STATE OF COLORADO
Cover Sheet for Building Specifications & QA Manual

Jan-2019

Name of Manufacturer: Family Built Homes **Plant I.D. Number:** 3516

Complete Address: 982 Rundell Road Gering, NE 69341

Contact Name: Ethan Bellairs **Contact Number:** (308)-633-0048

Contact Email address: ethanb@familybuilthomes.com

Third Party Inspection Agency: Nebraska Public Service Commission

For more detailed information on this plan approval please contact the Division of Housing

Model Name/No.

FB-SHD-3266

Sq. Footage Finished: 2002

Sq. Footage Unfinished:

Approval Stamp

State of Colorado
Division of Housing

May 24 2022

APPROVED PLANS
Subject to field inspection
AC INSPECTION REQUIRED

EXPIRES: 6/1/2022

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.

DIV. OF HOUSING, 1313 SHERMAN STREET, RM 320, DENVER, CO. 80203 (303) 864-7836 Fax (303) 864-7857

AC (alternative construction) INSPECTION REQUIRED NOTICE

The following is based on information provided to the Codes Section and may be modified based on the actual findings of the field inspection.

DATE May 24, 2022

MANUFACTURER: Family Built Homes ID NO.: 3516

CONTACT: Ethan Bellairs FAX NO.:

MODEL NO.: FB-SHD3266 P/A NO.: 517439AC

INSPECTION REQUIREMENTS:

Check on-site

AC INSPECTION REQUIREMENTS:

For site work with materials and parts provided by factory related to the code compliance of the structure. Check on-site installation/finishing of:

1) Installation shingles, Cora-vent/ridgecap shingles at hing/peak locations.
2) Completion of D.W.V. (tub, water closet, lavatory, washer), exhaust fan x4 vent, as needed, through roof.
3) Installation of 7/16 O.S.B. at gable end walls.
4) Installation of housewrap.
5) Exhaust of dryer vent to exterior.

LOCAL INSPECTION REQUIREMENTS (L.I.R.):

Check OSBO work with materials and parts not provided by the modular factory. Some items included are:

1) Foundation for modular structure.
2) Insulation installed OSBO in foundation meets minimum set by rescheck calculation.
3) Completion of radon vent connection OSBO.
4) Whole house ventilation, as required by blower test, to be completed OSBO.

Site Address:_____

The local building department by signing this form takes responsibility for inspecting the site built construction stated above to approved plans and current codes.
Normal permits and fees for these inspections are to be per the local jurisdiction.
State approved plans for Factory Built Construction may be obtained from the Builder/Manufacturer

Building Official Printed Name_____

Building Official Signature_____**Date**_____

Fire Safety Official Printed Name_____

Fire Safety Official Signature_____**Date**_____

Local jurisdiction may check box to defer inspection to the Division of Housing, ☐ Initials_____ or DOH approved Inspector.
A copy of this Notice must be included with the installation instructions and shipped with the unit.

Please direct questions to DOH Engineer, @ 303-864-7835

SPECS COVER SHEET

PAGE INDEX

DATE	REVISION	BY

Family Built Homes
Gering Industrial Site
982 Rundell Road
Gering, NE 69341
Phone: (308)633-0050

SCALE N.T.S.	DATE 11-21	JOB FB-3252-5
DRAWN	CHECKED	
TITLE	MODEL COVER SHEET	DRAWING NO.

REScheck Software Version 4.7.2

Compliance Certificate

Project FB-SHD3266

Energy Code:	**2015 IECC**
Location:	**Steamboat Springs, Colorado**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**1,902 ft2**
Glazing Area	**22%**
Climate Zone:	**7 (9779 HDD)**
Permit Date:	
Permit Number:	

Construction Site: Owner/Agent: Designer/Contractor:

Compliance: Passes using UA trade-off

Compliance: **3.6% Better Than Code** Maximum UA: **332** Your UA: **320**

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	2,002	50.0	0.0	0.026	0.026	52	52
Wall 1: Wood Frame, 16" o.c.	1,830	21.0	0.0	0.057	0.045	79	63
Window 1: Vinyl/Fiberglass Frame:Double Pane with Low-E	165			0.280	0.320	46	53
Window 2: Vinyl/Fiberglass Frame:Double Pane with Low-E	10			0.280	0.320	3	3
Window 3: Vinyl/Fiberglass Frame:Double Pane with Low-E	37			0.280	0.320	10	12
Window 4: Vinyl/Fiberglass Frame:Double Pane with Low-E	20			0.280	0.320	6	6
Window 6: Vinyl/Fiberglass Frame:Double Pane with Low-E	4			0.280	0.320	1	1
Door 1: Solid	44			0.140	0.320	6	14
Door 2: Glass	160			0.300	0.320	48	51
Basement Wall 1: Solid Concrete or Masonry Wall height: 8.0' Depth below grade: 7.0' Insulation depth: 8.0'	1,541	19.0	0.0	0.045	0.050	69	77

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.

Jacob Cowan - Draftsman		4/27/22
Name - Title	Signature	Date

2015 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Above-Grade Wall	**21.00**
Below-Grade Wall	**19.00**
Floor	**0.00**
Ceiling / Roof	**50.00**
Ductwork (unconditioned spaces):	R-8

Glass & Door Rating	U-Factor	SHGC
Window	**0.28**	
Door	**0.30**	

Heating & Cooling Equipment	Efficiency
Heating System: Electric Cove Heating	100%
Cooling System: OSBO	
Water Heater: Electric OSBO	100%

Name: Jacob Cowan **Date:** 4/27/22

Comments

Family Built Homes
Gering, Nebraska

CALCULATIONS PREPARED BY
Family Built Homes
RC

ELECTRICAL LOAD CALCULATIONS (200 AMP MINIMUM)

LIGHTING AND SMALL APPLIANCE LOAD

MODEL:	FB-6003			
BOX WIDTH	30.33	FT		
BOX LENGTH	60.00	FT		

GENERAL LIGHTING LOAD

FLOOR AREA	1820	SF x 3 WATTS PER SF	5459	WATTS
TOTAL AMPS	5459	WATTS / 120 VOLTS =	45	AMPS
NUMBER OF 15 AMP CIRCUITS REQUIRED =			3.03	CIRCUITS
NUMBER OF 15 AMP CIRCUITS PROVIDED =			6	CIRCUITS (Min)

SMALL APPLIANCE LOAD

NUMBER OF KITCHEN AND DINING 20 AMP CIRCUITS =	3	CIRCUITS
NUMBER OF ADDITIONAL 20 AMP CIRCUITS =	3	CIRCUITS
LAUNDRY 20 AMP CIRCUIT =	1	CIRCUIT
TOTAL WATTS (1500 WATTS PER CIRCUIT) =	10500	WATTS

TOTAL LOADS			FEEDER	
GENERAL LIGHTING	=		5459	WATTS
SMALL APPLIANCE/LAUNDRY	=		10500	WATTS
FREE STANDING RANG	=		11500	WATTS
DRYER	=		5600	WATTS
DISHWASHER	=		756	WATTS
WATER HEATER	=		4500	WATTS
MICROWAVE OVEN	=		1600	WATTS
DISPOSAL	=		690	WATTS
FURNACE MOTOR	=	Gas	610	WATTS
AIR CONDITION	=		7800	WATTS
			=========	
TOTAL			49015	WATTS
FIRST 10000 WATTS AT 100%			10000	WATTS
REMAINDER AT 40%			15606	WATTS
FURNACE: ELECTRIC =	0	kw @ 65%	0	WATTS
			=========	
TOTAL			25606	WATTS
AMPERAGE			106.69	AMPS
MINIMUM PANEL SIZE			200	AMPS

NEUTRAL CALCULATION

GENERAL LIGHTING	=		5459	WATTS
SMALL APPLIANCE/LAUNDRY	=		10500	WATTS
			=========	
TOTAL	=		15959.4	WATTS
FIRST 3000 WATTS AT 100%	=		3000	WATTS
REMAINDER AT 35%	=		4536	WATTS
			=========	
TOTAL	=		7536	WATTS
FREE STANDING RANG	=	AT 70%	8050	WATTS
DRYER	=	AT 70%	3920	WATTS
DISHWASHER	=		756	WATTS
MICROWAVE OVEN	=		1600	WATTS
GARBAGE DISPOSAL	=		690	WATTS
FURNACE MOTOR	=		610	WATTS
AIR CONDITION	=		7800	WATTS
WATER HEATER	=		4500	WATTS
			=========	
TOTAL			35462	WATTS

AMPERAGE 147.75746 AMPS

9-3.1

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Project Summary
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

Project Information

For: LISCOTT HOMES
CASTLE ROCK, CO

Notes:

Design Information

Weather: Craig, Creig-Moffit Field, CO, US

Winter Design Conditions

Outside db	***-15***	°F
Inside db	68	°F
Design TD	83	°F

Summer Design Conditions

Outside db	88	°F
Inside db	75	°F
Design TD	13	°F
Daily range	H	
Relative humidity	50	%
Moisture difference	-44	gr/lb

Heating Summary

Structure	34390	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	34390	Btuh

Sensible Cooling Equipment Load Sizing

Structure	14494	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.93	
Equipment sensible load	13479	Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	1995	1995
Volume (ft³)	17959	17959
Air changes/hour	0.14	0.07
Equiv. AVF (cfm)	42	21

Latent Cooling Equipment Load Sizing

Structure	-484	Btuh
Ducts	0	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	0	Btuh
Equipment Total Load (Sen+Lat)	13479	Btuh
Req. total capacity at 0.70 SHR	1.6	ton

Heating Equipment Summary

Make		
Trade		
Model		
AHRI ref	n/a	
Efficiency	100	EFF
Heating input	0	Btuh
Heating output	34037	Btuh
Temperature rise	0	°F
Actual air flow	0	cfm
Air flow factor	0	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

Cooling Equipment Summary

Make		
Trade		
Cond		
Coil		
AHRI ref		
Efficiency	0	SEER
Sensible cooling	0	Btuh
Latent cooling	0	Btuh
Total cooling	0	Btuh
Actual air flow	845	cfm
Air flow factor	0.058	cfm/Btuh
Static pressure	0	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.

AED Assessment
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

Project Information

For: LISCOTT HOMES
CASTLE ROCK, CO

Design Conditions

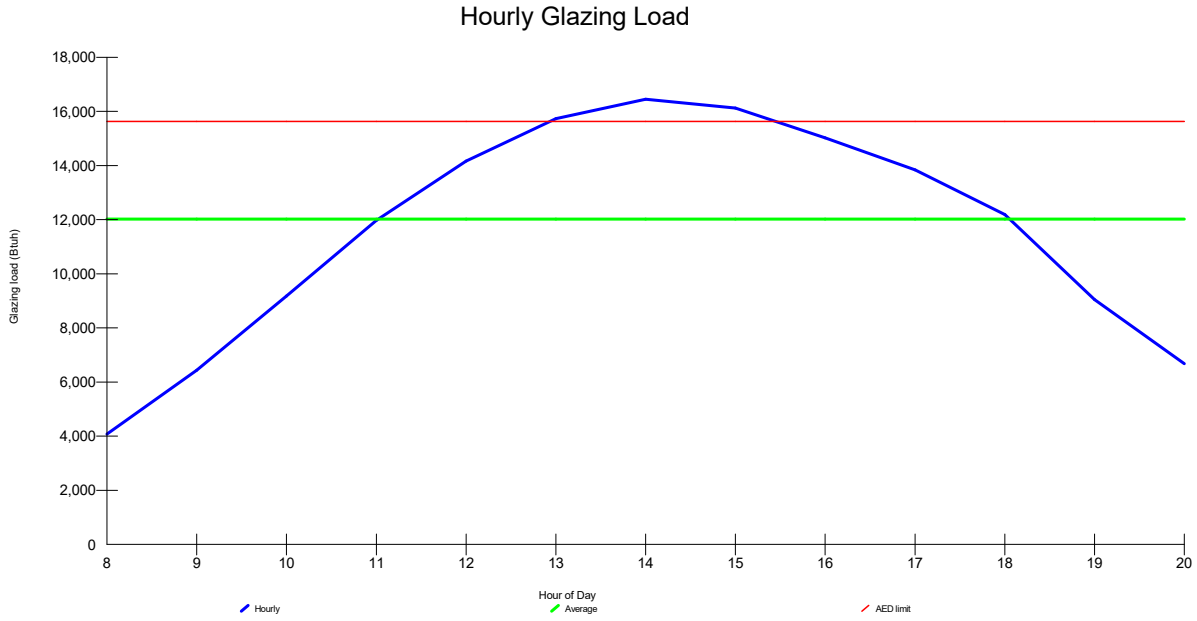
Location:
Craig, Creig-Moffit Field, CO, US
Elevation: ***6732*** ft
Latitude: 41°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	***-15***	88
Daily range (°F)	-	30 (H)
Wet bulb (°F)	-	57
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	68	75
Design TD (°F)	83	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	63.1	-43.6

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 36.9%.

House does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 825 Btuh (PFG - 1.3*AFG)

Bold/italic values have been manually overridden

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Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

							Entire House				MASTER BEDROOM			
1	Room name													
2	Exposed wall						229.5 ft				31.8 ft			
3	Room height						9.0 ft				9.0 ft		heat/cool	
4	Room dimensions										16.7 x 15.0 ft			
5	Room area						1995.4 ft²				250.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	591	486	2623	262	2	2	8	1
.	├──G	4A4-2ov	0.470	n	39.01	14.76	84	0	3267	1236	0	0	0	0
.	└──D	11P0	0.290	n	24.07	5.65	21	21	505	119	0	0	0	0
.	W	12F-0sw	0.065	e	5.39	0.54	440	410	2209	221	135	105	566	57
11	└──G	4A4-2ov	0.470	e	39.01	48.47	30	0	1170	1454	30	0	1170	1454
	W	12F-0sw	0.065	s	5.39	0.54	597	395	2128	213	150	105	566	57
	└──G	4A4-2ov	0.470	s	39.01	25.10	203	0	7900	5083	45	0	1755	1130
	W	12F-0sw	0.065	w	5.39	0.54	438	372	2009	201	0	0	0	0
	├──G	4A4-2ov	0.470	w	39.01	48.47	45	0	1755	2181	0	0	0	0
	└──D	11P0	0.290	w	24.07	5.65	21	21	505	119	0	0	0	0
	C	16B-50ad	0.020	-	1.66	0.86	1995	1995	3312	1716	250	250	415	215
	F	19C-0bscp	0.368	-	2.02	0.32	1995	1995	4022	630	250	250	504	79
6	c) AED excursion									825				-161
	Envelope loss/gain								31408	14260			4986	2830
12	a) Infiltration								2982	234			414	32
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								34390	14494			5399	2863
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								34390	14494			5399	2863
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								34390	14494			5399	2863
	Air required (cfm)								0	845			0	167

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

wrightsoft®

Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

		LIVING ROOM	2ND BEDROOM
1	Room name		
2	Exposed wall	30.3 ft	33.8 ft
3	Room height	9.0 ft heat/cool	9.0 ft heat/cool
4	Room dimensions	30.3 x 15.0 ft	18.8 x 15.0 ft
5	Room area	455.0 ft²	282.5 ft²

	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	0	0	0	0	0	0	0	0
.	├─G	4A4-2ov	0.470	n	39.01	14.76	0	0	0	0	0	0	0	0
.	└─D	11P0	0.290	n	24.07	5.65	0	0	0	0	0	0	0	0
.	W	12F-0sw	0.065	e	5.39	0.54	0	0	0	0	0	0	0	0
11	└─G	4A4-2ov	0.470	e	39.01	48.47	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	5.39	0.54	273	161	866	87	170	125	672	67
	└─G	4A4-2ov	0.470	s	39.01	25.10	113	0	4389	2824	45	0	1755	1130
	W	12F-0sw	0.065	w	5.39	0.54	0	0	0	0	135	105	566	57
	├─G	4A4-2ov	0.470	w	39.01	48.47	0	0	0	0	30	0	1170	1454
	└─D	11P0	0.290	w	24.07	5.65	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.66	0.86	455	455	755	391	283	283	469	243
	F	19C-0bscp	0.368	-	2.02	0.32	455	455	917	144	283	283	569	89
6	c) AED excursion									658				208
	Envelope loss/gain								6927	4104			5202	3248
12	a) Infiltration								394	31			440	34
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								7321	4135			5642	3282
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								7321	4135			5642	3282
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								7321	4135			5642	3282
	Air required (cfm)								0	241			0	191

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

wrightsoft

Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

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							W.I.C. 8.2 ft 9.0 ft heat/cool 7.7 x 11.3 ft 86.9 ft²				MASTER BATH 26.8 ft 9.0 ft heat/cool 1.0 x 146.0 ft 146.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	69	69	372	37	77	73	392	39
.	├─G	4A4-2ov	0.470	n	39.01	14.76	0	0	0	0	4	0	146	55
.	└─D	11P0	0.290	n	24.07	5.65	0	0	0	0	0	0	0	0
.	W	12F-0sw	0.065	e	5.39	0.54	0	0	0	0	138	138	745	74
11	└─G	4A4-2ov	0.470	e	39.01	48.47	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	5.39	0.54	5	5	24	2	0	0	0	0
	└─G	4A4-2ov	0.470	s	39.01	25.10	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	5.39	0.54	0	0	0	0	27	27	148	15
	├─G	4A4-2ov	0.470	w	39.01	48.47	0	0	0	0	0	0	0	0
	└─D	11P0	0.290	w	24.07	5.65	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.66	0.86	87	87	144	75	146	146	242	126
	F	19C-0bscp	0.368	-	2.02	0.32	87	87	175	27	146	146	294	46
6	c) AED excursion									-9				-24
	Envelope loss/gain								716	132			1968	332
12	a) Infiltration								106	8			349	27
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								822	141			2317	359
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								822	141			2317	359
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								822	141			2317	359
	Air required (cfm)								0	8			0	21

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

wrightsoft

Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

		MAIN BATH	LAUNDRY
1	Room name		
2	Exposed wall	0 ft	29.5 ft
3	Room height	9.0 ft heat/cool	9.0 ft heat/cool
4	Room dimensions	6.8 x 10.8 ft	14.2 x 15.3 ft
5	Room area	74.0 ft²	217.2 ft²

	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	0	0	0	0	128	107	575	57
.	G	4A4-2ov	0.470	n	39.01	14.76	0	0	0	0	0	0	0	0
.	D	11P0	0.290	n	24.07	5.65	0	0	0	0	21	21	505	119
.	W	12F-0sw	0.065	e	5.39	0.54	0	0	0	0	0	0	0	0
11	G	4A4-2ov	0.470	e	39.01	48.47	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	5.39	0.54	0	0	0	0	0	0	0	0
	G	4A4-2ov	0.470	s	39.01	25.10	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	5.39	0.54	0	0	0	0	138	102	550	55
	G	4A4-2ov	0.470	w	39.01	48.47	0	0	0	0	15	0	585	727
	D	11P0	0.290	w	24.07	5.65	0	0	0	0	21	21	505	119
	C	16B-50ad	0.020	-	1.66	0.86	74	74	123	64	217	217	361	187
	F	19C-0bscp	0.368	-	2.02	0.32	74	74	149	23	217	217	438	69
6	c) AED excursion									-5				290
	Envelope loss/gain								272	82			3519	1623
12	a) Infiltration								0	0			383	30
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								272	82			3903	1653
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								272	82			3903	1653
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								272	82			3903	1653
	Air required (cfm)								0	5			0	96

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

wrightsoft

Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

							DINING				KITCHEN			
1	Room name													
2	Exposed wall						32.7 ft				33.3 ft			
3	Room height						9.0 ft			heat/cool	9.0 ft			heat/cool
4	Room dimensions							1.0 x 194.5 ft				18.0 x 15.3 ft		
5	Room area						194.5 ft²				276.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	155	95	510	51	162	142	766	77
.	├─G	4A4-2ov	0.470	n	39.01	14.76	60	0	2341	885	20	0	780	295
.	└─D	11P0	0.290	n	24.07	5.65	0	0	0	0	0	0	0	0
.	W	12F-0sw	0.065	e	5.39	0.54	140	140	753	75	0	0	0	0
11	└─G	4A4-2ov	0.470	e	39.01	48.47	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	5.39	0.54	0	0	0	0	0	0	0	0
	└─G	4A4-2ov	0.470	s	39.01	25.10	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	5.39	0.54	0	0	0	0	138	138	745	74
	├─G	4A4-2ov	0.470	w	39.01	48.47	0	0	0	0	0	0	0	0
	└─D	11P0	0.290	w	24.07	5.65	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.66	0.86	194	194	323	167	276	276	458	237
	F	19C-0bscp	0.368	-	2.02	0.32	194	194	392	61	276	276	556	87
6	c) AED excursion									-79				-50
	Envelope loss/gain								4318	1161			3305	721
12	a) Infiltration								424	33			433	34
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								4742	1194			3738	755
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								4742	1194			3738	755
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								4742	1194			3738	755
	Air required (cfm)								0	70			0	44

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

wrightsoft®

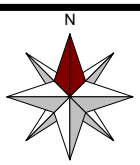
Right-J® Worksheet
Entire House
Family Built Homes

Job:
Date: Mar 05, 2022
By:

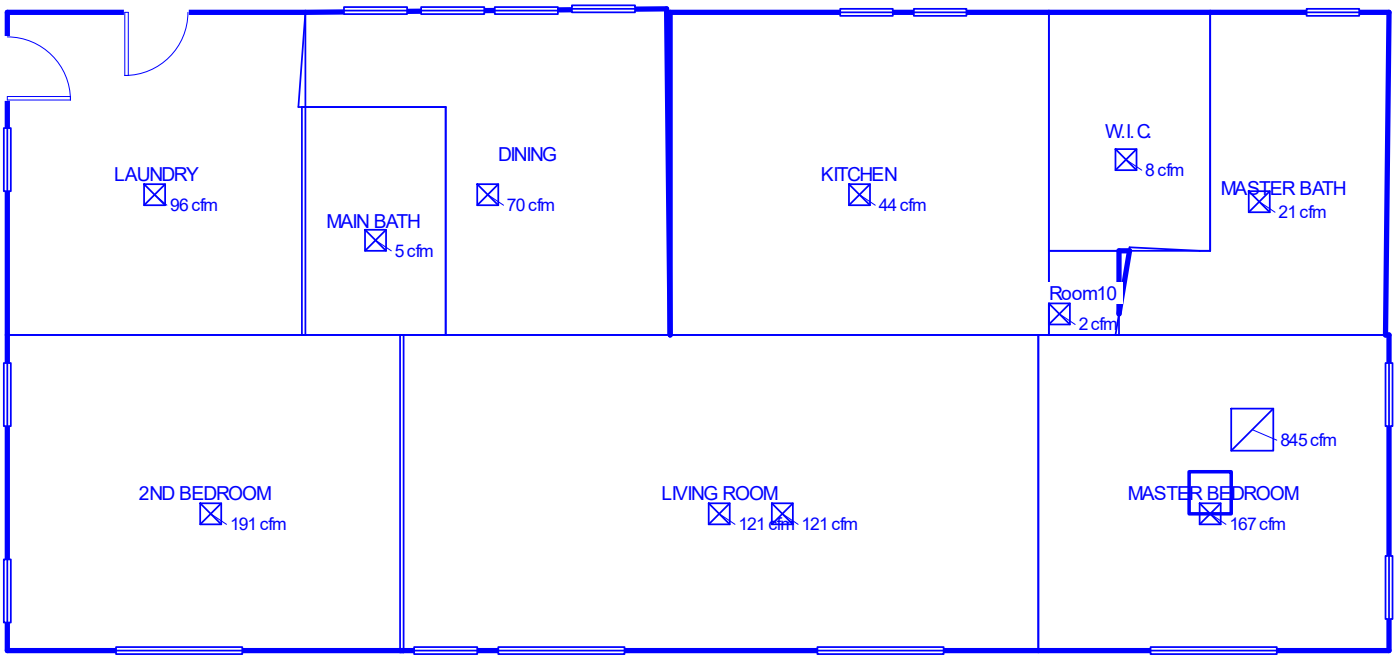
982 Rundell Road, Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 Email: nipf@familybuilthomes.com Web: www.familybuilthomes.com

1	Room name						Room10								
2	Exposed wall						3.0 ft								
3	Room height						9.0 ft				heat/cool				
4	Room dimensions							3.3	x	4.0	ft				
5	Room area						13.3 ft²								
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	5.39	0.54	0	0	0	0				
.	├──G	4A4-2ov	0.470	n	39.01	14.76	0	0	0	0				
.	└──D	11P0	0.290	n	24.07	5.65	0	0	0	0				
.	W	12F-0sw	0.065	e	5.39	0.54	27	27	146	15				
11	└──G	4A4-2ov	0.470	e	39.01	48.47	0	0	0	0				
	W	12F-0sw	0.065	s	5.39	0.54	0	0	0	0				
	└──G	4A4-2ov	0.470	s	39.01	25.10	0	0	0	0				
	W	12F-0sw	0.065	w	5.39	0.54	0	0	0	0				
	├──G	4A4-2ov	0.470	w	39.01	48.47	0	0	0	0				
	└──D	11P0	0.290	w	24.07	5.65	0	0	0	0				
	C	16B-50ad	0.020	-	1.66	0.86	13	13	22	11				
	F	19C-0bscp	0.368	-	2.02	0.32	13	13	27	4				
6	c) AED excursion									-2				
	Envelope loss/gain								195	28				
12	a) Infiltration								39	3				
	b) Room ventilation								0	0				
13	Internal gains:	Occupants @	230				0			0				
		Appliances/other								0				
	Subtotal (lines 6 to 13)								234	31				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								234	31				
15	Duct loads						-0%	0%	0	0				
	Total room load								234	31				
	Air required (cfm)								0	2				

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



Level 1



Job #: **Performed for:** LISCOTT HOMES CASTLE ROCK, CO	**Family Built Homes** 982 Rundell Road Gering, NE 69341 Phone: 308-633-0056 Fax: 308-633-0059 www.familybuilthomes.com nipf@familybuilthomes.com	Scale: 1 : 110 Page 1 Right-Suite® Universal 2021 21.0.10 RSU64210 2022-Mar-05 10:41:33 ...\Heiter\Heiter ACCA heatloss.rup

Job	Truss	Truss Type	Qty	Ply	Family Built Homes 223
93643	F494502	FLOOR	1	1	FB-148

Universal Forest Products Inc., Grand Rapids, MI 49525, Tom Craig — 8.220 e Aug 13 2018 MiTek Industries, Inc. Sun Oct 7 15:43:38 2018 Page 1 of 1

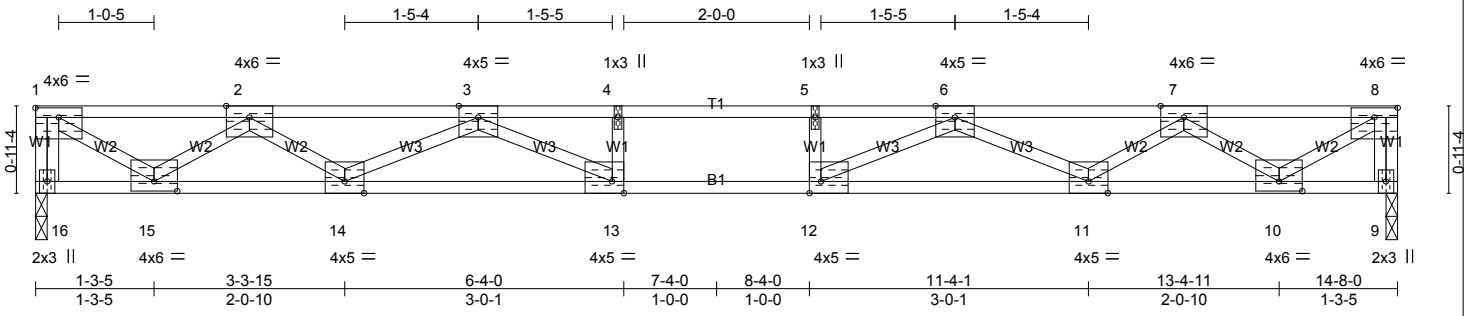


Plate Offsets (X,Y)-- [1:Edge,0-1-4], [8:Edge,0-1-4], [10:0-3-0,0-1-4], [12:0-1-8,Edge], [13:0-1-8,Edge], [15:0-3-0,0-1-4]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.40	Vert(LL)	-0.22	12-13	>778	480	MT20	197/144
TCDL	10.0	Lumber DOL	1.00	BC	0.65	Vert(CT)	-0.31	12-13	>567	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.34	Horz(CT)	0.05	9	n/a	n/a		
BCDL	5.0	Code IBC2018/TPI2014		Matrix-R							Weight: 54 lb	FT = 5%F, 5%E

LUMBER-
TOP CHORD 2x4 SPF 1650F 1.5E(flat)
BOT CHORD 2x4 SPF 1650F 1.5E(flat)
WEBS 2x4 SPF No.2(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals[P]
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (lb/size) 16=793/0-1-8 (min. 0-1-8), 9=793/0-1-8 (min. 0-1-8)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-16=-784/0, 8-9=-784/0, 1-2=-991/0, 2-3=-2389/0, 3-4=-3453/0, 4-5=-3453/0, 5-6=-3453/0, 6-7=-2389/0, 7-8=-991/0
BOT CHORD 15-16=0/0, 14-15=0/1859, 13-14=0/3082, 12-13=0/3453, 11-12=0/3082, 10-11=0/1859, 9-10=0/0
WEBS 4-13=-249/0, 5-12=-249/0, 1-15=0/1213, 2-15=-1107/0, 2-14=0/676, 3-14=-796/0, 3-13=0/708, 8-10=0/1213, 7-10=-1107/0, 7-11=0/676, 6-11=-796/0, 6-12=0/708

NOTES-
1) Unbalanced floor live loads have been considered for this design.
2) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 16, 9.
3) This truss is designed in accordance with the 2018 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
4) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
5) This truss is designed in accordance with the 2012 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
6) This truss is designed in accordance with the 2015 IBC Sec 2306.1 and referenced standard ANSI/TPI 1
7) Revision to F494501-89633; changed code.

LOAD CASE(S) Standard

10/8/2018

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.

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

Universal Forest Products®

Job	Truss	MFG	Customer
93643	F494502	223	FAMILY BUILT HOMES

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

Job	Truss	Truss Type	Qty	Ply	Family Built Homes 223
107796	C0773101	MONO SCISSOR	1	1	32 wide Shed 45psf

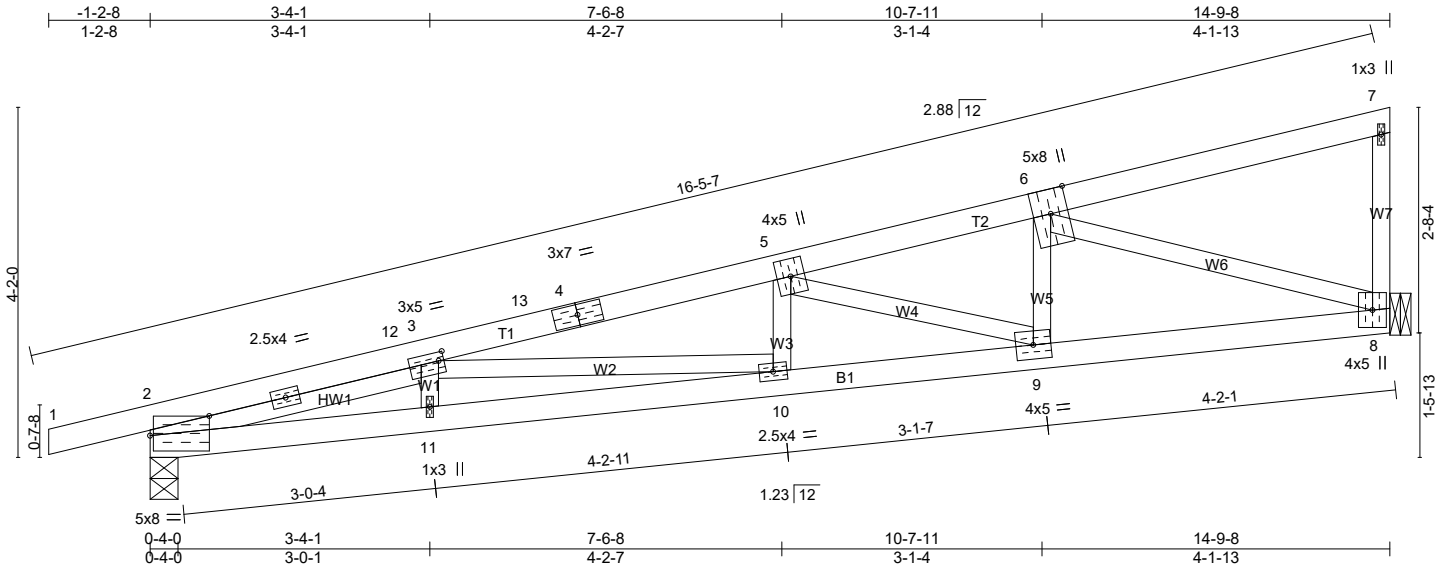


Plate Offsets (X,Y)-- [2:0-8-8,Edge], [3:0-0-12,0-1-4]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	45.0	Plate Grip DOL	1.15	TC	0.69	Vert(LL)	-0.23	10-11	>766	240	MT20	197/144
(Roof Snow=45.0)		Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.31	10-11	>559	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.98	Horz(CT)	0.07	8	n/a	n/a		
BCLL	0.0 *	Code IBC2018/TPI2014		Matrix-RH							Weight: 52 lb	FT = 5%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x3 SPF No.3 *Except*
W6: 2x3 SPF No.2
SLIDER Left 2x3 SPF No.3 -d 3-4-1

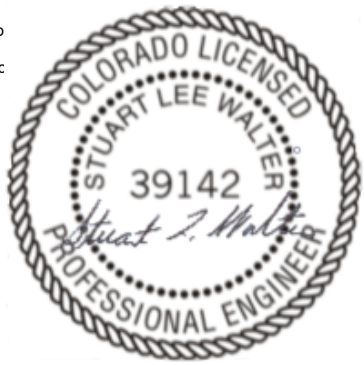
BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-3-9 oc purlins, except end verticals. [PB]
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

REACTIONS. (lb/size) 2=1095/0-4-0 (min. 0-1-15), 8=947/Mechanical
Max Horz 2=187(LC 8)
Max Uplift 2=-227(LC 6), 8=-207(LC 8)
Max Grav 2=1232(LC 2), 8=1207(LC 2)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-14/0, 2-12=-3651/1120, 3-12=-3530/1121, 3-13=-3334/995, 4-13=-3284/997, 4-5=-3276/1004, 5-6=-2130/624, 6-7=-81/45, 7-8=-255/117
BOT CHORD 2-11=-1308/3406, 10-11=-1312/3413, 9-10=-1148/3205, 8-9=-713/2037
WEBS 3-11=0/135, 5-10=-4/178, 6-9=-142/593, 3-10=-286/162, 5-9=-1231/460, 6-8=-2141/748

NOTES-
1) Wind: ASCE 7-16; Vult=126mph (3-second gust) Vasd=100mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3E) -1-2-8 to 1-9-8, Exterior(2N) 1-9-8 to 11-8-4, Corner(3E) 11-8-4 to 14-8-4 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=45.0 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 20.0 psf or 2.00 times flat roof load of 45.0 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 b chord and any other members.
7) Bearing at joint(s) 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surfac
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 227 lb uplift at joint 2 and 207 lb uplift at joint 8.
9) 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



2/14/2022

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

UFP INDUSTRIES

Job	Truss	MFG	Customer
107796	C0773101	223	FAMILY BUILT HOMES

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design 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.

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

Job	Truss	Truss Type	Qty	Ply	Family Built Homes 223
107796	C0773201	MONO SCISSOR	1	1	32 wide Shed 45psf

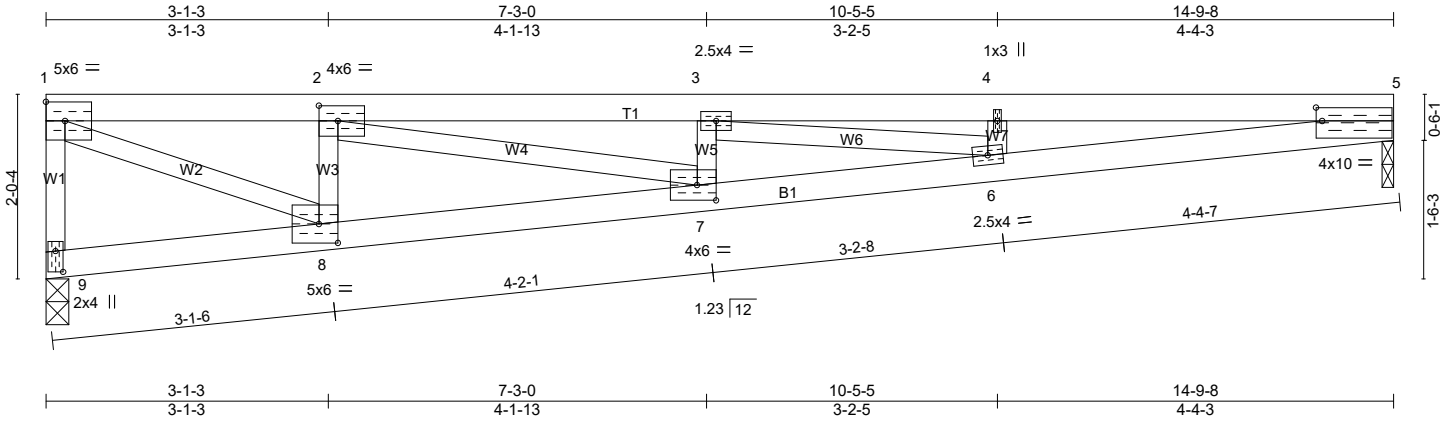

Plate Offsets (X,Y)-- [2:0-2-8,0-2-0], [5:0-0-13,0-1-12], [7:0-2-8,0-2-0], [8:0-2-8,0-2-8], [9:0-2-12,0-1-0]

LOADING (psf)		**SPACING-**	2-0-0	**CSI.**		**DEFL.**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
TCLL	45.0	Plate Grip DOL	1.15	TC	0.77	Vert(LL)	-0.39	6-7	>452	240	MT20	197/144
(Roof Snow=45.0)		Lumber DOL	1.15	BC	0.97	Vert(CT)	-0.57	6-7	>314	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.04	5	n/a	n/a		
BCLL	0.0 *	Code IBC2018/TPI2014		Matrix-RH							Weight: 45 lb	FT = 5%
BCDL	10.0											

LUMBER-
TOP CHORD 2x4 SPF 1650F 1.5E
BOT CHORD 2x4 SPF 1650F 1.5E
WEBS 2x3 SPF No.3 *Except*
W4,W2: 2x3 SPF No.2

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.[PB]
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

REACTIONS. (lb/size) 9=964/0-3-0 (min. 0-1-8), 5=964/0-1-8 (min. 0-1-8)
Max Uplift9=-185(LC 6), 5=-185(LC 6)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-9=-941/549, 1-2=-1755/980, 2-3=-3641/2034, 3-4=-4264/2381, 4-5=-4264/2381
BOT CHORD 8-9=-3/8, 7-8=-987/1766, 6-7=-2043/3659, 5-6=-2415/4320
WEBS 2-8=-914/607, 3-7=-534/375, 4-6=-392/323, 2-7=-1083/1939, 3-6=-355/636, 1-8=-1083/1940

NOTES-
1) Wind: ASCE 7-16; Vult=126mph (3-second gust) Vasd=100mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3) 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=45.0 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) Provide adequate drainage to prevent water ponding.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * 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.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 185 lb uplift at joint 9 and 185 lb uplift at joint 5.
7) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 9, 5.
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

2/14/2022

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

UFP INDUSTRIES

Job	Truss	MFG	Customer
107796	C0773201	223	FAMILY BUILT HOMES

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

Job	Truss	Truss Type	Qty	Ply	Family Built Homes 223
107796	G0356601	GABLE	1	1	32 wide Shed 45psf

UFP Industries Inc., Grand Rapids, MI 49525, Tom Craig — 8.430 e Jan 4 2021 MiTek Industries, Inc. Thu Sep 30 13:54:06 2021 Page 1 of 1

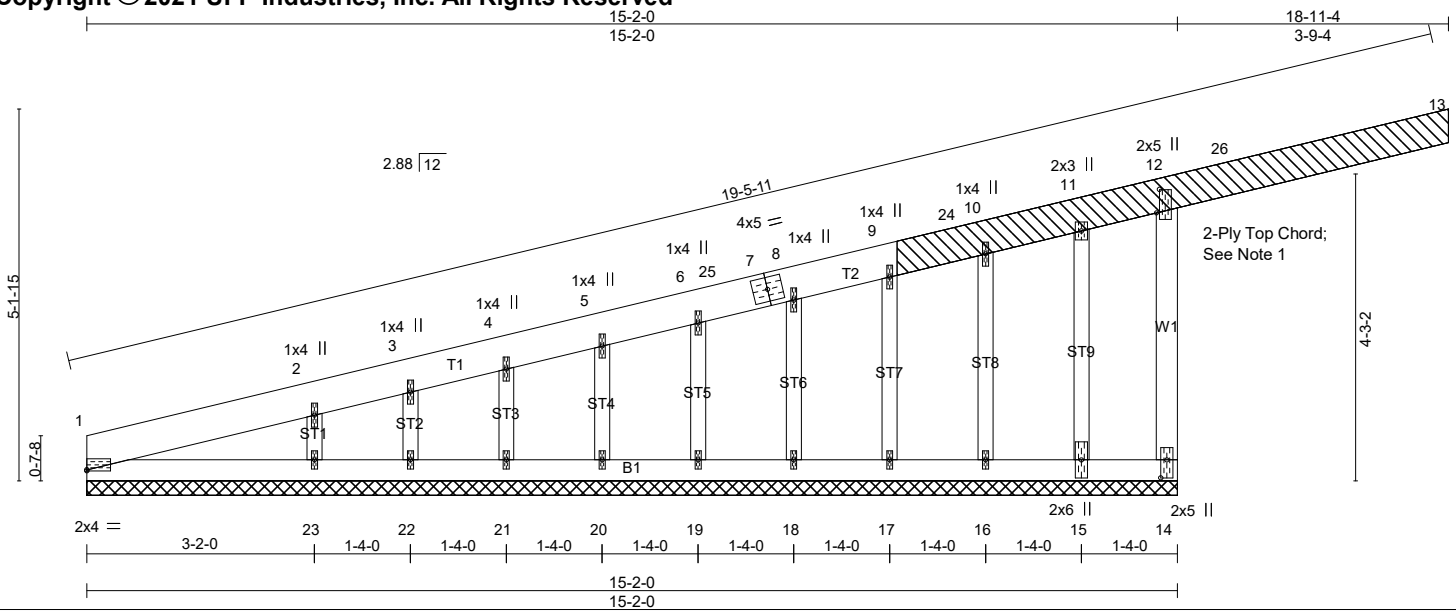

Plate Offsets (X,Y)-- [1:Edge,0-0-3], [12:0-3-15,0-0-8], [14:0-3-0,0-1-0]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	45.0	Plate Grip DOL	1.15	TC	0.66	Vert(LL)	-0.06	12-13	n/r	120	MT20	197/144
(Roof Snow=45.0)		Lumber DOL	1.15	BC	0.06	Vert(CT)	-0.09	12-13	n/r	90		
TCDL	10.0	Rep Stress Incr	YES	WB	0.41	Horz(CT)	0.00	14	n/a	n/a		
BCLL	0.0 *	Code IBC2018/TPI2014		Matrix-P							Weight: 85 lb	FT = 5%
BCDL	10.0											

LUMBER-
TOP CHORD 2x6 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x3 SPF No.3 *Except*
W1: 2x4 SPF No.2
OTHERS 2x3 SPF No.3
LBR SCAB 9-13 2x6 SPF No.2 one side

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (lb/size) 1=170/15-2-0 (min. 0-4-6), 14=1058/15-2-0 (min. 0-4-6), 15=-225/15-2-0 (min. 0-4-6), 16=-9/15-2-0 (min. 0-4-6), 17=183/15-2-0 (min. 0-4-6), 18=186/15-2-0 (min. 0-4-6), 19=173/15-2-0 (min. 0-4-6), 20=173/15-2-0 (min. 0-4-6), 21=180/15-2-0 (min. 0-4-6), 22=88/15-2-0 (min. 0-4-6), 23=407/15-2-0 (min. 0-4-6)
Max Horz 1=242(LC 7)
Max Uplift14=-358(LC 7), 15=-638(LC 12), 16=-292(LC 12), 17=-40(LC 6), 18=-41(LC 8), 19=-37(LC 8), 20=-38(LC 6), 21=-34(LC 6), 22=-25(LC 8), 23=-98(LC 8)
Max Grav 1=170(LC 1), 14=1806(LC 12), 15=124(LC 7), 16=53(LC 7), 17=241(LC 2), 18=239(LC 2), 19=191(LC 2), 20=173(LC 1), 21=180(LC 1), 22=88(LC 2), 23=407(LC 2)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-269/62, 2-3=-195/2, 3-4=-180/18, 4-5=-155/18, 5-6=-143/18, 6-25=-133/0, 7-25=-131/2, 7-8=-129/23, 8-9=-121/15, 9-24=-110/5, 10-24=-108/12, 10-11=-115/75, 11-12=-136/236, 12-26=-183/0, 13-26=-140/0, 12-14=-1797/825
BOT CHORD 1-23=-38/95, 22-23=-38/95, 21-22=-38/95, 20-21=-38/95, 19-20=-38/95, 18-19=-38/95, 17-18=-38/95, 16-17=-38/95, 15-16=-38/95, 14-15=-38/95
WEBS 11-15=-236/666, 10-16=-60/319, 9-17=-214/98, 8-18=-212/100, 6-19=-164/90, 5-20=-148/90, 4-21=-148/90, 3-22=-81/49, 2-23=-341/231

NOTES-
1) Attached 7-11-15 scab 9 to 13, front face(s) 2x6 SPF No.2 with 2 row(s) of 10d (0.131"x3") nails spaced 9" o.c.except : starting at 0-3-3 from end at joint 9, nail 2 row(s) at 4" o.c. for 5-6-7.
2) Wind: ASCE 7-16; Vult=126mph (3-second gust) Vasd=100mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3E) 0-0-0 to 3-2-0, Exterior(2N) 3-2-0 to 15-11-4, Corner(3E) 15-11-4 to 18-11-4 zone; end vertical right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only.
4) TCLL: ASCE 7-16; Pf=45.0 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
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 20.0 psf or 2.00 times flat roof load of 45.0 psf on overhangs non-concurrent with other loads.
7) All plates are 1x3 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 1-4-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * 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 chord and any other members.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 358 lb uplift at joint 14, 638 lb uplift at joint 15, 292 lb uplift 16, 40 lb uplift at joint 17, 41 lb uplift at joint 18, 37 lb uplift at joint 19, 38 lb uplift at joint 20, 34 lb uplift at joint 21, 25 lb uplift at joint 22 and 98 lb uplift 23.
13) 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

2/14/2022

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

UFP INDUSTRIES

Job	Truss	MFG	Customer
107796	G0356601	223	FAMILY BUILT HOMES

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design 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.

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

Job	Truss	Truss Type	Qty	Ply	Family Built Homes 223
107796	M1173201	MONO TRUSS	1	1	32 wide Shed 45psf

UFP Industries Inc., Grand Rapids, MI 49525, Tom Craig — 8.430 e Jan 4 2021 MiTek Industries, Inc. Thu Sep 30 13:46:43 2021 Page 1 of 1

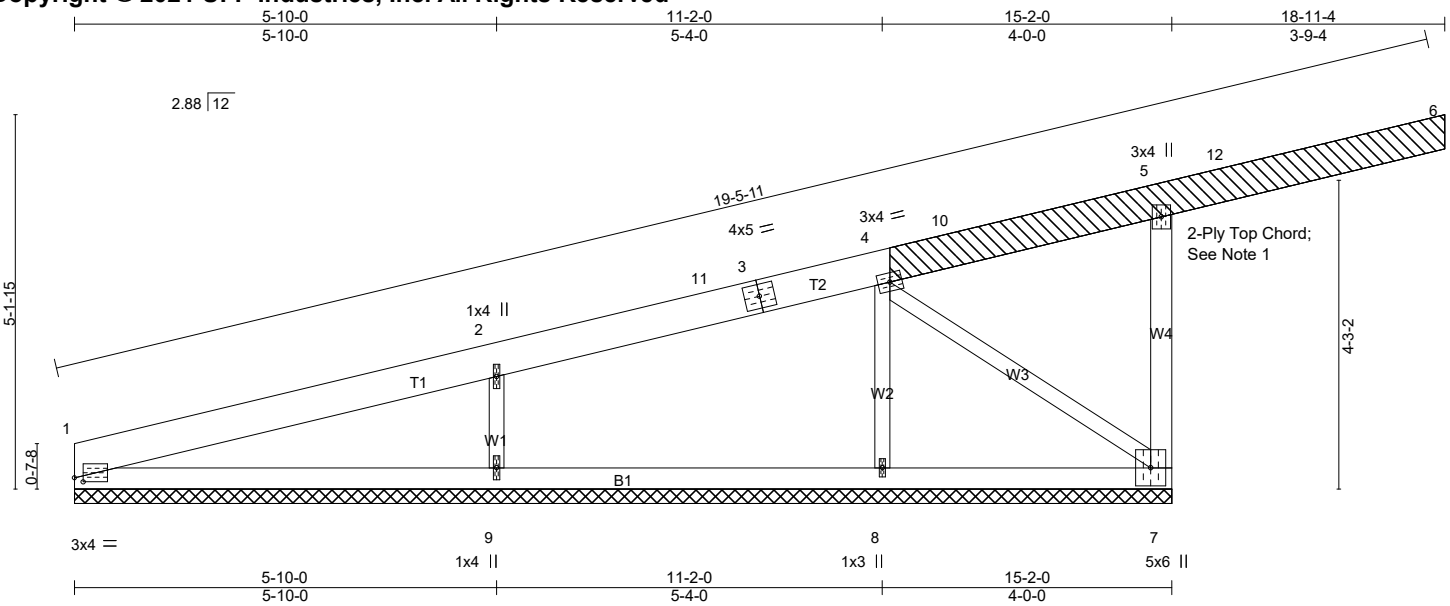

Plate Offsets (X,Y)-- [1:0-1-7,0-0-11]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	45.0	Plate Grip DOL	1.15	TC	0.64	Vert(LL)	-0.08	5-6	n/r	120	MT20	197/144
(Roof Snow=45.0)		Lumber DOL	1.15	BC	0.25	Vert(CT)	-0.11	5-6	n/r	90		
TCDL	10.0	Rep Stress Incr	YES	WB	0.25	Horz(CT)	-0.00	7	n/a	n/a		
BCLL	0.0 *	Code IBC2018/TPI2014		Matrix-P							Weight: 77 lb	FT = 5%
BCDL	10.0											

LUMBER-
TOP CHORD 2x6 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x3 SPF No.3 *Except*
W4: 2x4 SPF No.2
OTHERS 2x6 SPF No.2
LBR SCAB 4-6 2x6 SPF No.2 one side

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.[PC]
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS. (lb/size) 1=306/15-2-0 (min. 0-4-6), 7=896/15-2-0 (min. 0-4-6), 9=876/15-2-0 (min. 0-4-6), 8=306/15-2-0 (min. 0-4-6)
Max Horz 1=242(LC 7)
Max Uplift 1=-31(LC 6), 7=-273(LC 7), 9=-197(LC 8), 8=-258(LC 12)
Max Grav 1=306(LC 1), 7=1255(LC 12), 9=900(LC 2), 8=371(LC 2)

FORCES. (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-178/73, 2-11=-129/38, 3-11=-112/41, 3-4=-112/49, 4-10=-123/98, 5-10=-114/131, 5-12=-183/0, 6-12=-140/0, 5-7=-1263/635
BOT CHORD 1-9=-56/40, 8-9=-56/40, 7-8=-56/40
WEBS 2-9=-770/473, 4-8=-276/353, 4-7=-51/103

NOTES-
1) Attached 7-11-15 scab 4 to 6, front face(s) 2x6 SPF No.2 with 2 row(s) of 10d (0.131"x3") nails spaced 9" o.c.except : starting at 2-10-4 from end at joint 4, nail 2 row(s) at 7" o.c. for 2-11-5.
2) Wind: ASCE 7-16; Vult=126mph (3-second gust) Vasd=100mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Corner(3E) 0-0-0 to 3-0-0, Exterior(2N) 3-0-0 to 15-11-4, Corner(3E) 15-11-4 to 18-11-4 zone; end vertical right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pf=45.0 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
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 20.0 psf or 2.00 times flat roof load of 45.0 psf on overhangs non-concurrent with other loads.
6) Gable requires continuous bottom chord bearing.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * 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 b chord and any other members.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 31 lb uplift at joint 1, 273 lb uplift at joint 7, 197 lb uplift at joi and 258 lb uplift at joint 8.
10) 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

2/14/2022

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

UFP INDUSTRIES

Job	Truss	MFG	Customer
107796	M1173201	223	FAMILY BUILT HOMES

The professional engineering seal indicates that a licensed professional has reviewed the design under the standards referenced within this document, not necessarily the current state building code. The engineering seal is not an approval to use a design 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.

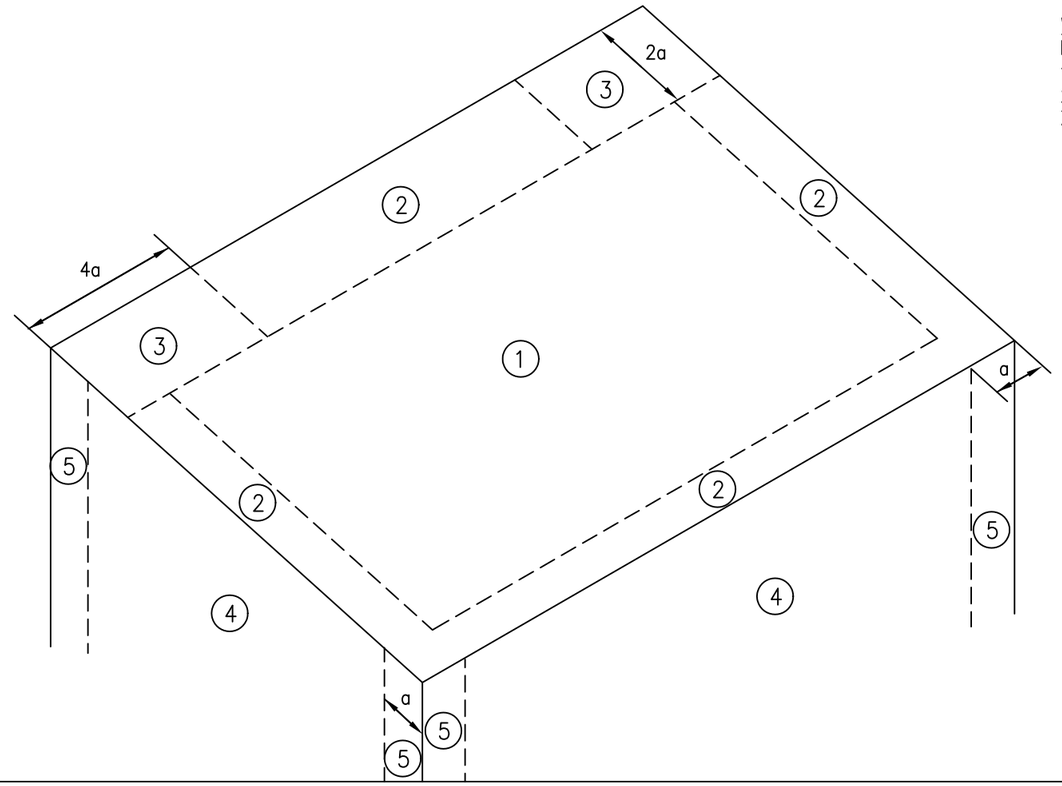
Corporate Engineering
2801 East Beltline, NE Grand Rapids, MI 49525-9736 (616) 364-6161 Fax (616) 365-0060
ufpi.com

DESIGN LOADS:

FLOOR LIVE LOAD:	40 PSF
ROOF LIVE LOAD:	100 PSF
HORIZONTAL WIND LOAD:	Vasd = 100 MPH (EXPOSURE C) Vult = 126 MPH
MEAN ROOF HEIGHT:	25'
SEISMIC CATEGORY:	A, B OR C
NUMBER OF STORIES:	1
ALLOWABLE WIDTHS:	30'–4"
EAVE DIMENSIONS:	17 1/2" MAXIMUM LOW SIDE AND 48" MAXIMUM HIGH SIDE
RAKE DIMENSIONS:	16" MAXIMUM
SIDEWALL HEIGHT:	8'–0" MAXIMUM LOW SIDE AND 11'–0" HIGH SIDE
ROOF SLOPE:	2.88n12

DESIGN CODES:
OCCUPANCY/USE GROUP AND CONSTRUCTION TYPE:
DETACHED ONE AND TWO FAMILY DWELLING
WOOD FRAME, UNPROTECTED, R–3
2018 INTERNATIONAL RESIDENTIAL CODE

GENERAL NOTES:
1. FLOOD LOADS: SITE SPECIFIC FLOOD LOADS HAVE NOT BEEN ASSESSED IN THIS DESIGN PACKAGE. FOR BUILDINGS LOCATED IN FLOOR HAZARD AREAS, SUCH AS ESTABLISHED IN SECTION R301.2.4, SHOULD BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTION R324.
2. GLAZING: IF HOME IS LOCATED IN WIND BORNE DEBRIS REGIONS ALL GLAZED OPENINGS SHALL MEET THE REQUIREMENTS OF THE "LARGE MISSILE TEST ASTM E 1996" AND OF ASTM 1886 OR HAVE PRECUT $\frac{7}{16}$" STRUCTURAL SHEATHING AND ATTACHMENT HARDWARE PER TABLE R301.2.1.2 PROVIDED FOR ALL GLAZING OPENINGS WITH THE HOME.
3. LOCATION ON THE LOT: MINIMUM DISTANCE OF 5'–0" FROM BUILDING TO PROPERTY AND ADJACENT BUILDINGS.
4. THE ROOF LIVE LOAD PRESENTED THROUGHOUT THIS MANUAL IS THE LOAD USED IN THE DESIGN OF THE STRUCTURE. THE DETERMINATION OF THE CORRESPONDING GROUND SNOW LOAD IS THE RESPONSIBILITY OF THE BUILDER. CONSULT THE LOCAL AUTHORITY HAVING JURISDICTION.
5. ALL CALCULATIONS WERE PREPARED IN COMPLIANCE WITH THE IRC AND/OR ASCE 7.
6. WIND SPEED LISTED THRUOUT THIS MANUAL IS Vasd. FOR EQUIVALENT Vult SEE "DESIGN LOADS" ABOVE.



WIND LOAD ZONES FOR MONOSLOPE ROOF
NOTES:
1. a = 3'–0"
2. SEE FS–3.0 FOR SUCTION FASTENING CHART PER ZONE

STRUCTURAL PACKAGE DRAWING INDEX

COLORADO LICENSED
ERIK J. MYERS
46317
PROFESSIONAL ENGINEER
Dec 18, 2018

FAMILY BUILT HOMES
Gering Industrial Site
982 Rundell Road
Gering, NE 69341
Phone: (308)633–0050

Date:	02/18/18
Drwn. by:	HDG
Rev #:	
Rev Date:	
Title	COVER SHEET
Page No.	CS–1.0

FLOOR SYSTEM	RIM JOIST TO FLOOR JOIST LEDGER STRIP TO RIM JOIST RIM TO SILL PLATE FLOOR DECKING TO FRAMING MULTIPLE JOISTS DOUBLE RIM JOISTS	WITH JOISTS AT 16" OC: (4) .131x3" NAILS (4) .131x3" NAILS PER BAY SEE DETAIL FN-2 .120x2" NAILS AT 6" OC EDGES, 10" OC FIELD ALTERNATE: 7/16"x1 5/8"x16 GA STAPLES AT 4" OC EDGES & FIELD W/ 90% GLUE COVERAGE .131x3" NAILS AT 16" OC, 2 ROWS STAGGERED (4) .131x3" NAILS AT 16" OC BAY, EQUALLY SPACED
EXTERIOR WALLS	TOP OR BOTTOM PLATE TO STUD TOP PLATE TO TRUSS AT ENDWALL BOTTOM PLATE TO FLOOR RIM MULTIPLE STUDS MULTIPLE HEADERS HEADER TO STUD STUD TO SILL SHEATHING TO FRAMING SIDING TO FRAMING INTERIOR FINISH TO FRAMING	(3) .131x3" NAILS END NAILED #8x4" SCREWS AT 3" OC (SEE END SHEARWALL FASTENING FOR ALTERNATE FASTENING. USE THE MOST RESTRICTIVE FASTENING) .131x3 NAILS AT 9" OC OR #8x3" SCREWS AT 9" OC .131x3" NAILS AT 9" OC SEE DETAIL ON SHEET EW-3.0 PER TABLE EW-3.0 PER TABLE EW-3.0 PER CHARTS ON FS-3 FOR SUCTION FASTENING OR SHEARWALL CHARTS ON FS-3.0. USE MOST RESTRICTIVE FASTENING PER MANUFACTURER'S INSTRUCTIONS NO. 13 GAUGE, 1 3/8" LONG, 19/64" HEAD; .098" DIAMETER, 1 1/4" LONG, ANNULAR RING; 5d COOLER OR WALLBOARD NAIL AT 7" OC EDGES AND 12" OC FIELD
INTERIOR WALL	TOP OR BOTTOM PLATE TO STUD BOTTOM PLATE TO FLOOR DOUBLE STUDS TOP PLATE TO TRUSS/BACKER HEADER TO STUD INTERIOR FINISH TO FRAMING	(2) .131x3" NAIL END NAILED .131x3" NAILS AT 16" OC .131x3" NAILS AT 16" OC .131x3" NAILS AT 16" OC (2) .131x3" NAILS NO. 13 GAUGE, 1 3/8" LONG, 19/64" HEAD; .098" DIAMETER, 1 1/4" LONG, ANNULAR RING; 5d COOLER OR WALLBOARD NAIL AT 7" OC EDGES AND 12" OC FIELD
ROOF & CEILING CONSTRUCTION	RIM RAILS TO TRUSS FASCIA TO TRUSS TRUSS TO TOP PLATE (LATERAL LOAD) SHINGLES TO SHEATHING SHEATHING TO FRAMING MATELINE BEAM TO TOP PLATE CEILING FINISH MATERIAL TO FRAMING UPLIFT (TRUSS TO EXTERIOR WALL) RIDGEBEAM TO TRUSS RIDGEBEAM PLYS TOGETHER	(3) .131x3" NAILS FOR 8' SIDEWALL SIDE (4) .131x3" NAILS FOR 11'" SIDEWALL SIDE (3) .131x3" NAILS INTERIOR ZONES (3) .131x3" NAILS END ZONES 8'-0" WALL HEIGHT LOW SIDE: (3) 0.131x3" NAILS TOED 11'-0"" WALL HEIGHT HIGH SIDE: (3) 0.131x3" NAILS TOED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS PER DIAPHRAGM CHARTS FS-3.0 OR SUCTION FASTENING REQUIREMENTS CHART ON FS-3 .131x3" NAILS AT 16" OC (TOED) NO. 13 GAUGE, 1 3/8" LONG, 19/64" HEAD; .098" DIAMETER, 1 1/4" LONG, ANNULAR RING; 5d COOLER OR WALLBOARD NAIL AT 7" OC EDGES AND 12" OC FIELD ALTERNATE: ALPHA SEAL 5200 INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS 17 1/2" EAVE SIDE: USE SIMPSON BRACKET RATED AT 150#. 48" EAVE SIDE: USE SIMPSON BRACKET RATED AT 350# 100 PSF ROOF LIVE LOAD WITH TRUSSES AT 16" OC. (18) 0.131x3" NAILS OR HANGER RATED AT 1550# (NO FASTENERS PERMITTED INTO END GRAIN OF TRUSS CHORD) 100 PSF ROOF LIVE LOAD WITH TRUSSES AT 16" OC. (10) 0.131x3" NAILS EQUALLY SPACED PER BAY

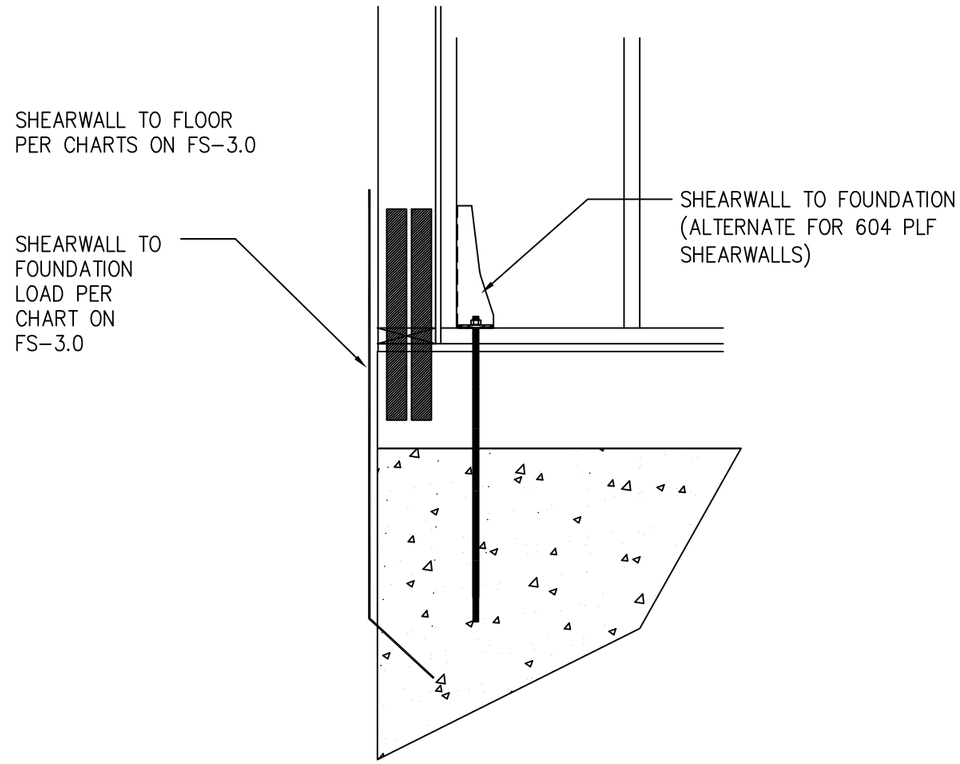
COLORADO LICENSED
ERIK J. MYERS
46317
PROFESSIONAL ENGINEER

Dec 18, 2018

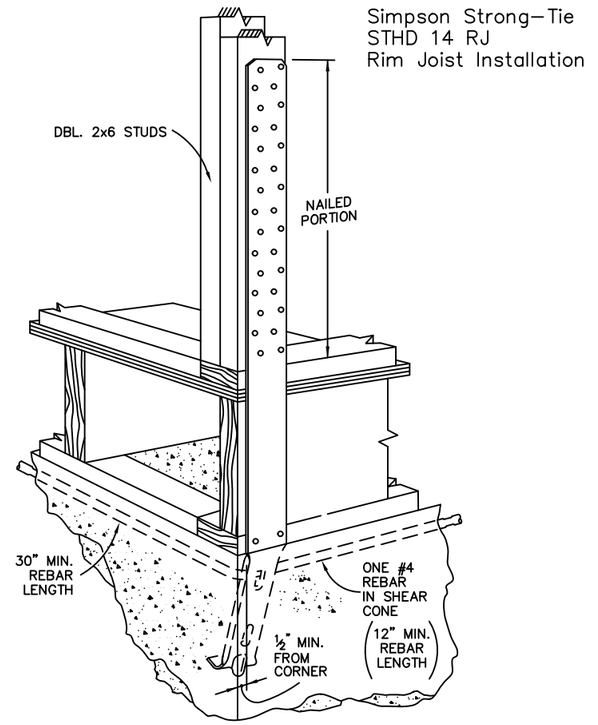
GENERAL NOTES:
1. This fastening schedule to be used for all components unless noted otherwise.
2. Fastening schedule is based on SPF lumber minimum.
3. When glue is specified, 80% minimum coverage is to be used unless specified otherwise. Glue to conform to ASTM C557.
4. All fasteners are minimum. Larger fasteners and/or closer spacings 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. i.e. fastener spacing 8" o.c. – actual spacing 10" between 2 fasteners but 4 fasteners effective within a 32" spacing.
6. "Toed" fasteners to be installed at a 30 degree angle with the receiving member and start approximately 1/3 the length from the member end.
7. Staples may not be "toed".
8. For fasteners not specified on this drawing see applicable details in this package.
9. Fastener substitution: (1) #8x3" wood screw may replace (1) .131x3" nail.

FAMILY BUILT HOMES
Gering Industrial Site
982 Rundell Road
Gering, NE 69341
Phone: (308)633-0050

Date:	02/18/18
Drwn. by:	HDG
Rev #:	
Rev Date:	
Title	FASTENING SCHEDULE
Page No.	FS-1.0



A SHEARWALL CONSTRUCTION DETAILS



Dec 18, 2018

FAMILY BUILT HOMES Gering Industrial Site 982 Rundell Road Gering, NE 69341 Phone: (308)633-0050	Date: 02/18/18 Drwn. by: HDG Rev #: Rev Date:
Title TYPICAL SHEARWALL CONSTRUCTION DETAILS	Page No. FS-2.0

7/16" ROOF SHEATHING DIAPHRAGM SPAN CHART (SEE NOTE 1)			
FASTENER	FASTENER SPACING	PLF	FLOOR WIDTH
			30'-4"
0.131 x 2" NAIL	6" OC BOUNDARY 6" OC EDGES 12" OC FIELD	294	76'-0"
0.120 x 2" NAIL	6" OC BOUNDARY 6" OC EDGES 12" OC FIELD	258	76'-0"
0.113 x 2" NAIL	6" OC BOUNDARY 6" OC EDGES 12" OC FIELD	230	76'-0"
7/16"x1 1/2"x16 GA STAPLES	6" OC BOUNDARY 6" OC EDGES 12" OC FIELD	176	62'-0"

7/16" ROOF SHEATHING BLOCKED DIAPHRAGM SPAN CHART (SEE NOTES 1,2&3)			
FASTENER	FASTENER SPACING	PLF	FLOOR WIDTH
			30'-4"
0.131 x 2" NAIL	4" OC BOUNDARY 6" OC EDGES 12" OC FIELD	437	76'-0"
0.120 x 2" NAIL	4" OC BOUNDARY 6" OC EDGES 12" OC FIELD	377	76'-0"
0.113 x 2" NAIL	4" OC BOUNDARY 6" OC EDGES 12" OC FIELD	345	76'-0"
7/16"x1 1/2"x16 GA STAPLES	4" OC BOUNDARY 6" OC EDGES 12" OC FIELD	271	76'-0"

ROOF SHEATHING DIAPHRAGM NOTES:
1. PLATE END TRUSS WITH 7/16" MIN. RATED SHEATHING & FASTEN WITH SAME FASTENERS & SPACING AS DIAPHRAGM EDGES
2. FOR BLOCKED DIAPHRAGMS THE LONGITUDINAL PANEL EDGES MUST BE BLOCKED FROM EACH END WALL. THE BLOCKING SHALL CONSIST OF A FLAT 2x4 FASTENED WITH (2) 0.131x3" NAILS (END NAILED OR TOE NAILED) EACH END. SHEATHING ATTACHED TO BLOCKING PER EDGE FASTENING FROM CHART.AS AN ALTERNATE USE A 3" WIDE BY 26 GA STRAP FASTENED WITH $\frac{7}{16}$"x1 $\frac{1}{2}$"x16 GA STAPLES AT 2" OC ALONG EACH EDGE. MINIMUM LENGTH OF BLOCKING TO BE 14' EACH END. WHEN SHEET METAL BLOCKING IS USED, PANEL EDGES MUST BE TONGUE AND GROOVE OR SUPPORTED BY PANEL CLIPS.
3. 2x6 ROOF RIM RAILS (DIAPHRAGM CHORDS) TO HAVE SPLICES MADE WITH 2x6x12" LONG BLOCK GLUED WITH 100 PSI PVA ADHESIVE (MINIMUM 80% COVERAGE) AND FASTENED WITH (8) 0.131x3" NAILS EACH SIDE OF SPLICE

SHEARWALL SHEATHING FASTENING: AT PANEL EDGES/FIELD				
FASTENER EDGE/FIELD	300 PLF	398 PLF	486 PLF	604 PLF
.131 x 2" NAILS	6"/12"	4"/12"	4"/12"	3"/12"
.120 x 2" NAILS	4"/12"	4"/12"	3"/12"	2"*/12"
.113 x 2" NAILS	4"/12"	4"/12"	2"*/12"	2"*/12"
7/16"x1 1/2"x16 GA STAPLES	4"/8"	3"/8"	2"*/8"	N/A

SHEARWALL SHEATHING NOTES:
1) SHEATHING TO BE $\frac{7}{16}$" RATED SHEATHING MIN.
2) ALL FRAMING 2X_ WITH STUDS 16" O/C.
3) * FASTENING REQUIRES DOUBLE STUDS AT PANEL EDGES FOR 2" OC SPACING.

SHEARWALL TO FLOOR AND TO FOUNDATION CHART				
SHEARWALL PLF	FOUNDATION LOAD	TO FLOOR		TO FOUNDATION
		LSTA 18 STRAPS	LSTA 21 STRAPS	
300	3300#	3	3	STHD14RJ
398	4378#	4	4	STHD14RJ
486	5346#	5	5	STHD14RJ
604	6644#	N/A	N/A	HD8Q-SDS3 NOTE 1

NOTES:
1. USE (3) STUDS PER END. FASTEN WITH (20) SDS $\frac{1}{4}$"x3" LAGS, $\frac{7}{8}$" BOLTS WITH CNW $\frac{7}{8}$" COUPLER NUT AND SB $\frac{7}{8}$" ANCHOR

SHEARWALL TOP PLATE TO ROOF TRUSSES #10x4 1/2" SCREWS TOE SCREWED			
300 PLF	398 PLF	486 PLF	604 PLF
4 3/4" OC	3 3/4" OC	3 1/8" OC	2 1/2" OC

SHEARWALL BOTTOM PLATE TO FLOOR SHEARWALL END STUD TO SIDEWALL OR MATING WALL #10x4 1/2" SCREWS			
300 PLF	398 PLF	486 PLF	604 PLF
5 3/4" OC	4 1/2" OC	3 3/4" OC	3" OC

SUCTION FASTENING REQUIREMENTS FASTENING SPACING (INCHES OC)								
	0.131x2" NAILS		.120x2" NAILS		.113x2" NAILS		7/16"x1 1/2"x16 GA STAPLES	
ZONE	EDGE	FIELD	EDGE	FIELD	EDGE	FIELD	EDGE	FIELD
1	6"	12"	6"	12"	6"	12"	6"	12"
2	6"	12"	6"	11 1/2"	6"	11"	6"	8"
2 OH	6"	8 1/2"	6"	7 3/4"	6"	7 1/2"	6"	5 1/2"
3	6"	7 3/4"	6"	7"	6"	6 1/2"	6"	5"
3 OH	6"	6"	6"	5 1/2"	6"	5"	6"	4"
4	6"	12"	6"	12"	6"	12"	6"	12"
5	6"	12"	6"	12"	6"	12"	6"	9 3/4"

NOTES:
1. SEE CS-1 FOR ZONE LOCATIONS

MINIMUM SHEARWALL LENGTHS					
BOX LENGTH (FEET)	300 PLF WALL (INCHES)	398 PLF WALL (INCHES)	486 PLF WALL (INCHES)	604 PLF WALL (INCHES)	
40	161	121	99	80	
42	168	127	104	84	
44	176	133	109	87	
46	183	138	113	91	
48	191	144	118	95	
50	198	149	122	98	
52	206	155	127	102	
54	213	161	132	106	
56	221	166	136	110	
58	228	172	141	113	
60	236	178	145	117	
62	243	183	150	121	
64	251	189	155	124	
66	258	194	159	128	
68	265	200	164	132	
70	273	206	168	136	
72	280	211	173	139	
74	288	217	178	143	
76	295	223	182	147	

NOTES:
1. EACH END OF HOME MUST HAVE THE MINIMUM LENGTH OF SHEARWALL AS SPECIFIED IN TABLE ABOVE. THE LENGTH MAY BE BROKEN UP INTO MULTIPLE WALL SECTIONS OF 38" OR WIDER.

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FAMILY BUILT HOMES
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SHEARWALL FASTENING REQUIREMENTS

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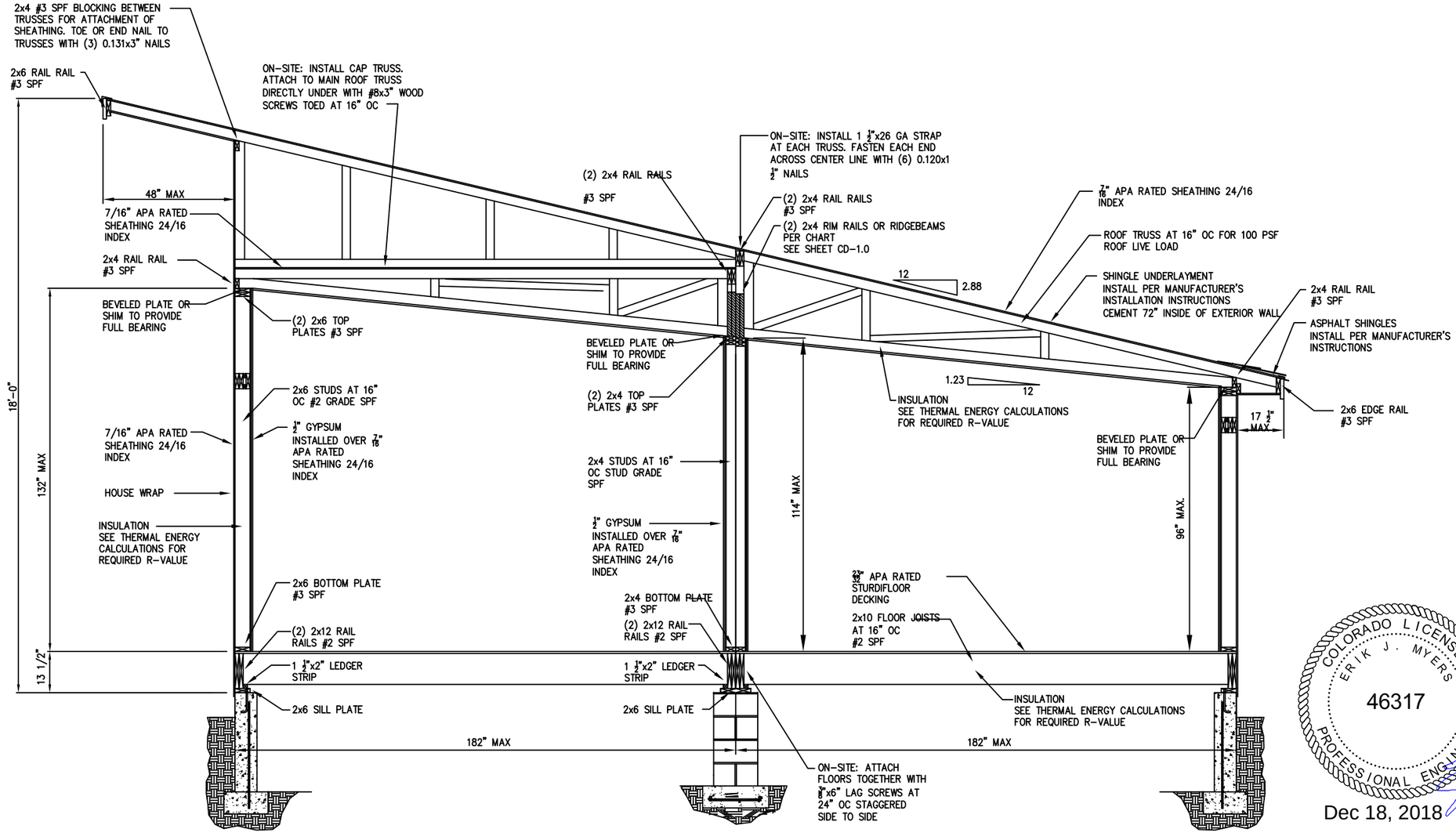

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1. ATTIC SPACE SHALL BE VENTILATED AT A RATIO OF 1 SF OF VENTILATION TO 300 SF OF ATTIC SPACE.

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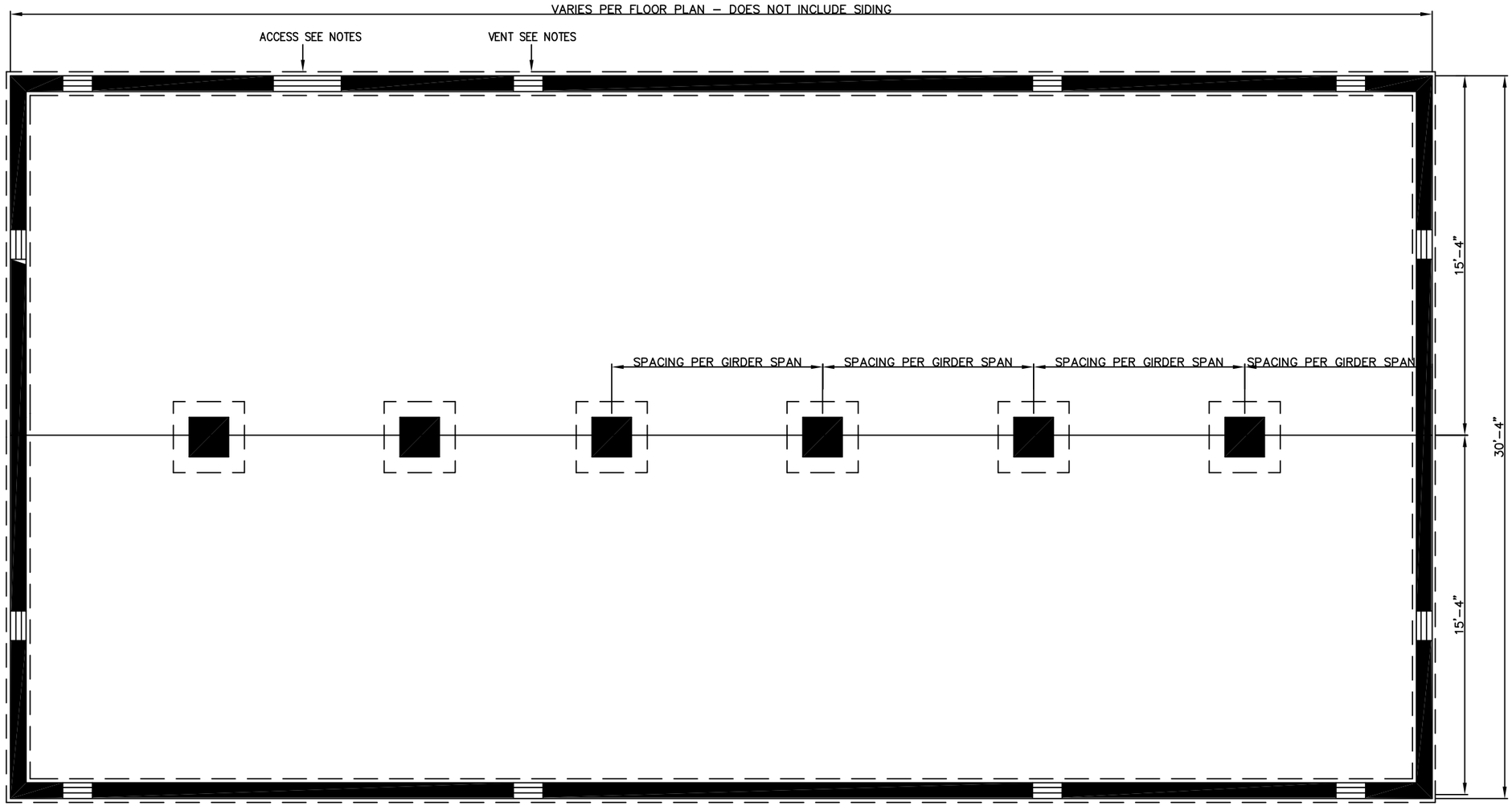

GENERAL NOTES:
1. DESIGN PARAMETERS:
ROOF: LIVE LOADS: BASIC 100 PSF UNIFORMLY DISTRIBUTED LIVE LOAD AND AS CALCULATED FOR DEAD LOAD.
2. MATERIAL SPECIFICATIONS:
ALL REINFORCING BARS: ASTM–615, GRADE 60 KSI. MUST BE INSTALLED PER ACI 318–02.
CONCRETE: MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS = 3000 PSI. CONCRETE MIX AND INSTALLATION MUST BE IN CONFORMANCE WITH ACI 318–02 AND REF. ASTM'S. ALL CONCRETE SHALL BE NORMAL WEIGHT, GRAVEL AGGREGATE FOR ALL FOUNDATION WORK. SLABS AND EXTERIOR WORK SHALL BE LIMESTONE AGGREGATE.
3. ALL CHANGES TO THE DRAWINGS AND SPECIFICATIONS WHETHER EXECUTED PRIOR TO OR DURING CONSTRUCTION MUST BE AUTHORIZED BY ENGINEER.
4. VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWING IN THE FIELD PRIOR TO CONSTRUCTION. IMMEDIATELY REPORT ALL DISCREPANCIES TO THE ENGINEER UPON DISCOVERY.

GENERAL NOTES (CONTINUED)
5. SOIL BEARING CAPACITY = 2000 PSF MINIMUM. TO BE VERIFIED BY SITE PROFESSIONAL PRIOR TO CONSTRUCTION.
6. FOUNDATION TO MEET ALL APPLICABLE STATE AND LOCAL BUILDING CODES.
7. DAMP PROOFING AND DRAINAGE MUST BE PROVIDED IN ACCORDANCE WITH THE INTERNATIONAL RESIDENTIAL CODE.
8. EACH INDIVIDUAL PIECE OF FLOOR GIRDER MUST BE CONTINUOUS OVER TWO SUPPORTS.
9. ALL JOINTS MUST FALL OVER A PIER.

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THIS PRINT IS A TYPICAL FOUNDATION LAYOUT ONLY AND IS NOT INTENDED FOR CONSTRUCTION DESIGN. FOUNDATION AND FOOTINGS MUST BE DESIGNED FOR SPECIFIC HOME BY A REGISTERED PROFESSIONAL ENGINEER.

FAMILY BUILT HOMES Gering Industrial Site 982 Rundell Road Gering, NE 69341 Phone: (308)633–0050	Date: 02/18/18 Drwn. by: HDG Rev #: Rev Date:
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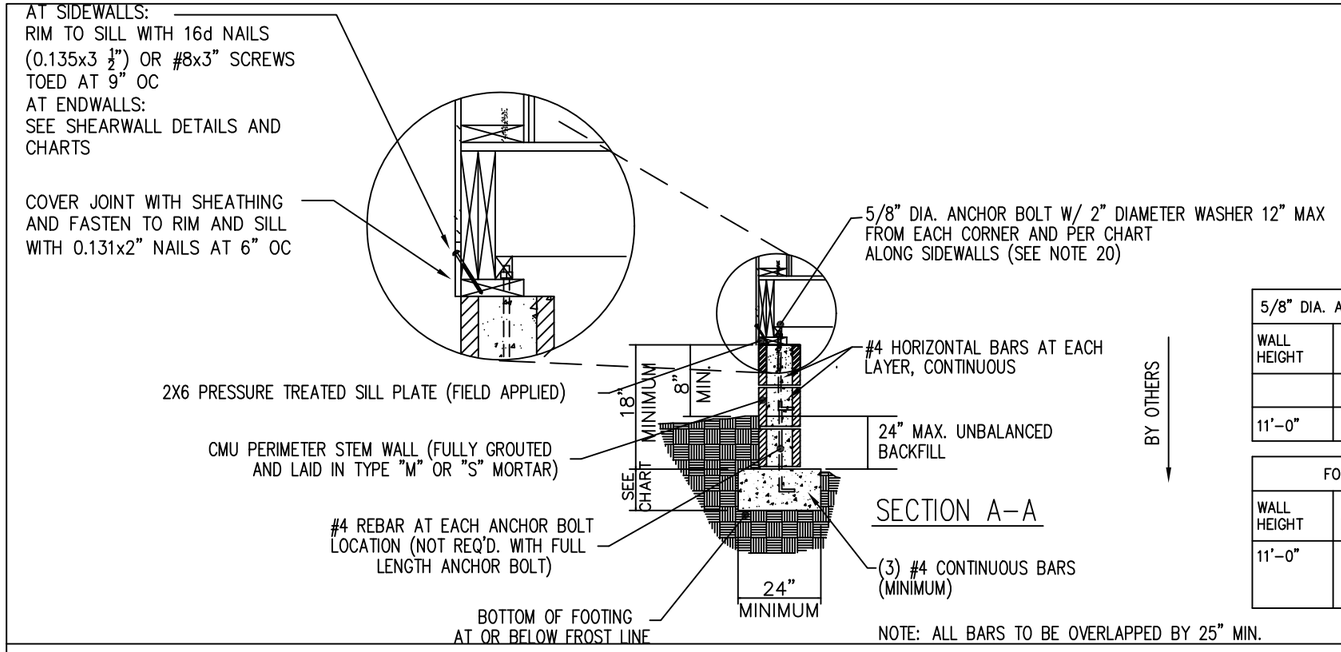
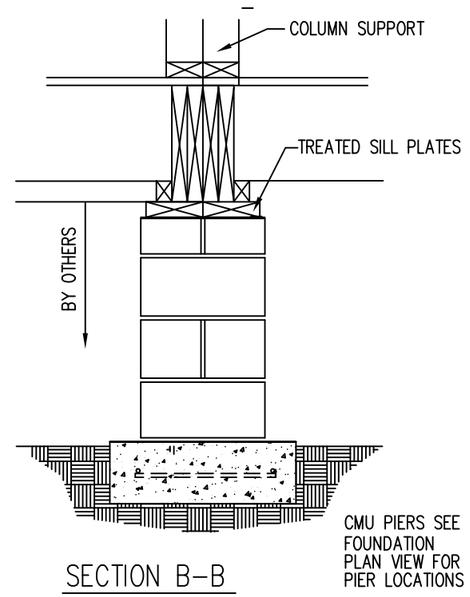


5/8" DIA. ANCHOR BOLT SPACING		
WALL HEIGHT	END WALLS	SIDE WALLS
11'-0"	48" OC	48" OC

FOOTER DEPTH		
WALL HEIGHT	6' END ZONE	INTERIOR ZONE
11'-0"	12"	12"

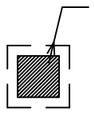
NOTE: ALL BARS TO BE OVERLAPPED BY 25" MIN.



SECTION B-B

General Notes:
1. Reserved.
2. If a foundation drawing is provided it is a suggested foundation only. Actual foundation and anchoring to be designed by a local Professional Engineer or Architect familiar with the local soil and climate conditions.
3. Provide crawl space ventilation equal to 1/150 of the actual enclosed crawl space access. (144 sq. in. / 150 sq. ft.)
4. Provide positive under drainage. Minimum 4" pea gravel with 6 mil polethylene vapor barrier.
5. 18"x24" crawl space access to be provided (minimum).
6. Crawl space clearance to be 18" minimum below bottom of floor joists to grade.
7. Minimum footing depth to be 12" but at or below local frost depth and or per local code requirements.
8. Footing sizes/design based on the allowable soil bearing of 2000 psf.
9. Concrete footing shall have a compressive strength of 3000 psi at 28 days.
10. Finish grade to be 8" below top of foundation wall.
11. Provide GFCI receptacle and switched light fixture at crawl space access for service of all mechanical systems.
12. Where interior ground level is below outside grade, adequate precautionary measures shall be taken to assure positive drainage at all times.
13. Wall and piers of hollow masonry units shall be capped with a minimum of 4" solid masonry or poured concrete for dwellings not over 1 story and not less than 8" for other dwellings.
14. Reserved.
15. Concrete blocks shall be laid in type "M" or "S" mortar or dry stacked and bonded with surface bonding cement in accordance with the manufacturers installation instructions.
16. Final details, construction, and approvals by local or state inspectors is the responsibility of the contractor.

General Notes:
17. Height of wall and height of unbalanced fill may have an effect on the size and type of masonry blocks used.
18. Method of bonding veneer to pilaster is subject to local code requirements.
19. Weep holes, flashing, exterior wall covering and masonry tie are subject to local code requirements.
20. Anchor bolt minimum embedment is 15" in mortar and 7" in concrete.



DENOTES PIERS LOCATED
ALONG THE MATE LINE
BENEATH RIDGE BEAM
SUPPORT COLUMNS
AND GIRDER SUPPORTS

FOUNDATION PLAN LEGEND

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FAMILY BUILT HOMES

Gering Industrial Site
982 Rundell Road
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Phone: (308)633-0050

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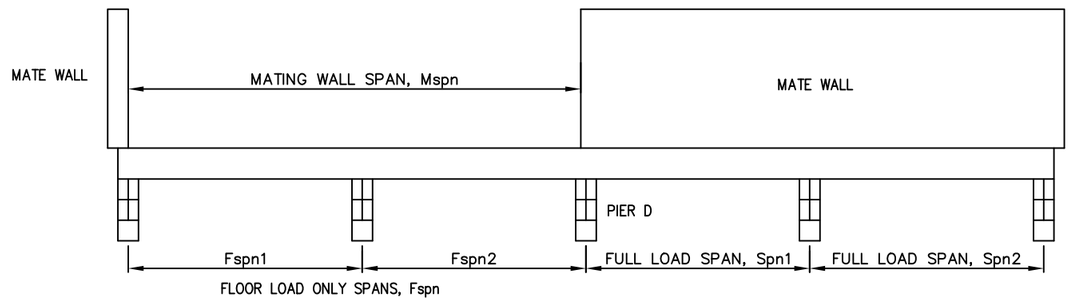
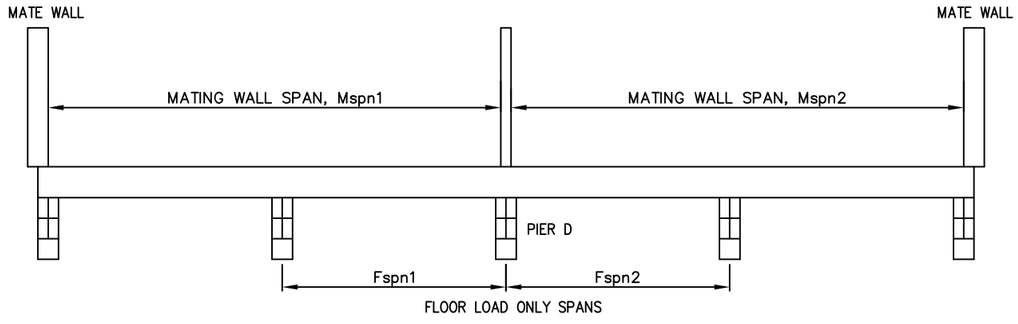
SUBJECT: PIER LOADS – 30 ft. WIDES (MAX.) – 100 PSF ROOF LIVE LOAD

GENERAL INFORMATION:

NOMINAL WIDTH =	30'–4" FT. MAX.	
ROOF DEAD LOAD =	20 PSF	ROOF LOAD = 184,000 PLI
ROOF LIVE LOAD =	100 PSI	
WALL LOAD 1ST FLOOR	95 PLF	WALL LOAD = 7.91 PLF
1ST FLOOR DEAD LOAD =	10 PSF	FLOOR DEAD LOAD = 5106 PLI
1ST FLOOR LIVE LOAD =	40 PSF	FLOOR LIVE LOAD = 5056
BOX WIDTH =	182" MAX.	FLOOR TOTAL LOAD = 63.17 PLI

NOTE: ALL LOADS ARE IN POUNDS PER LINEAR INCH (PLI)





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FORMULAS:

PIER A: FLOOR LOAD ONLY LOAD = FLOOR TOTAL LOAD (PLI) x (Fspn1+ Fspn2) / 2

PIER B: CLOUMN SUPPORT LOAD = TOTAL LOAD (PLI) x Spn1 / 2 + FLOOR TOTAL LOAD (PLI) x Fspn2 / 2 + ROOF LOAD (PLI) X Mspn /2

PIER C: FULL LOAD LOAD = TOTAL LOAD (PLI) x Spn1 Vx Spn2) / 2

PIER D: INTERIOR COLUMN LOAD = ROOF LOAD(PLI) x (Mspn1 + Mspn2) / 2 + FLOOR TOTAL LOAD (PLI) x (Fspn1 + Fspn2) / 2

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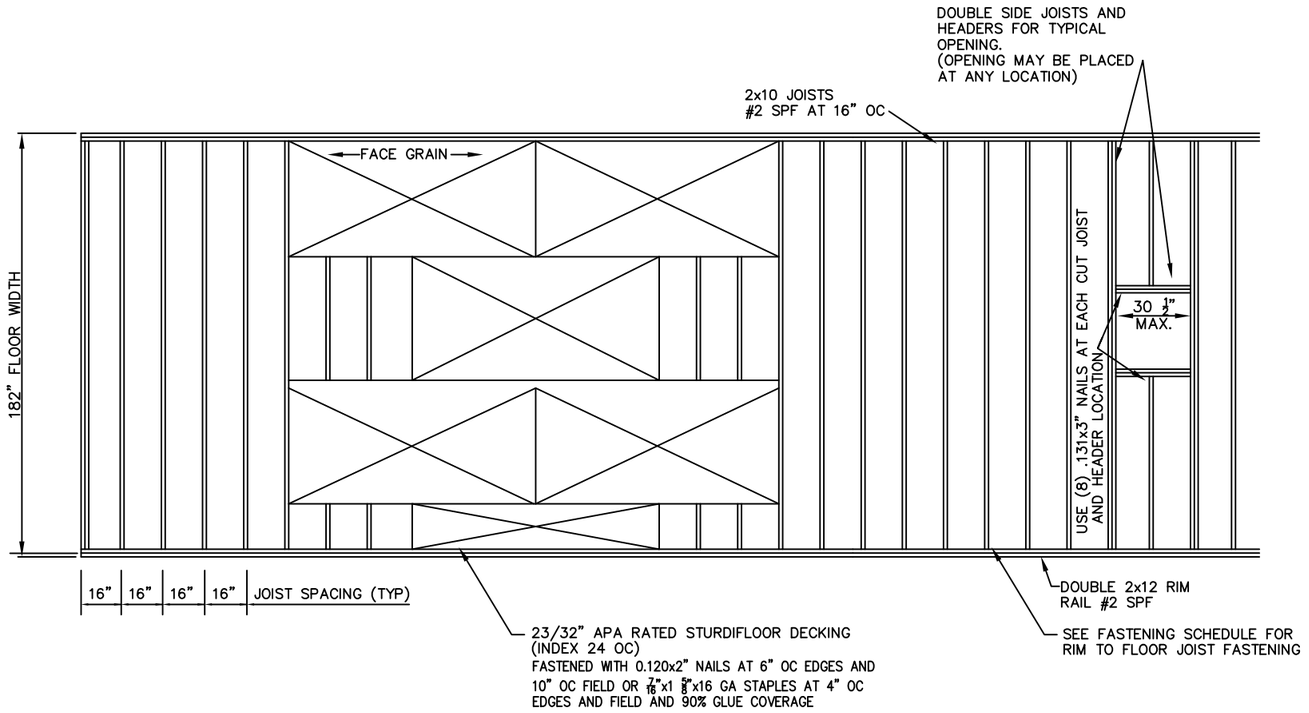

NOTES:
1. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS.
2. FOR ALLOWABLE GIRDER SPANS SEE CHART ON FL–2.
3. ONE JOIST IN A GIVEN LOCATION MAY BE MOVED UP TO 3" MAXIMUM FOR OBSTRUCTIONS (i.e. PLIMBING DROPS, HEAT REGISTERS, AND PLUNUM DROPS).
4. FLOOR SYSTEMS DO NOT REQUIRE BLOCKING OR BRIDGING, FRONT AND REAR JOISTS ARE STABILIZED BY THE DECKING.
5. HOLES BORED IN JOISTS SHALL HAVE A DIAMETER NOT EXCEEDING 1/3 THE DEPTH AND CANNOT BE WITHIN 2" OF THE TOP OF THE BOTTOM EDGE.
6. NOTCHES IN JOISTS SHALL NOT EXCEED 1/16 THE DEPTH OF THE JOIST AND CANNOT OCCUR IN THE CENTER 1/3 OF THE SPAN, WIDTH OF NOTCH CANNOT EXCEED 1/3 THE DEPTH OF THE JOIST.

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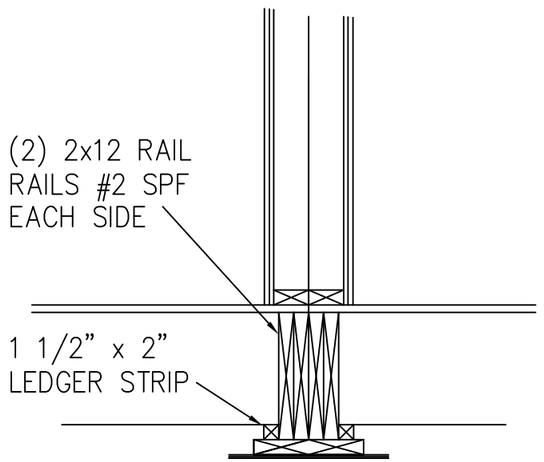
Title FLOOR FRAMING DETAILS 1st AND 2nd FLOORS	Page No. FL–1.0

1st FLOOR GIRDER SPAN TABLE			
MAXIMUM SPANS			
RIM SIZE	NUMBER EFFECTIVE	100 PSF RLL	FLOOR LOAD ONLY
2x12's #2 SPF	1	2'-5"	7'-0"
2x12's #2 SPF	2	4'-10"	9'-11"
1 1/2"x11 1/4" LVL (E 2.0 MIN.)	1	4'-6"	12'-1"
1 1/2"x11 1/4" LVL (E 2.0 MIN.)	2	8'-11"	15'-2"

NOTES:
1. EFFECTIVE DENOTES THOSE MEMBERS WHICH DO NOT HAVE SPLICES IN THE CLEAR SPAN PER HALF.



1st FLOOR BEAMS DETAIL

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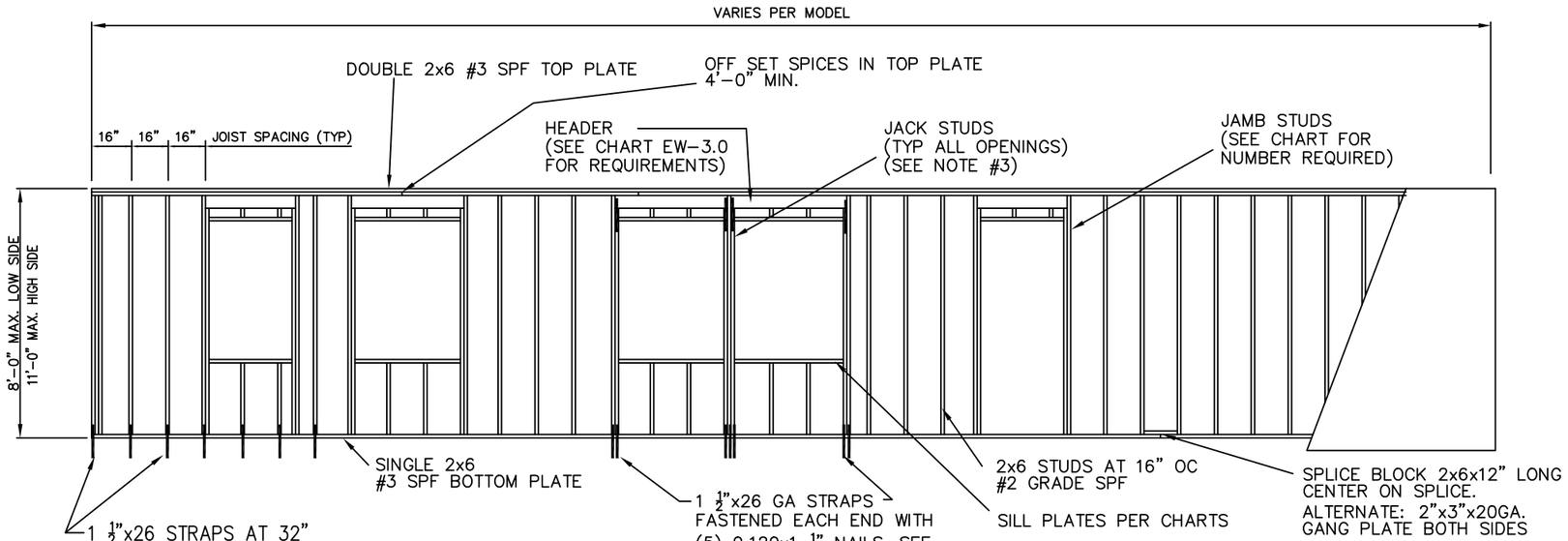

STRAP SPAN		
	100 MPH	
	SIDE SPAN	CENTER SPAN
1	34"	50"
2	83"	99"
3	133"	149"

BASED ON END ZONE.

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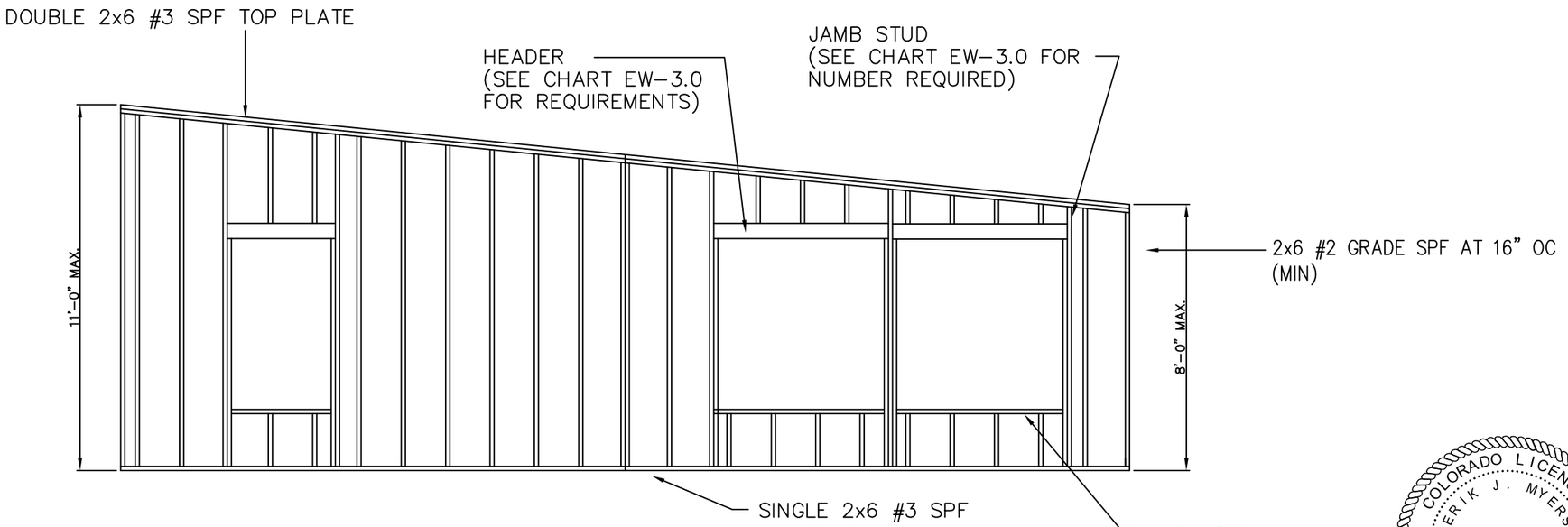
GENERAL NOTES:
1. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS AND QUANTITIES NOT SPECIFIED ON THIS DRAWING.
2. A SINGLE JACK STUD MAY COUNT IN THE NUMBER OF OPENING STUDS REQUIRED. EXAMPLE: IF (3) STUDS ARE REQUIRED IN A CENTER STUD CONDITION (2) MUST BE FULL HEIGHT AND (2) MAY BE JACK STUDS. IF (3) ARE REQUIRED IN A SIDE STUD (2) MUST BE FULL HEIGHT AND (1) MAY BE A JACK STUD.
3. SEE EW-3.0 FOR STUD AND HEADER CHARTS.

FAMILY BUILT HOMES Gering Industrial Site 982 Rundell Road Gering, NE 69341 Phone: (308)633-0050	Date: 02/18/18 Drwn. by: HDG Rev #: Rev Date:
Title EXTERIOR SIDE WALL FRAMING	Page No. EW-1.0

GENERAL NOTES:
1. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS AND QUANTITIES NOT SPECIFIED ON THIS DRAWING.



TYPICAL ENDWALL

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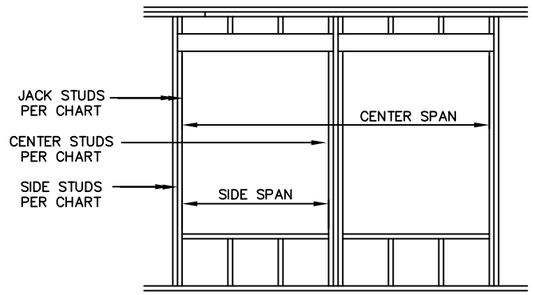
SIDEWALL OPENING STUD CHART 98" MAXIMUM HEIGHT				SIDEWALL OPENING STUD CHART 132" MAXIMUM HEIGHT			
		100 MPH				100 MPH	
		INTERIOR ZONE	END ZONE			INTERIOR ZONE	END ZONE
(2) 2x6	SIDE	113"	102"	(2) 2x6	SIDE	57"	50"
	CENTER	123"	111"		CENTER	66"	58"
(3) 2x6	SIDE	195"	178"	(3) 2x6	SIDE	101"	91"
	CENTER	205"	187"		CENTER	110"	99"
(4) 2x6	SIDE	265"	242"	(4) 2x6	SIDE	140"	126"
	CENTER	275"	251"		CENTER	150"	135"
NOTES: 1. DESIGNED FOR 182" MAX FLOOR WIDTH WITH 17 1/2" MAX EAVE. 2. ONE JACK STUD MAY COUNT AS A JAMB STUD				NOTES: 1. DESIGNED FOR 182" MAX FLOOR WIDTH WITH 48" MAX EAVE. 2. ONE JACK STUD MAY COUNT AS A JAMB STUD			

SIDEWALL JACK STUD CHART	
182" FLOOR WIDTH (MAXIMUM)	ROOF LIVE LOAD
NUMBER OF JACK STUDS	100 PSF
(1) 2x6	41"
(2) 2x6	82"
(3) 2x6	123"

ENDWALL STUDS (* SEE NOTE 1) 124" MAX. WALL HEIGHT					
				MAXIMUM OPENING WIDTH	
WIND SPEED	WIND ZONE	NORMAL STUD	NUMBER OF STUDS	SIDE OPENING	CENTER OPENING
100 MPH	INTERIOR	127 1/2"	2	120"	122"
			3	212"	216"
			4	289"	292"
	WIND ZONE	NORMAL STUD	NUMBER OF STUDS	SIDE OPENING	CENTER OPENING
	END	127 1/2"	2	97"	99"
			3	175"	177"
			4	239"	241"

NOTES:
1. ONLY ONE JACK STUD IS REQUIRED AT ALL ENDWALL OPENINGS.
2. ONE JACK STUD MAY COUNT AS A JAMB STUD

HEADER & SILL FASTENING CHART			HEADER & SILL FASTENING CHART		
NUMBER PER END	MAXIMUM CLEAR SPAN USING 0.131x3" NAILS 108 3/4" MAX. WALL HEIGHT		NUMBER PER END	MAXIMUM CLEAR SPAN USING 0.131x3" NAILS 124" MAX. WALL HEIGHT	
	END ZONE	INTERIOR ZONE		END ZONE	INTERIOR ZONE
3	52"	64"	3	38"	47"
6	103"	127"	6	75"	92"
8	137"	169"	8	100"	123"
9	154"	190"	9	112"	139"
10	171"	211"	10	125"	154"
12	205"	253"	12	150"	185"
15	256"	317"	15	187"	231"



SIDEWALL SILL PLATE SPAN CHART			SIDEWALL SILL PLATE SPAN CHART		
DESIGN (QUANTITY, GRADE & SPECIES)	MAXIMUM CLEAR SPAN 124" MAX. WALL HEIGHT		DESIGN (QUANTITY, GRADE & SPECIES)	MAXIMUM CLEAR SPAN 108 3/4" MAX. WALL HEIGHT	
	END ZONE	INTERIOR ZONE		END ZONE	INTERIOR ZONE
(1) 2x6 #3 SPF	67"	75"	(1) 2x6 #3 SPF	79"	87"
(2) 2x6 #3 SPF	95"	105"	(2) 2x6 #3 SPF	111"	123"
(3) 2x6 #3 SPF	124"	138"	(3) 2x6 #3 SPF	145"	162"

NOTE:
1. SIDEWALL SILL PLATE CHART TO ALSO BE USED FOR ENDWALL SILL PLATES.
2. ATTACH SIDE STUD TO SILL PLATE WITH 0.131x3" NAILS (MAY BE TOED OR END NAILED). SEE CHART FOR QUANTITY.

SIDEWALL HEADER SPAN CHART		ENDWALL HEADER SPAN CHART	
	MAXIMUM CLEAR SPAN		MAXIMUM CLEAR SPAN
DESIGN (QUANTITY, GRADE & SPECIES)	ROOF LIVE LOAD 100 PSF	DESIGN (QUANTITY, GRADE & SPECIES)	ROOF LIVE LOAD 100 PSF
(3) 2x4 #2 SPF	20"	(3) 2x4 #2 SPF	62"
(3) 2x6 #2 SPF	30"	(3) 2x6 #2 SPF	75"
(3) 2x8 #2 SPF	40"	(3) 2x8 #2 SPF	82"
(3) 2x10 #2 SPF	48"	(3) 2x10 #2 SPF	89"
(3) 2x12 #2 SPF	54"	(3) 2x12 #2 SPF	95"
(3) 1 1/2"x9 1/4" LVL	80"		
(3) 1 1/2"x11 1/4" LVL	83"		

NOTES:
1. LVL MEMBERS TO BE E = 2,000,000 psi, Fb = 2750 psi, Fv = 250 psi

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EXTERIOR WALL CHARTS

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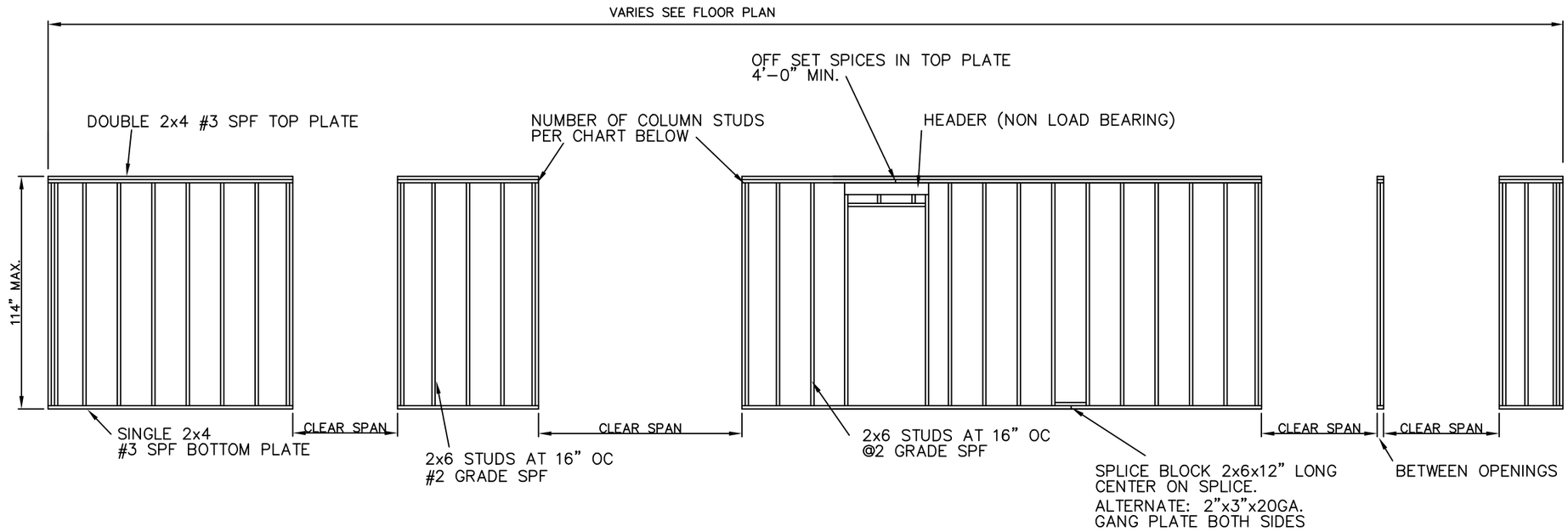

COLUMN STUDS TRIBUTARY SPAN CHART			
DESIGN	DESIGN (QUANTITY, GRADE & SPECIES)	100 PSF ROOF LIVE LOAD STUDS AT 16" OC	
		END SPAN	SPAN BETWEEN OPENINGS
	(1) 2x4 STUD/#3 SPF	20"	26"
	(2) 2x4 STUD/#3 SPF	55"	51"
	(3) 2x4 STUD/#3 SPF	93"	78"
	(4) 2x4 STUD/#3 SPF	130"	104"
	(5) 2x4 STUD/#3 SPF	166"	130"
	(6) 2x4 STUD/#3 SPF	202"	156"
	(7) 2x4 STUD/#3 SPF	238"	182"
NOTE 5	(1) 2x4 STUD/#3 SPF	20"	26"
	(2) 2x4 STUD/#3 SPF	55"	51"
NOTE 5	(1) 2x6 STUD/#3 SPF	53"	58"
	(2) 2x6 STUD/#3 SPF	106"	132"

GENERAL NOTES:
1. THE NUMBER OF COULMNS REPRESENTS THE NUMBER PER HALF.
2. COLUMN MEMBERS ARE GLUED AND MECHANICALLY FASTENED AT 4" OC.
3. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS AND QUANTITIES NOT LISTED ON THIS DRAWING.
4. MATE WALL REQUIRED ON EACH HALF OF HOME.
5. BRACING REQUIRED AS SHOWN.
6. 3 MINIMUM BEARING STRIP OR RIDGEBEAM WIDTH REQUIRED.
7. SEE CD-1.0 FOR UPLIFT STRAPPING REQUIREMENTS.
8. ALL STUD CONFIGURATIONS ARE BRACED BY SHEATHING OR GYPSUM.
9. CENTER COLUMNS MUST BE LOCATED IN THE MIDDLE THIRD OF SPAN.

COLORADO LICENSED
ERIK J. MYERS
46317
PROFESSIONAL ENGINEER
Dec 18, 2018

FAMILY BUILT HOMES
Gering Industrial Site
982 Rundell Road
Gering, NE 69341
Phone: (308)633-0050

Title
MATE WALL CONSTRUCTION

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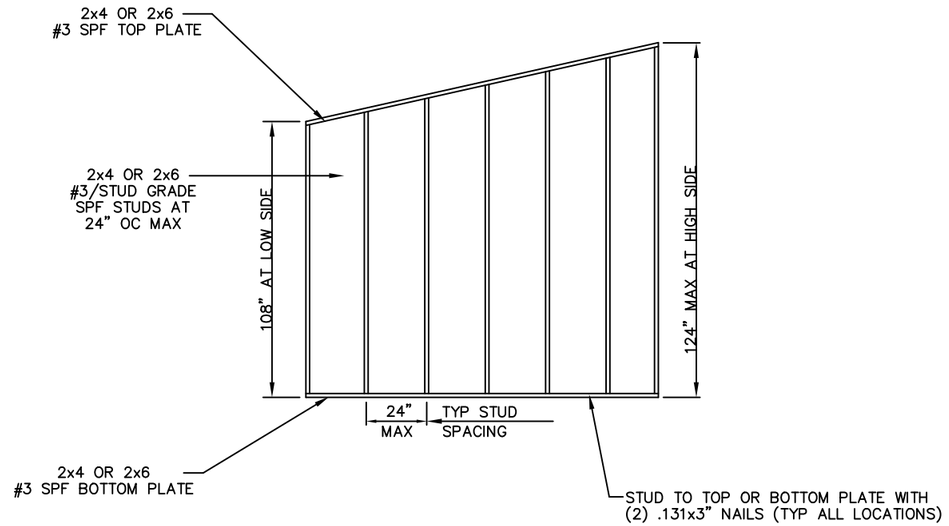
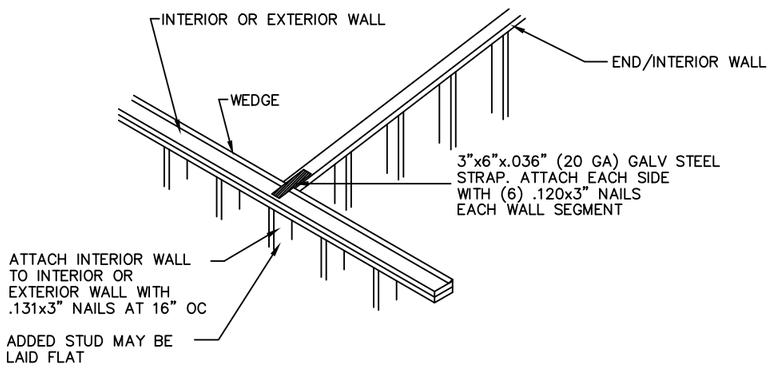
MW-1.0

GENERAL NOTES:
1. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS AND QUANTITIES.
2. PLATES MAYBE SPLICED USING 12" LONG 2x BLOCK OR AS AN ALTERNATE A 2"x3" 20ga. GANG PLATE EACH SIDE.





INTERIOR WALL TO EXTERIOR/INTERIOR WALL

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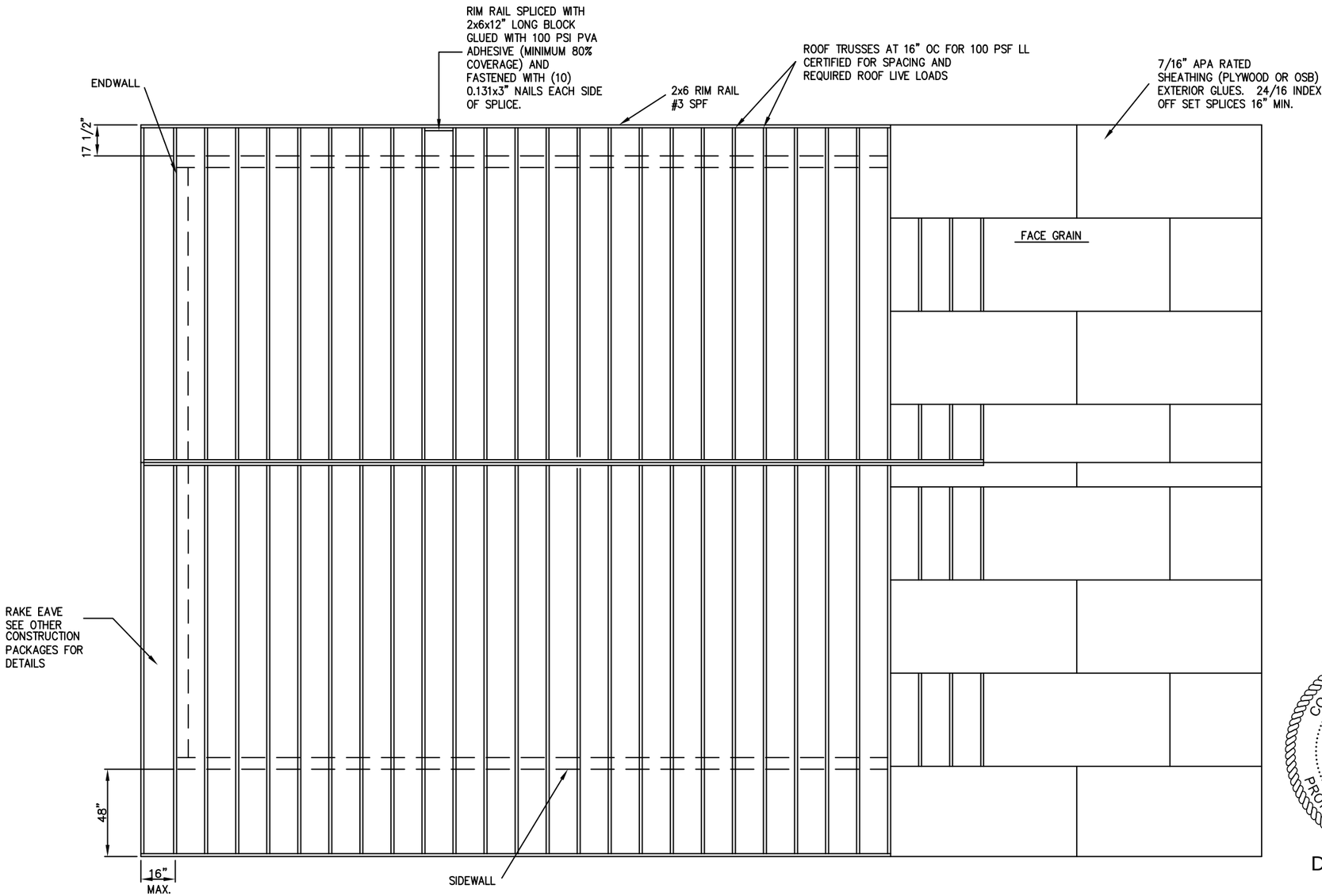

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GENERAL NOTES:
1. SEE FASTENING SCHEDULE FOR REQUIRED FASTENERS AND QUANTITIES NOT SHOWN ON THIS DRAWING.
2. ATTACH CEILING MATERIAL AS REQUIRED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. WHEN INSIDE HEIGHT OF ATTIC IS LESS THAN 30", NO ATTIC ACCES IS REQUIRED.

FAMILY BUILT HOMES Gering Industrial Site 982 Rundell Road Gering, NE 69341 Phone: (308)633-0050	Date: 02/18/18 Drwn. by: HDG Rev #: Rev Date:
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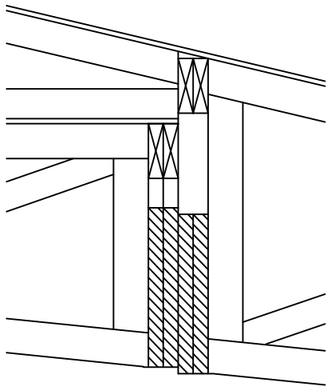

A CENTER LINE RIDGEBEAM

RIDEBEAM SPAN TABLE		
MAXIMUM SPANS		
RIDGEBEAM		100 PSF RLL
(2) 1 1/2"x16" LVL (EACH HALF)		169"
(2) 1 1/2"x18" LVL (EACH HALF)		190"
(2) 1 1/2"x20" LVL (EACH HALF)		210"
(2) 1 1/2"x22" LVL (EACH HALF)		229"
(2) 1 1/2"x24" LVL (EACH HALF)		249"

NOTES:
ALL LVL MEMBERS TO BE E = 2,000,000 psi, Fb = 2750 psi, Fv = 250 psi

MATELINE OPENING UPLIFT STRAPPING SPAN CHART		
TRUSSES 16" OC		
USING 1 1/2"x26GA. STRAPS FASTENED EACH END WITH (5) 0.120x1 1/2" NAILS		
STRAP SPACING AT 16" OC		
NUMBER OF STRAPS	SIDE OPENING SPAN	BETWEEN OPENINGS SPAN
1	100"	83"
2	215"	165"
3	331"	248"
4	446"	330"
5	562"	413"
6	677"	495"

C MATELINE UPLIFT STRAPPING REQUIREMENTS

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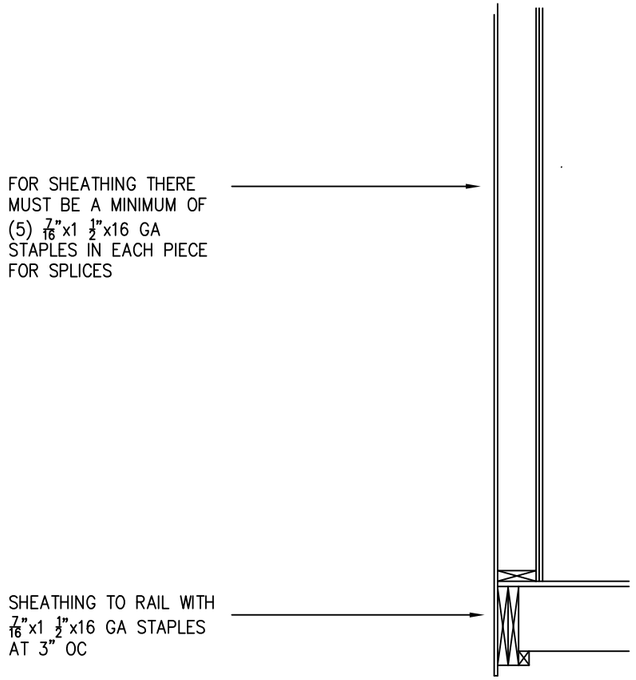
WHEN THIS DETAIL IS USED STRAPS FROM STUD TO FLOOR ARE NOT REQUIRED AND NO BRACKET IS REQUIRED FROM TRUSS TO TOP PLATE/STUD.



B UPLIFT RESISTANCE

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