COLORADO
Department of Local Affairs

JULY 2023

STATE OF COLORADO
Cover Sheet for Building Specifications, Third Party Reviews, and QA Manuals

Name of Manufacturer: Champion Home Builders **Plant I.D. Number:** 165

Manufacturer Address: 3200 Enterprise Ave., York, NE 68467

Manufacturer Contact Name and Contact Number: Chris Walker/Shaun Penne - 402-362-4455

Manufacturer Contact Email address: CWalker@ChampionHomes.com

Third Party Inspection Agency (if not CDOH): Nebraska Public Service Comm. Housing & RV Dept

Third Party Plan Review Agency (if applicable): PFS TECO

Third Party Plan Review Approval Name/Number (if applicable): PFS 500206OC

Factory Type: xx**FB** **FBNR** **Tiny Homes** **HUD Homes**

Document Type: xx **New Plan** **Revision** **Renewal**

Model Name/No.: 05-865-HERBERT

MANUFACTURER CERTIFIES that only approved equipment and materials will be used and the installations shall be made in accordance with approved plans and applicable codes and provisions of the Colorado Division of Housing. Manufacturer agrees to in-plant inspection of units manufactured under the above plan approval. Application shall be made for and insignia affixed to each factory built unit that is subject to Colorado statutes and which is manufactured or is to be sold, offered for sale, or occupied in the state of Colorado.

Sq. Footage Finished: 1865
Sq. Footage Unfinished: _____

CDOH Approval Stamp

Expiration Date	CDOH Plan Approval Number
01/01/2024	

INDEPENDENT AGENCY PLAN REVIEW APPLICATION

Name of Third Party plan review agency: **Ian Lehrer-P.E. 0054576**

Name of Manufacturer:	Plant street address:	Plant I.D. Number:
Champion Homes	**3200 Enterprise Ave**	**165**

Plant Mailing Address: **3200 Enterprise Ave.**
York, NE 68467

Plant Telephone: **402-362-4455**
Fax No:

Contact Person:/email: **Shaun Penne / Spenne@ChampionHomes.com**
Telephone No: **402-362-4455**

In plant Third Party Inspection Agency: **Nebraska Public Service Comm. Housing & RV Dept.**
Telephone No: **(402) 471-3101**

Mailing Address: **1200 N St # 300, Lincoln, NE 68508**
Fax No:

X	2018 I Code Compliant	Roof Snow Load	100 PSF	Floor Design Load	40 PSF
X	2020 NEC Compliant	Wind Design Speed	115 MPH	Occupancy	R-3
X	2015 IECC Compliant	Seismic Category	C		
	2012 IECC Compliant			Elec. >200 amp	
	2009 IECC Compliant			3 phase	
				Special Occupancy	

IRC PLANS X

IBC PLANS

Plan Revision

Model Number 05-865-HERBERT

Plan Approval Number PFS 500206OC

Expiration Date 1/1/2024

Square footage 1856

Unfinished Sqft

Unfinished Area fee = $0.10/ sq.ft.

Oversight review fee=$0.15/sq.ft. $278.40

($100.00 minimum)

Colorado Division of Housing Use only

Colorado Division of Housing oversight and o.k. to release plans

Initials

Date

COLORADO
Department of Local Affairs
Division of Housing

JULY 2023

"OC" (On-site Construction) Form

Please read below before signing form.

Please See Attached Document at bottom of form for Specific plan and Manufacturer information.

To: The Local Authority Having Jurisdiction (LAHJ) or other DOH approved third party inspection agency.

By signing this form, you confirm that you have received and reviewed this form, and acknowledge that the identified components below are required to complete the construction of this modular structure onsite within your jurisdiction.

Building Official Responsibility

Please check the box labeled "Accept" and initial to confirm that you will take responsibility for inspections of the "OC" Inspection Items on behalf of the DOH. You also acknowledge that it will be done to the DOH approved plans.

If you would like to defer inspection of the "OC" Inspection Items back to the DOH, please check the box labeled "Defer Inspection".

ATTENTION

"On-site Construction" or "OC" means on-site construction or modification of the factory-built structure that directly relates to the durability, quality, and safety; that is completed at the installation "site" as defined by section 24-32-3302(33), C.R.S.; using components not installed at the manufacturer's location; and to complete the compliance of that structure as reflected in the Division of Housing approved plans. These items do not include the component(s) required for setting and securing the structure for its installation.

Fire Safety Official Responsibility (if applicable)

The DOH defers the requirement of any fire protection system for all modular IBC (Section 901.2) and IRC (Section R313) structures as follows:

An automatic fire sprinkler system shall be installed in buildings (IBC) OR one and two family dwellings and townhouses (IRC) OR Tiny homes as required by the local jurisdiction where the structure or home will be set. Final tests required by this Section shall be approved by a certified inspector. The inspector must be either an employee of the fire department having jurisdiction or another qualified individual with prior approval of the Colorado Division of Fire Prevention & Control.

Wild Fire mitigation requirements will be deferred for (IBC) OR one and two family dwellings and townhouses (IRC) OR Tiny homes as required by the local jurisdiction where the structure or home will be set. Final inspections required by locals shall be approved by a certified inspector. The inspector must be either an employee of the fire department having jurisdiction or another qualified individual with prior approval of the Colorado Division of Fire Prevention & Control.

Please confirm if the LAHJ requires a fire protection system and/or wild fire mititgation for this modular structure. If so, please indicate if the inspection will be completed by a fire department (identify which one) or whether it will be completed by the Colorado Division of Fire Prevention & Control.

Manufacturer Responsibility

The registered manufacturer is responsible for manufacturing a structure that is compliant with our Administrative Rules (CCR 1302-14). If items in the factory have not been completed, only to be completed in the field, you are still responsible for ensuring they have been completed for compliance. Please sign below that you have received this letter and acknowledge the items listed are to complete compliance of the structure, and items are to be inspected and passed for compliance in order to meet Rule 1.13.1 and section 24-32-3311(4), Colorado Revised Statutes (C.R.S.).

ATTENTION

A DOH issued insignia (silver for residential or blue for nonresidential or pink for tiny homes or black for multi-family) certifying its construction cannot be affixed to the structure until all "OC" items are completed on site and pass inspection. The same applies to modular structures manufactured by a certified manufacturer.

Acknowledge Receipt and Understanding

Normal permits and fees for these site work inspections are to be per the local jurisdiction.

State approved plans for Factory-Built Construction may be obtained from the Builder/Manufacturer.

A copy of this completed form is included with the DOH approved plans and must be included with the installation instructions and shipped with the unit. If the completed form has been damaged or lost during shipping, the manufacturer or its representative can obtain a copy from the DOH.

Before any inspection is scheduled at the on-site location or Installation Authorization (required for modular homes and multi-family structures) is issued by the DOH, this form will be required to be signed and dated by the Building Official, or Approved Third Party Agent, or Fire Safety Official (if applicable), and submitted to the DOH.

The DOH approved OC form will be included with the approved spec file, with the DOH Plan Reviewer signature below and their plan approval stamp on the page(s) with the OC listed items to be completed at the site location. That approved OC form should be submitted to the appropriate parties described in this form and submitted back to the DOH before any inspection is scheduled at the onsite location or Installation Authorization (required for modular homes and multi-family structures) is issued.

DOH Plan Reviewer Name_____

DOH Plan Reviewer Signature_____

Date Approved 09/25/23 Contact email:_____

COLORADO
Department of Local Affairs
Division of Housing

JULY 2023

Building Department Representitive Printed Name_____

Building Department Representitive Signature_____

Title_____

Date_____

☐ Accept ☐ Defer Inspection Contact email:_____

If applicable:

Fire Safety Official Printed Name_____

Fire Safety Official Signature_____Date_____

Contact email:_____

Is a fire protection system required? (check one) Required Not Required

If required, the inspection is to be performed by (check one):

_____ Fire Department: (NAME)_____

OR

_____ Colorado Division of Fire Prevention & Control

Manufacturer's Authorized Quality Assurance Representative

Printed Name Champion Homes

Manufacturer's Authorized Quality Assurance Representative

Signature Kevin Stephens Date 08/28/2023

Contact email: KStephens@ChampionHomes.com

If the inspection has been deferred and the manufacturer elects to utilize an Approved Third Party Agency to inspect the "OC" items on behalf of DOH, please sign and date below.

Approved Third Party Agent Printed Name_____

Approved Third Party Agent Signature_____Date_____

Contact email:_____

COLORADO
Department of Local Affairs
Division of Housing

JULY 2023

Verify Inspection(s) Completed

Once you have completed all of your assigned inspections identified in this form and they have passed for compliance, please sign and date below.

Building Department Representitive Printed Name_____

Building Department Representitive Signature_____

Date_____

Contact email:_____

Or

Approved Third Party Agent Printed Name_____

Approved Third Party Agent Signature_____Date_____

Contact email:_____

Fire Protection Systems (if applicable)

Fire Safety Official Printed Name_____

Fire Safety Official Signature_____Date_____

Contact email:_____

Please direct questions to manufactured.plans@state.co.us

COLORADO
Department of Local Affairs
Division of Housing

JULY 2023

The following is based on information provided to the Division of Housing (DOH) and may be modified based on the actual findings of the field inspection.

DATE: 09/11/2023

MANUFACTURER:	Champion Home Builders	ID NO.:	165
CONTACT:	Chris Walker	PHONE NO.:	402-362-4455
MODEL NO.:	05-865-HERBERT	DOH P/A NO.:	R-0005707OC

INSPECTION REQUIREMENTS: Check on site:

"OC" Inspection Items

- Insulate basement/crawl wall to specifications (ResCheck) (Local inspection required)
- Basement/Stairwell construction-separate (Local inspection needed.)
- Complete waste & water line connections. (Local inspection required)
- Field install gas pipes serving furnace, water heater, ect. (Local inspection required)
- Air Conditioner outlet installed for future use (Local inspection required)
- Surge protector device & Emergency / Disconnect Service Installed On-Site by others (Local inspection required)
- Thermal expansion tank installed OSBO (Local inspection required)
- Check property lines and any adjacent buildings of minimum allowable setback distances (5' minimum)

COLORADO
Department of Local Affairs
Division of Housing

JULY 2023

Model Number: 05-865-HERBERT

Residential (IRC) & Tiny Home Plan Submission Checklist

A full plan set submission to the Colorado Division of Housing includes the following:
(Electronic Plan Submissions Only)

Submitted	Document Type
☑	• Plan Review Payment through Salesforce
	Plan Set Package
	Architectural Plan Set
☑	• Initialed and signed copy of the Plan Submission Checklist confirming applicable documents have been included in the plan package.
☑	• Index of submitted plan package ○ Can be a separate document or clearly denoted on cover page
☑	• Site location where structure is to be installed, and Local Authority Having Jurisdiction, or designate the structure as lot model with design loads that are specific for the area the home can be installed, and a minimum setback distance noted for fire separation requirements. If site location is known, a site plan, set back distances to lot lines or other structures, and local AHJ Wildfire Mitigation area requirements (if any) are required to determine fire separation requirements for structure. If structure is to be set in a location where there is no local authority having jurisdiction or lot model, at a minimum, the design loads must comply with 8 CCR 1302-14, Rule 2.2.1.

☑	• Code Analysis
	  ○ Design Codes
	  ○ Wind, and Snow Loads (must meet local AHJ and CDOH minimums)
	  ○ Seismic and Wind Exposure category
	  ○ Type of Fire suppression system if applicable (factory installed or on site)
	  ▪ If location is known, clearly denote on code analysis if the jurisdiction require a fire suppression system. If one is required and any of the installation is to be in-plant, then it must comply with Colorado Division of Fire Safety & Control Rules (8 CCR 1507-11) & a CORI shall accompany the units throughout the process.

☑	• List of items to be completed on site ○ OC Form included that complies with 8 CCR 1302-14, Rules 1.19, 4.17.1.1, and C.R.S. 24-32-3311(1)(a.7)

☑	• Architectural plans with applicable details
	  ○ Floor Plan for Each Level
	  ○ Room Use Specification
	  ○ Window and Door Schedules
	  ○ Elevations
	  ○ Section Drawings (Full and at Stairs)

☑	• Fire Rated Assembly Details (If applicable)
	  ○ Assemblies not exempt in section R302 to be fire rated or other sections in the code, need to have details showing compliance with section R302 of the IRC for separation of dwellings, fire separation distances, and/or floors. Must comply with the testing standards of either ASTM E119 or UL263 or section 703.3 of the IBC.
	  ○ If section 722 of the IBC has been opted for compliance, the design must be approved through a Colorado Registered Fire Protection engineer.

	Structural Framing Plans

☑	• Components
	  ○ Floor Assemblies
	  ○ Wall Assemblies
	  ○ Roof Assemblies
	  ○ Ceiling Assemblies
	  ○ Headers, Beams and Columns
	  ○ Proposed Foundation
	  ○ Braced Wall line details, and tie down equipment with locations that are not specifically addressed in approved installation manual.
	  ○ Construction components exceeding section R301 of the IRC, shall have plans stamped by a Colorado Registered Design Professional.

	MEP Plan Sheets

☑	• Mechanical System Plans
	  ○ Exhaust Locations
	  ○ Whole home ventilation systems

☑	• Electrical System Plans ○ Fixtures, load calculations, panel/circuit schedule with breaker and wire sizing, symbols legend, etc.

☑	• Plumbing System Plans (Field installed OSBO from a certified local plumber)
	  ○ Service water piping with piping location, insulation and size
	  ○ Fixture types and locations
	  ○ Isometric for DWV, indicate pipe sizes

☑	• Gas System Plans (Field installed OSBO from a certified local installer)
	  ○ Gas Isometric with distances and BTU ratings of appliances it serves
	  ○ Piping material and sizes, service pressure ratings

	Spec Set Package
☑	• Spec Cover Sheet
☑	• Copy of the "OC" Inspection letter denoting the "OC" inspection items listed on the submitted plans. Information from the site address on the first page to the "factory authorized representative" portion to the date must be filled in by the factory, except for the CDOH P/A NO (DOH assigned).

☑	• Engineered/Certified Component Details
	  ○ Engineered and stamped truss details by a State of Colorado professional designed per TPI 1 - 2014 per IRC 2018. Include correct loading and wind speed & exposure, etc.
	  ○ Tiny Home chassis must be engineer approved or certified by NHTSA

	• Energy Compliance

☑	○ REScheck (*signed*) ▪ Use appropriate version 2015 (or 2012, 2009 based on local adoption) ▪ Use the Colorado city where the building will be installed (If site location is not a selection on REScheck, list exact location on Construction Site information box) • If a REScheck is omitted and the prescriptive method is opted for use, please clearly denote on plans a table showing the information depicted in the IECC, Section R103.2 and applicable information per 8 CCR 1302-14, Rule 2.7
☑	• HVAC System Plans ○ Load calculations for equipment sizing (Manual J) ○ Equipment size listed and meets or exceeds load calculation with deration (Manual S) ○ Supply and return air sizing and plans (Manual D) ○ Site information must match information provided on the REScheck

The Colorado Division of Housing plan review does not begin until the entire plan submission is received.

Applicant must sign below acknowledging submittal checklist has been read and all applicable documents have been submitted for review and any changes to plans require plans to be resubmitted for review, and approved by DOH before construction. All DOH plans are subject to field inspection. Additional information not included in this general list may be requested by DOH plan reviewers to complete review.

X *Shaun Penne* Date: 9/11/2023

For additional plan review requirements, questions, or concerns, please reach out to our staff at:

FB/FBNR
manufactured.plans@state.co.us
Tiny Homes
dola_tinyhomes@state.co.us

INDEX

Champion Home Builders
3200 Enterprise Ave.
York, NE 68467

Load Short Form
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

Project Information

For: Champion Home Builders
3200 Enterprise Ave., York, NE 68467

Site:
18195 Hwy 131
Yampa, CO 80483

Design Information

	Htg	Clg
Outside db (°F)	***-15***	***85***
Inside db (°F)	70	75
Design TD (°F)	85	10
Daily range	-	H
Inside humidity (%)	50	50
Moisture difference (gr/lb)	71	-35

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

HEATING EQUIPMENT

Make	Generic		
Trade			
Model	AFUE 100		
AHRI ref			
Efficiency		100 AFUE	
Heating input		11.1	kW
Heating output		37883	Btuh
Temperature rise		66	°F
Actual air flow		692	cfm
Air flow factor		0.021	cfm/Btuh
Static pressure		0.30	in H2O
Space thermostat			

COOLING EQUIPMENT

Make	Generic		
Trade			
Cond	SEER 14.0		
Coil			
AHRI ref			
Efficiency		12.2 EER, 14 SEER	
Sensible cooling		10850	Btuh
Latent cooling		4650	Btuh
Total cooling		15500	Btuh
Actual air flow		692	cfm
Air flow factor		0.060	cfm/Btuh
Static pressure		0.30	in H2O
Load sensible heat ratio		1.00	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
M BA	90	1025	161	22	10
UTILITY	120	2171	217	46	13
C1	39	0	0	0	0
KIT\DIN\FAM\LIV	781	8415	5218	178	315
B1	232	3254	2152	69	130
B2	170	1580	1329	33	80
B3	170	2598	1363	55	82
B4	153	2473	806	52	49
A	21	0	0	0	0
BA	55	472	55	10	3
CRAWL	1833	10741	148	227	9

Bold/italic values have been manually overridden

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

Entire House	3666	32730	11449	692	692
Other equip loads		5153	606		
Equip. @ 0.90 RSM			10850		
Latent cooling			0		
TOTALS	3666	37883	10850	692	692

wrightsoft®

Building Analysis
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

Project Information

For: Champion Home Builders
3200 Enterprise Ave., York, NE 68467

Design Conditions

Location: Craig-Moffat, CO, US — Yampa, CO
Elevation: ***7687*** ft
Latitude: 40 °N

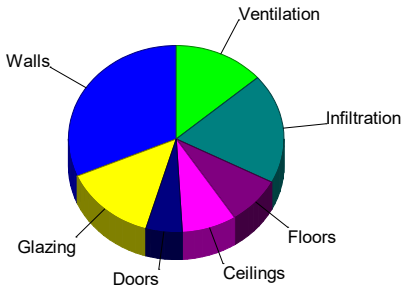
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	***-15***	***85***
Daily range (°F)	-	38 (H)
Wet bulb (°F)	-	58
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	85	10
Relative humidity (%)	50	50
Moisture difference (gr/lb)	70.6	-34.6

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

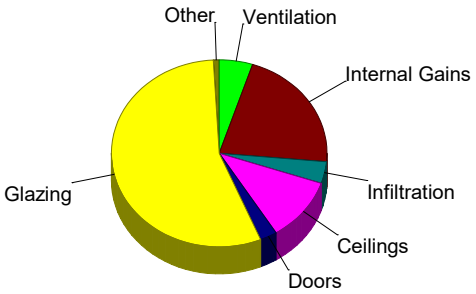
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	6.1	11922	31.5
Glazing	28.9	5292	14.0
Doors	24.6	2071	5.5
Ceilings	1.7	3116	8.2
Floors	1.7	3116	8.2
Infiltration	3.2	7214	19.0
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		5153	13.6
Adjustments		0	
Total		**37883**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.1	106	0.9
Glazing	36.5	6681	55.4
Doors	3.6	306	2.5
Ceilings	0.7	1321	11.0
Floors	0	0	0
Infiltration	0.2	455	3.8
Ducts		0	0
Ventilation		606	5.0
Internal gains		2580	21.4
Blower		0	0
Adjustments		0	
Total		**12055**	**100.0**



Latent Cooling Load = 0 Btuh
Overall U-value = 0.051 Btuh/ft²-°F, Window / Floor Area = 5.0 %

WARNING: window to floor area ratio = 5.0% - less than 5%.

Bold/italic values have been manually overridden

Project Information

For: Champion Home Builders
3200 Enterprise Ave., York, NE 68467

Design Conditions

Location: Craig-Moffat, CO, US (Yampa, CO)
Elevation: 7687 ft
Latitude: 40°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	***-15***	***85***
Daily range (°F)	-	38 (H)
Wet bulb (°F)	-	58
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	85	10
Relative humidity (%)	50	50
Moisture difference (gr/lb)	70.6	-34.6

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12F-0sw: Frm wall, vnl ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	202	0.065	21.0	5.53	1113	0.09	18
	e	431	0.065	21.0	5.53	2379	0.09	38
	s	210	0.065	21.0	5.52	1163	0.09	18
	w	370	0.065	21.0	5.52	2047	0.09	33
	all	1213	0.065	21.0	5.52	6701	0.09	106
Bg wall, light dry soil, 2"x4" wood int frm, concrete wall, r-12 cav ins, 8" thk	n	115	0.083	12.0	7.05	811	0	0
	e	255	0.083	12.0	7.05	1799	0	0
	s	115	0.083	12.0	7.05	811	0	0
	w	255	0.083	12.0	7.05	1799	0	0
	all	740	0.083	12.0	7.05	5221	0	0
Partitions								
(none)								
Windows								
DftWind: 3 glazing, clr low-e outr, 1/2" gap, insulated vinyl frm mat, clr low-e mid, argon gas, 1/4" thk, clr innr; NFRC rated (SHGC=0.30); 6.67 ft head ht	n	8	0.340	0	28.9	217	9.18	69
	e	38	0.340	0	28.9	1084	31.7	1188
	s	20	0.340	0	28.9	566	15.9	311
	w	119	0.340	0	28.9	3425	31.7	3754
	all	183	0.340	0	28.9	5292	29.1	5321
Doors								
11P0: Door, mtl pur core type	n	21	0.290	10.5	24.6	518	3.64	76
	e	42	0.290	10.5	24.6	1035	3.64	153
	w	21	0.290	10.5	24.6	518	3.64	76
	all	84	0.290	10.5	24.6	2071	3.64	306
Ceilings								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		1833	0.020	50.0	1.70	3116	0.72	1321
Floors								
21A-32t: Bg floor, light dry soil, 4' depth		1833	0.020	0	1.70	3116	0	0

Bold/italic values have been manually overridden

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Project Summary
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

Project Information

For: Champion Home Builders
3200 Enterprise Ave., York, NE 68467

Notes: The furnace output has been adjusted for elevation.

Design Information

Weather: Craig-Moffat, CO, US

Winter Design Conditions

Outside db	***-15***	°F
Inside db	70	°F
Design TD	85	°F

Summer Design Conditions

Outside db	***85***	°F
Inside db	75	°F
Design TD	10	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	-35	gr/lb

Heating Summary

Structure	32730	Btuh
Ducts	0	Btuh
Central vent (73 cfm)	5153	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	37883	Btuh

Sensible Cooling Equipment Load Sizing

Structure	11449	Btuh
Ducts	0	Btuh
Central vent (73 cfm)	606	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.90	
Equipment sensible load	10850	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	3666	3666
Volume (ft³)	21994	21994
Air changes/hour	0.28	0.15
Equiv. AVF (cfm)	103	55

Latent Cooling Equipment Load Sizing

Structure	228	Btuh
Ducts	0	Btuh
Central vent (73 cfm)	-1296	Btuh
Outside air		
Equipment latent load	0	Btuh
Equipment Total Load (Sen+Lat)	10850	Btuh
Req. total capacity at 0.70 SHR	1.3	ton

Heating Equipment Summary

Make	Generic
Trade	
Model	AFUE 100
AHRI ref	

Efficiency	100	AFUE
Heating input	11.1	kW
Heating output	37883	Btuh
Temperature rise	66	°F
Actual air flow	692	cfm
Air flow factor	0.021	cfm/Btuh
Static pressure	0.30	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	10850	Btuh
Latent cooling	4650	Btuh
Total cooling	15500	Btuh
Actual air flow	692	cfm
Air flow factor	0.060	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	1.00	

Bold/italic values have been manually overridden

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

wrightsoft

Right-J8® Form J1
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

		Entire House	MBA
1	Name of Room		
2	Running Feet of Exposed Wall	370.0 ft	9.8 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	6.0 ft 4864.0 ft²	8.0 ft 304.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	3665.6 ft²	9.3 x 9.8 ft 90.2 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° 3665.6 ft²	0 ° 90.2 ft²

	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	230	1113	18		78	390	6	
.	├──Glaz	DftWind	n	28.90	9.18	8	217	69		8	217	69	
.	└──Door	11P0	n	24.65	3.64	21	518	76		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	115	811	0		0	0	0	
11	Wall	12F-0sw	e	5.52	0.09	510	2379	38		0	0	0	
	├──Glaz	DftWind	e	28.90	31.67	38	1084	1188		0	0	0	
	└──Door	11P0	e	24.65	3.64	42	1035	153		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	255	1799	0		0	0	0	
	Wall	12F-0sw	s	5.52	0.09	230	1163	18		0	0	0	
	└──Glaz	DftWind	s	28.90	15.89	20	566	311		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	115	811	0		0	0	0	
	Wall	12F-0sw	w	5.52	0.09	510	2047	33		0	0	0	
	├──Glaz	DftWind	w	28.90	31.67	119	3425	3754		0	0	0	
	└──Door	11P0	w	24.65	3.64	21	518	76		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	255	1799	0		0	0	0	
	Ceil	16B-50ad	-	1.70	0.72	1833	3116	1321		90	153	65	
	Flor	21A-32t	-	1.70	0.00	1833	3116	0		0	0	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH	0.28	WAR 1.00	7214			WAR 0.04	253		
		Sensible Load (Btuh)			0.15			455				16	
		Latent Load (Btuh)							-972				
13	Internal	a Occupants at 230 and 200 Btuh				6		1380	1200	0		0	0
		b Scenario number						1200				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					32730	11449	228		1025	161	
15	Duct Loads	EHLF & ESGF		0	0		0	0			0	0	
		ELG							0				0
16	Ventilation Loads	Vent Cfm	73	E Cfm	73		5153	606	-1296				
17	Winter Humidification Load			Gal/Day	0		0						
18	Piping Load						0						
19	Blower Heat							0					
20	AED Excursion & Latent Moisture Migration Load							1360				0	
21	Total Load	Sum lines 13 through 19					37883	12055	0		1025	161	

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

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Right-J8® Form J1
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

		UTILITY		C1	
1	Name of Room				
2	Running Feet of Exposed Wall	22.0 ft		0 ft	
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	8.0 ft	432.0 ft²	8.0 ft	208.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	1.0 x 120.0 ft	120.0 ft²	8.3 x 4.8 ft	39.2 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 °	120.0 ft²	0 °	39.2 ft²

	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	36	83	1		0	0	0	
.	├──Glaz	DftWind	n	28.90	9.18	0	0	0		0	0	0	
.	└──Door	11P0	n	24.65	3.64	21	518	76		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	0	0	0		0	0	0	
11	Wall	12F-0sw	e	5.52	0.09	140	773	12		0	0	0	
	├──Glaz	DftWind	e	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	e	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	s	5.52	0.09	0	0	0		0	0	0	
	└──Glaz	DftWind	s	28.90	15.89	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	w	5.52	0.09	0	0	0		0	0	0	
	├──Glaz	DftWind	w	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	w	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	0	0	0		0	0	0	
	Ceil	16B-50ad	-	1.70	0.72	120	204	87		39	67	28	
	Flor	21A-32t	-	1.70	0.00	0	0	0		0	0	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH	0.28	WAR 0.08	572			WAR 0	0		
		Sensible Load (Btuh)			0.15			36				0	
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0		0	0
		b Scenario number						0				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					2171	217			0	0	
15	Duct Loads	EHLF & ESGF		0	0		0	0			0	0	
		ELG							0				0
16	Ventilation Loads	Vent Cfm	73	E Cfm	73								
17	Winter Humidification Load			Gal/Day	0								
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							-4				-1	
21	Total Load	Sum lines 13 through 19					2171	217			0	0	

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

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Right-J8® Form J1
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

1	Name of Room					KIT\DIN\FAMLIV				B1			
2	Running Feet of Exposed Wall					54.5 ft				30.5 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					8.0 ft		1052.0 ft²		8.0 ft		488.0 ft²	
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					1.0 x 781.4 ft		781.4 ft²		16.0 x 14.5 ft		232.0 ft²	
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 °		781.4 ft²		0 °		232.0 ft²	
	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	0	0	0		116	641	10	
.	Glaz	DftWind	n	28.90	9.18	0	0	0		0	0	0	
.	Door	11P0	n	24.65	3.64	0	0	0		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	0	0	0		0	0	0	
11	Wall	12F-0sw	e	5.52	0.09	284	1130	18		0	0	0	
	Glaz	DftWind	e	28.90	31.67	38	1084	1188		0	0	0	
	Door	11P0	e	24.65	3.64	42	1035	153		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	s	5.52	0.09	0	0	0		0	0	0	
	Glaz	DftWind	s	28.90	15.89	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	w	5.52	0.09	152	451	7		128	541	9	
	Glaz	DftWind	w	28.90	31.67	49	1426	1563		30	867	950	
	Door	11P0	w	24.65	3.64	21	518	76		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	0	0	0		0	0	0	
	Ceil	16B-50ad	-	1.70	0.72	781	1328	563		232	394	167	
	Flor	21A-32t	-	1.70	0.00	0	0	0		0	0	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH	0.28	WAR 0.20	1417			WAR 0.11	793		
		Sensible Load (Btuh)			0.15			89				50	
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				1		230	200	2		460	400
		b Scenario number						1200				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					8415	5218			3254	2152	
15	Duct Loads	EHLF & ESGF		0	0		0	0			0	0	
		ELG							0				0
16	Ventilation Loads	Vent Cfm	73	E Cfm	73								
17	Winter Humidification Load			Gal/Day	0								
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							119				499	
21	Total Load	Sum lines 13 through 19					8415	5218			3254	2152	

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

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Right-J8® Form J1
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

		B2	B3
1	Name of Room		
2	Running Feet of Exposed Wall	11.8 ft	26.3 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	8.0 ft 420.0 ft²	8.0 ft 420.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	11.8 x 14.5 ft 170.4 ft²	11.8 x 14.5 ft 170.4 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° 170.4 ft²	0 ° 170.4 ft²

	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	B2 Area or Length	B2 Btuh Heating	B2 Btuh S-Clg	B2 Btuh L-Clg	B3 Area or Length	B3 Btuh Heating	B3 Btuh S-Clg	B3 Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	0	0	0		0	0	0	
.	├──Glaz	DftWind	n	28.90	9.18	0	0	0		0	0	0	
.	└──Door	11P0	n	24.65	3.64	0	0	0		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	0	0	0		0	0	0	
11	Wall	12F-0sw	e	5.52	0.09	0	0	0		0	0	0	
	├──Glaz	DftWind	e	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	e	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	s	5.52	0.09	0	0	0		116	641	10	
	└──Glaz	DftWind	s	28.90	15.89	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	w	5.52	0.09	94	411	7		94	411	7	
	├──Glaz	DftWind	w	28.90	31.67	20	566	620		20	566	620	
	└──Door	11P0	w	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	0	0	0		0	0	0	
	Ceil	16B-50ad	-	1.70	0.72	170	290	123		170	290	123	
	Flor	21A-32t	-	1.70	0.00	0	0	0		0	0	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH	0.28	WAR 0.04	305			WAR 0.09	682		
		Sensible Load (Btuh)			0.15			19				43	
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				1		230	200	1		230	200
		b Scenario number						0				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					1580	1329			2598	1363	
15	Duct Loads	EHLF & ESGF		0	0		0	0			0	0	
		ELG							0				0
16	Ventilation Loads	Vent Cfm	73	E Cfm	73								
17	Winter Humidification Load			Gal/Day	0								
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							327				327	
21	Total Load	Sum lines 13 through 19					1580	1329			2598	1363	

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

		B4	A
1	Name of Room		
2	Running Feet of Exposed Wall	25.0 ft	0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	8.0 ft 400.0 ft²	8.0 ft 148.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	10.8 x 14.3 ft 153.2 ft²	5.3 x 4.0 ft 21.0 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° 153.2 ft²	0 ° 21.0 ft²

	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	0	0	0		0	0	0	
.	├──Glaz	DftWind	n	28.90	9.18	0	0	0		0	0	0	
.	└──Door	11P0	n	24.65	3.64	0	0	0		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	0	0	0		0	0	0	
11	Wall	12F-0sw	e	5.52	0.09	86	475	8		0	0	0	
	├──Glaz	DftWind	e	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	e	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	s	5.52	0.09	114	522	8		0	0	0	
	└──Glaz	DftWind	s	28.90	15.89	20	566	311		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	0	0	0		0	0	0	
	Wall	12F-0sw	w	5.52	0.09	0	0	0		0	0	0	
	├──Glaz	DftWind	w	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	w	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	0	0	0		0	0	0	
	Ceil	16B-50ad	-	1.70	0.72	153	260	110		21	36	15	
	Flor	21A-32t	-	1.70	0.00	0	0	0		0	0	0	

12	Infiltration	Heating Load (Btuh)	Effect ACH	0.28	WAR 0.09	650			WAR 0	0		
		Sensible Load (Btuh)		0.15			41				0	
		Latent Load (Btuh)										
13	Internal	a Occupants at 230 and 200 Btuh			1		230	200	0		0	0
		b Scenario number					0				0	
		c Default Adjustments										
		d Custom Appliances					0	0			0	0
		e Plants						0				0
14	Subtotals	Sum lines 6 through 12				2473	806			0	0	
15	Duct Loads	EHLF & ESGF		0	0	0	0			0	0	
		ELG						0				0
16	Ventilation Loads	Vent Cfm 73		E Cfm	73							
17	Winter Humidification Load			Gal/Day	0							
18	Piping Load											
19	Blower Heat											
20	AED Excursion & Latent Moisture Migration Load						98				0	
21	Total Load	Sum lines 13 through 19				2473	806			0	0	

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

		BA	CRAWL
1	Name of Room		
2	Running Feet of Exposed Wall	5.3 ft	185.0 ft
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)	8.0 ft 252.0 ft²	4.0 ft 740.0 ft²
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)	5.3 x 10.5 ft 55.1 ft²	63.8 x 28.8 ft 1832.8 ft²
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)	0 ° 55.1 ft²	0 ° 1832.8 ft²

	Type of Exposure	Const., Number	Panel Faces	HTM Htg.	HTM Clg.	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg	Area or Length	Btuh Heating	Btuh S-Clg	Btuh L-Clg
6	Wall	12F-0sw	n	5.52	0.09	0	0	0		0	0	0	
.	├──Glaz	DftWind	n	28.90	9.18	0	0	0		0	0	0	
.	└──Door	11P0	n	24.65	3.64	0	0	0		0	0	0	
.	Wall	Bg wall, light dry s	n	7.05	0.00	0	0	0		115	811	0	
11	Wall	12F-0sw	e	5.52	0.09	0	0	0		0	0	0	
	├──Glaz	DftWind	e	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	e	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	e	7.05	0.00	0	0	0		255	1799	0	
	Wall	12F-0sw	s	5.52	0.09	0	0	0		0	0	0	
	└──Glaz	DftWind	s	28.90	15.89	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	s	7.05	0.00	0	0	0		115	811	0	
	Wall	12F-0sw	w	5.52	0.09	42	232	4		0	0	0	
	├──Glaz	DftWind	w	28.90	31.67	0	0	0		0	0	0	
	└──Door	11P0	w	24.65	3.64	0	0	0		0	0	0	
	Wall	Bg wall, light dry s	w	7.05	0.00	0	0	0		255	1799	0	
	Ceil	16B-50ad	-	1.70	0.72	55	94	40		0	0	0	
	Flor	21A-32t	-	1.70	0.00	0	0	0		1833	3116	0	

12	Infiltration	Heating Load (Btuh)	Effect ACH	0.28	WAR 0.02	136			WAR 0.33	2405		
		Sensible Load (Btuh)		0.15			9				152	
		Latent Load (Btuh)										
13	Internal	a Occupants at 230 and 200 Btuh			0		0	0	0		0	0
		b Scenario number					0				0	
		c Default Adjustments										
		d Custom Appliances					0	0			0	0
		e Plants						0				0
14	Subtotals	Sum lines 6 through 12				472	55			10741	148	
15	Duct Loads	EHLF & ESGF		0	0	0	0			0	0	
		ELG						0				0
16	Ventilation Loads	Vent Cfm 73		E Cfm	73							
17	Winter Humidification Load			Gal/Day	0							
18	Piping Load											
19	Blower Heat											
20	AED Excursion & Latent Moisture Migration Load						-1				-3	
21	Total Load	Sum lines 13 through 19				472	55			10741	148	

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

wrightsoft®

Duct System Summary
Entire House

Job: 05-865-HERBERT
Date: 9/11/23
By: AMS of Indiana, Inc.

Project Information

For: Champion Home Builders
3200 Enterprise Ave., York, NE 68467

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0.06 in H2O	0.06 in H2O
Available static pressure	0.24 in H2O	0.24 in H2O
Supply / return available pressure	0.178 / 0.062 in H2O	0.178 / 0.062 in H2O
Lowest friction rate	0.062 in/100ft	0.062 in/100ft
Actual air flow	692 cfm	692 cfm
Total effective length (TEL)	389 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
B1	c 1076	34	65	0.062	6.0	0x 0	VlFx	27.3	260.0	st2
B1-A	c 1076	34	65	0.062	6.0	0x 0	VlFx	36.8	250.0	st2
B2	c 1329	33	80	0.064	6.0	0x 0	VlFx	64.5	215.0	st2
B3	c 1363	55	82	0.070	***6.0***	***0x 0***	VlFx	72.3	180.0	st1
B4	h 2473	52	49	0.092	6.0	0x 0	VlFx	53.8	140.0	st1
BA	h 472	10	3	0.073	6.0	0x 0	VlFx	74.8	170.0	st1
CRAWL	h 3580	76	3	0.122	***6.0***	***0x 0***	VlFx	5.3	140.0	st2
CRAWL-A	h 3580	76	3	0.091	6.0	0x 0	VlFx	45.0	150.0	st1
CRAWL-C	h 3580	76	3	0.063	6.0	0x 0	VlFx	56.8	225.0	st2
KIT\DIN\FAM\LIV	c 870	30	53	0.090	6.0	0x 0	VlFx	21.8	175.0	st1
KIT\DIN\FAM\LIV-A	c 870	30	53	0.086	6.0	0x 0	VlFx	31.3	175.0	st1
KIT\DIN\FAM\LIV-C	c 870	30	53	0.086	6.0	0x 0	VlFx	45.8	160.0	st1
KIT\DIN\FAM\LIV-D	c 870	30	53	0.062	6.0	0x 0	VlFx	53.0	235.0	st2
KIT\DIN\FAM\LIV-E	c 870	30	53	0.062	6.0	0x 0	VlFx	42.3	245.0	st2
KIT\DIN\FAM\LIV-F	c 870	30	53	0.087	6.0	0x 0	VlFx	38.3	165.0	st1
M BA	h 1025	22	10	0.114	6.0	0x 0	VlFx	5.3	150.0	st2
UTILITY-A	h 2171	46	13	0.097	6.0	0x 0	VlFx	8.0	175.0	st1

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	358	361	0.070	742	10.1	5 x 14	ShtMetl	
st2	Peak AVF	335	331	0.062	689	10.1	5 x 14	ShtMetl	

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
rb1	0x 0	692	692	100.9	0.062	496	16.0	0x 0		VlFx	

Job	Truss	Truss Type	Qty	Ply	Champion 223
107124	M1166701	MONO TRUSS	1	1	N5-1037 29DW 3/12 Flat - 100 @16"

UFP Industries Inc., Grand Rapids, MI 49525, Tom Craig

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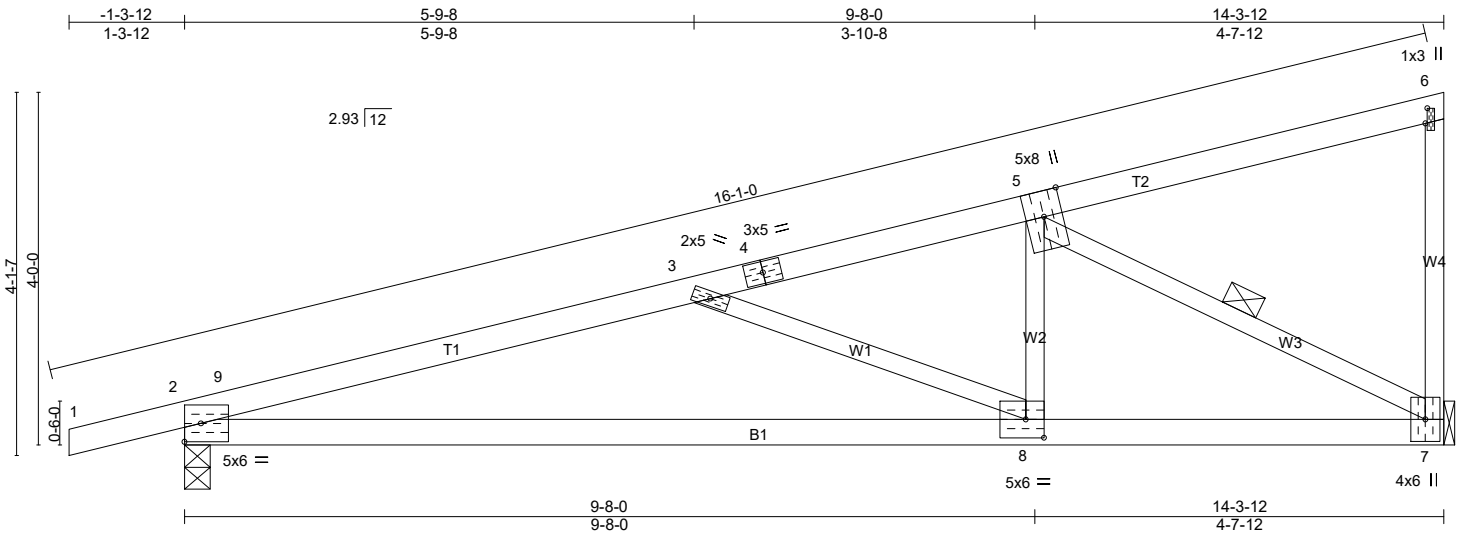

Plate Offsets (X,Y)-- [6:0-2-1,0-0-4], [8:0-2-8,0-2-8]

LOADING (psf)		SPACING-	1-4-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	100.0	Plate Grip DOL	1.00	TC	0.96	Vert(LL)	-0.24	2-8	>694	240	MT20	197/144
(Roof Snow=100.0)		Lumber DOL	1.00	BC	0.92	Vert(CT)	-0.38	2-8	>447	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.06	7	n/a	n/a		
BCLL	0.0 *	Code	IBC2018/TPI2014	Matrix-RH							Weight: 47 lb	FT = 5%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SPF 2100F 1.8E
BOT CHORD 2x4 SPF 1650F 1.5E
WEBS 2x3 SPF No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied, except end verticals. [PB]
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 5-7

REACTIONS. (lb/size) 2=1350/0-3-8 (min. 0-2-10), 7=1114/Mechanical
Max Horz 2=315(LC 6)
Max Uplift 2=-582(LC 6), 7=-501(LC 8)
Max Grav 2=1675(LC 2), 7=1463(LC 2)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/33, 2-9=-3447/1605, 3-9=-3426/1618, 3-4=-2064/911, 4-5=-1899/918, 5-6=-123/67, 6-7=-373/245
BOT CHORD 2-8=-1920/3179, 7-8=-1096/1913
WEBS 5-8=-282/657, 3-8=-1369/891, 5-7=-2198/1259

NOTES-
1) Wind: ASCE 7-16; Vult=200mph (3-second gust) Vasd=158mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3E) -1-3-12 to 1-8-4, Exterior(2N) 1-8-4 to 11-2-8, Corner(3E) 11-2-8 to 14-2-8 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pf=100.0 psf (Lum DOL=1.00 Plate DOL=1.00); 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 20.0 psf or 2.00 times flat roof load of 100.0 psf on overhangs non-concurrent with other live loads.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 582 lb uplift at joint 2 and 501 lb uplift at joint 7.
8) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

8/30/2021

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

UFP Industries, Inc.
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2801 EAST BELTLINE RD, NE
GRAND RAPIDS, MI 49525

IRC 2018 - DRAWING INDEX

Drawing Number	Description	Calc. No.	Drawing Date	Designed By
General (GE)				
GE01.01	CODES, SPECIFICATIONS AND HOME TYPES		09/28/18	SCD
GE02.01	GENERAL NOTES		09/28/18	SCD
GE03.01	ONE STORY CROSS-SECTION		09/28/18	SCD
GE03.02	CAPE CROSS SECTION		09/28/18	SCD
GE03.03	TWO STORY CROSS SECTION		09/28/18	SCD
HVAC (HVAC)				
HV01.01	MECHANICAL SYSTEMS - GENERAL NOTES		09/28/18	SCD
HV01.02	HVAC RIM JOIST CROSS-OVER, 2x10 OFF-FRAME FLOORS	MH-105	09/28/18	SCD
Electrical (EL)				
EL01.01	ELECTRICAL SYSTEM - GENERAL NOTES		09/28/18	SCD
Plumbing (PL)				
PL01.01	PLUMBING SYSTEM - GENERAL NOTES		09/28/18	SCD
Thermal (TH)				
TH01.01	ENERGY EFFICIENCY		09/28/18	SCD
Fastening (FA)				
FA01.01	GENERAL NOTES & FASTENING SUBSTITUTION	FA-100	09/28/18	SCD
FA01.02	FLOOR SYSTEM & ROOF SYSTEM		09/28/18	SCD
FA01.03	EXTERIOR WALLS & INTERIOR WALLS		09/28/18	SCD
FA02.01	GYPSUM FASTENING / FOAM ONLY OPTION		09/28/18	SCD
Foundation (FD)				
FD01.01	GENERAL NOTES	MD-100	09/28/18	SCD
FD01.02	RANCH MATE LINE DESIGN	MD-105; MD-105.1	09/28/18	SCD
FD01.03	CAPE & 2 STORY MATE LINE DESIGN	MD-110; MD-110.1	09/28/18	SCD
FD02.01	CRAWLSPACE (1, 1.5 & 2 STORY)		09/28/18	SCD
FD02.02	FULL BASEMENT (1, 1.5 & 2 STORY)		09/28/18	SCD
FD02.03	END & SIDE WALL PORCHES (OFF-FRAME FOUNDATION)	MD-120	09/28/18	SCD
Floor (FL)				
FL01.01	FLOOR CONSTRUCTION - GENERAL NOTES		09/28/18	SCD
FL02.01	FLOOR W/ 2x JOISTS - FRAMING & PLAN NOTES	MF-100	09/28/18	SCD
FL02.02	STAIR OPENING FRAMING - W/ 2x LUMBER JOISTS	MF-110	09/28/18	SCD
FL02.03	STAIR DETAILS		09/28/18	SCD
FL03.01	FLOOR - OPEN JOIST 2000, FRAMING PLAN & NOTES	MF-100	09/28/18	SCD
FL03.02	FLOOR - OPEN JOIST 2000, FRAMING DETAILS	MF-120	09/28/18	SCD
Wall (WA)				
WA01.01	WALL CONSTRUCTION (GENERAL NOTES)		09/28/18	SCD
WA02.01	RANCH WALL CONSTRUCTION		09/28/18	SCD
WA02.02	1½ & 2 STORY SIDEWALLS		09/28/18	SCD
WA02.03	1½ & 2 STORY MATE WALLS		09/28/18	SCD
WA02.04	1½ STORY GABLE END WALLS		09/28/18	SCD
WA03.01	STUD CHARTS - 1, 1½ & 2 STORY		09/28/18	SCD
WA03.02	INTERIOR NON-LOAD BEARING WALLS		09/28/18	SCD
WA03.51	HIGH WIND STUD CHARTS	MW-100	09/28/18	SCD
WA05.01	RANCH, UPPER 2 STORY SIDEWALL HEADERS	MW-105	09/28/18	SCD
WA05.02	1½ & LOWER 2 STORY SIDEWALL HEADERS	MW-105	09/28/18	SCD
WA05.11	RANCH, UPPER 2 STORY LVL HEADERS	MW-150	05/11/16	SCD
WA05.12	1½ & LOWER 2 STORY LVL HEADERS	MW-150	05/11/16	SCD
WA05.51	HIGH WIND SIDEWALL HEADERS	MW-105	09/28/18	SCD
WA06.01	LAY FLAT & END WALL HEADERS / SILLS	MW-105	09/28/18	SCD
Wall (WA) - CONTINUED				
WA08.01	JACK & JAMB WALL STUDS	MW-110	09/28/18	SCD
WA08.51	HIGH WIND JAMB STUDS	MW-110	09/28/18	SCD
WA10.01	SIDE & MATE WALL UPLIFT STRAPS	MW-105	09/28/18	SCD
WA12.01	LOWER OF 2 STORY HEADER CHARTS	MW-115	09/28/18	SCD
WA20.01	TYPICAL BAY CONSTRUCTION	MW-120	09/28/18	SCD
WA20.02	TYPICAL BAY CONSTRUCTION		09/28/18	SCD
WA20.03	TYPICAL BAY CONSTRUCTION		09/28/18	SCD
WA20.04	TYPICAL BAY CONSTRUCTION	MW-120	09/28/18	SCD
WA20.05	TYPICAL BAY CONSTRUCTION	MW-120	09/28/18	SCD
Main Wind Force Resisting System-MWFRS (SW)				
SW01.01	MAIN WIND FORCE RESISTING SYSTEM - GENERAL NOTES		09/28/18	SCD
SW02.01	SHEARWALL PANEL LAYOUT - PRESCRIPTIVE PROCEEDURE		09/28/18	SCD
SW02.02	ROOF DIAPHRAGM / BRACED WALL LINES - PRESCRIPTIVE PROCEEDURES		09/28/18	SCD
SW02.03	BRACED WALL PANELS - PRESCRIPTIVE PROCEEDURES		09/28/18	SCD
SW02.04	BRACED WALL PANELS (CONT.) - PRESCRIPTIVE PROCEEDURES		09/28/18	SCD
SW02.05	BRACED WALL CONNECTIONS - PRESCRIPTIVE PROCEEDURES		09/28/18	SCD
SW03.01	SIMPLIFIED WALL BRACING PROCEEDURE		09/28/18	SCD
SW45.01	ROOF DIAPHRAGM FASTENING	SW-105	09/28/18	SCD
SW45.02	ROOF DIAPHRAGM RANCH (STAPLES & NAILS)	SW-100	09/28/18	SCD
SW50.01	SHEAR WALL FASTENING	SW-105	09/28/18	SCD
SW50.02	RANCH SIDEWALL - STAPLES (140 TO 180 MPH)	SW-110	09/28/18	SCD
SW50.03	RANCH END WALL - STAPLES & NAILS (140 TO 180 MPH)	SW-115	09/28/18	SCD
SW50.04	ENDWALL CHART INTERPOLATION		09/28/18	SCD
SW55.01	HIGH WIND WALL & ROOF CONNECTIONS		09/28/18	SCD
SW55.02	FOUNDATION UPLIFT STRAPS		09/28/18	SCD
SW55.03	HIGH WIND FIELD CONNECTIONS	RF-120	09/28/18	SCD
SW55.04	HIGH WIND PORCH DETAIL	SW-120	09/28/18	SCD
Roof (RF)				
RF01.01	GENERAL NOTES - ROOF / CEILING		09/28/18	SCD
RF02.01	ROOF SYSTEM (TYPICAL)		09/28/18	SCD
RF03.01	ROOF RIDGE BEAM DETAILS		09/28/18	SCD
RF03.02	ROOF RIDGE BEAM SPAN CHART (2.0e LVL)	RF-100	09/28/18	SCD
RF03.03	ROOF RIDGE BEAM SPAN CHART (2x SAWN LUMBER)	RF-105	09/28/18	SCD
RF04.01	ENDWALL OVERHANG OUTLOOKERS	RF-110	09/28/18	SCD
RF04.02	ENDWALL OVERHANG LADDER	RF-110	09/28/18	SCD
RF05.01	TYPICAL CROSS-SECTION (HINGED ROOF TRUSS)		09/28/18	SCD
RF05.02	HINGED TRUSS & FILLER WEDGE DETAILS	RF-115	09/28/18	SCD
RF05.03	HINGED TRUSS / RIDGE CAP CONNECTION	RF-115	09/28/18	SCD
RF05.04	ROOF VENTILATION REQUIREMENTS	RF-120	09/28/18	SCD
RF06.01	ROOF DORMER	RF-125	09/28/18	SCD
RF06.02	DORMER DETAILS	RF-125	09/28/18	SCD
RF08.01	CAPE TRUSS CONNECTION DETAILS		09/28/18	SCD
RF08.02	CAPE TRUSS STAIR FRAMING (ROOF / CEILING)		09/28/18	SCD
RF08.03	CAPE TRUSS DORMER DETAILS (ROOF / CEILING)		09/28/18	SCD
RF08.04	CAPE TRUSS COLLAR TIE CONNECTION	RF-200	09/28/18	SCD
RF08.05	1.5 STORY COLLAR TIE CONNECTION		09/28/18	SCD
Exterior (EX)				
EX01.01	PORCH - GENERAL NOTES	ME-100	09/28/18	SCD
EX02.01	RECESSED SIDE PORCH	ME-100	09/28/18	SCD
EX02.02	RECESSED SIDE PORCH	ME-100	09/28/18	SCD
EX03.01	END PORCH & DETAILS	ME-100	09/28/18	SCD

CHAMPION

MANUFACTURED BEAUTIFULLY™

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PHONE: 248-614-8200

ENGINEER'S / ARCHITECT'S SEAL

COLORADO LICENSED
STEVEN C. DAME
53094
PROFESSIONAL ENGINEER

11/01/2021

APPROVER'S SEAL

PFS

Reviewed: October 8, 2018

Reviewed by:
James A. Rothman, PE
PFS Corporation - QC Dept.

MODIFICATIONS

TITLE:
IRC 2018
DRAWING INDEX

MODEL:

DATE: 09/28/18	SCALE:
DRAWN BY: CORP.	CHECKED BY:
BLDG CODE:	
CALCS:	

FILENAME: 1-INDEX 2018

SHEET NO.:
ID00.00

PAGE: 1 OF 1

GENERAL NOTES: (PER IRC 2018)

1. THE ACTUAL FOUNDATION IS DEPENDENT UPON UNIQUE SITE CONDITIONS WHICH REQUIRES 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. FINISH GRADE TO BE A MINIMUM 8" BELOW TOP OF FOUNDATION WALL.
7. MASONRY WEEP HOLES, FLASHING, AND TIE STRAPS ARE SUBJECT TO LOCAL CODE REQUIREMENTS.
8. ALL FOUNDATION WALLS LOCATED IN A HIGH WATER TABLE SHALL BE WATERPPROOFED PER IRC REQUIREMENTS. ALL OTHER FOUNDATIONS SHALL BE DAMP PROOFED PER IRC REQUIREMENTS.
9. ALL BASEMENTS SHALL HAVE AT LEAST ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING(S) PER IRC R310.
10. 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 2018.

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.

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Reviewed: October 8, 2018
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James A. Rothman, PE
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MODIFICATIONS

TITLE:
GENERAL NOTES
FOUNDATION

MODEL:

DATE: 09/28/18	SCALE:
DRAWN BY: CORP.	CHECKED BY:
BLDG CODE: IRC 2018	
CALCS:	

FILENAME: 8-FOUNDATION SECTION IRC 2018

SHEET NO.:
FD01.01

PAGE: 1 OF 1

RANCH HIGH SNOW DESIGN SPECIFICATIONS

DESIGN CRITERIA:

GROUND SNOW LOAD:	180 PSF MAX.
ROOF DEAD LOAD:	30 PSF
OVERHANG LENGTH:	18" MAX.
WIND SPEED:	180 MPH V_{ULT} MAX. (3 SEC GUST, EXP.C)

NOTES:
1. ALL LUMBER SHALL BE SPF#2 UNLESS OTHERWISE NOTED.
2. ALL LVL SHALL BE F_B = 3,100 PSI , Fv= 285PSI, 2.0E
3. VALUES SHOWN IN TABLES ARE STUD LENGTH ONLY AND DO NOT INCLUDE WALL PLATES.
4. VALUES FOR SPANS ARE CLEAR SPAN.
5. SEE REFERENCED PAGE OF SYSTEMS MANUAL FOR INFORMATION NOT SHOWN.

2x6 EXTERIOR WALL STUD

		END ZONE	INTERIOR ZONE
WIND (MPH)	STUD GRADE	STUD SPACING (IN)	
		16	16
180	SPF #2	115	124

RANCH JACK STUD CHART
MAXIMUM SIDEWALL OPENING (FT.)

		2x6 SPF#2				
		GROUND SNOW LOAD (PSF)				
	PLY(S)	100	120	140	160	180
9' SIDEWALLS (MAX.)	1	17	14	12	10	9
	2	36	29	26	21	19

RANCH PORCH POST REQUIREMENTS
MAXIMUM SPAN (FT.)

GROUND SNOW LOAD (PSF)	POST HEIGHT 108" MAX
	(3) 2x6's
180	8'-0"

*SPANS BASED ON CENTER POST, CORNER POST SPANS MAY BE DOUBLED.
(IE: NO CENTER POST IF HEADER WILL SPAN)

POST MATERIAL SHALL BE:
(3) PLY SPF #2 (MIN.), FASTENED TOGETHER WITH PVA GLUE AND 7/16x2½"x15 GA. STAPLES @ 12" O.C.

(3) PLY SIDEWALL LUMBER HEADER CHART

			SPECIES	SPF#2				
			HEADER SIZE	GROUND SNOW LOAD / ROOF LIVE LOAD (PSF)				
				100 / 77	120 / 92.4	140 / 107.8	160 / 123.2	180 / 138.6
TRIPLE PLY HEADER	FLOOR WIDTH	140" (MAX)	2x4	41 / 1	38 / 1	36 / 1	34 / 1	32 / 1
			2x6	60 / 1	56 / 1	53 / 1	50 / 1	48 / 1
			2x8	79 / 1	74 / 1	69 / 2	66 / 2	63 / 2
			2x10	97 / 2	91 / 2	85 / 2	81 / 2	77 / 2
			2x12	113 / 2	106 / 2	99 / 2	94 / 2	90 / 2
		160" (MAX)	2x4	39 / 1	36 / 1	34 / 1	32 / 1	31 / 1
			2x6	57 / 1	53 / 1	50 / 1	47 / 1	45 / 1
			2x8	75 / 1	70 / 2	66 / 2	62 / 2	59 / 2
			2x10	92 / 2	86 / 2	81 / 2	77 / 2	73 / 2
			2x12	107 / 2	100 / 2	94 / 2	89 / 2	85 / 2
		182" (MAX)	2x4	37 / 1	34 / 1	32 / 1	30 / 1	29 / 1
			2x6	54 / 1	50 / 1	47 / 1	45 / 1	43 / 1
			2x8	71 / 2	66 / 2	62 / 2	59 / 2	56 / 2
			2x10	87 / 2	81 / 2	77 / 2	73 / 2	69 / 2
			2x12	101 / 2	95 / 2	89 / 2	85 / 2	81 / 2

. NOTE: NUMBER OF JACK STUDS IN CHART IS BASED ON BEARING AREA REQUIREMENTS, NUMBER OF JACK STUDS MAY HAVE TO BE INCREASED BASED ON THE NUMBER OF STRAPS REQUIRED.

(3) PLY SIDEWALL LVL HEADER CHART

			SPECIES	LVL 2.0E (F_B = 3,100 PSI)				
			HEADER SIZE	GROUND SNOW LOAD / ROOF LIVE LOAD (PSF)				
				100 / 77	120 / 92.4	140 / 107.8	160 / 123.2	180 / 138.6
TRIPLE PLY HEADER	FLOOR WIDTH	140" (MAX)	3½	59 / 1	56 / 1	53 / 1	51 / 1	49 / 1
			5½	93 / 2	89 / 2	84 / 2	80 / 2	77 / 2
			7¼	123 / 2	117 / 2	111 / 2	106 / 2	102 / 2
			9¼	157 / 2	149 / 2	142 / 3	136 / 3	130 / 3
			11¼	181 / 3	181 / 3	173 / 3	165 / 3	159 / 3
		160" (MAX)	3½	57 / 1	54 / 1	51 / 1	49 / 1	47 / 1
			5½	90 / 2	85 / 2	81 / 2	78 / 2	75 / 2
			7¼	118 / 2	113 / 2	107 / 2	102 / 2	98 / 2
			9¼	151 / 2	144 / 3	137 / 3	131 / 3	126 / 3
			11¼	181 / 3	175 / 3	167 / 3	159 / 3	153 / 4
		182" (MAX)	3½	55 / 1	52 / 1	50 / 1	47 / 1	46 / 2
			5½	86 / 2	82 / 2	78 / 2	75 / 2	72 / 2
			7¼	114 / 2	109 / 2	103 / 2	99 / 3	95 / 3
			9¼	146 / 3	139 / 3	132 / 3	126 / 3	121 / 3
			11¼	177 / 3	169 / 3	161 / 3	153 / 4	146 / 4

*NOTE: NUMBER OF JACK STUDS IN CHART IS BASED ON BEARING AREA REQUIREMENTS, NUMBER OF JACK STUDS MAY HAVE TO BE INCREASED BASED ON THE NUMBER OF STRAPS REQUIRED.

LVL RIDGE BEAM CALCULATION

		SPECIES	LVL 2.0E (F_B = 3,100 PSI)				
		BEAM SIZE (IN.)	GROUND SNOW LOAD / ROOF LIVE LOAD (PSF)				
			100 / 77	120 / 92.4	140 / 107.8	160 / 123.2	180 / 138.6
FLOOR WIDTH	140" (MAX.)	7-1/4	81 / 3	76 / 3	71 / 3	68 / 3	64 / 3
		7-7/8	88 / 3	82 / 3	77 / 3	73 / 3	70 / 3
		8-5/8	95 / 3	89 / 3	84 / 3	80 / 4	76 / 4
		9-1/4	102 / 3	95 / 3	90 / 4	85 / 4	81 / 4
		11-**1/4**	123 / 4	115 / 4	108 / 4	103 / 5	98 / 5
		11-7/8	129 / 4	121 / 4	114 / 4	108 / 5	103 / 5
		14	151 / 5	141 / 5	133 / 5	126 / 5	120 / 6
		16	171 / 5	160 / 5	151 / 6	143 / 6	136 / 6
		18	192 / 6	179 / 6	169 / 6	160 / 7	153 / 7
		20	212 / 6	198 / 7	187 / 7	177 / 7	169 / 8
		24	252 / 7	235 / 8	222 / 8	210 / 9	200 / 9
	160" (MAX.)	7-1/4	76 / 3	71 / 3	67 / 3	63 / 3	58 / 3
		7-7/8	82 / 3	76 / 3	72 / 3	68 / 4	63 / 4
		8-5/8	89 / 3	83 / 3	79 / 4	74 / 4	69 / 4
		9-1/4	95 / 3	89 / 4	84 / 4	80 / 4	74 / 4
		11-**1/4**	115 / 4	107 / 4	101 / 5	96 / 5	90 / 5
		11-7/8	121 / 4	113 / 5	106 / 5	101 / 5	96 / 5
		14	141 / 5	132 / 5	124 / 5	118 / 6	112 / 6
		16	160 / 5	150 / 6	141 / 6	134 / 6	128 / 7
		18	179 / 6	168 / 6	158 / 7	150 / 7	143 / 8
		20	198 / 7	185 / 7	174 / 7	165 / 8	158 / 8
		24	235 / 8	220 / 8	207 / 9	197 / 9	187 / 10
	182" (MAX.)	7-1/4	71 / 3	66 / 3	61 / 3	57 / 3	53 / 3
		7-7/8	77 / 3	72 / 3	67 / 4	62 / 4	57 / 4
		8-5/8	84 / 3	78 / 4	73 / 4	68 / 4	63 / 4
		9-1/4	89 / 4	84 / 4	79 / 4	72 / 4	67 / 4
		11-**1/4**	108 / 4	101 / 5	95 / 5	88 / 5	82 / 5
		11-7/8	113 / 4	106 / 5	100 / 5	93 / 5	87 / 5
		14	132 / 5	124 / 6	117 / 6	110 / 6	102 / 6
		16	150 / 6	140 / 6	132 / 7	126 / 7	117 / 7
		18	168 / 6	157 / 7	148 / 7	140 / 8	132 / 8
		20	186 / 7	174 / 8	164 / 8	155 / 8	146 / 9
		24	221 / 8	206 / 9	194 / 9	184 / 10	176 / 10

CHAMPION
HOME BUILDERS
755 W. BIG BEAVER ROAD, SUITE 1000 TROY, MI 48084
PHONE: 248-614-8200

ENGINEER'S / ARCHITECT'S SEAL

COLORADO LICENSED
STEVEN C. DAME
53094
PROFESSIONAL ENGINEER
04/12/2021

APPROVER'S SEAL

MODIFICATIONS
A. UPDATED ALL WIND LOADS TO 180MPH, EXP. C SCD, 11/30/2020

TITLE:
HIGH SNOW SPAN TABLES

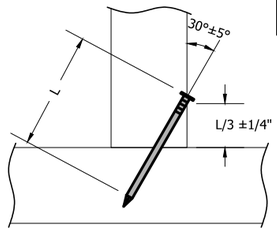
MODEL:

DATE: 06/15/2020 | SCALE:
DRAWN BY: CORP. | CHECKED BY:
BLDG CODE: IRC 2018
CALCS: HS-100A

FILENAME: 15-SPECIAL SECTION IRC 2018
SHEET NO.:
SP01.01A
PAGE: 1 OF 1

GENERAL NOTES:

1. THIS FASTENING SCHEDULE TO BE USED FOR ALL COMPONENTS UNLESS NOTED OTHERWISE.
2. FASTENING SCHEDULE IS BASED ON SPF LUMBER MINIMUM.
3. WHEN GLUE IS SPECIFIED, 80% MINIMUM COVERAGE IS TO BE USED UNLESS SPECIFIED OTHERWISE. GLUE TO CONFORM TO ASTM C557.
4. ALL FASTENERS ARE MINIMUM. LARGER FASTENERS AND/OR CLOSER SPACING MAY BE USED PROVIDED THEY DO NOT DAMAGE THE STRUCTURAL MEMBER.
5. FASTENER SPACING MAY VARY 25% AS LONG AS THE REQUIRED QUANTITY OVER A GIVEN DISTANCE IS MAINTAINED. EXAMPLE: IF FASTENER SPACING IS CALLED OUT 8" O.C. BUT ACTUAL SPACING IS 10" BETWEEN (2) FASTENERS THAN O.K. IF (4) FASTENERS EFFECTIVE WITHIN 32" SPACING.
6. "TOED" FASTENERS TO BE INSTALLED AT A 30° ANGLE WITH THE RECEIVING MEMBER AND START APPROXIMATELY 1/3 THE LENGTH FROM MEMBER END. STAPLES SHALL NOT BE "TOED" (SEE FIGURE A THIS SHEET).
7. FOR STAPLES NOT SPECIFIED ON THIS DRAWING SEE APPLICABLE DETAILS IN THIS PACKAGE.



EITHER TOE-NAIL OR TOE-SCREW.
(TOE-STAPLING IS NOT ALLOWED)

A TOE-NAIL DETAIL

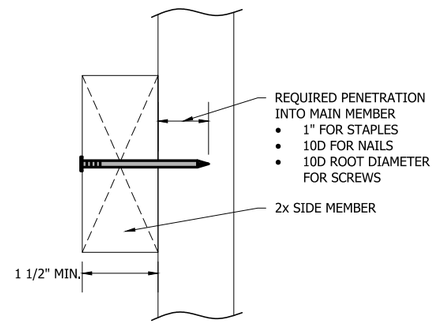
FASTENER SUBSTITUTION NOTES:

1. THE SHOWN SUBSTITUTION CHART IS APPLICABLE TO ALL LUMBER SPECIES.
2. FOR TOE-FASTENING DETAILS SEE "FIGURE A" ABOVE, WHERE "L" IS THE LENGTH OF THE FASTENER.
3. THE EDGE DISTANCE, END DISTANCE AND FASTENER SPACING SHALL BE SUFFICIENT TO PREVENT THE SPLITTING OF THE WOOD.
4. FOR REQUIRED PENETRATION DETAILS SEE "FIGURE B" THIS SHEET.
5. DURATION FACTOR = 1.0 FOR ALL LOAD CAPACITIES.
6. APPLICABLE CODES NDS 2018 (NAILS & SCREWS) & ESR-1539 (STAPLES)

SUBSTITUTION METHOD (2x MATERIAL ONLY):

1. CHART IS ONLY VALID WHERE BOTH THE MEMBERS IN SINGLE SHEAR ARE OF THE SAME SPECIES AND 2" NOMINAL IN THICKNESS.
2. MULTIPLY THE NUMBER OF THE FASTENERS SPECIFIED BY THE MULTIPLIER SHOWN IN THE TABLE BELOW IN THE COLUMN UNDER THE FASTENER DESIRED TO OBTAIN THE EQUIVALENT NUMBER OF FASTENERS DESIRED.
3. IF THE FASTENER SPACING IS SPECIFIED ON THE APPROVED DRAWING, DIVIDE THE SPACING SPECIFIED BY THE BELOW 'MULTIPLIER' TO OBTAIN THE SUBSTITUTE FASTENER SPACING.

	FASTENER DESIRED																	
FASTENER SPECIFIED	15 GA. STAPLE	14 GA. STAPLE	0.099x2¼" NAIL	0.113x2¼" NAIL	0.113x2½" NAIL	0.120x3" NAIL	0.120x3¼" NAIL	0.131x2½" NAIL	0.131x3" NAIL	0.131x3¼" NAIL	0.135x3½" NAIL	0.148x3" NAIL	0.148x3¼" NAIL	0.162x3½" NAIL	#8 SCREW	#10 SCREW	#12 SCREW
15 GA. STAPLE	1.0	0.9	1.2	0.9	0.8	0.6	0.6	0.7	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4
14 GA. STAPLE	1.1	1.0	1.3	1.0	0.9	0.7	0.7	0.8	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.5	0.4
0.099x2¼" NAIL	0.8	0.8	1.0	0.8	0.7	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.4	0.3	0.5	04	0.3
0.113x2¼" NAIL	1.1	1.0	1.3	1.0	0.9	0.7	0.7	0.8	0.6	0.6	0.5	0.5	0.5	0.4	0.6	0.5	0.4
0.113x2½" NAIL	1.3	1.1	1.5	1.1	1.0	0.8	0.8	0.9	0.7	0.7	0.6	0.5	0.5	0.5	0.7	0.6	0.5
0.120x3" NAIL	1.6	1.5	1.9	1.5	1.3	1.0	1.0	1.1	0.8	0.8	0.8	0.7	0.7	0.6	0.9	0.7	0.6
0.120x3¼" NAIL	1.6	1.5	1.9	1.5	1.3	1.0	1.0	1.1	0.8	0.8	0.8	0.7	0.7	0.6	0.9	0.7	0.6
0.131x2½" NAIL	1.5	1.3	1.8	1.3	10.2	0.9	0.9	1.0	0.8	0.8	0.8	0.6	0.6	0.6	0.8	0.6	0.6
0.131x3" NAIL	1.9	1.7	2.3	1.7	1.5	1.2	1.2	1.3	1.0	1.0	0.7	0.8	0.8	0.7	1.0	0.8	0.8
0.131x3¼" NAIL	1.9	1.7	2.3	1.7	1.5	1.2	1.2	1.3	1.0	1.0	0.9	0.8	0.8	0.7	1.0	0.8	0.8
0.135x3½" NAIL	2.1	1.9	2.5	1.9	1.6	1.3	1.3	1.4	1.1	1.1	0.9	0.9	0.9	0.8	1.1	0.9	0.8
0.148x3" NAIL	2.3	2.1	2.8	2.1	1.8	1.4	1.4	1.6	1.2	1.2	1.1	1.0	1.0	0.9	1.3	1.0	0.9
0.148x3¼" NAIL	2.3	2.1	2.8	2.1	1.8	1.4	1.4	1.6	1.2	1.2	1.1	1.0	1.0	0.9	1.3	1.0	0.9
0.162x3½" NAIL	2.6	2.3	3.1	2.3	2.0	1.6	1.6	1.8	1.3	1.3	1.3	1.1	1.1	1.0	1.4	1.1	1.0
#8 SCREW	DO NOT SUBSTITUTE STAPLES OR NAILS FOR SCREWS UNLESS IT IS SPECIFIED ON THE APPROVED DRAWING														1.0	0.8	0.7
#10 SCREW															1.0	1.0	0.9
#12 SCREW															1.4	1.1	1.0



B NAIL PENETRATION DETAIL

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

ENGINEER'S / ARCHITECT'S SEAL

COLORADO LICENSED
STEVEN C. DAME
53094
PROFESSIONAL ENGINEER
11/7/2022

APPROVER'S SEAL

PFS®
Reviewed: October 8, 2018
Reviewed by:
James A. Rothman, PE
PFS Corporation - QC Dept.

MODIFICATIONS

TITLE:
GENERAL NOTES / FASTENER SUBSTITUTION
FASTENING

MODEL:

DATE: 09/28/18	SCALE:
DRAWN BY: CORP.	CHECKED BY:
BLDG CODE: IRC 2018	
CALCS: FA-100	

FILENAME: FASTENING
SHEET NO.:
FA01.01
PAGE: 1 OF 1

REScheck Software Version 4.7.2

Compliance Certificate

Project 05-865-HERBERT

Energy Code:	**2015 IECC**
Location:	**Yampa, Colorado**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,712 ft2**
Glazing Area	**13%**
Climate Zone:	**7 (9316 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
18195 Hwy 131
Yampa, CO 80483

Owner/Agent:

Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **0.4% Better Than Code** Maximum UA: **225** Your UA: **224**

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

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Ceiling 1: Flat Ceiling or Scissor Truss	1,856	50.0	0.0	0.026	0.026	48	48
Wall 1: Wood Frame, 16" o.c.	1,488	21.0	0.0	0.057	0.045	70	56
Window 1: Vinyl/Fiberglass Frame:Double Pane with Low-E	171			0.250	0.320	43	55
Door 1: Solid	43			0.290	0.320	12	14
Door 2: Glass	40			0.320	0.320	13	13
Rim Joist: Wood Frame, 16" o.c.	186	21.0	0.0	0.057	0.045	11	8
Crawl 1: Solid Concrete or Masonry Wall height: 4.0' Depth below grade: 3.0' Insulation depth: 4.0'	744	0.0	18.0	0.048	0.055	27	31

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 IECC requirements in RES*check* Version 4.7.2 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Shaun Penne	Shaun Penne	9/14/2023
Name - Title	Signature	Date

2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	**21.00**
Below-Grade Wall	**18.00**
Floor	**0.00**
Ceiling / Roof	**50.00**
Ductwork (unconditioned spaces):	R-8 (Return Air Grill)

Glass & Door Rating	U-Factor	SHGC
Window	**0.25**	
Door	**0.29**	

Heating & Cooling Equipment		Efficiency
Heating System:	E2EB015H	100
Cooling System:		
Water Heater:	40 Electric - E40-2 RH95	0.95

Name: Shaun Penne **Date:** 9/11/2023

Comments