BIRCH

DIV-COMM-LOT-UNIT		

COMM-LOT: ---- - ----		
STREET ADDRESS: ---- ----		APT. NO.: ----
CITY: ----	STATE: ----	ZIP: ----

NVR

NVR, Inc.
5285 Westview Drive, Suite 400
Frederick, MD 21703

ZACHARY DAVID MENTZER
NORTH CAROLINA
REGISTERED ARCHITECT
NO. [illegible]

06/27/2022

	SLAB FOUNDATION
	STD. DWGS.
SPEC SHEET	SS-1
ROOF VENT AND VOLUME CALCULATION	CA-1
ELEVATIONS	4
FOUNDATION	8
FOUNDATION HOLD DOWN	13
PLUMBING	14
FIRST FLOOR PLAN	17
SECOND FLOOR PLAN	18
BUILDING SECTIONS	19
SECOND FLOOR FRAMING	28
ROOF FRAMING	30
TRUSS BRACING	32
WALL BRACING DETAILS	33

STANDARD DETAILS
DR-1
DR-1b
DR-3
ET-1
ET-1b
ET-1c
ET-1d
ET-3
F-1
FA-1b
FC-1
FC-2
FC-4
FC-5
FD-1
FD-1b
FD-4
GB-1
IT-1
IT-1b
JT-1
JT-1b
JT-2
JT-3
JT-3b
KT-1
RF-1
RF-1b
RF-1c
SEP-1
SEP-2
SEP-3
SEP-4
SP-1
SP-2
SP-3
ST-1
WB-2
WD-1
WD-3
WS-1b

FIRST FLOOR SQUARE FOOTAGE

DESCRIPTION	TOTAL SQ. FT.
1ST FLOOR (BASE SF)	640 SF
	640 SF

SECOND FLOOR SQUARE FOOTAGE

DESCRIPTION	TOTAL SQ. FT.
2ND FLOOR (BASE SF)	1040 SF
	1040 SF

GARAGE SQUARE FOOTAGE

DESCRIPTION	TOTAL SQ. FT.
TWO CAR GARAGE	400 SF
	400 SF

TOTAL FINISHED SQUARE FOOTAGE

DESCRIPTION	TOTAL SQ. FT.
1ST FLOOR (BASE SF)	640 SF
2ND FLOOR (BASE SF)	1040 SF
	1680 SF

SET - VERSION
BRH00 - 01

CS-1

GENERAL

1. 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 improvements.
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 13D** 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

1. 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 2020 w/ NC Amendments, NCEC 2018, NCFPC 2018
2. Use Group: R-3
3. Constr. Type: V-B
4. Max. Stories: 3

ENERGY AND MECHANICAL

1. Insulation requirements per 2018 NCRC Chapter 11, 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	0.35	0.30	38	15 / 19	19	5 / 15	NA	5 / 15
4	0.35	0.30	38	15 / 19	19	10 / 15	10	10 / 15

2. 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
3. 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:

   Ridge vent: Minimum 18 sq. in. of vent per linear foot
   Soffit vent: 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 301.5**

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)
- 10# P.S.F. (Dead)

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

Habitable Attics - 30# P.S.F. (Live)

Trusses - Areas up to **130 mph** ultimate wind speed per **Table R301.2(4)**
- Exposure category 'B'

Walls - Areas up to **130 mph** ultimate wind speed per **Table R301.2(4)**

Vult	115 mph	130 mph
Vasd	89 mph	101 mph

Note: Linear interpolation between contour lines permitted.

Stairs - 40# P.S.F. (Live)
- 10# P.S.F. (Dead)

Allowable deflection of structural members per IRC **Table R301.7**

Design Criteria

Design Codes:
1. National Design specification for Wood Construction by National Forest Products Association.
2. Specification for the Design Fabrication and Erection of Structural Steel for Buildings by American Institute of Steel Construction.

Materials:
Headers* Southern Pine (KD-19), No. 1 Grade
Studs Spruce-Pine-Fir, Stud Grade
Jacks Spruce-Pine-Fir, Stud Grade
Beams** Southern Pine (KD-19), No. 1 Grade
Joists 2x10 Hem-Fir (KD-19), No. 2 Grade or better (WCLIB & WWPA)
2x8 Southern Pine (KD-19), No. 1 Grade or better
2x10 Spruce-Pine-Fir (KD-19), No. 2 Grade or better (NLGA)
LVL 1.9E Minimum

*** Where required, Laminated Veneer Lumber may be used per Engineering**
**** Structural Steel - A.S.T.M. A36**

FOUNDATIONS

1. 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. Slab requirements:

   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 a minimum 2,500 PSI per **Table R402.2.**

   Non-structural garage slabs shall be nominal 3-1/2" thick and shall be installed on compacted / undisturbed soil per **Table R402.2.** Slabs shall be 3,500 PSI air-entrained concrete.

   Structural garage slabs utilizing grade beams shall be nominal 4" thick. Slabs shall be 3,500 PSI air-entrained concrete.

   Porch slab and exterior concrete work shall be nominal 4" minimum 3,500 PSI air-entrained concrete with 6x6 W1.4xW1.4 mesh or equivalent fiber mesh reinforcement.
7. 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 1 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 **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 installed per **Section R405.1.**
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.
11. 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. Reserved for future use.
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 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 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 1-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 NVR Flashing Details.
18. Reserved for future use.
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 requirements of **Section R404** are met.
21. Termite treatment provided below slabs or to framing members per **R318.1**

FOUNDATION WALL DESIGN(c)

NCRBC PRESCRIPTIVE CODE OR ENGINEERED DESIGN PER ACI 332

WALL HEIGHT	WALL THICKNESS	LATERAL SOIL LOAD (a)	UNBALANCED FILL	VERTICAL REINFORCING (b)	HORIZONTAL REINFORCING (b)
8'-0"	8"	45	6'-0"	NOT REQUIRED	2- #4 BARS (f)
			7'-0"	NOT REQUIRED (d)	3- #4 BARS (d,e)
		60	6'-0"	NOT REQUIRED (d)	3- #4 BARS (d,e)
			7'-0"	#4 @ 22" O.C. (d)	3- #4 BARS (d,e)
	10"	45	6'-0"	NOT REQUIRED	2- #4 BARS (f)
			7'-0"	NOT REQUIRED	2- #4 BARS (f)
		60	6'-0"	NOT REQUIRED	2- #4 BARS (f)
			7'-0"	NOT REQUIRED	2- #4 BARS (f)
9'-0"	8"	45	7'-0"	NOT REQUIRED (d)	4- #4 BARS (d,e)
			8'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (d,e)
		60	7'-0"	#4 @ 19" O.C. (d)	4- #4 BARS (d,e)
			8'-0"	#4 @ 15" O.C. (d)	4- #4 BARS (d,e)
	10"	45	7'-0"	NOT REQUIRED	3- #4 BARS (g)
			8'-0"	NOT REQUIRED (d)	4- #4 BARS (d,e)
		60	7'-0"	NOT REQUIRED (d)	4- #4 BARS (d,e)
			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
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
e. 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 PER TABLE 404.1.2(1).

PLANS

1. 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. hgt. 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" gypsum board per **R302.7.**
6. 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.**
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.**
8. 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. Handrails 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.
10. All flashing used (including at windows, doors, and with stone or masonry veneer) shall be corrosion-resistive per **R703.4.** See NVR Flashing Details.
11. 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).**
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 R703.2.**
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 Type W 1-1/4" drywall screws.

SCREW FASTENING SCHEDULE

	WITH ADHESIVE		
Framing Spacing	Ceilings	Load-brg. walls	Non-load-brg. walls
16	16	24	24
24	16	16	24
	WITHOUT ADHESIVE		
Framing Spacing	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 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" 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.**
18. 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 R905.1.1 Exception #1.**
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 **P2705.1**
22. Heating and cooling equipment installation shall be in accordance with **IRC Chapter 14** and the **International Mechanical Code.**
23. Mechanical fireplaces shall be installed per **Section R1004** and **1005.**
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 per Section **R317.**
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 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.**
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 **R303.6.**
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 gypsum 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 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 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. 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.
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 Design Category C.
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 system, unless otherwise specified.

ELECTRICAL

1. 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 vary by design.
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 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.
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 1fc 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.

DAVID ZACHARY MENTZER
REGISTERED ARCHITECT
NORTH CAROLINA
06/27/2022

REV. NO.	DATE	REMARKS
1	1/8/19	MBT - CODE UPDATES FOR 2018 NCRBC
2	3/1/19	MBT - UPDATED ENGERY NOTES

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

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

SHEET NO.
SS-1

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NVR - Business Use Only

NVR

Version 4.0
(Last Revised 04/26/19)

ROOF VENTILATION CALCULATIONS

HOUSE NAME	BIRCH
HOUSE VERSION	BRH00-01
PRODUCT LINE	RYANHOMES
VENTILATION VALUES	SOFFIT: 9.9 sq in of vent per lf
	RIDGE: 18 sq in of vent per lf
	BOX / GABLE VENT: 45 sq in of vent per unit

USER GUIDE						
	YES	(any)		(any)	VENT OK	No action req'd.
	NO	YES		OK	VENT OK	No action req'd.
	NO	YES		LOW	FAIL	Increase ridge
	NO	YES		HIGH	FAIL	Decrease ridge
	NO	NO		(any)	FAIL	Increase total vent

ELEVATION "A"

Location / Options	Area (A) (sq in)	Required: A/150 (sq in)	Required: A/300 (sq in)	Soffit (lf)	Soffit Vent (sq in)	Ridge (lf)	Ridge Vent (sq in)	Upper Box / Gable Vent (qty)	Lower Box Vent (qty)	TOTAL (sq in)	OK A/150	OK A/300	A/300 % vent at ridge	A/300 40%-50% OK?	Notes
HOUSE WITH GARAGE	160560	1070.40	535.20	40	396.00	14	252.00			648.00	NO	YES	47.09%	OK	

ELEVATION "B"

Location / Options	Area (A) (sq in)	Required: A/150 (sq in)	Required: A/300 (sq in)	Soffit (lf)	Soffit Vent (sq in)	Ridge (lf)	Ridge Vent (sq in)	Upper Box / Gable Vent (qty)	Lower Box Vent (qty)	TOTAL (sq in)	OK A/150	OK A/300	A/300 % vent at ridge	A/300 40%-50% OK?	Notes
HOUSE WITH GARAGE	160560	1070.40	535.20	40	396.00	14	252.00			648.00	NO	YES	47.09%	OK	

ELEVATION "K"

Location / Options	Area (A) (sq in)	Required: A/150 (sq in)	Required: A/300 (sq in)	Soffit (lf)	Soffit Vent (sq in)	Ridge (lf)	Ridge Vent (sq in)	Upper Box / Gable Vent (qty)	Lower Box Vent (qty)	TOTAL (sq in)	OK A/150	OK A/300	A/300 % vent at ridge	A/300 40%-50% OK?	Notes
HOUSE WITH GARAGE	160560	1070.40	535.20	40	396.00	14	252.00			648.00	NO	YES	47.09%	OK	

ELEVATION "L"

Location / Options	Area (A) (sq in)	Required: A/150 (sq in)	Required: A/300 (sq in)	Soffit (lf)	Soffit Vent (sq in)	Ridge (lf)	Ridge Vent (sq in)	Upper Box / Gable Vent (qty)	Lower Box Vent (qty)	TOTAL (sq in)	OK A/150	OK A/300	A/300 % vent at ridge	A/300 40%-50% OK?	Notes
HOUSE WITH GARAGE	160560	1070.40	535.20	40	396.00	14	252.00			648.00	NO	YES	47.09%	OK	

NVR - Business Use Only

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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***

DAVID MENTZER ZACHARIAS
NORTH CAROLINA
REGISTERED ARCHITECT

06/27/2022

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

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5285 Westview Drive, Suite 100
Frederick, MD 21703

SET NO. BRH00
VERSION 01
DRAWN BY
DATE:
OPTION

MODEL BIRCH
DRAWING TITLE
OPTION DESCRIPTION

SHEET NO. CA-1

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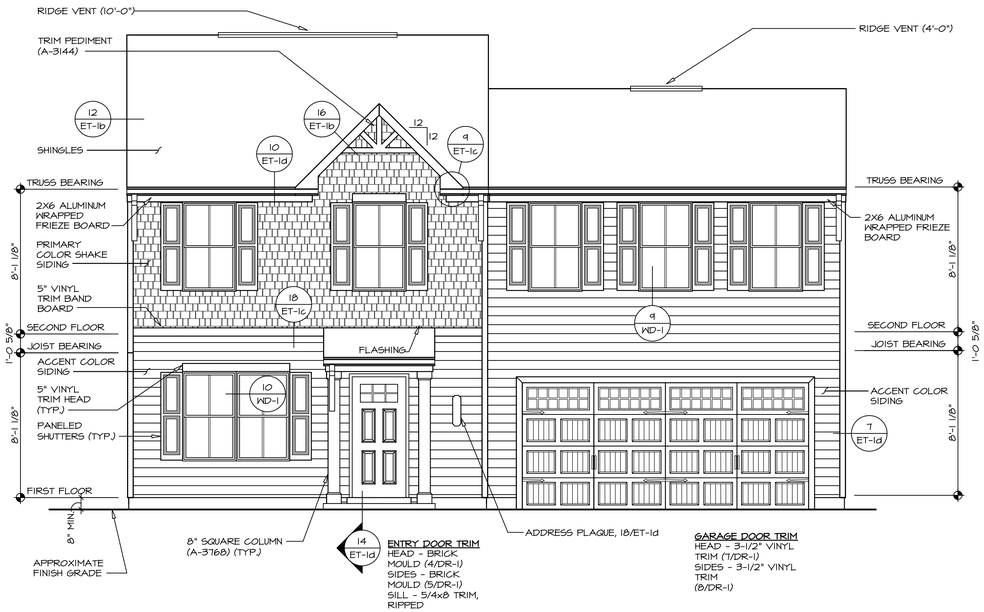
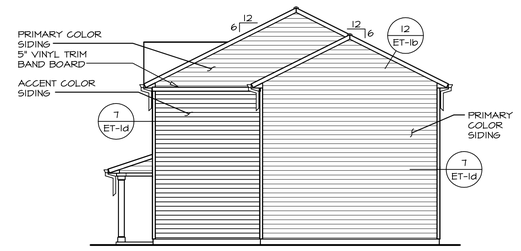


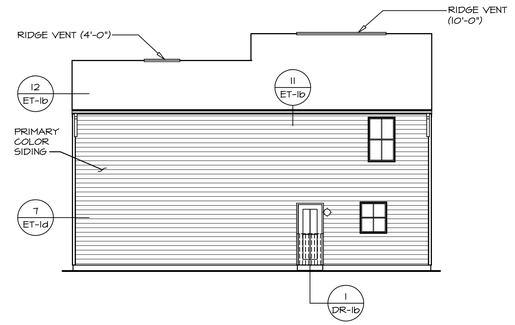
1 A-1 **FRONT ELEVATION "K"**

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



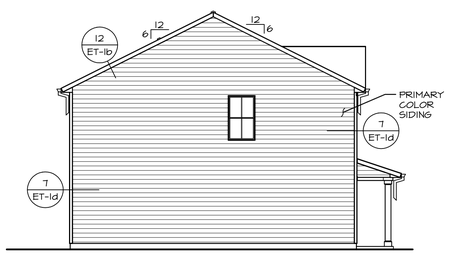
2 A-1 **RIGHT SIDE ELEVATION**

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



3 A-1 **REAR ELEVATION**

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



4 A-1 **LEFT SIDE ELEVATION**

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

06/27/2022

DIV-COMM-LOT-UNIT ----

COMM-LOT ---- -- ----

STREET ADDRESS ---- ----

APT. NO. ----

CITY ----

STATE ----

ZIP ----

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SET NO. BRHOO
VERSION 01
DRAWN BY
DATE:
OPTION FSM

SHEET NO. A-1

MODEL BIRCH

DRAWING TITLE ELEVATIONS

OPTION DESCRIPTION SLAB FOUNDATION MONOLITHIC

4

PAD FOOTING SCHEDULE					
IDENTIFIER	LENGTH	WIDTH	HEIGHT	ENG. NUM.	REMARKS
F001	1'-4"	13'-3 1/4"	0'-8"	S0001	
F008	2'-0"	2'-0"	1'-0"	1017	
F009	2'-0"	2'-0"	1'-0"	1017	

FOUNDATION DIAGONALS			
A		B	
A	0"	A	41'-9 1/8"
B	41'-9 1/8"	B	0"
C	51'-2 11/16"	C	20'-0"
D	32'-0"	D	44'-8 11/16"
E	20'-0"	E	23'-3 7/8"

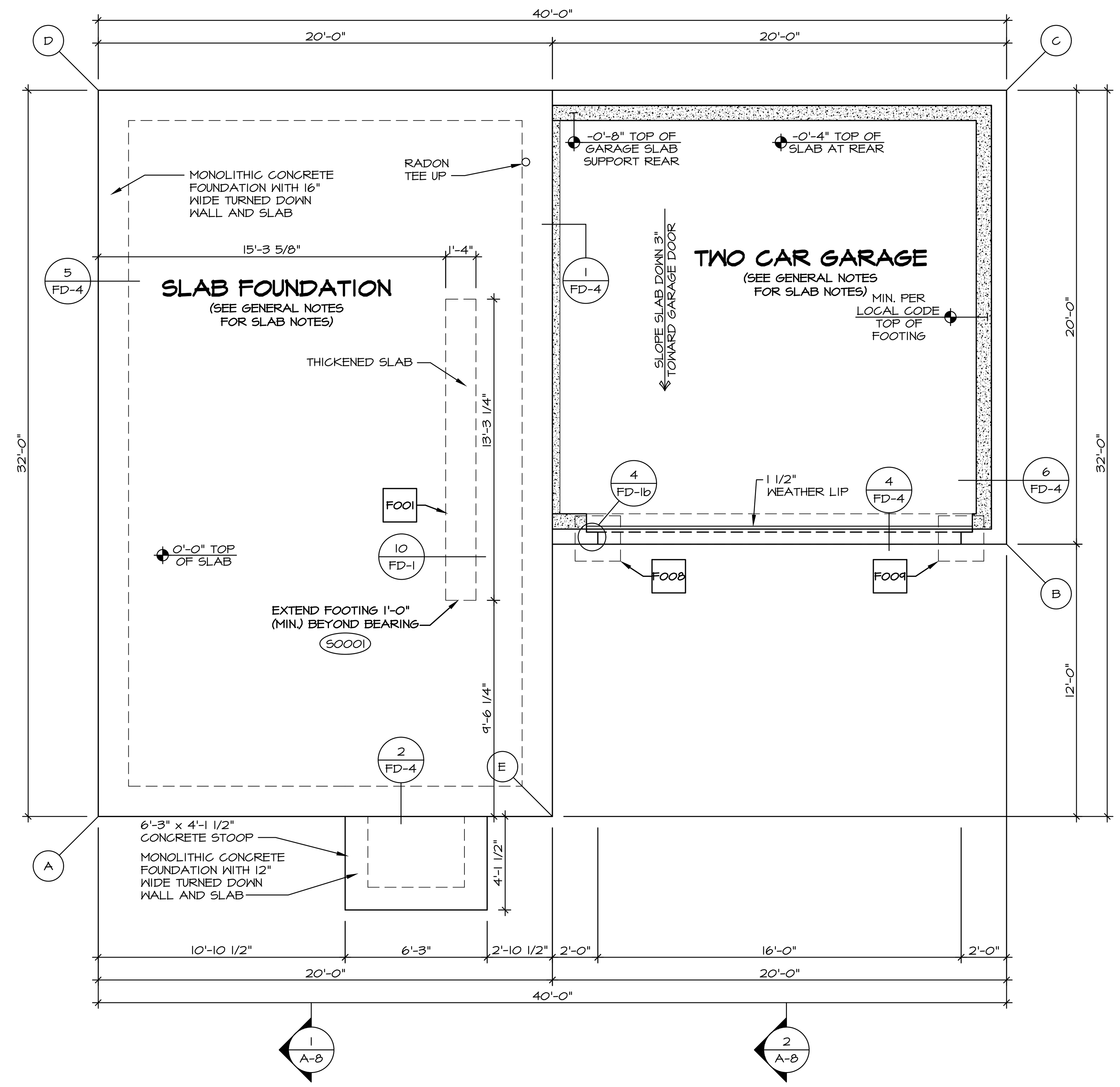
FOUNDATION NOTES - SLAB

1. FOUNDATION UNDER HABITABLE SPACE:
   - 1.1. CONCRETE SLAB ON 6 MIL VAPOR BARRIER OVER SUB-BASE **(SEE SPEC SHEET FOR SLAB NOTES)**
2. FOUNDATION UNDER GARAGE:
   - 2.1. UNEXCAVATED WITH CONCRETE SLAB ON VAPOR BARRIER OVER SUB-BASE **(SEE SPEC SHEET FOR SLAB NOTES)** OR
   - 2.2. STRUCTURAL CONCRETE SLAB ON VAPOR BARRIER OVER SUB-BASE **(SEE SPEC SHEET FOR SLAB NOTES)**
3. SEE FOUNDATION HOLD DOWN SHEET FOR CONNECTION INFORMATION.
4. SLAB LEDGE LOCATIONS VARY W/ GRADE BEAM(S) ORIENTATION. SEE GB-1 FOR DETAILS.
5. THE DIRECTION OF THE ARROW IS THE DIRECTION OF REBAR, AS REQUIRED.
6. ALL FOOTINGS ARE PLAIN, UNREINFORCED CONCRETE UNLESS NOTES OTHERWISE.

LEGEND

- BEARING WALL
- NON BEARING WALL
- ⊗ INDICATES BEARING FROM POINT-LOAD ABOVE
- J_ JACKS
- B_ BEAM/HEADER
- F_ PAD FOOTING
- C_ STEEL COLUMN
- X TRUSS TIE DOWN
- X PORTAL FRAME
- X JOIST/TRUSS
- L_-_ LVL
- X ENGINEERING PAGE NUMBER

SEE FC DETAILS FOR FRAMING CONNECTORS



FOUNDATION PLAN

1/A-2 — SCALE: 1/4" = 1'-0"

DAVID ZACHARY MENTZER — REGISTERED ARCHITECT — NORTH CAROLINA

06/27/2022

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

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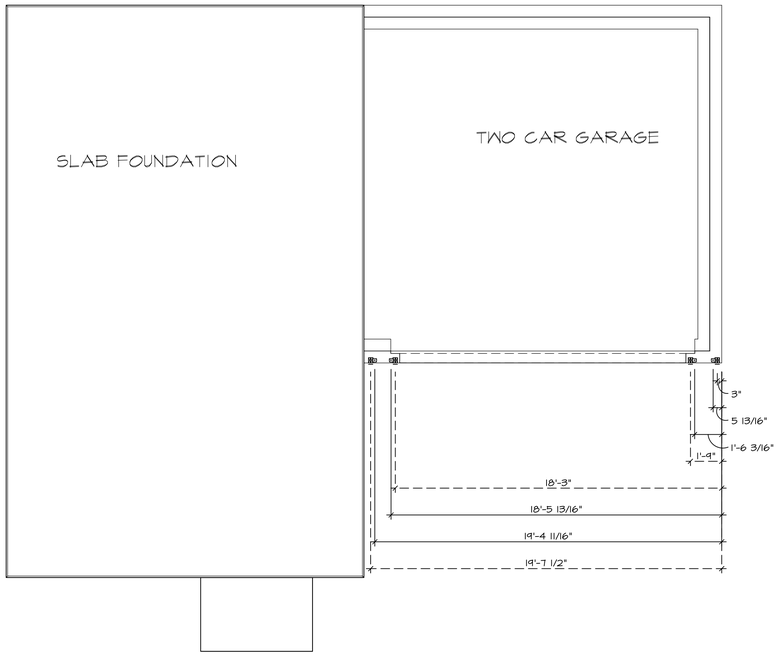
SET NO. BRH00
VERSION 01
DRAWN BY
DATE:
OPTION FSA

MODEL BIRCH
DRAWING TITLE FOUNDATION PLAN
OPTION DESCRIPTION SLAB FOUNDATION

SHEET NO. A-2

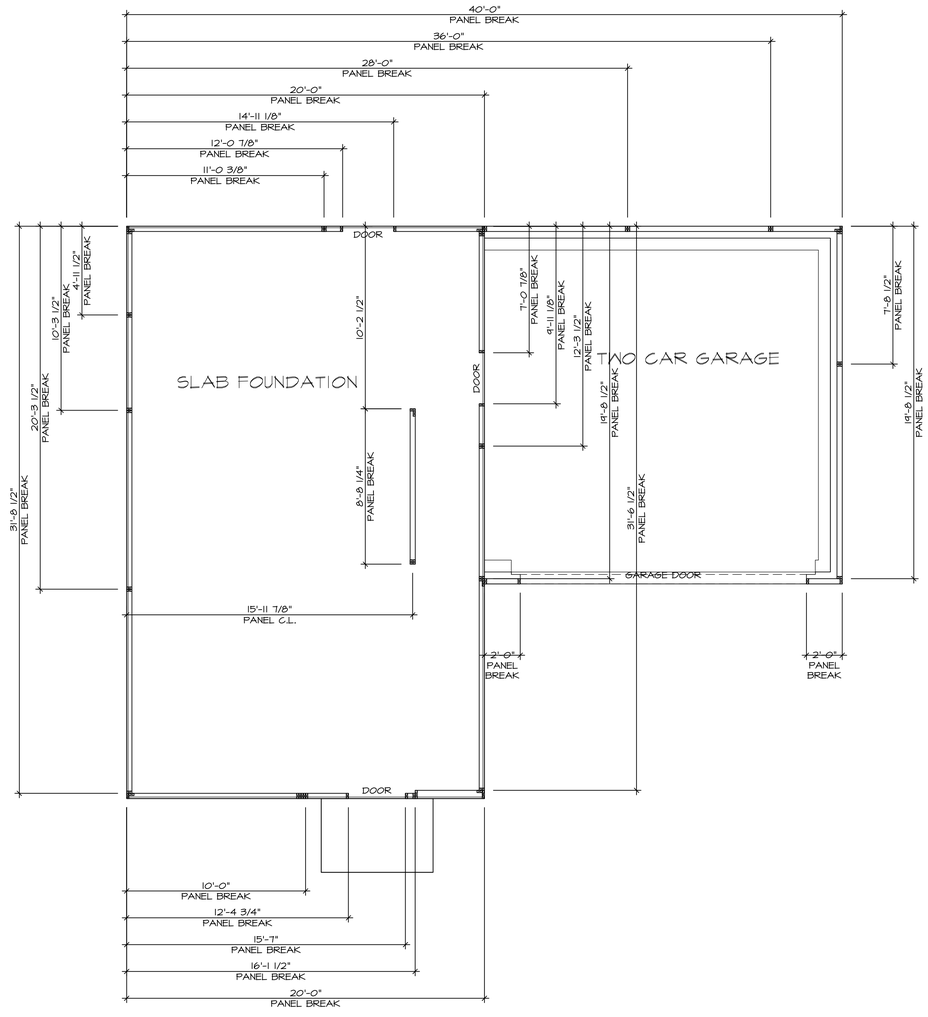
8

V:\As-Sold\2-Jobs\ASD\2022 2ndHalf-Complete\RLH\DETACHED\BIRCH_BRH00_01\ELK_P_QG_0160\8 A-2 FDN_LS (FSA).dwg 07/05/22 - 11:10 am



1 / A-3 FOUNDATION HOLD DOWN DETAILS

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



2 / A-3 PANEL BREAK DETAILS

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

HOLD DOWN NOTES

REFER TO DETAIL (9/FD-1) FOR HOLD DOWN OFFSET DIMENSIONS.
REFER TO DETAIL (12/FD-1) FOR HOLD DOWNS ON CMU BLOCK.

± 12"	1. ALL PANELS GREATER THAN 24" SHALL HAVE AN ANCHOR WITHIN 12" OF THE PANEL BREAKS / ENDS. (SEE DETAIL SHEET FC-1 FOR MORE INFORMATION ON ANCHOR DETAILS)
STRAP	1. STRAP: a. ON FOUNDATION USE (STHD14) b. ON FLOOR SYSTEM USE (STHD14R.J) 2. ALL OTHER HOLD DOWN SEE DETAIL (NB-1, 2) FOR MORE INFORMATION. 3. STRAP LOCATION ON PLANS SHOWN BY DASHED DIMENSION TO CENTER OF STUDS OR
BOLT	1. 5/8"ϕ THREADED ROD 2. ALL OTHER HOLD DOWN SEE DETAIL (NB-1, 2) FOR MORE INFORMATION. 3. BOLT LOCATION ON PLANS SHOWN BY SOLID DIMENSION TO CENTER OF BOLT

DAVID MENTZER ZACHARY NORTH CAROLINA
NO. 46061
REGISTERED ARCHITECT

06/27/2022

DIV--COMM--LOT--UNIT ----

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

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VERSION 01
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DATE:
OPTION

MODEL BIRCH
DRAWING TITLE FOUNDATION HOLD DOWN DETAILS
OPTION DESCRIPTION

SHEET NO. A-3

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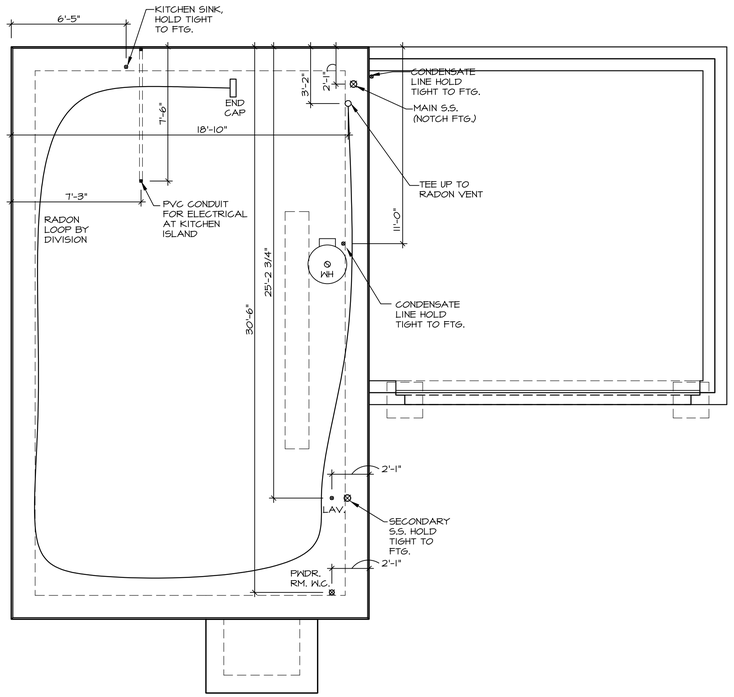
INSTALLATION OF RADON STACK AND
LOOP TO BE DETERMINED BY DIVISION



1 / A-4 PLUMBING PLAN

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

DAVID MENTZER ZACHARY
NO. 16005
REGISTERED ARCHITECT
NORTH CAROLINA

06/27/2022

DIV--COMM--LOT--UNIT

COMM-LOT
--- - ----

STREET ADDRESS
--- ---

APT. NO.

CITY

STATE

ZIP

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SET NO: BRHOO
VERSION 01

DRAWN BY

DATE:

OPTION

MODEL
BIRCH

DRAWING TITLE
PLUMBING PLAN

OPTION DESCRIPTION

SHEET NO.
A-4

14

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

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 BEARING, 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 CRIPPLES 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, CEILINGS, BEAM WRAPS AND SUPPORTS PER STANDARD DETAIL **FA-1(b)** FIRE ASSEMBLIES OR AS REQUIRED BY LOCAL CODE.

AT STAIRS:

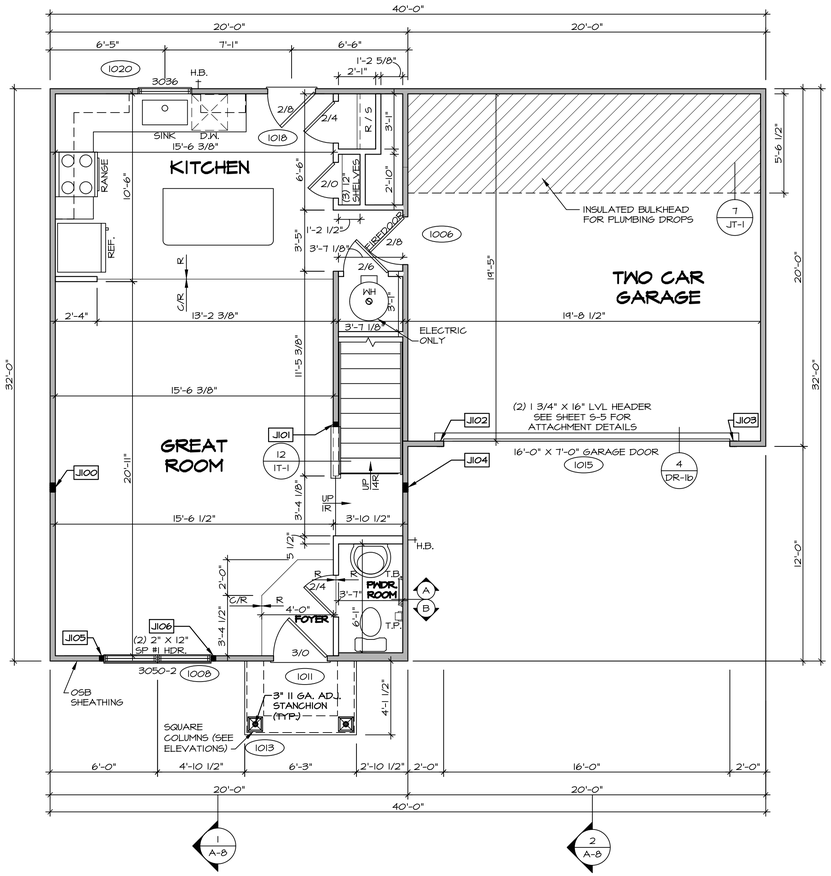
1/2" GYPSUM BOARD AT UNDERSIDE OF STAIRS AND WALLS IN CLOSET

LEGEND

- BEARING WALL
- NON BEARING WALL
- ⊗ INDICATES BEARINGS FROM POINT-LOAD ABOVE
- JACKS
- (B_) BEAM/HEADER
- [F_] PAD FOOTING
- ◇C_◇ STEEL COLUMN
- ⬡X⬡ TRUSS TIE DOWN
- [X] PORTAL FRAME
- [X] JOIST/TRUSS
- [L__"_] LVL
- (X) ENGINEERING PAGE NUMBER

SEE FC DETAILS FOR FRAMING CONNECTORS

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



FIRST FLOOR PLAN

1 / A-6

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

DAVID MEYERZER ZACHARY
NO. 46063
REGISTERED ARCHITECT
NORTH CAROLINA

06/27/2022

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

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Frederick, MD 21703

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DATE:
OPTION
OPTION DESCRIPTION

MODEL
BIRCH
DRAWING TITLE
FIRST FLOOR PLAN

SHEET NO.
A-6

17

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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 BEARING, 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 CRIPPLES 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, CEILINGS, BEAM WRAPS AND SUPPORTS PER STANDARD DETAIL **FA-1(b)** FIRE ASSEMBLIES OR AS REQUIRED BY LOCAL CODE.

AT STAIRS:

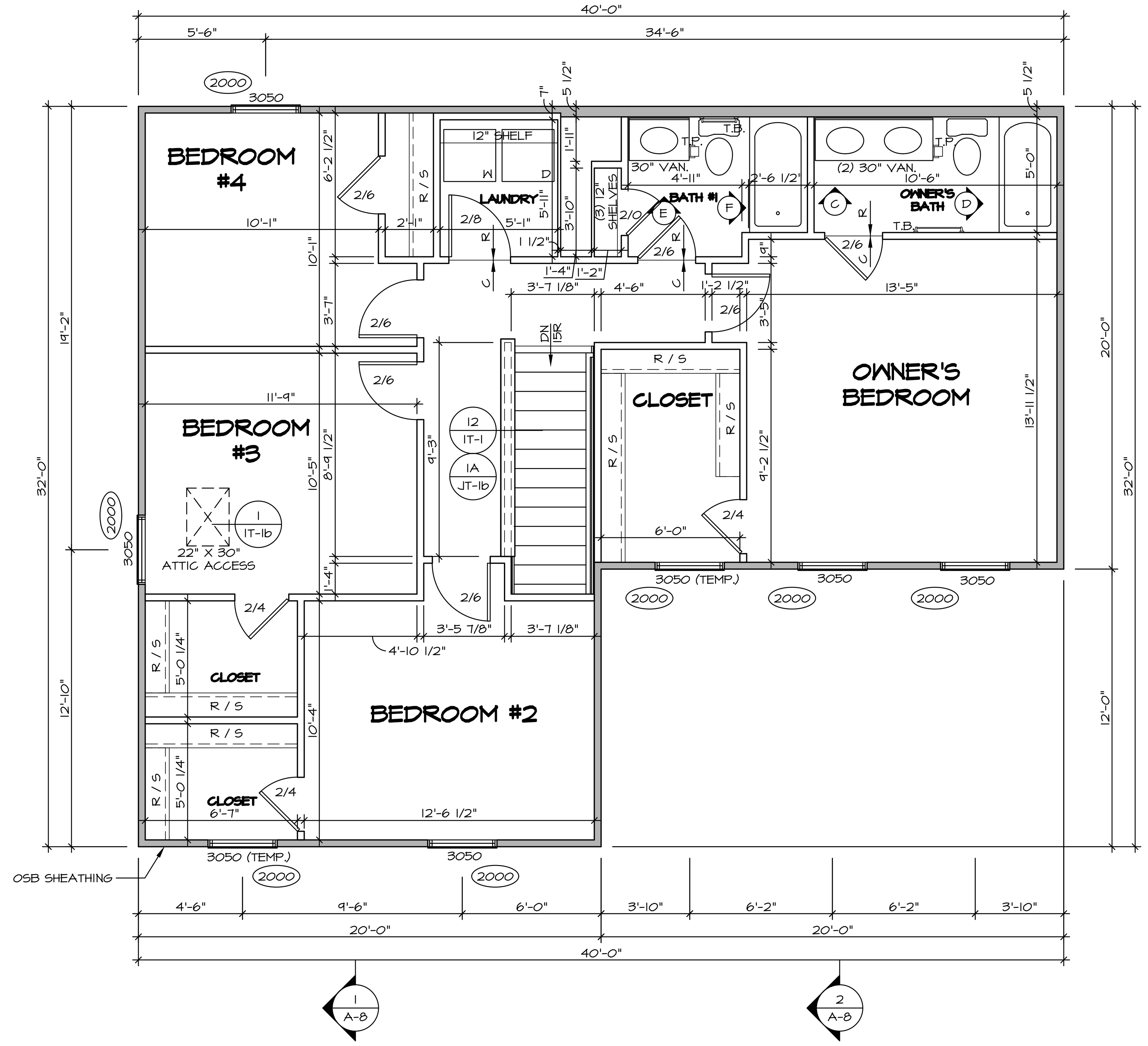
1/2" GYPSUM BOARD AT UNDERSIDE OF STAIRS AND WALLS IN CLOSET

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'-4 5/8" HEADER HEIGHT UNLESS OTHERWISE NOTED



SECOND FLOOR PLAN

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

SHEET NO. A-7

MODEL BIRCH

DRAWING TITLE SECOND FLOOR PLAN

OPTION DESCRIPTION

18

SET NO. BRH00

VERSION 01

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DATE:

OPTION

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COMM-LOT ---- - ----

STREET ADDRESS ---- ----

APT. NO. ----

CITY ----

STATE ----

ZIP ----

ZACHARY DAVID MENTZER NO. 16061 REGISTERED ARCHITECT NORTH CAROLINA

06/27/2022

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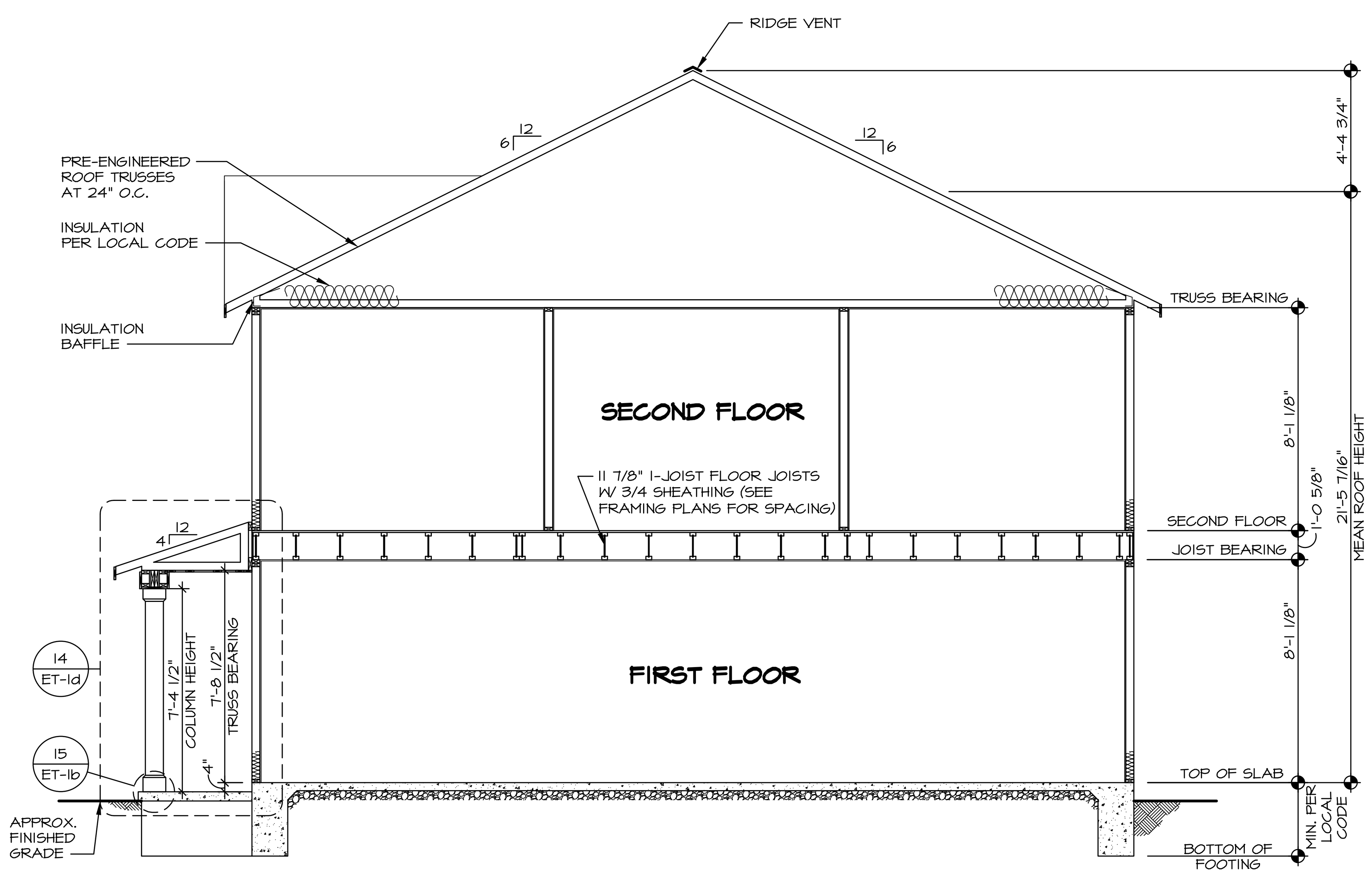
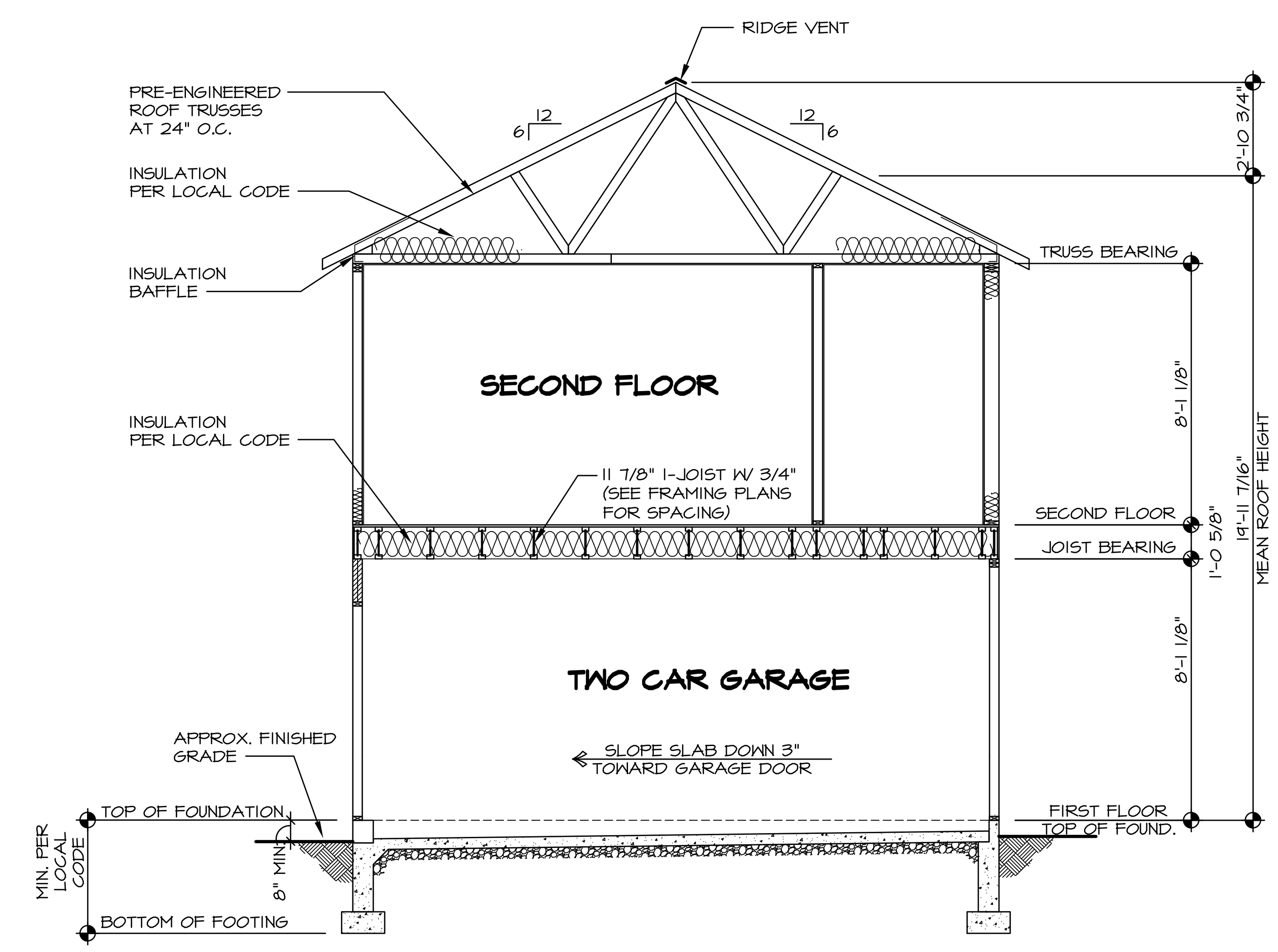


1 A-8 **BUILDING SECTION - FOYER**

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



2 A-8 **BUILDING SECTION - GARAGE**

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

ZACHARY DAVID MENTZER
REGISTERED ARCHITECT
NORTH CAROLINA
06/27/2022

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

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VERSION 01
DRAWN BY
DATE:
OPTION

SHEET NO. A-8
MODEL BIRCH
DRAWING TITLE BUILDING SECTION
OPTION DESCRIPTION

19

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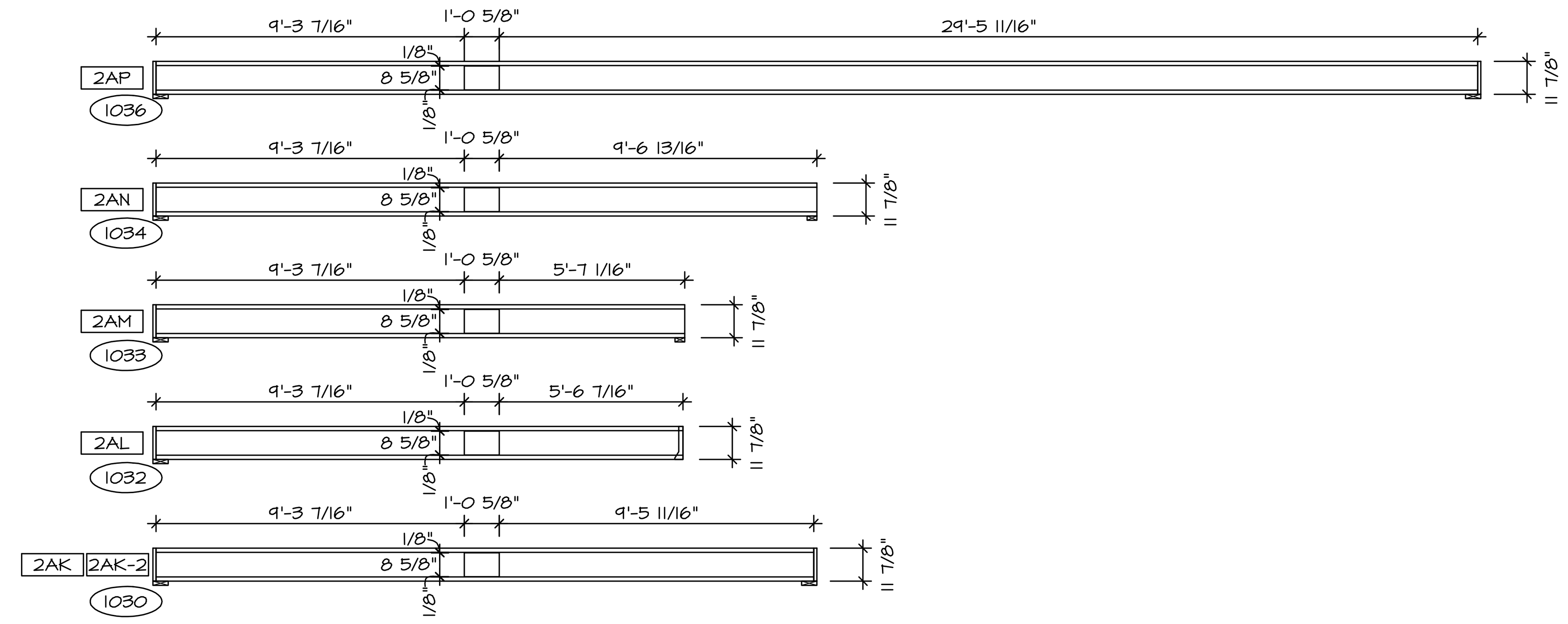


HOLE CUT DETAIL

2 / S-2

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

SECOND FLOOR FRAMING LENGTH SCHEDULE				
IDENTIFIER	DESCRIPTION	LENGTH	ENG. NUM.	REMARKS
2AE	PRI 60 - 11-14	39'-9 3/4"	1000	
2AH	PRI 60 - 11-14	20'-1 1/4"	1000	
2AJ	PRI 60 - 11-14	20'-2 3/8"	1000	
2AK	PRI 60 - 11-14	19'-9 3/4"	1030	J-0088
2AK-2	PRI 60 - 11-14 DBL	19'-9 3/4"	1031	J-0089
2AL	PRI 60 - 11-14	15'-10 1/2"	1032	J-0087
2AM	PRI 60 - 11-14	15'-11 1/8"	1033	J-0086
2AN	PRI 60 - 11-14	19'-10 7/8"	1034	J-0085
2AP	PRI 60 - 11-14	39'-9 3/4"	1036	J-0084
2AQ	PRI 60 - 11-14	19'-10 7/8"	1000	

SECOND FLOOR LVL LENGTH SCHEDULE				
IDENTIFIER	DESCRIPTION	LENGTH	ENG. NUM.	REMARKS
L201-1	LVL 1.75 - 11-14	3'-5 13/16"	1002	

LVL PLY TO PLY FASTENING SCHEDULE: (WHERE APPLICABLE BASED ON LVL USAGE)

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

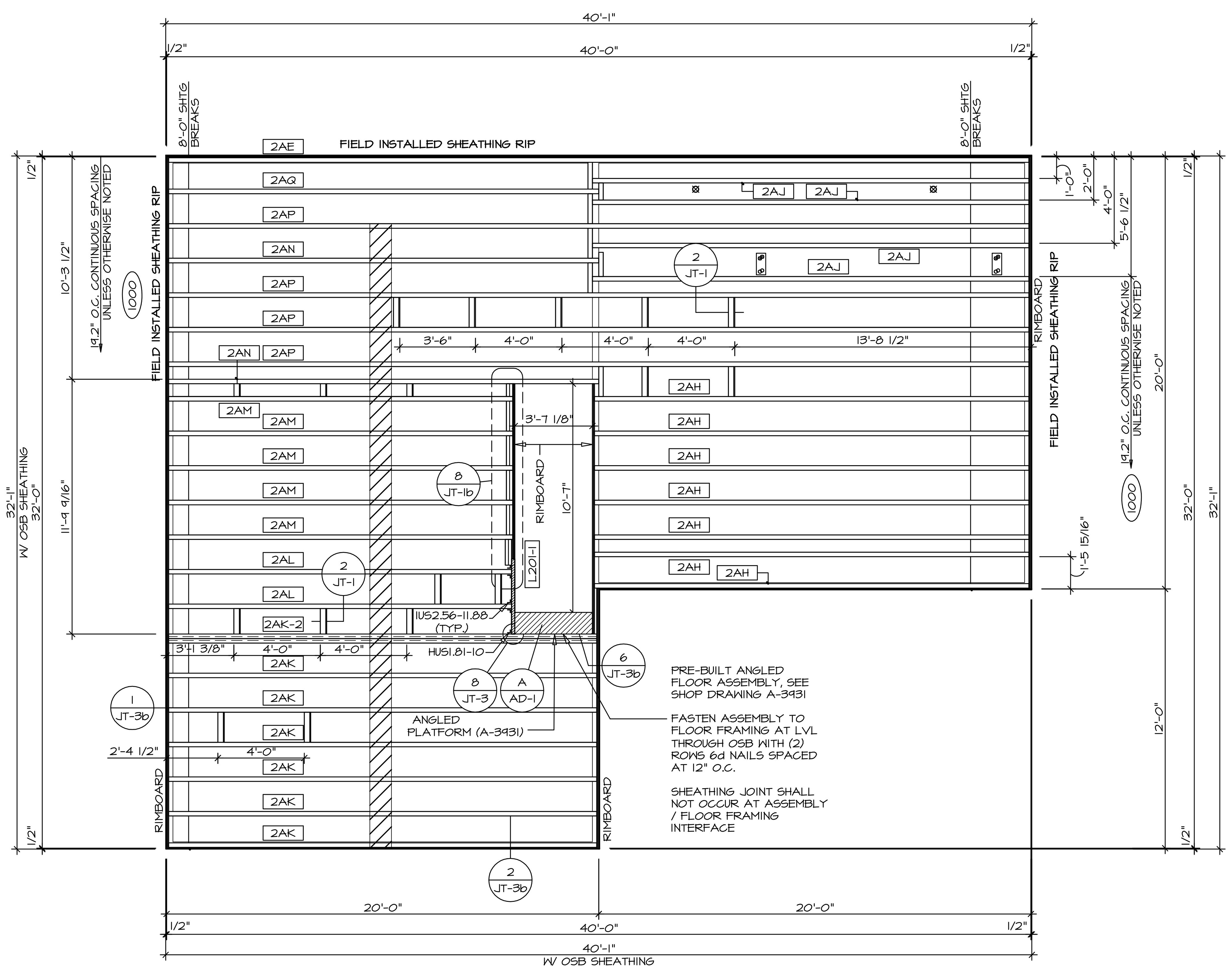
I-JOIST FLOOR SYSTEM

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 U.N.O.
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 **8/JT-3** FOR HANGER DETAIL.
7. ALL JOISTS TO BE PRI40, PRI60 OR PRI80, REFERENCE SCHEDULE FOR SPECIFIC SERIES PER MEMBER.
   A. PRI40 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 14'-0" MATERIAL.
11. ADHESIVE TO BE APPLIED AT THE RATE OF (1) TUBE PER TWO AND ONE-HALF SHEETS; SHEETS ARE TO BE GLUED AND PLACED ONE AT A TIME. **APPLY GLUE TO TONGUE AND GROOVE.**
12. I-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

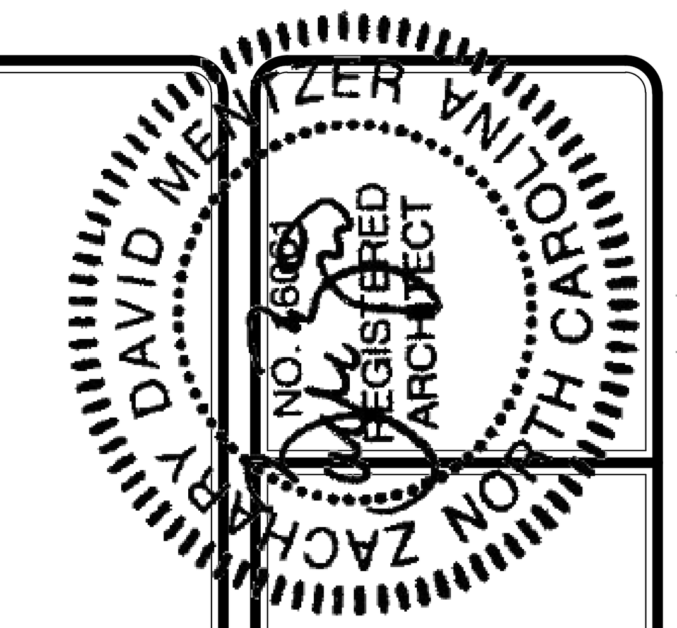
SEE FC DETAILS FOR FRAMING CONNECTORS



SECOND FLOOR FRAMING PLAN

1 / S-2

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



06/27/2022

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SHEET NO. S-2

MODEL BIRCH

DRAWING TITLE SECOND FLOOR JOIST LAYOUT

OPTION DESCRIPTION

28

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TRUSS SCHEDULE					
QUANTITY	SPECS	TRUSS NUMBER	LENGTH	ROOF PITCH (X/12)	REMARKS
10	SE	13152	20'-0"	6/12	-
4	SE	13155	3'-10 1/2"	4/12	-
1	SE	13176	32'-0"	6/12	-
3	SE	13177	32'-0"	6/12	-
3	SE	13178	32'-0"	6/12	-
2	SE	13179	32'-0"	6/12	-
1	SE	16940	32'-0"	6/12	-
1	SE	16941	32'-0"	6/12	-
1	SE	16942	20'-0"	6/12	-
1	VT	01261	2'-0"	12-6/12	-
1	VT	01262	4'-0"	12-6/12	-
1	VT	01263	6'-0"	12-6/12	-
1	VT	01264	8'-0"	12-6/12	-
1	VT	94708	8'-4"	12-6/12	-

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

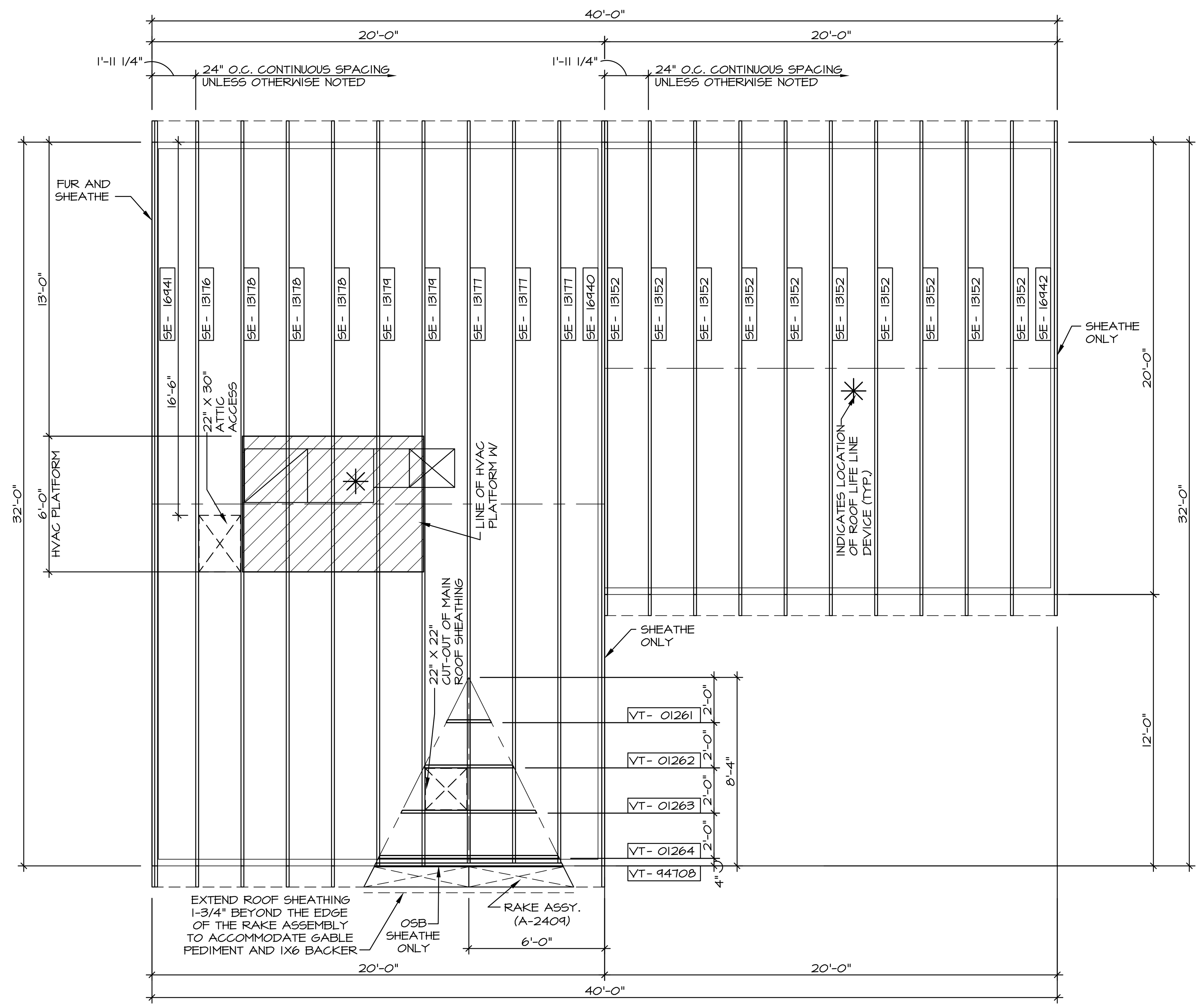
ROOF FRAMING NOTES

1. REFER TO THE STANDARD DETAILS FOR THE FOLLOWING:
   - 1.1. TRUSS TIE-DOWNS (1/RF-1)
   - 1.2. PIGGYBACK TRUSS ATTACHMENT (2/RF-1)
   - 1.3. VALLEY GABLE TRUSS BRACING (3/RF-1)
   - 1.4. GABLE BRACING (1/RF-1c)
   - 1.5. TURN GABLE BRACING (7/RF-1)
   - 1.6. TRUSS LATERAL BRACING (2/RF-1C)
   - 1.7. LIFELINE ATTACHMENT (5/RF-1)
   - 1.8. FALL PROTECTION ON PLATFORM TRUSS (11/RF-1)
2. IF TRUSS DOES NOT APPEAR ON THE TRUSS BRACING SHEET, NO ADDITIONAL LATERAL BRACING REQUIRED.

LEGEND

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

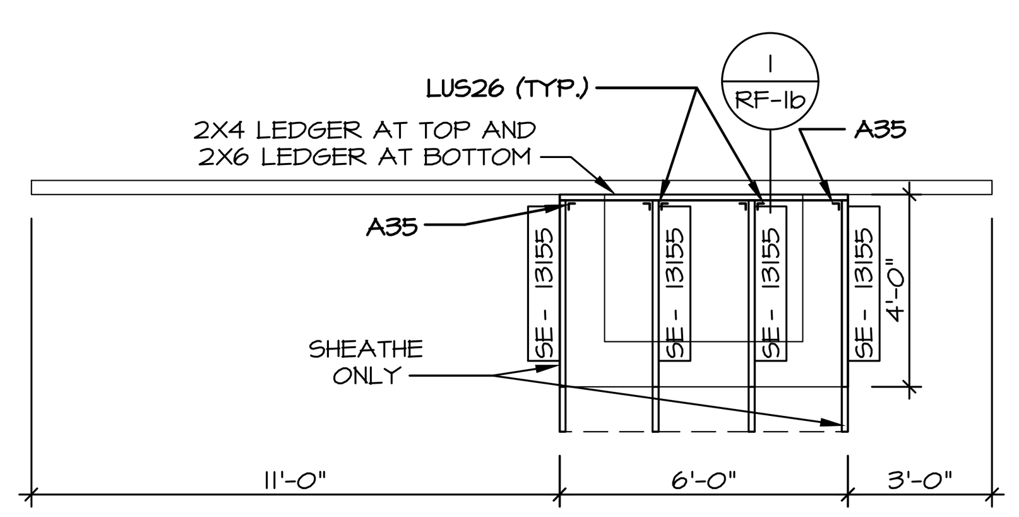
-SEE FA DETAILS FOR FIRE ASSEMBLIES
-SEE FC DETAILS FOR FRAMING CONNECTORS



ROOF FRAMING PLAN

1 / S-3

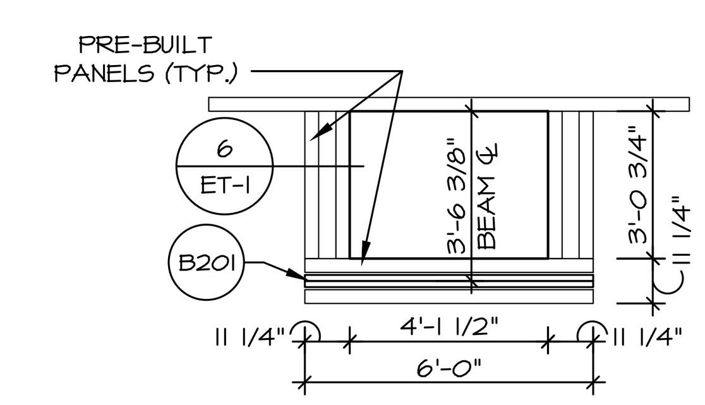
SCALE: 1/4" = 1'-0"



PORCH ROOF FRAMING PLAN

2 / S-3

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



PORCH BEAM FRAMING PLAN

3 / S-3

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

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MODEL
BIRCH
DRAWING TITLE
ROOF FRAMING PLAN
OPTION DESCRIPTION

SHEET NO.
S-3

30

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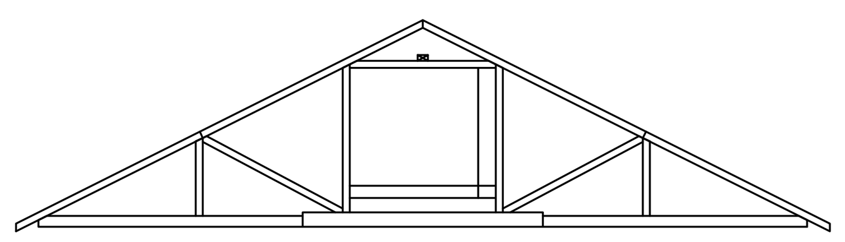

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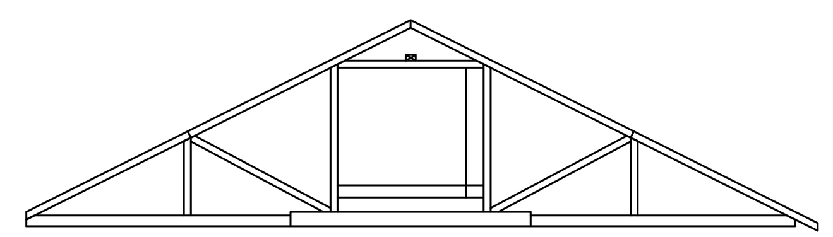

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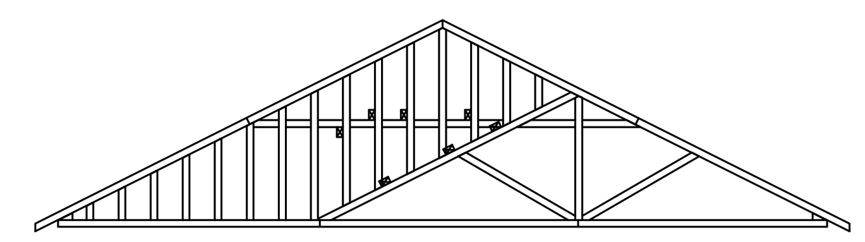

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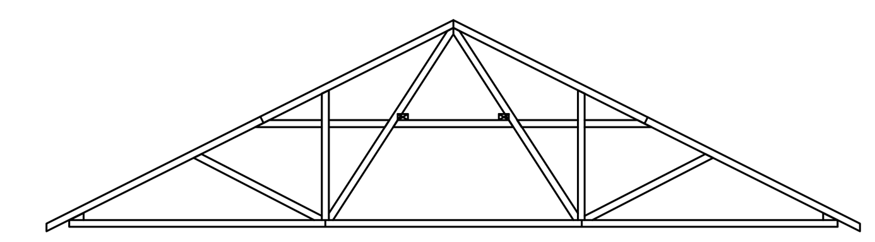

SE-16941

1/S-4 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. 2X4 SPF#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/RF-1c, IS REQUIRED WHERE LATERAL BRACING IS NOT CONTINUOUS ACROSS THREE (3) OR MORE TRUSSES AND MAY BE USED IN LIEU OF 2X4 LATERAL BRACING.
4. DIAGONAL BRACING REQUIRED WHEN LATERAL BRACING IS REQUIRED (4/RF-1c)
5. STUDDED GABLE BRACING DETAIL 1/RF-1c TO BE UTILIZED FOR TRUSSES 6'-9" IN HEIGHT OR GREATER.
6. PARTIALLY SHEATHED GABLES, SEE 5/RF-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.

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NORTH CAROLINA
REGISTERED ARCHITECT
NO. 16001
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SHEET NO. S-4
MODEL BIRCH
DRAWING TITLE TRUSS BRACING
OPTION DESCRIPTION

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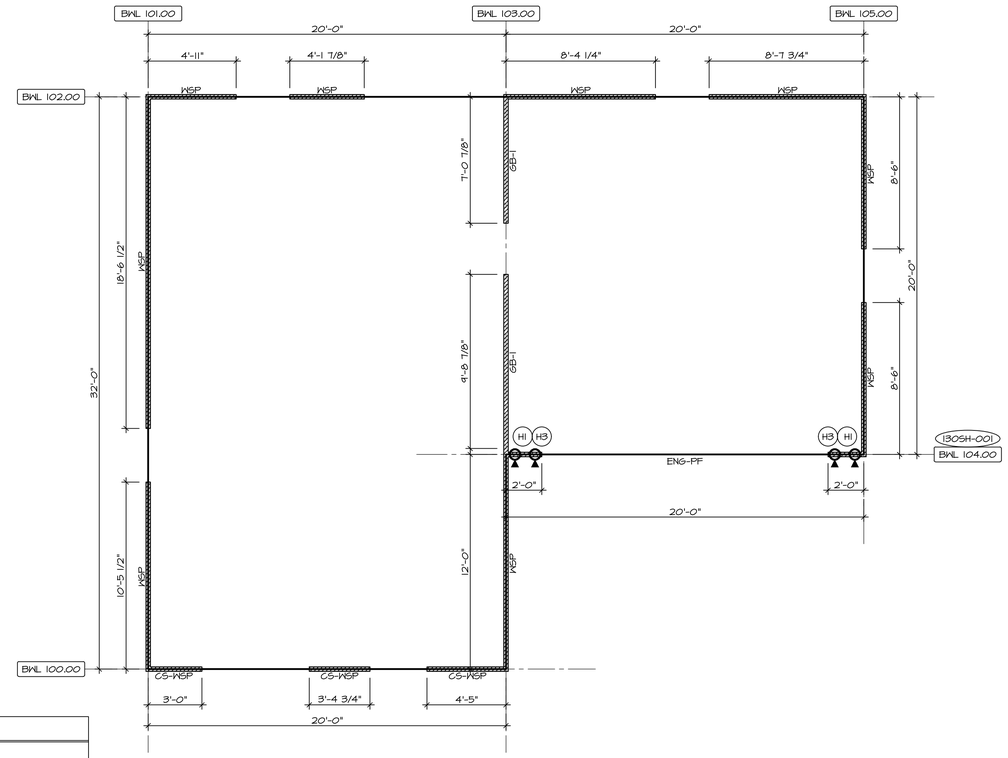
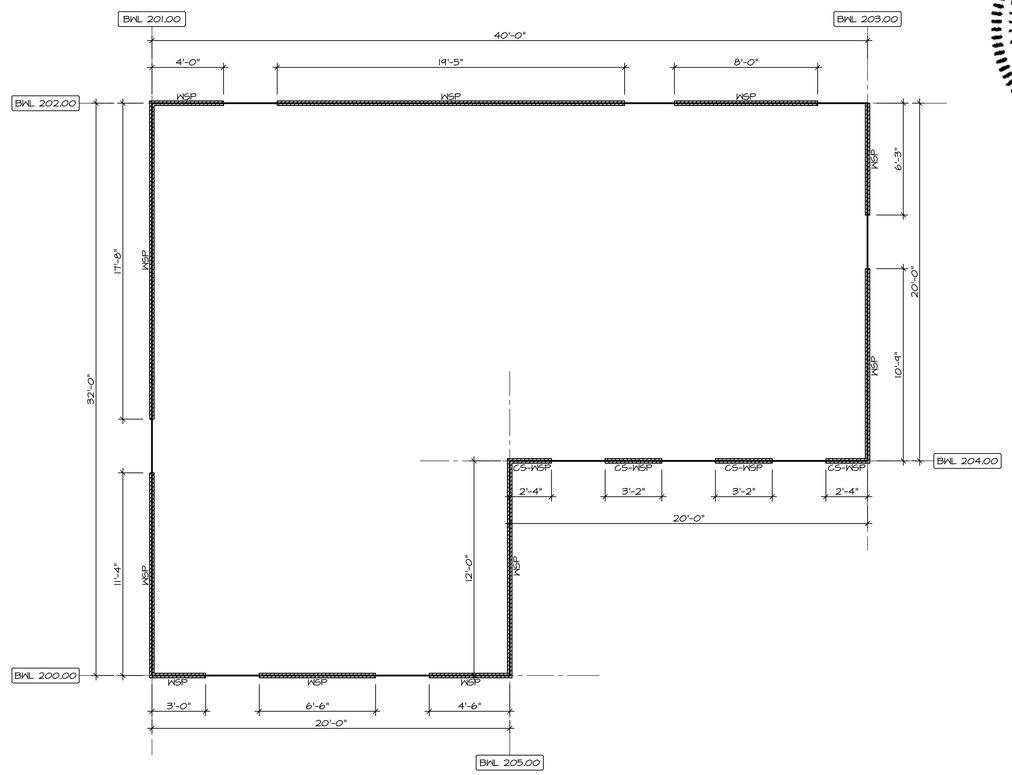


1 / S-5 FIRST FLOOR BRACED WALL PLAN

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



2 / S-5 SECOND FLOOR BRACED WALL PLAN

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

LEGEND

BWL XXX.XX	BRACED WALL LINE I.D.
	BRACED WALL LINE
	HOUSE WALL
	BRACED WALL PANEL
(X)	ENGINEERING PAGE NUMBER
WSP	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 6/WB-2)
LIB	LET-IN BRACING (SEE STANDARD DETAIL F / WB-2)
CS-WSP	CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL
CS-PF	CONTINUOUS SHEATHING - PORTAL FRAME, SEE FLOOR PLANS FOR PORTAL FRAME HEADER INFORMATION (SEE STANDARD DETAIL A, C/ WB-2)
CS-G	CONTINUOUS SHEATHING - WOOD STRUCTURAL PANEL ADJACENT TO GARAGE OPENINGS
ENG-WSP-A	ENGINEERED DESIGN W/ WALL STRUCTURAL PANEL SHEATHING TYPE 'A' FASTENING REQUIREMENTS (NO HOLD DOWNS REQUIRED UNLESS NOTED)
ENG-WSP-B	ENGINEERED DESIGN W/ WALL STRUCTURAL PANEL SHEATHING TYPE 'B' FASTENING REQUIREMENTS (NO HOLD DOWNS REQUIRED UNLESS NOTED)
ENG-WSP-C	ENGINEERED DESIGN W/ WALL STRUCTURAL PANEL SHEATHING ON BOTH SIDES OF THE WALL TYPE 'C' FASTENING REQUIREMENTS (NO HOLD DOWNS REQUIRED UNLESS NOTED)
ENG-PF	ENGINEERED DESIGN W/ PORTAL FRAME, SEE FLOOR PLANS FOR PORTAL FRAME HEADER INFORMATION (SEE STANDARD DETAIL PAGE WB-1)
ENG-GBI-A	ENGINEERED DESIGN W/ (1) SIDED GYPSUM BOARD TYPE "A" FASTENING REQUIREMENTS
ENG-GBI-B	ENGINEERED DESIGN W/ (1) SIDED GYPSUM BOARD TYPE "B" FASTENING REQUIREMENTS
ENG-BW	ENGINEERED DESIGN W/ (1) SIDED GYPSUM BOARD W/ BLOCK WALL CONSTRUCTION (SEE STANDARD DETAIL 17/WB-1)
HO	HOLD-DOWN: 1. SEE SHEET WB-2 FOR "P_" INDICATOR SCHEDULE AND DETAILS 2. SEE SHEET WB-1 FOR "HL_" INDICATOR SCHEDULE AND DETAILS 3. ARROW INDICATES LOCATION.

NOTES:

HOUSE HAS BEEN ANALYZED UTILIZING A PRESCRIPTIVE METHOD IN COMPLIANCE WITH INTERNATIONAL RESIDENTIAL CODES (IRC) UNLESS OTHERWISE NOTED. ENGINEERED WALL LINES ARE IN COMPLIANCE WITH INTERNATIONAL BUILDING CODES (IBC).

FASTENING SCHEDULE

SHEATHING	FASTENER	SPACING EDGES	SPACING FIELD
PRESCRIPTIVE 7/16" WOOD STRUCTURAL PANELS OR EQUIVALENT (W/ METHOD WSP, CS-WSP, CS-G)	8d COMMON NAILS	6" O.C.	12" O.C.
	ALTERNATIVE FASTENER 1-3/4" 16-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	6" O.C.
ENGINEERED 7/16" WOOD STRUCTURAL PANELS (W/ METHOD ENG-WSP-A, ENG-WSP-B, ENG-WSP-C)	A - 8d COMMON NAILS	4" O.C.	12" O.C.
	A - 1-3/4" 16-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	6" O.C.
	B - 8d COMMON NAILS*	3" O.C.	12" O.C.
	B - 1-3/4" 16-GAUGE CORROSION RESISTANT STAPLES	N/A	6" O.C.
	C - 8d COMMON NAILS* SHEATHING ON BOTH SIDES OF THE WALL	3" O.C.	12" O.C.
	C - 1-3/4" 16-GAUGE CORROSION RESISTANT STAPLES SHEATHING ON BOTH SIDES OF THE WALL	N/A	6" O.C.
1/2" GYPSUM WALLBOARD (W/ METHOD GB-1, GB-2, ENG-GBI-A)	1-1/4" LONG, 1/4" HEAD, .098" DIA. ANNULAR-RINGED NAILS	7" O.C.	7" O.C.
	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	3" O.C.	3" O.C.
	1-1/4" 16-GAUGE CORROSION RESISTANT STAPLES	3" O.C.	3" O.C.
1/2" GYPSUM WALL BOARD BLOCKED AT THE EDGES (W/ METHOD GB-BW-1, GB-BW-2, ENG-BW)	BLOCKING REQUIRED AT ALL GYPSUM EDGES. USE CORROSION RESISTANT TYPE W 1-1/4" DRYWALL SCREWS	4" O.C.	12" O.C.

NOTES:
1. MINIMUM 7/16" 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.

* STAPLE ALTERNATIVE FOR USE IN FIELD ONLY

BRACED WALL LINE SCHEDULE

WIND SPEED (ULT)	IDENTIFIER	REQUIRED (FT.)	ACTUAL (FT.)	METHOD
130 MPH	BWL 100.00	9.92'	10.81'	CONTINUOUS (WITH GWB)
130 MPH	BWL 101.00	10.84'	29.00'	WSP (WITH GWB)
130 MPH	BWL 102.00	13.93'	26.08'	WSP (WITH GWB)
130 MPH	BWL 103.00	18.25'	20.41'	GB
130 MPH	BWL 104.00	12.13'	6.00'	ENGINEERED
130 MPH	BWL 105.00	11.41'	17.00'	WSP (WITH GWB)
130 MPH	BWL 200.00	5.91'	13.25'	WSP (WITH GWB)
130 MPH	BWL 201.00	7.14'	29.00'	WSP (WITH GWB)
130 MPH	BWL 202.00	6.85'	31.42'	WSP (WITH GWB)
130 MPH	BWL 203.00	7.74'	17.00'	WSP (WITH GWB)
130 MPH	BWL 204.00	5.75'	11.00'	CONTINUOUS (WITH GWB)
130 MPH	BWL 205.00	5.53'	12.00'	WSP (WITH GWB)

DAVID MEYERZER ZACHARY NORTH CAROLINA NO. 46063 REGISTERED ARCHITECT

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MODEL BIRCH
DRAWING TITLE BRACED WALL PANEL DETAIL
OPTION DESCRIPTION

SHEET NO. S-5

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