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

MEAN ROOF HEIGHT: 23'-8	3"	HEIGHT TO RIDGE: 28'-0"		
CLIMATE ZONE	ZONE 34	70NE 44	ZONE EA	

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 115 MPH, 3 SECOND GUST (89 FASTEST MILE) EXPOSURE "B"

	COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS								LUADS
	MEAN ROOF	UP T	O 30'	30'-1"	TO 35'	35'-1"	TO 40'	40'-1"	TO 45'
	ZONE 1	13.1	-14.0	13.8	-14.7	14.3	-15.3	14.7	-15.7
	ZONE 2	13.0	-13.0	13.7	-13.7	14.2	-14.2	14.6	-14.6
	ZONE 3	13.1	-16.0	13.8	-16.8	14.3	-17.4	14.7	-17.9
	ZONE 4	14.3	-15.0	15.0	-15.8	15.6	-16.4	16.0	-16.8
	ZONE 5	14.3	-19.0	15.0	-20.0	15.6	-20.7	16.0	-21.3
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 T	O 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

DESIGNED FOR WIN	ID JI LLD	OI 120 I'II	11, 3 3 5 6	וכטט טווכ	וכתו ככן	LOT MILLE	LAI OOON	L D
COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS								
MEAN ROOF	UP T	O 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

## **ROOF VENTILATION**

SQUARE FOOTAGE OF ROOF TO BE VENTED = 2,040 SQ.FT. NET FREE CROSS VENTILATION NEEDED:

WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 13.6 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 = 6.8 SQ.FT.

## **GUARD RAIL NOTES**

**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.

### 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

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

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

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.

## **AIR LEAKAGE**

N1102.4.1 Building thermal envelope. The building thermal envelope shall be durably sealed with an air barrier system to limit 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 solid material consistent with Appendix E-2.4 of this code:

- 1. Blocking and sealing floor/ceiling systems and under knee walls open to unconditioned or exterior space.
- 2. Capping and sealing shafts or chases, including flue shafts.
- 3. Capping and sealing soffit or dropped ceiling areas.



PER CODE

**SQUARE FOOTAGE** HEATED

FIRST FLOOR SECOND FLOOR 1296 SQ.FT. 917 SQ.FT. 2213 SQ.FT.

SUB FLOOR

# **FRONT ELEVATION**

SCALE 1/4" = 1'-0"





# **REAR ELEVATION**

SCALE 1/4" = 1'-0"

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**ELEVATION** 

**AVER** REAR

**∞** 

**FRONT** 

Built **P**0



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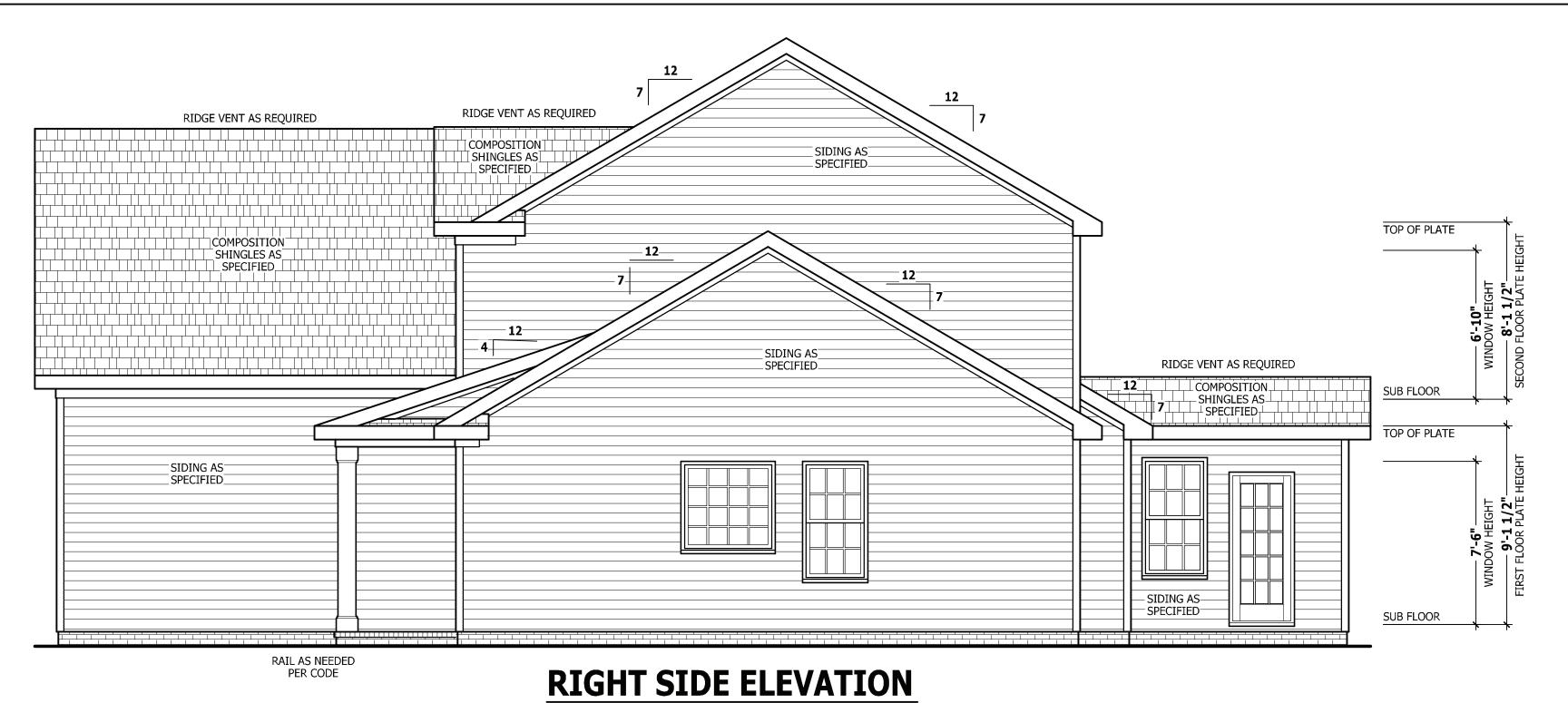
FIRST FLOOR SECOND FLOOR

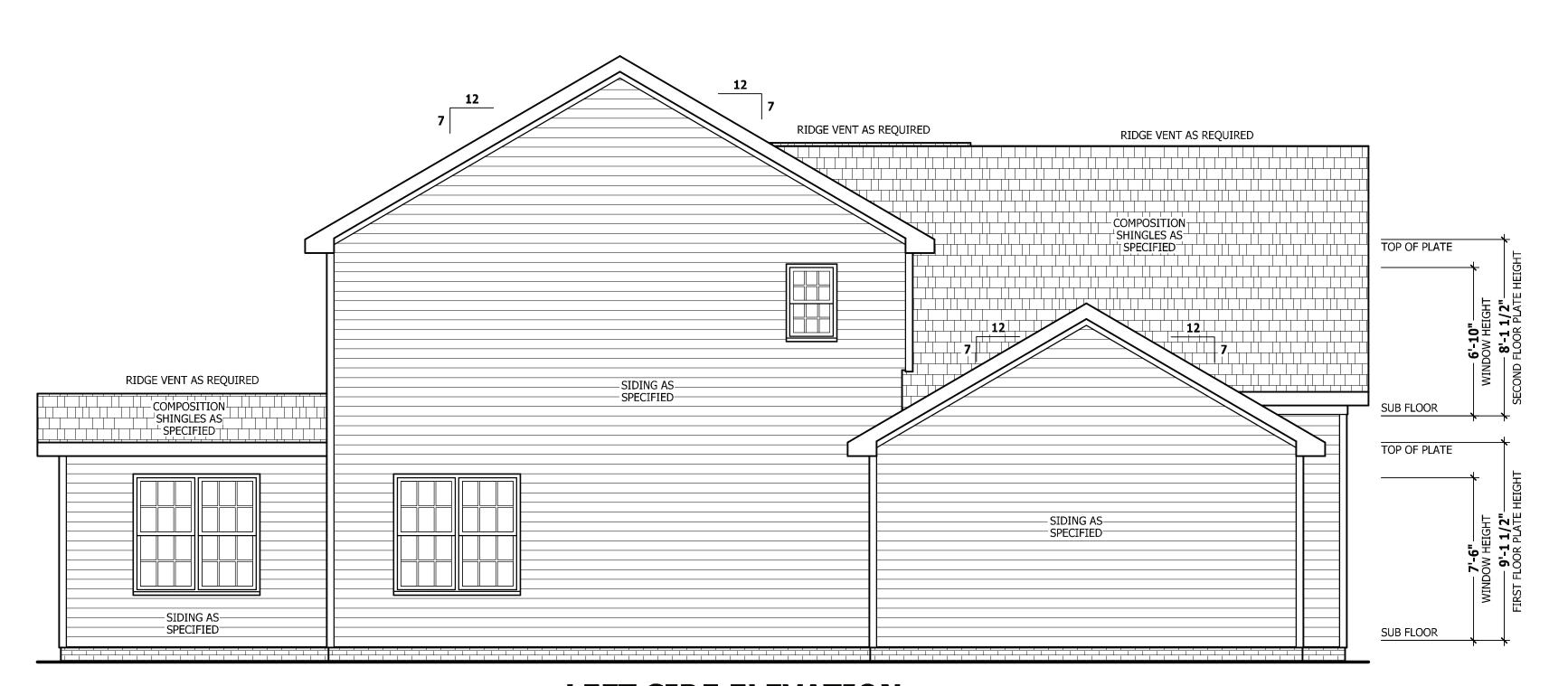
TOTAL UNHEATED

GARAGE FRONT PORCH PATIO TOTAL

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**PAGE 1 OF 8** 





SCALE 1/4" = 1'-0"

# **LEFT SIDE ELEVATION**

SCALE 1/4" = 1'-0"

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RIGHT ELEVATIONS

8

**AVERY** 

TIC PO Box 766 Springlake, NC 28390 910-436-3131 Southern Built

 SQUARE FOOTAGE

 HEATED

 FIRST FLOOR
 1296 SQ.FT.

 SECOND FLOOR
 917 SQ.FT.

 TOTAL
 2213 SQ.FT.

 UNHEATED
 673 SQ.FT.

673 SQ.FT. 62 SQ.FT. 135 SQ.FT. 870 SQ.FT.

GARAGE FRONT PORCH PATIO TOTAL

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VER

SQUARE FOOTAGE HEATED

FIRST FLOOR SECOND FLOOR TOTAL UNHEATED GARAGE FRONT PORCH PATIO TOTAL

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PLAN FIRST FLOOR

**AVERY** 

SQUARE FOOTAGE HEATED

FIRST FLOOR SECOND FLOOR TOTAL UNHEATED GARAGE FRONT PORCH PATIO TOTAL

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## **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	L	IVE LOAD	DEAD LOAD	DEFLECTIO
USE		(PSF)	(PSF)	(LL)
Attics without storage		10		L/240
Attics with limited storage	je	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 handrail	s	200		
Guardrail in-fill componer	nts	50		
Passenger vehicle garage	es	50	10	L/360
Rooms other than sleepi	ng	<del>4</del> 0	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 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 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.

**LADDER FRAMED** 

(3) SC

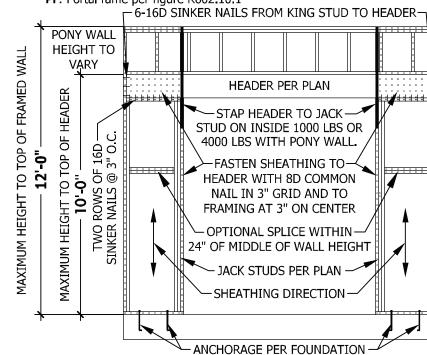
**REQUIRED LENGTH OF BRACING:** Required brace wall length for each side of the circumscribed rectangle are interpolated per table R602.10.3. Methods CS-WSP and CS-SFB contribute their actual length. Method GB contributes 0.5 it's actual length. Method PF contributes 1.5 times its actual length.

**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

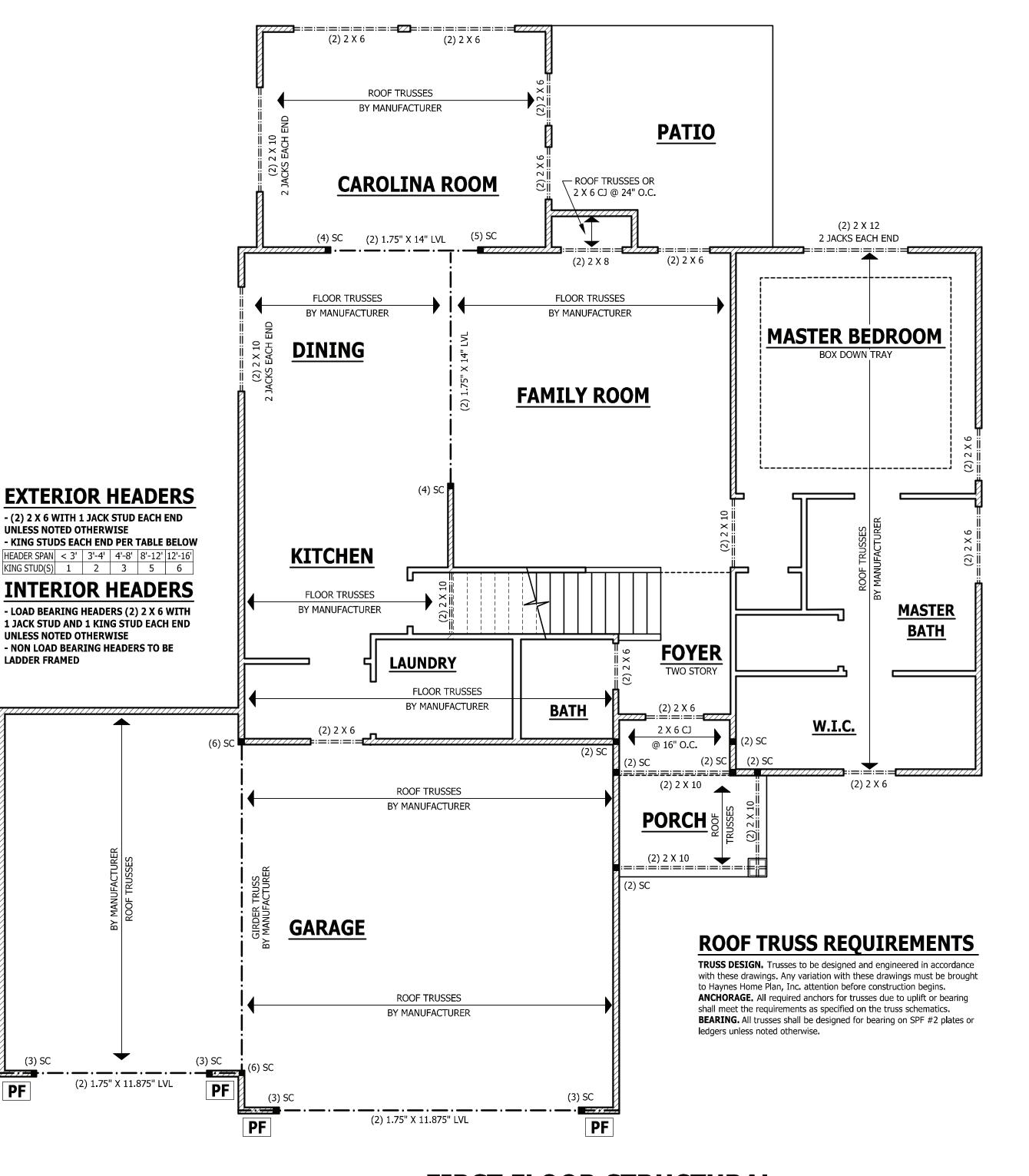
**CS-WSP:** Shall be minimum 3/8" OSB or CDX nailed at 6" on center at edges and 12" on center at intermediate supports with 6d common nails or 8d(2 1/2" long x 0.113" diameter). **CS-SFB:** Shall be minimum 1/2" structural fiber board nailed at 3" on center at edges and 3" on center at intermediate supports with 1 1/2" long x 0.12" diameter galvanized roofing

**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



## PORTAL FRAME AT OPENING

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



# FIRST FLOOR STRUCTURAL

SCALE 1/4" = 1'-0"

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STRUCTURAL VER FLOOR

**FIRST** 

SQUARE FOOTAGE HEATED

FIRST FLOOR SECOND FLOOR UNHEATED GARAGE FRONT PORCH

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## **STRUCTURAL NOTES**

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DESIGN LOADS	LIVE LOAD	DEAD LOAD	DEFLECTIO
USE	(PSF)	(PSF)	(LL)
Attics without storage	10	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:**

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**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

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

## **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.

## **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**

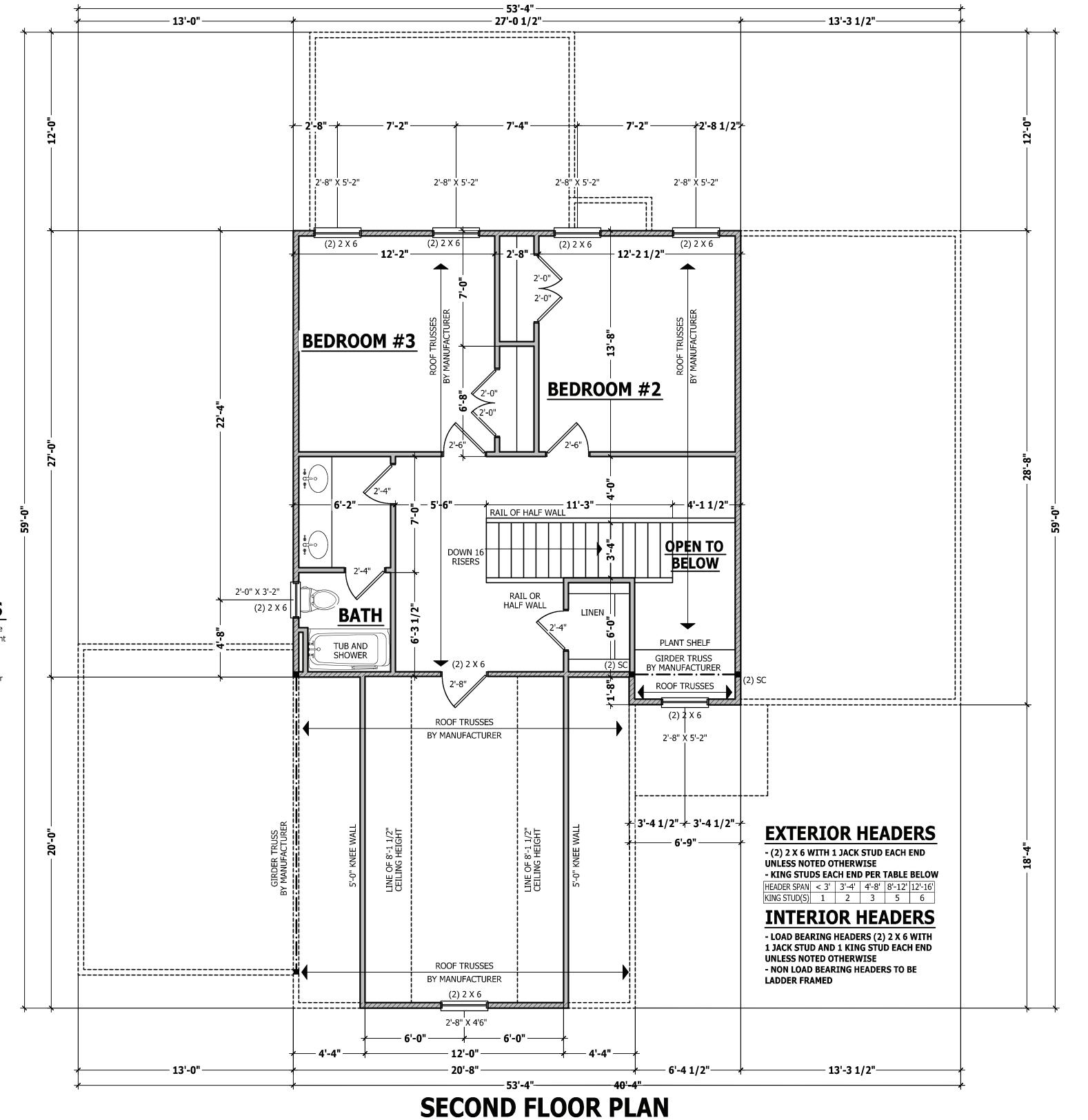
### **SECTION R807**

**R807.1 Attic access.** An attic access opening shall 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

### 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.



SCALE 1/4" = 1'-0"

VER

PURCHASER MUST VERIFY ALL EFORE CONSTRUCTION BEGINS

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PROCEDURES.

CODES AND CONDITIONS MAY

DESIGNER, ARCHITECT OR IGINEER SHOULD BE CONSULTED

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**PLAN** 

FLOOR

ECOND

SQUARE FOOTAGE HEATED

TOTAL UNHEATED GARAGE FRONT PORCH PATIO

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SCALE 1/4" = 1'-0"

Z:\Builder\Southern Built Homes, LLC\200310B Avery\200310B Avery Left.aec

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**ROOF PLAN AVERY** 



 SQUARE FOOTAGE

 HEATED

 FIRST FLOOR
 1296 SQ.FT.

 SECOND FLOOR
 917 SQ.FT.

 TOTAL
 2213 SQ.FT.

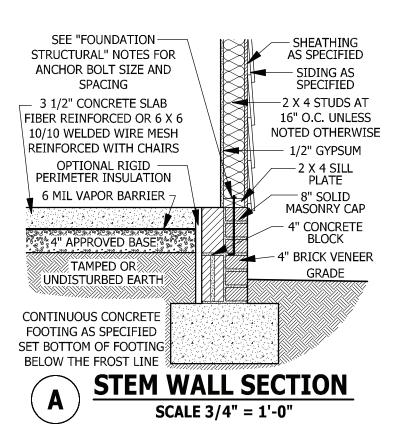
 UNHEATED
 673 SQ.FT.

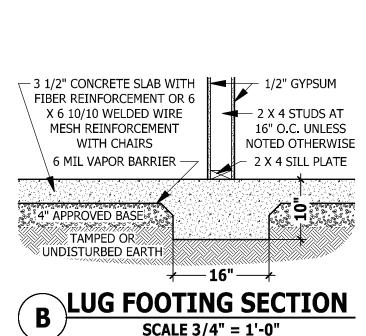
GARAGE FRONT PORCH PATIO TOTAL

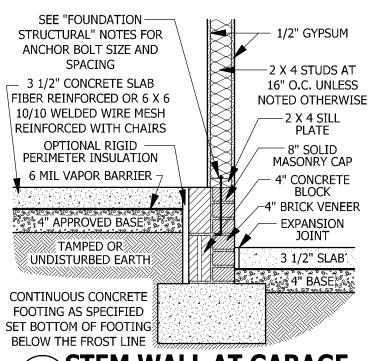
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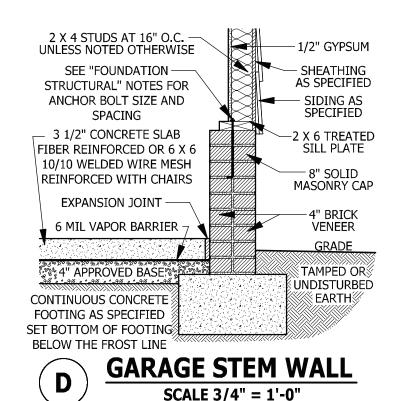
**PAGE 7 OF 8** 

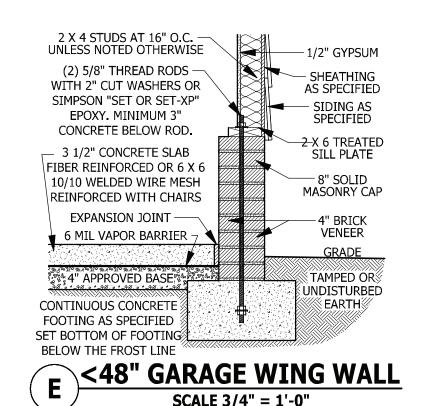






STEM WALL AT GARAGE SCALE 3/4" = 1'-0'



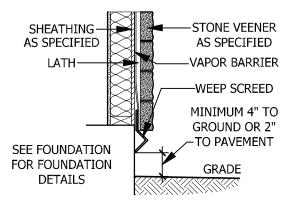


## **CARBON MONOXIDE ALARMS**

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 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

**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



**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 below the foundation plate line on exterior stud walls in accordance with ASTM C 926. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth 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.

## **SMOKE ALARMS**

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 and alarm 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

**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:

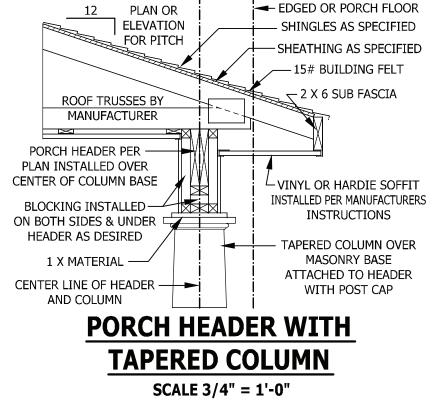
1. In each sleeping room,

2. Outside each separate sleeping area in the immediate vicinity of

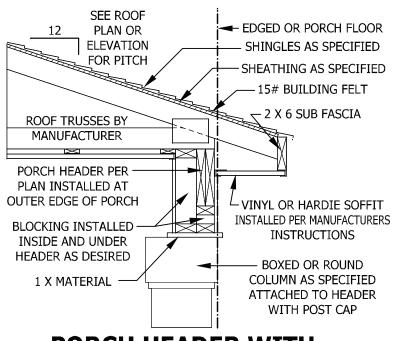
3. On each additional *story* of the *dwelling*, including *basements* and habitable attics (finished) but not including crawl spaces, uninhabitable (unfinished) attics and uninhabitable (unfinished) attic-stories. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less 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.



SEE ROOF



## **PORCH HEADER WITH BOXED OR ROUND COLUMN**

SCALE 3/4" = 1'-0"

## **STAIRWAY NOTES**

R311,7

R311.7.2 Headroom. The minimum headroom 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 adiacent treads.

R311.7.4.2 Tread depth. The minimum tread depth shall be 9 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 shall have a minimu 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 minimum tread depth of 4 inches (102 mm) at any point.

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 continuous run of treads or flight with four or more risers. R311,7,7,1 Height, Handrail height, measured vertically from the sloped

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 lowest tread.

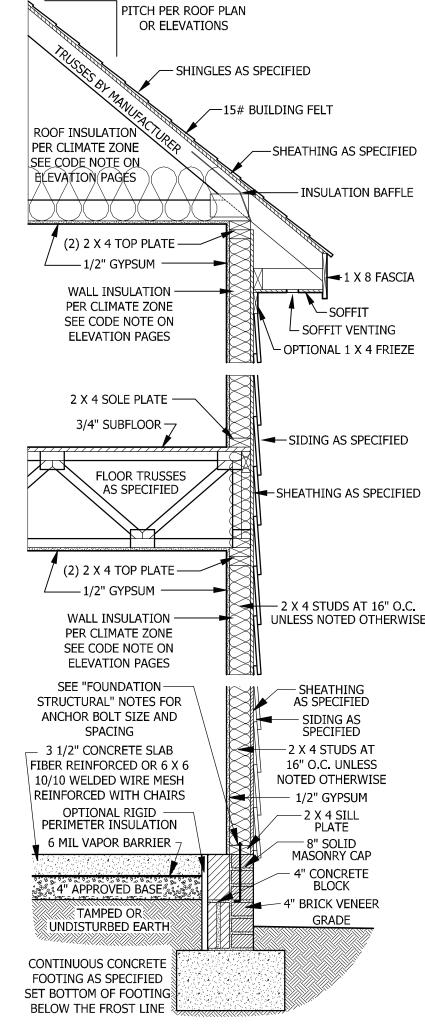
2. When handrail fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

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 riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 11/2 inch (38 mm) between the wall and the handrails.

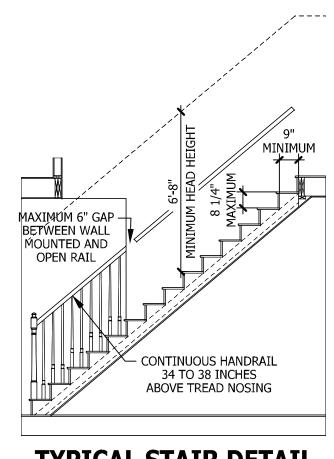
Exceptions: 1. Handrails shall be permitted to be interrupted by a newel post.

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



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

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SQUARE FOOTAGE HEATED

FIRST FLOOR SECOND FLOOR

UNHEATED

GARAGE FRONT PORCH

PURCHASER MUST VERIFY ALL EFORE CONSTRUCTION BEGINS

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DETAIL

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