR STUD TO FLOOR BAND: $P_{1fb} = P_{1tp} - 0.6 * WDL * H_1 * SOC =$
$P_{1fb} =$ 396 lbs - 0.6 * 14 psf * 8 ft * 16 in / 12 = 307 lbs

CHECK FASTENERS:

8d NAIL Z = 127.3 lbs
396 lbs / 127.3 lbs / FASTENER = 3.11 FASTENERS
USE (4) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 48.3 lbs
396 lbs / 48.3 lbs / FASTENER = 8.2 FASTENERS
USE (9) 16 ga. STAPLE(S) EACH END

USE A 1.5 x 20 ga STRAP EACH STUD WITH (4) 8d NAIL(S) EACH END
OR WITH (9) 16 ga. STAPLE(S) EACH END
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 396 lbs

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SIDEWALL 1st FLOOR BAND TO SILL PLATE CONNECTION:

SIDEWALL UPLIFT AT SILL PLATE: $w_{sp} = P_{1fb} / SOC - 0.6 * FDL * W_1 / 4 =$

$w_{sp} =$ 307 lbs * 12 / 16 in - 0.6 * 10 psf * 30.33 ft / 4 =

$w_{sp} =$ 185 plf

CHECK STRAP AT ANCHOR BOLT LOCATIONS:

1/2" ANCHOR BOLT SPACING (BOC) = 72 in

$P_{sp} = w_{sp} * BOC =$ 185 plf * 72 = 1110 lb

CHECK FASTENERS: 8d NAIL Z = 127.3 lbs

1110 lbs / 127.3 lbs / FASTENER = 8.72 FASTENERS

USE (9) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 48.3 lbs

1110 lbs / 48.3 lbs / FASTENER = 22.98 FASTENERS

USE (23) 16 ga. STAPLE(S) EACH END

USE A 1.5 x 20 ga STRAP WITH (9) 8d NAIL(S) EACH END
OR WITH (23) 16 ga. STAPLE(S) EACH END
WRAPPED AROUND THE SILL PLATE AT EACH ANCHOR BOLT LOCATION
OR CONNECTION TO WITHSTAND AN UPLIFT FORCE OF 1110 lbs

CHECK BENDING IN RIMBAND:

DBL. 2x10 SPF #2 RIMBAND DESIGN VALUES:

SECTION MODULUS (S) = 42.78 in^3

ALLOWABLE BENDING (fb) = 875 psi

$$M_{MAX} = \frac{w_{sp} * BOC^2}{8} =$$

$$M_{MAX} = \frac{185 \text{ plf} * (72 / 12)^2}{8} = 9990 \text{ in-lbs}$$

$$\text{APPLIED fb} = \frac{M_{MAX}}{S} = \frac{9990 \text{ in-lbs}}{42.78 \text{ in}^3} = 234 \text{ psi}$$

ALLOWABLE BENDING (fb) = 875 psi > APPLIED fb = 234 psi

DBL. 2x10 SPF #2 RIMBAND IS OK

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LATERAL LOAD AT ROOF/CEILING DIAPHRAGM

ROOF SPAN = 30.33 ft
ROOF PITCH = 7 /12

WIND PERPENDICULAR TO RIDGE:

213 plf

WIND PARALLEL TO RIDGE:

204 plf

LATERAL LOAD AT FLOOR DIAPHRAGM

WIND PERPENDICULAR TO RIDGE:

207 plf

WIND PARALLEL TO RIDGE:

206 plf

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LATERAL FRAMING CONNECTION LOADS FROM WIND:

(FOR ROOF-TO-PLATE, PLATE-TO-PLATE, PLATE-TO-STUD, AND PLATE-TO-FLOOR)

PER ASCE 7-10 WIND PRESSURE (w) = 28 psf

wl-wall' = w * H / 2 =

112 plf

TRUSS MULTIPLIER = 2

STUD MULTIPLIER = 1.33

TRUSS TO TOP PLATE CONNECTION:

$P_C = w_{l\text{-}wall} * M_{24}$ = 112 plf * 2 = 224 lbs

TRUSS CONNECTION: SIMPSON SDWC15600 SCREW F_2 = 148 lbs

$P_C = P - F_2$ =

P_C = 224 lbs - 148 lbs =

P_C = 76 lbs

OF #10 x 5" WOOD SCREW (TOENAILED) REQUIRED = $\frac{P_C}{Z} = \frac{76 \text{ lbs}}{188 \text{ lbs}}$ = 1 SCREWS

USE (1) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS

TRUSS CONNECTION: SIMPSON H8 F_2 = 0 lbs

$P_C = P - F_2$ =

P_C = 224 lbs - 0 lbs =

P_C = 224 lbs

OF #10 x 5" WOOD SCREW (TOENAILED) REQUIRED = $\frac{P_C}{Z} = \frac{224 \text{ lbs}}{188 \text{ lbs}}$ = 2 SCREWS

USE (2) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS

TRUSS CONNECTION: SIMPSON H10A F_1 = 505 lbs

$P_C = P - F_2$ =

P_C = 224 lbs - 505 lbs =

P_C = -281 lbs

OF #10 x 5" WOOD SCREW (TOENAILED) REQUIRED = $\frac{P_C}{Z} = \frac{-281 \text{ lbs}}{188 \text{ lbs}}$ = 0 SCREWS

USE (0) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS

TRUSS CONNECTION: #10 x 5" WOOD SCREW (TOENAILED) F_1 = 940 lbs

$P_C = P - F_2$ =

P_C = 224 lbs - 940 lbs =

P_C = -716 lbs

OF REQUIRED = $\frac{P_C}{Z} = \frac{-716 \text{ lbs}}{188 \text{ lbs}}$ = 0 SCREWS

USE (0) ADDITIONAL #10 x 5" WOOD SCREW (TOENAILED) PER TRUSS

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PLATE TO PLATE CONNECTION:

SPACING OF 15 ga. STAPLE (FACE) = $\frac{Z * 12}{w_{I\text{-}wall}} = \frac{72 \text{ lbs} * 12}{112 \text{ plf}} =$ 7 in O.C. (16" max)

ATTACH WITH 15 ga. STAPLE (FACE) AT 7" ON CENTER

PLATE TO STUD CONNECTION:

$P_C = w_{I\text{-}wall} * M_{16}$ = 112 plf * 1.33 = 149 lbs

OF 15 ga. STAPLE (FACE) REQUIRED = $\frac{P_C}{Z} = \frac{149 \text{ lbs}}{72 \text{ lbs}} =$ 3 STAPLES

USE (3) 15 ga. STAPLE (FACE) PER STUD

BOTTOM PLATE TO FLOOR CONNECTION:

SPACING OF 0.131" x 2.5" COMMON NAIL (FACE NAILED) = $\frac{Z * 12}{w_{I\text{-}wall}} = \frac{100 \text{ lbs} * 12}{112 \text{ plf}} =$ 10 in O.C. (16" max)

ATTACH WITH 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 10" ON CENTER

TOP PLATE SPLICE LENGTH

STRUCTURE WIDTH (W) =	30.33 ft	
STRUCTURE LENGTH (L) =	76 ft	
0.162" x 3.5" COMMON NAIL (FACE NAILED)	Z =	191 lbs
15 ga. STAPLE (FACE)	Z =	72 lbs
ROOF DIAPHRAGM LOADING ($w_{I\text{-}per}$) =	213 plf	

DIAPHRAGM CHORD FORCE = $T = \frac{wl\text{-}per * L^2}{8 * W} = \frac{213 \text{ plf} * 76 \text{ ft} \wedge 2}{8 * 30.33 \text{ ft}} =$ 5071 lbs

REQUIRED SPLICE LENGTH (w/ (2) 16d 3" o.c.): $\frac{T * 3" / 12" / ft}{2 * Z} = \frac{5071 \text{ lbs} * 3" / 12" / ft}{2 * 191 \text{ lbs / NAIL}} =$ 4 ft

REQUIRED SPLICE LENGTH (w/ (2) 16d 12" o.c.): $\frac{T * 12" / 12" / ft}{2 * Z} = \frac{5071 \text{ lbs} * 12" / 12" / ft}{2 * 191 \text{ lbs / NAIL}} =$ 14 ft

REQUIRED SPLICE LENGTH (w/ (2) 15 ga 3" o.c.): $\frac{T * 3" / 12" / ft}{2 * Z} = \frac{5071 \text{ lbs} * 3" / 12" / ft}{2 * 72 \text{ lbs / NAIL}} =$ 9 ft

REQUIRED SPLICE LENGTH (w/ (2) 15 ga 12" o.c.): $\frac{T * 12" / 12" / ft}{2 * Z} = \frac{5071 \text{ lbs} * 12" / 12" / ft}{2 * 72 \text{ lbs / NAIL}} =$ 36 ft

TOP PLATE SPLICES SHALL BE A MINIMUM OF 4 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 3" o.c
OR A MINIMUM OF 14 ft w/ (2) ROWS 16d (0.162" x 3.5" COMMON NAIL (FACE NAILED)) 12" o.c
OR A MINIMUM OF 9 ft w/ (2) ROWS 15 ga. STAPLE (FACE) 3" o.c
OR A MINIMUM OF 36 ft w/ (2) ROWS 15 ga. STAPLE (FACE) 12" o.c

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SHEARWALL DESIGN
(per ASCE 7-10)

CHAMPION HOME BUILDERS

ROOF DIAPHRAGM SHEATHING REQUIREMENTS

ROOF SPAN (RS) = 30.33 ft
ROOF LENGTH (RL) = 76 ft
ROOF PITCH = 7 /12
ROOF ANGLE (RA) = 30.3 °
$w_{l\text{-}per}$ = 213 plf
STANDARD ROOF SHEATHING = 7/16" OSB (UN-BLOCKED) w/ 16 ga. STAPLES @ 6"/12"
ROOF SHEATHING SHEAR CAPACITY (v_r') = 127 plf
STANDARD CEILING SHEATHING = 1/2" GWB (UN-BLOCKED) w/ FASTENERS @ 7"/7"
CEILING SHEATHING SHEAR CAPACITY (v_c) = 70 plf

MAX DIAPHRAGM SHEAR (v) = $\frac{L * wl_{l\text{-}per} / 2}{RS} = \frac{76 \text{ ft} * 213 \text{ plf} / 2}{30.33 \text{ ft}} =$ 267 plf

NET DIAPHRAGM SHEAR CAPACITY (v_n) = $v_r + v_c$ = 127 plf + 70 plf = 197 plf

DIAPHRAGM SHEAR CAPACITY REQUIRED = 267 plf **>** **STANDARD ROOF/CEILING DIAPHRAGM CAPACITY = 197 plf**

STANDARD ROOF/CEILING DIAPHRAGM NO GOOD AT ENDWALLS; SEE BELOW FOR ROOF MODIFICATION

LENGTH OF ROOF SHEATHING TO BE MODIFIED (x) = (RL / 2) * (1 - vn / v)
x = (76 ft / 2) * (1 - 197 plf / 267 plf)
x = 10 ft

ROOF SHEATHING CAPACITY REQUIRED AT ENDWALLS = v - vc = 267 plf - 70 plf) = 197 plf

INCREASE TO 7/16" OSB (BLOCKED) w/ 16 ga STAPLES @ 4"/12" & 2 1/2" o.c. @ PERIMETER WITHIN 10 ft OF ENDWALLS

FLOOR DIAPHRAGM SHEATHING REQUIREMENTS

BUILDING WIDTH (W) = 30.33 ft
BUILDING LENGTH (L) = 76 ft
$FL_{l\text{-}per}$ = 207 plf
STANDARD FLOOR SHEATHING = 19/32" MIN. OSB (UN-BLOCKED) w / 8 d NAILS @ 6"/12"
FLOOR DIAPHRAGM SHEAR CAPACITY (v_f) = 305 plf

MAX FLOOR DIAPHRAGM SHEAR (v) = $\frac{L * 3 / 4 * FLl_{l\text{-}per} / 2}{W} = \frac{76 \text{ ft} * 3 / 4 * 207 \text{ plf} / 2}{30.33 \text{ ft}} =$ 195 plf

DIAPHRAGM SHEAR CAPACITY REQUIRED = 195 plf **<** **STANDARD ROOF/CEILING DIAPHRAGM CAPACITY = 305 plf**

STANDARD FLOOR DIAPHRAGM OK

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SHEATHING SUCTION CONNECTION (PER ASCE 7-10 C-C PRESSURES, pp. 55-58)

TRUSS SPACING (TOC) =	24	in O.C.
STUD SPACING (SOC) =	16	in O.C.
0.131" x 2.5" COMMON NAIL (FACE NAILED)	69	lbs (7/16" SIDE MEMBER; WITHDRAWAL)
16 ga. STAPLE	34	lbs (7/16" SIDE MEMBER; WITHDRAWAL)
a =	3.03	ft

FOR ROOF ZONE 1 (FIELD):

24.48 psf

TRUSS LOADING = 24.48 psf x 24" o.c. / 12" / ft = 49 plf

NAILS:	49 plf / 69 lbs / FASTENER	=	0.8 FASTENERS / ft =	15	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	49 plf / 34 lbs / FASTENER	=	1.5 FASTENERS / ft =	8	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
OR USE 16 ga. STAPLE AT 8 in o.c.

FOR ROOF ZONE 2 (EDGE):

28.626 psf

TRUSS LOADING = 28.626 psf x 24" o.c. / 12" / ft = 57 plf

NAILS:	57 plf / 69 lbs / FASTENER	=	0.9 FASTENERS / ft =	13	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	57 plf / 34 lbs / FASTENER	=	1.7 FASTENERS / ft =	7	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
OR USE 16 ga. STAPLE AT 7 in o.c.

FOR ROOF ZONE 3 (CORNER):

28.626 psf

TRUSS LOADING = 28.626 psf x 24" o.c. / 12" / ft = 57 plf

NAILS:	57 plf / 69 lbs / FASTENER	=	0.9 FASTENERS / ft =	13	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	57 plf / 34 lbs / FASTENER	=	1.7 FASTENERS / ft =	7	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
OR USE 16 ga. STAPLE AT 7 in o.c.

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SHEARWALL DESIGN
(per ASCE 7-10)

CHAMPION HOME BUILDERS

FOR ROOF ZONE 3OH (CORNER OVERHANG):

45.222 psf

TRUSS LOADING = 45.222 psf x 24" o.c. / 12" / ft = 90 plf

NAILS:	90 plf / 69 lbs / FASTENER	=	1.4 FASTENERS / ft =	8	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	90 plf / 34 lbs / FASTENER	=	2.7 FASTENERS / ft =	4	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 8 in o.c.
OR USE 16 ga. STAPLE AT 4 in o.c.

FOR WALL ZONE 4 (FIELD):

26.55 psf

STUD LOADING = 26.55 psf x 16" o.c. / 12" / ft = 35 plf

NAILS:	35 plf / 69 lbs / FASTENER	=	0.6 FASTENERS / ft =	20	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	35 plf / 34 lbs / FASTENER	=	1.1 FASTENERS / ft =	10	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
OR USE 16 ga. STAPLE AT 10 in o.c.

FOR WALL ZONE 5 (EDGE):

32.778 psf

STUD LOADING = 32.778 psf x 16" o.c. / 12" / ft = 44 plf

NAILS:	44 plf / 69 lbs / FASTENER	=	0.7 FASTENERS / ft =	17	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.
STAPLES:	44 plf / 34 lbs / FASTENER	=	1.3 FASTENERS / ft =	9	in O.C.
			MAX ALLOWABLE SPACING:	12	in O.C.

USE 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 12 in o.c.
OR USE 16 ga. STAPLE AT 9 in o.c.

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SHEARWALL DESIGN
(per ASCE 7-10)

CHAMPION HOME BUILDERS

FIRST FLOOR ENDWALL #1 SHEATHING LENGTH REQUIREMENTS
MASTER BEDROOM /CLOSET END

FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR	
SHEATHING EDGE FASTENER SPACING =	4	in O.C. (16 ga STAPLES OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	590	plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3	ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	19.18	ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	77	%
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	6.83	ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.743	(TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{end}) =	2	
ADDITIONAL WALL LOAD =	0	lbs

SHEARWALL REACTION (R_{end1}) = L_1 * $W_{t\text{-}per}$ / N_{end} + ADDITIONAL=

R_{end1} = 76 ft * 213 plf / 2 + 0 lbs = 8094 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end1} / V = 8094 lbs / 590 plf = 13.72 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = LSW / CO = 13.72 ft / 0.743 = 18.47 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 18.47 ft **<** **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 19.18 ft**

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR HORIZONTAL FLOOR DIAPHRAGM CONTINUITY:

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (ALONG MATE LINE)
(DEEP BEAM HORIZONTAL SHEAR)

$$V_f = \frac{(3 * F_{t\text{-}per} / 4) * L}{2} = \frac{3 / 4 * 207 \text{ plf} * 76 \text{ ft}}{2} = 5900 \text{ lbs}$$

1/2" DIA. THRU BOLT = $\frac{V_f}{Z_{1/2\ BOLT}} = \frac{5900 \text{ lbs}}{623 \text{ lbs}}$ = 10 BOLTS

3/8" DIA. LAG SCREW $\frac{V_f}{Z_{1/2\ BOLT}} = \frac{5900 \text{ lbs}}{288 \text{ lbs}}$ = 21 SCREWS

USE A MIN. OF (10) 1/2" DIA.THRU BOLTS
OR USE A MIN. OF (21) 3/8" DIA. LAG SCREW
TO ATTACH MODULE TO MODULE ALONG MATE LINE

MODULE TO MODULE CONNECTION AT FLOOR RIMBAND: (AT ENDWALLS)
(CHORD FORCE CONTINUITY)

$$T = \frac{3/4 * F_{t\text{-}para} * W^2}{8 * L} = \frac{3/4 * 206 \text{ plf} * 30.33 \text{ ft} \wedge 2}{8 * 76 \text{ ft}} = 234 \text{ lbs}$$

CHECK FASTENERS:

8d NAIL Z = 127.3 lbs
234 lbs / 127.3 lbs / FASTENER = 1.84 FASTENERS
USE (2) 8d NAIL(S) EACH END

16 ga. STAPLE Z = 48.3 lbs
234 lbs / 48.3 lbs / FASTENER = 4.84 FASTENERS
USE (5) 16 ga. STAPLE(S) EACH END

USE A 1.5 x 20 ga STRAP WITH (2) 8d NAIL(S) EACH END
OR WITH (5) 16 ga. STAPLE(S) EACH END
TO ATTACH MODULE TO MODULE AT EACH ENDWALL
OR CONNECTION TO WITHSTAND A TENSILE FORCE OF 234 lbs

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FIRST FLOOR ENDWALL #1: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	19.18	ft
SHEARWALL ADJUSTMENT FACTOR (C_P) =	0.743	
SHEARWALL REACTION (R_{end2}) =	8094	lbs
WALL HEIGHT (H) =	8	ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{end1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{8094 \text{ lbs} \times 8 \text{ ft}}{19.18 \text{ ft} \times 0.743} = 4544 \text{ lbs}$$

FIRST FLOOR ENDWALL #2 SHEATHING LENGTH REQUIREMENTS
BEDROOM #3 #4 END

FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR	
SHEATHING EDGE FASTENER SPACING =	6	in O.C. (16 ga STAPLES OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	436	plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3	ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	27.27	ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	90	%
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	5.08	ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.917	(TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{end}) =	2	
ADDITIONAL WALL LOAD =	0	lbs

SHEARWALL REACTION (R_{end1}) = L_1 * $W_{t\text{-}per}$ / N_{end} + ADDITIONAL=

R_{end1} = 76 ft * 213 plf / 2 + 0 lbs = 8094 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{end1} / V = 8094 lbs / 436 plf = 18.56 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (ENDWALL) = L_{SW} / C_O = 18.56 ft / 0.917 = 20.25 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 20.25 ft **<** **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 27.27 ft**

ENDWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR ENDWALL #2: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	27.27	ft
SHEARWALL ADJUSTMENT FACTOR (C_P) =	0.917	
SHEARWALL REACTION (R_{end2}) =	8094	lbs
WALL HEIGHT (H) =	8	ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{end1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{8094 \text{ lbs} \times 8 \text{ ft}}{27.27 \times 0.917} = 2590 \text{ lbs}$$

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FIRST FLOOR ENDWALL: SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) =	30.33 ft		
FIRST FLOOR LENGTH (L_1) =	64 ft		
$FL_{l\text{-}per}$ =	207 plf		
1/2" ANCHOR BOLT	Z =	1056 lbs	
5/8" ANCHOR BOLT	Z =	1488 lbs	
0.131" x 2.5" COMMON NAIL (TOENAILED)	Z =	83 lbs	
(1) SIMPSON LTP4 PLATE	Z =	575 lbs	

MAXIMUM FIRST FLOOR ENDWALL SHEAR LOAD = 8094 lbs

TRUSS BOTTOM CHORD TO TOP PLATE CONNECTION:

# TOENAILS PER FOOT =	V / Z / W =	8094 lbs / 83 lbs / 30.33 ft =	3.2	NAILS / ft
TOENAIL SPACING =	12 / # =	12 / 3.2 =	3 " O.C.	(16" MAX)
# LTP4 PLATES PER FOOT =	V / Z / W =	8094 lbs / 575 lbs / 30.33 ft =	0.5	PLATES / ft
LTP4 PLATE SPACING =	12 / # =	12 / 0.5 =	25 " O.C.	(72" MAX)

USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 3" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE AT 25" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 8094 lbs

RIMBAND TO SILL PLATE CONNECTION:

V = MAX ENDWALL SHEAR + L_1 x (3/4 * $FL_{l\text{-}per}$) / 2 =
V = 8094 lbs + 64 ft x (3/4 * 207 plf) / 2 = 13062 lbs

# TOENAILS PER FOOT =	V / Z / W =	13062 lbs / 83 lbs / 30.33 ft =	5.2	NAILS / ft
TOENAIL SPACING =	12 / # =	12 / 5.2 =	2 " O.C.	(16" MAX)
# LTP4 PLATES PER FOOT =	V / Z / W =	13062 lbs / 575 lbs / 30.33 ft =	0.7	PLATES / ft
LTP4 PLATE SPACING =	12 / # =	12 / 0.7 =	16 " O.C.	(72" MAX)

USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 2" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE AT 16" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 13062 lbs

SILL PLATE TO FOUNDATION CONNECTION:

# 1/2" ANCHOR BOLTS =	V / Z =	13062 lbs / 1056 lbs =	13	BOLTS
BOLT SPACING =	(W - 2) / (N - 1) =	(30.33 ft - 2) / (13 - 1) =	28	in

USE 1/2" ANCHOR BOLTS AT 28" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 13062 lbs

# 5/8" ANCHOR BOLTS =	V / Z =	13062 lbs / 1488 lbs =	9	BOLTS
BOLT SPACING =	(W - 2) / (N - 1) =	(30.33 ft - 2) / (9 - 1) =	42	in

USE 5/8" ANCHOR BOLTS AT 42" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 13062 lbs

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CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

$$\text{SHEAR FORCE (V)} = \frac{R_{end1}}{\Sigma L_i \times C_O} =$$

FIRST FLOOR ENDWALL #1: $V = \frac{8094 \text{ lbs}}{19.18 * 0.743} = 568$ plf

FIRST FLOOR ENDWALL #2: $V = \frac{8094 \text{ lbs}}{27.27 * 0.917} = 324$ plf

MAXIMUM FIRST FLOOR ENDWALL UNIT SHEAR = 568 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

$$\text{\# OF 8d NAILS PER FOOT} = \frac{V}{Z} = \frac{568 \text{ plf}}{95 \text{ lbs / NAIL}}$$

\# OF 8d NAILS PER FOOT = 5.98 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 5.98 = 2 " O.C.

\# OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2 o.c. 2 " O.C.

CHECK # 14 ga. STAPLES REQUIRED FOR SHEATHING CONNECTION:

16 ga. STAPLE (FACE) Z = 63.7 lbs

$$\text{\# OF 16 ga. STAPLES PER FOOT} = \frac{V}{Z} = \frac{568 \text{ plf}}{63.7 \text{ lbs / STAPLE}}$$

\# OF 16 ga. STAPLES PER FOOT = 8.92 STAPLES PER FOOT

OVERALL 16 ga. STAPLE SPACING = 12 / # = 12 / 8.92 = 1 " O.C.

\# OF ROWS : 2 ROW(S)

16 ga. STAPLE SPACING WITHIN EACH ROW = 2 * SPACING 2 * 1 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8D NAILS AT 2" O.C.
OR USE SHEATHING CONNECTION WITH 2 ROW(S) OF 16 ga. STAPLES AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 568 plf

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UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

OF 8d NAILS PER FOOT = $\frac{V}{Z} = \frac{568 \text{ plf}}{95 \text{ lbs / NAIL}}$

OF 8d NAILS PER FOOT = 5.98 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 5.98 = 2 " O.C.

OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 2 o.c. 2 " O.C.

CHECK # 14 ga. STAPLES REQUIRED FOR SHEATHING CONNECTION:

16 ga. STAPLE (FACE) Z = 63.7 lbs

OF 16 ga. STAPLES PER FOOT = $\frac{V}{Z} = \frac{568 \text{ plf}}{63.7 \text{ lbs / STAPLE}}$

OF 16 ga. STAPLES PER FOOT = 8.92 STAPLES PER FOOT

OVERALL 16 ga. STAPLE SPACING = 12 / # = 12 / 8.92 = 1 " O.C.

OF ROWS : 2 ROW(S)

14 ga. STAPLE SPACING WITHIN EACH ROW = 2 * SPACING 2 * 1 o.c. 2 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 2" O.C.
OR USE SHEATHING CONNECTION WITH 2 ROW(S) OF 16 ga. STAPLES AT 2" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 568 plf

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

V = 568 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

WIDTH OF GLUE STRIP REQUIRED = $\frac{V}{Z} = \frac{568 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}} =$ 1 "

FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

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FIRST FLOOR SIDEWALL #1 SHEATHING LENGTH REQUIREMENTS
KITCHEN SIDE

FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR	
SHEATHING EDGE FASTENER SPACING =	6	in O.C. (16 ga STAPLES OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	277	plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3	ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	53.75	ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	71	%
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	6.8	ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.689	(TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{side}) =	2	
ADDITIONAL WALL LOAD =	0	lbs

SHEARWALL REACTION (R_{side1}) = $W_1 * W_{l\text{-}para} / N_{side}$ + ADDITIONAL =

R_{side1} = 30.33 ft * 204 plf / 2 + 0 lbs = 3101 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side1} / V = 3101 lbs / 277 = 11.19 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{sw} / C_O = 11.19 ft / 0.689 = 16.25 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 16.25 ft **<** **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 53.75 ft**

SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR SIDEWALL #1: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	53.75	ft
SHEARWALL ADJUSTMENT FACTOR (C_P) =	0.689	
SHEARWALL REACTION (R_{side1}) =	3101	lbs
WALL HEIGHT (H) =	8	ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{3101 \text{ lbs} \times 8 \text{ ft}}{53.75 \times 0.689} = 670 \text{ lbs}$$

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FIRST FLOOR SIDEWALL #2 SHEATHING LENGTH REQUIREMENTS
LIVING ROOM SIDE

FIRST FLOOR WIDTH (W_1) =	30.33	ft
FIRST FLOOR LENGTH (L_1) =	76	ft
SHEARWALL TYPE:	7/16" OSB EXTERIOR (BLOCKED) w/ 1/2" GWB INTERIOR	
SHEATHING EDGE FASTENER SPACING =	6	in O.C. (16 ga STAPLES OR EQUIVALENT)
SHEARWALL STRENGTH (V) =	277	plf
MIN. SHEARWALL SEGMENT LENGTH =	2.3	ft
FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	49.343	ft
1st FL. PERCENT FULL HEIGHT SHEATHING=	65	%
1st FL. MAX. UNRESTRAINED OPENING HEIGHT =	6.8	ft
SHEAR ADJUSTMENT FACTOR (C_o) =	0.652	(TABLE 2305.3.7.2, IBC)
1st FL. NUMBER OF SHEARWALLS (N_{side}) =	2	
ADDITIONAL WALL LOAD =	0	lbs

SHEARWALL REACTION (R_{side1}) = $W_1 * W_{l\text{-}para} / N_{side}$ + ADDITIONAL=

R_{side1} = 30.33 ft * 204 plf / 2 + 0 lbs = 3101 lbs

MIN. LENGTH SEGMENTED SHEARWALLS (L_{sw}) = R_{side1} / V = 3101 lbs / 277 plf = 11.19 ft

PERFORATED FULL HEIGHT SHEATHING LENGTH REQUIRED (SIDEWALL) = L_{SW} / C_O = 11.19 ft / 0.652 = 17.18 ft

PERFORATED FULL HEIGHT SHEATHING REQUIRED = 17.18 ft **<** **PERFORATED FULL HEIGHT SHEATHING PROVIDED = 49.34 ft**

SIDEWALL SHEARWALLS OK
ALL EXTERIOR SHEATHING TO BE BLOCKED UNO

FIRST FLOOR SIDEWALL #2: UPLIFT DUE TO OVERTURNING

FULL HEIGHT SHEATHING PROVIDED (ΣL_i) =	49.343	ft
SHEARWALL ADJUSTMENT FACTOR (C_P) =	0.652	
SHEARWALL REACTION (R_{side1}) =	3101	lbs
WALL HEIGHT (H) =	8	ft

$$\text{UPLIFT FORCE } (U_{E1}) = \frac{R_{side1} \times H}{\Sigma L_i \times C_O} =$$

$$U_{E1} = \frac{3101 \text{ lbs} \times 8 \text{ ft}}{49.343 \times 0.652} = 772 \text{ lbs}$$

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FIRST FLOOR SIDEWALL: SHEAR CONNECTIONS

FIRST FLOOR WIDTH (W_1) =	30.33 ft		
FIRST FLOOR LENGTH (L_1) =	64 ft		
$FL_{l\text{-}para}$ =	206 plf		
$W_{l\text{-}para}$ =	204 plf		
1/2" ANCHOR BOLT	Z =	1056 lbs	
5/8" ANCHOR BOLT	Z =	1488 lbs	
0.131" x 2.5" COMMON NAIL (TOENAILED)	Z =	83 lbs	
(1) SIMPSON LTP4 PLATE	Z =	575 lbs	

MAXIMUM FIRST FLOOR SIDEWALL SHEAR LOAD = 3101 lbs

RIMBAND TO SILL PLATE CONNECTION:

V = MAX SIDEWALL SHEAR + W_1 x (3/4 * $FL_{l\text{-}para}$) / 2 =
V = 3101 lbs + 30.33 ft x (3/4 * 206 plf) / 2 = 5444 lbs

# TOENAILS PER FOOT =	V / Z / L_1 =	5444 lbs / 83 lbs / 64 ft =	1.0	NAILS / ft
TOENAIL SPACING =	12 / # =	12 / 1 =	11 " O.C.	(16" MAX)
# LTP4 PLATES PER FOOT =	V / Z / W =	5444 lbs / 575 lbs / 64 ft =	0.1	PLATES / ft
LTP4 PLATE SPACING =	12 / # =	12 / 0.1 =	72 " O.C.	(72" MAX)

USE 0.131" x 2.5" COMMON NAIL (TOENAILED) AT 11" ON CENTER
OR USE (1) SIMPSON LTP4 PLATE AT 72" ON CENTER
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5444 lbs

SILL PLATE TO FOUNDATION CONNECTION:

# 1/2" ANCHOR BOLTS =	V / Z =	5444 lbs / 1056 lbs =	6	BOLTS
BOLT SPACING =	(L - 2) / (N - 1) =	(64 ft - 2) / (6 - 1) =	72	in

USE 1/2" ANCHOR BOLTS AT 72" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5444 lbs

# 5/8" ANCHOR BOLTS =	V / Z =	5444 lbs / 1488 lbs =	4	BOLTS
BOLT SPACING =	(L - 2) / (N - 1) =	(64 ft - 2) / (4 - 1) =	72	in

USE 5/8" ANCHOR BOLTS AT 72" O.C
ANCHOR BOLTS TO BE A MIN. OF 4" AND A MAX. OF 1'-0" FROM CORNERS
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 5444 lbs

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CHECK SHEATHING TO RIMBAND CONNECTION:

UNIT SHEAR CHECK:

$$\text{SHEAR FORCE (V)} = \frac{R_{end1}}{\Sigma L_i \times C_O} =$$

FIRST FLOOR SIDEWALL #1: $V = \frac{3101 \text{ lbs}}{53.75 \times 0.689} = 84$ plf

FIRST FLOOR SIDEWALL #2: $V = \frac{3101 \text{ lbs}}{49.343 \times 0.652} = 97$ plf

MAXIMUM FIRST FLOOR SIDEWALL UNIT SHEAR = 97 plf

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

$$\text{\# OF 8d NAILS PER FOOT} = \frac{V}{Z} = \frac{97 \text{ plf}}{95 \text{ lbs / NAIL}}$$

\# OF 8d NAILS PER FOOT = 1.03 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 1.03 = 11 " O.C.

\# OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 11 o.c. 6 " O.C.

CHECK # 16 ga. STAPLES REQUIRED FOR SHEATHING CONNECTION:

16 ga. STAPLE (FACE) Z = 63.7 lbs

$$\text{\# OF 16 ga. STAPLES PER FOOT} = \frac{V}{Z} = \frac{97 \text{ plf}}{63.7 \text{ lbs / STAPLE}}$$

\# OF 16 ga. STAPLES PER FOOT = 1.53 STAPLES PER FOOT

OVERALL 16 ga. STAPLE SPACING = 12 / # = 12 / 1.53 = 7 " O.C.

\# OF ROWS : 1 ROW(S)

16 ga. STAPLE SPACING WITHIN EACH ROW = 1 * SPACING 1 * 7 o.c. 6 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 6" O.C.
OR USE SHEATHING CONNECTION WITH 1 ROW(S) OF 16 ga. STAPLES AT 6" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 97 plf

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UNIT UPLIFT CHECK: (EQUAL TO UNIT SHEAR)

CHECK # 8d NAILS REQUIRED FOR SHEATHING CONNECTION:

8d COMMON NAIL (FACE NAILED), 7/16" SIDE MEMBER Z = 95 lbs

$$\text{\# OF 8d NAILS PER FOOT} = \frac{V}{Z} = \frac{97 \text{ plf}}{95 \text{ lbs / NAIL}}$$

\# OF 8d NAILS PER FOOT = 1.03 NAILS PER FOOT

OVERALL 8d NAIL SPACING = 12 / # = 12 / 1.03 = 11 " O.C.

\# OF ROWS : 1 ROW(S)

8d NAIL SPACING WITHIN EACH ROW = 1 * SPACING 1 * 11 o.c. 6 " O.C.

CHECK # 16 ga. STAPLES REQUIRED FOR SHEATHING CONNECTION:

16 ga. STAPLE (FACE) Z = 63.7 lbs

$$\text{\# OF 16 ga. STAPLES PER FOOT} = \frac{V}{Z} = \frac{97 \text{ plf}}{63.7 \text{ lbs / STAPLE}}$$

\# OF 16 ga. STAPLES PER FOOT = 1.53 STAPLES PER FOOT

OVERALL 16 ga. STAPLE SPACING = 12 / # = 12 / 1.53 = 7 " O.C.

\# OF ROWS : 1 ROW(S)

16 ga. STAPLE SPACING WITHIN EACH ROW = 1 * SPACING 1 * 7 o.c. 6 " O.C.

USE SHEATHING CONNECTION WITH 1 ROW(S) OF 8d NAILS AT 6" O.C.
OR USE SHEATHING CONNECTION WITH 1 ROW(S) OF 16 ga. STAPLES AT 6" O.C.
OR CONNECTION TO WITHSTAND A SHEAR FORCE OF 97 plf

ALTERNATE SHEATHING CONNECTION FOR UNIT UPLIFT (GLUE):

V = 97 plf

200 psi MINIMUM CONSTRUCTION ADHESIVE Z = 200 psi (FACE)

WIDTH OF GLUE REQUIRED FOR SHEATHING CONNECTION ALONG FLOOR BAND:

$$\text{WIDTH OF GLUE STRIP REQUIRED} = \frac{V}{Z} = \frac{97 \text{ plf}}{200 \text{ psi} * 12" / \text{ft}} = 1"$$

FASTEN SHEATHING TO BAND WITH 1" WIDE STRIP OF 200 psi MINIMUM CONSTRUCTION ADHESIVE

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SHEARWALL DESIGN
(per ASCE 7-10)

CHAMPION HOME BUILDERS

COMBINED CORNER HOLDDOWN REQUIREMENTS

UPLIFT FORCES: (SEE ABOVE FOR CALCULATIONS)

1st FLOOR ENDWALL #1 UPLIFT FORCE (UE1) =	4544	lbs
1st FLOOR ENDWALL #2 UPLIFT FORCE (UE1) =	2590	lbs
1st FLOOR SIDEWALL #1 UPLIFT FORCE (US1) =	670	lbs
1st FLOOR SIDEWALL #2 UPLIFT FORCE (US1) =	772	lbs

DEAD LOADS:

FIRST FLOOR WIDTH (W_1) =	30.33	ft (MAX: 4 * CEILING HEIGHT)
FIRST FLOOR LENGTH (L_1) =	64	ft (MAX: 4 * CEILING HEIGHT)
FIRST FLOOR HEIGHT (H_1) =	8	ft
ROOF & CEILING ASSEMBLY DEAD LOAD (RDL) =	15	psf
WALL DEAD LOAD (WDL) =	12	psf
FLOOR DEAD LOAD (FDL) =	10	psf

SIDEWALL FIRST FLOOR CORNER:

ROOF DEAD LOAD =	0.6 * RDL * W_1 * L_1 / 8 =	
ROOF DEAD LOAD =	0.6 * 15 psf * 30.33 ft * 64 ft / 8 =	2184 lbs
WALL DEAD LOAD =	0.6 * (WDL * H_1 * L_1 / 2) =	
WALL DEAD LOAD =	0.6 * 12 psf * 8 ft * 64 ft / 2 =	1843 lbs
1st FLOOR DEAD LOAD =	0.6 * FDL * W_1 * L_1 / 8 =	
1st FLOOR DEAD LOAD =	0.6 * 10 psf * 30.33 ft * 64 ft / 8 =	1456 lbs
TOTAL DEAD LOAD =	1843 lbs + 2184 lbs + 1456 lbs =	5483 lbs

CORNER STUD CONNECTION LOAD =	MAX WALL UPLIFT - SELF WEIGHT	
	772 lbs - 5483 lbs =	-4711 lbs

ENDWALL FIRST FLOOR CORNER:

WALL DEAD LOAD =	0.6 * (WDL * H_1 * W_1 / 2) =	
WALL DEAD LOAD =	0.6 * 12 psf * 8 ft * 30.33 ft / 2 =	lbs
GABLE WALL DEAD LOAD =	0.6 * (WDL * (H / 2) * W / 2) =	874
GABLE WALL DEAD LOAD =	0.6 * 12 psf * ((7 / 12) * (30.33 ft / 2) / 2) * (30.33 ft) / 2 =	483 lbs
TOTAL DEAD LOAD =	874 lbs + 483 lbs =	1357 lbs

CORNER STUD CONNECTION LOAD =	MAX WALL UPLIFT - SELF WEIGHT	
	2590 lbs - 1357 lbs =	1233 lbs

FIRST FLOOR HOLDDOWNS

UPLIFT FORCE =	2590 lbs (MAX. OF FIRST FLOOR UPLIFT FORCES)	
FIRST FLOOR DEAD LOAD (DL_1) =	5483 lbs + 1357 lbs =	6840 lbs
HOLDDOWN FORCE =	2590 lbs - 6840 lbs =	0 lbs

NO PHYSICAL HOLDDOWN REQUIRED

FIRST FLOOR CORNER STUD CONNECTION

0.131" x 2.5" COMMON NAIL (FACE NAILED)	Z = 100 lbs	
MAX CORNER STUD CONNECTION LOAD =	1233 lbs	
NAIL SPACING (2 ROWS) =	$\frac{2 * H * Z}{U} = \frac{2 * 8 \text{ ft} * 100 \text{ lbs}}{1233 \text{ lbs}} =$	15 in O.C. (16" MAX)
# OF 3/8" DIA. LAG SCREW REQUIRED =	$\frac{U}{Z} = \frac{1233 \text{ lbs}}{288 \text{ lbs}} =$	6 LAG SCREWS (6 MIN)

FASTEN CORNER STUDS 2 ROWS OF 0.131" x 2.5" COMMON NAIL (FACE NAILED) AT 15" ON CENTER
OR USE (6) 3/8" DIA. LAG SCREWS

PREPARED BY: BARLOW ENGINEERING. P.C.
6512 SIX FORKS RD, SUITE 203-B RALEIGH, NC 27615

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SECTION 5

PORCH CALCULATIONS

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

PORCH CALCULATIONS

Barlow Project Number:
Model Number: Champion 23-3669-011316

Porch Uplift Connections

p,overhang =	17.49	psf
truss o.c. =	24	" o.c.
truss span =	32.08	ft
porch TWmax =	12	ft
post TLmax =	11.09	ft
roof DL =	8	psf
roof Σp =	17.49	psf
truss uplift =	297	plf

***** ALL PORCH UPLIFT CONNECTIONS TO BE MADE AT POSTS AND PORCH HEADER JACK STUDS AND CONTINUED TO FOUNDATION BY OTHERS**

DETERMINE TRUSS CONNECTORS:

TRUSS + OVERHANG UPLIFT: 297 plf* 24 in/12+ 17.49 psf * 24 in /12* 11.09 ft = 788 lbs UPLIFT AT EXTERIOR

SIMPSON H10 UPLIFT = 850 lbs

$$\frac{788 \text{ lbs UPLIFT}}{850 \text{ lbs/STRAP}} = 0.9 \text{ FASTENERS}$$

USE (1) H10 FOR TRUSS TO HEADER CONNECTION OR A CONNECTION TO WITHSTAND 788 lbs UPLIFT

HEADER TO POST:

TRUSS + OVERHANG UPLIFT AT POST:
CENTER POST TRIBUTARY LENGTH= 2.75 ft

297 plf * 2.75 ft + 17.49 psf * 11.09 ft * 2.75 ft = 1350 lbs UPLIFT AT EXTERIOR (CONTROLING UPLIFT)

SIMPSON CS18 UPLIFT = 1370 lbs

$$\frac{1350 \text{ lbs UPLIFT}}{1370 \text{ lbs/STRAP}} = 1.0 \text{ FASTENERS}$$

USE (1) SIMPSON CS18 STRAP FOR HEADER TO POST WITH (9) 10d NAILS EACH STRAP EACH END OR A CONNECTION TO WITHSTAND 1351 lbs UPLIFT

POST TO FOUNDATION:

TRUSS + OVERHANG UPLIFT AT POST:

297 plf * 2.75 ft + 17.49 psf * 11.09 ft * 2.75 ft = 1350 lbs UPLIFT AT EXTERIOR

USE (1) SIMPSON LSTHD8RJ FOR POST TO FOUNDATION OR A CONNECTION TO WITHSTAND 1351 lbs UPLIFT

PREPARED BY:
BARLOW ENGINEERING. P.C.
6512 SIX FORKS RD, SUITE 203B
RALEIGH, NC 27615

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SECTION 6

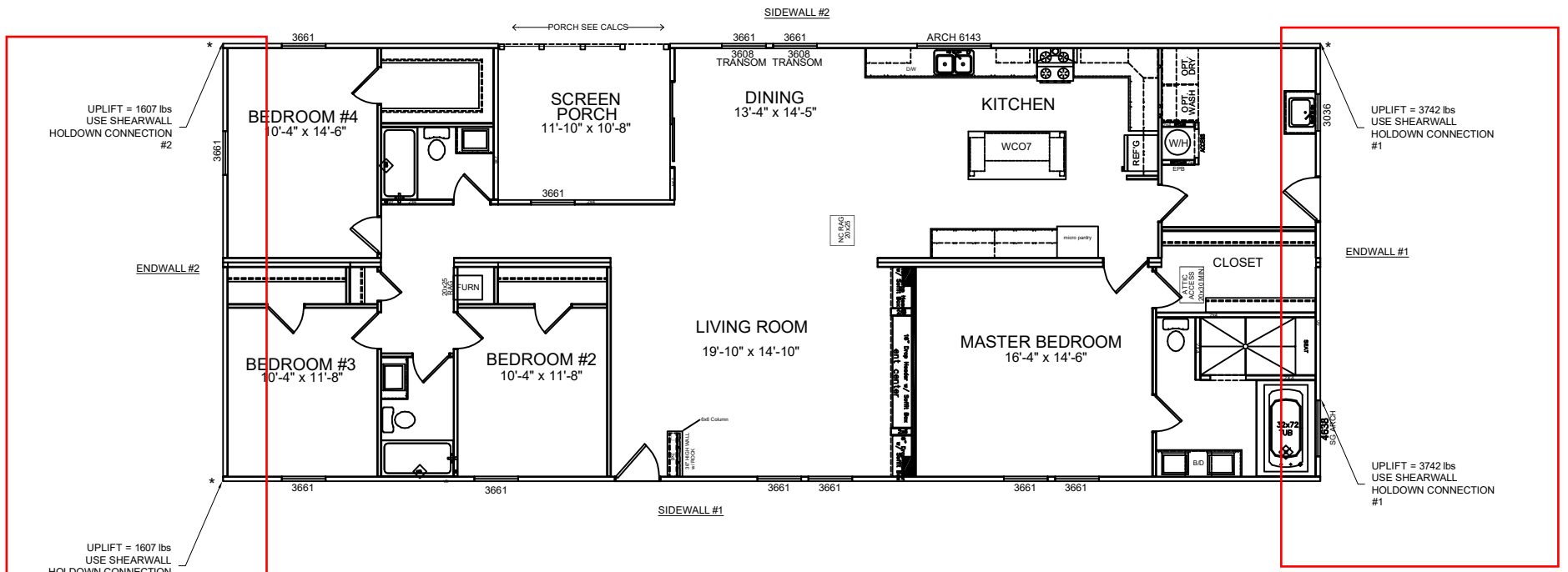
MARK UP PLANS

PFS APPROVED
Sharron Barry
DATE 12/4/19
Approval Limited to Factory Built Portion Only
PFS CORPORATION
Cottage Grove, WI

MODEL 23-3969 011316 (Rev 012816RS)

4 BDRM, 3 BATH
ACTUAL SIZE: 30'-4"X 76'-0"
TOTAL AREA: 2055 SQ.FT.

FIRST FLOOR FRAMING PLAN



* NO CORNER CONNECTION WILL BE REQUIRED IF SHEATHING COVERED ALL THE WAY TO THE CORNER EDGE. OTHERWISE, PROVIDE CONNECTION AS REQUIRED.

* MIN CORNER CONNECTION
(2) ROWS 16d COMMON NAILS @ 16" O.C.
OR (6) 1/4" LAG SCREWS

CP- 1 Revised or Added page per PFS review of 11-24-19