NICHOLAS GARAGE SOUTHSIDE EXTERIOR PLAN

COLORADO REGISTERED
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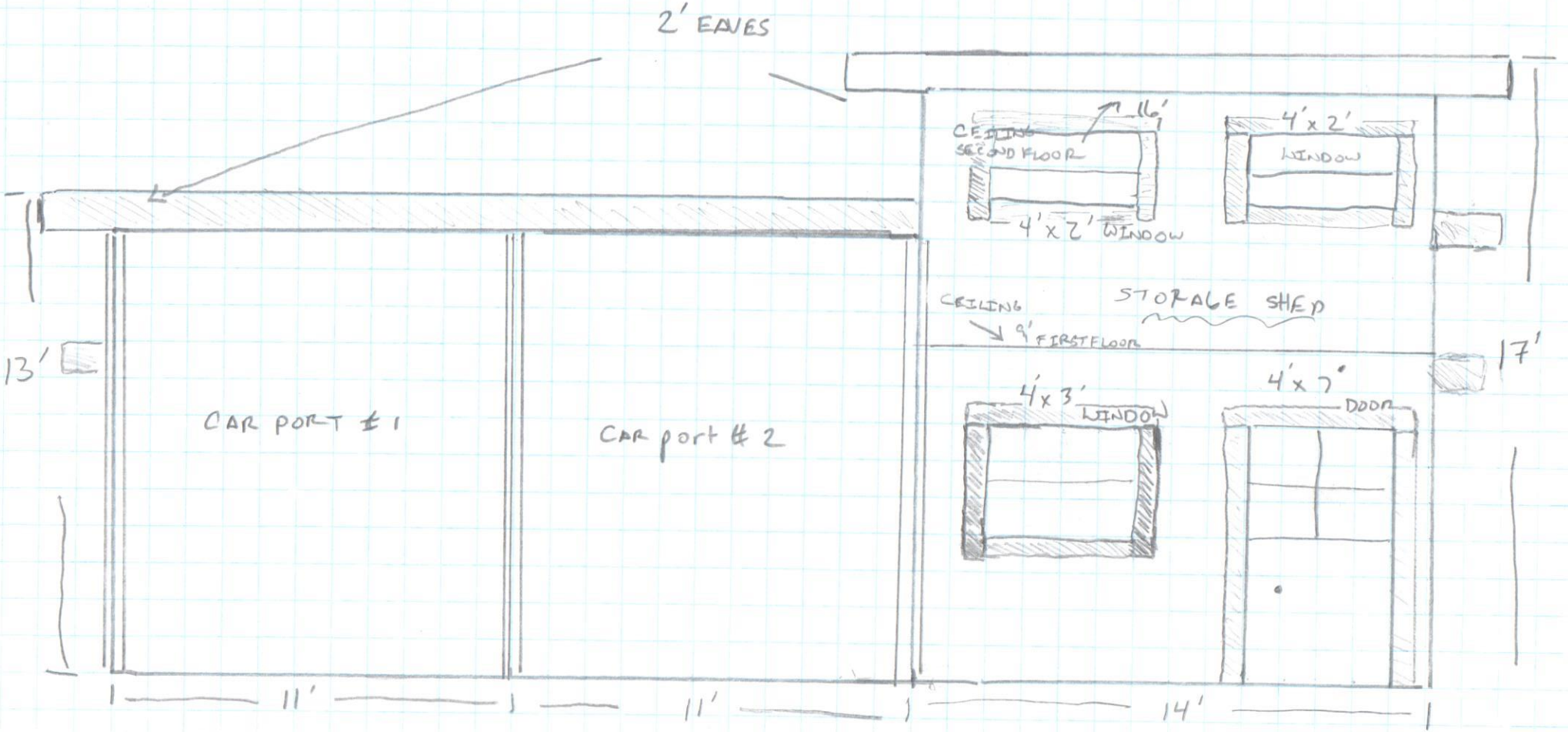
PROFESSIONAL ENGINEER
7-7-21



NATHAN + ALISON NICHOLAS GARAGE PLAN NORTH SIDE 1/4" = 1'

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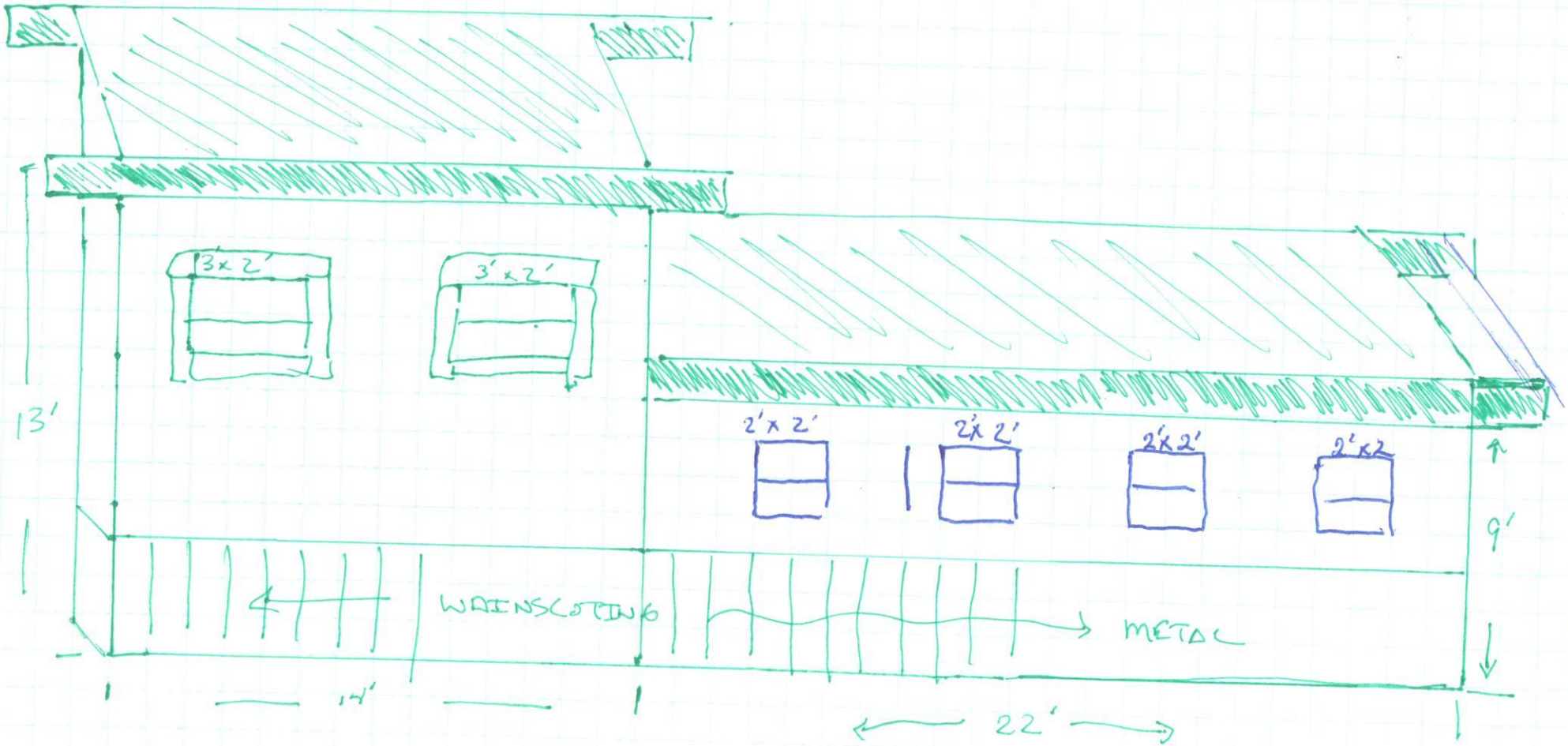

NICHOLAS GARAGE WEST SIDE EXTERIOR PLAN

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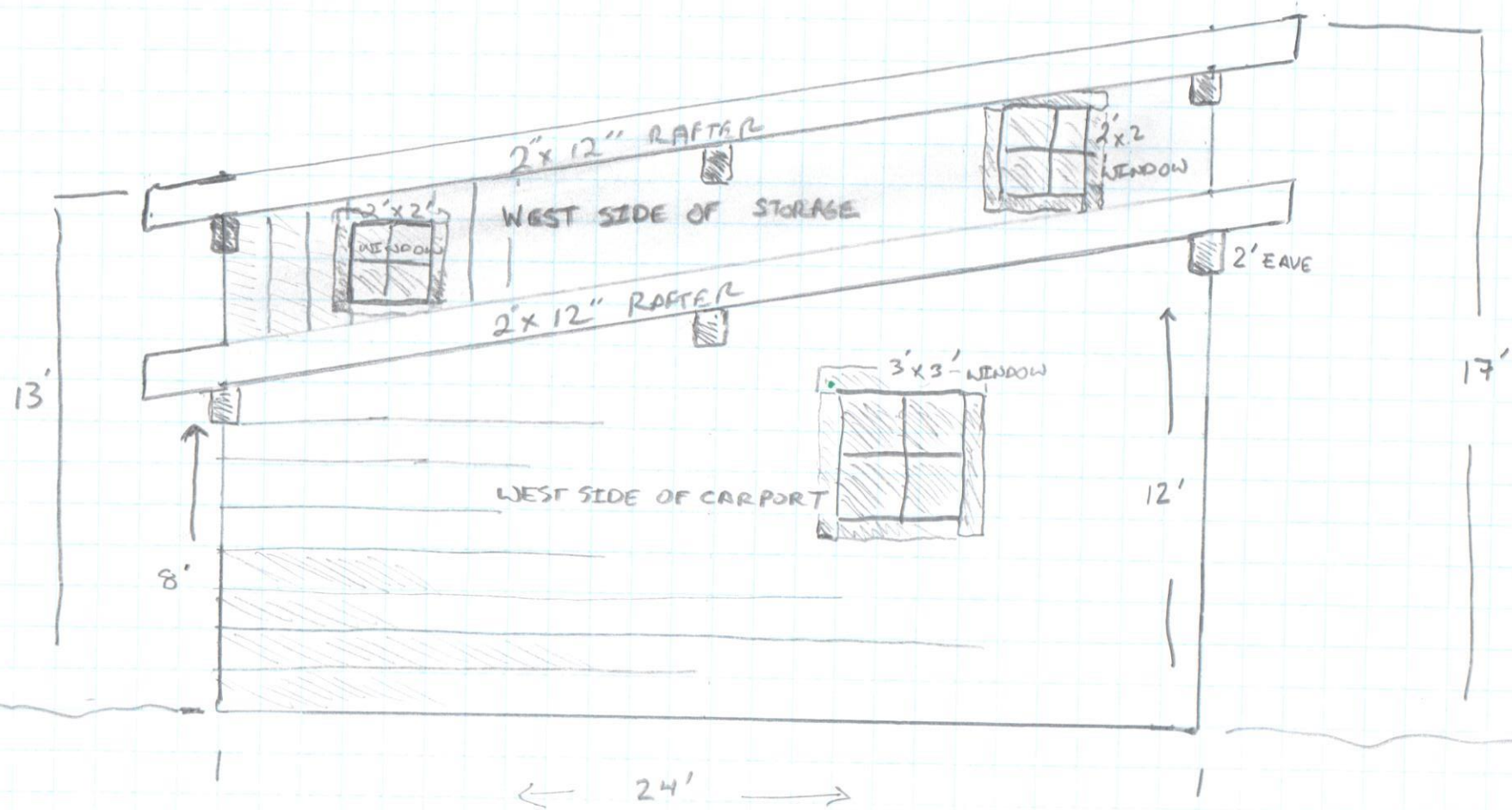
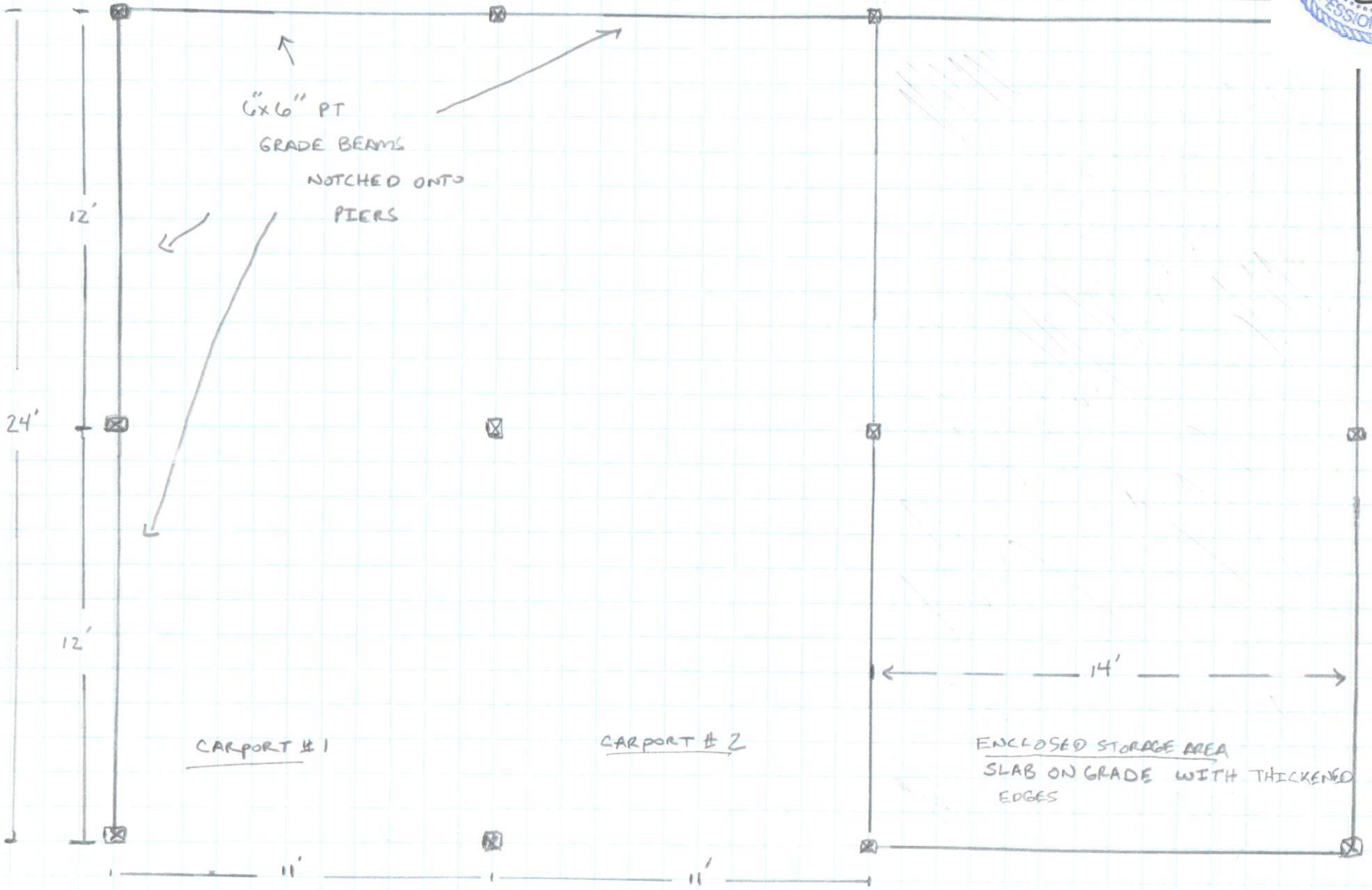


NATHAN
+
ALISON NICHOLAS

GARAGE PLAN 1/4" = 1'

FOUNDATION PLAN

7-7-21



NOTES: ⊠ = 6" x 6" POST

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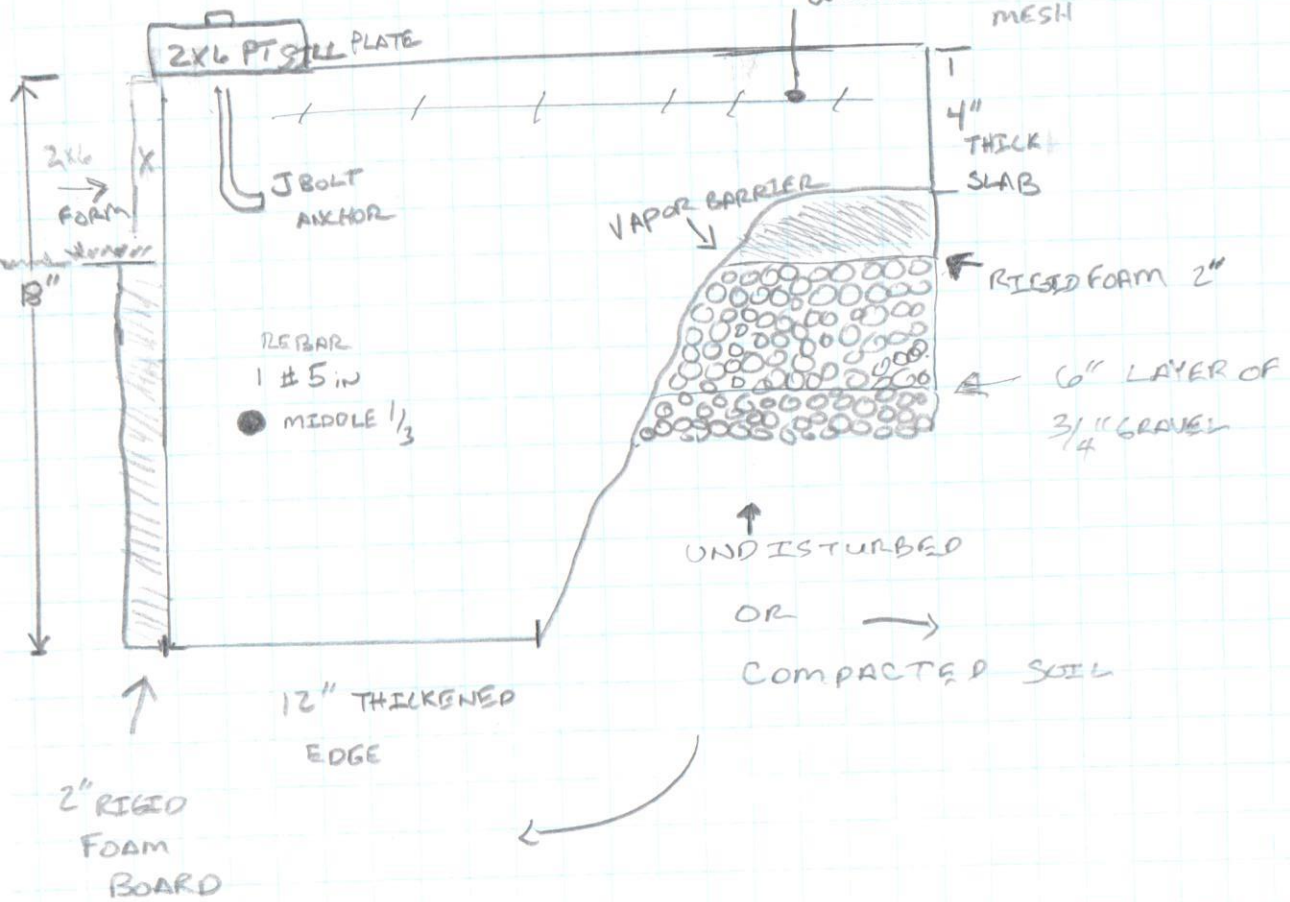
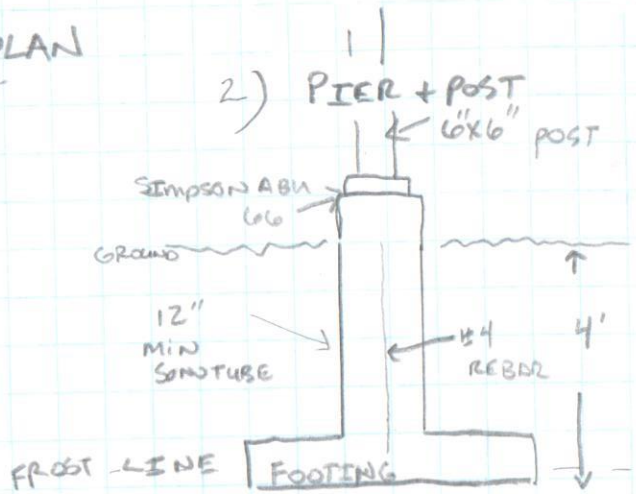
NATHAN AND ALISON NICHOLAS GARAGE PLAN

FOUNDATION NOTES

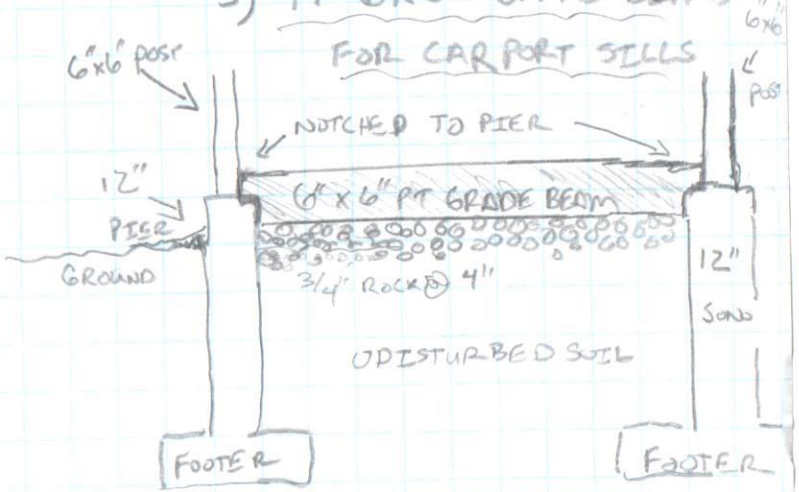
1.) SLAB ON GRADE W/THICKENED EDGES



2) PIER + POST

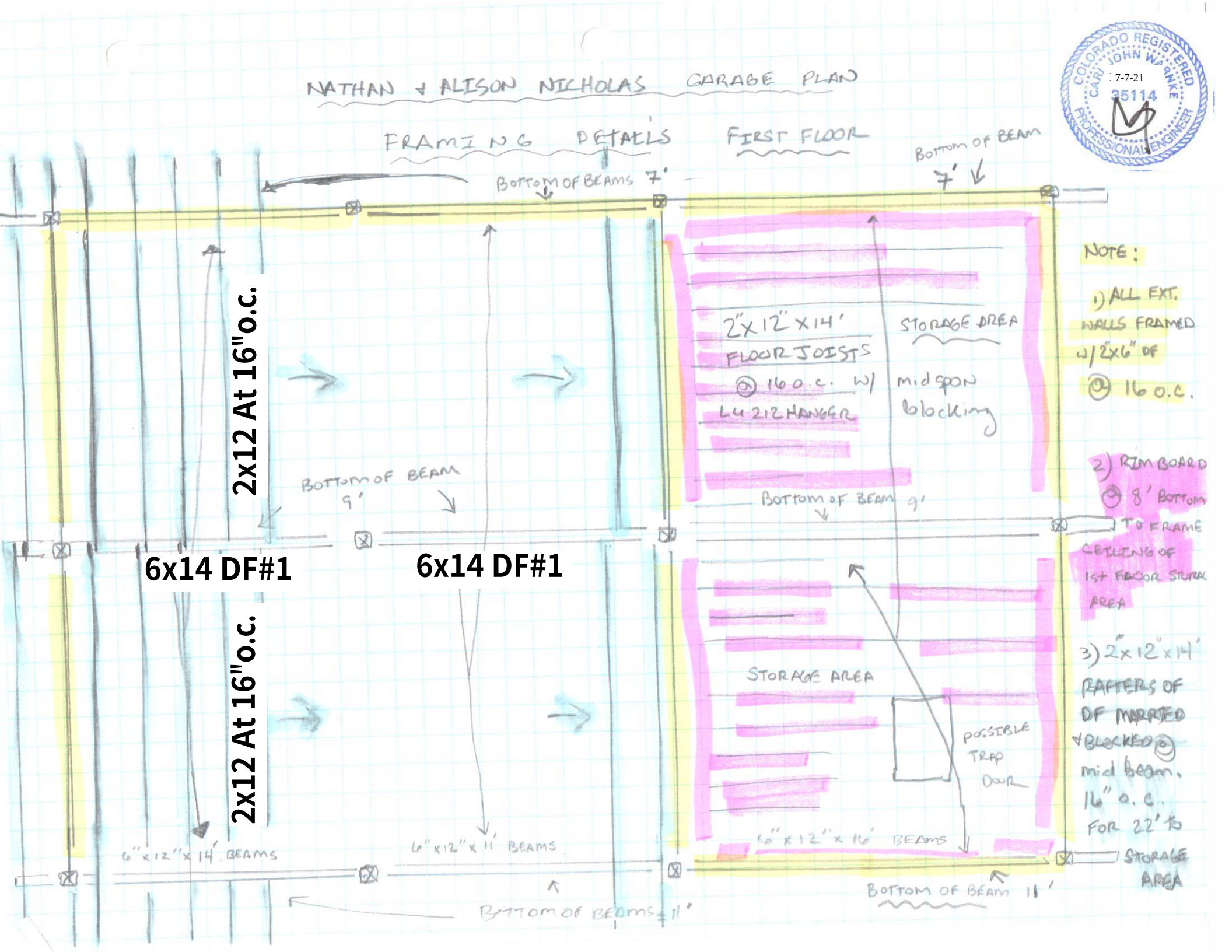


3) PT 6"X6" GRADE BEAMS FOR CARPORT SILLS



NATHAN & ALISON NICHOLAS GARAGE PLAN

FRAMING DETAILS FIRST FLOOR



NOTE:

1) ALL EXT. WALLS FRAMED W/ 2x6" DF @ 16 o.c.

2) RIM BOARD @ 8' BOTTOM TO FRAME CEILING OF 1ST FLOOR STORAGE AREA

3) 2"x12"x14' RAFTERS OF DF MARKED & BLOCKED @ mid beam. 16" o.c. FOR 22' TO STORAGE AREA

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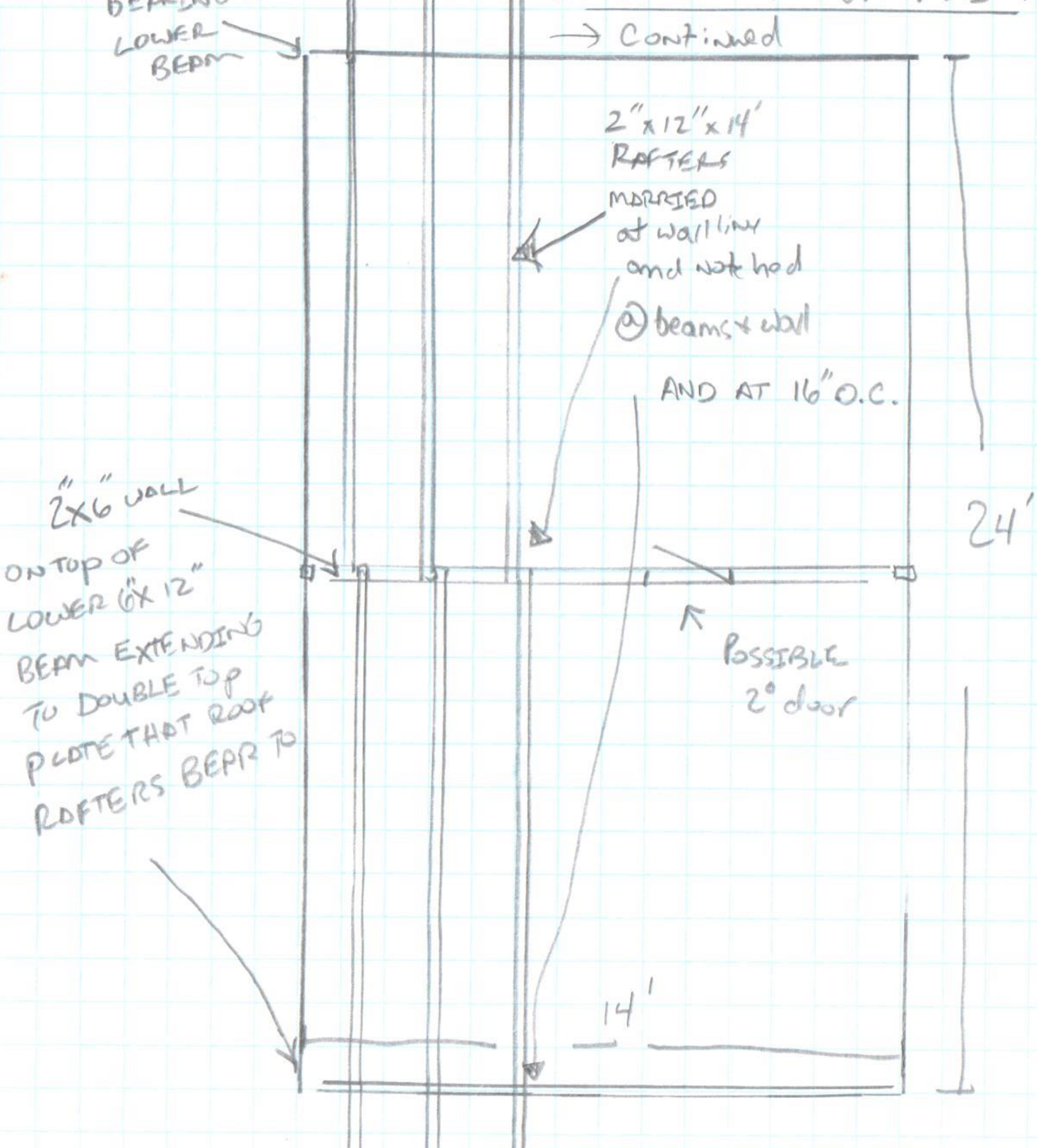
NATHAN AND ALISON NICHOLAS GARAGE PLANS

2ND FLOOR GARAGE FRAMING + ROOF FOR SECOND FLOOR



NOTES: ALL ROOF RAFTERS WILL BE NOTCHED W/ a birdsmouth and tied to walls or beams w/ hurricane clips

GENERAL

1. DESIGN LIVE LOADS: Snow=**45**psf, Floor=40psf, Wind 80mph exp. B
2. RESPONSIBILITY: The contractor is responsible for cross referencing all plans and inspecting work placement at the site to assure that no omissions or discrepancies exist that might adversely affect construction or the integrity of the finished product. Job site and construction safety are not addressed in these plans and are the responsibility of the contractor. These responsibilities are industry standard.
3. These plans are intended to be in accordance with 2018 IBC and IRC codes. All construction to be in conformance with these codes.

FOUNDATION

1. Foundation designed in accordance with **N.W.C.C.'s** site specific soils report, which is hereby made a part of these drawings. Maximum allowable soil bearing pressure = **3000** psf, **0** min. Lateral earth pressures determined from equivalent fluid weights of **45**pcf for granular free draining backfill, and **60**pcf for native backfill. Proper authorization for use of the report or its recommendations are the responsibility of the owner.
2. We recommend excavating contractor verify during excavation (and before construction of any part of the foundation) that soils types and conditions match those described in the pit log(s) of the above mentioned soils report.
3. Remove topsoils, organic material, and any questionable material below pads and footers. All pads and footings exposed to frost must maintain **the required 4' frost depth**. Minimum pad thickness = 12". The footing elevations of this design are indicated in economical relation to architectural elements. Proper soil bearing and/or the soil report may require lower footings.
4. Drainage and grading details to divert surface drainage at least 10' away from the structure. Do not backfill against any foundation or retaining wall until all supporting floor and slab systems are in place and securely anchored, or other adequate wall support is provided.
5. Where exterior backfill rises above any adjacent floor, use **granular free draining** backfill from drain tile up. Exterior backfill may be **native** inorganic material where final grade is below lowest floor (UNO). Before placing finish topsoil, we recommend capping backfill with a Mirafi fabric under 12" of water impermeable material (e.g. clay).
6. Provide 4" diameter perforated PVC draintile in a 12" by 12" gravel envelope at lowest levels of and perimeter of excavation sloped a minimum of 1/8" per foot to an adequate daylighting drain. Provide cleanouts and screen end. Mirafi or other filter barriers will help prevent drain clogging. Test draintile before and after backfilling.
7. All construction and materials to conform with ACI 318.
8. Reinforcing bar to be deformed 60ksi steel (per ASTM A-615). Lap all rebar splices and corners 30 bar diameters minimum.
9. Concrete 28 day compressive strength = 3000psi.
10. Concrete cover: Concrete cast against and permanently exposed to earth: footing, pad = 3". Concrete exposed to earth or weather: walls, slabs = 1.5"
11. Consolidate concrete per ACI 309. Cast in place concrete shall be poured continuously so as to prevent cold joints.
12. Provide 5/8" diameter by 10"min anchor bolts at 32" on center with an embedment of 7" to connect framing to foundation (UNO). Anchor bolts to be located not more than 12" from foundation corner (TYP). Use galvanized anchor bolts with pressure treated plates. Finish all concrete wall tops to within 1/8" of specified elevations.

13. Foundation insulation and waterproofing to be specified and installed in accordance with the above mentioned soils report, UBC, local codes, and accepted construction practice.
14. Provide **slab** shrinkage reinforcement of 6x6xW1.4 **welded wire** mesh with 2" laps, or a poly fiber mesh per manufacturer's instructions.
15. Slab surfaces to be left free from trowel marks, uniform in appearance, and with a surface plane tolerance not exceeding 1/8" in 10'0" when tested with a 10' straightedge.
16. Provide 1"deep tooled (or cut) control joints at approximately 10' on center in each direction.
17. Provide 1/2" expansion joint material at all slab to wall, footing, or column interfaces. Provide a 6mil poly barrier under all interior slabs for moisture protection and as a bond breaker. Provide an approved hardener and sealer to the surface of all slabs.
18. **If foundation on expansive soils is to sit through winter without complete framing, we recommend the building achieve enough backfill, framing, and floor sheathing to protect foundation bearing soils from moisture accumulation and frost heave.**

WOOD FRAMING

1. Framing plans show structural requirements only. Additional members may be required for blocking, nailers and code requirements.
2. Use Douglas Fir or Hem Fir "stud grade" (S4S) 2x6 for all wall studs (UNO). Use DF#2 (S4S) or better for all multi-stud posts, joists, rafters, headers, posts, trimmers, beams and plates.
3. Sill plates in direct contact with concrete- California Foundation Grade Redwood or Species Group B Pressure Treated Lumber. Use galvanized anchor bolts with pressure treated plates.
4. Glulams (GL)- manufactured in accordance with AITC 117-84, fb=2400psi. All Glulams exposed to the elements (IE exterior location) must be properly sealed against water penetration.
5. Microlam (ML)- manufactured in accordance with APA criteria. fb=2600psi.
6. Exterior **Wall Ply**- 1/2" APA rated CDX with 8d's @6"oc edge,12" oc field. Manufactured in conformance with APA PS 1-83. **Floor Ply**- 3/4" T&G APA rated 24/0 minimum, 8d's @6"oc edge, 10"oc field. Glue to joists. **Roof Ply** - 5/8" APA rated 40/20 minimum, 8d's @6"oc edge, 12"oc field.
7. Roof **Trusses- 80 psf snow load**, 24"oc. Truss design and fabrication by others. No drop top gable truss adjacent to scissor truss without approval of Engineer.
8. **Rigid insulation** decking- 9 1/2" Insulam or equal. Attach with 10 1/2" deck screws @12"oc each way.
9. Maintain 6" clearance between untreated wood or siding and soils at finish grade.
10. ½" Plywood sheath 100% all exterior frame. Ply to lap floor rim, top plates and sill plate.
11. All floor and roof plywood place with 8' dimension perpendicular to framing with end joints staggered.
12. All load bearing **headers** in 2x6 wall (3)2x10; in 2x4 wall (2)2x10, (UNO).
13. Provide 2 studs under each end of all load bearing beams or headers >38"(UNO).
14. Multiple stud posts anticipate 2'min wall sections preventing buckling. Verify new adjacent openings with engineer.
15. Studs removed for doors and windows shall be placed equally at the end of headers, up to (2)king (full height) studs each end.
16. Posts to **stack** over equal below (UNO). **Trusses spanning >24'** to stack over studs below (UNO). Provide end joist where studs above do not stack over studs below.

17. Solid block all bearing walls and posts for continuity to foundation.
18. Block all **trusses,** outlookers, rafters and joists at all bearing points.
19. Where full height foundation or frame wall parallel to joists, block 1st joist space @24”oc.
20. Wall studs to be continuous from floor to floor, or floor to roof. Balloon frame all gable walls. Provide **firestop blocking** at 10' max intervals in any wall with studs over 10' height.
21. **Connect joists** to blocking with a minimum of (2)10d nails and connect joists to plate or beam below with a minimum of (3)10d toenails. Connect rim to plate below with 10d toenails @6"oc.
22. Nail **exterior wall sole plate** to joists below with (3)10d and to blocking, rim or end joist with 10d's @4"oc.
23. Connect all 2x **rafters** to blocking with (3)16d nails **(TJI w/ (3)10d)**. 2x rafters to plate or beam below with (3)16d toenails **(TJI w/ VP connector, UNO)**. **Where TJI rafters at >4:12 pitch, provide beveled bearing plate at interior bearing, birdsmouth cut at exterior bearing, w/(4) 10d nails to plate, provide beveled web stiffeners.** Connect blocking to plate below with(3)16d toenails minimum. Strap TJI rafters across ridge with LSTA 36 @48”oc.
24. **Connect all 2x rafters to blocking with (3)16d nails. 2x rafters to plate or beam below with (3)16d toenails. Connect blocking to plate below with(3)16d toenails minimum.**
25. Connect common **trusses** to all bearing points with Simpson H3 connectors @48"oc (UNO) and otherwise to plate or beam below with (3)16d toenails. (Scissor trusses connect one end with Simpson TC26.) Connect to blocking with (3)16d nails
26. Ventilate roof framing per local codes.
27. Nailing, blocking, and all other construction details per UBC 2018, such as Table 23-II-B-1. (UNO)
28. All connector callouts to be Simpson Strong-Tie by Simpson Strong-Tie Company, Inc, or equal. Install per manufacturer's instructions.
29. TJI and MicroLam **(ML)** are products by Trus Joist MacMillan. Install per manufacturer's instructions. Multiple ML's glue and nail together with (2)rows 16d @12"oc (UNO).