NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes
and is subject to field inspection and verification.

APPROVED

Limited building only review

Permit holder responsible for full compliance with the code

06/17/2020





SPRUCE

DIV-COMM-LOT-UNIT		
COMM-LOT		
STREET ADDRESS		APT. NO.
CITY	STATE	ZIP

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NVR, Inc. 5285 Westview Drive, Suite 100 Frederick, MD 21703

first floor square for	OTAGE
DESCRIPTION	TOTAL 5Q. FT.
IST FLOOR	1296 SF
	1296 SF
GARAGE SQUARE FOOT	 'AGE
DESCRIPTION	TOTAL SQ. FT.
TWO CAR FRONT ENTRY GARAGE W/ FSA, FCA	376 SF
	376 SF
TOTAL FINISHED SQUARE FO	
DESCRIPTION	TOTAL 5Q. FT.
IST FLOOR	1296 SF

SET - VERSION
SPCOO - O

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GENERAL

- These plans and specifications are the sole property of NVR. Any unauthorized use of these plans without the written consent of NVR is prohibited.
- 2. These plans are subjected to modification as necessary to meet code requirements or to facilitate mechanical/plumbing installations or to incorporate design
- 3. These plans are not to be scaled for construction purposes. Dimension lines and notes supersede all scale references.
- 4. Single Family Attached/Detached Automatic residential fire sprinkler systems shall be installed in accordance with NCRBC P2904 or NFPA I3D where required.
- 5. This note sheet only covers major code requirements. The plans are intended to
- conform to all current applicable codes or engineering design in accordance with Section 301.1.3.

CODE ANALYSIS

I. This note sheet only covers major code requirements. The plans are intended to conform to all current applicable codes including, but not limited to:

NCRC 2018, NCMC 2018, NCPC 2018, NCFGC 2018, NEC 2017 w/ NC Amendments, NCEC 2018, NCFPC 2018

2. Use Group: R-3 3. Constr. Type: V-B

4. Max. Stories: 3

ENERGY AND MECHANICAL

Insulation requirements per 2018 NCRC Chapter II, Energy Efficiency, or Chapter 4 of the 2018 North Carolina Energy Conservation Code (NCECC), or Chapter 4 of the 2015 International Energy Conversation Code (IECC), Residential Energy Efficiency by the prescriptive method. See NVR "Standard Energy Package" for field procedures and details.

R-values shown below are the minimum used.

CLIMATE ZONE	FENESTRATION U-FACTOR	GLAZED FENESTRATION SHGC	CEILING R-VALUE	FRAME WALL R-VALUE 2x4 / 2x6	FLOOR R-VALUE	BASEMENT WALL R-VALUE UNFIN. / FIN.	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
3	<i>0.3</i> 5	0.30	38	15 / 19	19	5/15	NA.	5/15
4	0.35	0.30	38	15 / 14	19	10 / 15	10	10 / 15

2. All HVAC equipment is sized based on ACCA Manual J calculations. Ductwork is sized using ÁCCA Manual D. Minimum efficiencies of equipment are as listed below. Upgrades for improved energy performance may be installed.

- Air conditioner - 14 SEER - Gas furnace - 92% / 96% - Heat Pump - 8.2 HSPF

. Winter interior design temperatures shall be 70°F and summer interior design temperatures shall be 75°F. Exterior design temperatures vary based on geographic location and are listed on the Manual J calculations.

4. Roof ventilation calculations are based on the following specifications:

Minimum 18 sq. in. of vent per linear foot Minimum 9.9 sq. in. of vent per linear foot Roof jack (box vent): Minimum 45 sq. in. of vent per unit

5. See NVR "Standard Energy Package" for field procedures and details

DESIGN LOADS

Table of Loads for House Structure. Per Table 3015

Floor Living Areas	- 40# P.S.F. (LIVe)
-	- 10# P.S.F. (Dead) unless noted otherwise by calculations
Floor Sleeping Areas	- 30# P.S.F. (Live) unless noted otherwise by calculations
	- 10# P.S.F. (Dead) unless noted otherwise by calculations
Garage Floors	- 50# P.S.F. (Live)
-	- 50# P.S.F. (Dead)
Roof Areas - Top Chord	- 20# P.S.F. (Live)

- IO# P.S.F. (Dead) - Bottom Chord - 10# P.S.F. (Live) (Attics without storage) - 20# P.S.F. (Live) (Attics with limited storage) - IO# P.S.F. (Dead)

- 30# P.S.F. (Live) Habitable Attics - Areas up to 130 mph ultimate wind speed per Trusses Table R301.2(4)

- Exposure category 'B' - Areas up to 130 mph ultimate wind speed per Walls Table R301.2(4) Vult 115 mph 130 mph
Vasa 89 mph 101 mph

Note: Linear Interpolation between contour lines permitted. - 40# P.S.F. (Live)

- IO# P.S.F. (Dead) Allowable deflection of structural members per IRC Table R301.7

<u>Design Criteria</u>

Design Codes National Design specification for Wood Construction by National Forest

2. Specification for the Design Fabrication and Erection of Structural Steel for

<u>Buildings</u> by American Institute of Steel Construction. Materials:

Headers* Southern Pine (KD-19), No. 1 Grade Spruce-Pine-Fir, Stud Grade Spruce-Pine-Fir, Stud Grade Southern Pine (KD-19), No. 1 Grade

2x10 Hem-Fir (KD-19), No. 2 Grade or better (MCLIB & WWPA) 2x8 Southern Pine (KD-19), No. 1 Grade or better 2x10 Spruce-Pine-Fir (KD-19), No. 2 Grade or better (NLGA)

Where required, Laminated Veneer Lumber may be used per Engineering

** Structural Steel - A.S.T.M. A36

FOUNDATIONS

- I. All plain and reinforced concrete shall comply with requirements in ACI 318.
- 2. Concrete footings shall be poured a maximum 5" slump, 5 bag mix, and 2,500 psi minimum strength per Table R402.2. Concrete walls shall be poured a maximum 5" slump, 5 1/2-bag mix, and 3,000 psi minimum strength per Foundation Wall Design table below. Special soil and or wall height conditions may require a higher psi mix.
- 3. Walls and footings designed as unreinforced unless otherwise specified on foundation plans or details. Special soil and/or site conditions may require the addition of reinforcing.
- 4. Footing frost depth to be no less than 12" per R403.1.4 and Table R301.2(1).
- 5. Minimum Soil Bearing Capacity shall be 2,000 PSF per Table R401.4.1.
- 6. Interior slabs on grade (excluding garage slabs) to be minimum 3-1/2" concrete (may be represented on plans as nominal 4") over 4" sub-base, with vapor barrier (6-mil polyethylene) as required per Section 506 and minimum 2,500 PSI per Table R402.2.
- 7. Unconditioned crawl spaces shall have a minimum net area of ventilation not less than I square foot for each 150 square feet of area, unless the ground surface is covered by a Class I vapor retarder, in which case the minimum net area of ventilation shall not be less than I square foot for each 1,500 square feet of area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of the building, per R408.1.2.
- 8. Foundation drains shall be located per local codes and according to local site conditions. Drain discharge by gravity or mechanical means to conform with approved site plan and
- 9. The top course of block of foundation walls shall be semi-solid block or open cores of hollow
- block shall be filled with mortar. 10. Block piers to be solid block or mortar-filled hollow block.
- II. A poured concrete foundation wall designed to withstand an equivalent fluid weight of 30# per cubic ft. may be substituted where masonry units (block) are shown on plans.
- 12. Concrete and masonry foundation walls shall be dampproofed with min. 3/8" portland cement parging from footing to top of finished grade. The parging shall be covered with a coat of approved bituminous material applied at the recommended rate per **R406.1.**
- 13. Where required, concrete and masonry foundation walls shall be waterproofed with an approved membrane extending from footing to top of finished grade. The joints in the membrane shall be lapped and sealed with an adhesive compatible with the waterproofing membrane. Waterproofing to be in accordance with R406.2.
- 14. Non-structural garage slabs shall be nominal 3 1/2" thick. Structural garage slabs shall be nominal 4" thick. All garage slabs shall be 3,500 PSI air-entrained concrete on compacted / undisturbed soil per Table R402.2.
- 15. Foundation framing anchors shall be 1/2"x18" anchor bolts with 7" minimum embedment or Simpson Strong-Tie MASA / USP FA3 (16 gauge steel, galvanized) or equivalent set in concrete or arouted cell, I'-O" maximum from corners and spaced at a maximum of 6' o.c. and in the middle third of the width of the plate. For walls connecting offset braced wall panels, those 24" in length or shorter shall have min. (1) anchor strap and those 12" or shorter can be installed without anchor straps. Townhouses in seismic design category "C" shall require a .229" x 3" x 3" plate washer per R403.1.6.1 and maximum anchor bolt spacing for buildings over two stories shall be 4'.
- 16. Steel columns and bases shall be given a shop coating of rust-inhibitive paint or equivalent to provide corrosion resistance per R407.2.
- 17. For masonry veneers:

Per R703.8.4.1 - Corrugated sheet metal veneer ties shall be a minimum of No. 22 U.S. gauge by 7/8 Inch. Each tie shall be spaced not more than 32" o.c. horizontally and 24" o.c. vertically and shall support not more than 2.67 square feet of wall area. For townhouses in Seismic Design Category C and in wind areas of more than 30 pounds per square foot pressure, each tie shall support not more than 2 square feet of wall area.

Additional metal ties shall be provided around all wall openings greater than 16 inches (406 mm) in either dimension. Metal ties around the perimeter of openings shall be spaced not more than 3 feet (9144 mm) on center and placed within 12 inches (305 mm) of the wall opening.

Per R703.2 - One layer of No. 15 asphalt felt or other approved water-resistive barrier shall be provided behind brick.

Per Table R703.8.4 - Provide minimum I-inch air space between brick veneer and sheathing. Per R703.8.6 - Provide minimum 3/16" diameter weep holes at 33" on center maximum, located immediately above the flashing. Per R703.8.5 - When veneer of brick, clay tile, concrete, or natural or artificial stone are

used, 6 mil plastic flashing shall be attached to the sheathing wherever necessary to prevent

moisture penetration behind the veneer. See NYR Flashing Details. 18. Porch slab and exterior concrete work shall be nominal 4" minimum #3500 air entrained

concrete w/ 6x6 #10 W.W.M unless otherwise noted as specified by engineering.

19. Foundation wall strip footing thickness to be 8" (or 6" with a single story) unless otherwise noted as specified by engineering. Strip footing projections beyond the face of the foundation wall shall not to exceed the footing thickness. Bump out footings, pier pads, and any other footing identified as being greater than 8" in thickness shall not be reduced.

20. Block foundation walls may be substituted for poured foundation walls shown on foundation plans provided all requiréments of Section R404 are met.

21. Termite treatment provided below slabs or to framing members per R318.1

FOUNDATION WALL DESIGNA

NORBO PRESCRIPTIVE CODE OR ENGINEERED DESIGN PER ACI 332

WALL HEIGHT	WALL THICKNESS	LATERAL SOIL LOAD (a)	UNBALANCED FILL	VERTICAL REINFORCING (b)	HORIZONTAL REINFORCING (b)
		45	6'-0"	NOT REQUIRED	2- #4 BAR5 (f)
	₽"	45 -	7'-0"	NOT REGUIRED (d)	3- #4 BAR5 (dø)
	8	60	6'-0"	NOT REQUIRED (d)	3- #4 BARS (dø)
8'-O"			7'-0"	#4 @ 22" O.C. (d)	3- #4 BARS (dø)
<i>5-</i> 0		45	6'-O"	NOT REQUIRED	2- #4 BARS (F)
	lo"	40	7'-0"	NOT REQUIRED	2- #4 BARS (F)
	10	60	6'-0"	NOT REQUIRED	2- #4 BAR5 (f)
		80	T'-O"	NOT REQUIRED	2- #4 BARS (F)
		45	"ס-יד	NOT REQUIRED (d)	4- #4 BARS (dø)
	& "	40	8'-O"	#4 @ 19" O.C. (d)	4- #4 BARS (dø)
		4.0	7'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (dø)
q'-0°		60	8'-0"	#4 @ 15" O.C. (d)	4- #4 BARS (d,e)
, 0		24-	7'-0"	NOT REQUIRED	3- #4 BARS (g)
	10"	45	8' - 0"	NOT REQUIRED (d)	4- #4 BARS (d,e)
		60	7'-0"	NOT REQUIRED (d)	4- #4 BARS (d.e.)
		60	8'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (d,e)

NOTE: BACKFILLING OF THE FOUNDATION SHALL NOT TAKE PLACE BEFORE THE BASEMENT SLAB IS IN PLACE AND THE FLOOR FRAMING IS ERECTED OR UNLESS WALLS ARE ADEQUATELY BRACED.

- a. SOIL CLASSES GM, GC, SM, SM-SC AND ML 45 PSF
- SOIL CLASSES SC, MH, ML-CL AND CL 60 PSF

PER TABLE 404.1.2(1).

- b. SPACING SHOWN IS BASED UPON Fy = 60,000 PSI
- STEEL FOR Fy = 40,000 PSI STEEL, REDUCE SPACING BY 0.67 c. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI
- d. ENGINEERED DESIGN PER ACI 332-14, REQUIREMENTS FOR RESIDENTIAL CONCRETE CONSTRUCTION
- 6. FOR ALL WALL HEIGHTS, ONE HORIZONTAL BAR SHALL BE LOCATED WITHIN THE TOP 24", ONE IN THE BOTTOM 24" WITH THE REMAINING BARS EQUALLY SPACED. MAINTAIN 2" OF CONCRETE COVER BETWEEN INSIDE FACE OF WALL AND FACE OF
- HORIZONTAL BARS. F. ONE BAR WITHIN 12" OF TOP AND AT MID-HEIGHT OF WALL PER TABLE R404.1.2(1).
- g. ONE BAR WITHIN 12" OF TOP AND ONE EACH AT THIRD POINT OF WALL HEIGHT

PLANS

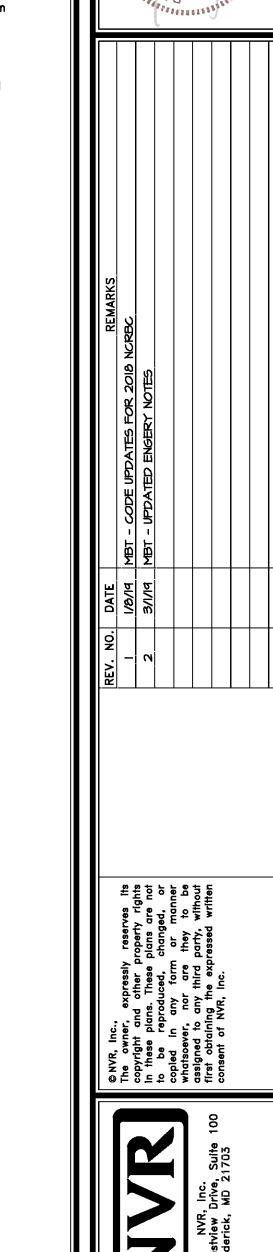
- Habitable attics and sleeping rooms shall have a window or door as a second means of egress that shall be minimum 5.7 sq. ft. openable area (5.0 sq. ft. if at grade level) with maximum sill height 44" above finish floor (min. hqt. 24", min. width 20") per R310.1.
- 2. All emergency escape and rescue openings shall have a minimum net clear openable area of 4 sq ft. The minimum net clear opening height shall be 22" and a minimum net clear opening width of 20". Emergency escape and rescue openings must have a minimum total glazing area of not less than 5 sq ft in the case of a ground window and not less than 5.7 sq ft in the case of an upper story window per R310.2.1. Window wells where required, shall be installed per R310.2.3 with a minimum of 9 sq ft and a minimum horizontal projection and width of 36". Wells with a greater depth of 44" shall have permanently affixed ladder or steps per R310.2.3.1.
- 3. Clear opening heights for exterior doors to be 6'-6" minimum per R311.2. All interior doors providing egress from habitable rooms shall have nominal minimum dimensions of 2'-6" by 6'-8" per R311.6.1. Habitable rooms with double doors less than 5'-0" in total width (less than 2'-6" per door slab) shall have a total opening width of at least 2'-6" with no slide bolts or locking devices installed on either door.
- 4. Sliding glass drs/patio drs/wdws must be safety glazed per R308.4.
- 5. Interior stairway shall have minimum head room of 6'-8" per 311.7.2 and minimum tread depth of 9" and maximum riser height of 8 1/4". Handrails are required for stairs with four or more risers and shall have minimum height of 34" and maximum height of 38" above treads and landings. Handrail to have maximum 4 1/2" projection into width of stair per **Section R311.7.** Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2" aupsum board per
- 6. Guard rails to have minimum height of 36" and shall not have openings from the walking surface to the required quard height which allow passage of a sphere 4 inches in diameter per R312.
- 7. The triangular openings at the open side of 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 per R312.1.3.
- 6. Where exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a a stairway in accordance with Section R311.7 (see item #5 above) or a ramp in accordance with Section R311.8.
- 9. Handralls shall be installed on exterior stairs having (4) or more risers per R311.7.8. Guards shall be installed at exterior porches / decks 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.
- IO. All flashing used (including at windows, doors, and with stone or masonry veneer) shall be corrosion-resistive per £703.4. See NVR Flashing Details.
- II. Wood framed walls assumed to be 2×4 stud construction unless otherwise noted on plans. Bearing walls shall have stude spaced at 16" o.c. maximum per Table R602.3(3) and Table R602.3(5).
- 12. All exterior sheathing to be structural sheathing designed in accordance with R602.10.
- 13. An approved water-resistive barrier shall be applied over sheathing of exterior walls per Section
- 14. Interior sheathing shall be 1/2" gypsum wall board unless otherwise noted. Exceptions may include, but are not limited to, special requirements for wall bracing and fire separation.
- 15. Screw fastening is typical for gypsum installation and nailing will only be permitted at the perimeter of the board. All screws shall be corrosion-resistant Tupe M I-1/4" druwall screws

SCREW FASTENING SCHEDULE								
	M	TH ADHESIVE						
Framina Spacina	Cellings	Load-bra, walls	Non-load-brg. walls					
16	16	24	24					
24	16	16	24					
*	HIM	HOUT ADHESIVE						
Framing Spacing	Cellings	Load-brg. walls	Non-load-brg. walls					
16	12	16	16					
24	12	12	12					

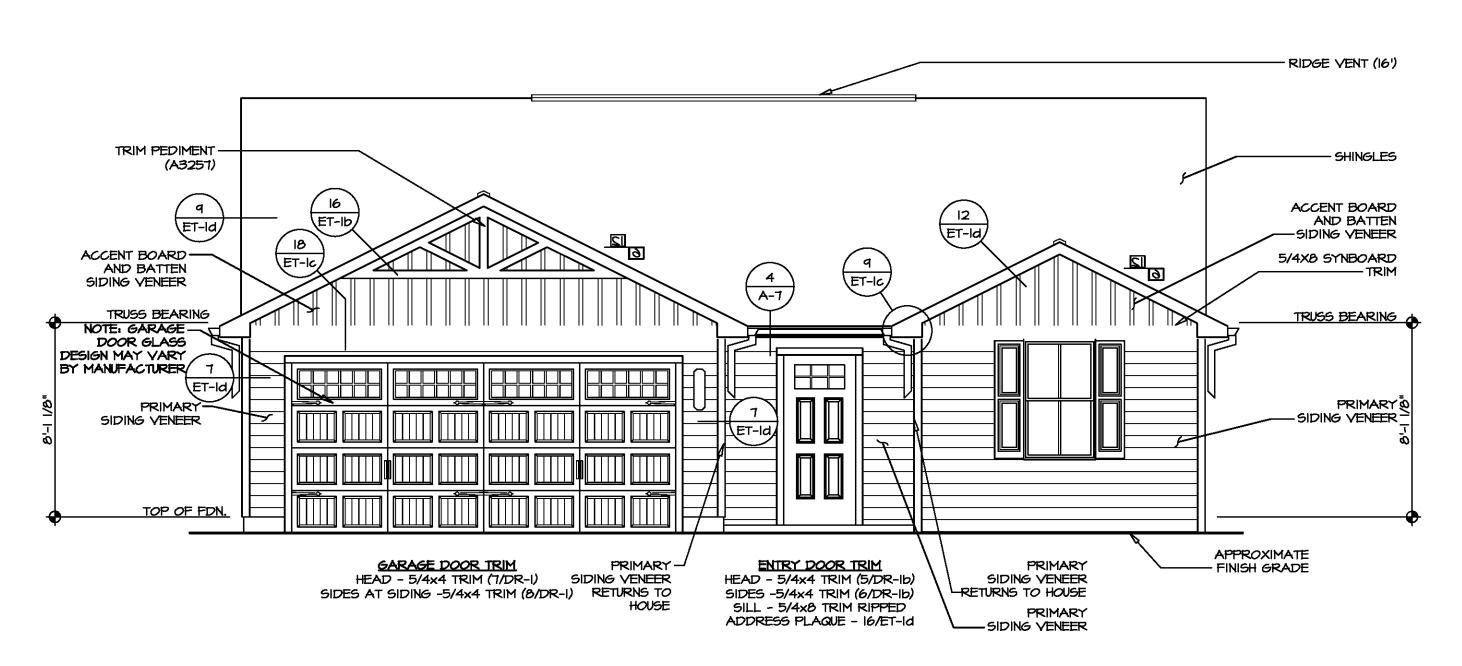
- For 1/2" wallboard, nails shall be 1-1/4" long, 1/4" head and .098 diameter shanks with annular ring or acceptable equivalent and comply with ASTM C514.
- For 5/8" wallboard, nails shall be 1-3/8" long, 1/4" head and .098 diameter shanks.
- 17. Garages shall be completely separated from the residence and attic area by not less than 1/2" gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8" type X gyp. board. Where a structure is supporting a floor-ceiling assembly due to living space above the garage, the structure shall also be protected by not less than 1/2" aupsum board per Section R302.6.. Openings and penetrations through the separation shall be protected by sealing the area around the penetration per Section R302.5. The garage door shall be a 20-minute fire-rated door and be equipped with a self-closing device installed per Section R302.5.I.
- 16. Asphalt shingles shall be installed per section R905.2. For roof slopes of 2:12 through 4:12, in lieu of two layers of underlayment, a self-adhering polymer-modified bitumen underlayment shall be used per section R905.I.I Exception #I.
- 19. Attic spaces shall be ventilated w/ ridge and soffit vents unless otherwise noted. Venting provided per R806.2.
- 20. Fireblocking shall be installed between ceiling and floor openings per R302.11. Draftstopping to be installed in accordance with R302.12.
- 21. Water closet, lavatory or bidet shall not be set closer than 15 inches from its center to any side wall, partition or vanity or closet than 30 inches center-to center- between adjacent fixtures. There shall be a clearance of not less than 21 inches in front of the water closet, lavatory or bidet to any wall, fixture or door per **P2705.**I
- 22. Heating and cooling equipment installation shall be in accordance with IRC Chapter 14 and the International
- 23. Mechanical fireplaces shall be installed per Section RIOO4 and IOO5.
- 24. Single family attached structures to have 2-hour dwelling unit separation wall continuous to roof deck. Roofing material to be minimum class "C" over approved fire retardant wood decking extending 4' each
- side of dwelling unit separation wall per R302.2 and R302.3. 25. Untreated wood shall be minimum 8" above finish grade per R317.1 Item #2.
- 26. Bottom plates on slabs and any wood in contact w/ concrete or masonry to be pressure treated material
- 27. Exterior egress swing doors shall open onto a landing not more than 8 1/4" below the top of the threshold when door swings in and I 1/2" below the top of the threshold when the door swings out. The landing shall extend a minimum of 36" in the direction of travel and be at least the width of the doorway served per
- 28. Air exhaust and intake openings that terminate outdoors shall be protected with corrosion-resistant screen, louvers, or grills having a min. opening size of 1/4" and maximum of 1/2" in any dimension per
- 29. Fasteners and connectors for pressure preservative-treated wood shall be hot-dipped galvanized steel. 30. Windows that have an operable opening more than 72" above finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24" above the finished floor of the room in which the window is located. Glazing between the floor and 24" shall be fixed or have openings through
- which a 4" dia. sphere cannot pass per Section R312.2. 31. The final grade shall fall a minimum of 6 inches within the first 10 feet of the foundation per R401.3.
- 32. One- and two-family dwelling construction (R302.1.1): Vinyl or aluminum soffit material shall be securely attached to framing members and use an underlayment material of either fire retardant treated wood, 3/4-inch wood sheathing or 5/8-inch aupsum board. Venting requirements shall apply to both soffit and underlayment and shall be per Section R806. Where the property line is 10 feet or more from the building face, the provisions of this code section shall not
- Townhouse construction (R302.2.5): Projections extending into the fire-separation distance shall have not less than I-hour fire-resistive construction on the underside. Vinul or aluminum soffit material shall be securely attached to framing members and use an underlayment material of either fire retardant treated wood, 3/4-inch wood sheathing or 5/8-inch gypsum board. Venting requirements shall apply to both soffit and underlayment. Vents shall be nominal 2-inch continuous or equivalent intermittent and shall not exceed the minimum net free air requirements of Section R806.2 by more than 50%. Vents in soffit are not allowed within 4 feet of fire
- walls or property lines per R302.2.5 and R302.2.6. 33. I-hour fire-rated construction required on projections within 2' to 3' of lot line per R302.I. No projections allowed within 2' of property line.
- I-hour fire-rated construction required on townhouse eaves within 3' of the property line.
- Note: Single Family Detached product will NOT be built within 3' of the property line. 34. Wall bracing is designed in compliance with Section R602.10. When wall bracing is beyond the criteria for a prescriptive approach, the structure is analyzed utilizing engineering in compliance with the North Carolina Building Code (NCBC). Refer to house-specific wall bracing detail sheets and wall bracing standard details. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in Seismic
- 35. Minimum floor sheathing shall be 5/8" tongue € groove decking underlayment grade plugged and sanded, exterior glue, glued and nailed on joists to meet. "American Plywood Association" approved glued floor

ELECTRICAL

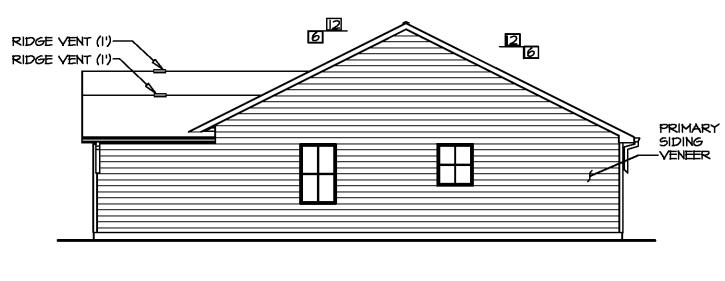
- I. Ground-fault and arc-fault circuit interrupter protection is provided per NFPA 70 (National Electric Code). 2. Electric panel box installation to be in accordance with NFPA 70, Article 408 Section III. Location may
- 3. Approved smoke detectors shall be installed in each sleeping room; outside each separate sleeping area in the immediate vicinity of the bedrooms; and on each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. Where more than one smoke detector is required, the devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit. All smoke detectors shall receive their primary power from the building wiring and be equipped with a battery backup.
- 4. Unless listed for installation in such locations, smoke detectors shall be installed at least 10 feet from a cooking appliance, at least 3 feet from the door to a bathroom containing a tub or shower, at least 3 feet from forced air supply registers, and at least 3 feet from the tip of a celling fan blade. In sleeping rooms, smoke detectors should be located in the vicinity of the room entrance. They shall be installed at the highest portion of the ceiling (including tray or coffered ceilings) or within 12 inches vertically from the highest point in rooms with sloped ceilings.
- 5. Interior stairs shall be provided with an artificial light source in the vicinity of each landing or directly over each stair section and capable of illuminating treads and landings to a level not less than Ifc measured at the center of the tread or landing per R303.7.
- 6. Outlets within 6' of a sink must be GFI protected.
- 7. An approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom. R315.3.
- 8. Outlets installed in laundry areas must be GFI protected.



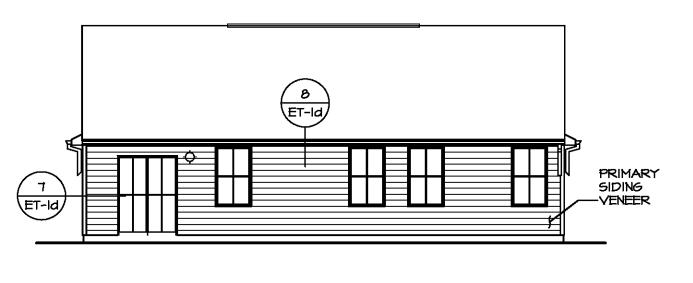
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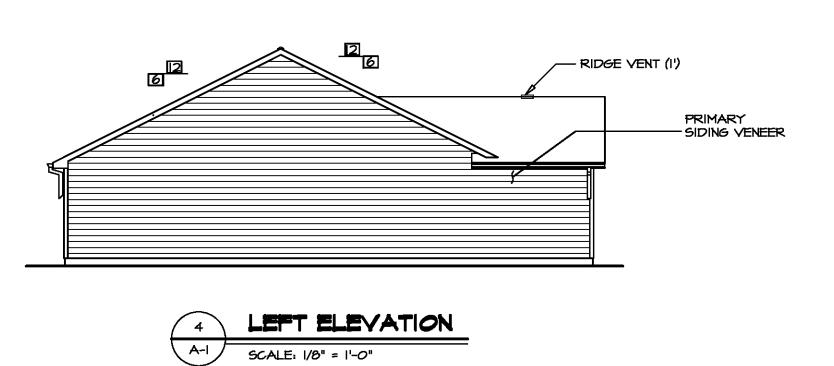


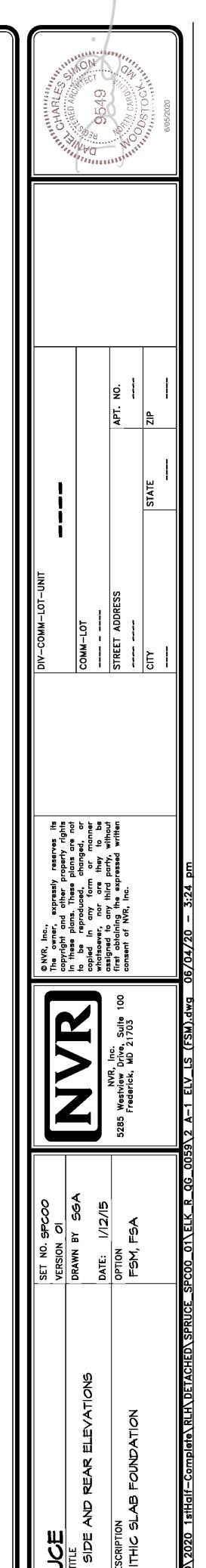




REAR ELEVATION

SCALE: 1/8" = 1'-0"





NVR - Business Use Only

[NVR]

ROOF VENTILATION CALCULATIONS

HOUSE NAME SPRUCE
HOUSE VERSION SPCOD-01
PRODUCT LINE RYANHOMES

SPRUCE
SPC00-01
RYANHOMES
SOFFIT: 9.9 so in of went per H
RIDGE: 18 so in of went per H
ROX / SABLE VENT: 45 so in of vent per unit VENTILATION VALUES

	YES	lanyi.	freezon.		No action req	'd.
	NO			VENT OK	No action req	
USER GUIDE	INC	YES			increase ridge	5
	NO	YES	HIGH	FAIL	Decrease ridg	e
	NO	A 7.44				vent

					All	rievatio	ais (Lmi d	asciikair i	roundaric	on "FBA")	t .				
		Required:	Required:		1			Upper Box /	Lower Box				A/300	A/300	
	Area (A)	A/150	A/300	Seiffit	Soffit Vent	Ridge	Ridge Vent	Sable Vent	Versi	TÖTAL	OK A/150	OK A/300	% vent at	40%-50%	
Location / Options	(sy in)	(sq in)	(sq in)	(11)	(sq fer)	(47)	(sq in)	(q1y)	(qty)	(sq in)			ridge	OK7	Nates
Vlain House Roof	208904	1359.36	679.68	45	475.20	16	288.00	T)		763.20	NO	YES	42.37%	OK	
Left Side of House over Bedroom 3	13824	92.36	46.68	15	148.50	1	18 00).		166.50	YES	N/A	N/A	N/A	
										245.70	CONTRACTOR NAMED AND ADDRESS.				1
ight Side of House over Garage	34560	230,40	115.20	2:	i 227,70]		12.60					N/A	N/A	N/A	
ight Side of House over Garage	34560	230,40	115,20	2:				Slab Four	dation "I			N/A		N/A	
light Side of House over Garage	34562	230,40 Required:	115.20	23				Slab Four	p			N/A	A/300	N/A	
light Side of House over Garage	34560 Area (A)			Soffit					p			OK A/300			
light Side of House over Garage Location / Options		Required:	Required:		All Elevi	ations (C	rawl and	Upper Box /	Lower Box	FCA and i	5A")		A/ 300	7/300	Notes
	Area (A)	Required: A/150 (sq in)	Required: A/300 (sq (n)	Soffit (II)	All Elevi	ations (C	Flidge Vent	Upper Box / Gable Vant (qty)	Lower Box Vent	FCA and I	5A")		A/300 % vent at ridge	N/300 40%-50%	
Location / Options	Aree (A) (sq in)	Required: A/150 (sq in)	Required: A/300 (sq in) 679.68	Soffit (II)	All Elevi	ations (C	Flidge Vent	Upper Box / Gable Vant (qty)	Lower Box Vent	FCA and F	5A") ok a/150	OK A/300	A/300 % vent at ridge	A/300 40%-50% OK?	

NVR - Business Use Only



Version 2.0 (Last Revised 04/26/19)

HOUSE \	VOLUME CALCULATION	IS
HOUSE NAME	SPRUCE	
HOUSE VERSION		
PRODUCT LINE	RYANHOMES	

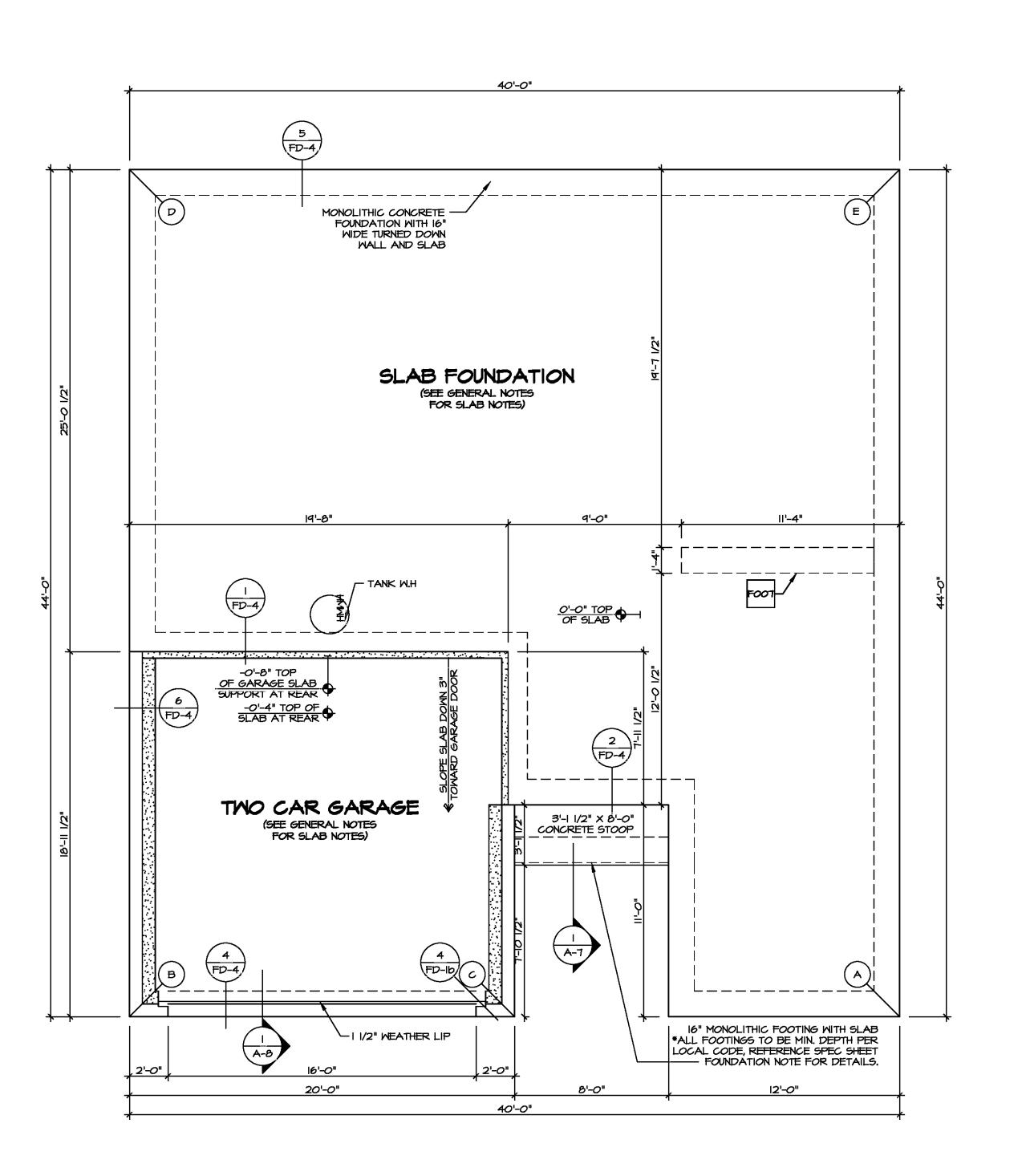
Note: The volume of the structure has been computed in acordance with "Title 5. of the Community Affairs, Chapter 23. Uniform Construction Code, Subchapter 2. Administration and enforcement: Process." (5;23-2.28. Volume computation)

ALL ELE	ALL ELEVATIONS W/ FULL BASEMENT "FBA"								
Location / Area of house	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)						
Main section of the house	1440.00	12.57	18105						
Gable left of the house	96.00	9.49	911						
Garage bump out from main house	240.01	10.53	2526						
		Total House Volume	21542						

ALL ELEVATIONS W/	CRAWL SPACE "FO	CA", SLAB FOUNDA	TION "FSA"
Location / Area of house	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)
Main section of the house	1440.00	12.57	18105
Gable left of the house	96.00	9.49	911
Garage bump out from main house	160.01	10.53	1684
		Total House Volume	20700

Additional areas of volume to be added to total house volume as needed								
Location / Area of house / option	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)					
Full Basement "FBA"	1376.61	8.61	11859					
Crawl Spaces "FCA"	1308.15	0.80	1047					

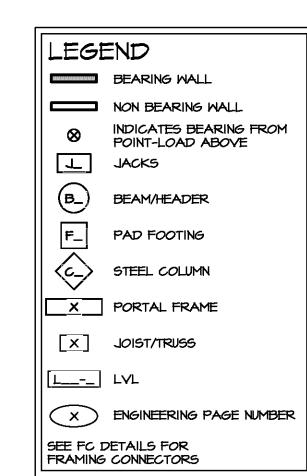
			.0.				
			APT. NO	i 	ZIP	i 	
 					STATE	-	
DIV-COMM-LOT-UNIT	COMM-LOT		STREET ADDRESS		CITY		
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1		N DI	AGONALS		
	Α	В			
Α	0"	Α	40'-0"		
B	40'-0"	B	0"		
v	20'-0"	v	20'-0"		
Ð	59'-5 9/16"	ם	44'-0"		
E	44'-0"	E	59'-5 9/16"		

		PAD FOO	TING SCH	EDULE	
IDENTIFIER	LENGTH	MIDTH	HEIGHT	ENG. NUM.	REMARKS
F007	10'-0"	l'-4°	O'-8"		

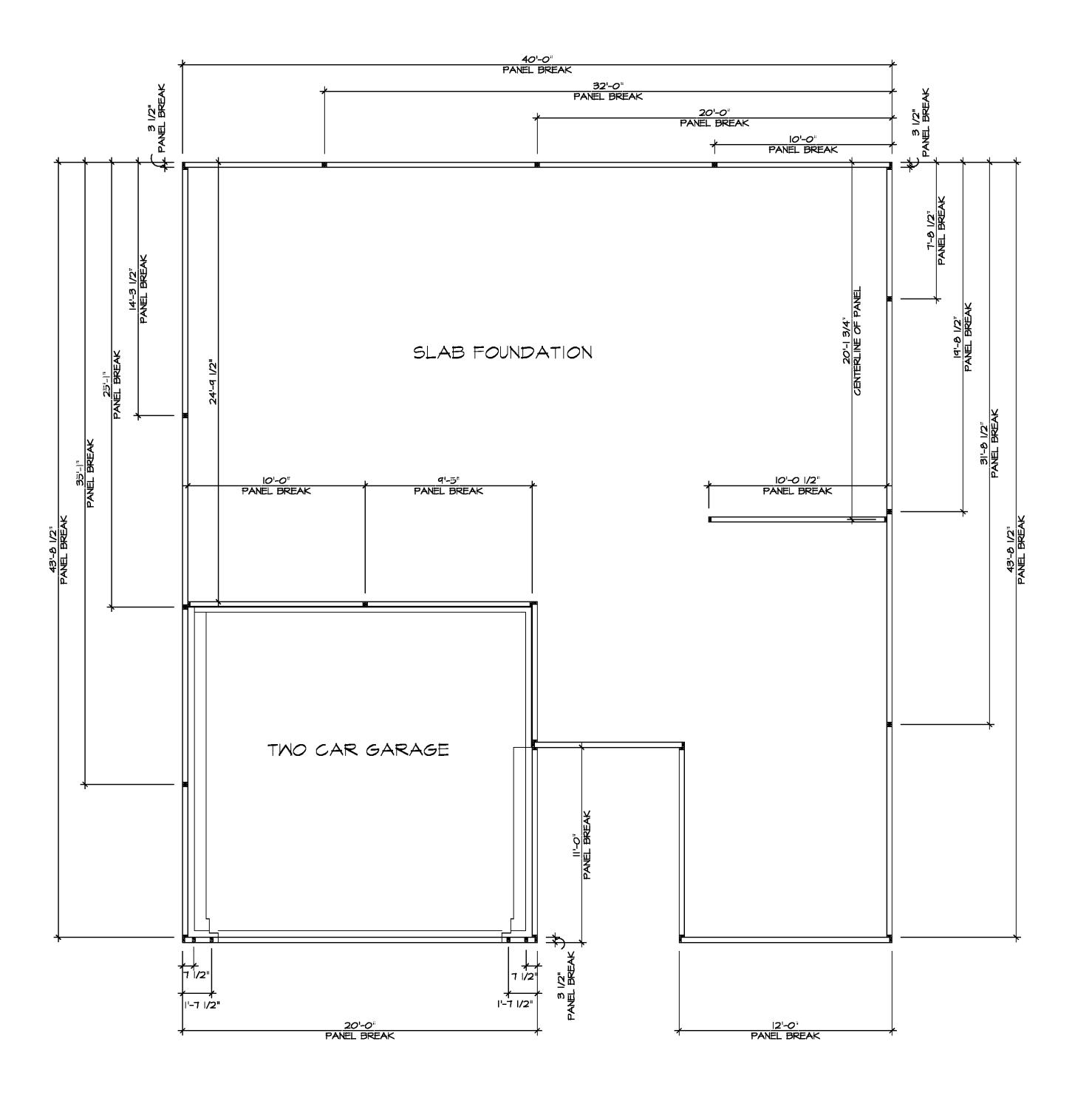


FOUNDATION NOTES - SLAB

- I. FOUNDATION UNDER HABITABLE SPACE:
 I.I. CONCRETE SLAB ON 6 MIL VAPOR BARRIER OVER
 SUB-BASE (SEE SPEC SHEET FOR SLAB NOTES)
 2. FOUNDATION UNDER KIRL CONCRETE SLAB ON A ROD
- 2. FOUNDATION UNDER GARAGE:
 2.I. UNEXCAVATED WITH CONCRETE SLAB ON VAPOR
 BARRIER OVER SUB-BASE (SEE SPEC SHEET FOR
- BARRIER OVER SUB-BASE (SEE SPEC SHEET FOR SLAB NOTES)

 3. SEE SHEET (A-4) FOR FOUNDATION CONNECTION
- SEE SHEET (A-4) FOR FOUNDATION CONNECTION INFORMATION.
 SLAB LEDGE LOCATIONS VARY W GRADE BEAM(S) ORIENTATION. SEE GB-I FOR DETAILS.

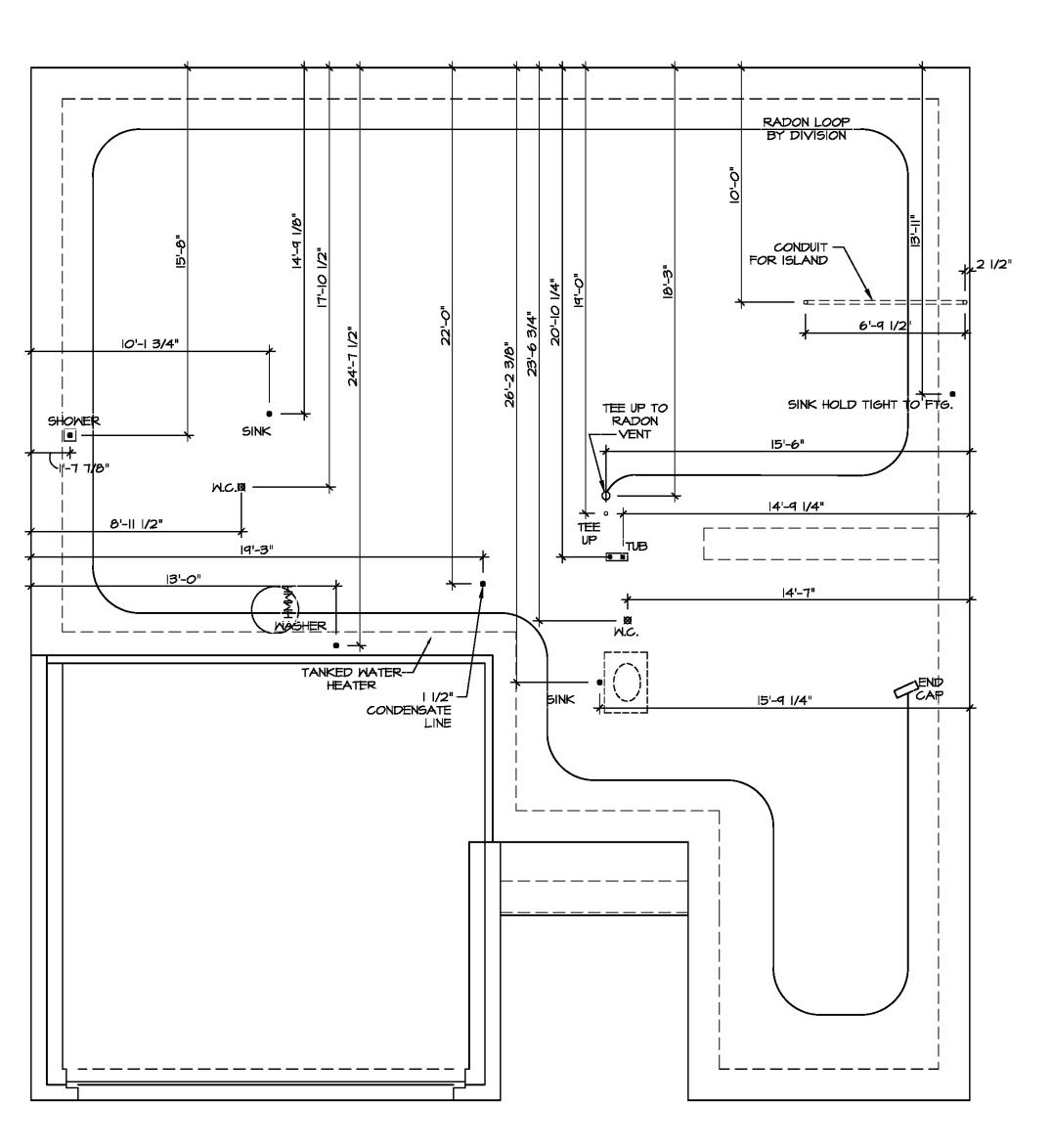
RADE BEAM(S)



FOUNDATION HOLD DOWN DETAILS

SCALE: 1/4" = 1'-0"

	CHARLES CHARLE					
			APT, NO.		STATE ZIP	
	DIV-COMM-LOT-UNIT	COMM-LOT	STREET ADDRESS			_
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			NVR, Inc. 5285 Westview Drive, Suite 100	Frederick, MD 21703		
	SET NO. SPCOO	DRAWN BY MBT	OPTION			
HOLD DOWN NOTES REFER TO DETAIL (9/FD-I) FOR HOLD DOWN OFFSET DIMENSIONS. REFER TO DETAIL (12/FD-I) FOR HOLD DOWNS ON CMU BLOCK. 1		DRAWING TITLE FOUNDATION HOLD DOWN DETAILS	DESCRIPTION			3131-17-13 (10 00003





- RADON REMEDIATION
 RADON LOOP:

 (4") PERFORATED HDPE "LOOP"

 MUST BE PLACED IN STONE BED SLIGHTLY HIGHER THAN ANY INTERIOR DRAINTILE

 LOOP TO BE SEPARATE FROM ANY DRAINTILE ELEMENTS

 TO BE CORRUGATED HDPE PIPE

 SCREWS TO BE INSTALLED THROUGH LOOP AT TEE UP INTO STACK
 STACK REQUIREMENTS:

 3" PVC STACK (4" IF BASEMENT IS GREATER THAN 2200 SQFT.)

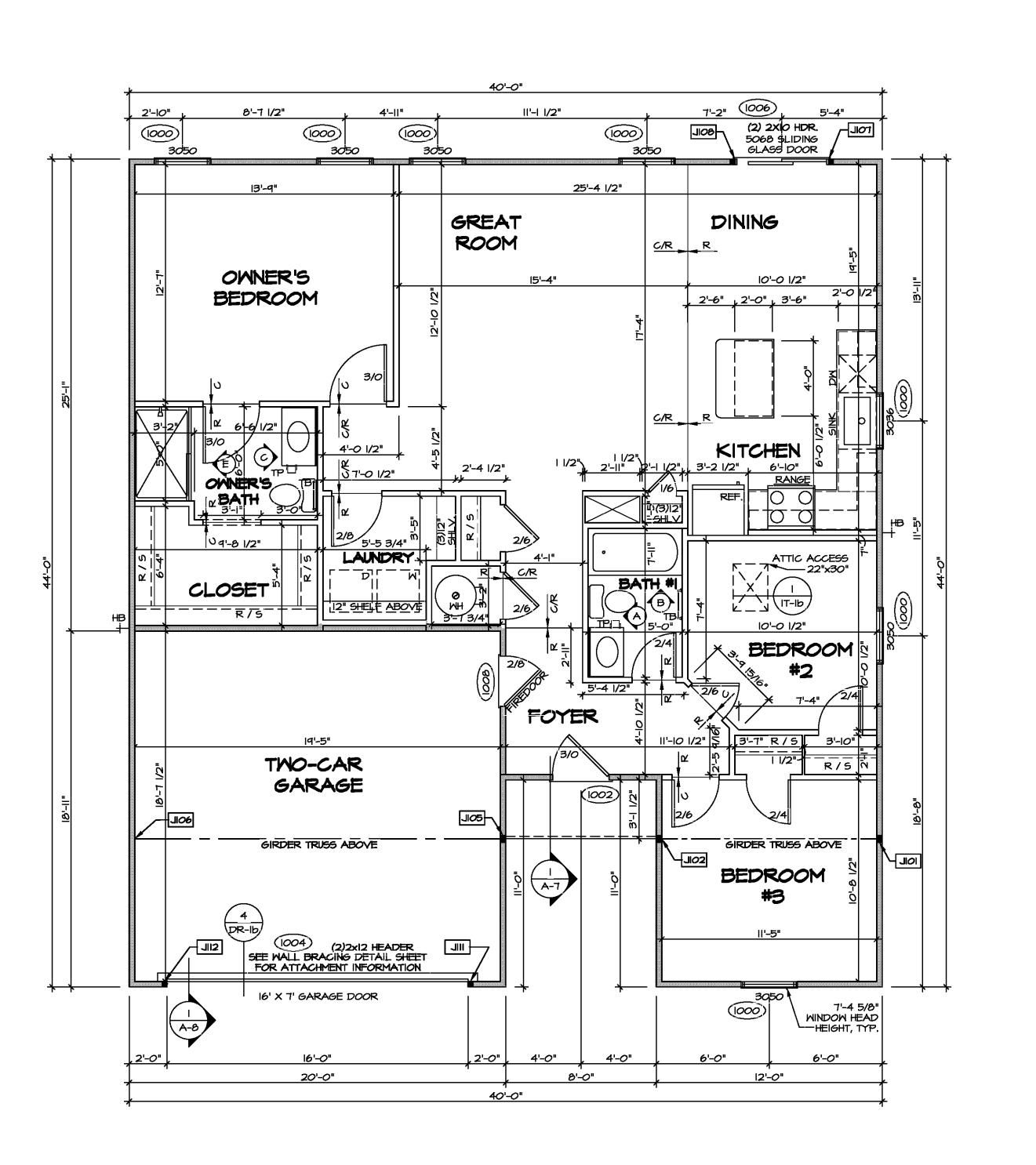
 NO PART OF STACK IS TO BE HORIZONTAL (45° ELBOWS PERMITTED AS REQUIRED)

 PIPE TO BE PHYSICALLY LABELED IN THE FIELD AS "RADON VENT" OR OTHER
 JURISDICTIONALLY REQUIRED LANGUAGE (ON EVERY LEVEL OF HOUSE)

 ROOF TERMINATION TO BE IN TOP 1/3 OF ROOF

- ROOF TERMINATION TO BE IN TOP 1/3 OF ROOF - SCREEN OR VENT CAP INSTALLED TO KEEP PESTS OUT OF RADON VENT AT ROOF TERMINATION.

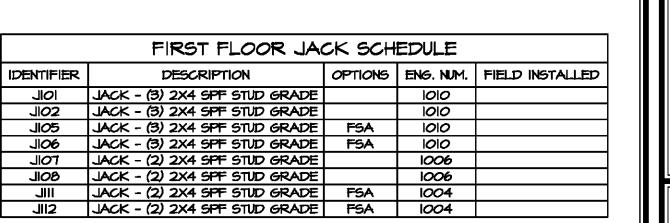
SPRUCE	SET NO. SPCOO		© NVR, Inc., The owner, expressly reserves its copyright and other property rights	DIV-COMM-LOT-UNIT		
DRAWING TITLE PLAN	DRAWN BY RUC	\ > Z	in these plans. These plans are not to be reproduced, changed, or copied in any form or manner	COMM-LOT		
	DATE: 12/30/14		whatsoever, nor are they to be assigned to any third party, without			
OPTION DESCRIPTION	OPTION	NVK, Inc. 5285 Westview Drive, Suite 100	first obtaining the expressed written	STREET ADDRESS	APT. NO.	0.
		Frederick, MD 21703	COURSELL OF NAM, INC.			-
				CITY	STATE ZIP	
					-	
RYANHOMES\SPRUCE_SPC00_01\Sheets\Lot_Specific\5_A-4_PLMG_LS.dwg_06/02/20 9:40_am	- NG_LS.dwg 06/02/20	9:40 am				



FIRST FLOOR PLAN

A-6 SCALE: 1/4" = 1'-0"

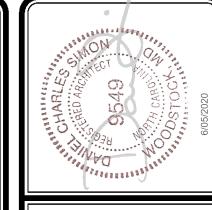




FIRST FLOOR JACK SCHEDULE

DESCRIPTION

JIOI JACK - (3) 2X4 SPF STUD GRADE



LEGE	END	
*******************	BEARING WALL	
	NON BEARING WALL	
8	INDICATES BEARING FROM POINT-LOAD ABOVE	
1	JACKS	
B _	BEAM/HEADER	
F_	PAD FOOTING	
€ <u></u>	STEEL COLUMN	
x	PORTAL FRAME	
[X]	JOIST/TRUSS	
L	LVL	
X	ENGINEERING PAGE NUMBER	
	PETAILS FOR CONNECTORS	

RYAN

١.	ALL HEADERS ARE (2) 2x6 w/ 2x4 WALLS OR (3) 2x6 w/
	2x6 WALLS, UNLESS OTHERWISE NOTED.
2.	ALL HEADERS TO HAVE (1) 2x4 OR 2x6 JACK AND KING
	STUD EACH END, UNLESS OTHERWISE NOTED.
3.	ALL EXTERIOR WALLS TO BE 4" w/ OSB OR 3 1/2"
	W/ LAMINATED FIBROUS STRUCTURAL SHEATHING, ALL
	INTERIOR WALLS TO BE 3 1/2", UNLESS OTHERWISE NOTED.
4.	HATCHED AREAS INDICATE DROPPED CEILINGS. ALL
	DROPPED CEILINGS ARE 12" UNLESS OTHERWISE NOTED.
5.	SEE "BRACED WALL PANEL DETAIL SHEET" FOR SPECIAL
	WALL FRAMING LOCATIONS AND HEADER SIZES, IF
	APPLICABLE.
6.	SEE STANDARD DETAIL CATEGORY "IT" SHEET(S) FOR
	INTERIOR TRIM DETAILS.
7.	SEE ARCHITECTURAL DETAIL SHEET "AD" FOR HOUSE
l	A PORT A DE LA TELLE PORT A PO

FLOOR PLAN NOTES

7. SEE ARCHITECTURAL DETAIL SHEET "AD" FOR HOUSE SPECIFIC INTERIOR TRIM OPTION TABLE.
8. ALL WINDOWS HAVE 7'-O I/2" HEADER HEIGHT UNLESS OTHERWISE NOTED.
9. ALL HEADERS IN NON-BEARING WALLS SHALL BE A SINGLE FLAT 2X4 OR 2X6 ATTACHED TO CRIPPLES ABOVE, UNLESS OTHERWISE NOTED.
10. TANKED WATER HEATER SHOWN AS BASE CONDITION, OPTIONAL TANKLESS WATER HEATER IS AVAILABLE IN LIEU OF TANKED WATER HEATER.

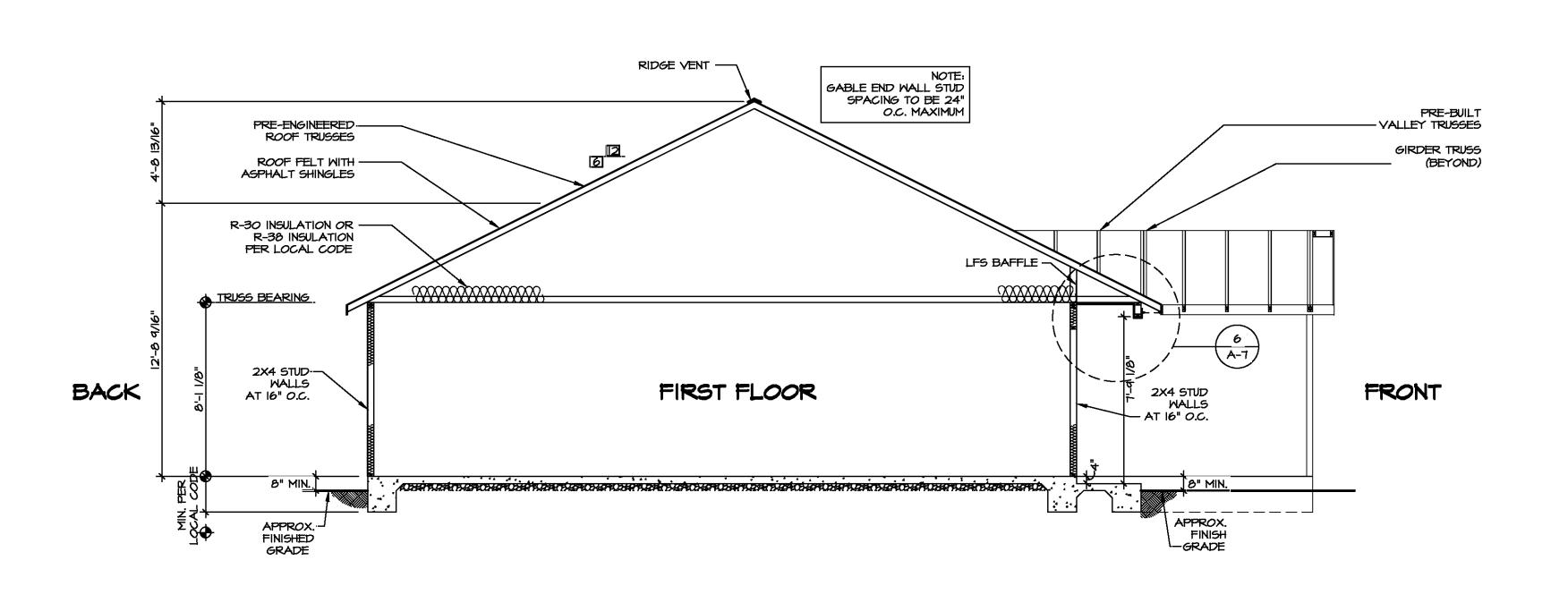
AT GARAGE:

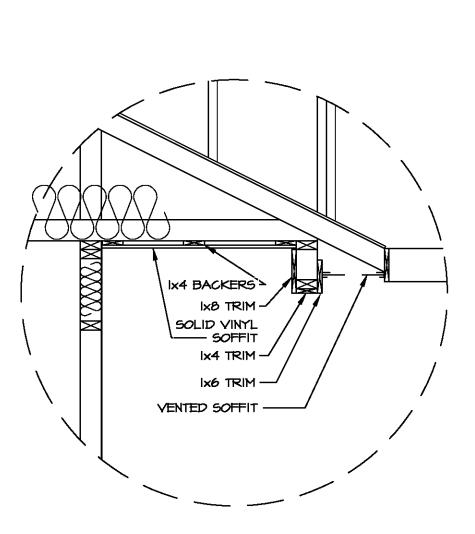
GYPSUM BOARD AT COMMON WALLS, CEILINGS, BEAM WRAPS AND SUPPORTS PER STANDARD DETAIL FA-I(b) FIRE ASSEMBLIES OR AS REQUIRED BY LOCAL CODE.

AT STAIRS:

I/2" GYPSUM BOARD AT UNDERSIDE OF STAIRS AND WALLS IN CLOSET

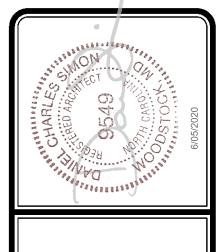
GYPSUM NOTES



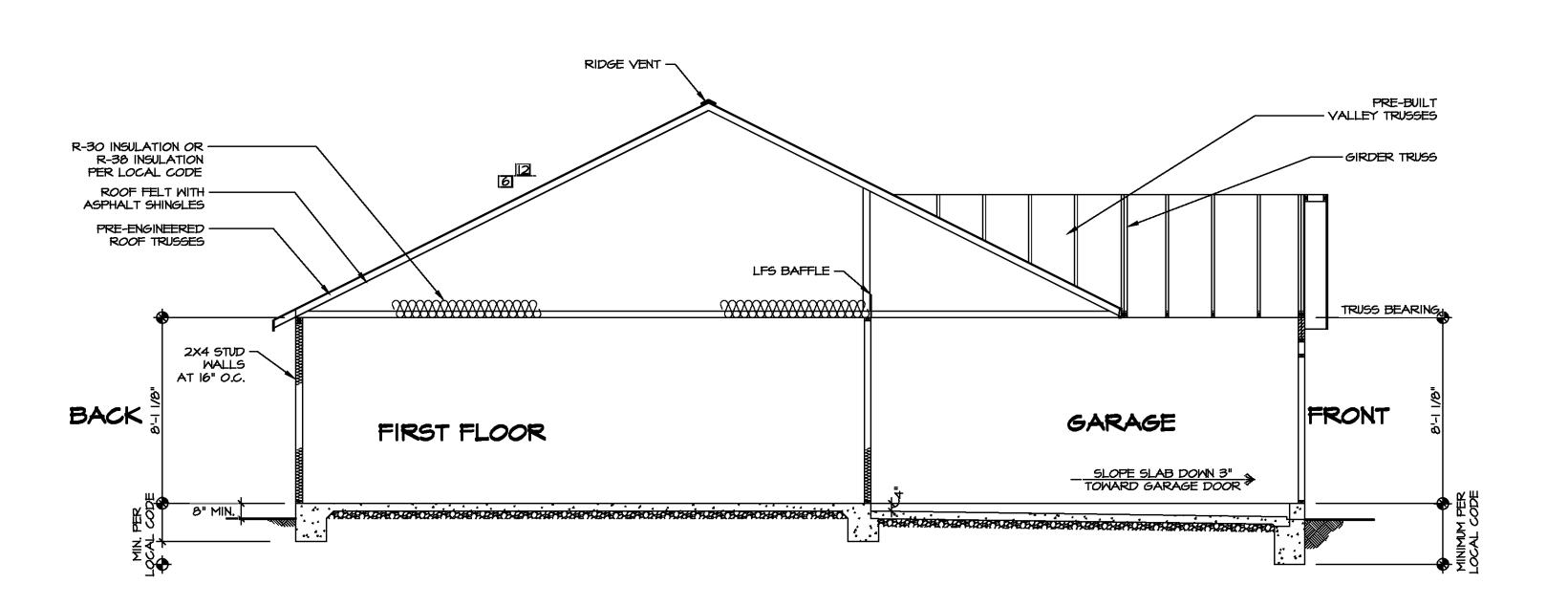


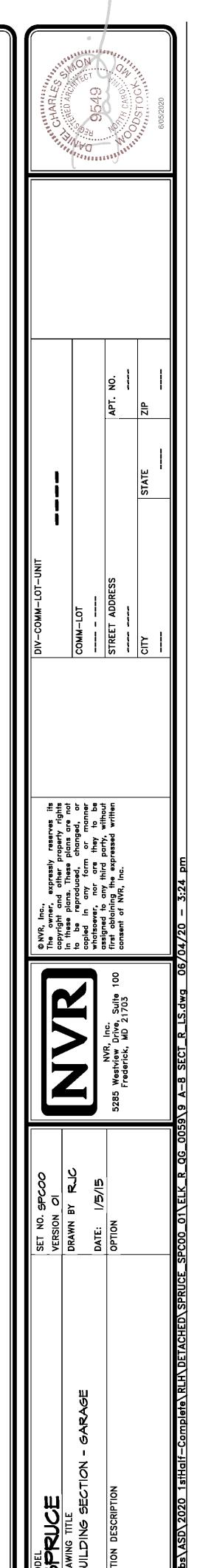






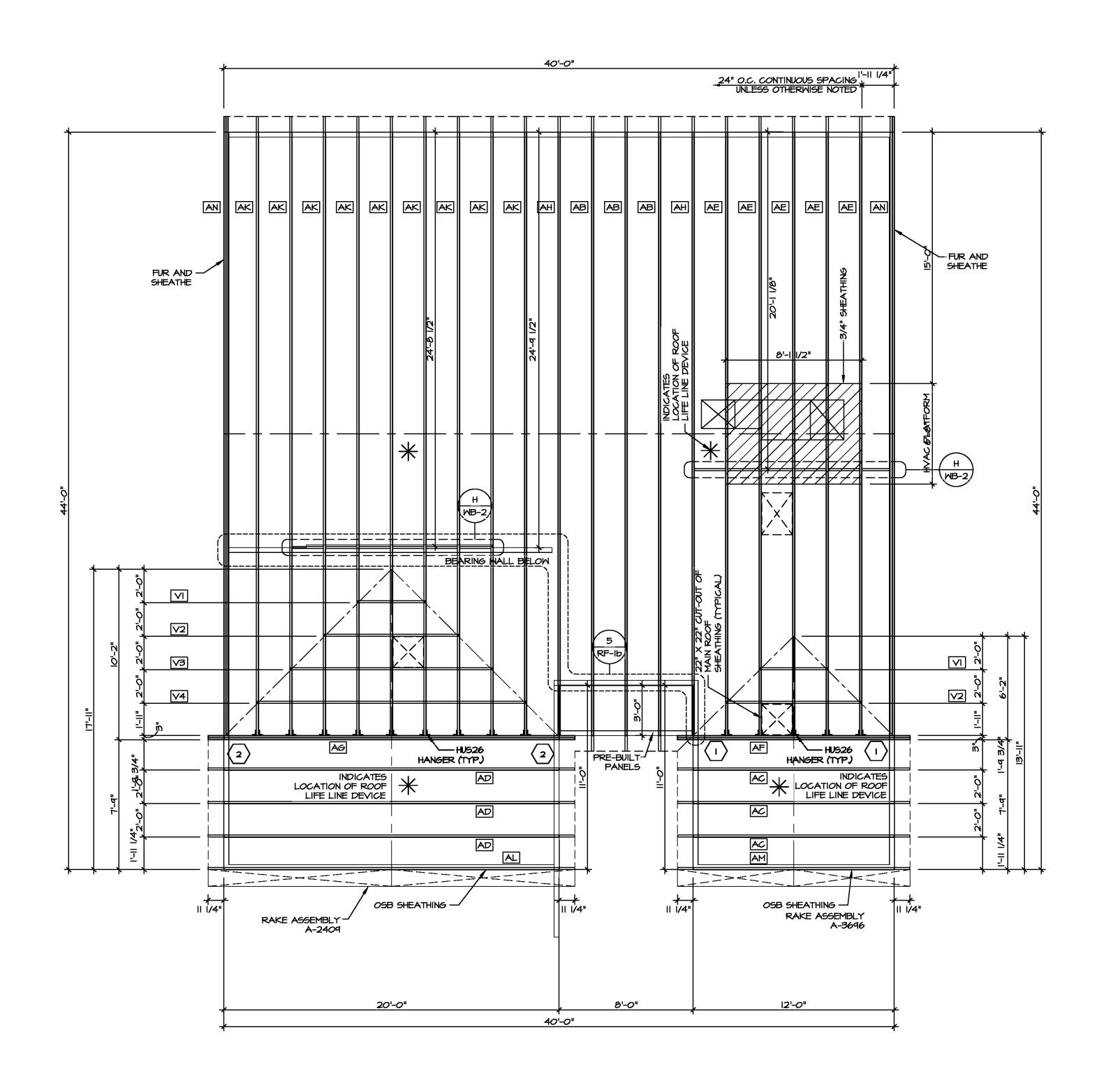
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1					STATE	!
DIV-COMM-LOT-UNIT	COMM-LOT		STREET ADDRESS		CITY	
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	.= ¥ o	¥ B	firs	<u> </u>		
	Y Y Z]	5285 Westview Drive, Suite 100			
SET NO. SPCOO VERSION OI	DRAWN BY RUC]				
SET NO. SPCOO VERSION OI	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	DATE: 1/5/15	5285 Westview Drive, Suite 100			



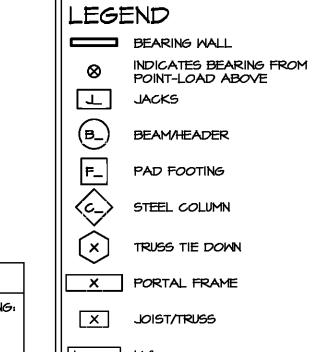


BUILDING SECTION - GARAGE

SCALE: 1/4" = 1'-0"



TRUSS SCHEDULE							
IDENTIFIER	SPECS	TRUSS NUMBER	LENGTH	ROOF PITCH (X/12)	TYPE		
AB	SE	13139	36'-0"	6/12	COMMON		
AC	SE	13140	12'-0"	6/12	COMMON		
AD	5E	13141	20'-0"	6/12	COMMON		
ΑE	SE.	13142	36'-0"	6/12	COMMON		
AF	5E	13143	12'-0"	6/12	GIRDER (2 PLY)		
AG	5E	131 44	20'-0"	6/12	GIRDER (2 PLY)		
AH	SE	13147	36'-0"	6/12	COMMON		
ΑK	SE	13149	36'-0"	6/12	COMMON		
AL	SE	13174	20'-0"	6/12	GABLE END		
AM	SE	13175	12'-0"	6/12	GABLE END		
AN	SE	16912	36'-0"	6/12	GABLE END		
٧I	VT	93344	4'-0"	6-6/12	VALLEY		
V 2	VT	93345	8'-0"	6-6/12	VALLEY		
V 3	VT	93346	12'-0"	6-6/12	VALLEY		
V4	VT	93907	16'-0"	6-6/12	VALLEY		



ROOF FRAMING NOTES

I. REFER TO THE STANDARD DETAILS FOR THE FOLLOWING:
I.I. TRUSS TIE-DOWNS (I/RF-I)
I.2. PIGGYBACK TRUSS ATTACHMENT (2/RF-I)
I.3. VALLEY GABLE TRUSS BRACING (3/RF-I)

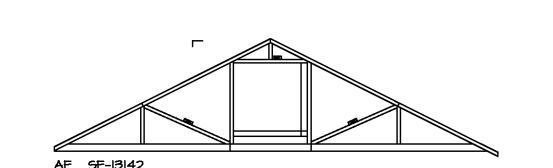
I.4. GABLE BRACING (I/RF-IC)
I.5. TRUSS BRACING (2/RF-IC)
I.6. LIFELINE ATTACHMENT (5/RF-I)

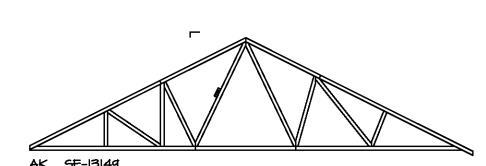
I.T. FALL PROTECTION ON PLATFORM TRUSSES (II/RF-I)
2. IF TRUSS DOES NOT APPEAR ON THE TRUSS BRACING
SHEET, NO ADDITIONAL LATERAL BRACING REQUIRED.

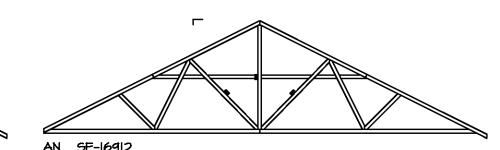
X ENGINEERING PAGE NUMBER

SEE FC DETAILS FOR FRAMING CONNECTORS









TRUSS BRACING DETAILS

SCALE: 1/8" = 1'-0"

TRUSS BRACING NOTES

1. IF TRUSS DOES NOT APPEAR ON THIS TRUSS BRACING SHEET, NO ADDITIONAL LATERAL BRACING IS REQUIRED.

2. IX6 SPF#2 LATERAL BRACES SHALL BE NAILED TO MINIMUM (3) TRUSS MEMBERS WITH MINIMUM (2) IOD NAILS. PROVISIONS MUST BE MADE AT ENDS OR SPECIFIED INTERVALS TO RESTRAIN OR ANCHOR LATERAL BRACING.

3. WEB "T" BRACE, DETAIL 3/RF-Ic, IS REQUIRED WHERE LATERAL BRACING IS NOT CONTINUOUS ACROSS THREE (3) OR MORE TRUSSES AND MAY BE USED IN LIEU OF IX6 LATERAL BRACING.

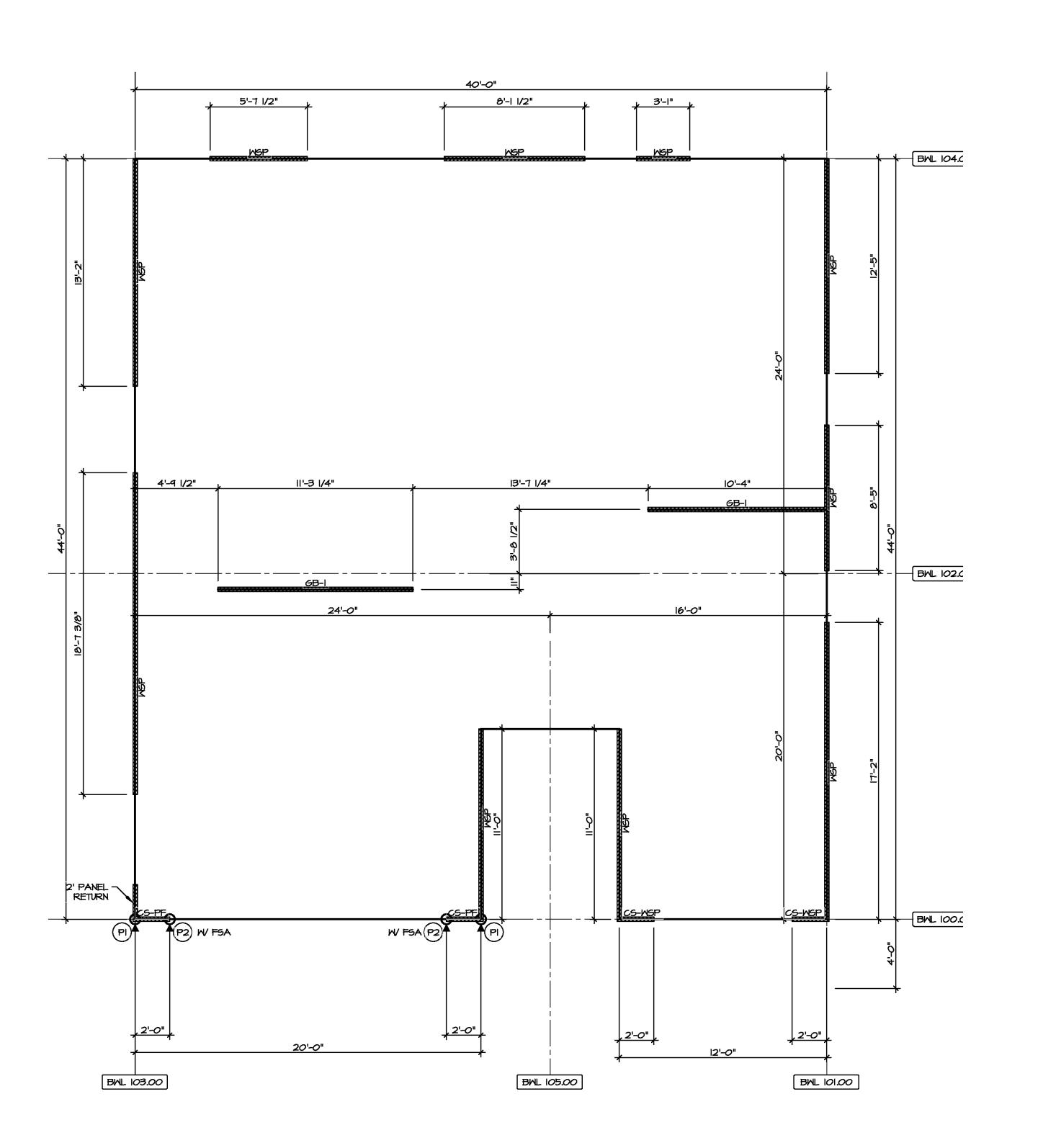
4. DIAGONAL BRACING REQUIRED WHEN LATERAL BRACING IS REQUIRED (7/RF-I)

5. STUDDED GABLE BRACING DETAIL I/RF-Ic TO BE UTILIZED FOR TRUSSES 6'-9" IN HEIGHT OR GREATER.

6. PARTIALLY SHEATHED GABLES, SEE 5/RF-Ic FOR "L" BRACING WHEN REQUIRED.

7. LATERAL BRACING CAN BE APPLIED TO EITHER SIDE OF THE WEB MEMBER IDENTIFIED IN THE DRAWING.

8. SHEATHING (OSB OR GYPSUM) REPLACES LATERAL AND DIAGONAL TRUSS BRACING.



FIRST FLOOR WALL BRACING DETAIL

S-4 SCALE: 1/6" = 1'-0"

	BRACED	MALL LINE	SCHEDULE	
WIND SPEED (ULT)	IDENTIFIER	ACTUAL (FT)	REQUIRED (FT)	METHOD
130 MPH	BWL 100.00	10.00'	7.05'	CONTINUOUS (2 SIDE
130 MPH	BWL 101.00	38.01'	8.61'	MSP (2 SIDES)
130 MPH	BWL 102.00	10.761	יוד.סו	6B
130 MPH	BWL 103.00	31.79'	8.81'	MSP (2 SIDES)
130 MPH	BWL 104.00	16.13'	6.75'	WSP (2 SIDES)
130 MPH	BWL 105.00	22. <i>00</i> '	6.00'	MSP (2 SIDES)

SHEATHING NOTE

LAMINATED FIBROUS STRUCTURAL (LFS)
SHEATHING MATERIAL SHALL BE INSTALLED
ON ALL WALLS UNLESS OTHERWISE NOTED
ON THE FLOOR PLAN. INSTALL IN
ACCORDANCE WITH SBCRI TECHNICAL
EVALUATION REPORT. STRUCTURAL
PERFORMANCE UNDER LATERAL LOAD
CONDITIONS IS DESIGNED. INSTALLATION
SHALL BE PERFORMED IN ACCORDANCE
WITH THE PROVISIONS FOR WOOD
STRUCTURAL PANELS (WSP/CS-WSP) AS
DEFINED IN THE APPROPRIATE TER SECTION.

STRUCTURAL SHEATHING MATERIAL

OX THERMO-PLY
TER NO. 1004-01

BARRICADE THERMO-BRACE
TER NO. 1507-08

NSP DRYLNE TSX
TER NO. 1407-06

LEGEND	
BWL XXX.XX	BRACED WALL LINE I.D.
	BRACED WALL LINE
	HOUSE WALL
	BRACED WALL PANEL
MSP	WOOD STRUCTURAL PANEL
6B	GYPSUM BOARD (I) SIDED OR (2) SIDED
GB-BW	GYPSUM BOARD BLOCKED WALL CONSTRUCTION (I) SIDED OR (2) SIDED (SEE STANDARD DETAIL G/WB-2)
LIB	LET-IN BRACING (SEE STANDARD DETAIL F / MB-2)
CS-MSP	CONTINUOUS SHEATHING - MOOD STRUCTURAL PANEL
CS-PF	CONTINUOUS SHEATHING - PORTAL FRAME, SEE FLOOR PLANS FOR PORTAL FRAME HEADER INFORMATION (SEE STANDARD DETAIL A, C/ WB-2)
с 5-6	CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL ADJACENT TO GARAGE OPENINGS
Ю	HOLD-DOWN I. SEE SHEET WB-2 "P_" INDICATOR SCHEDULE AND DETAILS 2. ARROW INDICATES LOCATION
NOTES.	

NOTES:
HOUSE HAS BEEN ANALYZED UTILIZING A PRESCRIPTIVE
METHOD IN COMPLIANCE WITH INTERNATIONAL RESIDENTIAL
CODES (IRC) UNLESS OTHERWISE NOTED.

FASTENING SCHEDULE			
SHEATHING	FASTENER	SPACING	
		EDGES	FIELD
7/16" WOOD STRUCTURAL PANELS OR EQUIVALENT (W/ METHOD WSP, CS-WSP, CS-G)	8d COMMON NAILS	6" O.C.	12" 0.C.
	ALTERNATIVE FASTENER I-3/4" I6-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	12" O.C.
I/2" GYPSUM WALLBOARD (W METHOD GB-I, GB-2)	I-1/4" LONG, 1/4" HEAD, .098" DIA. ANNULAR-RINGED NAILS	7" O.C.	7" O.C.
	CORROSION RESISTANT TYPE W I-1/4" DRYWALL SCREWS	7" O.C.	7" O.C.
LAMINATED FIBROUS STRUCTURAL SHEATHING	IOd X I I/4" GALVANIZED ROOFING NAILS	3" O.C.	3" O.C.
	I-I/4" I6-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	3" O.C.
I/2" GYPSUM WALLBOARD BLOCKED AT THE EDGES (W METHOD GB-BW-I, GB-BW-2)	BLOCKING REQUIRED AT ALL GYPSUM EDGES. USED CORROSION RESISTANT TYPE W 1-1/4" DRYWALL SCREWS	4" O.C.	12" O.C.
NOTES:			•

NOTES:

I. MINIMUM 1/16" CROWN WIDTH FOR STAPLES IN WOOD STRUCTURAL PANEL.

2. SPECIFIED GYPSUM FASTENING REQUIRED ONLY WHERE METHOD GB IS IDENTIFIED. SEE PHASE SPECS FOR TYPICAL GYPSUM FASTENER SPACING.

3. USE OF STAPLES IN WOOD STRUCTURAL PANEL AS FASTENING METHOD ON WALLS PER ENGINEERED ALTERNATIVE.