

ชีดแอนสม แสสเขาสมอังเหมือแนะออกกว่า เป็นได้ต่อเสีย (INFee

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# PLANS DESIGNED TO THE **2012 NORTH CAROLINA STATE RESIDENTIAL BUILDING CODE**

CLIMATE ZONE	ZONE 3	ZONE 4	ZONE 5		
FENESTRATION U-FACTOR	0.35	0.35	0.35		
SKYLIGHT U-FACTOR	0.65	0.60	0.60		
GLAZED FENESTRATION SHGC	0.30	0.30	0.30		
CEILING R-VALUE	30	38	38		
WALL R-VALUE	13	15	19		
FLOOR R-VALUE	19	19	30		
* BASEMENT WALL R-VALUE	10/13	10/13	10/13		
** SLAB R-VALUE	0	10	10		
* CRAWL SPACE WALL R-VALUE	5/13	10/13	10/13		
* "10/13" MEANS R-10 SHEATHING INSULATION OR R-13 CAVITY INSULATION					

\*\* INSULATION DEPTH WITH MONOLITHIC SLAB 18" 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 100 MPH, 3 SECOND GUST (85 FASTEST MILE) EXPOSURE "B"

DESIGN PRESSURES FOR DOORS AND WINDOWS POSITIVE AND NEGATIVE IN PSF						
	MEAN ROOF HEIGHT (FT)					
VELOCITY (MPH)	15	25	35			
90	15	17	19			
100	20	23	25			

ASSUMED MEAN ROOF HEIGHT 14'-6"

# **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.

# **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 = 2,460 SQ.FT. NET FREE CROSS VENTILATION NEEDED:

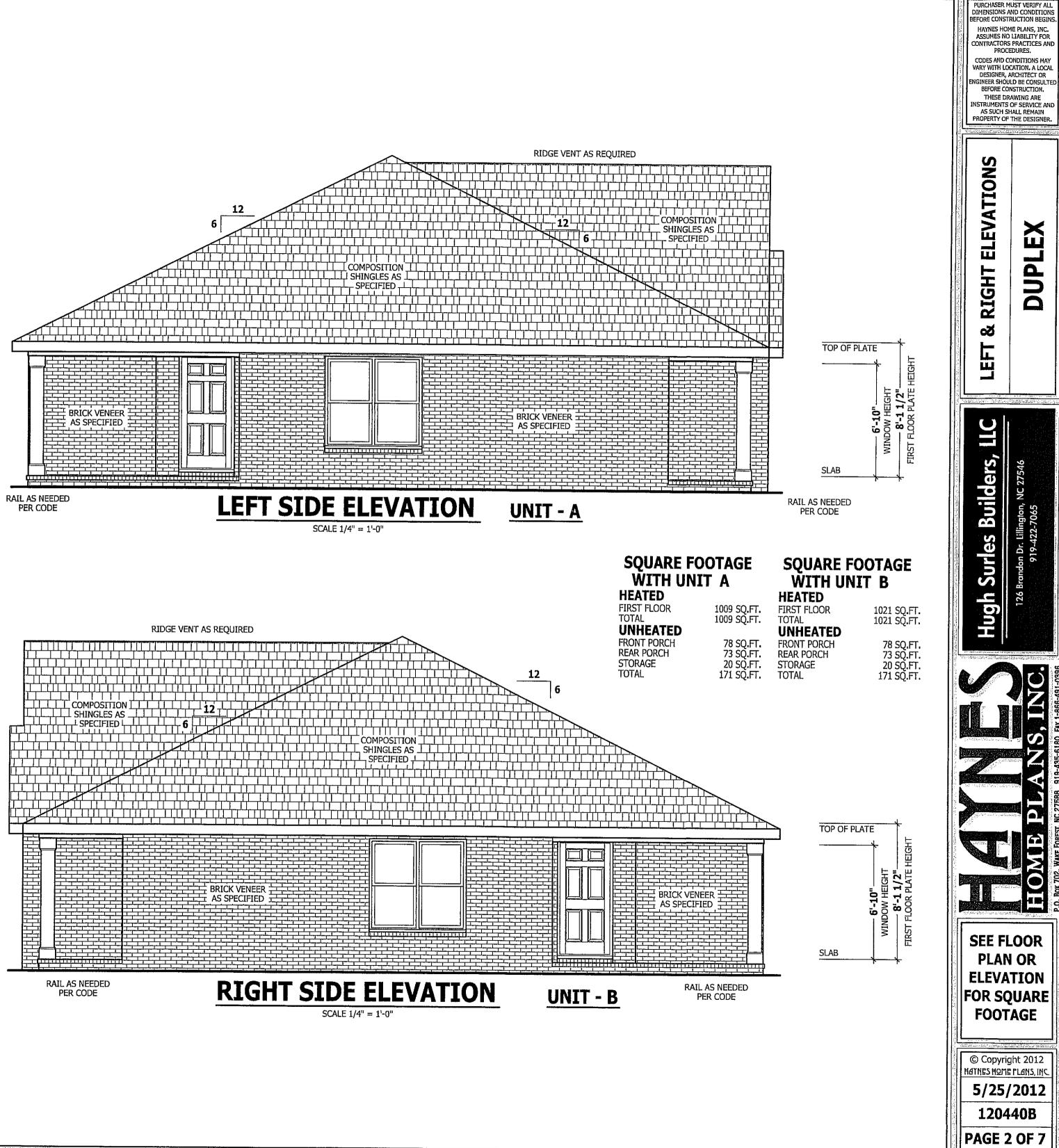
WITHOUT 50% TO 80% OF VENTING 3'-0" ABOVE EAVE = 16.4 SQ.FT. WITH 50% TO 80% OF VENTING 3'-0" ABOVE EAVE; OR WITH CLASS I OR II VAPOR RETARDER ON WARM-IN-WINTER SIDE OF CEILING = 8.2 SQ.FT.

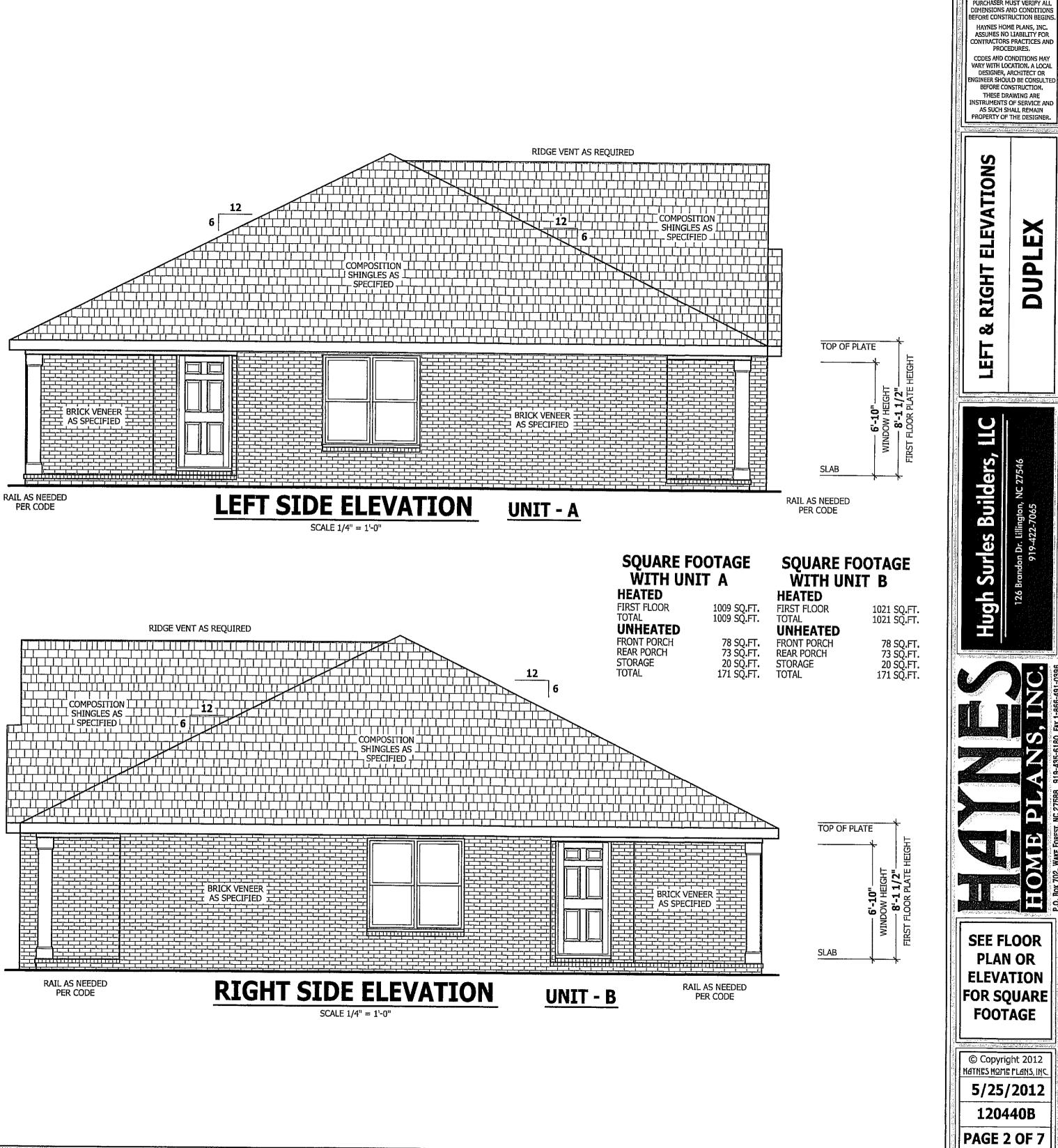
# **AIR LEAKAGE**

## Section N1102.4

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.





# FOUNDATION STRUCTURAL

1/2" GYPSUM-

- 3 1/2" CONCRETE SLAB WITH FIBER REINFORCEMENT OR 6

X 6 10/10 WELDED WIRE MESH REINFORCEMENT

WITH CHAIRS

2 X 4 TREAD SILL PLATE

-6 MIL VAPOR BARRIER

4 CRUSHED STONE

UNDISTURBED

A BRICK STEM WALL SECTION

SCALE 1/2" = 1'-0"

1/2" DIAMETER ANCHOR

EMBEDDED 7" MINIMUM

TWO BOLTS PER SILL

WEEP HOLES

- 8" CONCRETE BLOCK FILL TOP CORE SOLID

- 4" BRICK VENEER - PERIMETER INSULATION

CONTINUOUS CONCRETE

BELOW THE FROST LINE

GRADE

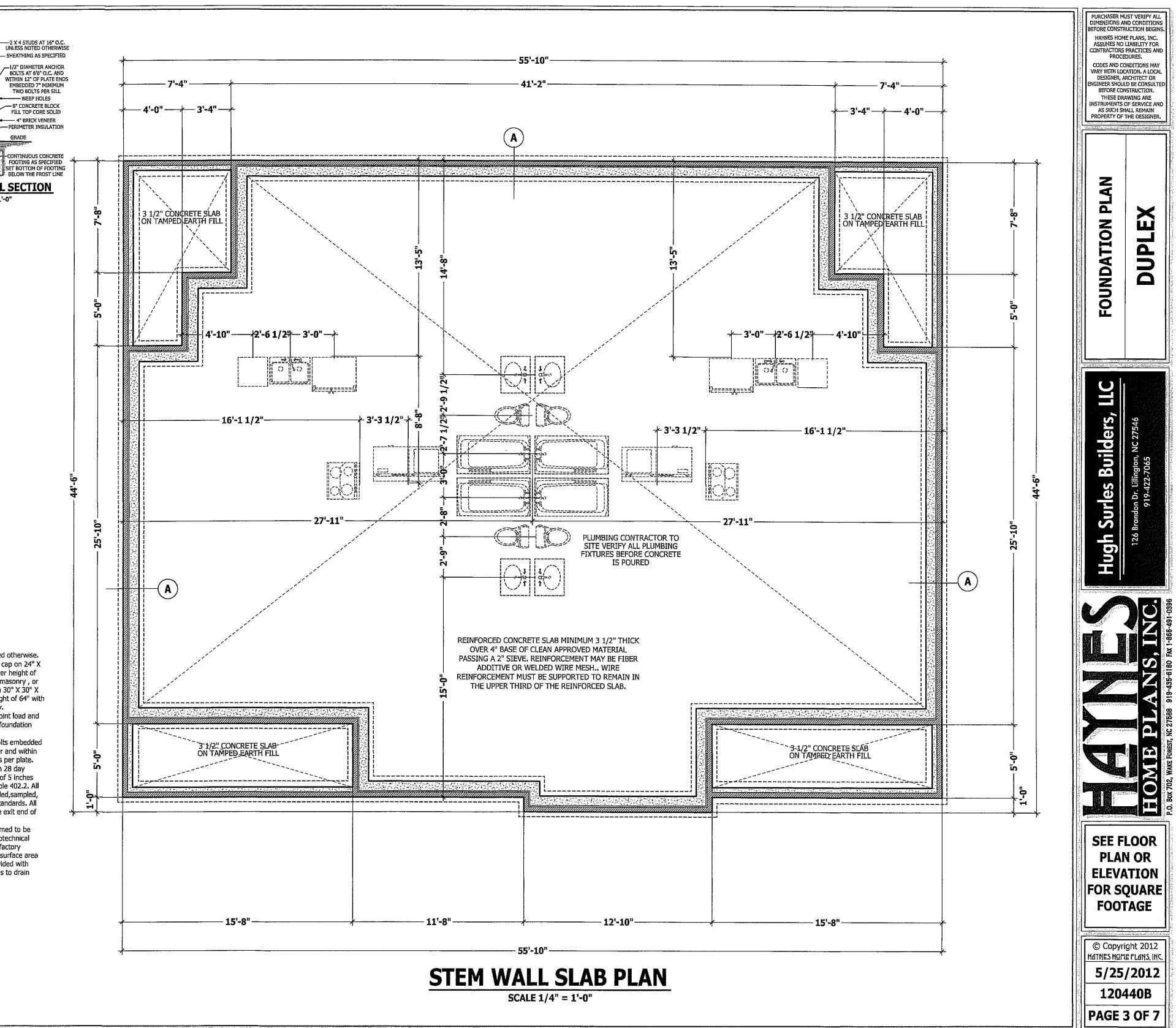
100 mph wind zone (1 story)

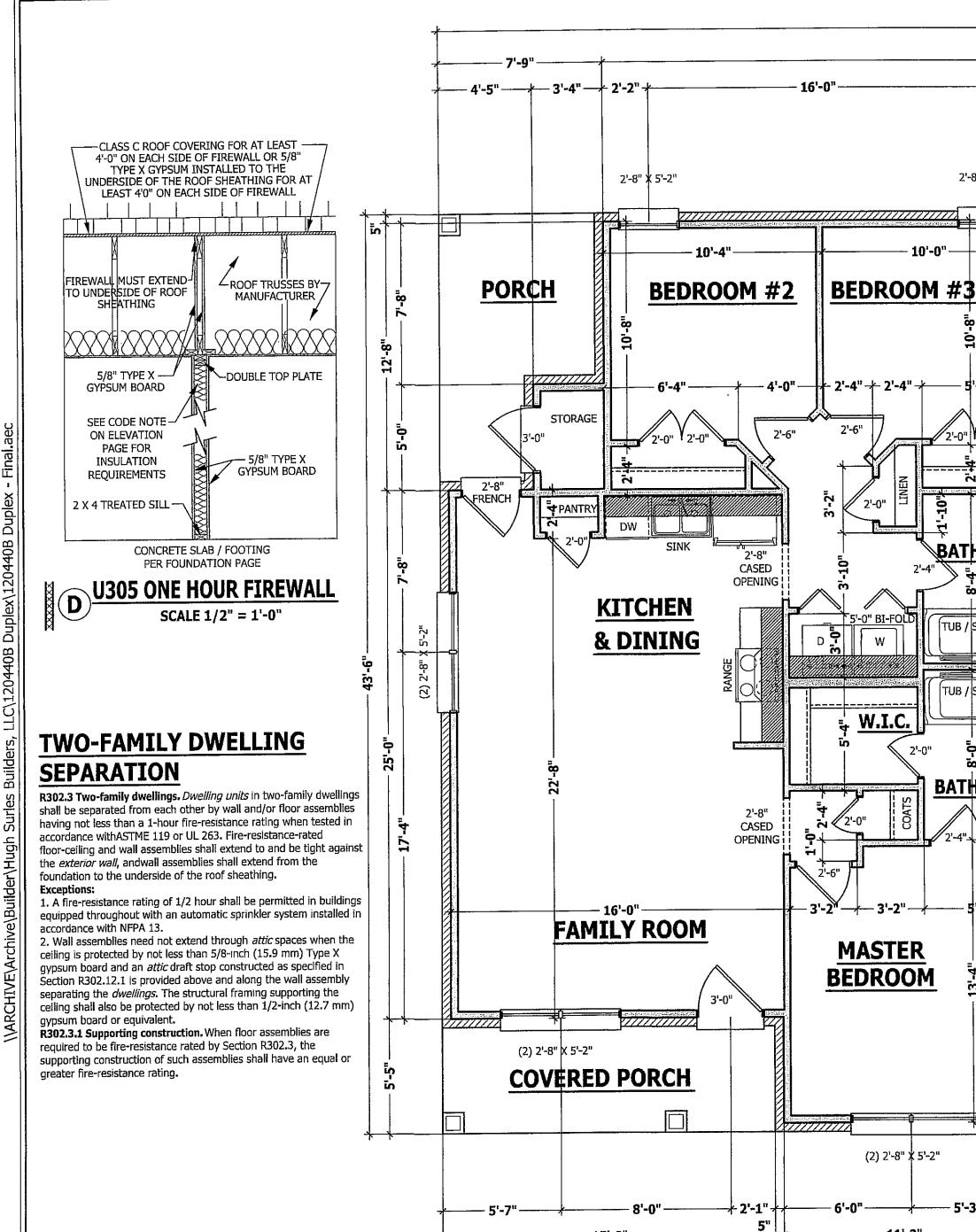
GIRDERS: (3) 2 X 10 SPF girder unless noted otherwise. PIERS: 8" X 16" piers with 8" solid masonry cap on 24" X 24" X 10" concrete footing with maximum pier height of 32" with hollow masonry and 80" with solid masonry , or 16" X 16" piers with 8" solid masonry cap on 30" X 30" X 10" concrete footing with maximum pier height of 64" with hollow masonry and 160" with solid masonry.

POINT LOADS: Main designates significant point load and should have solid blocking to pier, girder or foundation wall.

ANCHORS BOLTS: 1/2" diameter anchor bolts embedded minimum 7" and at maximum 6'-0" on center and within 12" of plate ends. Minimum two anchor bolts per plate. CONCRETE: Concrete shall have a minimum 28 day strength of 3000 psi and a maximum slump of 5 inches unless noted otherwise. Air entrained per table 402.2. All concrete shall be proportioned, mixed, handled, sampled, tested, and placed in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.

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.



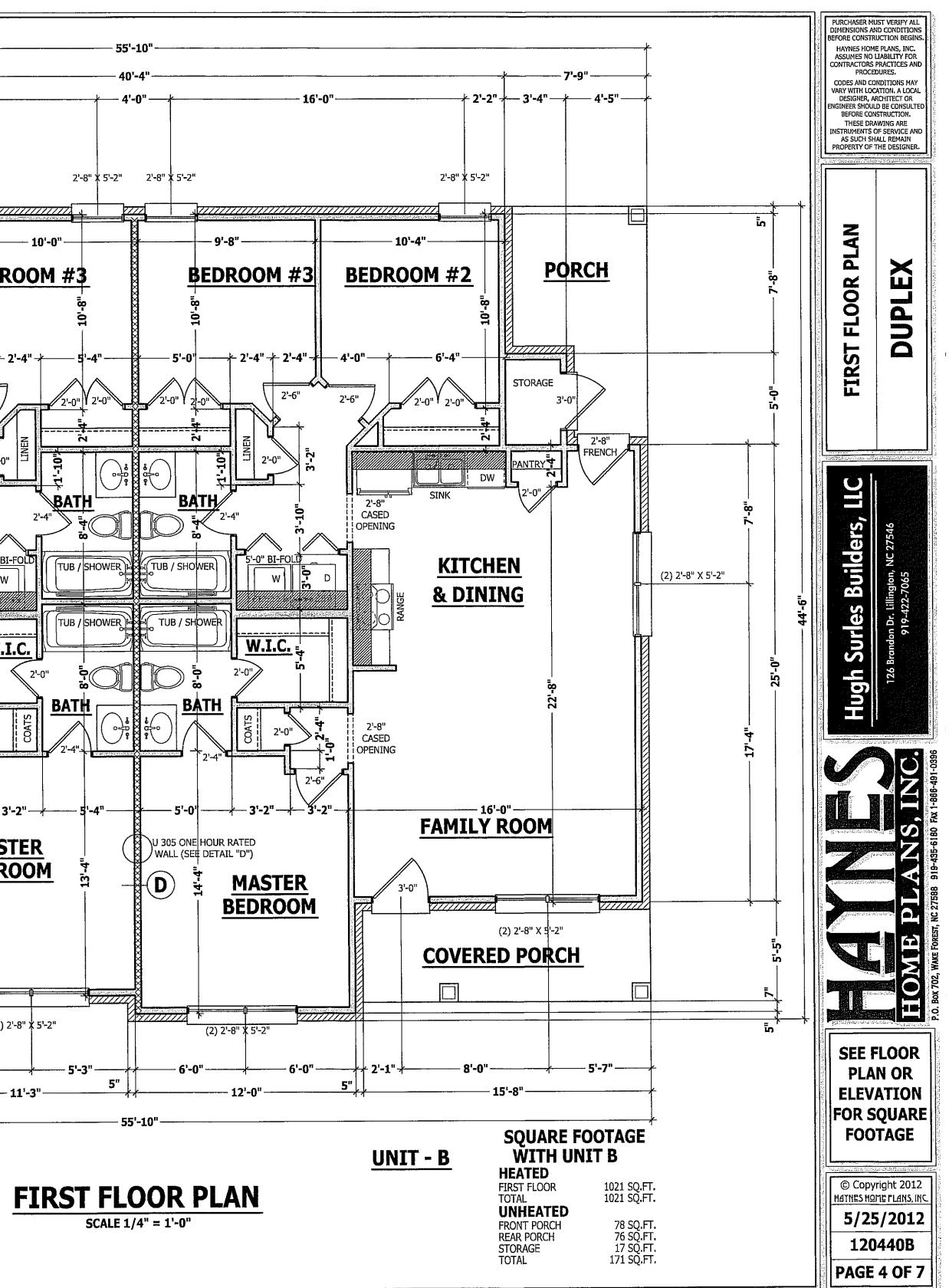


## SQUARE FOOTAGE WITH UNIT A

HEATED FIRST FLOOR TOTAL UNHEATED FRONT PORCH REAR PORCH STORAGE TOTAL

17 SQ.FT. 171 SQ.FT. 15'-8

<u>UNIT - A</u>



# **BRACE WALL PANEL METHODS**

SEE TABLE 8602.10.1.2(1)

SEE TABLE R002.10.1.2(1)					
	METHOD				
CS	3/8" CONTINUOUS SHEATHING AND 1/2" DRYWALL				
	BLOCK ALL PANEL EDGES				
CSX2	3/8" CONTINUOUS SHEATHING BOTH SIDES AND 1/2" DRYWALL				
	BLOCK ALL PANEL EDGES				
CS-PF	CONTINUOUS PORTAL FRAME, BLOCK ALL PANEL EDGES AND				
	CONSTRUCT PER SECTION R602.10.4.1.1				
WSP	3/8" WOOD STRUCTURAL PANELS				
	BLOCK ALL PANEL EDGES				
GB	1/2" GYPSUM BOARD ON ONE SIDE				
GB X 2	1/2" GYPSUM BOARD ON BOTH SIDES				
GBX2 (4")	1/2" GYPSUM BOARD ON BOTH SIDE BLOCKED				
	AT ALL PANEL EDGES AND NAILED @ 4" ON CENTER				
PFH	INTERMITTENT PORTAL FRAME WITH HOLDOWNS R602.10.3.3				
PFG	INTERMITTENT PORTAL FRAME AT GARAGE R602.10.3.4				

# **STRUCTURAL NOTES**

All construction shall conform to the latest requirements of the 2012 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.

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DESIGN LOADS	LIVE LOAD	DEAD LOAD	DEFLECTION
USE	(PSF)	(PSF)	<b>(</b> Щ)
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) and all treated lumber shall be SYP #2 (Fb = 975 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 and 6" x 4" x 5/16" steel angle with 6" leg vertical for spans up to 9'-0" unless noted otherwise. **CONCRETE:** Concrete shall have a minimum 28 day strength of 3000 psi and a maximum slump of 5 inches unless noted otherwise. Air entrained per table 402.2. All concrete shall be proportioned, mixed, handled, sampled, tested, and placed in accordance with ACI standards. All samples for pumping shall be taken from the exit end of the pump.

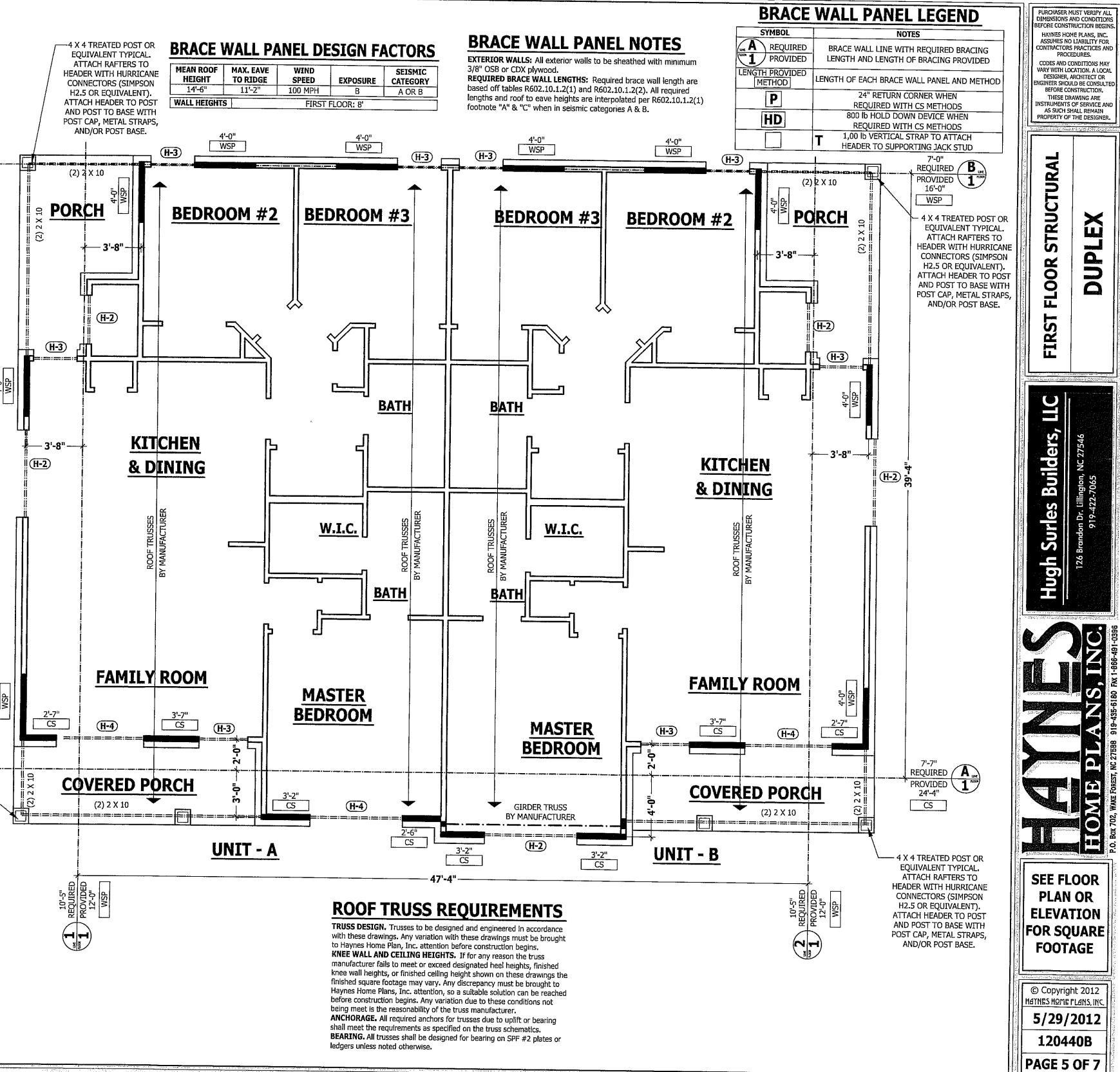
SOILS: Allowable soil bearing pressure assumed to be 2000 PSF. The contractor must contact a geotechnical engineer and a structural engineer if unsatisfactory subsurface conditions are encountered. The surface area adjacent to the foundation wall shall be provided with adequate drainage, and shall be graded so as to drain surface water away from foundation walls.

> 4 X 4 TREATED POST OR EQUIVALENT TYPICAL. ATTACH RAFTERS TO HEADER WITH HURRICANE CONNECTORS (SIMPSON H2.5 OR EQUIVALENT). ATTACH HEADER TO POST AND POST TO BASE WITH POST CAP, METAL STRAPS, AND/OR POST BASE.

## **HEADER SCHEDULE**

COMMON LOAD BEARING HEADERS							
	SIZE:	COLUMNS:					
H-1	(2) 2 X 4	1 JACK 1 KING					
<u>H-2</u>	H-2 (2) 2 X 6 1 JACK 1 KING						
<u>H-3</u>	(2) <u>2 X 8</u>	2 JACKS 1 KING					
<u>H-4</u>	(2) 2 X 10	2 JACKS 1 KING					
H-5	H-5 (2) 2 X 12 3 JACKS 1 KING						
H-6 (2) 1.75" X 3 JACKS 1 KING 9.25" LVL							
ALL NON LOAD BEARING HEADERS							

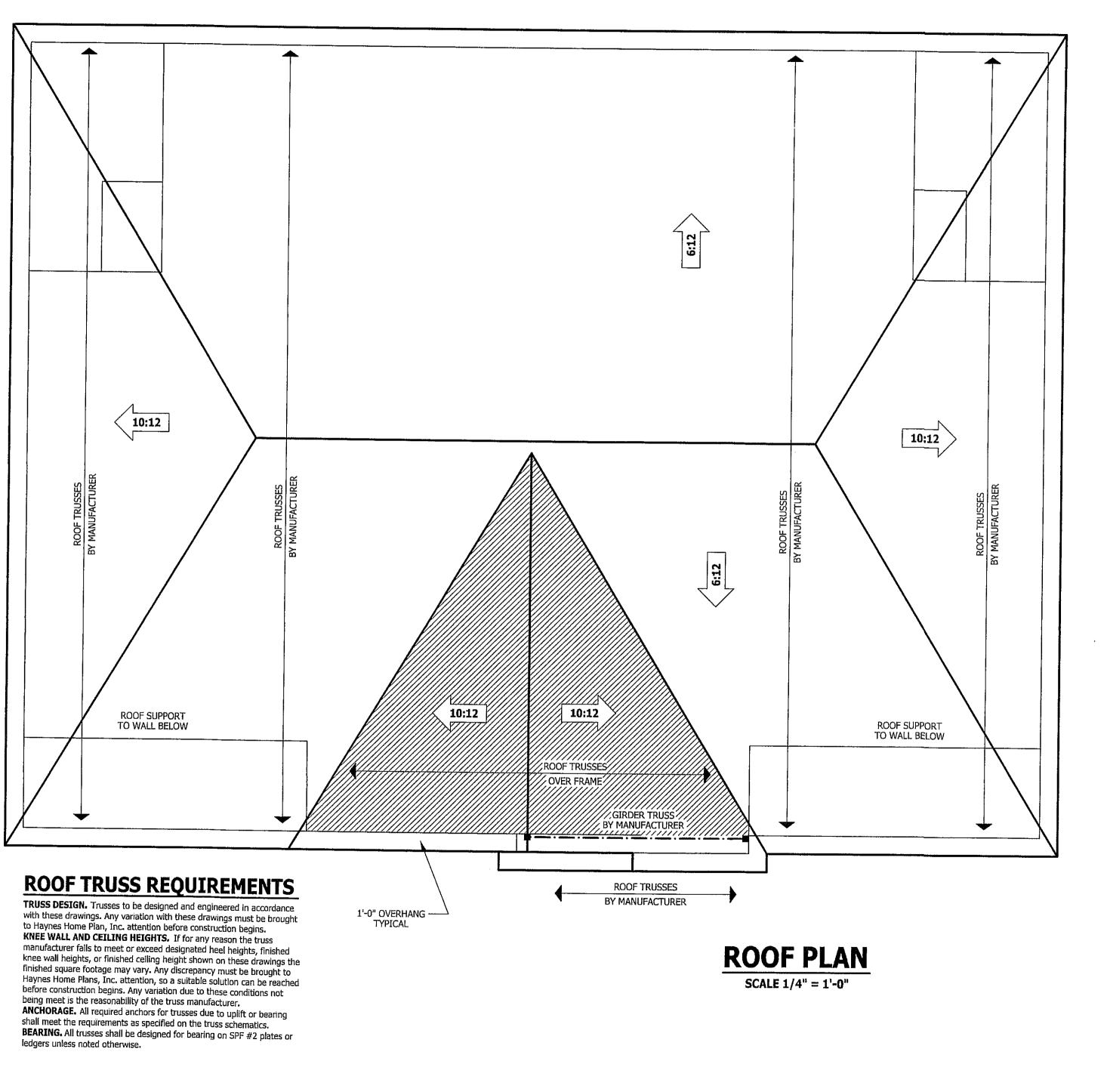
TO BE LADDER FRAMED OR (2) 2 X 4 WITH 1 JACK STUD AND 1 KING STUD UNLESS NOTED OTHERWISE



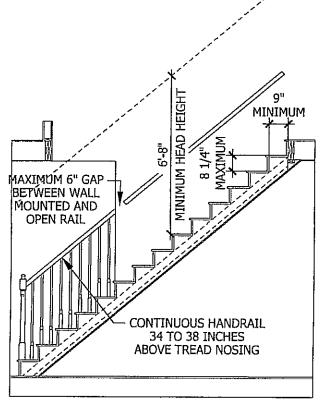
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## **EXTERIOR WINDOWS AND DOORS** SECTION R612

R612.1 General. This section prescribes performance and construction requirements for exterior windows and doors installed in walls. Windows and doors shall be installed and flashed in accordance with the fenestration manufacturer's written installation instructions. Window and door openings shall be flashed in accordance with Section R703.8. Written installation instructions shall be provided by the fenestration manufacturer for each window or door.

R612.2 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4 inch (102 mm) diameter sphere where such openings are located within 24 inches (610 mm) of the finished floor. Exceptions:

1. Windows whose openings will not allow a 4-inch diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position. 2. Openings that are provided with window fall prevention devices that comply with Section

R612.3. 3. Openings that are provided with fall prevention devices that comply with ASTM F 2090. 4. Windows that are provided with opening limiting devices that comply with Section R612.4. R612.3 Window fall prevention devices. Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

## **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 adjacent 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 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

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 risers.

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).

Exceptions 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.

# **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.

# **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 o 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 NFPA 72, Exception: Where smoke alarms are provided meeting the requirements of Section R314.4.

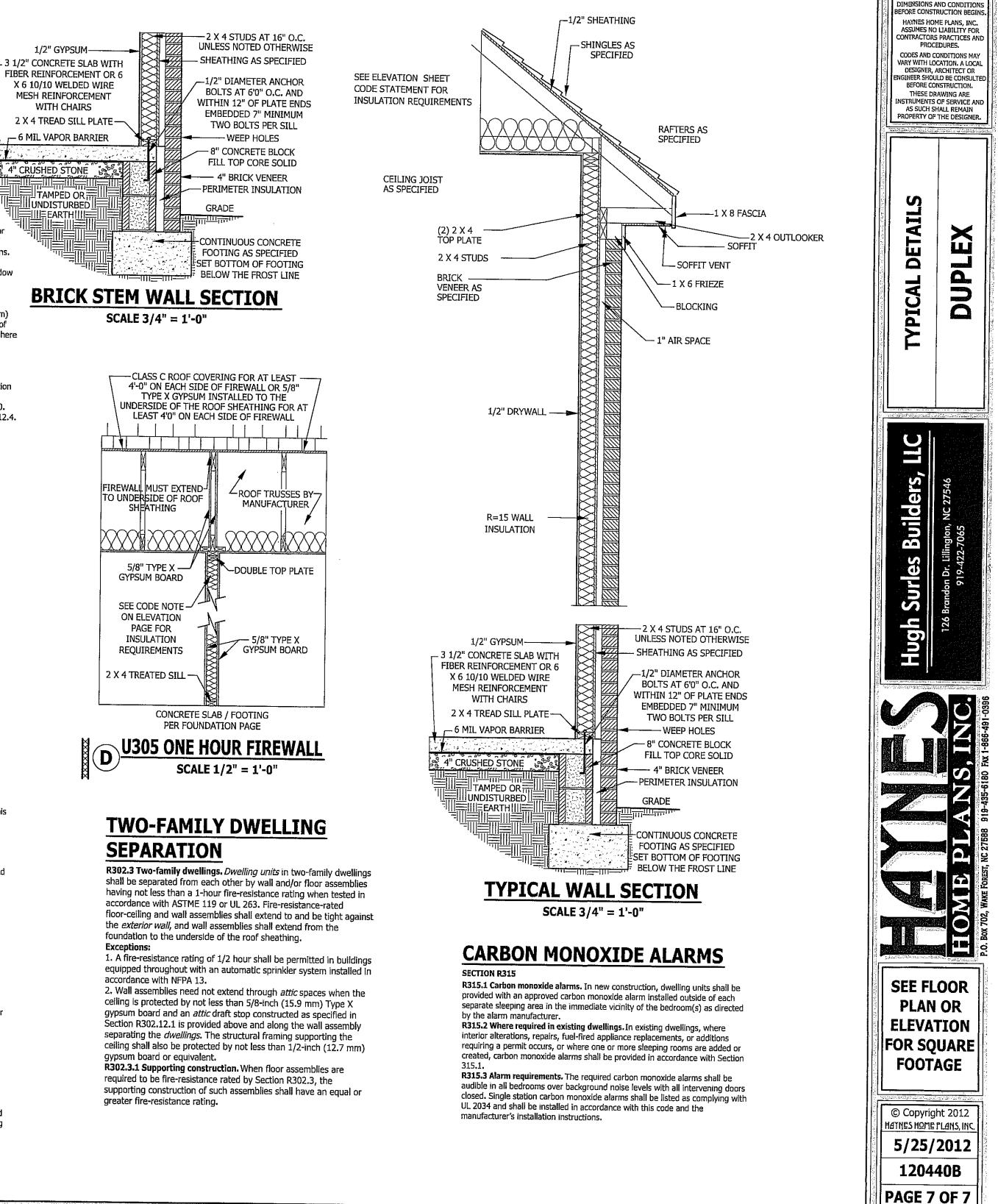
R314.3 Location. Smoke alarms shall be installed in the following locations: 1. In each sleeping room.

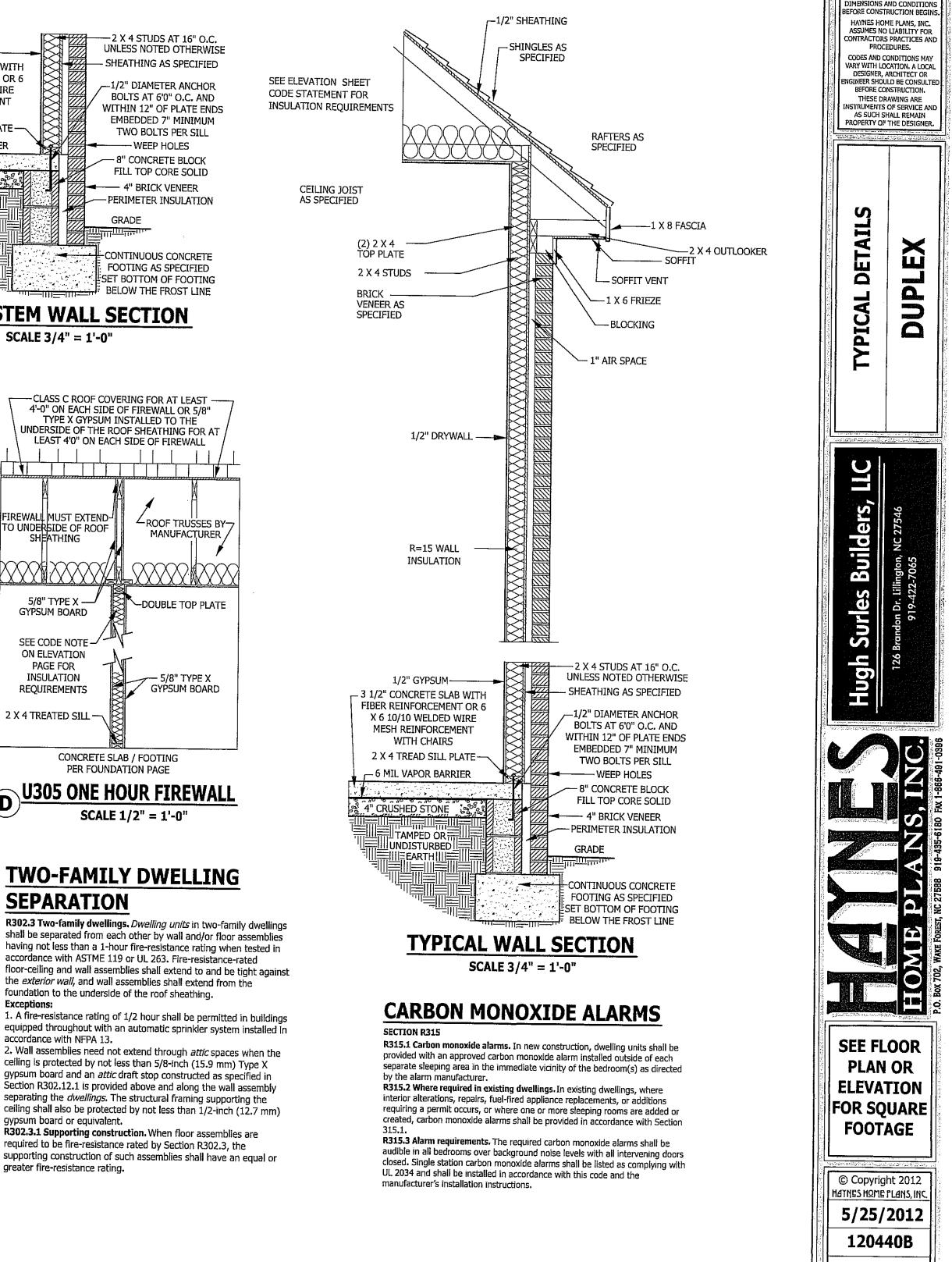
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.

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 is less than one full story below the upper level.

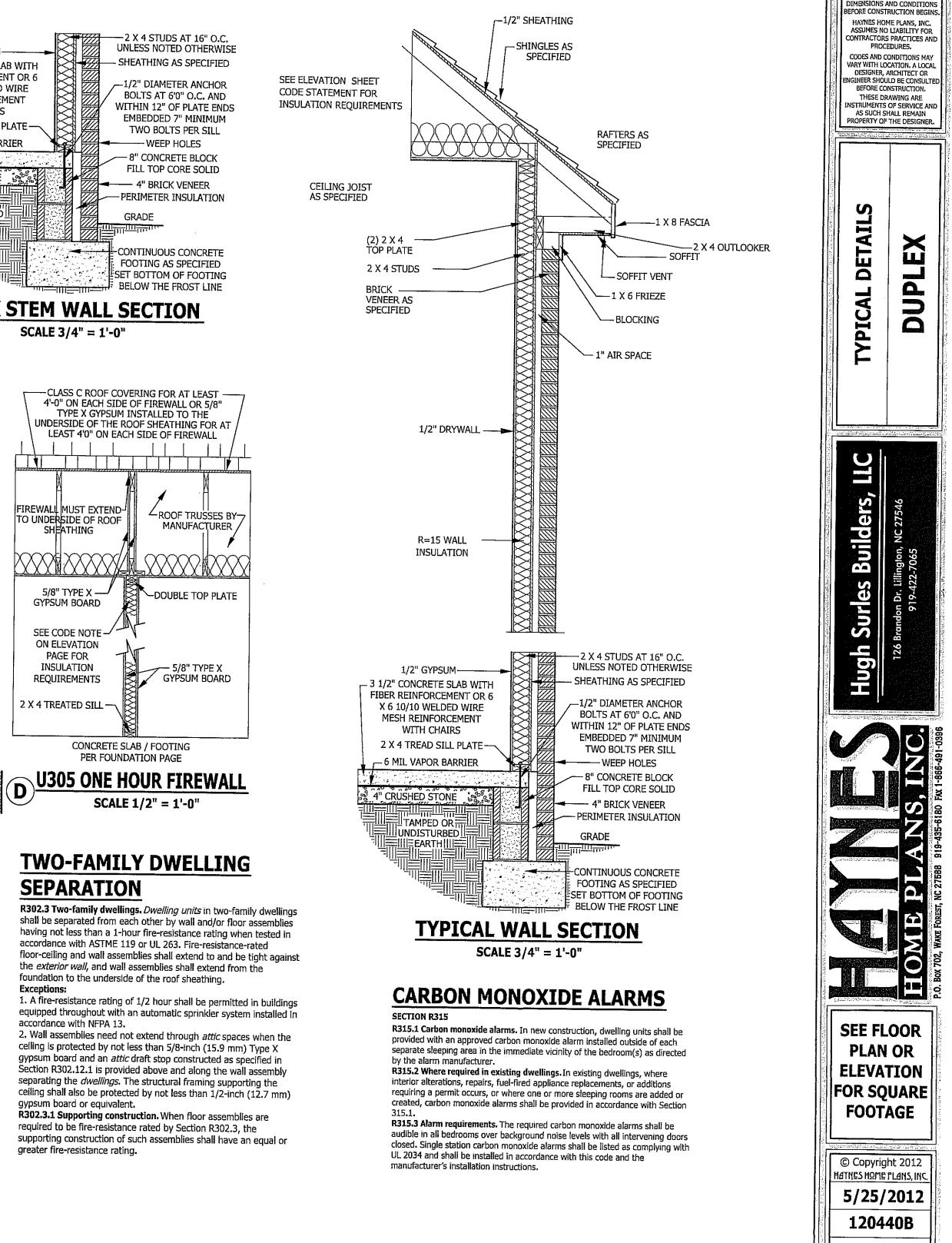
When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

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.



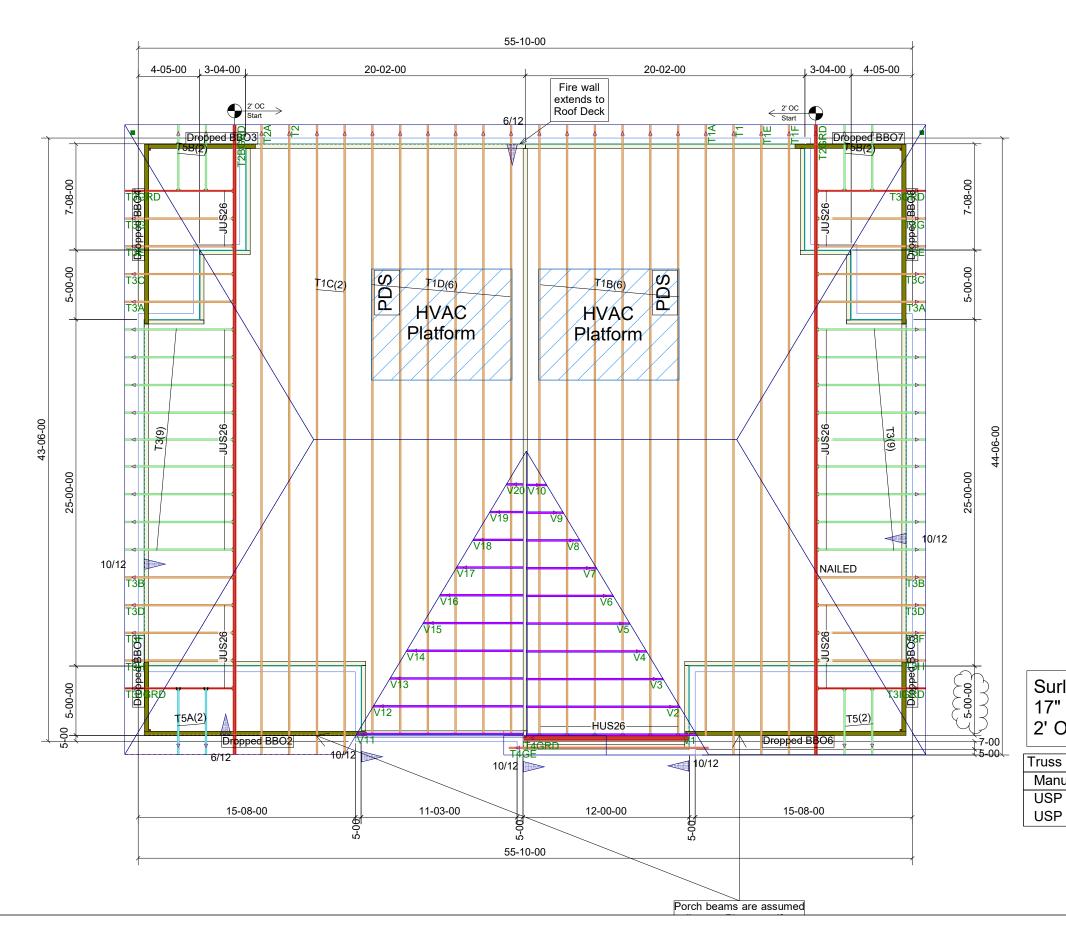


PURCHASER MUST VERIFY ALL

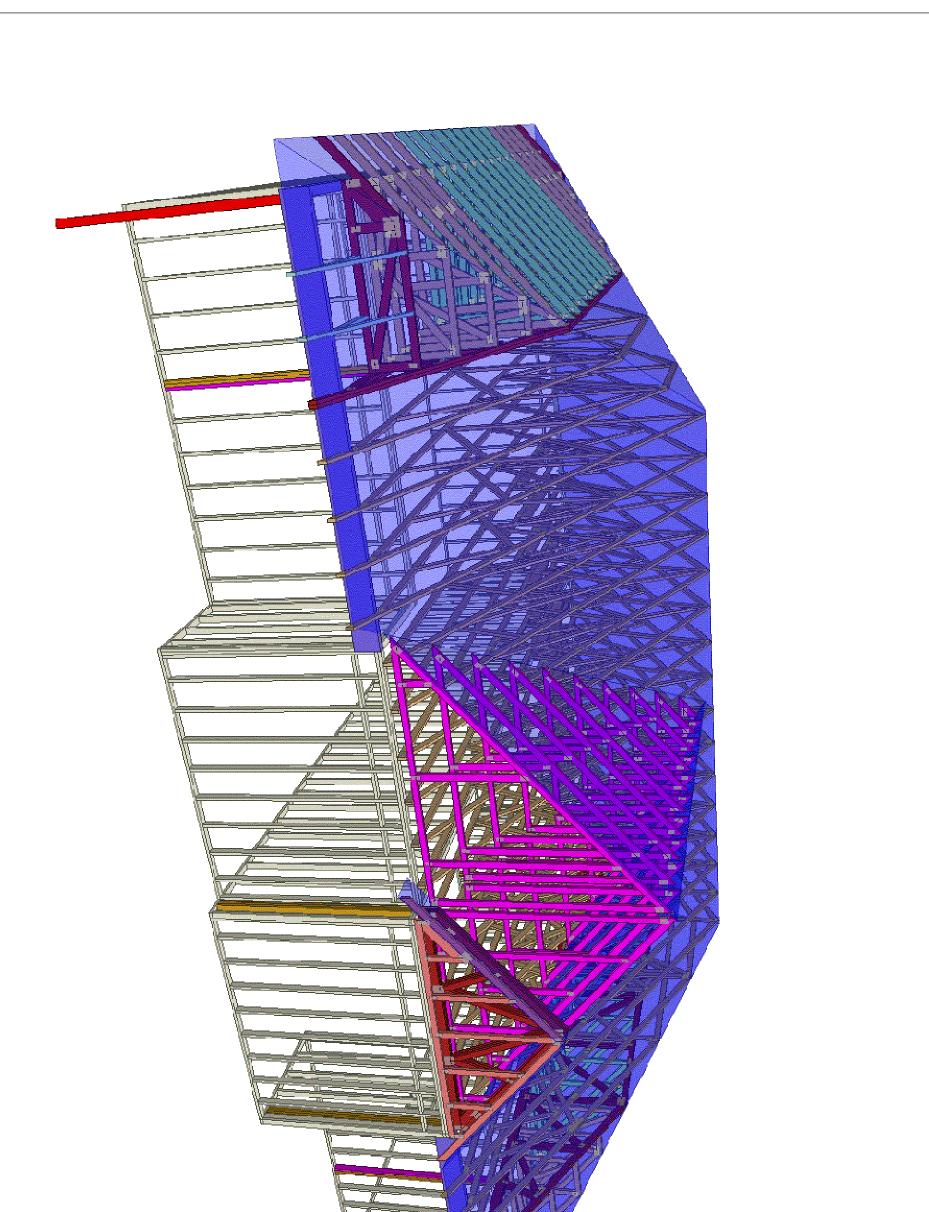


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## THIS LAYOUT IS TO BE USED AS A TRUSS PLACEMENT GUIDE ONLY. PLEASE REFER TO BUILDING PLANS FOR BUILDING CONSTRUCTION AND DETA SUCH AS PLUMBING OR DUCT DROPS.



AILS,	N	Notes: I. Exterior dimensions shown a assumed to be:     □ Out-to-out of stud     Out-to-out of sheathing     2. Adjust truss locations as     needed for plumbing and     mechanical clearance. Unless     otherwise noted, trusses may	6			Q-2001273	
		shifted as long as O.C. spacin shown is not exceeded. 3. Do not cut, drill, or otherwise damage any part of any truss without prior approval from Po Truss. 4. Do not approve drawings if a information herein is unclear. Once ordered trusses will be fabricated as approved. 5. Please contact Peak Truss Builders with any questions. are available to help any way we can. We can be reached 919-545-5555 or sales@peaktruss.com Roof Truss Loading per 2018 NC Residential Code Top Chord Live Load 20# Top Chord Live Load 0# Bottom Chord Live Load 0#	ng eak ny We y lat PSF		Surles Duplex	Bunnlevel NC	
		Trusses are designed for addition storage load wherever a 42"x24" box will fit between the webs.	nal nd of wings let n.	Date Quoted:		Designer: <b>Aron Meeks</b>	
les Duplex OH					PBS - Raleigh 10405 Chanel Hill Rd	Morrisville, NC 27577	
Connector Tot uf Product HUS26 JUS26	al List Qty 7 36				Peak Truss	PO Box 340, New Hill, NC 27562	



Peak Truss Builders, LLC PO Box 340, New Hill, NC 27562	PBS - Raleigh 10405 Chapel Hill Rd. Morrisville,NC 27577	Date Quoted: Designer: Aron Meeks	Surles Duplex Bunnlevel NC	Job # Q-2001273