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

MEAN ROOF HEIGHT: 19'-8" HEIGHT TO RIDGE: 27'-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 INS	ULATION OR R-13 C	AVITY 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 WI	ND SPEED	OF 120 MF	PH, 3 SEC(	ond gust	(93 FAST	EST MILE)	) Exposur	<u>RE "B"</u>
COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS							LOADS	
MEAN ROOF	UP T	O 30'	30'-1"	TO 35'	35' <b>-</b> 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"						IRF "B"		

COMPONENT	& CLA	DDING	DESIG	NED FC	DR THE	FOLLO	WING I	LOADS
MEAN ROOF	UP T	O 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 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  $\rm II$ 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 = 2,619 SQ.FT.

NET FREE CROSS VENTILATION NEEDED:

WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 17.46 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 = 8.73 SQ.FT.

# **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:

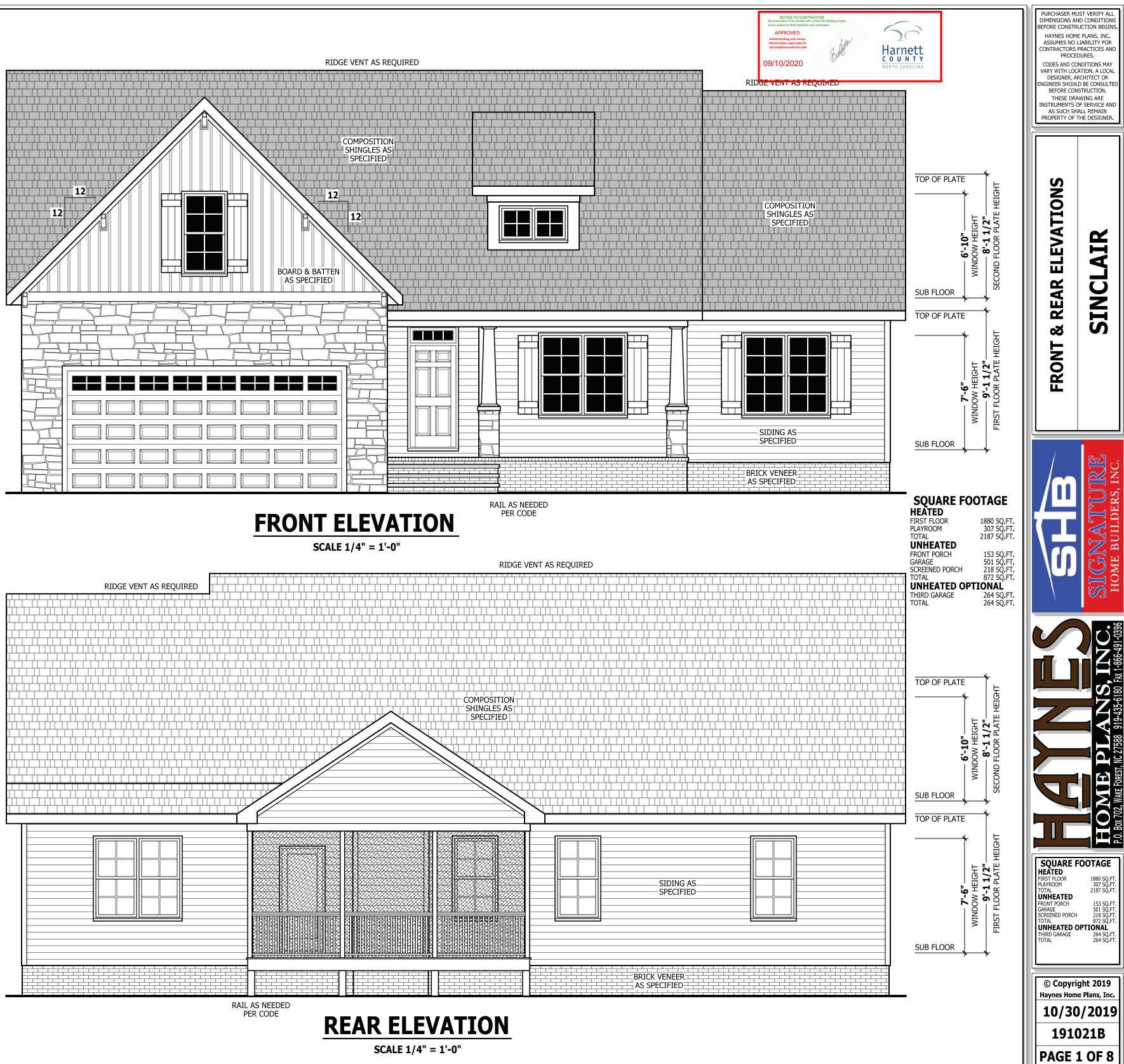
1. *Guards* on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.

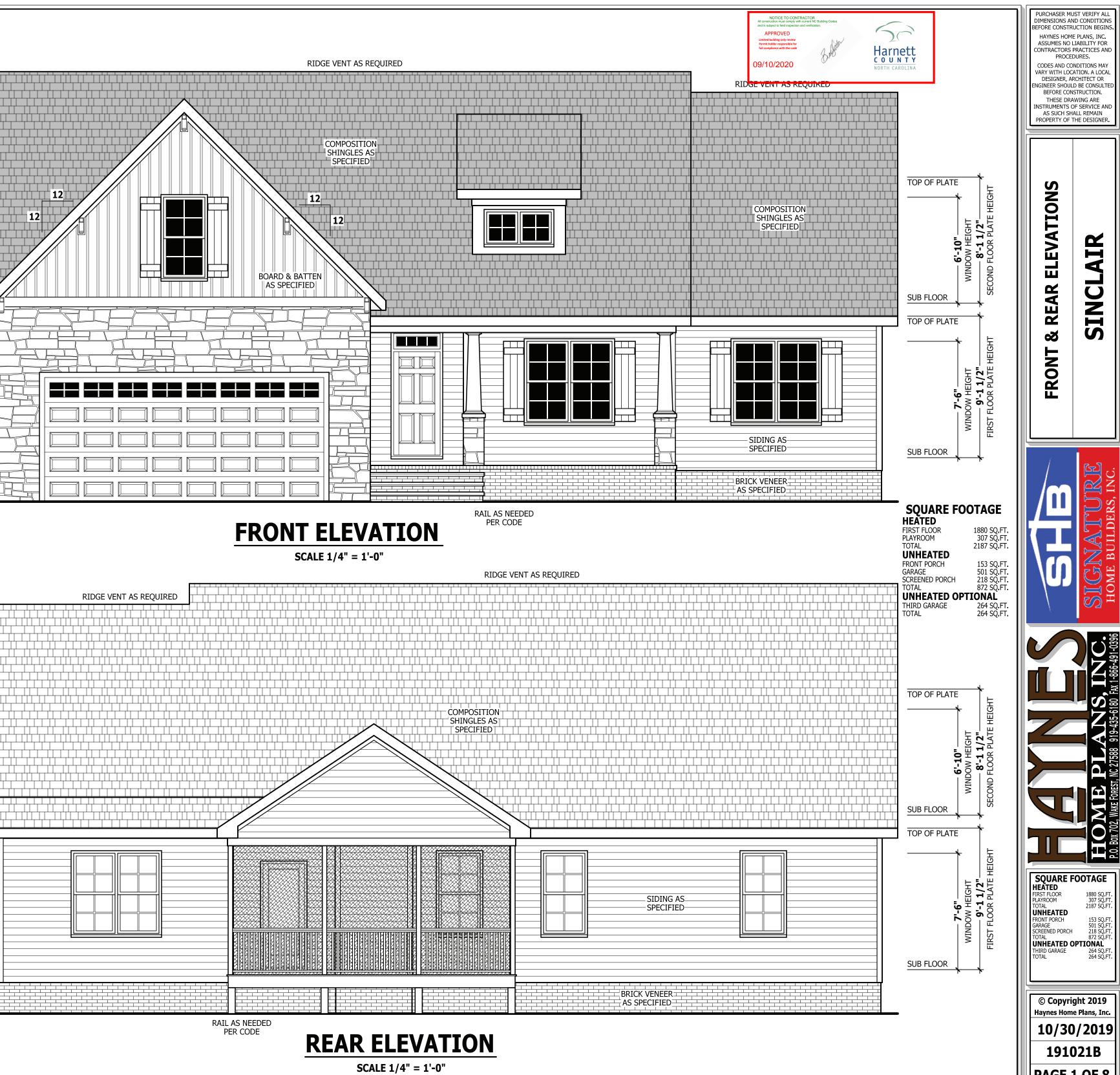
2. Where the top of the *guard* also serves as a handrail on the open sides of stairs, the top of the *guard* shall not be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

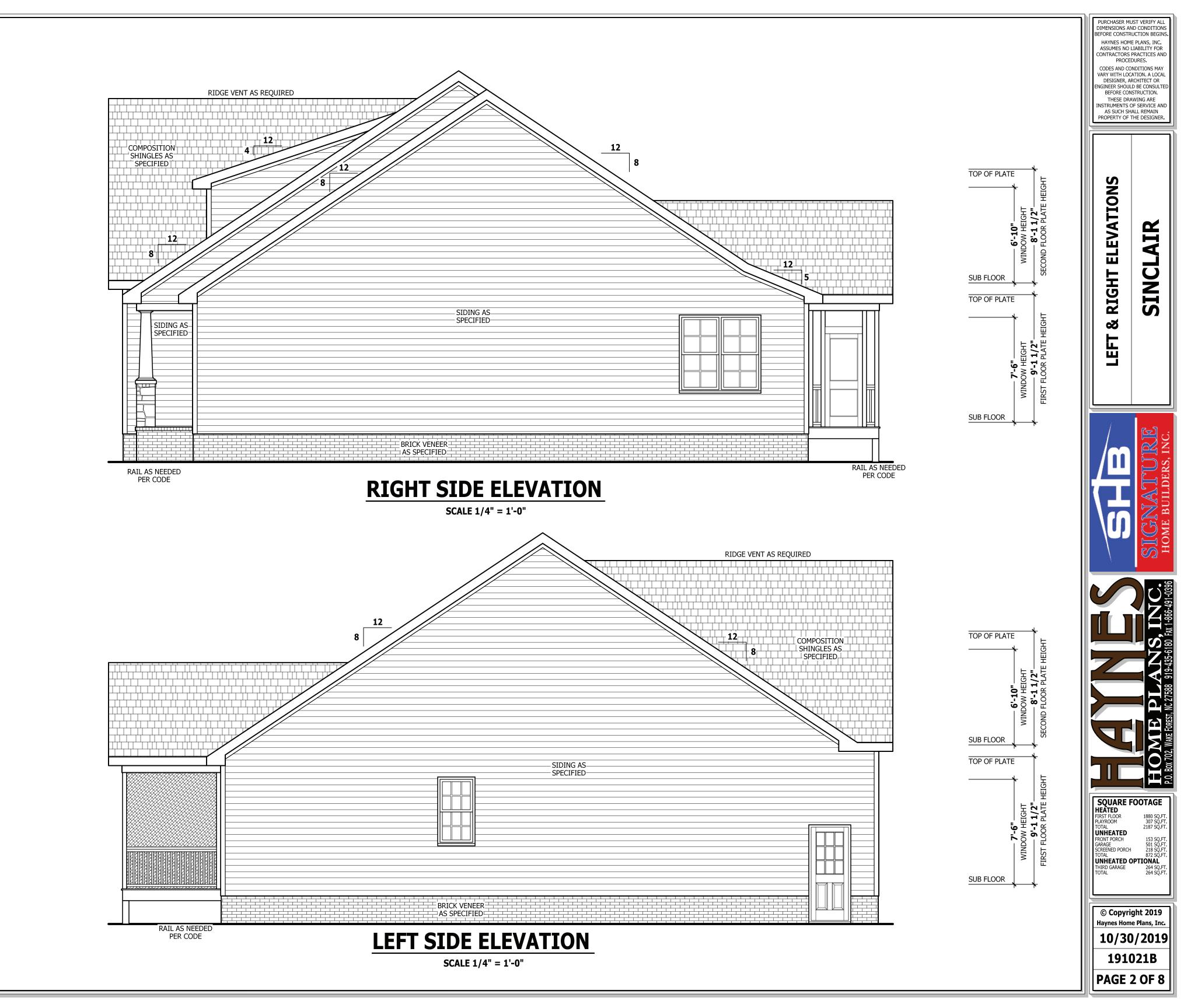
**R312.3 Opening limitations.** Required *guards* shall not have openings from the walking surface to the required *guard* height which allow passage of a sphere 4 inches (102 mm)in diameter. Exceptions:

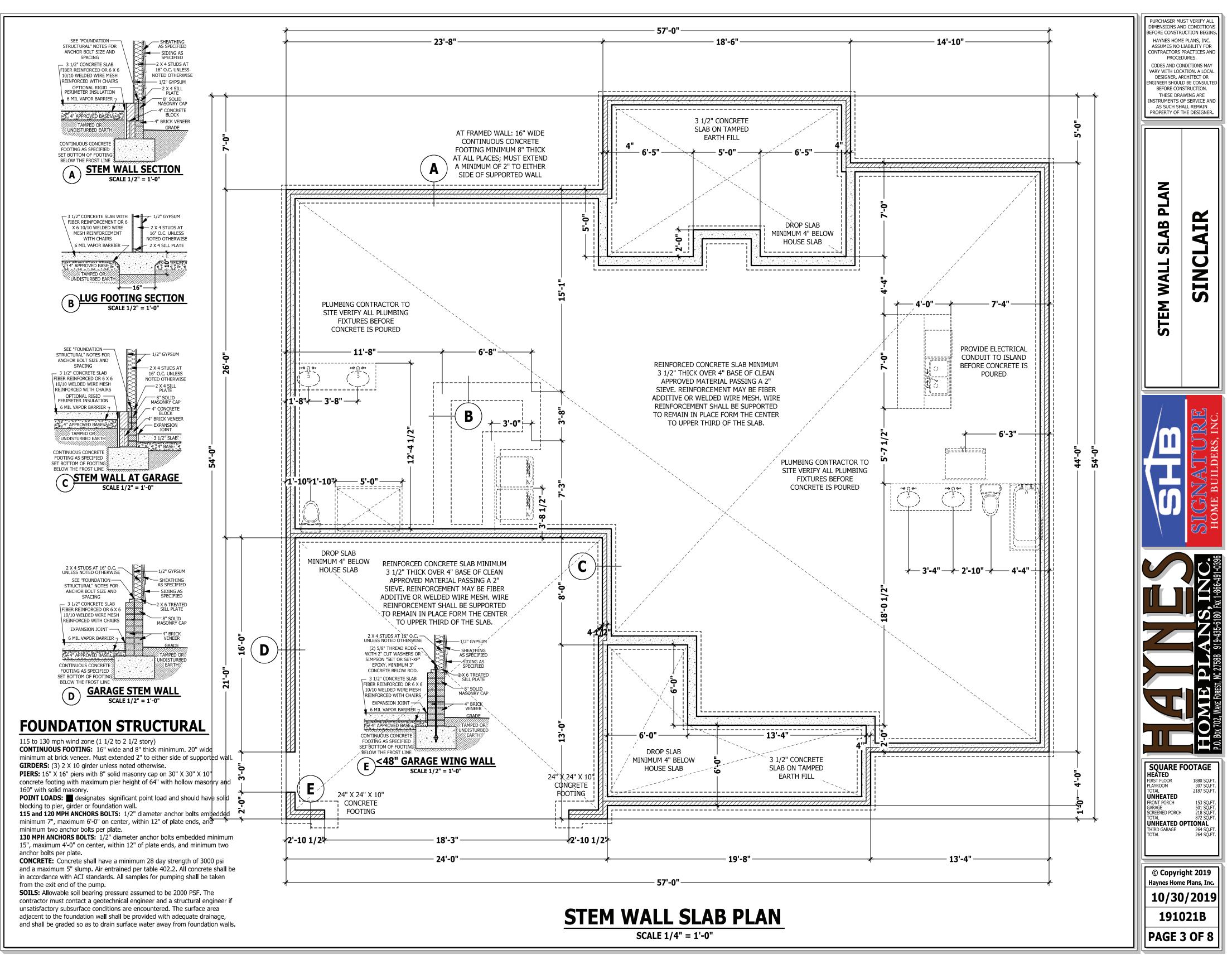
1. The triangular openings at the open side of a stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter.

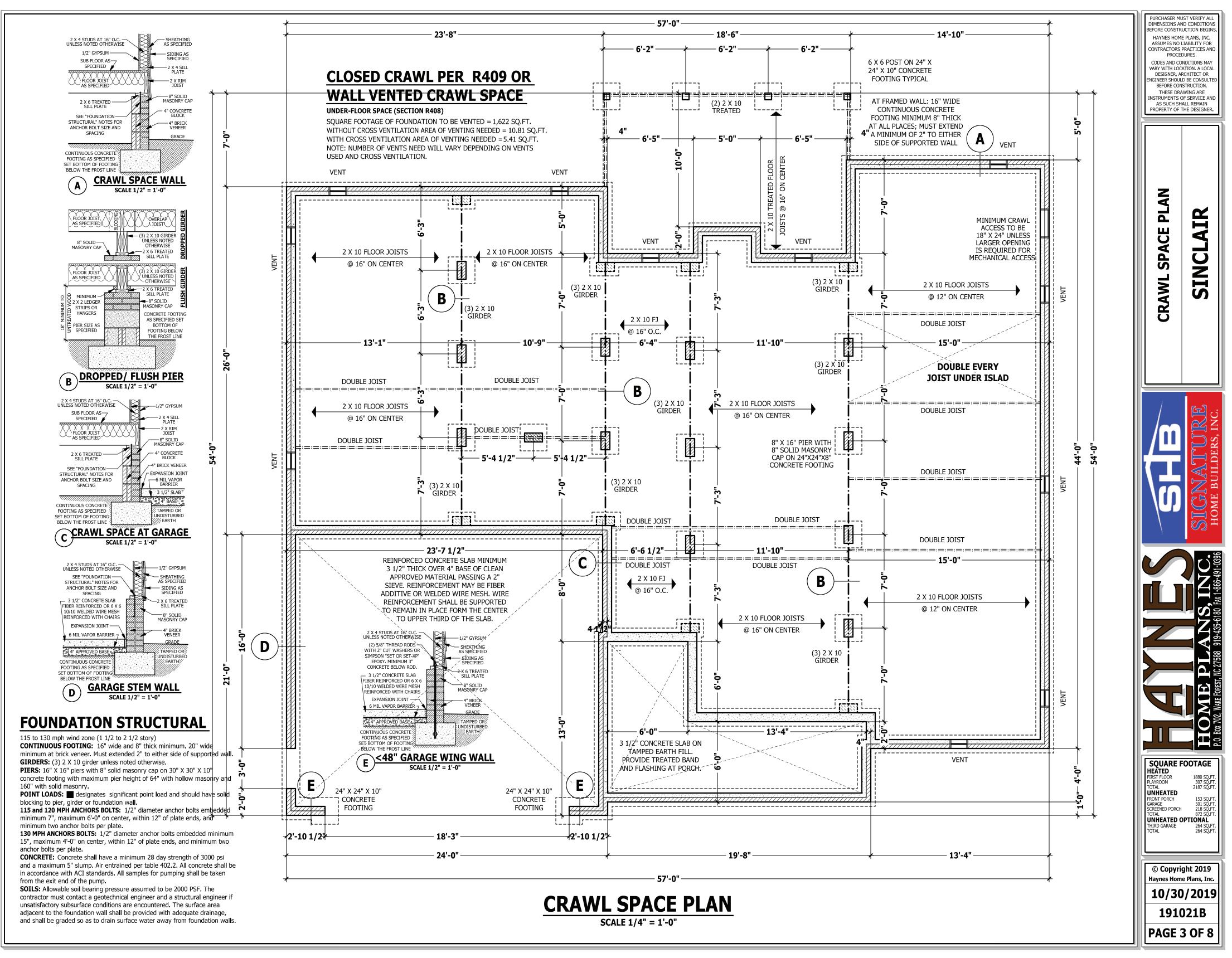
2. *Guards* on the open sides of stairs shall not have openings which allow passage of a sphere 43/8 inches (111 mm) in diameter.

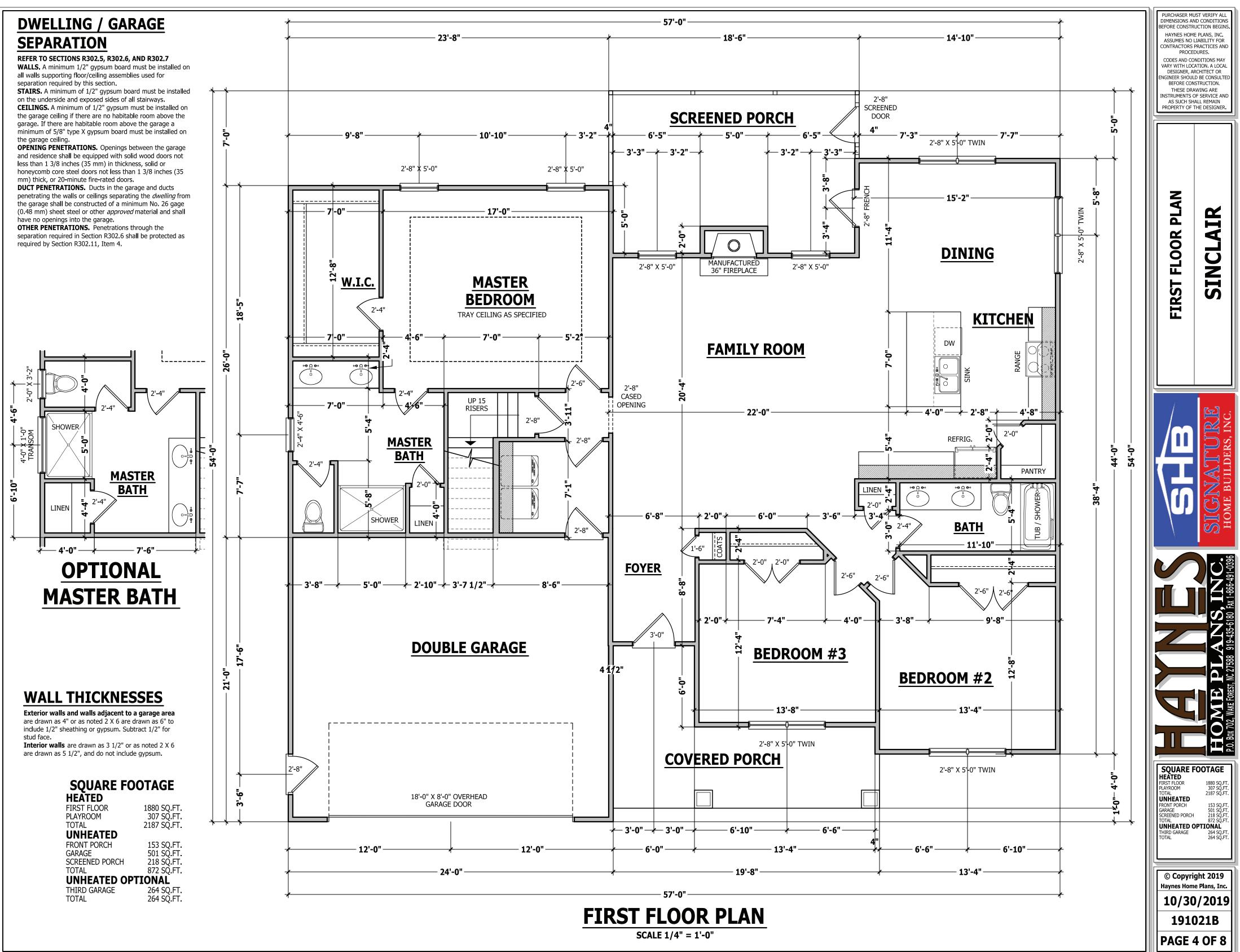












## **STRUCTURAL NOTES**

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=1.9x106 PSI Parallel strand lumber (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-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.  $3 \frac{1}{2} \times 3 \frac{1}{2} \times \frac{1}{4}$ " steel angle with  $\frac{1}{2}$ " 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 for 16"

on center rafters and 7/16" for 24" on center rafters. **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.

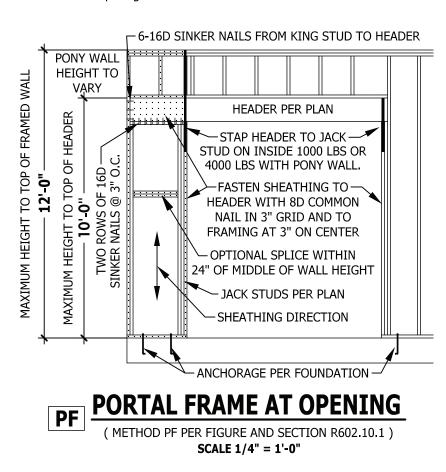
**GYPSUM:** All interior sides of exterior walls and both sides interior walls to have 1/2" gypsum installed. When not using method GB gypsum to be fastened per table R702.3.5. Method GB to be fastened per table R602.10.1.

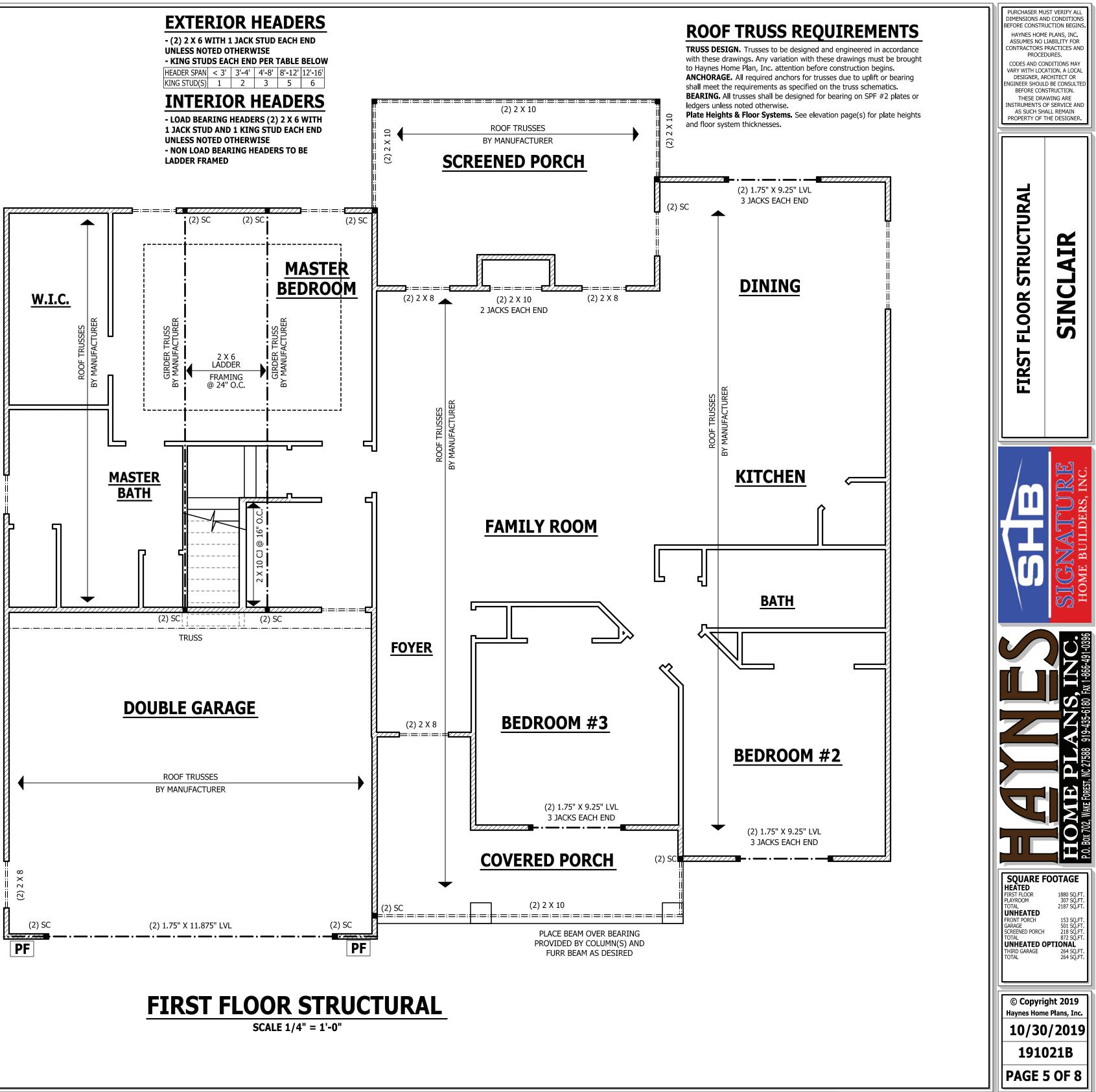
**REQUIRED LENGTH OF BRACING:** Required brace wall length for each side of the circumscribed rectangle are interpolated per table R602.10.3. Methods CS-WSP and CS-SFB contribute their actual length. Method GB contributes 0.5 it's actual length. Method PF contributes 1.5 times its actual length.

**HD:** 800 lbs hold down hold down device 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 at edges and 12" on center at intermediate supports with 6d common nails or  $8d(2 1/2" \log x 0.113" diameter)$ . **CS-SFB:** Shall be minimum 1/2" structural fiber board nailed at 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 minimum 1/2" gypsum board on both sides of the wall fastened at 7" on center at edges and 7" on center at intermediate supports with minimum 5d cooler nails or #6 screws. **PF**: Portal fame per figure R602.10.1





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### ENGINEERED WOOD BEAMS :

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thick for 24" 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.

2

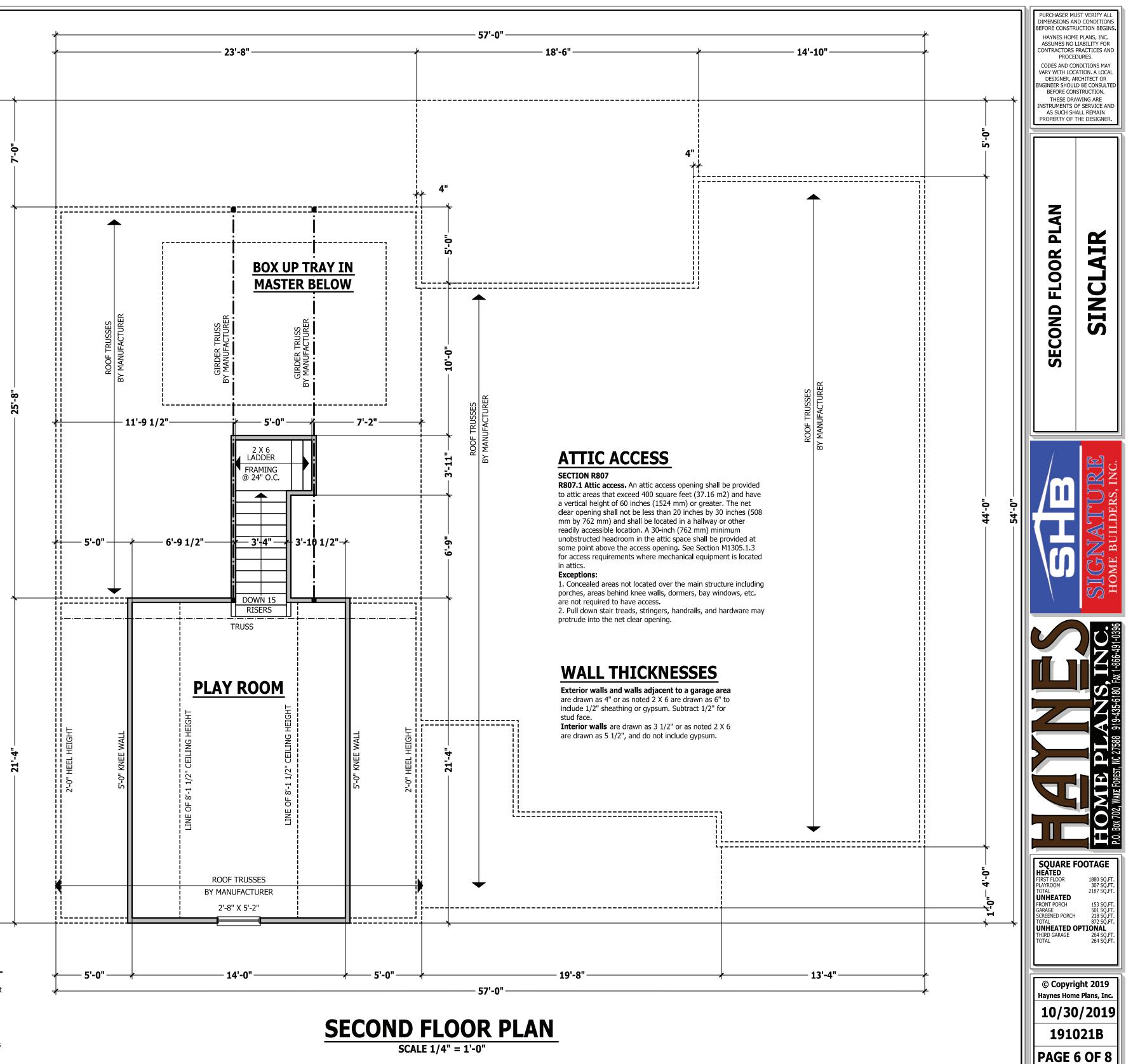
**CONCRETE AND SOILS:** See foundation notes.

## **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



## **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.

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

# **ROOF TRUSS REQUIREMENTS**

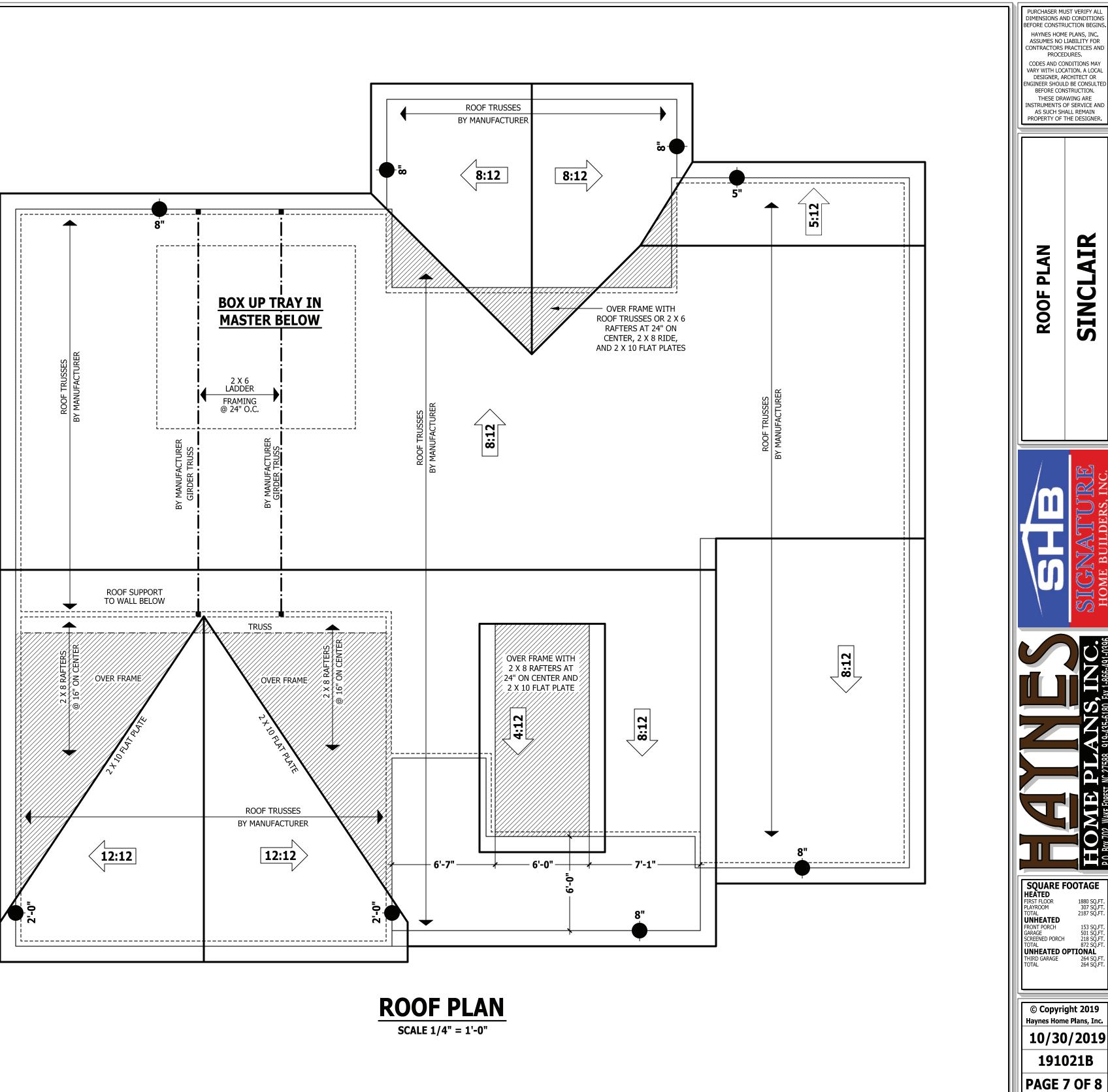
**TRUSS DESIGN.** Trusses to be designed and engineered in accordance with these drawings. Any variation with these drawings must be brought to Haynes Home Plan, Inc. attention before construction begins. KNEE WALL AND CEILING HEIGHTS. All finished knee wall heights and ceiling heights are shown furred 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.

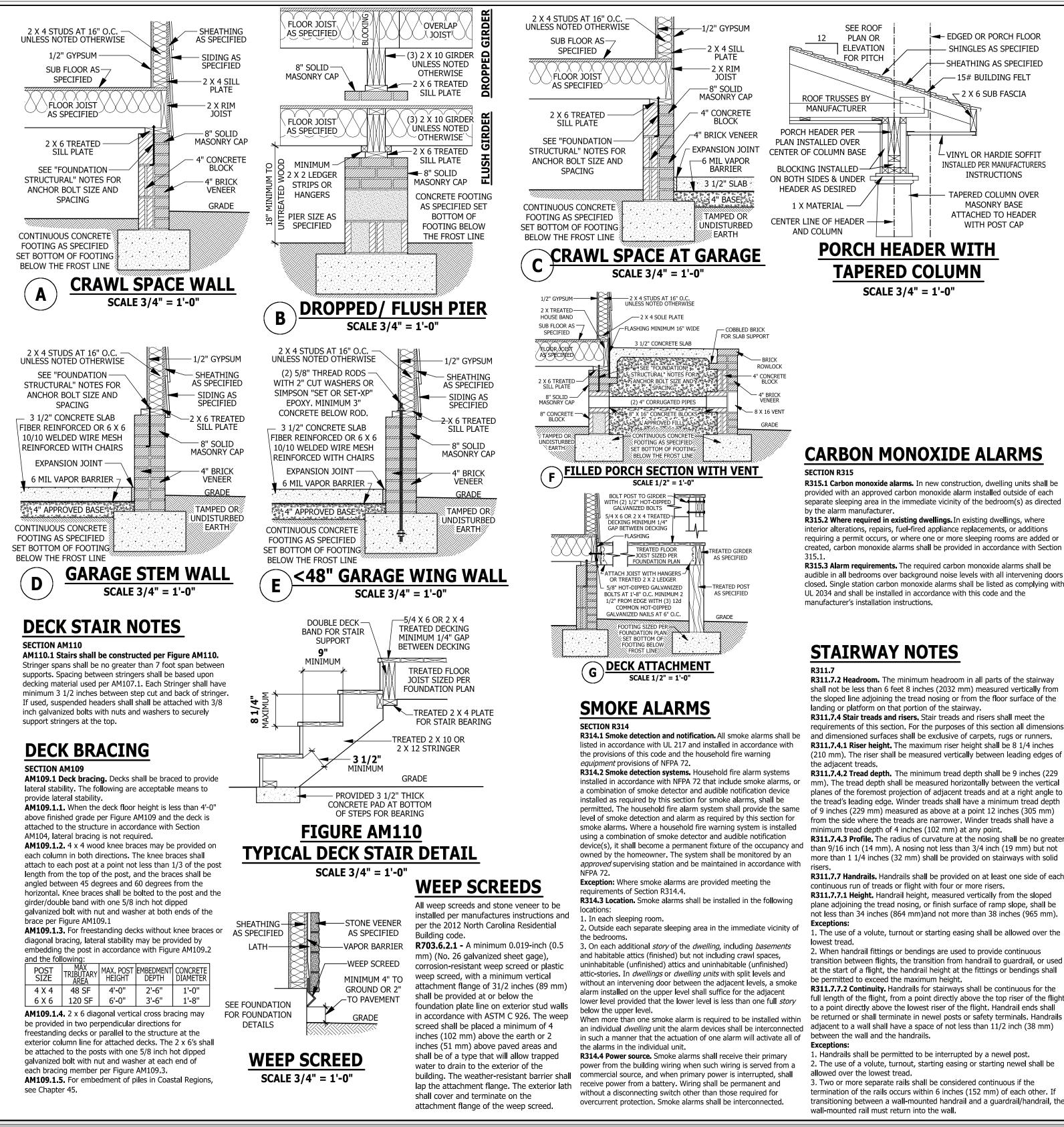
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Plate Heights & Floor Systems. See elevation page(s) for plate heights and floor system thicknesses.

HEEL HEIGHT ABOVE FIRST FLOOR PLATE

HEEL HEIGHT ABOVE





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

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

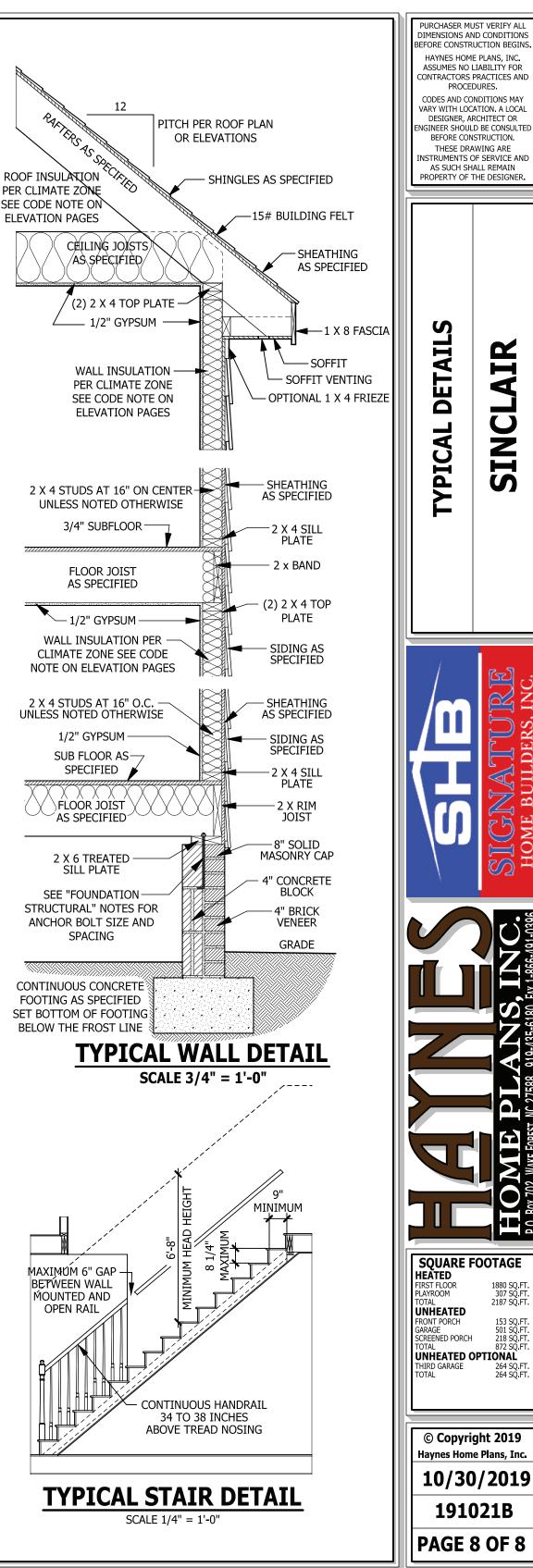
plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm)and not more than 38 inches (965 mm).

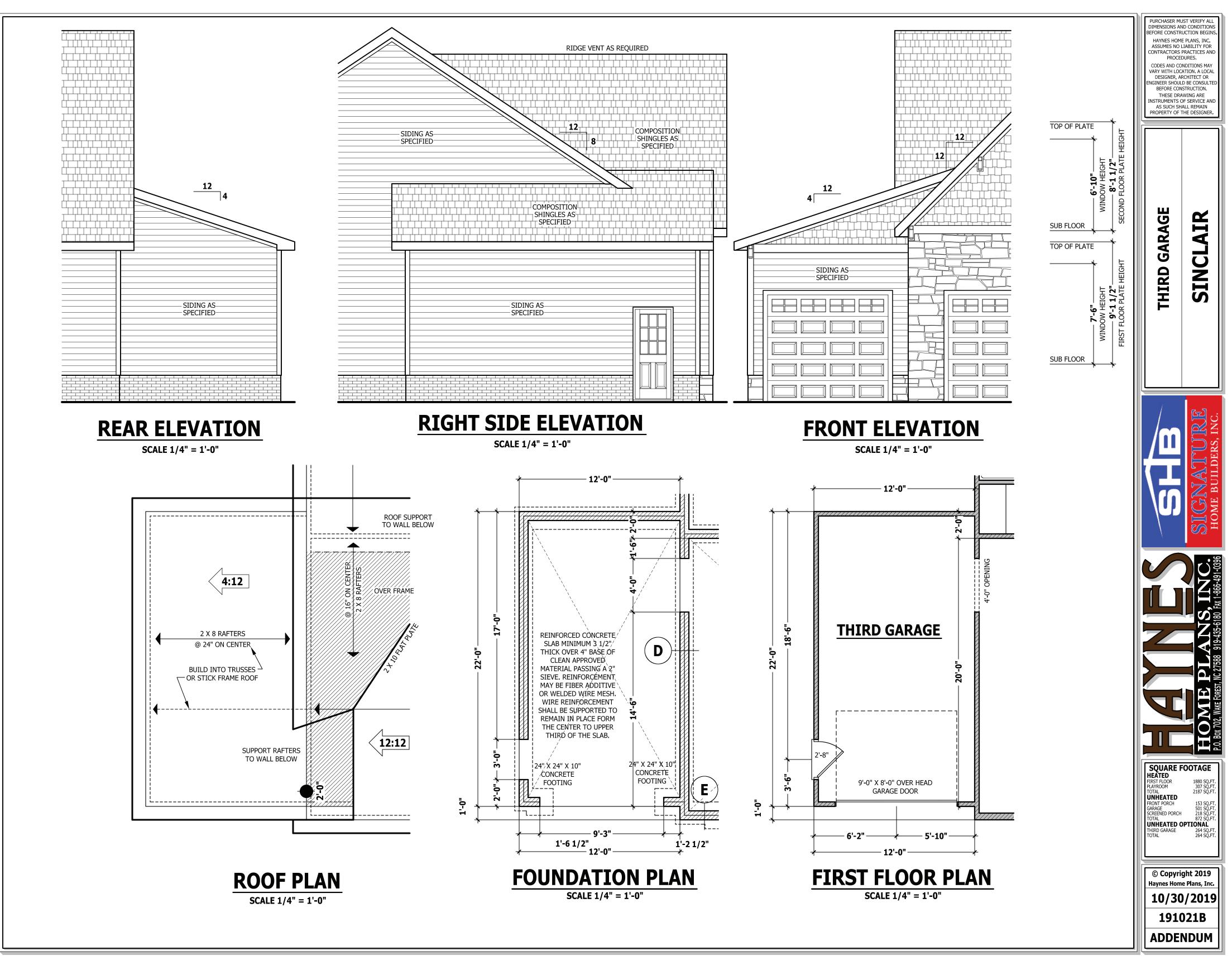
transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall

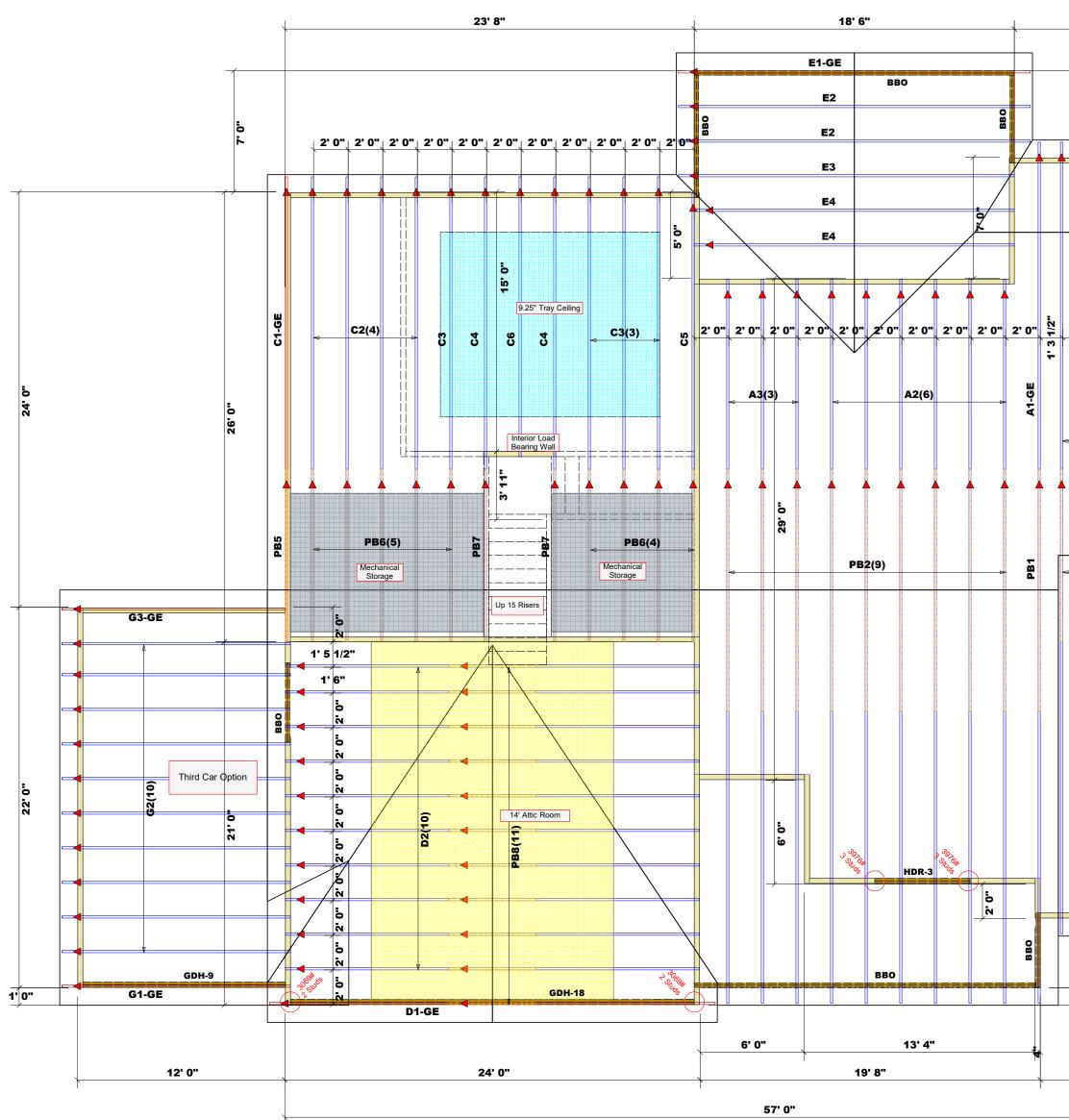
full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails

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







14' 10"	in a state of the	Beari deem requi attact Code found requi	RO RUS Reilly F Fayet Phor Fax red to comp requirem ation size ed to sup to sup to greater	OF & SES Road II teville he: (910) : (910) : (910) ms less th ply with t he contra ( derivec and num port react than 150	<b>&amp; FL</b> <b>&amp; FL</b> <b>&amp; E</b> ndustri c, N.C. 0) 864 864-4 864-4 an or eq he presc. actor shal d from the letermine ber of we lions greater ber of we	COOF BEAN rial Par 28309 I-8787 4444 ual to 3000 riptive Coo I refer to 1 e prescript the minin ood studs ater than 3 gistered dd design the	A AS rk of de the tive num 30000# esign
HDR-2		suppo those regist desig	ort system specified ered desig	for any r in the att on profes	eaction t ached Ta sional sh	hat exceed	ds ained to
			signature Sales Area				
			LOAD CHART FOR JACK STUDS (BASED ON TABLES R502.5(1) & (b)) NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADER/GIRDER				
2' 0" 2' 0" 2' 0" 2' 0" 2' 0" 2' 0"	Dimension Notes   1. All exterior wall to wall dimensions are to face of sheathing unless noted otherwise   2. All interior wall dimensions are to face of stud unless noted otherwise   3. All exterior wall to truss dimensions are to face of stud unless noted otherwise   1. All exterior wall to truss dimensions are to face of stud unless noted otherwise   3. All exterior wall to truss dimensions are to face of stud unless noted otherwise   Beoof Area = 3976.01 sq.ft.	3400 5100 6800 8500 10200 11900 13600	NO   NO<		) 1 ) 2 ) 3 0 4 0 5	3400 1 6800 2 10200 3	
	Ridge Line = 98.13 ft. Hip Line = 0 ft. Horiz. OH = 130.09 ft. Raked OH = 261.79 ft. Decking = 137 sheets	1					
PB4(6)	▲ = Indicates Left End of Truss (Reference Engineered Truss Drawing) Do Not Erect Trusses Backwards   BEAM SCHEDULE   PlotID Length Product Plies Net Qty   HDR-1 6'0" 1-3/4"x 9-1/4" LVL Kerto-S 2 2   HDR-2 6'0" 1-3/4"x 9-1/4" LVL Kerto-S 2 2   HDR-3 6'0" 1-3/4"x 9-1/4" LVL Kerto-S 2 2   GDH-9 12'0" 1-3/4"x 11-7/8" LVL Kerto-S 2 2   GDH-18 24'0" 1-3/4"x 14" LVL Kerto-S 2 2	Harnett County	50 Joel Way / Lillington, NC	Roof	9/1/20	Anthony Williams	Anthony Williams
- <sup>3</sup>	Denotes Reaction Greater than 3,000 lbs. Reaction / # of Studs	COUNTY	ADDRESS	MODEL	DATE REV.	DRAWN BY	SALESMAN
13' 4"		ome Builders	's Crossing	Sinclair (191021B) w/ 3rd Car			
		Signature Home Builders	Lot 2 Finley's	HHP / The Si	10/30/19	NA	J0820-4006
		BUILDER	JOB NAME	PLAN	SEAL DATE	QUOTE #	JOB #
		These compo design See in identif design perma for the suppo and co design consul	trusses a nents to I at the sp dividual d ed on the er is resp nent braci overall st t structur lumns is er. For ge t BCSI-B1	re designe be incorpo ecification esign she placemen onsible fo ng of the ructure. T e includir the respo neral guid and BCS	ed as ind prated int n of the b ets for ea nt drawin or tempor roof and The desig g header nsibility of dance reg il-B3 prov	GRAM ON ividual bui to the building de ach truss e g. The bui ary and floor syst yn of the tr rs, beams, of the build garding bravided with gasching bravided vided with	ilding ding esigner. design ilding tem and russ , walls, ding acing, the