



Residential Construction CERTIFIED™

Certification Worksheets

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Dennis J. Walsh and Associates, Inc. Certified New Home Specialist™

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Architectural Drawing Process

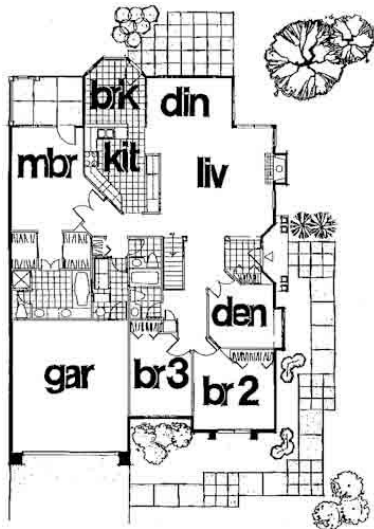
Module 1

Steps in the drawing process:

1. _____
2. _____
3. _____
4. _____

Orthographic Projection

1. _____



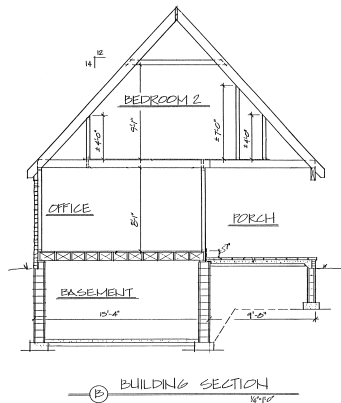
2. _____



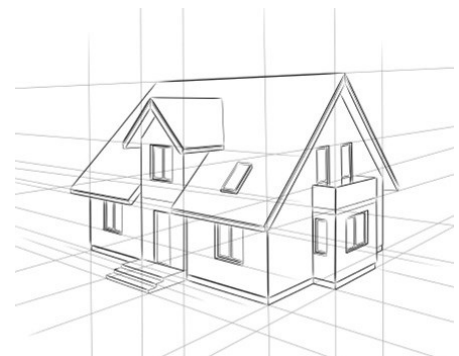
3. _____



4. _____



5. _____



Architectural Scales

Architectural Scale Rulers

1. _____

2. _____

Examples of Scales

1/8" scale means _____

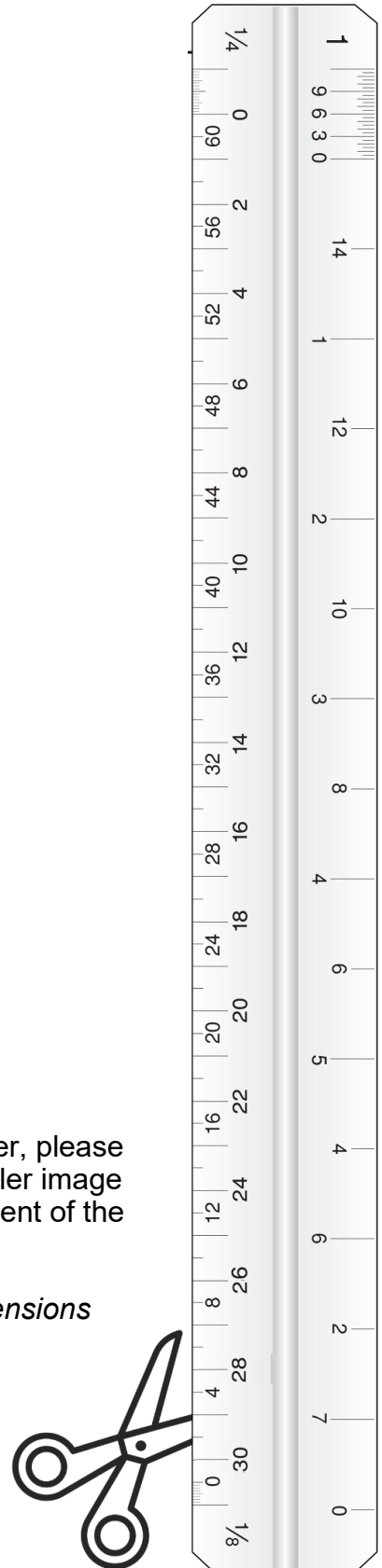
1/4" scale means _____

30' scale means _____

50' scale means _____

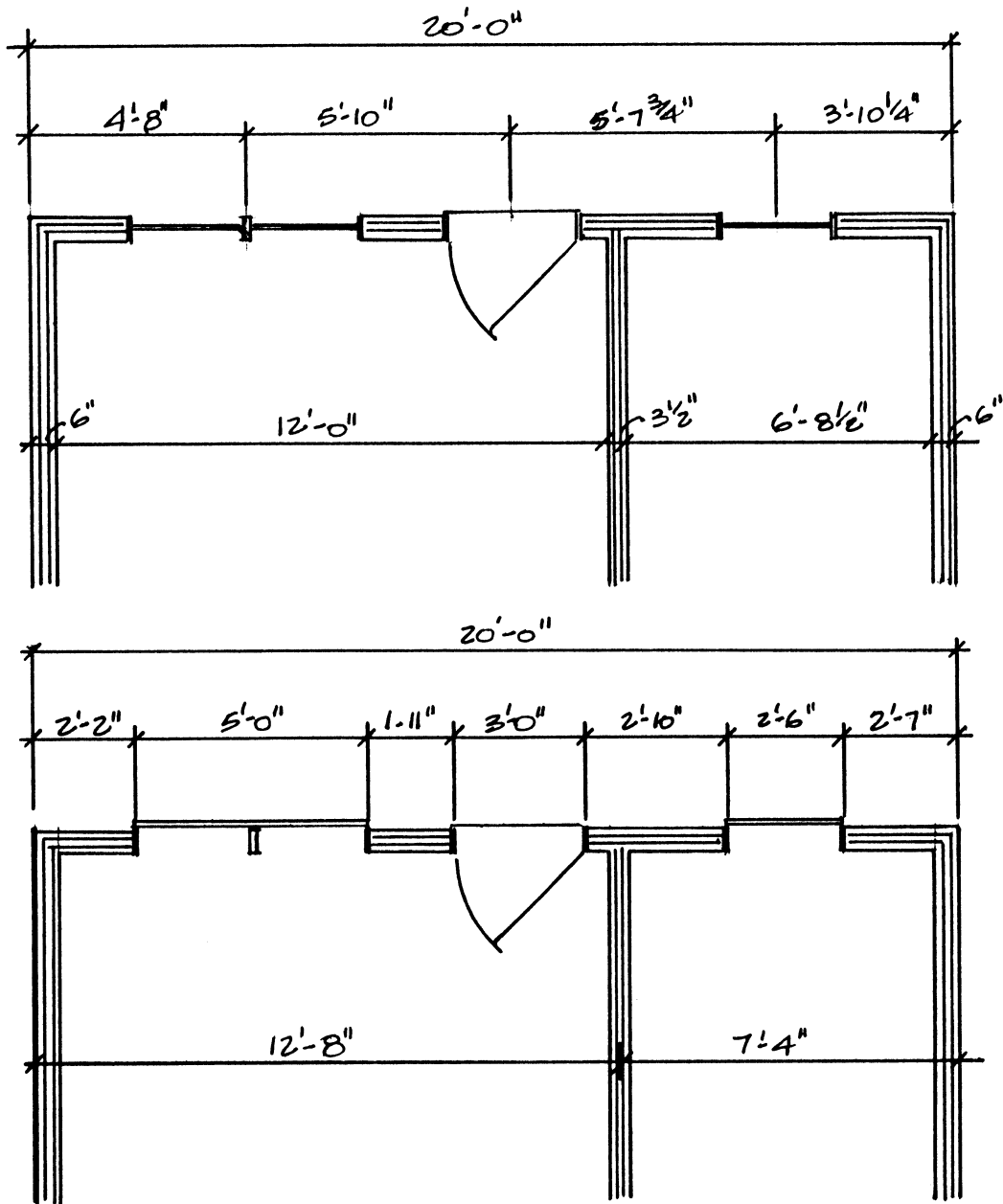
If you do not have access to an architectural scale ruler, please print an additional copy of this page and cut out the ruler image to work along with the "Dimensions and Scales" segment of the course.

Please note: Due to variations when printing, the dimensions on this image may not be exact.



Using an Architectural Scale Ruler

Module 1










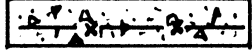
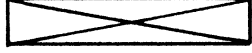

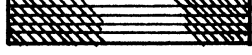


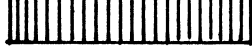
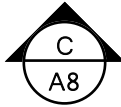
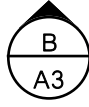
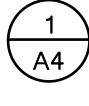
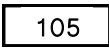


The Golden Rule of Dimensioning:

_____ takes precedence over _____.

Unit Dimension: _____

Rough Opening: _____

Material and Plan Symbols

																			
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--	---	---	---

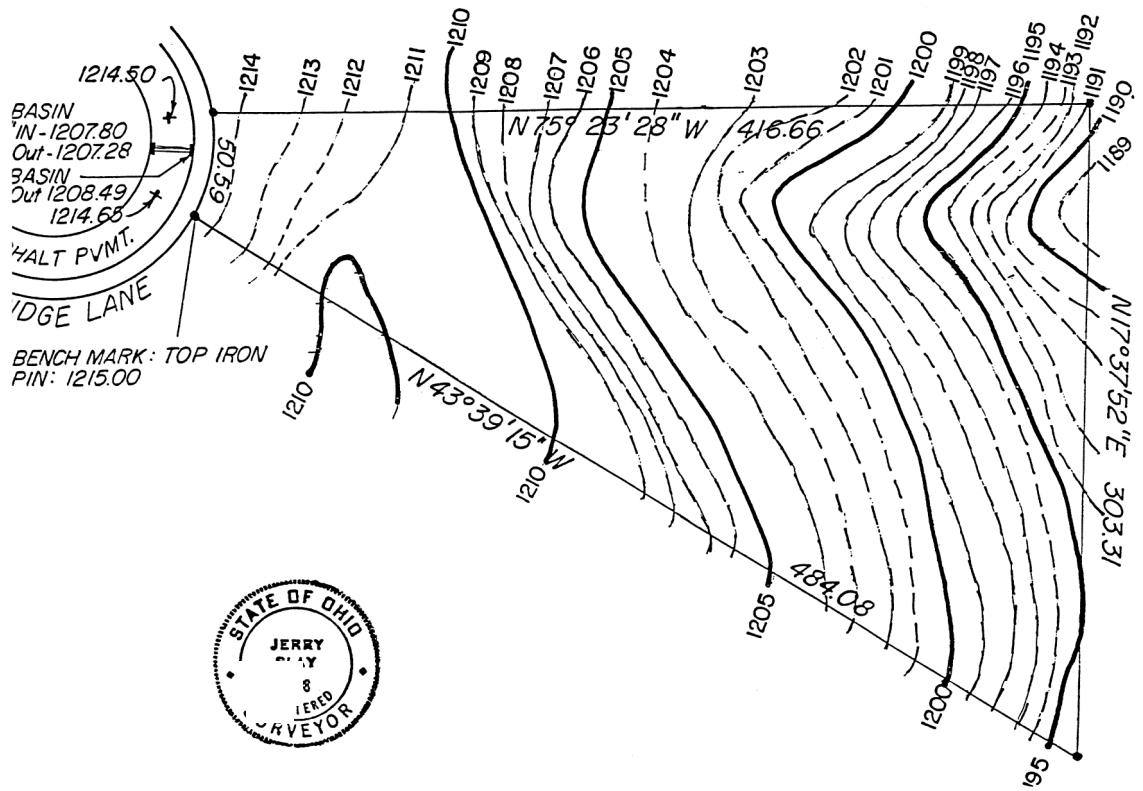
Site Design & Evaluation

The building site impacts the home in three areas:

1. _____
2. _____
3. _____

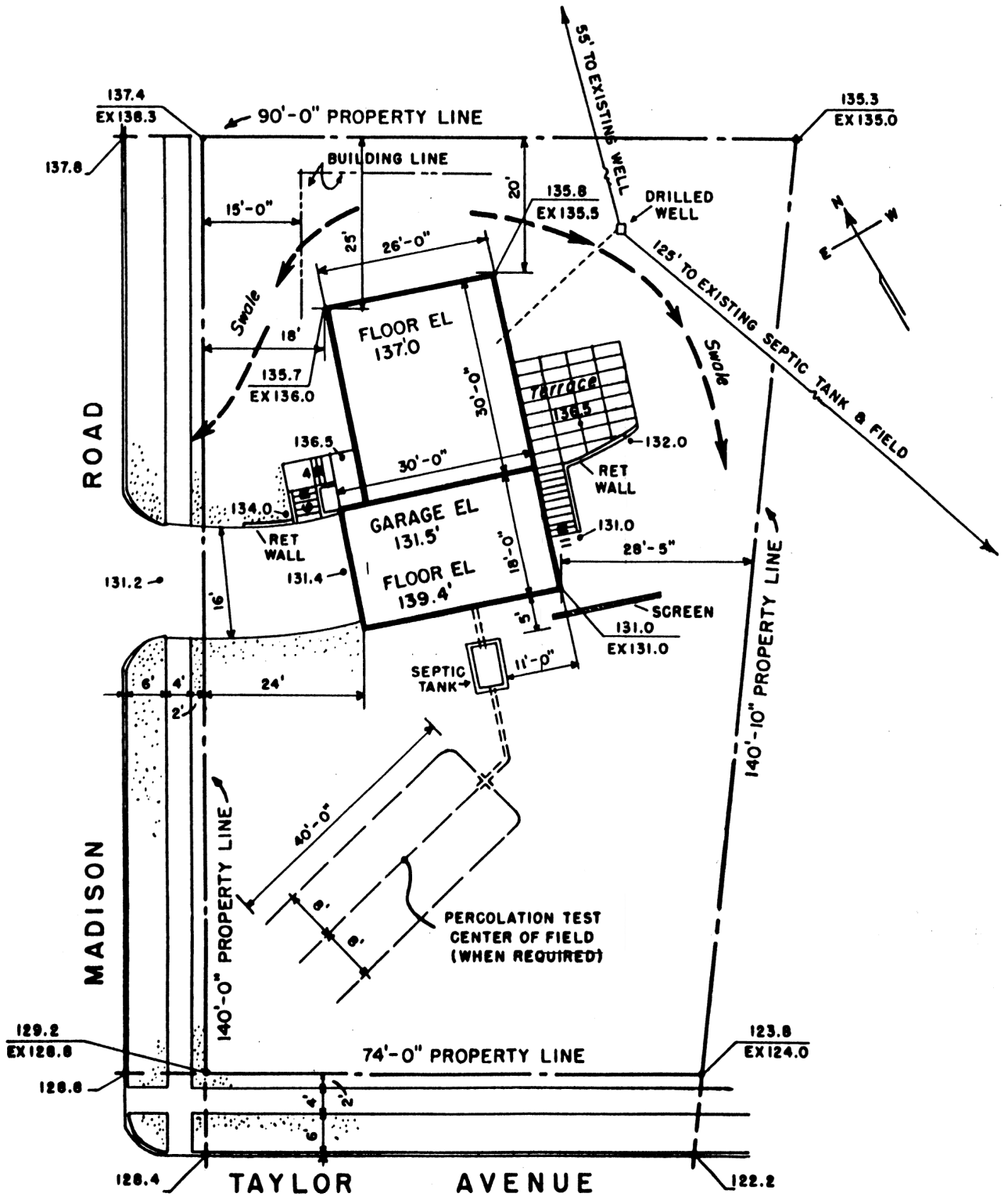
Typical home site design drawings:

1. _____
2. _____
3. _____
4. _____



Site Development Plan

Module 2





SITE EVALUATION CHECKLIST

Customer _____ Phone _____

Site Location _____ Size _____

Site Owner _____ Phone _____

Sales Agent _____ Phone _____

Price _____ Utilities _____

Amenities _____

Notes _____

STATUS	
<input type="checkbox"/> +	Positive
<input type="checkbox"/> -	Negative
<input type="checkbox"/> ?	Needs Follow-up

STATUS

STATUS

- Accessory Buildings
- Amenities
- Architectural Review
- Assessments
- Building Design
- Character
- Clearing
- Community Features
- Convenience
- Deed Restrictions
- Drainage
- Driveway
- Easements
- Electric Service
- Flood Plain
- Gas Service
- Grading Requirements

- Impact Fees
- Liens
- Neighboring Properties
- Prestige
- Privacy
- Security
- Setbacks
- Septic System
- Sewers
- Soil Conditions
- Trees
- Views
- Water Service
- Well
- Wetlands
- Zoning Restrictions
- _____

Dynamics of Scheduling

Construction scheduling is a dynamic process impacted by:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____



RESIDENTIAL CONSTRUCTION SCHEDULING FLOW CHART

INSPECTIONS	CATEGORIES	WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1																												
2																												
3																												
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41																												

RESIDENTIAL CONSTRUCTION SCHEDULING FLOW CHART

INSPECTIONS	CATEGORIES	WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
1																														
2																														
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41																														

Construction Scheduling Worksheet

The following list includes major activities necessary for scheduling the construction of a new home. These activities are in mixed order... can you number them according to their normal sequence during construction? Give it a try!

- | | |
|---|---|
| <input type="checkbox"/> SEWER LINES | <input type="checkbox"/> BACKFILL |
| <input type="checkbox"/> CLEAN UP | <input type="checkbox"/> CONCRETE FLOOR |
| <input type="checkbox"/> FINISH SPECIAL MECHANICALS | <input type="checkbox"/> MIRRORS |
| <input type="checkbox"/> FRAMING | <input type="checkbox"/> BATH ACCESSORIES |
| <input type="checkbox"/> FINAL GRADING | <input type="checkbox"/> WATER SERVICE / WELL |
| <input type="checkbox"/> CABINETS / TOPS | <input type="checkbox"/> CHIMNEYS/FIREPLACE |
| <input type="checkbox"/> ROUGH PLUMBING | <input type="checkbox"/> FINISH PLUMBING |
| <input type="checkbox"/> HARD SURFACE FLOOR | <input type="checkbox"/> ROOFING |
| <input type="checkbox"/> CARPETING | <input type="checkbox"/> PHONE SERVICE |
| <input type="checkbox"/> EXCAVATION | <input type="checkbox"/> EXTERIOR FINISH |
| <input type="checkbox"/> GUTTERS/DOWNSPOUTS | <input type="checkbox"/> LANDSCAPING |
| <input type="checkbox"/> ELECTRIC SERVICE | <input type="checkbox"/> SPECIAL MECHANICALS |
| <input type="checkbox"/> SURVEY / STAKEOUT | <input type="checkbox"/> ROUGH HEATING |
| <input type="checkbox"/> LIGHT FIXTURES | <input type="checkbox"/> FINAL CLEAN-UP |
| <input type="checkbox"/> APPLIANCES | <input type="checkbox"/> FINISH CARPENTRY |
| <input type="checkbox"/> FOUNDATION | <input type="checkbox"/> GAS SERVICE |
| <input type="checkbox"/> PAINTING | <input type="checkbox"/> INSULATION |
| <input type="checkbox"/> LOCKSETS / HARDWARE | <input type="checkbox"/> ROUGH ELECTRICAL |
| <input type="checkbox"/> WALKS/DRIVEWAY | <input type="checkbox"/> DRYWALL |
| <input type="checkbox"/> CLEARING | <input type="checkbox"/> WINDOWS/DOORS |
| <input type="checkbox"/> FINISH ELECTRICAL | <input type="checkbox"/> SEPTIC |
| <input type="checkbox"/> UNDERGROUND PLUMBING | <input type="checkbox"/> FINISH HEATING |



Foundations, Materials, and Considerations

Types of residential foundations:

1. _____
2. _____
3. _____
4. _____

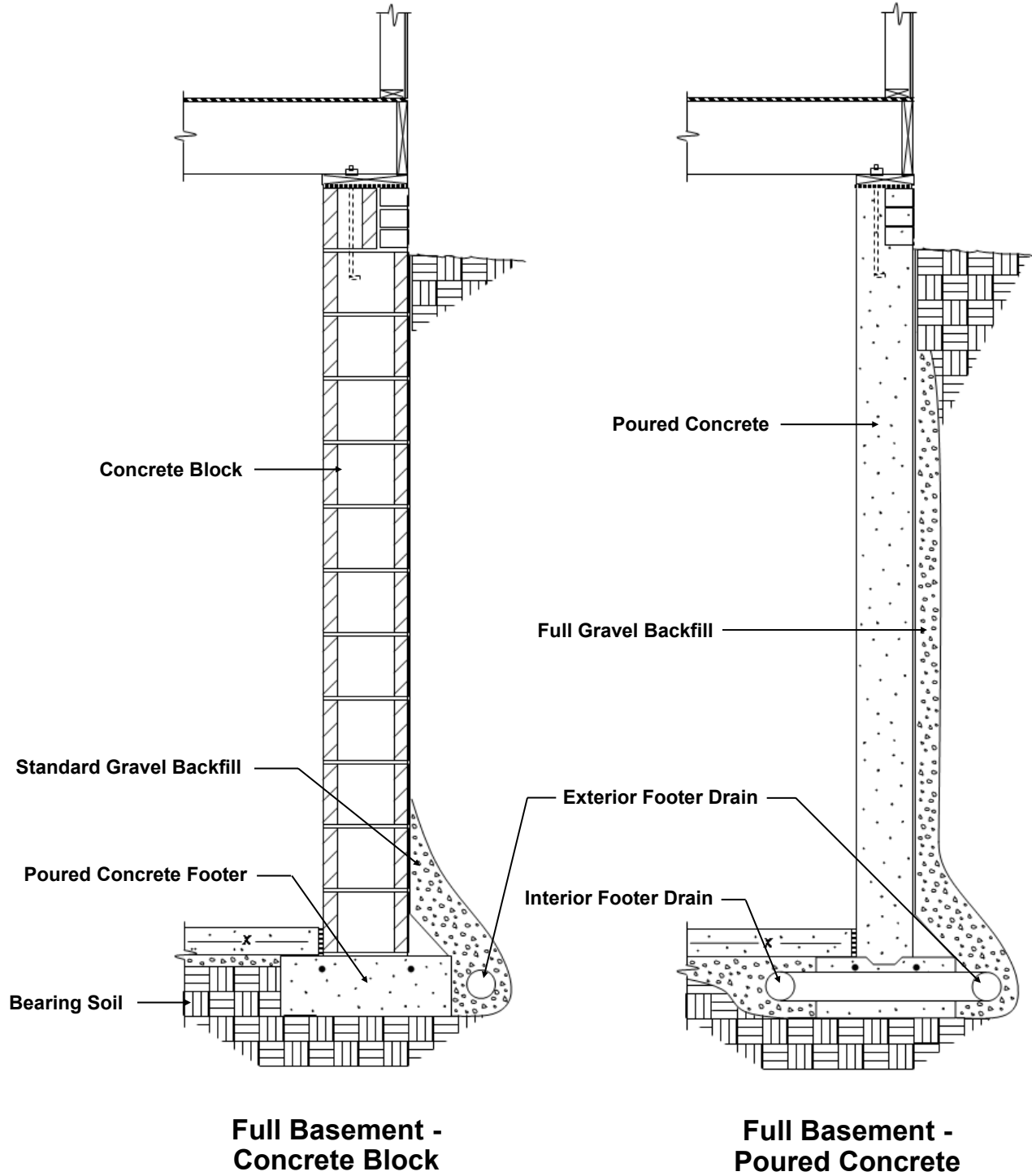
Foundation materials:

1. _____
2. _____
3. _____
4. _____

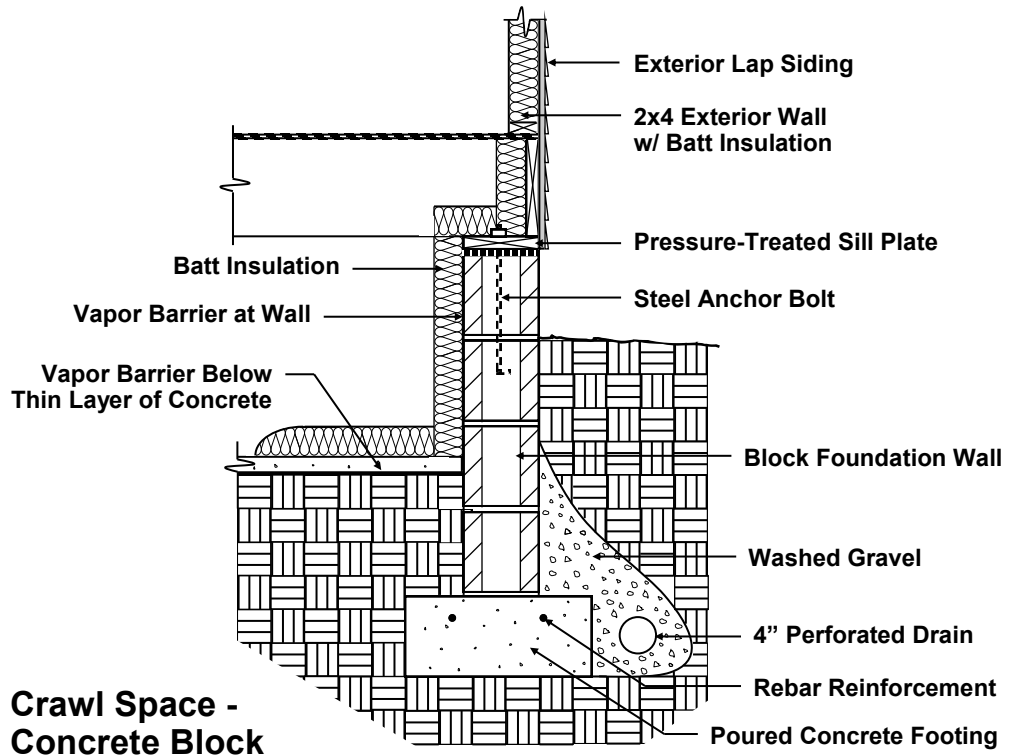
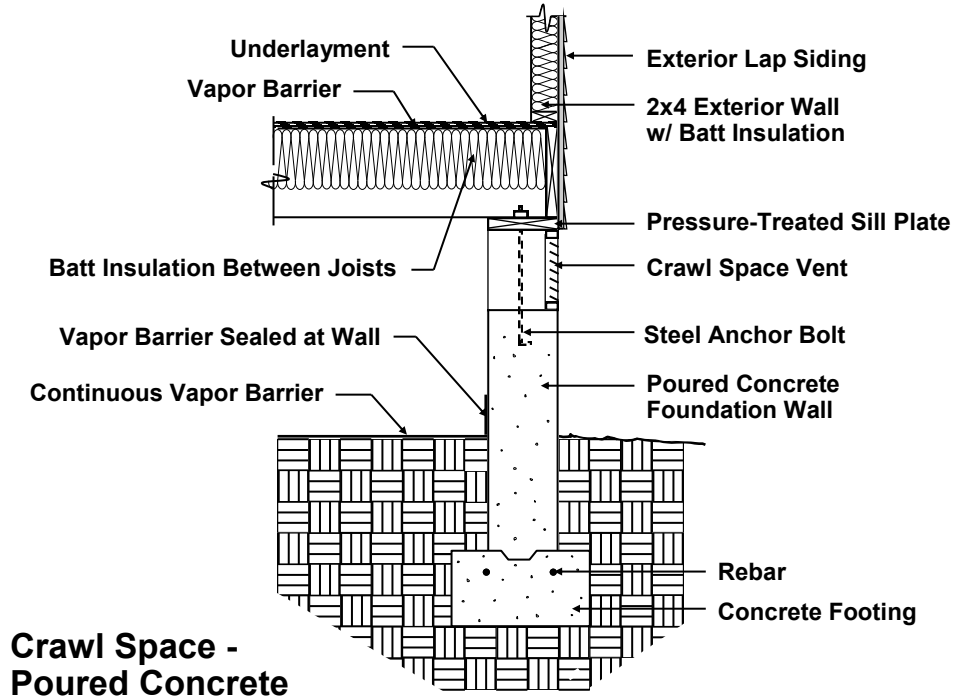
Primary foundation considerations:

1. _____
2. _____
3. _____

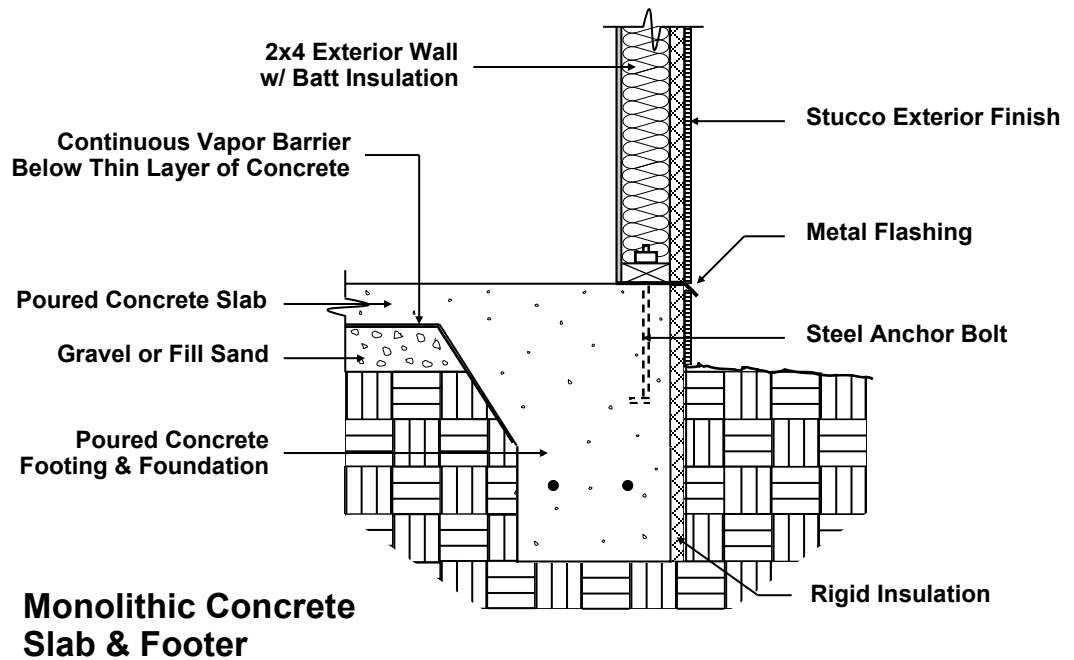
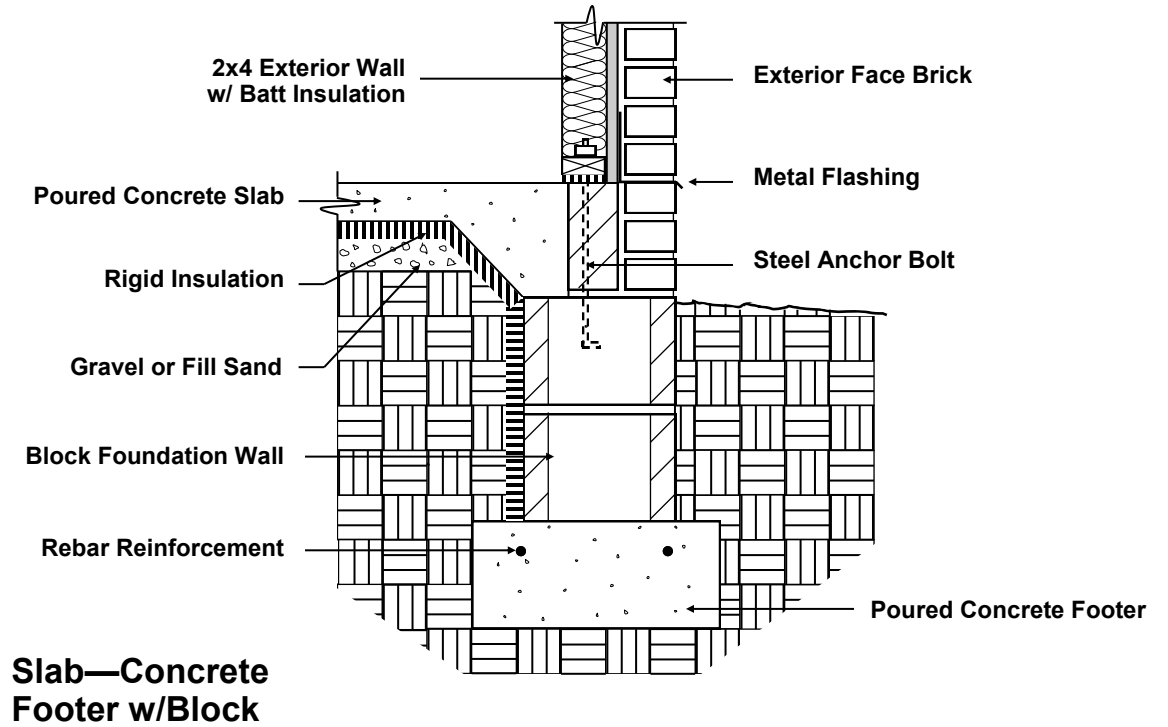
Foundation Details



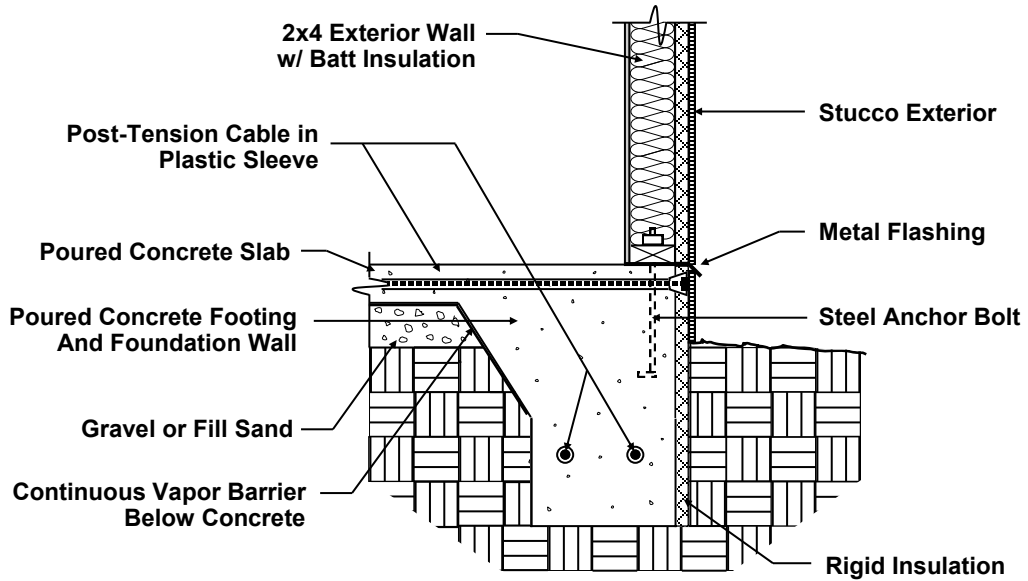
Foundation Details



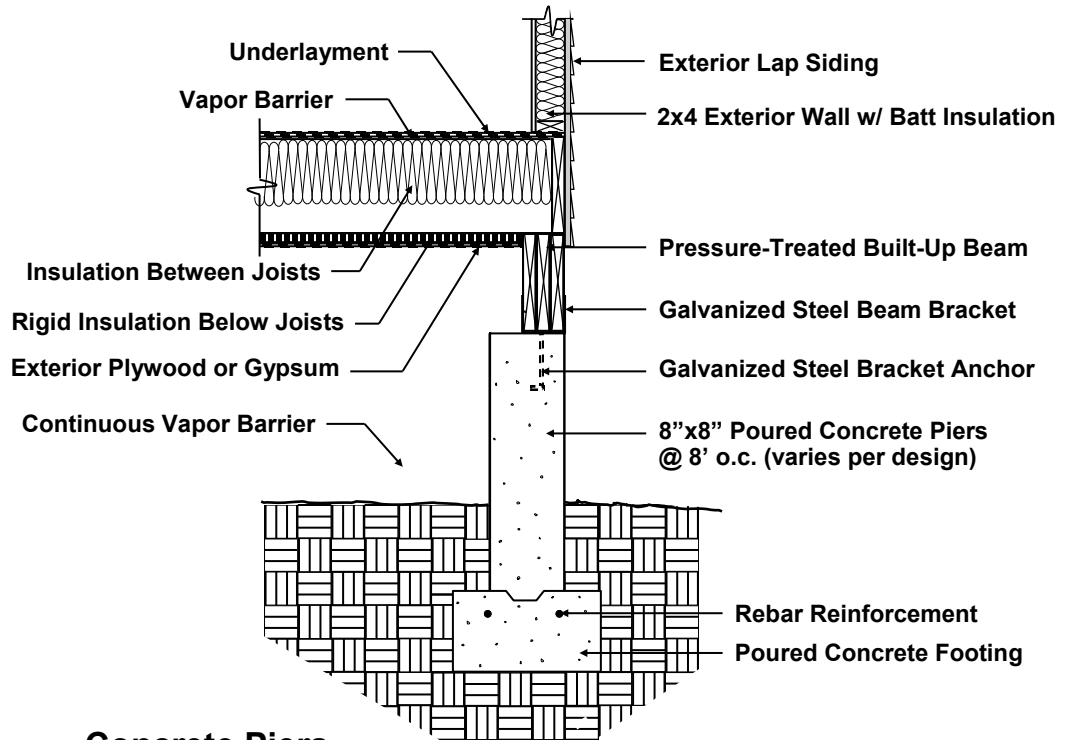
Foundation Details



Foundation Details

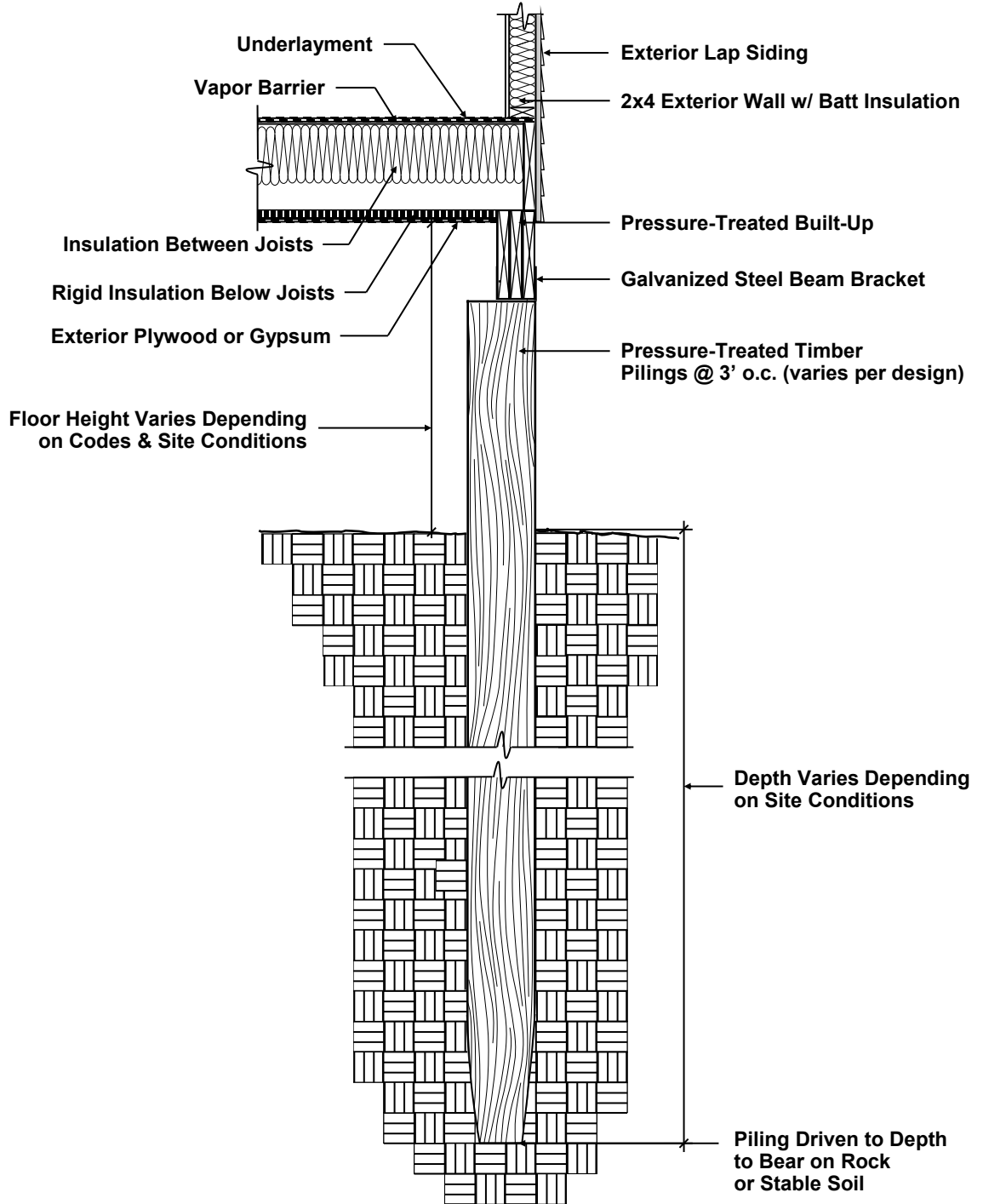


Post-Tension Concrete Slab



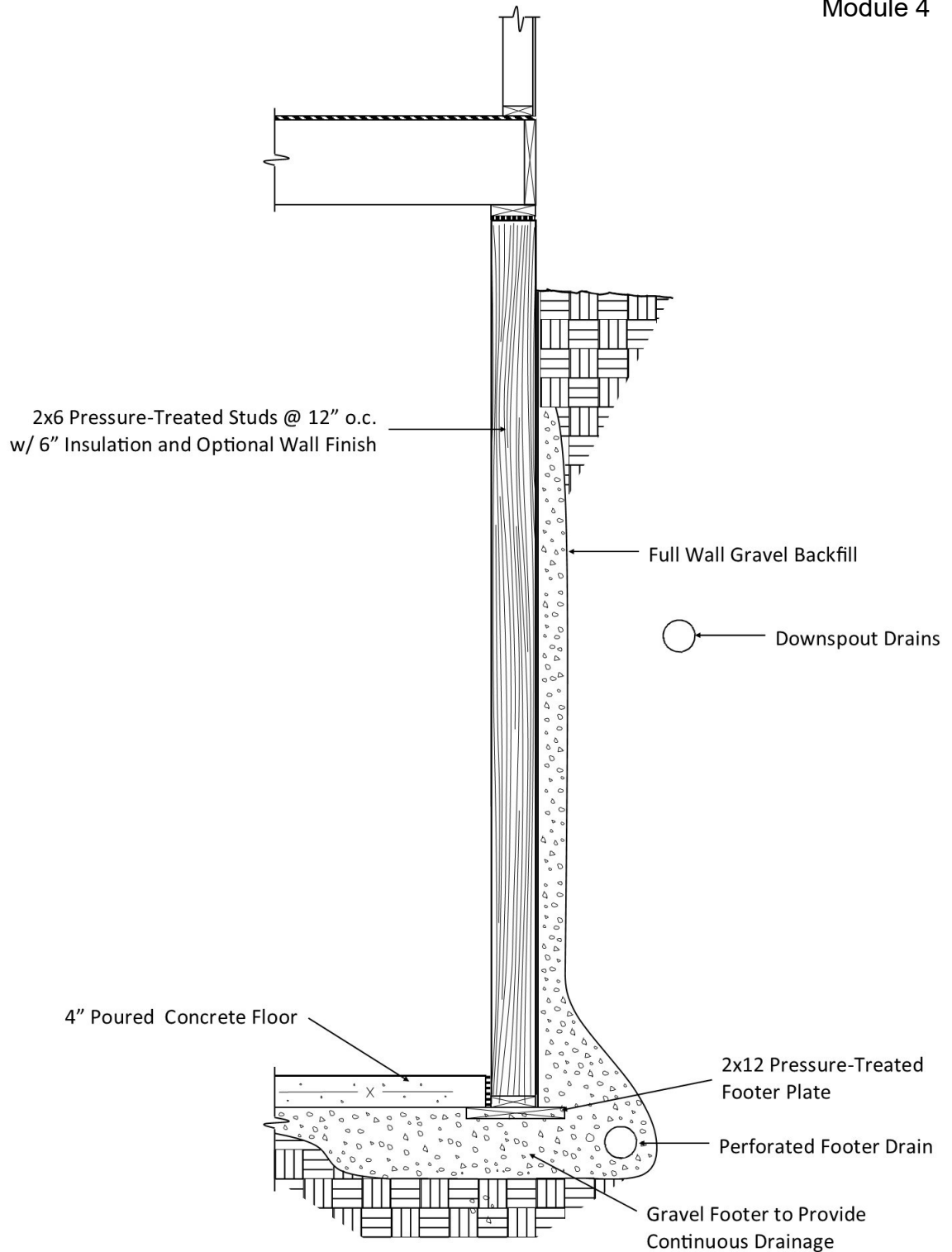
Concrete Piers

Foundation Details



Pressure-Treated Wood Pilings

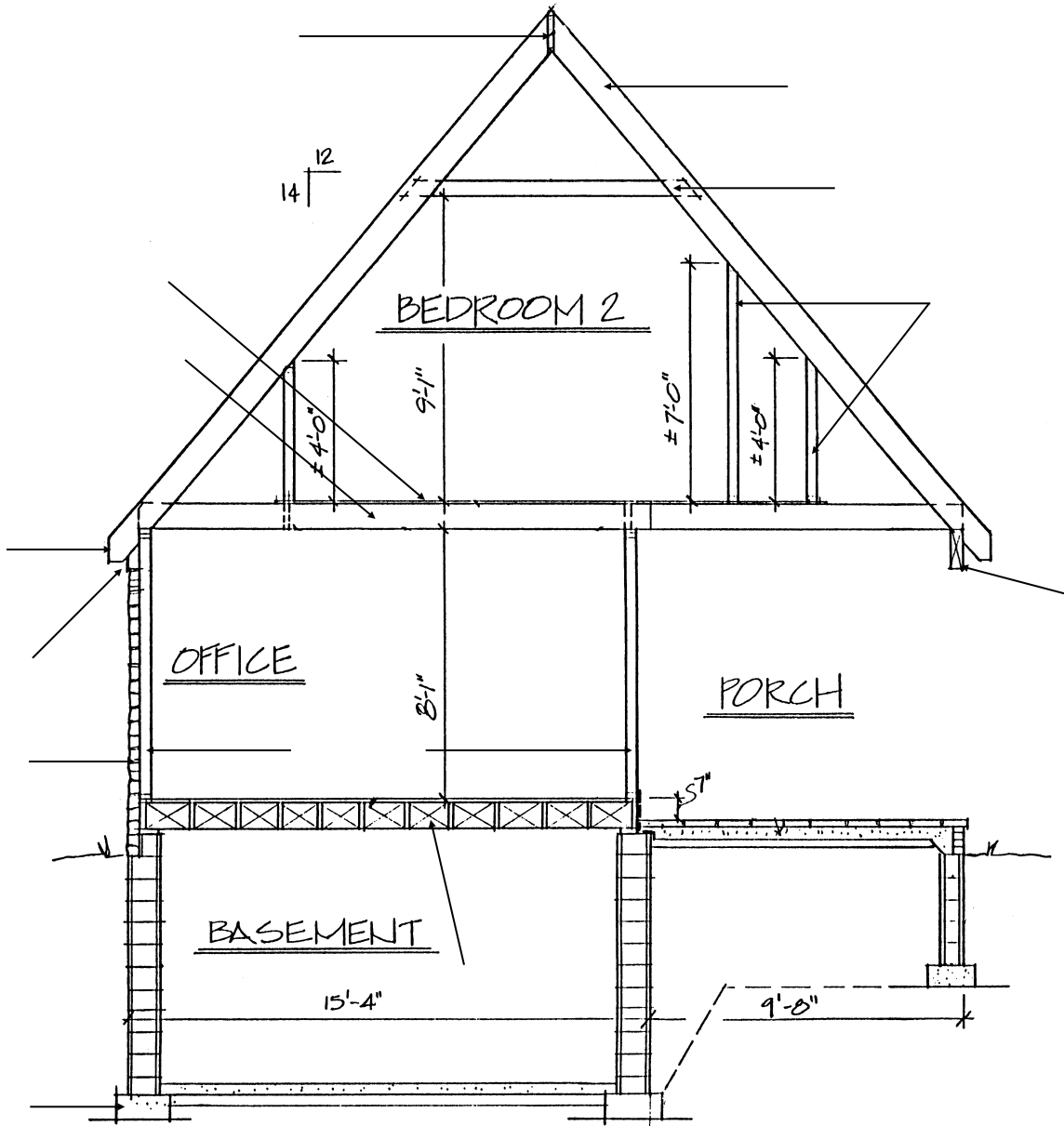
Foundation Details



Permanent Wood Foundation

Permanent Wood Foundation

Structure & Terminology



ⓑ BUILDING SECTION
1/4" = 1'-0"

Dimensional Lumber & Structural Loads

Nominal Dimensions	Actual Dimensions
1 x 2	3/4" x 1-1/2"
1 x 3	3/4" x 2-1/2"
1 x 4	3/4" x 3-1/2"
1 x 5	3/4" x 4-1/2"
1 x 6	3/4" x 5-1/2"
1 x 7	3/4" x 6-1/4"
1 x 8	3/4" x 7-1/4"
1 x 10	3/4" x 9-1/4"
1 x 12	3/4" x 11-1/4"
5/4 x 4	1" x 3-1/2"
5/4 x 6	1" x 5-1/2"
5/4 x 8	1" x 7-1/4"
5/4 x 10	1" x 9-1/4"
5/4 x 12	1" x 11-1/4"
2 x 4	1-1/2" x 3-1/2"
2 x 6	1-1/2" x 5-1/2"
2 x 8	1-1/2" x 7-1/4"
2 x 10	1-1/2" x 9-1/4"
2 x 12	1-1/2" x 11-1/4"
4 x 4	3-1/2" x 3-1/2"
4 x 6	3-1/2" x 5-1/2"
6 x 6	5-1/2" x 5-1/2"
8 x 8	7-1/4" x 7-1/4"

Dead Loads: _____

Live Loads: _____

Joists and rafters are designed to limit _____

Panel Materials

Wood structural panels:

1. _____

2. _____

3. _____

Additional panel materials:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Framing Systems & Alternative Structural Components

Module 6

Framing systems:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

Alternative structural components:

1. _____

2. _____

3. _____

Earthquake & Wind Resistance

Module 7

Earthquake and wind resistance details

1. _____

2. _____

3. _____

4. _____

5. _____

Earthquake specific details

1. _____

2. _____

3. _____

4. _____

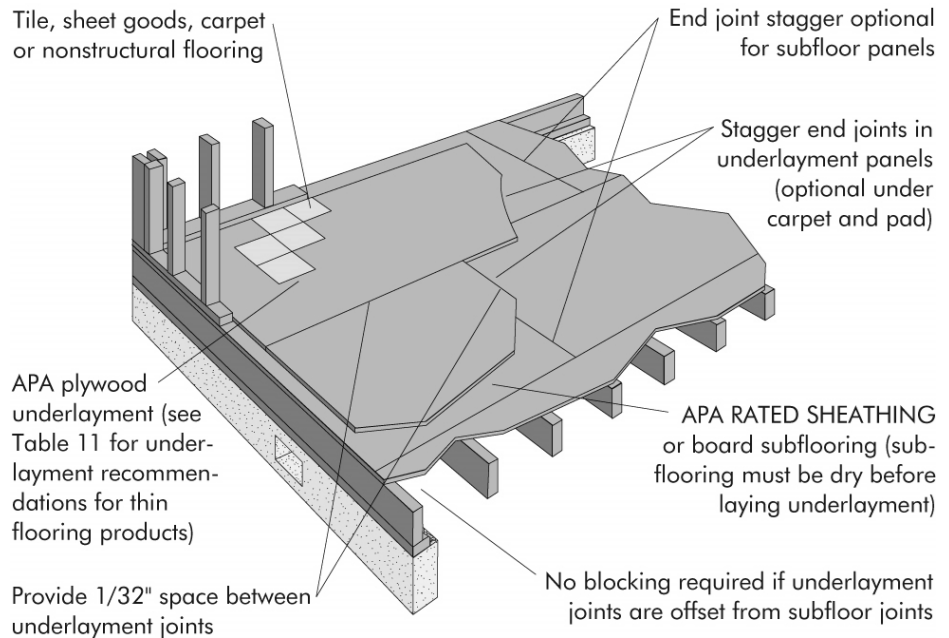
High wind resistance details

1. _____

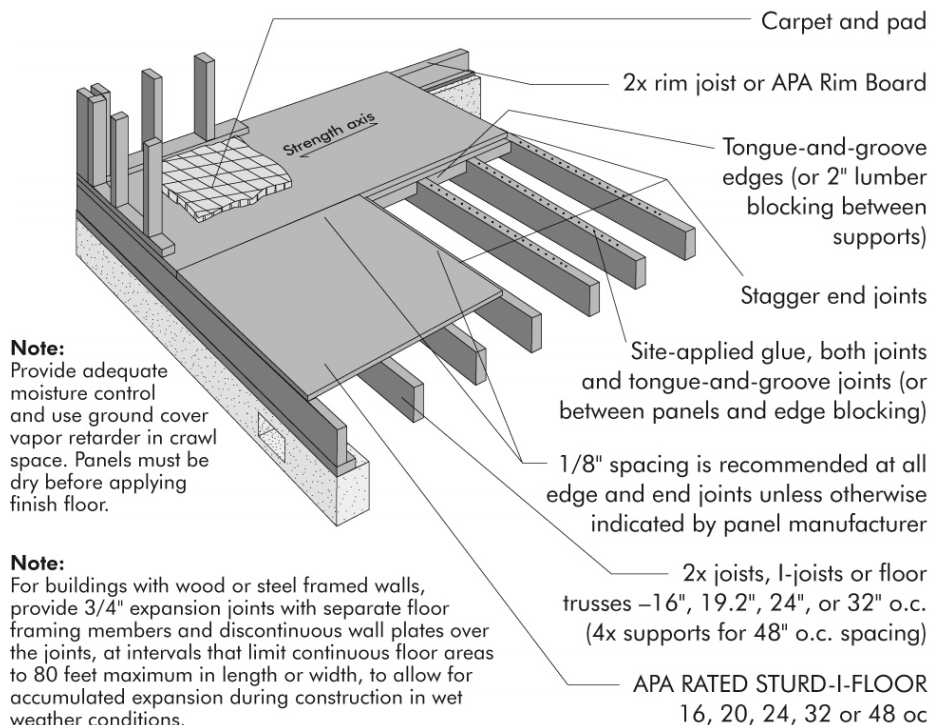
2. _____

Floor Construction

Double Layer Floor System

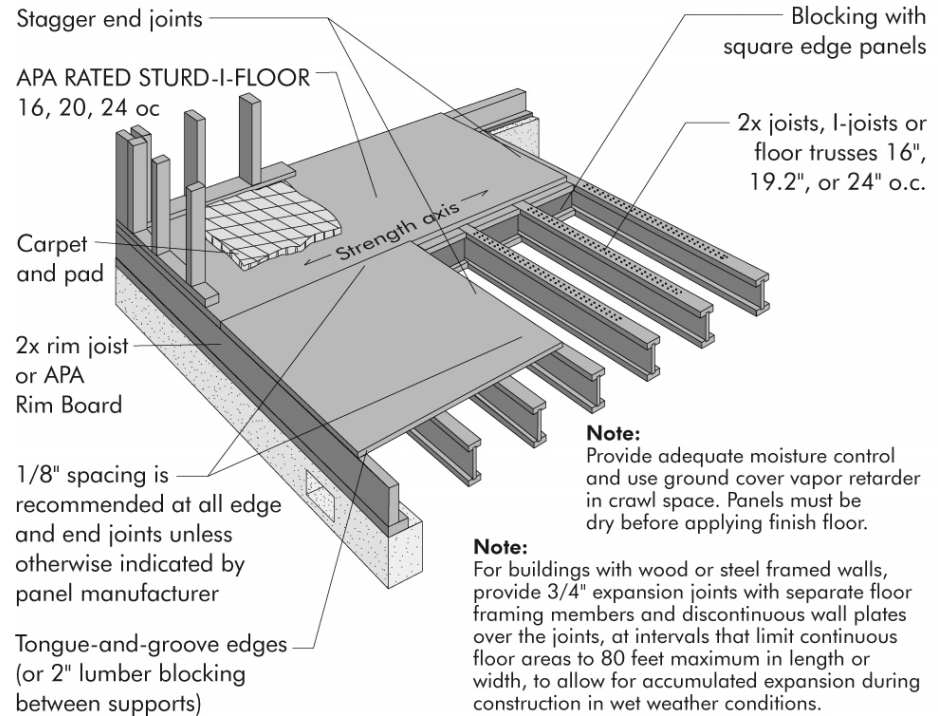


Single Layer Floor System

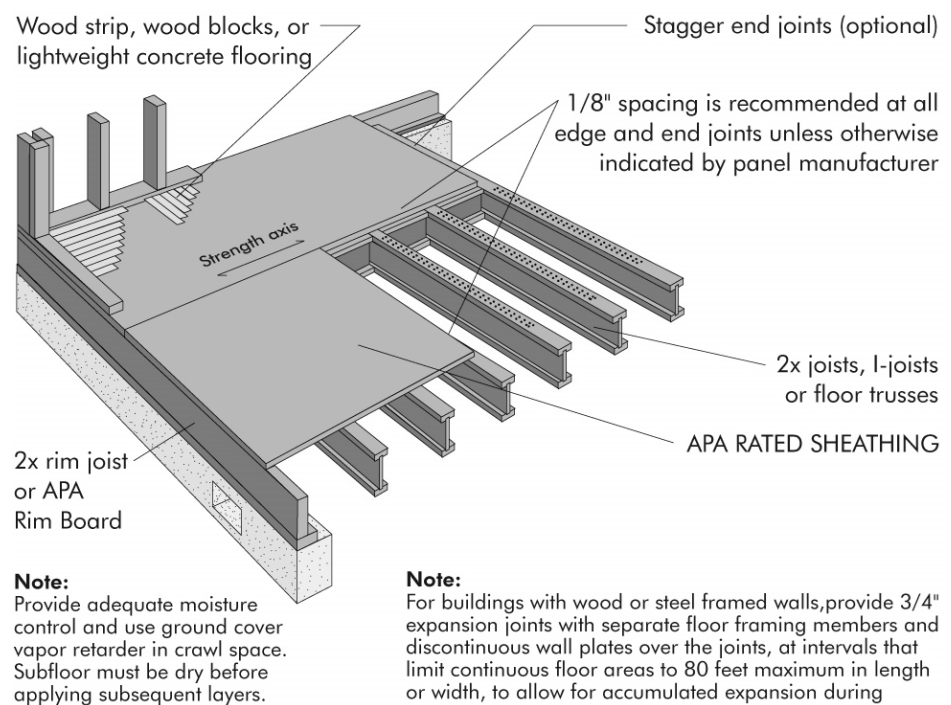


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Single Layer Wooden I-joist Construction



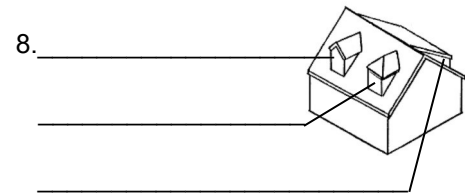
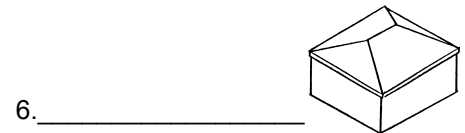
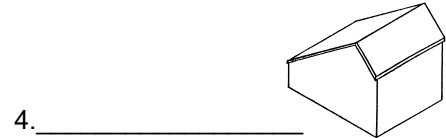
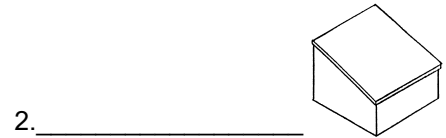
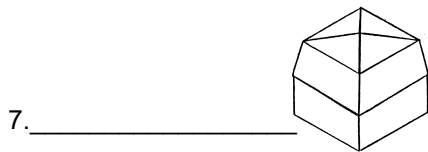
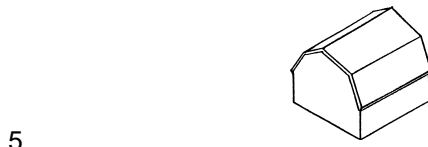
Double Layer Wooden I-joist Construction



Images used with permission of the American Plywood Association

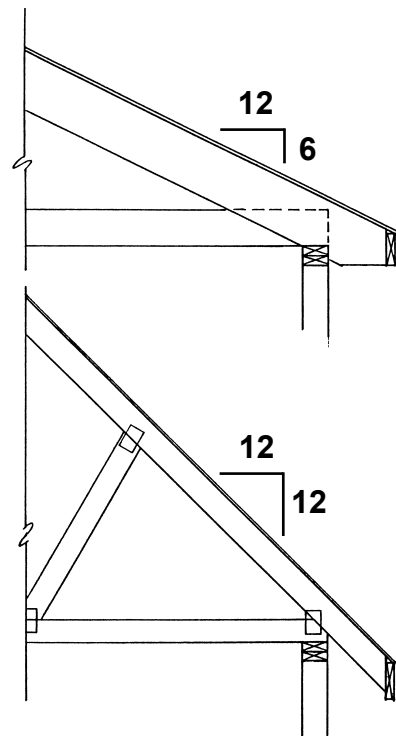
Roof Types and Pitches

Roof Types

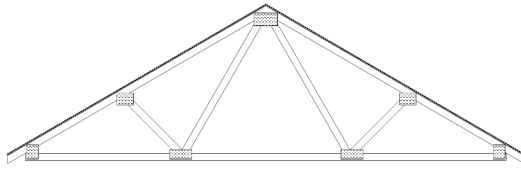


Roof Pitches

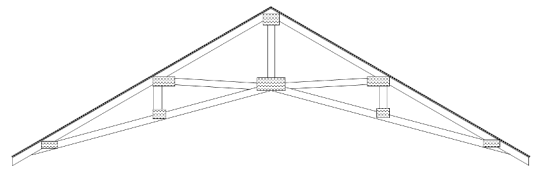
Roof pitches are described as a ratio between _____ & _____.



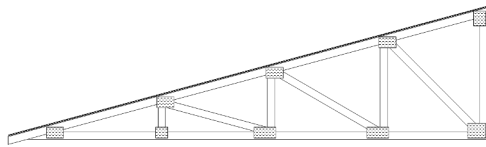
Roof Construction



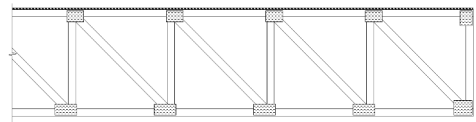
1. _____



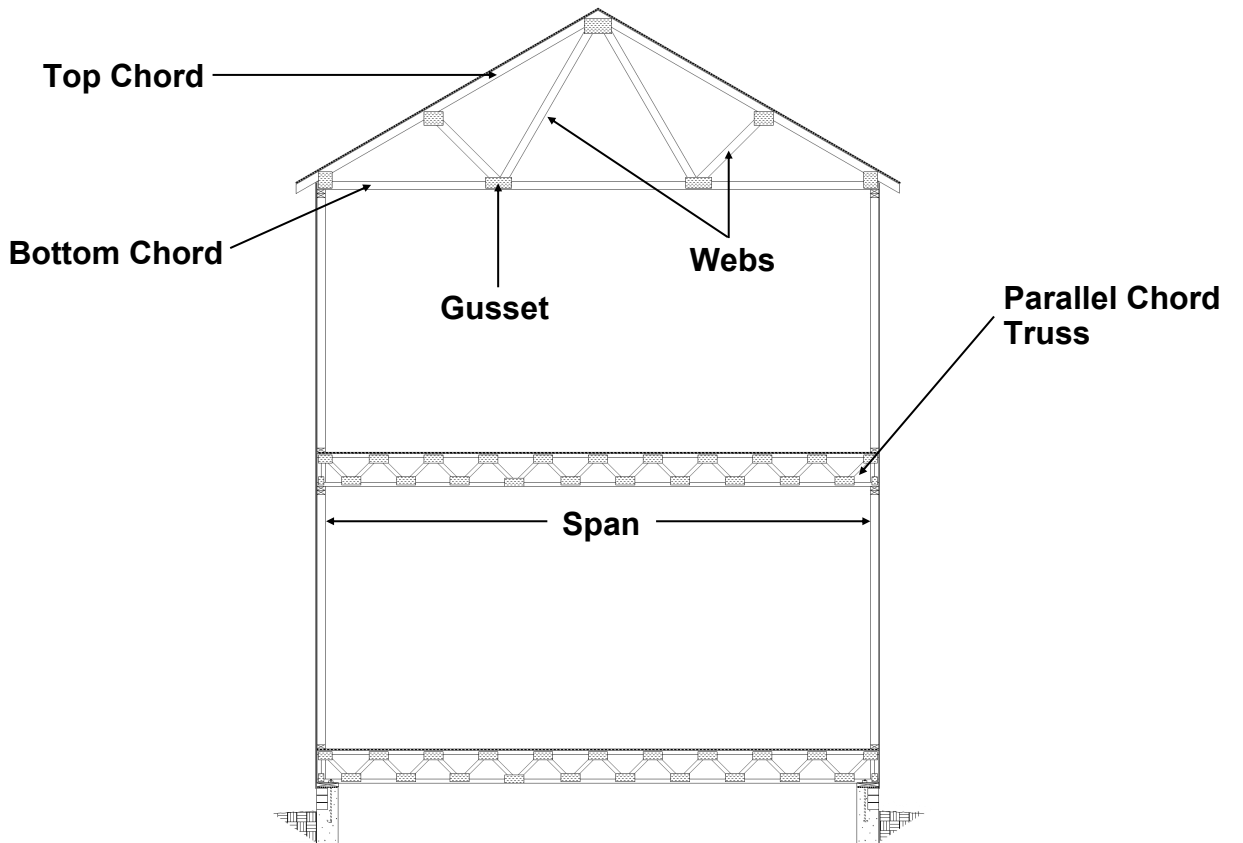
2. _____



3. _____

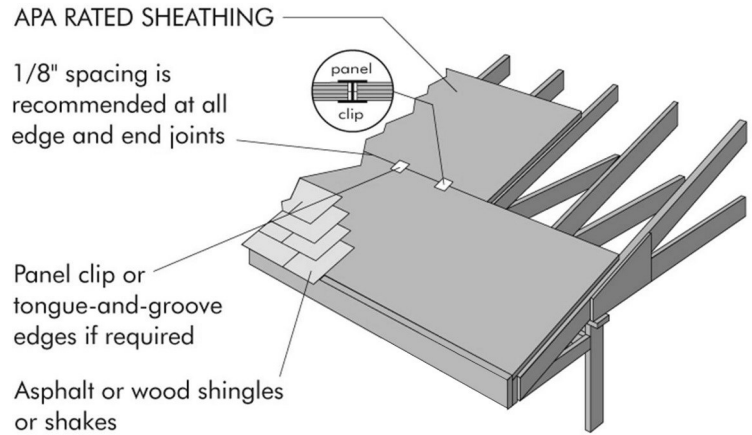


4. _____

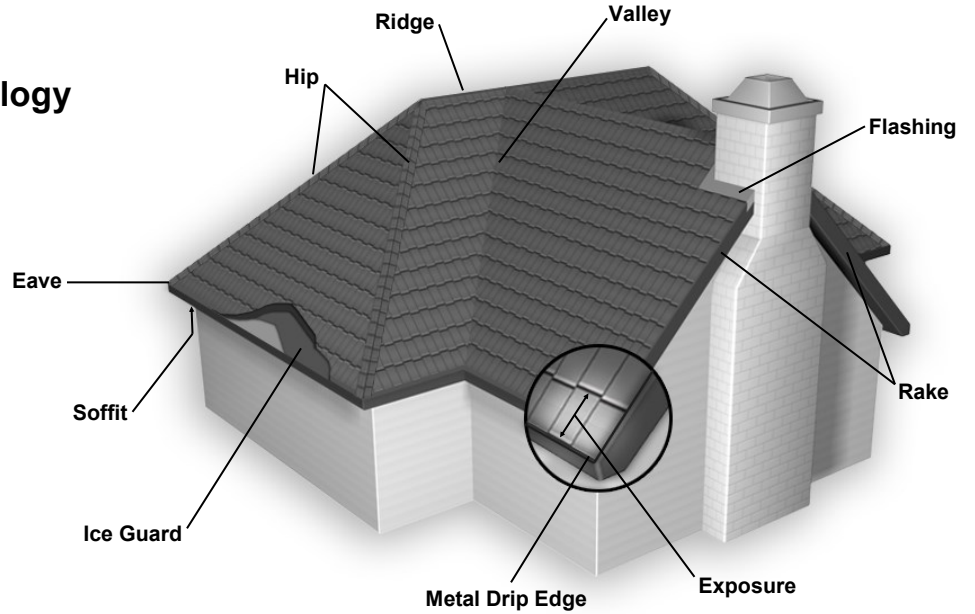


Roof Construction

Roof Sheathing



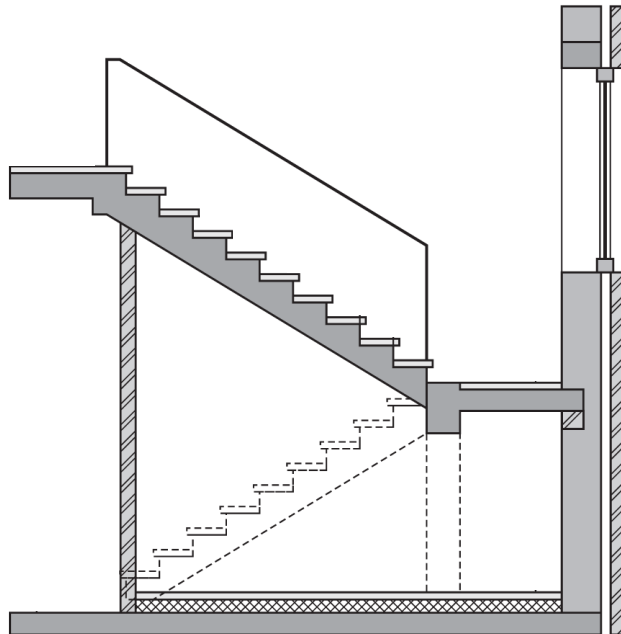
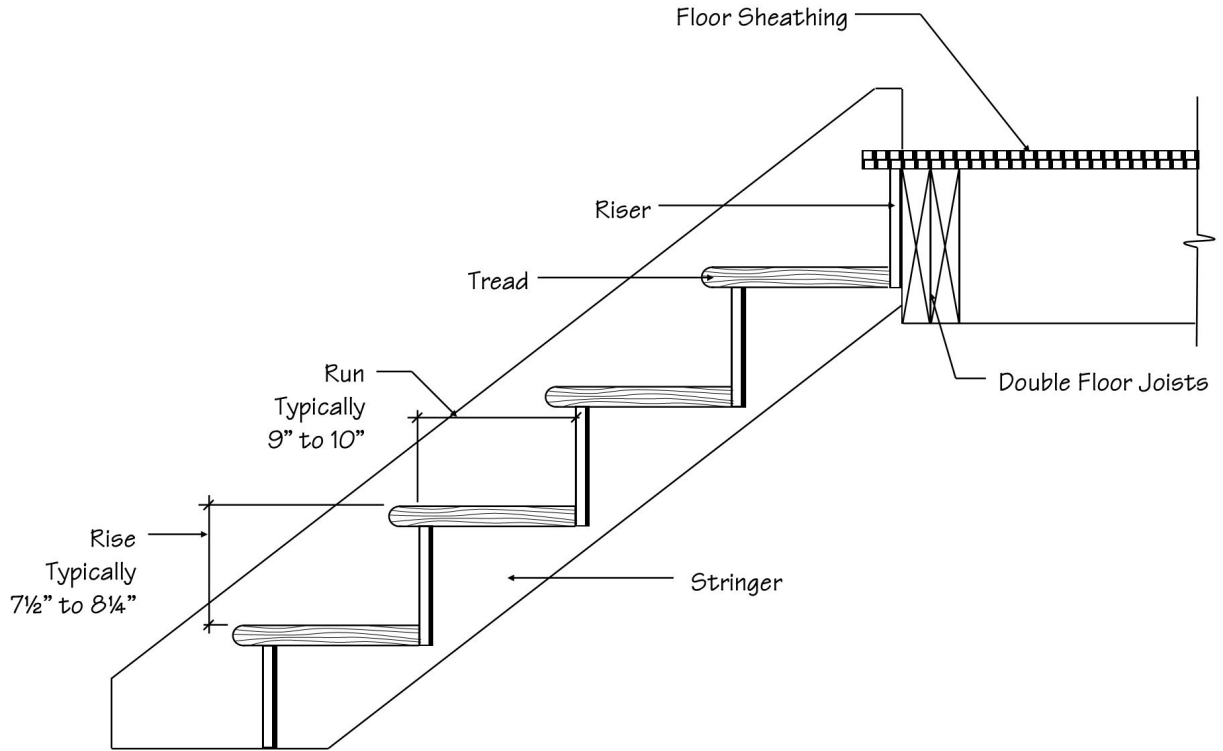
Roof Terminology



Roofing materials

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Stair Construction



Pressure-Treated Lumber

Module 9

For rot to occur in wood

1. _____ 2. _____

3. _____ 4. _____

Pressure-treating eliminates _____

Pressure-treated lumber considerations

1. _____ 2. _____

3. _____ 4. _____

Factory-Built Housing

Types of Factory-Built Housing

1. _____ 2. _____

3. _____ 4. _____

Factory-Built Advantages

1. _____ 2. _____

3. _____ 4. _____

Concrete Materials & Quality

Module 9

Concrete is a mixture of

1. _____
2. _____
3. _____
4. _____
5. _____

Concrete Reinforcing

1. _____
2. _____

Joint in Slabs

1. _____
2. _____

Concrete Quality is Relative to

1. _____
2. _____
3. _____
4. _____

Words of Wisdom

*"We provide a lifetime guarantee on concrete —
It's guaranteed to crack sometime in its lifetime."*

— **Dennis Walsh**

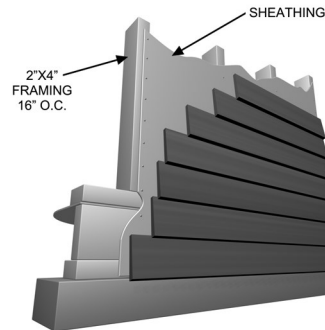
Exterior Finish Materials

Exterior siding/finish materials

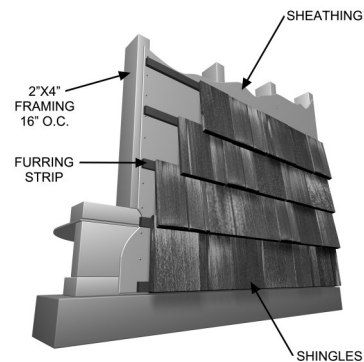
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

A square of roofing or siding covers _____

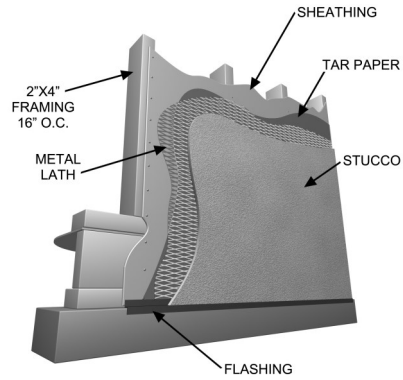
Horizontally Applied Siding



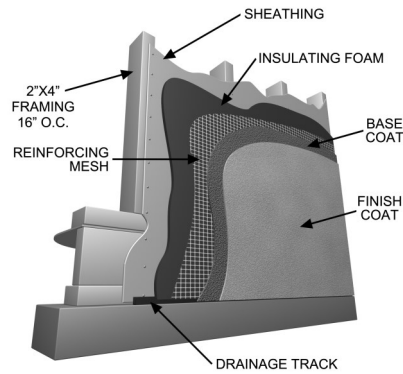
Wood Shingle & Shakes



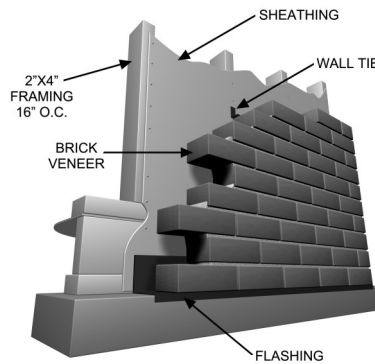
Cement Stucco



Synthetic Stucco — EIFS



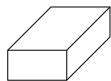
Brick Veneer



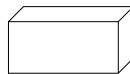
Terms applied to various brick positions:



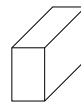
STRETCHER



HEADER



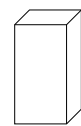
SHINER



ROWLOCK



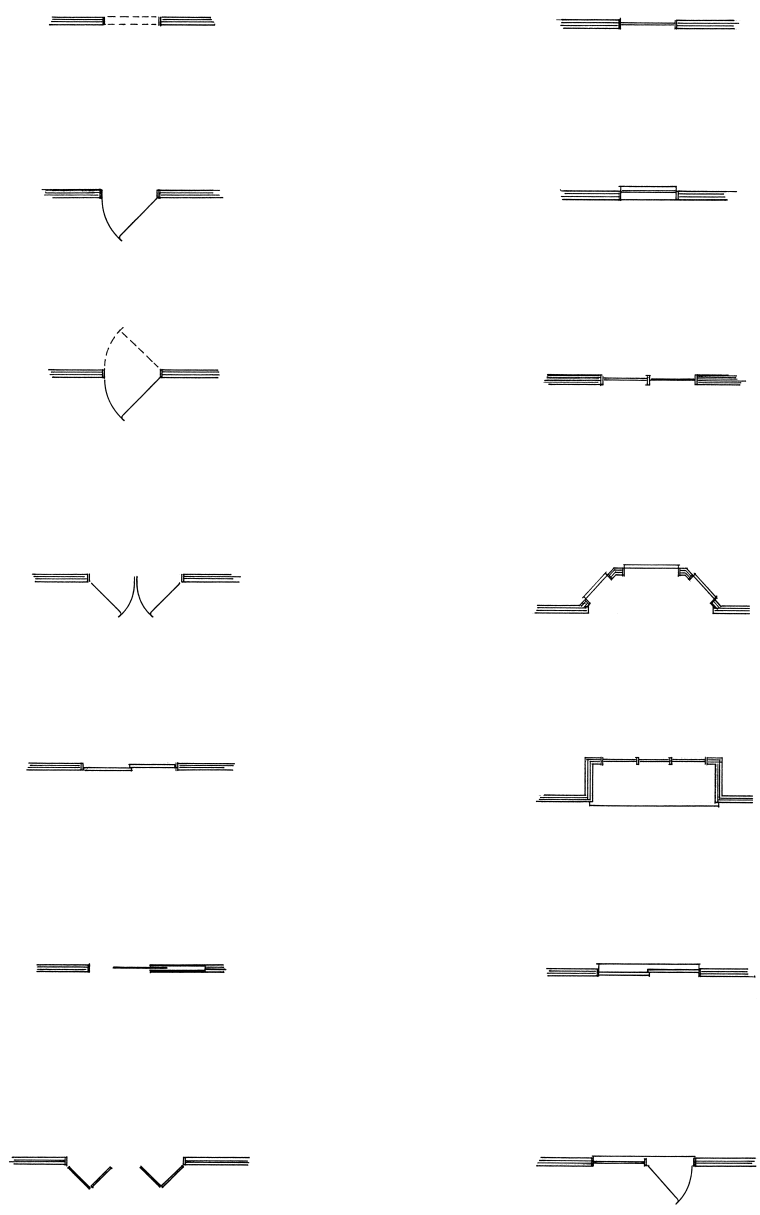
SOLDIER



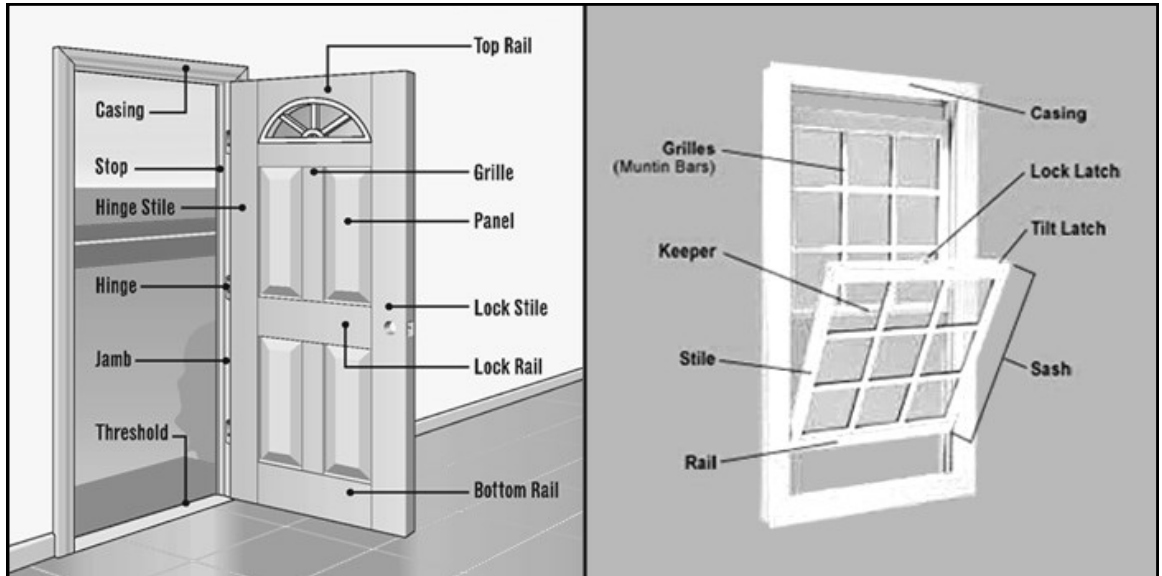
SAILOR

Doors & Windows

Door and window blueprint symbols



Door & Window Components



Exterior doors

1. _____
2. _____
3. _____

Interior doors

1. _____
2. _____
3. _____

Doors & Windows

Window frame and sash options

1. _____
2. _____
3. _____
4. _____

Window glazing options

1. _____
 2. _____
 3. _____
 4. _____
- _____
 - _____
 - _____



Energy Performance Ratings

 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
	ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32	
ADDITIONAL PERFORMANCE RATINGS		
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2	
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>		

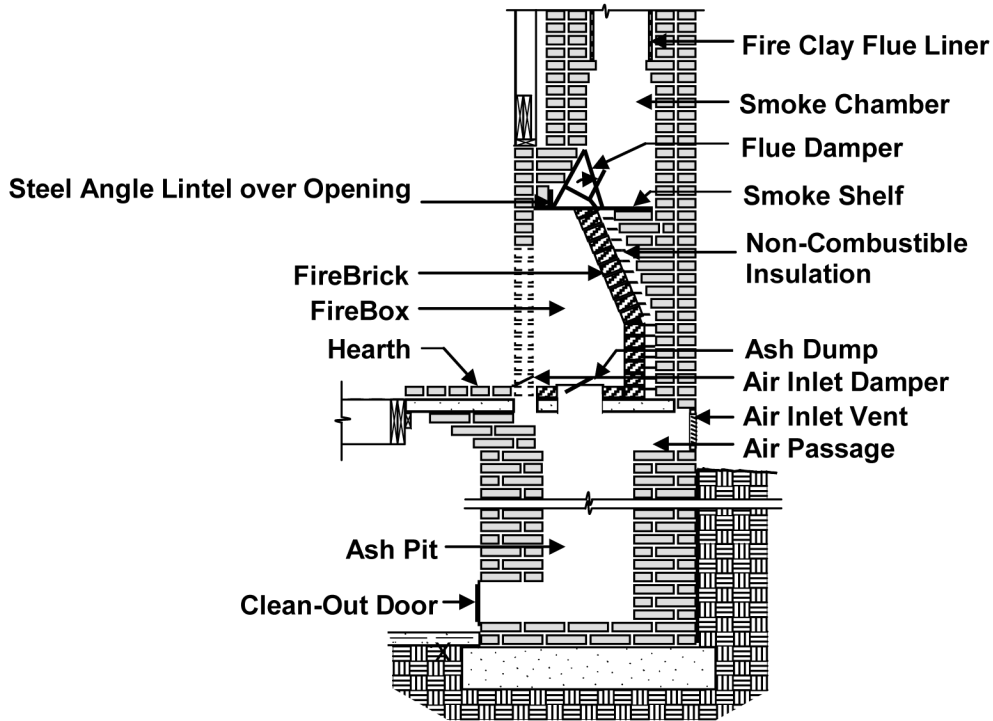
Window Types



Window Types



Masonry Fireplace Construction

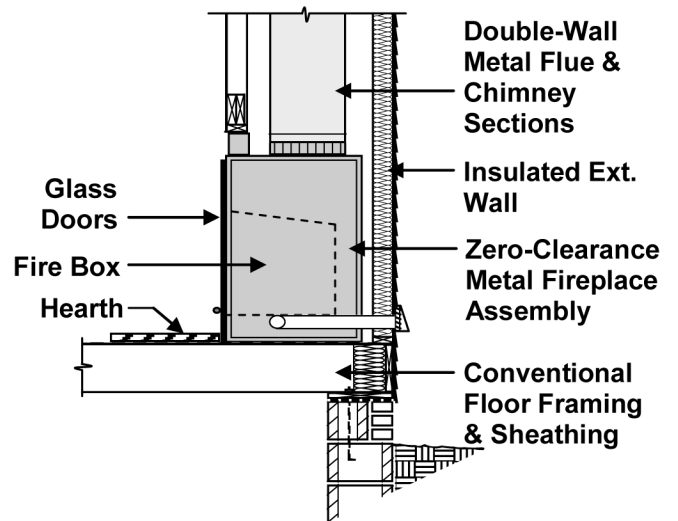


Factory-Built Fireplaces

Zero-clearance

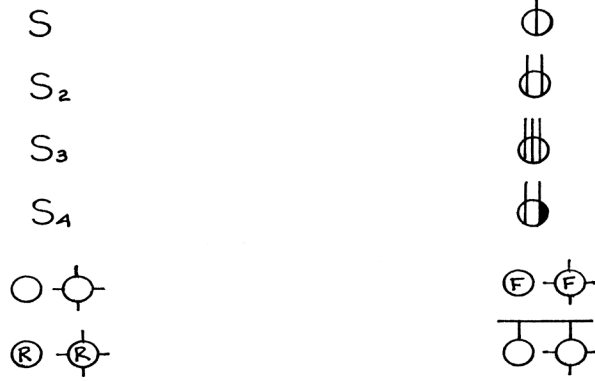
Factory-built fireplace types:

1. _____
2. _____
 - _____
 - _____
 - _____
3. _____
4. _____



Zero-Clearance Fireplace / Section

Electrical Symbols



Solar Systems

Primary components

1. _____
2. _____
3. _____

Types of solar systems

1. _____
2. _____
3. _____

Heating and Cooling Systems

Module 11

Types of heating systems:

1. _____

- _____
- _____
- _____

2. _____

- _____
- _____

3. _____

4. _____

5. _____

6. _____

HVAC _____

AFUE _____

SEER _____

Water Heaters

Types of water heaters

1. _____

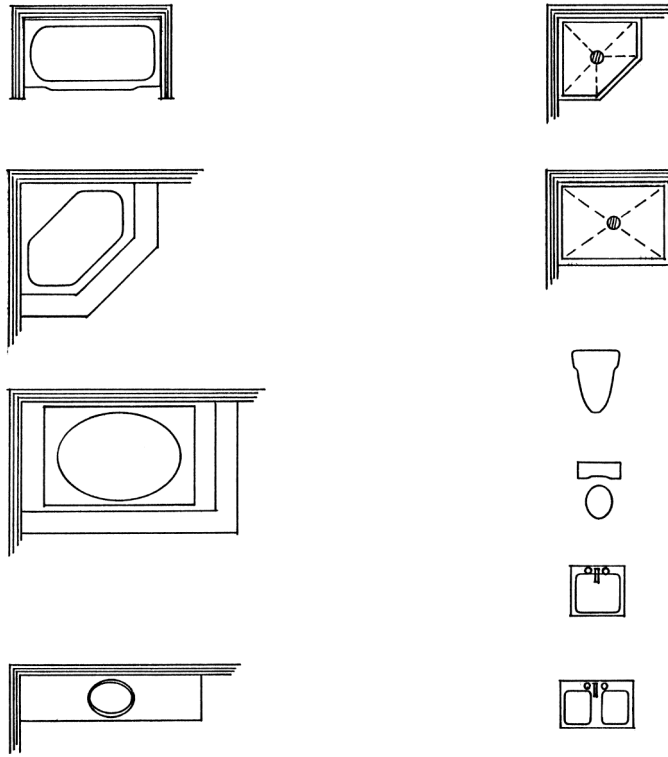
2. _____

3. _____

4. _____

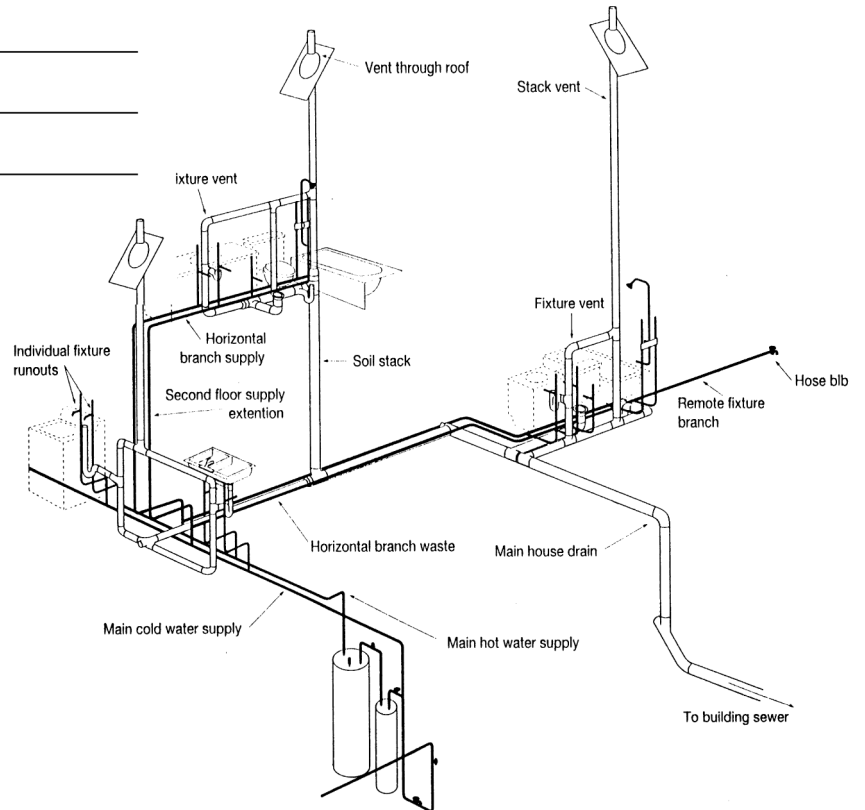
5. _____

Plumbing Symbols



Three major components of the plumbing system:

1. _____
2. _____
3. _____



Energy Efficient Construction

We minimize the transfer of heat energy

1. _____
 - _____
 - _____
 - _____
 - _____
2. _____
 - _____
 - _____
 - _____
3. _____
 - _____
 - _____
 - _____

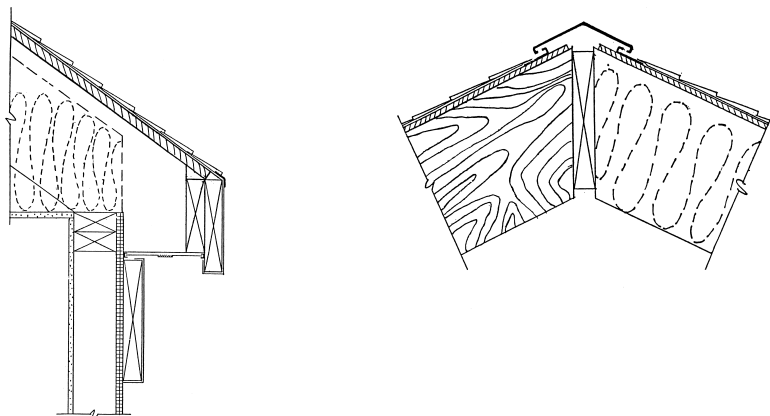
Insulation Materials

1. _____
2. _____
3. _____
4. _____
5. _____

Insulation R-Values & Roof Ventilation

Insulation Material	Thickness	R-Value
Blankets or Batts		
Fiberglass/Rockwool	3½"	11 to 13
	5½"	19 to 21
	9"	30
	12"	38
Loose Fill		
Fiberglass/Rockwool	5"	11
	7-8"	19
	10-13"	30
Vermiculite	1"	2.27
Cellulose	1"	3.33
Rigid Boards		
Fiberglass	1"	4
Fiberboard	1"	1.5 to 2.5
Expanded Polystyrene	1"	3.6
Extruded Polystyrene	1"	5.4
Polyisocyanurate	1"	7.4
Expanding Spray Foam		
Closed-Cell	1"	6 to 7
Open-Cell	1"	3.6 to 3.9

Roof Ventilation



Green Building

Green building principles

1. _____
2. _____
3. _____
4. _____
5. _____

LEED - Leadership in Energy and Environmental Design

ENERGY STAR - U.S. Environmental Protection Agency

NGBS - National Green Building Standard



Interior Surface Materials

1. _____

- _____
- _____
- _____

2. _____

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

3. _____

4. _____

5. _____

Cabinet Types

Module 13

1. _____
2. _____
3. _____
4. _____

Cabinet Quality

1. _____
• _____ • _____ • _____
2. _____
• _____ • _____ • _____
3. _____
• _____ • _____ • _____
4. _____
• _____ • _____ • _____
5. _____
• _____ • _____ • _____
• _____ • _____ • _____

Countertops

1. _____

2. _____

3. _____

4. _____

• _____

• _____

• _____

• _____

• _____

• _____

5. _____

6. _____

7. _____

Flooring

1. _____

- _____

- _____

- _____

- _____

2. _____

3. _____

- _____

- _____

4. _____

- _____

- _____

- _____

- _____

5. _____

- _____

- _____

- _____

- _____

- _____

6. _____

Moldings & Trim



Paint Types & Quality

Paint components

1. _____

2. _____

3. _____

Paint types

1. _____

2. _____

• _____ • _____ • _____

Paint sheens

1. _____

3. _____

2. _____

4. _____

Quality considerations

1. _____

4. _____

2. _____

5. _____

3. _____

6. _____

Primers



Lead



Stains & Finishes

Stain types

1. _____

2. _____

Transparency

1. _____

2. _____

3. _____

Clear finishes

1. _____

2. _____

Wood sealers

Wood preservatives

Building code concerns

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Zoning code concerns

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Congratulations!

You've completed the Residential Construction Certified™ professional designation training program. We wish you success in your endeavors!

Your friends Dennis, Teresa and the Dennis Walsh and Associates team.