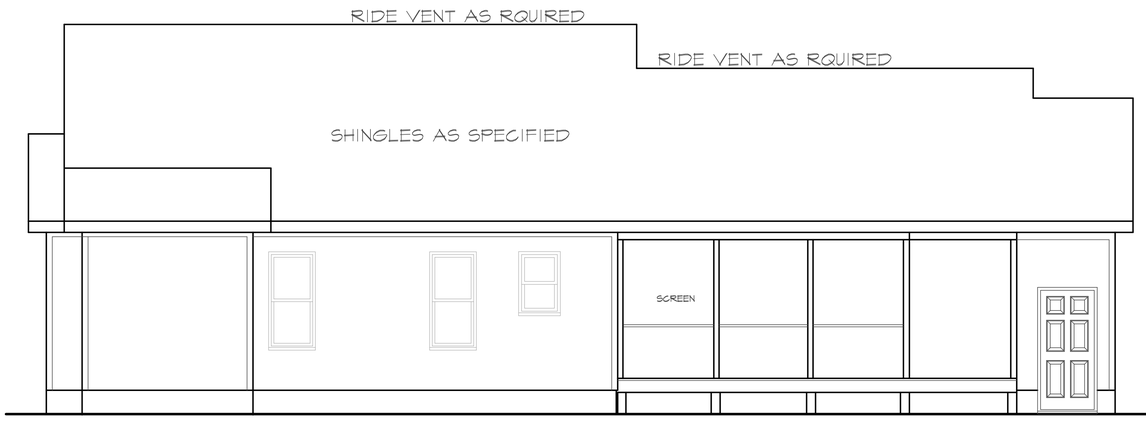
NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

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

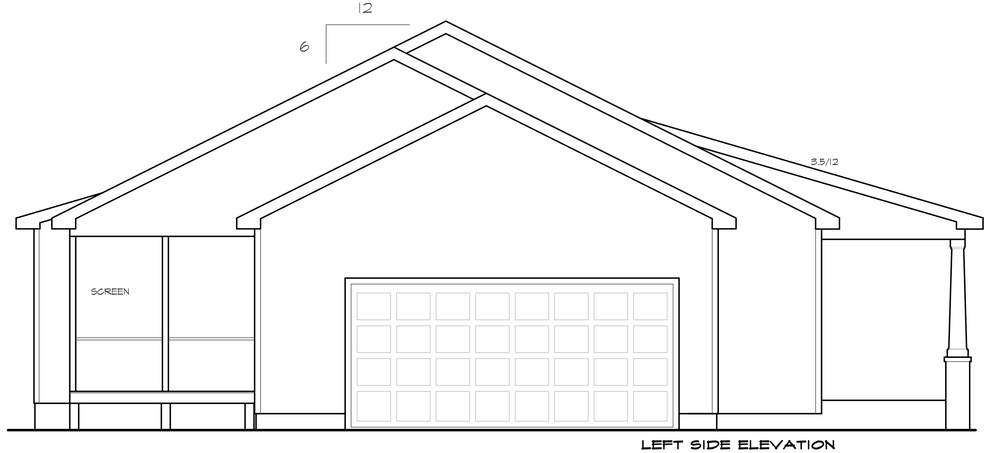
09/21/2023

Harnett COUNTY NORTH CAROLINA

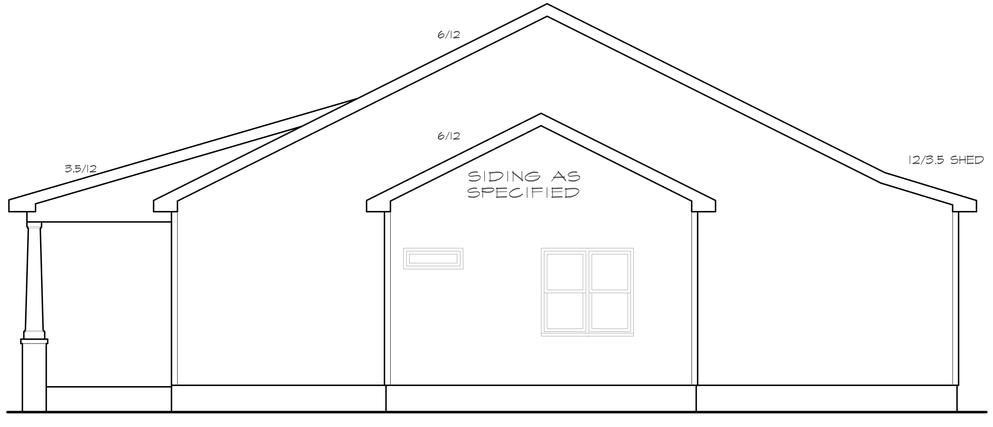
FRONT ELEVATION
SCALE 1/4" = 1'0"



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



LEFT SIDE ELEVATION
SCALE 1/8" = 1'0"



RIGHT SIDE ELEVATION
SCALE 1/8" = 1'0"

ATTIC VENTILATION:

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300 , PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

GROSS ATTIC AREA TO BE VENTILATED 1255 SQ.FT.

1255/300 = 4.2 SQ.FT. NET FREE AREA

50% OF VENTING MUST BE 5FT. ABOVE EAVE OR SOFFIT VENTS.

MIDTOWN DESIGNS

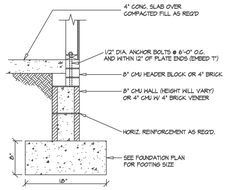
Plan #
BELLA
GARAGE LEFT

THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2018 IRC)

DATE 9/10/2023

PROJECT # 230804

MidTown Designs Inc. 1732 Deacon Falls Way. Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com



A SLAB FND. W/ STEM WALL
N.T.S.

FOUNDATION NOTES:

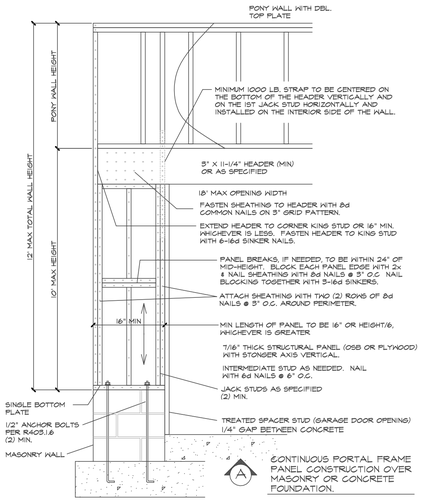
1. Deck posts min. 4'-0" above grade are to be knee or diagonally braced per Appendix M. fastening to house will be by nailes with 5/8" galvanized bolts @ 20" o.c. and 12d kot dipped galv @ 42" o.c.
2. Corners shall be braced with one of the approved methods as outlined in R602.10.3.
3. Structural members fastening to conform to Table R602.3(1) and (2).
4. Girders and piers shall bear on center 1/3 of pier and footing, respectively.
5. 2018 NC State Residential Building Code apply to the construction of footings.
6. Typical lag footing to be 18"x 8" deep, (UNO)
7. Pressure treated wood shall be installed for exterior use.
8. Hanger Schedule (Simpson hangers) for beam to beam consedtions (UNO)
   a. (2)2x10's: LUS2 10-2
   b. (3)2x10's: LUS2 10-3
   c. (2)9-1/2 LVL's: HUS410
9. Concrete shall have min. 28 day strength of 3000 psi and max. Slump of 5 inches unless noted otherwise (,UNO) Air entrained per Table 402.2 All concrete shall be proportioned, mixed, handled, samples, tested, and placed in accordance with ACI current standards. All samples for pumping shall be takes from the exit pump.
10. Allowable soil bearing pressure assumed to be 2000 psf. The contractor must contact Geotechnical Engineer & the Structural Engineer if unsatisfactory subsurface conditions are encountered. The surface area adjacent to the foundation wall shall be provided adequate drainage, and shall be graded so as to drain surface water away from foundation walls

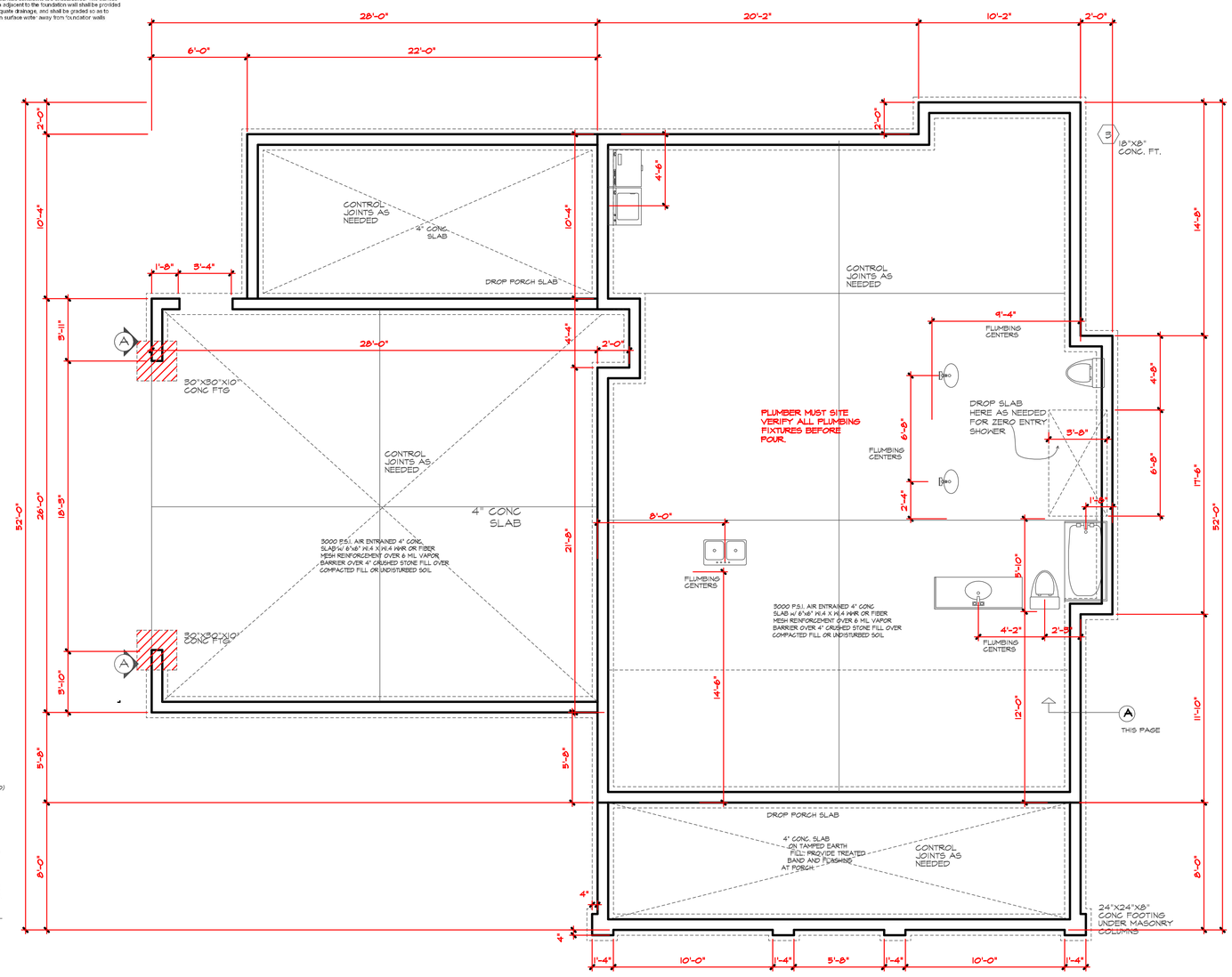
FOUNDATION STRUCTURAL NOTES:

1. (3) 2 x 10 SPF #2 GIRDER DROPPED TYPICAL UNO.
2. CONCRETE BLOCK PIER SIZE SHALL BE:

SIZE	HALLOW MASONRY	SOLID MASONRY
8 x 16	UP TO 32" HIGH	UP TO 5'-0" HIGH
12 x 16	UP TO 48" HIGH	UP TO 9'-0" HIGH
16 x 16	UP TO 64" HIGH	UP TO 12'-0" HIGH
24 x 24	UP TO 96" HIGH	

   WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.
3. WALL FOOTING AS FOLLOWS:
   DEPTH: 8" - UP TO 2-1/2 STORY
   10" - 3 STORY
   WIDTH: SIDING (OR EQUAL)
   - 16" - UP TO 2-1/2 STORY
   - 18" - 3 STORY
   BRICK VENEER
   - 16" - 1 STORY
   - 20" - 2 STORY
   - 24" - 3 STORY
   FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO NORTH CAROLINA RESIDENTIAL CODE TABLE R404.1.1 (1 THRU 4)
   NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF. CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.
   ATTACH SILL PLATE WITH 1/2"dia. ANCHOR BOLTS AT 6'-0" CENTERS (7" EMBEDMENT) AND 12" FROM EACH PLATE END. (SECTION R 403.1.6)
4. ■ DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO FND, TYPICAL.
5. ABBREVIATIONS:
   "SJ" = SINGLE JOIST
   "DJ" = DOUBLE JOIST
   "TJ" = TRIPLE JOIST
6. (4) 2 x 10 SPF #2 GIRDER, TYPICAL UNO.





FOUNDATION PLAN (STEM WALL)

SCALE 1/4" = 1'-0"

Plan # BELLA
GARAGE LEFT

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DATE 9/10/2023

PROJECT # 230804

MidTown Designs Inc. 1732 Deacon Falls Way, Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

STRUCTURAL NOTES:

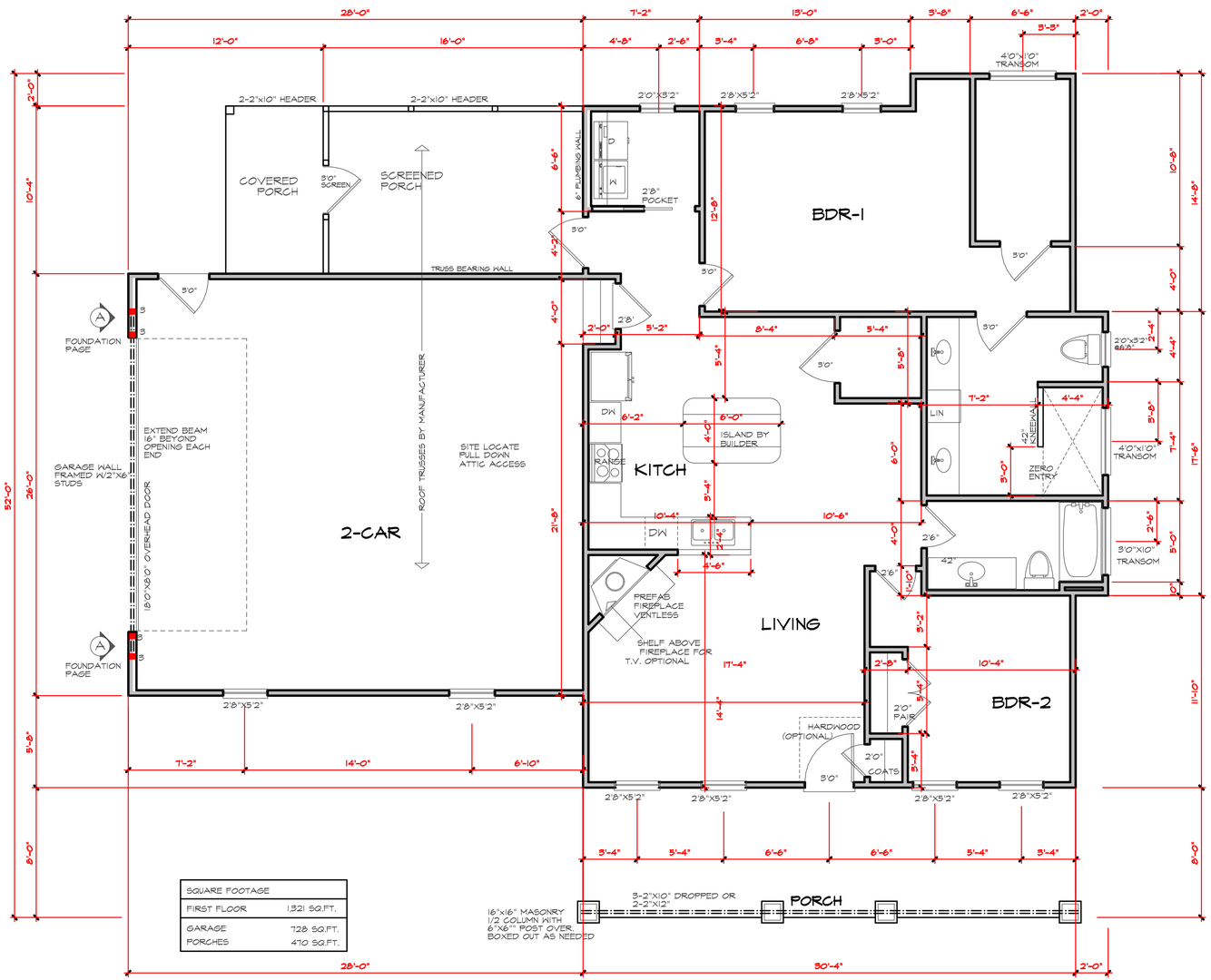
1. Framing lumber shall be #2 SPF (modulus of of elasticity 1,100,000 psi, fb 950) All beams & trusteс lumber to be #2 SYP, E=1,600,000, fb=1100 min. Studs min.#2 or stud grade.
2. Use hangers for all beam to beam connections Structural fastening as per R602.3(1). Adequate connections is the sole responsibility of the general contractor and his subs.
3. Structural members fastening to conform to Table R602.3(1) and (2).
4. Roof Framing Notes:
   a. Dbl Hips may be spliced with a min. 6'-0" overlap at center. No valley splices.
   b. Use 2x10 or fir down rafters for vaulted areas
   c. Attach vaulted rafters with hurricane connectors: Simpson H-2.5, H-5 or approved equal.
5. All construction shall conform to the latest requirements of the NC State Residential Building Code - 2018 Edition, plus all local codes & regulations or 2015 IBC
6. Structural Engineer is not responsible for and will not control of construction means, methods, techniques, sequences or procedures, or the safety precautions and programs in connection with the construction work
7. Structural Engineer is not responsible for the contractor's failure to carry out the proposed construction work in accordance with the contract document.

FRAMING NOTES:

1. Design Loads (R301.5)

	Live Loads (PSF)	Dead (PSF)
Rooms not for Sleeping	40	10
Sleeping Rooms	30	10
Attic w/Permanent Stairs	40	10
Attic w/o Permanent Stairs	20	10
Attic w/o Storage	10	10
Stairs	40	–
Exterior Balconies	60	10
Decks	40	10
Guardrails & Handrails	200	–
Passanger Vehicle Garages	50	10
Fire Escapes	40	10
Snow	20	–

   Wind Load: (Refer to Table R301.2.4)
   Verify Zone before Construction
   Wake County 115 mph
2. Wall Bracing: Braced wall panels shall be constructed according to section R602.10.3. The wall structural paneling shall comply with Table R602.10.3. The length of braced panels shall be determined by section R602.10.4. Lateral bracing shall be satisfied per method 3 by continuously sheathing walls with structural sheathing per Table 601.3. Note that any specific bracing wall detail shall be installed as specified.
3. All framing lumber shall be SPF#2 (Fb=875 psi) unless otherwise noted (UNO). All treated lumber shall be SYP#2 (Fb=975 psi). Plate material may be SPF#3 or SYP#3 (Fc (perp.) = 425 psi min.)
4. All exterior headers to be (2)2x10 spf, u.n.o w/ dbl. Jacks for all openings >5'-0".
5. All interior bearing headers to be (2)2x10 u.n.o. w/ dbl. jacks for all openings >4'-6". use (2)2x8 w/ dbl. Jacks for all openings >3'-0" u.n.o.
6. All interior non-bearing headers to be min. (2)2x4 flat, u.n.o.
7. Finish to conform with R602.8



SQUARE FOOTAGE	
FIRST FLOOR	1321 SQ.FT.
GARAGE	728 SQ.FT.
PORCHES	470 SQ.FT.

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

NOTE!
TRUSS MANUFACTURER TO SIZE ALL STRUCTURAL MEMBERS.

MIDTOWN DESIGNS

Purchaser must verify all dimensions and conditions before beginning construction.

MidTown Designs Inc. assumes no liability for contractors practices and procedures

These drawings are instruments of service and as such shall remain property of the designer

Plan # **BELLA**
GARAGE LEFT

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DATE 9/9/2023

PROJECT # 230804

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TRUSS SYSTEM REQUIREMENTS

NC (2018 NCRC). Wind: 115-120 mph

1.TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH SEALED STRUCTURAL PLANS. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH ENGINEER OF RECORD

2.TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.

3.ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).

4.ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.

ROOF PLAN

NOTE!
ROOF TRUSSES BY OTHERS

MIDTOWN DESIGNS

Plan #
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GARAGE LEFT

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DATE 9/9/2023

PROJECT # 230804

MidTown Designs Inc. 1732 Deacon Falls Way, Wendell NC 27591 Phone: 919-783-8626 www.midtowndesigns.com

STRUCTURAL NOTES

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION (2018 IRC), PLUS ALL LOCAL CODES AND REGULATIONS.
ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

2) DESIGN LOADS SEE TABLE R301.5

WIND SPEED: (REFER TO TABLE R301.2.4)
VERIFY ZONE BEFORE CONSTRUCTION.

3) WALL BRACING: WALLS SHALL BE BRACED ALONG BRACED WALL LINES ACCORDING TO SECTION R602.10. THE AMOUNT, LOCATION, AND CONSTRUCTION OF BRACING SHALL COMPLY WITH R602.10. NOTE THAT THE BRACING SHOWN ON THE PLANS IS BASED ON THE PRESCRIPTIVE BRACING REQUIREMENTS OF THE CODE AND SHALL BE VERIFIED AND/ORAPPROVED BY THE CODE OFFICIAL.

4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIT ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.

5) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

6) ALL FRAMING LUMBER SHALL BE SPF #2/FB = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP #2 (FB=975 PSI). PLATE MATERIAL MAY BE SPF #3 OR SYP #3 (FC/PERP) = 425 PSI - MIN).

7) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2X4 STUD COLUMN FOR 6'-0" MAX. BEAM SPAN (UNO), (2)2X4 STUDS FOR BEAM SPAN GREATER THAN 6'-0" (UNO).

8) L.V.L SHALL BE LAMINATED VENEER LUMBER: FB=2600 PSI, FV=285 PSI, E=1,900,000 PSI. P.S.L SHALL BE PARALLEL STRAND LUMBER: FB=2900 PSI, FV=290 PSI, E=2,000,000 PSI. L.S.L SHALL BE LAMINATED STRAND LUMBER: FB=2250 PSI, FV=400 PSI, E=1,550,000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

9) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

10) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER X 4" LONG). LATERAL SUPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

11) REBAR SHALL BE DEFORMED STEEL. ASTM615, GRADE 60.

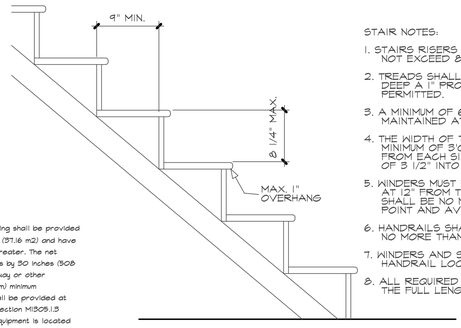
12) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX). AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.

13) BRICK LINTELS SHALL BE 3 1/2"X3 1/2"X1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"X4"X5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0" (UNO).

14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS SEE R301.2(6)

DWELLING / GARAGE SEPARATION

REFER TO SECTIONS R302.5, R302.6, AND R302.7
WALLS. A minimum 1/2" gypsum board must be installed on all walls supporting floor/ceiling assemblies used for separation required by this section.
STAIRS. A minimum of 1/2" gypsum board must be installed on the underside and exposed sides of all stairways.
CEILINGS. A minimum of 1/2" gypsum must be installed on the garage ceiling If there are no habitable room above the garage. If there are habitable room above the garage a minimum of 5/8" type X gypsum board must be installed on the garage ceiling.
OPENING PENETRATIONS. Openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors.
DUCT PENETRATIONS. Ducts in the garage and ducts penetrating the walls or ceilings separating the *dwelling* from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other *approved* material and shall have no openings into the garage.
OTHER PENETRATIONS. Penetrations through the separation required in Section R302.6 shall be protected as required by Section R302.11, Item 4.



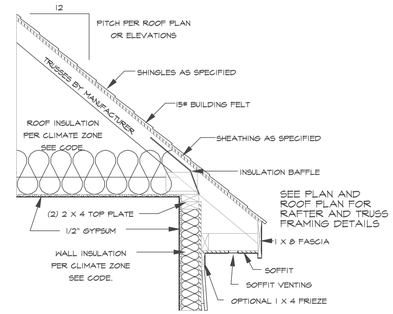
ATTIC ACCESS

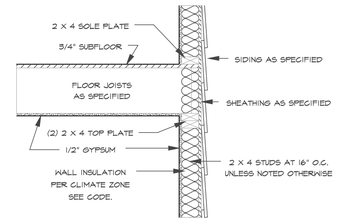
SECTION R807
R807.1 Attic access. An attic access opening shall be provided to attic areas that exceed 400 square feet (37.16 m2) and have a vertical height of 60 inches (1524 mm) or greater. The net clear opening shall not be less than 20 inches by 30 inches (508 mm by 762 mm) and shall be located in a hallway or other readily accessible location. A 30-inch (762 mm) minimum unobstructed headroom in the attic space shall be provided at some point above the access opening. See Section M1305.1.3 for access requirements where mechanical equipment is located in attics.
Exceptions:
1. Concealed areas not located over the main structure including porches, areas behind knee walls, dormers, bay windows, etc. are not required to have access.
2. Pull down stair treads, stringers, handrails, and hardware may protrude into the net clear opening.

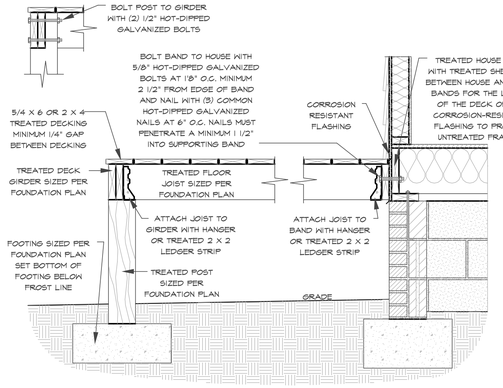
STAIR NOTES:
1. STAIRS RISERS MUST BE UNIFORM AND NOT EXCEED 8 1/4".
2. TREADS SHALL NOT BE LESS THAN 10" DEEP A 1" PROJECTION OVER RISER IS PERMITTED.
3. A MINIMUM OF 6'8" HEADROOM MUST BE MAINTAINED AT ALL PLACES ON STAIR.
4. THE WIDTH OF THE STAIR SHALL BE A MINIMUM OF 30", HANDRAIL MAY PROJECT FROM EACH SIDE OF STAIR A DISTANCE OF 3 1/2" INTO THE REQUIRED WIDTH.
5. WINDERS MUST BE A MINIMUM OF 9" IN WIDTH AT 12" FROM THE NARROWEST SIDE. TREAD SHALL BE NO NARROWER THAN 6" AT ANY POINT AND AVERAGE NO LESS THAN 9 INCHES.
6. HANDRAILS SHALL BE NO LESS THAN 34" AND NO MORE THAN 38" ABOVE TREAD NOSING.
7. WINDERS AND SPIRAL STAIRS SHALL HAVE THE HANDRAIL LOCATED ON THE OUTSIDE RADIUS.
8. ALL REQUIRED HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS.

STAIR DETAIL

NO SCALE

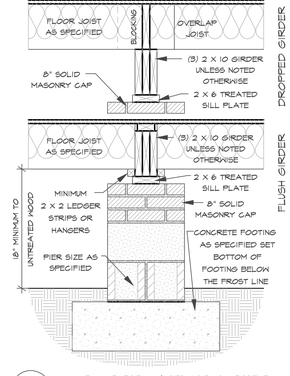






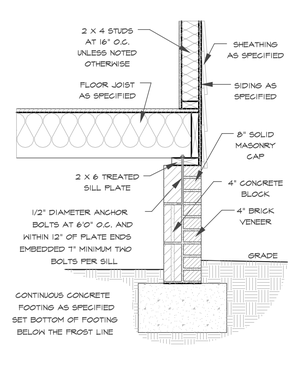
DECK ATTACHMENT DETAIL TO FRAMED WALL

SCALE 3/4" TO 1'-0"



C DROPPED/ FLUSH PIER

SCALE 3/4" = 1'-0"



TYPICAL WALL SECTION

SCALE 3/4" = 1'-0"

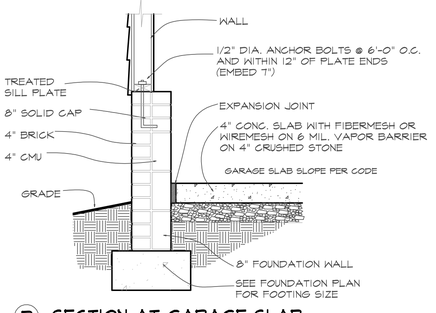
TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT*

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,c]	CEILING R-VALUE[h]	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE[i]	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE & DEPTH	CRAWL SPACE[c] WALL R-VALUE
3	0.35	0.55	0.30	38 or: 30ci	13 or 13+2.5[f]	5/13 or 5/10ci	19	5/13	0	5/13
4	0.35	0.55	0.30	38 or: 30ci	13 or 13+2.5[f]	5/13 or 5/10ci	19	10/15	10	10/15
5	0.35	0.55	NR	38 or: 30ci	19[f] or 13+5[f] or 15+3[f]	13/17 or 13/12.5ci	30[f]	10/15	10	10/19

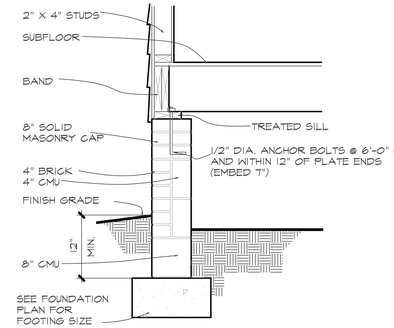
TABLE R402.1.4
EQUIVALENT U-FACTORS[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[d]	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR[i]	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55	0.030	0.077	0.141	0.047	0.059[f]	0.136
4	0.35	0.55	0.030	0.077	0.141	0.047	0.059	0.065
5	0.35	0.55	0.030	0.061	0.082	0.033	0.055	0.065

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.
b. When more than half the insulation is on the interior the mass wall U-factors shall be a maximum of 0.07 in Climate Zone 3, 0.81 in Climate Zone 4 and 0.054 in Climate Zone 5.
c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1
d. A maximum of 'as-glazed' fenestration product assemblies having a U-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the REScheck 'IA Trade-off' compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the U-factor of 0.32 and the SHGC of 0.30, as applicable, but the fenestration products actual U-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable projects. Compliance for these substitute products shall be verified compared to the allowed/substituted maximum U-value requirement and maximum SHGC requirement, as applicable.



B SECTION AT GARAGE SLAB

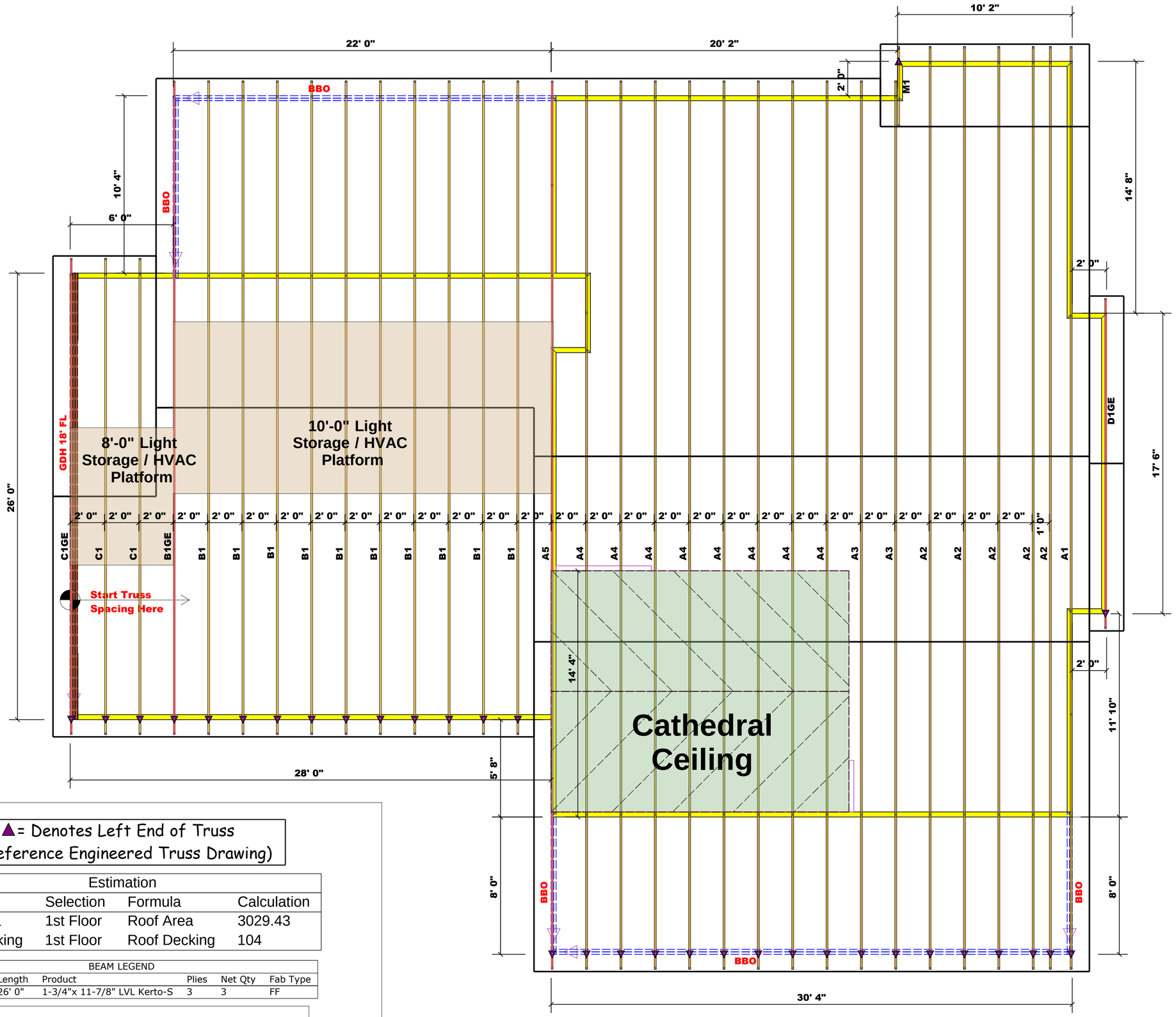


D SECTION AT CRAWL

HOUSE DESIGNED UNDER
RESIDENTIAL CODE 2018 IRC

DETAIL PAGE

DATE



▲= Denotes Left End of Truss
(Reference Engineered Truss Drawing)

Estimation			
Name	Selection	Formula	Calculation
Roof Area	1st Floor	Roof Area	3029.43
Roof Decking	1st Floor	Roof Decking	104

BEAM LEGEND					
PlotID	Length	Product	Plies	Net Qty	Fab Type
GDH 18' FL	26' 0"	1-3/4"x 11-7/8" LVL Kerto-S	3	3	FF

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

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

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

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 Lenny Norris

Lenny Norris

LOAD CHART FOR JACK STUDS

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

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

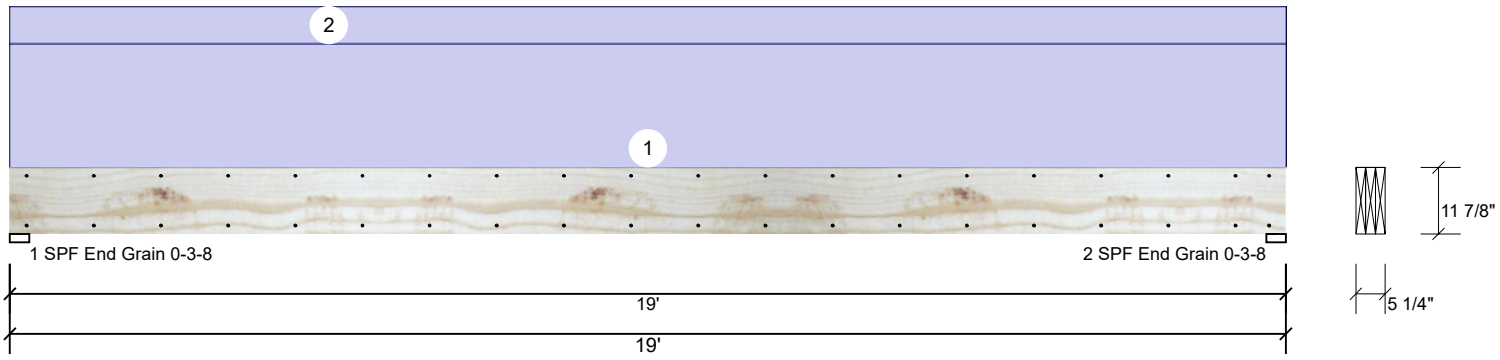
END REACTION (UP TO)	REQ'D # STUDS FOR (2) PLY HEADER	END REACTION (UP TO)	REQ'D # STUDS FOR (3) PLY HEADER	END REACTION (UP TO)	REQ'D # STUDS FOR (4) PLY HEADER
1700	1	2550	1	3400	1
3400	2	5100	2	6800	2
5100	3	7650	3	10200	3
6800	4	10200	4	13600	4
8500	5	12750	5	17000	5
10200	6	15300	6		
11900	7			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

BUILDER	Weaver Development, Inc.
JOB NAME	Hall Residence
PLAN	Bella
SEAL DATE	Seal Date
QUOTE #	Quote #
JOB #	J0923-5487
CITY / CO.	Sanford / Harnett
ADDRESS	6587 Rosser Pittman Rd.
MODEL	Roof
DATE REV.	/ /
DRAWN BY	Lenny Norris
SALES REP.	Lenny Norris

Client:	WRAVER	Date:	9/28/2023
Project:		Input by:	LENNY NORRIS
Address:		Job Name:	HALL
		Project #:	

GDH 18' FL Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2018
Deflection LL:	480	Load Sharing:	Yes
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	2602	0	0	0
2	Vertical	0	2602	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	17%	2602 / 0	2602	Uniform	D
2 - SPF End Grain	3.500"	Vert	17%	2602 / 0	2602	Uniform	D

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11769 ft-lb	9'6"	27954 ft-lb	0.421 (42%)	D	Uniform
Unbraced	11769 ft-lb	9'6"	11788 ft-lb	0.998 (100%)	D	Uniform
Shear	2264 lb	1'3 3/8"	11970 lb	0.189 (19%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.519 (L/429)	9'6 1/16"	0.618 (L/360)	0.839 (84%)	D	Uniform

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". Nail from both sides.
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 12'2 7/8" 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			Top	200 PLF	0 PLF	0 PLF	0 PLF	0 PLF	GABLE END
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	DEAD WALL
	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 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 5/29/2026

Manufacturer Info

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

Client:	WRAVER	Date:	9/28/2023
Project:		Input by:	LENNY NORRIS
Address:		Job Name:	HALL
		Project #:	

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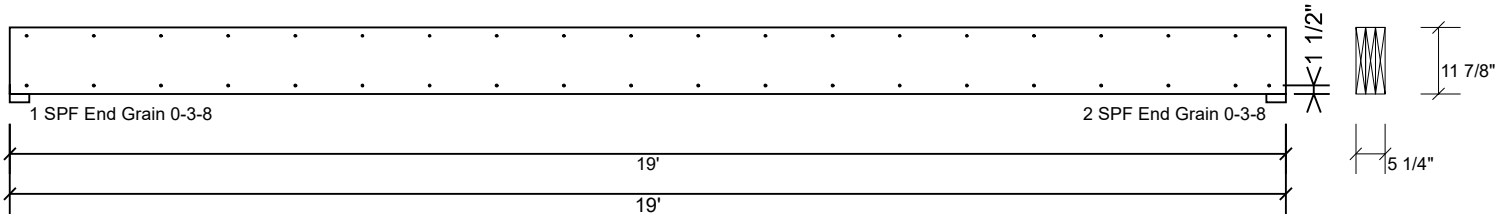

Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. 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.
C_M	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

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Lumber

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