





**ROOF VENTILATION CALCULATIONS**

HOUSE NAME  
HOUSE VERSION  
PRODUCT LINE  
VENTILATION VALUES

HOUSE NAME	BIRCH
HOUSE VERSION	BRH00-01
PRODUCT LINE	RYANHOMES
VENTILATION VALUES	SFF: 1.0 SFF: 1.0 SFF: 1.0 SFF: 1.0

USER GUIDE	YES (opt) NO NO NO NO	(opt) YES YES YES YES	VENT ON NO VENT DK LOW FAIL HIGH FAIL INCREASE TOTAL VENT	No action req'd. No action req'd. Increase ridge. Decrease ridge. Increase total vent.
------------	-----------------------------------	-----------------------------------	-----------------------------------------------------------------------	----------------------------------------------------------------------------------------------------

ELEVATION "A"												
Location / Option	Area (sq. ft.)	Required: A/150 (sq. ft.)	Required: A/200 (sq. ft.)	Soffit (sq. ft.)	Soffit Vent (sq. ft.)	Ridge (sq. ft.)	Ridge Vent (sq. ft.)	Upper Box / Stable Vent (sq. ft.)	Lower Box Vent (sq. ft.)	TOTAL (sq. ft.)	OK A/150	OK A/200
HOUSE WITH GARAGE	640.00	107.00	133.00	42	190.00	14	252.00			640.00	NO	YES

ELEVATION "B"												
Location / Option	Area (sq. ft.)	Required: A/150 (sq. ft.)	Required: A/200 (sq. ft.)	Soffit (sq. ft.)	Soffit Vent (sq. ft.)	Ridge (sq. ft.)	Ridge Vent (sq. ft.)	Upper Box / Stable Vent (sq. ft.)	Lower Box Vent (sq. ft.)	TOTAL (sq. ft.)	OK A/150	OK A/200
HOUSE WITH GARAGE	400.00	71.00	88.00	42	190.00	14	252.00			400.00	NO	YES

ELEVATION "K"												
Location / Option	Area (sq. ft.)	Required: A/150 (sq. ft.)	Required: A/200 (sq. ft.)	Soffit (sq. ft.)	Soffit Vent (sq. ft.)	Ridge (sq. ft.)	Ridge Vent (sq. ft.)	Upper Box / Stable Vent (sq. ft.)	Lower Box Vent (sq. ft.)	TOTAL (sq. ft.)	OK A/150	OK A/200
HOUSE WITH GARAGE	640.00	107.00	133.00	42	190.00	14	252.00			640.00	NO	YES

ELEVATION "L"												
Location / Option	Area (sq. ft.)	Required: A/150 (sq. ft.)	Required: A/200 (sq. ft.)	Soffit (sq. ft.)	Soffit Vent (sq. ft.)	Ridge (sq. ft.)	Ridge Vent (sq. ft.)	Upper Box / Stable Vent (sq. ft.)	Lower Box Vent (sq. ft.)	TOTAL (sq. ft.)	OK A/150	OK A/200
HOUSE WITH GARAGE	640.00	107.00	133.00	42	190.00	14	252.00			640.00	NO	YES



**HOUSE VOLUME CALCULATIONS**

HOUSE NAME	BIRCH
HOUSE VERSION	BRH00-01

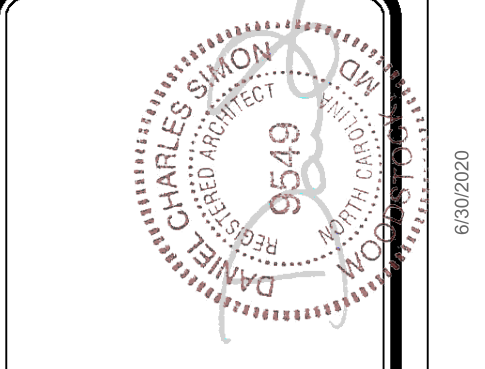
**Note:** The volume of the structure has been computed in accordance with "Title 5, of the Community Affairs, Chapter 23, Uniform Construction Code, Subchapter 2, Administration and enforcement: Process." (5,23-2.28. Volume computation)

ELEVATION "A"			
Location / Area of house	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)
Left side of the house	640.00	21.45	13730
Right side of the house	400.00	19.95	7981
Total House Volume			21711

ELEVATION "B", "L"			
Location / Area of house	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)
Left side of the house	640.00	21.45	13730
Right side of the house	400.00	19.95	7981
Porch on front of house	24.00	8.90	214
Total House Volume			21925

ELEVATION "K"			
Location / Area of house	Floor Area (sq. ft.)	Mean height (ft.)	Total volume (cu. Ft.)
Left side of the house	640.00	21.45	13730
Right side of the house	400.00	19.95	7981
Porch on front of house	24.00	8.49	204
Total House Volume			21915

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.)
Partial Front Porch "EPB" W/ Elevation A "ELA"	24.00	8.49	204
Full Basement "FBA"	640.00	8.61	5513
Crawl space "FCA"	640.00	0.80	512



DIV-COMM-LOT-UNIT

COMM-LOT

STREET ADDRESS

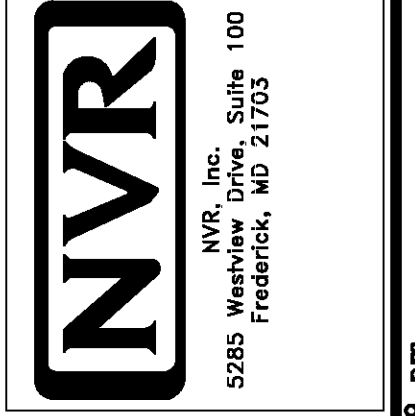
CITY

STATE

ZIP

APT. NO.

The owner, expressly reserves the right to be reproduced, changed, or otherwise, in any way, without the consent of NVR, Inc.



SHEET NO. CA-1

MODEL BIRCH

DRAWING TITLE

OPTION DESCRIPTION

SET NO. BRH00-01

VERSION 01

DRAWN BY

DATE:

OPTION



**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.
- These plans are subject to modification as necessary to meet code requirements or to facilitate mechanical/plumbing installations or to incorporate design improvements.
- These plans are not to be scaled for construction purposes. Dimension lines and notes supersede all scale references.
- Single Family Attached/Detached - Automatic residential fire sprinkler systems shall be installed in accordance with **NCRC P2404** or **NFPA 13D** where required.
- 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 301.3**.

**CODE ANALYSIS**

- 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, NCFP 2018, NCFGC 2018, NEC 2017 w/ NC Amendments, NCEC 2018, NCFPE 2018
- Use Group: R-3
- Constr. Type: V-B
- 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 Conservation 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	CEILING 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	CRANK SPACE WALL R-VALUE
3	0.35	0.20	36	15 / 14	14	5 / 15	NA	5 / 15
4	0.35	0.20	36	15 / 14	14	10 / 15	10	10 / 15

- All HVAC equipment is sized based on ACCA Manual J calculations. Ductwork is sized using ACCA 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.
- Roof ventilation calculations are based on the following specifications:
  - Ridge vent: Minimum 18 sq. in. of vent per linear foot
  - Soffit vent: Minimum 1.9 sq. in. of vent per linear foot
  - Roof Jack (box vent): Minimum 45 sq. in. of vent per unit
- See NVR "Standard Energy Package" for field procedures and details.

**DESIGN LOADS**

Table of Loads for House Structure. Per Table 301.5

Floor Living Areas	- 40# P.S.F. (Live)	- 10# P.S.F. (Dead)
Floor Sleeping Areas	- 30# P.S.F. (Live)	- 10# P.S.F. (Dead)
Garage Floors	- 50# P.S.F. (Live)	- 50# P.S.F. (Dead)
Roof Areas - Top Chord	- 20# P.S.F. (Live)	- 10# P.S.F. (Dead)
- Bottom Chord	- 10# P.S.F. (Live) (Attics without storage)	- 20# P.S.F. (Live) (Attics with limited storage)
Habitable Attics	- 10# P.S.F. (Dead)	- 10# P.S.F. (Live)
Trusses	- Areas up to 150 mph ultimate wind speed per Table R301.2(4)	- Exposure category 'B'
Halls	- Areas up to 150 mph ultimate wind speed per Table R301.2(4)	- Areas up to 150 mph ultimate wind speed per Table R301.2(4)
Stairs	- 40# P.S.F. (Live)	- 10# P.S.F. (Dead)
Allowable deflection of structural members per IRC Table R301.1		

**Design Criteria**

- National Design specification for Wood Construction by National Forest Products Association.
  - Specification for the Design Fabrication and Erection of Structural Steel for Buildings by American Institute of Steel Construction.
- Materials:
- Headers\* Southern Pine (KD-14), No. 1 Grade
  - Studs Spruce-Pine-Fir, Stud Grade
  - Jacks Spruce-Pine-Fir, Stud Grade
  - Beams\*\* Southern Pine (KD-14), No. 1 Grade
  - Joists 2x10 Hem-Fir (KD-14), No. 2 Grade or better (NGLIB & NNPA)
  - 2x8 Southern Pine (KD-14), No. 1 Grade or better
  - 2x10 Spruce-Pine-Fir (KD-14), No. 2 Grade or better (NLGA)
  - LVL 1.4E Minimum
- \* Where required, Laminated Veneer Lumber may be used per Engineering
- \*\* Structural Steel - A.S.T.M. A36

**FOUNDATIONS**

- All plain and reinforced concrete shall comply with requirements in **ACI 318**.
- Concrete footings shall be poured a maximum 5' slump, 5 bag mix, and 2500 psi minimum strength per **Table R402.1**. 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.
- Walls and footings designed as unreinforced unless otherwise specified on foundation plans or details. Frost soil and/or site conditions may require the addition of reinforcing.
- Footing frost depth to be no less than 12" per **R403.1.4** and **Table R301.2(1)**.
- Minimum Soil Bearing Capacity shall be 2,000 PSF per **Table R401.4.1**.
- 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**.
- Unconditioned crawl spaces shall have a minimum net area of ventilation not less than 1 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 1 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 **R403.1.2**.
- Foundation drains shall be located per local codes and according to local site conditions. Drain discharges by gravity or mechanical means to conform with approved site plan and installed per **Section R403.1**.
- The top course of block of foundation walls shall be semi-solid block or open cores of hollow block shall be filled with mortar.
- Block piers to be solid block or mortar-filled hollow block.
- 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.
- Concrete and masonry foundation walls shall be dampproofed with min. 3/8" portland cement paring from footing to top of finished grade. The paring shall be covered with a coat of approved bituminous material applied at the recommended rate per **R406.1**.
- 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**.
- Non-structural garage slabs shall be nominal 3 1/2" thick. Structural garage slabs shall be nominal 4" thick. All garage slabs shall be 3500 PSI air-entrained concrete on compacted / undisturbed soil per **Table R402.2**.
- Foundation framing anchors shall be 1/2"x18" anchor bolts with T1 minimum embedment or Simpson Strong-Tie MASA / USP FAS (16 gauge steel, galvanized) or equivalent set in concrete or grouted cell, 1'-0" 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 shall have min. 1" anchor straps and those 12" or shorter can be installed without anchor straps. Townhouses in seismic design category 'C' shall require a 22"x3" x 3" plate washer per **R403.1.6.1** and maximum anchor bolt spacing for buildings over two stories shall be 4'.
- Steel columns and bases shall be given a shop coating of rust-inhibitive paint or equivalent to provide corrosion resistance per **R407.2**.
- For masonry veneers:
  - Per **R103.5.4.1** - 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 2.61 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 (914 mm) on center and placed within 12 inches (305 mm) of the wall opening.
  - Per **R103.5.2** - One layer of No. 15 asphalt felt or other approved water-resistive barrier shall be provided behind brick.
  - Per **Table R103.5.4** - Provide minimum 1-inch air space between brick veneer and sheathing.
  - Per **R103.5.6** - Provide minimum 3/16" diameter weep holes at 33" on center maximum, located immediately above the flashing.
  - Per **R103.5.5** - 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 NVR Flashing Details.
- Porch slab and exterior concrete work shall be nominal 4" minimum #3500 air entrained concrete w/ 6x6 #10 W/M in accordance with specifications by engineering.
- 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 exceed the footing thickness. Strip footings, pier pads, and any other footing identified as being greater than 8" in thickness shall not be reduced.
- Block foundation walls may be substituted for poured foundation walls shown on foundation plans provided all requirements of **Section R404** are met.
- Termite treatment provided below slabs or to framing members per **R310.1**.

**FOUNDATION WALL DESIGN (c)**  
NCRC PRESCRIPTIVE CODE OR ENGINEERED DESIGN PER ACI 318.2

WALL HEIGHT	WALL THICKNESS	LATERAL SOIL LOAD (w)	UNBALANCED FILL	VERTICAL REINFORCING (v)	HORIZONTAL REINFORCING (h)
8'-0"	6"	45	6'-0"	NOT REQUIRED	2- #4 BARS (f)
		60	7'-0"	NOT REQUIRED (d)	3- #4 BARS (d)
		60	6'-0"	NOT REQUIRED (d)	3- #4 BARS (d)
	10"	45	6'-0"	NOT REQUIRED	2- #4 BARS (f)
		60	7'-0"	#4 @ 22" O.C. (d)	3- #4 BARS (d)
		60	6'-0"	NOT REQUIRED	2- #4 BARS (f)
12'-0"	6"	45	7'-0"	NOT REQUIRED (d)	4- #4 BARS (d)
		60	8'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (d)
		60	7'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (d)
	10"	45	7'-0"	NOT REQUIRED	3- #4 BARS (g)
		60	8'-0"	NOT REQUIRED (d)	4- #4 BARS (d)
		60	7'-0"	NOT REQUIRED (d)	4- #4 BARS (d)

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.

- SOIL CLASSES GM, GC, SM, SM-SC AND ML - 45 PSF SOIL CLASSES SC, MH, ML-CL AND CL - 60 PSF
- SPACINGS SHOWN IS BASED UPON Fy = 60,000 PSI STEEL FOR Fy = 40,000 PSI STEEL, REDUCE SPACING BY 0.67
- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI
- ENGINEERED DESIGN PER ACI 318-14, REQUIREMENTS FOR RESIDENTIAL CONCRETE CONSTRUCTION
- FOR ALL WALL HEIGHTS, ONE HORIZONTAL BAR SHALL BE LOCATED WITHIN THE TOP 24" 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.
- ONE BAR WITHIN 12" OF TOP AND AT MID-HEIGHT OF WALL PER TABLE R404.1.2(1).
- ONE BAR WITHIN 12" OF TOP AND ONE EACH AT THIRD POINT OF WALL HEIGHT PER TABLE 404.1.2(1).

**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. operable area (5.0 sq. ft. if at grade level) with maximum sill height 44" above finish floor (min. hgt. 24", min. width 20") per **R310.1**.
- All emergency escape and rescue openings shall have a minimum net clear operable 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 5.7 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 5 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**.
- 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.
- Sliding glass drs/patio drs/walks must be safety glazed per **R308.4**.
- Interior stairway shall have minimum head room of 6'-8" per **R311.2** and minimum tread depth of 4" 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" gypsum board per **R302.7**.
- Guard rails to have minimum height of 36" and shall not have openings from the walking surface to the required guard height which allow passage of a sphere 4 inches in diameter per **R312.1**.
- 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 **R312.3**.
- 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 stairway in accordance with **Section R311.7** (see item #5 above) or a ramp in accordance with **Section R311.6**.
- Handrails shall be installed on exterior stairs having (4) or more risers per **R311.1.6**. 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.
- All flashing used (including at windows, doors, and with stone or masonry veneer) shall be corrosion-resistant per **R103.4**. See NVR Flashing Details.
- Wood framed walls assumed to be 2 x 4 stud construction unless otherwise noted on plans. Bearing walls shall have studs spaced at 16" o.c. maximum per **Table R602.3(3)** and **Table R602.3(5)**.
- All exterior sheathing to be structural sheathing designed in accordance with **R602.10**.
- An approved water-resistive barrier shall be applied over sheathing of exterior walls per **Section R103.2**.
- 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.
- 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 Type W 1-1/4" drywall screws.

SCREW FASTENING SCHEDULE				
Framing Spacing	WITH ADHESIVE			
	Ceilings	Load-brg. walls	Non-load-brg. walls	
16	16	24	24	
24	16	24	24	
Framing Spacing	WITHOUT ADHESIVE			
	Ceilings	Load-brg. walls	Non-load-brg. walls	
16	12	16	16	
24	12	12	12	

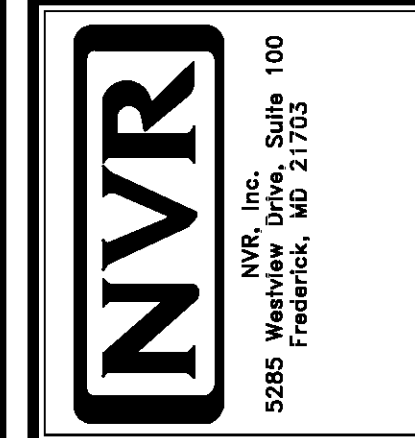
- For 1/2" wallboard, nails shall be 1-1/4" long, 1/4" head and .098 diameter shanks with annular ring or acceptable equivalent and comply with ASTM C54.
  - For 5/8" wallboard, nails shall be 1-3/8" long, 1/4" head and .098 diameter shanks.
- Garages shall be completely separated from the residence 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" gypsum 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 R302.5.1**.
  - Asphalt shingles shall be installed per **Section R305.2**. 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 R305.1** Exception #1.
  - Attic spaces shall be ventilated w/ ridge and soffit vents unless otherwise noted. Venting provided per **R306.2**.
  - Fireblocking shall be installed between ceiling and floor openings per **R302.11**. Draftstopping to be installed in accordance with **R302.12**.
  - 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 **P2105**.
  - Heating and cooling equipment installation shall be in accordance with IRC Chapter 14 and the International Mechanical Code.
  - Mechanical fireplaces shall be installed per **Section R1004** and **1005**.
  - 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**.
  - Untreated wood shall be minimum 8" above finish grade per **R311.1** item #2.
  - Bottom plates on slabs and any wood in contact w/ concrete or masonry to be pressure treated material per **Section R311**.
  - 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 1 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 **R311.3**.
  - 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 **R303.6**.
  - Fasteners and connectors for pressure preservative-treated wood shall be hot-dipped galvanized steel.
  - Windows that have an operable opening more than 12" 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**.
  - The final grade shall fall a minimum of 6 inches within the first 10 feet of the foundation per **R401.3**.
  - 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 gypsum board. Venting requirements shall apply to both soffit and underlayment and shall be per **Section R302.6**. Where the property line is 10 feet or more from the building face, the provisions of this code section shall not apply.
    - Townhouse construction (**R302.2.5**):
      - Projections extending into the fire-separation distance shall have not less than 1-hour fire-resistive construction on the underside. 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 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 R302.2** by more than 50%. Vents in soffit are not allowed within 4 feet of the walls or property lines per **R302.2.5** and **R302.2.6**.
  - 1-hour fire-rated construction required on projections within 2' to 3' of lot line per **R302.1**. No projections allowed within 2' of property line.
    - 1-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.
  - 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 6B, shall not be permitted in Seismic Design Category C.
  - Minimum floor sheathing shall be 5/8" tongue & groove decking underlayment grade plugged and ganded, exterior glue, glued and nailed on joists to meet. \*American Plywood Association\* approved glued floor system, unless otherwise specified.

**ELECTRICAL**

- Ground-fault and arc-fault circuit interrupter protection is provided per **NFPA 70** (National Electric Code).
- Electric panel box installation to be in accordance with **NFPA 70, Article 408 Section III**. Location may vary by design.
- 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.
- 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 ceiling 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.
- 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 1fc measured at the center of the tread or landing per **R303.7**.
- Outlets within 6' of a sink must be GFI protected.
- 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**.
- Outlets installed in laundry areas must be GFI protected.



REV. NO.	DATE	DESCRIPTION
1	5/1/18	MBT - CODE UPDATES FOR 2018 NCRC
2	5/1/18	MBT - UPDATED ENERGY NOTES

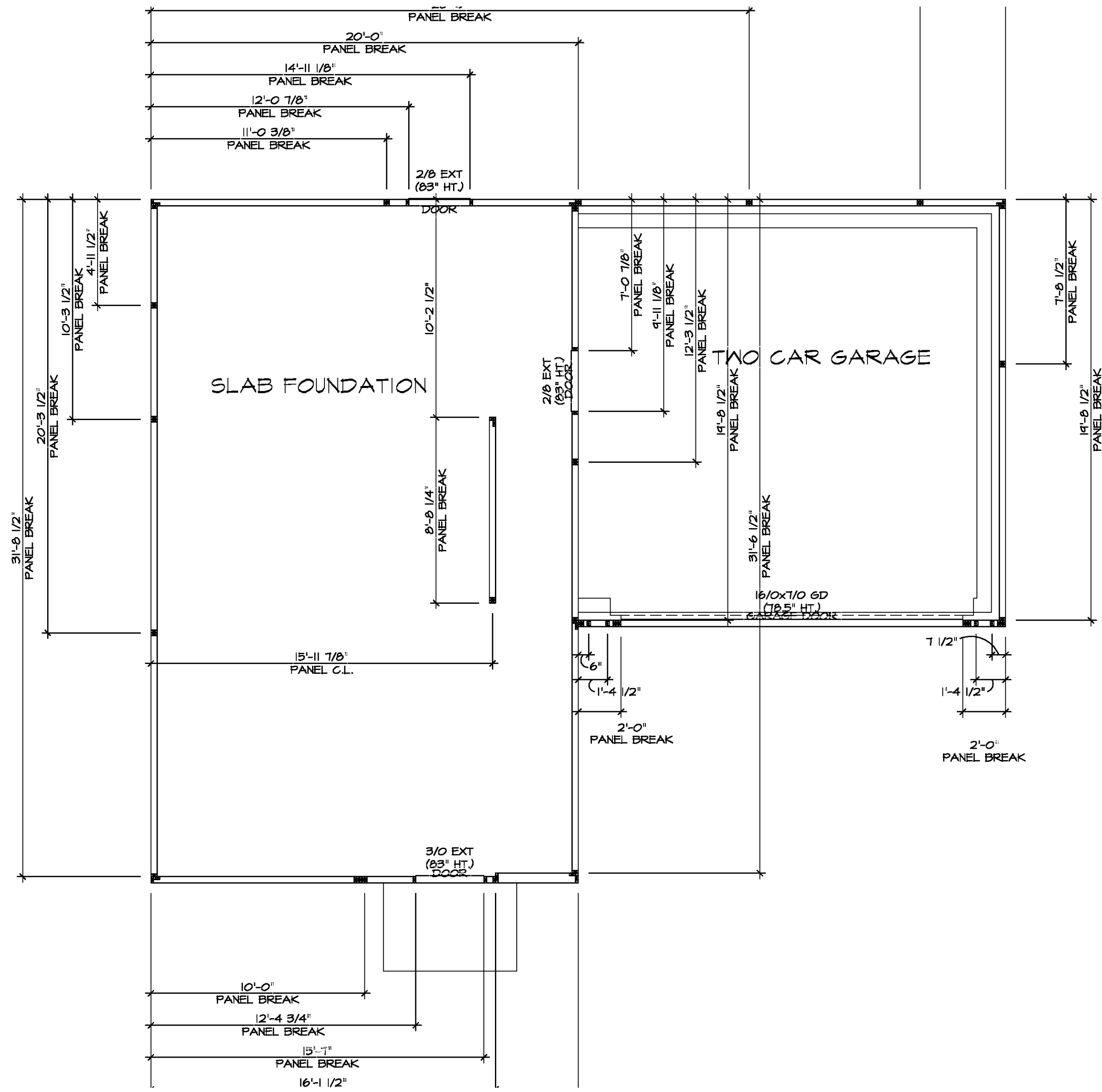


MODEL	SET NO.	VERSION	DRAWN BY	DATE	OPTION
NCRC 2018 SPEC SHEET	SS-1				
DRAWING TITLE: SINGLE FAMILY ATTACHED SINGLE FAMILY DETACHED					
OPTION DESCRIPTION: NC State Building Code - Residential Code 2018					

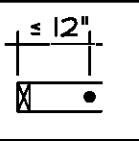










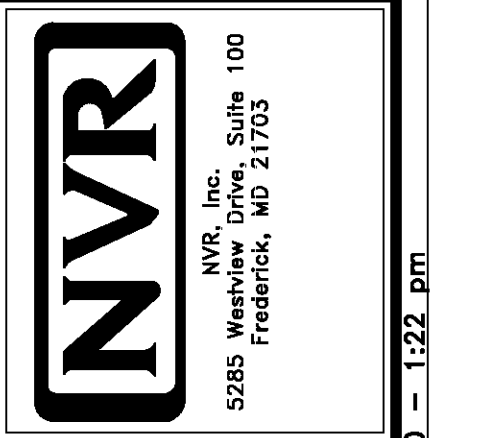
**FOUNDATION HOLD DOWN PLAN**  
SCALE: 1/4" = 1'-0"

HOLD DOWN NOTES	
REFER TO DETAIL (4/FD-1) FOR HOLD DOWN OFFSET DIMENSIONS. REFER TO DETAIL (12/FD-1) FOR HOLD DOWNS ON CMU BLOCK.	
	1. ALL PANELS GREATER THAN 24" SHALL HAVE AN ANCHOR WITHIN 12" OF THE PANEL BREAKS / ENDS. (SEE DETAIL SHEET FF-1 FOR MORE INFORMATION ON ANCHOR DETAILS)
	1. STRAP: a. ON FOUNDATION USE (STHD14) b. ON FLOOR SYSTEM USE (STHD14R/L) 2. ALL OTHER HOLD DOWN SEE DETAIL (MB-1, 2, 4) FOR MORE INFORMATION. 3. STRAP LOCATION ON PLANS SHOWN BY DASHED DIMENSION TO CENTER OF STUDS
OR	
	1. 5/8"Ø THREADED ROD 2. ALL OTHER HOLD DOWN SEE DETAIL (MB-1, 2, 4) FOR MORE INFORMATION. 3. BOLT LOCATION ON PLANS SHOWN BY SOLID DIMENSION TO CENTER OF BOLT

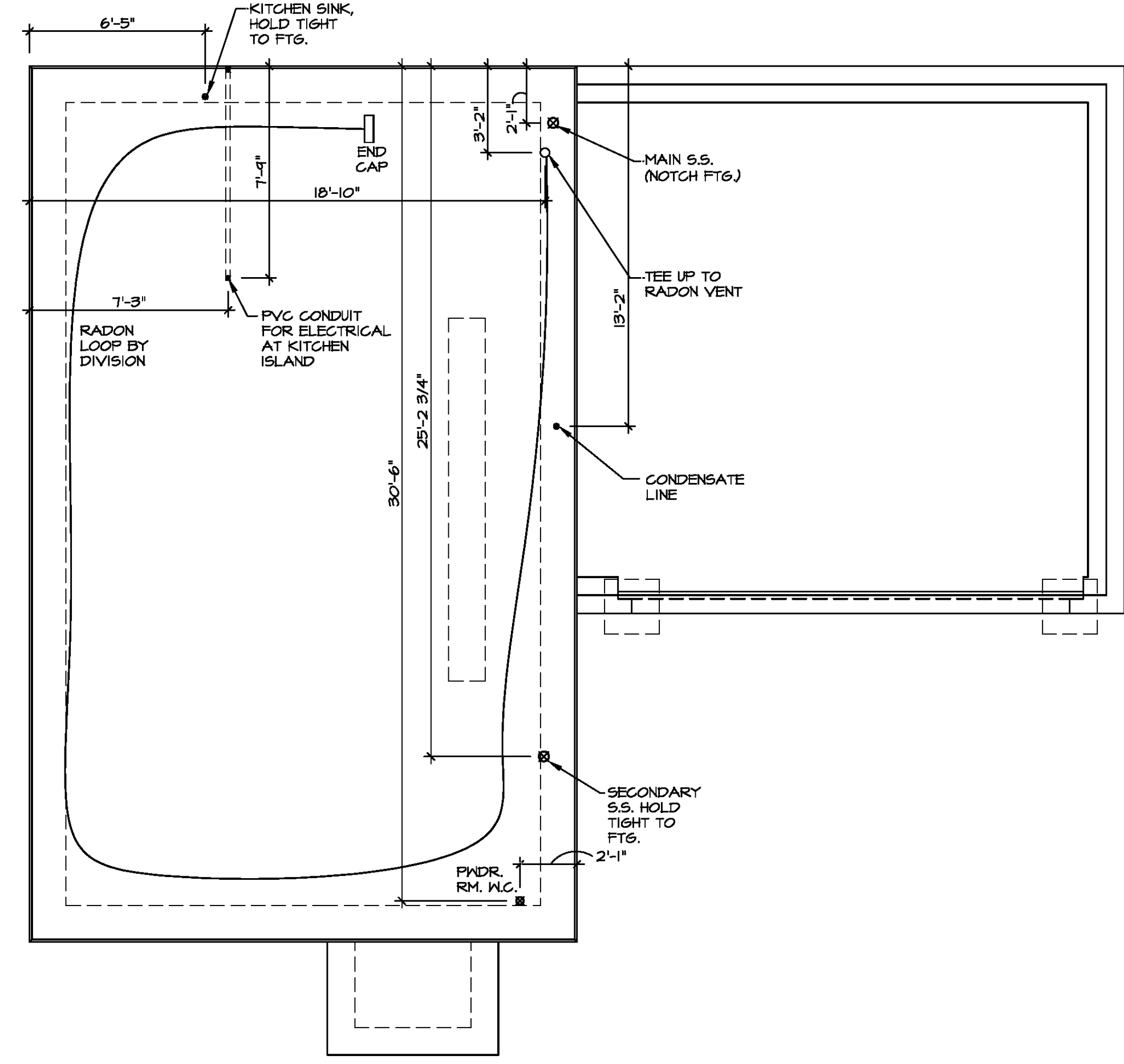


DIV-COMM-LOT-UNIT  
COMM-LOT  
STREET ADDRESS  
CITY STATE ZIP

The owner expressly reserves the right to be reproduced, changed, or otherwise used in any way without the written consent of NVR, Inc.



SHEET NO.	MODEL	SET NO.	BRH00
A-3	BIRCH	VERSION	01
13	FOUNDATION HOLD DOWN DETAILS	DRAWN BY	
		DATE	
		OPTION	



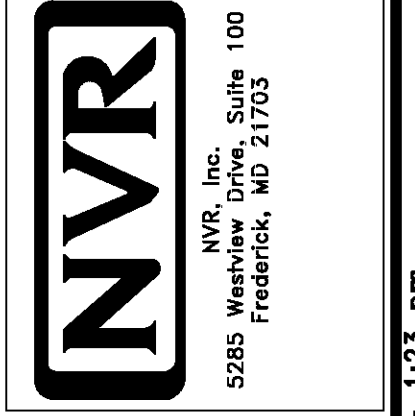
INSTALLATION OF RADON STACK AND LOOP TO BE DETERMINED BY DIVISION

1 PLUMBING PLAN  
A-4 SCALE: 1/4" = 1'-0"



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

The owner, expressly reserves its right to be reproduced, changed, or otherwise, nor are they to be assigned to any third party, without the written consent of NVR, Inc.



SHEET NO. <b>A-4</b>	MODEL <b>BIRCH</b>	SET NO. BR400	VERSION 01
	DRAWING TITLE PLUMBING PLAN	DRAWN BY	DATE
	OPTION DESCRIPTION	OPTION	





FIRST FLOOR JACK SCHEDULE		
IDENTIFIER	DESCRIPTION	ENG. NUM.
J100	JACK - (4) 2X4 SFF STUD GRADE	1004
J101	JACK - (2) 2X4 SFF STUD GRADE	1002
J102	JACK - (3) 2X4 SFF STUD GRADE	1015
J103	JACK - (3) 2X4 SFF STUD GRADE	1015
J104	JACK - (4) 2X4 SFF STUD GRADE	1004
J105	JACK - (2) 2X4 SFF STUD GRADE	1008
J106	JACK - (2) 2X4 SFF STUD GRADE	1008

- FLOOR PLAN NOTES**
- ALL HEADERS ARE (2) 2x6 w/ 2x4 WALLS OR (3) 2x6 w/ 2x6 WALLS, UNLESS OTHERWISE NOTED.
  - ALL HEADERS TO HAVE (1) 2x4 OR 2x6 JACK AND KING STUD EACH END, UNLESS OTHERWISE NOTED.
  - MULTI-OPENING HEADERS TO HAVE (2) JACKS AT INTERMEDIATE BEARING, UNLESS OTHERWISE NOTED. NO ADDITIONAL FLOOR SYSTEM BLOCKING OR CONTINUOUS LOAD PATH JACKS ARE REQUIRED UNLESS OTHERWISE NOTED.
  - 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.
  - HATCHED AREAS INDICATE DROPPED CEILINGS. ALL DROPPED CEILINGS ARE 12" UNLESS OTHERWISE NOTED.
  - SEE "BRACED WALL PANEL DETAIL SHEET" FOR SPECIAL WALL FRAMING LOCATIONS AND HEADER SIZES, IF APPLICABLE.
  - SEE STANDARD DETAIL CATEGORY "IT" SHEET(S) FOR INTERIOR TRIM DETAILS.
  - SEE ARCHITECTURAL DETAIL SHEET "AD" FOR HOUSE SPECIFIC INTERIOR TRIM OPTION TABLE.
  - ALL HEADERS IN NON-BEARING WALLS SHALL BE A SINGLE FLAT 2X4 OR 2X6 ATTACHED TO CRIPPLES ABOVE, UNLESS OTHERWISE NOTED.
  - TANKED WATER HEATER SHOWN AS BASE CONDITION. OPTIONAL TANKLESS WATER HEATER IS AVAILABLE IN LIEU OF TANKED WATER HEATER.

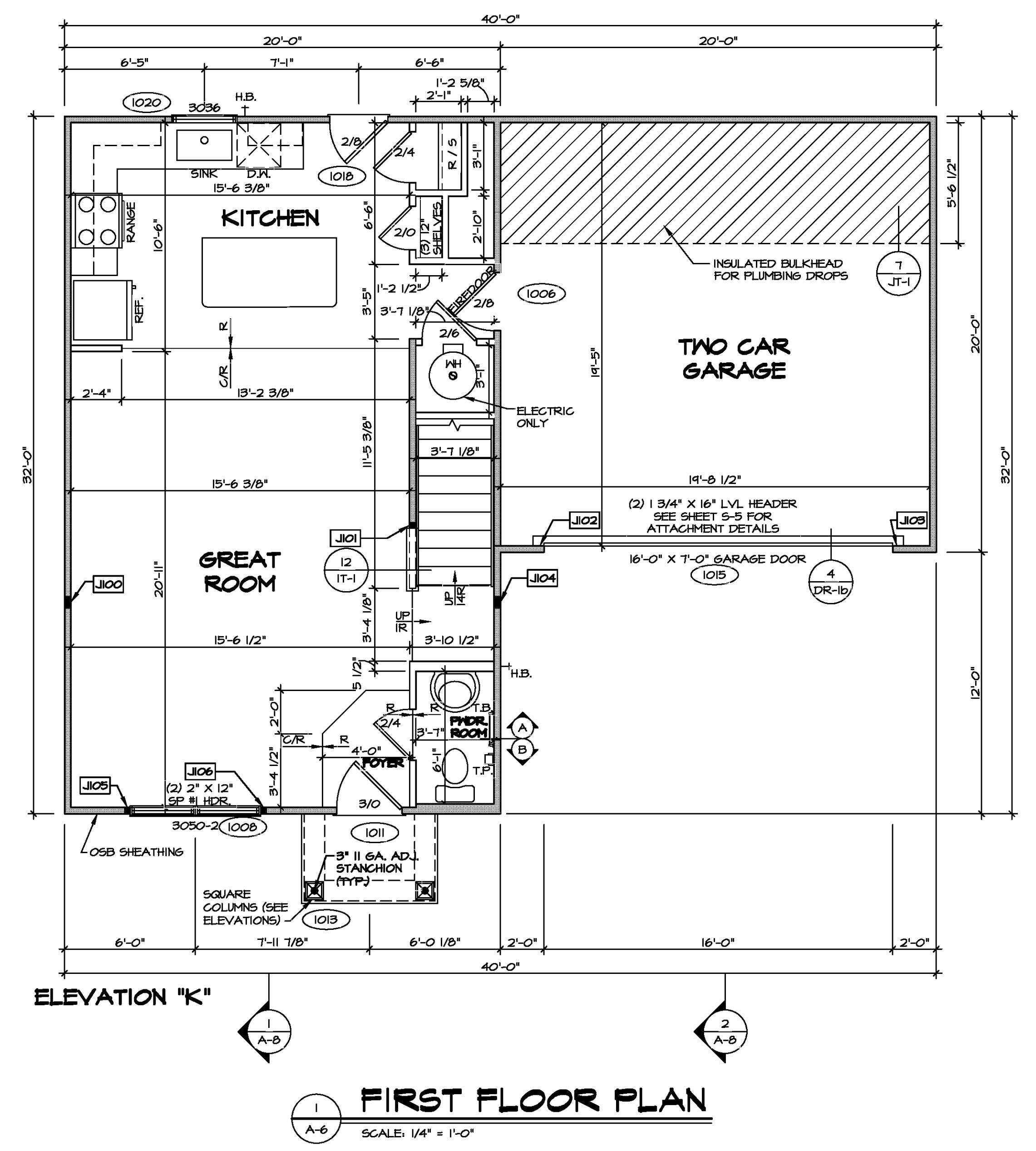
- GYPSUM NOTES**
- AT GARAGE:**  
GYPSUM BOARD AT COMMON WALLS, CEILINGS, BEAM WRAPS AND SUPPORTS PER STANDARD DETAIL FA-1(b) FIRE ASSEMBLIES OR AS REQUIRED BY LOCAL CODE.
- AT STAIRS:**  
1/2" GYPSUM BOARD AT UNDERSIDE OF STAIRS AND WALLS IN CLOSET

**LEGEND**

- BEARING WALL
- NON BEARING WALL
- INDICATES BEARING FROM POINT-LOAD ABOVE
- JACKS
- BEAM/HEADER
- PAD FOOTING
- STEEL COLUMN
- TRUSS TIE DOWN
- PORTAL FRAME
- JOIST/TRUSS
- LVL
- ENGINEERING PAGE NUMBER

SEE FC DETAILS FOR FRAMING CONNECTORS

ALL WINDOWS HAVE 7'-0" 1/2" HEADER HEIGHT UNLESS OTHERWISE NOTED



DIV-COMM-LOT-UNIT		COM-LOT		STREET ADDRESS		CITY		STATE		APT. NO.		ZIP	
<p>© NVR, Inc. expressly reserves the right to modify these plans without notice. These plans are not to be reproduced, changed, or altered in any way without the written consent of NVR, Inc.</p>													
<p>NVR, Inc. Suite 100 5285 Walkers Lane Frederick, MD 21703</p>													
SET NO. BRH00		VERSION 01		DRAWN BY		DATE:		OPTION					
MODEL BIRCH		DRAWING TITLE		FIRST FLOOR PLAN		OPTION DESCRIPTION							
SHEET NO. A-6		DRAWING TITLE		FIRST FLOOR PLAN		OPTION DESCRIPTION							
17													



**FLOOR PLAN NOTES**

1. 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. MULTI-OPENING HEADERS TO HAVE (2) JACKS AT INTERMEDIATE BEARINGS, UNLESS OTHERWISE NOTED. NO ADDITIONAL FLOOR SYSTEM BLOCKING OR CONTINUOUS LOAD PATH JACKS ARE REQUIRED 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 SPECIFIC INTERIOR TRIM OPTION TABLE.
8. ALL HEADERS IN NON-BEARING WALLS SHALL BE A SINGLE FLAT 2x4 OR 2x6 ATTACHED TO GRIFFLES ABOVE, UNLESS OTHERWISE NOTED.
9. TANKED WATER HEATER SHOWN AS BASE CONDITION. OPTIONAL TANKLESS WATER HEATER IS AVAILABLE IN LIEU OF TANKED WATER HEATER.

**GYPSUM NOTES**

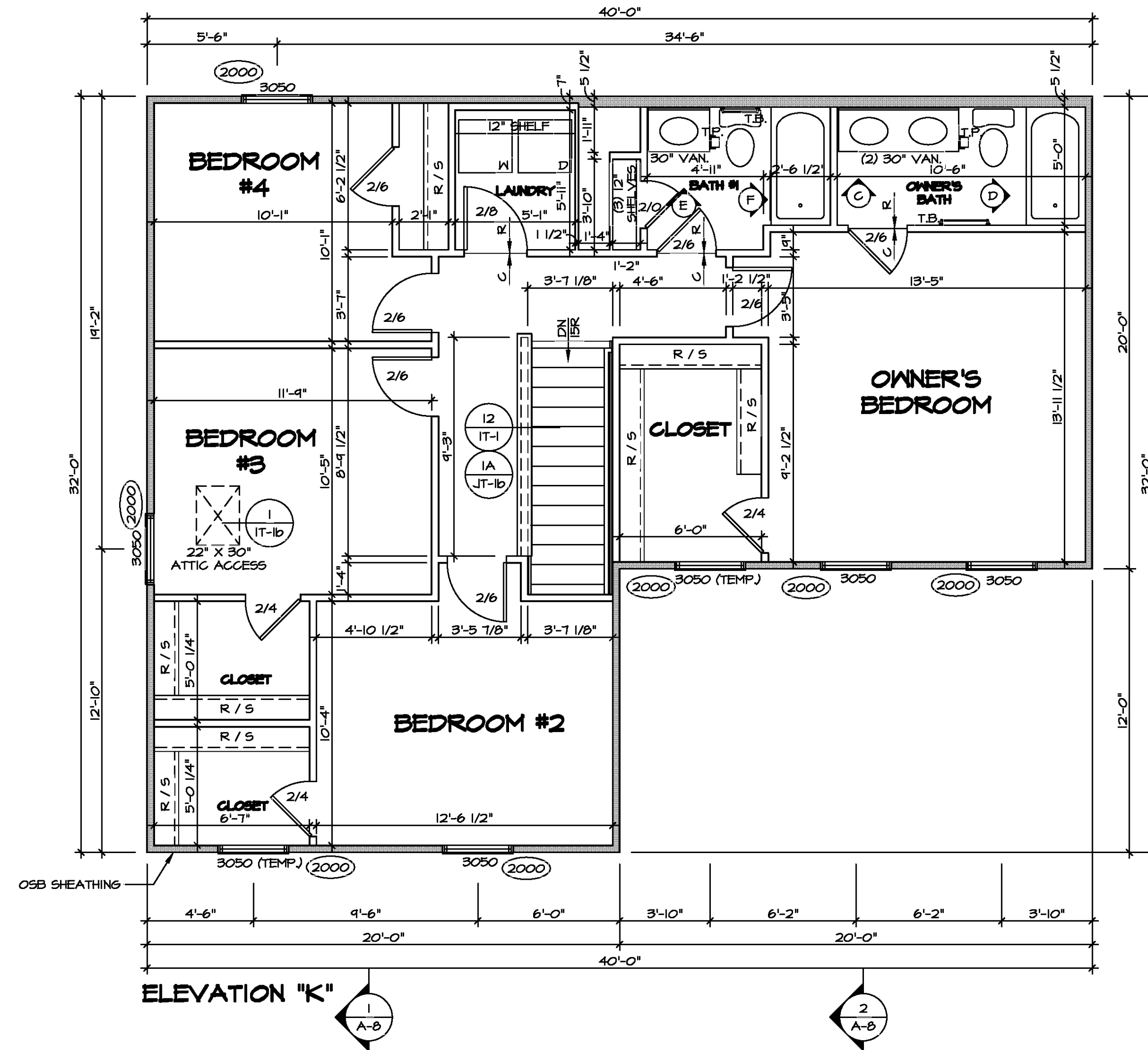
AT GARAGE:  
GYPSUM BOARD AT COMMON WALLS, CEILING, BEAM WRAPS AND SUPPORTS PER STANDARD DETAIL FA-1(b) FIRE ASSEMBLIES OR AS REQUIRED BY LOCAL CODE.

AT STAIRS:  
1/2" GYPSUM BOARD AT UNDERSIDE OF STAIRS AND WALLS IN CLOSET

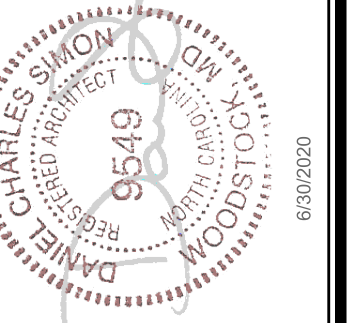
**LEGEND**

- BEARING WALL
  - NON BEARING WALL
  - INDICATES BEARING FROM POINT-LOAD ABOVE
  - JACKS
  - BEAM/HEADER
  - PAD FOOTING
  - STEEL COLUMN
  - TRUSS TIE DOWN
  - PORTAL FRAME
  - JOIST/TRUSS
  - LVL
  - ENGINEERING PAGE NUMBER
- SEE FC DETAILS FOR FRAMING CONNECTORS

ALL WINDOWS HAVE 7'-4 5/8" HEADER HEIGHT UNLESS OTHERWISE NOTED

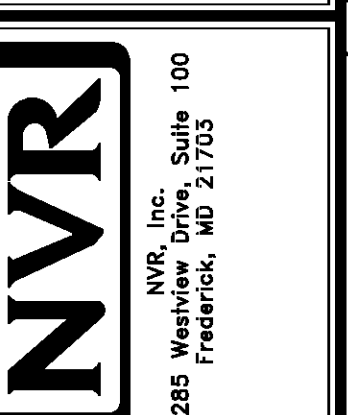


**SECOND FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

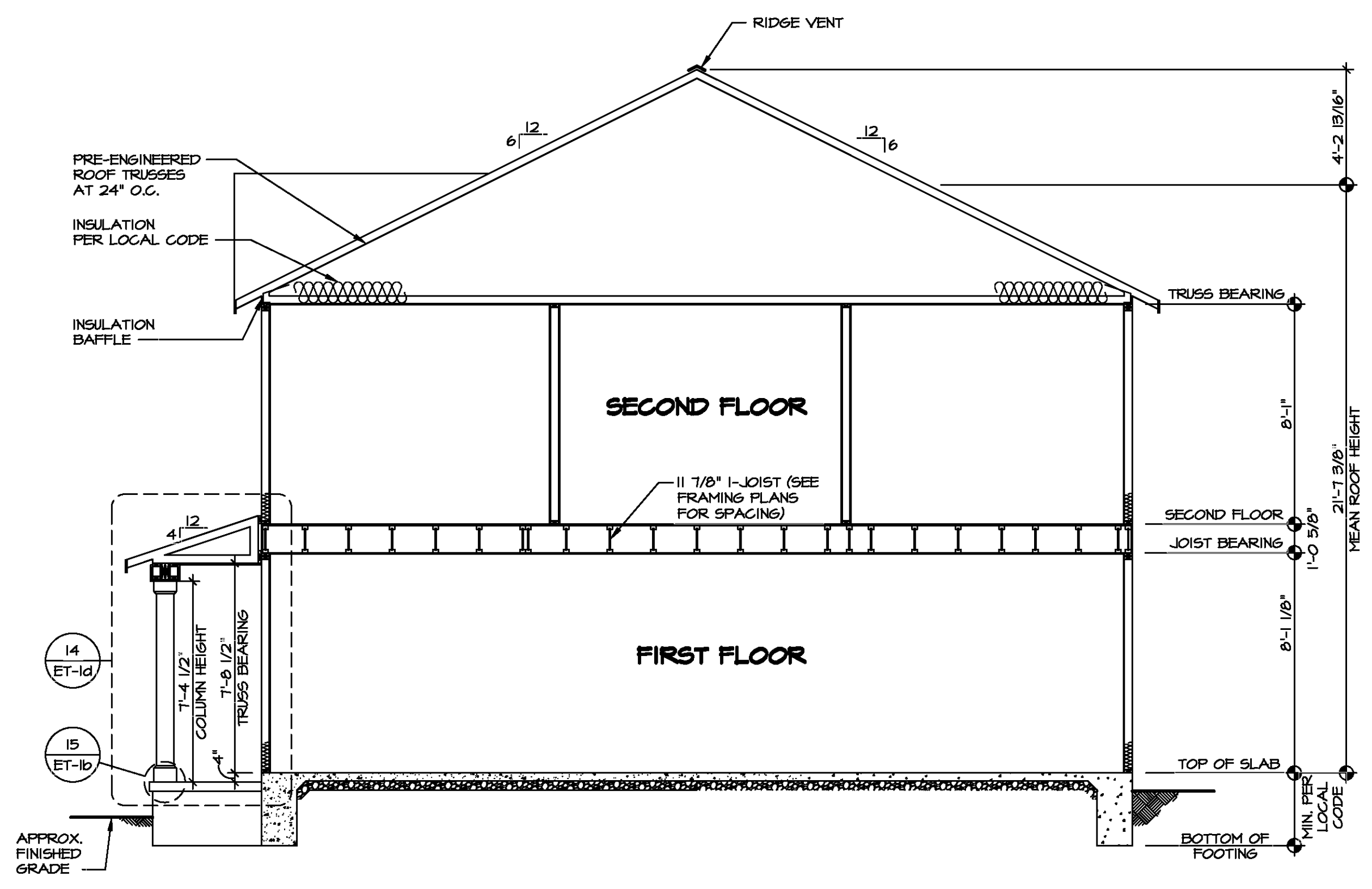


---  
DIV-COMM-LOT-UNIT  
COM-LOT  
STREET ADDRESS  
CITY  
STATE  
APT. NO.  
ZIP

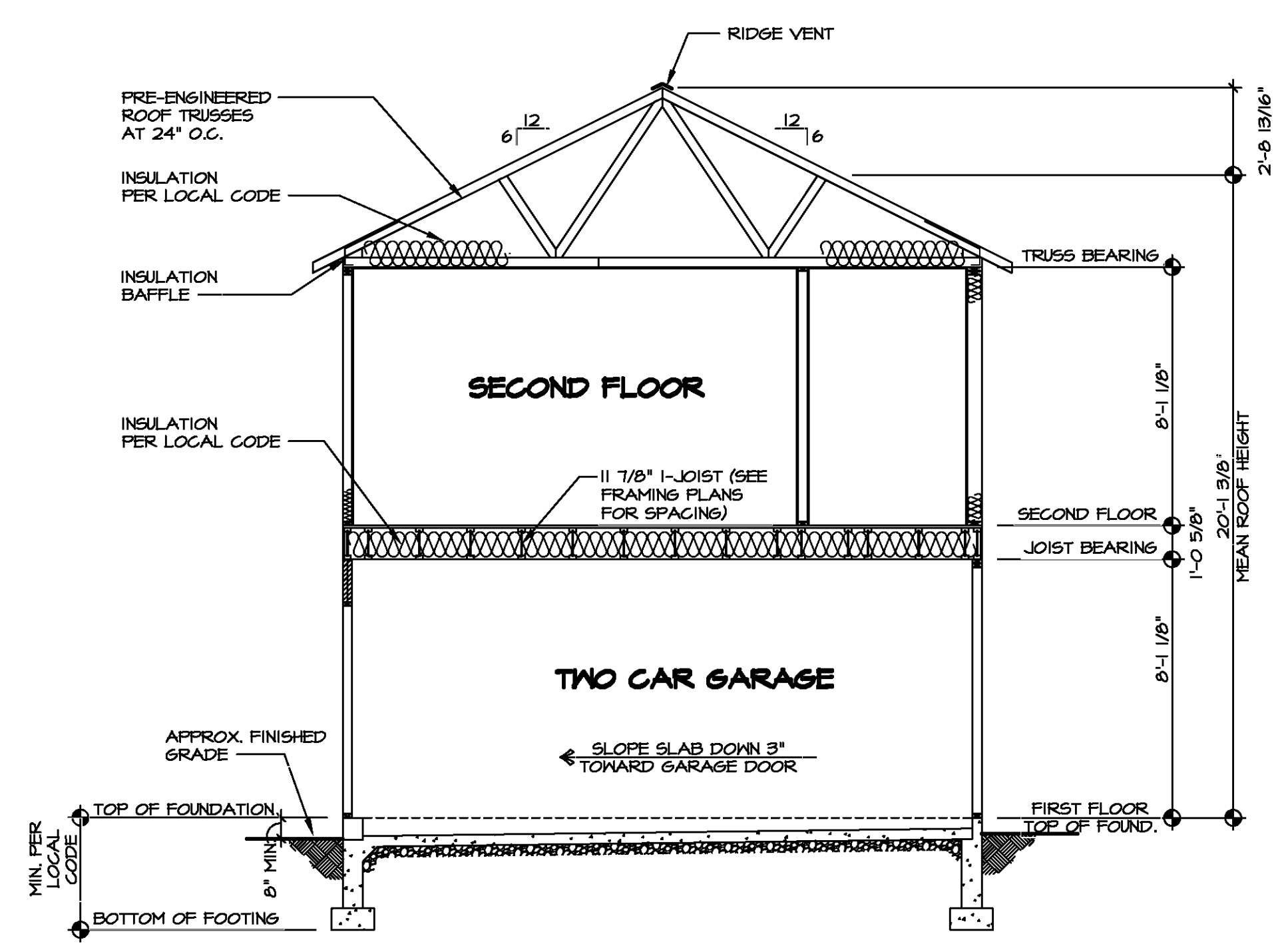
© NVR, Inc. The owner expressly reserves the right to modify these plans. These plans are not to be reproduced, changed or altered in any way without the written consent of NVR, Inc.



MODEL	BIRCH
DRAWING TITLE	SECOND FLOOR PLAN
OPTION DESCRIPTION	
SHEET NO.	A-7
VERSION	01
DRAWN BY	
DATE:	
OPTION	
SET NO. ER-HOO	



**1 BUILDING SECTION - FOYER**  
 SCALE: 1/4" = 1'-0"



**2 BUILDING SECTION - GARAGE**  
 SCALE: 1/4" = 1'-0"

DIV-COMM-LOT-UNIT  
 COMM-LOT  
 STREET ADDRESS  
 CITY

APT. NO.  
 STATE  
 ZIP

©NVR, Inc. expressly reserves the right to modify the information in these plans. These plans are not to be reproduced, changed or altered in any way without the written consent of NVR, Inc.

**NVR**  
 NVR, Inc. Suite 100  
 5285 Walkers Lane  
 Frederick, MD 21703

SET NO. ERHOO  
 VERSION 01  
 DRAWN BY  
 DATE:  
 OPTION

MODEL  
**BIRCH**  
 DRAWING TITLE  
**BUILDING SECTION**  
 OPTION DESCRIPTION

SHEET NO.  
**A-8**

19



SECOND FLOOR FRAMING LENGTH SCHEDULE				
IDENTIFIER	DESCRIPTION	LENGTH	ENG. NUM.	REMARKS
2AE	FRI 60 - 11-4	31'-4 3/4"	1000	
2AH	FRI 60 - 11-4	20'-1 1/4"	1000	
2AJ	FRI 60 - 11-4	20'-2 3/8"	1000	
2AK	FRI 60 - 11-4	14'-4 3/4"	1030	J-0088
2AK-2	FRI 60 - 11-4 DEL	14'-4 3/4"	1031	J-0084
2AL	FRI 60 - 11-4	15'-10 1/2"	1032	J-0087
2AM	FRI 60 - 11-4	15'-11 1/8"	1033	J-0086
2AN	FRI 60 - 11-4	14'-10 7/8"	1034	J-0085
2AP	FRI 60 - 11-4	31'-4 3/4"	1036	J-0084
2AQ	FRI 60 - 11-4	14'-10 7/8"	1000	

SECOND FLOOR LVL LENGTH SCHEDULE				
IDENTIFIER	DESCRIPTION	LENGTH	ENG. NUM.	REMARKS
L201-H	LVL 1.75 - 11-4	3'-5 13/16"	1002	

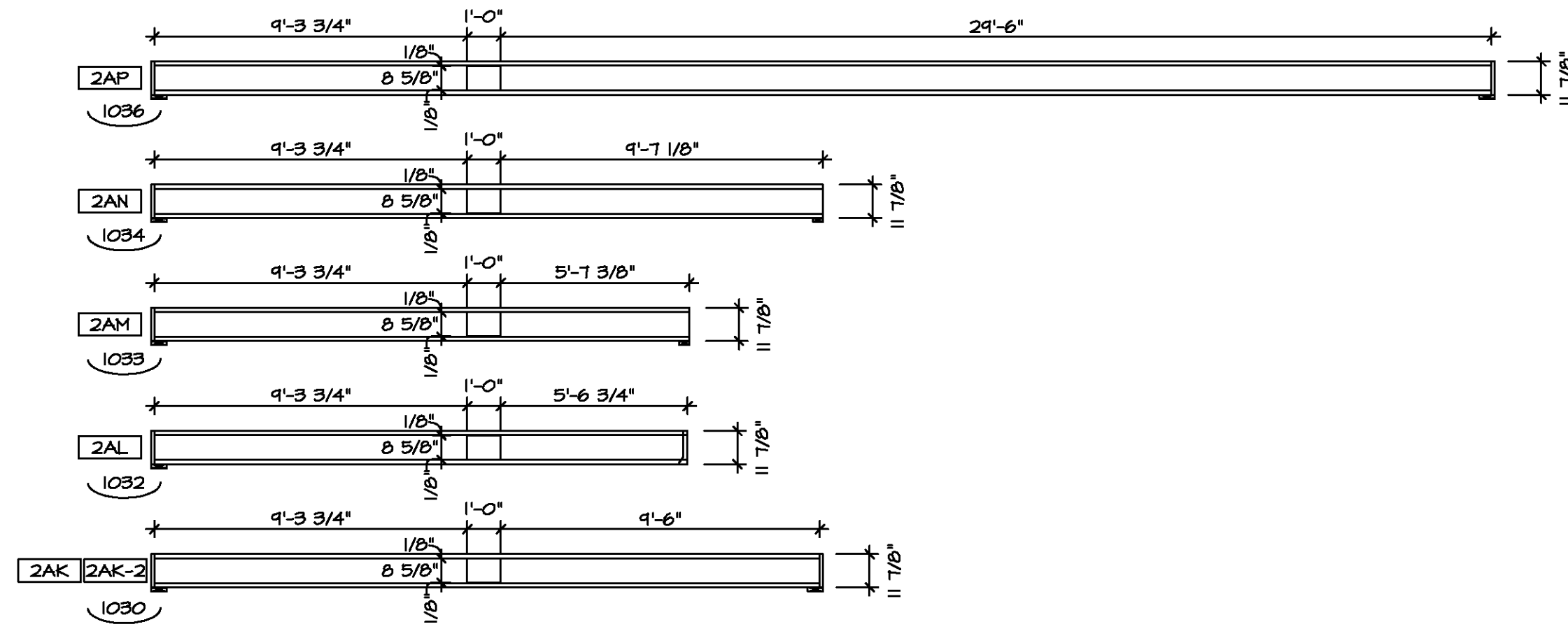
- LVL FLY TO PLY FASTENING SCHEDULE:** (WHERE APPLICABLE BASED ON LVL USAGE)
- 1.A - (2) FLY UP TO AND INCLUDING 11 7/8" TALL. FASTEN PLYS W/ (2) ROWS 16D NAILS AT 12" O.C. OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (3) ROWS 12D NAILS AT 12" O.C.
  - 2.A - (2) FLY 14" TO AND 18" TALL (INCLUSIVE). FASTEN PLYS W/ (3) ROWS 16D NAILS AT 12" O.C. OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (4) ROWS 12D NAILS AT 12" O.C.
  - 3.A - (2) FLY 20" TALL AND OVER. FASTEN PLYS W/ (4) ROWS 16D NAILS AT 12" O.C. OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (5) ROWS 12D NAILS AT 12" O.C.
  - 4.A - (3) FLY UP TO AND INCLUDING 11 7/8" TALL. FASTEN PLYS W/ (2) ROWS 16D NAILS AT 12" O.C. FROM EACH SIDE OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (3) ROWS 12D NAILS AT 12" O.C. FROM EACH SIDE.
  - 5.A - (3) FLY 14" TO AND 18" TALL (INCLUSIVE). FASTEN PLYS W/ (3) ROWS 16D NAILS AT 12" O.C. FROM EACH SIDE OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (4) ROWS 12D NAILS AT 12" O.C. FROM EACH SIDE.
  - 6.A - (3) FLY 20" TALL AND OVER. FASTEN PLYS W/ (4) ROWS 16D NAILS AT 12" O.C. FROM EACH SIDE OR ALT 1 1/2" WIDE LVL FASTEN PLYS W/ (5) ROWS 12D NAILS AT 12" O.C. FROM EACH SIDE.
  - 7.A - (4) FLY (ALL SIDES). FASTEN PLYS W/ (2) ROWS 1 1/2" DIAMETER A307 BOLTS AT 24" O.C. SEE SHOP DRAWING FOR ADDITIONAL INFORMATION.

**1-JOIST FLOOR SYSTEM**

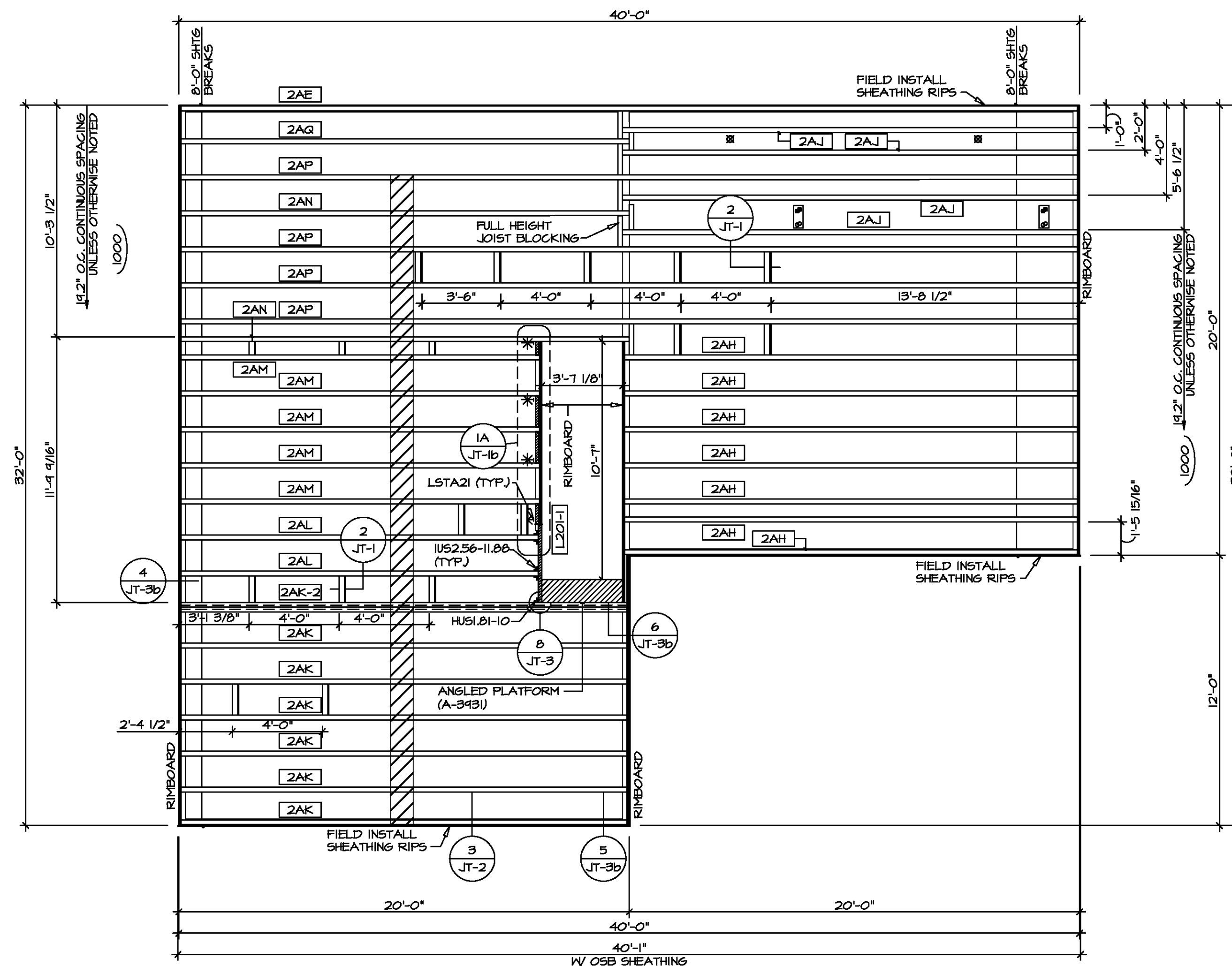
1. SUBFLOOR IS 3/4" TONGUE AND GROOVE OSB STANDARD.
2. JOIST LENGTHS SHIPPED IS THE NEXT HIGHEST LENGTH TO CUT FROM.
3. ALL RIMBOARD TO BE 1-1/8" THICK UNO.
4. REFER TO STANDARD DETAIL 7/JT-3 FOR HOLE CUTTING GUIDELINES.
5. PROVIDE RIMBOARD SOLID BLOCKING AT EXTERIOR WALLS AND BELOW ALL JACKS AS REQUIRED.
6. REFER TO DETAIL 6/JT-5 FOR HANGER DETAIL.
7. ALL JOISTS TO BE PR140, PR160 OR PR180. REFERENCE SCHEDULE FOR SPECIFIC SERIES PER MEMBER.
  - A. PR140 SERIES ARE SHOWN AS SHADED ON FRAMING PLAN.
8. SEE CONNECTOR / NAIL CHART IN STANDARD DETAILS (FC-4) FOR TYPICAL HANGERS.
10. ALL LVL BLOCKING CUT FROM 1 1/2" MATERIAL.
11. ADHESIVE TO BE APPLIED AT THE RATE OF (1) TUBE PER TWO AND ONE-HALF SHEETS. SHEETS ARE TO BE GLED AND PLACED ONE AT A TIME. **APPLY GLUE TO TONGUE AND GROOVE.**
12. 1-JOIST BLOCKING CUT FROM 2'-0" MATERIAL.
13. ADHESIVE TO BE ADDED TO ALL JOIST HANGERS PRIOR TO SETTING JOISTS.

**LEGEND**

- BEARING WALL
  - INDICATES BEARING FROM POINT-LOAD ABOVE
  - JACKS
  - BEAM/HEADER
  - PAD FOOTING
  - STEEL COLUMN
  - TRUSS TIE DOWN
  - PORTAL FRAME
  - JOIST/TRUSS
  - LVL
  - ENGINEERING PAGE NUMBER
- SEE FC DETAILS FOR FRAMING CONNECTORS



**2 HOLE CUT DETAIL**  
SCALE: 1/4" = 1'-0"



**1 SECOND FLOOR FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



DIV-COMM-LOT-UNIT

COM-LOT

STREET ADDRESS

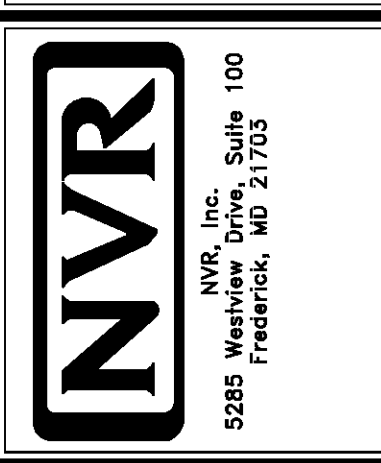
CITY

STATE

ZIP

APT. NO.

I, the undersigned, hereby certify that the drawings and specifications herein are true and correct to the best of my knowledge and belief, and that I am a duly licensed Professional Engineer in the State of Maryland.



MODEL: BIRCH

DRAWING TITLE: SECOND FLOOR JOIST LAYOUT

OPTION DESCRIPTION: 2B

SET NO. ERHOO

VERSION: 01

DRAWN BY:

DATE:

OPTION:

SHEET NO. S-2

2B

TRUSS SCHEDULE					
IDENTIFIER	SPECS	TRUSS NUMBER	LENGTH	ROOF PITCH (X/12)	TYPE
AA	SE	13176	32'-0"	6/12	COMMON
AB	SE	13177	32'-0"	6/12	SPECIAL
AC	SE	13152	20'-0"	6/12	COMMON
AD	SE	13178	32'-0"	6/12	COMMON
AE	SE	13174	32'-0"	6/12	SPECIAL
AF	SE	13155	3'-10 1/2"	4/12	MONO
AH	SE	16440	32'-0"	6/12	STUDDED GABLE
AJ	SE	16441	32'-0"	6/12	GABLE END
AK	SE	16442	20'-0"	6/12	GABLE END
VO1	VT	01261	2'-0"	12-6/12	VALLEY
VO2	VT	01262	4'-0"	12-6/12	VALLEY
VO3	VT	01263	6'-0"	12-6/12	VALLEY
VO4	VT	01264	8'-0"	12-6/12	VALLEY
VO6	VT	44108	8'-4"	12-6/12	VALLEY

FIELD INSTALLED ROOF FRAMING BEAM/HEADER SCHEDULE				
IDENTIFIER	DESCRIPTION	LENGTH	ENG. NUM.	REMARKS
B201	BEAM BUILT 2X8 - 2 PLY RFF	6'-0"	1013	

**ROOF FRAMING NOTES**

- REFER TO THE STANDARD DETAILS FOR THE FOLLOWING:
  - TRUSS TIE-DOWNS (1/RF-1)
  - PIGGYBACK TRUSS ATTACHMENT (2/RF-1)
  - VALLEY GABLE TRUSS BRACING (3/RF-1)
  - GABLE BRACING (1/RF-1c)
  - TRUSS BRACING (2/RF-1c)
  - LIFELINE ATTACHMENT (5/RF-1)
  - FALL PROTECTION ON PLATFORM TRUSSES (1/RF-1)
- IF TRUSS DOES NOT APPEAR ON THE TRUSS BRACING SHEET, NO ADDITIONAL LATERAL BRACING REQUIRED.

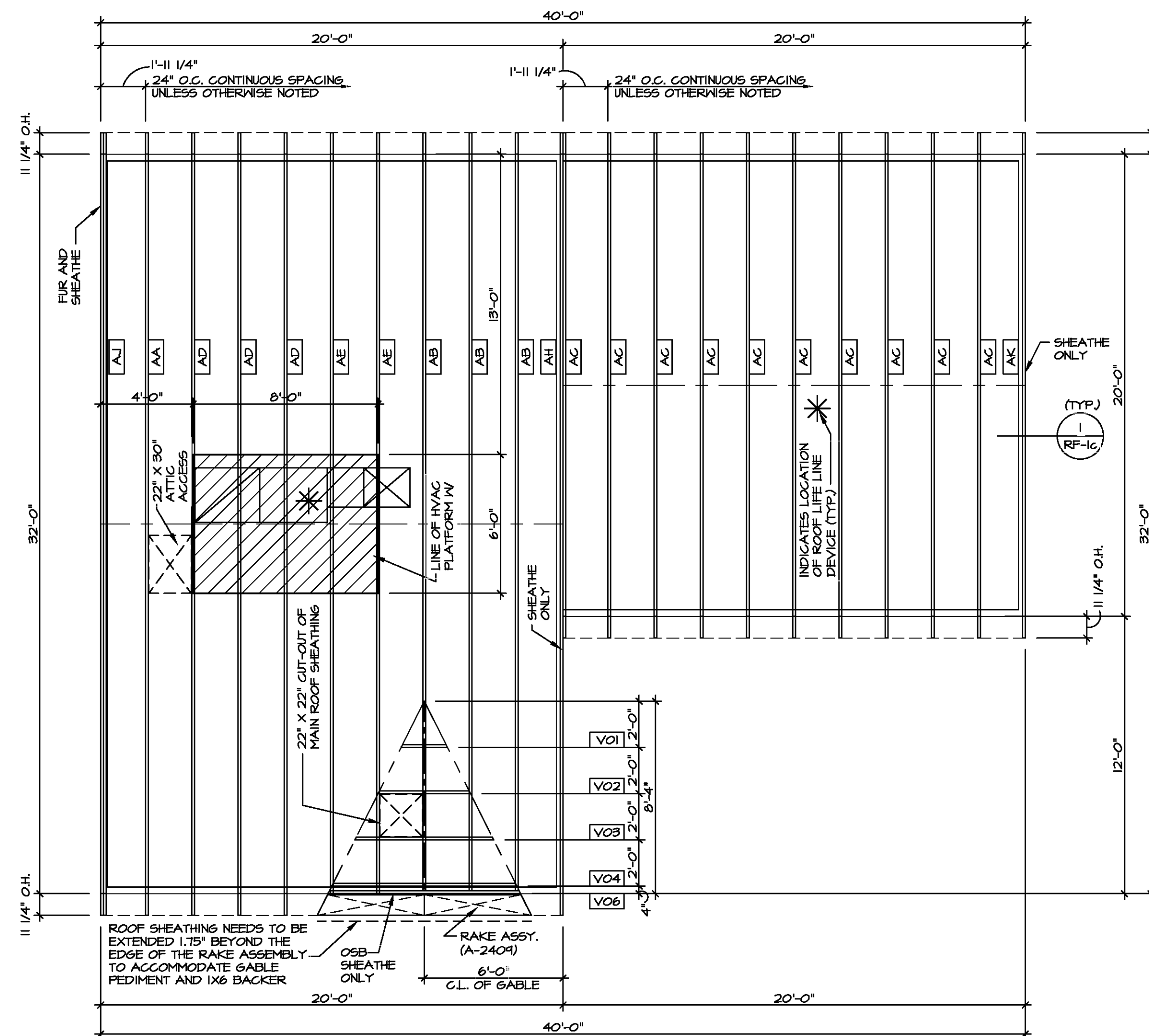
**NOTES:**

- SEE GENERAL NOTES (N-1) FOR ADDITIONAL INFORMATION.
- SCHEDULES (N-2)
- LVL NAILING SCHEDULE (N-1)

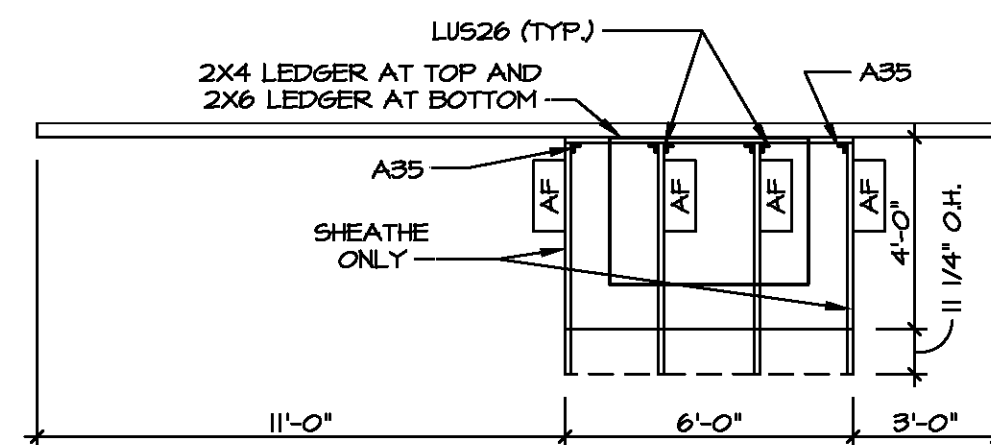
**LEGEND**

- BEARING WALL
- INDICATES BEARING FROM POINT-LOAD ABOVE
- JACKS
- BEAM/HEADER
- PAD FOOTING
- STEEL COLUMN
- TRUSS TIE DOWN
- PORTAL FRAME
- JOIST/TRUSS
- LVL
- ENGINEERING PAGE NUMBER

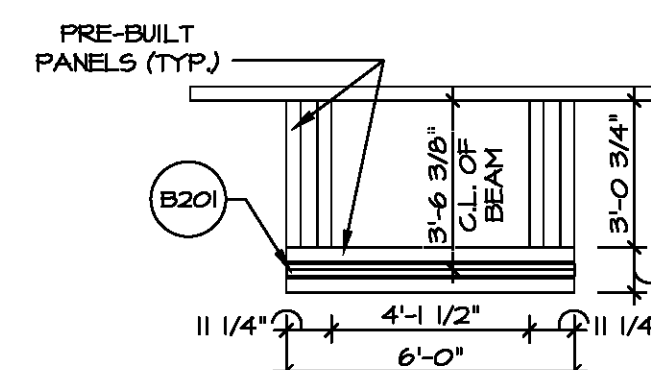
SEE FC DETAILS FOR FRAMING CONNECTORS



**1 ROOF FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



**2 PORCH ROOF FRAMING PLAN**  
SCALE: 1/4" = 1'-0"

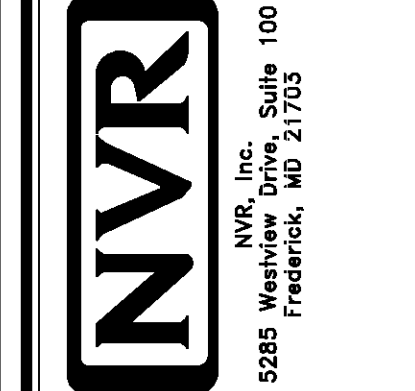


**3 PORCH BEAM FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



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

© NVR, Inc. expressly reserves the right to modify these plans without notice. These plans are not to be reproduced, changed, or altered in any way without the written consent of NVR, Inc.



MODEL: BIRCH  
DRAWING TITLE: ROOF FRAMING PLAN  
OPTION DESCRIPTION: 30

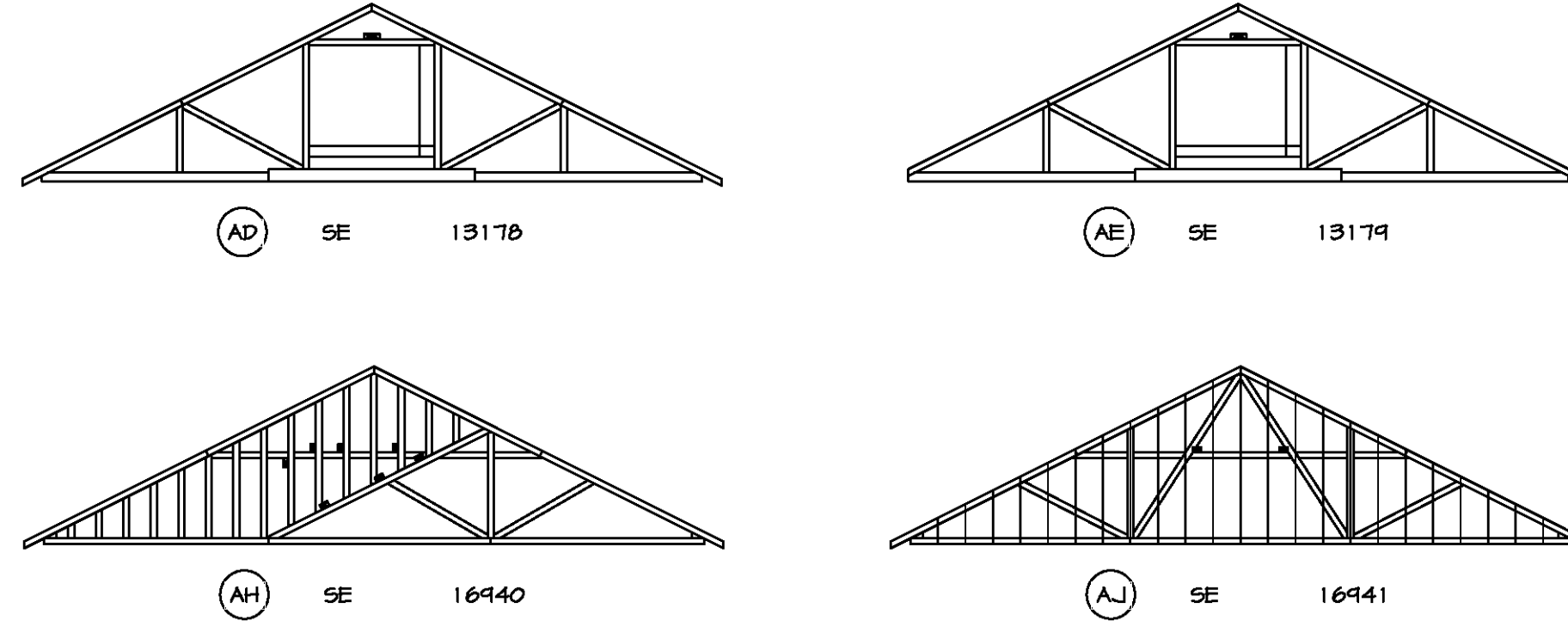
SET NO. ERHOO  
VERSION 01  
DRAWN BY  
DATE:  
OPTION

SHEET NO. 9-3  
30

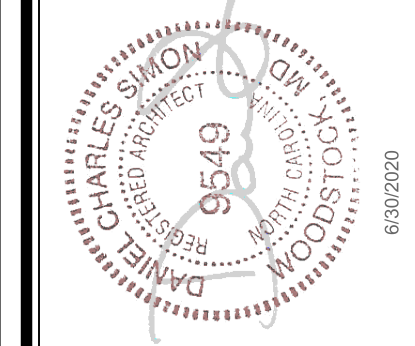


**TRUSS BRACING NOTES**

1. IF TRUSS DOES NOT APPEAR ON THIS TRUSS BRACING SHEET, NO ADDITIONAL LATERAL BRACING IS REQUIRED.
2. 1X6 SFF#2 LATERAL BRACES SHALL BE NAILED TO MINIMUM (3) TRUSS MEMBERS WITH MINIMUM (2) 10D NAILS. PROVISIONS MUST BE MADE AT ENDS OR SPECIFIED INTERVALS TO RESTRAIN OR ANCHOR LATERAL BRACING.
3. WEB "T" BRACE, DETAIL 3/RP-1c, IS REQUIRED WHERE LATERAL BRACING IS NOT CONTINUOUS ACROSS THREE (3) OR MORE TRUSSES AND MAY BE USED IN LIEU OF 1X6 LATERAL BRACING.
4. DIAGONAL BRACING REQUIRED WHEN LATERAL BRACING IS REQUIRED (1/RP-1)
5. STUDDED GABLE BRACING DETAIL 1/RP-1c TO BE UTILIZED FOR TRUSSES 6'-4" IN HEIGHT OR GREATER.
6. PARTIALLY SHEATHED GABLES, SEE 5/RP-1c 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.

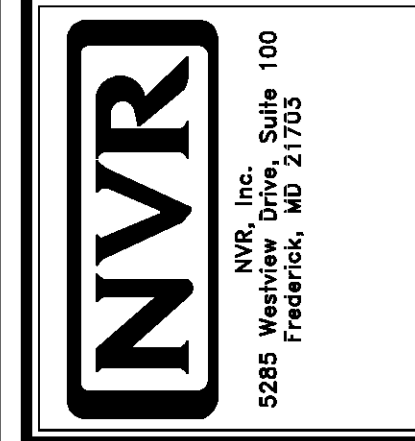


**TRUSS BRACING**  
SCALE: 1/8" = 1'-0"

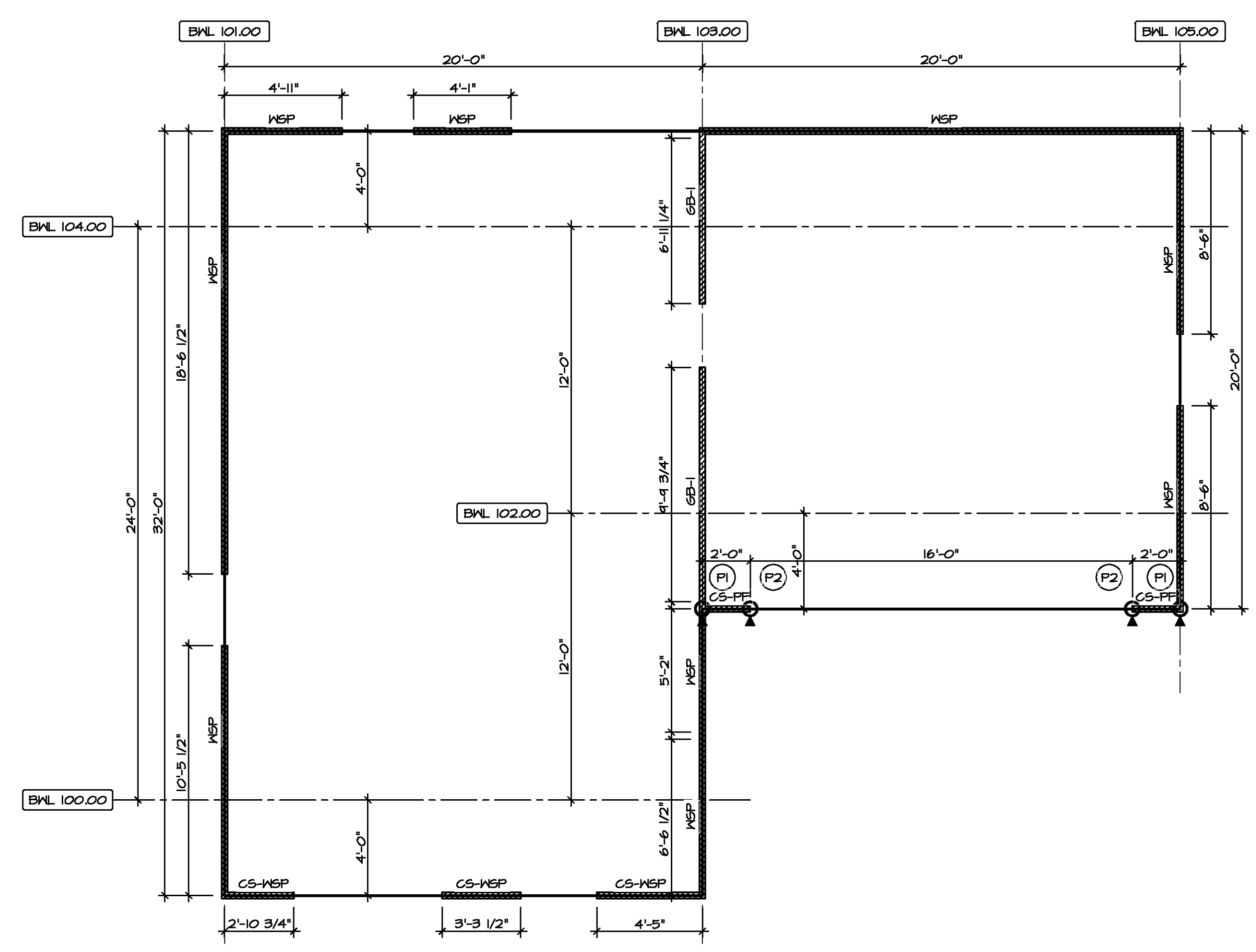


DIV-COMM-LOT-UNIT  
 COMM-LOT  
 STREET ADDRESS  
 CITY STATE ZIP  
 APT. NO.

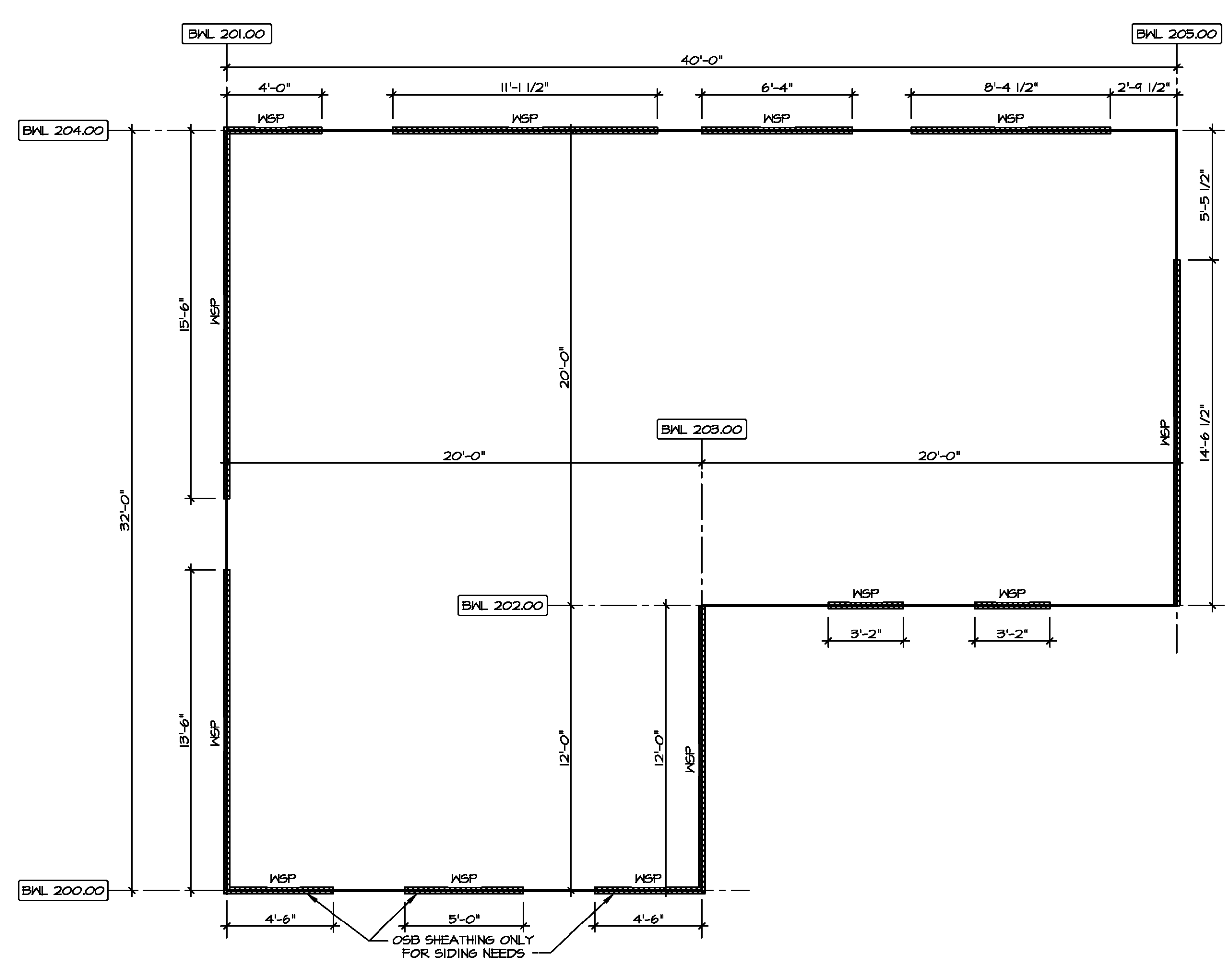
© NVR, Inc. expressly reserves the right to modify these plans at any time without notice. These plans are not to be reproduced, changed or altered in any way without the written consent of NVR, Inc.



SHEET NO. <b>S-4</b>	MODEL <b>BIRCH</b>	SET NO. ER-HOO VERSION 01	DRAWN BY	DATE:	OPTION
	DRAWING TITLE <b>TRUSS BRACING</b>				
	OPTION DESCRIPTION				
	<b>32</b>				



1  
S-5  
**FIRST FLOOR WALL BRACING DETAIL**  
SCALE: 1/4" = 1'-0"



2  
S-5  
**SECOND FLOOR WALL BRACING DETAIL**  
SCALE: 1/4" = 1'-0"

FASTENING SCHEDULE			
SHEATHING	FASTENER	SPACING	
		EDGES	FIELD
1/16" WOOD STRUCTURAL PANELS OR EQUIVALENT (W METHOD MSP, CS-MSP, CS-6)	8d COMMON NAILS  ALTERNATIVE FASTENER 1 3/4" 16-GAUGE CORROSION RESISTANT STAPLES	6" O.C.	12" O.C.
1/2" GYPSUM WALLBOARD (W METHOD GB-1, GB-2)	1-1/4" LONG, 1/4" HEAD, 20# DIA. ANNULAR-RINGED NAILS CORROSION RESISTANT TYPE W 1-1/4" DRYWALL SCREWS	7" O.C.	7" O.C.
LAMINATED FIBROUS STRUCTURAL SHEATHING	10d x 1 1/4" GALVANIZED ROOFING NAILS 1-1/4" 16-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	3" O.C.
1/2" GYPSUM WALLBOARD BLOCKED AT THE EDGES (W METHOD GB-BW-1, 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.

LEGEND	
BWL XXX.XX	BRACED WALL LINE I.D.
---	BRACED WALL LINE
---	HOUSE WALL
////	BRACED WALL PANEL
MSP	WOOD STRUCTURAL PANEL
GB	GYPSUM BOARD (1) SIDED OR (2) SIDED
GB-BW	GYPSUM BOARD BLOCKED WALL CONSTRUCTION (1) SIDED OR (2) SIDED (SEE STANDARD DETAIL G/MB-2)
LIB	LET-IN BRACING (SEE STANDARD DETAIL F / MB-2)
CS-MSP	CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL
CS-FF	CONTINUOUS SHEATHING - PORTAL FRAME. SEE FLOOR PLANS FOR PORTAL FRAME HEADER INFORMATION (SEE STANDARD DETAIL A, C / MB-2)
CS-6	CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL ADJACENT TO GARAGE OPENINGS
○	HOLD-DOWN 1. SEE SHEET MB-2 "P." INDICATOR SCHEDULE AND DETAILS 2. ARROW INDICATES LOCATION

**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 (MSP/CS-MSP) AS DEFINED IN THE APPROPRIATE TER SECTION.

**STRUCTURAL SHEATHING MATERIAL**  
- OX THERMO-FLY  
- TER NO. 1004-01  
- BARRICADE THERMO-BRACE  
- TER NO. 1501-06  
- MSP DRYLINE TSX  
- TER NO. 1401-06

BRACED WALL LINE SCHEDULE				
WIND SPEED (ULT)	IDENTIFIER	ACTUAL (FT)	REQUIRED (FT)	METHOD
130 MPH	BWL 100.00	10.61'	8.27'	CONTINUOUS (2 SIDES)
130 MPH	BWL 101.00	24.00'	10.76'	MSP (2 SIDES)
130 MPH	BWL 102.00	6.00'	5.84'	CONTINUOUS (2 SIDES)
130 MPH	BWL 103.00	20.04'	18.13'	GB
130 MPH	BWL 104.00	24.00'	4.74'	MSP (2 SIDES)
130 MPH	BWL 105.00	17.00'	10.76'	MSP (2 SIDES)
130 MPH	BWL 200.00	14.00'	5.84'	MSP (2 SIDES)
130 MPH	BWL 201.00	24.00'	7.63'	MSP (2 SIDES)
130 MPH	BWL 202.00	6.88'	4.72'	MSP (2 SIDES)
130 MPH	BWL 203.00	12.00'	5.45'	CONTINUOUS (2 SIDES)
130 MPH	BWL 204.00	24.84'	6.76'	MSP (2 SIDES)
130 MPH	BWL 205.00	14.54'	7.63'	MSP (2 SIDES)

© NVR, Inc. All rights reserved. No part of this drawing may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of NVR, Inc.

**NVR**  
NVR, Inc. Suite 100  
Frederick, MD 21703

SET NO. BRH00  
VERSION 01  
DRAWN BY SKB  
DATE: \_\_\_\_\_  
OPTION

MODEL: BIRCH  
DRAWING TITLE: WALL BRACING DETAILS  
OPTION DESCRIPTION

SHEET NO. S-5  
33

DIV-COMM-LOT-UNIT  
COM-LOT  
STREET ADDRESS  
CITY  
STATE  
ZIP

Y:\AS-Sold\2-565A.ASD\2020\_1\Sheet-Complete\BIRCH DETACHED\BIRCH-BR00-01\ELC\_P-06-0080\33-S-5-WSHG-LS.dwg 06/30/20 - 2:20 PM



