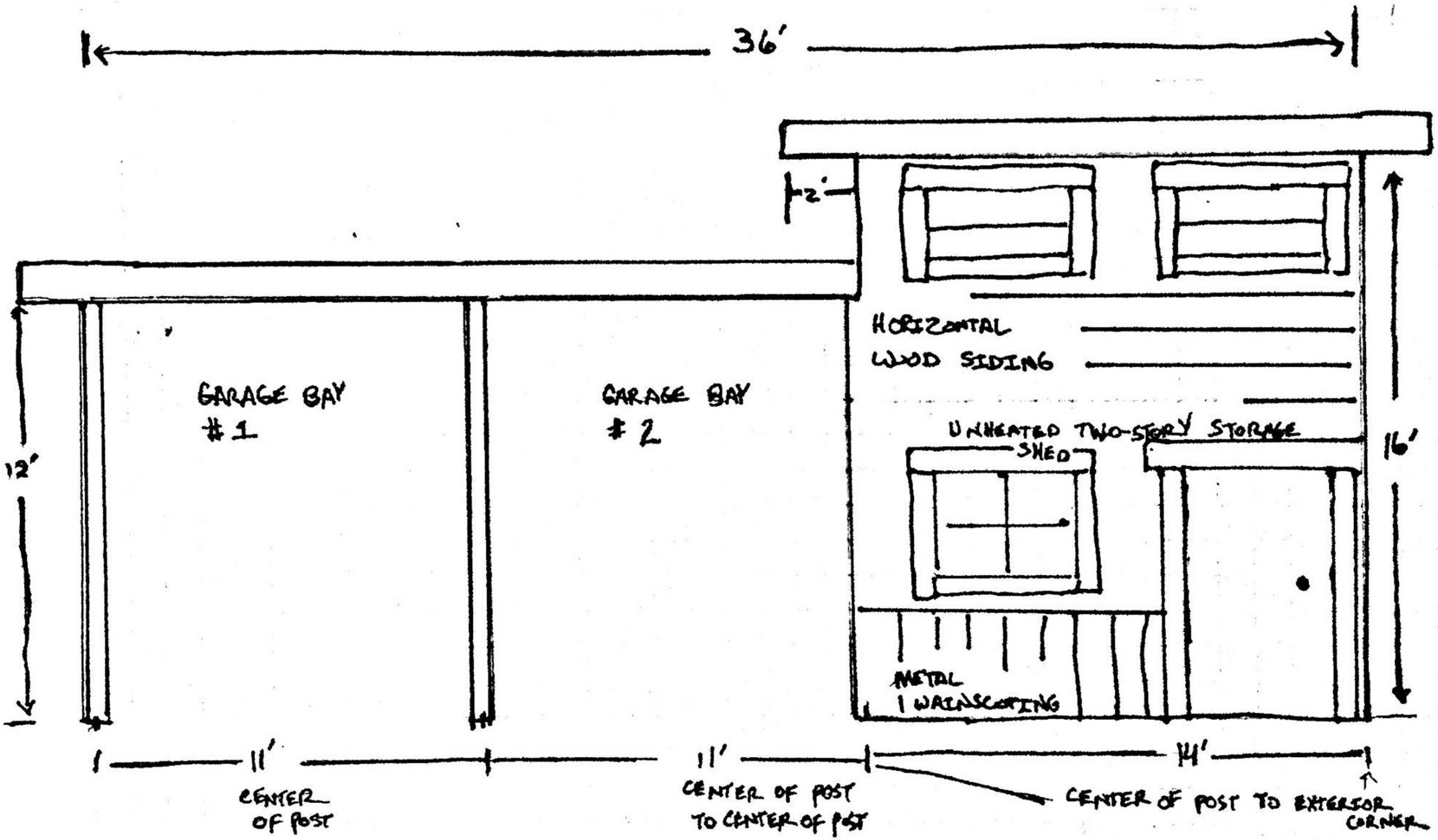
PERMIT # PRAB210091

SCALE: 1/4" = 1'

NICHOLAS GARAGE AND STORAGE SHED UNHEATED

SOUTHSIDE EXTERIOR

50310 MOONHILL DR,
ROUTT, CO 80487



COLORADO REGISTERED
CARY JOHN WARNKE
PROFESSIONAL ENGINEER
8-30-21
35114

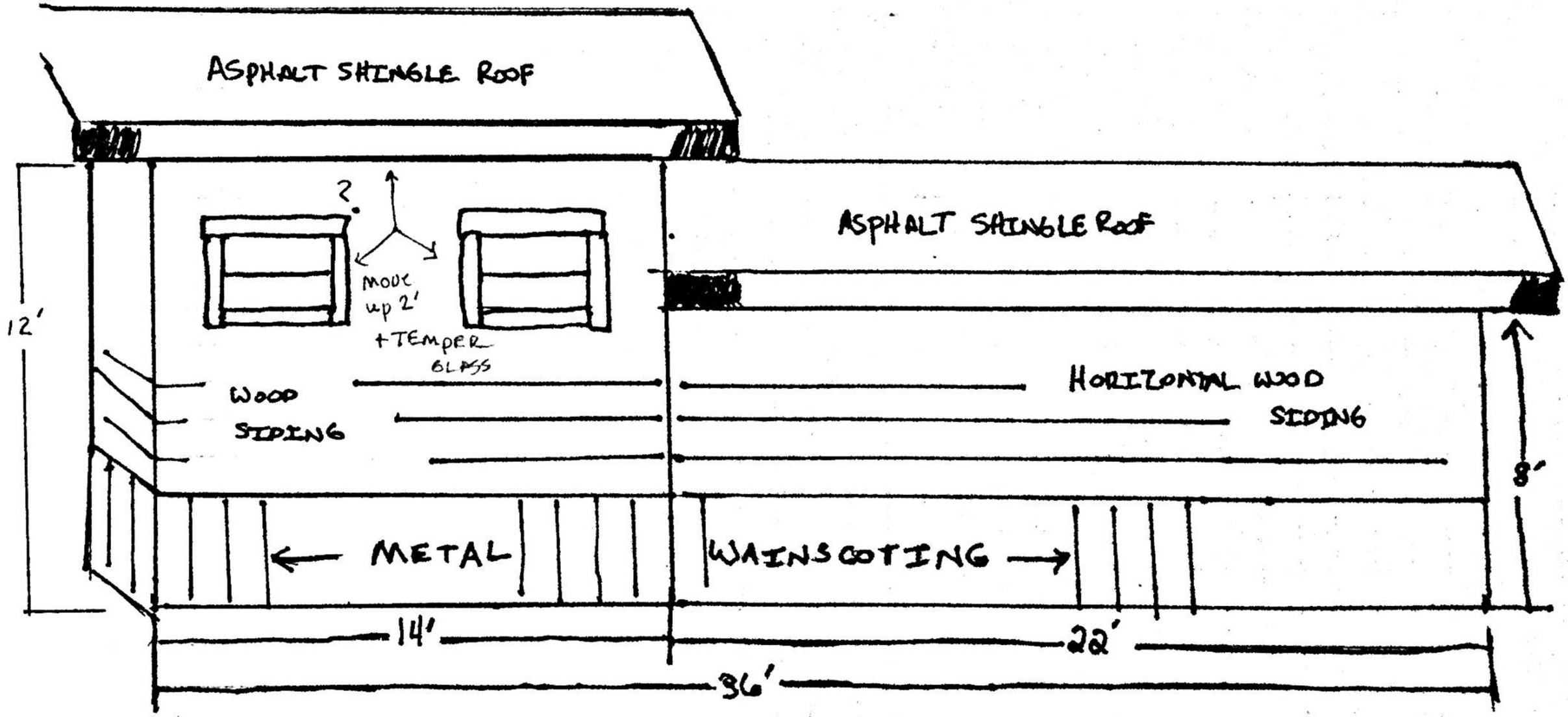
SCALE: 1/4" = 1'

NICHOLAS GARAGE
AND
STORAGE SHED

NORTHSIDE EXTERIOR

50310 MOONHILL DR,
ROUTT, CO
80487

PERMIT # PRAB210091



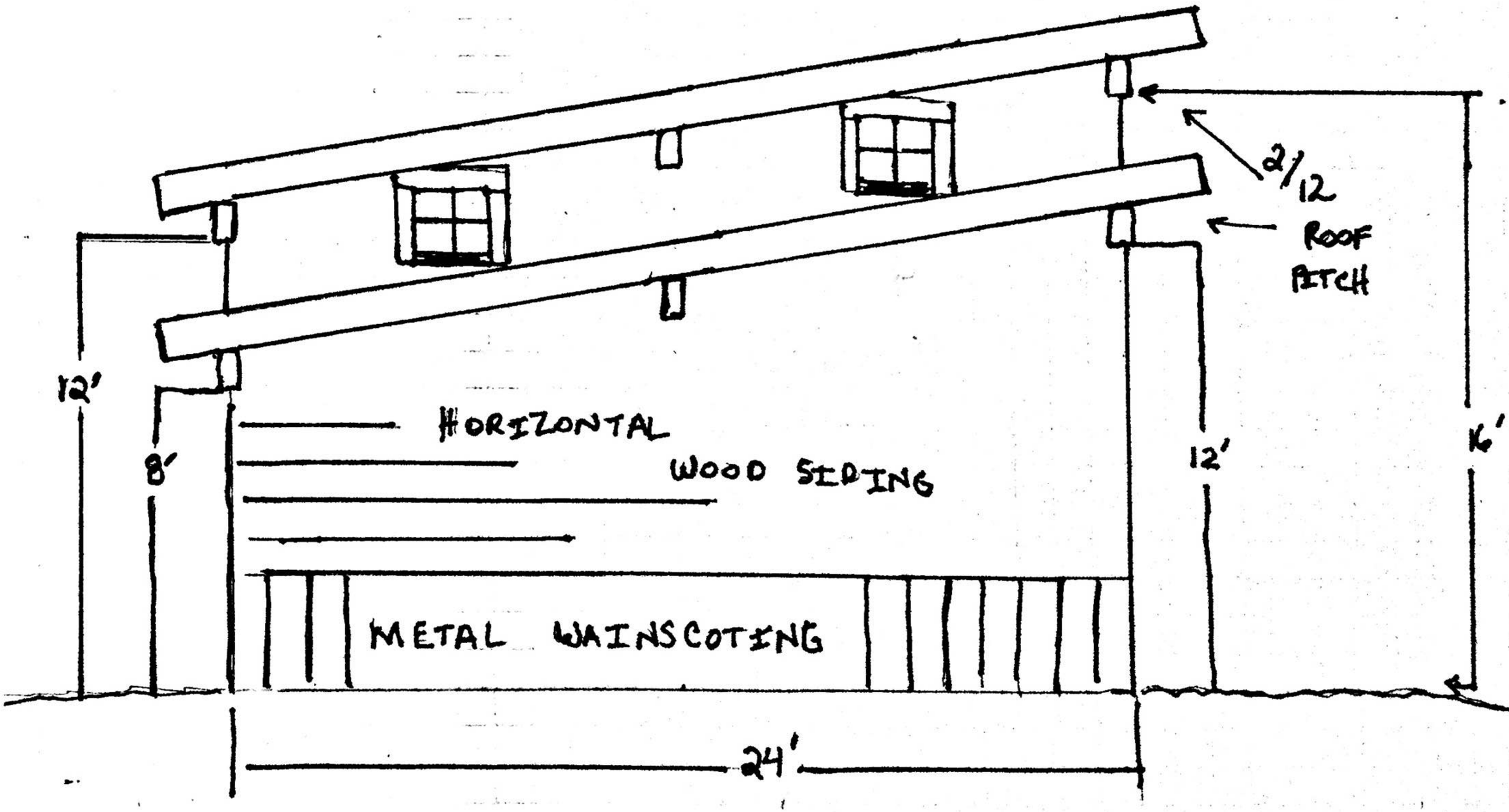
COLORADO REGISTERED
JOHN W. RINKE
PROFESSIONAL ENGINEER
8-30-21
35114

PERMIT # PRAB210091

SCALE: 1/4" = 1'

NICHOLAS GARAGE
AND STORAGE SHED
50310 MOONHILL DR,
ROUTT, CO
80487

WEST SIDE
EXTERIOR



COLORADO REGISTERED CARL JOHN WINKE PROFESSIONAL ENGINEER
8-30-21
35114

PERMIT # PRAB210091

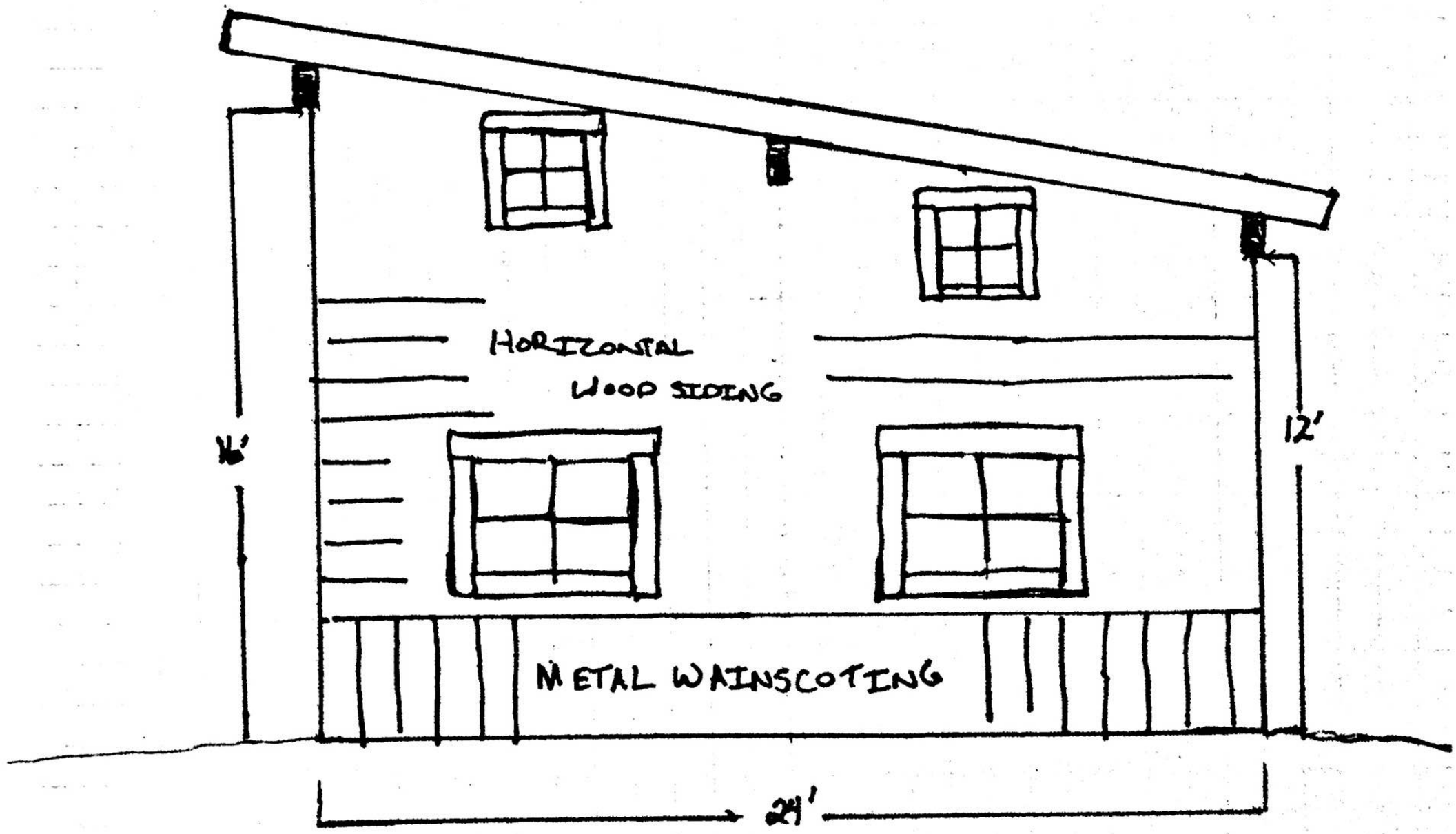
SCALE: 1/4" = 1'

NICHOLAS GARAGE
AND
STORAGE SHED

EASTSIDE EXTERIOR

50310 MOONHILL DR,
ROUTT, CO 80487

2/12 ROOF PITCH



PRAB
PERMIT # 210091

SCALE: 1/4" = 1'

NICHOLAS GARAGE AND STORAGE SHED UNHEATED

FOUNDATION PLAN

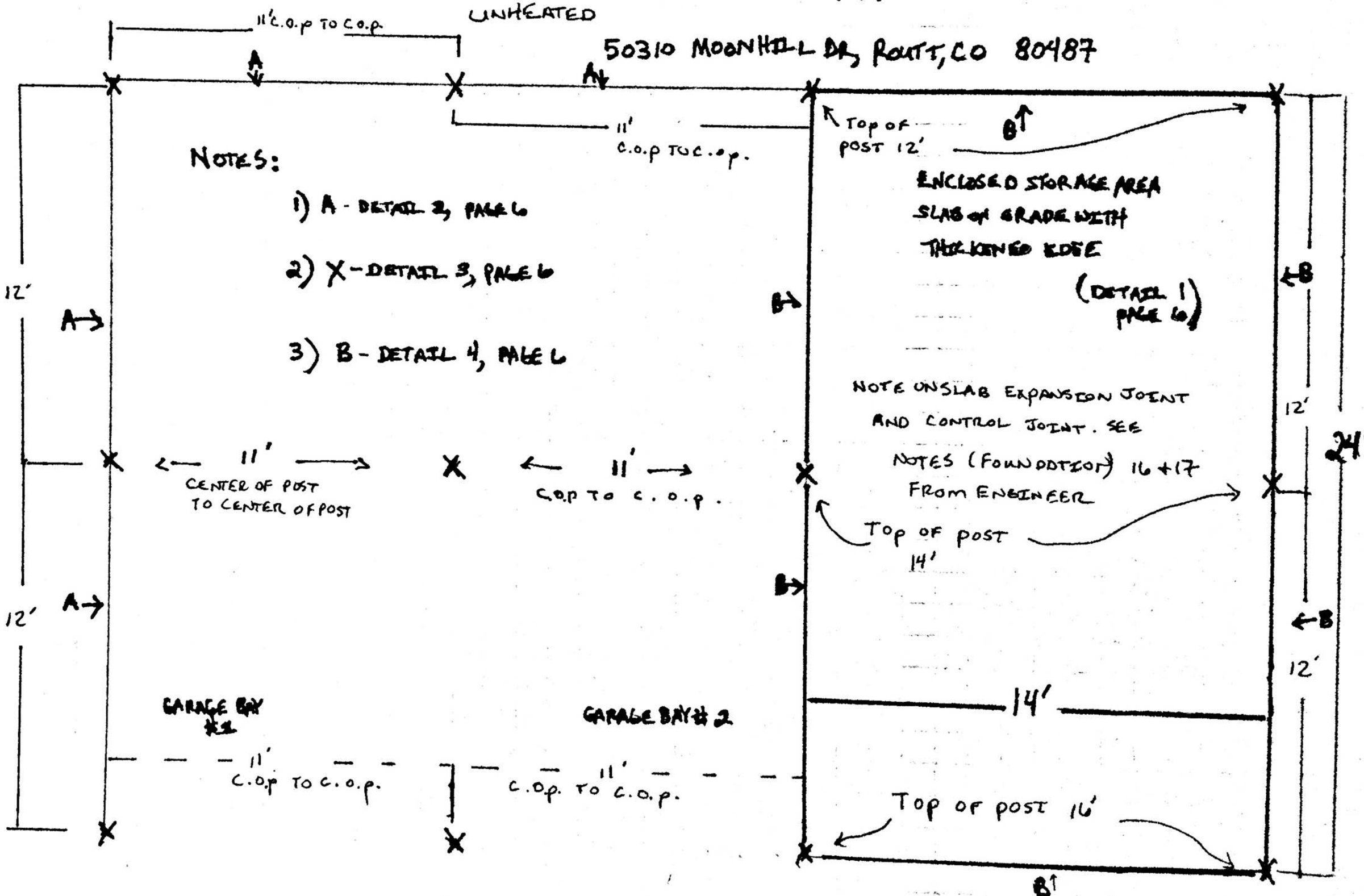
50310 MOONHILL DR, ROUTT, CO 80487

NOTES:

1) A - DETAIL 2, PAGE 6

2) X - DETAIL 3, PAGE 6

3) B - DETAIL 4, PAGE 6



PRAB

PERMIT # 210091

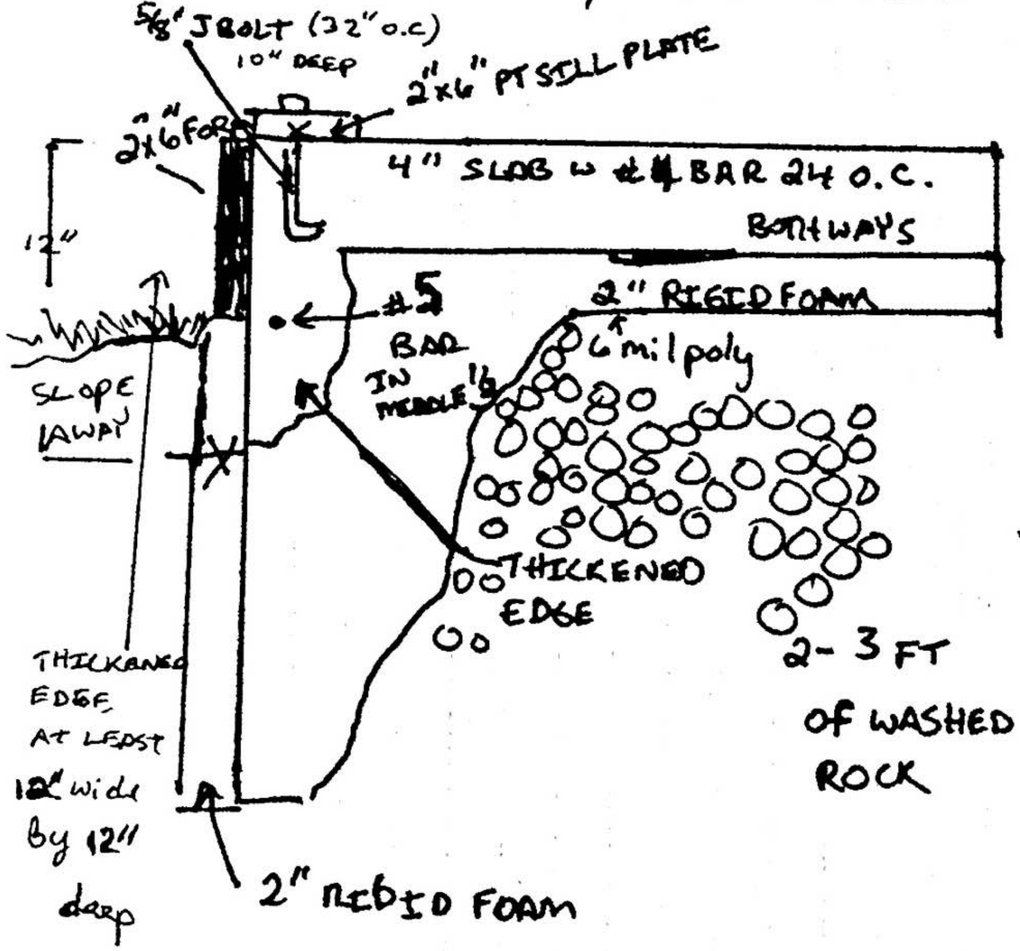
NICHOLAS GARAGE AND STORAGE SHED

50310 MOONHILL DR,
ROUTT, CO 80487

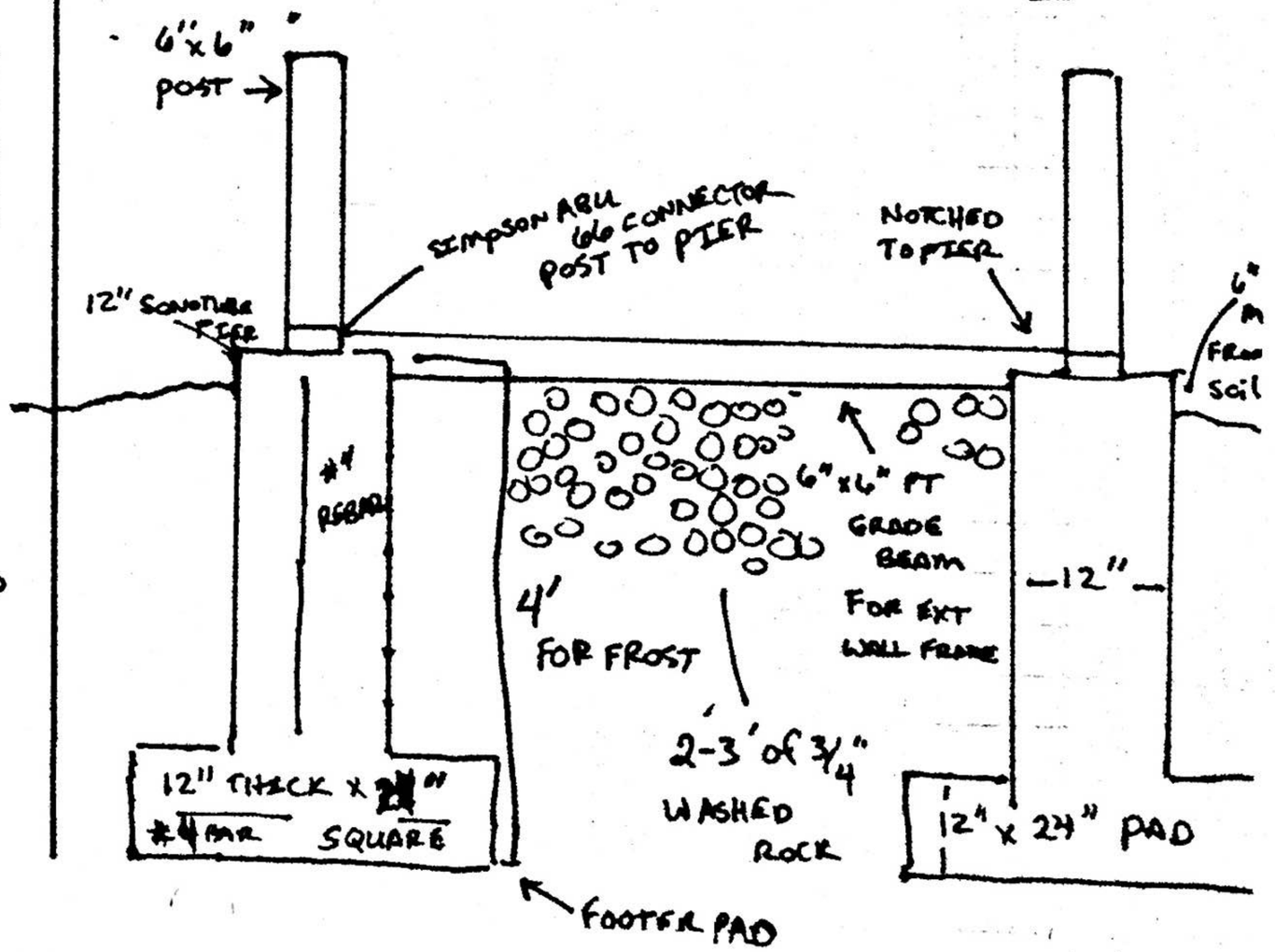
FOUNDATION NOTES

NOTE OR DETAIL #1 + #4

SLAB ON GRADE W/ THICKENED EDGE



NOTES 2 and 3 FOR DETAILS A and X



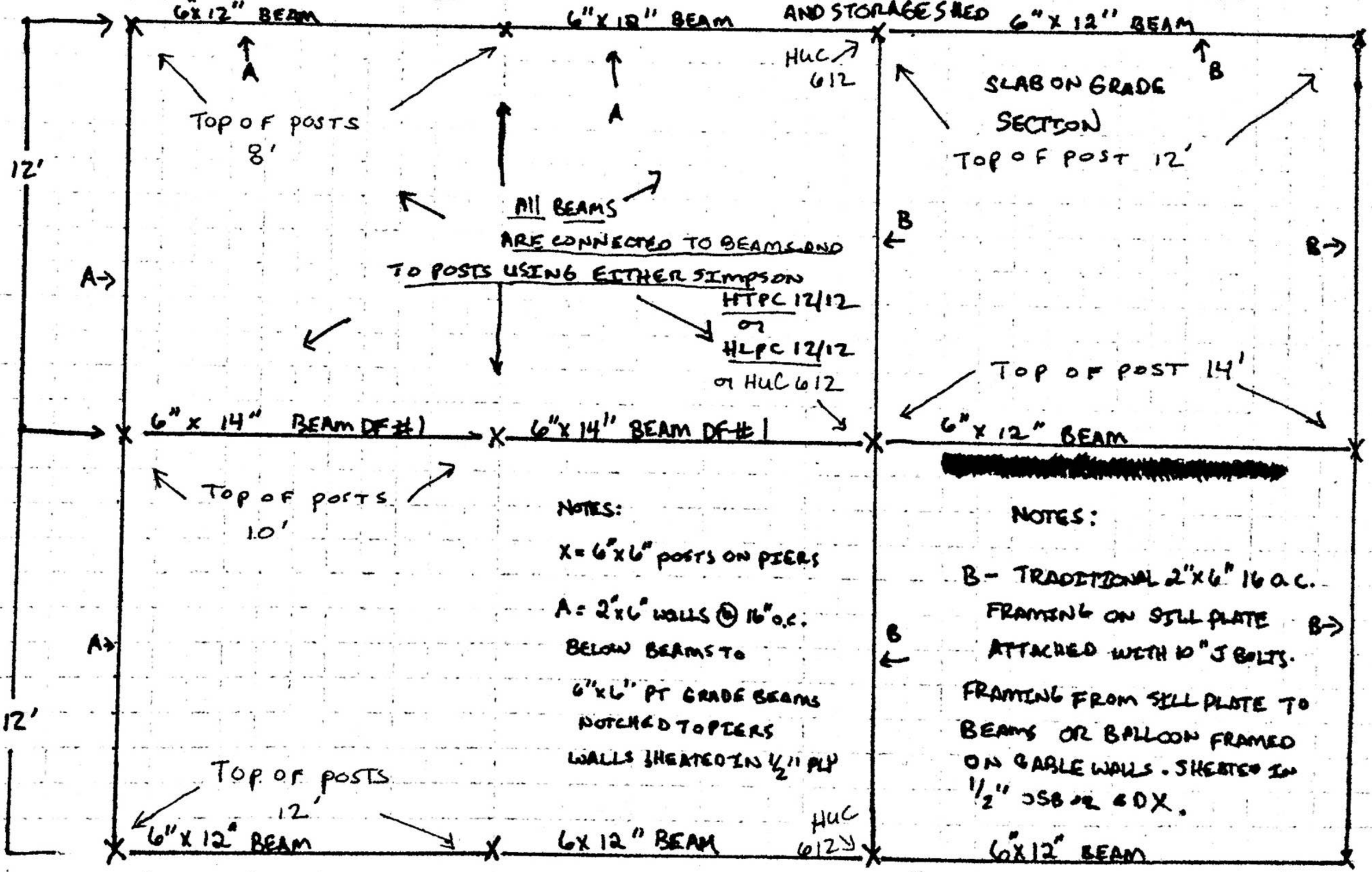
80487

COLORADO REGISTERED PROFESSIONAL ENGINEER
JOHN W. RINKE
8-30-21
35114

SCALE: 1/4" = 1'

NICHOLAS GARAGE AND STORAGE SHED

FRAMING DETAILS
GARAGE BAYS FIRSTFLOOR AND STORAGE SHED

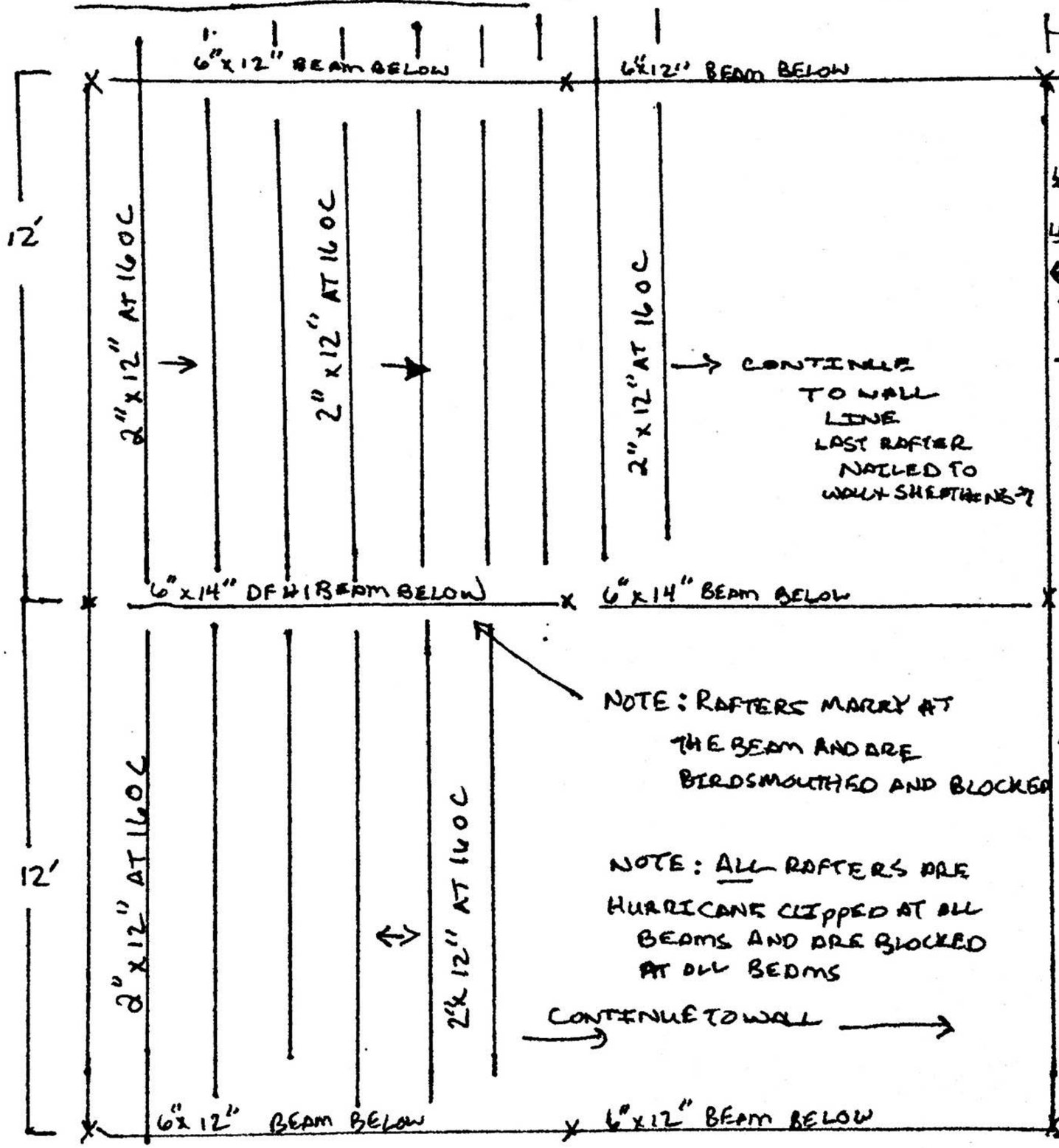


80487

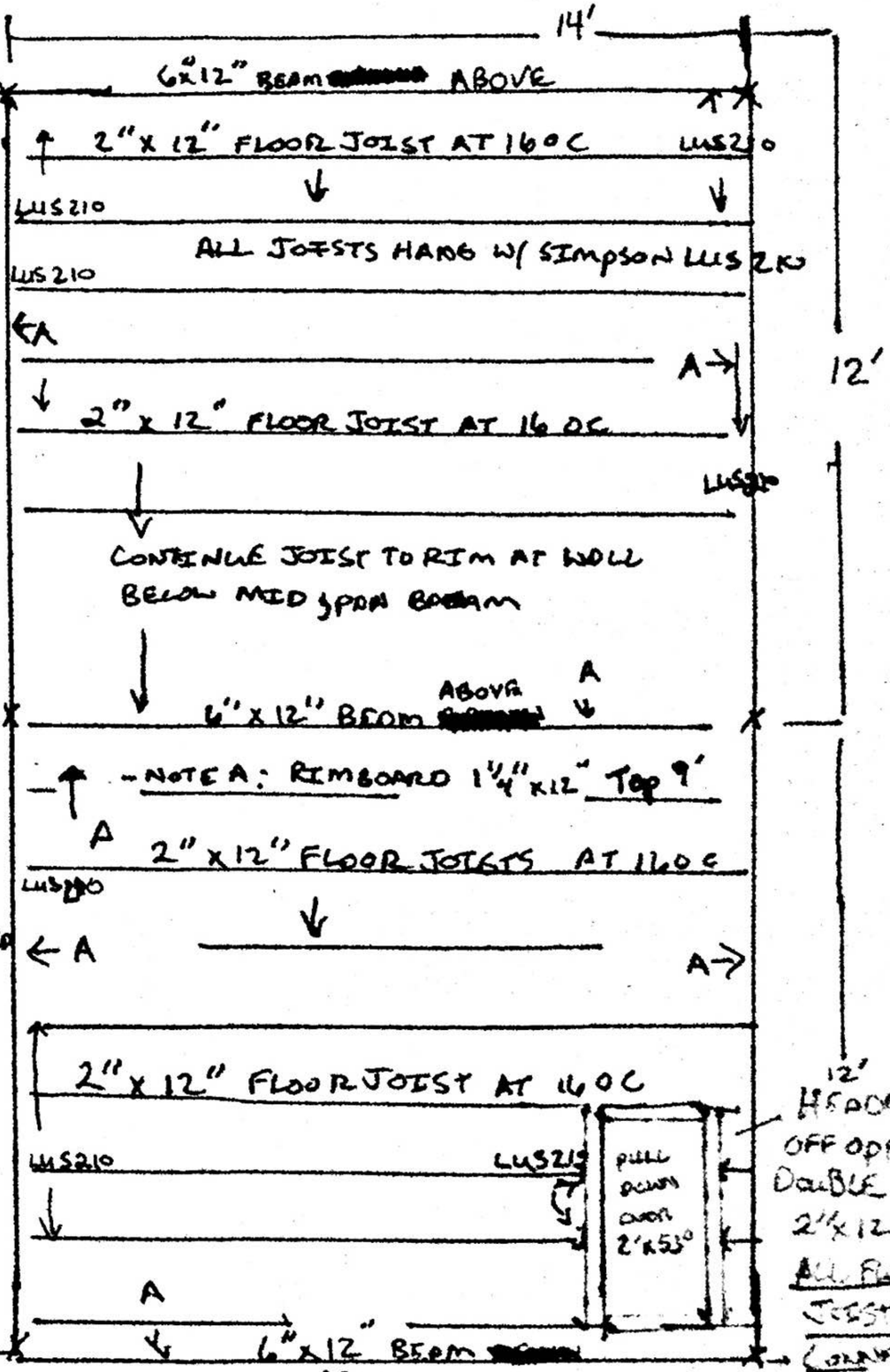
SCALE: 1/4" = 1'

NICHOLS GARAGE & UNHEATED STORAGE SHED

FRAMING GARAGE BAYS ROOF



FRAMING FOR SECOND STORY FLOOR SYSTEM



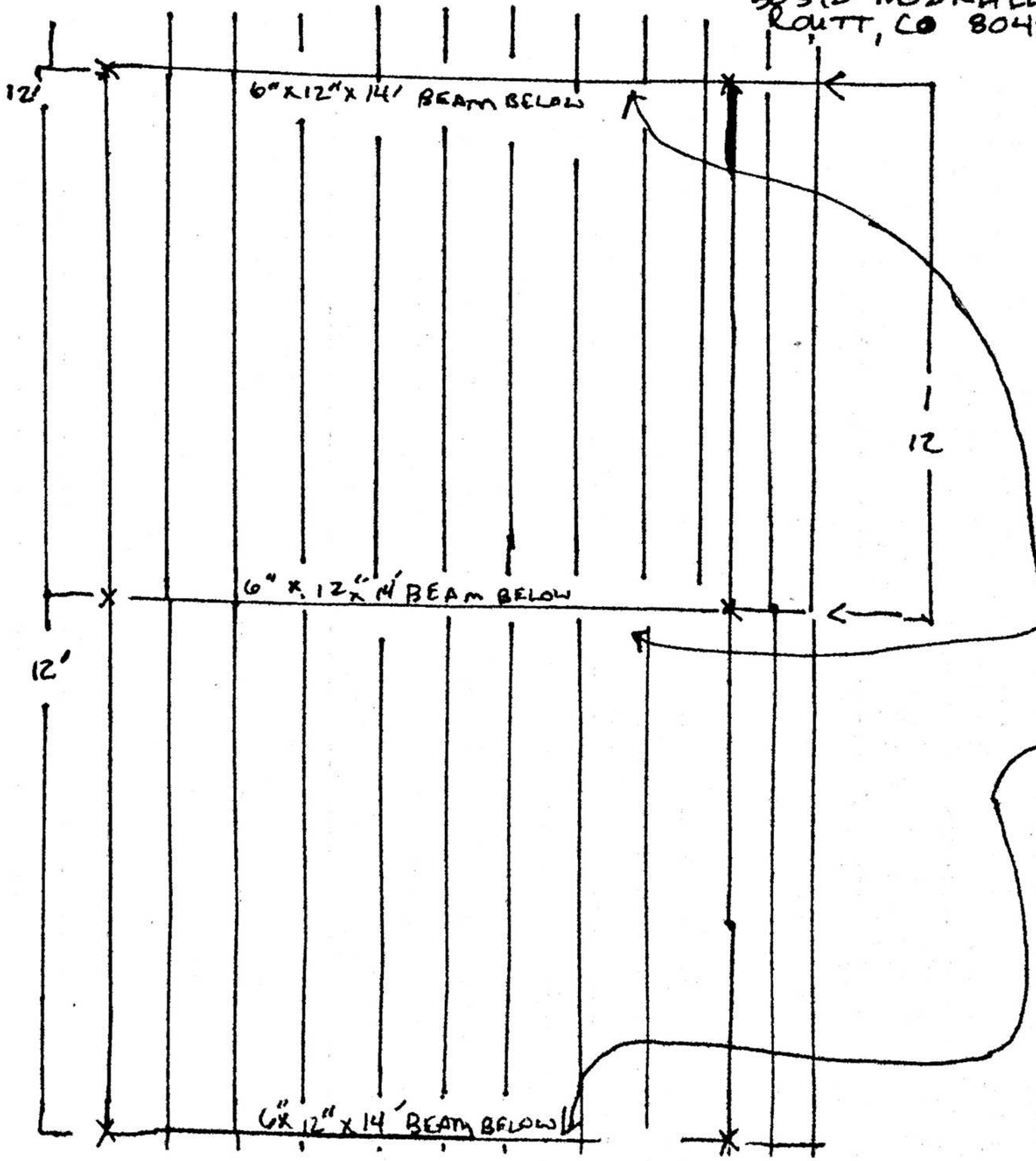
PERMIT # PRAB210091

SCALE 1/4" = 1'

STORAGE
SHED SIDE ROOF FRAMIN

NICHOLAS GARAGE
+ STORAGE SHED

5310 MOONHILL DR,
ROUTT, CO 80487



NOTE 1 ON RAFTERS:
RAFTERS MARRY AT MOOSPA
BEAM. RAFTERS ARE
BLOCKED, BIRDSMOUTHED,
AND HURRICANE CLIPPED
TO BEAM BELOW

NOTE 2: ALL RAFTERS
ARE BLOCKED AND BIRDSMO
TO BEAMS AT EXTERIOR WALL
LINE. ALL ARE HURRICANE
CLIPPED

GENERAL

1. DESIGN LIVE LOADS: Snow=**85**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.

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T.A.

08/31/2021

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.

RCRBD Record Set
T.A.

08/31/2021

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).

ROUTT COUNTY
REGIONAL BUILDING DEPARTMENT

Proudly Serving Rural Routt County * City of Steamboat Springs * Town of Hayden * Town of Oak Creek * Town of Yampa * Routt County School Districts

Date: 08/13/2021

Address: 50310 MOON HILL DR, STEAMBOAT
Owner: NICHOLAS, NATHAN S ALISON K (JT)
Parcel ID: 924173001
Zoning: AF
Property Use: AGRIC
Lot Area: 13.6
Year Built: 0
Book Page: SPECIAL

RCRBD Record Set
T.A.

08/31/2021

Building TB-21-934

To: Nathan Nicholas

Design information:

Occupancy Classification: R3
Character and Use: One-Family Residence w/Detached Garage
Number of Stories: 2
Type of Construction: Type V-B
Occupant Load: <10

Detached Garage Foundation Only
SPRAB210097

A Foundation Only Building Permit required on all Agricultural Buildings has been revised to include plans for a One-Family dwelling. Note that this dwelling occupies the entire space, no garage is use is provided inside. No Mixed-Use allowed outside of Residential Use.
The following items and questions below will need to be addressed prior to the Building Permit being issued. Please make all necessary corrections and resubmit the corrected plans for review. Corrections shall be "ballooned" if made on the plans and a narrative that specifically references the items on this list shall be included with the resubmittal.

1. This project is in the concurrent review process with the other Departments. Review comments in Viewpermit as applicable, when available.
2. New site plan with properly oriented North Arrow need to be submitted with seal and signature per Colorado State Law.
3. See summary of redlines from Bluebeam session below.
4. The detached garage will need a separate permit number for inspections of the accessory structure.
5. The adopted codes in Routt County are the 2018 ICC model codes to include APPENDIX F RADON CONTROL METHODS. The components of a passive submembrane depressurization system shall be installed during construction but this does not mean you have to install the full system, just through the Soil-gas-retarder. Please show portions of this system for installation on the plans.
6. All construction shall comply with the 2018 local code amendments as shown on approved plans. Energy provisions from the International Energy Conservation Code—Residential Provisions applicable to residential buildings which fall under the scope of this code are shown in the attached checklist. The plans need to show

this information. A building section cut or typical wall section through the representative wall and floors as required to show the thermal envelope as required to accurately show in detail shall be submitted (include location of all building and section cuts on the plans). All information shall be using Zone 7, Dry. Details shall include, but are not limited to, as applicable:

1. Insulation materials and their R-values (include per inch).
2. Fenestration U-factors and air leakage.
3. Area-weighted U-factor calculations (if applicable).
4. Mechanical system design criteria (if applicable). Specify method and type of heat.
5. Equipment and system controls.
6. Duct sealing, duct and pipe insulation and location.
7. Air sealing details.
8. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding three air changes per hour.

7. Specifications for size of piers & pier pads, sono-tubes is to be determined by others in relation to local codes and soil conditions. Provide soils report and design of these items to include connectors, fireplace, frost depth, rebar, compaction and grading for a complete foundation for review by RCRBD. Note frost line is 4-feet.
8. The construction of buildings and structures shall result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation or R301.1.1 Such analysis shall result in a system that provides a complete load-path capable of transferring loads from their point of origin to the load resisting element. Adequate connections to resist lateral (normal) and shear (in plane) forces, as well as overturning (uplift) must be provided and shown on the plans and/or details. The braced wall lines are not called out or in the details and appears to be work similar to the foundation required by others. This building may contain structural elements that are either unconventional or exceed the prescriptive limitations of the code. This is acceptable, provided these elements are designed in accordance with accepted engineering practice and shall result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. Please submit engineered design of complete lateral system.
9. While the building plans for the garage are submitted with separate plans for the house, these appear to fall short of our adopted codes in the following areas:
   a. Will the garage be heated?
      If so: A minimum of R-10 insulation is required from the top of the slab downward 48". Could be traded off in REScheck. Also provide documentation that the garage doors have a maximum U-factor of 0.30.
   b. The Building Plans must include a full structural design of all vertical and lateral loads including a roof structure that meets our local Ground Snow Load values included in the calculations and design of the footings/foundation. ~~The snow load (45 psf) appears to be in error~~. See attached Forte calculation Failures.
   c. Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structures shall be protected from frost by one or more of the methods per R403.1.4.1 Frost protection.
   d. The braced wall lines are not called out or in the details. This building may contain structural elements that are either unconventional or exceed the prescriptive limitations of the code. This is acceptable, provided these elements are designed in accordance with accepted engineering practice and shall result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. Please submit engineered design of complete lateral system.

✓**Items noted below do not require a response or comment back during the Plan Review in order for us to approve this permit. The Items below are required and will be checked by field inspectors. Please take time to review these items in advance of starting any work to ensure your project is ready for inspection.**

1. Separate Electrical Plumbing Permits must be applied for and obtained prior to any work being done within these trades. Note Electrical and Plumbing trades are protected by the State, Licensed Contractors must apply and perform this work on all Commercial Properties, and additionally their employees working on these projects must be registered or licensed with the State of Colorado and work directly under Licensed Individual managing the project.
    - On Residential Properties owners are allowed to apply for the permit and perform their own Electrical and Plumbing work if this is their primary residence and they sign and complete our Home Owner Agreement form.
2. Separate Mechanical Permits must be applied for and obtained prior to any work being done within this trade. Mechanical Contractors must be registered and approved by the Routt County Regional Building Department.
3. Deferred Submittal Required: Heat Load Calculations and heating information for the new construction must be submitted prior to Electrical, Plumbing, and Mechanical Permits being issued.
4. Deferred Submittal Required: Stamped Truss Drawings to be provided for review and approval by RCRBD prior to trusses being set and inspections being done.
5. Deferred Submittal: Applicant to provide information on how Whole House Ventilation requirements will be met in accordance with IEEC R403.6 and 403.6.1 and IRC M1507.3.
6. Deferred Blower Door Test Certificate of Compliance: The building or dwelling unit (except within the Town of Hayden) must complete a Blower Door Test with a passing score of Equal/Less than 3 air changes per hour (3ACH), this certificate must be present for our Inspectors prior to approval of a Temporary Certificate of Occupancy/ Certificate of Occupancy. Please also upload this Blower Door Certificate to the Building Department Permit Record, or email this to our staff and they will upload the document.
7. R308 Glazing. Except as indicated in Section R308.1.1, each pane of glazing installed in hazardous locations as defined in SectionR308.4 shall be provided with a manufacturer's or installer's label, designating the type and thickness of glass and the safety glazing standard with which it complies, which is visible in the final installation. The label shall be acid etched, sandblasted, ceramic-fired, embossed mark, or shall be of a type which once applied cannot be removed without being destroyed. Exceptions: Tempered spandrel glass may be identified by the manufacturer with a removable paper label.
8. Fenestration U-factors windows and doors less than or equal to 0.30 will be required. This will apply for all glazing in windows and doors. The builder shall leave the National Fenestration Rating Council (NFRC) labels on all windows and doors with glazing at time of rough inspections so inspectors can verify the glazing requirements.
9. Bath Exhaust ducts if ran in unconditioned space must be done in insulated duct.
10. R321.1 Premises identification. Approved numbers or addresses shall be provided for all new buildings in such a position as to be plainly visible and legible from the street or road fronting the property.

11. R316.4 Thermal barrier. Unless otherwise allowed in Section R316.5, foam plastic shall be separated from the interior of a building by an approved thermal barrier of not less than 1/2-inch (12.7 mm) gypsum wallboard, 23/32-inch (18.2 mm) wood structural panel or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

12. R316.5.4 Crawl spaces. The thermal barrier specified in Section R316.4 is not required where all of the following apply:

    1. Crawl space access is required by Section R408.4.
    2. Entry is made only for purposes of repairs or maintenance.
    3. The foam plastic insulation has been tested in accordance with Section R316.6 or the foam plastic insulation is protected against ignition using one of the following ignition barrier materials:
    3.1. 1 1/2-inch-thick (38 mm) mineral fiber insulation;.
    3.2. 1/4-inch-thick (6.4 mm) wood structural panels;.
    3.3. 3/8-inch (9.5 mm) particleboard;.
    3.4. 1/4-inch (6.4 mm) hardboard;.
    3.5. 3/8-inch (9.5 mm) gypsum board; or.
    3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).
    3.7. 1/4-inch (6.4 mm) fiber-cement panel, soffit or backer board.
    Similarly, the ignition barrier is not required in attics where the foam plastic insulation has been tested in accordance with Section R316.6.

13. SECTION R314 SMOKE ALARMS

    R314.1 General. Smoke alarms shall comply with NFPA 72 and Section R314.
    R314.1.1 Listings. Smoke alarms shall be listed in accordance with UL 217. Combination smoke and carbon mon-oxide alarms shall be listed in accordance with UL 217 and UL 2034.

    R314.2 Where required. Smoke alarms shall be provided in accordance with this section.
    R314.2.1 New construction. Smoke alarms shall be pro-vided in dwelling units.
    R314.3 Location. Smoke alarms shall be installed in the following locations:
    1. In each sleeping room.
    2. outside each separate sleeping area in the immediate vicinity of the bedrooms.
    3. on each additional story of the dwelling, including basements and habitable attics and not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
    4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.

    SECTION R315
    CARBON MONOXIDE ALARMS
    R315.1 General. Carbon monoxide alarms shall comply with Section R315.
    R315.1.1 Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be listed in accordance with UL 2034 and UL 217.

R315.2 Where required. Carbon monoxide alarms shall be provided in accordance with Sections R315.2.1 and R315.2.2.
R315.2.1 New construction. For new construction, car-bon monoxide alarms shall be provided in dwelling units where either or both of the following conditions exist.
1. The dwelling unit contains a fuel-fired appliance.
2. The dwelling unit has an attached garage with an opening that communicates with the dwelling unit.

R315.3 Location. Carbon monoxide alarms in dwelling units 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 bath-room, a carbon monoxide alarm shall be installed within the bedroom.
R315.4 Combination alarms. Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.
R315.5 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.
Exceptions:
1. Carbon monoxide alarms shall be permitted to be battery operated where installed in buildings without commercial power.
2. Carbon monoxide alarms installed in accordance with Section R315.2.2 shall be permitted to be battery powered.

Reviewed by: Ted Allen Date: June 30, 2021

2018 International Energy Conservation Code Checklist for General Prescriptive Method

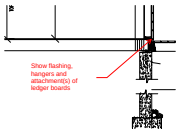
Building Components Thermal Envelope R402: General Prescriptive Method to Compliance	
Vapor Retarder: Class I =Poly Class II =Kraft-Faced insulation Class III = Paint	Follow IRC Section R702.7 or IBC Section 1405.3 Class of vapor retarder is based upon selected methods of insulating the exterior walls of the structure.
Windows and Doors U-Factor = 0.30	R402.1.5 Total UA Alternative may be used to lower the U-Factor
Skylights U-Factor = 0.55	R402.1.5 Total UA Alternative may be used to lower the U-Factor
Ceiling Insulation with Attic Space = R49	R402.2.1 reduction to R38 wherever the full height of uncompressed R-38 extends over the wall top plate at the eaves.
Ceiling Insulation without Attic Space = R-49	R402.2.2 reduction to R30 provided when roof/ceiling assemblies don't have sufficient space.
Wood Framed Wall Insulation : 2x6 wall = R20/5 Wood Framed Wall Insulation: 2x6 wall = R22/3 Wood Framed Wall Insulation: 2x6 wall = R27/0	R20 in the cavity of the wall and R5 continuous insulation, R22 in the cavity of the wall and R3 continuous insulation, or R27 in the cavity of the wall and no continuous insulation. Walls with Structural Sheathing see Section R402.2.7 for reduction
Wood Framed Wall Insulation: 2x4 wall = R13/10	R13 in the cavity of the wall and R10 continuous insulation. Walls with Structural Sheathing see Section R402.2.7 for reduction
Mass Walls R-19/21	Defined & Reviewed based upon formula from Section 402.2.5
Floor Insulation = R38	See Section 402.2.8 for definition and exception
Basement Wall Insulation = R-15/19	See Section 402.2.9 for definition R15 continuous on either side or R19 on interior side. See footnotes in R402.1.2 for alternatives
Concrete Slab on Grade Insulation = R10/4ft	See Section R402.2.10 Insulation depth shall be depth of the footing minimum of 4 feet. R-5 insulation shall be provided under the full slab area of a heated slab .
Crawl Space Wall Insulation = R15/19	See Section R402.2.11 for definition R15 continuous on either side or R19 on interior side.
Fenestration Air Leakage: windows, sliding doors, skylights	</= 0.3 cfm/sf Exception for site built windows, skylights, and doors.
Fenestration Air Leakage: Swinging Doors	</= 0.5 cfm/sf Exception for site built doors.
Air Leakage: The building thermal envelop shall be constructed to limit air leakage.	All products installed in accordance with manufactures instructions and be labeled in accordance with the requirements of the 2018 IECC.
Fireplaces new wood-burning units	See Section R402.4.2 Information on tight fitting doors and labels required.

2018 International Energy Conservation Code Checklist for General Prescriptive Method

Building Systems R403: General Prescriptive Method to Compliance	
Programmable thermostats required for all heating and cooling equipment installed in a dwelling unit.	See Section R403.1.1: Thermostat to have daily schedules and temperature setback for scheduled times of the day.
Duct Insulation: Attic spaces R8 when 3” diameter or greater	See Section R403.3.1 for exception where ducts are completely within the building thermal envelope.
Duct Insulation: Attic spaces R6 when less than 3” diameter	See Section R403.3.1 for exception where ducts are completely within the building thermal envelope.
Sealing: Mandatory for ducts, air handlers and filter boxes.	See Section R403.3.2 for exceptions.
Hot water boiler outdoor temperature setback:	See Section R403.2 Hot water boilers that supply heat to the building through one or two-pipe heating systems shall have an outdoor set-back control that lowers the temperature based on outdoor temperature.
Mechanical System Piping insulation: Mandatory	See Section R403.4 mechanical piping carrying fluids above 105 F or below 55 F shall be insulated with R3 minimum.
Circulating systems / Heat trace systems/ Demand recirculation systems:	See Section R403.5.1.1, R403.5.1.2, R403.5.2 for information on operations and controls for pumps and specific electric heat trace systems.
Hot water pipe insulation required to be R3	See Section R403.5.3 for list of required piping that requires R3
Mechanical Ventilation: The building should be provided with mechanical ventilation or approved method per requirements.	See Section R403.6 and R403.6.1 for definitions and refer the 2015 IRC Sections M1507 for system design and requirements.
Systems serving multiple dwelling units:	See Section R403.8 Shall comply with Sections C403 and C404 of the IECC – Commercial provisions in lieu of Section R403
Snow melt systems and ice system controls:	See Section R403.9 Automatic controls shutting system when pavement temperature >50 F and no precipitations falling, automatic or manual control to shutoff as outdoor temp > 40 F
Pools/ Permanent & Portable Spas:	See Sections R403.10 through R403.12 Heaters, Time Switches, Covers, Energy Consumption.
Equipment Sizing and Efficiency Rating	See Section R403.7 and refer to IRC M1401.3

NICHOLAS CONST DWGS 7-30-21 ESTAMP.pdf Markup Summary

Callout (2)



Subject: Callout
Page Label: [10] CONST DWG NICHOLAS 5-7-21-(9)
Author: tallen
Date: 08/13/2021 8:50:32 AM
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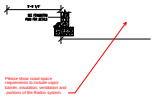
Color:
Layer:
Space:

Show flashing, hangers and attachment(s) of ledger boards for garage, as applicable.



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Page Label: [10] CONST DWG NICHOLAS 5-7-21-(9)
Author: tallen
Date: 08/13/2021 9:41:32 AM
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Color:
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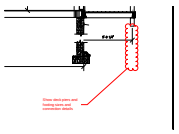
Space:

Please show crawl space requiements to include vapor barrier, insulation, ventilation and portions of the Radon system.

Cloud+ (6)



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Page Label: [10] CONST DWG NICHOLAS 5-7-21-(9)
Author: tallen
Date: 08/12/2021 3:51:22 PM
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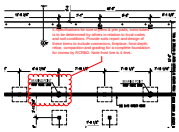
Show deck piers and footing sizes and connection details



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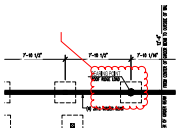
Page Label: [5] CONST DWG NICHOLAS 5-7-21-(4)
Author: tallen
Date: 08/13/2021 9:54:07 AM
Status:
Color:
Layer:
Space:

5.Specifications for size of piers & pier pads, sono-tubes is to be determined by others in relation to local codes and soil conditions. Provide soils report and design of these items to include connectors, fireplace, frost depth, rebar, compaction and grading for a complete foundation for review by RCRBD. Note frost line is 4-feet..



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Page Label: [5] CONST DWG NICHOLAS 5-7-21-(4)
Author: tallen
Date: 08/12/2021 3:53:17 PM
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Color:
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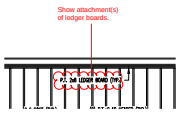

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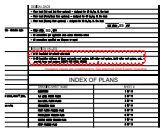
Page Label: [7] CONST DWG NICHOLAS 5-7-21-(6)
Author: tallen
Date: 08/12/2021 4:03:13 PM
Status:
Color:
Layer:
Space:

Show attachment(s) of ledger boards.



Subject: Cloud+
Page Label: [1] CS-PLUS PUU - NICHOLAS-COVER
Author: tallen
Date: 08/12/2021 4:13:48 PM
Status:
Color:
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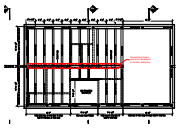
Space:

Insulation values are unsatisfactory. See attached 2018 Energy Checklist.



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Page Label: [8] CONST DWG NICHOLAS 5-7-21-(7)
Author: tallen
Date: 08/12/2021 4:24:20 PM
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Color:
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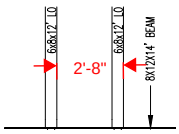
Space:

Provide floor beam size and calculations to confirm adequacy.

Length Measurement (2)



Subject: Length Measurement
Page Label: [8] CONST DWG NICHOLAS 5-7-21-(7)
Author: tallen
Date: 08/12/2021 4:17:58 PM
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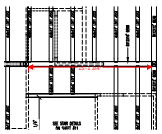
2'-8"



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Page Label: [8] CONST DWG NICHOLAS 5-7-21-(7)
Author: tallen
Date: 08/12/2021 4:21:58 PM
Status:
Color:
Layer:
Space:

15'-1 3/4"

Text Box (2)

Subject: Text Box
Page Label: [5] CONST DWG NICHOLAS 5-7-21-(4)
Author: tallen
Date: 08/12/2021 3:54:18 PM
Status:
Color:
Layer:
Space:

Show all footing, deck piers and footing sizes and connection details

OK for Detached Garage Foundation Only SPRAB210097

Subject: Text Box
Page Label: [10] CONST DWG NICHOLAS 5-7-21-(9)
Author: tallen
Date: 08/13/2021 9:21:23 AM
Status:
Color:
Layer:
Space:

4.All construction shall comply with the 2018 local code amendments as shown on approved plans. Energy provisions from the International Energy Conservation Code—Residential Provisions applicable
to residential buildings which fall under the scope of this code are shown in the attached checklist. The plans need to show this information. A building section cut or typical wall section through the representative wall and floors as required to show the thermal envelope as required to accurately show
in detail shall be submitted (include location of all building and section cuts on the plans).
All information shall be using Zone 7, Dry. Details shall include, but are not limited to, as applicable:
1. Insulation materials and their R-values (include per inch).
2. Fenestration U-factors and air leakage.
3. Area-weighted U-factor calculations (if applicable).
4. Mechanical system design criteria (if applicable). Specify method and type of heat.
5. Equipment and system controls.
6. Duct sealing, duct and pipe insulation and location.
7. Air sealing details.
8. The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding three air changes per hour.

Level			
Member Name	**Results**	**Current Solution**	**Comments**
Roof: Joist	Passed	1 piece(s) 2 x 12 DF No.2 @ 12" OC	
Roof: Drop Beam	Failed	1 piece(s) 6 x 12 DF No.2	
Roof: Drop Beam	Failed	1 piece(s) 6 x 14 HF No.1	

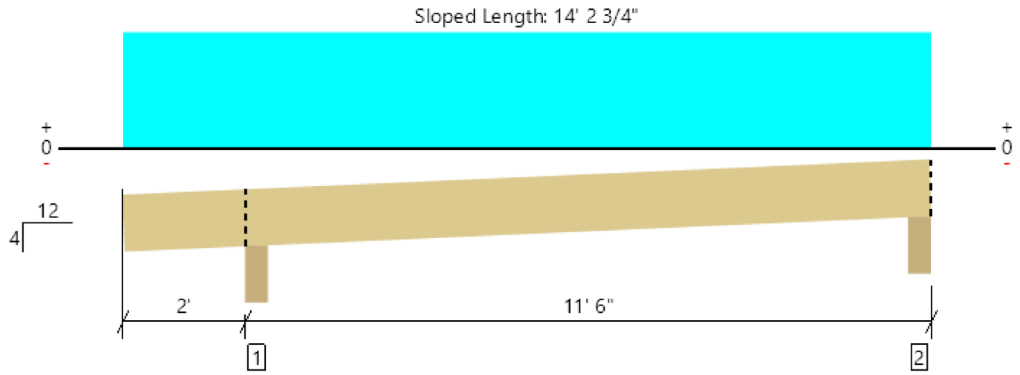
ForteWEB Software Operator	Job Notes
Ted Allen RCRBD (970) 870-5566 tallen@co.routt.co.us	

Weyerhaeuser

8/31/2021 5:49:26 PM UTC
ForteWEB v3.2
File Name: tb-21-934

Level, Roof: Joist

1 piece(s) 2 x 12 DF No.2 @ 12" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Member Length : 14' 6 1/2"

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 4/12

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	836 @ 2' 2 3/4"	3696 (5.50")	Passed (23%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	482 @ 3' 4 3/16"	2025	Passed (24%)	1.00	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	1496 @ 7' 9 11/16"	2729	Passed (55%)	1.00	1.0 D + 1.0 Lr (Alt Spans)
Live Load Defl. (in)	0.106 @ 7' 8 9/16"	0.574	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.123 @ 7' 8 5/8"	0.766	Passed (L/999+)	--	1.0 D + 1.0 Lr (Alt Spans)

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Beveled Plate - SPF	5.50"	5.50"	1.50"	125	711	836	Blocking
2 - Beveled Plate - SPF	5.50"	5.50"	1.50"	88	514	602	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	10' 1" o/c	
Bottom Edge (Lu)	14' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Roof Live (non-snow: 1.00)	Comments
1 - Uniform (PSF)	0 to 13' 6"	12"	15.0	90.0	Default Load

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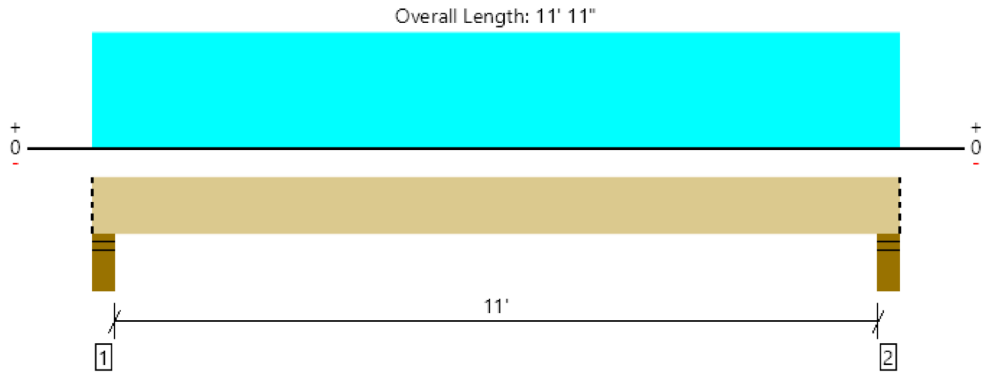
The product application, input design loads, dimensions and support information have been provided by TA

ForteWEB Software Operator	Job Notes
Ted Allen RCRBD (970) 870-5566 tallen@co.routt.co.us	

Weyerhaeuser

Level, Roof: Drop Beam

1 piece(s) 6 x 12 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	5100 @ 4"	12856 (5.50")	Passed (40%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	3888 @ 1' 5"	7168	Passed (54%)	1.00	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	13543 @ 5' 11 1/2"	8840	Failed (153%)	1.00	1.0 D + 1.0 Lr (All Spans)
Live Load Defl. (in)	0.286 @ 5' 11 1/2"	0.563	Passed (L/471)	--	1.0 D + 1.0 Lr (All Spans)
Total Load Defl. (in)	0.340 @ 5' 11 1/2"	0.750	Passed (L/397)	--	1.0 D + 1.0 Lr (All Spans)

System : Roof
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Lumber grading provisions must be extended over the length of the member per NDS 4.2.5.5.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Stud wall - SPF	5.50"	5.50"	2.18"	810	4290	5100	Blocking
2 - Stud wall - SPF	5.50"	5.50"	2.18"	810	4290	5100	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6" o/c	
Bottom Edge (Lu)	11' 11" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.00)	Comments
0 - Self Weight (PLF)	0 to 11' 11"	N/A	16.0	--	
1 - Uniform (PSF)	0 to 11' 11" (Front)	8'	15.0	90.0	Default Load

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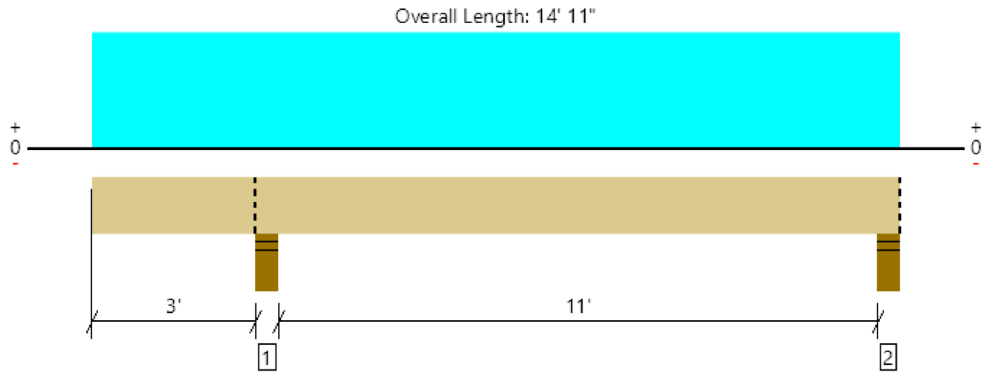
The product application, input design loads, dimensions and support information have been provided by TA

ForteWEB Software Operator	Job Notes
Ted Allen RCRBD (970) 870-5566 tallen@co.routt.co.us	

Weyerhaeuser

Level, Roof: Drop Beam

1 piece(s) 6 x 14 HF No.1



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	10993 @ 3' 2 3/4"	12251 (5.50")	Passed (90%)	--	1.0 D + 1.0 Lr (All Spans)
Shear (lbs)	5613 @ 4' 7"	6930	Passed (81%)	1.00	1.0 D + 1.0 Lr (All Spans)
Moment (Ft-lbs)	17187 @ 9' 2 1/16"	14428	Failed (119%)	1.00	1.0 D + 1.0 Lr (Alt Spans)
Live Load Defl. (in)	0.228 @ 8' 11 13/16"	0.568	Passed (L/597)	--	1.0 D + 1.0 Lr (Alt Spans)
Total Load Defl. (in)	0.266 @ 9'	0.757	Passed (L/512)	--	1.0 D + 1.0 Lr (Alt Spans)

System : Roof
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Lumber grading provisions must be extended over the length of the member per NDS 4.2.5.5.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Roof Live	Total	
1 - Stud wall - SPF	5.50"	5.50"	4.94"	1721	9272	10993	Blocking
2 - Stud wall - SPF	5.50"	5.50"	3.03"	1020	5723	6743	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6" o/c	
Bottom Edge (Lu)	14' 11" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Roof Live (non-snow: 1.00)	Comments
0 - Self Weight (PLF)	0 to 14' 11"	N/A	18.8	--	
1 - Uniform (PSF)	0 to 14' 11" (Front)	11'	15.0	90.0	Default Load

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Ted Allen RCRBD (970) 870-5566 tallen@co.routt.co.us	

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