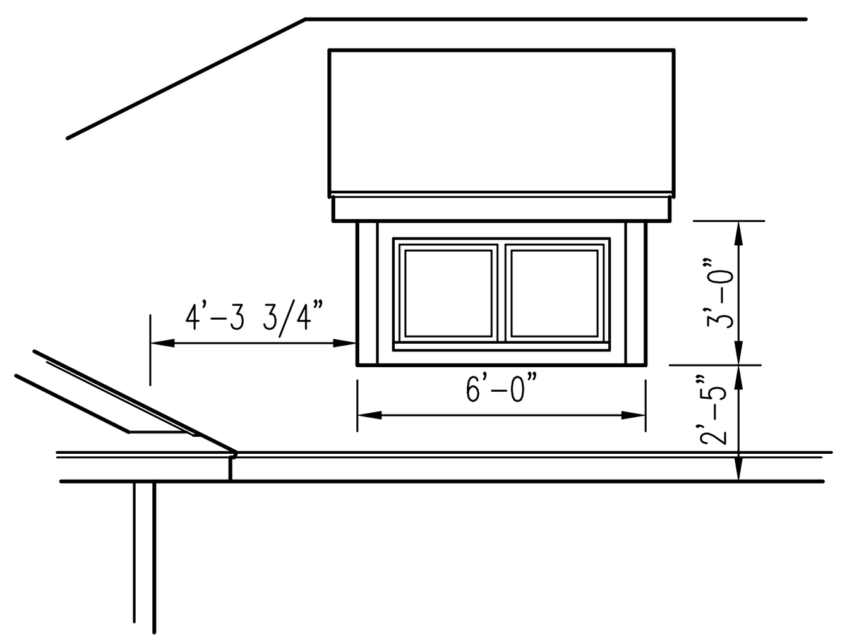
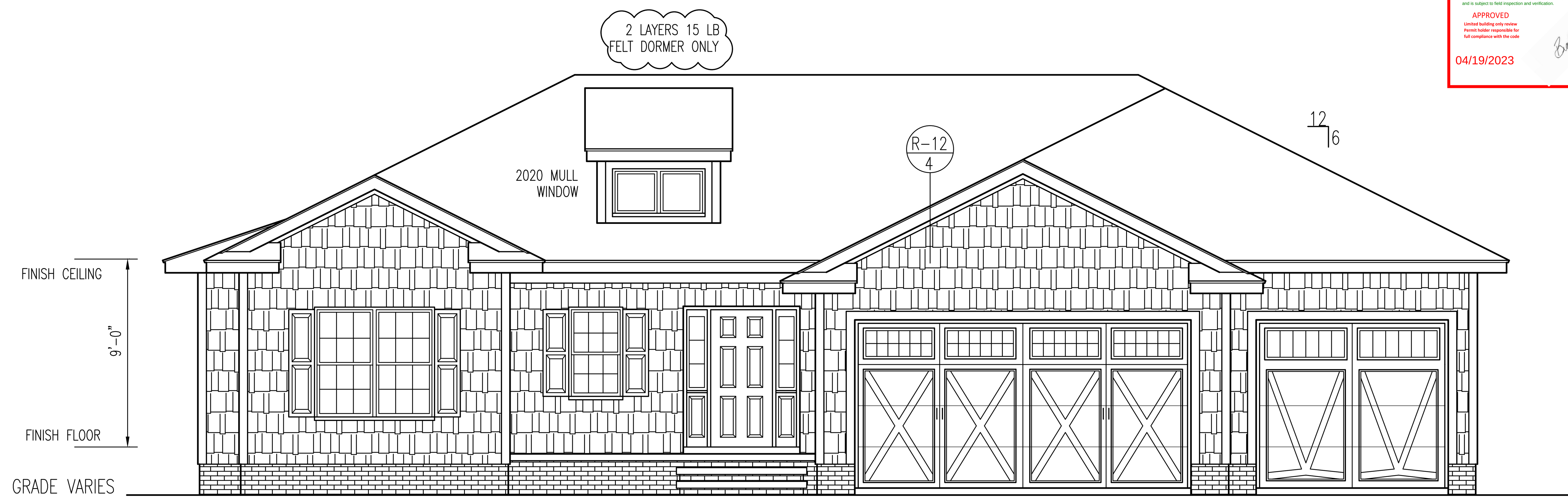
NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

APPROVED
Limited building only review
Permit holder responsible for full compliance with the code

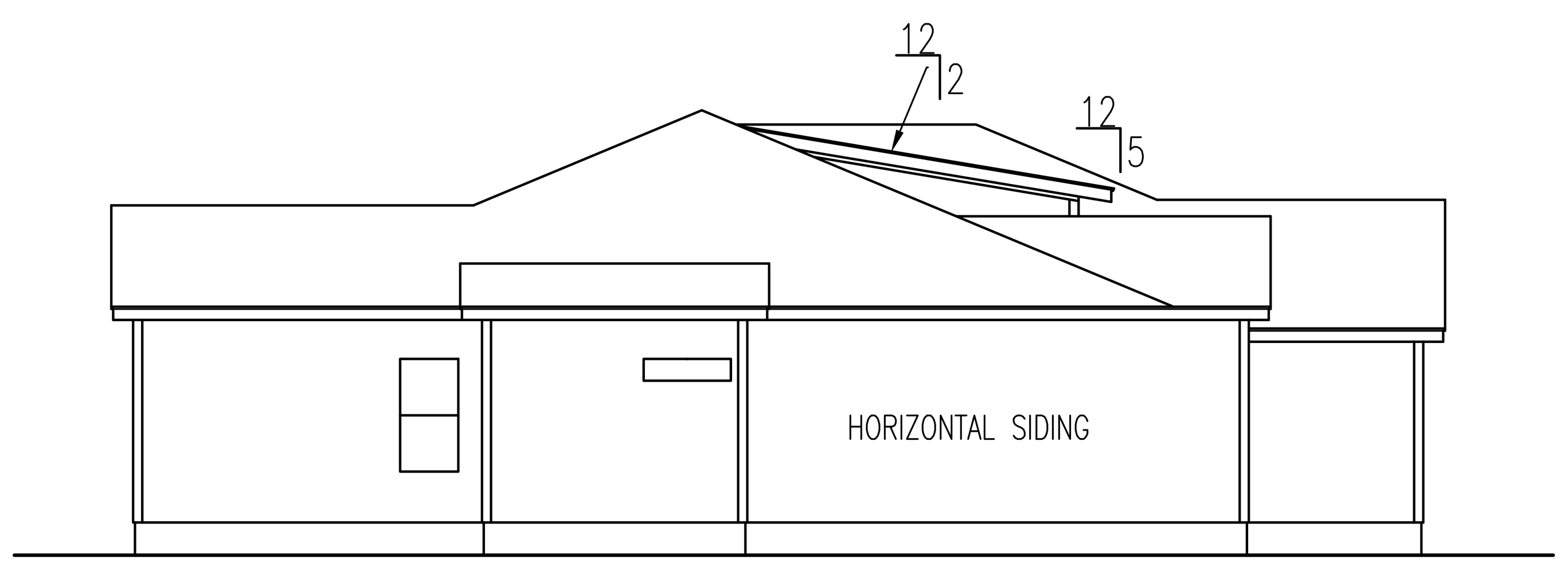
04/19/2023

Harnett COUNTY NORTH CAROLINA

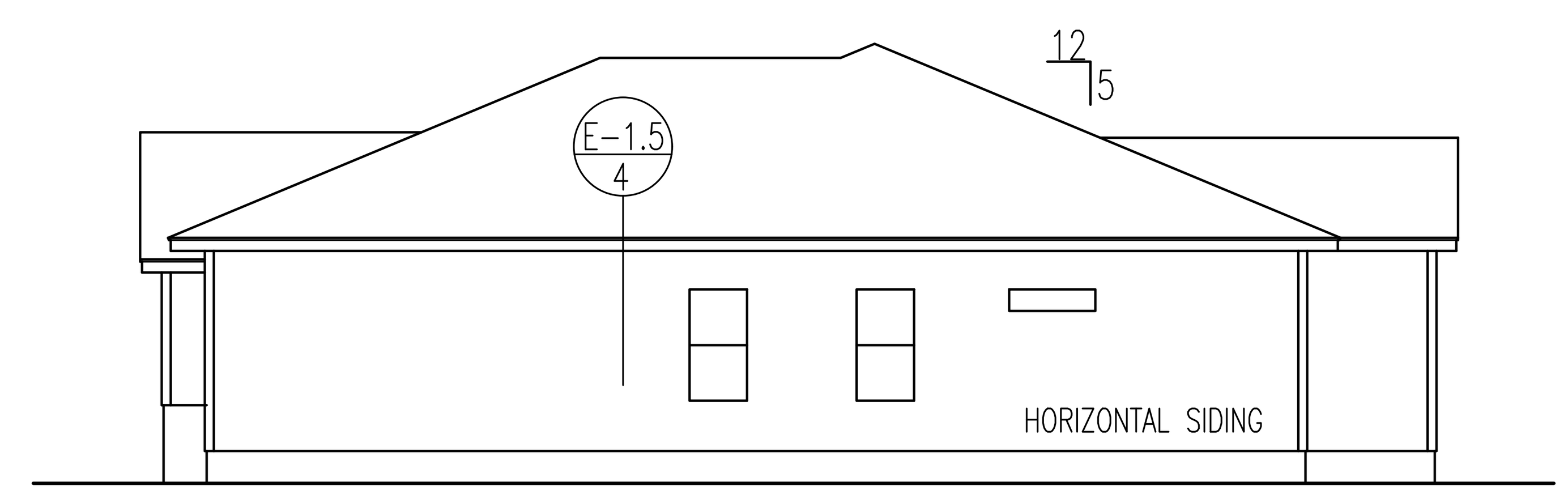




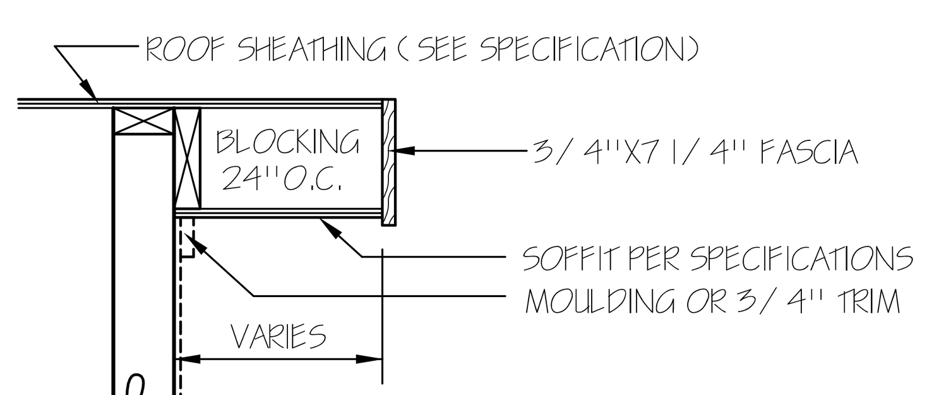
FRONT ELEVATION
SCALE:1/4"=1'-0"



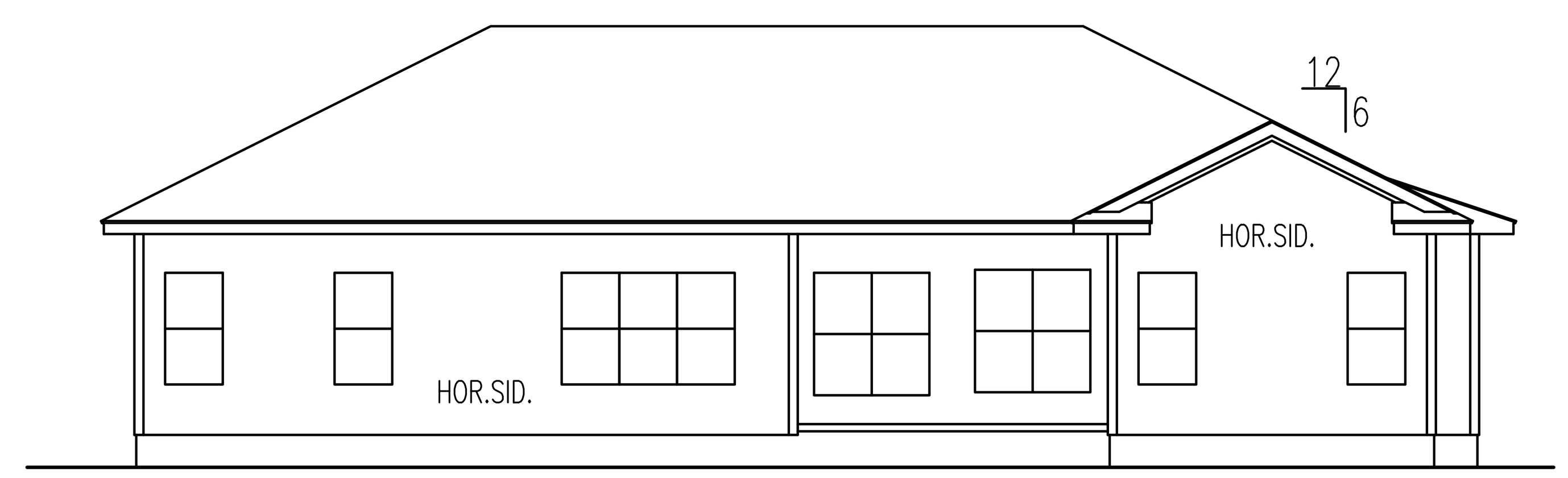
LEFT ELEVATION



RIGHT ELEVATION



RAKE DETAIL FOR GABLE ENDS



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

ATTIC VENTILATION CALCULATIONS

ATTIC AREA 2965 SQ.FT.(AREA VENTILATION REQUIRED 17.8 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
167 LIN.FT. EAVE VENT @ 11 SQ.IN./FT.= 12.7 SQ.FT.NET FREE AREA
66 LIN.FT. RIDGE VENT @ 18 SQ.IN./FT.= 8.3 SQ.FT.NET FREE AREA

TM DESIGNS

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

EXCLUSIVE RESIDENCE DESIGN FOR:

WATERMARK HOMES

LOT: 83 SOUTH CREEK

NAME: BLUE ASH

TM DESIGNS WILL NOT BE LIABLE FOR ANY ERRORS NOT BROUGHT TO THEIR ATTENTION PRIOR TO THE START OF CONSTRUCTION. WHILE EVERY EFFORT WAS MADE IN THE PREPARATION OF THESE DRAWINGS AND DIMENSIONS TO AVOID ERRORS THE OWNER AND/ OR BUILDER SHALL VERIFY ALL DIMENSIONS, DETAILS, LOCAL AND STATE CODES.

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

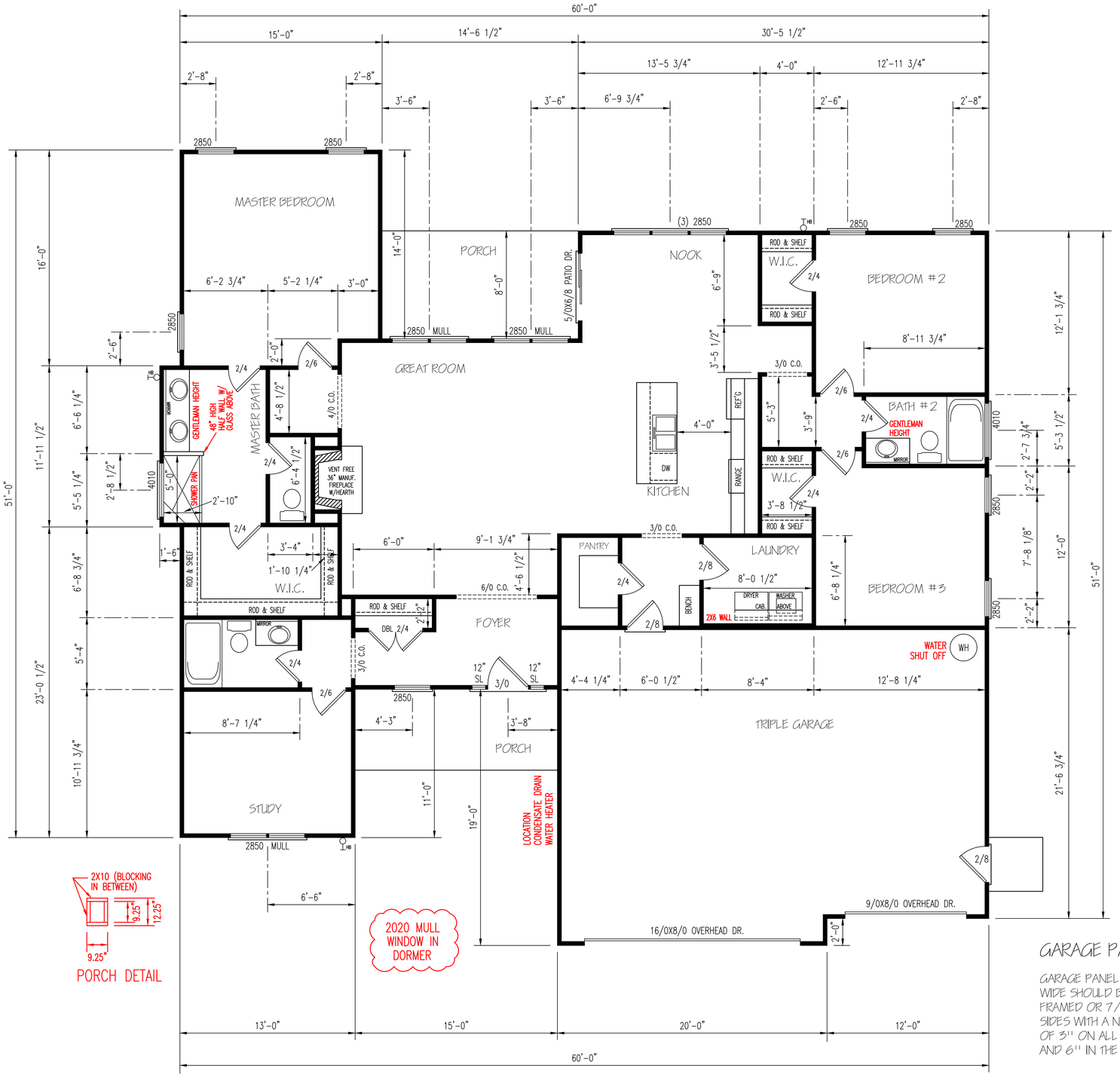
PLAN NUMBER
RG20-A06

OPTION #1

1

GARAGE | F | L

DATE:
7/1/20

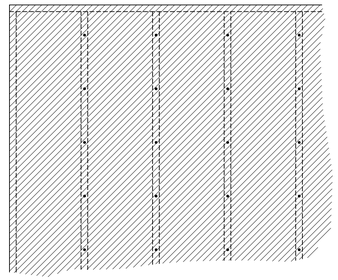


PORCH DETAIL

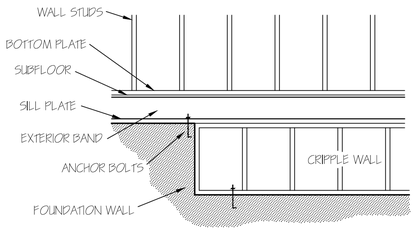
2020 MULL WINDOW IN DORMER

EXERIOR 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		

BRACING METHOD



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.

ENERGY TABLE

U-FACTOR OF WINDOWS .30
CLIMATE ZONE 3
INSULATION: WALLS 15
CEILING 38
FLOORS 19

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.

FLOOR PLAN

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

HEATED AREA
2035 SQ FT

OTHER AREAS
GARAGE 724 SQ FT
F.PORCH 90 SQ FT
R.PORCH 116 SQ FT

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

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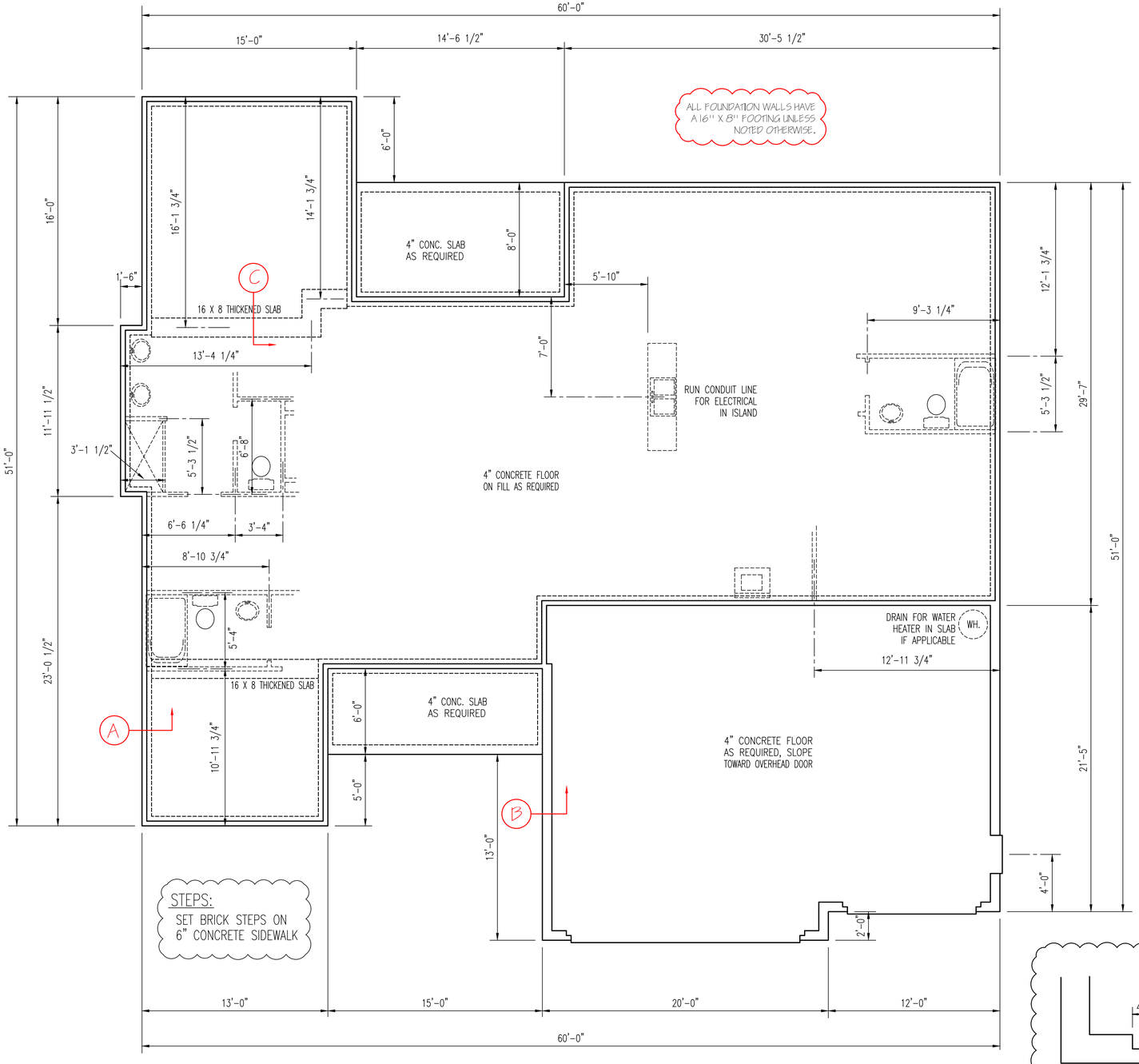
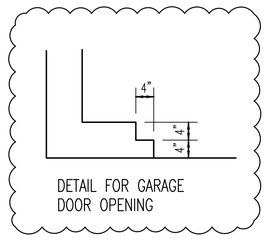
PLAN NUMBER
RG20-A06

OPTION #1

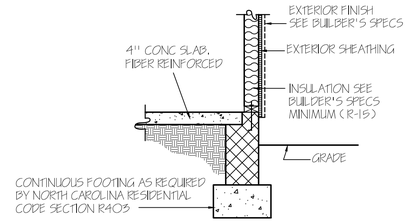
2 A | GARAGE F R | DATE: 7/1/20





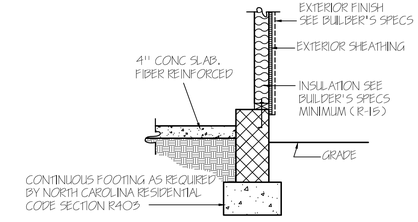
WALL ANCHOR OPTIONS

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



NOTE:
PERIMETER INSUL. MAY EXTEND HORIZ. UNDER SLAB 24" OR VERTICAL 24" BELOW SLAB FLOOR

CONCRETE SLAB FLOOR — (A)



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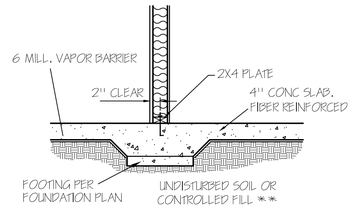
GARAGE WALL — (B)



LOAD BEARING WALL THICKENED SLAB — (C)

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.

FOUNDATION PLAN

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

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

EXCLUSIVE RESIDENCE DESIGN FOR:
WATERMARK HOMES
LOT: 83 SOUTH CREEK
NAME: BLUE ASH

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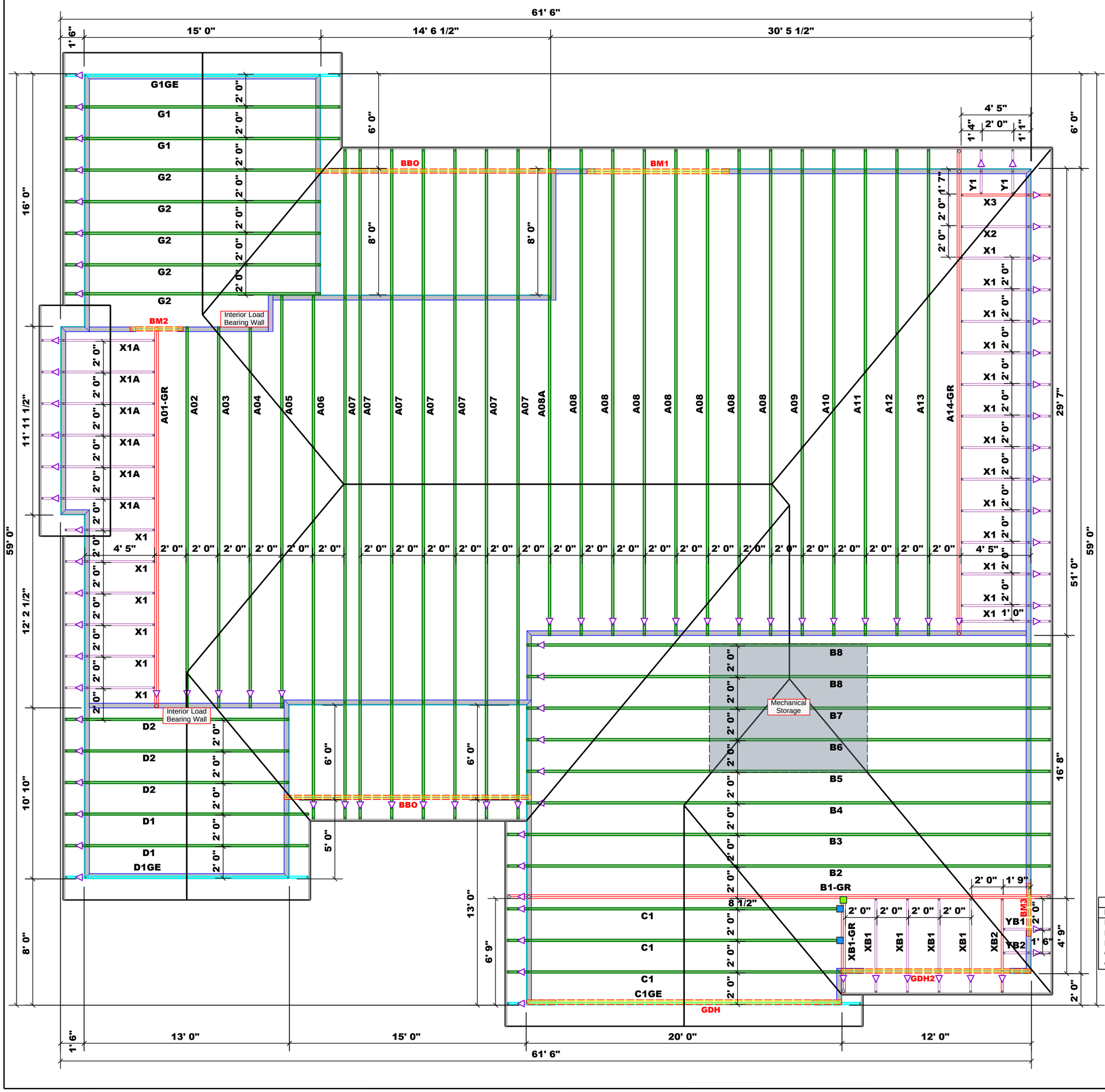
PLAN NUMBER
RG20-A06

OPTION #1

3 | GARAGE | F | R
DATE: 7/1/20



All Walls Shown Are Considered Load Bearing

Roof Area = 3636.32 sq.ft.
Ridge Line = 83.1 ft.
Hip Line = 100.23 ft.
Horiz. OH = 205.35 ft.
Raked OH = 81.8 ft.
Decking = 125 sheets

Hatch Legend
- Mechanical Storage
- Drop Beam

Connector Information					Nail Information	
Sym	Product	Manuf	Qty	Supported Member	Header	Truss
	HUS26	USP	2	Varies	16d/3-1/2"	16d/3-1/2"
	THD26-2	USP	1	Varies	16d/3-1/2"	10d/3"

Products				
PlotID	Length	Product	Plies	Net Qty
BM1	9' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2
BM2	4' 0"	2x10 SPF No.2	2	2
BM3	4' 0"	2x10 SPF No.2	2	2
GDH	20' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2
GDH2	12' 0"	2x12 SPF No.1	2	2

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

COMTECH
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 _____
David Landry

LOAD CHART FOR JACK STUDS

(BASED ON TABLES R502.5(1) & (b))

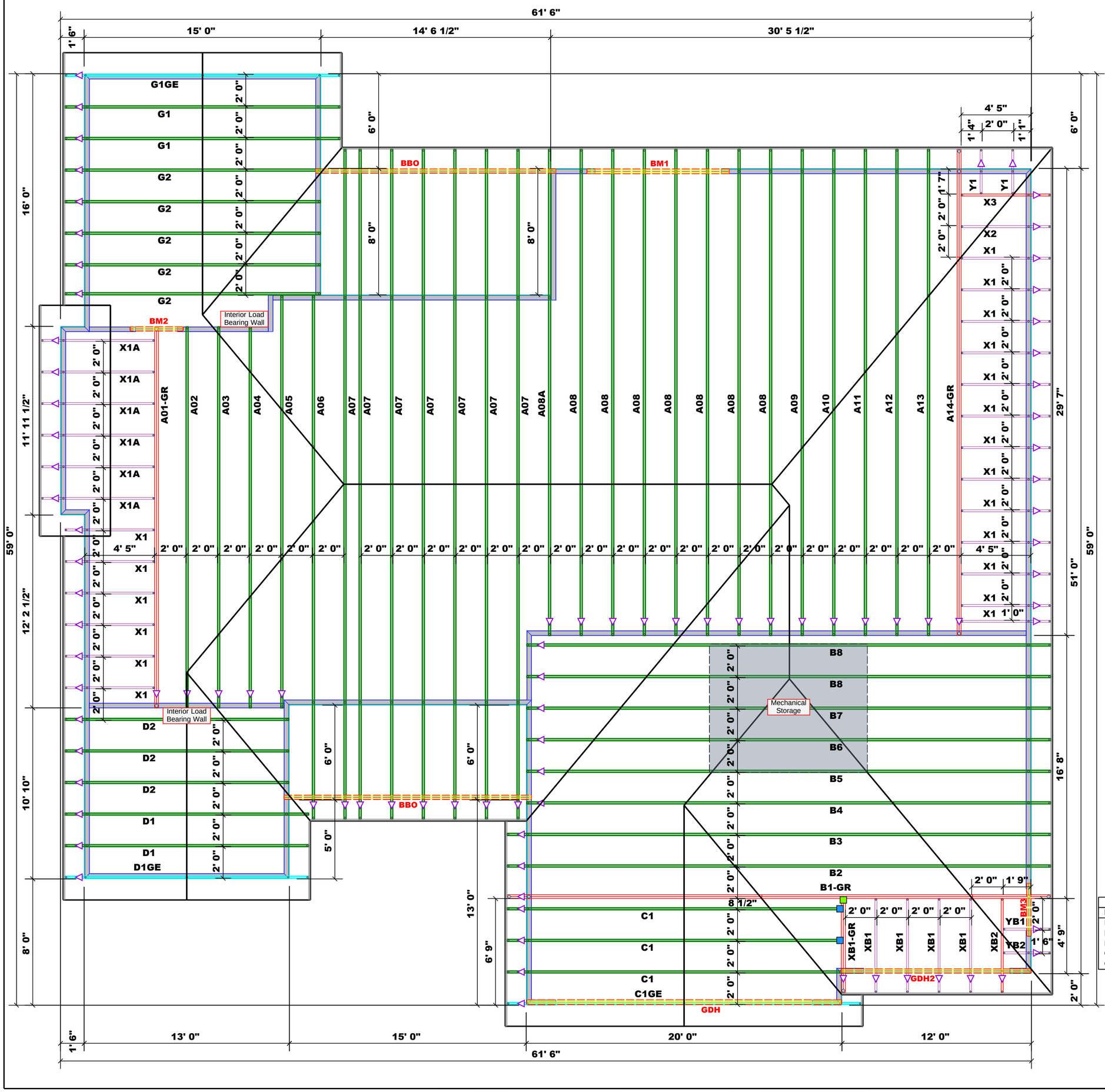
NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADER/GIRDER

END REACTION (3# TO)	REQ'D # STUDS FOR (2) PLY HEADER	END REACTION (6# TO)	REQ'D # STUDS FOR (3) PLY HEADER	END REACTION (3# TO)	REQ'D # STUDS FOR (4) PLY 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				

BUILDER	Watermark Homes
JOB NAME	Lot 83 South Creek
PLAN	Blue Ash
SEAL DATE	N/A
QUOTE #	
JOB #	J0323-1298

COUNTY	Beaufort / Harnett
ADDRESS	Lot 83 South Creek
MODEL	Roof
DATE REV.	03/22/23
DRAWN BY	David Landry
SALESMAN	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



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BM3	4' 0"	2x10 SPF No.2	2	2
GDH	20' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2
GDH2	12' 0"	2x12 SPF No.1	2	2

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

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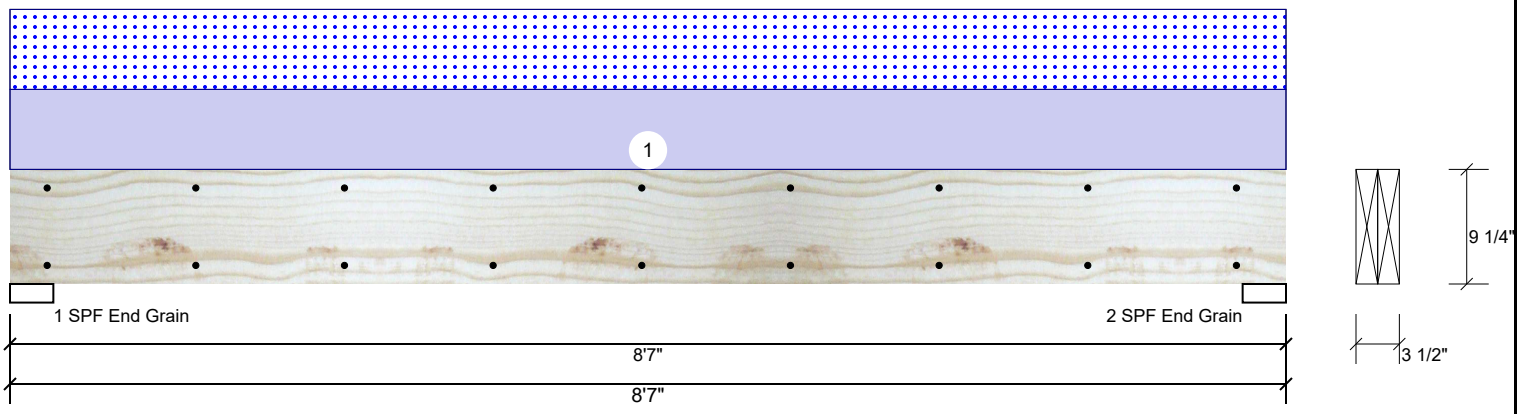
Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

BM1 Kerto-S LVL 1.750" X 9.250" 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	0	1340	1309	0	0
2	Vertical	0	1340	1309	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	26%	1340 / 1309	2649	L	D+S
2 - SPF End Grain	3.500"	Vert	26%	1340 / 1309	2649	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5093 ft-lb	4'3 1/2"	14423 ft-lb	0.353 (35%)	D+S	L
Unbraced	5093 ft-lb	4'3 1/2"	8689 ft-lb	0.586 (59%)	D+S	L
Shear	1999 lb	7'6 1/4"	7943 lb	0.252 (25%)	D+S	L
LL Defl inch	0.074 (L/1322)	4'3 9/16"	0.203 (L/480)	0.363 (36%)	S	L
TL Defl inch	0.149 (L/653)	4'3 9/16"	0.271 (L/360)	0.551 (55%)	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	305 PLF	0 PLF	305 PLF	0 PLF	0 PLF	A08
	Self Weight				7 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

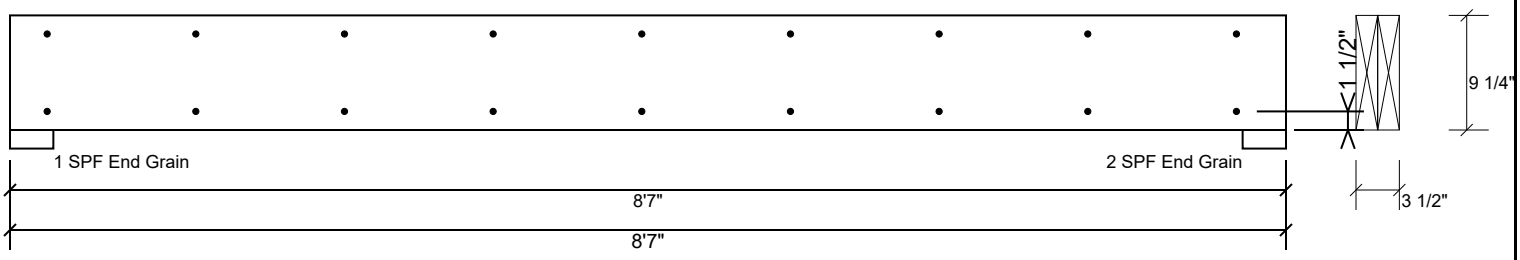
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

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

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

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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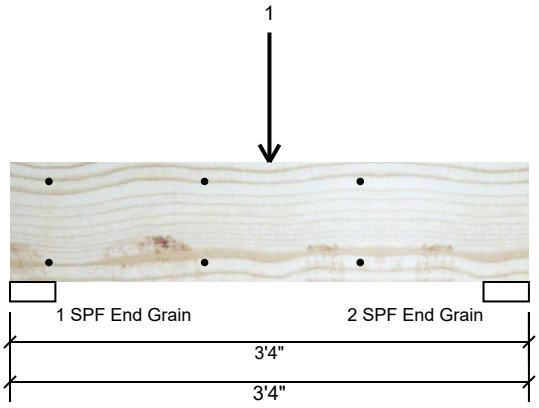
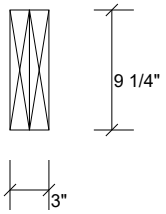
Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

BM2 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED

Level: Level





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Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	522	522	0	0
2	Vertical	0	522	522	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	23%	522 / 522	1044	L	D+S
2 - SPF End Grain	3.500"	Vert	23%	522 / 522	1044	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1501 ft-lb	1'8"	3946 ft-lb	0.380 (38%)	D+S	L
Unbraced	1501 ft-lb	1'8"	3834 ft-lb	0.391 (39%)	D+S	L
Shear	1044 lb	2'3 1/4"	2872 lb	0.363 (36%)	D+S	L
LL Defl inch	0.003 (L/10700)	1'8"	0.072 (L/480)	0.045 (4%)	S	L
TL Defl inch	0.006 (L/5350)	1'8"	0.096 (L/360)	0.067 (7%)	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	Point	1-8-0		Top	1044 lb	0 lb	1044 lb	0 lb	0 lb	A01-GR

This design is valid until 11/3/2024

Manufacturer Info

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

BM2 S-P-F #2 2.000" X 10.000" 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	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

This design is valid until 11/3/2024

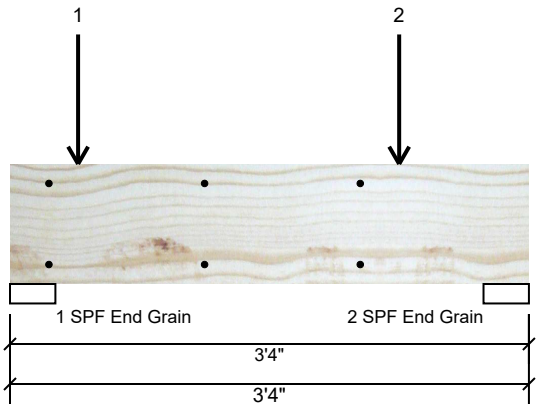
Manufacturer Info

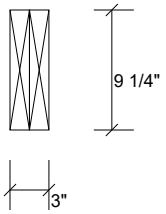
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

BM3 S-P-F #2 2.000" X 10.000" 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	0	343	343	0	0
2	Vertical	0	1097	1097	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	15%	343 / 343	686	L	D+S
2 - SPF End Grain	3.500"	Vert	49%	1097 / 1097	2194	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	1326 ft-lb	2'6"	3946 ft-lb	0.336 (34%)	D+S	L
Unbraced	1326 ft-lb	2'6"	3834 ft-lb	0.346 (35%)	D+S	L
Shear	1372 lb	2'3 1/4"	2872 lb	0.478 (48%)	D+S	L
LL Defl inch	0.003 (L/13169)	1'10 3/16"	0.072 (L/480)	0.036 (4%)	S	L
TL Defl inch	0.005 (L/6585)	1'10 3/16"	0.096 (L/360)	0.055 (5%)	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	Point	0-5-4		Top	56 lb	0 lb	56 lb	0 lb	0 lb	YB1
2	Point	2-6-0		Top	1384 lb	0 lb	1384 lb	0 lb	0 lb	B1-GR

This design is valid until 11/3/2024

Manufacturer Info

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

BM3 S-P-F #2 2.000" X 10.000" 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	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

This design is valid until 11/3/2024

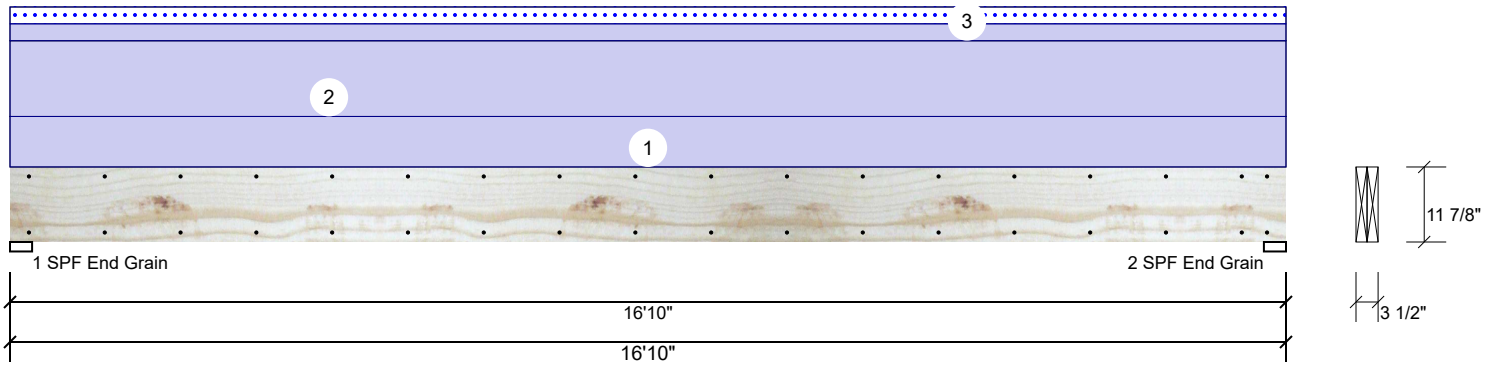
Manufacturer Info

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

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

GDH 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/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	0	1509	168	0	0
2	Vertical	0	1509	168	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	16%	1509 / 168	1677	L	D+S
2 - SPF End Grain	3.500"	Vert	16%	1509 / 168	1677	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6008 ft-lb	8'5"	17919 ft-lb	0.335 (34%)	D	Uniform
Unbraced	6678 ft-lb	8'5"	6684 ft-lb	0.999 (100%)	D+S	L
Shear	1288 lb	1'3 3/8"	7980 lb	0.161 (16%)	D	Uniform
LL Defl inch	0.035 (L/5617)	8'5 1/16"	0.409 (L/480)	0.085 (9%)	S	L
TL Defl inch	0.348 (L/564)	8'5 1/16"	0.546 (L/360)	0.638 (64%)	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 14'10 7/16" 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	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above
2	Uniform			Top	90 PLF	0 PLF	0 PLF	0 PLF	0 PLF	C1GE
3	Tie-In	0-0-0 to 16-10-0	1-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof Load
	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

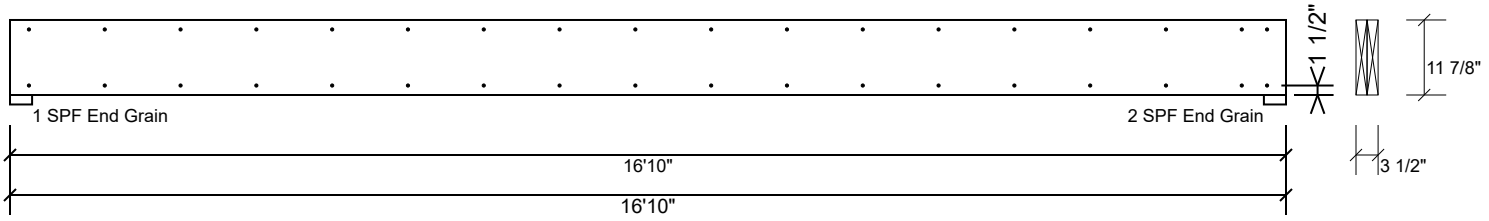
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

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

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

GDH 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

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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

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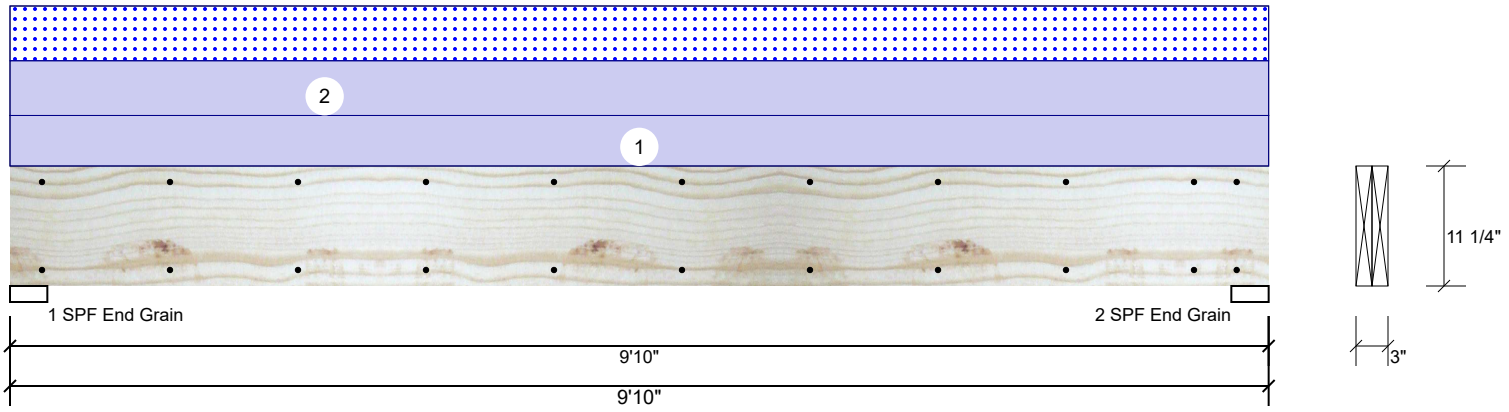
910-864-TRUS

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

GDH2 S-P-F #1 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 lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	615	320	0	0
2	Vertical	0	615	320	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	21%	615 / 320	934	L	D+S
2 - SPF End Grain	3.500"	Vert	21%	615 / 320	934	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2087 ft-lb	4'11"	5306 ft-lb	0.393 (39%)	D+S	L
Unbraced	2087 ft-lb	4'11"	3714 ft-lb	0.562 (56%)	D+S	L
Shear	701 lb	8'7 1/4"	3493 lb	0.201 (20%)	D+S	L
LL Defl inch	0.023 (L/4962)	4'11"	0.234 (L/480)	0.097 (10%)	S	L
TL Defl inch	0.066 (L/1698)	4'11"	0.312 (L/360)	0.212 (21%)	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	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Above
2	Uniform			Top	65 PLF	0 PLF	65 PLF	0 PLF	0 PLF	XB2

This design is valid until 11/3/2024

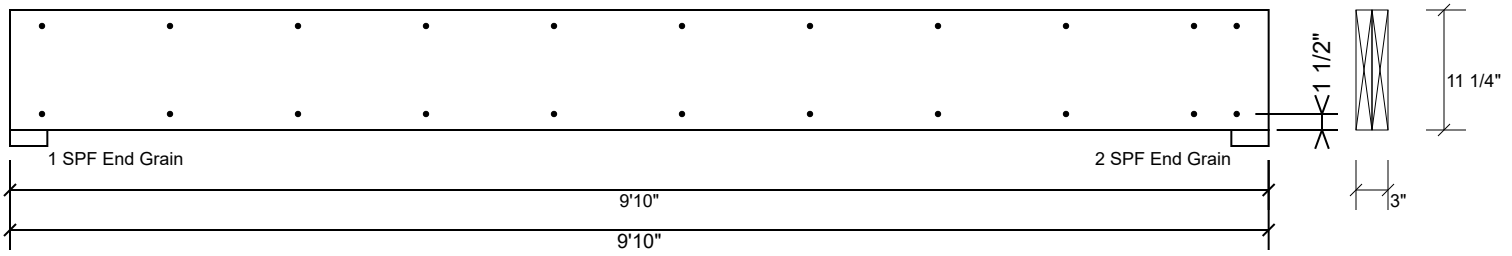
Manufacturer Info

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

Client:	Watermark Homes	Date:	3/27/2023
Project:	Blue Ash	Input by:	David Landry
Address:		Job Name:	Lot 83 South Creek
		Project #:	J0323-1298

GDH2 S-P-F #1 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	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

This design is valid until 11/3/2024

Manufacturer Info

Comtech, Inc.
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