



December 20, 2022

Mr. Mike Hamm, P.E.
Chief Building Code Consultant
North Carolina Department of Insurance - OSFM
325 North Salisbury Street
Raleigh, NC 27603

RE: Champion Home Builders #23
Lillington, NC
Model: 23-2945

Dear Mr. Hamm:

Enclosed is one set of PFS accepted documents for the above referenced manufacturer. PFS has reviewed these documents and to the best of our knowledge have found them to conform to the North Carolina codes:

2018 NC Residential Code w/Amendments (includes plumbing, mechanical, & energy codes – Chapter 11)
2017 NC Electrical Code w/Amendments

If you have any questions, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ian Lehrer'.

Ian Lehrer, P.E.
Agency Engineer

Enclosure: As Stated

cc: Ryan Duke
Michael Golliver
File

Mr. Mike Hamm, P.E.
December 20, 2022
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PFS Corporation has reviewed and approved the above referenced material and to the best of our knowledge these documents conform to the referenced codes.



Construction Review
Ian Lehrer, P.E.



Structural Review
Ian Lehrer, P.E.



Plumbing Review
Ian Lehrer, P.E.



Mechanical Review
Ian Lehrer, P.E.



Electrical Review
Ian Lehrer, P.E.

N/A

Quality Control Review
Ian Lehrer, P.E.



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 #: 21-002679
 Model Name/ No. 23-2945 5-12 CORP ENGINEERING NC
 Manufacturer's Name: Champion Home Builders, Inc
 Plant(s) at which model will be produced Division 023, Lillington North Carolina

Check One: NEW MODEL Revised Model*

TECHNICAL DATA			
	Conforms		
	Yes	No	N/A
Floor Plan Showing:			
Braced Wall Method or Shearwalls	X		
Building Size (LxW Dimensions)	X		
Room Sizes, Light & Ventilation Schedule	X		
Exit Requirements	X		
Electrical Outlet Spacing & Smoke Detector	X		
Location of Labels & Data Plates	X		
Use Group, Type Const., Total Sq.Ft. Area	X		
Plumbing System Design or Reference No. (<u>PL-101, PL-102, PL-103</u>)	X		
Heat Loss Calculations or Reference No. (<u>MANUAL D & J</u>)	X		
HVAC/Furnace Size/Model No. (<u>MAN. D & J/AIR HANDLER/FURNACE INSTALLED-NORDYNE E7 10KW</u>)	X		
Thermal Performance Calculations or Reference No. (<u>Attached-(Appendix E)</u>)	X		
Electrical Load Calculations or Reference No. (<u>E-101</u>)	X		
Service Size and Location (<u>200A/Utility, E-101</u>)	X		
Applicable Building Codes <u>CS-101</u>	X		
Submit model to the following states: <u>North Carolina</u>			
*Description of Modification: <u>New model</u>			
Requested by: <u>Brian Herring</u> Date: <u>12/19/22</u> (designer)			

For PFS Use

Staff Plan Reviewer: Tim Busche Certification #: B5002446-R3 Date: 12-20-2022

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.

NORTH CAROLINA
MODULAR PLANS REVIEW CHECKLIST

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revised June 2018

Plan Sheet Page # and NOTES

MECHANICAL

Design calculations	N/A, BY OTHERS
Installed unit capacity	N/A, BY OTHERS
Supply and returns (locations and sizes)	N/A, BY OTHERS
Duct sizes	N/A
Specifications (units, ducts)	N/A
All appliances furnished by mfg. shown on plans	A-101

ELECTRICAL

Plan	E-101
Location of all electrical boxes	E-101
Electrical panel location	E-101
Note regarding main disconnect (if applicable)	E-101
Exterior lighting and receptacles	E-101
Ground level receptacles (if applicable)	E-101
Smoke detector location(s)	E-101
Electrical load calculations	E-101
Electrical panel layout (breaker and wire sizes, circuit schedule)	E-101
Panel and service entrance sizes	E-101
All fixtures furnished by mfg. shown on plans	E-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

Joists and beam sizes and spacing	XS-101
Materials species and grade	XS-101
Sheathing, decking, and concrete as applicable	SXS101
Fastening instructions	SU-101 TO SU-103
Insulation	XS-101 / APPENDIX E
Details as required for clarification	SU-101 TO SU-103

WALL X-SECTION

Stud and column sizes and spacing	STR-101
Materials species and grade	XS-101 / STR-101
Sheathing and bracing	XS-101, STR-101, SU-101 TO SU-103
Headers and lintels	STR-101
Finishes	XS-101
Fastening instructions	SU-101 TO SU-103
Insulation	XS-101
Details as required for clarification	XS-101, SU-101 TO SU-103

NORTH CAROLINA
MODULAR PLANS REVIEW CHECKLIST

PAGE 3 of 3

revised June 2018

Plan Sheet Page # and NOTES

CEILING / ROOF X-SECTION

Truss, rafter, and beam spacing	XS-101, SU-101 TO SU-103
Lumber species and grade	XS-101
Sheathing and decking	XS-101, SU-101 TO SU-103
Finishes	XS-101
Fastening instructions	SU-101 TO SU-103
Insulation	XS-101
Details including NC sealed truss designs or manual reference	ATTACHED (TRUSS PAGES)

FOUNDATION PLAN

Footings, pier, and curtain wall locations and specifications	PF-101
X-sections with dimensions	FD-01.01 - FD-2.03
Anchorage - sill plate to piers and curtain wall	PF-101
Anchorage - building to sill plate	PF-101
Anchorage - tie downs (lateral and longitudinal)	N/A
Soil bearing capacity	PF-101
Minimum concrete compressive strength	PF-101
Mortar type	PF-101
Ventilation requirements (with and without vapor barrier)	PF-101
Crawl space access requirements	PF-101

ENERGY COMPLIANCE

Demonstrated compliance	APPENDIX E
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SET-UP INSTRUCTIONS

Floor and ceiling connections	SU-101 TO SU-103
Marriage wall connections	SU-101 TO SU-103
Roof set-up and connection	SU-101 TO SU-103
Plumbing connections	PL-101
Mechanical connections	CS-102 (SEE MECHANICAL NOTES)
Electrical connections	E-101, CS-102 (SEE ELECTRICAL NOTES)
Fire stopping	CS-101, CS-102 (SEE PLUMBING NOTES)
Air infiltration elimination	CS-101, CS-102 (SEE PLUMBING NOTES)
Notice to inspections department attachment if set-up instructions are by attachment	CS-101, CS-102, ALSO SU-101 TO SU-103

ITEMS NOT INSPECTED IN PLANT

List of items not inspected by 3rd. Party	CS-101, CS-102
Notice to inspections department	CS-101, CS-102, ALSO SEE SU-101 TO SU-103

North Carolina
2018 N.C. Residential Code
2017 N.C. Electrical Code w/ Amendments

DRAWING INDEX			
SHEET	DESCRIPTION	SHEET	DESCRIPTION
CS-101	COVER SHEET	XS-101	CROSS SECTION
CS-102	COVER SHEET CONT.	SU-101 TO SU-103	SITE WORK DETAILS 3 PAGES
A-101	FLOOR PLAN	EV-101	ELEVATION
STR-101	STRUCTURAL	PL-101	DWV
BW-101	PRESCRIPTIVE BRACED WALL	PL-102 - PL-103	WATER & OPT
E-101	ELECTRICAL	HVAC LAYOUT & SUMMARY	MECHANICAL DETAILS PAGES 1-7
		PF-101	FOUNDATION
		FD-01.01, FD-02.01 & FD-02.03	FOUNDATION DETAILS PGS 1 TO 3
ATTACHED SHEETS			
5/12 TRUSS CERTIFICATES	PAGES 1-3		
APPENDIX E	PAGES 1-21		

ATTENTION LOCAL INSPECTIONS DEPARTMENT

THE FOLLOWING ITEMS HAVE NOT BEEN COMPLETED BY CHAMPION HOME BUILDERS, HAVE NOT BEEN INSPECTED BY THE THIRD PARTY INSPECTORS (PFS), AND ARE NOT INCLUDED IN THE STATE MODULAR CERTIFICATION LABEL. CODE COMPLIANCE MUST BE DETERMINED AT THE LOCAL LEVEL.

- SEE CS-102 FOR ADDITIONAL INSPECTIONS LIST
- ALL UTILITY CONNECTIONS
 - Electrical connections onsite (pages 26-29 setup manual)
 - Plumbing connections onsite (pages 24-25 setup manual)
- ALL ASPECTS OF SOIL AND SITE PREP
- SITE CONNECTIONS OF UNITS
 - Roofs, Floors, Walls (Setup manual pages 11-13, pages A-101, SU-101, XS-101, PF-101.. PILING DETAILS ONSITE BY OTHERS.)
- SITE CONNECTIONS OF WATER AND DRAIN LINES
- SITE INSTALLED INSULATION DUE TO PLUMBING OR MISC SITE WORK
 - .3/4" HOT WATER LINES TO BE INSULATED WITH R-3 MIN ONSITE PER N1103.5.3
- SITE INSTALLED APPLIANCES (EXAMPLE: DRYER AND VENT ETC.)
- ENTIRETY OF FOUNDATION INCLUDING DESIGN EXCEPT ADDITIONAL HOLD DOWNS AS REQUIRED PER PAGE SW-101 IF INCLUDED OTHERWISE PRESCRIPTIVE USED
- ENTIRETY OF SITE BUILT SPACES SUCH AS BASEMENTS, FINISHED ATTICS, ETC.
- SITE BUILT COMPONENTS SUCH AS PORCHES, DECKS, EXTERIOR STAIRS
- INSPECTION OF BASEMENT/PILING INSULATED DOOR REQUIRED TO BE SITE INSTALLED AND INSPECTED
- SITE INSTALLED HVAC COMPONENTS
 - 4x10 REGISTERS/BOOTS PROVIDED IN TYPICAL LOCATIONS (MANUAL D)
 - TRUNKLINE, MANUAL D & J SHOULD BE RECALCULATED BY OTHERS ON SITE IF SYSTEM DIFFERS FROM THAT PROVIDED.
 - DRYER VENTING BY OTHERS (PAGE 21 SET-UP MANUAL)
 - BLOWER DOOR TESTING TO BE COMPLETED BY OTHERS ON SITE
- SEE PRESCRIPTIVE ENERGY CODE (APPENDIX E) FOR FACTORY COMPLETED ITEMS AND SITE COMPLETED ITEMS
 - RODENT PROOFING PER RP-101 (HOME OWNERS PACKET)QAMan.(SECT. 5 Page 36)
 - WINDBORNE DEBRIS PROTECTION OF WINDOWS AND DOORS, IF REQ'D
 - SCREEN DOOR REQUIRED FOR VENTING INSTALLED AND VERIFIED.
 - SPRINKLER SYSTEM NOT REQUIRED, FIRE EXTINGUISHER TO BE PROVIDED AND INSTALLED BY OTHERS ON SITE
 - ANY FALL PROTECTION DEVICES REQ'D BY R312.2 TO BE PROVIDED AND INSTALLED ON SITE BY OTHERS
 - ATTIC ACCESS SHOWN ON A-101
 - 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 PROVIDED BY OTHERS ON SITE.
 - PROVISIONS FOR EGRESS FROM BASEMENT PROVIDED BY OTHERS ON SITE.
 - ALL ENERGY COMPLIANCE FOR BASEMENTS ON SITE BY OTHERS.

Building Description		
Use Group	Detached single family dwelling	INSULATION
Construction type	VB	OMITTED FLOOR: R-19 MIN.
Area of 1st floor	1173 Square Feet	WALLS: R-18
Area of 2nd floor	N/A	ROOF: R-38
Stories above grade	1	
Finished floor height above grade < 6'-0"	Yes	<u>U-VALUES AND SHGC typ. wdws</u>
Occupancy	Single Family	SHGC: .29
Located in flood zone?	No	U-VALUE: .34
Foundation Type	Crawl Space	see A-101 for others
Sprinklers required?	No	
Climate Zone	4A	

METHOD OF COMPLIANCE: PER NC PRESCRIPTIVE / APPENDIX E MEASURES

Structural Loads	
TCLL	20 PSF
Ground snow load	23.1 PF / 30 PG
Roof dead load	15 PSF
Uninhabitable attic live load without limited storage	10 PSF
Attic dead load	15 PSF
1st floor live load	40 PSF
Floor dead load	10 PSF
wind speed	120 MPH
Wind exposure	C
Seismic Design	C
Elevation	<2999' Feet A.S.L.
fire rating exterior wall	0 Hrs.
tenant separation	0 Hrs.
max mean roof ht.	20.00'

HOMEOWNER SITE LOCATION ANY COUNTY THAT MEETS REQUIREMENTS UNDER CS-101

LOCATION OF BUILDING ON LOT: > 5'-0" FROM LOT LINE
ANY EXISTING STRUCTURE TO BE REMOVED

ATTENTION LOCAL INSPECTIONS DEPARTMENT:

SET-UP INSTRUCTIONS INCLUDED ON THE PLAN SHEETS AND SET UP MANUAL INCLUDED WITH HOME. SEE NOTES, CROSS SECTION, SET-UP AND FOUNDATION PAGES. PLAN SET IS INCOMPLETE WITHOUT INSTALLATION MANUAL

THIS MODEL NOT TO BE LOCATED IN A COASTAL HIGH HAZARD OR OCEAN HAZARD AREA.

STRUCTURES TO BE PLACED ON FLOOD PLAINS, PILINGS, IN MOUNTAIN REGION, OR COASTAL HIGH HAZARD SITE MUST BE DESIGNED FOR ACTUAL SITE CONDITIONS

ATTENTION LOCAL INSPECTIONS DEPARTMENT:

This unit must be connected to a public water supply and sewer system if these are available

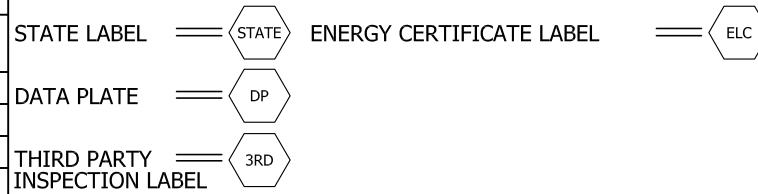
ATTENTION LOCAL INSPECTIONS DEPARTMENT:

SET UP PAGES HAVE BEEN INCLUDED TO ASSIST IN THE ON-SITE INSPECTION. PLEASE SEE PAGES CS-102, AND SU-101 TO SU-103

THIRD PARTY INSPECTION AGENCY

PFS CORPORATION
417 CENTRAL ROAD SUITE #2 BLOOMSBURG, PA
17815 (570) 784-8396

MODULAR LABELS SEE A-101 FOR LOCATIONS:



*** THIS APPROVAL PACKAGE IS USED IN CONJUNCTION WITH CHAMPION HOMES CALCULATIONS MANUAL AND DESIGN MANUAL ON FILE WITH THE STATE AND PFS THIRD PARTY AGENCY. PFS APPROVAL 06/18/20 PFS ID #002689 ITEMS NOT DIRECTLY REFERENCED MAY BE FOUND IN THIS DOCUMENT ***

MATERIAL SPECIFICATIONS

- LUMBER SPECIFICATION SHALL BE : (UNLESS NOTED OTHERWISE IN THIS DRAWING PACKAGE)
- STUDS = STUD GRADE OR EQUAL FLOOR
- CEILING JOISTS = PER TRUSS PRINT.
- EXTERIOR FINISH MATERIALS SHALL BE : VINYL SIDING UNLESS DIFFERENT TYPE IS SPECIFIED IN THESE PLANS
- FIBERGLASS ROOF SHINGLES, CLASS C MIN. UNLESS DIFFERENT TYPE IS SPECIFIED IN THESE PLANS. - SEE ORDER FORM FOR EXTENT OF MATERIALS AND INSTALLATION PROVIDED BY CHAMPION HOME BUILDERS, INC. (DIVISION 23).
- THE BUILDER SHALL BE RESPONSIBLE FOR INSTALLING ANY VINYL SIDING NOT INSTALLED BY CHAMPION HOME BUILDERS, INC. AS SITE WORK
- INTERIOR FINISHES OF UNITS MUST MIN.

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Dusha*
Title: Staff Plan Reviewer
Date: 12/20/22

GENERAL NOTES

- THE BUILDER SHALL BE RESPONSIBLE FOR PROVIDING ALL SITE REQUIRED ELEMENTS OF EGRESS.
- THE BUILDER SHALL BE RESPONSIBLE FOR ALL APPLICABLE UTILITY CONNECTIONS ON SITE
- THE BUILDER IS RESPONSIBLE FOR ENTIRETY OF FOUNDATION DESIGN AND CONSTRUCTION
- SITE WORK SHALL BE SUBJECT TO LOCAL BUILDING DEPARTMENT INSPECTION. THIS DRAWING SET INCLUDES THE MODULAR PORTION OF THIS PROJECT ONLY. THE BUILDER SHALL BE RESPONSIBLE FOR DESIGN AND ENGINEERING OF ALL SITE CONSTRUCTED ELEMENTS.
- THE BUILDER SHALL BE RESPONSIBLE FOR INSTALLING THE HEAT (ON SITE) TO INCLUDE: TYPE, CHASES AND ALL PLUMBING (IF REQ'D.)
- THE BUILDER IS RESPONSIBLE FOR INSTALLING ALL ITEMS LISTED ON CHAMPION HOME BUILDER, INC. MODULAR HOMES SHIP LOOSE LIST PER INSTALLATION PROCEDURES (IF APPLICABLE).
- THE ROOF SYSTEM IS OF THE ENGINEERED TRUSS NATURE TO BE ERECTED ON SITE BY CERTIFIED INSTALLATION CREW PER CHAMPION HOME BUILDERS, INC MODULAR HOME SITE INSTALLATION PROCEDURES MANUAL.
- ALL PENETRATIONS THROUGH FLOOR OR CEILING TO BE FIRE STOPPED

CHAMPION
MANUFACTURED BEAUTIFULLY™
4055 Hwy. 401 South Lillington, NC 27546

CHAMPION
MANUFACTURED BEAUTIFULLY™
755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48064
PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

APPROVERS SEAL

APPROVED
12/29/2022
Harnett COUNTY NORTH CAROLINA

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: COVER SHEET CS-101

DRAWN BY: Staff
DATE: 05-20-21
SCALE: 23-2945 NC MOD NEW

SHEET:

PROPRIETARY AND CONFIDENTIAL
THESE DRAWINGS AND SPECIFICATIONS ARE ORIGINAL
PROPRIETARY AND CONFIDENTIAL MATERIALS OF CHAMPION.
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ATTENTION LOCAL BUILDING DEPARTMENT

THE FOLLOWING ITEMS HAVE NOT BEEN COMPLETED BY THE MANUFACTURER, HAVE NOT BEEN INSPECTED BY THE THIRD PARTY INSPECTORS, AND ARE NOT INCLUDED IN THE STATE MODULAR CERTIFICATION LABEL. CODE COMPLIANCE MUST BE DETERMINED AT THE LOCAL LEVEL.

- ALL UTILITY CONNECTIONS
- ALL ASPECTS OF SOIL AND SITE PREP
- SITE CONNECTIONS OF UNITS
- SITE CONNECTIONS OF WATER AND DRAIN LINES
 - INSULATION ON WATER LINES PER N1103.5.3
- SITE INSTALLED INSULATION (FLOOR)
- SITE INSTALLED APPLIANCES
- ENTIRETY OF FOUNDATION INCLUDING DESIGN
- ENTIRETY OF SITE BUILT SPACES SUCH AS BASEMENTS, FINISHED ATTICS, ETC.
- SITE BUILT COMPONENTS SUCH AS PORCHES, DECKS, EXTERIOR STAIRS
- SITE INSTALLED HVAC COMPONENTS
- BLOWER DOOR TESTING
- RODENT PROOFING AND FIRE BLOCKING VERIFICATION AFTER DWV COMPLETION
- WINDBORNE DEBRIS PROTECTION OF WINDOWS AND DOORS, IF REQ'D
- SPRINKLER SYSTEM NOT REQUIRED, FIRE EXTINGUISHER TO BE PROVIDED AND INSTALLED BY OTHERS ON SITE
- ANY FALL PROTECTION DEVICES REQ'D BY R612.2 TO BE PROVIDED AND INSTALLED ON SITE BY OTHERS
- CERTAIN PARTS OF APPENDIX E OF NC AMENDMENTS. SEE PAGES THIS APPROVAL
- CERTAIN PARTS OF RESCHECK INSPECTION CHECKLIST . SEE PAGES THIS APPROVAL

GENERAL NOTES FOR BUILDER RESPONSIBILITY

- THE BUILDER SHALL BE RESPONSIBLE FOR PROVIDING ALL SITE REQUIRED ELEMENTS OF EGRESS.
 - THE BUILDER SHALL BE RESPONSIBLE FOR ALL APPLICABLE UTILITY CONNECTIONS ON SITE
 - THE BUILDER IS RESPONSIBLE FOR ENTIRETY OF FOUNDATION DESIGN AND CONSTRUCTION
 - SITE WORK SHALL BE SUBJECT TO LOCAL BUILDING DEPARTMENT INSPECTION. THIS DRAWING SET INCLUDES THE MODULAR PORTION OF THIS PROJECT ONLY. THE BUILDER SHALL BE RESPONSIBLE FOR DESIGN AND ENGINEERING OF ALL SITE CONSTRUCTED ELEMENTS.
 - THE BUILDER SHALL BE RESPONSIBLE FOR INSTALLING THE HEAT (ON SITE) TO INCLUDE: TYPE, CHASES AND ALL PLUMBING (IF REQ'D.)
 - THE BUILDER IS RESPONSIBLE FOR INSTALLING ALL ITEMS LISTED ON CHAMPION HOME BUILDER , INC. MODULAR HOMES SHIP LOOSE LIST PER INSTALLATION PROCEDURES (IF APPLICABLE).
 - THE ROOF SYSTEM IS OF THE ENGINEERED TRUSS NATURE TO BE ERECTED ON SITE BY CERTIFIED INSTALLATION CREW PER CHAMPION HOME BUILDERS, INC MODULAR HOME SITE INSTALLATION PROCEDURES MANUAL.
 - ALL PENETRATIONS THROUGH FLOOR OR CEILING TO BE FIRE BLOCKED PER R302.11
- SET-UP INSTRUCTIONS INCLUDED ON THE PLAN SHEETS, "SU-101 TO SU-103" PAGES OF THIS APPROVAL AND SET UP MANUAL INCLUDED WITH HOME. SEE NOTES, CROSS SECTION, SET-UP AND FOUNDATION PAGES. PLAN SET IS INCOMPLETE WITHOUT INSTALLATION MANUAL
- STRUCTURES TO BE PLACED ON PILINGS, IN MOUNTAIN REGION, OR COASTAL HIGH HAZARD SITE MUST BE DESIGNED FOR ACTUAL SITE CONDITIONS

Notice:

- THIS UNIT MUST BE CONNECTED TO PUBLIC WATER AND SEWAGE SYSTEM IF THESE SERVICES ARE AVAILABLE
- THIS PLAN MAY BE FLIPPED END TO END OR MIRRORRED DRYER TO BE VENTED IN ACCORDANCE WITH IRC M1502
- STAIRWALLS EXPOSED TO UNCONDITIONED SPACE MUST BE INSULATED TO A MINIMUM OF R13 WALLS AND R5 DOOR
- IF FACTORY PROVIDES AND/OR INSTALLS WATER HEATER TO BE A MINIMUM OF 50 GALLON CAPACITY AND INSTALLED IN ACCORDANCE WITH IRC CHAPTER 28
- ALL OPERABLE WINDOWS, ATRIUM OR SLIDING 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 SITE INSTALLATION
- MANUFACTURER MUST BE INFORMED IF THIS HOUSE IS TO GO INTO CITY OF CHARLESTON S.C OR INTO A SPECIAL MOUNTAIN REGION
- 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 4A FOR NC & SC AND CLIMATE ZONE 4A FOR VA. MANUFACTURER MUST BE INFORMED IF HOME TO BE LOCATED IN A HIGHER CLIMATE ZONE.

Fastening: ALL FASTENING TO BE PERFORMED IN ACCORDANCE WITH TABLE R602.3(1), R602.3(2), & R602.3(3) OF THE IRC CODE ABOVE UNLESS ALTERNATE CALCULATIONS ARE PROVIDED

ATTENTION LOCAL INSPECTIONS DEPARTMENT

ATTENTION LOCAL BUILDING DEPARTMENT ELECTRICAL NOTES:

- MULTI-SECTION UNITS WILL HAVE ELECTRICAL CROSSOVERS EITHER NEAR THE ENDS OF THE MARRAIGE LINE OR ACROSS FROM THE PANEL BOX NEAR MARRAIGE LINE.
- LOCATE THE JUNCTION BOXES OR QUICK CONNECTORS. THE CONDUCTORS SHOULD BE COLOR CODED OR MARKED FOR EASY IDENTIFICATION. DO NOT INTERCONNECT CIRCUITS OR CROSS CONDUCTORS.
- 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 THY SHALL BE SURFACE MOUNTED OR RECESSED AND BE 6" MIN. FROM STORAGE AREA. INCANDESCENT FIXTURES SHALL HAVE COMPLETELY ENCLOSED LAMPS AND BE A MINIMUM OF 12 INCHES FROM "STORAGE" AREA AS DEFINED BY NEC.
- WHEN WATER HEATERS, DISHWASHERS, AND WALL OVENS ARE INSTALLED THEY SHALL BE PROVIDED WITH READILY ASSESSIBLE DISCONNECTS ADJACENT TO THE WATER HEATERS SERVED. 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 WATER HEATER OR IS CAPABLE OF BEING LOCKED IN THE OPEN POSITION.
- HVAC EQUIPMENT SHALL BE PROVIDED W/ READILY ASSESSIBLE 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 PERMITTED AS THE DISCONNECTING MEANS WHERE OTHER DISCONNECTING MEANS ARE ALSO PROVIDED BY A READILY ASSESSIBLE 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 THE NEC BY LOCAL ELECTRICAL CONSULTANT.
- THE MAIL 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 TOP SHALL BE WITH IN 6" OF THE EDGE
- ALL BRANCH CIRCUITS SUPPLYING 15 & 20 AMP OUTLETS IN LIVING AREAS ARE PROTECTED BY AN ARC-FAULT CIRCUIT INTERRUPTER 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.
- CO/SMOKE DETECTORS COMPLIES WITH UL 217 AND UL 2034 (FIRST ALERT MODEL #SC9120B)

ATTENTION LOCAL BUILDING DEPARTMENT PLUMBING NOTES:

- ALL P-TRAPS AT TUBS,SHOWERS, AND TUB/SHOWERS MUST BE RODENT PROOFED AND FINAL DRAFT STOPPING COMPLETED ONSITE BY OTHERS AFTER COMPLETION OF ALL PLUMBING TESTS. ALL OTHER RODENT PROOFING AND FIRE BLOCKING AT FLOOR LEVEL DONE AT FACTORY. THIS SHOULD BE SITE VERIFIED UPON COMPLETION OF DWV INSTALL (SEE PAGE AE-101 IN SETUP MANUAL IN HOME FOR DETAILS. SECTION 5, STARTING PAGE 25 QA MANUAL) (SEE Q/A MANUAL FOR APPROVED PLUMBING FIXTURES SECTION 4 PAGE 5)
- ON-SITE PLUMBING CONNECTIONS:**
- WATER LINES:
 - Waterlines shall be insulated with R-3 minimum if they are located outside of conditioned space
 - ALL HOT LINES 3/4" AND LARGER SHALL BE INSULATED R-3 MIN PER N1103.5.3
 - LOCATE AND CONNECT WATER LINE
 - CROSS-OVERS LOCATED UNDER THE FLOOR AT THE MARRAIGE 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.
 - BUILDING AND 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" ABOVE FINISH FLOOR.
 - T&P RELIEF VALVE W/DRAIN TO EXTERIOR AND SHUT-OFF WITH-IN 3" OF WATER SUPPLY AT WATER HEATER
 - EXPANSION TANK SHALL BE INSTALLED ONSITE BY OTHERS WHEN REQUIRED PER PLUMBING CODE 607.3
 - AIR ADMITTANCE VALVES SHOULD BE INSTALLED ON-SITE AFTER TESTING

ON-SITE GAS CONNECTIONS (IF APPLICABLE)

- LOCATE "QUICK DISCONNECT" AND CONNECT. THE "QUICK DISCONNECT" IS LOCATED UNDER THE FLOOR AT THE MARRAIGE LINE. VERIFY THAT ALL CONNECTIONS ARE TIGHT AND HAVE BEEN CHECKED FOR LEAKS.

ATTENTION LOCAL BUILDING DEPARTMENT MECHANICAL NOTES

(NORTH CAROLINA):

- 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 MIN 50 CFM VENT FAN, (VA REQUIRES A MINIMUM .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.
 - HVAC SUPPLY DUCTS AND CALCULATIONS ARE PROVIDED IN THE MANUAL D&J. IT IS RECOMMENDED THAT A NEW MANUAL D&J BE RE-FIGURED WHEN SYSTEM IS COMPLETED BY OTHERS ONSITE IF ANY VARIATION TO PROVIDED SYSTEM OCCURS.
 - ALL DUCTS SHALL HAVE A MIN. OF R-8 INSULATION
 - ALL RETURN GRILLS BY FACTORY UNLESS SPECIFIED.
 - *** SUPPLEMENTAL AIR HANDLER/FURNACE IS FOR HEAT ONLY *** (SEE Q/A MANUAL SECTION 4 PAGE 31)
 - *** AIR HANDLER/FURNACE TO BE FACTORY INSTALLED. FURNACE MODEL IS NORDYNE E7-KW SIZING PER MANUAL J PROVIDED AND TO BE VERIFIED BY OTHERS IF SITE HVAC SYSTEM DIFFERS FROM PROVIDED MANUAL D&J.
 - AIR HANDLER/FURNACE USED FOR HEATING ONLY. FOR OPTIMAL EFFICIENCY A HEAT PUMP SHOULD BE INSTALLED.
 - *** CHAMPION HOMES ASSUMES NO RESPONSIBILITY FOR THE HVAC SYSTEM. CHAMPION PROVIDES A GENERIC MANUAL D&J THAT IF SYSTEM IS INSTALLED PER THAT DESIGN WILL WORK FOR THE HOME. CHAMPION RECOMMENDS THAT A NEW MANUAL D&J BE GENERATED AFTER ACTUAL HVAC SYSTEM IS INSTALLED AND BEFORE LOCAL INSPECTION IS COMPLETED.
- ON-SITE DUCT CONNECTIONS:**
- FOR CEILING/ATTIC CROSSOVER DUCT INSTALLATIONS.
 - SLIDE EACH END OF THE CROSSOVER DUCT OVER THE DROP OUT UNDERNEATH EACH SECTION. SECURE AS REQUIRED.
 - WRAP/CPVER ALL SEAMS AND JOINTS WITH UL181 DUCT TAPE/MASTIC TO REDUCE AIR LEAKAGE
 - WRAP/COVER EXPOSED METAL WITH FIBERGLASS INSULATION TO REDUCE HEAT LOSS.
 - INTEGRITY OF MARRAIGE LINE RIDGE BEAM SHALL NOT BE COMPROMISED UNLESS SPECIFICALLY DESIGNED FOR AND SHOWN ON APPROVED PLANS

ATTENTION LOCAL BUILDING DEPARTMENT STRUCTURAL NOTES:

TWO-STORY DESIGNS:

- SOME 2 STORY MODELS WILL REQUIRE ADDITIONAL VERTICAL CONNECTIONS. SEE PLAN SHEETS FOR LOCATIONS AND ACCESS POINTS

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755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48064 PHONE: 248-614-8200	
BUILDER:	
CUSTOMER/PROJECT:	
ENGINEER'S / ARCHITECT'S SEAL	
APPROVERS SEAL	
MODIFICATIONS	
PROJECT:	23-2945 26'-8" x 44' 3 BD 2 BTH
TITLE:	LOCAL INSPECTIONS DEPT
DRAWN BY: Staff	
DATE: 05-20-21	
SCALE:	23-2945 NC MOD NEW
SHEET:	CS-102
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State: North Carolina

Signature: *Tim Dusche*

Title: Staff Plan Reviewer

Date: **12/20/22**

- ALL WINDOW OPENINGS WHICH ARE 72" ABOVE THE FINISHED GRADE, WITH THE BOTTOM OF THE CLEAR OPENING LESS THAN 24" ABOVE THE FINISHED FLOOR, SHALL BE PROVIDED WITH FIELD SUPPLIED AND INSTALLED WINDOW GUARDS PER R312.2.
- GAS LINES (IF REQUIRED) TO BE PROVIDED, SIZED, AND INSTALLED ON SITE BY OTHERS IN ACCORDANCE WITH PREVAILING CODE.
- SEE QA MANUAL MATERIALS SECTION 4 PAGE 13 FOR WINDOW SPECIFICATIONS
- SEE QA MANUAL MATERIALS SECTION 4 STARTING PAGE 2 FOR APPLIANCES
- DRYER VENT TO BE INSTALLED ONSITE
- SEE EV-101 FOR ATTIC VENTILATION
- SEE QA MANUAL SECTION 6 FOR ATTIC ACCESS DETAILS PAGE 36.
- THIS UNIT DOES NOT HAVE SOFFIT OVER CABINETS
- TUBS AND SHOWERS INSTALLED PER APPENDIX E
- SEE STR-101 FOR HEADER DETAILS
- SEE SECTION EX-01.01 TO EX-03.01 OF DESIGN MANUAL FOR PORCH DETAILS
- WIND VELOCITY SHEARWALLS REFERENCED TO ATTACHED CALCULATIONS SEE PAGES SW-101 TO SW-103. CALCULATIONS PAGES 11-17 IN THIS PACKAGE IF REQUIRED BEYOND PRESCRIPTIVE TUB SUPPORTED BY FLOOR JOIST CALC PER QA MANUAL SECTION 6 PAGE 26
- FLOOR JOIST DESIGN MANUAL REF: FL-02-01A
- ATTIC PULL DOWN STAIRS:
 - INSTALLED PER N1102.2.4 AND MANUF. INSTALLATION INSTRUCTIONS. INSULATED AND GASKET PER EXCEPTION #2

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 Minimum 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.
- FIRE STOPPING AND AIR INFILTRATION BARRIER BETWEEN UNITS SHALL BE PROVIDED BY DRAFTSTOP BRAND NONCOMBUSTIBLE FILLER COMPOUND OR EQUAL MEETING ASTM-E136

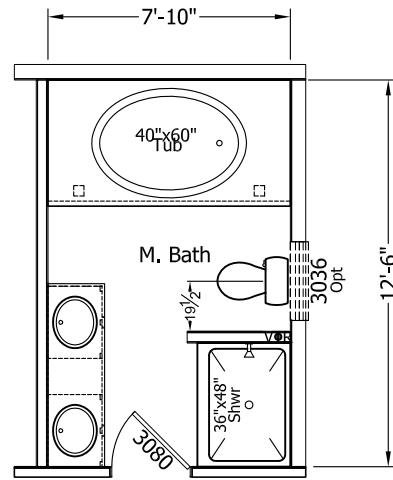
DESCRIPTION	GLAZED SQ. FT.	VENTING SQ. FT.	DESIGN PRESSURE	SHGC	U-VALUE	MANUFACTURER
WINDOW SCHEDULE						
3661 36" x 61" EGRESS opt, SAFETY GLAZED	12.2	6.14	DP 50 / DP 66	.29	.34	KINRO (9750 series)
3061 30" x 61"	9.95	5.85	DP 50	.29	.34	KINRO (9750 series)
3036 30" x 36" opt, SAFETY GLAZED	5.55	2.76	DP 66	.29	.34	KINRO (9750 series)
4661 46" x 61" EGRESS	16.07	8.01	DP 25	.29	.34	KINRO (9750 series)
3072 30" x 72" FIXED PANEL SAFETY GLAZED	13.1	0	DP 66	.35	.32	KINRO (9750 series)
2448 24" x 48" opt, SAFETY GLAZED	4.85	2.44	DP 66	.29	.34	KINRO (9750 series)
1440 14" x 40" opt, SAFETY GLAZED	2.48	1.29	DP 66	.32	.34	KINRO (9750 series)
4234 34" x 42" BLOCK GLASS	6.28	0	DP 50	.56	.45	HY-LITE
6240 62" x 40"	14.35	6.11	DP 50	.29	.34	KINRO (9750 series)
4638 46" x 38" ARCH SAFETY GLAZED	8.26	3.58	DP 50	.32	.34	KINRO (9750 series)
3008 30" x 8" TRANSOM	1.3	0	DP 66	.35	.32	KINRO (9750 series)
3608 36" x 8" TRANSOM (MAY FLIP)	1.7	0	DP 66	.35	.32	KINRO (9750 series)
7208 72" x 8" TRANSOM	2.9	0	DP 66	.35	.32	KINRO (9750 series)
DOOR SCHEDULE						
3680 36" x 80" EXTERIOR DOOR	0	19.45	DP 50	.01	.17	LIPPETT
3680 36" x 80" EXTERIOR DOOR WITH 9 LITE WINDOWS	4.40	19.45	DP 50	.09	.29	LIPPETT
3680 36" x 80" EXTERIOR DOOR WITH 15 LITE WINDOWS	14.68	19.45	DP 50	.17	.28	LIPPETT
7280 72" x 80" SLIDING GLASS	34.37	19.45	DP 50	.29	.32	LIPPETT
7480 74" x 80" ATRIUM DOOR WITH 15 LITE WINDOWS	24.96	19.45	DP 50	.30	.35	LIPPETT
3280 32" x 80" INSULATED DOOR WITH WEATHER STRIPS	4.40	19.45	DP 50	.01	.24	LIPPETT
3080 30" x 80" INTERIOR				N/A		
2480 24" x 80" INTERIOR				N/A		
3680 36" x 80" INTERIOR				N/A		
4980 49" x 80" INTERIOR DOUBLE DOORS				N/A		
6080 60" x 80" INTERIOR DOUBLE DOORS				N/A		

Note: EXTERIOR DOORS WILL NOT BE GENERALLY USED FOR LIGHT AND VENT PURPOSES. WHEN THEY ARE USED THE DISTINCTION BETWEEN WHICH TYPE WILL BE REQUIRED FOR PLAN REVIEWER VERIFICATION

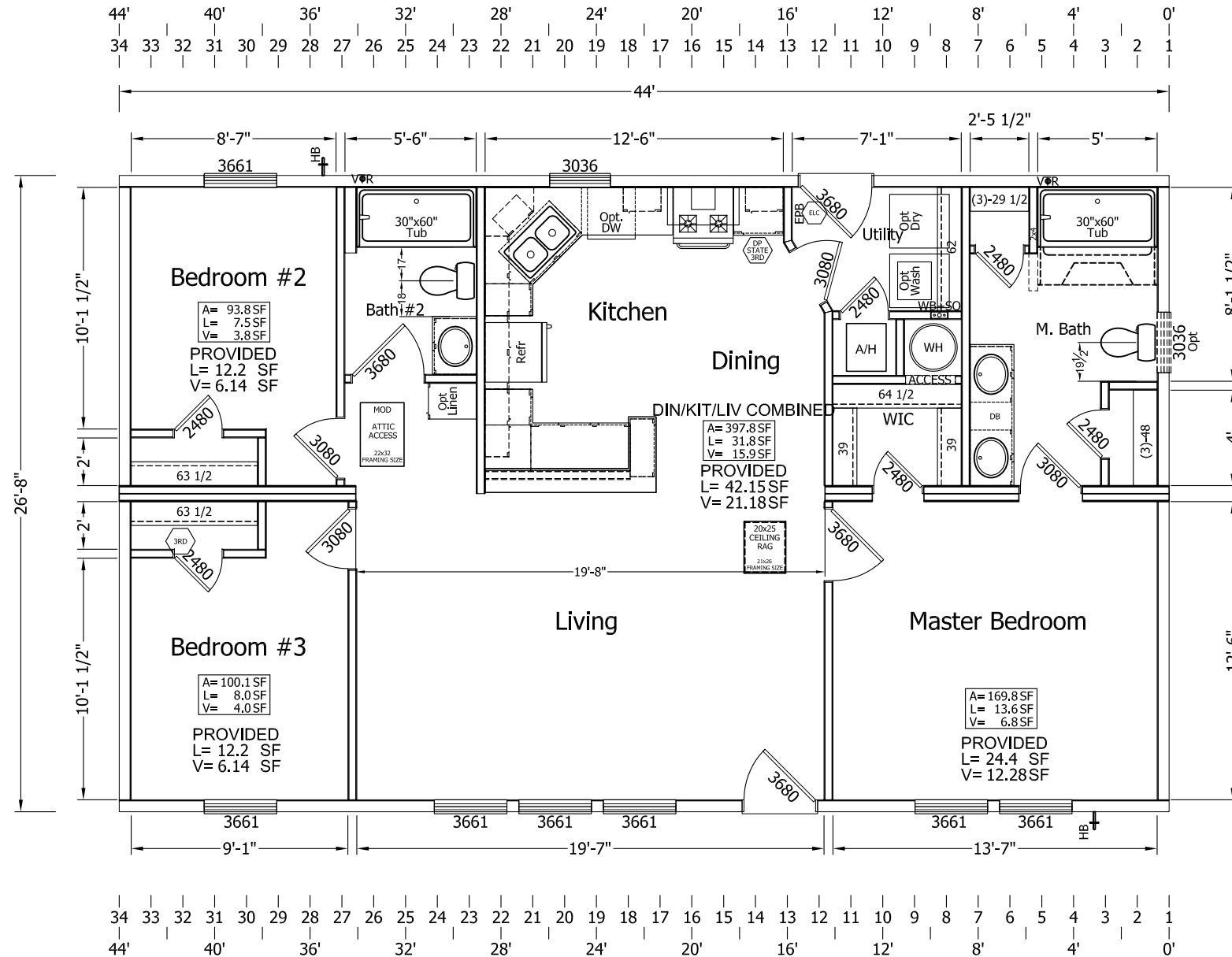
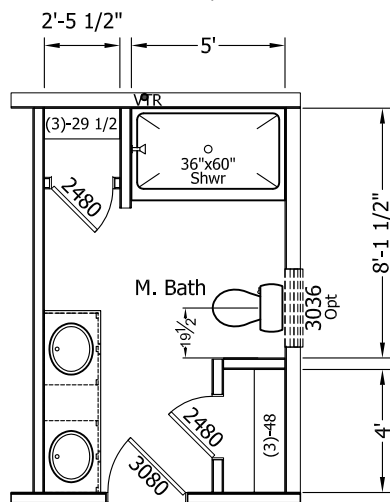
108" MAX SIDEWALL HEIGHT

DRYER VENT TO BE INSTALLED ONSITE

OPT M. BATH #2 - GLAMOUR BATH OPT.



STD. BATH OPTION w/ SHOWER



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State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

PROJECT: 23-2945
 26'-8" x 44' 3" BD 2 BTH

TITLE: FLOOR PLAN A-101

DRAWN BY: Staff
 DATE: 05-20-21
 SCALE: 23-2945 NC MOD NEW

SHEET:

EXTERIOR WALL HEADER
 RANCH, UPPER 2 STORY SIDEWALL HEADERS
 160" WIDE 5/12 ROOF
 FOR 30lb/SF GROUND SNOW LOAD

	MEMBER	SPAN	# of JACK STUDS	Design manual Ref.
E-1	3- #2 SPF 2x4	5'-10" (70")	1-2x6 #2 SPF Min	WA-05.01
E-2	1- #2 SPF 2x6 (TOP PLATE)	8'-0" (96")	1-2x6 #2 SPF Min	WA-06.01

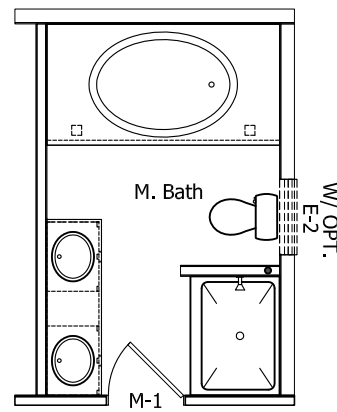
- MURPHY LVL (2.0E) OR EQUIVALENT LISTED AS ALTERNATE MATERIAL IN QA MANUAL SECTION 4A PAGE 45
- LUMBER BEAMS DERIVED FROM SECTION MW-105 OF CALC MANUAL
- DESIGN MANUAL WA-05.01 AND WA.05.02, RANCH AND 1 1/2 STORY RESPECTIVELY

MATING WALL HEADER
 ROOF RIDGE BEAM SPAN CHART
 160" WIDE 5/12 ROOF
 FOR 30lb/SF GROUND SNOW LOAD

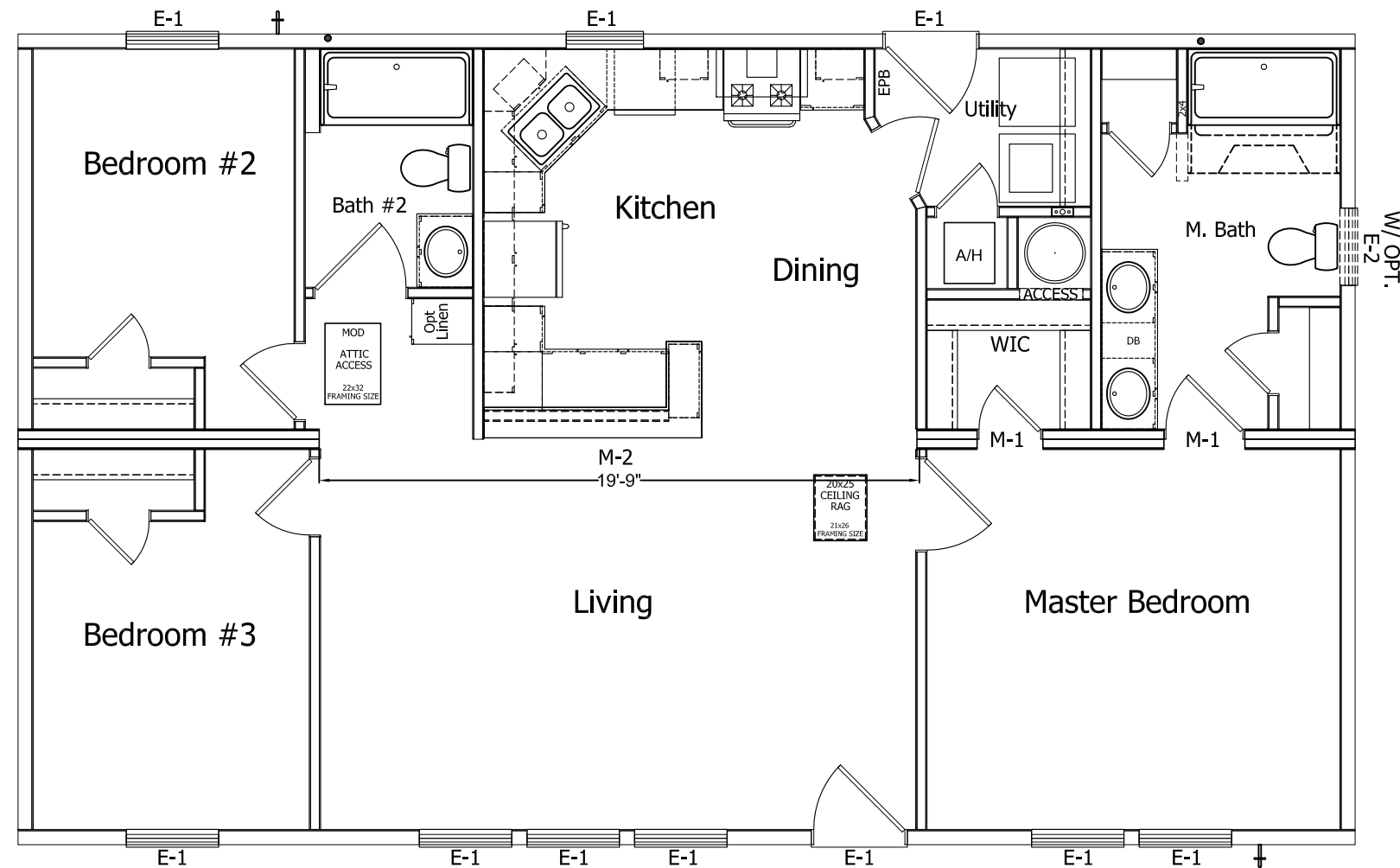
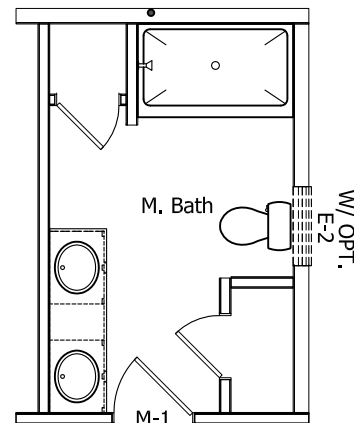
	MEMBER	SPAN	# of JACK STUDS(Columns)	Design manual Ref.
M-1	1- #2 SPF 2x4	3'-5" (41")	1-2x4 #2 SPF Min	RF-03.03
M-2	1-1 1/2" x 14" LVL	20'-0" (240")	3-2x4 #2 SPF Min	RF-03.02

- MURPHY LVL (2.0E) OR EQUIVALENT
- LUMBER BEAMS DERIVED FROM SECTION MW-105 OF CALC MANUAL
- DESIGN MANUAL REF. RF-03.03 RANCH MATEWALL HEADER CHART
- TYPICAL LVL BEAMS FOR FULL OPENINGS RF-03.02
- USE 9 1/4" MIN LVL or 2x10 min FOR 5/12 TO ALLOW FOR MECHANICAL FASTENING (9) .131 X 3" NAILS ON MARRAIGE WALLS OPENINGS

OPT M. BATH #2 - GLAMOUR BATH OPT.



STD. BATH OPTION w/ SHOWER



PFS CORPORATION
 Approval Limited to Factory Built Portion Only

State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

APPROVERS SEAL

MODIFICATIONS

PROJECT: 23-2945
 26'-8" x 44' 3 BD 2 BTH

TITLE: FLOOR PLAN
 STRUCTURAL
 STR-101

DRAWN BY: Staff
 DATE: 05-20-21
 SCALE:
 23-2945 NC MOD NEW

SHEET:

BUILDER:

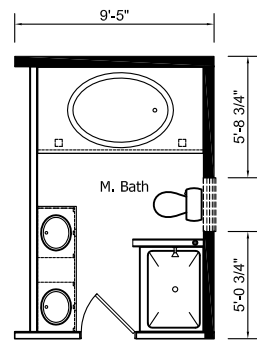
CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

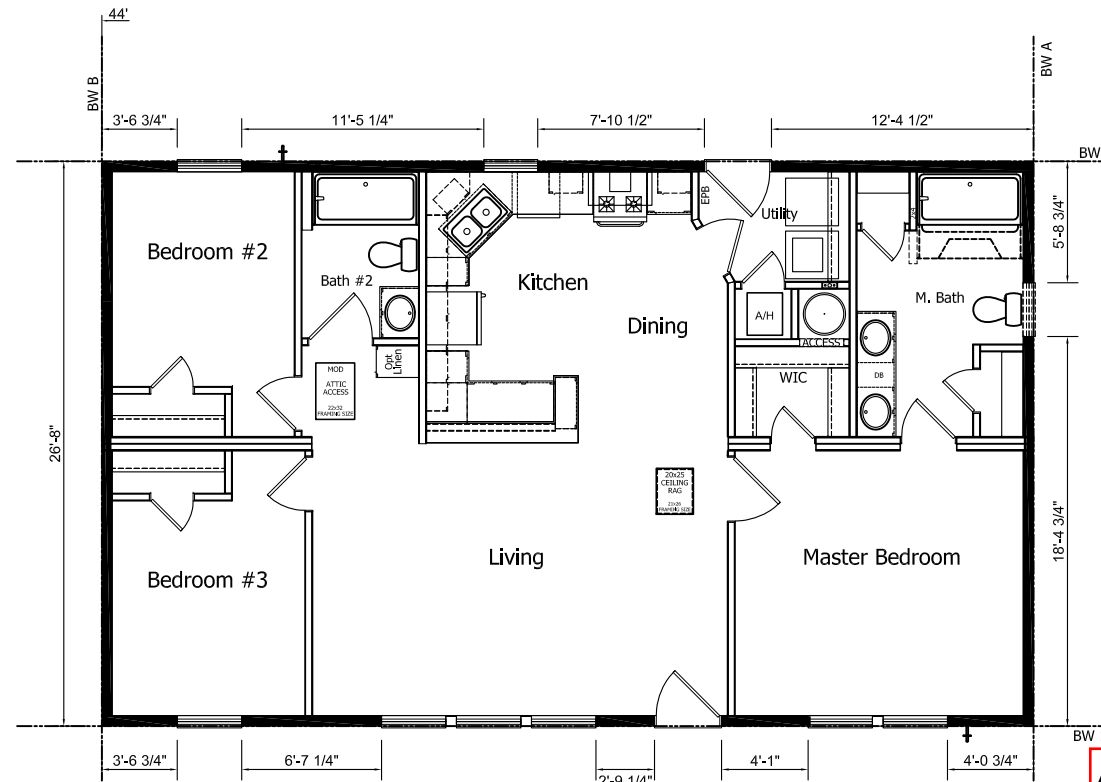
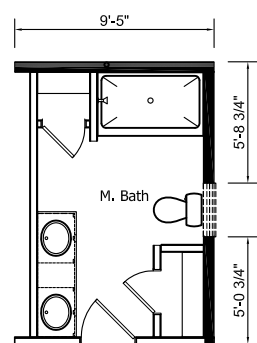
NOTES:

- BRACED WALL LENGTH IN ACCORDANCE WITH 2015 IRC SECTION 602.10.3
- REQUIREMENTS OF TABLE 602.3(3) MUST BE FOLLOWED IF WOOD STRUCTURAL PANELS ARE TO BE USED TO RESIST WIND PRESSURES EQUAL TO OR GREATER THAN 130 MPH
- Design Manual Ref: SW-01.01 to SW-02.05

OPT M. BATH #2 - GLAMOUR BATH OPT.



STD. BATH OPTION W/ SHOWER



NUMBER OF BRACED WALL LINES IS A TOTAL NUMBER INDICATOR FOR LEFT TO RIGHT BRACED WALL

BW 1&2 ARE SIDEWALL SEGMENTS

BW A&B ARE ENDWALL SEGMENTS

2015 IRC BRACED WALL LINE PRESCRIPTIVE MEASURES

Wind Speed =	120	mph	Module Width =	160	in.
Exposure =	C		Home Length =	44.00	ft.
No. of Stories =	1		Roof Pitch =	5	:12
No. of modules =	2	per story	Overhang, OH =	12	in.
Eave to Ridge Ht. =	72	in.	1st Floor Wall Ht, H =	108	in.
Panel Uplift Load =	135	plf	#8x4" Toe-screw	1	per truss

1ST FLOOR SIDE WALL REQUIREMENTS

Sheathing Method =	CS-WSP	Number of Braced Wall Lines =	2
Block Seams =	Yes	Braced Wall Line Spacing =	26.67 ft.

1st Floor Factors:		Eave to Ridge Ht. =	0.76	(Interpolated)
Exposure =	1.20	No. Braced Wall Lines =	1.00	
Wall Height =	0.95	GB Method 4" o.c. =	1.00	No
Block Seams =	1.00			

1st Floor Required Wall Length: 4.50 ft. = **4 ft - 6in.** (Interpolated)

[From Table R602.10.3(1)]

Factored Required Wall Length: 3.90 ft. = **4 ft - 0in.** Required

Largest Opening on Sidewall = **80** in. Min. Panel Width = **30** in.

1ST FLOOR END WALL REQUIREMENTS

Sheathing Method =	CS-WSP	Number of Braced Wall Lines =	2
Block Seams =	Yes	Braced Wall Line Spacing =	44.00 ft.

Block Seams =	1.00	No. Braced Wall Lines =	1.00
		GB Method 4" o.c. =	1.00 No

1st Floor Required Wall Length: 7.10 ft. = **7 ft - 2in.** (Interpolated)

[From Table R602.10.3(1)]

Factored Required Wall Length: 6.15 ft. = **6 ft - 2in.** Required

Largest Opening on Endwall = **36** in. Min. Panel Width = **27** in.



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Staff Plan Reviewer
12/20/22

FASTENER	EDGES (IN.)	NAIL (IN.)
.131 X 2 1/2" NAIL (SEE NOTE A)	6	12
15GA X 1 3/4" STAPLE (SEE NOTE B)	4	8
.097 X 2 1/4" NAIL (SEE NOTE B)	3	6
16GA X 1 3/4" STAPLE (SEE NOTE B)	3	6

STAPLES HAVE A MIN. CROWN WIDTH OF 7/16"

NOTE A:
WHERE THE BASIC WIND SPEED IS EQUAL TO OR GREATER THAN 130 MPH THEN INTERMEDIATE FASTENING SHALL BE FASTENED AT THE SAME SPACING AS EDGE FASTENING

NOTE B:
THESE FASTENERS SHALL ONLY BE USED IN WIND ZONES LESS THAN 130 MPH PER IRC TABLE R602.3(2) NOTE G.

Design Man Ref: SW-02.02

WP & CS-WP: WOOD STRUCTURAL SHEATHING SHALL BE AS INDICATED IN TABLE R602.3(3) OF THE IRC, SHOWN HERE

MINIMUM FASTENERS	MIN. PANEL SPAN RATING	MIN. PANEL THICKNESS	MAX. STUD SPACING	PANEL NAIL SPACING			MAX. DESIGN SPEED (MPH)		
				EDGES	FIELD	WIND EXPOSURE CATEGORY	B	C	D
0.113 x 2"	1 1/2"	3/8"	16	6	12	140	X	X	
0.131 x 2 1/2"	1 3/4"	7/16"	16	6	12	170	140	135	
			24	6	12	140	X	X	

THERMO-PLY RED STRUCTURAL SHEATHING (NOT ALLOWED W/ 2 PART ADHESIVE ON GYP PANELS)

16 ga 16" crown x 1 1/2" staple	1"	16" o.c. stud spacing	0.113"	16	3	3	130	130	N/A
0.120 X 1 1/4"	1"	16" o.c. stud spacing	0.113"	16	3	3	130	130	N/A

"INTERIOR DRYWALL SECUREMENT FOR THERMO-PLY RED SHEATHING PER IRC R702.3.5 (INTERIOR GYPSUM CANNOT BE SECURED WITH FOAM ADHESIVE. MUST BE EITHER SCREW OR NAIL PER R702.3.5)"

1 3/8" MIN DRYWALL SCREW TYP. USED	16" o.c. stud spacing	1/2"	16	8	16
------------------------------------	-----------------------	------	----	---	----

PER TABLE R702.3.5: (13 gage, 1 3/8" long, 19/64" head; 0.098" diameter, 1 1/4" long, annular-ridged; 5d cooler nail, 0.086" diameter, 1 5/8" long, 15/64" head; or gypsum board nail, 0.086" diameter, 1 5/8" long, 9/32" head.)

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PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

MODIFICATIONS

PROJECT:
23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE:
BRACED WALLS BW-101

DRAWN BY: Staff
DATE: 05-20-21
SCALE:
23-2945 NC MOD NEW

SHEET:

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ELECTRICAL LEGEND

	GENERAL LIGHTING RECEPTACLE 110 VOLT - 15 AMP		P.C. DENOTES PULL CHAIN		SPECIAL PURPOSE CONNECTION		JUNCTION BOX
	GROUND FAULT INTERRUPT RECEPTACLE 110 VOLT - 15 AMP		RECESSED LED LIGHT		CARBON MONOXIDE ALARM		HEAT TAPE RECEPTACLE 110 VOLT - 15 AMP
	SMALL APPLIANCE RECEPTACLE 110 VOLT - 20 AMP		PENDANT LIGHT		COMBO SMOKE / CARBON MONOXIDE ALARM		HEAT TAPE RECEPTACLE GFI 110 VOLT - 15 AMP
	GROUND FAULT INTERRUPT SMALL APPLIANCE RECEPTACLE 110 VOLT - 20 AMP		THERMOSTAT		SMOKE ALARM		MAIN PANEL
	220 VOLT RECEPTACLE		CEILING VENT FAN		PHONE JACK		TV JACK
	CEILING VENT FAN WITH LIGHT		SINGLE POLE SWITCH (3 - DENOTES 3 WAY)	1. SMOKE DETECTORS ARE INTERCONNECTED. FOR MODEL WITH BASEMENT, A #14/3 WIRE IS RUN FROM UPSTAIRS SMOKE DETECTOR TO UNDER FLOOR JUNCTION BOX (ON SITE CONNECTION TO BASEMENT SMOKE DETECTOR). 2. ELECTRICAL: 200 AMP MAIN & SERVICE IS STANDARD.			
	CEILING LIGHT		FLUORESCENT LIGHT				
	WALL LIGHT		W.P. DENOTES WEATHERPROOF				

CIR #	BRKR	NOMENCLATURE	VOLTS	WIRE
1	GFI	20 AF	PORTABLE APPLIANCE	120 12/2
2	GFI	20 AF	PORTABLE APPLIANCE	120 12/2
3	GFI	20 AF	PORTABLE APPLIANCE	120 12/2
4	GFI	20 AF	WASHER	120 12/2
5	AF	15	KIT/DIN/UTL/M.BATH	120 14/2
6	AF	15	BATH #2/BEDRM #2/SD	120 14/2
7	AF	15	BEDROOM #3	120 14/2
8	AF	15	LIVING ROOM	120 14/2
9	GFI	20 AF	REFRIGERATOR	120 12/2
10	GFI	20	BATH GFIs	120 12/2
11		30	DRYER	240 10/3
12		40	RANGE	240 8/3
13	GFI	15 AF	DISH WASHER	120 14/2
14		25	WATER HEATER	240 10/2
15		30 OPT	COUNTER TOP RANGE	PER MANUF
16		15 OPT	FURNACE (GAS)	120 14/2
17		60/35	FURNACE (ELECTRIC)	240 6/6/8
18		20 OPT	TRASH COMPACTOR	120 12/2
19		15 OPT	DISPOSAL	120 14/2

CIR #	BRKR	NOMENCLATURE	VOLTS	WIRE
24	AF	15	M.BEDROOM	120 14/2
25	AF	15	GEN. LIGHTING	120 14/2
26		OPT GFI	OUTDOOR HYDRO MASSAGE SPA	PER MANUF
27	GFI	20 OPT	FREEZER	120 12/2
28	AF	15	RANGE HOOD	120 14/2
29	GFI	20 OPT	INDOOR HYDRO MASSAGE SPA	PER MANUF.
33	AF	20 OPT	MICROWAVE	120 12/2

* OTHER CIRCUITS MAY BE ADDED AS NECESSARY.
 FURNACE NOTE: 10KW NORDDYNE E7 FURNACE

- SERVICE ENTRANCE DISCONNECT TO BE PROVIDED AND INSTALLED ON SITE BY OTHERS.
- ALL 120-VOLT, SINGLE PHASE, 15- AND 20- AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHEN, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN 210.12 (A).(NEC) BOXES USED AT LUMINARIES OR LAMPHOLDER OUTLETS. OUTLET BOXES OR FITTINGS DESIGNED FOR THE SUPPORT OF LUMINARIES AND LAMPHOLDERS, AND INSTALLED AS REQUIRED BY 314.23, SHALL BE PERMITTED TO SUPPORT A LUMINAIRE OR LAMPHOLDER.
- ALL RECEPTACLES ARE TO BE TAMPER PROOF.
- ALL BATH VENT FANS TO BE 50 CFM MIN.
- RANGE HOOD TO BE 100 CFM MIN.
- SEE QA MANUAL SECTION 4 PAGE 4 FOR FIXTURES LIST
- ALL ELECTRICAL FIXTURES/WIRING SHALL COMPLY WITH SECTION E3303.3 (SC & VA)
- ALL WIRING SHALL BE NMC
- FACTORY INSTALLED SUB PANEL SHALL HAVE A 2" MINIMUM CONDUIT FOR FEEDERS
- FURNACE INSTALLED IS PROVIDED FOR SUPPLEMENTAL HEAT AND SHOULD HAVE ITS KW SIZE VERIFIED BY ON-SITE MANUAL D AND J IF SYSTEM DIFFERS FROM THAT PROVIDED. SEE QA MANUAL SECTION 4 PG 18 FOR FURNACE DETAILS
- SEE QA MANUAL SECTION 4 PAGE 4 FOR APPROVED ELECTRICAL FIXTURES
- BREAKER LOCKOUT TO BE INSTALLED FOR WATER HEATER AND DISHWASHER
- NC-MODS NOTE: PER IECC A MINIMUM OF 75% LAMPS INSTALLED IN PERMANENTLY INSTALLED FIXTURES MUST BE HIGH EFFICIENT LAMPS (EXAMPLE, CFLS) ALL BULBS TO BE PROVIDED ON-SITE BY OTHERS

FEEDER AND SERVICE LOAD CALCULATION:

MODEL PLAN NUMBER:	23-2945
UNIT SERIAL NUMBER:	
First Story Size (feet):	26'-8" x 44' x
Second Story Size (feet):	x

ELECTRICAL SERVICE PANEL SIZING: (kW or kVA)	
TOTAL FLOOR AREA:	1173 SF x 3 Watt / 1000 = 3.519
3 Small Appliance Circuits at 1500 VA /1000 per Circuit	= 4.5
1 Laundry Circuits at 1500 VA /1000 per Circuit	= 1.5

Standard Appliances:			
1 Range With Oven:	9600	Watts	= 9.6
1 Range Hood Vent Fan:	1440	Watts	= 1.44
1 Refrigerator	1800	Watts	= 1.8
0 Microwave	1632	Watts	= 0
1 Dishwasher:	1188	Watts	= 1.188
0 Waste Food Disposal:	804	Watts	= 0
1 Clothes Washer	1500	Watts	= 1.5
1 Clothes Dryer:	5760	Watts	= 5.76
1 Electric Water Heater:	6000	Watts	= 6
2 Bathroom Vent Fan(s):	96	Watts	= 0.192
0 Hydro-Massage Tub:	720	Watts	= 0

Miscellaneous Items:			
1 Furnace Blower w/ Gas Option:	1440	Watts	= 1.44
0 Whole House Vent fan	96	Watts	= 0
0 Oven	9600	Watts	= 0
0 Cook Top	7900	Watts	= 0
0 (Enter Item #5 :)	0	Watts	= 0

TOTAL LOAD: 38.439

ELECTRICAL HVAC EQUIPMENT:			
1 Heating Equipment:	15385	Watts (at 65%)	= 10.000
0 Cooling Equipment:	9600	Watts (at 100%)	= 0.000

Calculate Total Electrical Design Load:

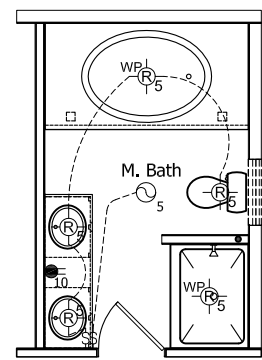
FIRST 10 kVA of TOTAL LOAD at 100%	= 10.000
REMAINDER of TOTAL LOAD at 40%	= 11.376
HVAC EQUIPMENT (Maximum: Heating or Cooling)	= 10.000

Design Total: 31.376 kVA

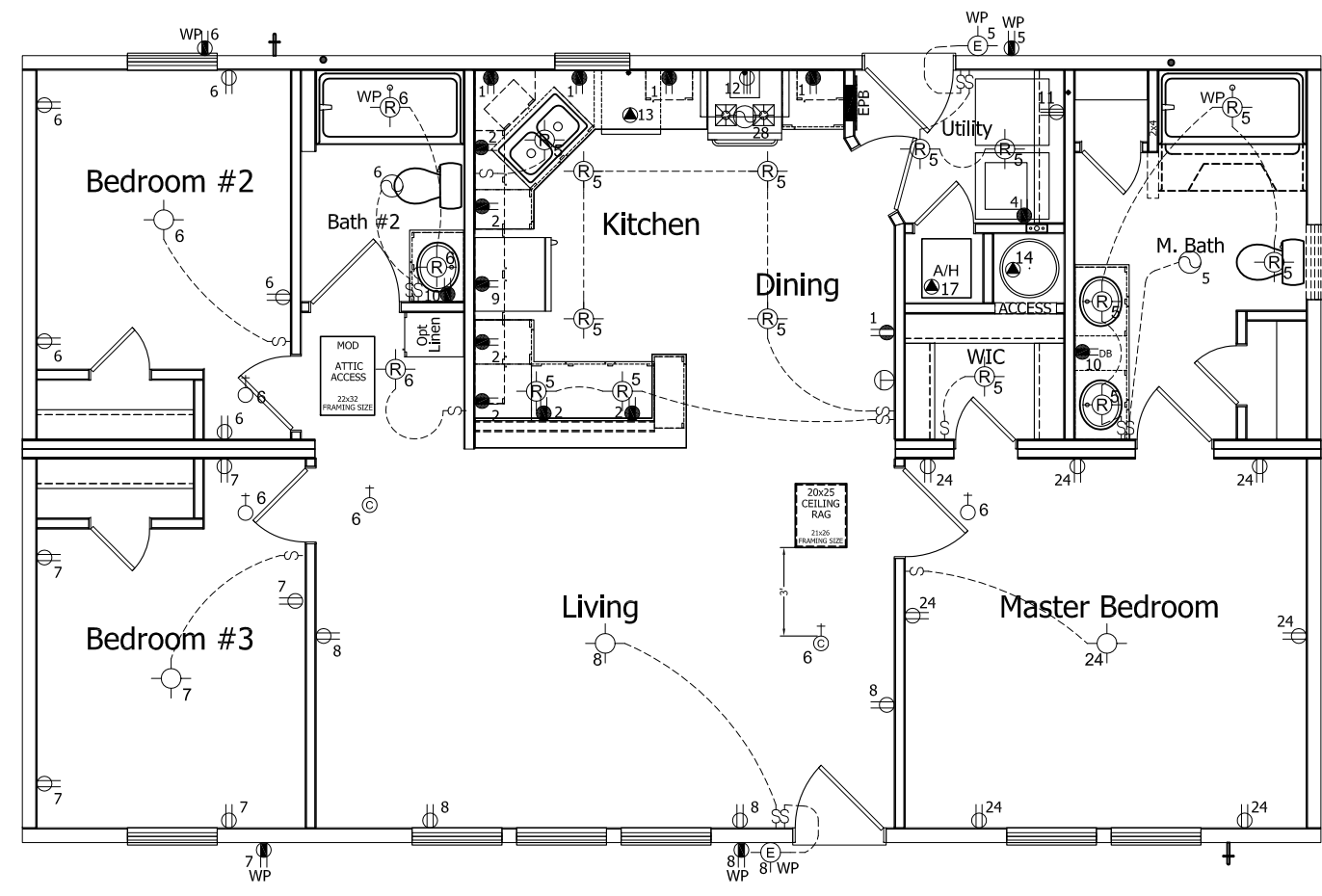
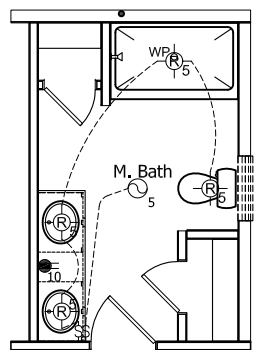
REQUIRED AMPERAGE [(Design Total / 240-Volts) x 1000] = 130.7 Amps

INSTALL: 200 AMP PANEL, 120/240-Volt, SINGLE PHASE, ELECTRICAL SERVICE PANEL
 THIS FEEDER AND SERVICE LOAD CALCULATION MAY INCLUDE SOME OPTIONAL ITEMS NOT CURRENTLY PART OF THIS HOME. THESE ITEMS ARE INCLUDED TO SHOW FUTURE ITEMS COULD IMPACT THE PANEL AND STILL ALLOW FOR ENOUGH GRND TO MAINTAIN COMPLIANCE.

OPT M. BATH #2 - GLAMOUR BATH OPT.



STD. BATH OPTION w/ SHOWER



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State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

MODIFICATIONS

PROJECT: 23-2945
 26'-8" x 44' 3 BD 2 BTH

TITLE: ELECTRICAL
 E-101

DRAWN BY: Staff
 DATE: 05-20-21
 SCALE: 23-2945 NC MOD NEW

SHEET:

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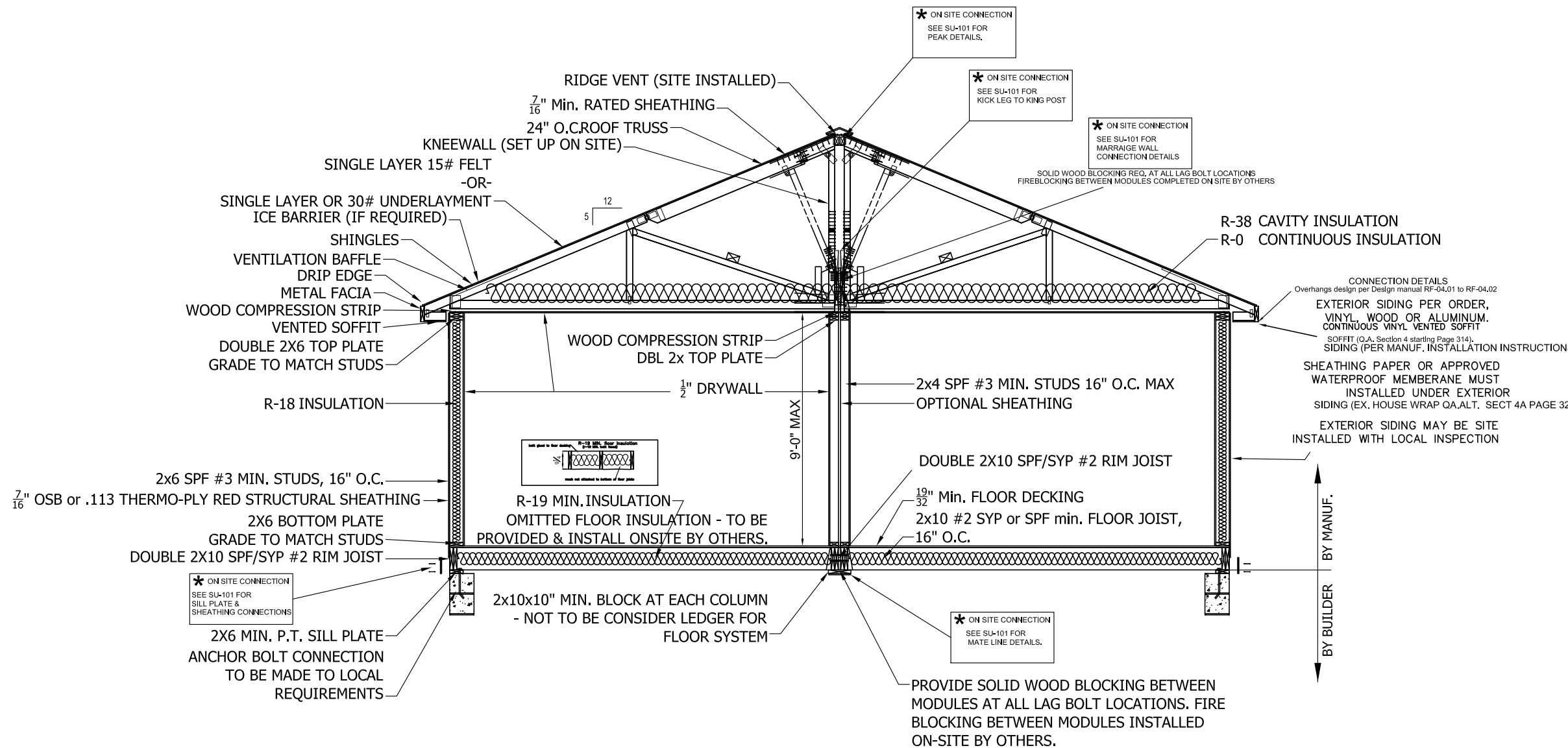
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 North Carolina
Tim Dusche
 Staff Plan Reviewer
 12/20/22

MODIFICATIONS

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: CROSS SECTION
XS-101

DRAWN BY: Staff
DATE: 05-20-21
SCALE:
23-2945 NC MOD NEW

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LOCATION 7A: SHINGLES - SHINGLES INSTALLED PER MANUF. LOACATED ON EACH WRAPPER FOR INSTALLATION INSTRUCTIONS - IKO CAMBRIDGE OR TAMCO HERITAGE ARCHITECTURAL "OR EQUAL" - (HIGH WIND requires 6 fasteners per shingle -130MPH OR GREATER)
LOCATION 7B: VINYL SIDING - INSTALLED PER MANUF. INSTALLATION INSTRUCTIONS -PLYGEM TRUE WALL BRAND "OR EQUAL" (FASTENER SPACING-16"o.c. Horizontal vinyl 12" o.c. vertical vinyl and accesories at 8" to 10" o.c. ALL WIND SPEEDS)

LOCATION 1: For future use if required.

LOCATION 2: RIDGE CAP (peak/flip) - (1) #8 X 3" WOOD SCREWS 16" O.C. OR SEE SW-SECTION FOR HIGH WIND REQUIREMENTS REF: Design Manual RF-05.03 up to 140mph

LOCATION 3: ROOF KNEE WALL - Secure Kickleg to kingpost with (1) 16" 26 ga strap w/ (6) .113 nails each end for (530# or strap capacity per truss print) REF: Design manual RF-05.03

LOCATION 4: CENTERLINE FLOOR BAND - $\frac{5}{16}$ " X 7" LAGS(min.) @ 36" O.C or $\frac{1}{2}$ " X 8" (min) CARRAIGE BOLT @ 72" O.C. REF: Design Manual RF-05.04

LOCATION 5: MARRAIGE WALL CEILING Same as location 12 REF: Design Manual RF-05.04

LOCATION 6: MARRAIGE WALL ENDS 12"o.c. #10x5" Screws REF: Design manual WA-03.01

LOCATION 7A: SHINGLES - SHINGLES INSTALLED PER MANUF. LOACATED ON EACH WRAPPER FOR INSTALLATION INSTRUCTIONS - IKO CAMBRIDGE OR TAMCO HERITAGE ARCHITECTURAL "OR EQUAL" - (HIGH WIND requires 6 fasteners per shingle -130MPH OR GREATER)

LOCATION 7B: VINYL SIDING - INSTALLED PER MANUF. INSTALLATION INSTRUCTIONS -PLYGEM TRUE WALL BRAND "OR EQUAL" (FASTENER SPACING-16"o.c. Horizontal vinyl 12" o.c. vertical vinyl and accesories at 8" to 10" o.c. ALL WIND SPEEDS)

LOCATION 8: GABLE ENDWALLS (3) #8x4 $\frac{1}{2}$ " wood screws per 16" gable wall stud cavity REF: Design Manual WA-01.01

LOCATION 9: GABLE END SHEATHING - PER BW-101 OSB 6" Edged 12" Field THERMO-PLY RED 3" oc Edged & Field REF: Design Manual SW-02.03 OR see SW-101 Pages for non-prescriptive wind speeds TER 1004-01 THERMO-PLY RED RATED SHEATHING

LOCATION 10: DORMER DETAILS IF REQUIRED- REF: Design Manual RF-06.01-02 OR RF-08.03A of the Design Manual. Also Approved drawings in set up manual package

LOCATION 11: OSB-PERIMETER SHEATHING - .131X 2 $\frac{1}{2}$ " NAILS @ 6" O.C. ONE ROW INTO RIM JOIST ONE ROW IN SILL PLATE

THERMO-PLY-PERIMETER SHEATHING - 0.120 x 1 $\frac{1}{4}$ " NAIL MIN. @ 3" oc ONE ROW INTO RIM JOIST ONE ROW INTO SILL PLATE
REF: Design Manual fd-01.02 to be installed per edge fastening BW-101 or SW-101 (Which ever is appicable to package) / THERMO'PLY PER TER REPORT 1004-01

LOCATION 12: ROOF PEAK - $\frac{5}{16}$ " X 5" LAGS(MIN.) @ 7" O.C. ALTERNATING SIDES or #10 X 4" SCREWS 4" O.C. ALTERNATING SIDES UP TO 140 MPH REF: Design manual RF-05.04

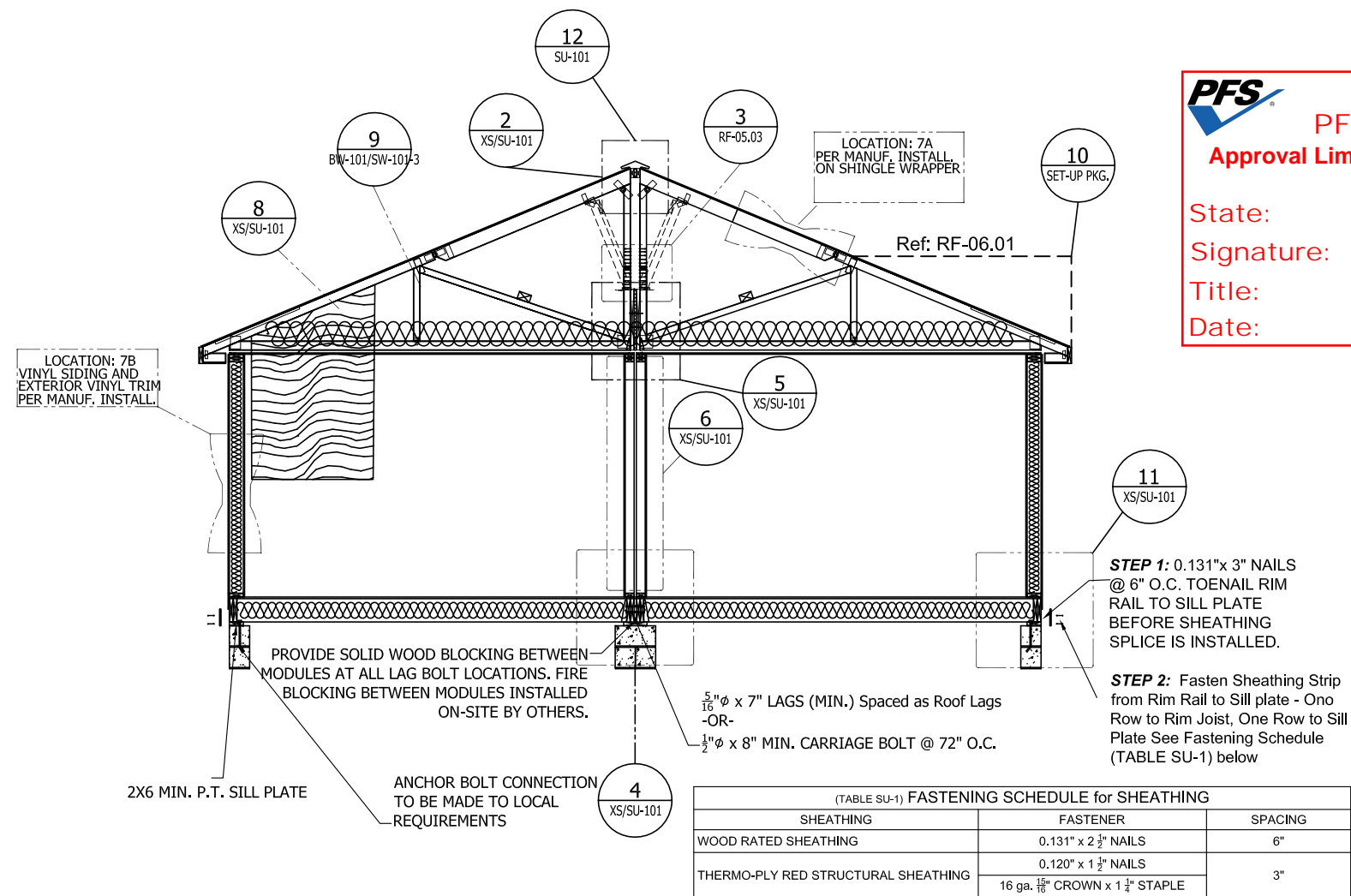
LOCATION 13: FOUNDATION - SHOULD BE INSTALLED PER IRC CHAPTER 4 OR NC Code-CHAPTER 45(HIGH WIND). SEE FD-01.01 TO FD-02.05 FOR TYPICAL FOUNDATION DETAILS AND SUBJECT TO LOCAL JURISDICTION.

LOCATION 14: VINYL SIDING OR OTHER EXTERIOR COSMETICS SHOULD BE INSTALLED PER MANUFACTURER INSTALLATION INSTRUCTIONS FOR WIND OR OTHER SITE CONDITIONS

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BASED ON 5 / 12 ---32' TRUSS & 5 / 12 ---28' TRUSS
HM773863(32') - HM694830(28') UFP DESIGN
- OR -
MHT-2 (32') OR HM69 (28')- PLANT BUILT
PICTURE MAY NOT REFLECT ACTUAL TRUSS



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Title:
Date:

North Carolina

Tim Dusche
Staff Plan Reviewer

12/20/22

MODIFICATIONS

PROJECT:
23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE:
Attention
LOCAL INSPECTIONS

DRAWN BY: Staff
DATE: 05-20-21
SCALE:
23-2945 NC MOD NEW

SHEET:
SU-101

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1
XS/SU-101

RESERVED FUTURE REFERENCE

10
SET-UP PKG.

DESIGN MANUAL REF: RF-06.01-02
OR
APPROVED DORMERS THIS
PLAN SET

LOCATION: 7
PER MANUF. INSTALL.
OR SET-UP MANUAL
PAGES XX-XX

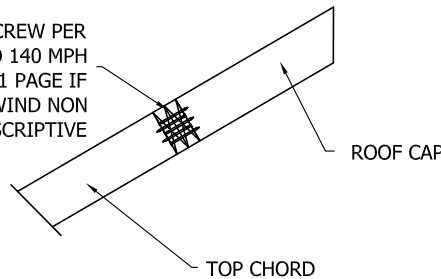
shingles should be installed per manufacturer installation instructions AND can be found on the shingle package or located in the set-up manual

2
XS/SU-101

DESIGN MANUAL REF: RF-05.03

TOP CHORD TO ROOF CAP CONNECTION

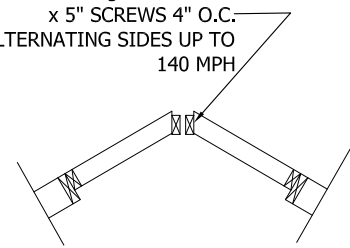
MIN. (1) #8x3" SCREW PER TRUSS BAY UPTO 140 MPH OR SEE SW-101 PAGE IF HIGH WIND NON PRESCRIPTIVE



12
SET-UP PKG.

DESIGN MANUAL REF: RF-05.04

5/16" x 5" (Min.) LAGS @ 7" o.c. alternating sides or #10 x 5" SCREWS 4" O.C. ALTERNATING SIDES UP TO 140 MPH



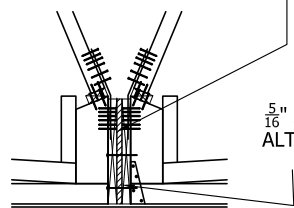
3
XS/SU-101

DESIGN MANUAL REF: RF-05.03

TRUSS KICK LEG (KNEE WALL) TO KINGPOST

MATE LINE BEAM TO BEAM

MIN. (1) 26 GA STRAP W/ (6) .113 X 3" NAILS EACH END FROM KNEE WALL INTO KING POST.



5
XS/SU-101

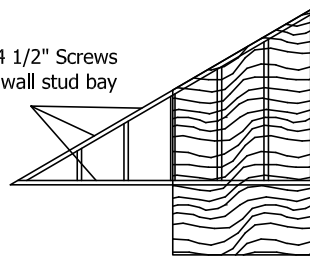
5/16" X 5" LAGS 7" O.C. ALTERNATING SIDES

8
XS/SU-101

DESIGN MANUAL REF: RF-05.02

GABLE WALL CONNECTIONS

MIN. (3) #8 x 4 1/2" Screws per 16" gable wall stud bay

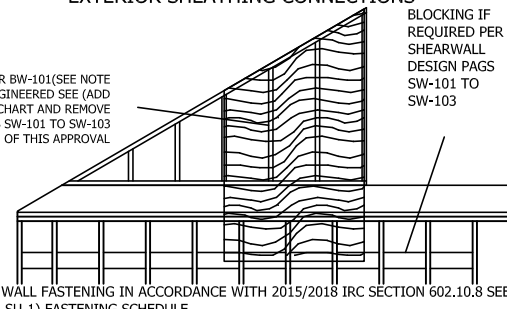


9
SEE NOTES

DESIGN MANUAL REF: SW-02.03-04

EXTERIOR SHEATHING CONNECTIONS

SECUREMENT PER BW-101(SEE NOTE BELOW) IF ENGINEERED SEE (ADD FASTENING CHART AND REMOVE NOTES)OR PAGES SW-101 TO SW-103 OF THIS APPROVAL



NOTES:
• BRACED WALL FASTENING IN ACCORDANCE WITH 2015/2018 IRC SECTION 602.10.8 SEE BELOW (TABLE SU-1) FASTENING SCHEDULE
• REQUIREMENTS OF 602.3(3) MUST BE FOLLOWED IF WOOD STRUCTURAL PANELS ARE TO BE USED TO RESIST WIND PRESSURES

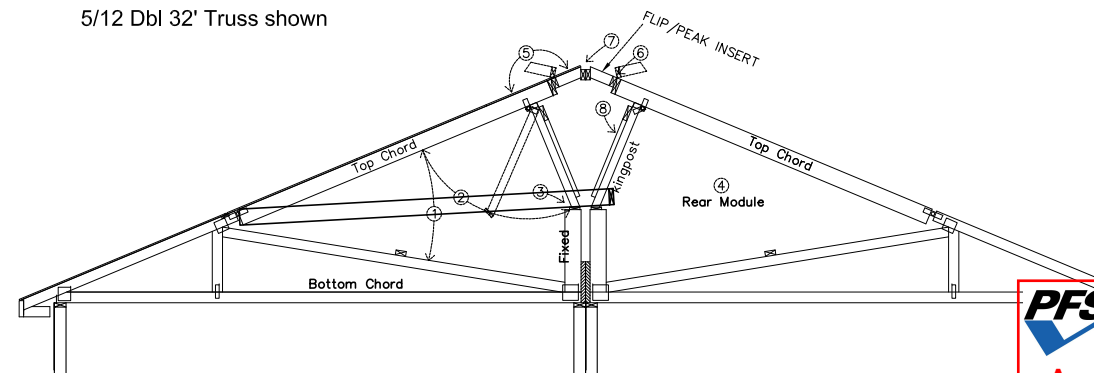
Gable End Framing

5/12 Dbl 32' Truss
112.5 square ft
5/12 Dbl 28' Truss
89.3 square ft

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5/12 Dbl 32' Truss shown



- Step 1, Raise Front Module Top chord
- Step 2, Lower Front Module Kingpost to Sit On Fixed Portion of Kingpost
- Step 3, Secure Hinged Kingpost to fixed Kingpost With (1) 26 ga. Strap With (6) .113 Nails Ea. End (for 530# or Strap capacity per truss drawing)
- Step 4, Repeat steps one through three for rear module
- Step 5, Flip Top chord Extension Into Place & Secure or insert the flip peaks
- Step 6, Secure Top chord Extension W/ (1) #8 x 3" Screw Ea. Bay upto 140 mph or 8" o.c. for 140 mph and over
- Step 7, Secure Ridge With 5/16" x 5" Lag Screws @ 7" O.C. Alternating Sides upto 140 mph See SW pages for winds above 140 MPH
- Step 8, Add 1x4 angle brace along kingpost (1) each end, each module



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State:
Signature:
Title:
Date:

PFS CORPORATION

North Carolina
Tim Dusche
Staff Plan Reviewer
12/20/22

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(TABLE SU-1) FASTENING SCHEDULE for SHEATHING		
SHEATHING	FASTENER	SPACING
WOOD RATED SHEATHING	0.131" x 2 1/2" NAILS	6"
THERMO-PLY RED STRUCTURAL SHEATHING	0.120" x 1 1/2" NAILS	3"
	16 ga. 15/16" CROWN x 1 1/4" STAPLE	

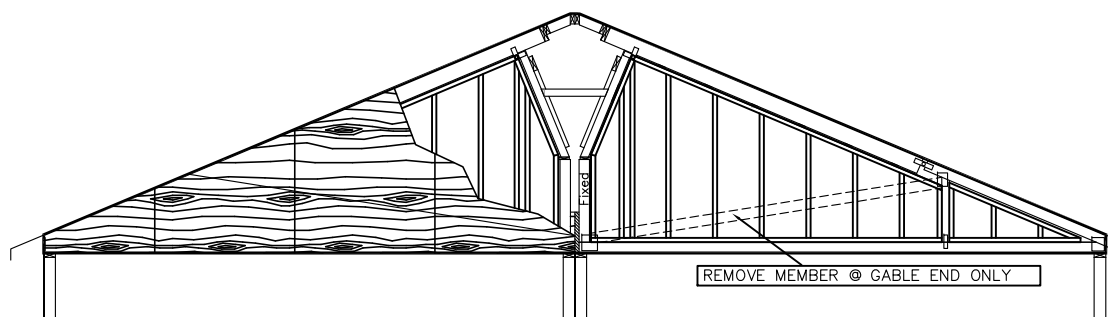
RATED SHEATHING

RATED SHEATHING SHALL BE INSTALLED ON THE ENTIRE EXTERIOR OF THE HOME.
ALL SHEATHING TO BE FASTENED WITH SPECIFIED FASTENERS. SEE NOTE BELOW. OR USE SW PAGES IN PLAN SET.
NOTES:
• BRACED WALL FASTENING IN ACCORDANCE WITH 2015/2018 IRC SECTION 602.10.8
• REQUIREMENTS OF 602.3(3) MUST BE FOLLOWED IF WOOD STRUCTURAL PANELS ARE TO BE USED TO RESIST WIND PRESSURES
• THERMO-PLY RED FASTENING 3" o.c. EDGE and FIELD

GABLE END FILLERS

2X4 GABLE END WALLS ARE ASSEMBLED AT THE PLANT
INSTALL WALL SECTIONS IN PLACE AS SHOWN ON EACH END OF HOME. SECURE BOTTOM AND TOP PLATES OF WALL SECTIONS TO FLOOR AND ROOF WITH 16d NAILS OR #8 X 3 1/2" WOOD SCREWS AT 12" O.C.. SECURE WALL SECTIONS TOGETHER WITH 16d NAILS OR #8 X 3 1/2" WOOD SCREWS AT 12" O.C.
ANY GAPS THAT MAY EXIST BETWEEN WALL SECTIONS OR BETWEEN SECTIONS AND FLOOR OR ROOF WILL NEED TO BE SHIMED. SHIM TIGHT WITH DIMENSIONAL LUMBER, OSB, OR EQUIVALENT.

NOTE:
IF WALL IS TOO TALL, STUDS MAY BE CUT DOWN TO FIT BY REMOVING TOP PLATE OR BOTTOM PLATE.
REATTACHMENT IS (5)Q25 STAPLES OR (3)16d NAILS PER STUD TO PLATE



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MODIFICATIONS

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: Attention LOCAL INSPECTIONS-2

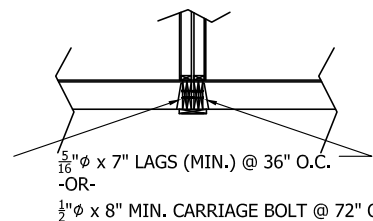
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DATE: 05-20-21
SCALE: 23-2945 NC MOD NEW

SHEET: SU-102

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4 MODULE TO MODULE CONNECTION AT FLOOR RIM BAND

XS/SU-101



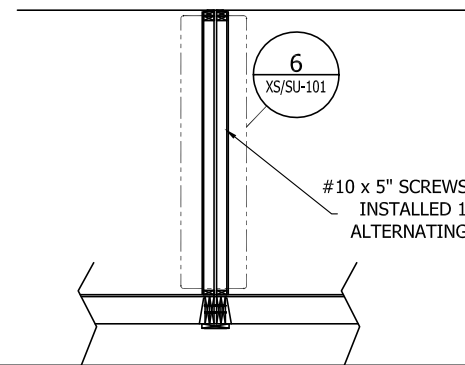
$\frac{5}{16}$ " ϕ x 7" LAGS (MIN.) @ 36" O.C.
-OR-
 $\frac{1}{2}$ " ϕ x 8" MIN. CARRIAGE BOLT @ 72" O.C.

PROVIDE SOLID WOOD BLOCKING BETWEEN MODULES AT ALL LAG BOLT LOCATIONS. PROVIDED AND INSTALLED ONSITE BY OTHERS
FIRE BLOCKING FILLER MATERIAL BETWEEN MODULES INSTALLED ON-SITE BY OTHERS. MUST BE NOMINAL $\frac{3}{4}$ " MATERIAL

14 PER MANFU.

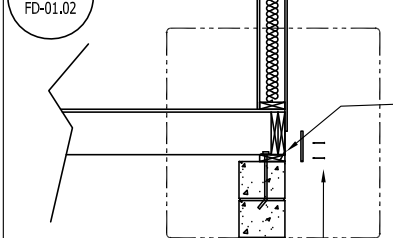
6 MODULE TO MODULE ENDWALL CONNECTION

XS/SU-101



#10 x 5" SCREWS TO BE INSTALLED 12" O.C. ALTERNATING SIDES

11 FD-01.02



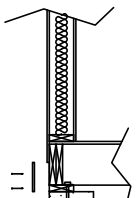
STEP 1: 0.131"x 3" NAILS @ 6" O.C. TOENAIL RIM RAIL TO SILL PLATE BEFORE RATED SHEATHING SPLICE IS INSTALLED.

FASTEN RATED SHEATHING TO PERIMETER JOIST AND TO SILL W/ (2) ROWS OF FASTENERS USED FOR SHEARWALL

STEP 2: ONE ROW TO RIM JOIST, ONE ROW TO SILL PLATE. SEE TABLE SU-1 FASTENING SCHEDULE TO RIGHT

SEE FOUNDATION UPLIFT DETAILS PER FD-01.02 OR IF REQUIRED SW SECTION THIS PLAN SET. SEE DESIGN MANUAL FA-01.02 OR SW-55.02 FOR DETAILS

13 Per IRC and Local

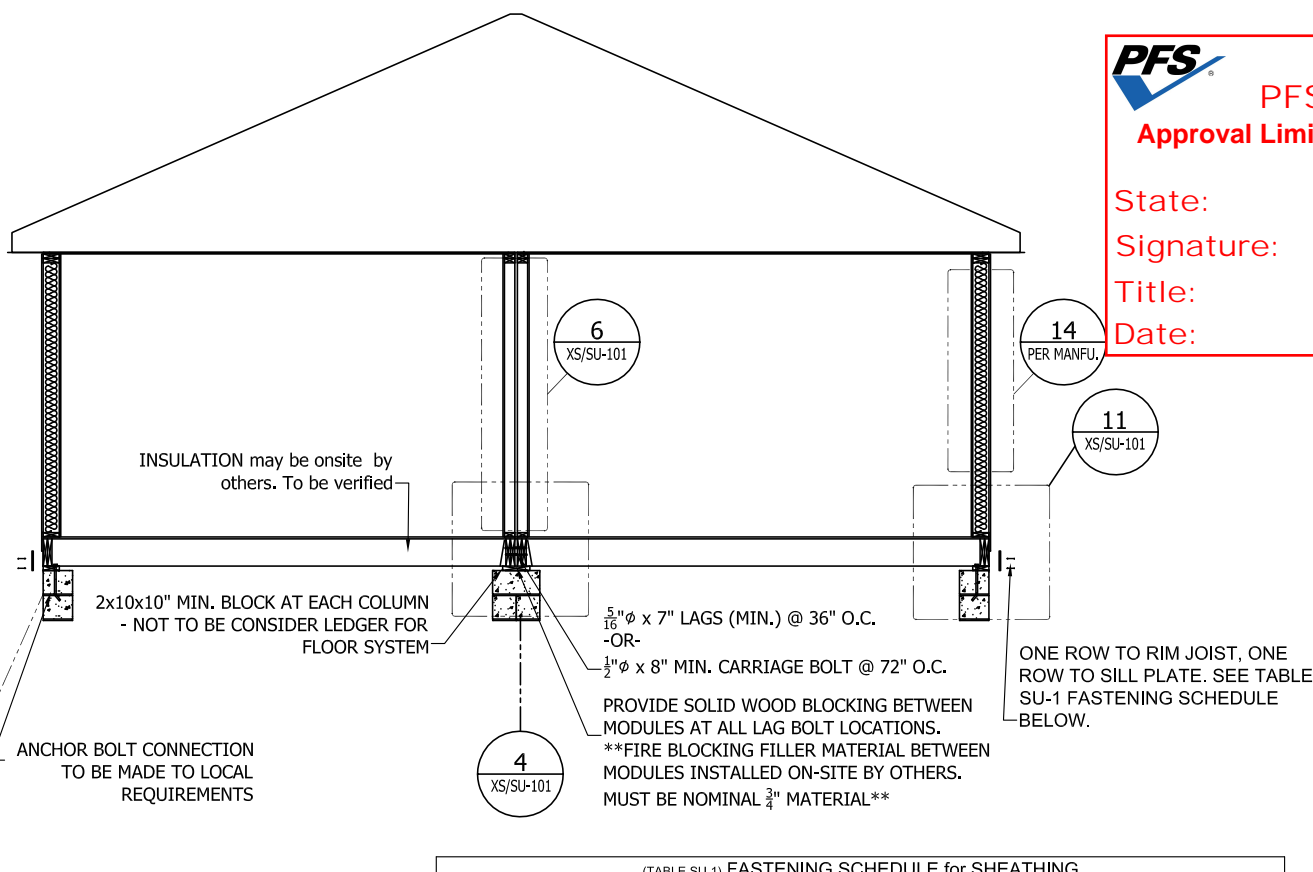


ANCHOR BOLT PER 2018 IRC R403.1.6 MAX SPACING 72". SEE SW SECTION FOR HIGH WIND SPACING OR TO LOCAL REQUIREMENTS

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(TABLE SU-1) FASTENING SCHEDULE for SHEATHING

SHEATHING	FASTENER	SPACING
WOOD RATED SHEATHING	0.131" x 2 $\frac{1}{2}$ " NAILS	6"
THERMO-PLY RED STRUCTURAL SHEATHING	0.120" x 1 $\frac{1}{2}$ " NAILS	3"
	16 ga. $\frac{11}{16}$ " CROWN x 1 $\frac{1}{4}$ " STAPLE	

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State: North Carolina
Signature: *Tim Dusche*
Title: Staff Plan Reviewer
Date: 12/20/22

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MODIFICATIONS

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: LOCAL INSPECTIONS-3

DRAWN BY: Staff
DATE: 05-20-21
SCALE: 23-2945 NC MOD NEW

SHEET: SU-103

ACCESS TO GRADE AT ALL DOORS TO BE PROVIDED AND INSTALLED ON SITE, BY OTHERS IN COMPLIANCE WITH PREVAILING CODE

North Carolina Required Ventilation

Floor Length: 44 ft.

Floor Type

28 Wide 32 Wide Triple Wide T-Ranch

Check if pod

Manufacturer Specifications
 Ridge Vent: 18 sq. in. per lf.
 Soffit Vent: 5.89 sq. in. per lf.

House Required Ventilation

Required Ventilation for House:	563.2 sq. in.
Inches Required for Soffit Ventilation:	281.6 sq. in.
Inches Required for Ridge Ventilation:	281.6 sq. in.
Number of Ridge Vents Required:	3.911111 pc.
	15.64444 lf. of Ridge Vent

Ventilation in House

Soffit Ventilation in house:	506 sq. in.	
Ridge Ventilation in house:	288 sq. in.	51.14% through Ridge Vent
Number of Ridge Vents in house:	4 pc.	
	16 lf. of Ridge Vent	

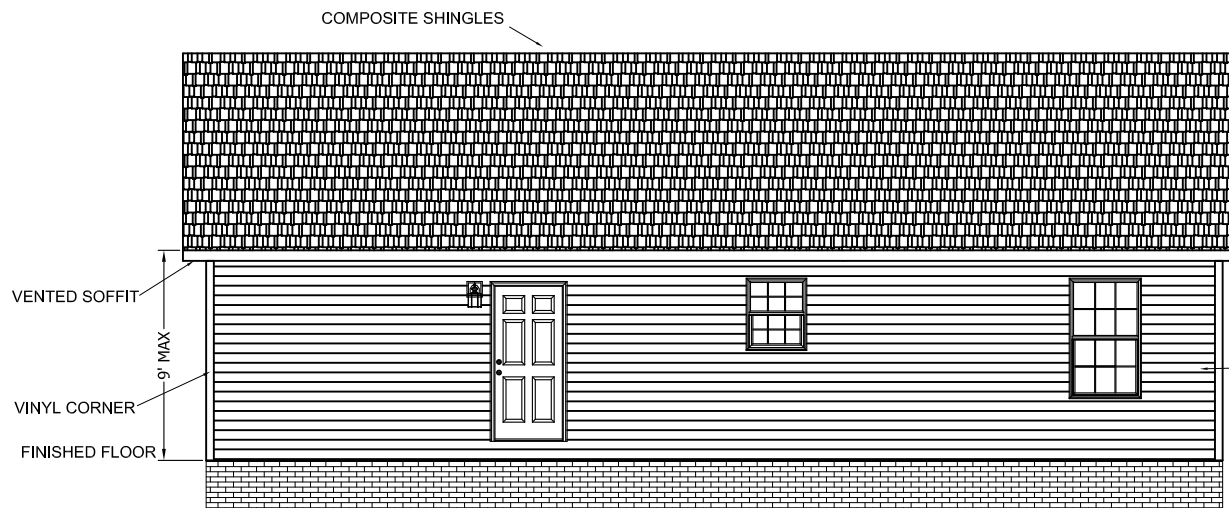
Code can be found at R806.2 in the IRC

ELEVATION IS TO SHOW CHAMPION HOMES PORTION OF THE STRUCTURE. FOUNDATION IS A REPRESENTATION ONLY AND MAY NOT REFLECT ACTUAL SITE CONDITIONS.



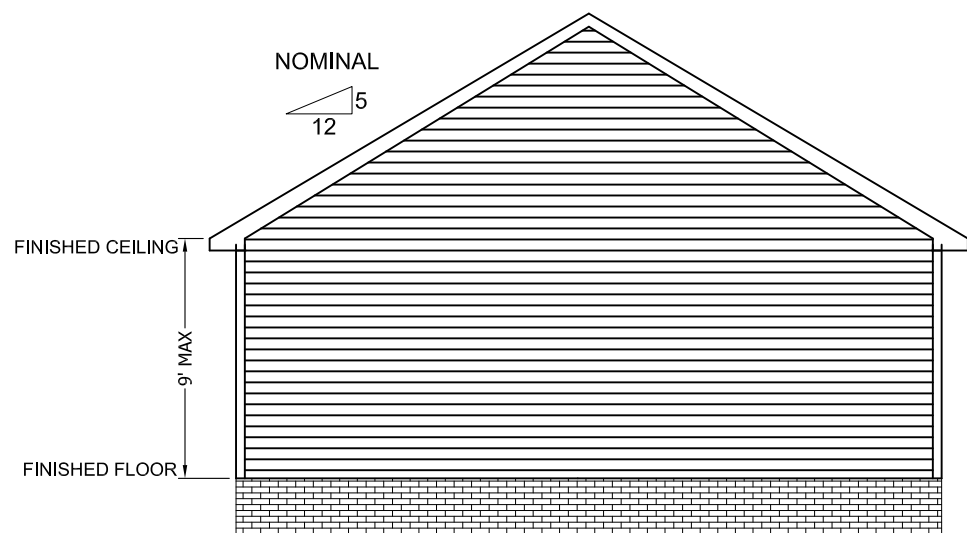
FRONT ELEVATIONS

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

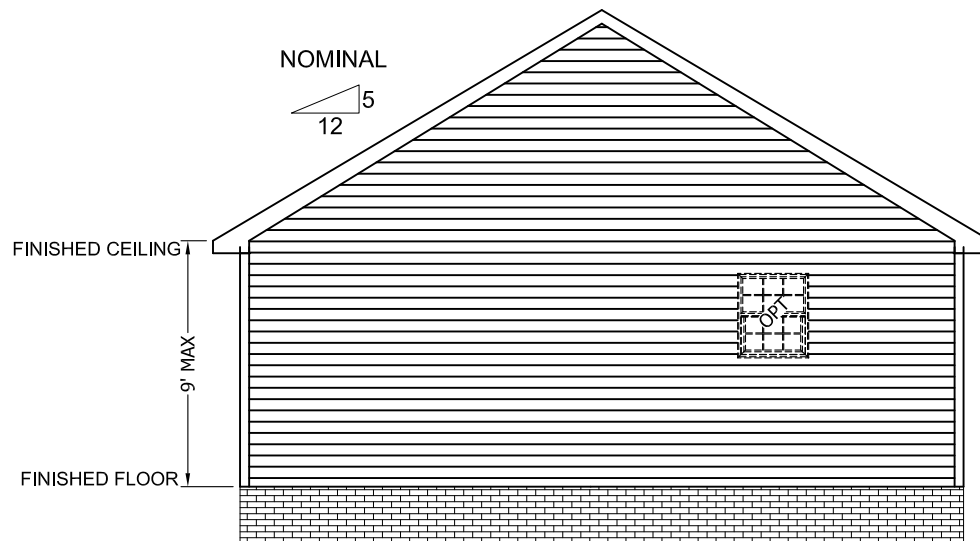


REAR ELEVATIONS

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



LEFT ELEVATION



RIGHT ELEVATION

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4055 Hwy. 401 South Lillington, NC 27546

CHAMPION

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755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48064
 PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL



APPROVERS SEAL

PFS CORPORATION

Approval Limited to Factory Built Portion Only

State:

Signature:

Title:

Date:

North Carolina

Tim Duske

Staff Plan Reviewer

12/20/22

MODIFICATIONS

PROJECT: 23-2945
 26'-8" x 44' 3 BD 2 BTH

TITLE: **ELEVATION EV-101**

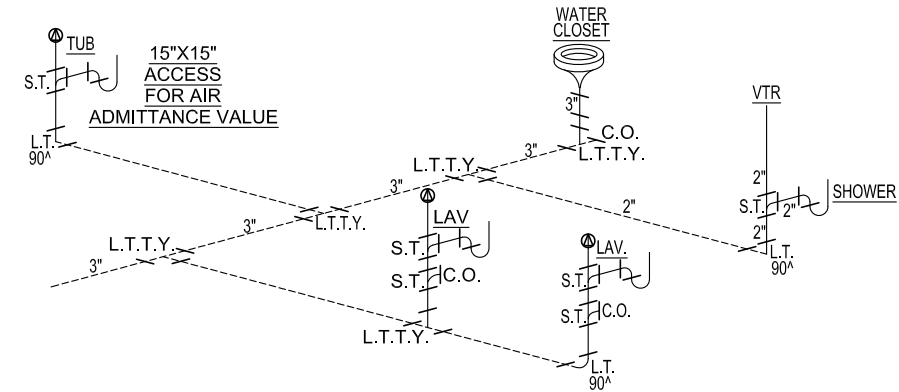
DRAWN BY: Staff
 DATE: 05-20-21
 SCALE: 23-2945 NC MOD NEW

SHEET:

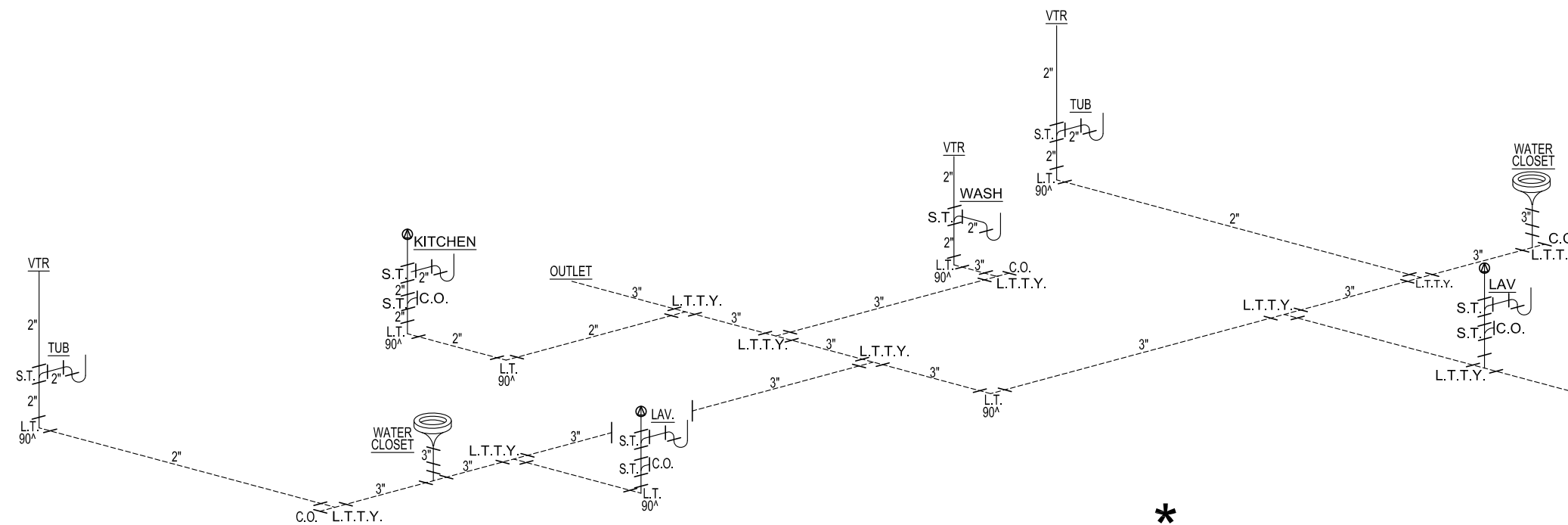
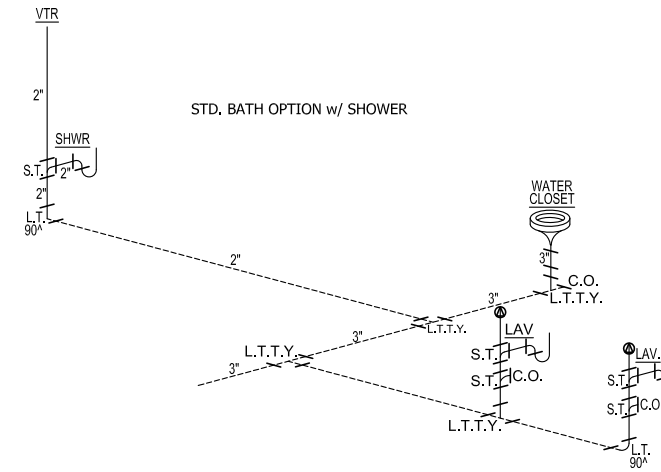
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VENTS MAY BE RUN INDIVIDUALLY OR TIED TOGETHER IN ATTIC CAVITY

OPT M. BATH #2 - GLAMOUR BATH OPT.



STD. BATH OPTION w/ SHOWER



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State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

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

ALL P-TRAPS AT TUBS, SHOWERS & TUB/SHOWERS MUST BE RODENT PROOFED AND FINAL FIRE BLOCKING COMPLETED ON SITE BY OTHERS AFTER COMPLETION OF ALL PLUMBING TESTS. ALL OTHER RODENT PROOFING AND FIRE BLOCKING AT FLOOR LEVEL DONE AT FACTORY. (REFERENCE IRC R302.11 FOR CORRECT METHODS) SEE PAGE AE-101 IN SETUP MANUAL IN HOME FOR DETAILS (SECTION 5, PG 36 QA MANUAL). SEE Q/A MANUAL FOR APPROVED PLUMBING FIXTURES SECTION 4 PAGE 5

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.
- 9-DWV SYSTEM SHALL EITHER ABS or PVC-DWV

- 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

15"X15"
 ACCESS
 FOR AIR
 ADMITTANCE VALUE

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

REFERENCE IPC TABLE 308.5

⊕ APPROVED AUTOVENT
 VTR VENT THROUGH ROOF
 - - - - - INSTALLED ON SITE

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 PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

APPROVERS SEAL

PFS CORPORATION
 Approval Limited to Factory Built Portion Only

State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

MODIFICATIONS

PROJECT: 23-2945
 26'-8" x 44' 3 BD 2 BTH

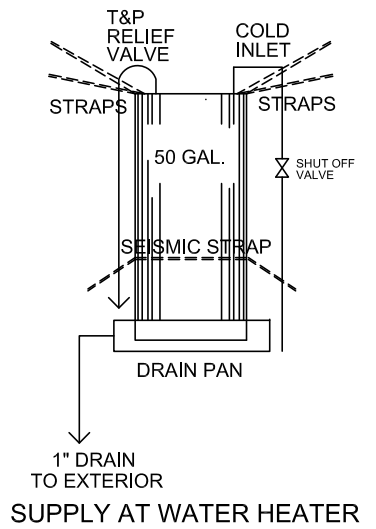
TITLE: DRAIN LINE PL-101

DRAWN BY: Staff
 DATE: 05-20-21
 SCALE:
 23-2945 NC MOD NEW

SHEET:

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



1. ALL PLUMBING FIXTURES HAVE SEPARATE SHUTOFF VALVES.
2. WATER HEATER SHALL HAVE A SAFETY PAN WITH 1 INCH DRAIN TO EXTERIOR.
3. 3/4" HOT WATER PIPES SHALL BE INSULATED PER N1103.5.3 AND INSULATED WITH R-3 MIN. **THE MAIN WATER PIPES LOCATED UNDER FLOOR SHALL BE INSULATED AND INSPECTED ON-SITE TO VERIFY COMPLIANCE. IF 3/4" HOT WATER LINES ARE INSTALLED IN ATTIC SPACE, THIS IS ALSO TO BE INSULATED TO R-3 MIN AND VERIFIED BY ONSITE INSPECTION
4. SHOWER VALVES MUST LIMIT TEMP TO 120 deg MAX
5. WATER SUPPLY LINES SHALL BE POLYETHYLENE (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. WHOLE HOUSE SHUT OFF VALVE LOCATED AT WASHER BOX FOR WATER HEATER, SHOULD BE NEAR THE WATER HEATER. IF THE WATER HEATER LOCATION IS NOT "NEAR" THEN SHUT OFF PROVISIONS MUST BE MADE PER P2903.9.2 OR A DOOR SHOULD BE INSTALLED ON WATER HEATER COMPARTMENT
11. FOR SEISMIC D0-D2 CONDITIONS WATER HEATER SHALL HAVE AN ADDITIONAL STRAP AROUND LOWER 1/3 IN ADDITION TO THE UPPER STRAPPING STRAPPING SHALL COMPLY WITH M1307.2 SEE ILLUSTRATION

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

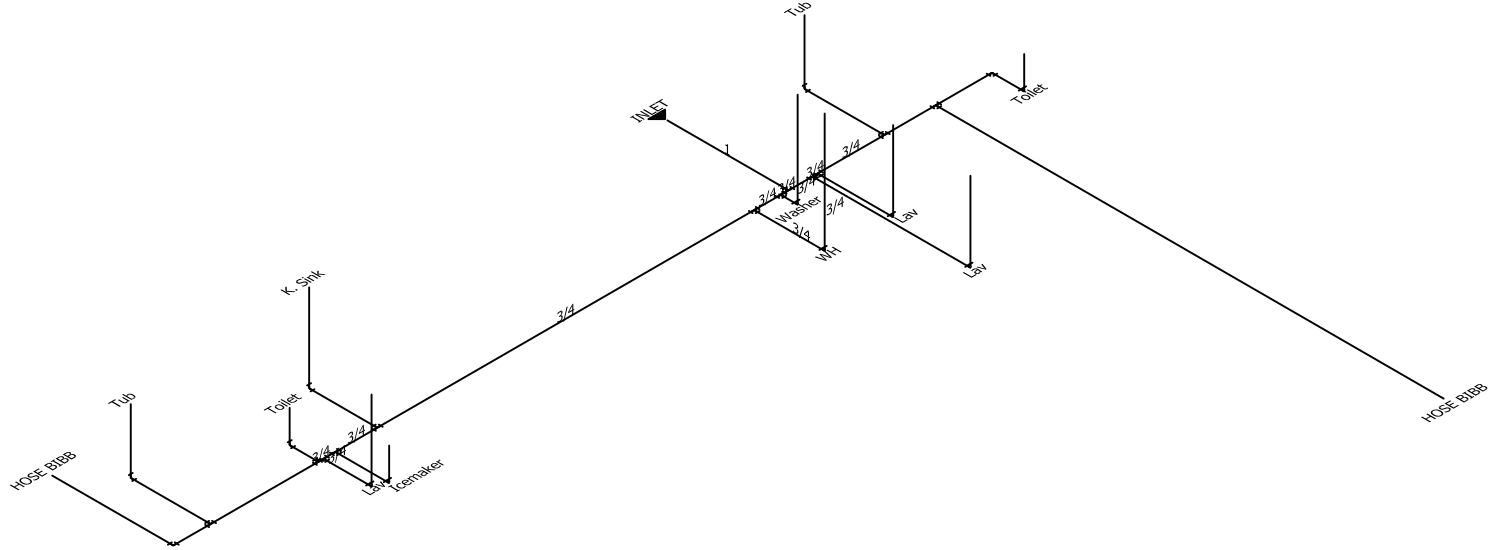
ALL PLUMBING FIXTURES/PIPING SHALL COMPLY WITH 2018 IRC AND IPC.

ALL TUBS AND SHOWER SHALL HAVE TEMPERATURE LIMITING VALVES PER 2018 IRC .

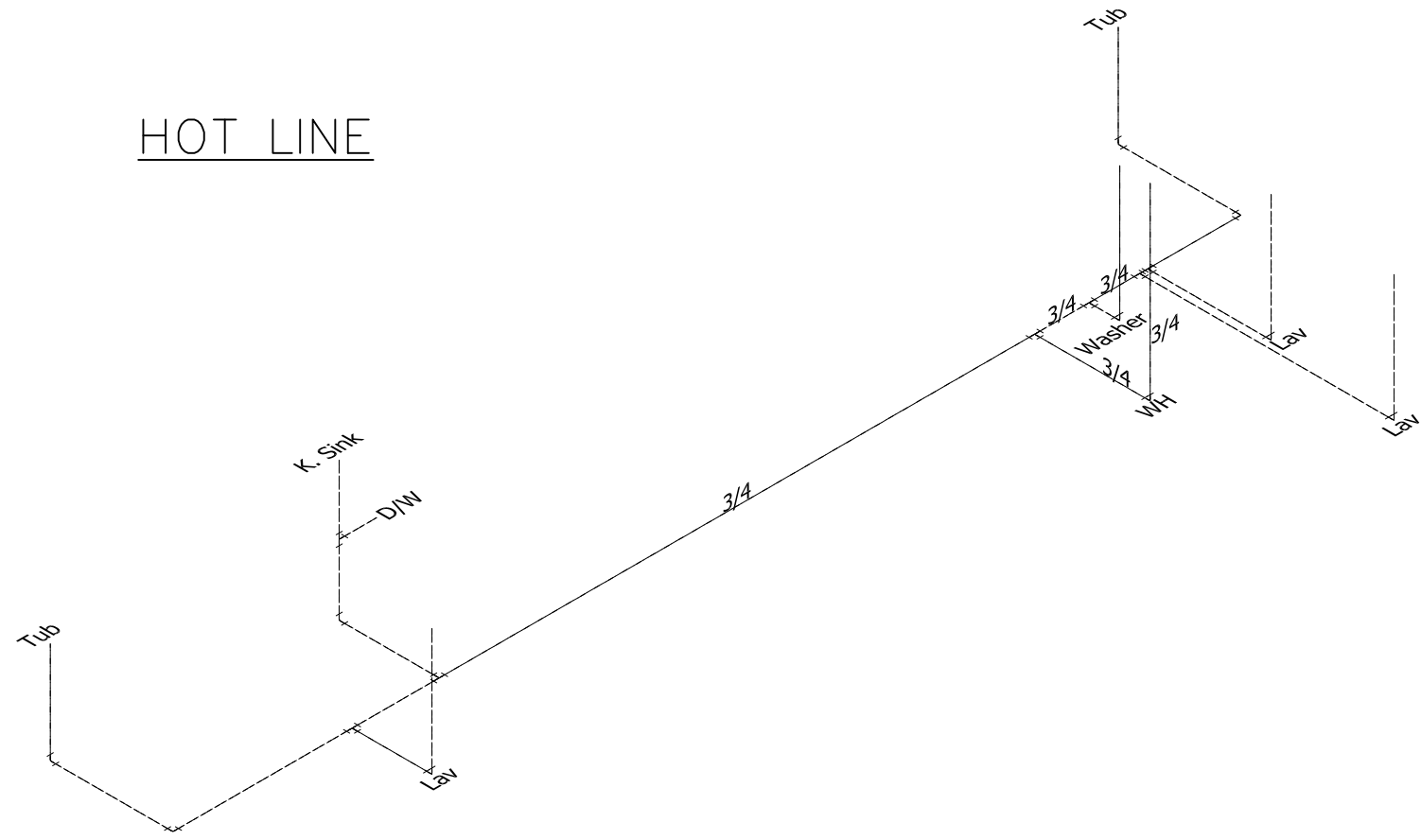
WATER SUPPLY LINES SHALL BE POLYETHYLENE (PEX), WHEN POLYETHYLENE (PEX), SUPPLY LINES ARE INSTALLED THE MAXIMUM WATER HEATER SETTING IS 180 deg F. THE POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES LIMITATIONS AND INSTRUCTIONS.

WATER HAMMER ARRESTERS SHALL BE INSTALLED AT EACH QUICK CLOSING VALVE ie. ICE MAKERS, DISH WASHERS, AND CLOTHES WASHERS.

COLD LINE



HOT LINE



WATER SUPPLY NOTES:

- ALL SUPPLY LINES TO BE 1/2" UNLESS OTHERWISE NOTED
- ONLY FACTORY INSTALLED PORTION DISPLAYED, REMAINDER OF SYSTEM DESIGNED, PROVIDED AND INSTALLED BY OTHERS ON SITE IN ACCORDANCE WITH PREVAILING CODE
- WATER HEATER EXPANSION TANK WHEN REQUIRED, TO BE PROVIDED AND INSTALLED ONSITE BY OTHERS PER PLUMBING CODE 607.3

WATER SUPPLY and DISTRIBUTION

PLUMBING FIXTURE OR FIXTURE FITTING	MAX. FLOW RATE OR QUANTITY
LAVATORY FAUCET	2.2 gpm at 60 psi
SHOWER HEAD(including hand held shower spray)	2.5 gpm at 80 psi
SINK FAUCET	2.2 gpm at 60 psi
WATER CLOSET	1.6 gallons per flushing cycle

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Dushke*
Title: Staff Plan Reviewer
Date: 12/20/22

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PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

APPROVERS SEAL

MODIFICATIONS

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: **FACTORY INSTALLED WATER LINES PL-102**

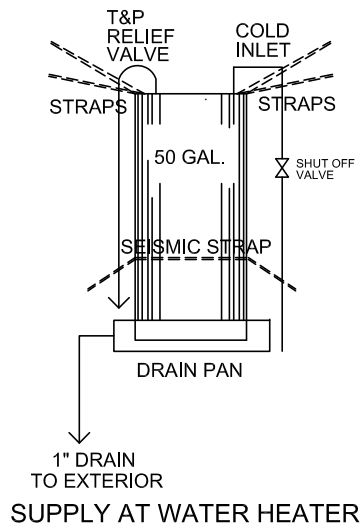
DRAWN BY: Staff
DATE: 05-20-21
SCALE: 23-2945 NC MOD NEW

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

ALL PLUMBING FIXTURES/PIPING SHALL COMPLY WITH 2018 IRC AND IPC.

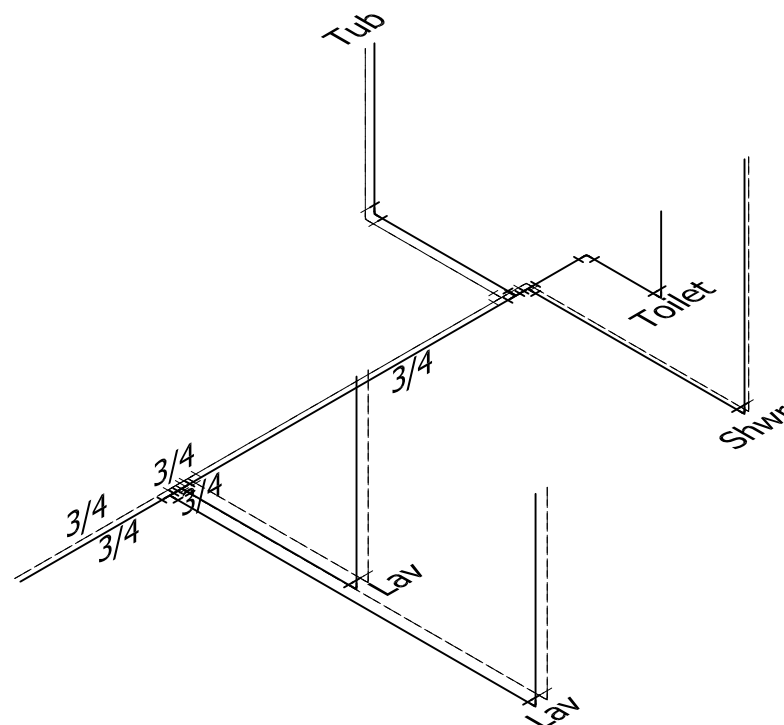
ALL TUBS AND SHOWER SHALL HAVE TEMPERATURE LIMITING VALVES PER 2018 IRC .

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WATER HAMMER ARRESTERS SHALL BE INSTALLED AT EACH QUICK CLOSING VALVE ie. ICE MAKERS, DISH WASHERS, AND CLOTHES WASHERS.

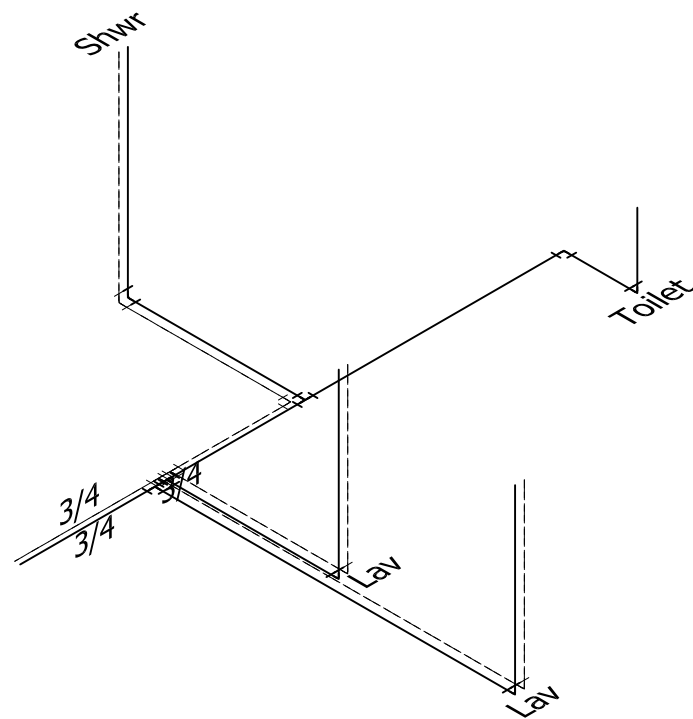
OPT. MASTER BATH #2 – GLAMOUR BATH OPT.

HOT LINE



STD. MASTER BATH W/ SHOWER OPT.

HOT LINE



COLD LINE

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Osuche*
Title: Staff Plan Reviewer
Date: 12/20/22

WATER SUPPLY NOTES:

- ALL SUPPLY LINES TO BE 1/2" UNLESS OTHERWISE NOTED
- ONLY FACTORY INSTALLED PORTION DISPLAYED, REMAINDER OF SYSTEM DESIGNED, PROVIDED AND INSTALLED BY OTHERS ON SITE IN ACCORDANCE WITH PREVAILING CODE
- WATER HEATER EXPANSION TANK WHEN REQUIRED, TO BE PROVIDED AND INSTALLED ONSITE BY OTHERS PER PLUMBING CODE 607.3

WATER SUPPLY and DISTRIBUTION

PLUMBING FIXTURE OR FIXTURE FITTING	MAX. FLOW RATE OR QUANTITY
LAVATORY FAUCET	2.2 gpm at 60 psi
SHOWER HEAD(including hand held shower spray)	2.5 gpm at 80 psi
SINK FAUCET	2.2 gpm at 60 psi
WATER CLOSET	1.6 gallons per flushing cycle

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PHONE: 248-614-8200

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

APPROVERS SEAL

MODIFICATIONS

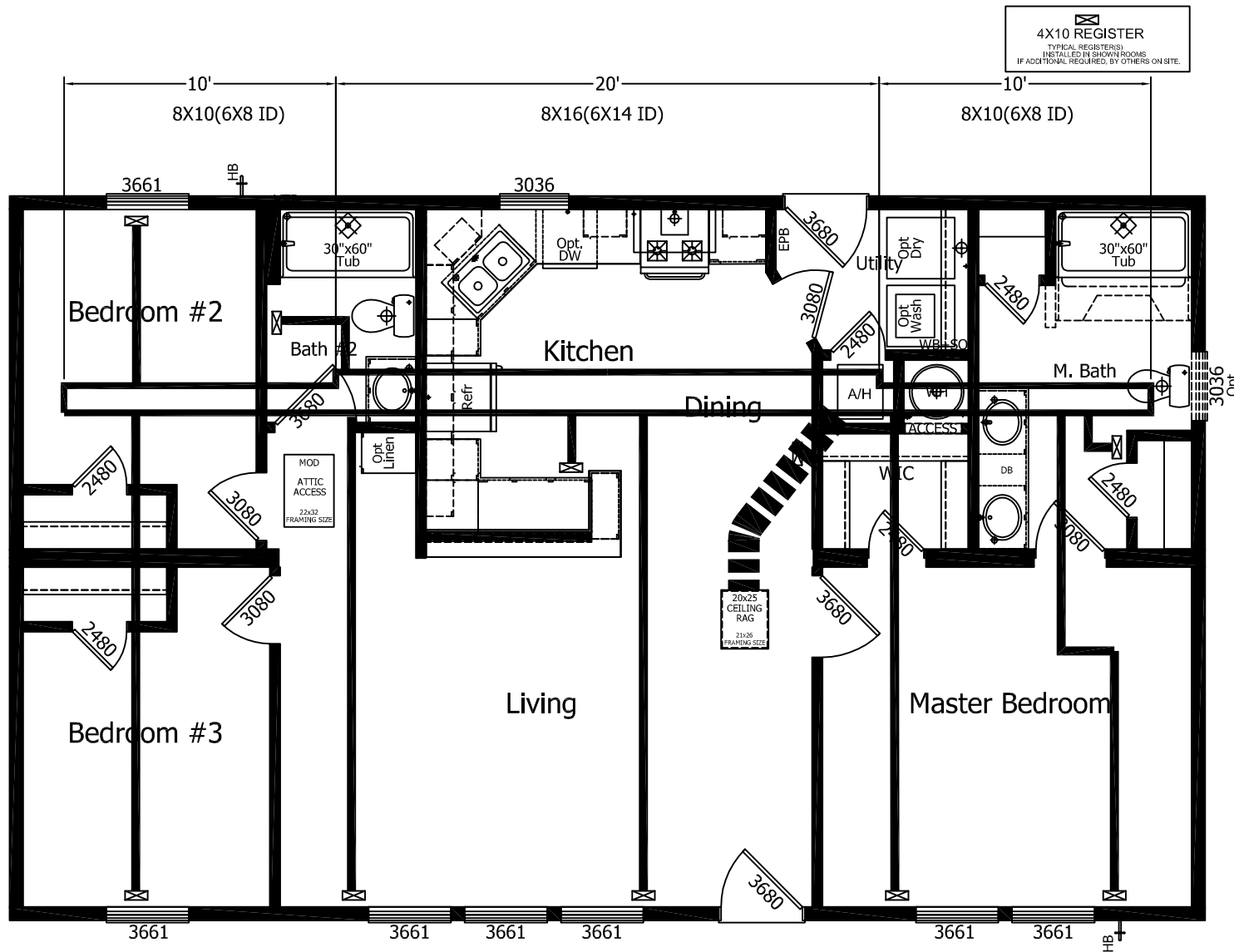
PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: **FACTORY INSTALLED WATER LINES OPT PL-103**

DRAWN BY: Staff
DATE: 05-20-21
SCALE:
23-2945 NC MOD NEW

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State: North Carolina
 Signature: *Tim Busche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

THE AMS GROUP <small>ELKHART, IN.</small>		CUSTOMER: CHAMPION HOME BUILDER	
DESCRIPTION: PERIMETER		SCALE:	
MODEL: 23-2945		DATE:	
DRAWN: JL		12/19/22	
CAD FILENAME: DS\CHAMPION LILLINGTON			

3933 East Jackson Blvd., Elkhart, IN 46516

Project Information

For: Champion Home Builders
 Lillington, NC

Design Information

Approval Limited to Factory-Built Portion Only

Method: Simplified
 Construction quality: Average
 State: North Carolina
 Fireplaces: (Average)
 Signature: *Tim Busche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

	Htg	Clg
Outside db (°F)	15	92
Inside db (°F)	70	75
Design TD (°F)	55	17
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	46	52

HEATING EQUIPMENT

Make	Generic
Trade	
Model	AFUE 100
AHRI ref	
Efficiency	100 AFUE
Heating input	5.8 kW
Heating output	19729 Btuh
Temperature rise	28 °F
Actual air flow	658 cfm
Air flow factor	0.037 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	

COOLING EQUIPMENT


Make	Generic
Trade	
Cond	SEER 14.0
Coil	
AHRI ref	
Efficiency	12.2 EER, 14 SEER
Sensible cooling	12548 Btuh
Latent cooling	5378 Btuh
Total cooling	17926 Btuh
Actual air flow	658 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.76

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
b2	129	2501	1174	92	62
ba2	43	583	181	21	10
kt	118	2140	2125	79	113
u	41	0	0	0	0
c1	36	0	0	0	0
ba1	113	2769	921	102	49
b1	186	3318	2715	122	144
lr	339	4101	3648	151	194
HALL	26	0	0	0	0
B3	129	2484	1606	91	85

Bold/italic values have been manually overridden

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Entire House	1159	17896	12370	658	658
Other equip loads		1832	566		
Equip. @ 0.97 RSM			12548		
Latent cooling			4109		
TOTALS	1159	19729	16657	658	658



PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina

Signature: *Tim Dusche*

Title: Staff Plan Reviewer

Date: **12/20/22**

Bold/italic values have been manually overridden

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

3933 East Jackson Blvd., Elkhart, IN 46516



PFS CORPORATION

Project Information

Approval Limited to Factory Built Portion Only

For: Champion Home Builders
 Lillington, NC

State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

Notes:

Design Information

Weather: Henderson-Oxford AP, NC, US

Winter Design Conditions

Outside db **15** °F
 Inside db 70 °F
 Design TD 55 °F

Summer Design Conditions

Outside db **92** °F
 Inside db 75 °F
 Design TD 17 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 52 gr/lb

Heating Summary

Structure 16526 Btuh
 Ducts 1371 Btuh
 Central vent (31 cfm) 1832 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 19729 Btuh

Sensible Cooling Equipment Load Sizing

Structure 11775 Btuh
 Ducts 595 Btuh
 Central vent (31 cfm) 566 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.97
 Equipment sensible load 12548 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 1 (Average)

Latent Cooling Equipment Load Sizing

Structure 2187 Btuh
 Ducts 851 Btuh
 Central vent (31 cfm) 1071 Btuh
 Outside air
 Equipment latent load 4109 Btuh

	Heating	Cooling
Area (ft ²)	1159	1159
Volume (ft ³)	10434	10434
Air changes/hour	0.57	0.23
Equiv. AVF (cfm)	98	40

Equipment Total Load (Sen+Lat) 16657 Btuh
 Req. total capacity at 0.70 SHR 1.5 ton

Heating Equipment Summary

Make Generic
 Trade
 Model AFUE 100
 AHRI ref

Efficiency 100 AFUE
 Heating input 5.8 kW
 Heating output 19729 Btuh
 Temperature rise 28 °F
 Actual air flow 658 cfm
 Air flow factor 0.037 cfm/Btuh
 Static pressure 0.50 in H2O
 Space thermostat

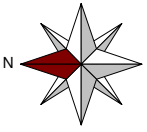
Cooling Equipment Summary

Make Generic
 Trade
 Cond SEER 14.0
 Coil
 AHRI ref
 Efficiency 12.2 EER, 14 SEER

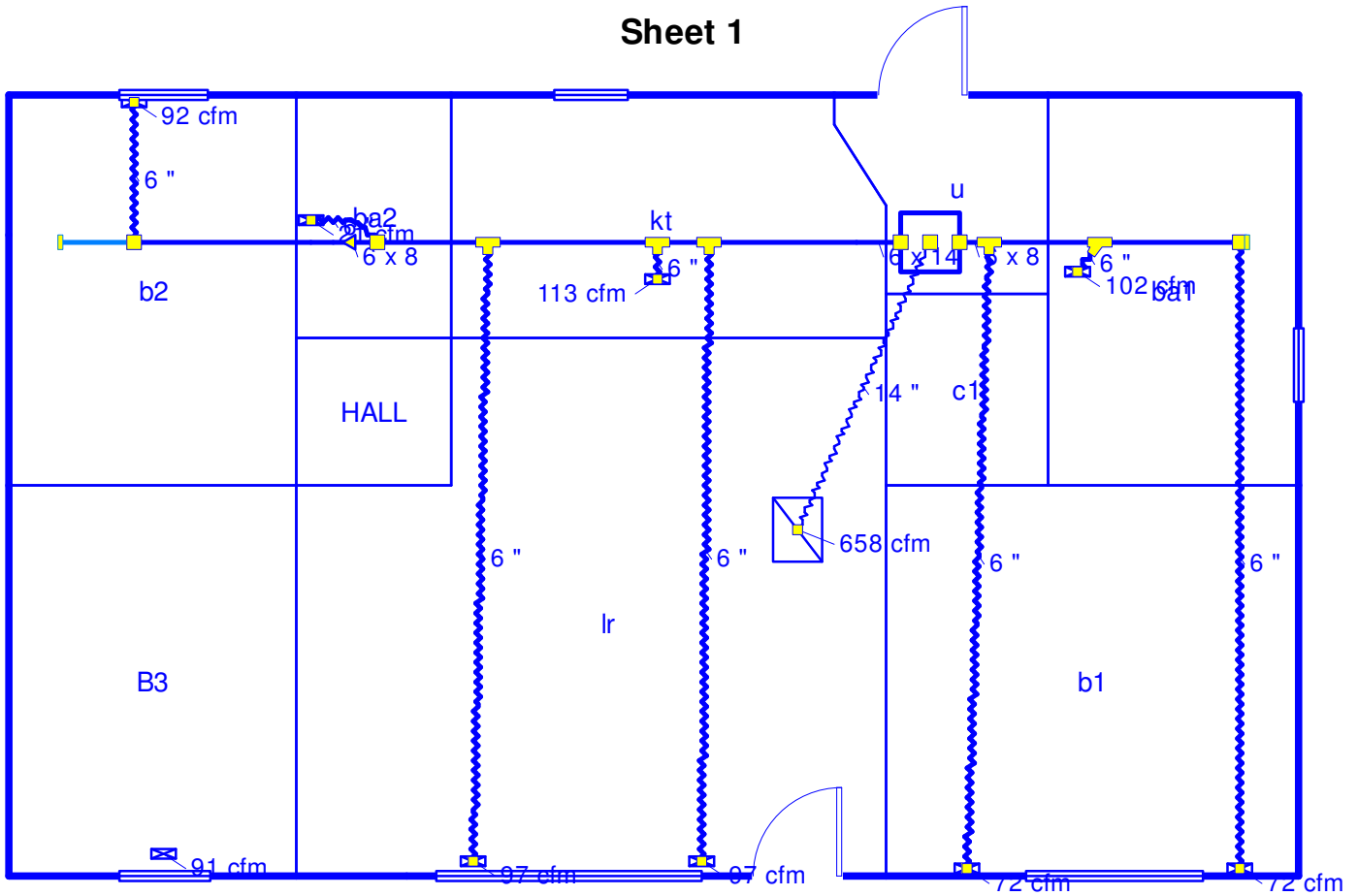
Sensible cooling 12548 Btuh
 Latent cooling 5378 Btuh
 Total cooling 17926 Btuh
 Actual air flow 658 cfm
 Air flow factor 0.053 cfm/Btuh
 Static pressure 0.50 in H2O
 Load sensible heat ratio 0.76

Bold/italic values have been manually overridden

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Sheet 1



PFS
PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Busche*
Title: Staff Plan Reviewer
Date: 12/20/22

Job #: 23-2945
Performed by AMS of Indiana, Inc. for:
Champion Home Builders
Lillington, NC

AMS Of Indiana, Inc.
3933 East Jackson Blvd.
Elkhart, IN 46516

Scale: 1 : 76
Page 1
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Project Information

For: Champion Home Builders
 Lillington, NC

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.26 in H2O	0.26 in H2O
Available static pressure	0.24 in H2O	0.24 in H2O
Supply / return available pressure	0.167 / 0.073 in H2O	0.167 / 0.073 in H2O
Lowest friction rate	0.103 in/100ft	0.103 in/100ft
Actual air flow	658 cfm	658 cfm
Total effective length (TEL)	233 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
B3	h 1606	91	85	0	0	0x0	VIFx	0	0	
b1	c 1358	61	72	0.110	6.0	0x0	VIFx	22.3	130.0	st1
b1-A	c 1358	61	72	0.115	6.0	0x0	VIFx	30.8	115.0	st1
b2	h 2501	92	62	0.107	6.0	0x0	VIFx	30.8	125.0	st2A
ba1	h 2769	102	49	0.128	6.0	0x0	VIFx	6.0	125.0	st1
ba2	h 583	21	10	0.119	6.0	0x0	VIFx	20.3	120.0	st2
kt	c 2125	79	113	0.120	6.0	0x0	VIFx	9.5	130.0	st2
lr	c 1824	75	97	0.105	6.0	0x0	VIFx	35.0	125.0	st2
lr-A	c 1824	75	97	0.103	6.0	0x0	VIFx	27.5	135.0	st2

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	343	379	0.103	650	10.5	14 x 6	RectFbg	
st1	Peak AVF	224	193	0.110	671	8.0	8 x 6	RectFbg	
st2A	Peak AVF	92	62	0.107	276	8.3	8 x 6	RectFbg	st2

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina

Signature: *Tim Dusche*


Title: Staff Plan Reviewer

Date: **12/20/22**

Bold/italic values have been manually overridden

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x0	658	658	70.7	0.103	615	14.0	0x 0		VIFx	



PFS CORPORATION

Approval Limited to Factory Built Portion Only

State: North Carolina

Signature: *Tim Busche*

Title: Staff Plan Reviewer

Date: **12/20/22**

NOTE:

- FOUNDATION AND DETAILS SHOWN ARE FOR THIS STRUCTURE ONLY, PROVIDING BASIC DIMENSIONS AND SUPPORT REQUIREMENTS. ACTUAL FOUNDATION DESIGN SHALL BE BY PER IRC CHAPTER 4 OR (NC)Chapter 45(HIGH WIND). IF THE SITE CONDITIONS DO NOT FOLLOW PRESCRIPTIVE IRC SPECIFICATIONS THEN THE FOUNDATION SHOULD BE DONE BY A REGISTERED ARCHITECT OR PROFESSIONAL ENGINEER BASED ON SITE SOIL CONDITIONS AND STATE/LOCAL CODE REQUIREMENTS.
- CHAMPION HOME BUILDERS, INC. ASSUMES NO RESPONSIBILITY FOR FOUNDATION CONSTRUCTION OR DESIGN.
- FOR HEATED BASEMENTS; INSULATION REQUIREMENTS SHALL BE BASED ON ENERGY AND HEAT LOSS CALCULATION PER STATE CODE.
- UNLESS A BASEMENT ACCESS IS PROVIDED FROM THE DWELLING UNIT TO THE BASEMENT THE BUILDER IS RESPONSIBLE FOR PROVIDING ON SITE ACCESS FROM THE BASEMENT OR CRAWL SPACE TO THE EXTERIOR. VENTILATION OF THE BASEMENT/ CRAWL SPACE REQUIREMENTS TO BE DETERMINED, PROVIDED AND INSTALLED ON SITE BY OTHERS IN ACCORDANCE WITH LOCAL AUTHORITY HAVING JURISDICTION
- 1/2" ANCHOR BOLTS W/ 1/4"x3"x3" PLATE WASHERS REQUIRED 6'-0" O.C. MAX., MIN. (2) ANCHOR BOLTS REQUIRED PER SILL PLATE SECTION.
- ANCHOR BOLTS TO BE NOT MORE THAN 12" AND NOT LESS THAN 4" FROM CORNERS OF UNIT
- MINIMUM OF (2) ANCHOR BOLTS PER SILL PLATE SECTION. - AN ANCHOR BOLT MUST BE LOCATED 3 1/2" MIN - 12" MAX. FROM EACH END OF EACH SILL PLATE SECTION.
- CONNECTIONS FROM THE MODULAR TO THE FOUNDATION MUST BE PROVIDED ON-SITE FOR LISTED UPLIFT LOADS.
- FOUNDATION SHALL BE DESIGNED TO CONFORM TO IRC CHAPTER 4 OR CHAPTER 45(HIGH WIND) SPECIFICATIONS OR BY A LOCAL DESIGN PROFESSIONAL WITH KNOWLEDGE OF THE LOCAL SOIL CONDITIONS. THIS PLAN IS MEANT ONLY TO COMMUNICATE THE DIMENSIONAL AND LOADING INFORMATION TO THE DESIGN PROFESSIONAL SO THE FOUNDATION IS COORDINATED WITH THE REQUIREMENTS OF THE MODULAR BUILDING.
- CRAWL SPACE ACCESS REQUIREMENTS TO BE DETERMINED, PROVIDED AND INSTALLED BY OTHERS ON SITE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING JURISDICTION

NOTES:

- SPLICES IN MATE LINE GIRDERS MUST FALL ON A SUPPORT PIER.
- PIERS OR POSTS TO BE SPACED PER CHART AND LOCATED UNDER OPENING COLUMN SUPPORTS WHEN OPENING WIDTH IS 4' OR GREATER.
- 1" ADDED TO OVERALL WIDTH TO ACCOMMODATE LIFT STRAPS

RECOMMENDED FOUNDATION PARAMETERS:

- 2500 PSI MIN. CONCRETE
- MIN. SOIL BEARING CAPACITY OF 2,000 PSI
- MORTAR TO BY TYPE M OR S

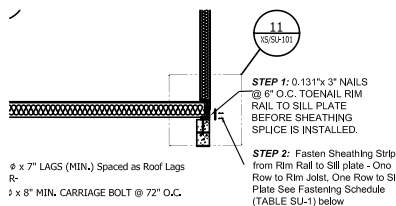
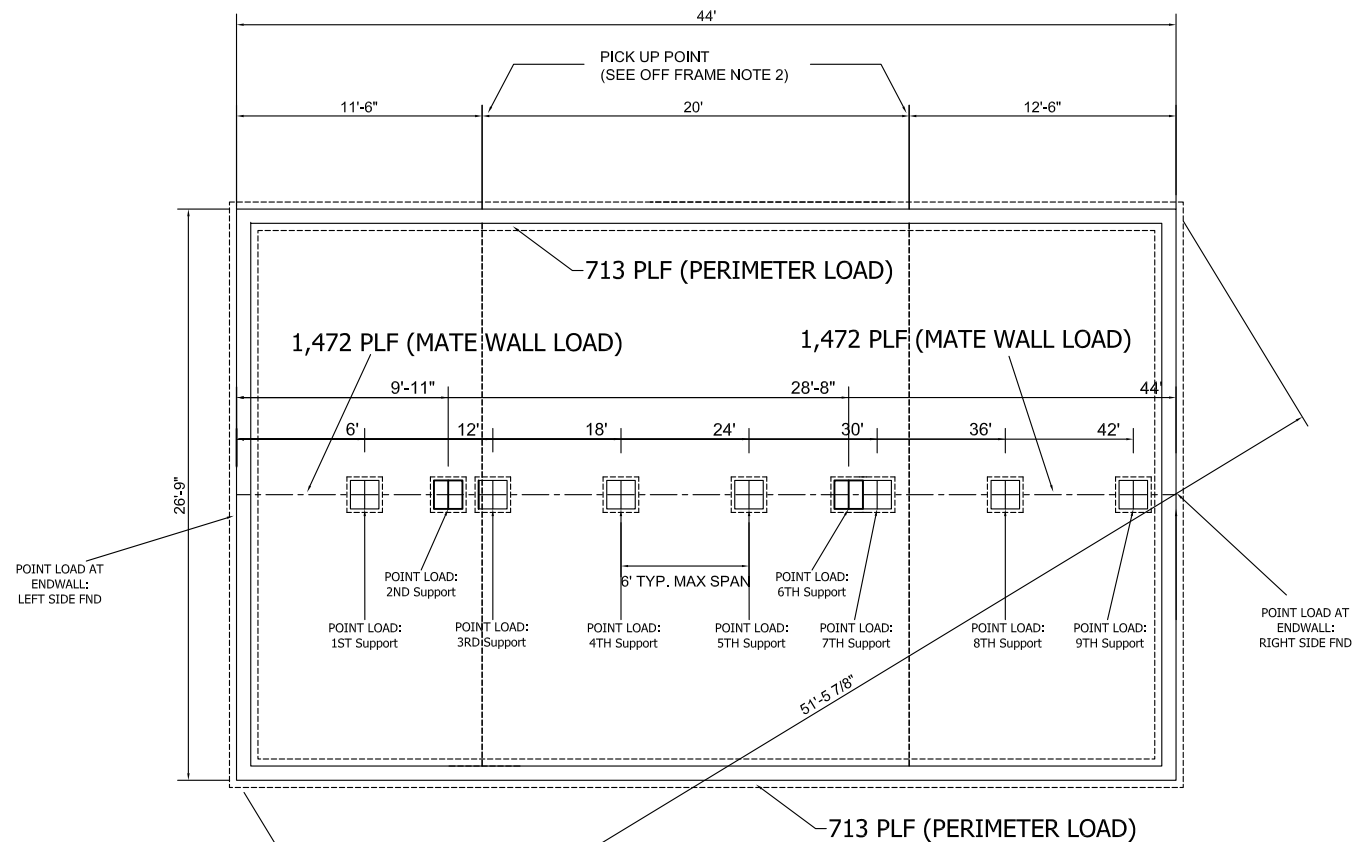


TABLE 60-1 FASTENING SCHEDULE FOR SHEATHING		
SHEATHING	FASTENER	SPACING
OSB SHEATHING	0.131" x 2" NAILS	6"
RMD-PLY RED STRUCTURAL SHEATHING	0.100" x 1 1/2" NAILS 16 GA. 8" CROWN x 1 1/2" STAPLE	3"

SILL TO UNIT CONNECTION

OFF-FRAME LIFTING POINTS:

- If lifting points are more than 32' 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.
- pick up point must not be located under a wall opening. if it can't be avoided a temporary wall must be installed



**** SEE CHART BELOW FOR CORRESPONDING SUPPORT NUMBER AND LOADING ****

SEE FD-01.01 - FD-02.03 FOR MINIMUM TYPICAL FOUNDATION DETAILS. FOUNDATION SHOULD BE BUILT AND DESIGNED PER IRC CHAPER 4 REQUIREMENTS AND SUBJECT TO LOCAL JURISDICTION.

****IF THE SITE CONDITIONS DO NOT FOLLOW PRESCRIPTIVE REQUIREMENTS THEN A FOUNDATION SHOULD BE DESIGNED BY AN ARCHITECT OR ENGINEER USING SITE CONDITIONS.****

****CALCULATIONS BELOW USED FOR POINT LOADS. PIERS ADDED 6' o.c. FOR SPLICE BEARING****

Foundation Loading Calculation - V3.0 (01/20/2021)											
Roof Live Load = 20 psf	Ground Snow Load = 23.1 psf	Box Width = 160 in	Truss Number = HM69	Perimeter Reaction = 669 lbs	Truss Drawing Max. Grav @ Sidewall						
Cape Floor Load = 0 psf	Truss Dead Load = 15 psf	Sidewall Height = 108 in	Truss Spacing = 24 in o.c.	Mate Line Reaction = 715 lbs	Truss Drawing Max. Grav @ Matewall						
Size Factor, Cf = 1.10	Floor Live Load = 40 psf	Mate Wall Height = 108 in	Truss Type = Ranch	Live Load Truss Reaction = 409 lbs							
Repetitive Factor, Cr = 1.00	Floor Dead Load = 10 psf			Truss Pitch = 5 :12	Max. Span, No Marriage Wall Openings						
	Wall Dead Load = 5 psf	Perimeter Foundation Loading = 713 plf		Plies = 2	6'-7"						
				Material = SPF#2	Max. Span in Marriage Wall Openings						
				Material Size = 9.25	9'-0"						
Mate Wall Foundation Loading w/ Roof = 1471.67 plf	Roof Load Only (Openings) = 715.00 plf	Floor Load Only (Openings) = 666.67 plf		Fb = 875 psi							
				Fv = 135 psi							
				E = 1,400,000 ksi							
*Start From Left of Home and work your way Right to the end. (Distance is always to right)											
Full Length LVL Rim Joist = No	Rim Joist Splices occur over a Pier = Yes										
Left Side Fnd:	1st Support:	2nd Support:	3rd Support:	4th Support:	5th Support:	6th Support:	7th Support:	8th Support:	9th Support:	Right Side Fnd:	
Roof Load = Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	
Opening = No	No	Start	In	In	In	End	No	No	No	No	
Opening Size (Pier/Pier), ft. =		19.67									
Dist. to Next Support, ft. =	6.00	3.92	2.08	6.00	6.00	4.67	1.33	6.00	6.00	2.00	0.00
Load, lbs =	4,415	7,299	10,610	2,693	4,000	3,557	9,567	5,394	8,830	5,887	1,472



PFS CORPORATION
Approval Limited to Factory Built Portion Only

State:
Signature:
Title:
Date:

North Carolina
Tim Dusche
Staff Plan Reviewer
12/20/22

MODIFICATIONS

PROJECT: 23-2945
26'-8" x 44' 3 BD 2 BTH

TITLE: **FOUNDATION LOADING PF-101**

DRAWN BY: Staff
DATE: 05-20-21
SCALE:
23-2945 NC MOD NEW

SHEET:

BUILDER:

CUSTOMER/PROJECT:

ENGINEER'S / ARCHITECT'S SEAL

APPROVERS SEAL

GENERAL NOTES: (PER IRC 2015)

1. ALL DESIGN NOTES AND DETAILS IN THIS SECTION ARE AN IRC BASED SET OF GUIDELINES FOR PROPER FOUNDATION CONSTRUCTION. THE ACTUAL FOUNDATION IS DEPENDENT UPON UNIQUE SITE CONDITIONS WHICH MAY REQUIRE DESIGN BY A PROFESSIONAL ENGINEER AND APPROVAL FROM THE LOCAL AUTHORITY HAVING JURISDICTION.
2. FOUNDATION DESIGN IS BASED ON AN ASSUMED NON-EXPANSIVE SOIL WITH CAPACITY OF 2000 PSF. SOIL TYPE AND BEARING CAPACITY VARIATION MAY SIGNIFICANTLY ALTER DESIGN REQUIREMENTS. CONSULT LOCAL AHJ OR ENGINEERING PROFESSIONAL FOR ADDITIONAL INFORMATION.
3. ALL ASPECTS OF FOUNDATION CONSTRUCTION ARE TO BE PERFORMED ON SITE BY OTHERS, AND IS SUBJECT TO LOCAL BUILDING CODE REQUIREMENTS AND APPROVAL.
4. VERIFY ALL DIMENSIONS AND SUPPORT LOCATIONS OF THE HOME PRIOR TO CONSTRUCTION.
5. FOOTINGS SHALL BE CENTERED UNDER ALL SUPPORTS ALONG THE MARRIAGE WALL.
6. MINIMUM FOOTING DEPTH TO BE 12" OR BELOW SITE FROST LINE PER LOCAL CODE REQUIREMENTS.
7. CONCRETE FOUNDATIONS SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS WITH 5 TO 7% AIR ENTRAINMENT BY VOLUME IN MODERATE TO SEVERE WEATHER AREAS. PROVIDE MINIMUM 3" CONCRETE COVER FOR ALL REINFORCEMENT STEEL UNLESS OTHERWISE DIMENSIONED.
8. FOUNDATION DESIGN DOES NOT INCLUDE PROVISIONS FOR FLOODING. CONSULT WITH LOCAL AHJ OR ENGINEERING PROFESSIONAL FOR SITE SPECIFIC PROVISIONS ON FLOOD RESISTANT CONSTRUCTION.
9. FINISH GRADE TO BE A MINIMUM 8" BELOW TOP OF FOUNDATION WALL.
10. MASONRY WEEP HOLES, FLASHING, AND TIE STRAPS ARE SUBJECT TO LOCAL CODE REQUIREMENTS.
11. ALL FOUNDATION WALLS LOCATED IN A HIGH WATER TABLE SHALL BE WATERPROOFED PER IRC REQUIREMENTS. ALL OTHER FOUNDATIONS SHALL BE DAMP PROOFED PER IRC REQUIREMENTS.
12. BASEMENTS AND EVERY SLEEPING ROOM IN BASEMENTS SHALL HAVE AT LEAST ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING PER IRC R310.
13. TYPE "M" OR "S" MORTAR SHALL BE USED IN ALL MASONRY.

CRAWLSPACE:

1. PROVIDE CRAWL SPACE VENTILATION EQUAL TO 1/150 OF THE ACTUAL ENCLOSED CRAWL SPACE AREA. (144 SQ. IN. / 150 SQ. FT.)
2. PROVIDE POSITIVE UNDER DRAINAGE, SUGGEST MINIMUM 4" PEA GRAVEL WITH 6 MIL POLYETHYLENE VAPOR BARRIER.
3. 18"x24" CRAWL SPACE ACCESS TO BE PROVIDED (MINIMUM)
4. CRAWL SPACE CLEARANCE TO BE 18" MINIMUM BELOW BOTTOM OF FLOOR JOISTS TO GRADE.
5. PROVIDE GFCI RECEPTACLE AND SWITCHED LIGHT FIXTURE AT CRAWLSPACE ACCESS.
6. WHERE INTERIOR GROUND LEVEL IS BELOW OUTSIDE GRADE, MEASURES SHALL BE TAKEN TO ASSURE POSITIVE DRAINAGE.
7. GROUTED PIERS MAY BE DRY STACKED. UN-GROUTED PIERS MAY BE DRY STACKED AND SURFACE BONDED WITH CEMENT IN ACCORDANCE TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8. UNBALANCED BACKFILL SHALL NOT EXCEED 4'-0" ON ALL CRAWLSPACES.

BASEMENT:

1. EXTERIOR FOOTINGS SHALL EXTEND BELOW THE LOCAL FROST LINE OR SHALL BE PLACED A MINIMUM OF 12" BELOW FINISHED GRADE.
1. THE FINISHED GRADE SHALL PROVIDE A MINIMUM SLOPE OF ONE-HALF UNIT VERTICAL IN 12 UNITS HORIZONTAL, FOR A MINIMUM OF 10 FEET FROM THE HOME.
2. FOUNDATION INSULATION, WHEN INSTALLED, SHALL BE PERFORMED ON SITE BY OTHERS AS REQUIRED BY LOCAL BUILDING CODES.
3. DRAINAGE AND WATERPROOFING AS REQUIRED BY SITE CONDITIONS, SHALL BE INSTALLED ON SITE BY OTHERS PER IRC SPECIFICATIONS.
4. THE REINFORCEMENT LOCATED AT TOP OF FOUNDATION WALL FOR ON-FRAME DESIGNS PROVIDES LATERAL RESISTANCE FOR SOIL PRESSURE PER IRC 2015.

DESIGN CRITERIA: (1 & 1/2 STORY)

ROOF LIVE LOAD : 90 PSF (MAX.)
 FLOOR LIVE LOAD: 40 PSF
 TOTAL DEAD LOAD: 25 PSF
 MAXIMUM EAVE LENGTH: 18"
 MAXIMUM SIDE WALL HEIGHT: 108"
 ROOF PITCH: 3:12 TO 12:12
 WIND LOAD: 180 MPH, EXP. D*
 MINIMUM SOIL BEARING CAPACITY: 2000 PSF
 SEISMIC CATEGORY: A, B, & C

* SEE SW SECTION FOR WIND LOADS OVER 140 MPH, EXP. C (RANCH ONLY)

DESIGN CRITERIA: (2-STORY)

ROOF LIVE LOAD : 90 PSF (MAX.)
 FLOOR LIVE LOAD: 40 PSF
 TOTAL DEAD LOAD: 50 PSF
 MAXIMUM EAVE LENGTH: 12"
 MAXIMUM SIDE WALL HEIGHT (LOWER LEVEL): 108"
 MAXIMUM SIDE WALL HEIGHT (UPPER LEVEL): 108"
 ROOF PITCH: 3:12 TO 7:12
 WIND LOAD: 140 MPH, EXP. C*
 MINIMUM SOIL BEARING CAPACITY: 2000 PSF
 IRC SEISMIC CATEGORY: A, B, & C

**TABLE 1
UN-REINFORCED FOOTING SIZE CHART**

FOOTING SIZE (IN)	MAX. LOAD (KIPS)
22x22x6	6.72
24x24x8	8.00
26x26x10	9.39
28x28x12	10.8
30x30x14	12.5
32x32x16	14.2
34x34x18	16.0

NOTES:

- CHART BASED ON SOIL CAPACITY OF 2000 PSF. GREATER SOIL CAPACITY MAY SIGNIFICANTLY REDUCE SPREAD FOOTING DIMENSION/ REINFORCEMENT REQUIREMENTS. CONSULT LOCAL AHJ OR ENGINEERING PROFESSIONAL FOR VERIFICATION.
- PIERS OUTSIDE THIS SCOPE MUST BE DESIGNED BY A PROFESSIONAL ENGINEER, PER LOCAL CODES AND SOIL BEARING CAPACITY GIVEN BY LAHJ.

MAXIMUM SPACING OF PIERS IN MATE WALL WITH NO OPENINGS. (RANCH ONLY)

ROOF LIVE LOAD	6" FOOTING DEPTH		8" FOOTING DEPTH		10" FOOTING DEPTH		12" FOOTING DEPTH		14" FOOTING DEPTH		16" FOOTING DEPTH		18" FOOTING DEPTH								
	MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH								
20	140"	160"	182"	140"	160"	182"	140"	160"	182"	140"	160"	182"	140"	160"	182"						
30	6'-9"	5'-11"	5'-2"	8'-0"	7'-0"	6'-2"	9'-5"	8'-3"	7'-3"	10'-11"	9'-7"	8'-5"	12'-7"	11'-0"	9'-8"	14'-4"	12'-6"	11'-0"	16'-2"	14'-2"	12'-5"
40	6'-0"	5'-3"	4'-7"	7'-2"	6'-3"	5'-6"	8'-5"	7'-4"	6'-6"	9'-9"	8'-7"	7'-6"	11'-3"	9'-10"	8'-8"	12'-9"	11'-2"	9'-10"	14'-5"	12'-8"	11'-1"
60	5'-5"	4'-9"	4'-2"	6'-6"	5'-8"	5'-0"	7'-7"	6'-8"	5'-10"	8'-10"	7'-9"	6'-10"	10'-2"	8'-11"	7'-10"	11'-7"	10'-1"	8'-11"	13'-1"	11'-5"	10'-0"
90	4'-7"	4'-0"	--	5'-5"	4'-9"	4'-2"	6'-5"	5'-7"	4'-11"	7'-5"	6'-6"	5'-8"	8'-6"	7'-6"	6'-7"	9'-9"	8'-6"	7'-6"	11'-0"	9'-7"	8'-5"

NOTES:

1. OPENINGS IN MATE WALL 48" OR LESS MAY BE IGNORED FOR PIER SPACING.
2. USE CHART AT TOP OF THIS SHEET FOR FOOTING OVERALL SIZE.
3. PIERS OUTSIDE THIS SCOPE MUST BE DESIGNED BY A PROFESSIONAL ENGINEER, PER LOCAL CODES AND SOIL BEARING CAPACITY GIVEN BY LAHJ.

MAXIMUM OPENING SIZE FOR MATE WALL BASED ON PIER CAPACITY (RANCH ONLY)

ROOF LIVE LOAD	6" FOOTING DEPTH		8" FOOTING DEPTH		10" FOOTING DEPTH		12" FOOTING DEPTH		14" FOOTING DEPTH		16" FOOTING DEPTH		18" FOOTING DEPTH								
	MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH		MODULE WIDTH								
20	140"	160"	182"	140"	160"	182"	140"	160"	182"	140"	160"	182"	140"	160"	182"						
30	9'-7"	8'-4"	7'-4"	11'-5"	10'-0"	8'-9"	13'-4"	11'-8"	10'-3"	15'-6"	13'-7"	11'-11"	17'-10"	15'-7"	13'-8"	20'-3"	17'-9"	15'-7"	22'-11"	20'-0"	17'-7"
40	8'-2"	7'-2"	6'-3"	9'-9"	8'-6"	7'-6"	11'-5"	10'-0"	8'-10"	13'-4"	11'-7"	10'-3"	15'-3"	13'-4"	11'-9"	17'-4"	15'-2"	13'-4"	19'-7"	17'-2"	15'-1"
60	7'-2"	6'-3"	5'-6"	8'-6"	7'-5"	6'-7"	10'-0"	8'-9"	7'-8"	11'-8"	10'-2"	8'-11"	13'-4"	11'-8"	10'-3"	15'-2"	13'-3"	11'-8"	17'-2"	15'-0"	13'-2"
90	5'-9"	5'-0"	--	6'-10"	6'-0"	5'-3"	8'-0"	7'-0"	6'-2"	9'-4"	8'-1"	7'-2"	10'-8"	9'-4"	8'-2"	12'-2"	10'-7"	9'-4"	13'-9"	12'-0"	10'-7"

NOTES:

1. CHART ABOVE ASSUMES (1) PIER SUPPORT AT MID-SPAN OF OPENING (OVER 48" IN WIDTH) FOR FLOOR LOAD SUPPORT ONLY.
2. OPENINGS IN MATE WALL 48" OR LESS MAY BE IGNORED FOR PIER SPACING.
3. USE CHART AT TOP OF THIS SHEET FOR OVERALL FOOTING SIZE.
4. PIERS OUTSIDE THIS SCOPE MUST BE DESIGNED BY A PROFESSIONAL ENGINEER, PER LOCAL CODES AND SOIL BEARING CAPACITY GIVEN BY LAHJ.

PFS CORPORATION
 Approval Limited to Factory Built Portion Only

State: North Carolina

Signature: *Tim Dusche*
 Title: Staff Plan Reviewer

Date: 12/20/22

ENGINEER'S / ARCHITECT'S SEAL

APPROVER'S SEAL

PFS Corporation
 Northeast Region
APPROVED
 H Raup – 3
11/5/19
 Approval limited to
 Factory Built Portion

MODIFICATIONS

TITLE:

GENERAL NOTES
 FOUNDATION

MODEL:

DATE: 09/20/2019
 DRAWN BY: CORP.
 BLDG CODE: IRC 2015
 CALCS: MD-100

SCALE:
 CHECKED BY:

FILENAME: 8-FOUNDATION SECTION 023
 SHEET NO.:

FD-01.01

PAGE: 1 OF 1

PFS Corporation
Northeast Region
APPROVED
H Raup - 3
11/5/19
Approval limited to
Factory Built Portion

TITLE:
CRAWLSPACE
(1, 1.5 & 2 STORY)
FOUNDATION PLAN / DETAILS

MODEL:

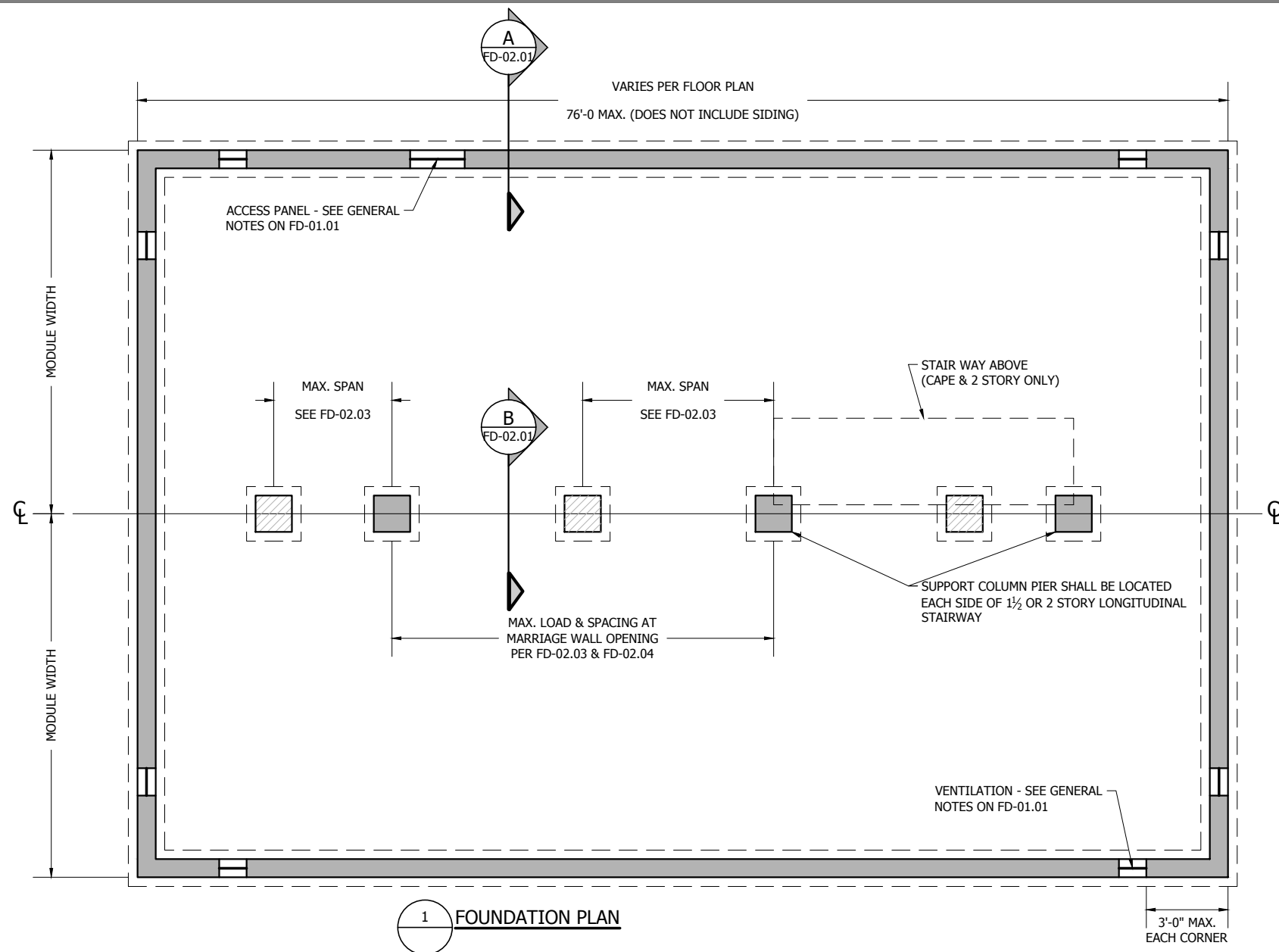
DATE: 09/20/2019 SCALE:
DRAWN BY: CORP. CHECKED BY:
BLDG CODE: IRC 2015
CALCS:

FILENAME: 8-FOUNDATION SECTION 023
SHEET NO.:

FD-02.01

PAGE: 1 OF 1

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LOCATED BELOW MARRIAGE LINE. FILL SOLID WITH 2500 PSI GROUT WHEN LOAD IS > 16.0 KIPS

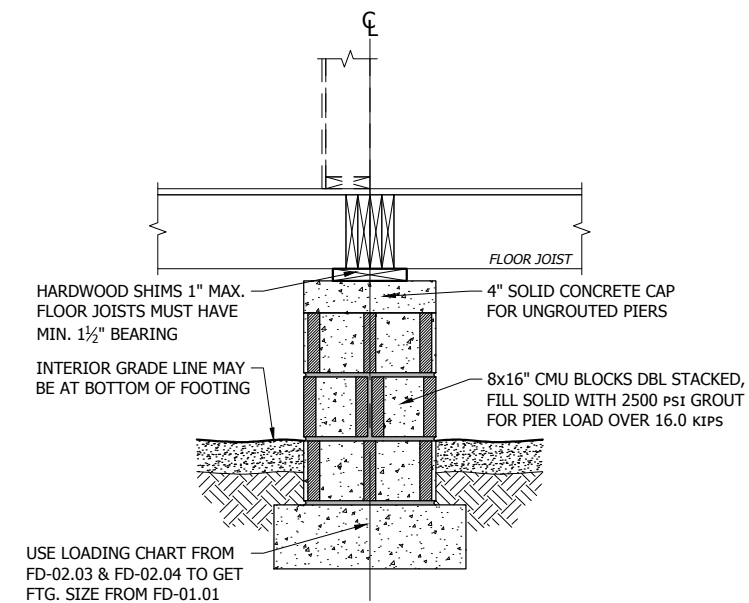
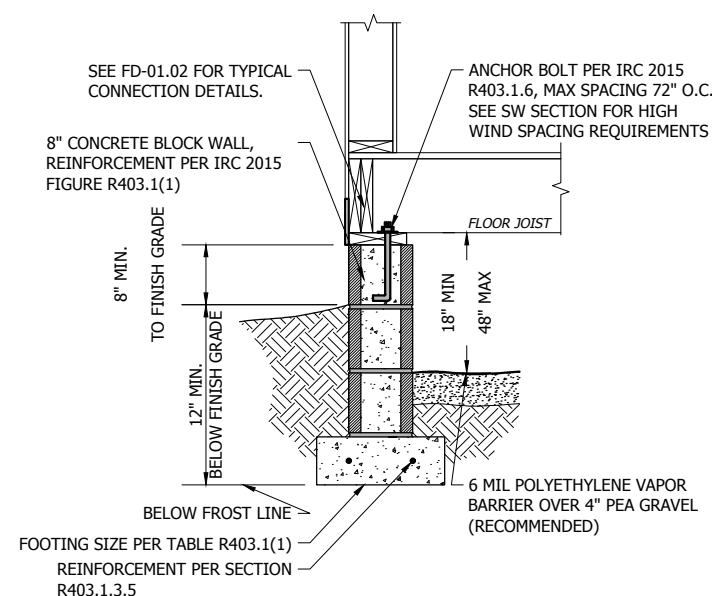
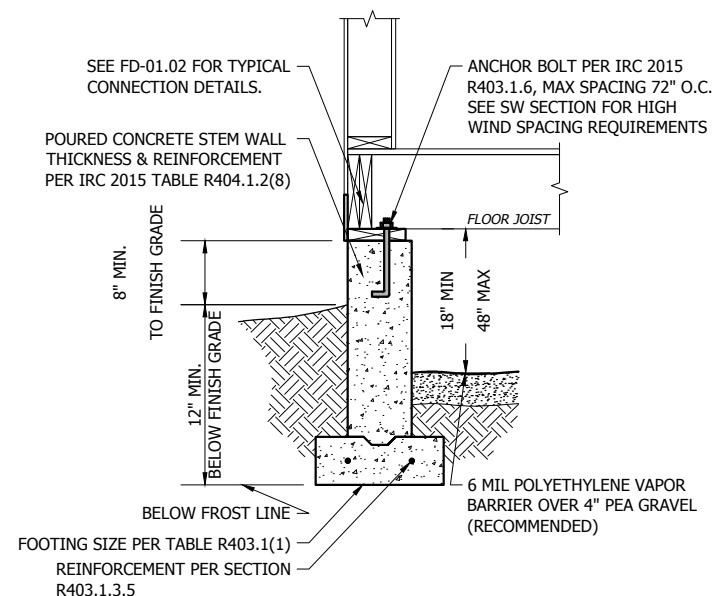
LOCATED BELOW MARRIAGE LINE OPENING COLUMNS. FILL SOLID WITH 2500 PSI GROUT

PIER LEGEND
8x16" CMU BLOCKS DBL STACKED

NOTES:
- SEE SHEET FD-01.01 FOR GENERAL NOTES
- SEE SHEET FD-02.05 FOR PORCH PROVISIONS
- SEE FULL BASEMENT SECTION FD-02.02 FOR STEEL CENTER BEAM OPTION.

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Duske*
Title: Staff Plan Reviewer
Date: 12/20/22



PAG 2 OF 3

NOTES: SEE FD-01 FOR GENERAL NOTES

1 STORY DESIGN LOADING (PLF)

MAXIMUM HOME WIDTH	ROOF LIVE LOAD									
	20 PSF		30 PSF		40 PSF		60 PSF		90 PSF	
	CENTER BEAM	PERIMETER WALL	CENTER BEAM	PERIMETER WALL	CENTER BEAM	PERIMETER WALL	CENTER BEAM	PERIMETER WALL	CENTER BEAM	PERIMETER WALL
24' WIDE	1,042	674	1,159	747	1,275	820	1,509	967	1,859	1,187
28' WIDE	1,184	745	1,317	826	1,450	908	1,717	1,071	2,117	1,316
32' WIDE	1,340	766	1,491	850	1,643	934	1,946	1,103	2,401	1,355

A. FOUNDATION LOADING PROVIDED FOR ON SITE FOUNDATION EVALUATION AS REQUIRED BY LAHJ PER SPECIFIC SITE CONDITIONS UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

1 STORY PIER SPACING & MAXIMUM LOAD CHART

GROUND SNOW LOAD (PSF)	NUMBER OF SPF #2, 2x10'S	MAXIMUM FLOOR WIDTH											
		140"				160"				182"			
		WITH NO MARRIAGE WALL OPENINGS		IN MARRIAGE WALL OPENINGS (FLOOR LOAD ONLY) SEE NOTE 3		WITH NO MARRIAGE WALL OPENINGS		IN MARRIAGE WALL OPENINGS (FLOOR LOAD ONLY) SEE NOTE 3		WITH NO MARRIAGE WALL OPENINGS		IN MARRIAGE WALL OPENINGS (FLOOR LOAD ONLY) SEE NOTE 3	
		MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)	MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)	MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)	MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)	MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)	MAX. CLEAR SPAN	MAX. PIER LOAD (KIPS)
20	2	7'-0"	8.7	9'-8"	12.9	6'-7"	9.2	9'-0"	14.1	6'-2"	9.7	8'-6"	15.4
	3	9'-2"	11.4	12'-8"	15.2	8'-8"	12.1	11'-11"	16.6	8'-2"	12.8	11'-2"	18.1
30	2	6'-8"	9.1	9'-8"	14.6	6'-3"	9.7	9'-0"	16.1	5'-11"	10.3	8'-6"	17.7
	3	8'-9"	11.9	12'-8"	17.0	8'-2"	12.7	11'-11"	18.6	7'-9"	13.4	11'-2"	20.4
40	2	6'-4"	9.5	9'-8"	16.3	5'-11"	10.1	9'-0"	18.1	5'-7"	10.7	8'-6"	19.9
	3	8'-4"	12.5	12'-8"	18.8	7'-10"	13.3	11'-11"	20.7	7'-5"	14.1	11'-2"	22.7
60	2	5'-10"	10.3	9'-8"	16.0	5'-6"	11.0	9'-0"	17.6	5'-2"	11.6	8'-6"	19.4
	3	7'-8"	13.5	12'-8"	18.5	7'-3"	14.4	11'-11"	20.4	6'-10"	15.3	11'-2"	22.3
90	2	5'-3"	11.4	9'-8"	19.6	5'-0"	12.1	9'-0"	21.7	4'-8"	12.9	8'-6"	24.0
	3	6'-11"	14.9	12'-8"	22.3	6'-6"	15.9	11'-11"	24.6	6'-2"	16.9	11'-2"	27.1

NOTES:

- ALL MULTIPLE MEMBER CENTER BEAM CONFIGURATIONS SHALL BE MECHANICALLY FASTENED TOGETHER WITH RIM TO RIM REQUIREMENTS ON SHEET FA-01.02
- ALL CENTER BEAM END (BUTT) JOINTS & RIDGE BEAM COLUMNS SHALL BE LOCATED DIRECTLY ABOVE SUPPORT LOCATIONS.
- MAXIMUM MARRIAGE WALL TRIBUTARY SPANS:
- FOR ROOF LIVE LOADS 40 PSF & LESS = 24'-0"
- FOR ROOF LIVE LOADS 60 & UP = 16'-0"
- FOR LOADING CONDITIONS SEE GENERAL NOTES. (FD-01.01)
- USE MAX PIER LOADING TO DETERMINE SPREAD FOOTING SIZE IN TABLE 1 ON SHEET FD-01.01. MAX. PIER LOADINGS OVER 16 KIP MUST BE DESIGNED BY A PROFESSIONAL ENGINEER.
- FOR STEEL BEAM OPTION DOWN MATE LINE SEE BELOW

CHAMPION

MANUFACTURED BEAUTIFULLY™

755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48064
PHONE: 248-614-8200

ENGINEER'S / ARCHITECT'S SEAL

APPROVER'S SEAL

PFS Corporation
Northeast Region
APPROVED
H Raup - 3
11/5/19
Approval limited to
Factory Built Portion

1 STORY STEEL CENTER BEAMS

MAXIMUM HOME WIDTH (PER SECTION)	DESIGN ROOF LIVE LOAD				
	20 PSF	30 PSF	40 PSF	60 PSF	90 PSF
140"	W10x19 / W12x16	W10x19 / W12x16	W10x19	W10x19 / W12x16	W10x19 / W12x16
160"	W10x19 / W12x16	W10x19	W10x22 / W12x19	W10x19 / W12x16	W10x19
182"	W10x19	W10x22 / W12x19	W10x22	W10x19 / W12x16	W10x22 / W12x19

GENERAL NOTES:

- MAXIMUM MARRIAGE WALL TRIBUTARY SPANS:
- FOR ROOF LIVE LOADS 40 PSF & LESS = 24'-0"
- FOR ROOF LIVE LOADS 60 & UP = 16'-0"
- FOR LOADING CONDITIONS SEE GENERAL NOTES. (FD-01.01)
- ALL PIER DESIGNS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

PFS PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: North Carolina
Signature: *Tim Dusche*
Title: Staff Plan Reviewer
Date: 12/20/22

CENTER BEAM FOUNDATION COLUMN LOADS (KIPS) / MAX. COLUMN SPACING (FT)
(SPACING BASED ON TWO CONTINUOUS SPANS MINIMUM)

MAXIMUM HOME WIDTH (PER SECTION)	DESIGN ROOF LIVE LOAD				
	20 PSF	30 PSF	40 PSF	60 PSF	90 PSF
140"	17.0K / 12'-0"	19.0K / 12'-0"	21.0K / 12'-0"	19.5K / 8'-0"	24.0K / 8'-0"
160"	19.0K / 12'-0"	21.5K / 12'-0"	24.0K / 12'-0"	22.0K / 8'-0"	27.0K / 8'-0"
182"	21.5K / 12'-0"	24.5K / 12'-0"	27.0K / 12'-0"	25.0K / 8'-0"	31.0K / 8'-0"

MODIFICATIONS

TITLE: RANCH
MATELINE DESIGN
OFF-FRAME FOUNDATION

MODEL:

DATE: 09/20/2019 SCALE:
DRAWN BY: CORP. CHECKED BY:
BLDG CODE: IRC 2015
CALCS: MD-105

FILENAME: 8-FOUNDATION SECTION 023
SHEET NO.:

FD-02.03

PAGE: 1 OF 1

PROPRIETARY AND CONFIDENTIAL
THESE DRAWINGS AND SPECIFICATIONS ARE ORIGINAL.
PROPRIETARY AND CONFIDENTIAL MATERIALS OF
CHAMPION HOME BUILDERS, INC.
COPYRIGHT © 2018 BY CHAMPION

Job	Truss	Truss Type	Qty	Ply	144018998
MH83123R2	HM69	MONO TRUSS	1	1	

Champion Home Builders, Inc., Lillington, NC - 27546, 8.330 s Oct 7 2020 MiTek Industries, Inc. Tue Dec 15 14:25:08 2020 Page 1

0-10-8 6-2-1 ID:3Rq15aj_8jhPtoRZkrz07z1g6A-IO?xZJS5EjOrEYp?gpwD3SCndmM_EmFNPWuko9y8hIP 7-0-7

PFS CORPORATION
Approval Limited to Factory Built Portion Only

State: **North Carolina**

Signature: *Tim Dusche*

Title: **Staff Plan Reviewer**

Date: **12/20/22**

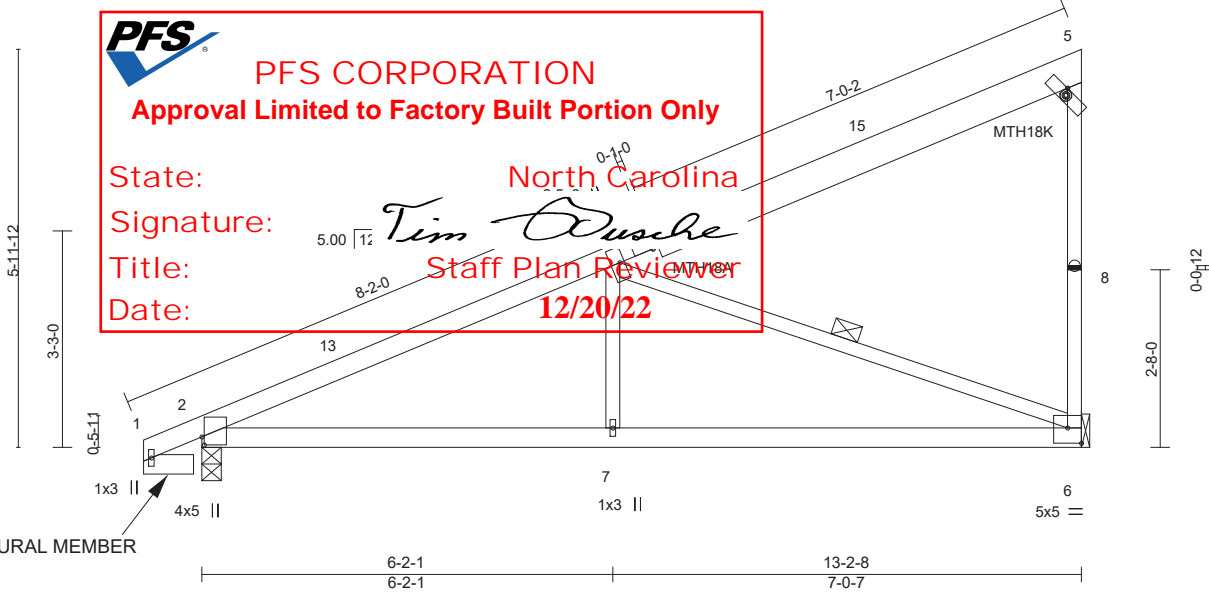


Plate Offsets (X,Y)-- [2:0-1-7,0-0-7], [3:0-2-12,0-0-13], [4:0-0-11,0-1-2], [5:0-0-11,0-1-2], [6:Edge,0-2-12]

LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof) 20.0	2-0-0	TC 0.65	Vert(LL) -0.08	6-7	>999	240	MT20	197/144
Snow (Pf/Pg) 23.1/30.0	Plate Grip DOL 1.15	BC 0.59	Vert(CT) -0.16	6-7	>966	180	MT18HS	197/144
TCDL 10.0	Lumber DOL 1.15	WB 0.50	Horz(CT) 0.02	6	n/a	n/a		
BCLL 0.0 *	Rep Stress Incr NO	Matrix-MS						
BCDL 10.0	Code IBC2018/TPI2014						Weight: 65 lb	FT = 10%

LUMBER-	BRACING-
TOP CHORD 2x4 SP No.1 or 2x4 SPF No.2 *Except* 4-5: 2x6 SP No.2 or 2x6 SPF No.2	TOP CHORD Structural wood sheathing directly applied or 5-6-9 oc purlins, except end verticals.
BOT CHORD 2x4 SP No.2 or 2x4 SPF No.2	BOT CHORD Rigid ceiling directly applied or 6-7-0 oc bracing
WEBS 2x3 SP No.2 or 2x3 SPF No.2 *Except* 1-9: 2x4 SPF No.2	WEBS 1 Row at midpt 3-6

REACTIONS. (size) 2=0-3-8, 6=Mechanical
 Max Horz 2=456(LC 36)
 Max Uplift 2=-428(LC 36), 6=-521(LC 36)
 Max Grav 2=669(LC 23), 6=715(LC 23)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
 TOP CHORD 2-3=-1030/423, 5-6=-313/303
 BOT CHORD 2-7=-704/890, 6-7=-703/895
 WEBS 3-7=0/310, 3-6=-959/754

REQUIRED FIELD JOINT CONNECTIONS - Maximum Compression (lb)/ Maximum Tension (lb)/ Maximum Shear (lb)/ Maximum Moment (lb-in)
 8=313/303/0/0

- NOTES-**
- 1) Wind: ASCE 7-16; Vult=150mph (3-second gust) Vasd=119mph; TCCL=4.2psf; BCDL=4.2psf; h=30ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior(1) 2-1-8 to 13-1-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=30.0 psf; Pf=23.1 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
 - 3) Unbalanced snow loads have been considered for this design.
 - 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 23.1 psf on overhangs non-concurrent with other live loads.
 - 5) All plates are MT20 plates unless otherwise indicated.
 - 6) See HINGE PLATE DETAILS for plate placement.
 - 7) Provisions must be made to prevent lateral movement of hinged member(s) during transportation.
 - 8) All additional member connections shall be provided by others for forces as indicated.
 - 9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - 10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 2-9 ft by 2-0-0 wide will fit between the bottom chord and any other members.
 - 11) Refer to girder(s) for truss to truss connections.
 - 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 428 lb uplift at joint 2 and 521 lb uplift at joint 6.
 - 13) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
 - 14) Load case(s) 36 has/have been modified. Building designer must review loads to verify that they are correct for the intended use of this truss.
 - 15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).



December 15, 2020

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.
 Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

ENGINEERING BY
TRENCO
 A MiTek Affiliate
 818 Soundside Road
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	
MH83123R2	HM69	MONO TRUSS	1	1	I44018998
					Job Reference (optional)

Champion Home Builders, Inc., Lillington, NC - 27546,

8.330 s Oct 7 2020 MiTek Industries, Inc. Tue Dec 15 14:25:08 2020 Page 2
ID:3Rq15aj_8jhPtoRZkrz0ZnzUo6A-IO?xZJS5EjOrEYp?gpwD3SCndmM_EmFNPWuko9y8h1P

- 16) This truss meets HUD WIND ZONE I (-15 psf main body,-28.5 psf overhang and 6 psf dead load) @ 24"oc.
- 17) This truss meets HUD WIND ZONE II (-39 psf main body,-51 psf overhang and 6 psf dead load) @ 24"oc.
- 18) This truss meets HUD WIND ZONE III (-47 psf main body,-62 psf overhang and 6 psf dead load) @ 16"oc.

DESIGN SUMMARY

Stress Summary

Members	Size	Shear	Axial Moment	PnIPnt Moment	MidPnl	CSI Purlin Spc	SSI	Allow.
		(lb)	(lb-in)	(lb-in)		(in)		
1-4 1-2	2x4 No.1 or No.2	114(8)	3(8)	498(8)	404(8)	0.08(8)	0.15(8)	120.00
1-4 2-11	2x4 No.1 or No.2	127(9)	-92(8)	408(8)	372(8)	0.06(8)	0.17(9)	72.00
1-4 11-3	2x4 No.1 or No.2	244(8)	391(8)	2306(8)	-2340(8)	0.47(23)	0.36(23)	66.53
1-4 3-4	2x4 No.1 or No.2	334(23)	0(23)	-2819(23)	0(1)	0.61(23)	0.62(23)	72.00
4-5 4-5	2x6 No.2	289(23)	-106(23)	2239(23)	5655(23)	0.65(23)	0.34(23)	72.00
6-8 6-8	2x3 No.2	0(26)	-313(23)	0(1)	0(1)	0.23(23)	0.00(26)	72.00
5-8 8-5	2x3 No.2	0(1)	-313(23)	0(1)	0(1)	0.23(23)	0.00(1)	72.00
2-6 10-12	2x4 No.2	214(8)	-419(8)	-630(8)	-567(8)	0.16(1)	0.28(8)	104.21
2-6 12-7	2x4 No.2	144(7)	-701(36)	-1764(7)	-1315(36)	0.54(7)	0.24(7)	78.98
2-6 7-6	2x4 No.2	166(7)	565(7)	-1949(7)	1573(7)	0.59(7)	0.28(7)	82.78
3-7 7-3	2x3 No.2	0(1)	310(7)	0(1)	0(1)	0.10(7)	0.00(1)	120.00
3-6 3-6	2x3 No.2	0(1)	-959(23)	0(1)	0(1)	0.50(23)	0.00(1)	61.61

Note: Forces and moments are absolute maxima. When loadcase numbers do not coincide with maximum stress index, individual loadcases may need to be examined.)

Load Deflection Summary (Creep\Total) (in)

Mbr	Local calc.	Local allow.	Global calc.	Global allow.	Start Joint ==X==	End Joint ==Y==	Start Joint ==X==	End Joint ==Y==
	(Local Reference Frame)		(Global Reference Frame)		(Global Reference Frame)		(Global Reference Frame)	
1-4 1-2	-0.00(36)	0.09	-0.04(36)	0.09	0.01(36)	-0.04(36)	-0.01(36)	-0.00(23)
1-4 2-11	-0.00(36)	0.03	0.02(36)	N/A	-0.01(36)	-0.00(23)	-0.02(36)	0.02(36)
1-4 11-3	0.14(36)	0.63	0.16(36)	N/A	-0.02(36)	0.02(36)	-0.02(36)	-0.05(23)
1-4 3-4	-0.15(23)	0.76	-0.18(23)	N/A	-0.02(36)	-0.05(23)	-0.01(36)	-0.00(23)
4-5 4-5	-0.15(23)	0.76	-0.17(23)	N/A	-0.02(36)	-0.05(23)	-0.01(36)	-0.00(23)
6-8 6-8	0.20(7)	0.51	-0.00(23)	N/A	0.02(23)	0.00(1)	-0.01(36)	-0.00(23)
5-8 8-5	0.20(7)	0.51	-0.00(23)	N/A	0.02(23)	0.00(1)	-0.01(36)	-0.00(23)
2-6 10-12	0.00(36)	0.03	0.02(36)	0.87	0.00(1)	0.00(1)	-0.00(36)	0.02(36)
2-6 12-7	0.05(36)	0.59	0.07(36)	0.87	-0.00(36)	0.02(36)	0.01(23)	-0.05(23)
2-6 7-6	-0.15(7)	0.69	-0.16(7)	0.87	0.01(23)	-0.05(23)	0.02(23)	0.00(1)
3-7 7-3	-0.00(36)	0.24	-0.05(23)	N/A	0.01(23)	-0.05(23)	-0.02(36)	-0.05(23)
3-6 3-6	0.00(23)	0.71	-0.05(23)	N/A	-0.02(36)	-0.05(23)	0.02(23)	0.00(1)

Live Load Deflection Summary (in)

Mbr	Local calc.	Local allow.	Global calc.	Global allow.	Start Joint ==X==	End Joint ==Y==	Start Joint ==X==	End Joint ==Y==
	(Local Reference Frame)		(Global Reference Frame)		(Global Reference Frame)		(Global Reference Frame)	
1-4 1-2	-0.00(36)	0.06	-0.05(36)	0.09	0.01(16)	-0.05(36)	-0.01(36)	0.00(36)
1-4 2-11	-0.00(36)	0.02	0.02(36)	N/A	-0.01(36)	0.00(36)	-0.02(36)	0.02(36)
1-4 11-3	0.15(36)	0.42	0.17(36)	N/A	-0.02(36)	0.02(36)	-0.02(36)	0.04(36)
1-4 3-4	-0.12(23)	0.50	-0.14(23)	N/A	-0.02(36)	0.04(36)	-0.01(36)	0.00(36)
4-5 4-5	-0.12(23)	0.50	-0.13(23)	N/A	-0.02(36)	0.04(36)	-0.01(36)	0.00(36)
6-8 6-8	0.10(7)	0.34	0.00(36)	N/A	-0.02(36)	0.00(1)	-0.01(36)	0.00(36)
5-8 8-5	0.10(7)	0.34	0.00(36)	N/A	-0.02(36)	0.00(1)	-0.01(36)	0.00(36)
2-6 10-12	0.00(36)	0.02	0.02(36)	0.66	0.00(1)	0.00(1)	-0.00(36)	0.02(36)
2-6 12-7	0.06(36)	0.39	0.08(36)	0.66	-0.00(36)	0.02(36)	-0.01(36)	0.04(36)
2-6 7-6	-0.07(7)	0.46	-0.08(7)	0.66	-0.01(36)	0.04(36)	-0.02(36)	0.00(1)
3-7 7-3	-0.00(36)	0.16	0.04(36)	N/A	-0.01(36)	0.04(36)	-0.02(36)	0.04(36)
3-6 3-6	-0.00(36)	0.47	0.04(36)	N/A	-0.02(36)	0.04(36)	-0.02(36)	0.00(1)



PFS CORPORATION

Approval Limited to Factory Built Portion Only

State:

North Carolina

Signature:

Tim Duske

Title:

Staff Plan Reviewer

Date:

12/20/22

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.

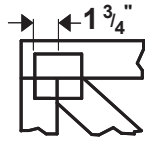
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



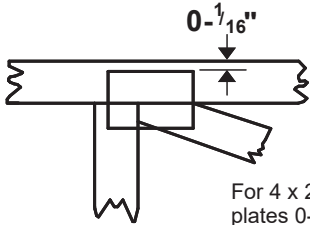
818 Soundside Road
Edenton, NC 27932

Symbols

PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- 1/16" from outside edge of truss.



This symbol indicates the required direction of slots in connector plates.

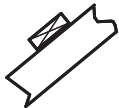
* Plate location details available in MiTek 20/20 software or upon request.

PLATE SIZE

4 x 4

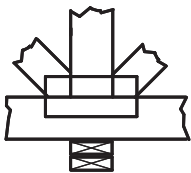
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

BEARING

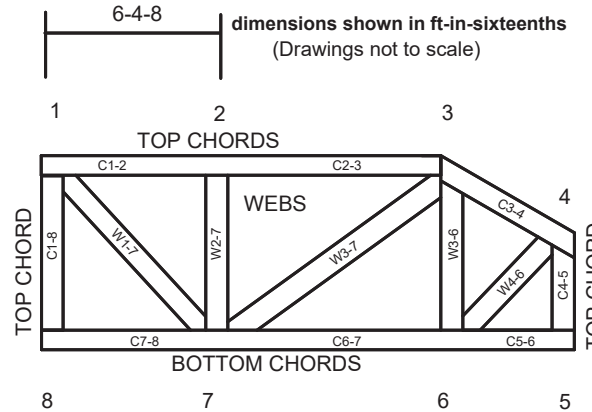


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

- ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
- DSB-89: Design Standard for Bracing.
- BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ESR-1988, ER-3907, ESR-2362, ESR-1339, ESR-1328



PFS CORPORATION

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State:

Signature:

Tim Busche

Date:

12/20/22

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

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MiTek Engineering Reference Sheet: MII-7473 rev. 5/19/2020



General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

- Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
- Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
- Never exceed the design loading shown and never stack materials on inadequately braced trusses.
- Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
- Cut members to bear tightly against each other.
- Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
- Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
- Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
- Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
- Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
- Lumber used shall be of the species and size, and grade to or better than that indicated.
- Top chords must be sheathed or purlins provided at spacing indicated or design.
- Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
- Connections not shown are the responsibility of others.
- Do not cut or alter truss member or plate without prior approval of an engineer.
- Install and load vertically unless indicated otherwise.
- Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
- Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
- Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.
- The design does not take into account any dynamic or other loads other than those expressly stated.

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)

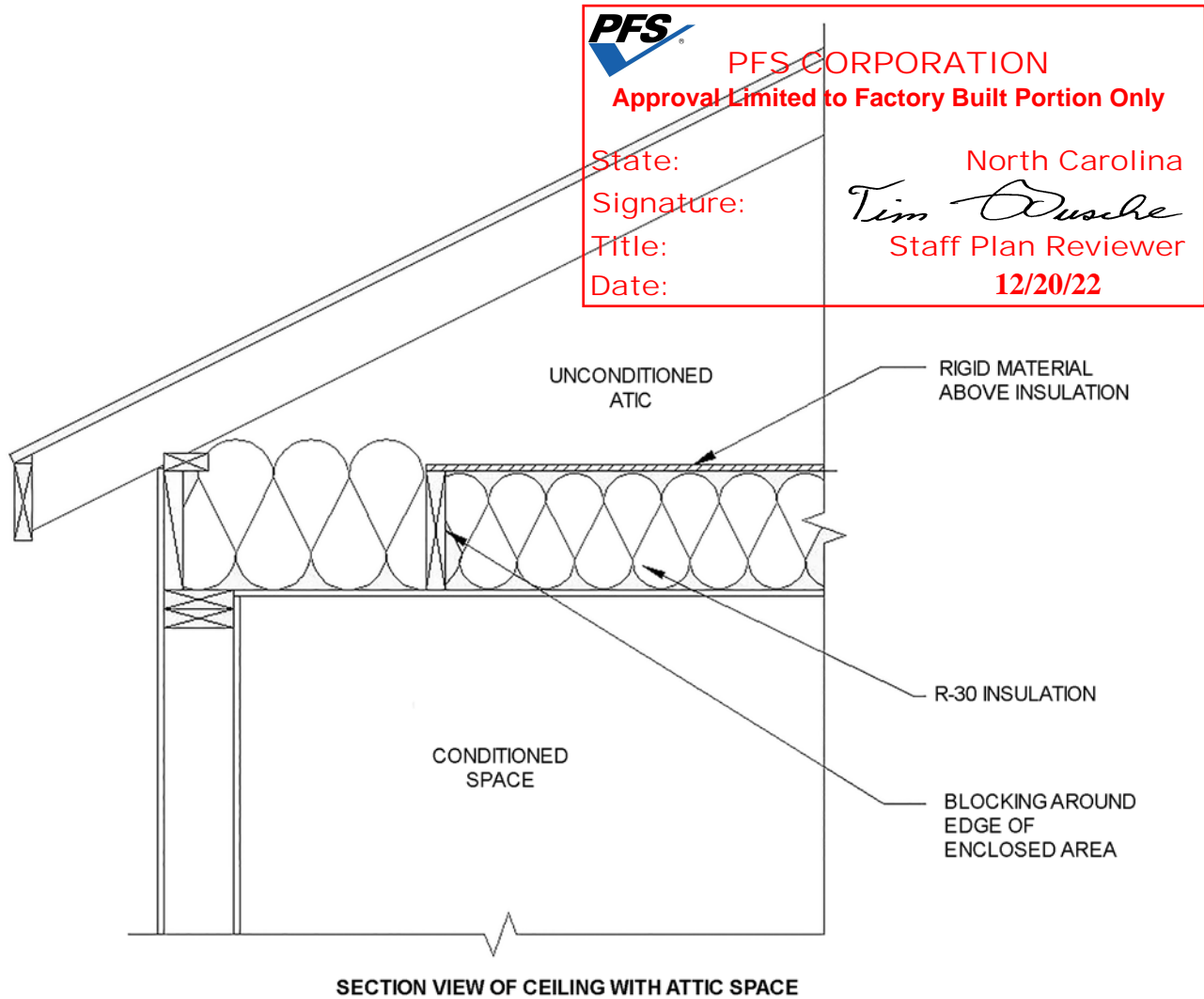
ENERGY EFFICIENCY CERTIFICATE (N1101.14)

Builder, Permit Holder or Registered Design Professional Print Name: Signature: Property Address: Date:	<div style="text-align: center;">  <p>PFS CORPORATION Approval Limited to Factory Built Portion Only</p> </div> State: _____ North Carolina Signature: <i>Tim Dusche</i> Title: Staff Plan Reviewer Date: 12/20/22
Insulation Rating – List the value covering largest area to all that apply	R-Value
Ceiling/roof:	R- 38
Wall:	R- 18
Floor: Omitted floor insulation - To be provided and install onsite by others.	R- 19 MIN.
Closed crawl space wall:	R-
Closed crawl space floor:	R-
Slab:	R-
Basement wall:	R-
Fenestration:	
U-Factor	0.34
Solar Heat Gain Coefficient (SHGC)	0.29
Building Air Leakage	
<input type="checkbox"/> Visually inspected according to N1102.4.2.1 OR	
<input type="checkbox"/> 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-
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]	R-
Name of Tester or Company:	
Date:	Phone:
Certificate to be displayed permanently	

APPENDIX E-2
INSULATION AND AIR SEALING DETAILS

APPENDIX E-2.1

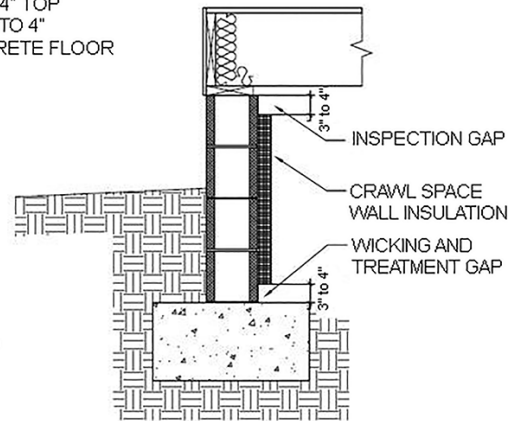
N1102.2.1 Ceilings with attic spaces: Exception for fully enclosed attic floor systems



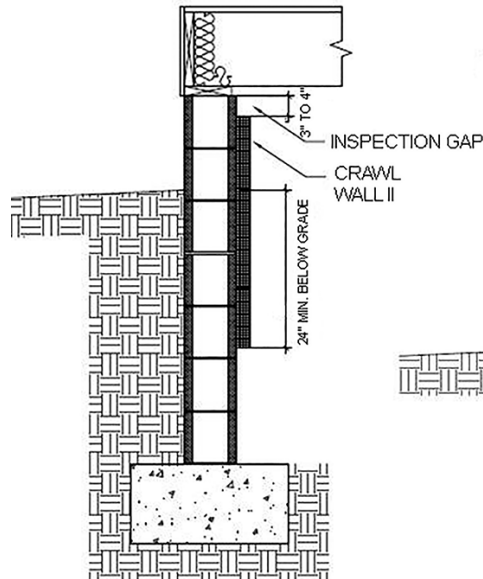
APPENDIX E-2.2

N1102.2.11 Closed crawl space walls. Insulation illustrations

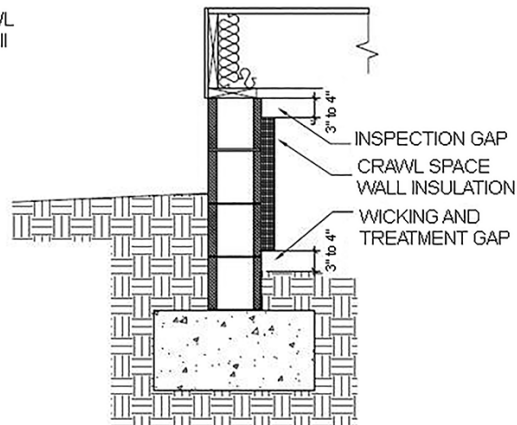
FOAM OR POROUS INSULATION HAS 3" TO 4" TOP INSPECTION GAP AND EXTENDS DOWN 3" TO 4" ABOVE TOP OF WALL FOOTING OR CONCRETE FLOOR



FOAM OR POROUS INSULATION HAS 3" TO 4" TOP INSPECTION GAP AND EXTENDS DOWN 24" BELOW GRADE



FOAM OR POROUS INSULATION HAS 3" TO 4" TOP INSPECTION GAP AND EXTENDS DOWN 3" TO 4" ABOVE INTERIOR GROUND SURFACE



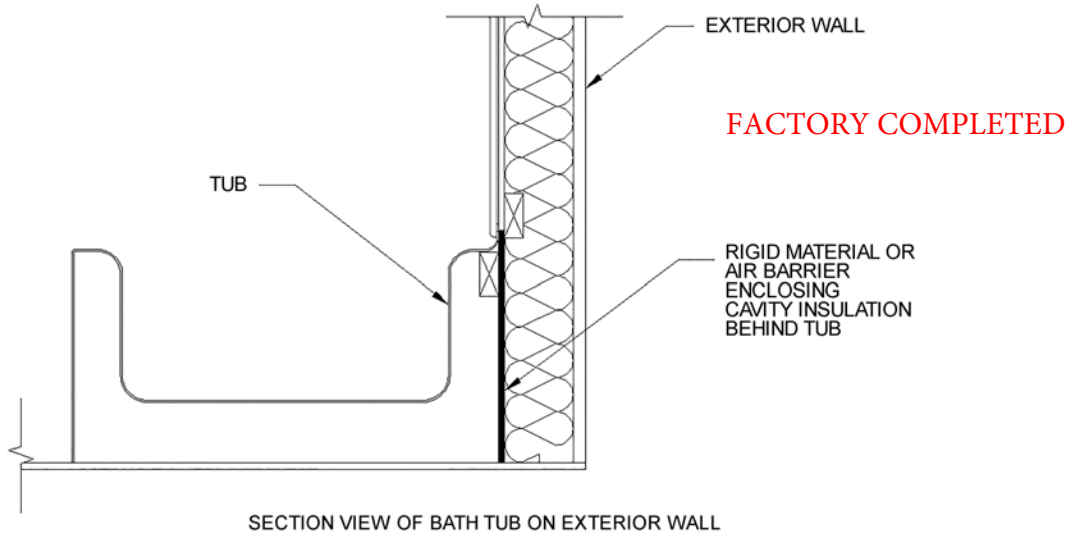
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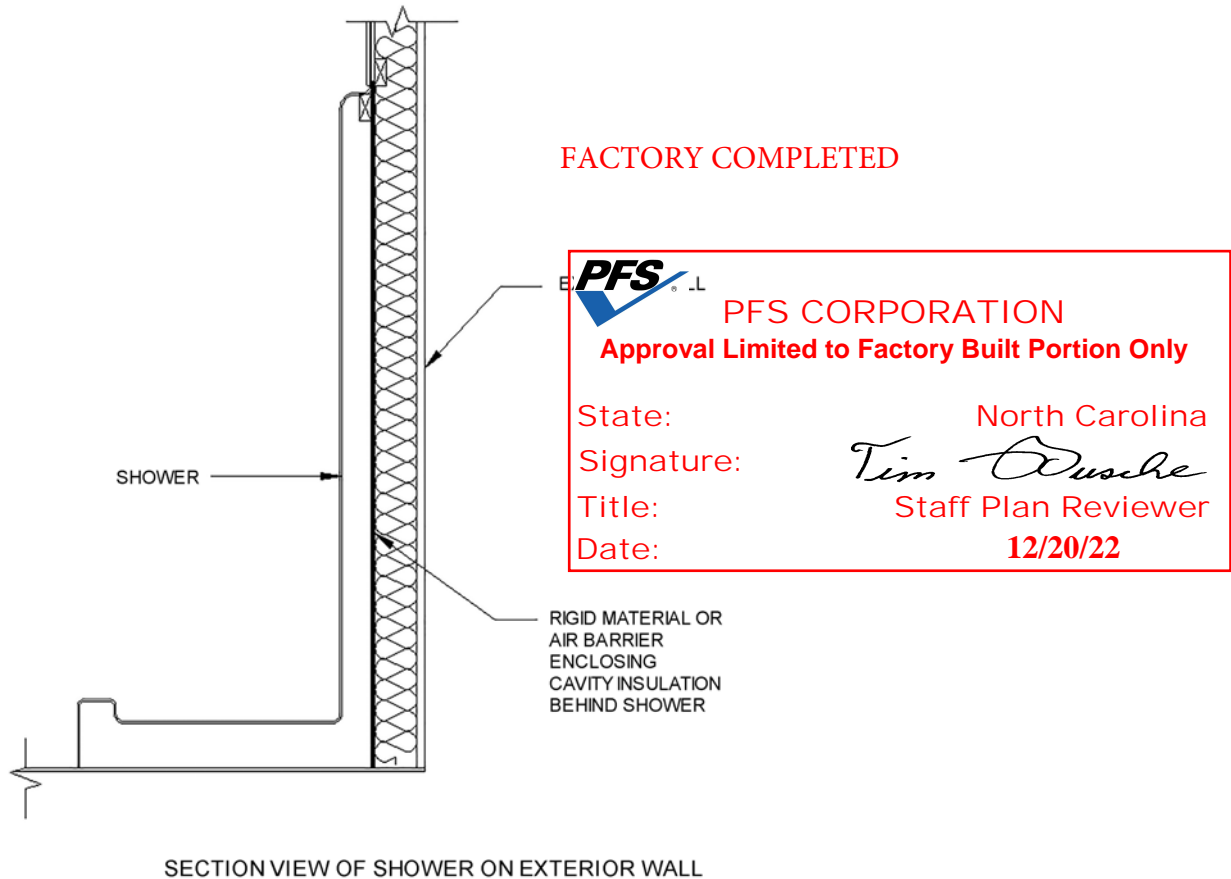
State: North Carolina
 Signature: *Tim Dushke*
 Title: Staff Plan Reviewer
 Date: 12/20/22

APPENDIX E-2.3

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

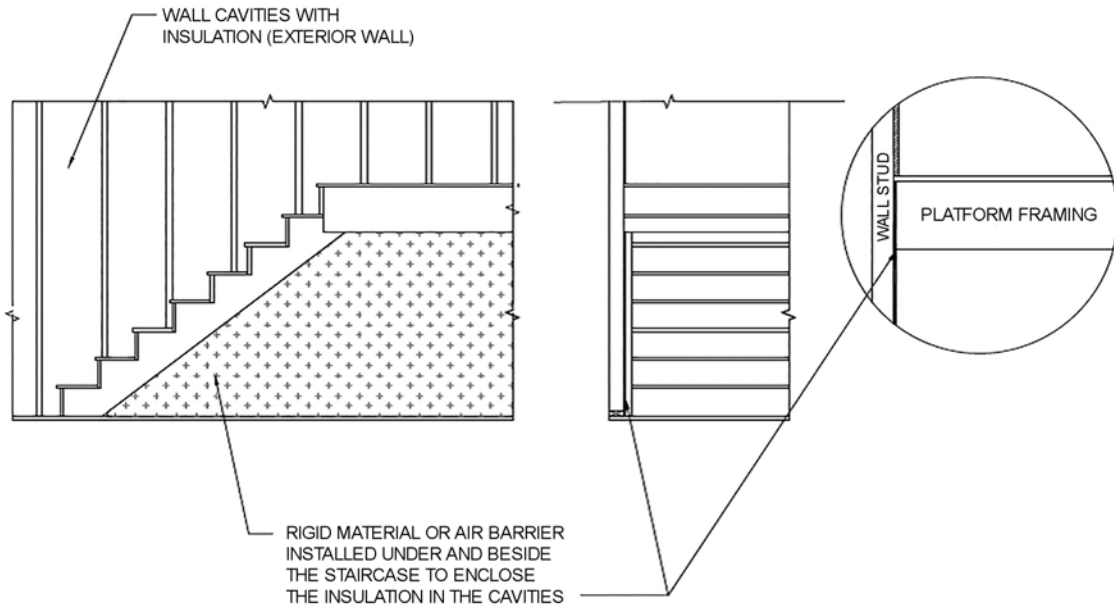


N1102.2.14 Framed cavity walls. Insulation enclosure—2. Showers



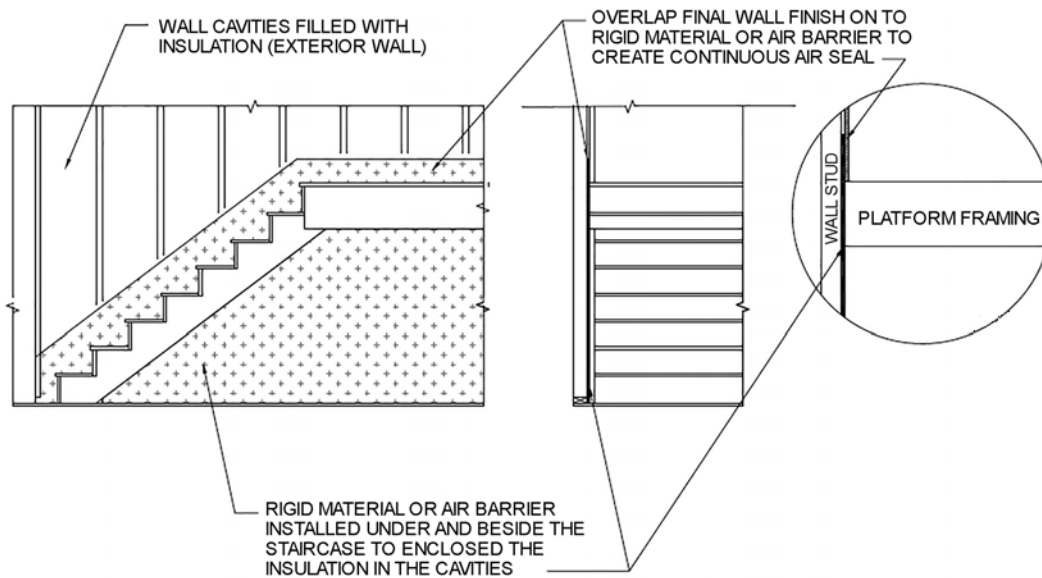
N1102.2.14 Framed cavity walls. Insulation enclosure—3. Stairs

FACTORY COMPLETED, IF APPLICABLE



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

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



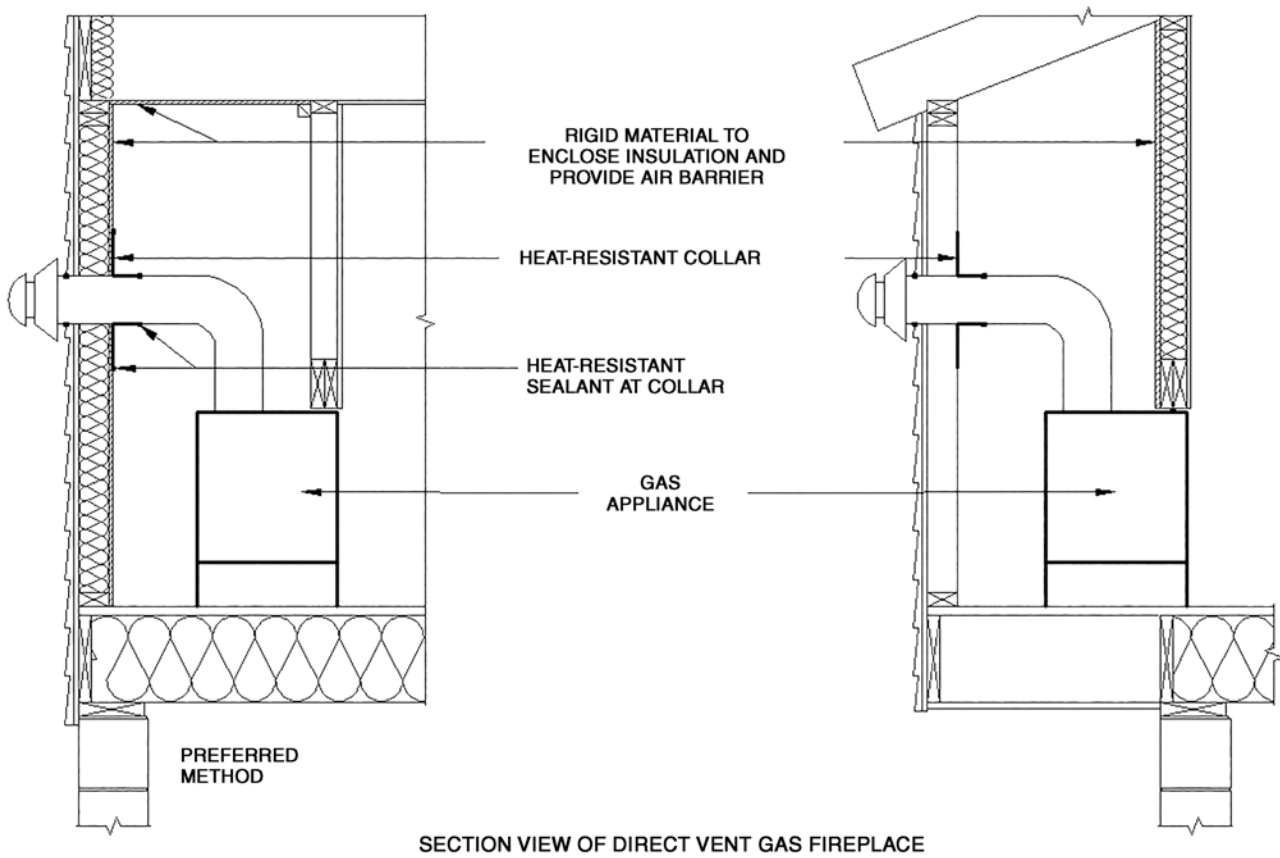
SECTION VIEW OF INTERIOR STAIRCASE ON EXTERIOR WALL (OPTION 2)

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

N/A BY FACTORY



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North Carolina

Signature:

Tim Duske

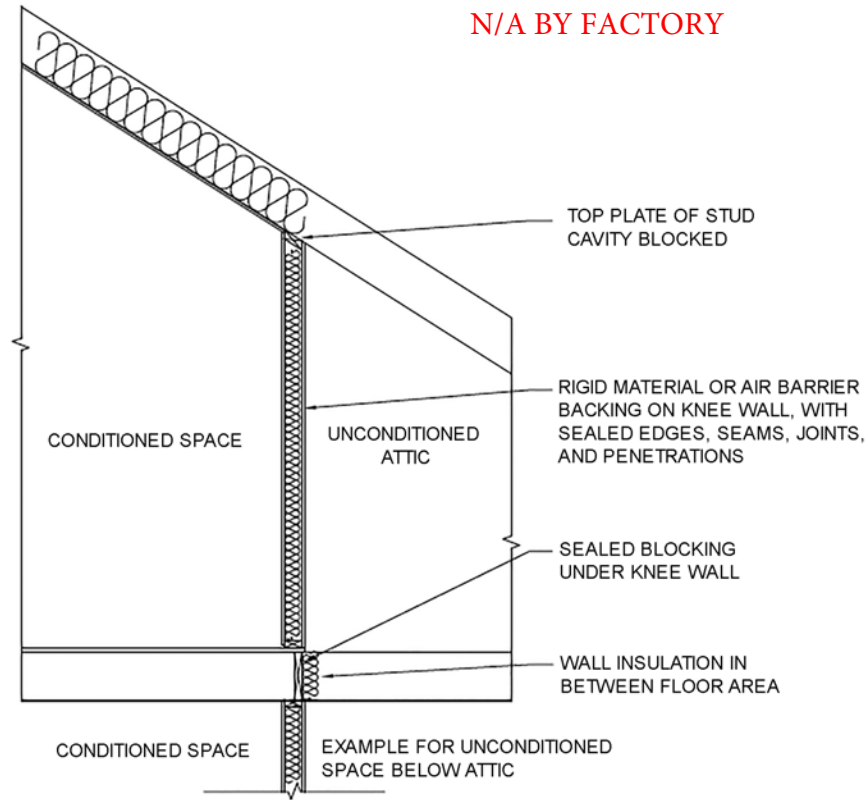
Title:

Staff Plan Reviewer

Date:

12/20/22

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



SECTION VIEW OF WALL ADJOINING ATTIC SPACE WITH STICK FRAMED ROOF

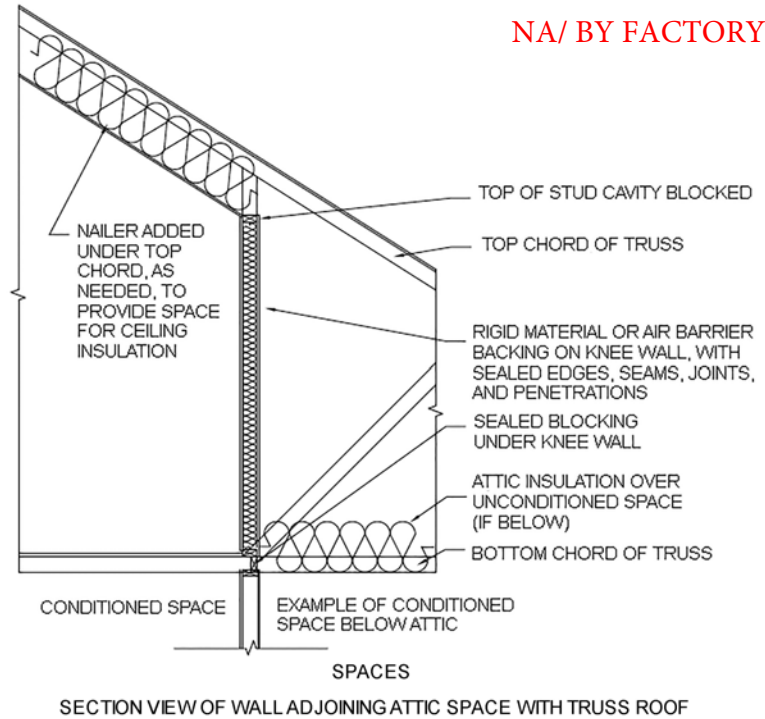


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Signature: *Tim Duske*
Title: Staff Plan Reviewer
Date: 12/20/22

APPENDIX E

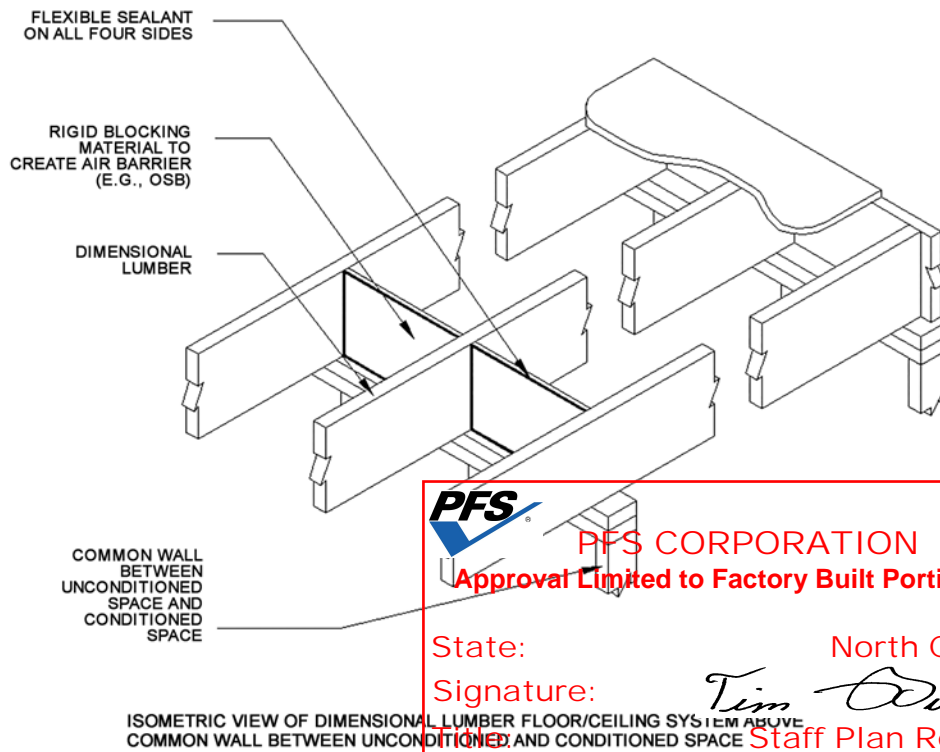
N1102.2.15 Framed cavity walls. Insulation enclosure—5. Walls that adjoin attic spaces



APPENDIX E-2.4

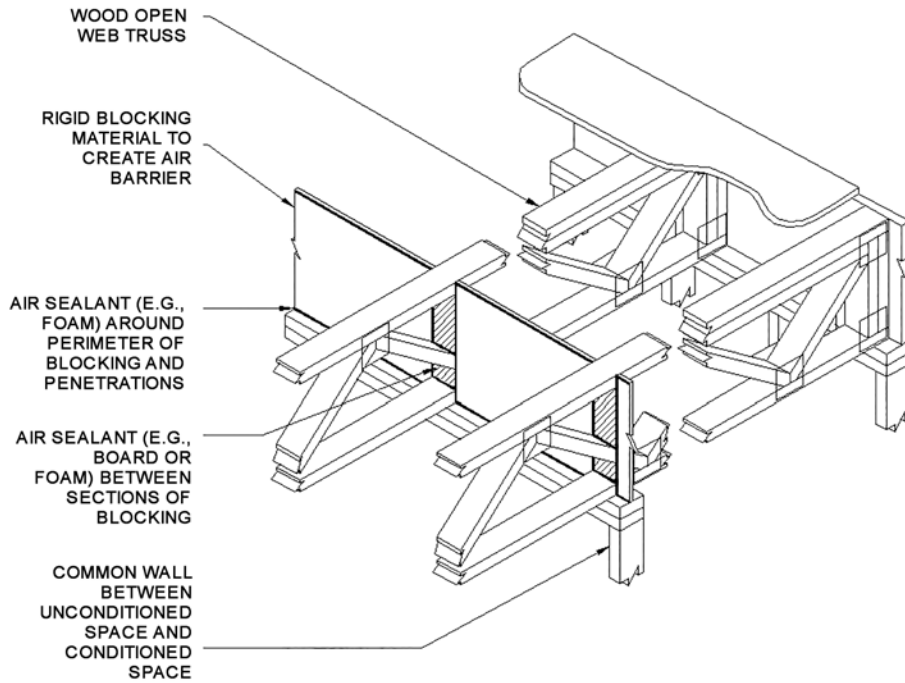
N1102.4.1 Building thermal envelope.—1. Block and seal floor/ceiling systems

N/A BY FACTORY



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

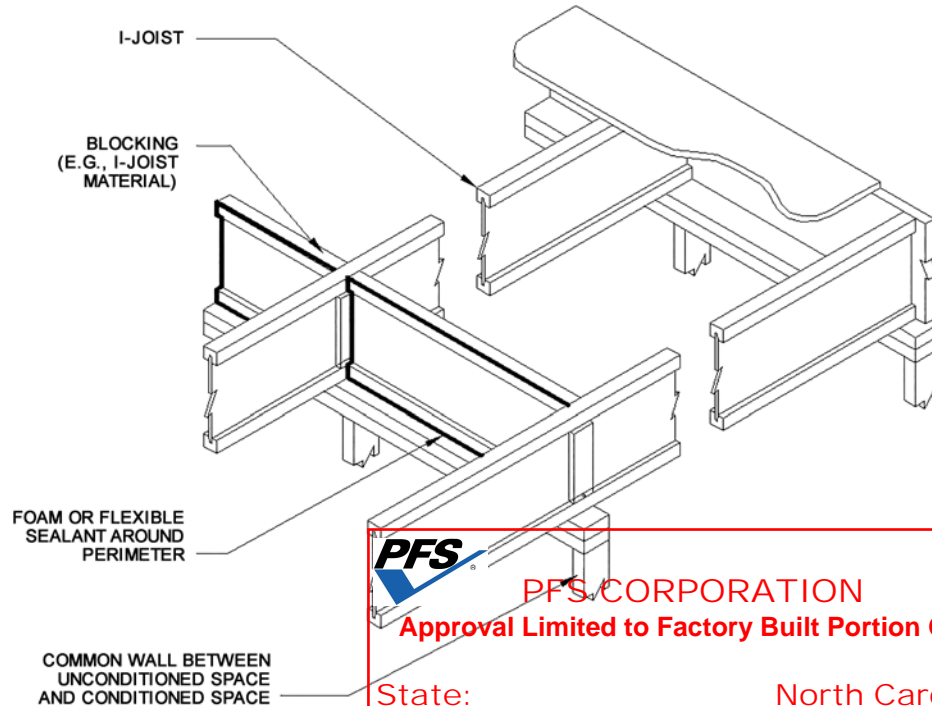
N/A BY FACTORY




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



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

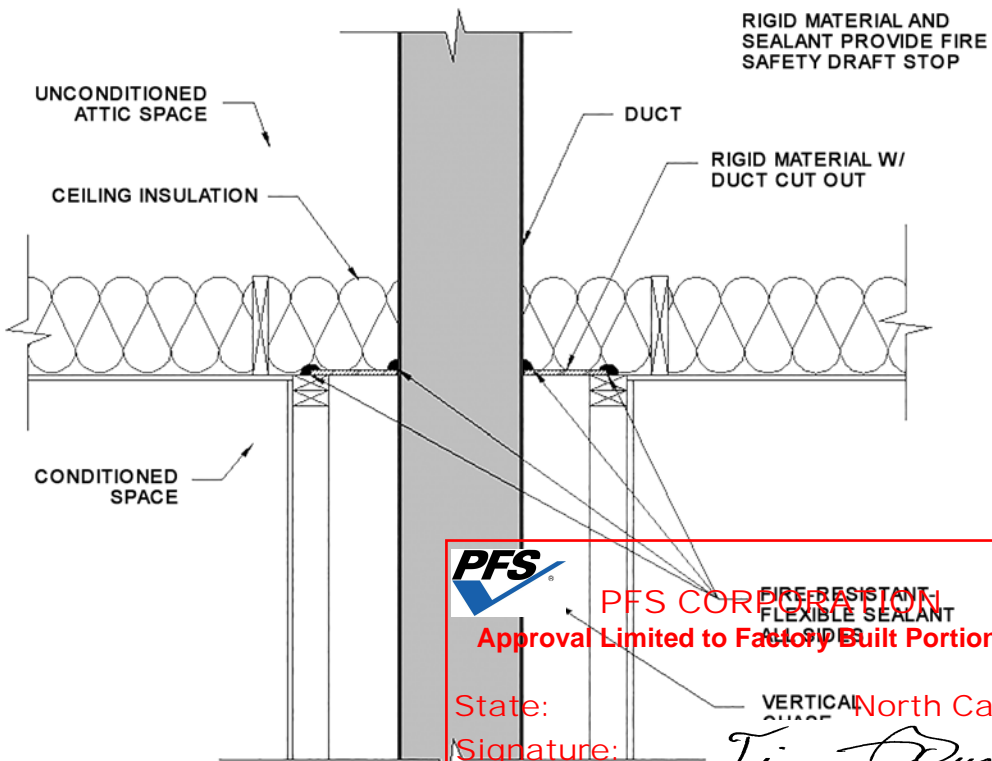
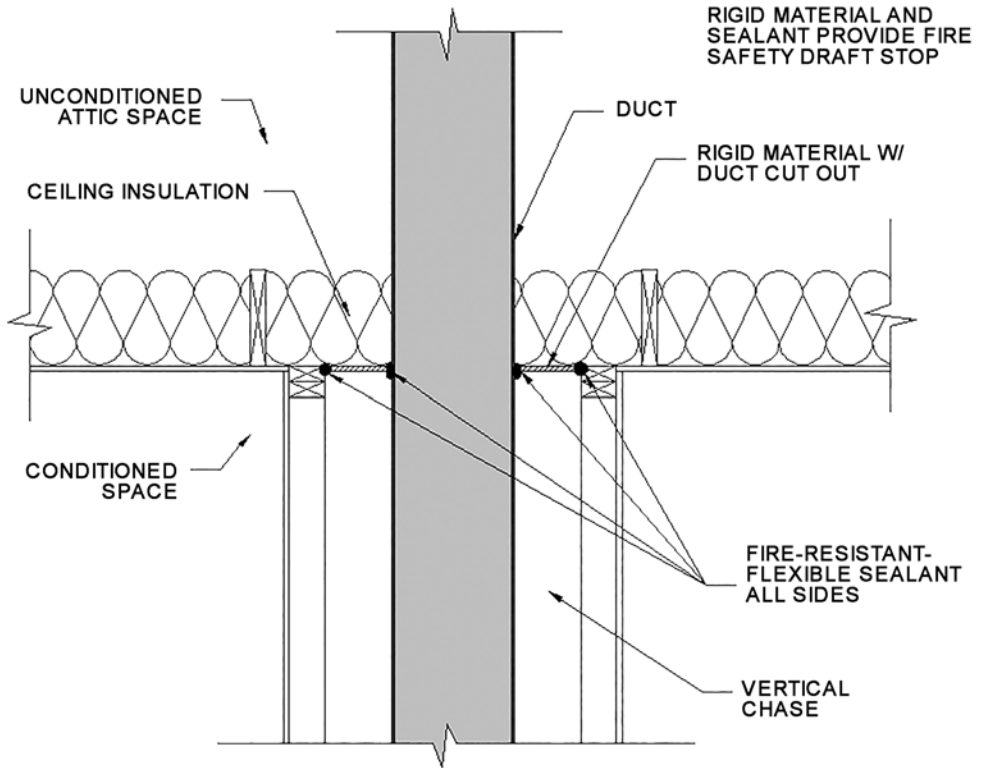


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 Date: 12/20/22

N1102.4.1 Building thermal envelope—2. Cap and seal shafts and chases

BY OTHERS IF APPLICABLE



SECTION VIEWS OF DUCT PENETRATING INTO ATTIC

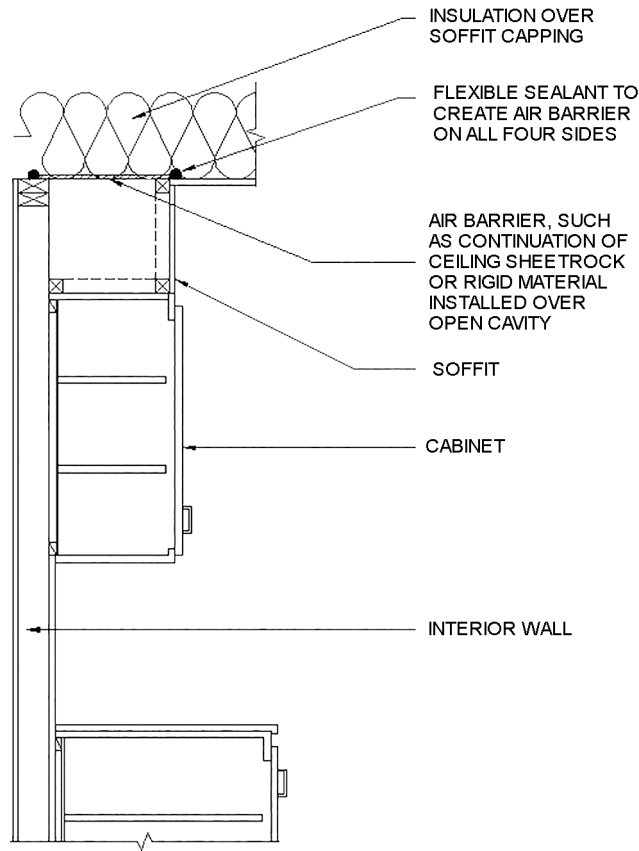
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FIRE-RESISTANT FLEXIBLE SEALANT ALL SIDES

VERTICAL CHASE

State: North Carolina
 Signature: *Tim Busche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

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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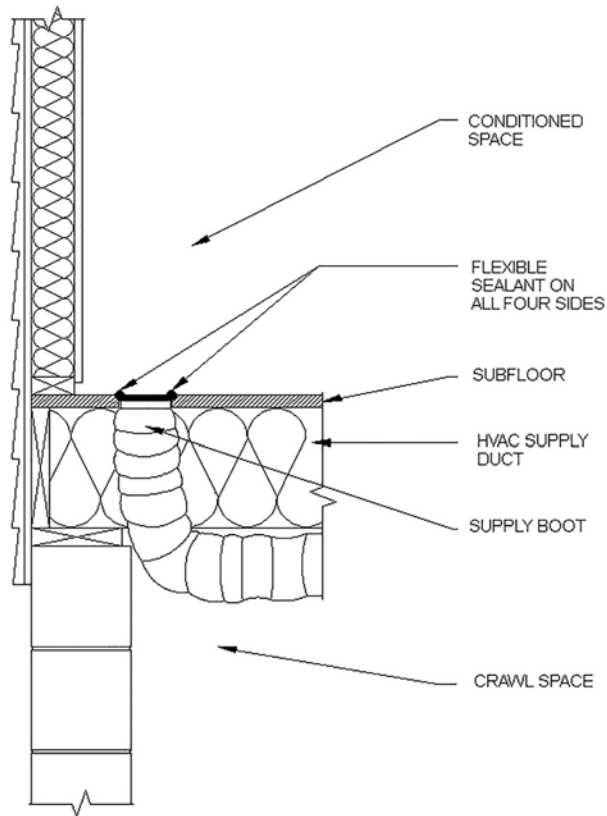
State: North Carolina

Signature: *Tim Dusche*

Title: Staff Plan Reviewer

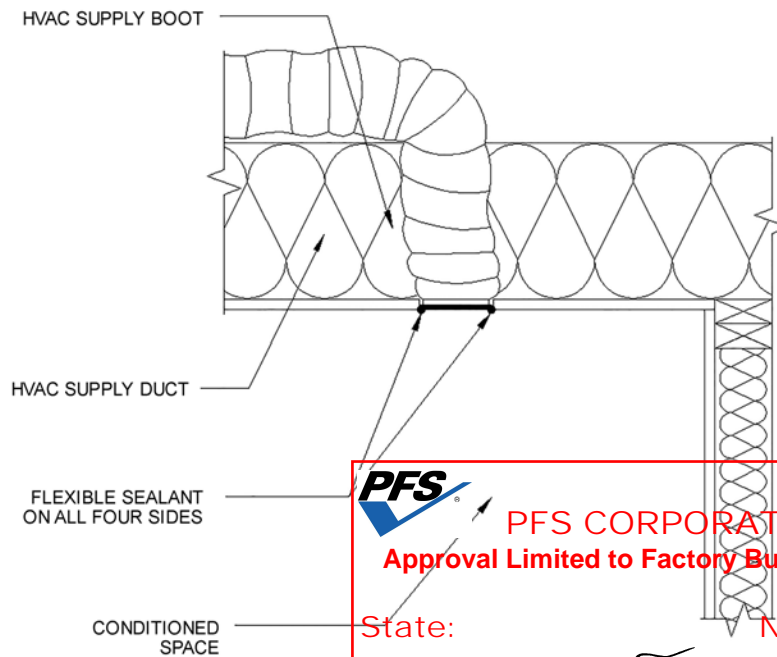
Date: 12/20/22

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



SECTION VIEW OF CEILING HVAC BOOT PENETRATION



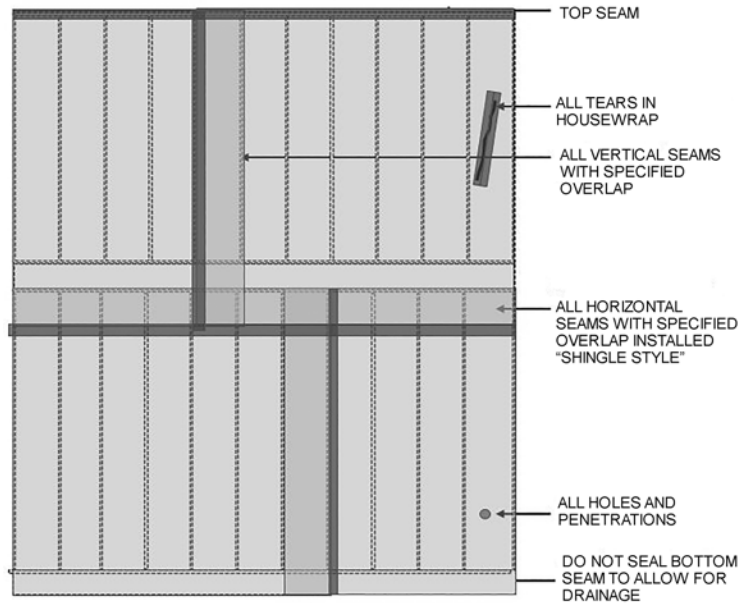
PFS CORPORATION
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State: North Carolina
 Signature: *Tim Dusche*
 Title: Staff Plan Reviewer
 Date: 12/20/22

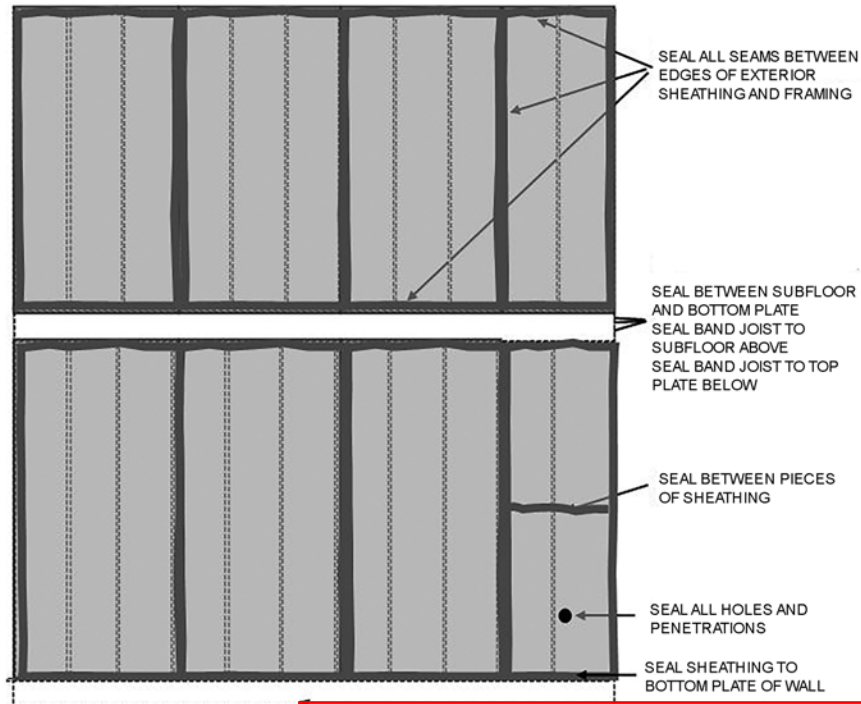
MUST BE INSPECTED ON SITE BY OTHERS FOR TEARS

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 BAND 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.

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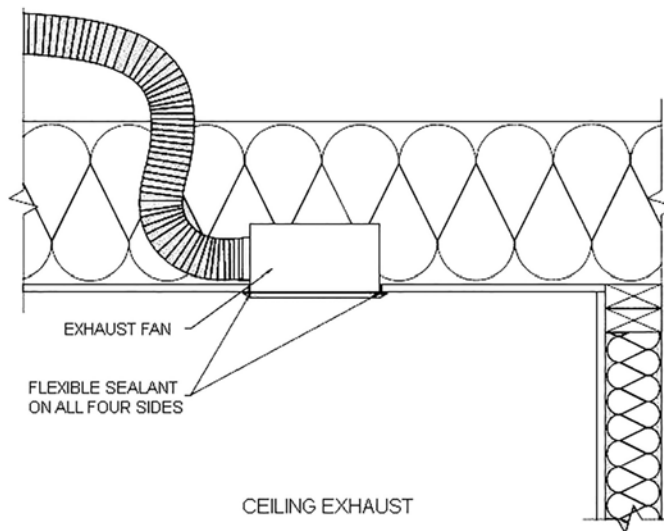
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Tim Duske
Staff Plan Reviewer

Date: 12/20/22

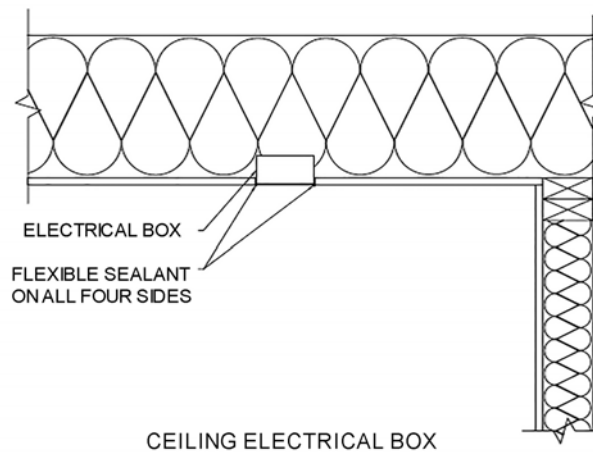
N1102.4.2.1 Visual inspection option. —Table N1102.4.2 Seal ceiling mechanical box penetrations

FACTORY COMPLETED



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

FACTORY COMPLETED



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Title:

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Date:

12/20/22

**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 unless onsite provided
Floors (including above-garage and cantilevered floors)	Air barrier system is installed at any exposed edge of insulation. Onsite 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. Onsite 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. Onsite done
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 started/Onsite Completed 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

****All factory done items have been inspected in factory, above signoff is for on site items only****



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Date

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Signature: *Tim Dusche*

Title: **Staff Plan Reviewer**

Date: **12/20/22**

**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 contrac-

tor, 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*



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Title: Staff Plan Reviewer

Date: 12/20/22

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 ft² (9.29 m²) 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 ft² (9.29 m²) 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 904.2.

Information shall be produced in the following manner: perform the HVAC system air leakage test and record the CFM25. Calculate the total square feet that system. Multiply CFA and

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Date: 12/20/22

APPENDIX E

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 x 100 divided by CFA = _____ CFM25/100SF (e.g. 100 CFM25 x 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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Signature: *Tim Busche*

Title: Staff Plan Reviewer

Date: 12/20/22

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 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 [0.24 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 _____

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

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Signature: Tim Busche
Title: Staff Plan Reviewer
Date: 12/20/22

**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 ft² (9.29 m²) 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 ft² (9.29 m²) 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).


PFS CORPORATION
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State: _____
Signature: *Tim Dusche*
Title: **Staff Plan Reviewer**
Date: **12/20/22**

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)



PFS CORPORATION

Approval Limited to Factory Built Portion Only

State: North Carolina

Signature: *Tim Duske*

Title: Staff Plan Reviewer

Date: **12/20/22**