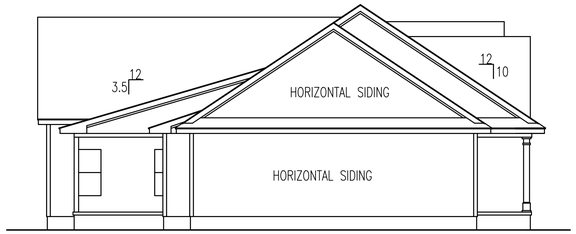
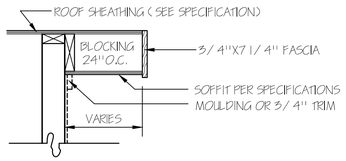
FRONT ELEVATION

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

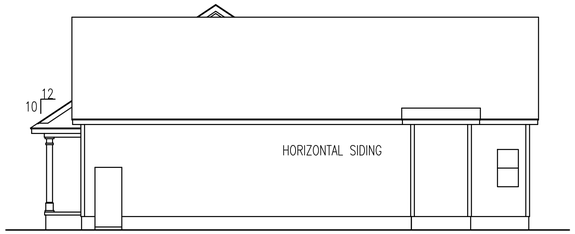
NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code
09/12/2022
Harnett COUNTY NORTH CAROLINA



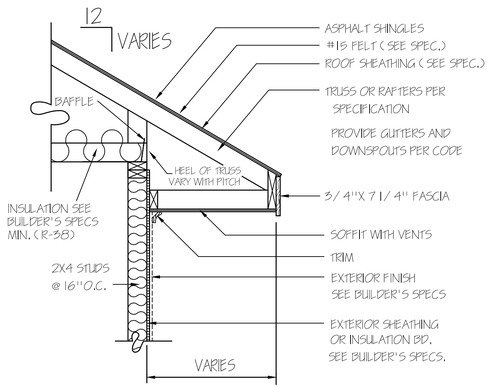
LEFT ELEVATION



RAKE DETAIL FOR GABLE ENDS



RIGHT ELEVATION



REAR ELEVATION

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

ATTIC VENTILATION CALCULATIONS

ATTIC AREA 3064 SQ.FT.(AREA VENTILATION REQUIRED 18.4 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
174	LIN.FT.	EAVE VENT @ 11 SQ.IN./FT.=	13.3	SQ.FT.	NET FREE AREA
103	LIN.FT.	RIDGE VENT @ 18 SQ.IN./FT.=	12.9	SQ.FT.	NET FREE AREA

EXCLUSIVE RESIDENCE DESIGN FOR:

WATERMARK HOMES

NAME: PONDEROSA

LOT: 163

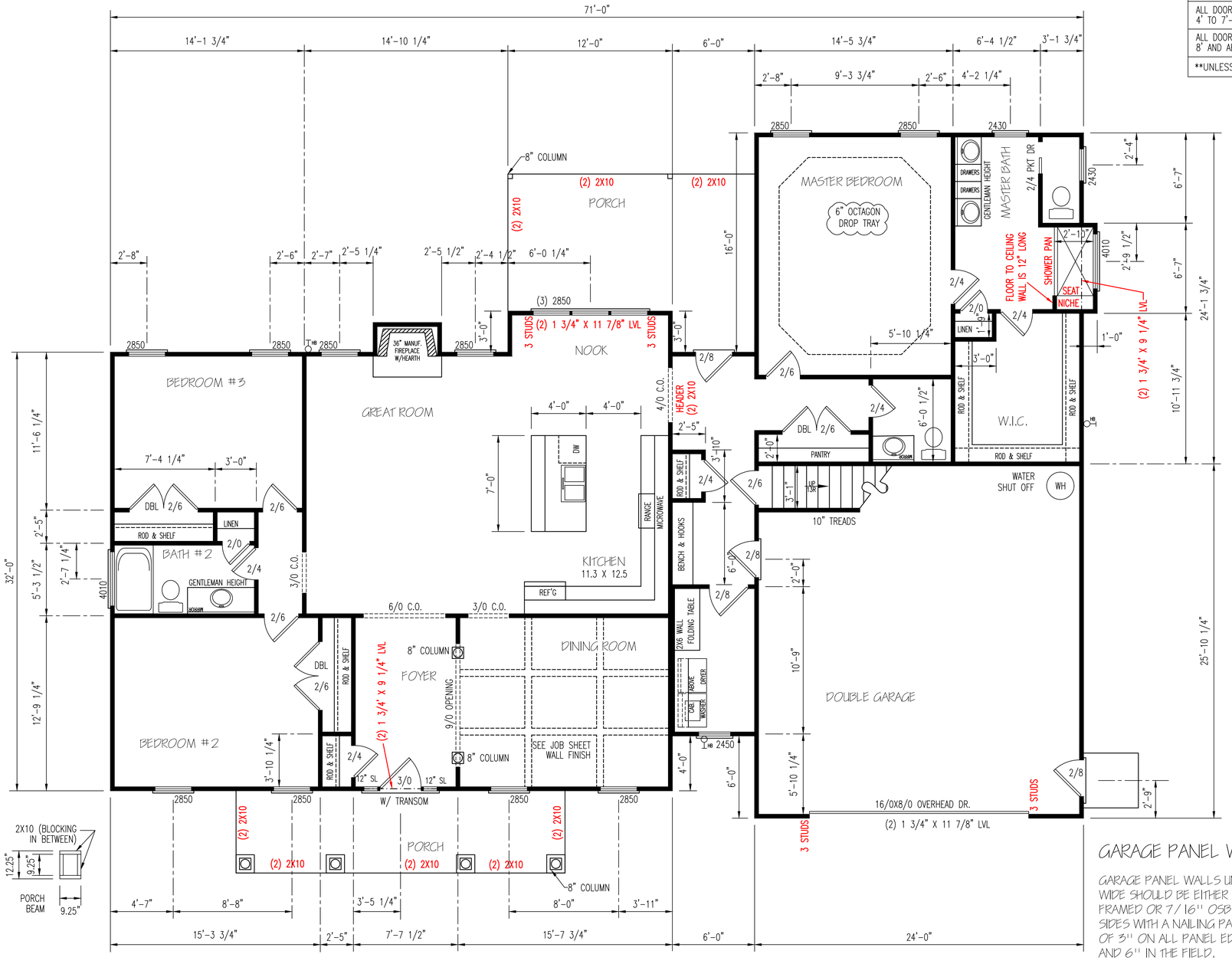
TM DESIGNS
RESIDENTIAL PLANS BY TINA MCFADDEN
(910) 354-4736 TMDESIGNS2016@GMAIL.COM

PLAN NUMBER
RG21-A01

OPTION #2

1 | GARAGE | R | F

DATE: 2/15/21

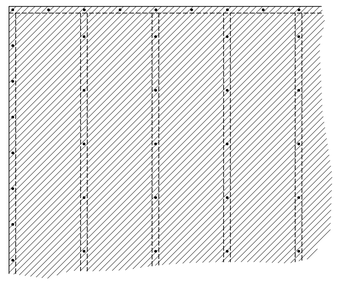


ENERGY TABLE

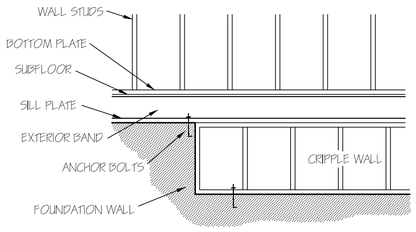
U FACTOR OF WINDOWS .30
CLIMATE ZONE 3
INSULATION: WALLS 15
CEILING 38
FLOORS 19

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(3), OR CRIPPLE WALLS SHALL BE CONSTRUCTED OF SOLID BLOCKING.

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.

FIRST FLOOR PLAN

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

HEATED AREA

1ST FL	2111	SQ FT
2ND FL	348	SQ FT
TOTAL	2459	SQ FT

OTHER AREAS

GARAGE	611	SQ FT
F.PORCH	144	SQ FT
R.PORCH	198	SQ FT
STORAGE	302	SQ FT
TOTAL	1255	SQ FT

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

TM DESIGNS
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(910) 354-4736 TMDESIGNS2016@GMAIL.COM

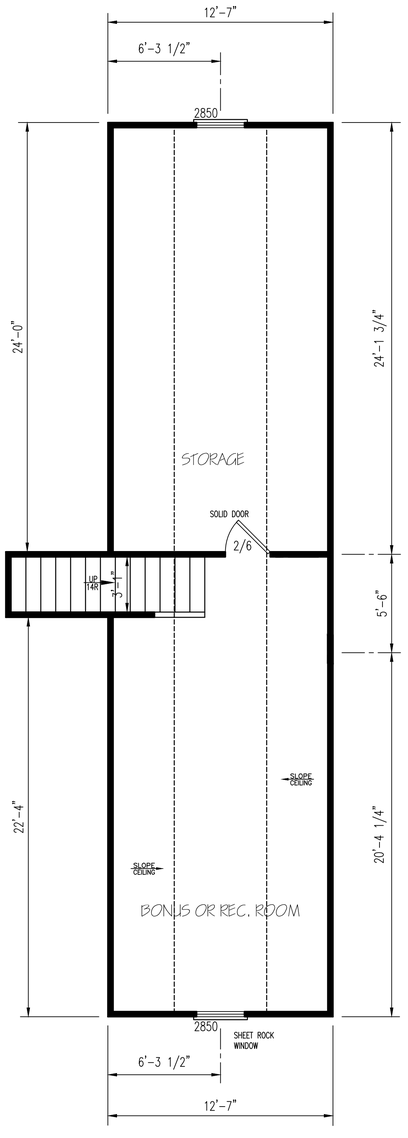
EXCLUSIVE RESIDENCE DESIGN FOR:
WATERMARK HOMES
LOT: 163 BALLARD WOODS
NAME: PONDEROSA

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 RELISED

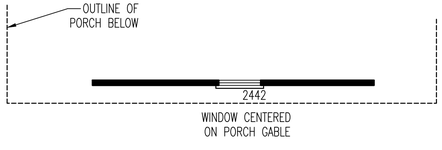
PLAN NUMBER
RG21-A01
OPTION #2
2.A
GARAGE R F
DATE: 2/15/21

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



SECOND FLOOR PLAN

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



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EXCLUSIVE RESIDENCE DESIGN FOR:
WATERMARK HOMES
NAME: PONDEROSA
LOT: 163 BALLARD WOODS

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

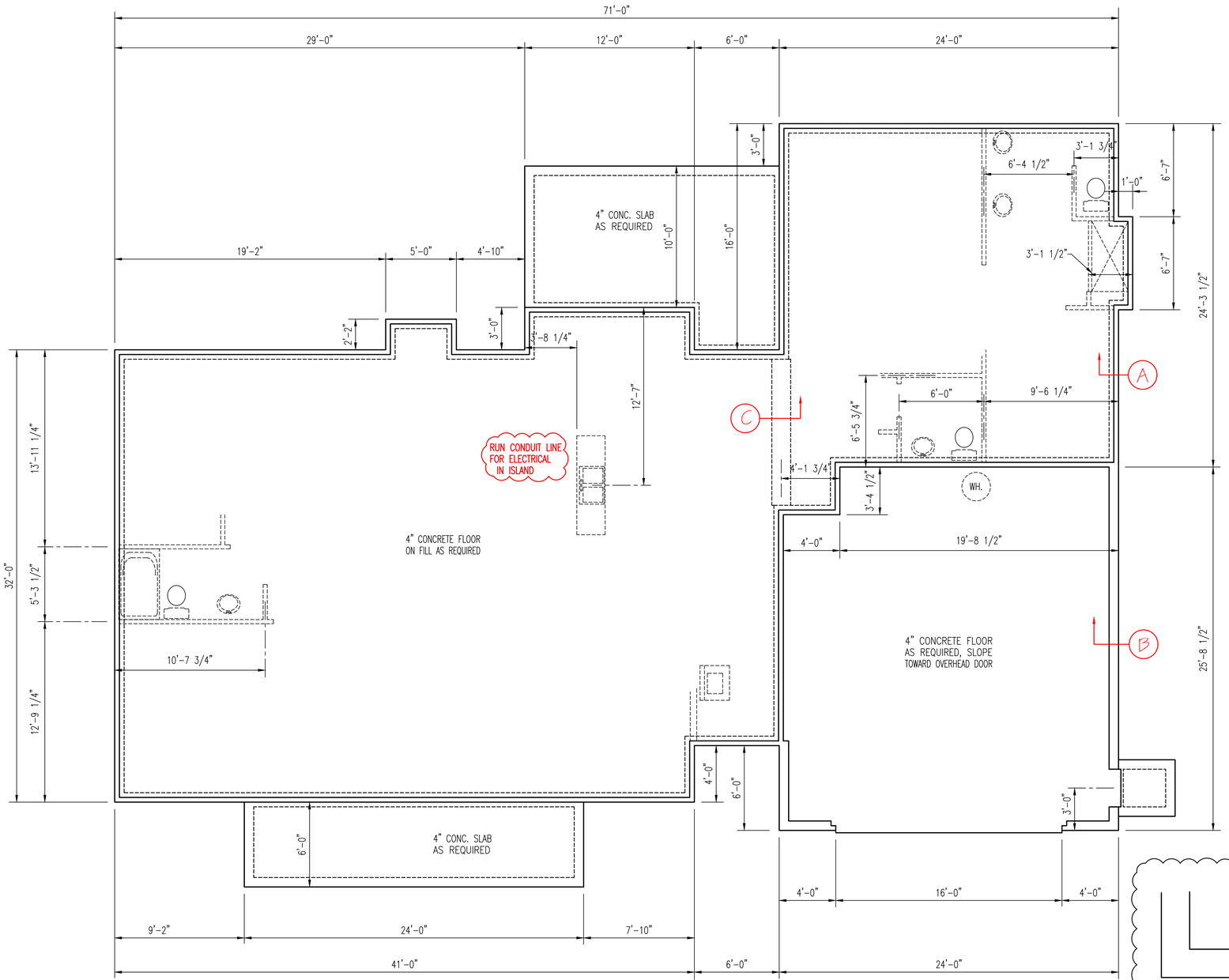
PLAN NUMBER
RG21-A01

OPTION #2

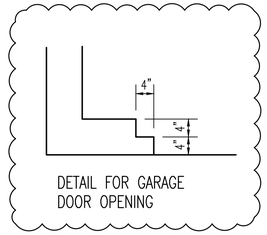
2 B | GARAGE R F | DATE: 2/15/21

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.

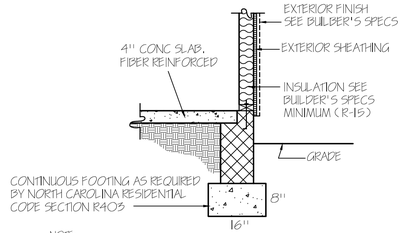
USE ANCHOR BOLTS
ANCHOR BOLTS: 1/ 2" DIA. BOLTS AT 6'-0" O.C. AND NOT MORE THAT 12" FROM CORNERS, EMBEDDED MIN. 7" INTO FOUNDATION. USE A MIN. OF 2 BOLTS PER EACH STUD WALL



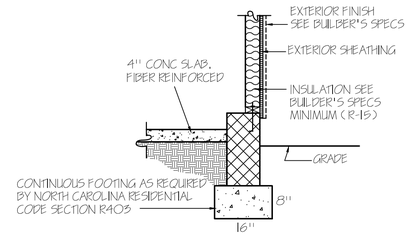
STEPS:
SET BRICK STEPS ON 6" CONCRETE SIDEWALK



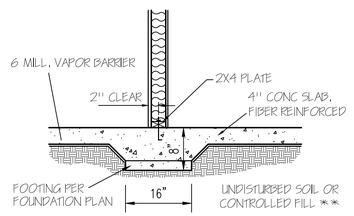
DETAIL FOR GARAGE DOOR OPENING



CONCRETE SLAB FLOOR — A



GARAGE WALL — B



LOAD BEARING WALL THICKENED SLAB — C

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

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

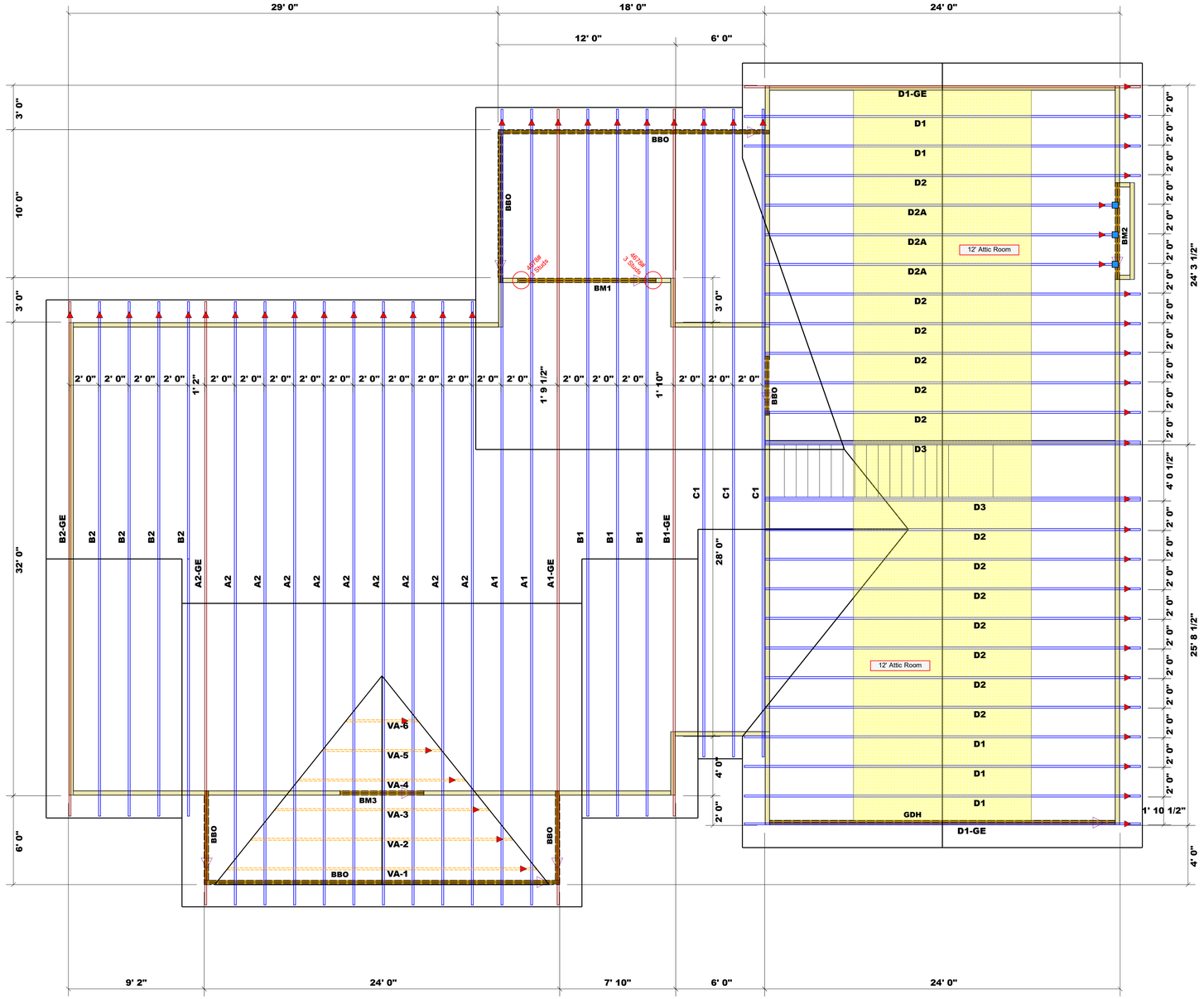
EXCLUSIVE RESIDENCE DESIGN FOR:
WATERMARK HOMES
NAME: PONDEROSA
LOT: 163
163 BALLARD WOODS

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
RG21-A01
OPTION #2
3
GARAGE R F
DATE: 2/15/21



Truss Placement Plan
SCALE: 1/4" = 1'-0"

Dimension Notes
1. All exterior wall to wall dimensions are to face of sheathing unless noted otherwise
2. All interior wall dimensions are to face of frame wall unless noted otherwise
3. All exterior wall to truss dimensions are to face of frame wall unless noted otherwise

Roof Area	= 4411.57 sq.ft.
Ridge Line	= 111.2 ft.
Hip Line	= 0 ft.
Horiz. OH	= 189.14 ft.
Raked OH	= 323.95 ft.
Decking	= 152 sheets

All Walls Shown Are Considered Load Bearing

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

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

Beam Schedule					
PlotID	Length	Product	Plies	Net Qty	Fab Type
BM2	7' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2	FF
BM3	6' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2	FF
GDH	24' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2	FF
BM1	10' 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. Reaction / # of Studs

comTECH
ROOF & FLOOR TRUSSES & BEAMS
Reilly Road Industrial Park
Fayetteville, N.C. 28309
Phone: (910) 864-8787
Fax: (910) 864-4444

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 truss design drawings for additional information on this 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, columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCSI-B1 and BCSI-B3 provided in the truss delivery package or online @ sbcindustry.com

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_____
Anthony Williams

BUILDER	Watermark Homes
JOB NAME	Lot 163 Ballard Woods
PLAN	Ponderosa
SEAL DATE	Plan Date: 2/15/21
QUOTE #	Quote #
JOB #	J0822-3955

COUNTY	Harnett
ADDRESS	Lot 163 Ballard Woods
MODEL	Roof
DATE REV.	6/29/21
DRAWN BY	Anthony Williams
SALESMAN	Anthony Williams

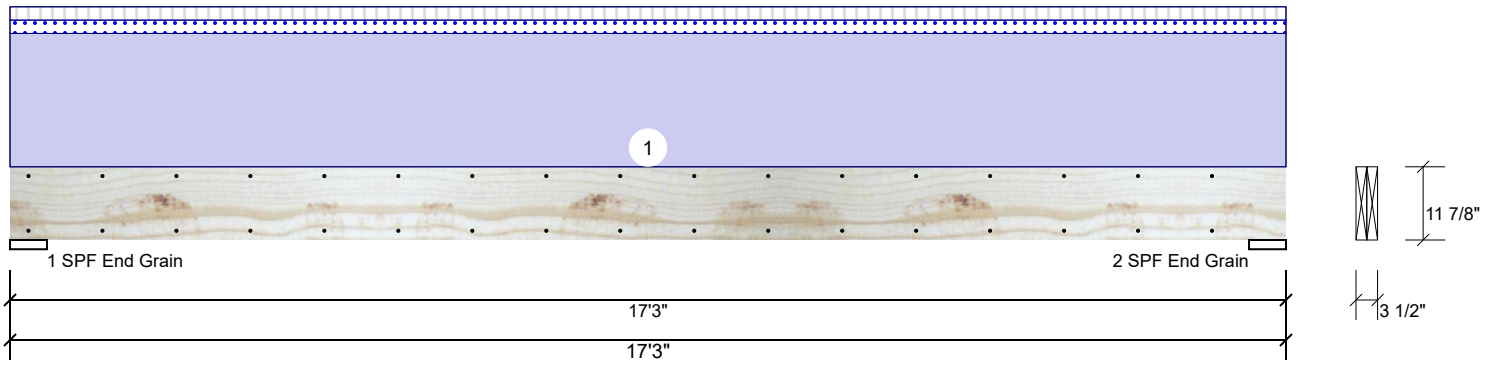
LOAD CHART FOR JACK STUDS
(BASED ON TABLES R502.5(1) & (3))
NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADER/GIRDER

END REACTION (LBS)	REQ'S STUD FOR (2) 1.5" HEADER	END REACTION (LBS)	REQ'S STUD FOR (3) 1.5" HEADER	END REACTION (LBS)	REQ'S STUD FOR (4) 1.5" 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				

Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

GDH-FRONT 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	173	1805	173	0	0
2	Vertical	173	1805	173	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	6.000"	Vert	11%	1805 / 259	2063	L	D+0.75(L+S)
2 - SPF End Grain	6.000"	Vert	11%	1805 / 259	2063	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	7013 ft-lb	8'7 1/2"	17919 ft-lb	0.391 (39%)	D	Uniform
Unbraced	8019 ft-lb	8'7 1/2"	8035 ft-lb	0.998 (100%)	D+0.75(L+S)	L
Shear	1502 lb	15'9 1/8"	7980 lb	0.188 (19%)	D	Uniform
LL Defl inch	0.052 (L/3745)	8'7 9/16"	0.409 (L/480)	0.128 (13%)	0.75(L+S)	L
TL Defl inch	0.418 (L/470)	8'7 9/16"	0.546 (L/360)	0.767 (77%)	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 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 12' 11/16" 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	200 PLF	20 PLF	20 PLF	0 PLF	0 PLF	ROOF/WALL
	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 3/30/2024

Manufacturer Info

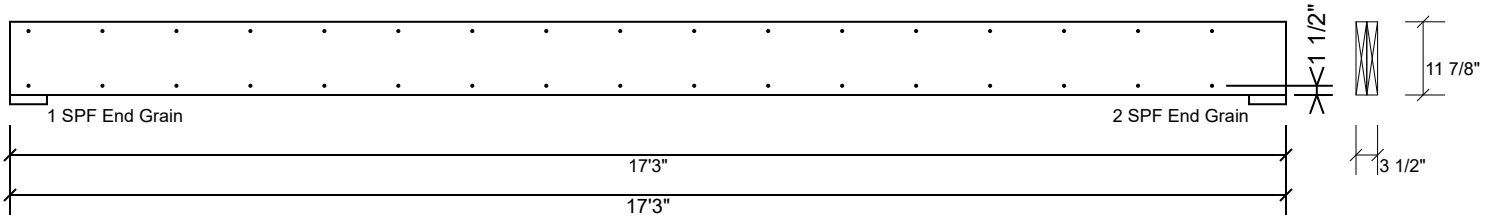
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

GDH-FRONT 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
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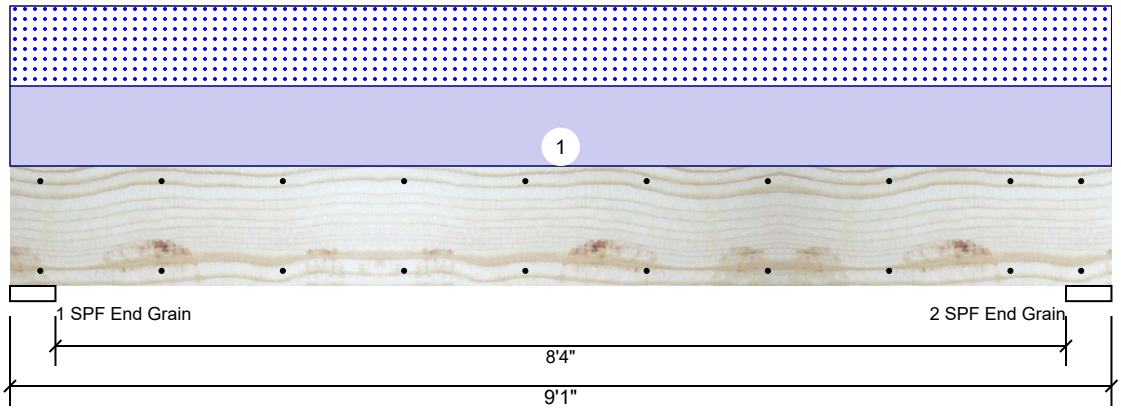
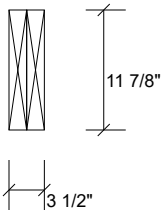
Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

BM1 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	0	2426	2384	0	0
2	Vertical	0	2426	2384	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	Vert	35%	2426 / 2384	4811	L	D+S
2 - SPF End Grain	4.500"	Vert	35%	2426 / 2384	4811	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9473 ft-lb	4'6 1/2"	22897 ft-lb	0.414 (41%)	D+S	L
Unbraced	9473 ft-lb	4'6 1/2"	10675 ft-lb	0.887 (89%)	D+S	L
Shear	3374 lb	1'4 3/8"	10197 lb	0.331 (33%)	D+S	L
LL Defl inch	0.075 (L/1355)	4'6 9/16"	0.211 (L/480)	0.354 (35%)	S	L
TL Defl inch	0.151 (L/672)	4'6 9/16"	0.282 (L/360)	0.536 (54%)	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	525 PLF	0 PLF	525 PLF	0 PLF	0 PLF	B1
	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 3/30/2024

Manufacturer Info

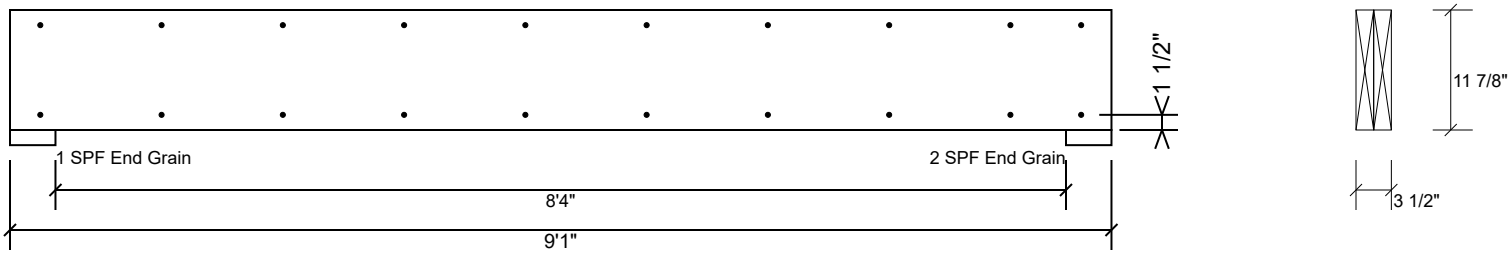
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

BM1 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 3/30/2024

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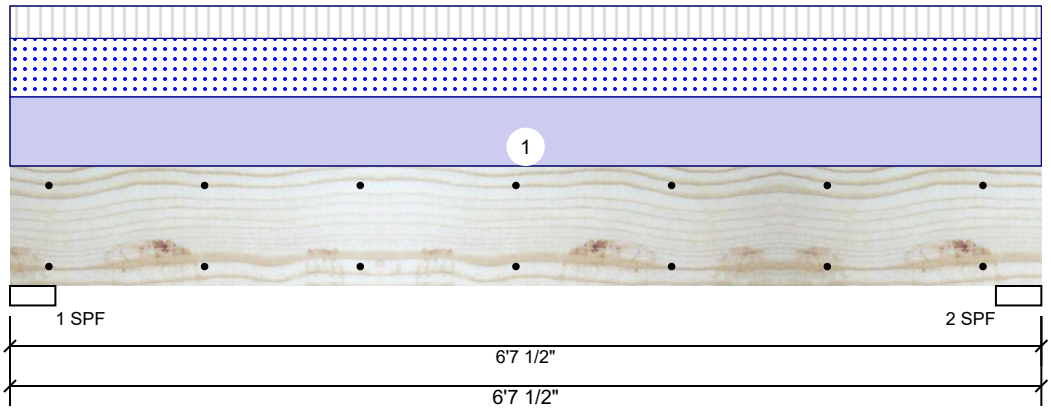
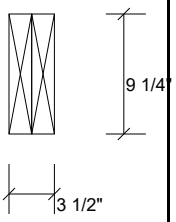
Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

BM2 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 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	513	1120	928	0	0
2	Vertical	513	1120	928	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	42%	1120 / 1081	2201	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	42%	1120 / 1081	2201	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3158 ft-lb	3'3 3/4"	14423 ft-lb	0.219 (22%)	D+0.75(L+S)	L
Unbraced	3158 ft-lb	3'3 3/4"	10411 ft-lb	0.303 (30%)	D+0.75(L+S)	L
Shear	1501 lb	5'6 3/4"	7943 lb	0.189 (19%)	D+0.75(L+S)	L
LL Defl inch	0.029 (L/2595)	3'3 3/4"	0.154 (L/480)	0.185 (18%)	0.75(L+S)	L
TL Defl inch	0.058 (L/1274)	3'3 3/4"	0.206 (L/360)	0.282 (28%)	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 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	331 PLF	155 PLF	280 PLF	0 PLF	0 PLF	D2A
	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 3/30/2024

Manufacturer Info

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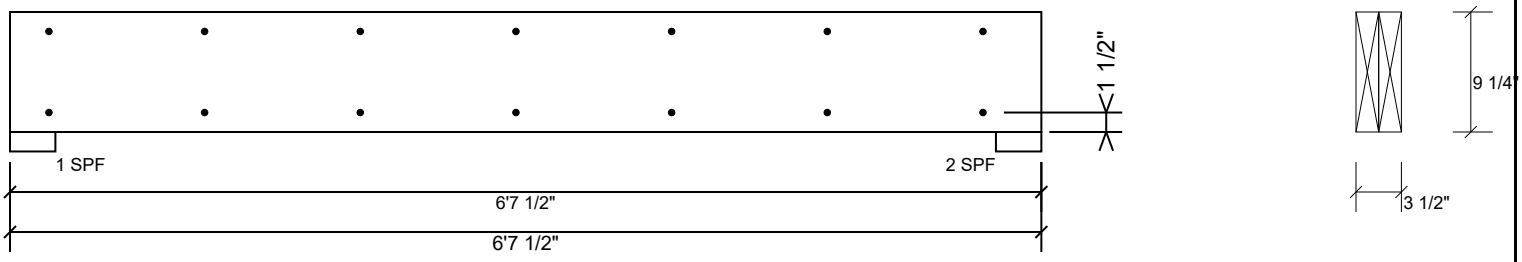
Client:	Watermark Homes	Date:	8/4/2022
Project:		Input by:	Anthony Williams
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

BM2 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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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
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6. For flat roofs provide proper drainage to prevent ponding

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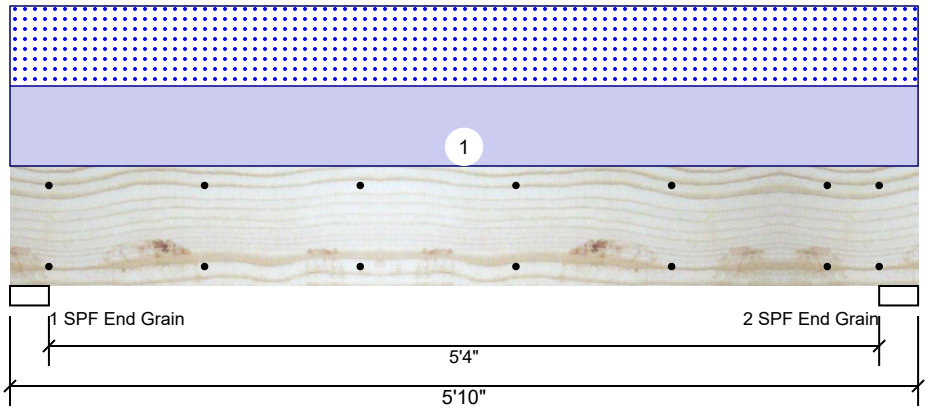
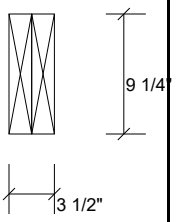
		Project #:	J0822-3955

BM3 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 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	0	1479	1458	0	0
2	Vertical	0	1479	1458	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	32%	1479 / 1458	2938	L	D+S
2 - SPF End Grain	3.000"	Vert	32%	1479 / 1458	2938	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3751 ft-lb	2'11"	14423 ft-lb	0.260 (26%)	D+S	L
Unbraced	3751 ft-lb	2'11"	11110 ft-lb	0.338 (34%)	D+S	L
Shear	1915 lb	4'9 3/4"	7943 lb	0.241 (24%)	D+S	L
LL Defl inch	0.028 (L/2318)	2'11"	0.136 (L/480)	0.207 (21%)	S	L
TL Defl inch	0.057 (L/1151)	2'11"	0.182 (L/360)	0.313 (31%)	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.
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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	500 PLF	0 PLF	500 PLF	0 PLF	0 PLF	A2
	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
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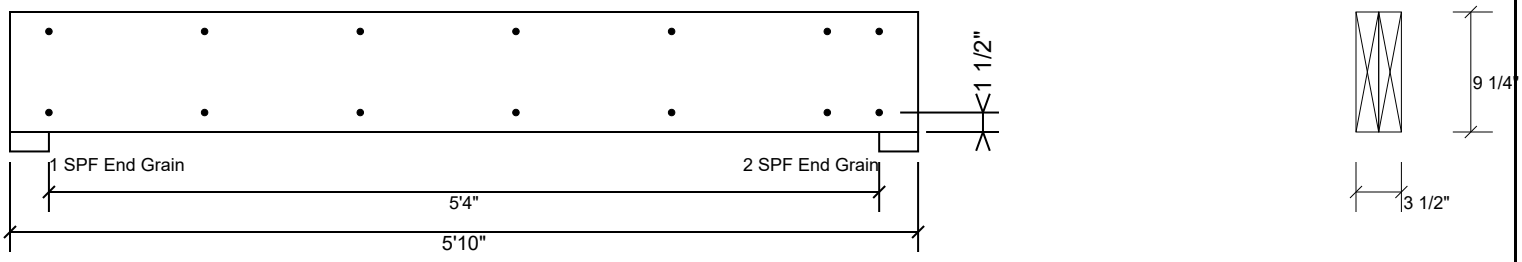
Address:	Lot 163 Ballard Woods, Harnett County NC	Job Name:	Lot 163 Ballard Woods
		Project #:	J0822-3955

BM3 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

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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