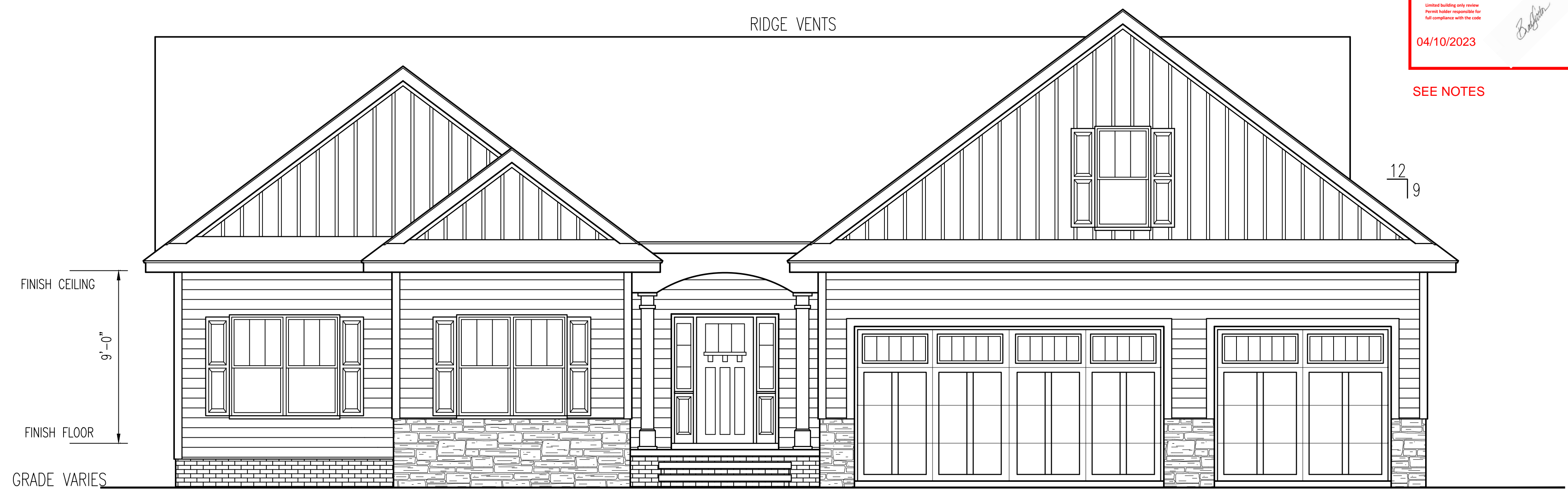
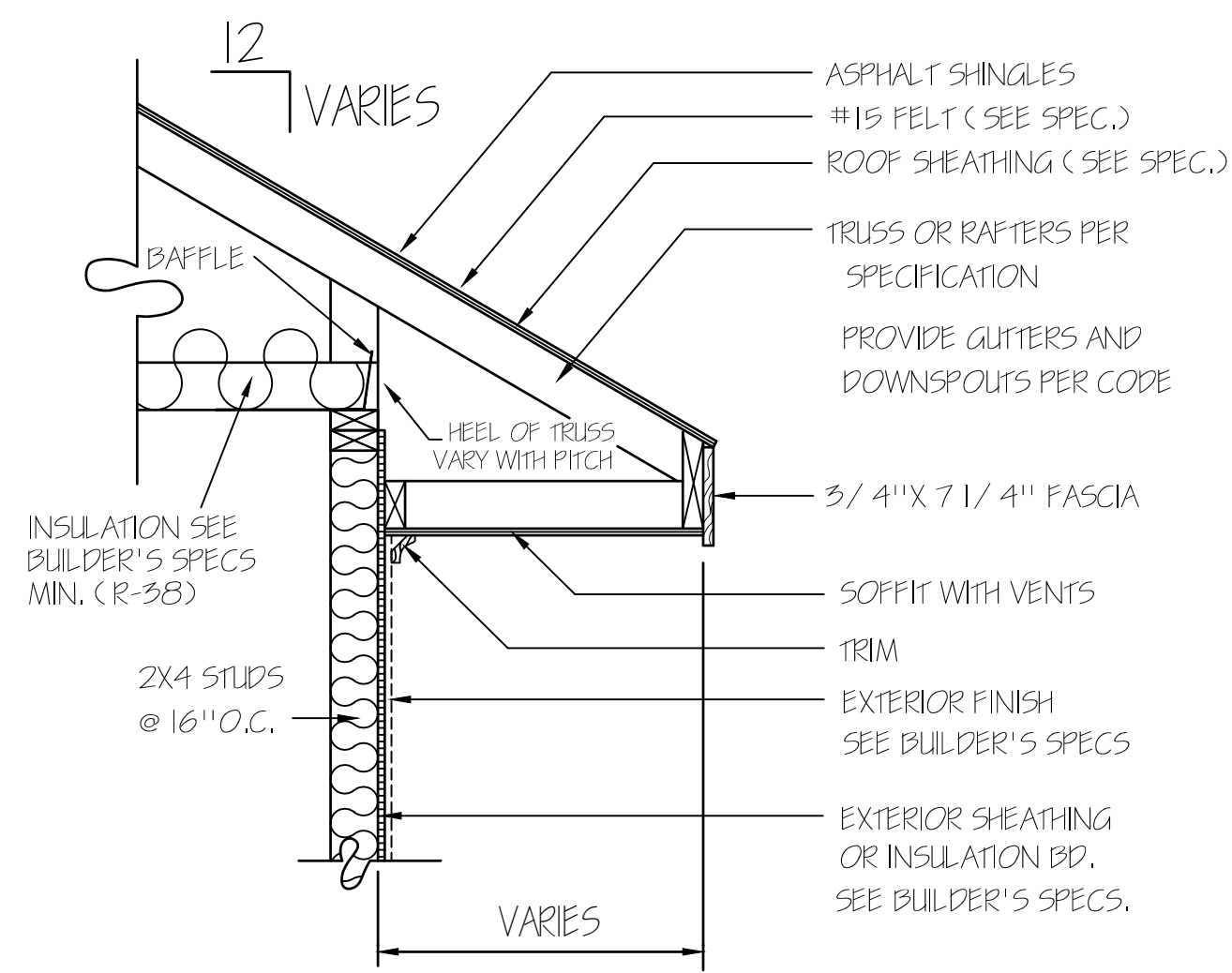
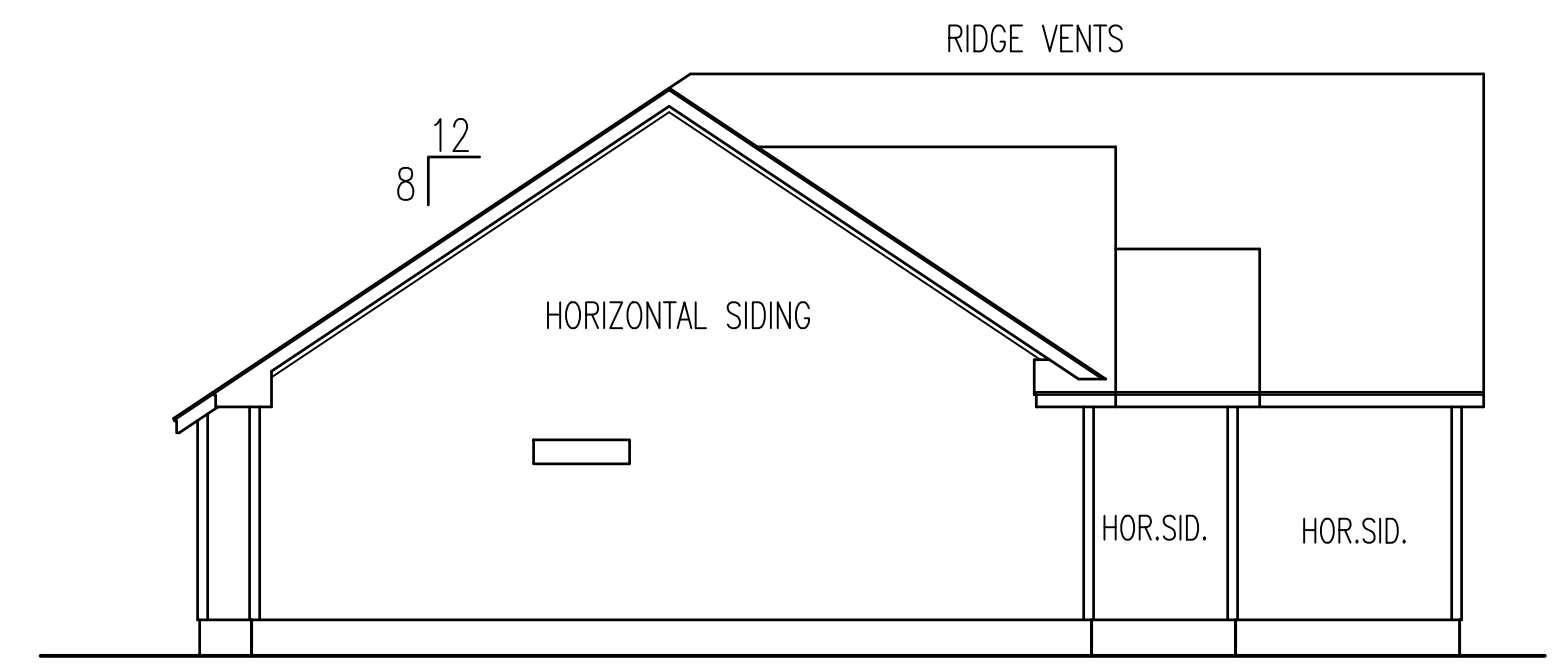


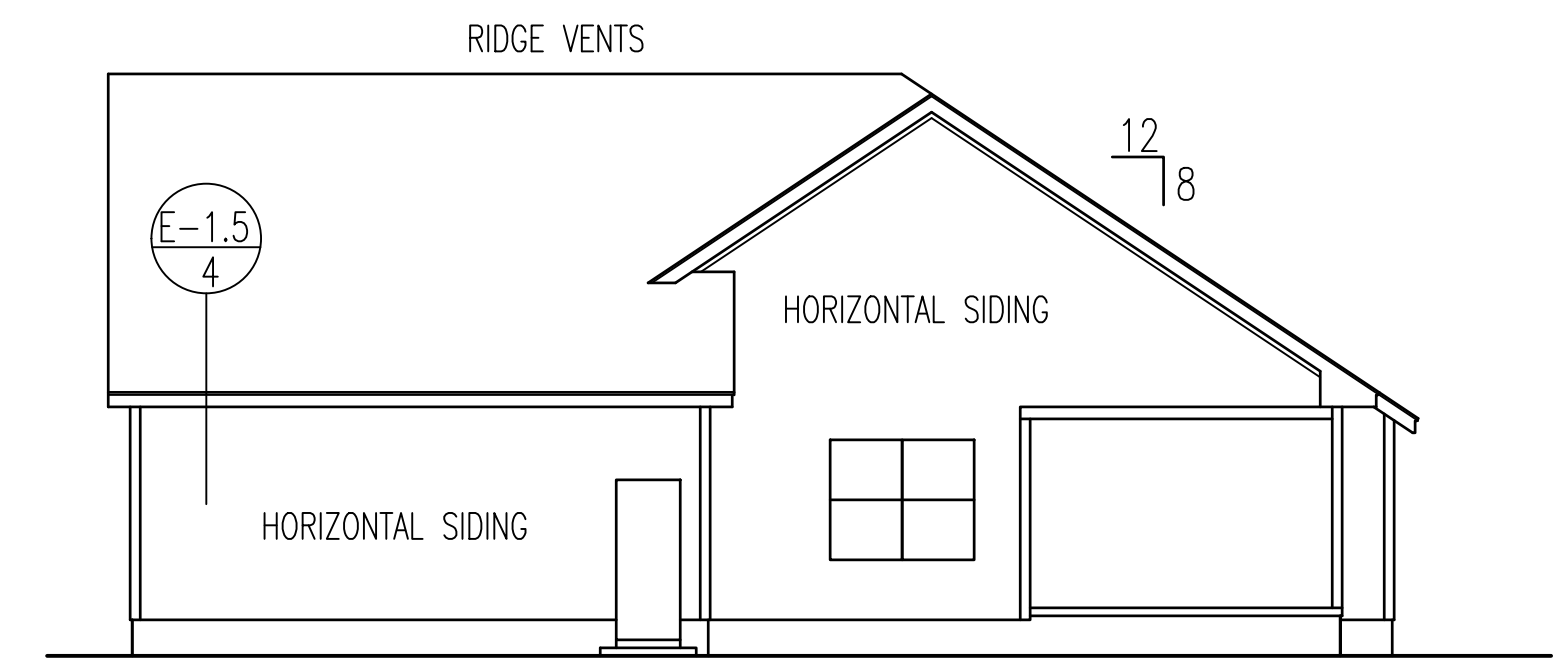
NOTICE TO CONTRACTOR  
 All materials shall comply with current building codes and be subject to field inspection and verification.  
 APPROVED  
 04/10/2023  
 Harnett COUNTY  
 NORTH CAROLINA



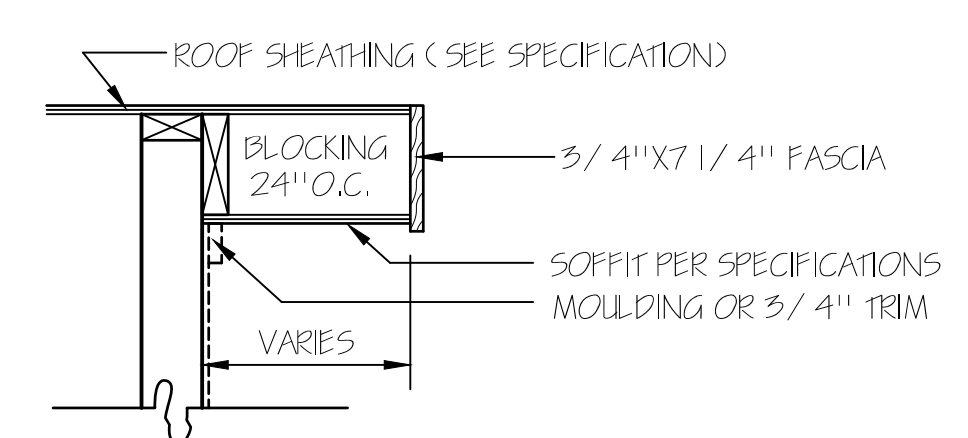
FRONT ELEVATION  
 SCALE: 1/4" = 1'-0"



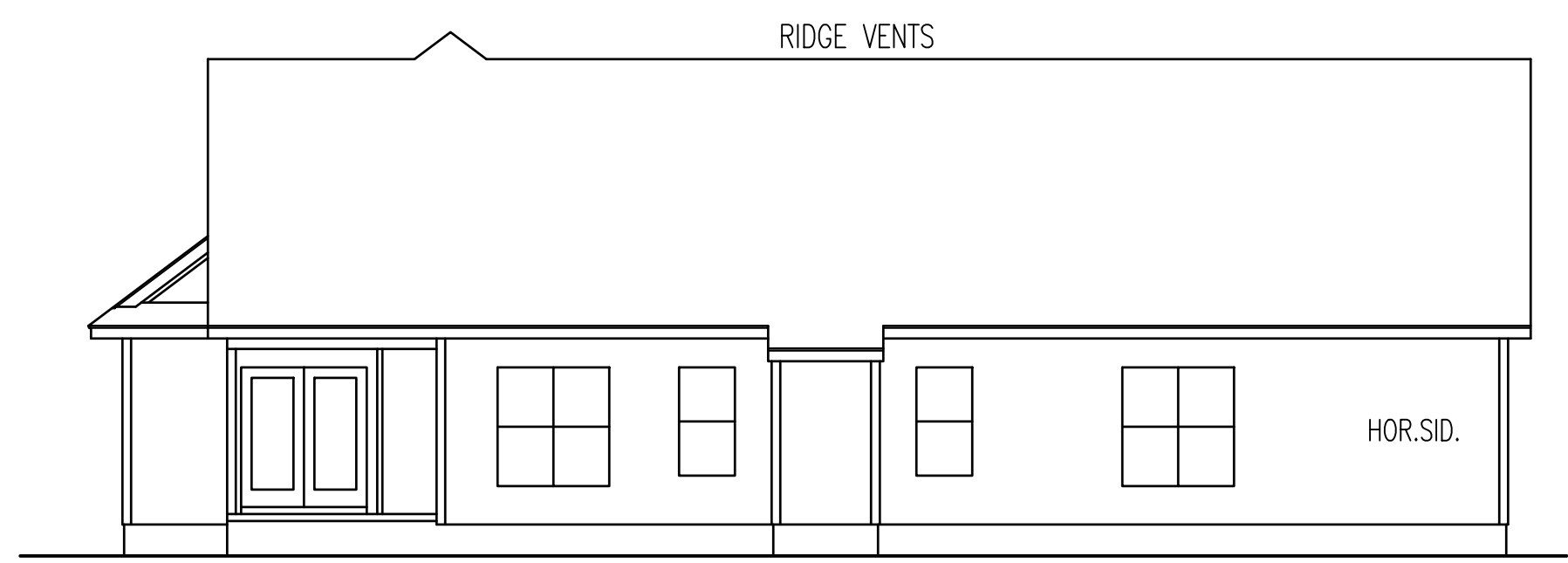
LEFT ELEVATION



RIGHT ELEVATION



RAKE DETAIL FOR GABLE ENDS



REAR ELEVATION  
 SCALE: 1/8" = 1'-0"

ATTIC VENTILATION CALCULATIONS

ATTIC AREA	2976 SQ.FT.	(AREA VENTILATION REQUIRED	19.8 SQ.FT.)
EACH	FT. BASE GABLE LOUVER @		SQ.FT. NET FREE AREA
EACH	FT. BASE GABLE LOUVER @		SQ.FT. NET FREE AREA
EACH	LOUVER @		SQ.FT. NET FREE AREA
90	LN.FT. EAVE VENT @ 11 SQ.IN./FT. =	6.9	SQ.FT. NET FREE AREA
101	LN.FT. RIDGE VENT @ 18 SQ.IN./FT. =	12.6	SQ.FT. NET FREE AREA

EXCLUSIVE RESIDENCE DESIGN FOR:

# WATERMARK HOMES

LOT: 89 SOUTH CREEK  
 NAME: PINYON PINE

TM DESIGNS  
 RESIDENTIAL PLANS BY TINA MCFADDEN  
 (910) 354-4736 TMDESIGNS2016@GMAIL.COM

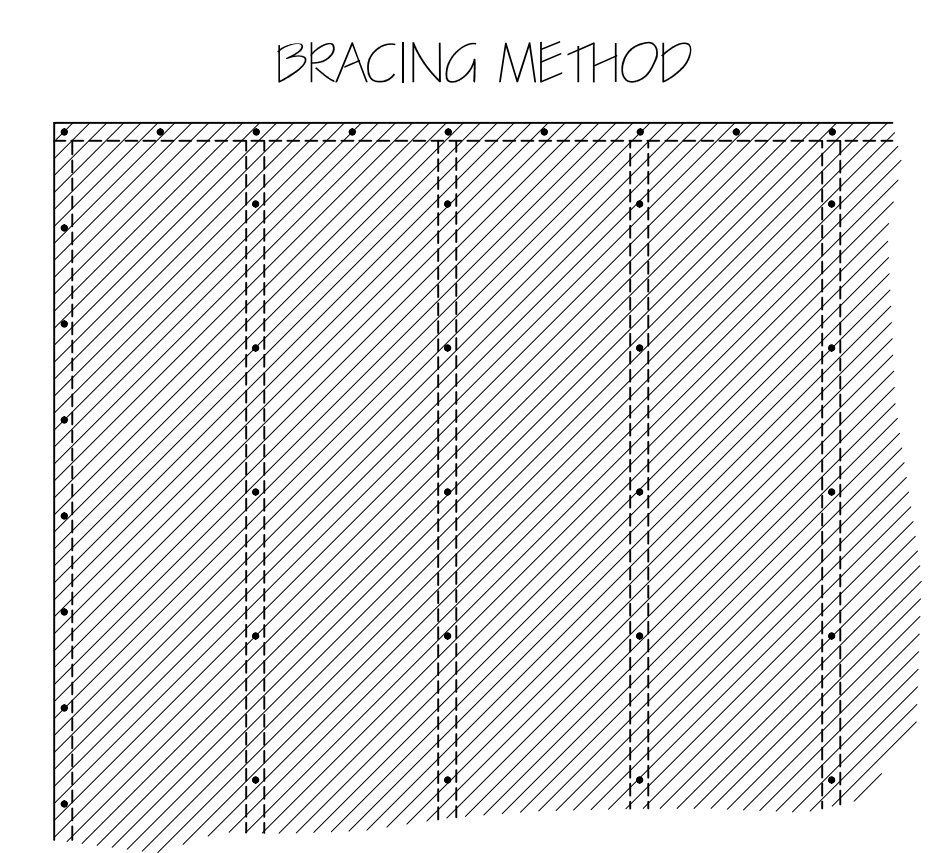
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 I HEREBY CERTIFY THAT THIS DRAWING MEETS LOCAL CODES, 2012 INTERNATIONAL BUILDING CODES.  
 THIS IS FOR THE CONSTRUCTION OF ONE HOUSE ON A SINGLE LOT, NOT TO BE REUSED

PLAN NUMBER  
 RG22-A06  
 OPTION #1

1	GARAGE	F	R
DATE: 6/19/22			

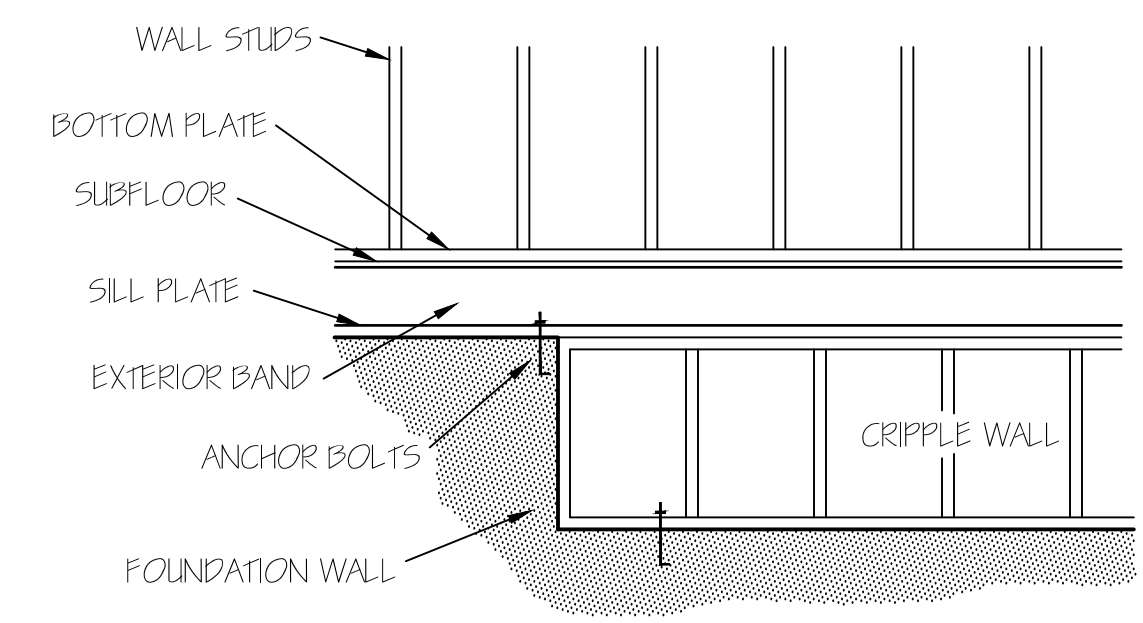
EXTERIOR WALLS (2) 2X10 HEADERS		
CLEAR SPAN FOR HEADER	NUMBER OF STUDS	
	JACKS	KINGS
ALL DOOR & C.O. BELOW 4'	1	1
ALL DOOR & C.O. 4' TO 7'-11"	2	2
ALL DOOR & C.O. 8' AND ABOVE	SIZED BY ENGINEER	

\*\*UNLESS NOTED OTHER WISE\*\*



**ENERGY TABLE**  
UFACTOR OF WINDOWS .30  
CLIMATE ZONE 3  
INSULATION: WALLS 15  
CEILING 38  
FLOORS 19

EXTERIOR WALL TO BE FULLY SHEATHED WITH 7/16" OSB. NAILING PATTERN TO BE 8" ON ALL EDGES AND 12" IN FIELD, WITH 8d NAILS.



FOUNDATION CRIPPLE WALLS SHALL BE FRAMED OF STUDS NOT SMALLER THAN THE STUDDING ABOVE. WHEN EXCEEDING 4 FT. IN HEIGHT, SUCH WALLS SHALL BE FRAMED OF STUDS HAVING THE SIZE REQUIRED FOR AN ADDITIONAL STORY. CRIPPLE WALLS WITH A STUD HEIGHT LESS THAN 14 INCHES SHALL BE CONTINUOUSLY SHEATHED ON ONE SIDE WITH WOOD STRUCTURAL PANELS FASTENED TO BOTH THE TOP AND BOTTOM PLATES IN ACCORDANCE WITH TABLE R602.3(1), OR CRIPPLE WALLS SHALL BE CONSTRUCTED OF SOLID BLOCKING.

**NOTE:**  
CEILING ARE 9'-0" UNLESS NOTED.  
SET WINDOWS @ 7'-4" UNLESS NOTED.

**FIRST FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

**HEATED AREA**

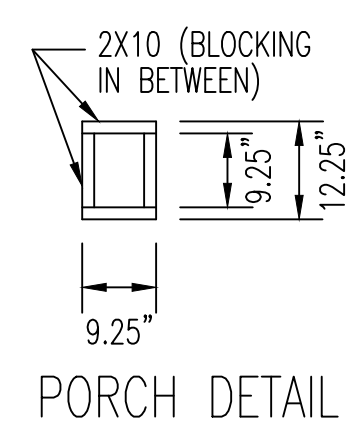
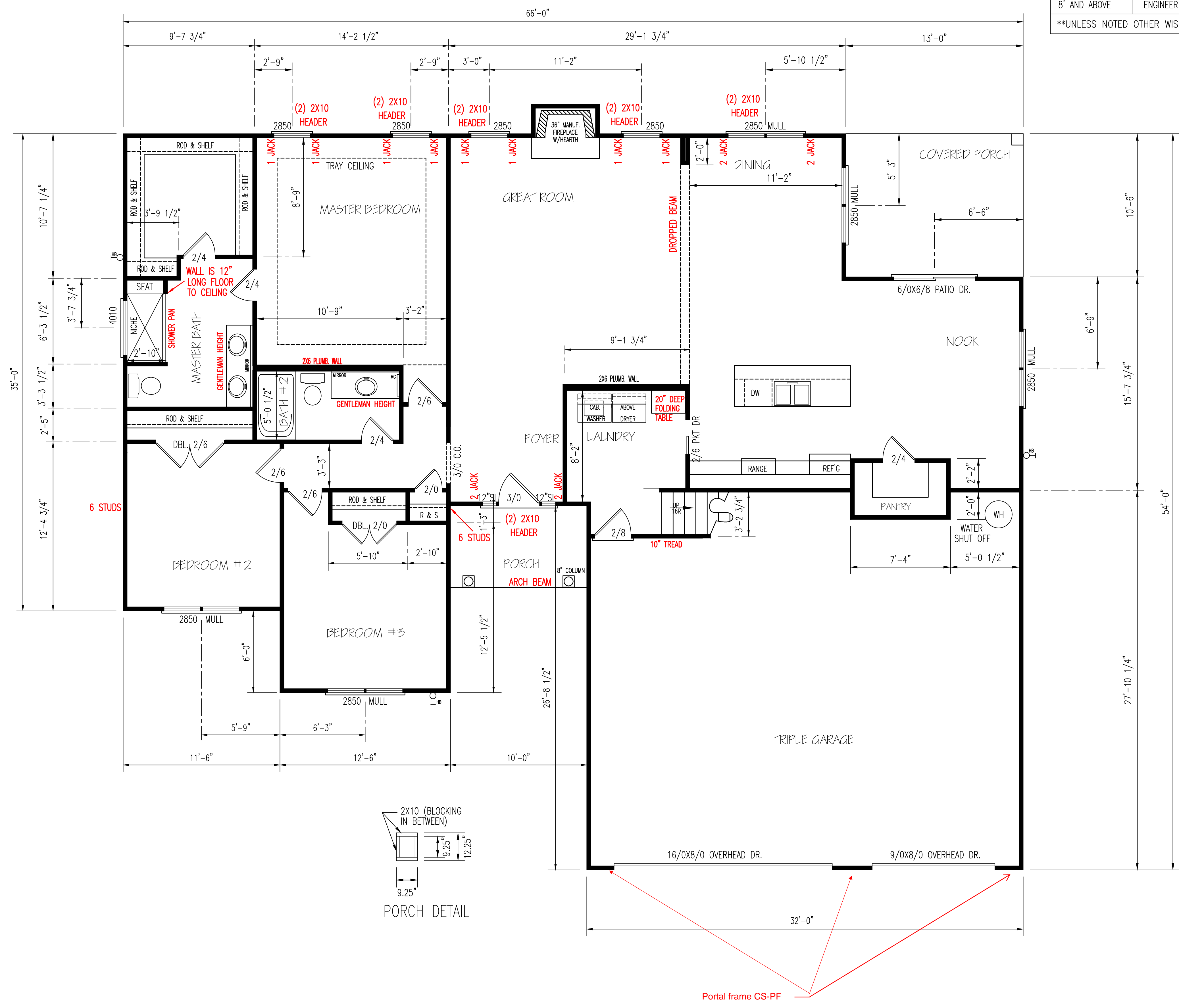
1ST FL	1921	SQ FT
2ND FL	367	SQ FT
TOTAL	2288	SQ FT

**OTHER AREAS**

GARAGE	898	SQ FT
STORAGE	181	SQ FT
F.PORCH	60	SQ FT
R.PORCH	137	SQ FT

**GARAGE PANEL WALL**

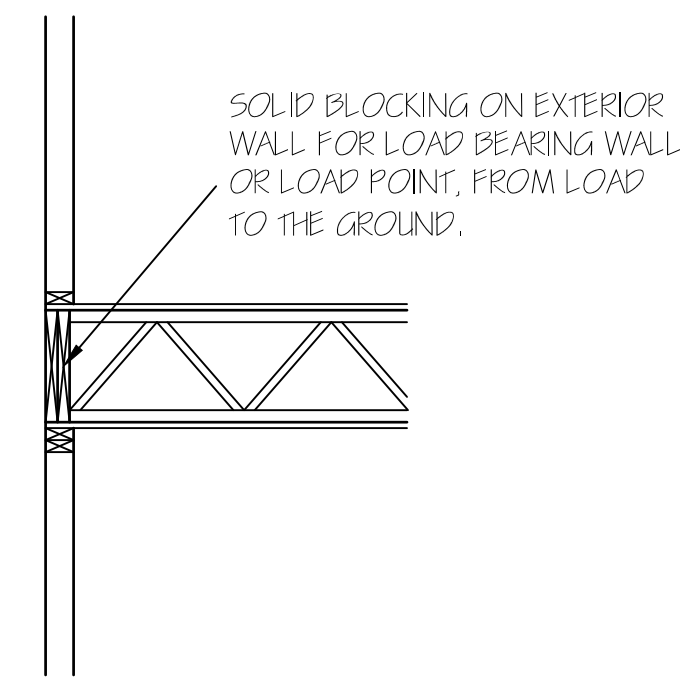
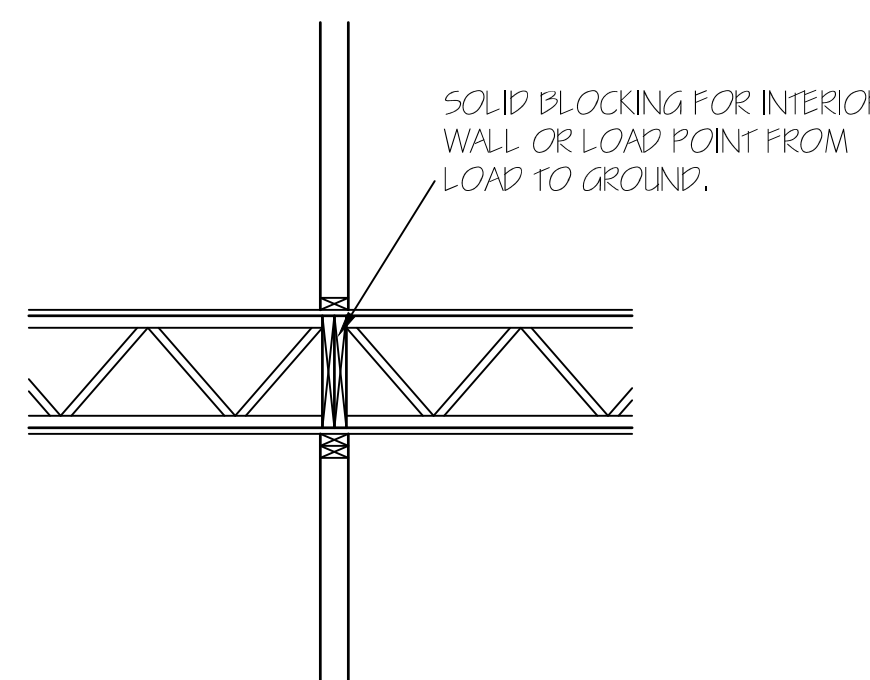
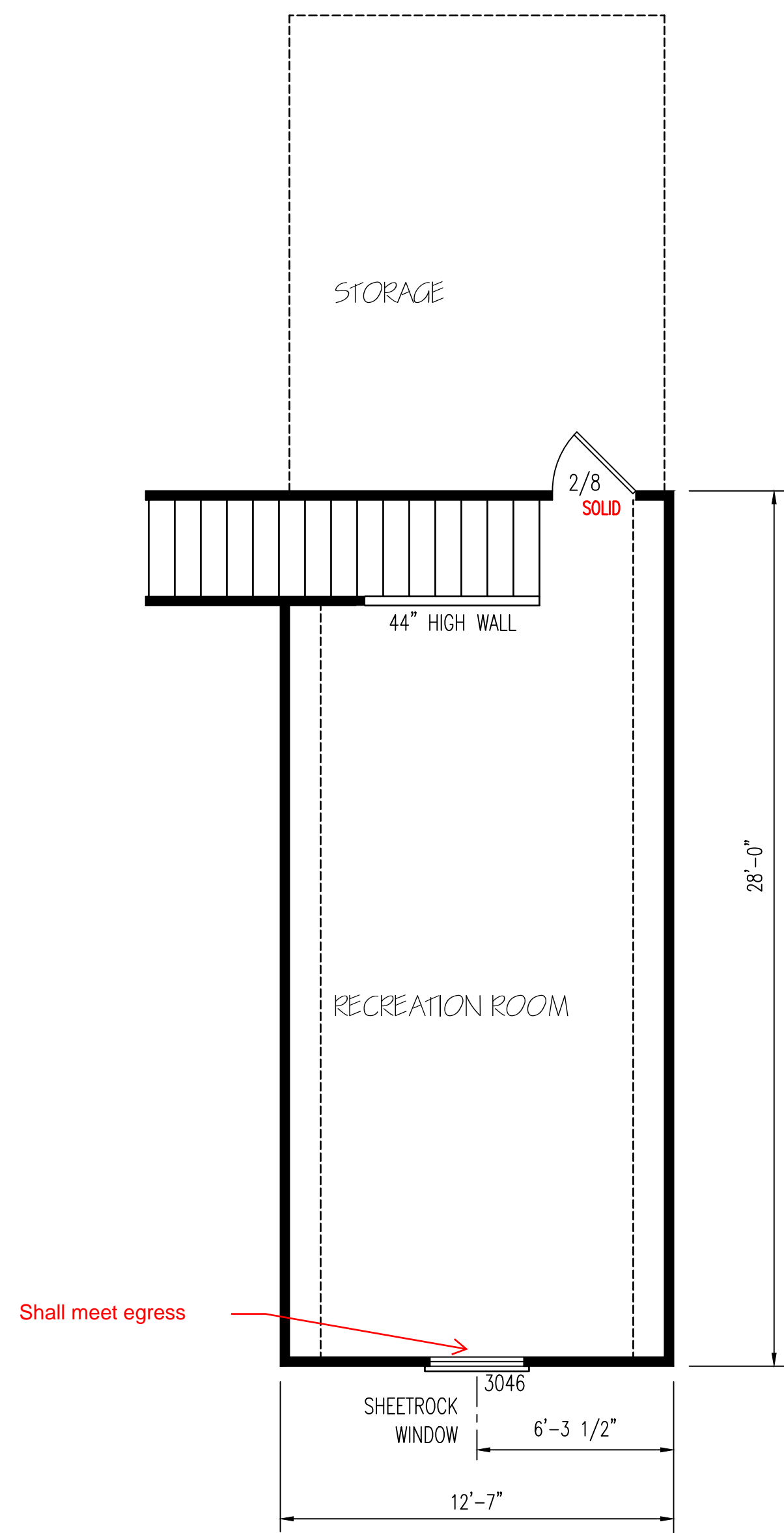
GARAGE PANEL WALLS UNDER 24" WIDE SHOULD BE EITHER PORTAL FRAMED OR 7/16" OSB ON BOTH SIDES WITH A NAILING PATTERN OF 3" ON ALL PANEL EDGES AND 6" IN THE FIELD.



Portal frame CS-PF

EXTERIOR WALLS (2) 2X10 HEADERS		
CLEAR SPAN FOR HEADER	NUMBER OF STUDS	
	JACKS	KINGS
ALL DOOR & C.O. BELOW 4'	1	1
ALL DOOR & C.O. 4' TO 7'-11"	2	2
ALL DOOR & C.O. 8' AND ABOVE	SIZED BY ENGINEER	

**\*\*UNLESS NOTED OTHER WISE\*\***



**SECOND FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

EXCLUSIVE RESIDENCE DESIGN FOR:

# WATERMARK HOMES

NAME: PINYON PINE

LOT: 89 SOUTH CREEK

**TM DESIGNS**  
RESIDENTIAL PLANS BY TINA MCFADDEN  
(910) 354-4736 TMDDESIGNS2016@GMAIL.COM

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I HEREBY CERTIFY THAT THIS DRAWING MEETS LOCAL CODES, 2018 INTERNATIONAL BUILDING CODES

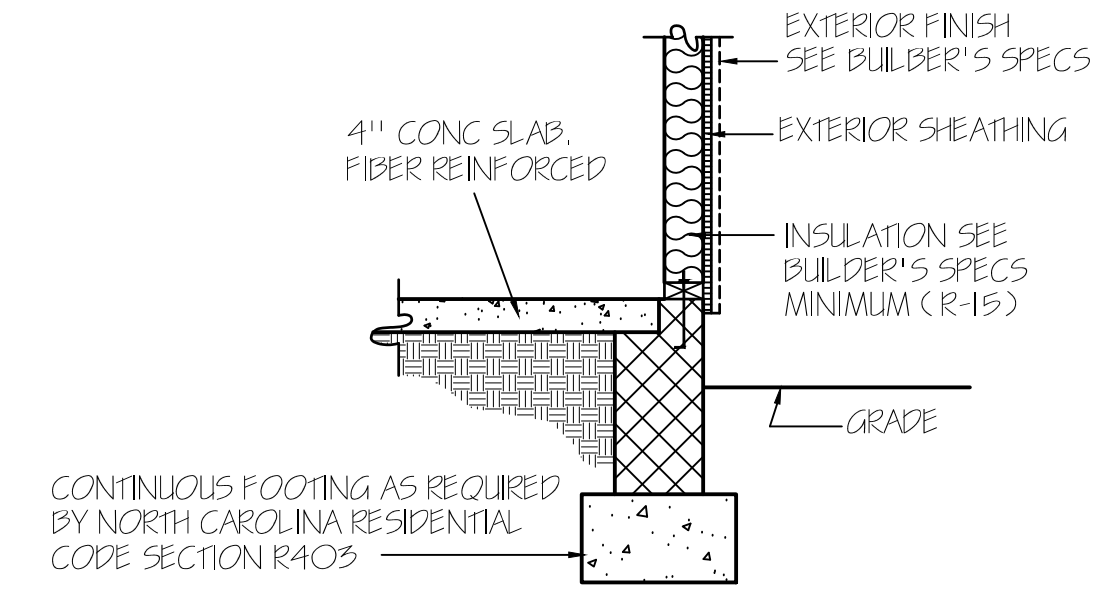
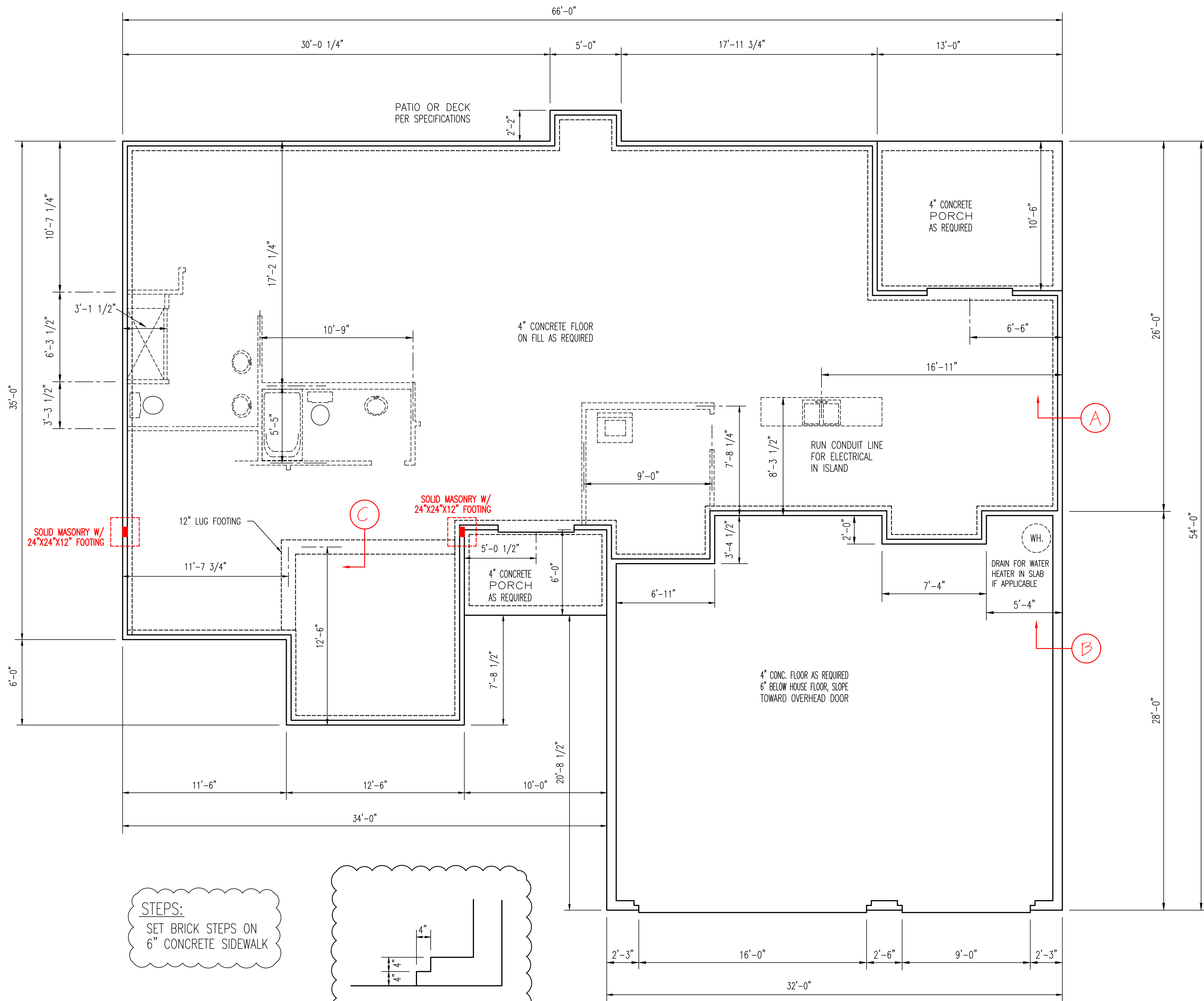
THIS IS FOR THE CONSTRUCTION OF ONE HOUSE ON A SINGLE LOT, NOT TO BE REUSED

PLAN NUMBER  
RG22-A06  
OPTION #1

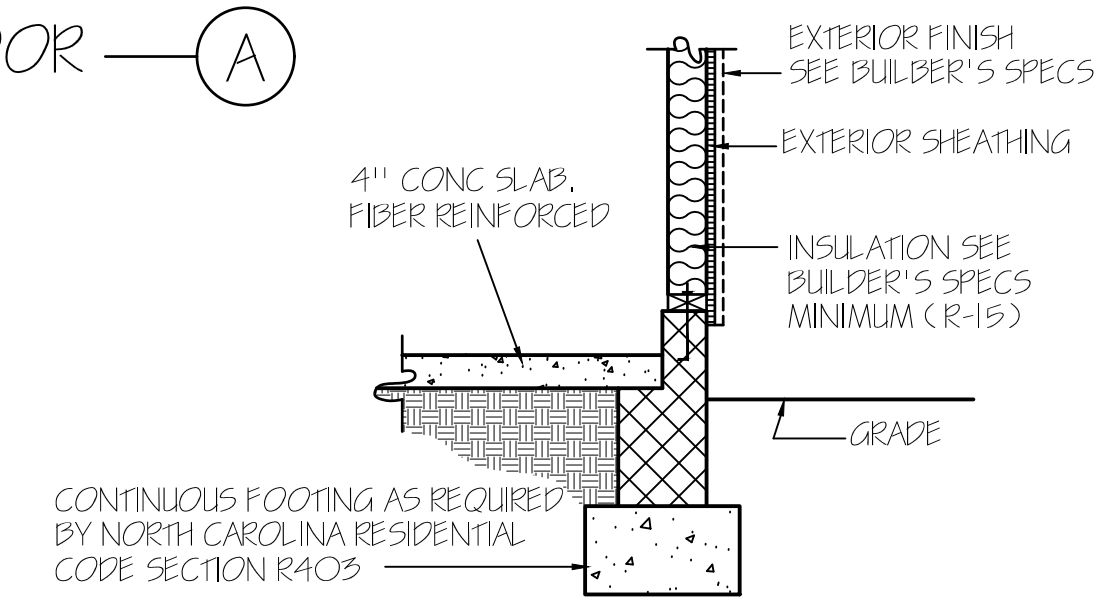
2	GARAGE	R	F
	DATE:	6/19/22	

WALL ANCHOR OPTIONS  
 USE ANCHOR BOLTS  
 ANCHOR BOLTS: 1/2" DIA. BOLTS AT 6'-0" O.C.  
 AND NOT MORE THAN 12" FROM CORNERS, EMBEDDED  
 MIN. 7" INTO FOUNDATION. USE A MIN. OF 2 BOLTS  
 PER EACH STUD WALL

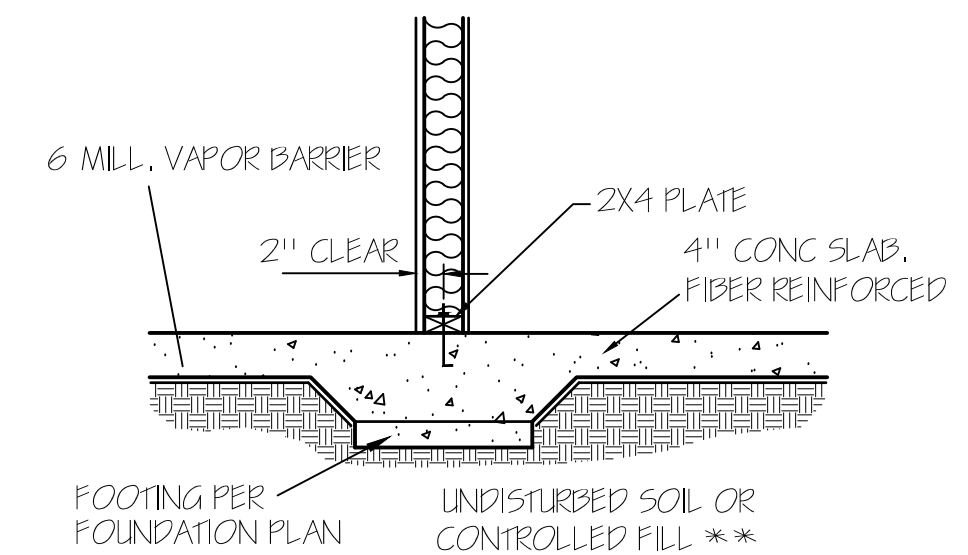
NOTE:  
 FOUNDATION DETAILS SHOWN ARE BASED ON  
 ASSUMED SOIL BEARING CAPACITY OF  
 2000 PSF. LOCAL SITE CONDITIONS MUST BE  
 INVESTIGATED. ALL FOOTING TO BE LOCATED  
 BELOW FROST DEPTH.



CONCRETE SLAB FLOOR — (A)



GARAGE WALL — (B)

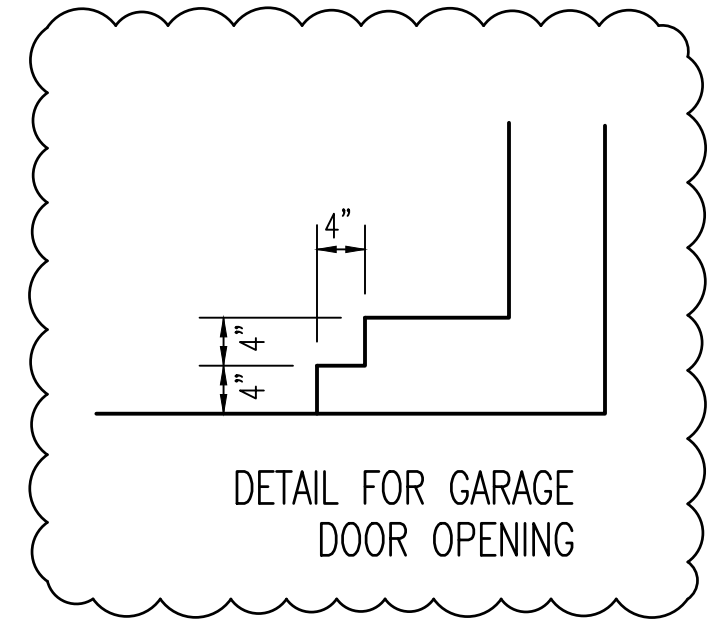


LOAD BEARING WALL THICKENED SLAB — (C)

FOUNDATION PLAN  
 SCALE: 1/4" = 1'-0"

STEPS:  
 SET BRICK STEPS ON  
 4" CONCRETE SIDEWALK

STEPS:  
 SET BRICK STEPS ON  
 6" CONCRETE SIDEWALK



TM DESIGNS  
 RESIDENTIAL PLANS BY TINA MCFADDEN  
 (910) 354-4736 TMDDESIGNS2016@GMAIL.COM

WATERMARK HOMES  
 LOT: 89 SOUTH CREEK  
 NAME: PINYON PINE

EXCLUSIVE RESIDENCE DESIGN FOR:

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 THIS IS FOR THE CONSTRUCTION OF ONE HOUSE ON A SINGLE LOT, NOT TO BE REUSED.

PLAN NUMBER  
 RG22-A06  
 OPTION #1

3 GARAGE | R | F  
 DATE:  
 6/19/22



# ROOF & FLOOR TRUSSES & BEAMS

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

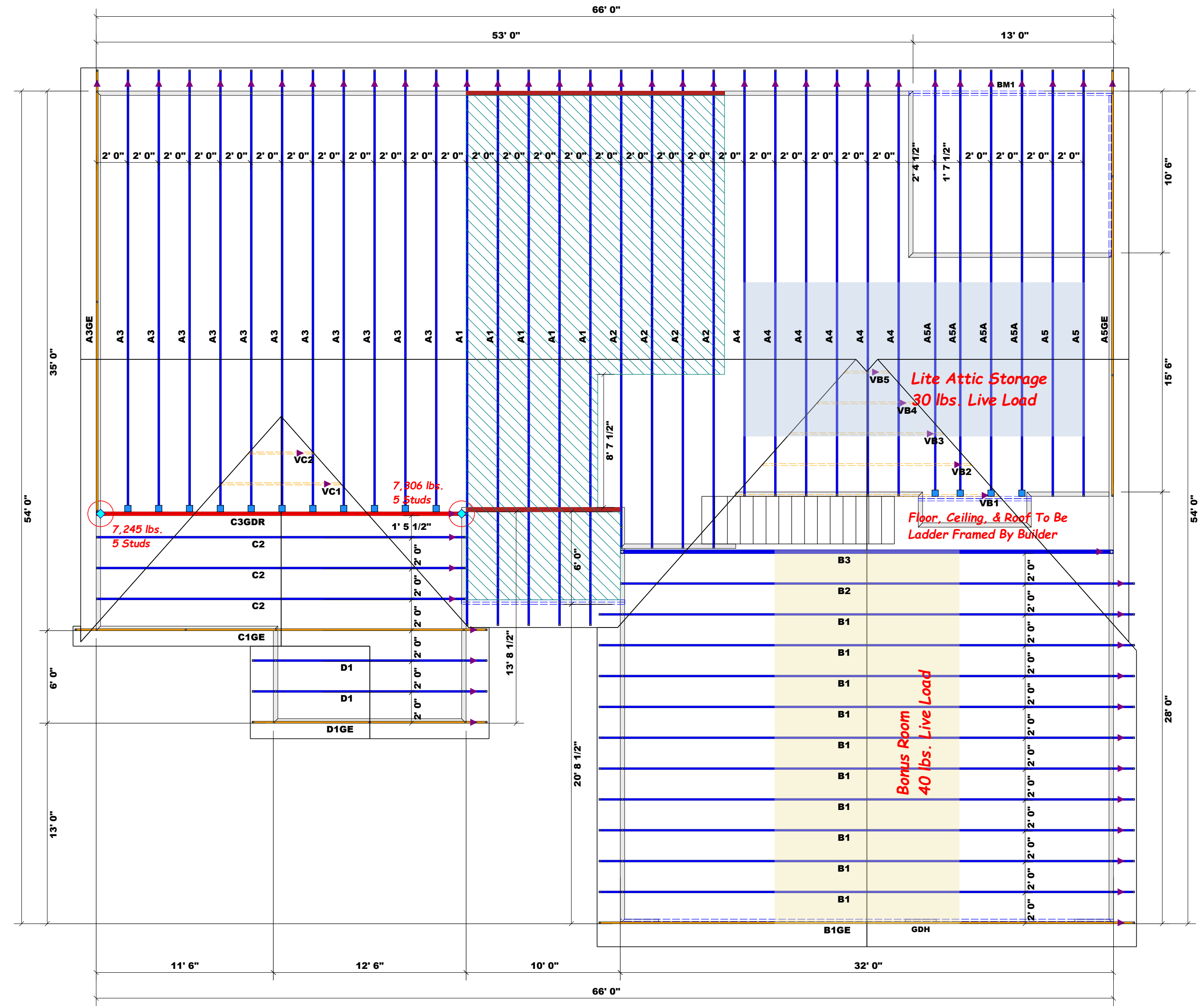
Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables ( derived from the prescriptive Code requirements ) to determine the minimum foundation size and number of wood studs required to support reactions 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 Curtis Quick  
Curtis Quick

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



Hatch Legend	
	Ceiling Height @ 10' 1-1/2"
	1st Floor Bearing Walls @ 10' 1-1/2"

Connector Information					Nail Information	
Sym	Product	Manuf	Qty	Supported Member	Header	Truss
	HUS26	USP	15	NA	16d/3-1/2"	16d/3-1/2"
	HTW20	USP	2	NA	10d/1-1/2"	10d/3"

Beam Legend					
PlotID	Length	Product	Plies	Net Qty	Fab Type
BM1	14' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2	FF
GDH	32' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2	FF

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

-- Denotes Reaction Greater than 3,000 lbs.

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

Truss Placement Plan  
SCALE: 3/16" = 1'

BUILDER	Watermark Homes	CITY / CO.	Lillington / Harnett
JOB NAME	Lot 89 South Creek	ADDRESS	Lot 89 South Creek
PLAN	Pinyon Pine	MODEL	Roof
SEAL DATE	Seal Date	DATE REV.	03/31/23
QUOTE #	Quote #	DRAWN BY	Curtis Quick
JOB #	J0323-1472	SALES REP.	Anthony Williams

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 @ sbcindustry.com



**ROOF & FLOOR TRUSSES & BEAMS**

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

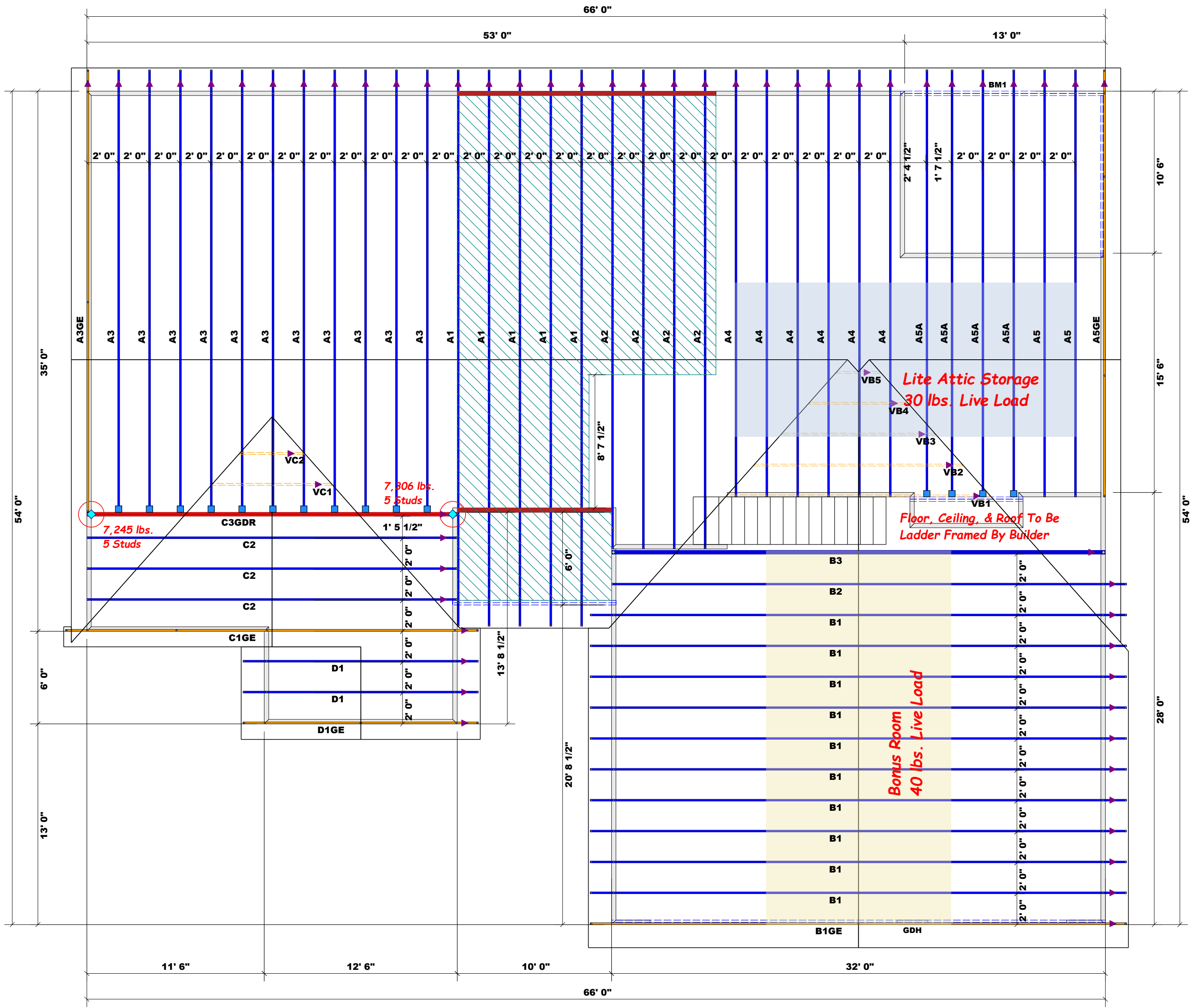
Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables ( derived from the prescriptive Code requirements ) to determine the minimum foundation size and number of wood studs required to support reactions 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 Curtis Quick  
 Curtis Quick

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



**Hatch Legend**

	Ceiling Height @ 10' 1-1/2"
	1st Floor Bearing Walls @ 10' 1-1/2"

**Connector Information**

Sym	Product	Manuf	Qty	Supported Member	Header	Truss
	HUS26	USP	15	NA	16d/3-1/2"	16d/3-1/2"
	HTW20	USP	2	NA	10d/1-1/2"	10d/3"

**Beam Legend**

PlotID	Length	Product	Plies	Net Qty	Fab Type
BM1	14' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2	FF
GDH	32' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2	FF

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

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

○ -- Denotes Reaction Greater than 3,000 lbs.

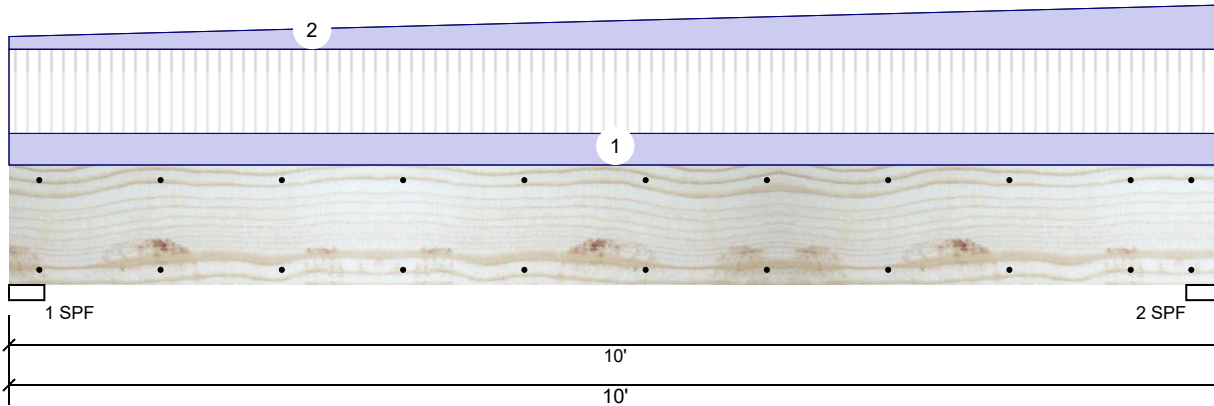
**Truss Placement Plan**  
 SCALE: 3/16" = 1'

BUILDER	JOB NAME	PLAN	SEAL DATE	QUOTE #	JOB #
Watermark Homes	Lot 89 South Creek	Pinyon Pine	Seal Date	Quote #	J0323-1472
CITY / CO.	Lillington / Harnett	ADDRESS	Lot 89 South Creek	MODEL	Roof
DATE REV.	03/31/23	DRAWN BY	Curtis Quick	SALES REP.	Anthony Williams

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 @ sbcindustry.com

**GDH (PT 1) Kerto-S LVL 1.750" X 11.875" 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 2012
Load Sharing:	No
Deck:	Not Checked

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2000	1341	0	0	0
2	Vertical	2000	1602	0	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	64%	1341 / 2000	3341	L	D+L
2 - SPF	3.500"	Vert	69%	1602 / 2000	3602	L	D+L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7903 ft-lb	5'1"	19911 ft-lb	0.397 (40%)	D+L	L
Unbraced	7903 ft-lb	5'1"	9628 ft-lb	0.821 (82%)	D+L	L
Shear	2638 lb	8'8 5/8"	8867 lb	0.297 (30%)	D+L	L
LL Defl inch	0.089 (L/1287)	5'	0.239 (L/480)	0.373 (37%)	L	L
TL Defl inch	0.154 (L/741)	5' 5/16"	0.318 (L/360)	0.486 (49%)	D+L	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 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	Tie-In	0-0-0 to 10-0-0	10-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Roof
2	Tapered Start	0-0-0		Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	End	10-0-0			210 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				9 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 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

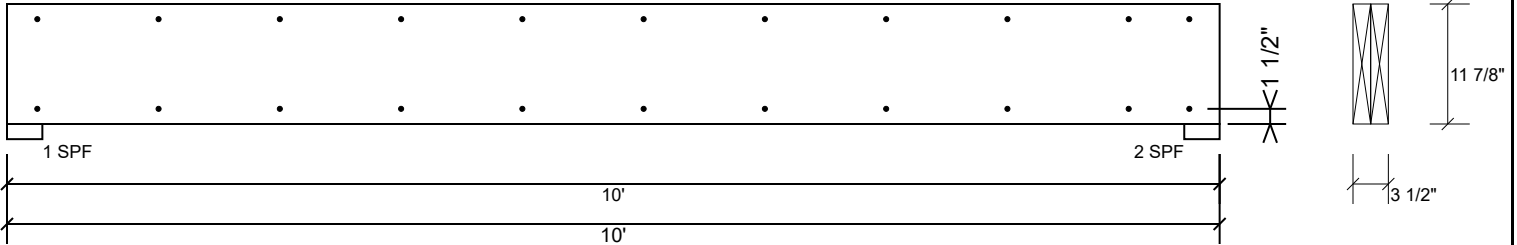
**Manufacturer Info**  
 Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
[www.metsawood.com/us](http://www.metsawood.com/us)

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



**GDH (PT 1) Kerto-S LVL 1.750" X 11.875" 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	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
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](http://www.metsawood.com/us)

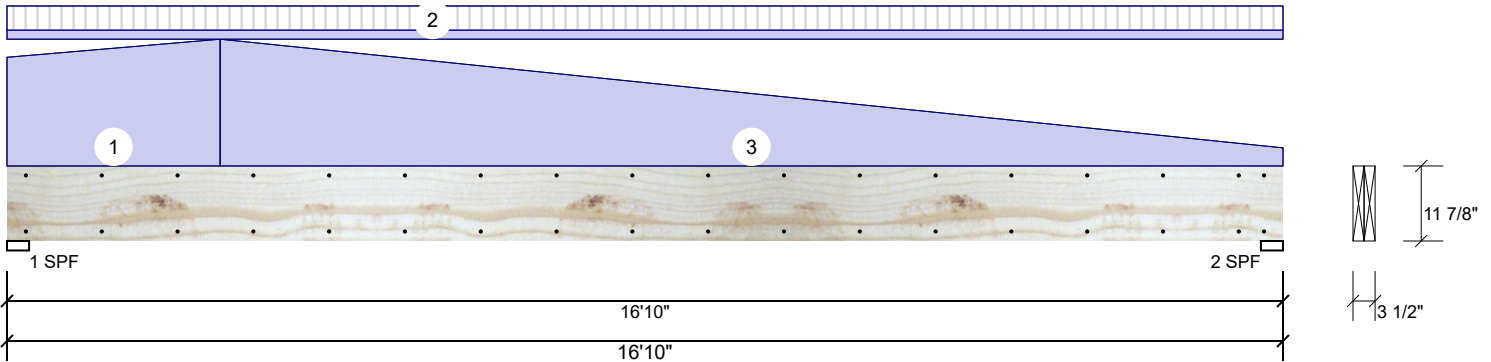
Comtech, Inc.  
 1001 S. Reilly Road, Suite #639  
 Fayetteville, NC  
 USA  
 28314  
 910-864-TRUS





**GDH (PT 2) Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Level



**Member Information**

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
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	337	1588	0	0	0
2	Vertical	337	1051	0	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	37%	1588 / 337	1925	L	D+L
2 - SPF	3.500"	Vert	27%	1051 / 337	1387	L	D+L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6794 ft-lb	7'8 7/8"	19911 ft-lb	0.341 (34%)	D+L	L
Unbraced	6794 ft-lb	7'8 7/8"	6796 ft-lb	1.000 (100%)	D+L	L
Shear	1613 lb	1'3 3/8"	8867 lb	0.182 (18%)	D+L	L
LL Defl inch	0.070 (L/2809)	8'5 1/16"	0.409 (L/480)	0.171 (17%)	L	L
TL Defl inch	0.352 (L/558)	8'2 13/16"	0.546 (L/360)	0.645 (64%)	D+L	L

**Design Notes**

- 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.
- Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- Refer to last page of calculations for fasteners required for specified loads.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 14'6 5/8" o.c.
- Bottom must be laterally braced at end bearings.
- 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	Tapered Start	0-0-0		Top	180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE
	End	2-9-12			210 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
2	Tie-In	0-0-0 to 16-10-0	1-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Roof
3	Tapered Start	2-9-12		Top	210 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE

Continued on page 2...

**Notes**

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.

**Lumber**

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

**Handling & Installation**

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- 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**

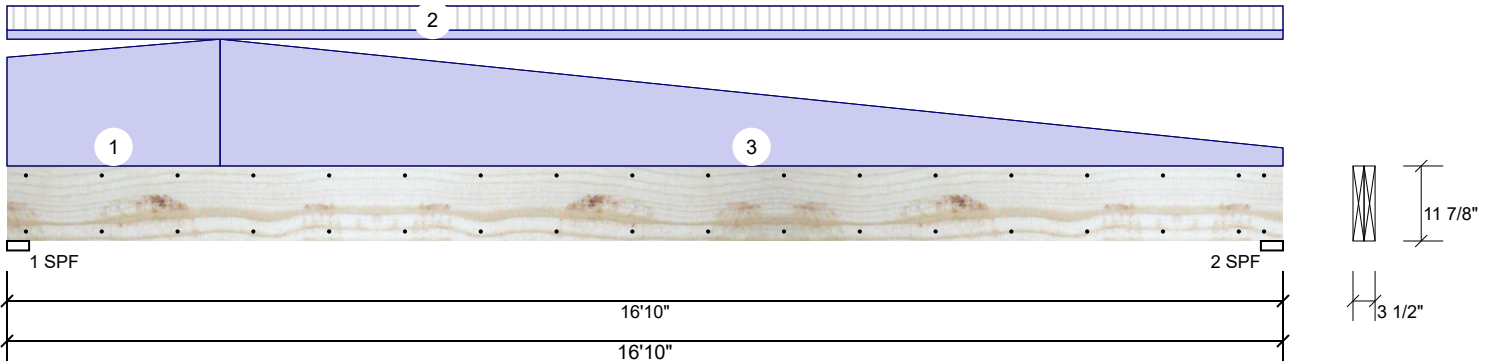
Metsä Wood  
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 Norwalk, CT 06851  
 (800) 622-5850  
[www.metsawood.com/us](http://www.metsawood.com/us)

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



**GDH (PT 2) Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED**

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
	End	16-10-0			30 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				9 PLF					

**Notes**

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**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

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**GDH (PT 2) Kerto-S LVL 1.750" X 11.875" 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	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
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**

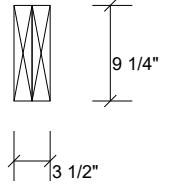
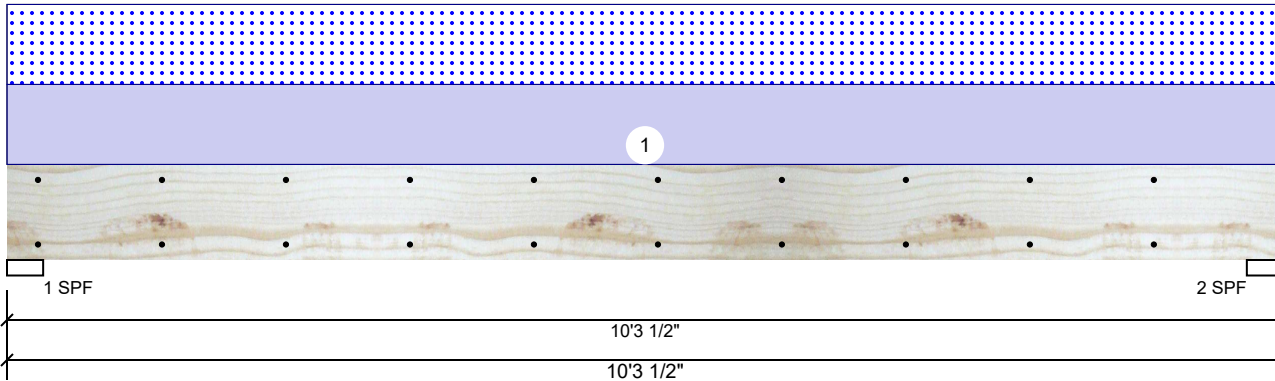
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**BM1 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED**

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 2012
Load Sharing:	No
Deck:	Not Checked

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1534	1497	0	0
2	Vertical	0	1534	1497	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	58%	1534 / 1497	3032	L	D+S
2 - SPF	3.500"	Vert	58%	1534 / 1497	3032	L	D+S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7121 ft-lb	5'1 3/4"	14423 ft-lb	0.494 (49%)	D+S	L
Unbraced	7121 ft-lb	5'1 3/4"	7519 ft-lb	0.947 (95%)	D+S	L
Shear	2411 lb	1' 3/4"	7943 lb	0.304 (30%)	D+S	L
LL Defl inch	0.145 (L/813)	5'1 3/4"	0.246 (L/480)	0.590 (59%)	S	L
TL Defl inch	0.294 (L/402)	5'1 3/4"	0.328 (L/360)	0.896 (90%)	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 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			Top	291 PLF	0 PLF	291 PLF	0 PLF	0 PLF	A4
	Self Weight				7 PLF					

**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

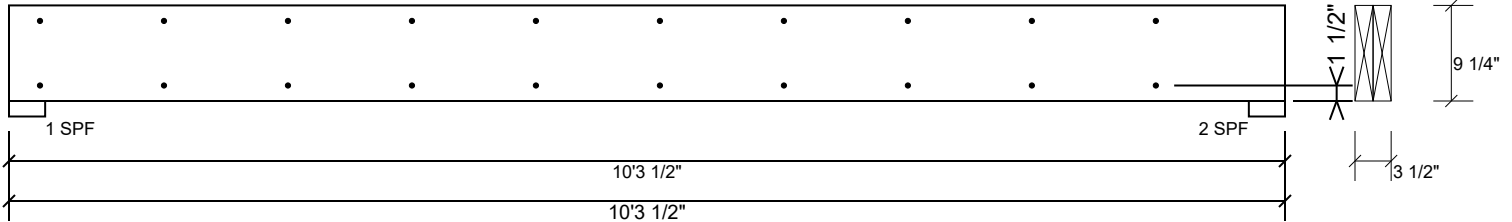
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**BM1 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED**

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	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

**Notes**

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