# PLANS DESIGNED TO THE **2018 NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE**

MEAN ROOF HEIGHT: 19'-4	HEIGHT TO RIDGE: 26'-6"			
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 WIN	D SPEED	OF 120 MP	H, 3 SECO	OND GUST	(93 FAST	EST MILE)	EXPOSU	RE "B"
MEAN ROOF								
ZONE 1								
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 WIN COMPONENT MEAN ROOF ZONE 1 ZONE 2 ZONE 3 ZONE 4	DESIGNED FOR WIND SPEED COMPONENT & CLA MEAN ROOF UP T ZONE 1 14.2 ZONE 2 14.2 ZONE 3 14.2 ZONE 4 15.5	DESIGNED FOR WIND SPEED OF 120 MP           COMPONENT         & CLADDING           MEAN ROOF         UP TO 30'           ZONE 1         14.2         -15.0           ZONE 2         14.2         -18.0           ZONE 3         14.2         -18.0           ZONE 4         15.5         -16.0	DESIGNED FOR WIND SPEED OF 120 MPH, 3 SECC           COMPONENT         & CLADDING         DESIG           MEAN ROOF         UP TO 30'         30'-1"           ZONE 1         14.2         -15.0         14.9           ZONE 2         14.2         -18.0         14.9           ZONE 3         14.2         -18.0         14.9           ZONE 4         15.5         -16.0         16.3	DESIGNED FOR WIND SPEED OF 120 MPH, 3 SECOND GUST           COMPONENT & CLADDING DESIGNED FO           MEAN ROOF         UP TO 30'         30'-1" TO 35'           ZONE 1         14.2         -15.0         14.9         -15.8           ZONE 2         14.2         -18.0         14.9         -18.9           ZONE 3         14.2         -18.0         14.9         -18.9           ZONE 4         15.5         -16.0         16.3         -16.8	DESIGNED FOR WIND SPEED OF 120 MPH, 3 SECOND GUST (93 FAST           COMPONENT & CLADDING DESIGNED FOR THE           MEAN ROOF         UP TO 30'         30'-1" TO 35'         35'-1"           ZONE 1         14.2         -15.0         14.9         -15.8         15.5           ZONE 2         14.2         -18.0         14.9         -18.9         15.5           ZONE 3         14.2         -18.0         14.9         -18.9         15.5           ZONE 4         15.5         -16.0         16.3         -16.8         16.9	DESIGNED FOR WIND SPEED OF 120 MPH, 3 SECOND GUST (93 FASTEST MILE)           COMPONENT & CLADDING DESIGNED FOR THE FOLLO           MEAN ROOF         UP TO 30'         30'-1" TO 35'         35'-1" TO 40'           ZONE 1         14.2         -15.0         14.9         -15.8         15.5         -16.4           ZONE 2         14.2         -18.0         14.9         -18.9         15.5         -19.6           ZONE 3         14.2         -18.0         14.9         -18.9         15.5         -19.6           ZONE 4         15.5         -16.0         16.3         -16.8         16.9         -17.4	ZONE 2         14.2         -18.0         14.9         -18.9         15.5         -19.6         15.9           ZONE 3         14.2         -18.0         14.9         -18.9         15.5         -19.6         15.9           ZONE 3         14.2         -18.0         14.9         -18.9         15.5         -19.6         15.9           ZONE 4         15.5         -16.0         16.3         -16.8         16.9         -17.4         17.4

## **GUARD RAIL NOTES**

### SECTION R312

**R312.1 Where required.** *Guards* shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to 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. Where the top of the *guard* also 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 treads.

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

Exceptions:

1. The triangular openings 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 shall not have openings which allow passage of a sphere 4 3/8 inches (111 mm) in diameter.

# **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 ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum 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 a least 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 ventilating area shall not be less than 1/150 of the area of the space ventilated 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 side of the ceiling. Exceptions:

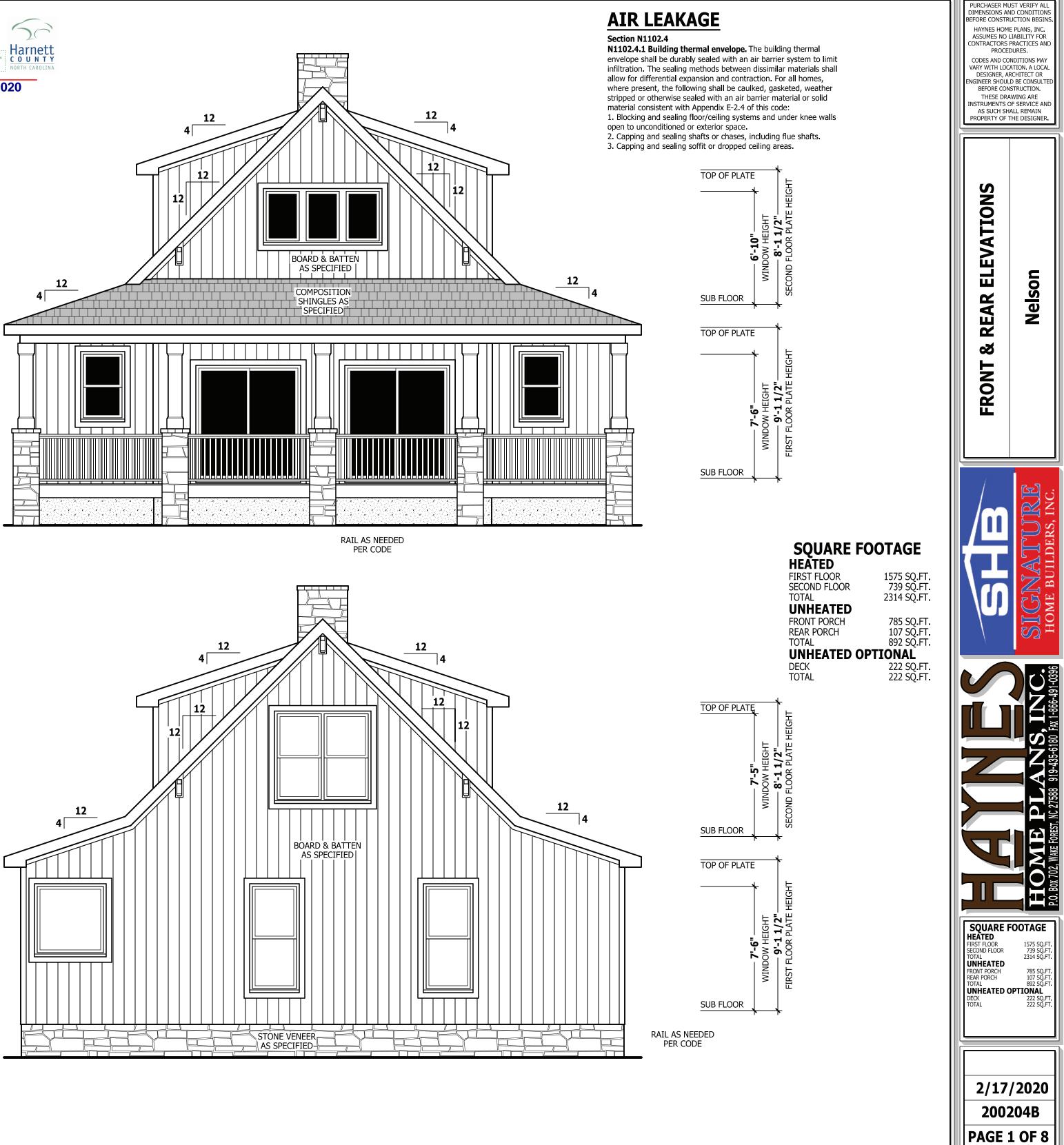
1. Enclosed attic/rafter spaces requiring less than 1 square foot (0.0929 m2) of ventilation may be vented with continuous soffit ventilation only. 2. Enclosed attic/rafter spaces over unconditioned space may be vented with continuous soffit vent only.

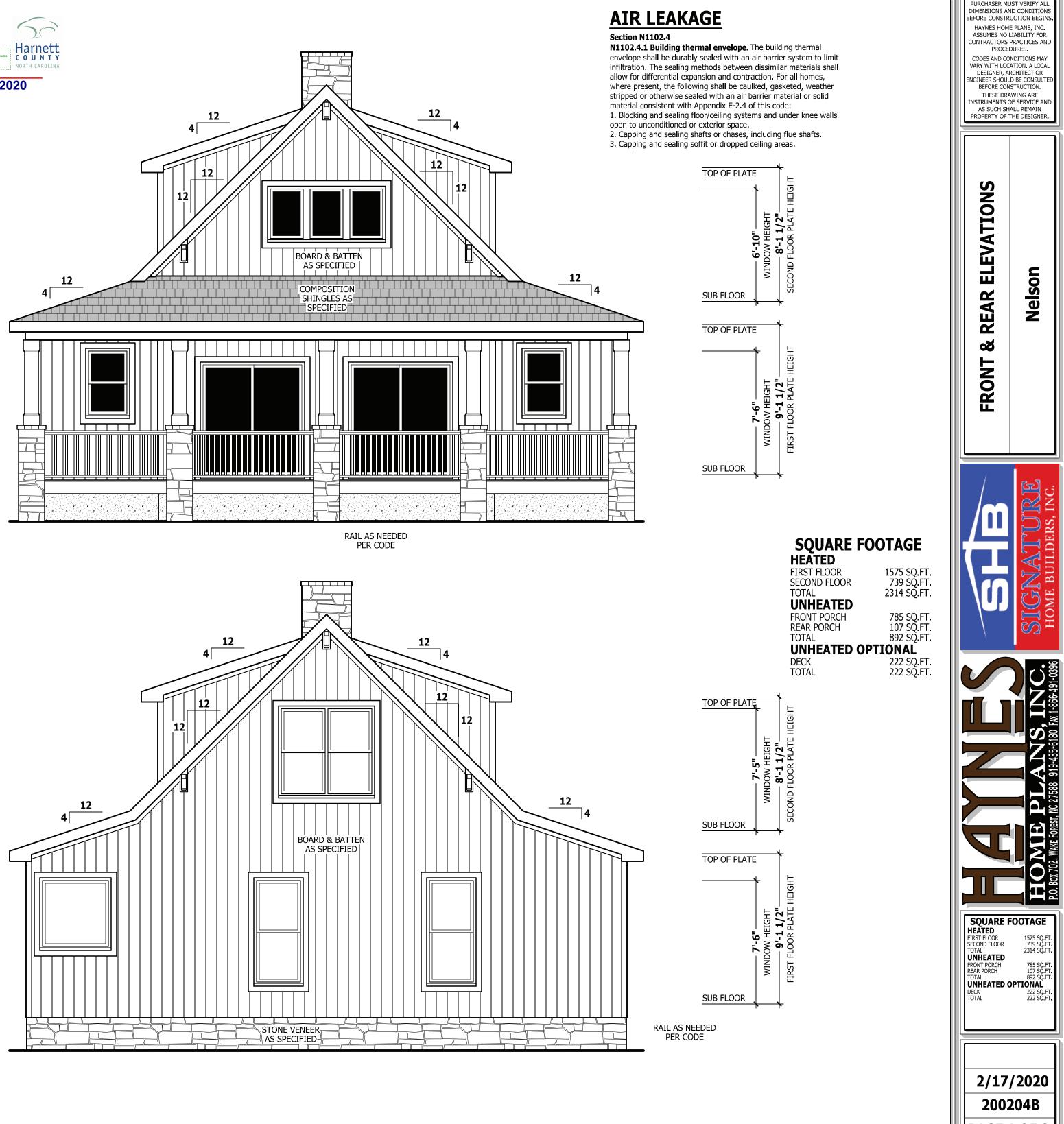
SQUARE FOOTAGE OF ROOF TO BE VENTED = 2.360 SQ.FT. NET FREE CROSS VENTILATION NEEDED:

WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 15.73 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 = 7.87 SQ.FT.

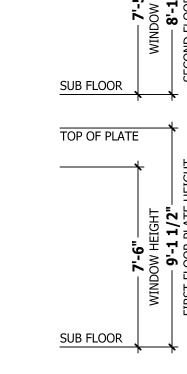


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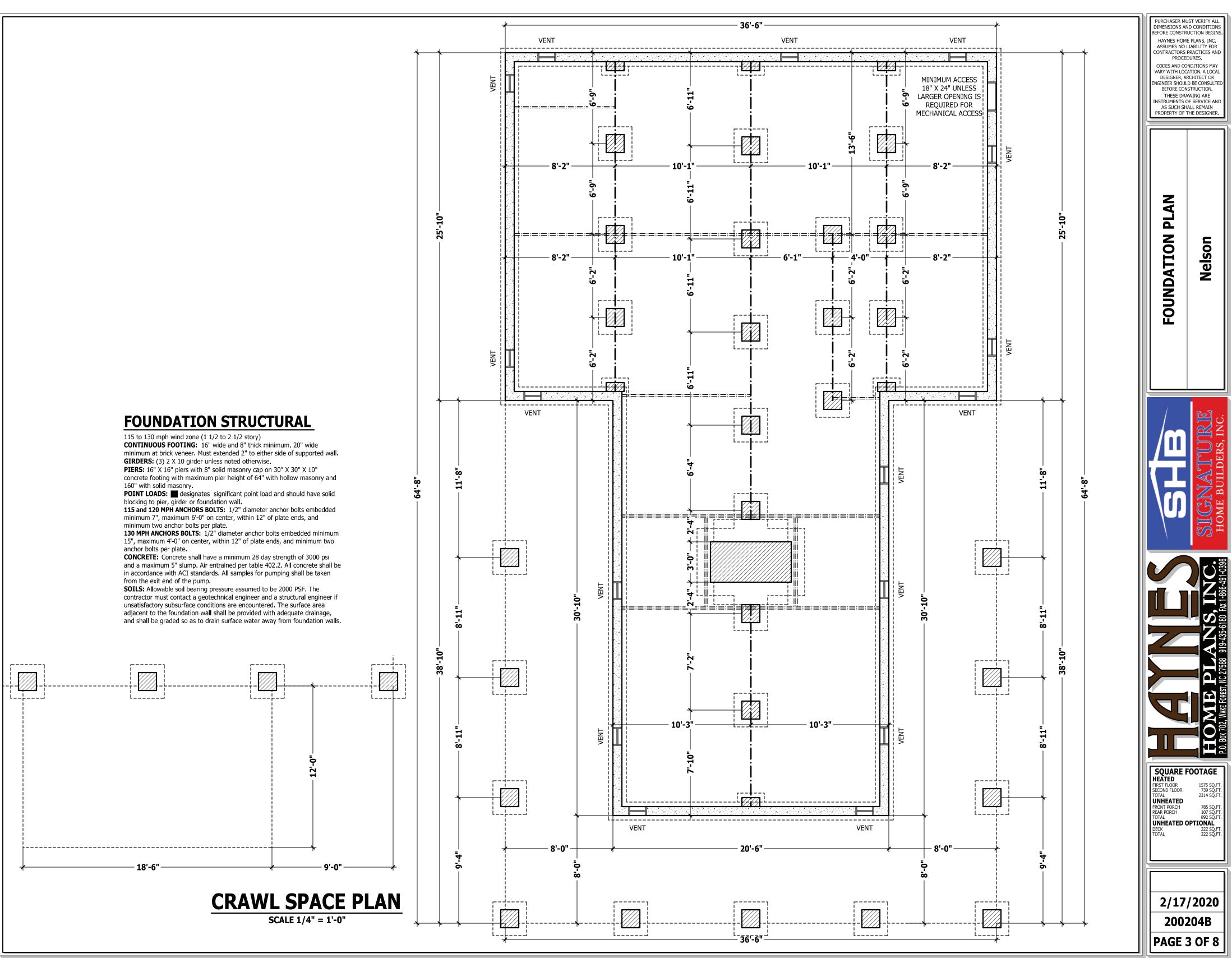


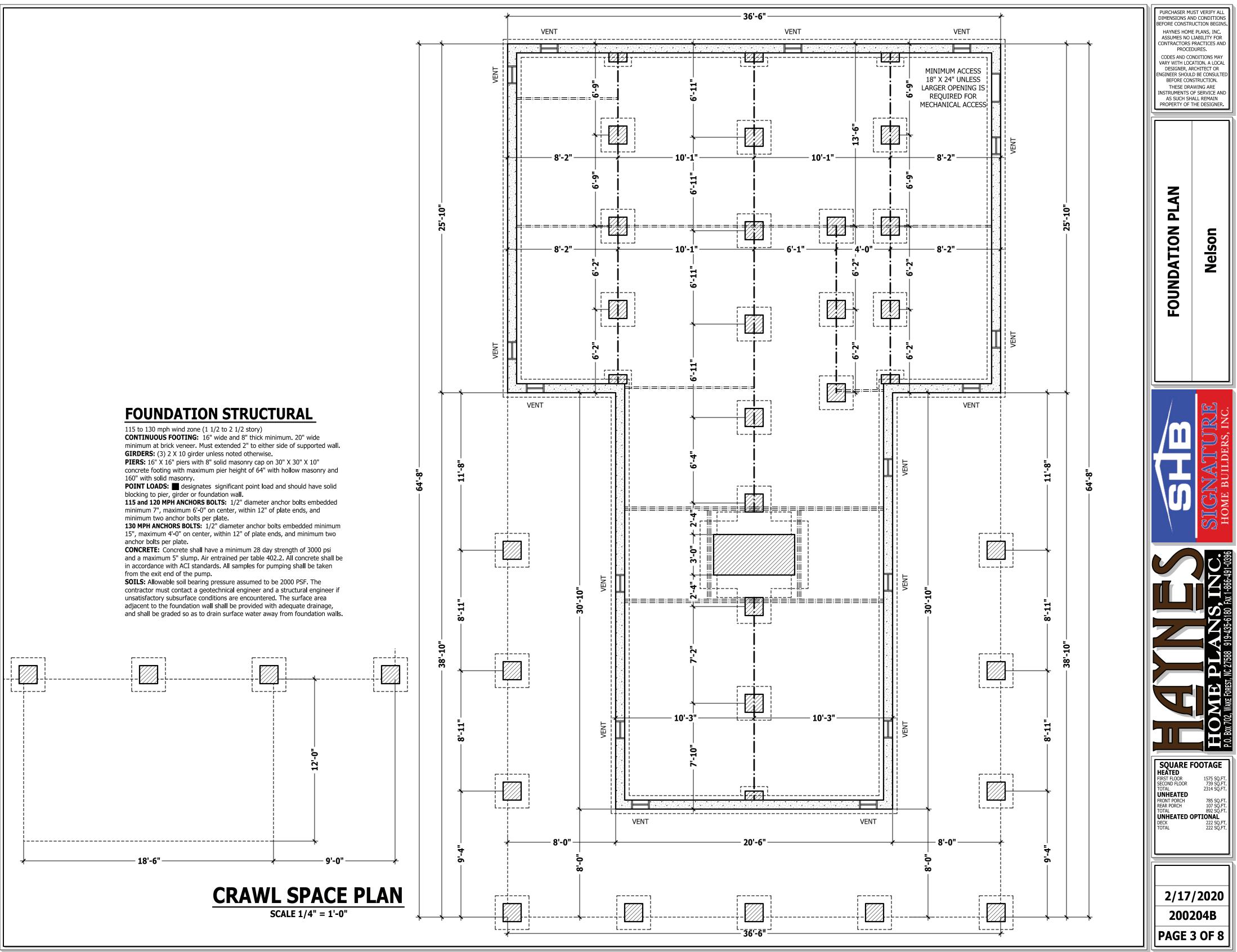


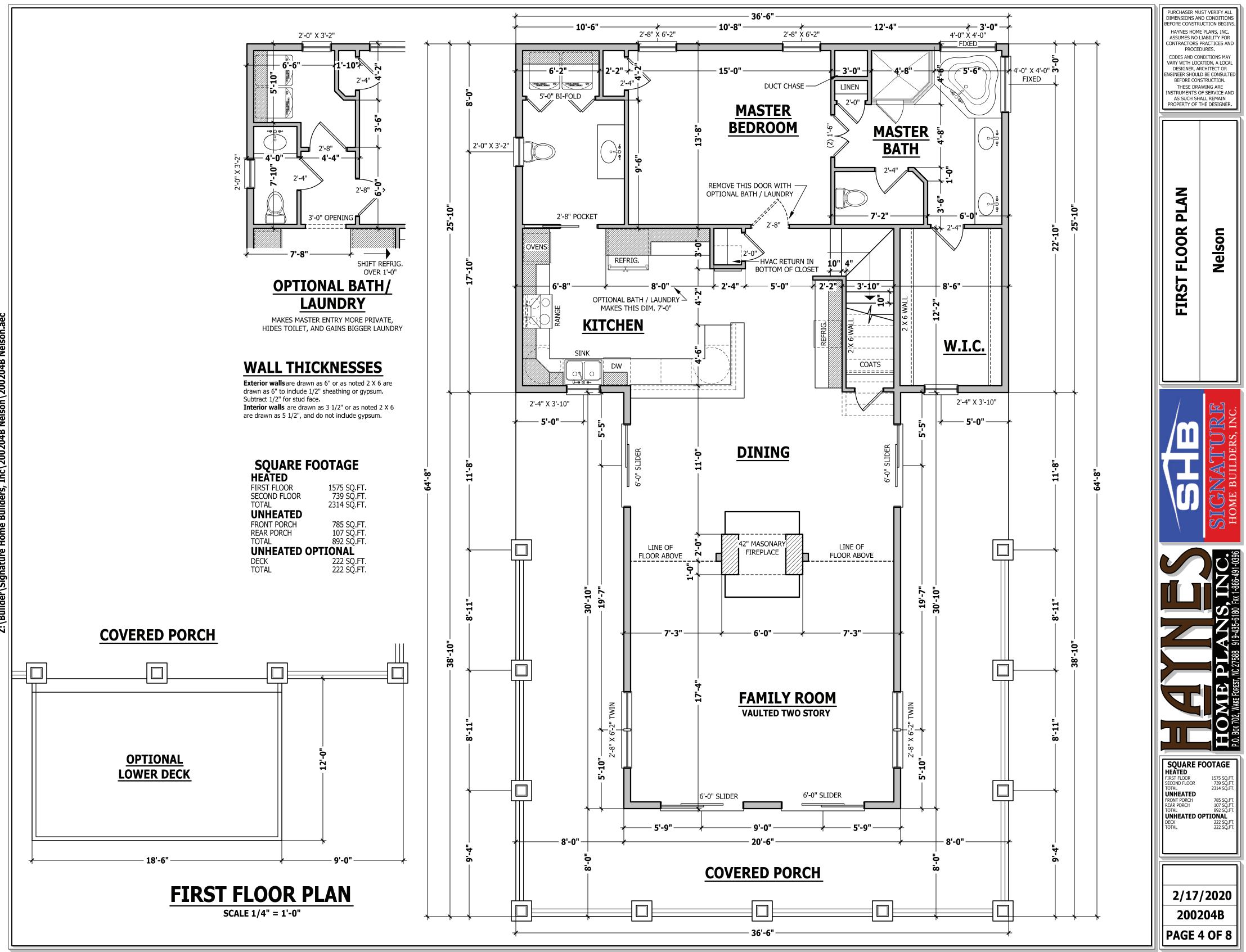




PURCHASER MUST VERIFY ALL IMENSIONS AND CONDITIONS BEFORE CONSTRUCTION BEGINS HAYNES HOME PLANS, INC.







### **STRUCTURAL NOTES**

All construction shall conform to the latest 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 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	LIVE LOAD	DEAD LOAD	DEFLECTION
USE	(PSF)	(PSF)	(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<sup>6</sup> PSI Parallel strand lumber (PSL) = Fb=2900 PSI, Fv=290 PSI, E=2.0x10<sup>6</sup> PSI Laminated strand lumber (LSL) Fb=2250 PSI, Fv=400 PSI, E=1.55x10<sup>6</sup> 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 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. **ROOF SHEATHING:** OSB or CDX roof sheathing minimum 3/8" thick for 16" on center rafters and 7/16" for 24" on center rafters. **CONCRETE AND SOILS:** See foundation notes.

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## **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. **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.

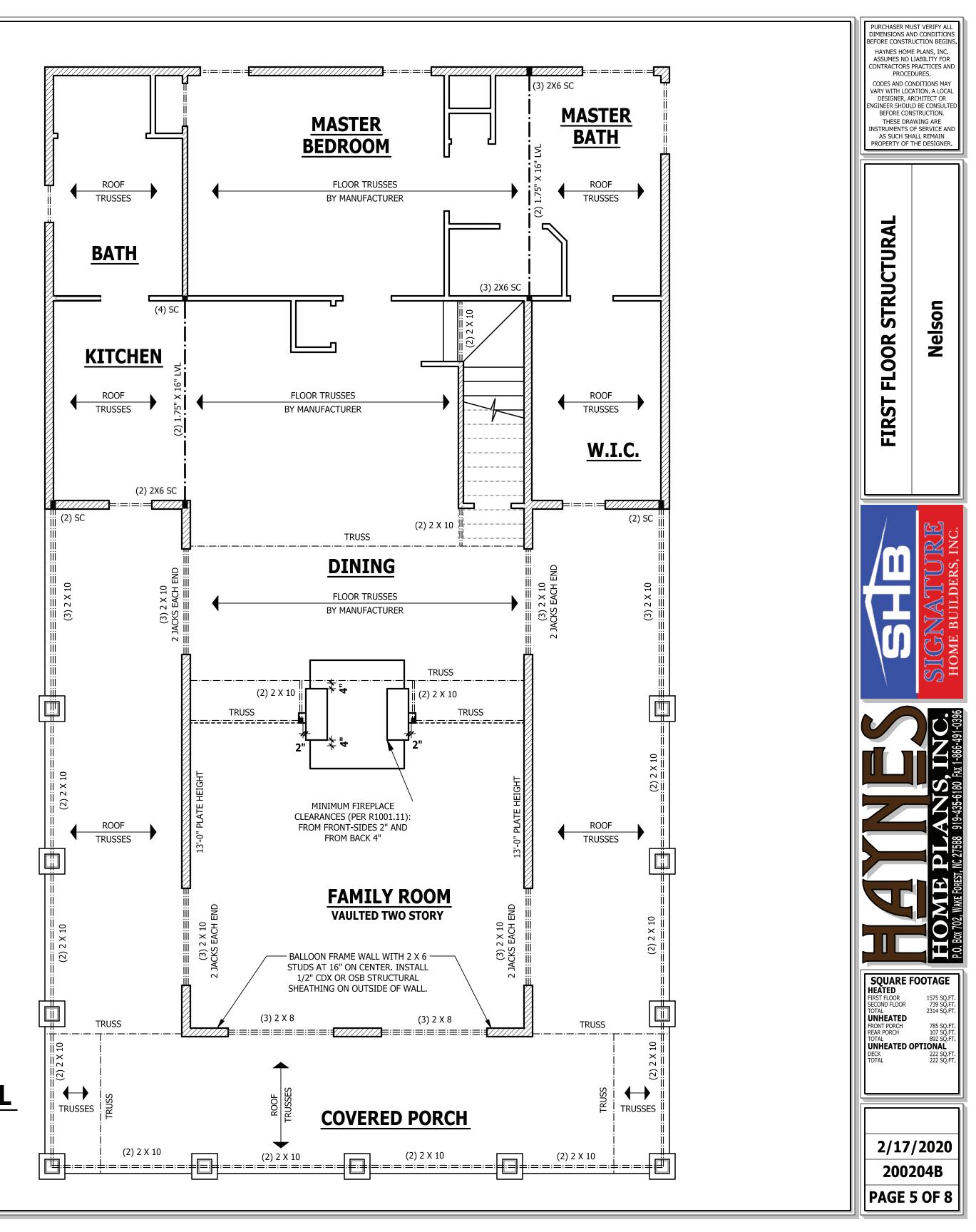
## **EXTERIOR HEADERS**

- (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**

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## **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.

## WALL THICKNESSES

**Exterior walls** are drawn as 6" 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.

### - KING STUDS EACH END PER TABLE BELOW |HEADER SPAN < 3' 3'-4' 4'-8' 8'-12' 12'-16'

**EXTERIOR HEADERS** 

- (2) 2 X 6 WITH 1 JACK STUD EACH END

UNLESS NOTED OTHERWISE

 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

## **STRUCTURAL NOTES**

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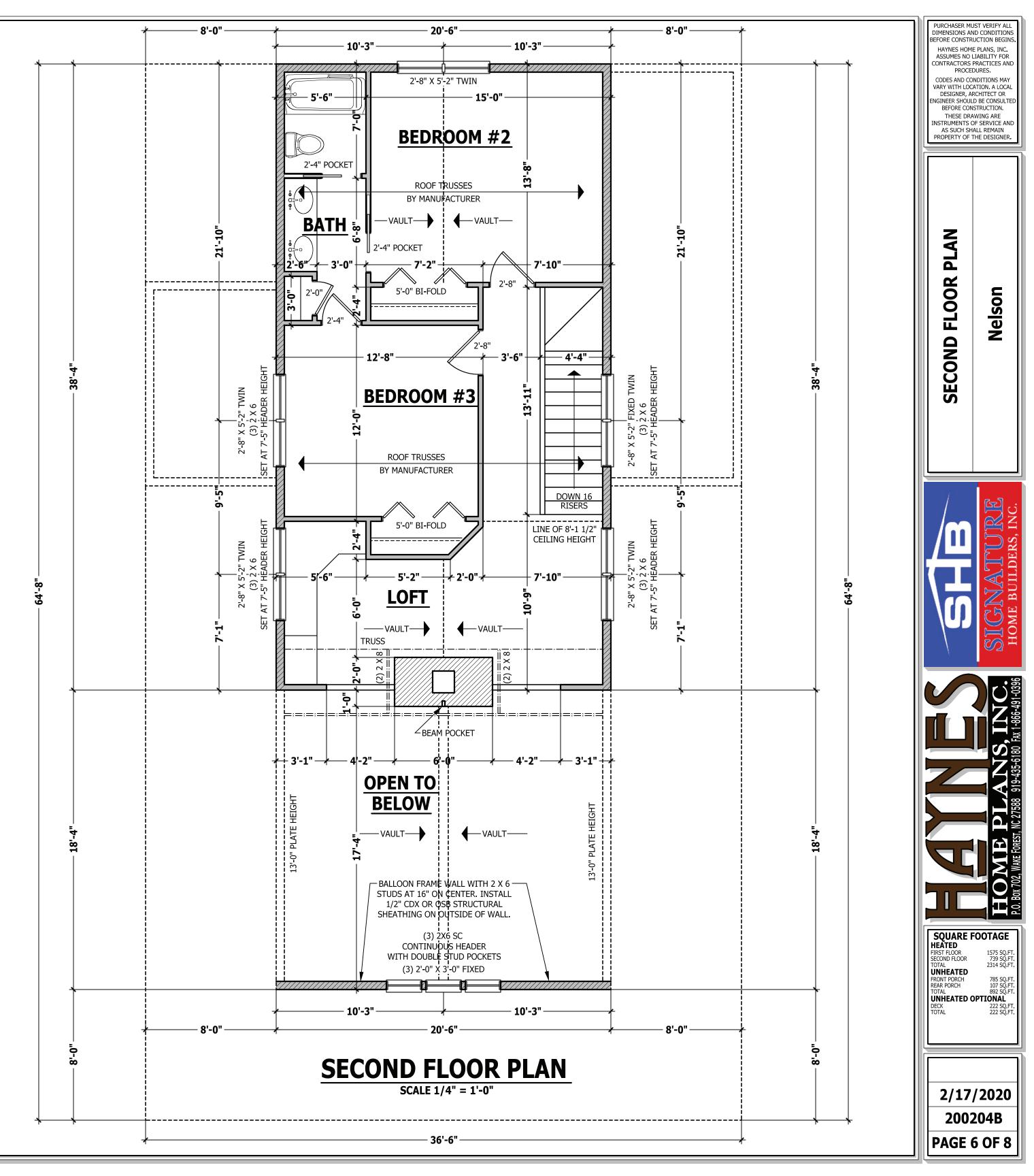
DESIGN LOADS	LIVE LOAD	DEAD LOAD	DEFLECTION
USE	(PSF)	(PSF)	(LL)
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Attics with limited storage	20	10	L/360
Attics with fixed stairs	40	10	L/360
Balconies and decks	40	10	L/360
Fire escapes	40	10	L/360
Guardrails and handrails	200		
Guardrail in-fill 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<sup>6</sup> PSI Parallel strand lumber (PSL) = Fb=2900 PSI, Fv=290 PSI, E=2.0x10<sup>6</sup> PSI Laminated strand lumber (LSL) Fb=2250 PSI, Fv=400 PSI, E=1.55x10<sup>6</sup> PSI Install all connections per manufacturers instructions.

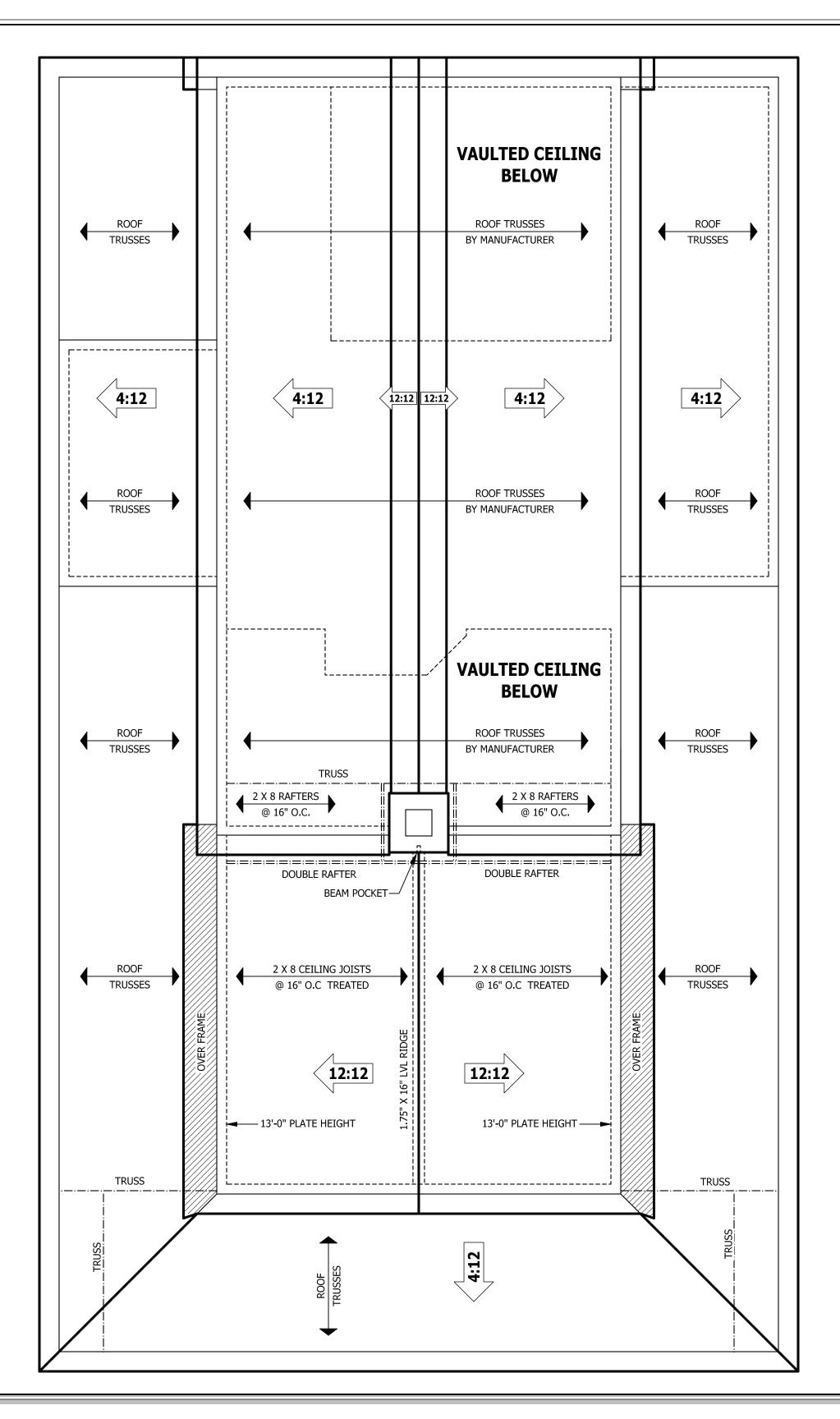
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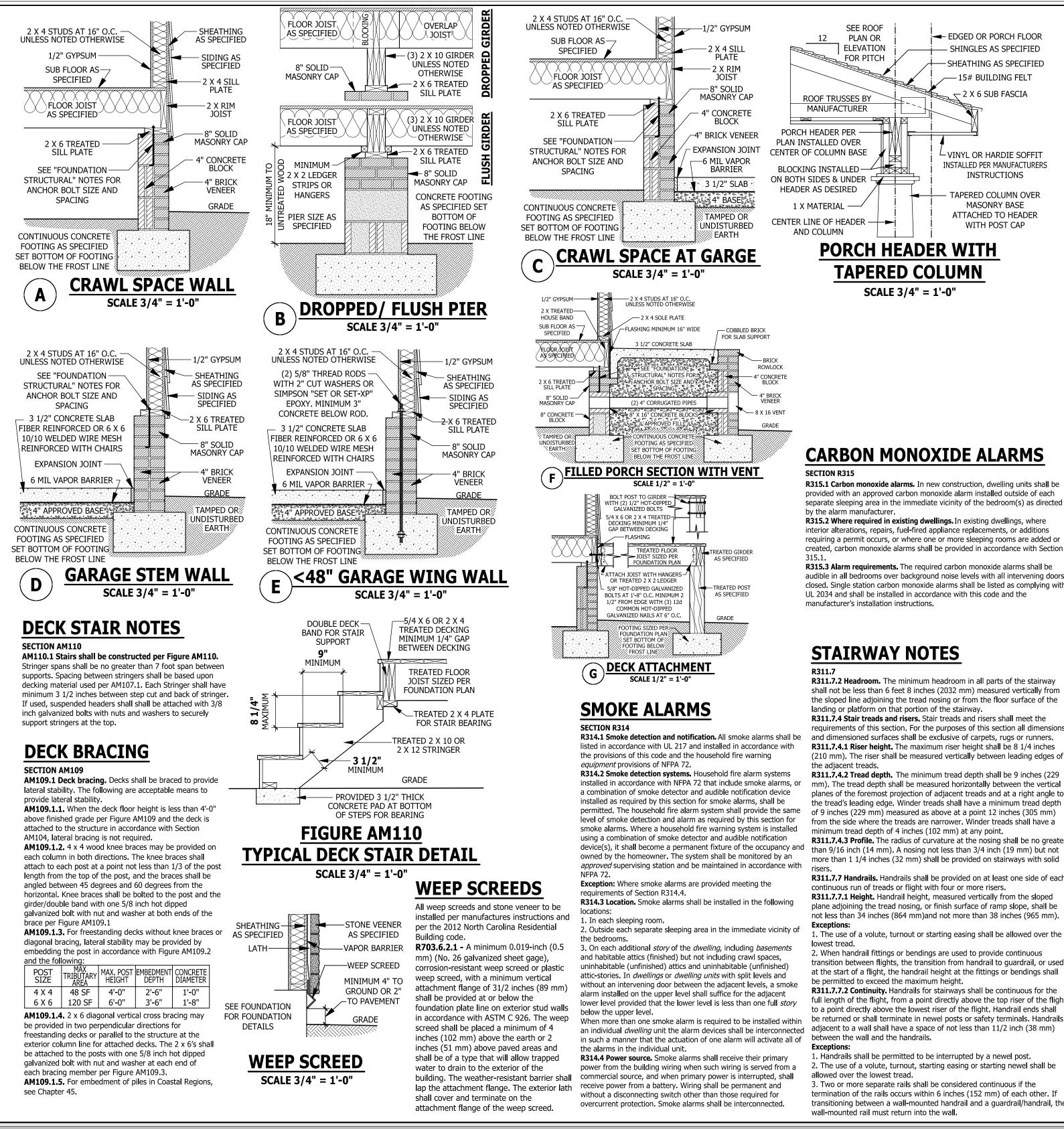
## **ROOF TRUSS REQUIREMENTS**

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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 area in the immediate vicinity of the bedroom(s) as directed

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

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

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

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

R311.7.4.2 Tread depth. The minimum tread depth shall be 9 inches (229

planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. Winder treads shall have a minimum tread depth of 9 inches (229 mm) measured as above at a point 12 inches (305 mm) from the side where the treads are narrower. Winder treads shall have a

R311.7.4.3 Profile. The radius of curvature at the nosing shall be no 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

R311.7.7 Handrails. Handrails shall be provided on at least one side of each

plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm)and not more than 38 inches (965 mm).

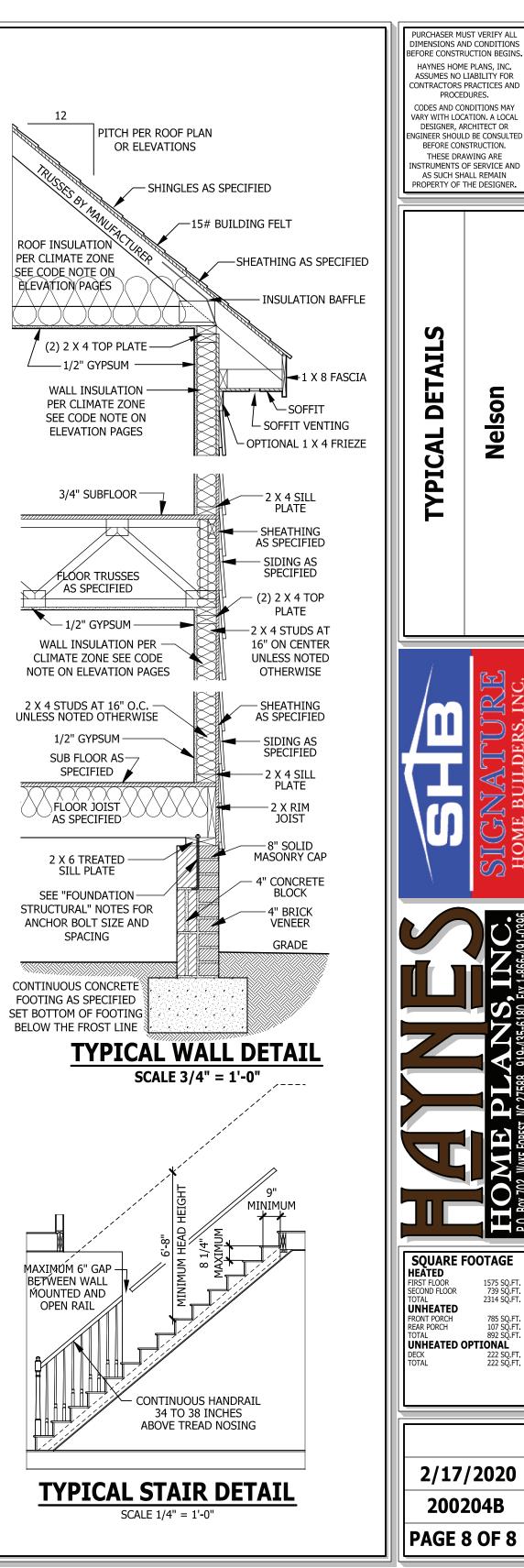
1. The use of a volute, turnout or starting easing shall be allowed over the

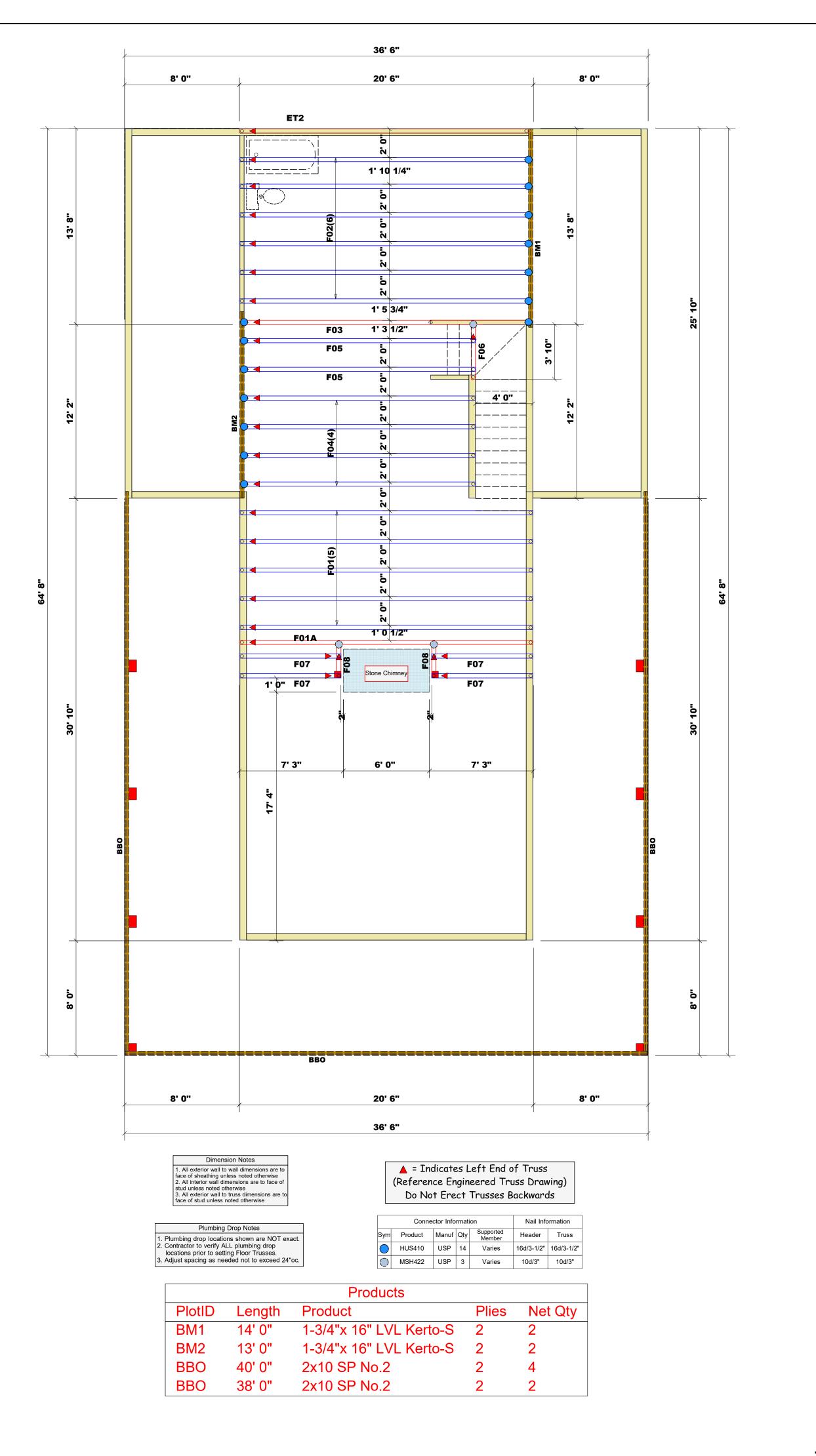
transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall

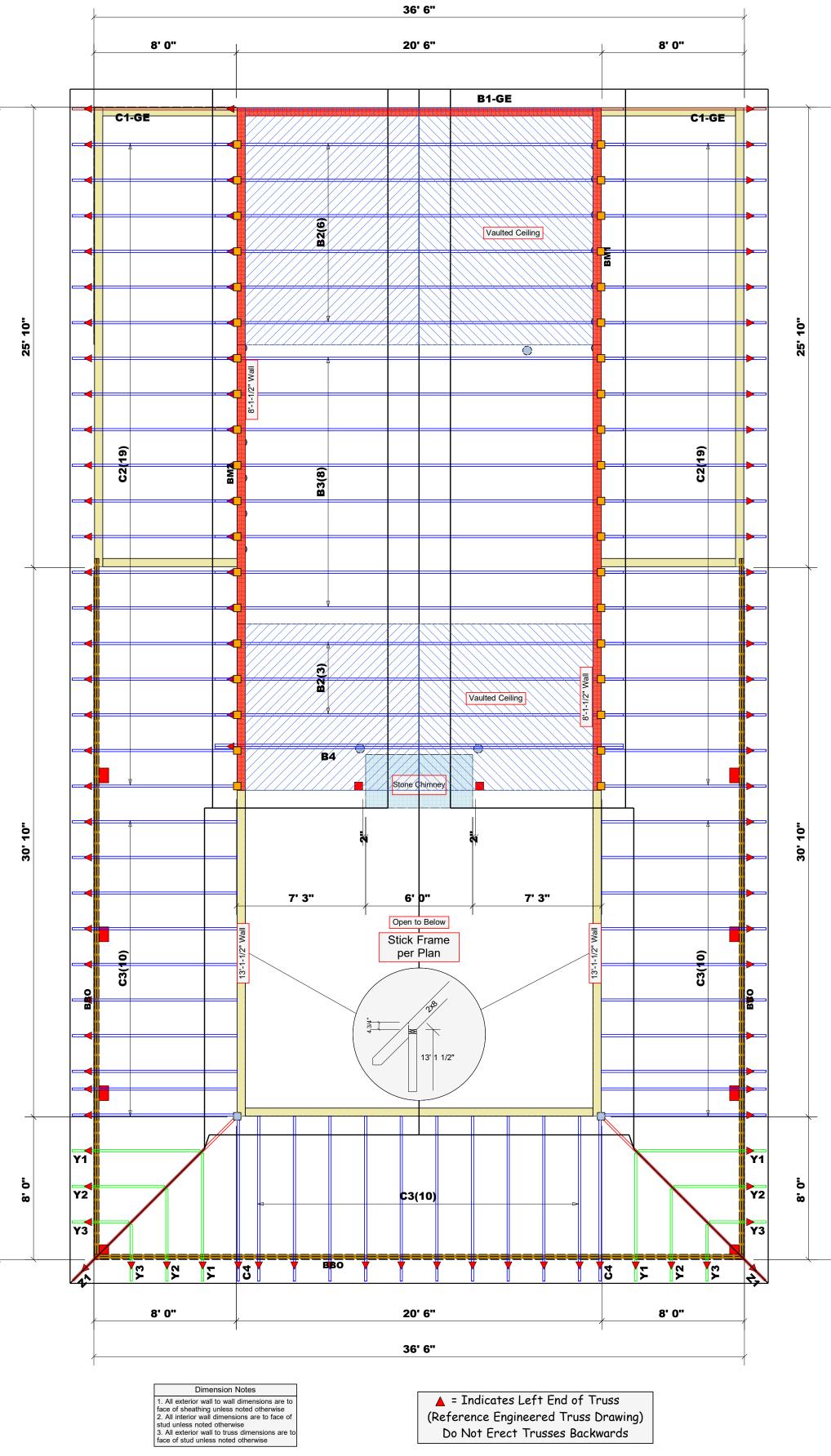
full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails

2. The use of a volute, turnout, starting easing or starting newel shall be

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







Connector Information					Nail Information	
Sym	Product	Manuf	Qty	Supported Member	Header	Truss
	JUS26	USP	38	Varies	10d/3"	10d/3"
[]	HJC26	USP	2	Varies	16d/3-1/2"	10d/3"

<image/>						
y Harnett County	SS 215 Joe Collins Road / Lillington, NC	Roof & Floor	DATE REV. 3/20/20	J BY Anthony Williams	SALESMAN Anthony Williams	
COUNTY	ADDRESS	MODEL	DATE RE	DRAWN BY	SALESM	
Signature Home Builders	Centrella Residence	Nelson Plan	2/17/20	B0120-0162 & B0120-0163	J0120-0162 & J0120-0163	
BUILDER	JOB NAME	PLAN	SEAL DATE 2/17/20	QUOTE #	JOB #	
LOA	D CHA	ART FC	DR JAC	CK STU ) & (b))	DS	
			REQUIRED /GIRDER /GIRDER ND4 SQN15 SQN25 COM BACK 0 SQN15 SQN25 1 2 3 0 4 0 5		4         0	