

PLAN:  
Hazlitt



See note on foundation plan A-2

**FRONT ELEVATION**

Scale: 1/4" = 1'0"

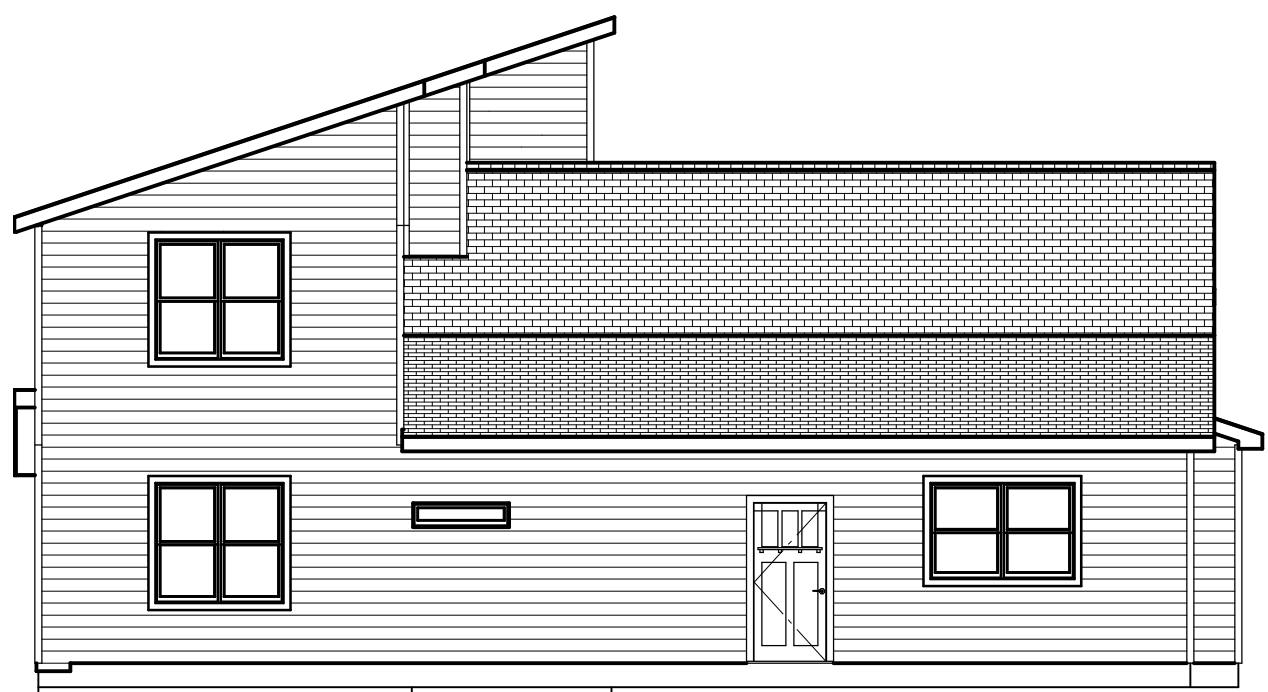
9'0" CEILING HEIGHT FIRST FLOOR  
(HEADER HEIGHT 7'6")  
8'0" CEILING HEIGHT SECOND FLOOR  
(HEADER HEIGHT 7')

FRAME WINDOWS TO HEADER HEIGHT



**LEFT ELEVATION**

Scale: 1/8" = 1'0"



**REAR ELEVATION**

Scale: 1/8" = 1'0"



**RIGHT ELEVATION**

Scale: 1/8" = 1'0"

SHEET TITLE:

**ELEVATIONS**

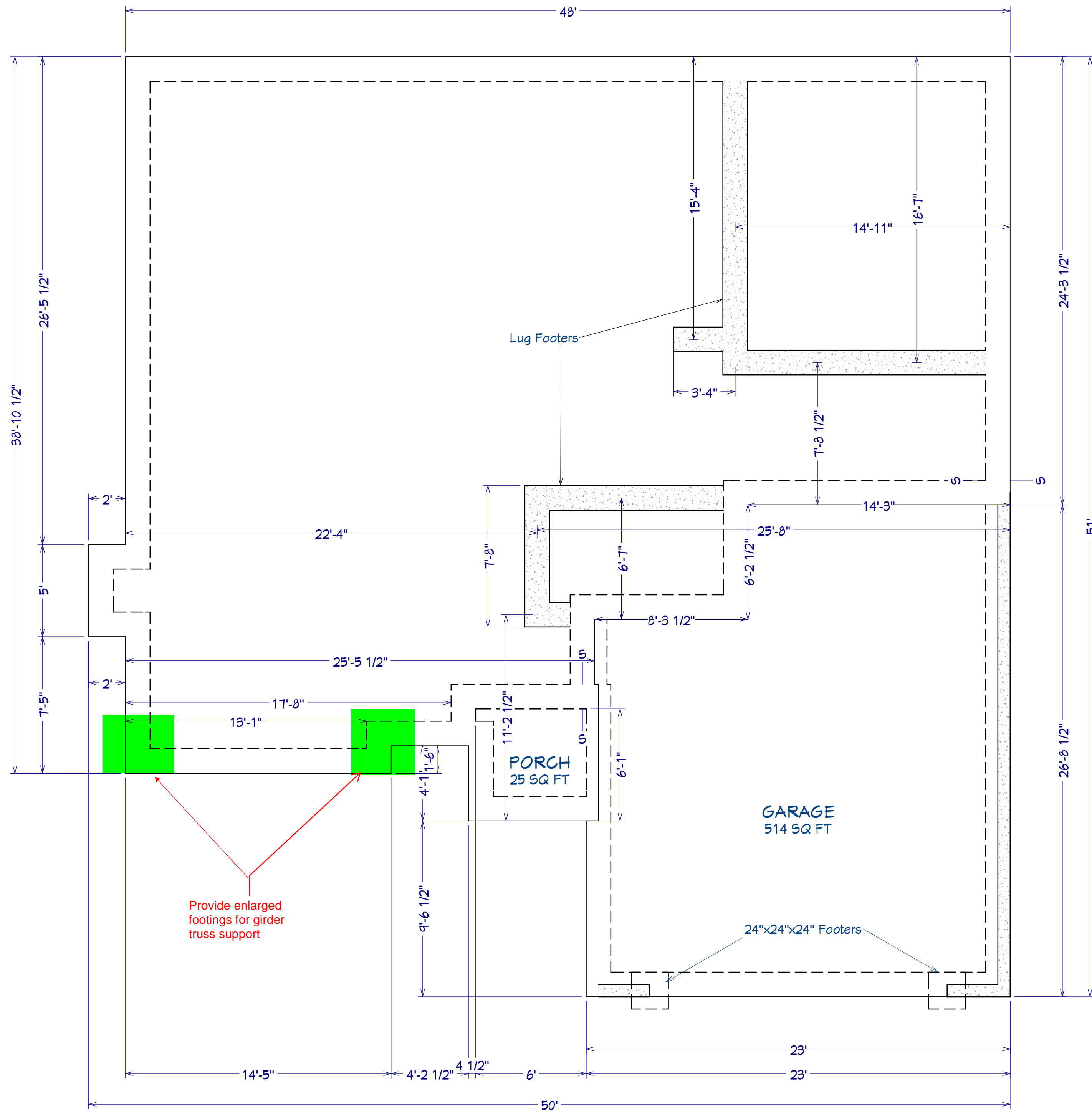
**PROJECT ADDRESS:**  
18 Brewster Ct.  
Liberty Meadows Lot 32

DESIGNED BY:  
Precision Custom Homes  
Raeferd, NC  
Shaun@PrecisionCustomHomesNC.com

DATE:  
1/16/23

SCALE:  
1/4" = 1'

SHEET:  
**A-1**



**FOUNDATION PLAN**  
Scale: 1/4" = 1'0"

AREA SCHEDULE	
NAME	AREA
1st FLOOR	1,564 SF
2nd FLOOR	866 SF
GARAGE	560 SF
FRONT PORCH	39 SF
<b>TOTAL HEATED</b>	<b>2,430 SF</b>
<b>TOTAL UNDER ROOF</b>	<b>3,029 SF</b>

PLAN:  
Hazlitt

SHEET TITLE:  
**FOUNDATION**

PROJECT ADDRESS:  
18 Brewster Ct.  
Liberty Meadows Lot 32

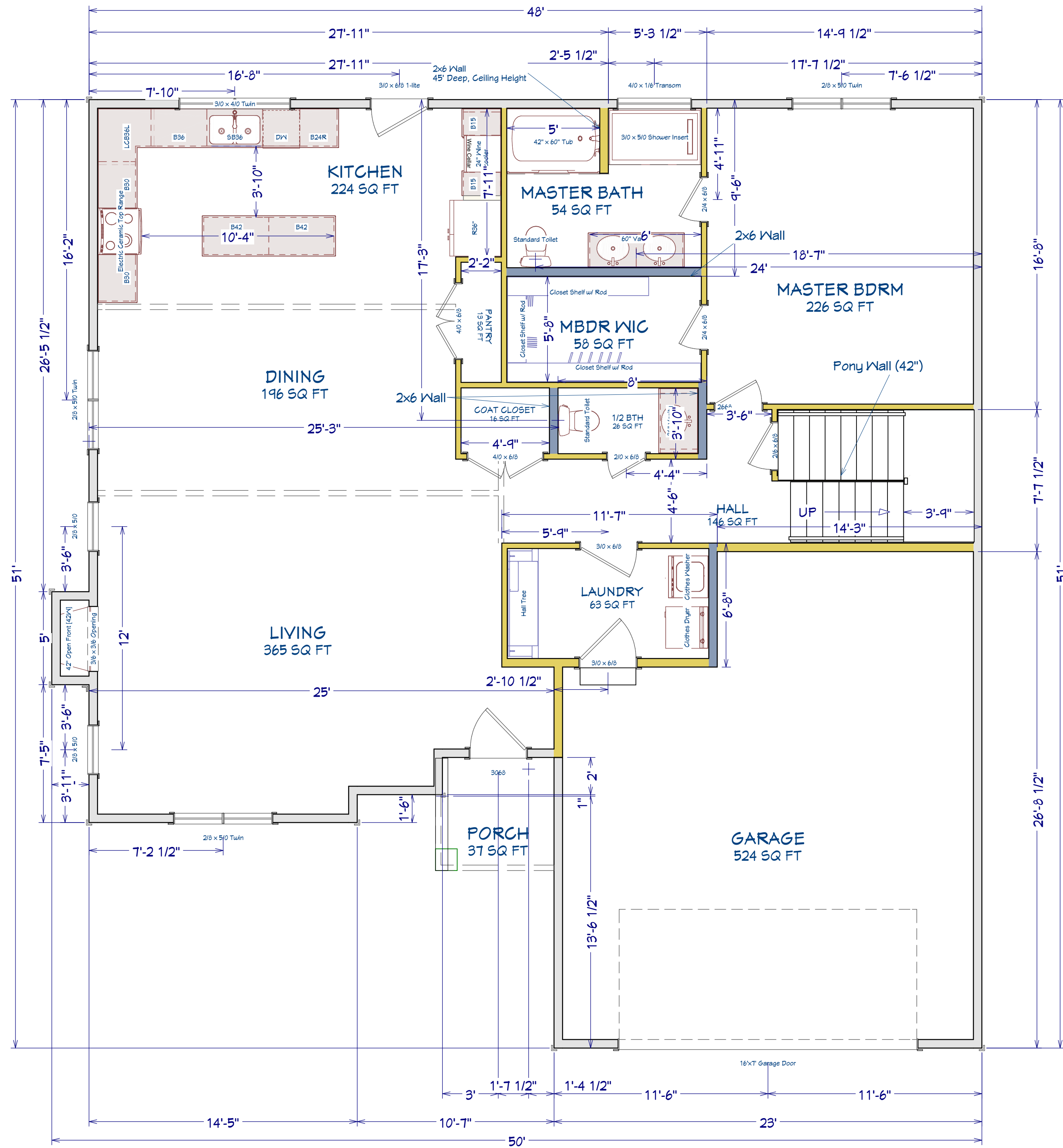
DESIGNED BY:  
Precision Custom Homes  
Rae ford, NC  
Shaun@PrecisionCustomHomesNC.com

DATE:  
1/16/23

SCALE:  
1/4" = 1'

SHEET:  
**A-2**





AREA SCHEDULE	
NAME	AREA
1st FLOOR	1,564 SF
2nd FLOOR	866 SF
GARAGE	560 SF
FRONT PORCH	39 SF
<b>TOTAL HEATED</b>	<b>2,430 SF</b>
<b>TOTAL UNDER ROOF</b>	<b>3,024 SF</b>

PLAN:  
Hazlitt

SHEET TITLE:  
**1st FLOOR**

PROJECT ADDRESS:  
18 Brewster Ct.  
Liberty Meadows Lot 32

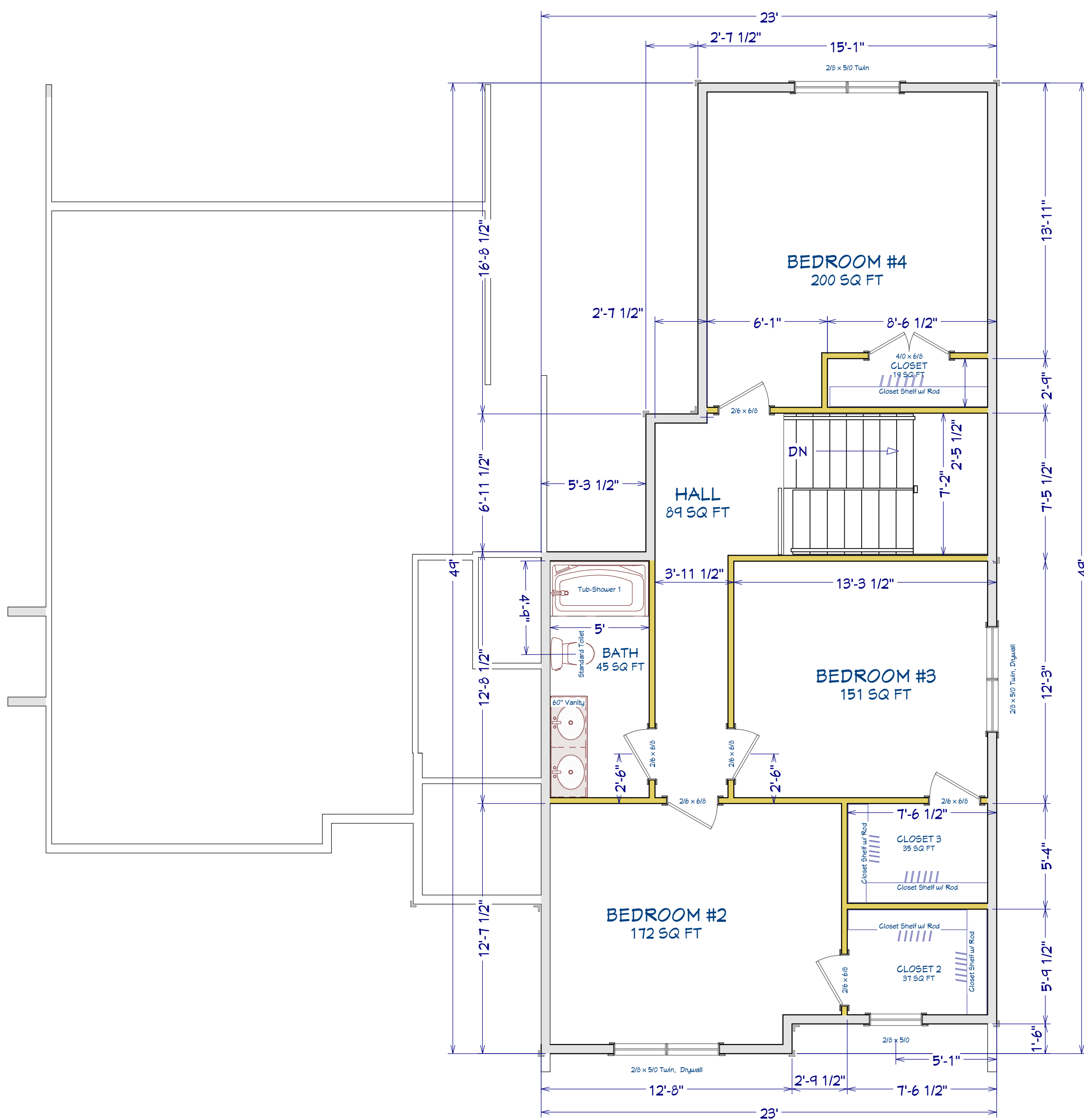
DESIGNED BY:  
Precision Custom Homes  
RaeFord, NC  
Shaun@PrecisionCustomHomesNC.com

DATE:  
1/16/23

SCALE:  
1/4" = 1'

SHEET:  
**A-4**





AREA SCHEDULE	
NAME	AREA
1st FLOOR	1,564 SF
2nd FLOOR	866 SF
GARAGE	560 SF
FRONT PORCH	39 SF
<b>TOTAL HEATED</b>	<b>2,430 SF</b>
<b>TOTAL UNDER ROOF</b>	<b>3,029 SF</b>

PLAN:  
Hazlitt

SHEET TITLE:  
**2nd FLOOR**

PROJECT ADDRESS:  
18 Brewster Ct.  
Liberty Meadows Lot 32

DESIGNED BY:  
Precision Custom Homes  
Raeferd, NC  
Shaun@PrecisionCustomHomesNC.com

DATE:  
1/16/23

SCALE:  
1/4" = 1'

SHEET:  
**A-5**





# ROOF & FLOOR TRUSSES & BEAMS

Reilly Road Industrial Park  
Fayetteville, N.C. 28309  
Phone: (910) 864-8787  
Fax: (910) 864-4444

Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables ( derived from the prescriptive Code requirements ) to determine the minimum foundation size and number of wood studs required to support reactions greater than 3000# but not greater than 15000#. A registered design professional shall be retained to design the support system for any reaction that exceeds those specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.

Signature  
**Neil Baggett**

### LOAD CHART FOR JACK STUDS

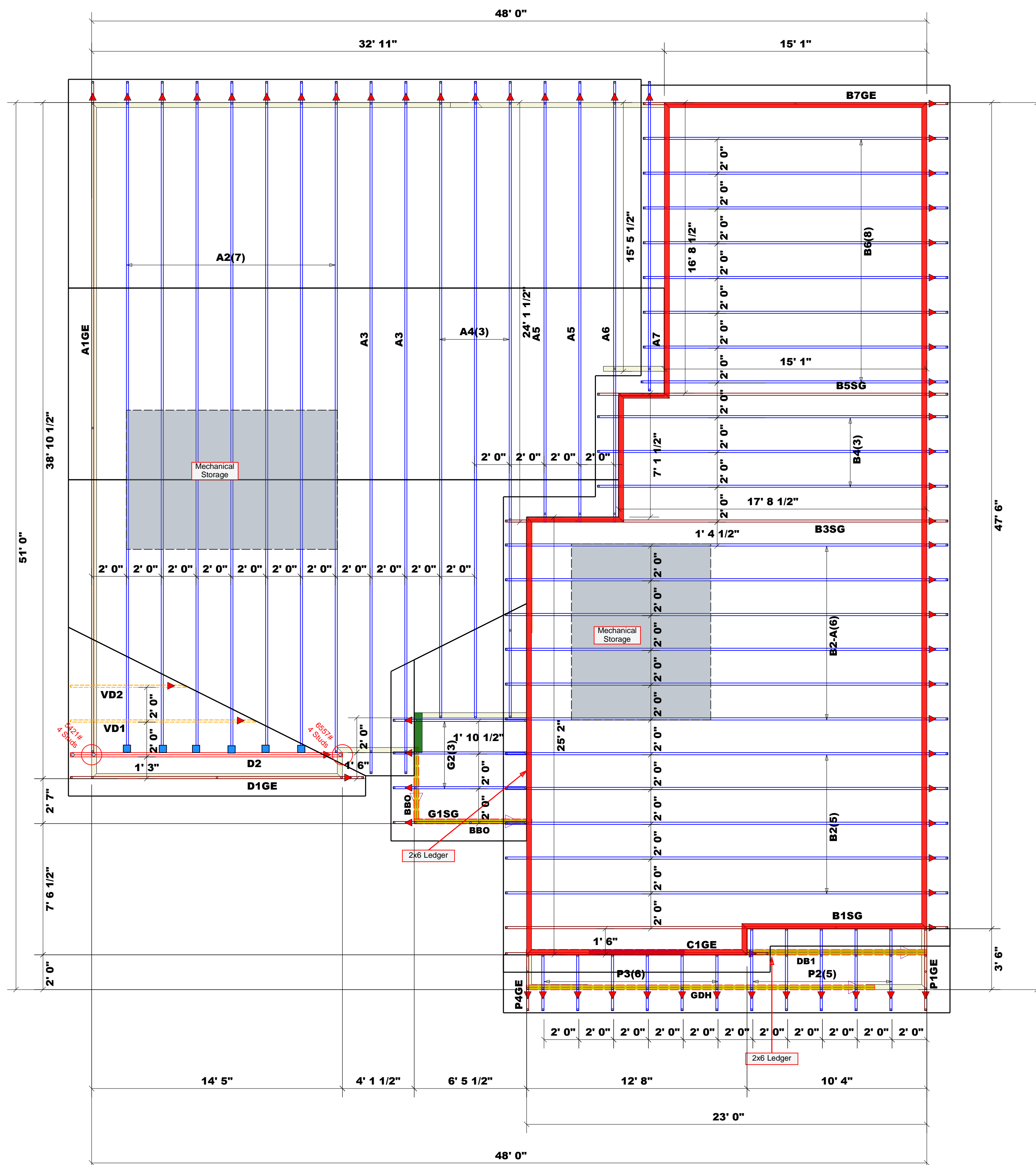
(BASED ON TABLES R502.5(1) & (b))  
NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADER/GIRDER

END REACTION (UP TO)	REQ. D. STUDS FOR (1) FT. HEADER	END REACTION (UP TO)	REQ. D. STUDS FOR (1) FT. HEADER	END REACTION (UP TO)	REQ. D. STUDS FOR (1) FT. HEADER
1700	1	2550	1	3400	1
3400	2	5100	2	5100	2
5100	3	7650	3	6800	2
6800	4	10200	4	10200	3
8500	5	12750	5	13600	4
10200	6	15300	6	17000	5
11900	7				
13600	8				
15300	9				

COUNTY	ADDRESS	MODEL	DATE REV.	DRAWN BY	SALESMAN
Harnett	Lot 32 Liberty Meadows	Roof	1/17/2023	Neil Baggett	Neil Baggett

BUILDER	JOB NAME	PLAN	SEAL DATE	QUOTE #	JOB #
Precision Custom Homes	Lot 32 Liberty Meadows	Hazlitt	N/A	N/A	J0123-0245

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY. These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCSI-B1 and BCSI-B3 provided with the truss delivery package or online @ sbciindustry.com



**Plumbing Drop Notes**

1. Plumbing drop locations shown are NOT exact.
2. Contractor to verify ALL plumbing drop locations prior to setting Floor Trusses.
3. Adjust spacing as needed not to exceed 24"oc.

**Dimension Notes**

1. All exterior wall to wall dimensions are to face of stud unless noted otherwise
2. All interior wall dimensions are to face of stud unless noted otherwise
3. All exterior wall to truss dimensions are to face of stud unless noted otherwise

= 2758.28 sq.ft.	Roof Area
= 31.62 ft.	Ridge Line
= 0 ft.	Hip Line
= 226.21 ft.	Horiz. OH
= 150.73 ft.	Raked OH
= 95 sheets	Decking

All Walls Shown Are Considered Load Bearing

= Indicates Left End of Truss ▲  
(Reference Engineered Truss Drawing)  
Do Not Erect Trusses Backwards

Truss Placement Plan  
Scale: 1/4"=1'

**Hatch Legend**

Padded HVAC	[Grey Hatch]
2nd Floor Walls @ 8' 1 1/2" UNO	[Red Hatch]
Wall @ 13' 1 1/2"	[Green Hatch]
Flush Beam	[Orange Hatch]
Drop Beam	[Yellow Hatch]

**Products**

Net Qty	Plies	Product	Length	PlotID
2	2	1-3/4"x 16" LVL Kerto-S	9' 0"	FB1
2	2	1-3/4"x 16" LVL Kerto-S	7' 0"	FB2
2	2	1-3/4"x 18" LVL Kerto-S	23' 0"	DB1
2	2	2x12 SP No.2	20' 0"	GDH

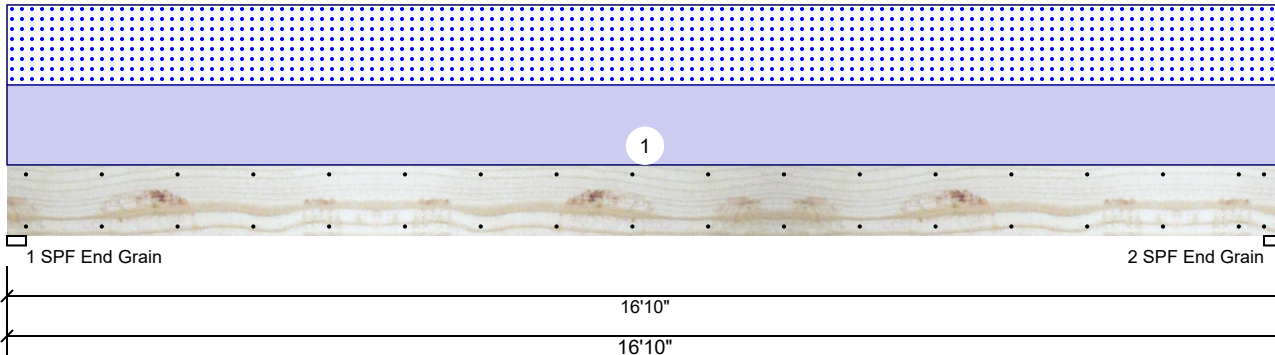
All Truss Reactions are Less than 3,000 lbs. Unless Noted Otherwise.

-- Denotes Reaction Greater than 3,000 lbs. Reaction / # of Studs

Nail Information		Connector Information				
Truss	Header	Supported Member	Qty	Manuf	Product	Sym
16d/3-1/2"	16d/3-1/2"	Varies	8	USP	HUS410	●
16d/3-1/2"	16d/3-1/2"	Varies	7	USP	HUS26	■

**GDH SP #2 2.000" X 12.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED Ib (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	337	337	0	0
2	Vertical	0	337	337	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	13%	337 / 337	673	L	D+S
2 - SPF End Grain	3.000"	Vert	13%	337 / 337	673	L	D+S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2709 ft-lb	8'5"	4548 ft-lb	0.596 (60%)	D+S	L
Unbraced	2709 ft-lb	8'5"	2710 ft-lb	1.000 (100%)	D+S	L
Shear	578 lb	1'2 1/4"	4528 lb	0.128 (13%)	D+S	L
LL Defl inch	0.133 (L/1490)	8'5 1/16"	0.411 (L/480)	0.322 (32%)	S	L
TL Defl inch	0.265 (L/745)	8'5 1/16"	0.549 (L/360)	0.483 (48%)	D+S	L

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 14' 3/16" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	P3

**Manufacturer Info**

Comtech, Inc.  
1001 S. Reilly Road, Suite #639  
Fayetteville, NC  
USA  
28314  
910-864-TRUS

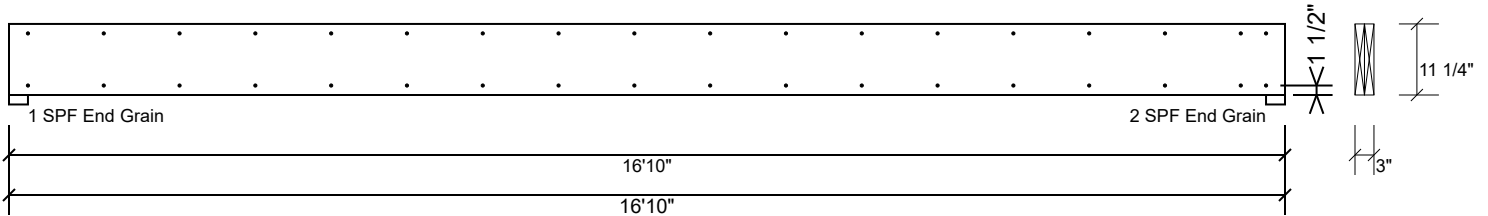


This design is valid until 11/3/2024



**GDH SP #2 2.000" X 12.000" 2-Ply - PASSED**

Level: Level



**Multi-Ply Analysis**

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	202.6 PLF
Yield Limit per Fastener	101.3 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

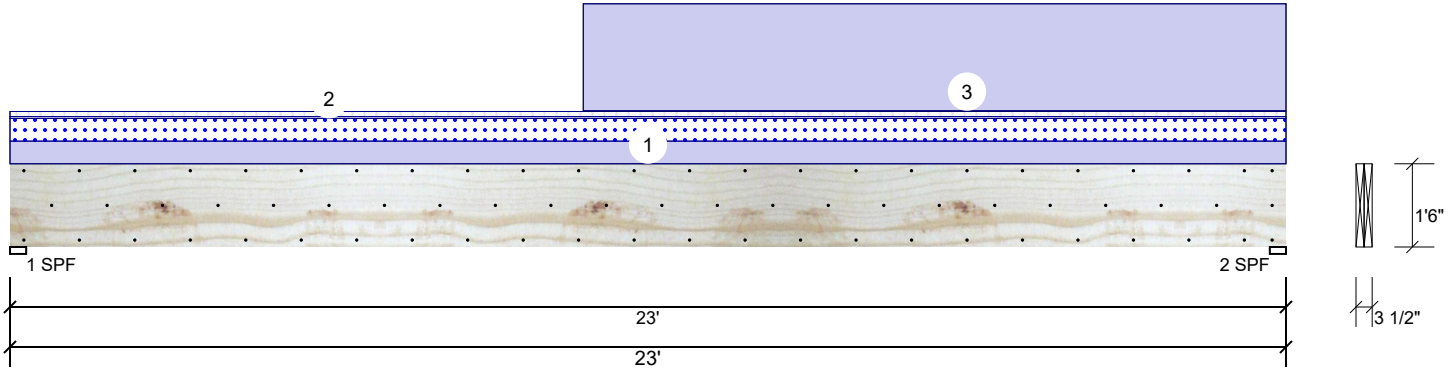
<b>Manufacturer Info</b>	Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS
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This design is valid until 11/3/2024

**DB1 Kerto-S LVL 1.750" X 18.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC/IRC 2015
Load Sharing:	No
Deck:	Not Checked

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	278	1762	621	0	0
2	Vertical	278	3241	621	0	0

**Bearings**

Bearing	Length	Dir.	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	47%	1762 / 674	2436	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	75%	3241 / 674	3915	L	D+0.75(L+S)

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	15112 ft-lb	13'2 7/8"	38683 ft-lb	0.391 (39%)	D	Uniform
Unbraced	18767 ft-lb	12'11 3/4"	18779 ft-lb	0.999 (100%)	D+0.75(L+S) L	
Shear	2761 lb	21'2 1/2"	12096 lb	0.228 (23%)	D	Uniform
LL Defl inch	0.107 (L/2523)	11'6 1/16"	0.564 (L/480)	0.190 (19%)	0.75(L+S) L	
TL Defl inch	0.522 (L/519)	11'11 11/16"	0.752 (L/360)	0.694 (69%)	D+0.75(L+S) L	

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 7'1 3/8" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Near Face	54 PLF	0 PLF	54 PLF	0 PLF	0 PLF	P TRUSSES
2	Tie-In Far	0-0-0 to 23-0-0	0-7-4	Far Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR LOADING
2	Tie-In Near	0-0-0 to 23-0-0	0-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR LOADING
3	Part. Uniform	10-4-0 to 23-0-0		Top	255 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL & C1GE
	Self Weight				14 PLF					

**Notes**

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

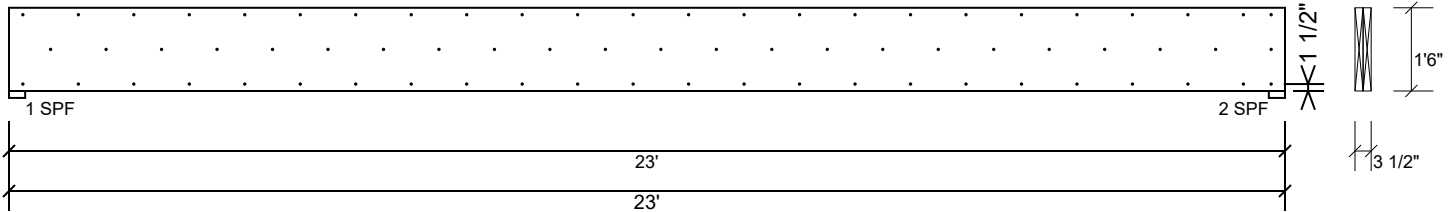
Metsä Wood  
301 Merritt 7 Building, 2nd Floor  
Norwalk, CT 06851  
(800) 622-5850  
www.metsawood.com/us

Comtech, Inc.  
1001 S. Reilly Road, Suite #639  
Fayetteville, NC  
USA  
28314  
910-864-TRUS



**DB1 Kerto-S LVL 1.750" X 18.000" 2-Ply - PASSED**

Level: Level



**Multi-Ply Analysis**

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	19.1 %
Load	54.0 PLF
Yield Limit per Foot	282.4 PLF
Yield Limit per Fastener	94.1 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+S
Duration Factor	1.15

**Notes**

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**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

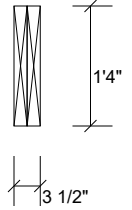
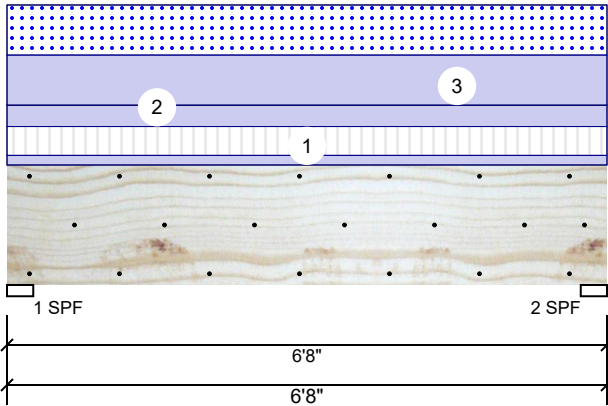
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**FB2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	540	1558	937	0	0
2	Vertical	540	1558	937	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	51%	1558 / 1108	2666	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	51%	1558 / 1108	2666	L	D+0.75(L+S)

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3879 ft-lb	3'4"	39750 ft-lb	0.098 (10%)	D+0.75(L+S)	L
Unbraced	3879 ft-lb	3'4"	18821 ft-lb	0.206 (21%)	D+0.75(L+S)	L
Shear	1617 lb	5' 1/2"	13739 lb	0.118 (12%)	D+0.75(L+S)	L
LL Defl inch	0.008 (L/9314)	3'4"	0.156 (L/480)	0.052 (5%)	0.75(L+S)	L
TL Defl inch	0.019 (L/3870)	3'4"	0.208 (L/360)	0.093 (9%)	D+0.75(L+S)	L

**Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

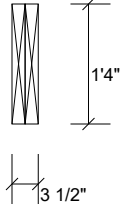
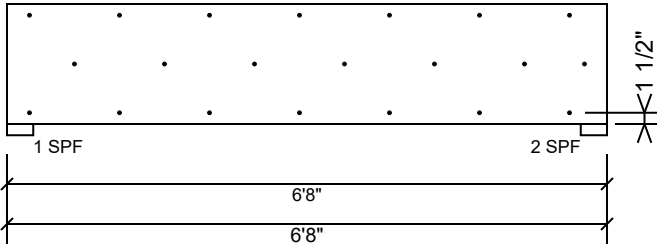
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Near Face	54 PLF	162 PLF	0 PLF	0 PLF	0 PLF	F2
2	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	281 PLF	0 PLF	281 PLF	0 PLF	0 PLF	B2-A
	Self Weight				12 PLF					

<p><b>Notes</b></p> <p>Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.</p> <p><b>Lumber</b></p> <p>1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive chemicals</p> <p><b>Handling &amp; Installation</b></p> <p>1. LVL beams must not be cut or drilled 2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals 3. Damaged Beams must not be used 4. Design assumes top edge is laterally restrained 5. Provide lateral support at bearing points to avoid lateral displacement and rotation</p>	<p>4. For flat roofs provide proper drainage to prevent ponding</p>	<p><b>Manufacturer Info</b></p> <p>Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us</p>	<p>Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>
		<p>This design is valid until 11/3/2024</p>	



**FB2 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED**

Level: Level



**Multi-Ply Analysis**

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	44.0 %
Load	108.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

**Notes**

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**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
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6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

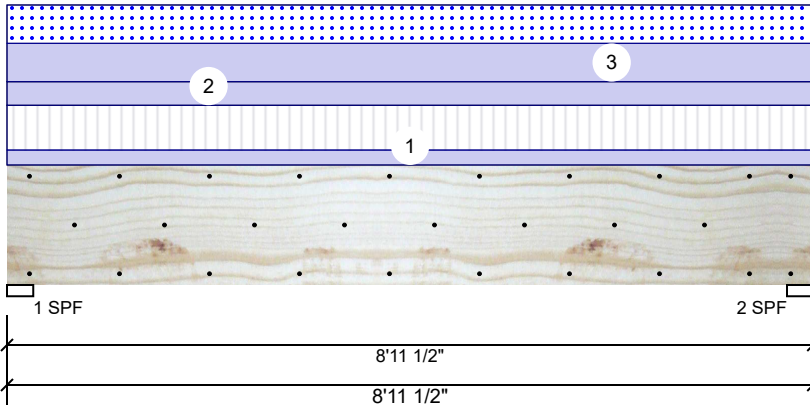
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**FB1 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1021	1807	873	0	0
2	Vertical	1021	1807	873	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	62%	1807 / 1421	3228	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	62%	1807 / 1421	3228	L	D+0.75(L+S)

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5731 ft-lb	4'5 3/4"	34565 ft-lb	0.166 (17%)	D+L	L
Unbraced	6541 ft-lb	4'5 3/4"	13975 ft-lb	0.468 (47%)	D+0.75(L+S)	L
Shear	2224 lb	1'7 1/2"	11947 lb	0.186 (19%)	D+L	L
LL Defl inch	0.022 (L/4718)	4'5 13/16"	0.213 (L/480)	0.102 (10%)	0.75(L+S)	L
TL Defl inch	0.049 (L/2077)	4'5 13/16"	0.284 (L/360)	0.173 (17%)	D+0.75(L+S)	L

**Design Notes**

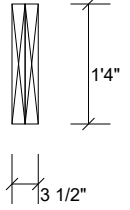
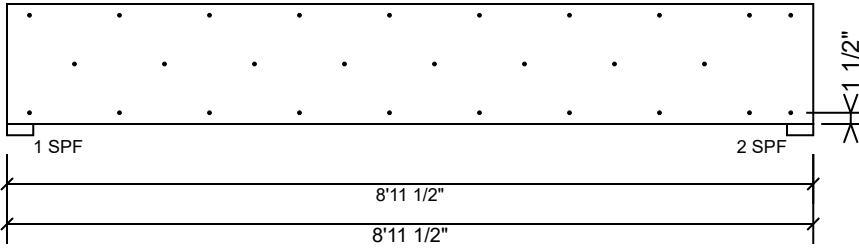
- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Near Face	76 PLF	228 PLF	0 PLF	0 PLF	0 PLF	F4
2	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
3	Uniform			Top	195 PLF	0 PLF	195 PLF	0 PLF	0 PLF	B4
	Self Weight				12 PLF					

<p><b>Notes</b></p> <p>Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.</p> <p><b>Lumber</b></p> <p>1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive chemicals</p> <p><b>Handling &amp; Installation</b></p> <p>1. LVL beams must not be cut or drilled 2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals 3. Damaged Beams must not be used 4. Design assumes top edge is laterally restrained 5. Provide lateral support at bearing points to avoid lateral displacement and rotation</p>	<p>4. For flat roofs provide proper drainage to prevent ponding</p>	<p><b>Manufacturer Info</b></p> <p>Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us</p>	<p>Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>

**FB1 Kerto-S LVL 1.750" X 16.000" 2-Ply - PASSED**

Level: Level



**Multi-Ply Analysis**

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	61.9 %
Load	152.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
Duration Factor	1.00

**Notes**

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

**Lumber**

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

**Handling & Installation**

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

**Manufacturer Info**

Metsä Wood  
301 Merritt 7 Building, 2nd Floor  
Norwalk, CT 06851  
(800) 622-5850  
www.metsawood.com/us

Comtech, Inc.  
1001 S. Reilly Road, Suite #639  
Fayetteville, NC  
USA  
28314  
910-864-TRUS



# North Carolina 2018 - R402.1.5 Total UA

**Property**

Cameron, NC 28326  
Model: Hazlitt  
Community: Liberty Meadows

**Organization**

Southern Energy Manager  
Justin Smith

**Inspection Status**

Results are projected

Template - SMG Precision - Liberty  
Meadows lot 11 - CZ 3 slab -  
Liberty Meadows lot 11

**Builder**

SMG Precision Properties

**This report is based on a proposed design and does not confirm field enforcement of design elements.**

## Building UA

Elements	NC Reference	As Designed
Ceilings	61.8	58.6
Above-Grade Walls	190.0	141.1
Windows, Doors and Skylights	87.7	77.5
Slab Floor:	85.0	111.1
Framed Floors	23.3	25.3
Foundation Walls	0.0	0.0
Rim Joists	9.9	8.0
<b>Overall UA (Design must be equal or lower):</b>	<b>457.7</b>	<b>421.6</b>

## Requirements

✓	402.1.5	Total UA alternative compliance passes by 7.9%.	
✓	402.3.2	Average SHGC: 0.28 Max SHGC: 0.30	
✓	R402.4.2.2	Air Leakage Testing	Air sealing is 0.25 CFM50 / ft <sup>2</sup> Shell Area. It must not exceed 0.30 CFM50 / ft <sup>2</sup> Shell Area.
✓	R402.5	Area-weighted average fenestration SHGC	
✓	R402.5	Area-weighted average fenestration U-Factor	
✓	R404.1	Lighting Equipment Efficiency	
✓	Mandatory Checklist	Mandatory code requirements that are not checked by Ekotrope must be met.	
✓	R403.3.1	Duct Insulation	
✓	403.3.3	Duct Testing	

**Design exceeds requirements for North Carolina 2018 Prescriptive compliance by 7.9%.**

Name: Justin Smith

Signature: Justin Smith

Organization: Southern Energy Management

Digitally signed: 8/9/22 at 11:13 AM

### Ekotrope RATER - Version 4.0.1.2966

North Carolina 2018 Prescriptive compliance results calculated using Ekotrope RATER's energy and code compliance algorithm, including appropriate amendments.  
Ekotrope RATER is a RESNET Accredited HERS Rating Tool. All results are based on data entered by Ekotrope users.  
Ekotrope disclaims all liability for the information shown on this report.



# Building Summary



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Template - SMG Precision - Liberty Meadows lot 11  
- CZ 3 slab - ecoSelect  
Liberty Meadows lot 11

**Builder**  
SMG Precision Properties

## General Building Information

Number Of Bedrooms	4
Number Of Floors	2
Conditioned Floor Area [sq. ft.]	2,430
Has Electric Vehicle Ready Space	No
Unconditioned, attached garage?	Yes
Conditioned Volume [cu. ft.]	21,870
Total Units in Building	1
Residence Type	Single family detached
Number of Floors in Building	-
Floor Number	-
Model	Hazlitt
Community	Liberty Meadows
RESNET/IECC 2006 Climate Zone	4A
IECC 2021 Climate Zone	3A

## Foundation Wall

None Present

## Foundation Wall Library List

None Present

## Slab

Name	Library Type	Perimeter	Floor Grade	Carpet R	Exposed Masonry Area	Surface Area	Location	Enclosing
slab	Uninsulated	174	On Grade	1	0	1,564.0 ft²	Exposed Exterior	Conditioned Space

## Slab Library List

Name	Wall Construction Type	Slab Completely Insulated?	Underslab Insulation Width [ft]	Perimeter Insulation Depth [ft]	Perimeter Insulation R Value	Thermal Break	Effective R-value
Uninsulated	Wood Frame / Other	No	0	0	0	No	0.00

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**SOUTHERN ENERGY MANAGEMENT**  
 ENERGY EFFICIENCY & SOLAR POWER

Template - SMG Precision - Liberty Meadows lot 11  
 - CZ 3 slab - ecoSelect  
 Liberty Meadows lot 11

**Builder**  
 SMG Precision Properties

## Framed Floor

Name	Library Type	Carpet R	Floor Grade	Surface Area	Location
over garage	R 19, 16"OC G1 Carpet	0	Above Grade	495.0 ft <sup>2</sup>	Unconditioned, attached garage

## Framed Floor Library List

Name	Effective R-value
R 19, 16"OC G1 Carpet	19.566

## Rim Joist

Name	Library Type	Surface Area	Location
1st floor ambient	R 19 G1, 16"OC	144.0 ft <sup>2</sup>	Exposed Exterior
1st floor garage	R 19 G1, 16"OC	34.0 ft <sup>2</sup>	Unconditioned, attached garage

## Rim Joist Library List

Name	Effective Insulation R-value
R 19 G1, 16"OC	17.30

## Wall

Name	Library Type	Surface Color	Surface Area	Location
1st floor ambient	R 19 Adv. Framing G1 16" O.C	Medium	1,260.0 ft <sup>2</sup>	Exposed Exterior
1st floor garage	R 19 Adv. Framing G1 16" O.C	Medium	306.0 ft <sup>2</sup>	Unconditioned, attached garage
2nd floor ambient	R 19 Adv. Framing G1 16" O.C	Medium	1,152.0 ft <sup>2</sup>	Exposed Exterior

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**Builder**  
 SMG Precision Properties

## Wall Library List

Name	Effective R-value
R 19 Adv. Framing G1 16" O.C	17.492

## Glazing

Name	Library Type	Wall Assignment	Foundation Wall Assignment	Is Operable	Overhang Depth	Overhang Ft To Top	Overhang Ft To Bottom	Orientation	Surface Area
front 2nd unshaded	33/28	2nd floor ambient		Yes	0	0	0	North	40.1 ft <sup>2</sup>
front unshaded	33/28	1st floor ambient		Yes	0	0	0	North	13.4 ft <sup>2</sup>
rear 2nd unshaded	33/28	2nd floor ambient		Yes	0	0	0	South	26.7 ft <sup>2</sup>
rear unshaded	33/28	1st floor ambient		Yes	0	0	0	South	77.1 ft <sup>2</sup>
right unshaded	33/28	1st floor ambient		Yes	0	0	0	West	53.4 ft <sup>2</sup>

## Glazing Library List

Name	Shgc	U-factor
33/28	0.28	0.330

## Skylight

None Present

## Skylight Library List

None Present

# Building Summary



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**Builder**  
SMG Precision Properties

## Opaque Door

Name	Library Type	Wall Assignment	Foundation Wall Assignment	Emittance	Solar Absorptance	Surface Color	Surface Area	Location
front entry	Fiberglass R-5	1st floor ambient		0.9	0.75	Medium	20.0 ft <sup>2</sup>	Exposed Exterior
garage entry	Fiberglass R-5	1st floor garage		0.9	0.75	Medium	20.0 ft <sup>2</sup>	Unconditioned, attached garage

## Opaque Door Library List

Name	Effective U-factor
Fiberglass R-5	0.200

## Roof Insulation

Name	Library Type	Attic Exterior Area [ft <sup>2</sup> ]	Clay or Concrete Roof Tiles	Surface Color	Surface Area	Location
attic	R 38 Attic BLOWN FG G1 2x10 24"OC NO Radiant Barrier	3,026.73	No	Dark	2,059.0 ft <sup>2</sup>	Attic

## Roof Insulation Library List

Name	Has Radiant Barrier	Effective R-value
R 38 Attic BLOWN FG G1 2x10 24"OC NO Radiant Barrier	No	35.115

## Whole House Infiltration

Infiltration	Measurement Type	Shelter Class
1750 CFM at 50 Pa	Blower-door tested	4

## Mechanical Ventilation

None Present



# Building Summary



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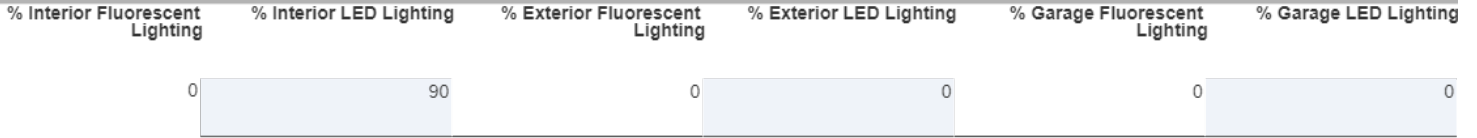
**Organization**  
Southern Energy Management  
Justin Smith

**Inspection Status**  
Results are projected

Template - SMG Precision - Liberty Meadows lot 11  
- CZ 3 slab - ecoSelect  
Liberty Meadows lot 11

**Builder**  
SMG Precision Properties

## Lighting



## Onsite Generation

None Present

## Onsite Generation Library List

None Present

## Solar Generation

None Present

## Dehumidifier

None Present

## Dehumidifier Library List

None Present

## Whole House Fan

None Present

# Building Summary



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 Justin Smith

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Template - SMG Precision - Liberty Meadows lot 11  
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**Builder**  
 SMG Precision Properties

## Whole House Fan Library List

None Present

## Conditioning Equipment

Name	Library Type	Serial Number	Heating Percent Load	Cooling Percent Load	Hot Water Percent Load	Location
1st floor heat pump	z 24k 14 SEER 8.2hspf		64%	64%	0%	Attic
2nd floor heat pump	z 24k 14 SEER 8.2hspf		36%	36%	0%	Attic
Water Heating	z 50 gal. 0.95 EF Elec		0%	0%	100%	Unconditioned Garage

### Equipment Type: z 24k 14 SEER 8.2hspf

Equipment Type	Air Source Heat Pump
Fuel Type	Electric
Distribution Type	Forced Air
Motor Type	PSC (Single Speed)
Heating Efficiency	8.2 HSPF
Heating Capacity [kBtu/h]	24
Backup Fuel Type	Electric
Switchover Temperature [°F]	0
Backup Heating Efficiency	1 COP
Use default Supplemental Heat	Yes
Cooling Efficiency	14 SEER
Cooling Capacity [kBtu/h]	24

### Equipment Type: z 50 gal. 0.95 EF Elec

Equipment Type	Residential Water Heater
Fuel Type	Electric
Distribution Type	Hydronic Delivery (Radiant)
Hot Water Efficiency	0.95 Energy Factor
Tank Capacity (gal.)	50
Hot Water Capacity [kBtu/h]	40
Recovery Efficiency	0.98

# Building Summary

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 Justin Smith

**Inspection Status**

Results are projected



**SOUTHERN ENERGY**  
**MANAGEMENT**  
 ENERGY EFFICIENCY & SOLAR POWER

Template - SMG Precision - Liberty Meadows lot 11  
 - CZ 3 slab - ecoSelect  
 Liberty Meadows lot 11

**Builder**

SMG Precision Properties

## Distribution System

Distribution Type	Forced Air
Heating Equipment	1st floor heat pump
Cooling Equipment	1st floor heat pump
Sq. Feet Served	1,564
# Return Grilles	2
Supply Duct R Value	8
Return Duct R Value	8
Supply Duct Area [ft²]	422.28
Return Duct Area [ft²]	156.4
Leakage to Outdoors	62 CFM @ 25Pa (3.96 / 100 ft²)
Total Leakage	62 CFM25
Total Leakage Duct Test Conditions	Post-Construction
Use Default Flow Rate	Yes
Duct 1	
Duct Location	Attic (well vented)
Percent Supply Area	70
Percent Return Area	70
Duct 2	
Duct Location	Conditioned Space
Percent Supply Area	30
Percent Return Area	30
Duct 3	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 4	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 5	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 6	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0

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 Liberty Meadows lot 11

**Builder**  
 SMG Precision Properties

## Distribution System

Distribution Type	Forced Air
Heating Equipment	2nd floor heat pump
Cooling Equipment	2nd floor heat pump
Sq. Feet Served	866
# Return Grilles	2
Supply Duct R Value	8
Return Duct R Value	8
Supply Duct Area [ft <sup>2</sup> ]	233.82
Return Duct Area [ft <sup>2</sup> ]	86.6
Leakage to Outdoors	34 CFM @ 25Pa (3.93 / 100 ft <sup>2</sup> )
Total Leakage	34 CFM25
Total Leakage Duct Test Conditions	Post-Construction
Use Default Flow Rate	Yes
Duct 1	
Duct Location	Attic (well vented)
Percent Supply Area	100
Percent Return Area	100
Duct 2	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 3	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 4	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 5	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0
Duct 6	
Duct Location	Conditioned Space
Percent Supply Area	0
Percent Return Area	0

## HVAC Grading

HVAC Grading Not Conducted

## Ceiling Fan

Has Ceiling Fan	No
Cfm Per Watt	100

# Building Summary



## Property

Cameron, NC 28326  
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Community: Liberty Meadows

## Organization

Southern Energy Management  
Justin Smith

## Inspection Status

Results are projected

Template - SMG Precision - Liberty Meadows lot 11  
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Liberty Meadows lot 11

## Builder

SMG Precision Properties

## Water Distribution

Water Fixture Type	Low-flow
Use Default Hot Water Pipe Length	No
Hot Water Pipe Length [ft]	87
At Least R3 Pipe Insulation?	No
Hot Water Recirculation System?	No
Recirculation System Pipe Loop Length [ft]	20
Drain Water Heat Recovery?	No

## Clothes Dryer

Cef	3.01
Fuel Type	Electric
Field Utilization	Timer Controls
Is Outside Conditioned Space	No
Clothes Dryer Available	Yes
Defaults Type	HERS Reference

## Clothes Washer

Label Energy Rating	153 kWh/Year
Annual Gas Cost	\$12.00
Electric Rate	\$0.11/kWh
Gas Rate	\$1.22/Therm
Capacity	3.31
Imef	2.1547
Defaults Type	Custom
Load Type	Front-load
Loads Per Week	6
Is Outside Conditioned Space	No
Clothes Washer Available	Yes

## Dishwasher

Dishwasher Efficiency	270 kWh
Dishwasher Size	Standard
Annual Gas Cost	\$22.23
Electric Rate	\$0.12/kWh
Gas Rate	\$1.09/Therm
Is Outside Conditioned Space	No

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Liberty Meadows lot 11

**Builder**

SMG Precision Properties

## Appliances and Controls

Thermostat Cooling Setpoint	*** 75.0
Thermostat Heating Setpoint	*** 70.0
Range/Oven Fuel	Electric
Convection Oven?	No
Induction Range?	No
Range/Oven Outside Conditioned Space?	No
Refrigerator Consumption	538 kWh/Year
Refrigerator Outside Conditioned Space?	No

## Notes

Initial Inputs \_\_\_\_\_ MS 06/30/22 \_\_\_\_\_

- confirm HVAC specs
- confirm water heater specs
- confirm ventilation entry, modeled as air cycler
- modeled to worst case orientation
- confirm cfl lighting %