

A Beginner's Guide to Structural Engineering House

General Notes:

- I. Design criteria
- A. Design is to be in conformance with the latest editions of applicable national model design codes as specified by the instructor. Where explicit details are not shown or described the minimum requirements of the above codes shall apply.

B. Gravity live loads: (Governing Standard: ASCE 7)

1. Roof (snow) 40 psf

2. Residential 40 psf

C. Seismic force: (Governing Standard: ASCE 7)

1. Occupancy Category II

2. Seismic Use Group I

3. Importance Factor 1.0

4. Framing system: Bearing Walls, Light-framed with shear panels

5. Site Class D

4. Spectral Response Factors: S1 = 0.55, SS = 1.50

5. W, weight of structure

D. Wind: (Governing Standard: ASCE 7)

1. 3 sec gust Velocity 120 mph

2. Exposure type C

E. Foundation:

1. Soils information based on well log.

2. Foundation design is based on an assumed soil pressure = 1500 psf.
- II. Concrete
- A. Materials shall comply with the standards specified in the latest edition of ACI 318, "Building Code Requirements for Reinforced Concrete".

1. 28 Day compressive strengths, f'c, per ASTM C94 shall be as follows:

a. Footings 3,000 psi

b. Slabs-on-grade ... 4,000 psi

c. Walls 3,000 psi

2. Reinforcement steel:

a. Deformed Bars: ASTM A615, grade 60, fy = 60,000 psi min. This steel is not to be welded.

b. Weldable Deformed Bars: ASTM A706, grade 60, fy = 60,000 psi min. This steel may be welded.

c. Welded wire fabric: ASTM A185, Grade 60.

3. Admixtures:

a. Air-entraining admixtures shall comply with ASTM C260. Air content of concrete shall be between 5 % and 7 %.

b. Calcium chloride shall not be used in any concrete mixture.
- III. Wood
- A. Lumber.

1. All lumber shall be visually graded in accordance with current W.W.P.A. grading rules. All dimensional lumber shown on plans shall be S4S seasoned lumber of the following grades:

a. 2x lumber Hem Fir #2

b. 4x and wider lumber Hem Fir #1

c. posts and timbers Hem Fir #1

2. All wood ledgers, plates, sills, and nailers in contact with concrete or masonry shall be treated in accordance with American Wood Preservers Bureau standard AWPB-FDN, and bear that quality mark.

B. Glued laminated lumber (GL)

1. All glue laminated lumber shall be manufactured in accordance to AITC 117-79 and PS-56 with Fb = 2400 psi, Fv = 165 psi, Fc = 385 psi, E = 1,700,000 psi.

C. Plywood.

1. All plywood except where otherwise noted on drawings shall be standard C-D exterior with exterior glue as graded by the American Plywood Association and be in conformance with U.S. Product standard PS 1-74. All plywood shall be made with exterior type glue.

D. Manufactured wood trusses.

1. All wood trusses shall be factory manufactured with stress rated material designed by a Professional Engineer registered in Alaska to support loadings shown on drawings.

E. Premanufactured wood joists.

1. All premanufactured wood joists shall be design in accordance with manufacturer recommendations.

F. Connections

1. Bolts shall be ASTM A307 bolts.

Sheet Index:

- COV Cover Sheet
- A1 Architectural Elevations
- A2 First Floor Plan
- A3 Second Floor Plan
- A4 Building Sections
- S1 Foundation Plan
- S2 First Floor Framing Plan
- S3 Second Floor Framing Plan
- S4 Roof Framing Plan

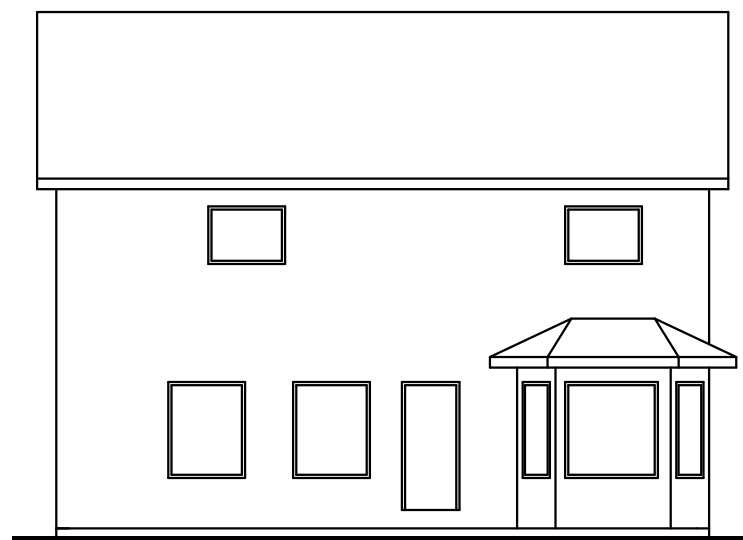
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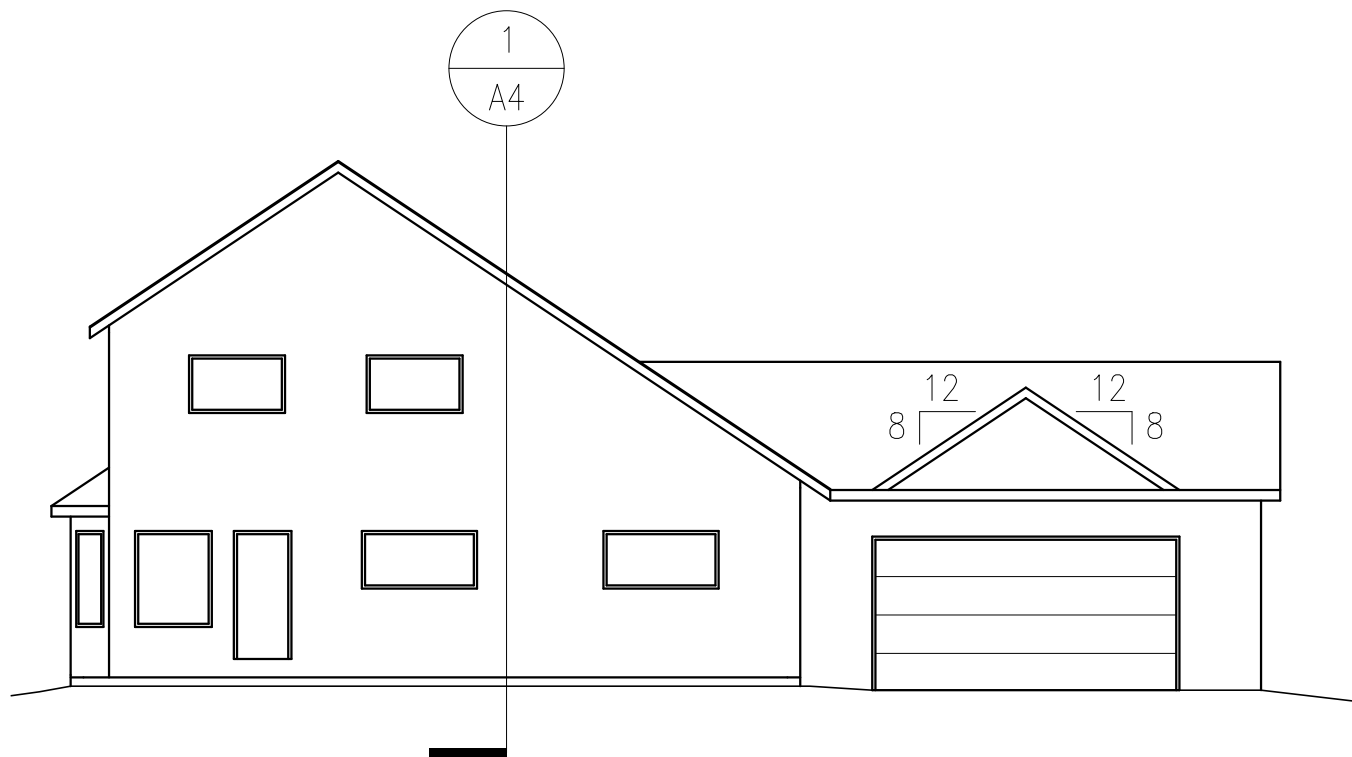
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	Sheet No.: COV	of 4
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By: TBO	Date: 2007	Checked: _____
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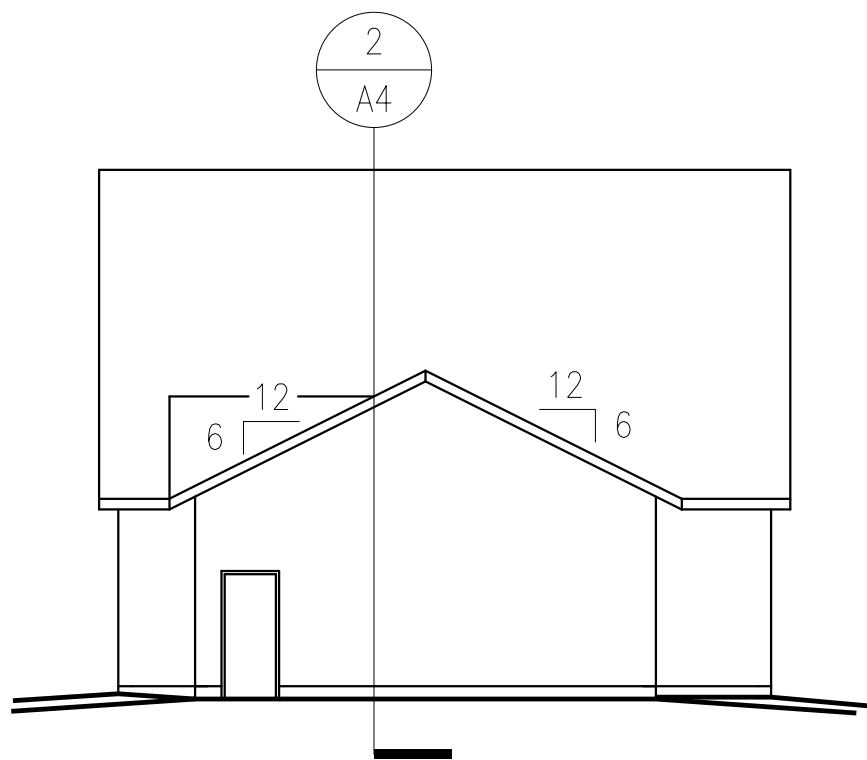
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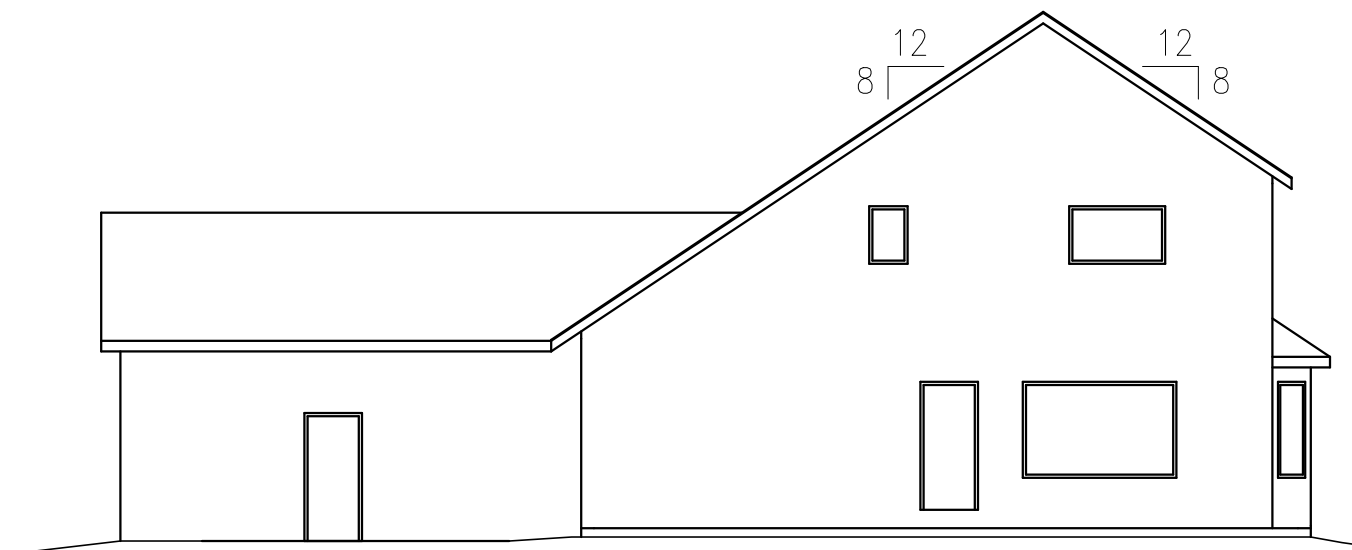
1 West Elevation
BGSE: House SCALE: 1" = 10'-0"



2 South Elevation
BGSE: House SCALE: 1" = 10'-0"



1 East Elevation
BGSE: House SCALE: 1" = 10'-0"

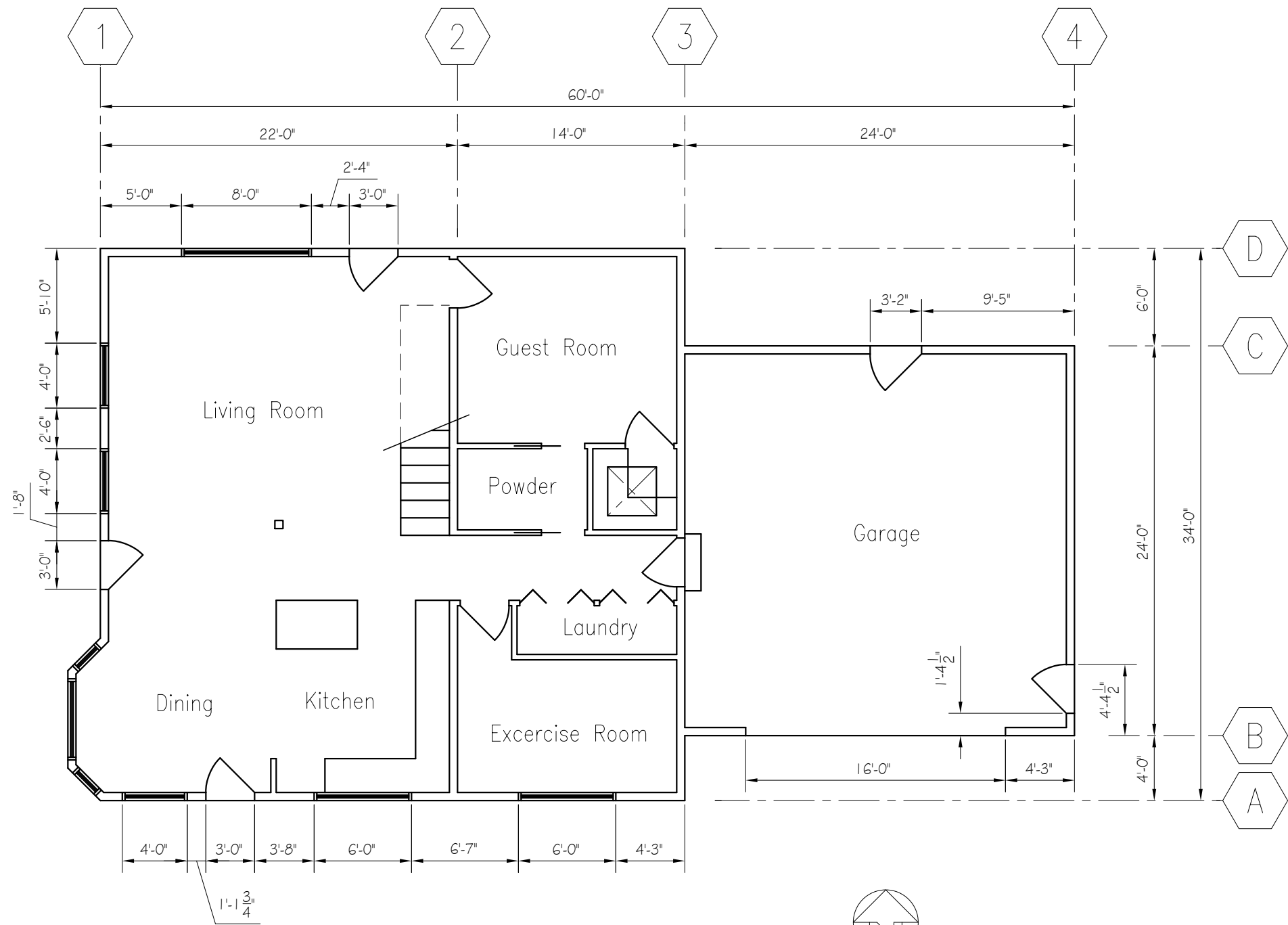


2 North Elevation
BGSE: House SCALE: 1" = 10'-0"

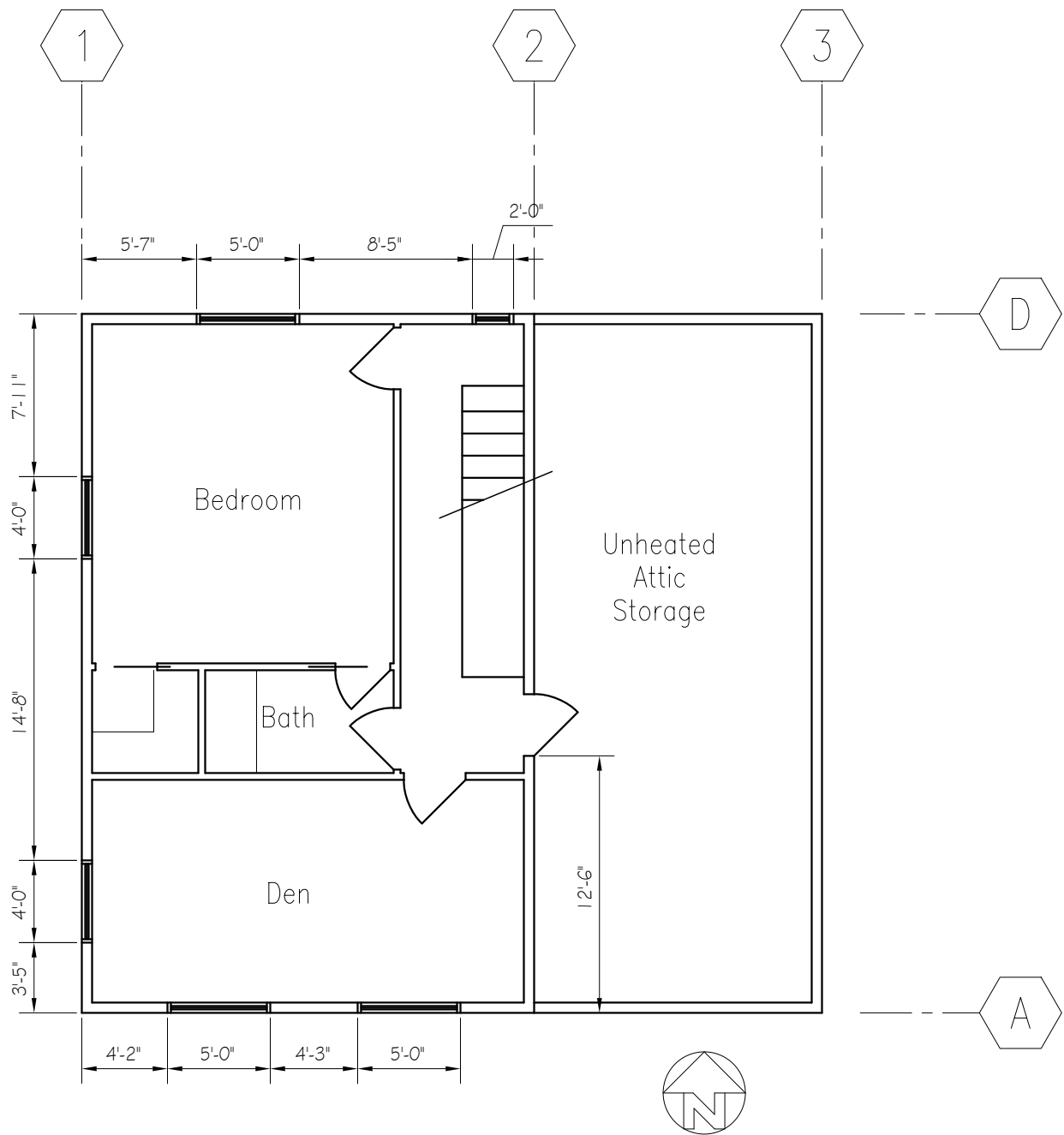
ARCHITECTURAL ELEVATIONS				Revisions: 0. -/-		Project No.: HOUSE			
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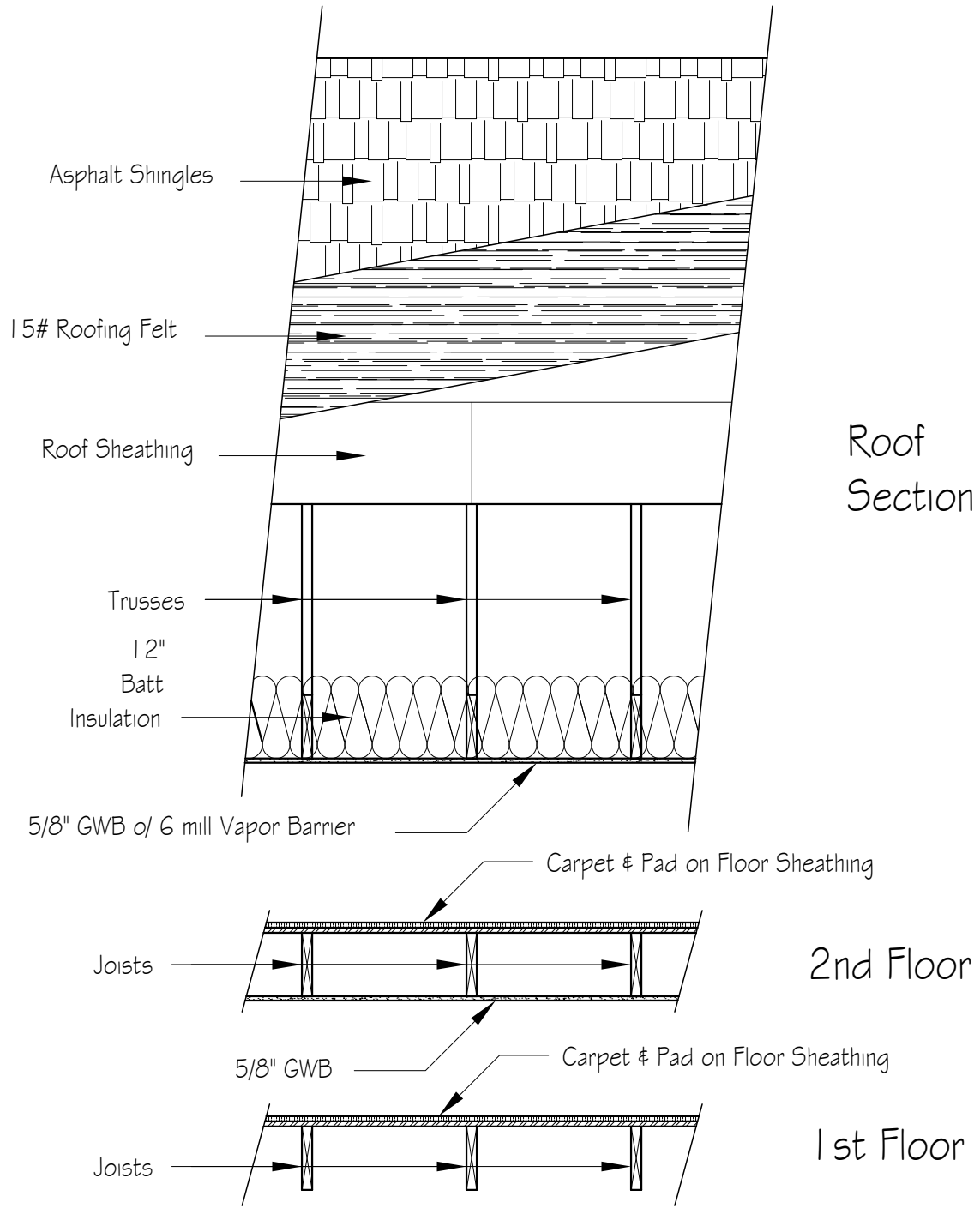
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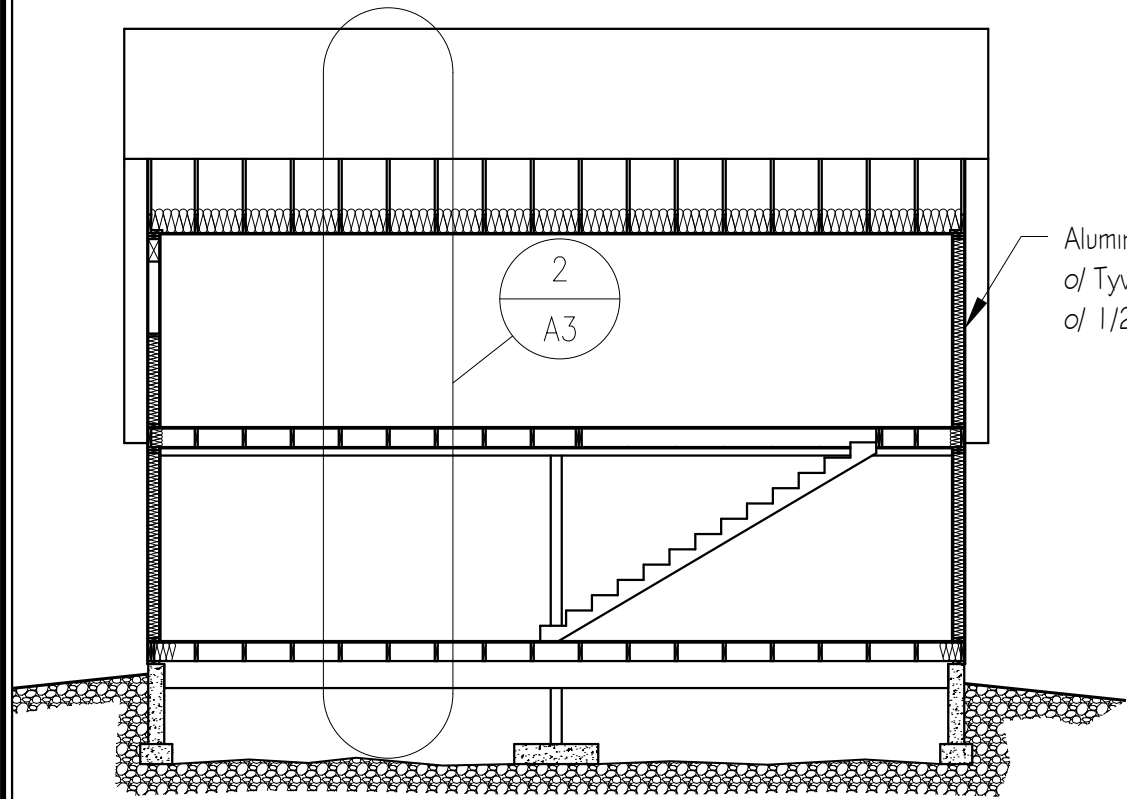
1 First Floor Plan
 BGSE: House
 SCALE: 1/8" = 1'-0"



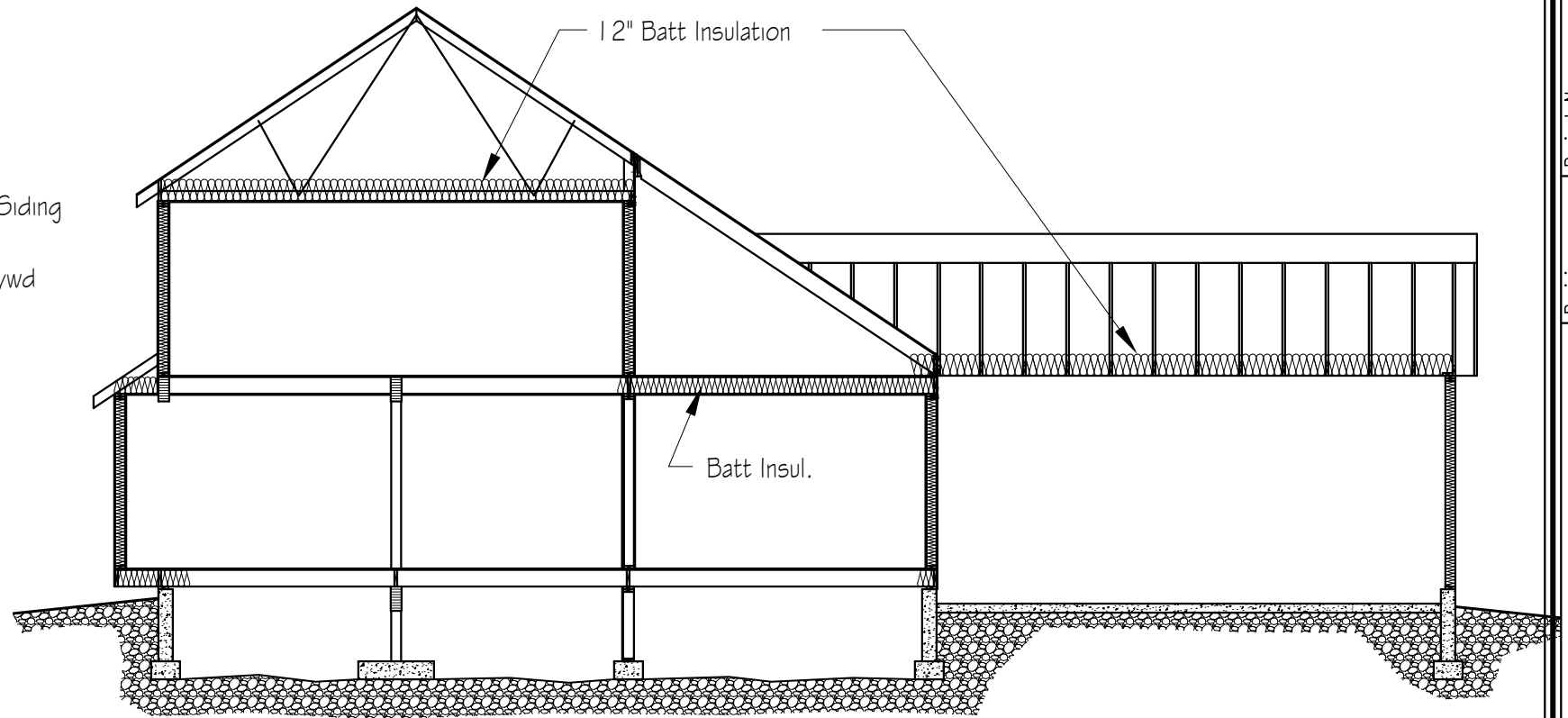
1 Second Floor Plan
BGSE: House
SCALE: 1/8" = 1'-0"



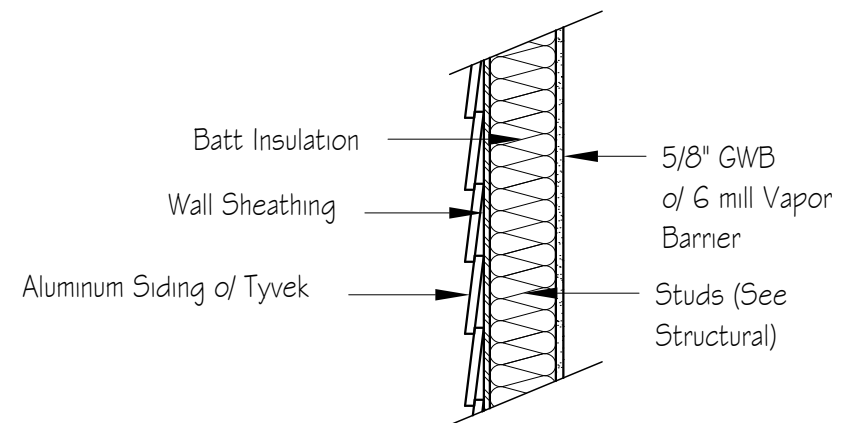
2 Roof/Floor Sections
BGSE: House
SCALE: 1/2" = 1'-0"



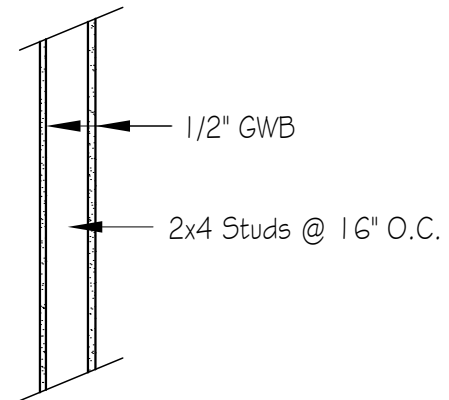
1 Building Section
BGSE: House SCALE: 1/8" = 1'-0"



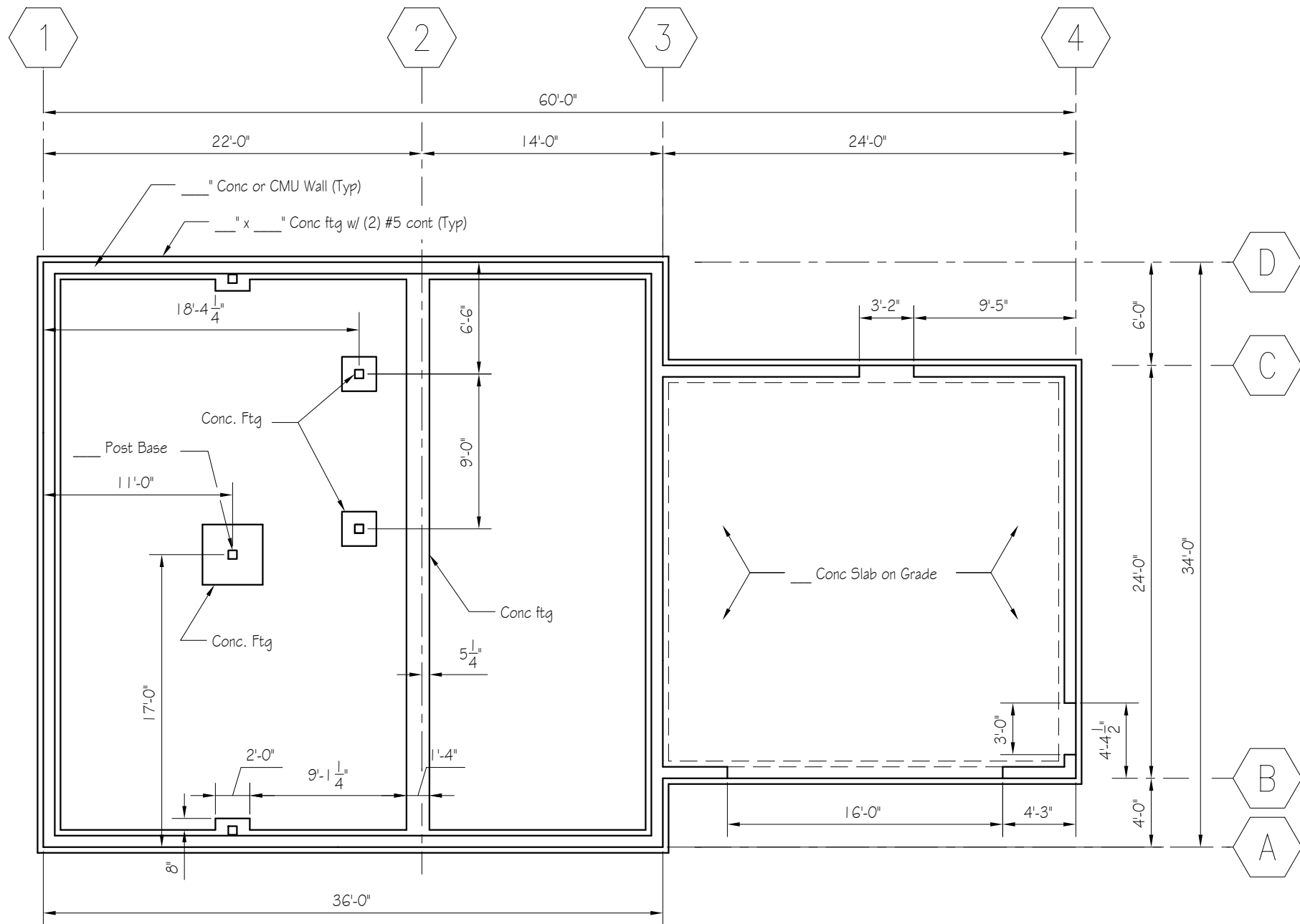
2 Building Section
BGSE: House SCALE: 1/8" = 1'-0"



3 Typ. Exterior Wall Section
BGSE: House SCALE: 3/4" = 1'-0"

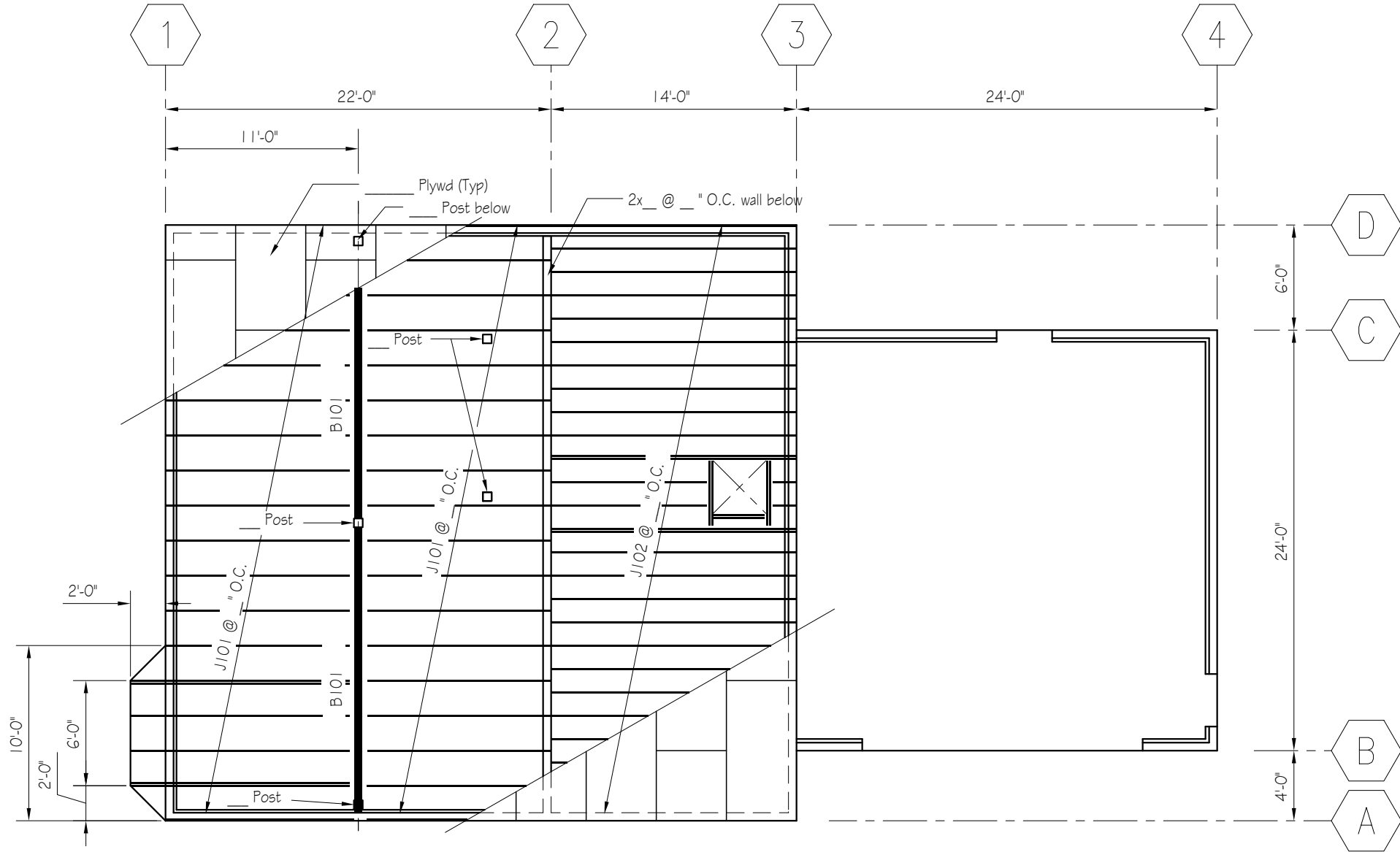


4 Typ. Non-Bearing Interior Wall Section
BGSE: House SCALE: 3/4" = 1'-0"



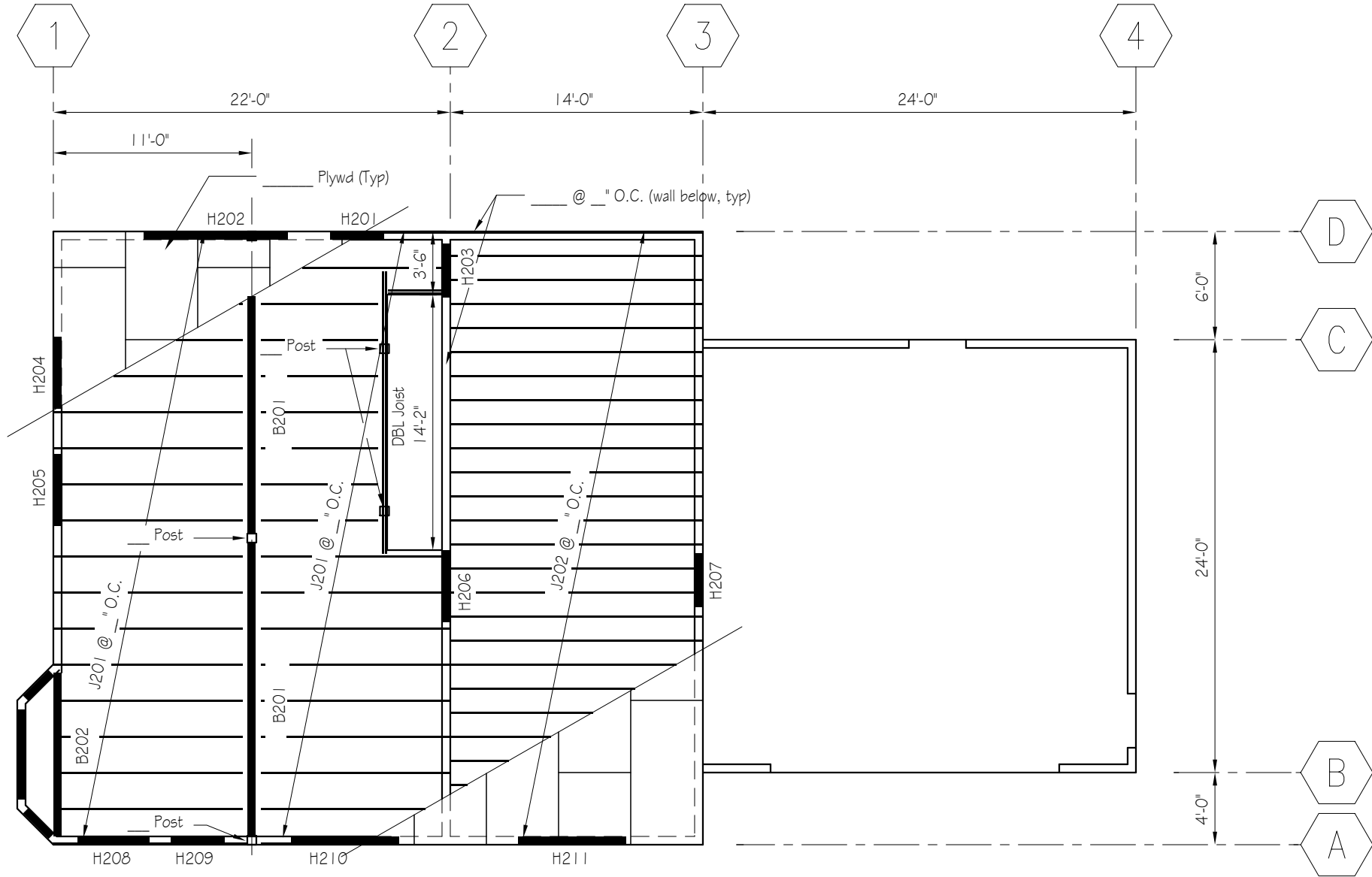
1 Foundation Plan
BGSE: House

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

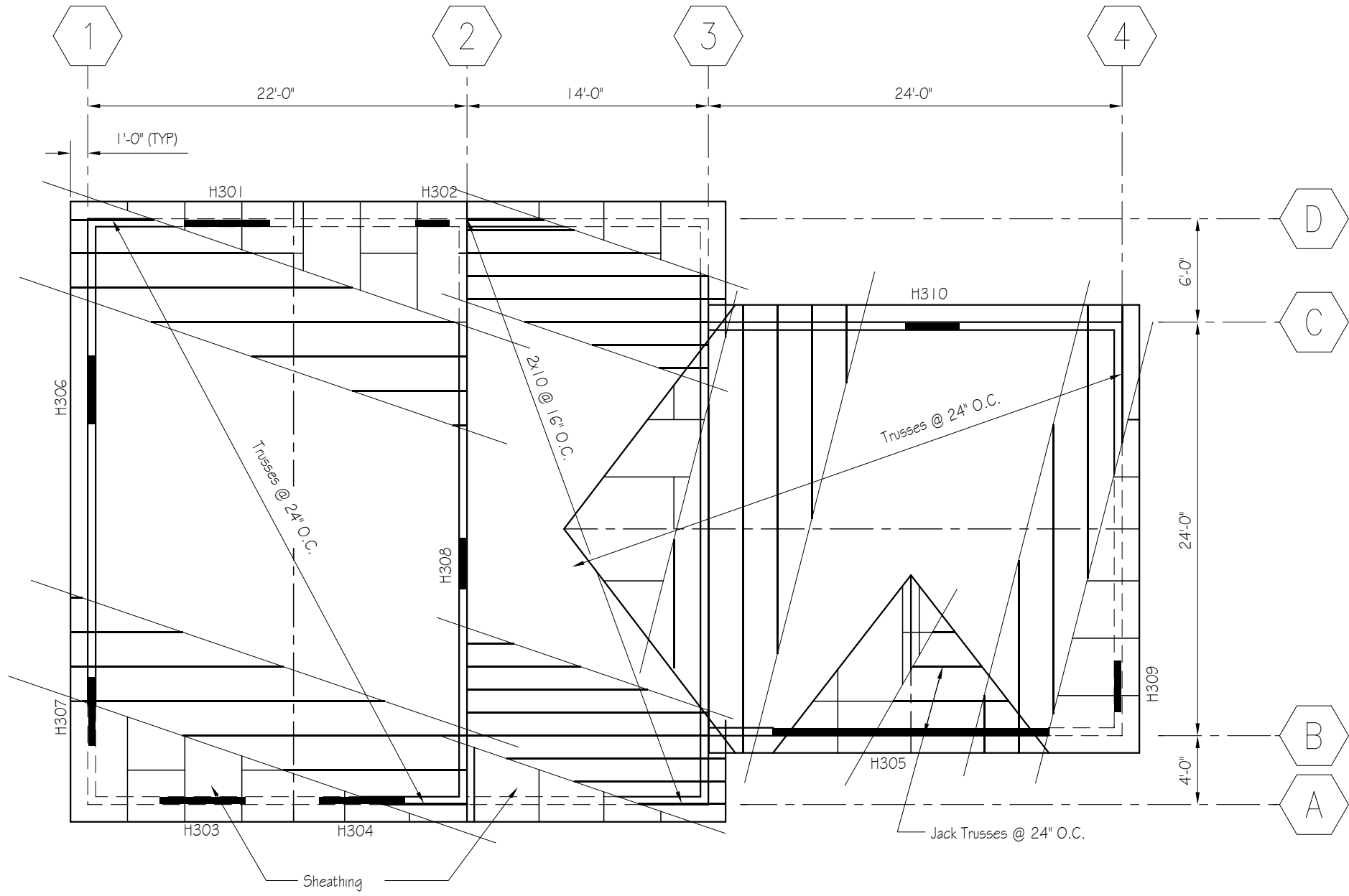


1 First Floor Framing Plan
BGSE: House

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



1 Second Floor Framing Plan
BGSE: House
SCALE: 1/8" = 1'-0"



1 Roof Framing Plan
BGSE: House
SCALE: 1/8" = 1'-0"

Project No.: HOUSE	Sheet No.: S4 of 4
ROOF FRAMING	
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