

28' X 24' GARAGE ON TRUSSES

FRAMING DRAWINGS

DRAWING INDEX

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STOREYS

1

FLOOR AREA

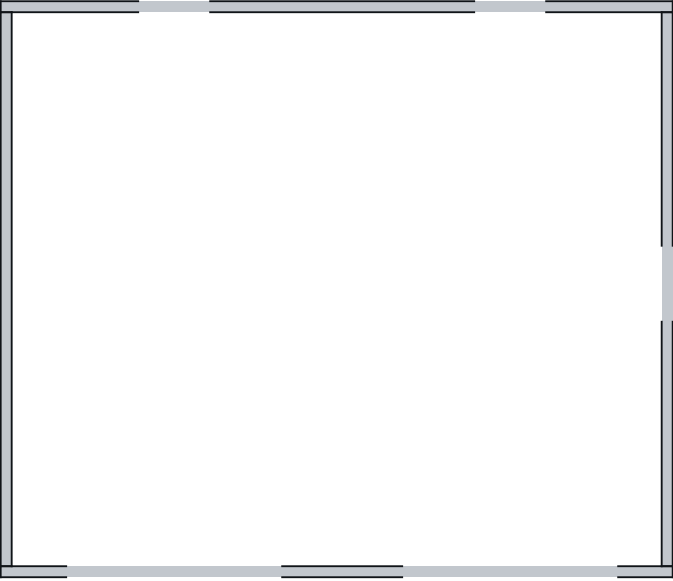
625.1 sq ft

LOT AREA

6000 sq ft

LOT COVERAGE

11.3%



KEY PLAN, GROUND

NOT IN THIS SET

Foundations are cast-in-place concrete. Insulating concrete forms, preserved wood foundations, screw piles and grade beams are not drawn or sized.

No cold room is drawn under a porch, and no window is tagged for egress.

NBC 9.36 energy compliance is not calculated and its forms are not produced. An Alberta permit package needs them and this set does not contain them.

Mechanical, electrical and plumbing are not drawn beyond the sleeves cast in the foundation.

COVER

28' x 24' garage on trusses

SHEETS

12

SCALE

AS NOTED

SHEET

G1

DESIGN CRITERIA

CRITERION	VALUE AND SOURCE
Building code	NBC 2023 Alberta Edition, Division B, Part 9
Span tables	NBC 2023 Alberta Edition (Alberta, Canada), S-P-F No.1/No.2
Species and grade	S-P-F No.1/No.2, NLGA
Site	Not stated
Specified roof snow load, S = 1.00 kPa	NBC 2023 Alberta Edition, 9.4.2.2. Sentence (2): in no case less than 1 kPa. No location has been stated for this building.
Specified floor live load	1.9 kPa (Table 4.1.5.3., residential areas)
Specified attic live load	0.5 kPa limited-access attic (Table 4.1.5.3.); total specified load not less than 0.35 kPa (9.4.2.4.(1))
Plan dimensions	To the face of framing: a floor plan runs out to out of the stud walls, locates each partition on the face the string reaches first, and locates an opening by its rough jambs. Sheathing and finishes lie outside these figures. A storey standing inside a foundation wall is measured to the room outlines instead, because its perimeter is drawn on the foundation plan, which is dimensioned out to out of the concrete. This build's own convention.
Default stud spacing	16" o.c.
Default wall height	8'-1 1/8"
Soil and drainage	Clay or soils not clearly defined, poor drainage
Minimum foundation depth	NBC 2023 Alberta Edition, Division B, Table 9.12.2.2. (p. 9-85)
Concrete strength	15 MPa / 20 MPa / 32 MPa by element, per 9.3.1.6.(1)
Foundation wall thickness	NBC 2023 Alberta Edition, Division B, Table 9.15.4.2.-A (p. 9-98), solid concrete, read in the column the floor's lateral support puts it in per 9.15.4.3.(2)(c)
Footing size	NBC 2023 Alberta Edition, Division B, Table 9.15.3.4. (p. 9-96)
Anchorage	Article 9.23.6.1. Alberta reaches neither the seismic band of Sentence (4) nor the wind of Sentence (6), so a building on frame walls is anchored under Sentence (2) or (3) by its floor count.
Beam spans	NBC 2023 Alberta Edition, Division B, Table 9.23.4.3. (p. 9-138)
Column spacing	8', this build's own figure. Nothing in Part 9 states one; the section carrying the resulting span is the table's answer.
Soil gas control	Subsection 9.13.4. An air barrier under the floor per 9.25.3.6., and the rough-in for subfloor depressurization per 9.13.4.3.(3), which is granular and a capped pipe.
Excavation and backfill	2' of working space outside the footing, dug with vertical sides, this build's own figure. Part 9 states no excavation dimension. Depth is measured from the grade plane to the underside of the footing.

Every span on these drawings is a lookup in the tables named above, at the species, grade and load stated. A span outside those tables is reported as a warning on the drawing it is on and is not silently resized.

MAXIMUM DEFLECTIONS

MEMBER	SUPPORTED CEILING	LIMIT
Roof rafters, roof joists and roof beams	No ceiling	L / 180
Roof rafters, roof joists and roof beams	Other than plaster or gypsum board	L / 240
Roof rafters, roof joists and roof beams	Plaster or gypsum board	L / 360
Ceiling joists	Other than plaster or gypsum board	L / 240
Ceiling joists	Plaster or gypsum board	L / 360
Floor beams, floor joists and floor decking	All cases	L / 360

NBC 2023 Alberta Edition, Division B, Table 9.4.3.1. (p. 9-8). The limits are those the tabulated spans were published to meet; this program reads the spans and does not recompute a deflection.

NAILING FOR FRAMING

CONSTRUCTION DETAIL	NAIL LENGTH	MIN. DIAMETER	NUMBER OR SPACING
Floor joist or blocking perpendicular to sill plate or top wall plate – toe nail	82 mm	3.66 mm	2
Double header or trimmer joists	76 mm	3.66 mm	300 mm o.c.
Each header joist to adjacent trimmer joist	82 mm	3.66 mm	5
Stud to wall plate (each end) end nail	82 mm	3.66 mm	2
Doubled studs at openings, or studs at walls or wall intersections and corners	76 mm	3.66 mm	750 mm o.c.
Doubled top wall plates	76 mm	3.66 mm	600 mm o.c.
Bottom wall plate or sole plate to floor joists, rim joists or blocking (exterior walls)	82 mm	3.66 mm	400 mm o.c.
Lintels to studs	82 mm	3.66 mm	2
Ceiling joist to plate – toe nail each end	82 mm	3.66 mm	2
Roof rafter, roof truss or roof joist to plate – toe nail	82 mm	3.66 mm	3
Rafter to ridge board – toe nail – end nail	82 mm	3.66 mm	3
Collar tie to rafter – each end	76 mm	3.66 mm	3
Jack rafter to hip or valley rafter	82 mm	3.66 mm	2
Cross bridging to joists	57 mm	2.87 mm	2

NBC 2023 Alberta Edition, Division B, Table 9.23.3.4. (p. 9-134, 9-135). Nail lengths and spacings are the table's own, in millimetres. Minimum diameters are NBC 2023 Alberta Edition, Division B, Table 9.23.3.1. (p. 9-133). These are the rows this frame contains a joint for; the printed table has others.

FASTENERS FOR SUBFLOORING AND SHEATHING

PANEL	COMMON OR SPIRAL NAIL	ALONG EDGES	INTERMEDIATE SUPPORTS
Plywood, OSB or waferboard over 10 mm and up to 20 mm thick	51 mm	150 mm o.c.	300 mm o.c.

NBC 2023 Alberta Edition, Division B, Table 9.23.3.5.-A (p. 9-136). This build sheathes nothing thicker than 3/4 in, which is 19 mm, so the row above is the one that applies.

GENERAL NOTES

28' x 24' garage on trusses

SCALE
NONE

SHEET
NOTES 1 OF 1

SHEET
G2

4 lot lines · closest 2'-8 13/16" to a lot line



SITE DATA

ITEM	FIGURE
Lot area	6000 sq ft
Building footprint	675.7 sq ft
Lot coverage	11.3%



SITE PLAN

28' x 24' garage on trusses

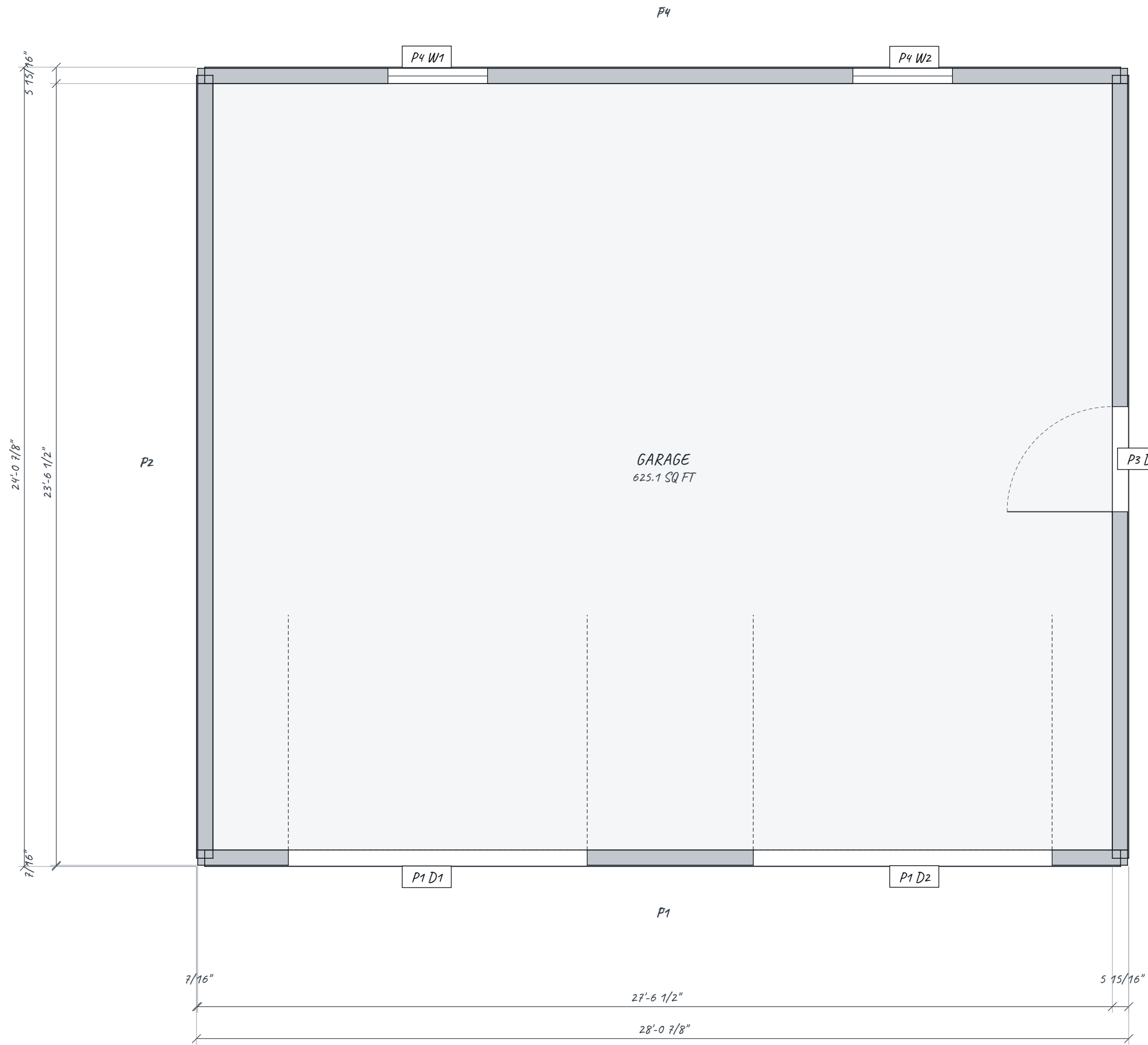
SCALE
3/32" = 1'-0"

COVERAGE
11.3%

SHEET
SITE PLAN

SHEET
A1

28' x 24' garage on trusses · 1 level · studs @ 16" o.c. · dimensions to face of framing unless noted



GROUND FLOOR PLAN

28' x 24' garage on trusses

SCALE
3/8" = 1'-0"

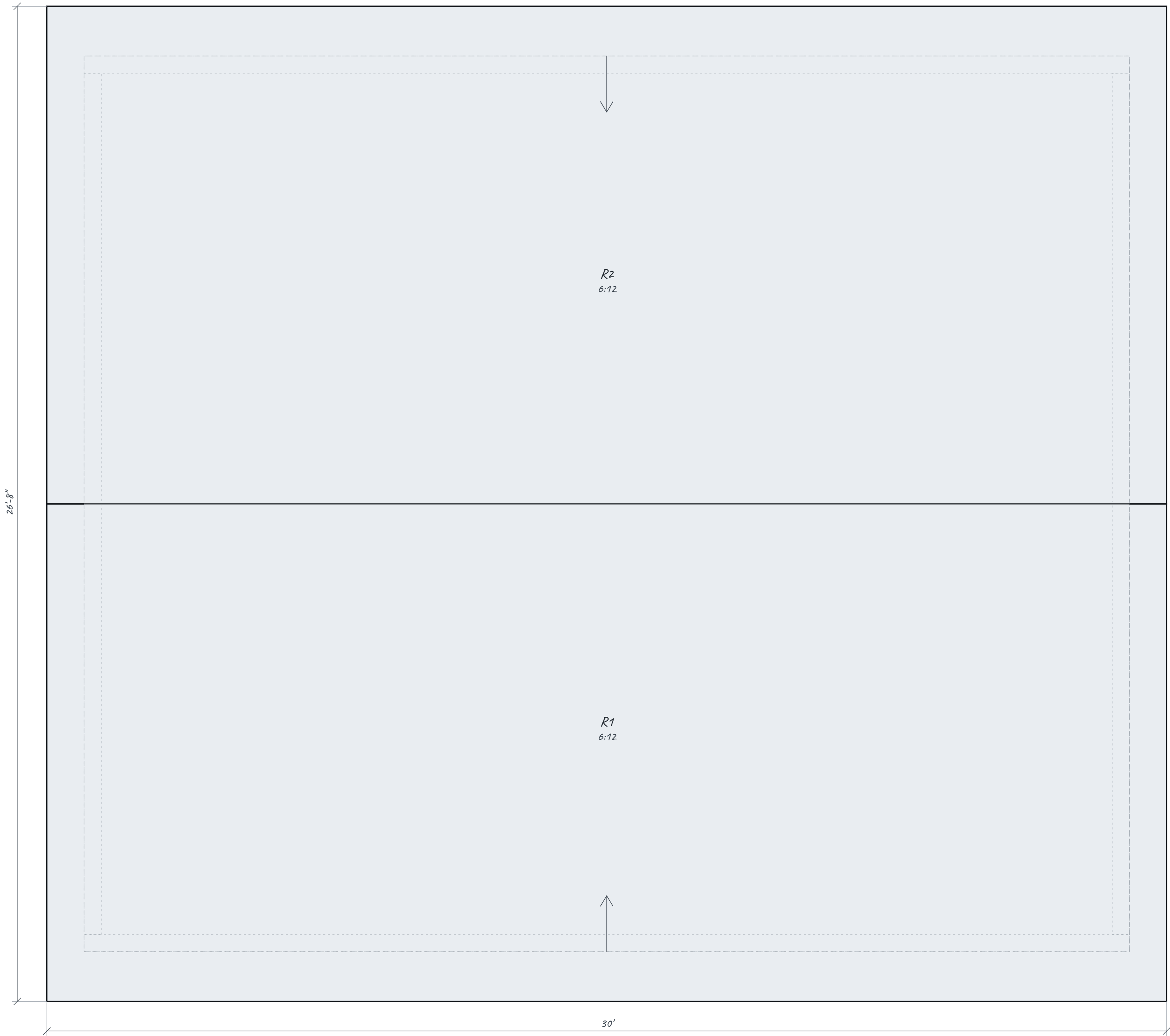
WALLS
4

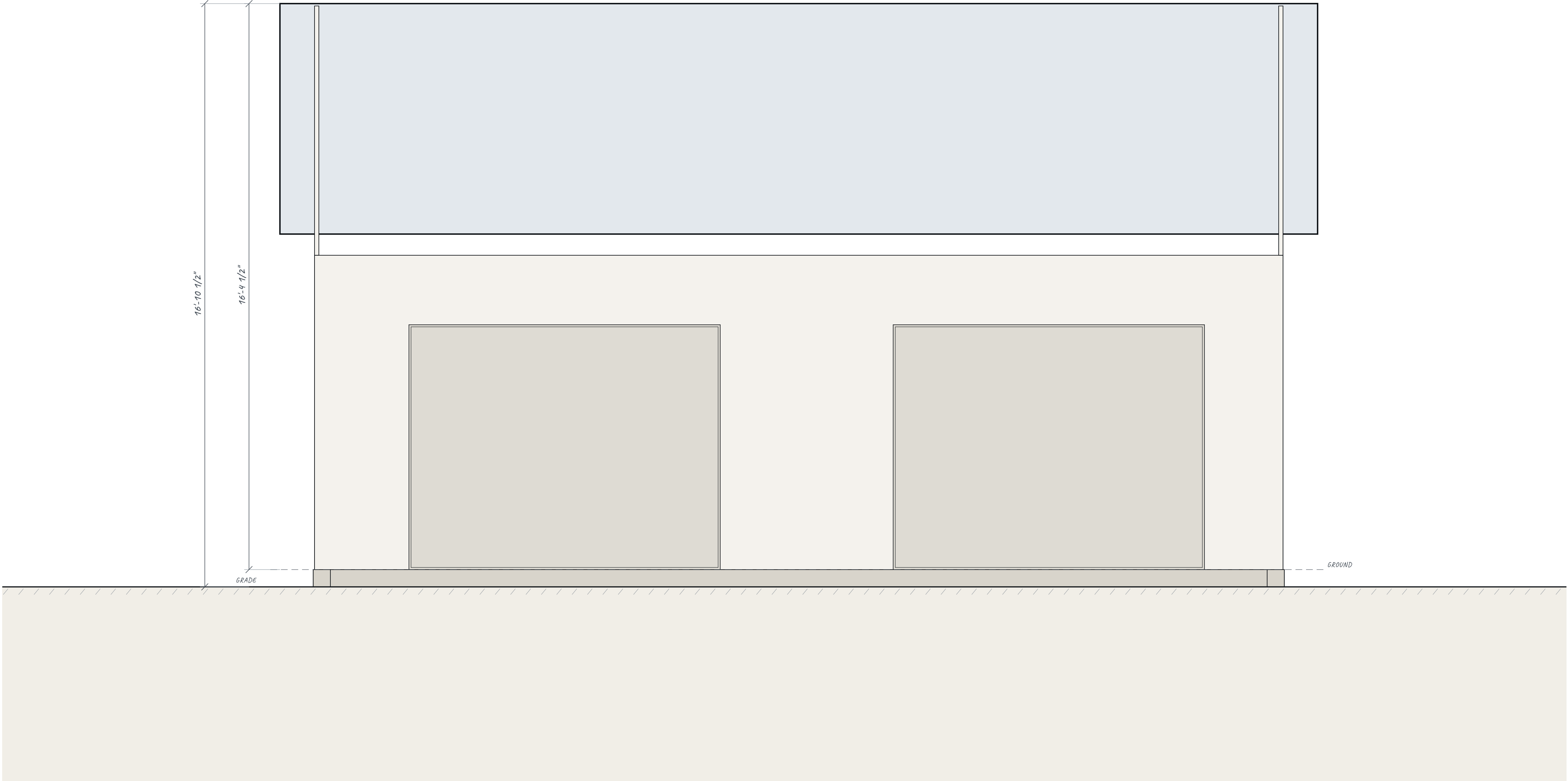
SHEET
FLOOR PLAN

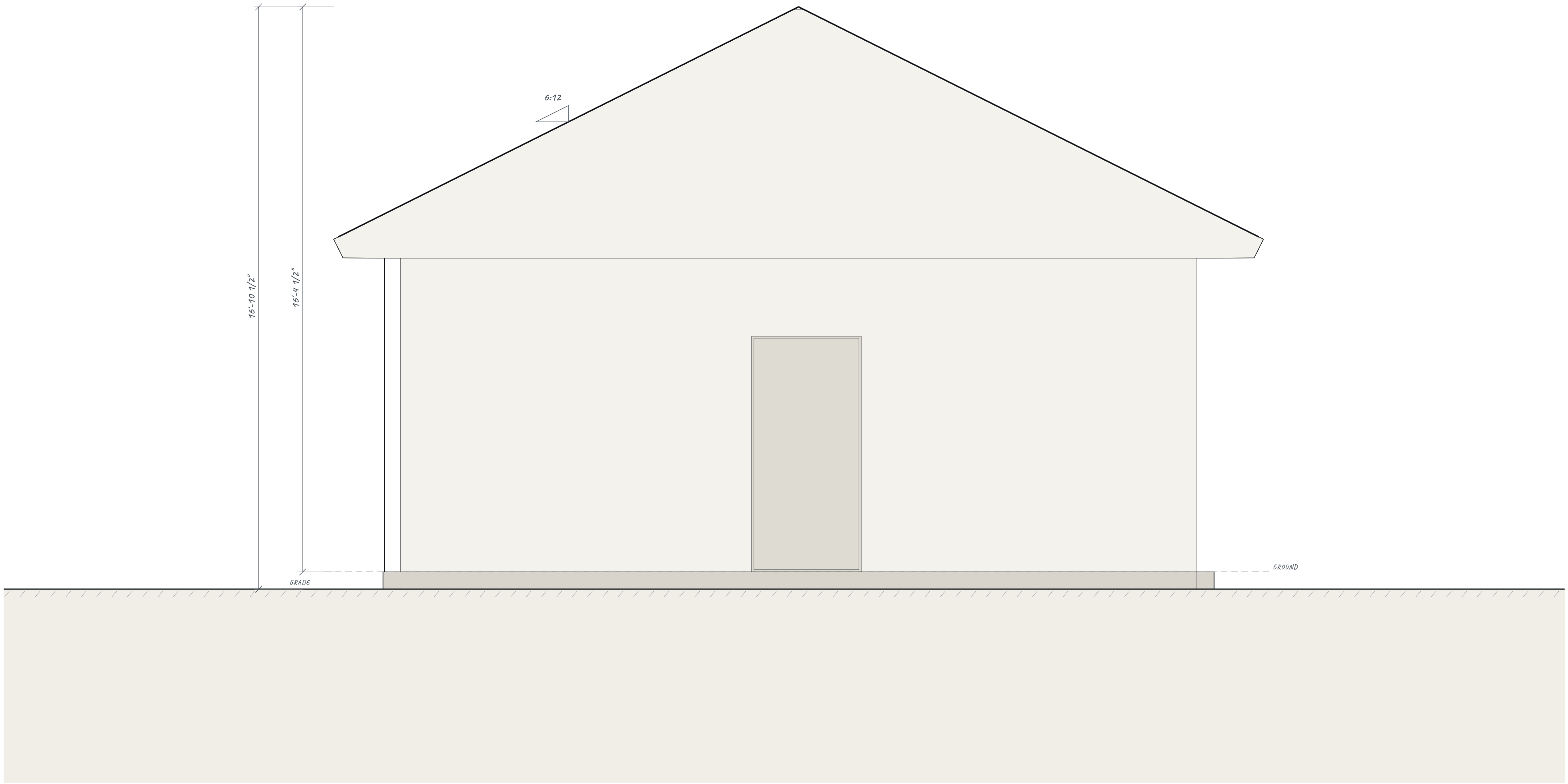
SHEET
A2

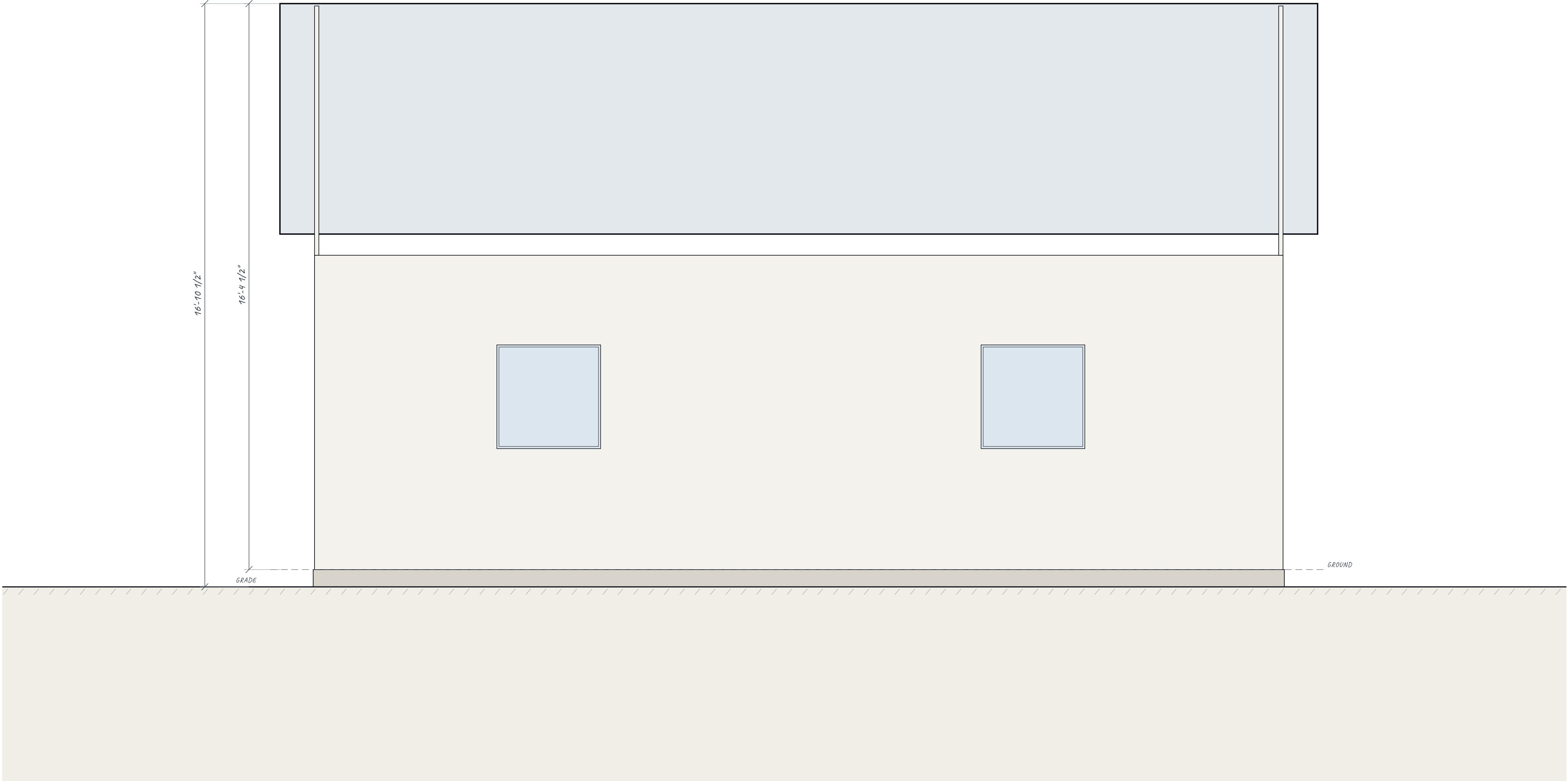
2 planes • 6:12

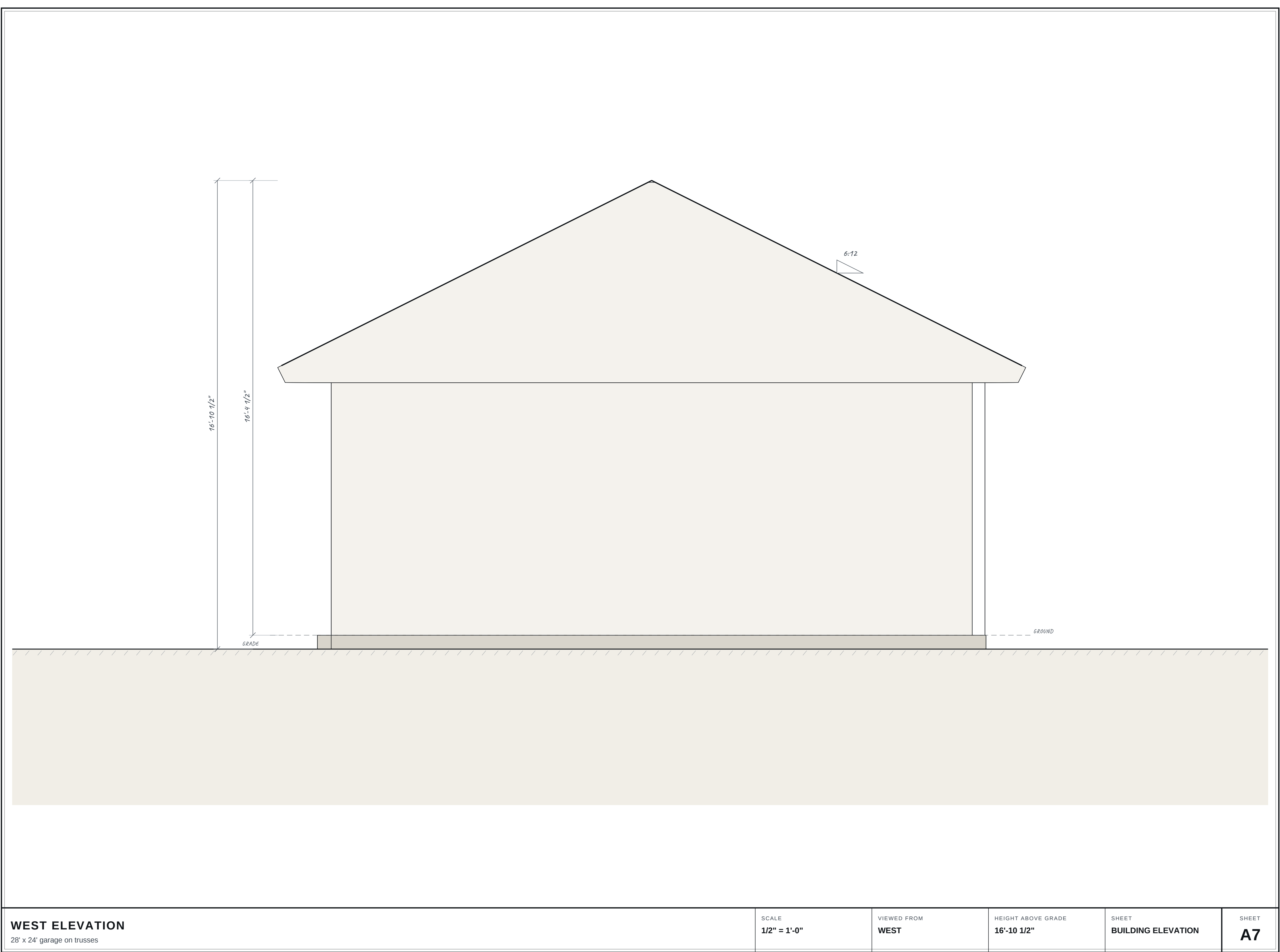
EAVE FRAMING RIDGE WALL BELOW











WEST ELEVATION 28' x 24' garage on trusses	SCALE 1/2" = 1'-0"	VIEWED FROM WEST	HEIGHT ABOVE GRADE 16'-10 1/2"	SHEET BUILDING ELEVATION	SHEET A7
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CONCRETE SCHEDULE

ELEMENT	STRENGTH	PIECES	PLACED	ORDER
Strip footing	15 MPa	4	0.78 m3	1.00 m3
Foundation wall	15 MPa	4	5.89 m3	6.25 m3
Garage floor	32 MPa	1	4.43 m3	4.75 m3

Ordered volumes carry an allowance over what is placed and are rounded up to the quarter cubic metre. No reinforcing steel: these walls are sized off the unreinforced rows of Table 9.15.4.2.-A.

ROOM SCHEDULE

ROOM	AREA
Garage	625.1 sq ft

Areas are measured inside the finished wall faces.

OPENING SCHEDULE

MARK	TYPE	ROUGH SIZE	SILL
P1 D1	Overhead	9' x 7'-1"	n/a
P1 D2	Overhead	9' x 7'-1"	n/a
P3 D1	Door	3'-2" x 6'-10"	n/a
P4 W1	Window	3' x 3'	3'-6"
P4 W2	Window	3' x 3'	3'-6"

Rough sizes. Add the frame and the shims for the unit itself. A cast opening is the hole formed in the concrete, and its buck is on the lumber list.

ROOF SCHEDULE

MARK	PITCH	RUN	ALONG RIDGE	RAFTERS
R1 (south slope)	6:12	12'	28'	24" o.c.
R2 (north slope)	6:12	12'	28'	24" o.c.

TRUSS SCHEDULE

MARK	UNITS	PROFILE	SPAN	PITCH	SPACING
T1	13	fink truss	24'	6:12	24" o.c.
T2	2	gable end frame	24'	6:12	24" o.c.

Ordered as units, so chords and webs are the manufacturer's scope and are in neither the lumber list nor the cut list.

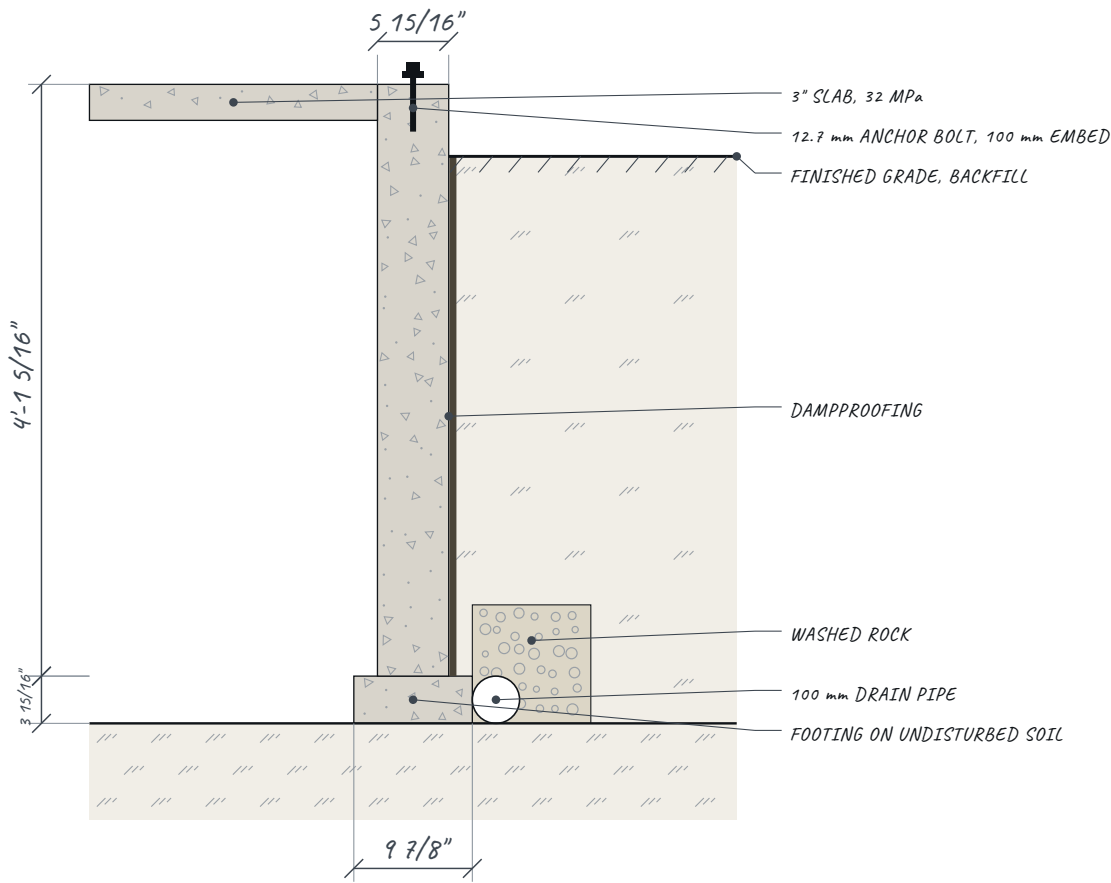
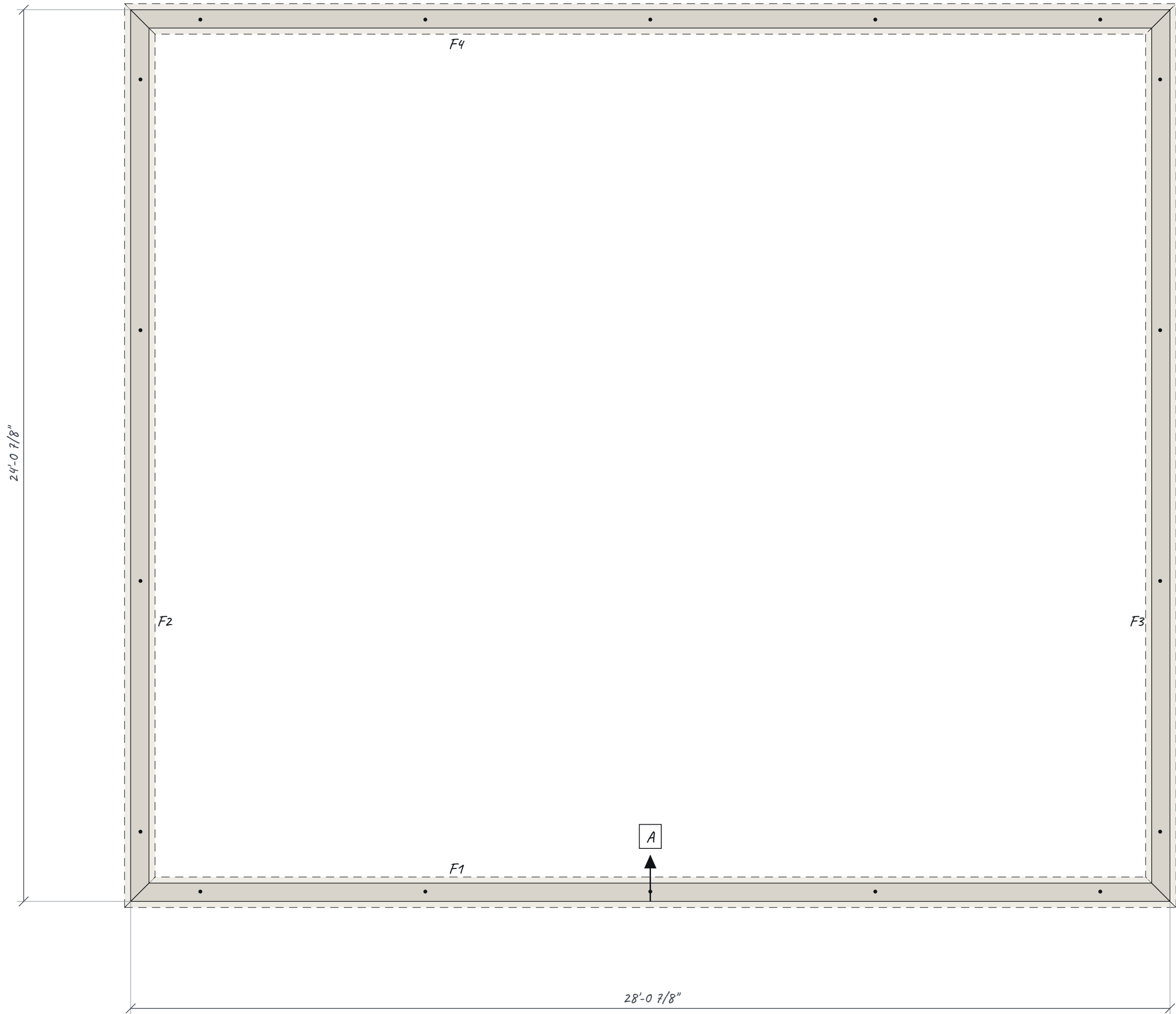
SHEET GOODS SCHEDULE

MATERIAL	SHEETS	FULL	CUT	COVERED	WASTE
OSB 1/2"	36	16	20	891 sq ft	22.6%
OSB 7/16"	46	5	41	777 sq ft	47.2%
Total	82			1669 sq ft	36.4%

Bought by the sheet. Waste is everything purchased that does not end up on the building; pieces off the scrap pile are installed and not ordered.

This takeoff is the frame, its sheathing and the concrete under it: no reinforcing steel, which the unreinforced rows these walls are sized from do not call for, no formwork, no handrail, balusters or newels on a stair (the flight is framed, the rail is not) and no fasteners, hangers or connectors beyond the anchor bolts cast into the sill.

Foundation walls 5 15/16" at 15 MPa, the code minimum for a wall under 9.3.1.6.(1)(a).
Top of wall 0".
Underside of footing -4'-5 1/4".
Elevations on this sheet are from the top of the Ground slab, 6" above the site datum.
Strip footings 9 7/8" wide x 3 15/16" deep, centred under the wall.
Anchor bolts 12.7 mm at 100 mm embedment, 6'-9 1/4" o.c., per 9.23.6.1.(2).
Garage floor 3" at 32 MPa under 9.3.1.6.(1)(c), air entrained 5 to 8% per 9.3.1.6.(2), top 0".
No granular fill under the garage floor: 9.16.2.1.(2) does not require it under a slab in a garage or carport.
Do not backfill until the floor over this storey is framed and anchored: the wall thickness is read as laterally supported at its top, per 9.15.4.3.(2)(c).
Footings to bear on undisturbed native soil. Verify the bearing on excavation.
Dampproof the exterior face below grade, per 9.13.2.1., and lay 100 mm drain pipe at the footing round the building, per 9.14.2.1.
Footings and pads are shown dashed: they are below the wall.
Overall dimensions are out to out of the concrete wall, not of the footing under it.



SECTION A, WALL F1
3/4" = 1'-0"

TRUSS BLOCKING SUB-FASCIA BARGE

R1 (south slope): rafters @ 24" o.c.
R2 (north slope): rafters @ 24" o.c.
T1 @ 24" o.c.
T2 @ 24" o.c.



ROOF FRAMING PLAN
28' x 24' garage on trusses

SCALE
1/2" = 1'-0"

MEMBERS
73

SHEET
ROOF FRAMING

SHEET
S2