32’ x 20’ Shed Design

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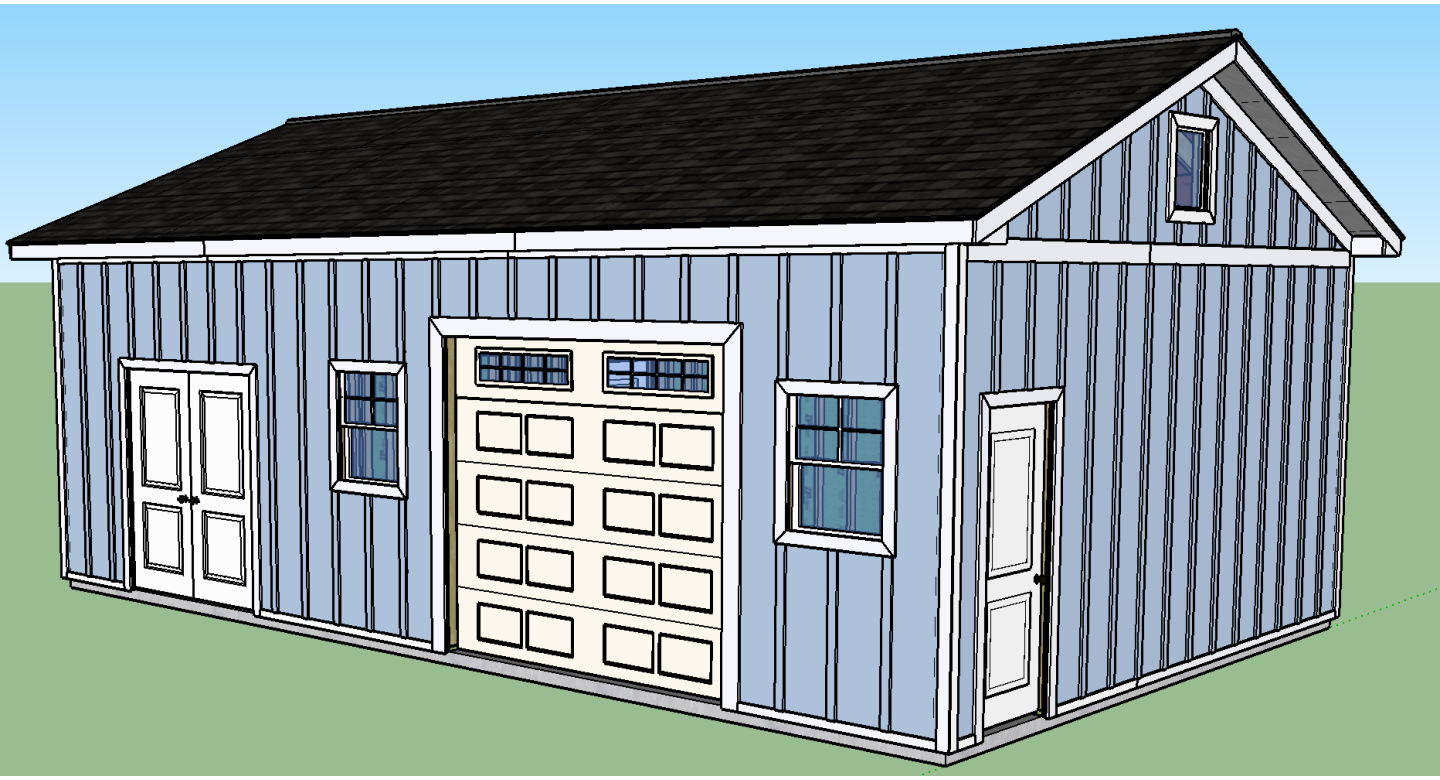
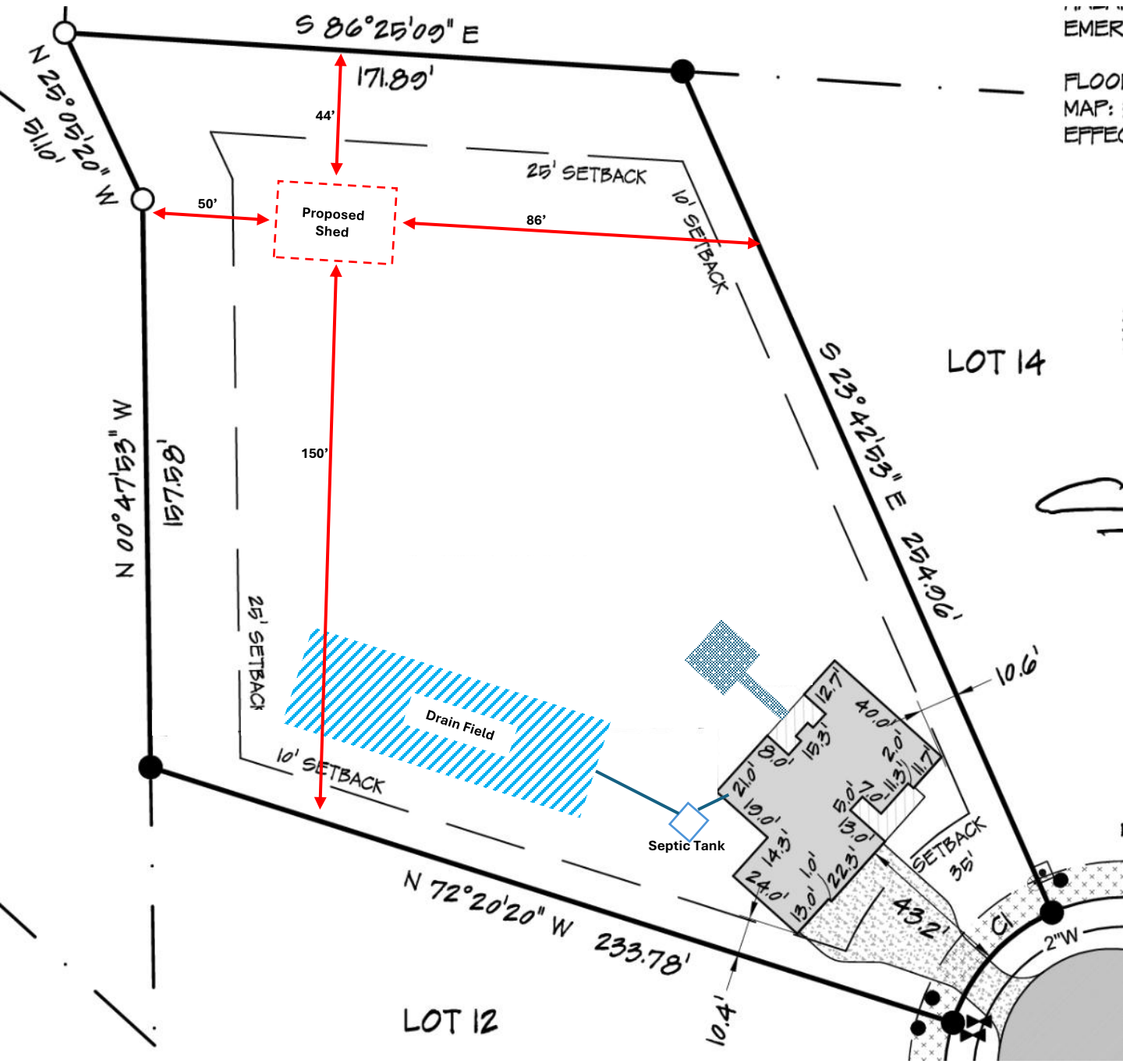
Design meets all requirements set out in NCRC and exceeds requirements for a 120mph Vult wind.



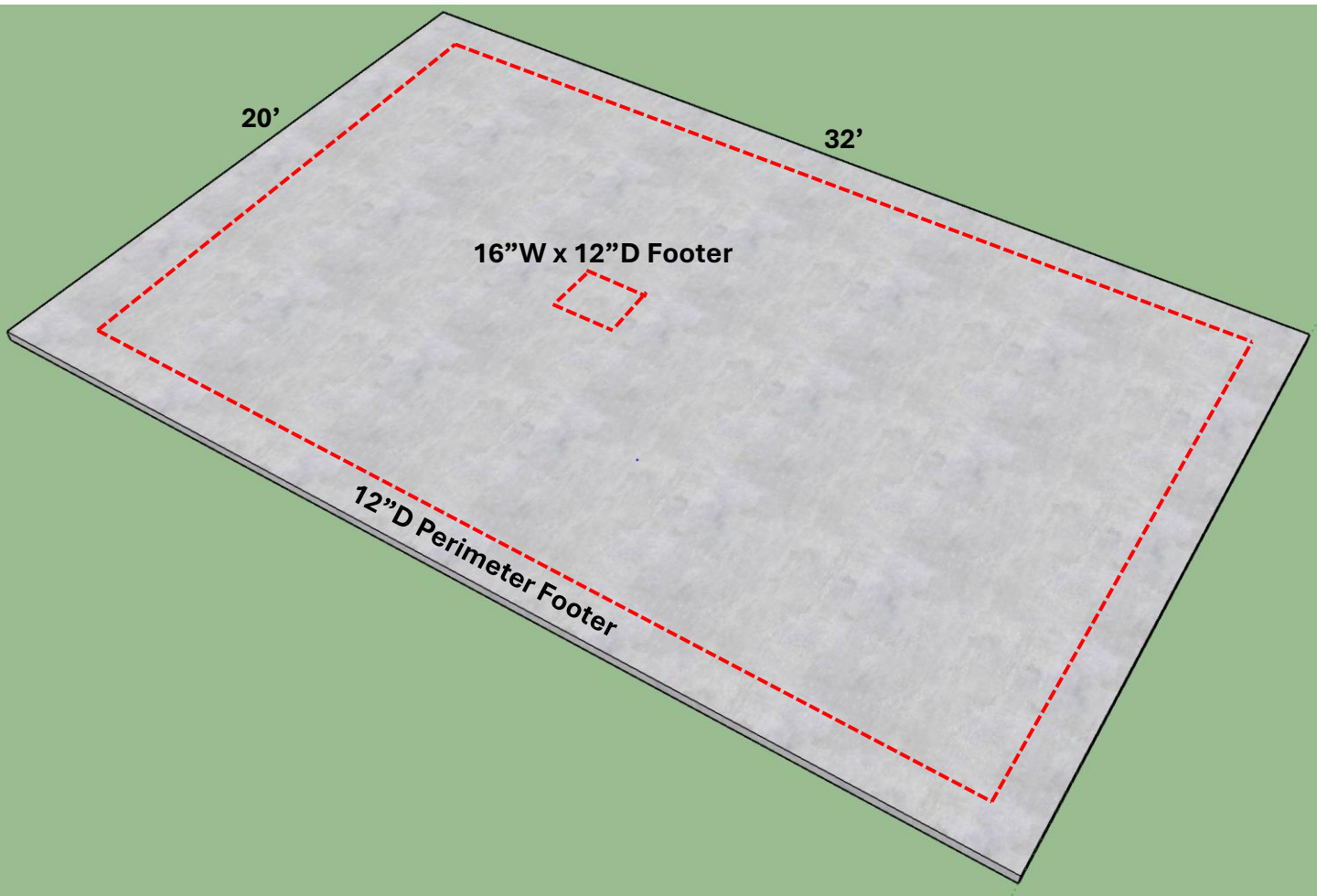
Site Map

Location: 303 Thistle Ct, Sanford NC 27332 (Lot #13, West Preserve)



A: Foundation

The foundation consists of a **32’ x 20’ x 5”** wire-mesh reinforced concrete slab. The slab contains a **continuous 12”W x 12”D footer** along the edges and a **16”L x 16”W x 12”D footer** located beneath the central ridge beam support post. All sizing is in compliance with NCRC R403.1

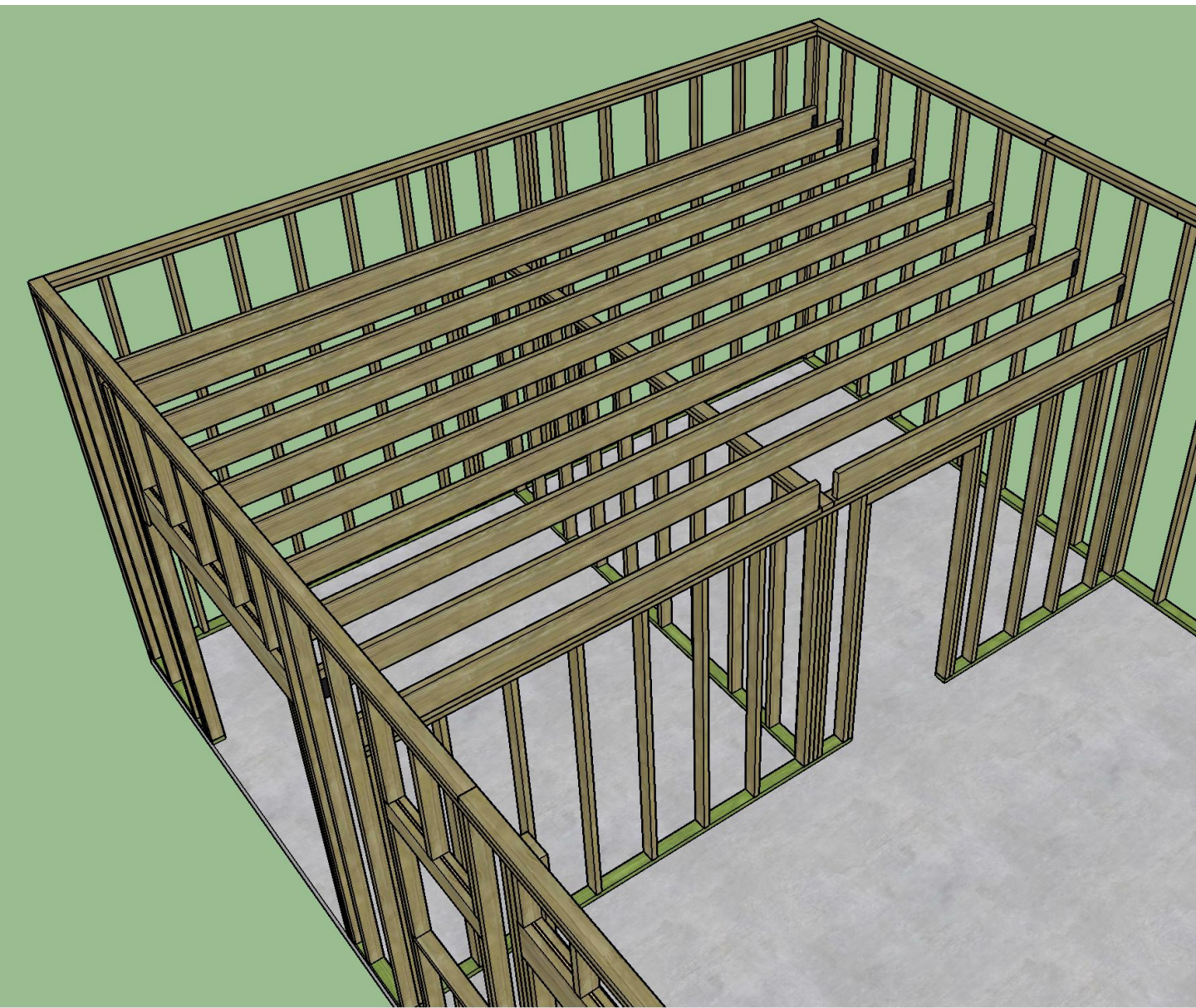


B: Exterior Wall Framing

The exterior walls are framed with **2x4's** spaced **16" O/C** with a single bottom plate and double top plate to a **height of 10'**. Bottom plates are secured to the concrete slab using 5/8" galvanized bolts. All window / door openings are framed using traditional techniques. All wall framing techniques are in compliance with NCRC R602.

C: Interior Wall Framing

The interior walls are framed with **2x4's** spaced **16" O/C** with a single bottom plate and double top plate to a **height of 7' 4".** The bottom plates will be secured to the concrete slab using 5/8" galvanized bolts. **2x8 joists** spaced **16" O/C** sit atop the interior wall top plate and are secured to the exterior wall studs using Simpson Strong-Tie joist hangers.

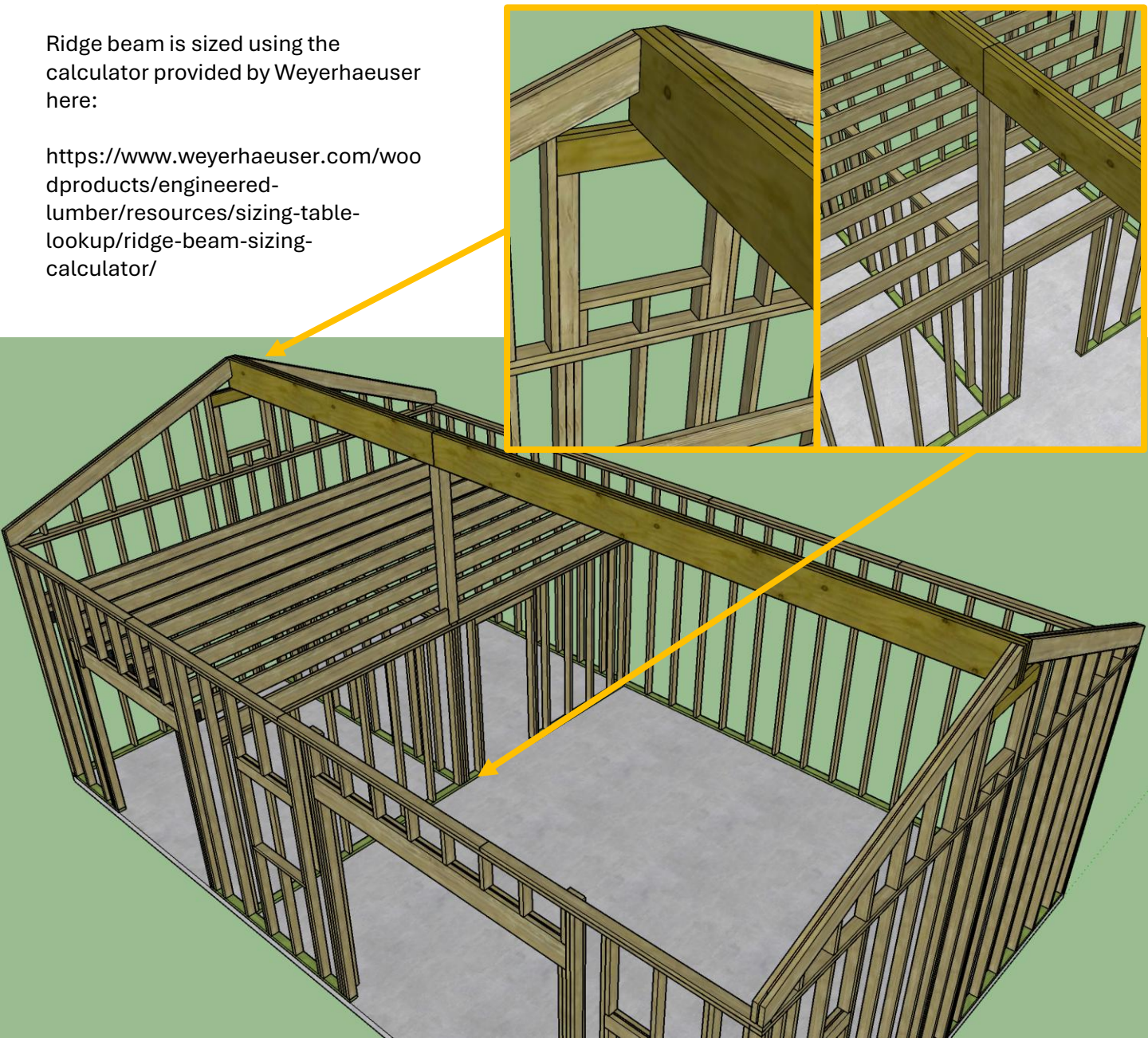


D: Ridge Posts / Ridge Beam

A multiply **5-1/4” x 14” LVL structural ridge beam** runs the length of the structure, supported by a **6” x 6” center post** located 20’/12’ from the ends. Below the center post, **5x 2x4 studs** in the interior wall transfer the force into the footer located below. At the ends of the structure, the ridge beam is supported **by 3-1/2” x 5-1/2” LVL headers**, which transfer the force into **4” x 4” jack studs**. Each jack stud is supported by **3x 2x4 studs** in the exterior wall. All beams are in compliance with NCRC R602.7(1) and NCRC R602.3(1).

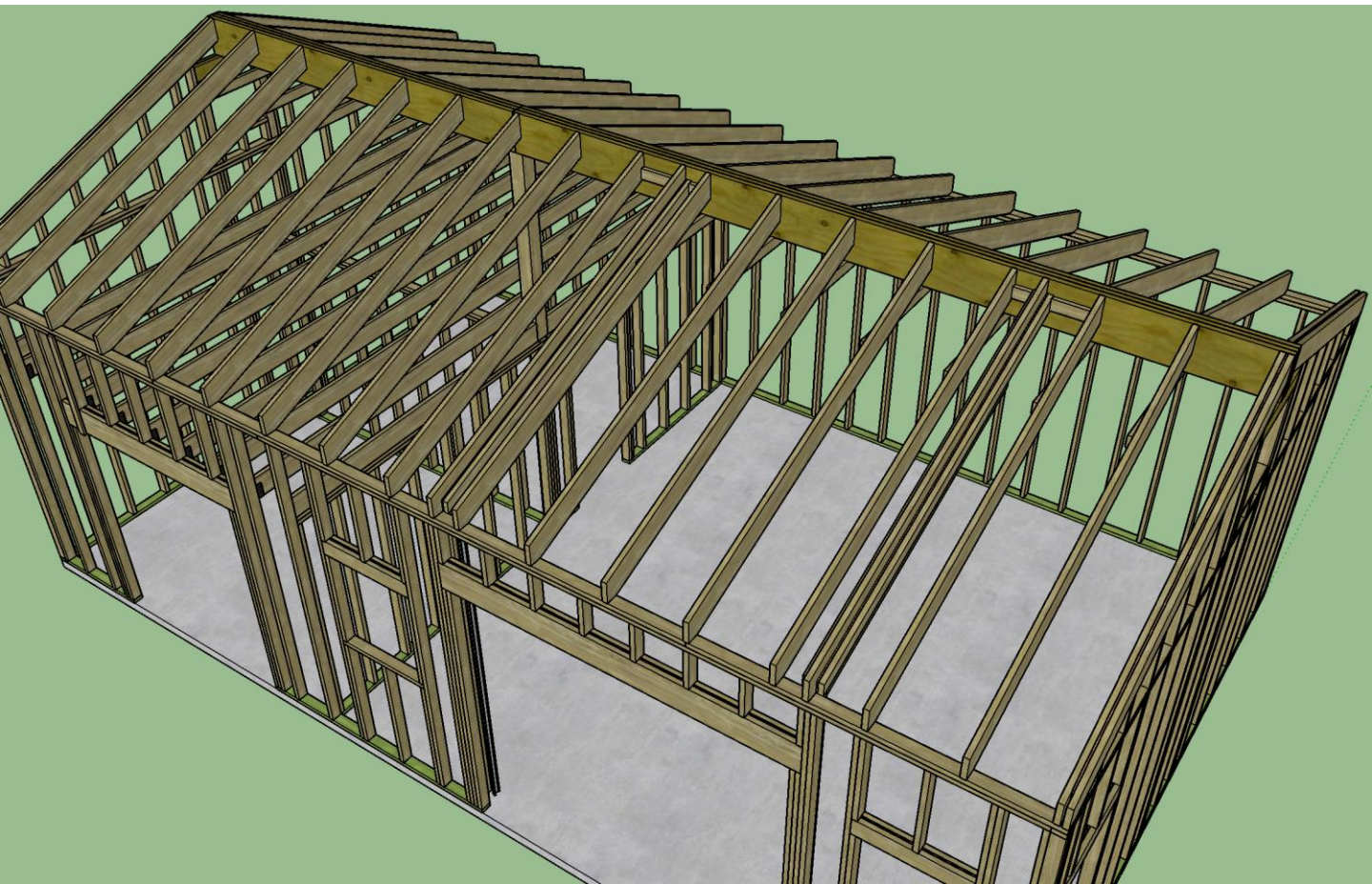
Ridge beam is sized using the calculator provided by Weyerhaeuser here:

https://www.weyerhaeuser.com/woodproducts/engineered-lumber/resources/sizing-table-lookup/ridge-beam-sizing-calculator/



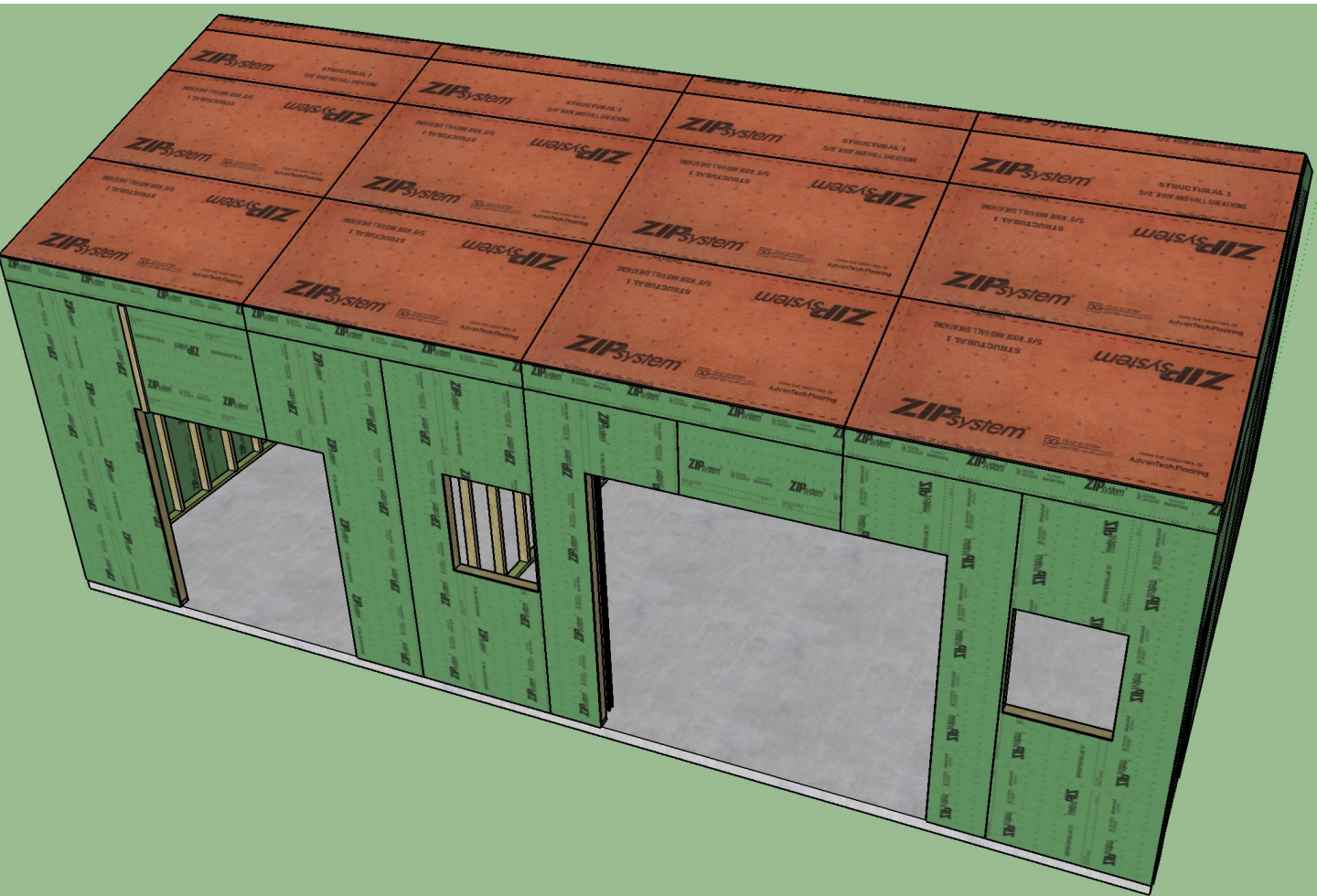
E: Rafters

The rafters are framed with **2x8's** spaced **24" O/C**. **2x4 collar ties** are placed between every rafter. Rafter tails are cut to remain flush with the edge of the top plates, allowing for continuous sheathing between the walls/roof.



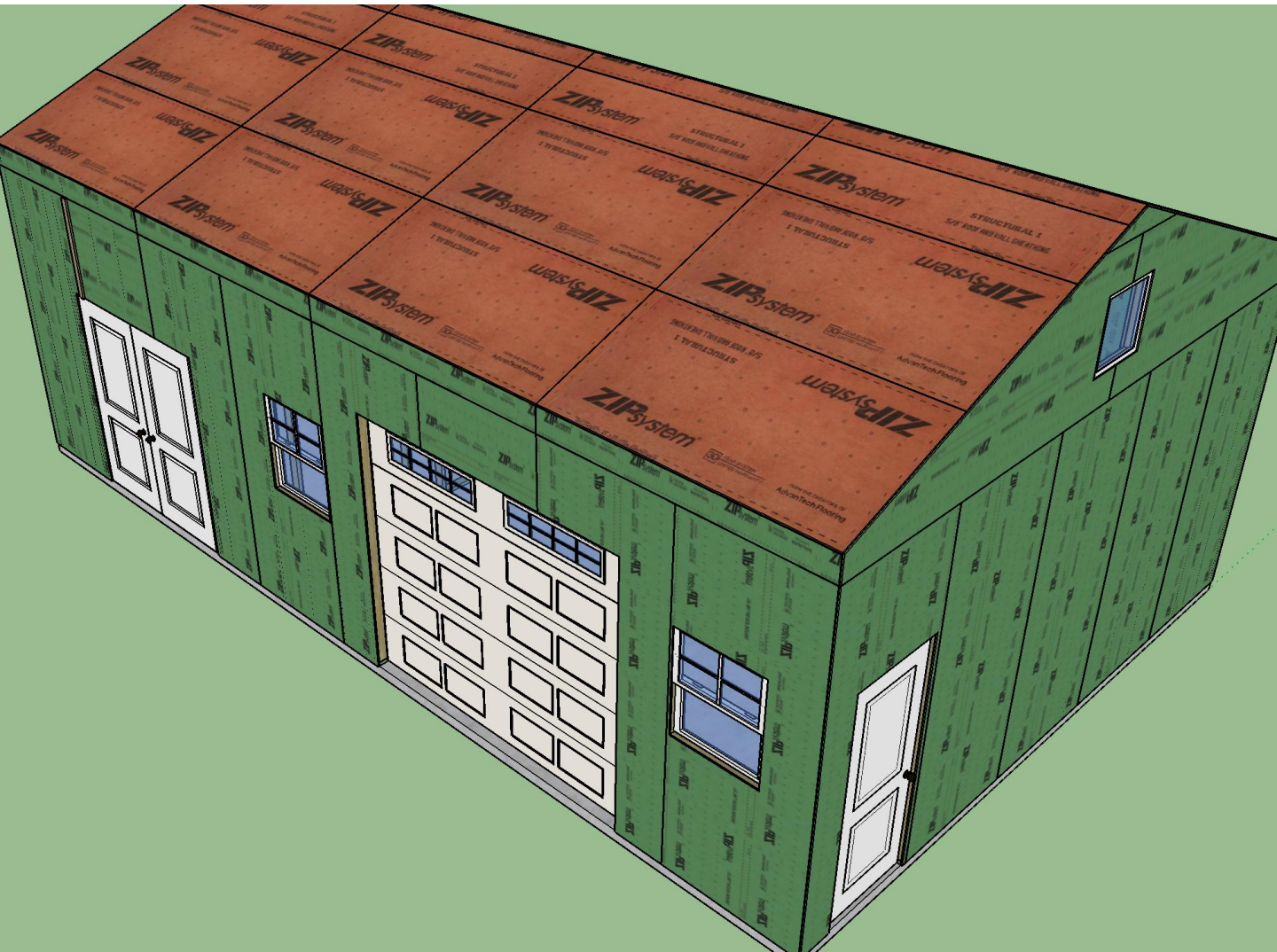
F: Wall / Inner Roof Sheathing

The walls and inner roof are sheathed using **Huber ZIP System** sheathing to allow for a continuous barrier. Walls will be sheathed with **7/16” (Green) ZIP sheathing** and the inner roof will be sheathed with **5/8” (Brown) ZIP sheathing**.



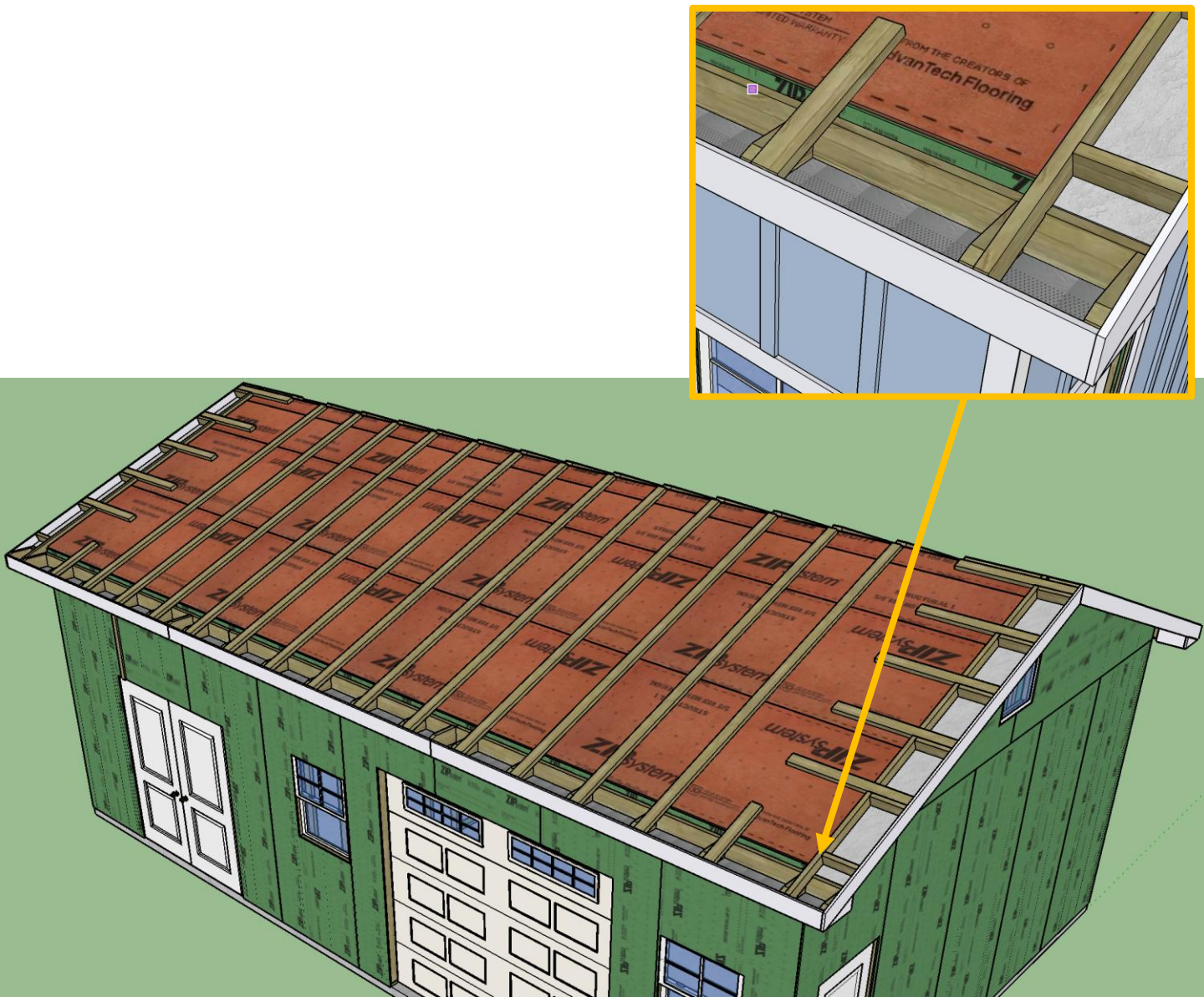
G: Windows / Doors

The structure will contain **(1) 9’x8’ overhead panel door, (1) 72” x 80” double door, (1) 72” x 36” single door, (2) 24” x 36” windows and (2) 24” x 24” windows**. All windows/doors will be installed using traditional techniques and compliance with manufacturer instructions.



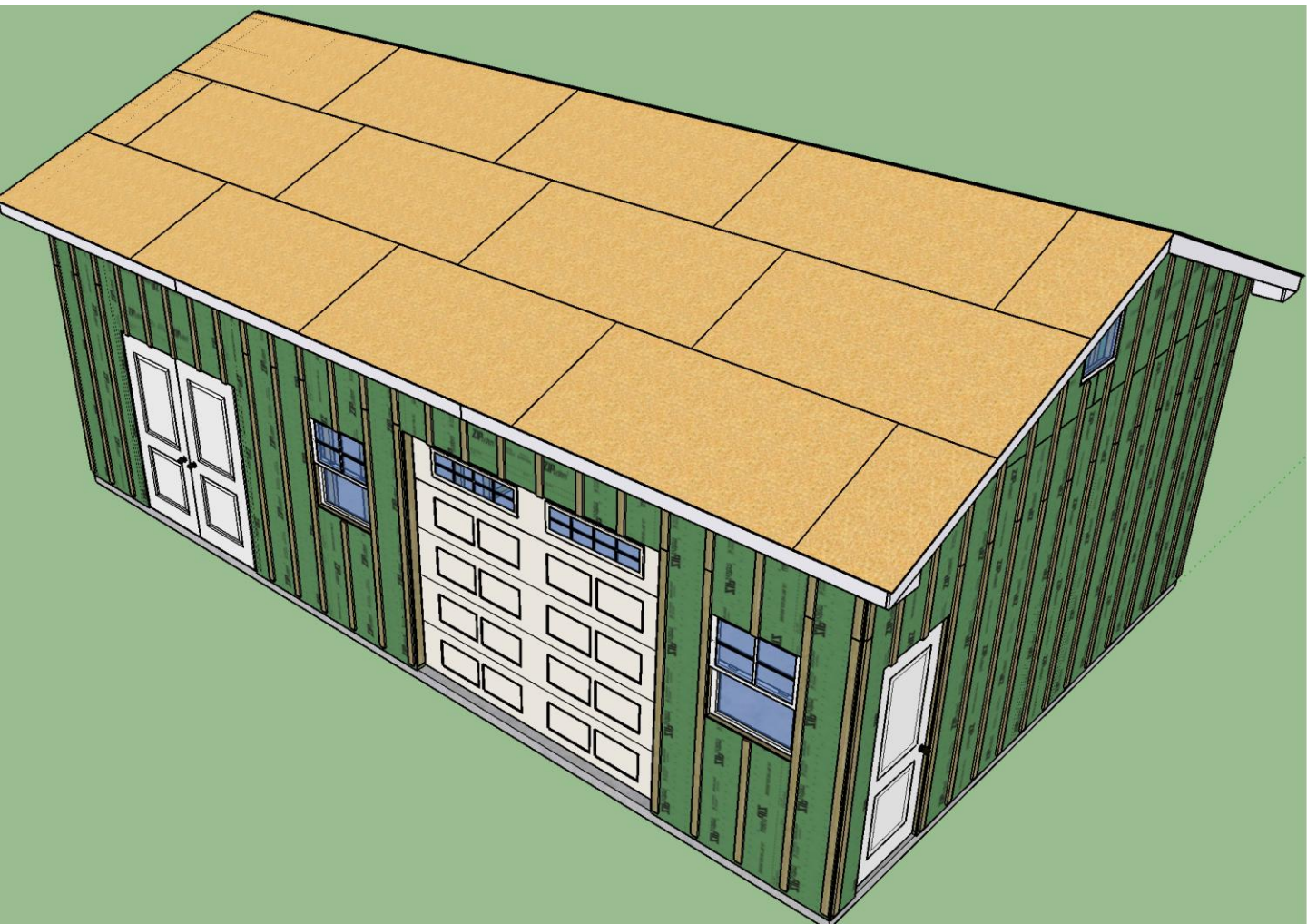
H: Roof Framing

Above the ZIP sheathing, the roof will be framed with **2x4's** spaced **24" O/C, secured to the rafters below**. These 2x4's provide a **12" overhang** from the sides. Additionally, a **2x6 ledger board and blocking** provides a nailing surface to install vented soffit and fascia boards. This vented soffit, along with the air channels provided between the 2x4's, allows for circulation/venting of hot air through a ridge vent.



I: Outer Roof Sheathing / Rainscreen

7/16” OSB provides the outer layer of roof sheathing above the exterior roof framing. **1x3’s** spaced **16” O/C** provide a rain screen between the wall sheathing and siding.



J: Siding / Shingles

Siding will consist of **Hardie Board & Batten**, using the manufacturer prescribed techniques. Asphalt shingles will meet ASTM D7158 H wind resistance, and installation of shingles will comply with NCRC R905.