Rosado Residence- 6085 Cool Springs Road Broadway NC

Block Parged Crawlspace Foundatin

Z:\Builder\Signature Home Builders, Inc\1908148 Hinson Residence\1908148 Hinson Residence.aec

PLANS DESIGNED TO THE 2018 NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE

MEAN ROOF HEIGHT: 17'-2" HEIGHT TO RIDGE: 24'-4"

CLIMATE ZONE	ZONE 3A	ZONE 4A	ZONE 5A
FENESTRATION U-FACTOR	0.35	0.35	0.35
SKYLIGHT U-FACTOR	0.55	0.55	0.55
GLAZED FENESTRATION SHGC	0.30	0.30	0.30
CEILING R-VALUE	38 or 30ci	38 or 30ci	38 or 30ci
WALL R-VALUE	15	15	19
FLOOR R-VALUE	19	19	30
* BASEMENT WALL R-VALUE	5/13	10/15	10/15
** SLAB R-VALUE	0	10	10
* CRAWL SPACE WALL R-VALUE	5/13	10/15	10/19

* "10/13" MEANS R-10 SHEATHING INSULATION OR R-13 CAVITY INSULATION
** INSULATION DEPTH WITH MONOLITHIC SLAB 24" OR FROM INSPECTION GAP TO BOTTOM OF FOOTING; INSULATION DEPTH WITH STEM WALL SLAB 24" OR TO BOTTOM OF FOUNDATION WALL

DESIGNED FOR WIND SPEED OF 120 MPH, 3 SECOND GUST (93 FASTEST MILE) EXPOSURE "B"

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS								
MEAN ROOF	UP TO 30'		30'-1" TO 35'		35'-1" TO 40'		40'-1" TO 45'	
ZONE 1	14.2	-15.0	14.9	-15.8	15.5	-16.4	15.9	-16.8
ZONE 2	14.2	-18.0	14.9	-18.9	15.5	-19.6	15.9	-20.2
ZONE 3	14.2	-18.0	14.9	-18.9	15.5	-19.6	15.9	-20.2
ZONE 4	15.5	-16.0	16.3	-16.8	16.9	-17.4	17.4	-17.9
ZONE 5	15.5	-20.0	16.3	-21.0	16.9	-21.8	17.4	-22.4

DESIGNED FOR WIND SPEED OF 130 MPH, 3 SECOND GUST (101 FASTEST MILE) EXPOSURE "B"

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS								
MEAN ROOF	UP TO 30'		30'-1" TO 35'		35'-1" TO 40'		40'-1" TO 45'	
ZONE 1	16.7	-18.0	17.5	-18.9	18.2	-19.6	18.7	-20.2
ZONE 2	16.7	-21.0	17.5	-22.1	18.2	-22.9	18.7	-23.5
ZONE 3	16.7	-21.0	17.5	-22.1	18.2	-22.9	18.7	-23.5
ZONE 4	18.2	-19.0	19.1	-20.0	19.8	-20.7	20.4	-21.3
ZONE 5	18.2	-24.0	19.1	-25.2	19.8	-26.2	20.4	-26.9

ROOF VENTILATION

SECTION R806

R806.1 Ventilation required. Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilati on for each separatespace by ventilati ng openings protected against the entrance of rain or snow. Ventilation opening s shall have a least di mension of 1/16 inch (1.6 mm) mi ni mum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, or similar material with openings having aleast dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7.

R806.2 Minimum area. The total net free ventilati ng area shall not be less than 1/150 of thearea of the spaceventilated except that reduction of the total area to 1/300 is permitted provided that at least 50 percent and not more than 80 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 (914 mm) above the eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents. As an alternative, the net free cross-ventilation area may be reduced to 1/300 when a Class I or II vapor retarder is installed on the warm-in-winter sideof the ceiling.

Exceptions:

1. Enclosed attic/rafter spaces requiring less than 1 square foot (0.0929 m2) of ventilation may be vented with continuous soffit ventilation only.
2. Enclosed attic/rafter spaces over unconditioned space may be vented with continuous soffit vent only.

SQUARE FOOTAGE OF ROOF TO BE VENTED = 3,668 SQ.FT.
NET FREE CROSS VENTILATION NEEDED:
WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 24.45 SQ.FT.
WITH 50% TO 80% OF VENTING 3'-0" ABOVE EAVE; OR WITH CLASS I OR II VAPOR RETARDER ON WARM-IN-WINTER SIDE OF CEILING = 12.23 SQ.FT.

GUARD RAIL NOTES

SECTION R312

R312.1 Where required. *Guards* shall be located along open-sided walking surfaces, including stairs, ramps and landi ngs, that are located more than30 inches (762 mm) measured verticallyt o the floor or *grade* below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.

R312.2 Height. Required *guards* at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. *Guards* on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Wherethe top of the *guard* als o serves as a handrail on the open sides of stairs, the top of the *guard* shall not be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treeds.

R312.3 Opening limitations. Required *guards* shall not have openings fro m the walking surface to the required *guard* height which allow passage of a sphere 4 inches (102 mm)indiameter.

Exceptions:

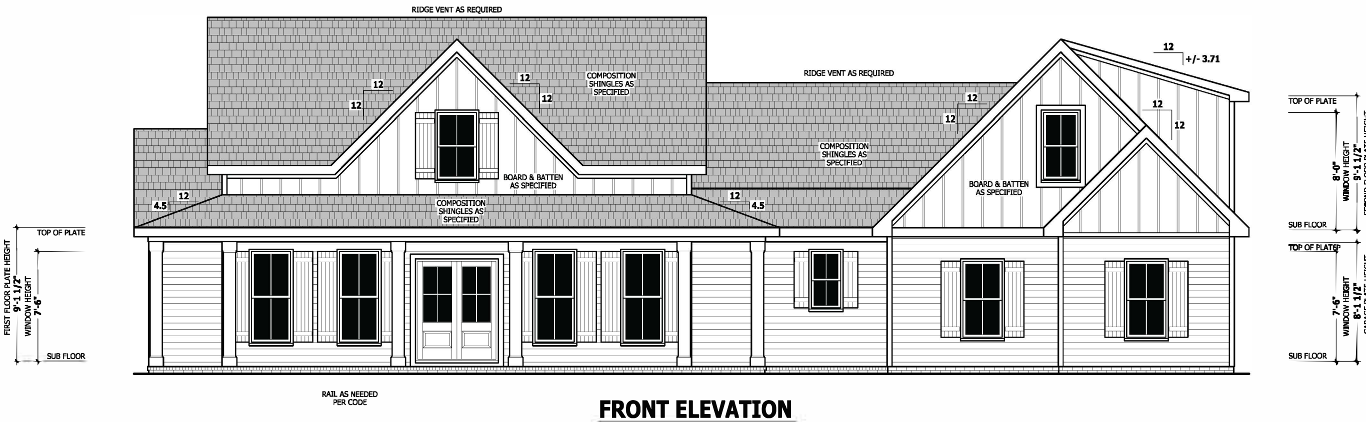
1. The triangular opening s at the open side of a stair, formed by the riser, tread and bottom rail of a *guard*, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
2. *Guards* on the open sides of stairs shallnot have openings which allow passage of a sphere 4 3/8 inches (111 mm) indiameter.

AIR LEAKAGE

Section N1102.4

N1102.4.1 Building thermal envelope. The buiding thermal envelope shall be durably sealed with an ai r barrier system to limi t infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. For all homes, where present, the following shall be caulked, gasketed, weather stripped or otherwise sealed with an air barrier material or s olid material consistent with Appendix E-24 of this code:

1. Blocking and sealing floor/ceiling systems and under kneewalls open to unconditioned or exterior space.
2. Capping and sealing shafts or chases, includ ing flue shafts.
3. Capping and sealing soffit or dropped ceiling areas.



FRONT ELEVATION

SCALE 1/4" = 1'-0"

Front Door- 1/0 3/0 Fiberglass Painted
Windows- MGM SH Vinyl- Clear- White
Columns- 8" PVC- White
Shingles- 30 Year Arch- Charcoal
Garage Door- 18'x 8' Recessed Panel- White

Shake Siding- Alside Harbor Blue
Horizontal Siding- Alside Platinum Gray
Trim- White

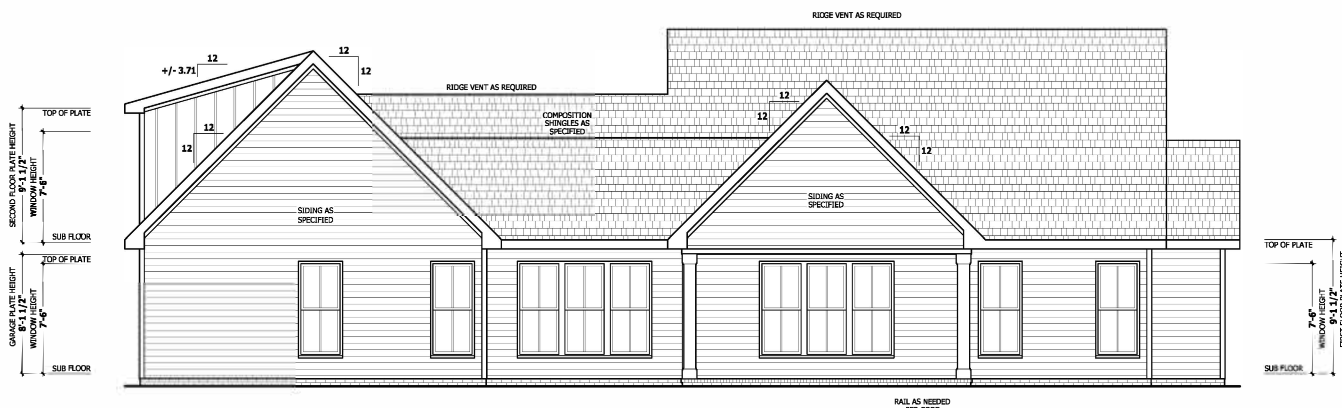
NOTICE TO CONTRACTOR
APPROVED
04/04/2024
Harnett COUNTY NORTH CAROLINA

SQUARE FOOTAGE

HEATED
FIRST FLOOR 2258 SQ.FT.
TOTAL 2258 SQ.FT.

HEATED FUTURE
PLAYROOM 419 SQ.FT.
TOTAL 419 SQ.FT.

UNHEATED
FRONT PORCH 455 SQ.FT.
REAR PORCH 234 SQ.FT.
GARAGE 690 SQ.FT.
TOTAL 1379 SQ.FT.



REAR ELEVATION

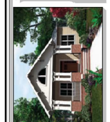
SCALE 1/4" = 1'-0"

FRONT & REAR ELEVATIONS

2677

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.

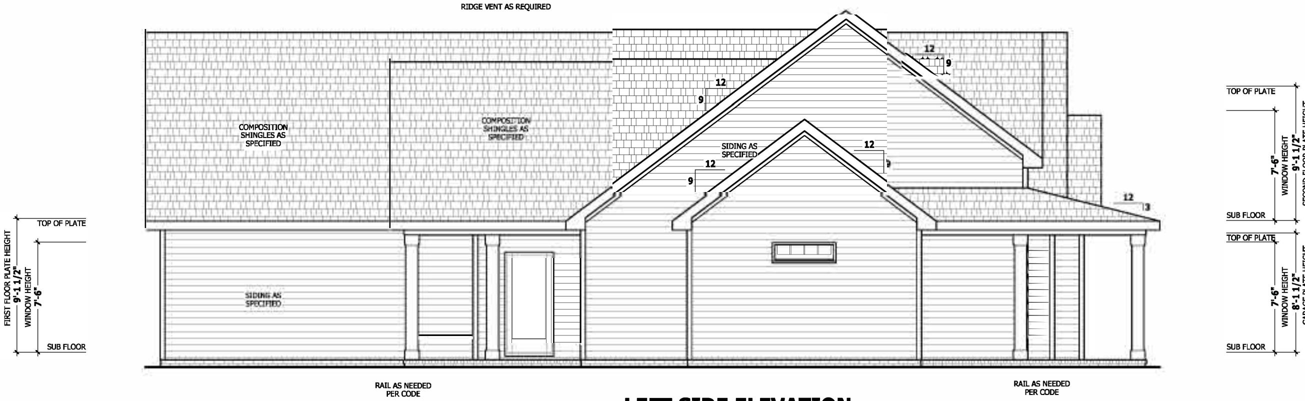


SQUARE FOOTAGE
HEATED
FIRST FLOOR 2258 SQ.FT.
TOTAL 2258 SQ.FT.
HEATED FUTURE
PLAYROOM 419 SQ.FT.
TOTAL 419 SQ.FT.
UNHEATED
FRONT PORCH 455 SQ.FT.
REAR PORCH 234 SQ.FT.
GARAGE 690 SQ.FT.
TOTAL 1379 SQ.FT.

12/30/2019

190814B

Z:\Builder\Signature Home Builders, Inc\190814B Hinson Residence\190814B Hinson Residence.aec



LEFT SIDE ELEVATION

SCALE 1/4" = 1'-0"

Change to 18'x 8' single garage door

RIGHT SIDE ELEVATION

SCALE 1/4" = 1'-0"

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.

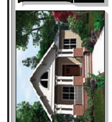
HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.

CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.

THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

SHB SIGNATURE HOME BUILDERS, INC.

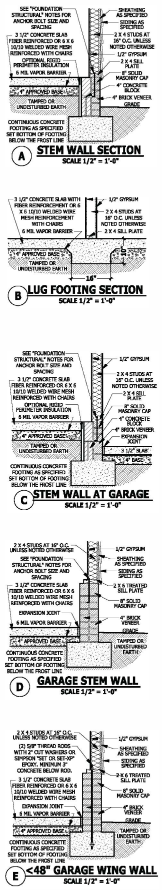
HAYNES HOME PLANS, INC.
P.O. Box 702, Wake Forest, NC 27588 919-435-6180 Fax 1-866-491-0596



SQUARE FOOTAGE	
HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

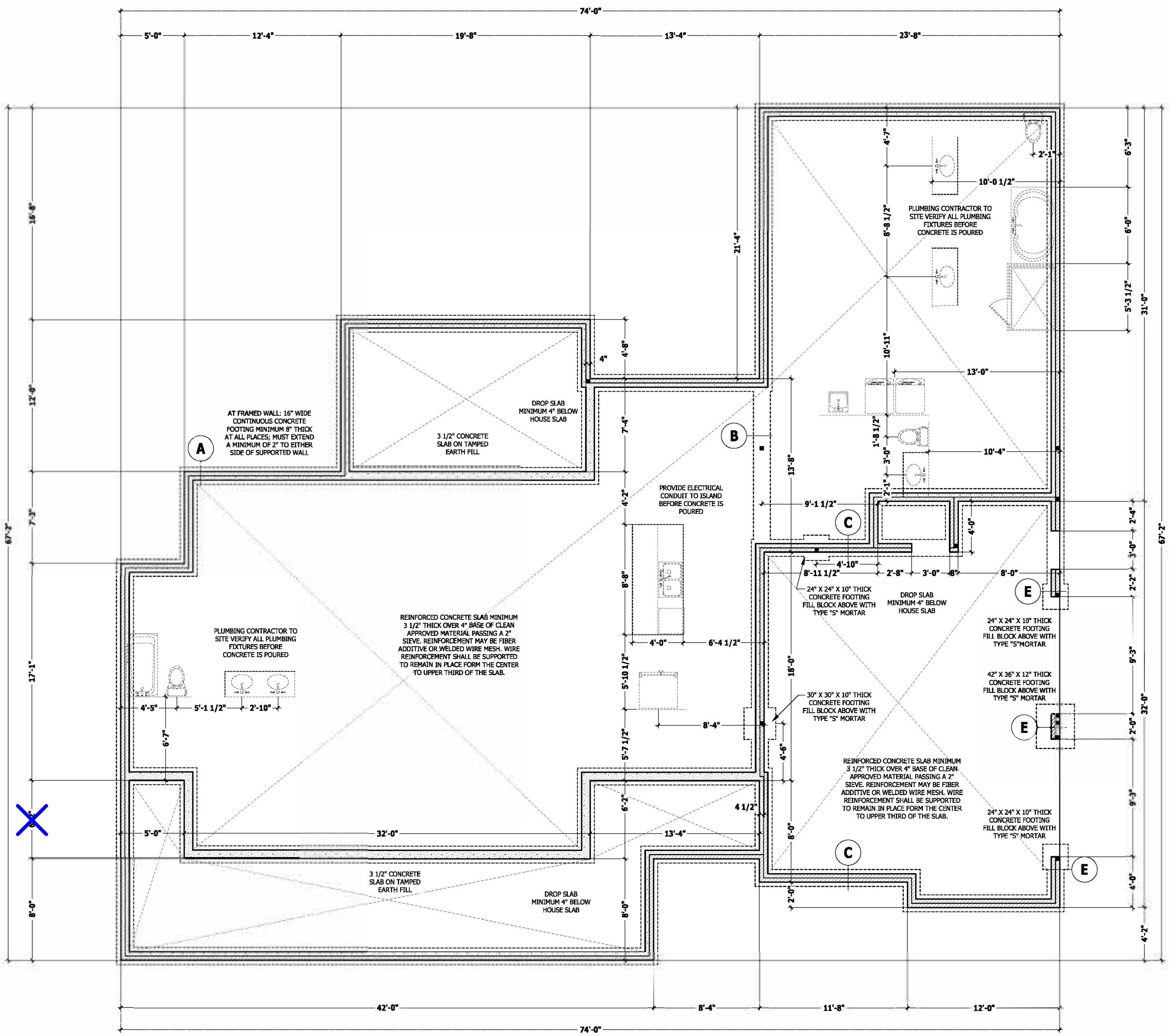
190814B



Z:\Builder\Signature Home Builders, Inc\190814B Hinson Residence\190814B Hinson Residence.aec

Plan descrepancy. Go by first floor plan measurement which is 7'3"

7'3"



STEM WALL SLAB PLAN

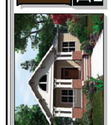
SCALE 1/4" = 1'-0"

FOUNDATION STRUCTURAL

115 to 130 mph wind zone (1 1/2 to 2 1/2 story)
CONTINUOUS FOOTING: 16" wide and 8" thick minimum. 20" wide minimum at brick veneer. Must extended 2" to either side of supported wall.
GIRDERS: (3) 2 X 10 girder unless noted otherwise.
PIERS: 16" X 16" piers with 8" solid masonry cap on 30" X 30" X 10" concrete footing with maximum pier height of 64" with hollow masonry and 160" with solid masonry.
POINT LOADS: ■ designates significant point load and should have solid blocking to pier, girder or foundation wall.
115 and 120 MPH ANCHORS BOLTS: 1/2" diameter anchor bolts embedded minimum 7", maximum 6'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.
130 MPH ANCHORS BOLTS: 1/2" diameter anchor bolts embedded minimum 15", maximum 4'-0" on center, within 12" of plate ends, and minimum two anchor bolts per plate.
CONCRETE: Concrete shall have a minimum 28 day strength of 3000 psi and a maximum 5" slump. Air entrained per table 402.2. All concrete shall be in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.
SOILS: Allowable soil bearing pressure assumed to be 2000 PSF. The contractor must contact a geotechnical engineer and a 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.

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.

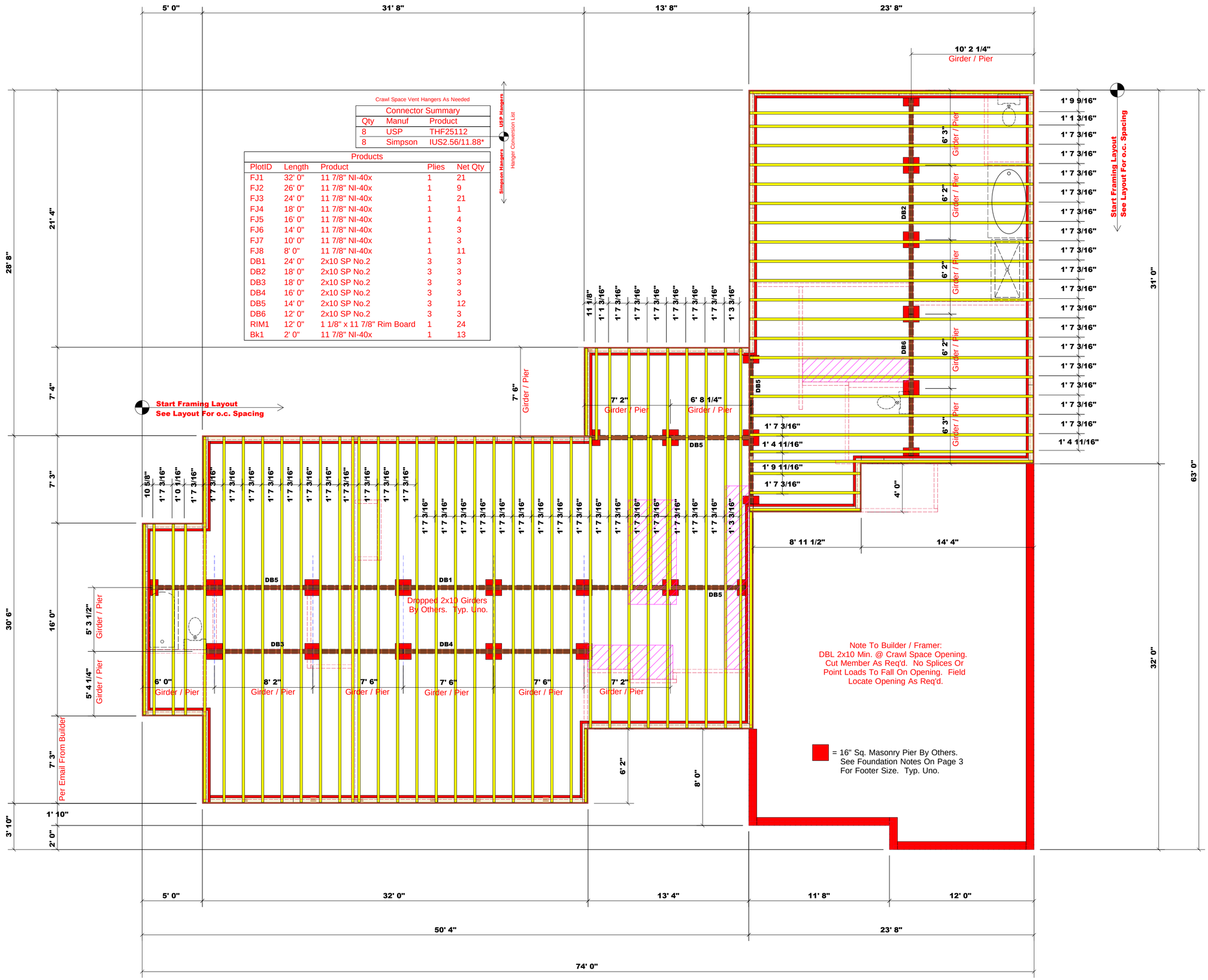


SQUARE FOOTAGE

HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

190814B



Truss Placement Plan
SCALE: 3/16" = 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 _____

Joe Ciferni

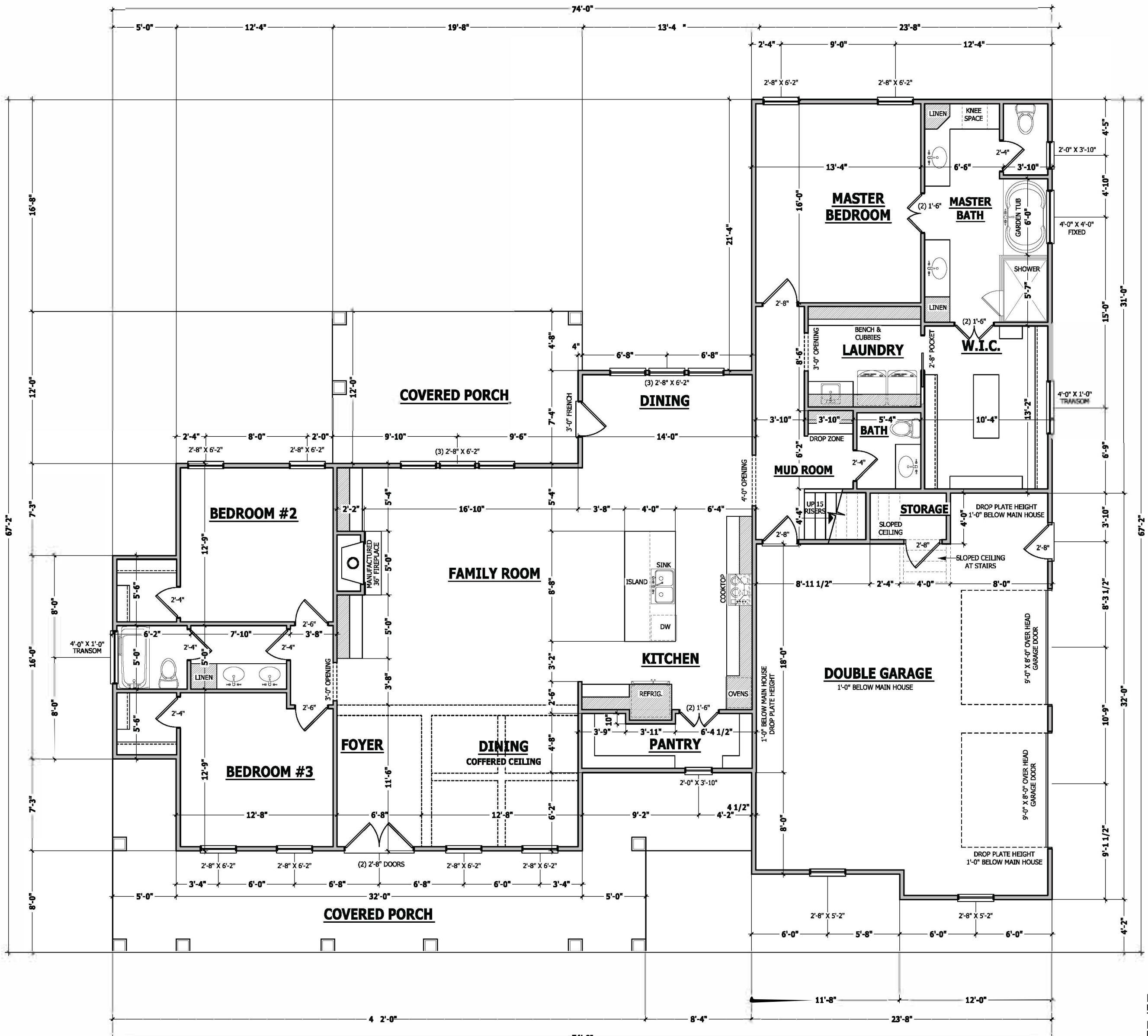
LOAD CHART FOR JACK STUDS

(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 (4# TO)	REQ'D STUDS FOR (3) PLY HEADER	END REACTION (5# 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	Signature Home Builders
JOB NAME	6085 Stewart Road
PLAN	Crawl
SEAL DATE	NA
QUOTE #	NA
JOB #	J0324-1346
COUNTY	Harnett County
ADDRESS	6085 Stewart Road / Broadway, NC
MODEL	1st Floor I-Joists
DATE REV.	3/6/24
DRAWN BY	Joe Ciferni
SALESMAN	Anthony Williams



FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

WALL THICKNESSES

Exterior walls and walls adjacent to a garage area are drawn as 4" or as noted 2 X 6 are drawn as 6" to include 1/2" sheathing or gypsum. Subtract 1/2" for stud face.
Interior walls are drawn as 3 1/2" or as noted 2 X 6 are drawn as 5 1/2", and do not include gypsum.

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 R302.1 1, Item 4.

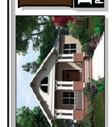
SQUARE FOOTAGE

HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

FIRSTFLOOR PLAN

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.



12/30/2019

190814B

STRUCTURAL NOTES

All construction shall conform to thelatest requirements of the 2018 North Carolina Residential Building Code, plus all local codes and regulations. This document in no way shall be construed to supersede thecode.

JOB SITE PRACTICES AND SAFETY: Haynes Home Plans, Inc assumes no liability for contractors practicesand procedures or safety program. Haynes Home Plans, Inc. takes no responsibility for the contractor's failure to carry out the construction workin accordance with the contract documents. All members shall be framed, anchored, and braced in accordance with good construction practice and thebuilding code.

DESIGN LOADS

USE	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
Attics without storage	10		L/240
Attics with limited storage	20	10	L/360
Attics with fixed stairs	40	10	L/360
Balconies and decks	40	10	L/360
Fire escapes	40	10	L/360
Guardrails and handrails	200	--	--
Guardrail in-fill components	50	--	--
Passenger vehicle garages	50	10	L/360
Rooms other than sleeping	40	10	L/360
Sleeping rooms	30	10	L/360
Stairs	40	--	L/360
Snow	20	--	--

FRAMING LUMBER: All non treated framing lumber shall be SPF #2 (Fb = 875 PSI) or SYP #2 (Fb = 750 PSI) and all treated lumber shall be SYP #2 (Fb = 750 PSI) unless noted other wise.

ENGINEERED WOOD BEAMS:
Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x10^6 PSI
Parallel strand lumber (PSL) = Fb=2900 PSI, Fv=290 PSI, E=2.0x10^6 PSI
Laminated strand lumber(LSL) Fb=2250 PSI, Fv=400 PSI, E=155x10^6 PSI
Install all connections per manufacturers instructions.

TRUSS AND I-JOIST MEMBERS: All roof truss and I-joist layouts shall be prepared in accordance with this document. Trusses and I-joists shall be installed according to the manufacture's specifications. Any change in truss or I-joist layout shall be coordinated with Haynes Homes Plans, Inc.

LINTELS: Brick lintels shall be 3 1/2" x 3 1/2" x 1/4" steel angle for up to 6'-0" span. 6" x 4" x 5/16" steel anglewith 6" leg vertical for spans up to 9'-0" unless noted otherwise. 3 1/2" x 3 1/2" x 1/4" steel angle with 1/2" bolts at 2'-0" on center for spans up to 18'-0" unless noted otherwise.

FLOOR SHEATHING: OSB or CDX floor sheathing minimum 1/2" thick for 16" on center joist spacing, minimum 5/8" thick for 19.2" on center joist spacing, and minimum 3/4" thick for 24" on center joist spacing.

ROOF SHEATHING: OSB or CDX roof sheathing minimum 3/8" thick.

CONCRETE AND SOILS: See foundation notes.

BRACE WALL PANEL NOTES

EXTERIOR WALLS: All exterior walls to be sheathed with CS-WSP or CS-SFB in accordance with section R602.10.3 unless noted otherwise.

GYPSUM: Allinterior sides of exterior walls and both sides interior walls to have 1/2" gypsum installed. When not using method GB gypsum to be fastened per table R702.3.5. Method GB to be fastened per table R60210.1.

REQUIRED LENGTH OF BRACING: Required brace wall length for each side of the circumscribed rectangle ar e interpolated per table R602.10.3. Methods CS-WSP and CS-SFB contribute their actual length. Method GB contributes 0.5It's actual length. Method PF contributes 1.5 times its actual length.

HD: 800 lbs hold down hold downdevice fastened to the edge of the brace wall panel closets to the corner.

Methods Per Table R602.10.1

CS-WSP: Shall be minimum 3/8" OSB or CDX nailed at 6" on center atedges and 12" on center at intermediate supports with 6d co mmon nails or 8d(2 1/2" long x 0.113" diameter).

CS-SFB: Shall be minimum 1/2" structural fiber board nailedat 3" on center at edges and 3" on center at intermediate supports with 1 1/2" long x 0.12" diameter galvanized roofing nails.

GB: Interior walls show as GB are to have minimum1/2" gypsum boar d on both sides of thewall fastened at7" on center at edges and7" on center at intermediate supports with mini mum 5d cooler nails or #6 screws.

PF: Portal fame per figure R60210.1

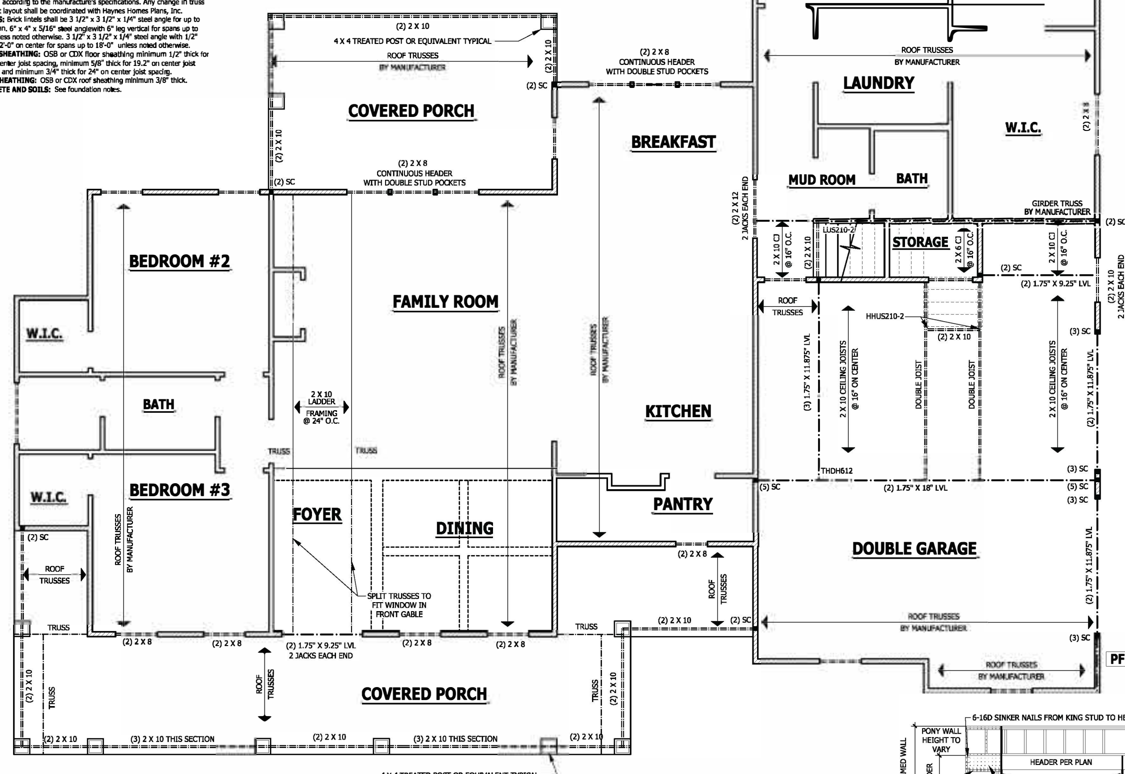
EXTERIOR HEADERS

- (2) 2 X 6 WITH 1 JACK STUD EACH END UNLESS NOTED OTHERWISE
- KING STUDS EACH END PER TABLE BELOW

HEADER SPAN	< 3'	3'-4'	4'-8'	8'-12'	12'-16'
KING STUD(S)	1	2	3	5	6

INTERIOR HEADERS

- LOAD BEARING HEADERS (2) 2 X 6 WITH 1 JACK STUD AND 1 KING STUD EACH END UNLESS NOTED OTHERWISE
- NON LOAD BEARING HEADERS TO BE LADDER FRAMED



FIRST FLOOR STRUCTURAL

SCALE 1/4" = 1'-0"

ROOF TRUSS REQUIREMENTS

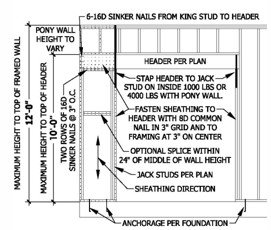
TRUSS DESIGN. Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought to Haynes Home Plan, Inc. attention before construction begins.

KNEE WALL AND CEILING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred down 10" from roof decking for insulation.If for any reason the truss manufacturer fails to meetor exceed designated heel heights, finished knee wall heights, or finished ceiling heights shown on these drawings the finished square footage may vary. Any discrepancy must be brought to Haynes Home Plans, Inc. attention, so a suitable solution can be reached before construction begins. Any variation due to these conditions not being met is the reasonability of the truss manufacturer.

ANCHORAGE. All required anchors for trusses due to uplift or bearing shall meet the requirements as specified on the tuss schematics.

BEARING. All trussesshall be designed for bearing on SPF #2 plates or ledgers unless noted otherwise.

Plate Heights & Floor Systems. See elevation page(s) for plate heights and floor system thicknesses.



PF **PORTAL FRAME AT OPENING**

(METHOD PF PER FIGURE AND SECTION R602.10.1)
SCALE 1/4" = 1'-0"

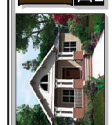
Z:\Builder\Signature Home Builders, Inc\190814B Hinson Residence\190814B Hinson Residence.aec

FIRST FLOOR STRUCTURAL

ce

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.
P.O. Box 702, Wake Forest, NC 27588 919-435-6180 Fax 1-866-491-0396



SQUARE FOOTAGE

HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

190814B

STRUCTURAL NOTES

All construction shall conform to the latest requirements of the 2018 North Carolina Residential Buildi ngCode, plus all local codes and regulations. This document in no way shall be construed to supersede the code.

JOB SITE PRACTICES AND SAFETY: Haynes Home Plans, Inc. assumes no liability for contractors practices and procedures or safety program. Haynes Home Plans, Inc. takes no responsibility for the contractor's failure to carry out the construction work in accordance with the contract documents. All members shall be framed, anchored, and braced in accordance with good construction practice and the building code.

DESIGN LOADS

USE	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (LL)
Attics without storage	10		L/240
Attics with limited storage	20	10	L/360
Attics with fixed stairs	40	10	L/360
Balconies and decks	40	10	L/360
Fire escapes	40	10	L/360
Guardrails and handrails	200	--	--
Guardrail in-fill components	50	--	--
Passenger vehicle garages	50	10	L/360
Rooms other than sleeping	40	10	L/360
Sleeping rooms	30	10	L/360
Stairs	40	--	L/360
Snow	20	--	--

FRAMING LUMBER: All non treated fr aming lumber shall be SPF #2 (Fb = 875 PSI) or SYP #2(Fb = 750 PSI) and all treated lumber shall be SYP #2 (Fb= 750 PSI) unless noted other wise.

ENGINEERED WOOD BEAMS:
Laminated veneer lumber (LVL) = Fb=2600 PSI, Fv=285 PSI, E=1.9x10⁶ PSI
Parallel strand lu mber (PSL) = Fb=2900 PSI, Fv=290 PSI, E=2.0x10⁶ PSI
Laminated strand lumber (LSL) Fb=2250 PSI, Fv=400 PSI, E=1.55x10⁶ PSI
Install all connections per manufacturers instructions.

TRUSS AND I-JOIST MEMBERS: All roof truss and I joist layouts shall be prepared in accordance with this document. Trusses and I-joists shall be installed according to the manufacture's specifications. Any change in truss or I-joistlayout shall be coordinated with Haynes Homes Plans, Inc.

LINTELS: Brick lintels shall be 3 1/2" x 3 1/2" x 1/4" steel angle for up to 6'-0" span. 6" x 4" x 5/16" steel angle with 6" leg vertical for spans up to 9'-0" unless noted otherwise. 3 1/2" x 3 1/2" x 1/4" steel angle with 1/2" bolts at 2'-0" on center for spans up to 18'-0" unless noted otherwise.

FLOOR SHEATHING: OSB or CDX floor sheathing minimum 1/2" thick for 16" on center joist spacing, minimum 5/8" thick for 19.2" on center joist spacing, and minimum 3/4" thick for 24" on center joist spacing.

ROOF SHEATHING: OSB or CDX roof sheathing minimum 3/8" thick.

CONCRETE AND SOILS: See foundation notes.

ROOF TRUSS REQUIREMENTS

TRUSS DESIGN. Trusses to bedesigned and engineered in accordance with these drawings. Any variation with these drawings must be brought to Haynes Home Plan, Inc. attention before construction begins.

KNEE WALL AND CEILING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred down 10" fromroof decking for insulation. If for any reason the truss manufacturer fails to meet or exceed designated heel heights, finished knee wall heights, or finished ceiling heights shown on these drawings the finished square footage may vary. Any discrepancy must be brought to Haynes Home Plans, Inc. attention, so a suitable solution can be reached before construction begins. Any variation due to these cond itions not beingmet is the reasonability of the truss manufacturer.

ANCHORAGE. All required anchors for trusses due to uplift or bearing shall meet the requirements as specified on the truss schemati cs.

BEARING. All trusses shall be designed for bearing on SPF #2 plates or ledgers unless noted otherwise.

Plate Heights & Floor Systems. See elevation page(s) for plate heights and floor system thicknesses.

EXTERIOR HEADERS

- (2) 2 X 6 WITH 1 JACK STUD EACH END UNLESS NOTED OTHERWISE
- KING STUDS EACH END PER TABLE BELOW

HEADER SPAN	< 3'	3'-4'	4'-8'	8'-12'	12'-16'
KING STUD(S)	1	2	3	5	6

INTERIOR HEADERS

- LOAD BEARING HEADERS (2) 2 X 6 WITH 1 JACK STUD AND 1 KING STUD EACH END UNLESS NDTEDDTHERWISE
- NON LOAD BEARING HEADERS TO BE LADDER FRAMED

WALL THICKNESSES

Exterior walls and walls adjacent to a garage area are drawn as 4" or as noted 2 X 6 are drawn as 6" to include 1/2" sheathing or gypsum . Subtract 1/2" for stud face.

Interior walls are drawn as 3 1/2" or as noted 2 X 6 are drawn as 5 1/2", and do not include gypsum.

ATTIC ACCESS

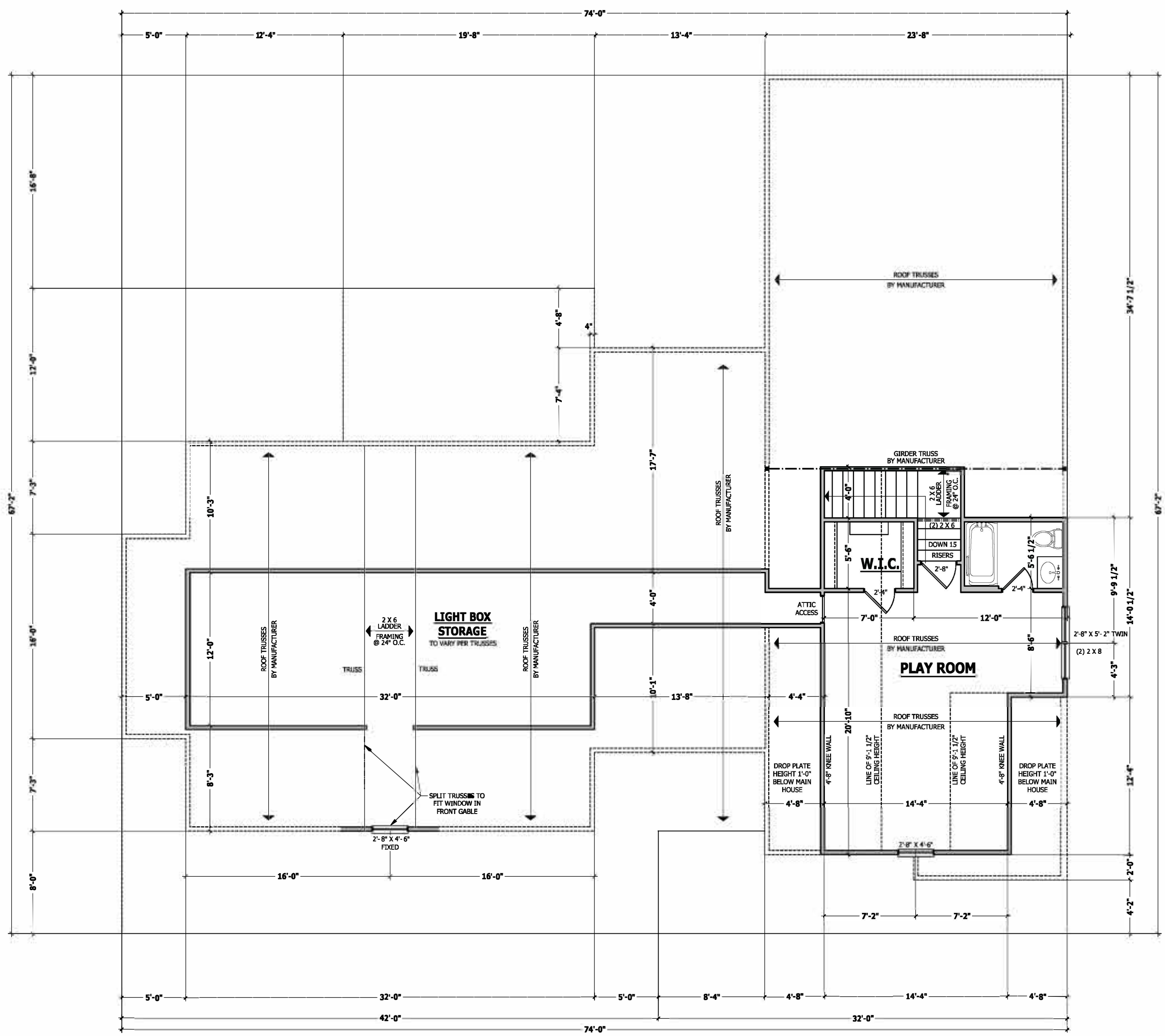
SECTION R807

R807.1 Attic access. An attic access opening shall beprovided to attic areas that exceed 400 square feet (37.16 m2) and have a vertical height of 60inches (1524 mm) or greater. The net clear opening shall not be less t han20 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 i n the attic space shall be provided at some point above the access opening. See Section M1305.1.3 for access requirements where mechanical equipmen t 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.

Z:\Builder\Signature Home Builders, Inc\190814B Hinson Residence\190814B Hinson Residence.aec



SECOND FLOOR PLAN

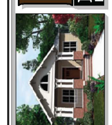
SCALE 1/4" = 1'-0"

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.
HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.
CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.
THESE DRAWING ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

SECOND FLOOR PLAN

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.
P.O. Box 702, Wake Forest, NC 27588 919-435-6180 Fax 1-866-491-0396



SQUARE FOOTAGE

HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

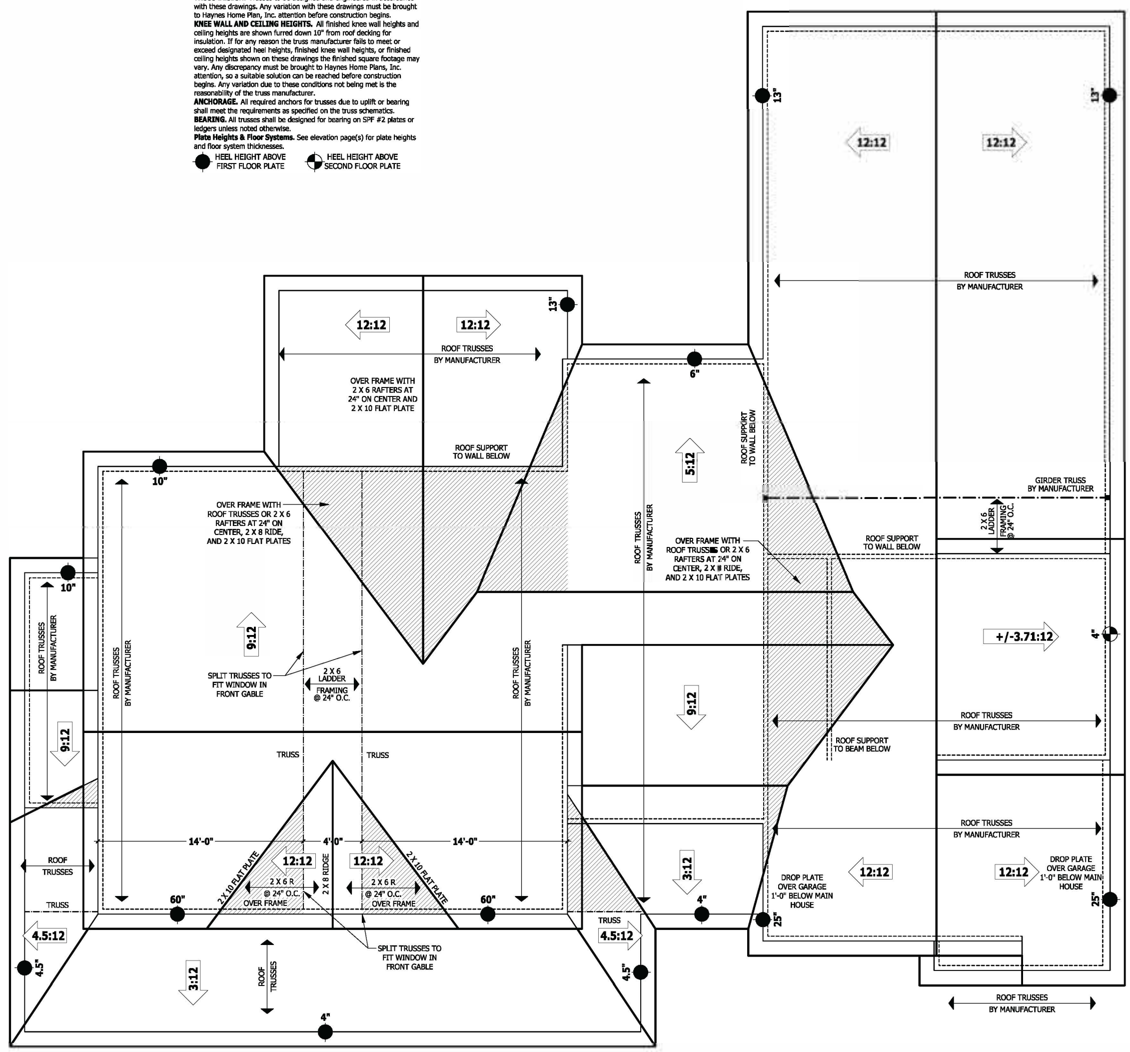
190814B

Z:\Builder\Signature Home Builders, Inc\190814B Hinson Residence\190814B Hinson Residence.aec

ROOF TRUSS REQUIREMENTS

TRUSS DESIGN. Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought to Haynes Home Plan, Inc. attention before construction begins.
KNEE WALL AND CEILING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred down 10" from roof decking for insulation. If for any reason the truss manufacturer fails to meet or exceed designated heel heights, finished knee wall heights, or finished ceiling heights shown on these drawings the finished square footage may vary. Any discrepancy must be brought to Haynes Home Plans, Inc. attention, so a suitable solution can be reached before construction begins. Any variation due to these conditions not being met is the reasonability of the truss manufacturer.
ANCHORAGE. All required anchors for trusses due to uplift or bearing shall meet the requirements as specified on the truss schematics.
BEARING. All trusses shall be designed for bearing on SPF #2 plates or ledgers unless noted otherwise.
Plate Heights & Floor Systems. See elevation page(s) for plate heights and floor system thicknesses.

● HEEL HEIGHT ABOVE FIRST FLOOR PLATE ◐ HEEL HEIGHT ABOVE SECOND FLOOR PLATE



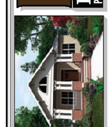
ROOF PLAN

SCALE 1/4" = 1'-0"

PURCHASER MUST VERIFY ALL DIMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS.
HAYNES HOME PLANS, INC. ASSUMES NO LIABILITY FOR CONTRACTORS PRACTICES AND PROCEDURES.
CODES AND CONDITIONS MAY VARY WITH LOCATION. A LOCAL DESIGNER, ARCHITECT OR ENGINEER SHOULD BE CONSULTED BEFORE CONSTRUCTION.
THESE DRAWINGS ARE INSTRUMENTS OF SERVICE AND AS SUCH SHALL REMAIN PROPERTY OF THE DESIGNER.

SHB SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.

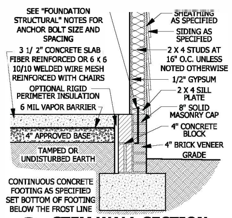


SQUARE FOOTAGE

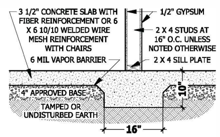
HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

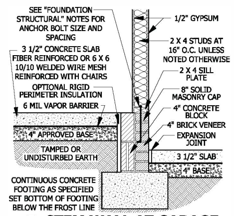
190814B



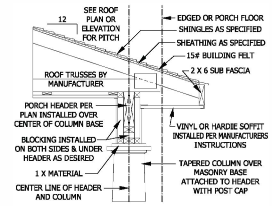
A **STEM WALL SECTION**
SCALE 3/4" = 1'-0"



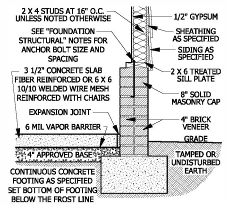
B **LUG FOOTING SECTION**
SCALE 3/4" = 1'-0"



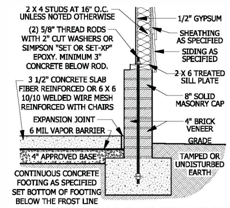
C **STEM WALL AT GARAGE**
SCALE 3/4" = 1'-0"



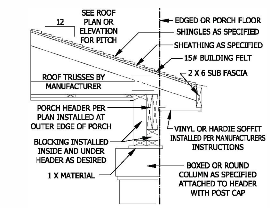
PORCH HEADER WITH TAPERED COLUMN
SCALE 3/4" = 1'-0"



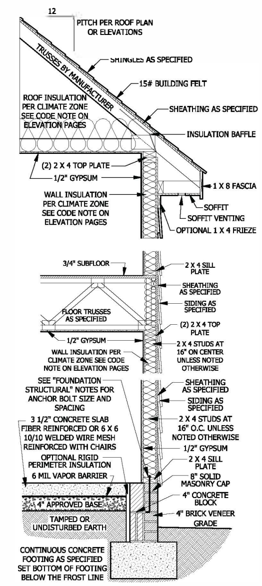
D **GARAGE STEM WALL**
SCALE 3/4" = 1'-0"



E **<48" GARAGE WING WALL**
SCALE 3/4" = 1'-0"



PORCH HEADER WITH BOXED OR ROUND COLUMN
SCALE 3/4" = 1'-0"



TYPICAL WALL DETAIL
SCALE 3/4" = 1'-0"

CARBON MONOXIDE ALARMS

SECTION R315

R315.1 Carbon monoxide alarms. In new construction, dwelling units shall be provided with an approved carbon monoxide alarm installed outside of each separate sleeping areain the immediate vicinity of the bedoom(s) asdirected by the alarm manufacturer.

R315.2 Where required in existing dwellings. In existing dwellings, where interior alterations, repairs, fuel-fired appliance replacements, or additions requiring a permit occurs, or where one or more sleeping rooms are added or created, carbon monoxide alarms shall be provided in accordance with Section 315.1.

R315.3 Alarm requirements. The required carbon monoxide alarms shall be audible in all bedrooms over background noise levels with all intervening doors closed. Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

SMOKE ALARMS

SECTION R314

R314.1 Smoke detection and notification. All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72.

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection andalarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an *approved* supervising station and be maintained in accordance with NFPA 72.

Exception: Where smoke alarms are provided meeting the requirements of Section R314.4.

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and habitable attics (finished) but not including crawl spaces, uninhabitable (unfinished) attics and uninhabitable (unfinished) attic-stories. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level isless than one full *story* below the upper level.

When more than one smoke alarm is required to be installed within an individual *dwelling* unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

R314.4 Power source. Smoke alarms shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Smoke alarms shall be interconnected.

STAIRWAY NOTES

R311.7

R311.7.2 Headroom. The minimumheadroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

R311.7.4 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section all dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

R311.7.4.1 Riser height. The maximum riser height shall be 8 1/4 inches (210 mm). The riser shall be measured vertically between leading edges of the adjacent treads.

R311.7.4.2 Tread depth. The minimum tread depth shall be9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shallhave a minimum tread depth of 9 inches (229 mm) measured as above ata point 12 inches (305mm) from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 4 inches (102 mm)at any point.

R311.7.4.3 Profile. The radius of curvature at the nosing shall beno greater than 9/16 inch (14 mm). A nosing not less than 3/4 inch (19 mm) but not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid risers.

R311.7.7 Handrails. Handrails shall be provided on at least one side of each continuous run of treads or flight with four ormore risers.

R311.7.7.1 Height. Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of amp slope, shall be not less than 34 inches (864 mm)and not more than 38 inches (965 mm).

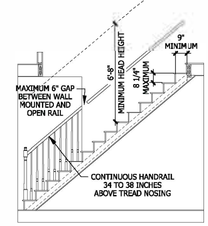
Exceptions:

1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. When handral fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

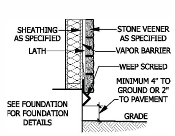
R311.7.7.2 Continuity. Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riserof the flight. Handrail ends shall be returned or shall terminatein newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 11/2inch (38 mm) between the wall and the handrails.

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post.
2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.
3. Two or more separate rails shall be considered continuous if the termination of the rails occurs within 6 inches (152 mm) of each other. If transitioning between a wall-mounted handrail and a guardrail/handrail, the wall-mounted rail must return into the wall.



TYPICAL STAIR DETAIL
SCALE 1/4" = 1'-0"



WEEP SCREED
SCALE 3/4" = 1'-0"

WEEP SCREEDS

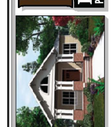
All weep screeds and stone veneer to be installed per manufactures instructions and per the 2012 North Carolina Residential Building code.

R703.6.2.1 - A minimum 0.019-inch (0.5 mm) (No. 26 galvanized sheet gage), corrosion-resistant weep screed or plastic weep screed, with a minimum vertical attachment flange of 31/2 inches (89 mm) shall be provided at or belowthe foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102mm) above theearth or 2 inches (51 mm) above paved areas and shall be of a type that will allow trapped water to drain to the exterior of the building. The weather-resistant barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed.

TYPICAL DETAILS

SIGNATURE HOME BUILDERS, INC.

HAYNES HOME PLANS, INC.
P.O. Box 702, Wake Forest, NC 27588 919-435-6180 Fax 1-866-491-0396

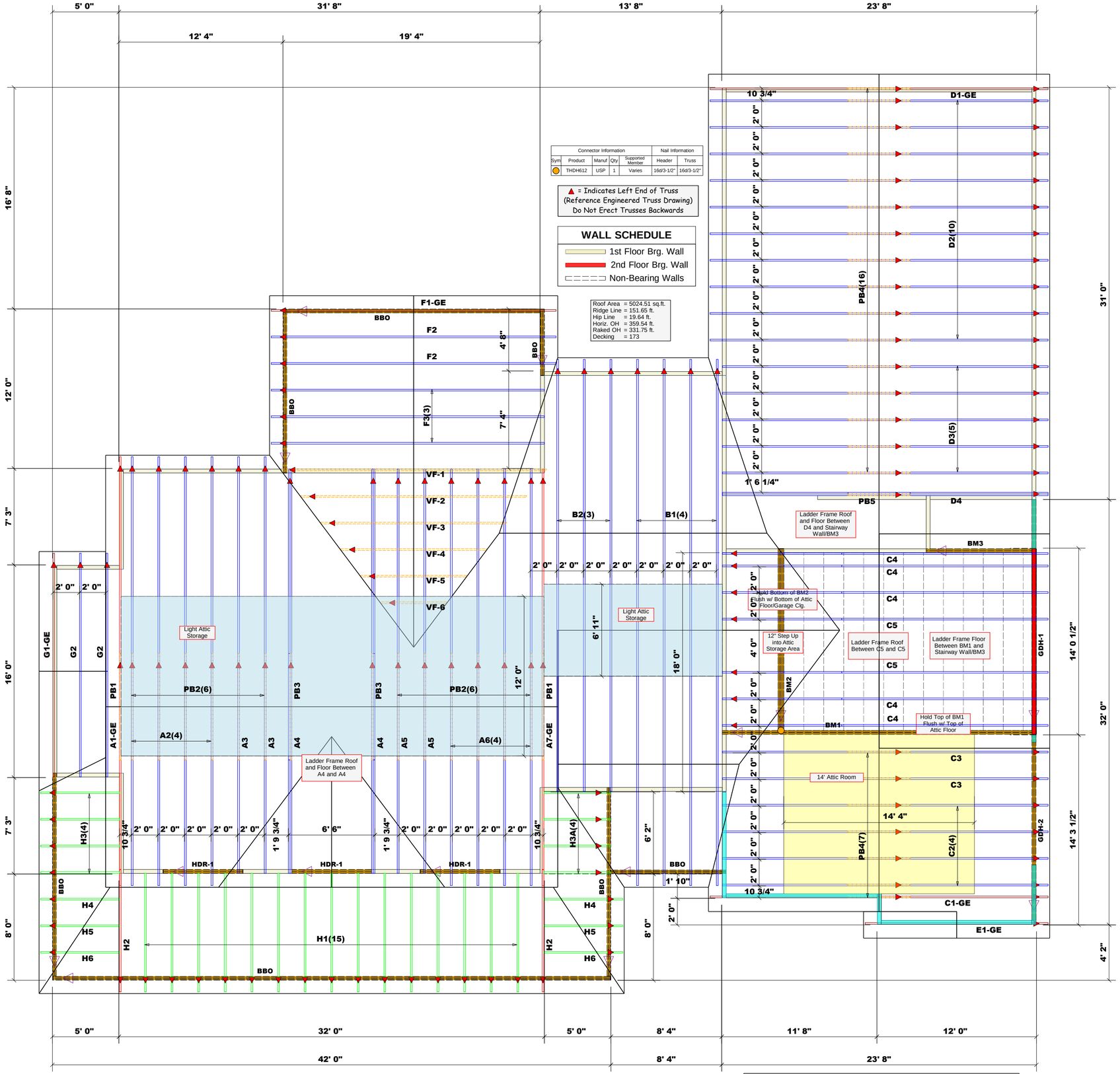


SQUARE FOOTAGE

HEATED	
FIRST FLOOR	2258 SQ.FT.
TOTAL	2258 SQ.FT.
HEATED FUTURE	
PLAYROOM	419 SQ.FT.
TOTAL	419 SQ.FT.
UNHEATED	
FRONT PORCH	455 SQ.FT.
REAR PORCH	234 SQ.FT.
GARAGE	690 SQ.FT.
TOTAL	1379 SQ.FT.

12/30/2019

190814B



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
BM3	9' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	2	FF
HDR-1	6' 0"	1-3/4"x 9-1/4" LVL Kerto-S	2	6	FF
GDH-1	18' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2	FF
GDH-2	14' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	2	FF
BM2	14' 0"	1-3/4"x 11-7/8" LVL Kerto-S	3	3	FF
BM1	24' 0"	1-3/4"x 23-7/8" LVL Kerto-S	2	2	FF

Truss Placement Plan
SCALE: 3/16" = 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_____

Anthony Williams

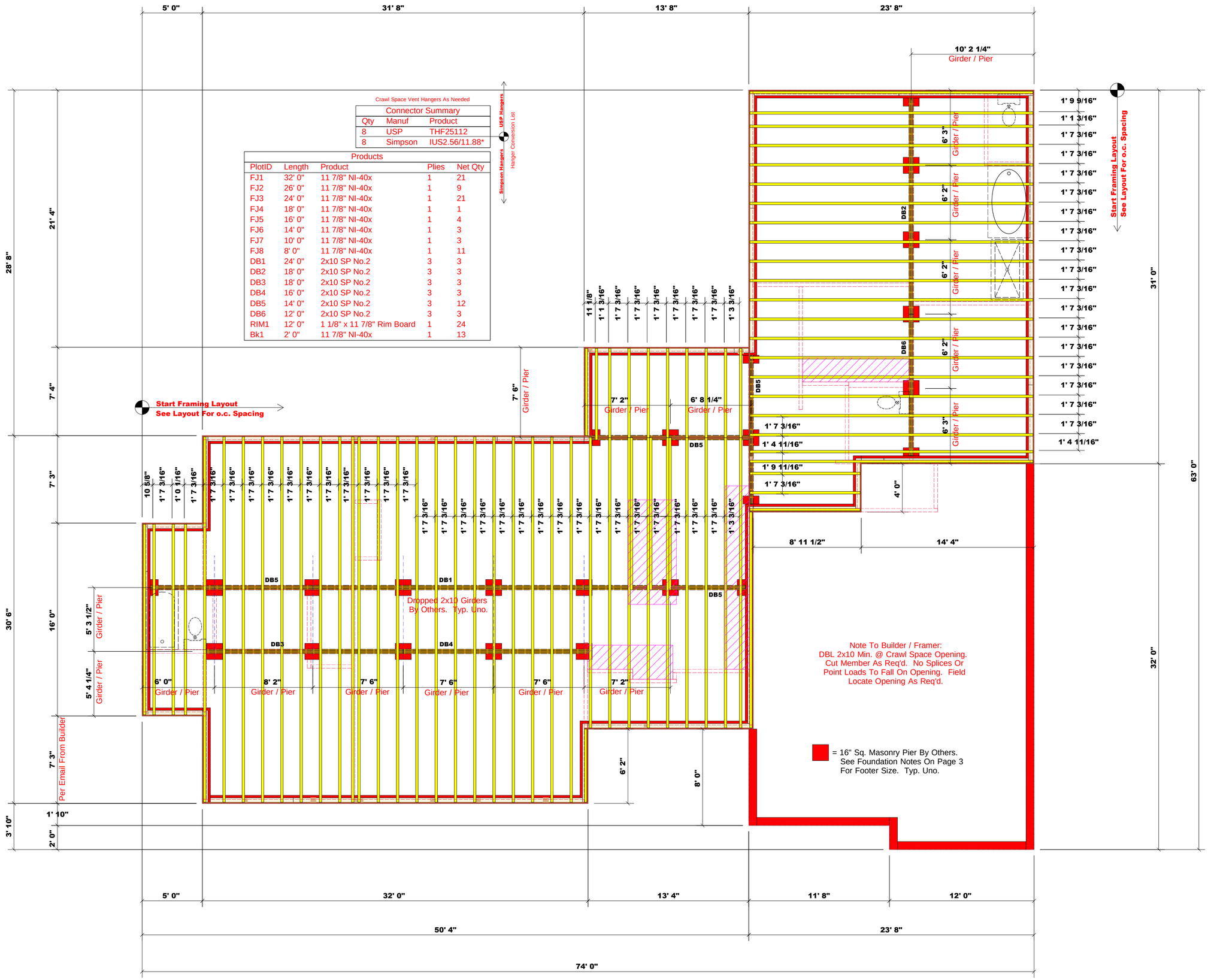
LOAD CHART FOR JACK STUDS

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

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

END REACTION (3# TO)	REQ'D # STDS FOR (2) 2"x7" HEADER	END REACTION (4# TO)	REQ'D # STDS FOR (3) 2"x7" HEADER	END REACTION (5# TO)	REQ'D # STDS FOR (4) 2"x7" 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	Signature Home Builders
JOB NAME	6085 Cool Springs Rd
PLAN	Custom
SEAL DATE	NA
QUOTE #	NA
JOB #	JO324-1345
COUNTY	Harnett County
ADDRESS	6085 Cool Springs Rd / Broadway, NC
MODEL	Roof
DATE REV.	3/21/24
DRAWN BY	Anthony Williams
SALESMAN	Anthony Williams



Truss Placement Plan
SCALE: 3/16" = 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 _____

Joe Ciferni

LOAD CHART FOR JACK STUDS

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

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

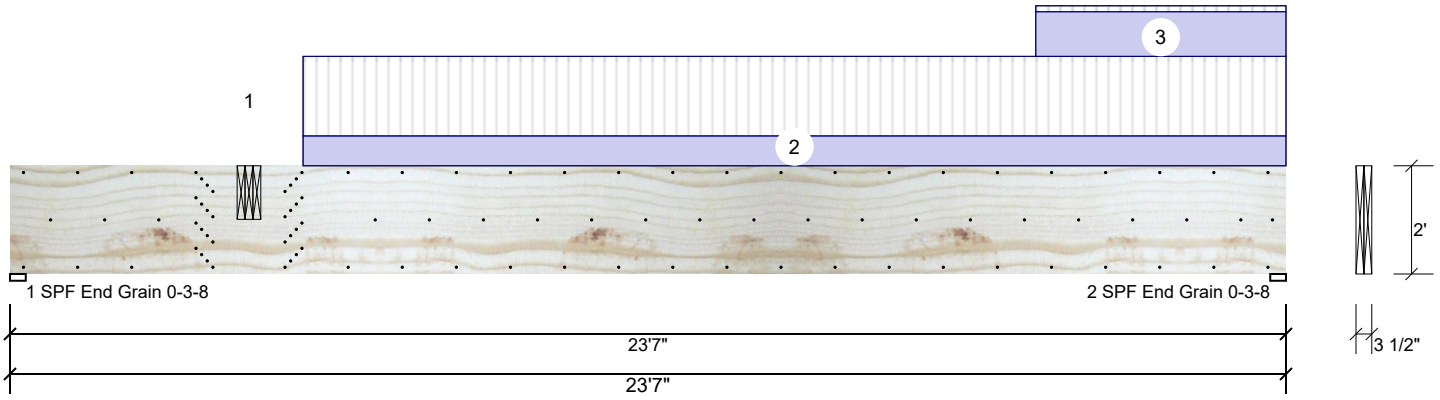
END REACTION (3P TO)	REQ'D STUDS FOR (2) PLY HEADER	END REACTION (4P TO)	REQ'D STUDS FOR (3) PLY HEADER	END REACTION (5P TO)	REQ'D STUDS FOR (4) PLY HEADER
1700	1	2550	1	3400	1
3400	2	5100	2	6800	2
5100	3	7650	3	10200	3
6800	4	10200	4	13600	4
8500	5	12750	5	17000	5
10200	6	15300	6		
11900	7				
13600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

BUILDER	Signature Home Builders
JOB NAME	6085 Cool Springs Rd
PLAN	Crawl
SEAL DATE	NA
QUOTE #	NA
JOB #	J0324-1346
COUNTY	Harnett County
ADDRESS	6085 Cool Springs Rd / Broadway, NC
MODEL	1st Floor I-Joists
DATE REV.	3/6/24
DRAWN BY	Joe Ciferni
SALESMAN	Anthony Williams

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

BM1 Kerto-S LVL 1.750" X 24.000" 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	2094	3134	1991	0	0
2	Vertical	3132	2452	441	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	60%	3134 / 3064	6198	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	Vert	54%	2452 / 3132	5584	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	30390 ft-lb	11'2 1/16"	73185 ft-lb	0.415 (42%)	D+L	L
Unbraced	30390 ft-lb	11'2 1/16"	30490 ft-lb	0.997 (100%)	D+L	L
Shear	6192 lb	2'3 1/2"	20608 lb	0.300 (30%)	D+0.75(L+S)	L
LL Defl inch	0.224 (L/1240)	11'5 5/16"	0.579 (L/480)	0.387 (39%)	0.75(L+S)	L
TL Defl inch	0.415 (L/669)	11'3 13/16"	0.772 (L/360)	0.538 (54%)	D+0.75(L+S)	L

Design Notes

1. Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2. Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
3. Refer to last page of calculations for fasteners required for specified loads.
4. Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
5. Girders are designed to be supported on the bottom edge only.
6. Top loads must be supported equally by all plies.
7. Top must be laterally braced at a maximum of 5'10" o.c.
8. Bottom must be laterally braced at end bearings.
9. 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	4-5-0		Far Face	2630 lb	273 lb	2433 lb	0 lb	0 lb	BM2 Brg 2
2	Tie-In	5-5-0 to 23-7-0	6-8-4	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	
3	Part. Uniform	18-11-8 to 23-7-0		Top	150 PLF	20 PLF	0 PLF	0 PLF	0 PLF	ROOF & WALL
	Self Weight				19 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

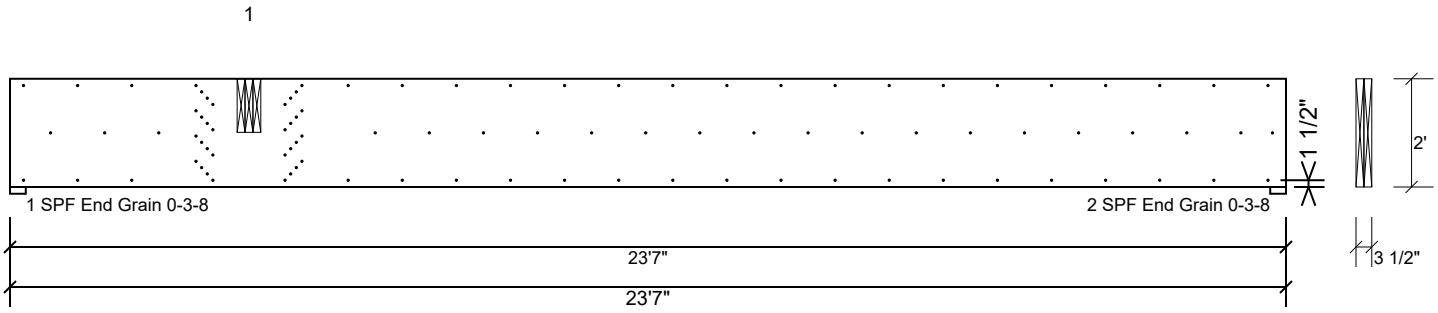
This design is valid until 6/28/2026

Manufacturer Info

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

BM1 Kerto-S LVL 1.750" X 24.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. except for regions covered by concentrated load fastening. Maximum end distance not to exceed 6".

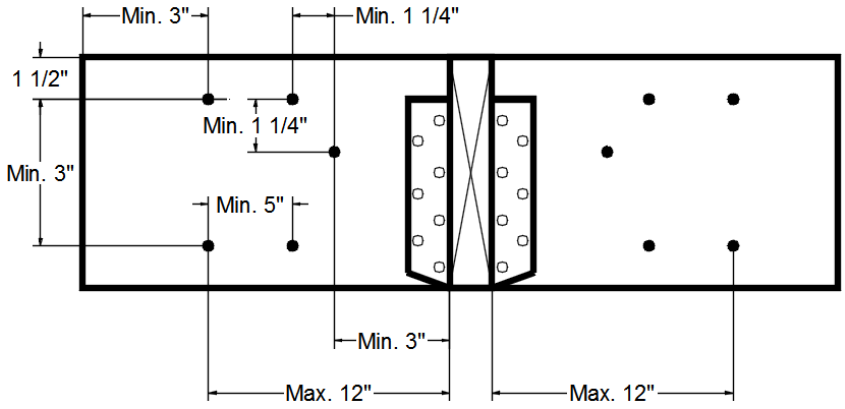
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	245.6 PLF
Yield Limit per Fastener	81.9 lb.
Cм	1
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Concentrated Load

Fasten at concentrated side load at 4-5-0 with a minimum of (32) – 10d Box nails (.128x3") in the pattern shown.

Capacity	84.1 %
Load	2531.3lb.
Total Yield Limit	3010.4 lb.
Cg	0.9994
Cм	1
Yield Limit per Fastener	94.1 lb.
Yield Mode	IV
Load Combination	D+S
Duration Factor	1.15

Min/Max fastener distances for Concentrated Side Loads



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 6/28/2026

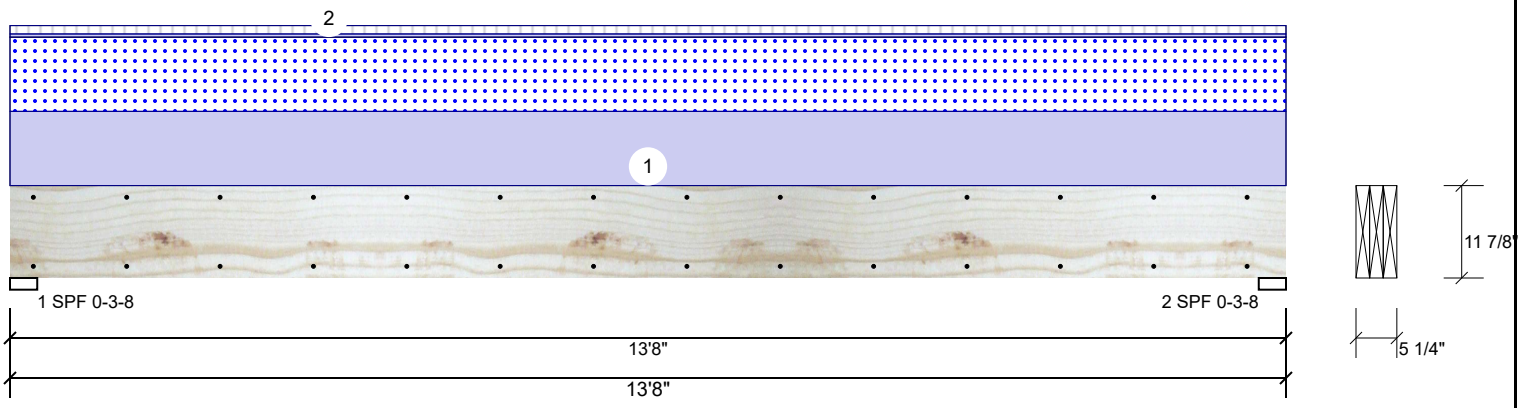
Manufacturer Info

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

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

BM2 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:	IBC/IRC 2015
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	273	2630	2433	0	0
2	Vertical	273	2630	2433	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	65%	2630 / 2433	5063	L	D+S
2 - SPF	3.500"	Vert	65%	2630 / 2433	5063	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	16156 ft-lb	6'10"	35719 ft-lb	0.452 (45%)	D+S	L
Unbraced	16156 ft-lb	6'10"	16165 ft-lb	0.999 (100%)	D+S	L
Shear	4127 lb	12'4 5/8"	15295 lb	0.270 (27%)	D+S	L
LL Defl inch	0.181 (L/877)	6'10"	0.330 (L/480)	0.547 (55%)	S	L
TL Defl inch	0.376 (L/421)	6'10"	0.440 (L/360)	0.854 (85%)	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". 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 8'4 5/8" 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	356 PLF	0 PLF	356 PLF	0 PLF	0 PLF	C4
2	Uniform			Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	FLOOR
	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 6/28/2026

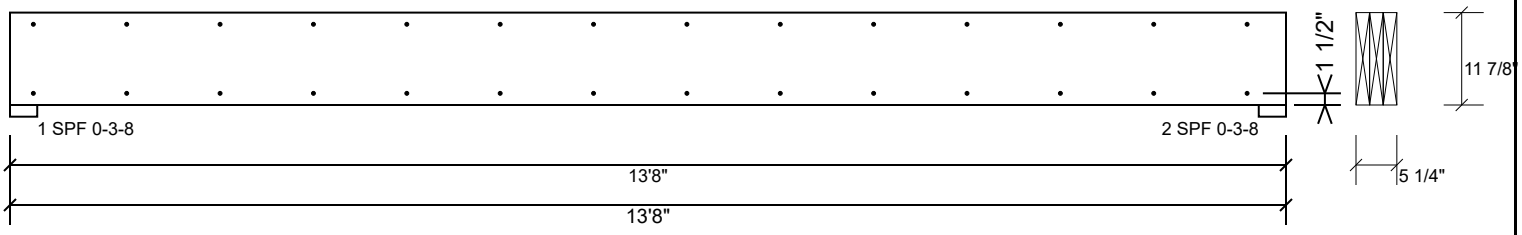
Manufacturer Info

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

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

BM2 Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



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

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 6/28/2026

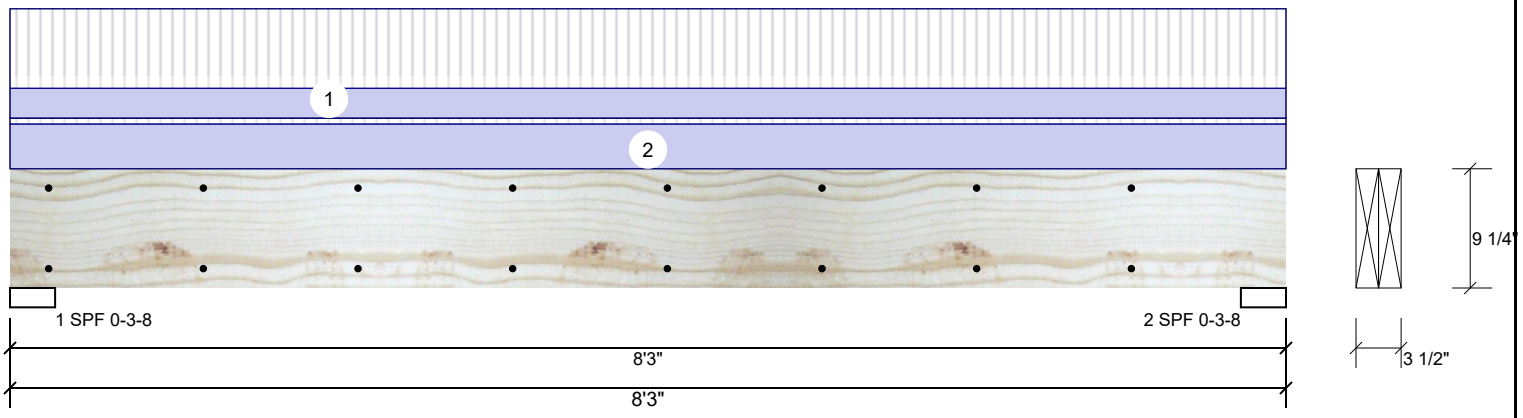
Manufacturer Info

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

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

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/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	1183	1061	0	0	0
2	Vertical	1183	1061	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	43%	1061 / 1183	2243	L	D+L
2 - SPF	3.500"	Vert	43%	1061 / 1183	2243	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4127 ft-lb	4'1 1/2"	12542 ft-lb	0.329 (33%)	D+L	L
Unbraced	4127 ft-lb	4'1 1/2"	8701 ft-lb	0.474 (47%)	D+L	L
Shear	1671 lb	7'2 1/4"	6907 lb	0.242 (24%)	D+L	L
LL Defl inch	0.059 (L/1579)	4'1 9/16"	0.195 (L/480)	0.304 (30%)	L	L
TL Defl inch	0.112 (L/832)	4'1 9/16"	0.260 (L/360)	0.433 (43%)	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 8-3-0	6-8-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR
2	Uniform			Top	150 PLF	20 PLF	0 PLF	0 PLF	0 PLF	ROOF & WALL
	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

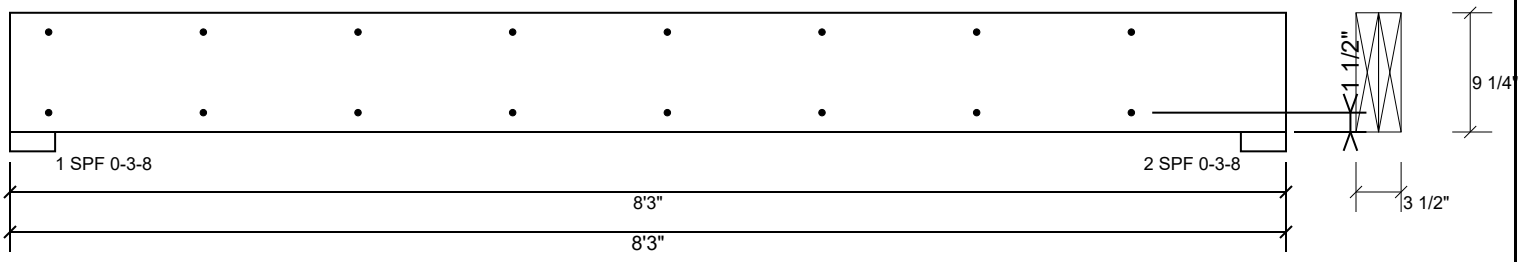
This design is valid until 6/28/2026

Manufacturer Info

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

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.
C_M	1
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 6/28/2026

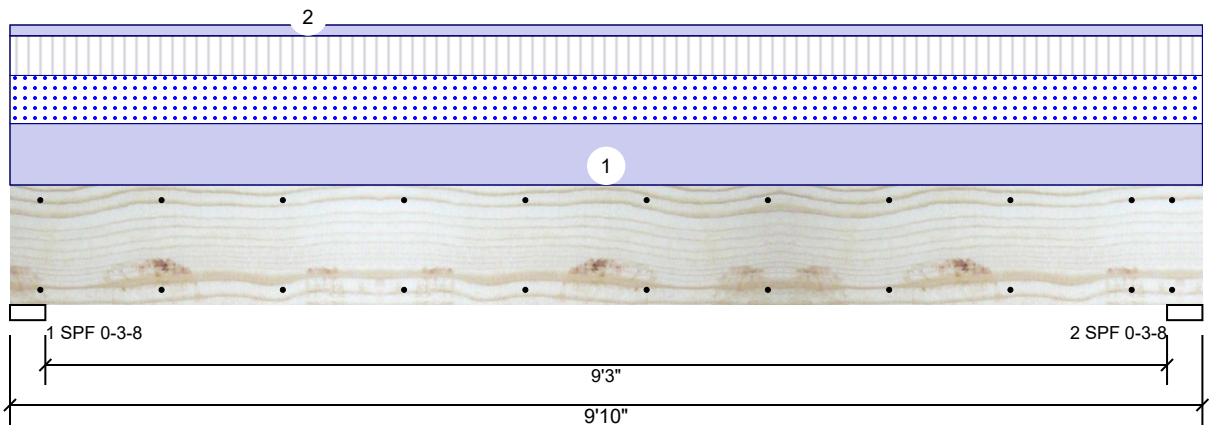
Manufacturer Info

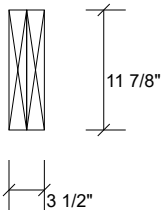
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

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	1092	2027	1323	0	0
2	Vertical	1092	2027	1323	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	74%	2027 / 1811	3837	L	D+0.75(L+S)
2 - SPF	3.500"	Vert	74%	2027 / 1811	3837	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8575 ft-lb	4'11"	22897 ft-lb	0.374 (37%)	D+0.75(L+S)	L
Unbraced	8575 ft-lb	4'11"	9857 ft-lb	0.870 (87%)	D+0.75(L+S)	L
Shear	2847 lb	1'3 3/8"	10197 lb	0.279 (28%)	D+0.75(L+S)	L
LL Defl inch	0.077 (L/1466)	4'11"	0.234 (L/480)	0.327 (33%)	0.75(L+S)	L
TL Defl inch	0.163 (L/692)	4'11"	0.312 (L/360)	0.520 (52%)	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	343 PLF	222 PLF	269 PLF	0 PLF	0 PLF	C3 R+F
2	Uniform			Top	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	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 6/28/2026

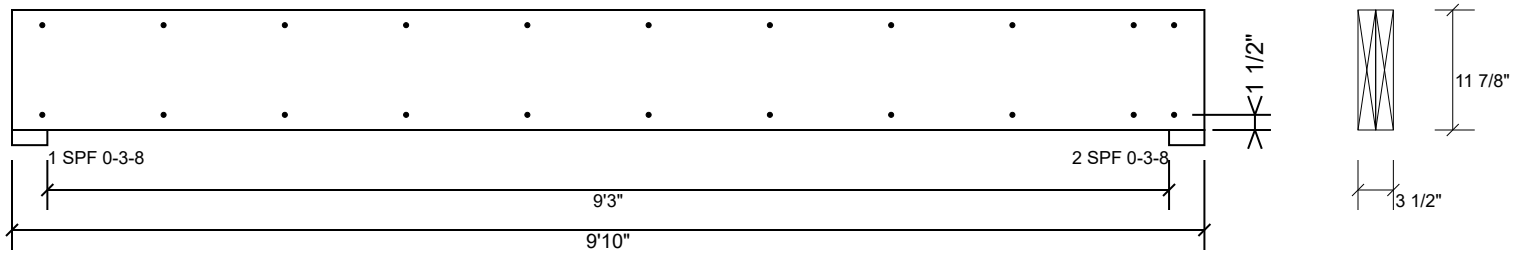
Manufacturer Info

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

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

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.
C_M	1
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 6/28/2026

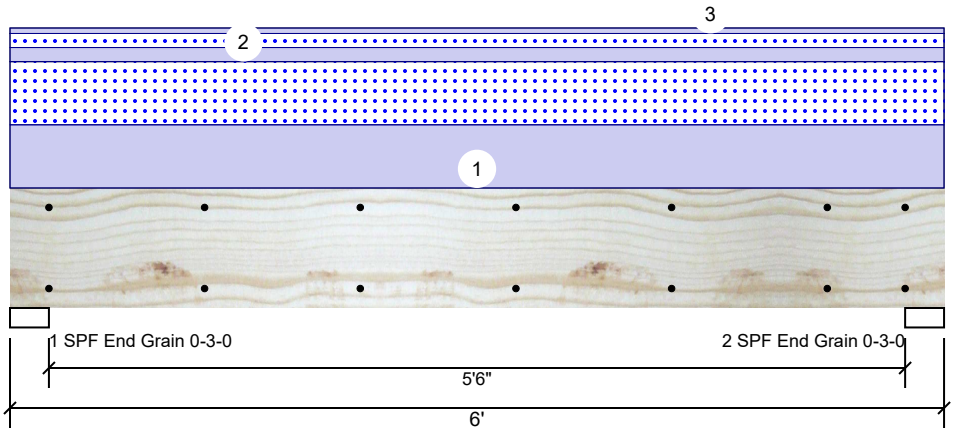
Manufacturer Info

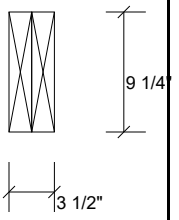
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

HDR-1 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	1381	1269	0	0
2	Vertical	0	1381	1269	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	30%	1381 / 1269	2650	L	D+S
2 - SPF End Grain	3.000"	Vert	30%	1381 / 1269	2650	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3493 ft-lb	3'	14423 ft-lb	0.242 (24%)	D+S	L
Unbraced	3493 ft-lb	3'	10944 ft-lb	0.319 (32%)	D+S	L
Shear	1754 lb	1' 1/4"	7943 lb	0.221 (22%)	D+S	L
LL Defl inch	0.027 (L/2538)	3'	0.141 (L/480)	0.189 (19%)	S	L
TL Defl inch	0.056 (L/1216)	3'	0.188 (L/360)	0.296 (30%)	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	346 PLF	0 PLF	346 PLF	0 PLF	0 PLF	"A" TRUSSES
2	Uniform			Top	77 PLF	0 PLF	77 PLF	0 PLF	0 PLF	"H" TRUSSES
3	Uniform			Top	30 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	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 6/28/2026

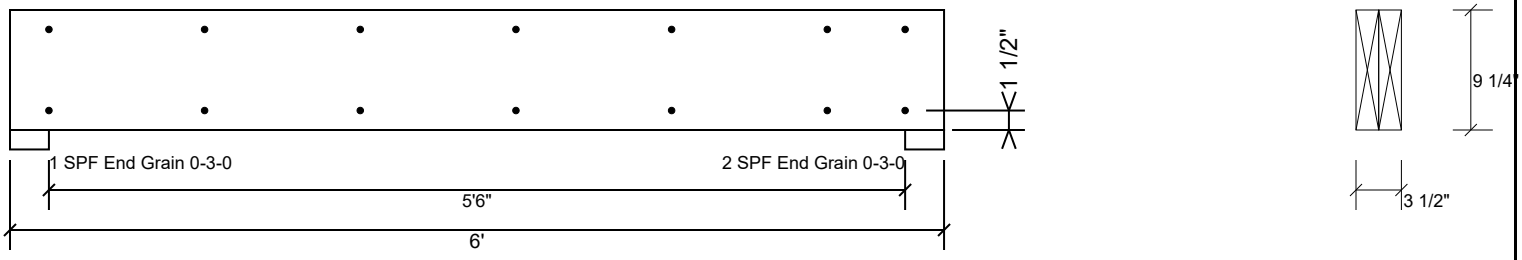
Manufacturer Info

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

Client:	Signature Home Builders	Date:	3/27/2024
Project:		Input by:	Anthony Williams
Address:		Job Name:	6085 Cool Springs Rd
		Project #:	J0324-1345

HDR-1 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.
C_M	1
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 6/28/2026

Manufacturer Info

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