



2005
NORTH CAROLINA
AFFORDABLE PASSIVE SOLAR
PLANBOOK

THE GARDEN WINDOW

3 BEDROOM/ 2 BATH
1135 SQ. FT. TOTAL HEATED SPACE
308 SQ. FT. GARAGE

DRAWN BY: Appalachian State University Energy Center
Construction Technology Department



LEGEND:

DRAWING TITLE

GRID LOCATION

SHEET NUMBER

SCALE

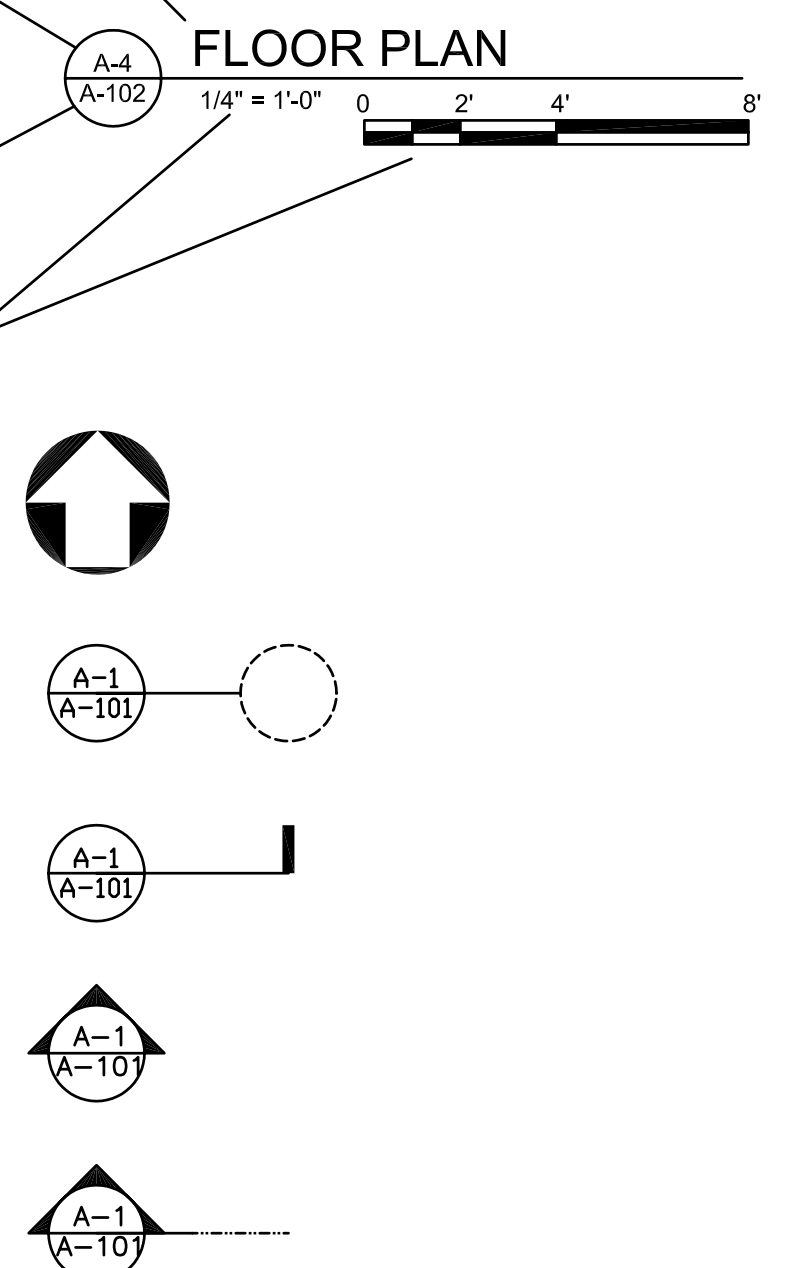
NORTH

DETAIL

SECTION DETAIL

EXTERIOR ELEVATION

BUILDING SECTION



INDEX TO DRAWINGS:

A-101	FOUNDATION PLAN
A-102	1ST FLOOR PLAN
A-103	ROOF PLAN
A-201	ELEVATIONS
A-301	BUILDING SECTIONS
A-401	DETAILS

DISCLAIMER:

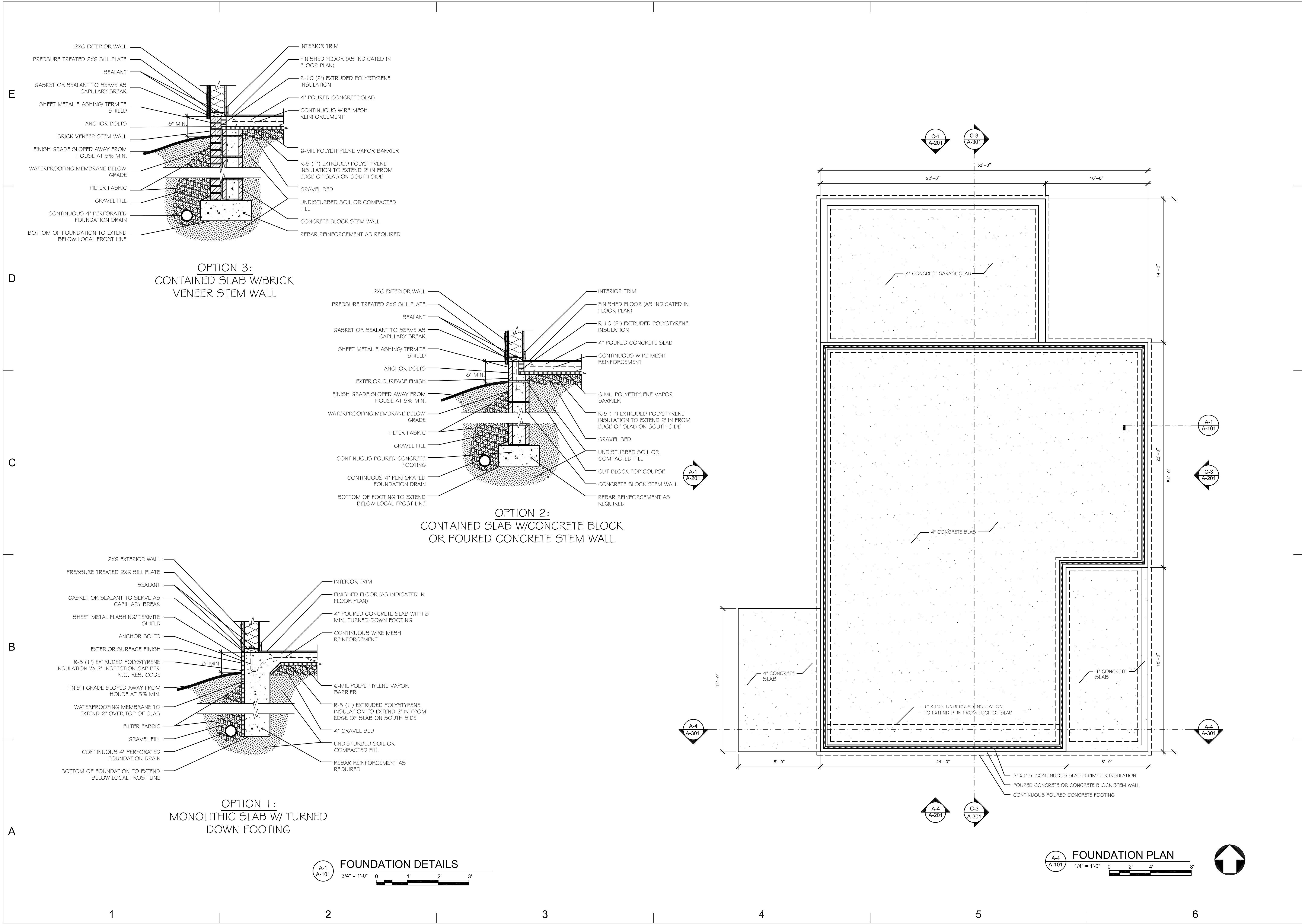
This house plan has been developed under a contract with the North Carolina State Energy Office as part of their ongoing effort to promote energy efficient house designs.

The designs, drawings, and specifications offered are generally suitable for construction in the state of North Carolina. Changes necessary to adapt the designs to other areas should be performed by professionals experienced and competent in passive solar applications. In addition, the working drawings and specifications should be submitted for review to local building officials to insure compliance with code requirements. This review should be done prior to site selection, financial commitments, or construction permit applications.

Neither the State of North Carolina, nor any agency thereof, nor any of the employees makes any warranty, express or implied, or assumes any legal liability or responsibility for any third party use or the results of such use of any information, apparatus, assembly, product, or functional efficiency in this plan or represents that the use by such third party would not infringe upon privately owned designs or rights.

The energy use information and design criteria for energy analysis on this plan has been assumed for the climate conditions found in North Carolina. Neither ASU Energy Center, nor any of their employees or consultants, shall be responsible for variations in the actual performance of this design.

The drawings in this set have been prepared as architectural guidelines for the evaluation of a passive solar house. Items such as heating and cooling equipment, plumbing, and electrical requirements are included, though modifications may be necessary due to the location and the specific site. All modifications should follow energy efficient guidelines: provide continuous exterior insulation, seal all air leaks, create a continuous air and moisture barrier, and insulate and seal all ductwork. The contractor and owner shall follow the requirements of local codes carefully. The contractor is responsible for all fabrication processes, construction techniques, and coordination of work with all trades and subcontractors. Any dimensional errors or omissions from the drawings do not relieve the general contractor of the responsibility to provide a complete project in accordance with genuinely accepted quality standards.



State Energy Office

ENERGY

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CONSTRUCTION TECHNOLOGY DEPARTMENT

ISSUE

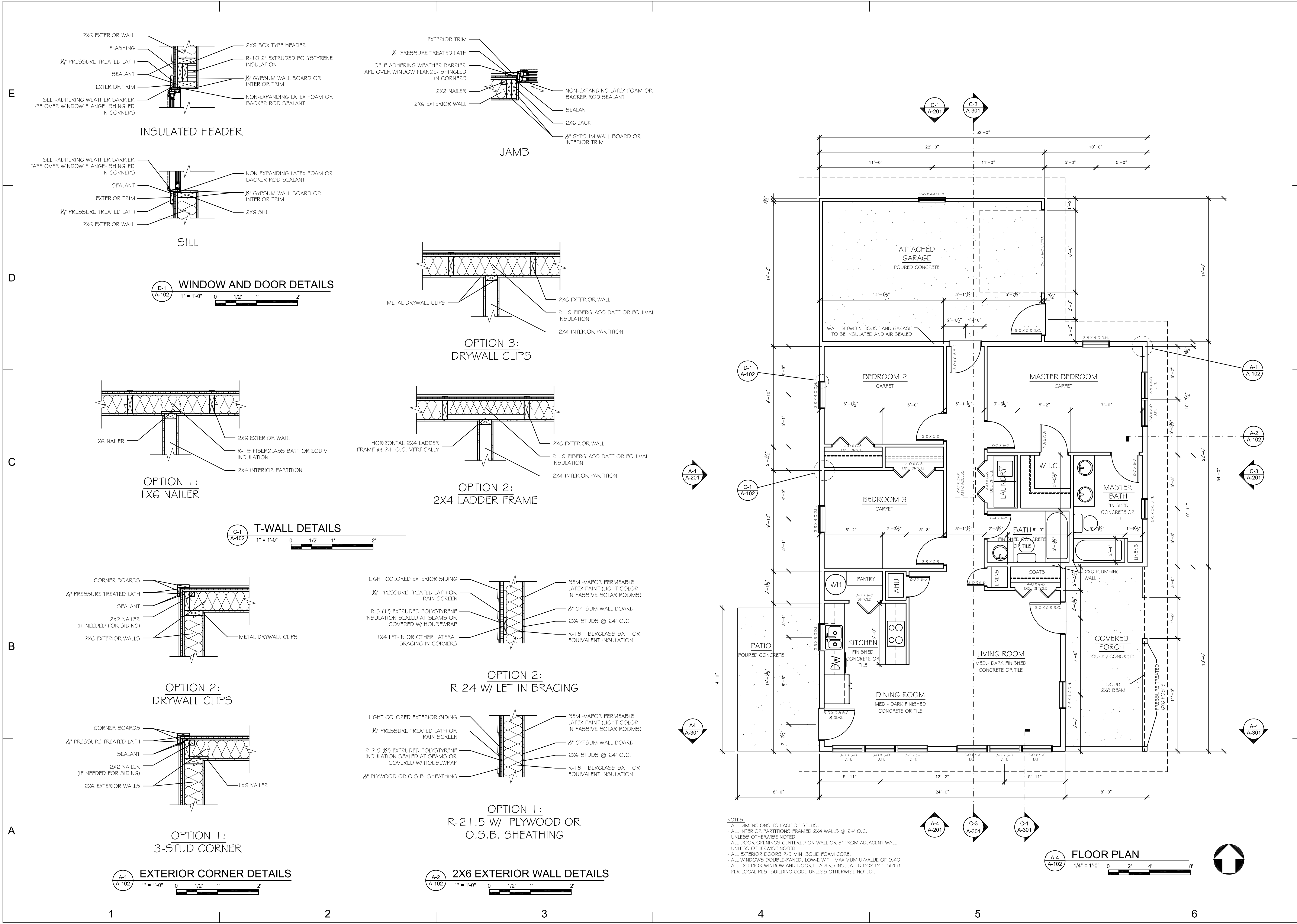
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FOUNDATION PLAN and DETAILS

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A-101



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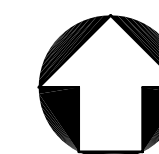
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SHEET TITLE

FLOOR PLAN and DETAILS

SHEET NO.

A-102



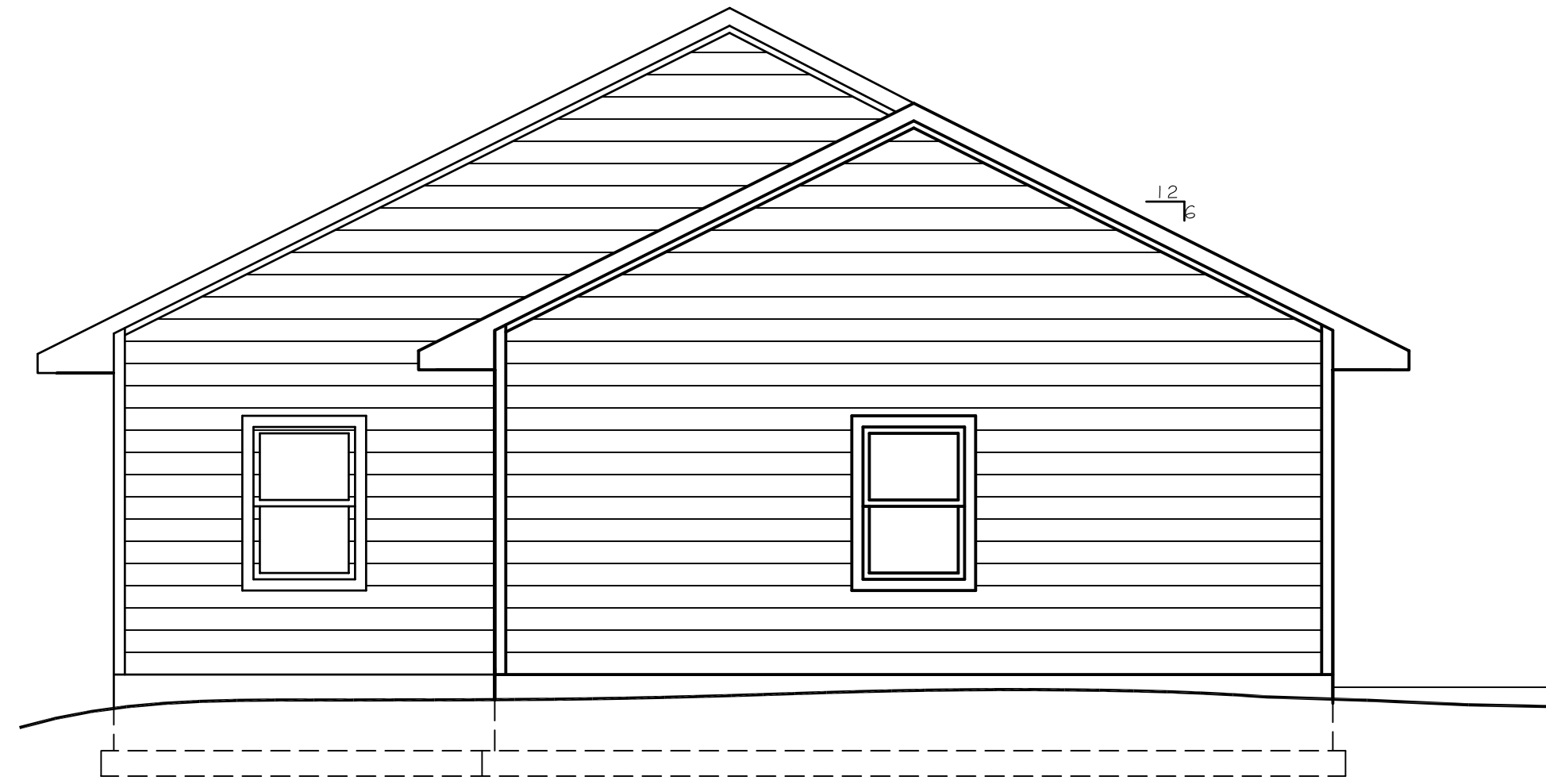
E

D

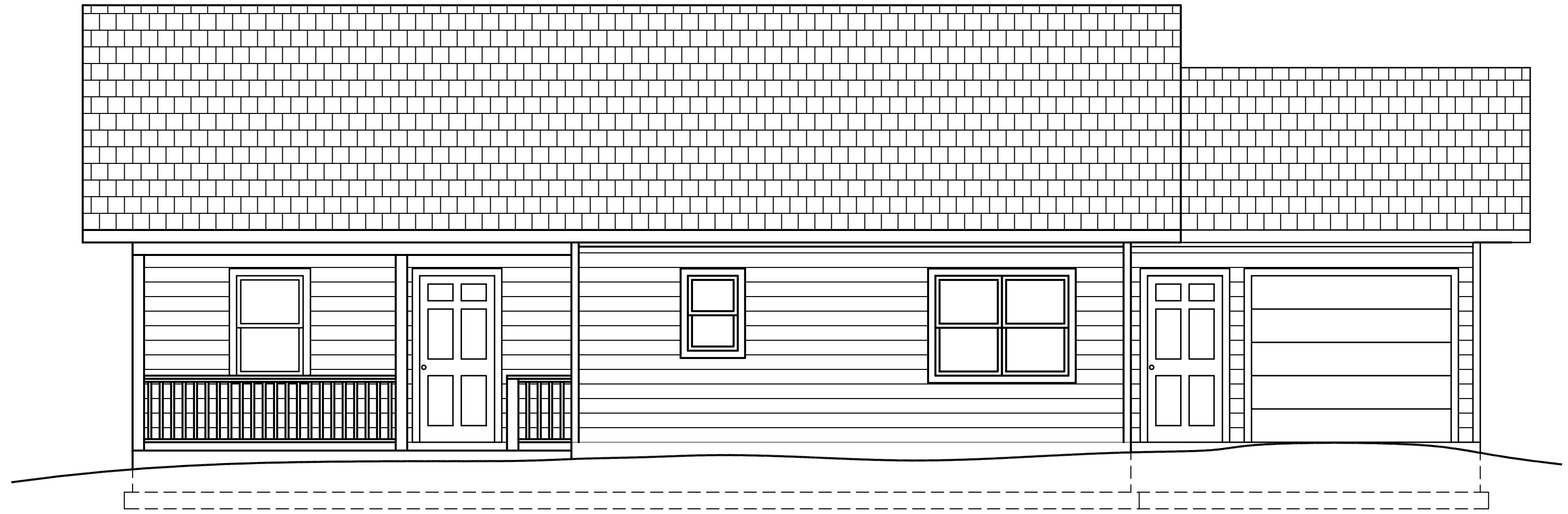
C

B

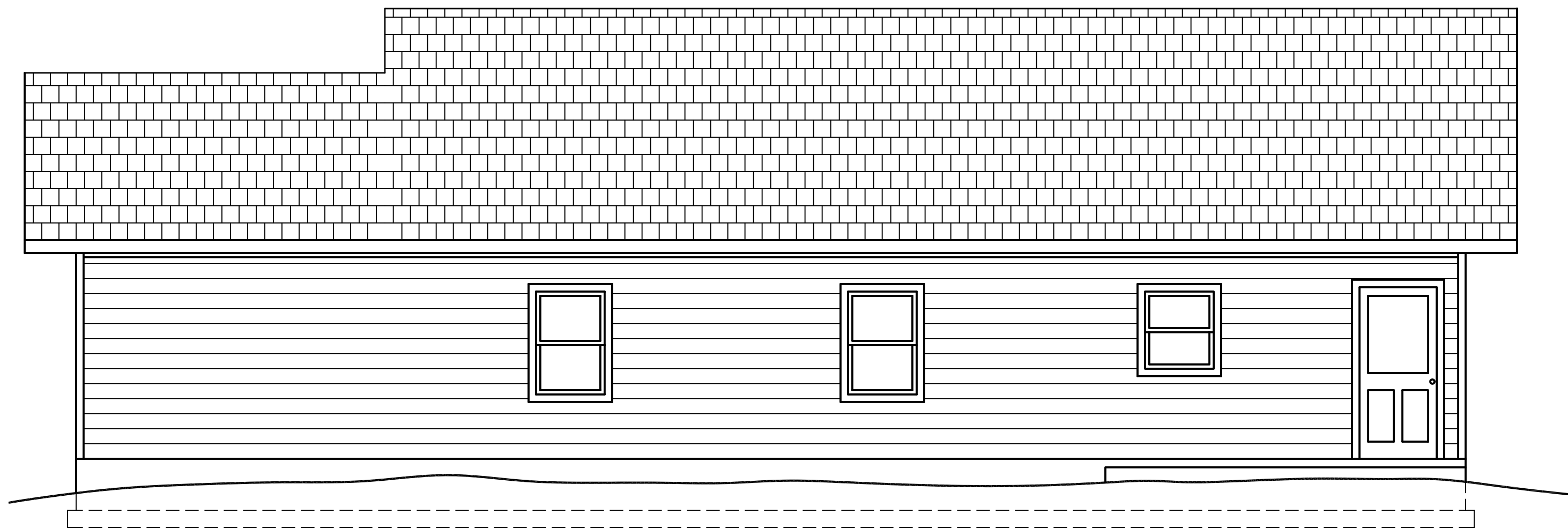
A



C-1
A-201
NORTH ELEVATION
1/4" = 1'-0" 0 2' 4' 8'



C-3
A-201
EAST(FRONT) ELEVATION
1/4" = 1'-0" 0 2' 4' 8'



A-1
A-201
WEST ELEVATION
1/4" = 1'-0" 0 2' 4' 8'



A-4
A-201
SOUTH ELEVATION
1/4" = 1'-0" 0 2' 4' 8'

1

2

3

4

5

6

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SHEET
TITLE

ELEVATIONS

SHEET NO.

A-201

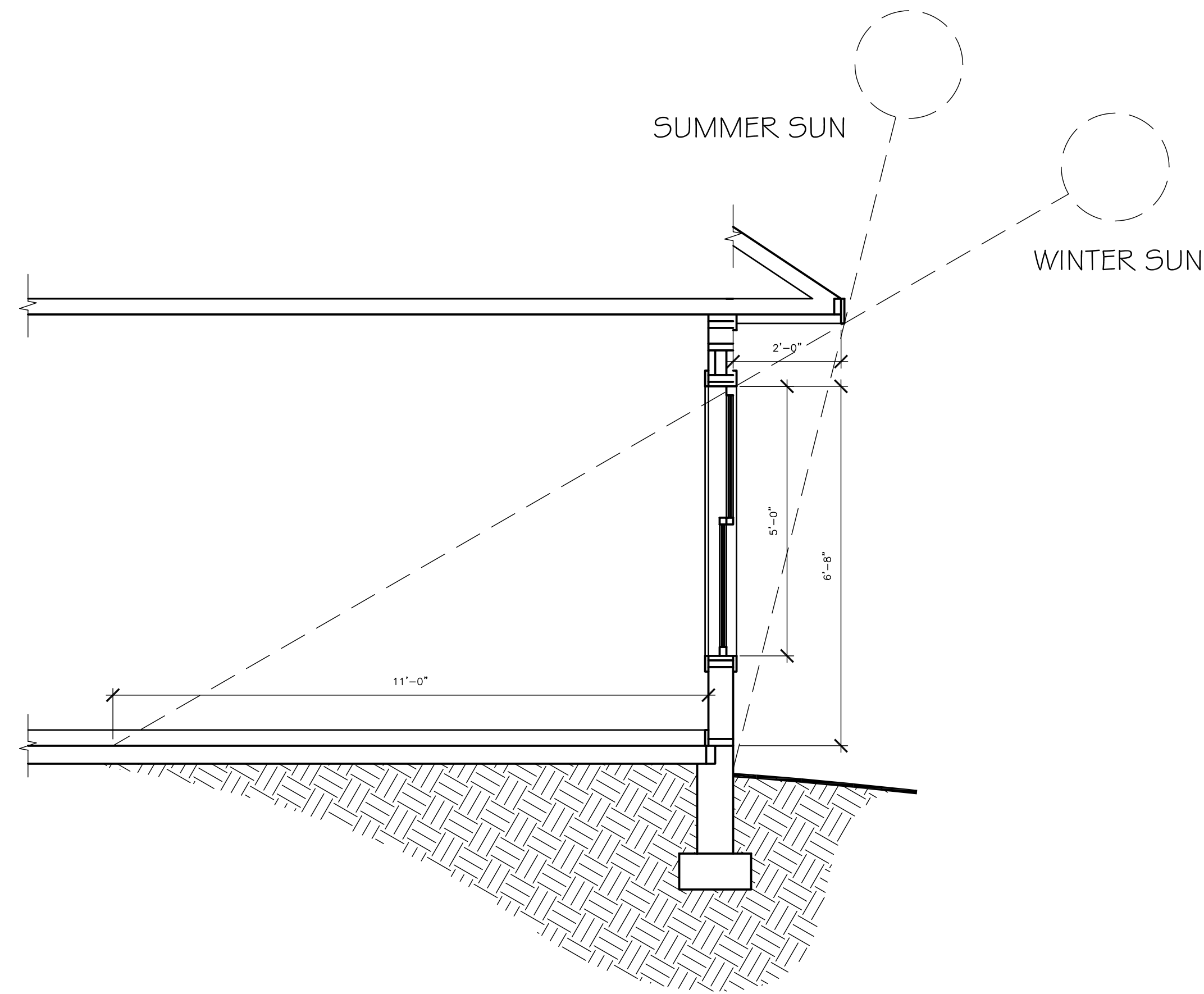
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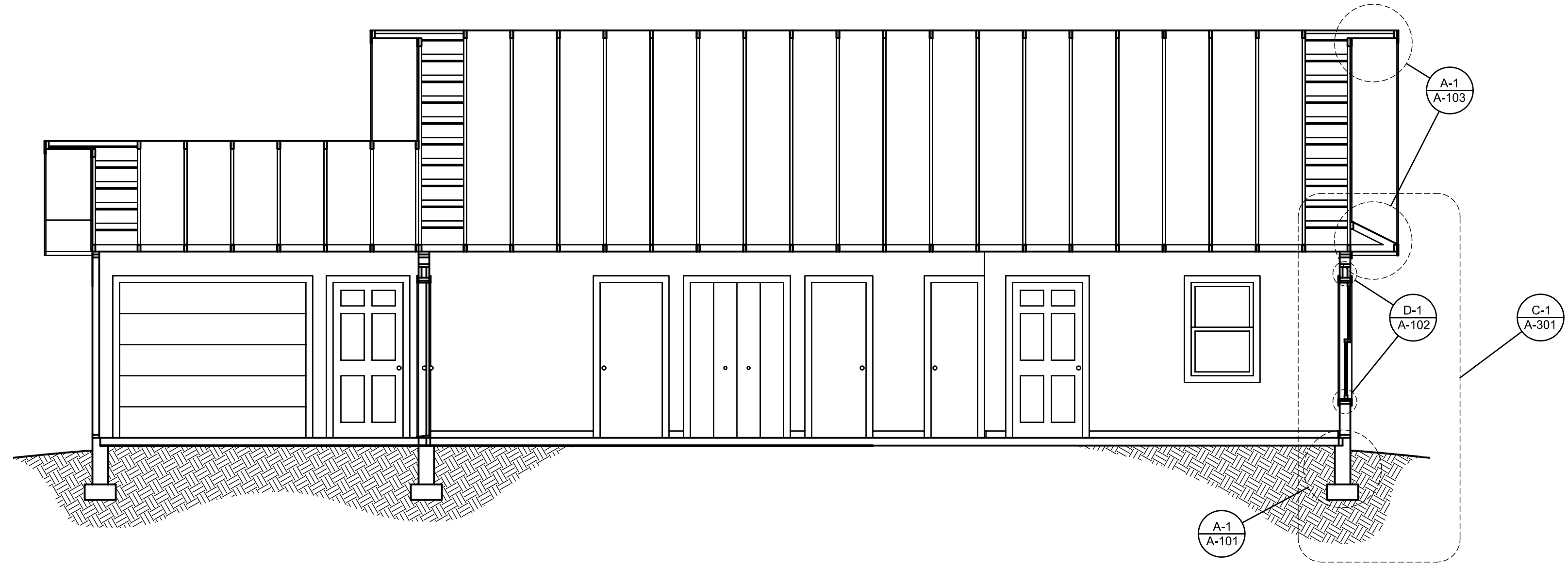
C

B

A



WALL SECTION
C-1
A-301
1/2" = 1'-0"
0 1' 2' 4'

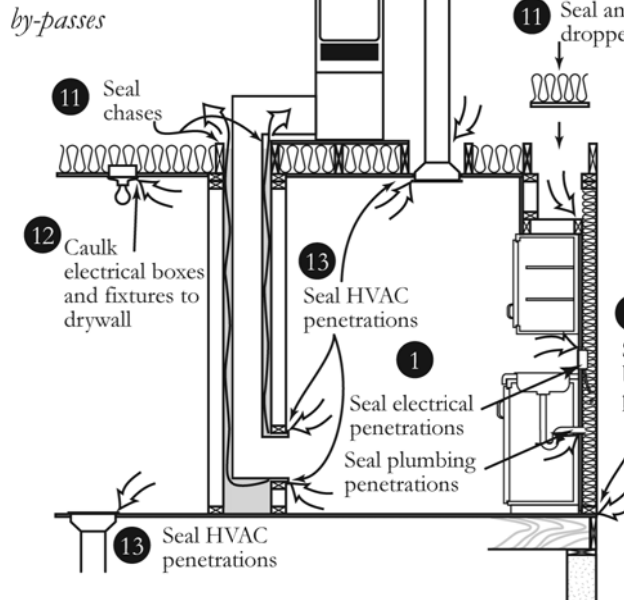


BUILDING SECTION
C-3
A-301
1/4" = 1'-0"
0 2' 4' 8'

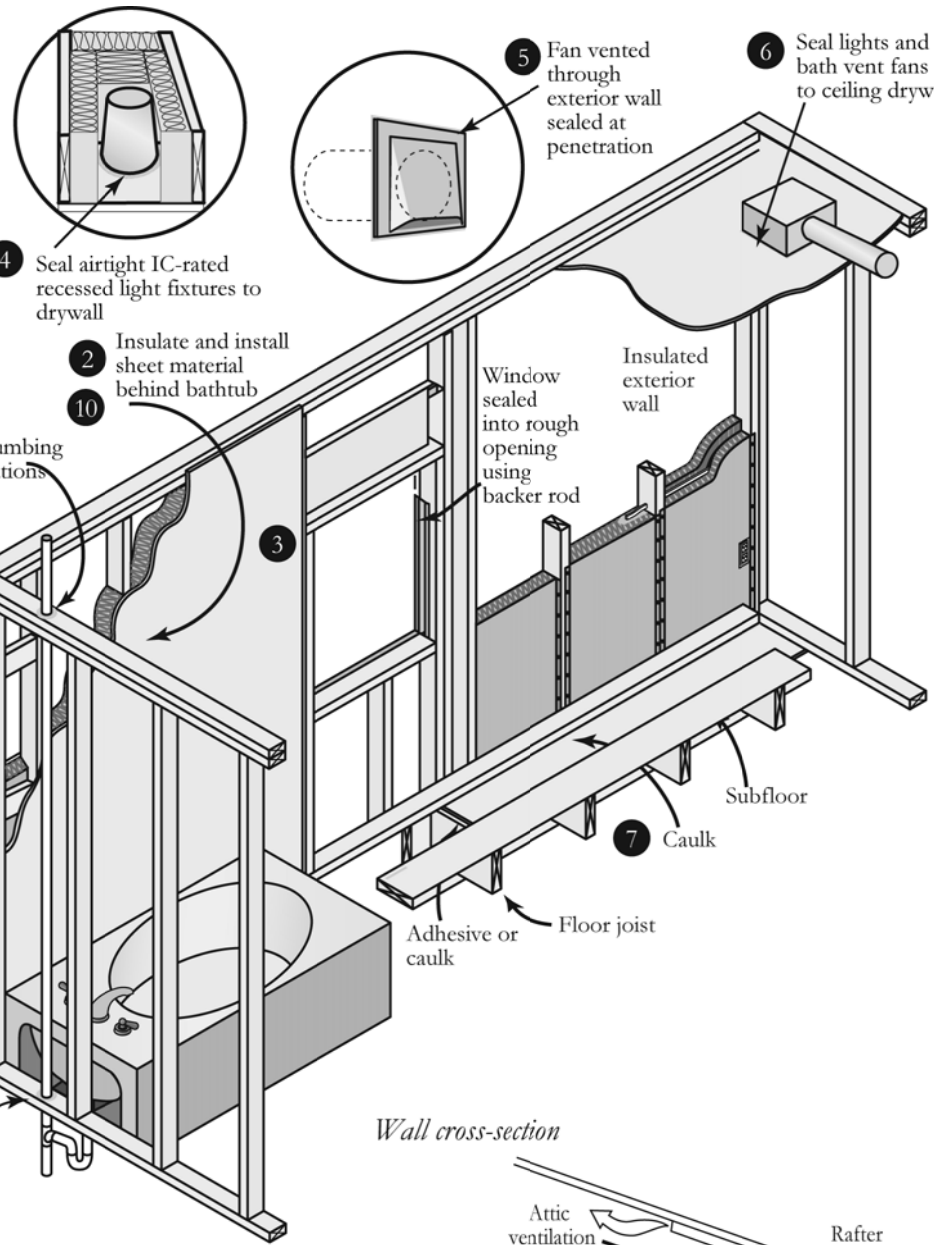
Air Sealing Key Points

1. Plate and wall penetrations by plumbing and electrical
2. Tub/shower on outside or attic wall
3. Window and door rough openings
4. Airtight, IG-rated recessed lights and electrical fixtures exposed to attic
5. Exterior wall exhaust fan terminations
6. Ceiling-mounted bath fans, speakers, etc.
7. Bottom plate and top plate
8. Seams between rigid exterior sheathing
9. Band area between floors, conditioned space and attic
10. Garden tub on exterior wall
11. Mechanical equipment and ductwork chases in attics, crawlspaces
12. Ceiling/crawlspace HVAC boots
13. Ceiling/crawlspace HVAC boots
14. Shower and tub drain line
15. Fireplace inserts
16. Attic kneewall doors
17. Joist cavities under attic kneewalls
18. Transition between ceiling heights
19. Attic scuttle hole
20. Attic pull-down stairs
21. Wall penetrations of mechanical combustion closets
22. Thresholds at mechanical combustion closet doors
23. Band joist exposed to exterior
24. Band area exposed to unconditioned space (such as basement or garage)
25. Exterior wall penetrations for refrigeration lines, condensate line, etc.

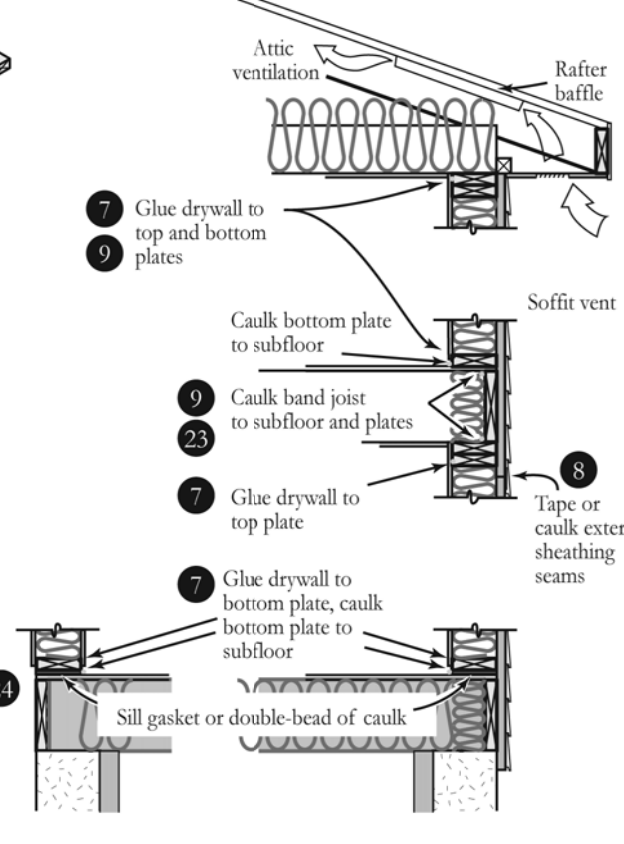
Chases and common by-passes



1



Wall cross-section



2

