



Permit Technician Handout

England Training Division
1102 St Julien Drive Eutawville, SC 29048
(843) 747-3575

www.ibcode.com
classes@ibcode.net

This workbook is not for sale and is included only as part of this course. The information in the workbook has been carefully put together to better help the student understand the code. While many of pages of this workbook are the sole copyright property of England Training Division. Any tables , charts or code sections are taken from the appropriate codes , are used in part only to clarify the code.

Copyright © 2024 England Training Division. All rights reserved. No portion or part of this publication may be reproduced and /or sold in any form or by any means : electronic, mechanical, photocopy, or otherwise without prior written permission of England Training Division, whether as reference material or as part of a class.

While every precaution has been taken in preparation of this workbook , the author and publisher assume no responsibility for any errors or omissions contained herein. Neither is any liability assumed from the use of the information contained herein.

In the event of a discrepancy between this workbook and the code, the code would govern.



2018 IBC Occupancy Classification

Chapter 3 & 4

101.2== Single Family (townhouse) & Duplex up to 3 stories use the IRC

Occupancy	Uses	Additions/ Exceptions															
Assembly A-1 A-2 A-3 A-4 A-5	Theater, TV Studio With Audience Restaurant , Bar, Banquet Hall, Gaming Areas Church, Dance Hall, Library, Bowling Alleys Skating Rink, Pool, Tennis, Indoor Arenas Stadiums, Bleachers, Amusement Park	> Less than 50 (750 sq/ft) and accessory to another occupancy , then it becomes part of than occupancy >Less than 50 (750 sq/ft) (standalone) = Business															
Business = B	Offices, Travel Agents, Ambulatory Health care (outpatient) Service Stations	Add-Schools over the 12 th grade Add- up to 2500 sq/ft Caterers															
Education = E	Schools -- up to & include 12 th grade	Add –Daycare 6+, 2 ½ yo (less 24 hr)															
Factory = F-1 F-2	Mod.Hazard– Furniture, Clothing, Caterer 2501 sq/ft Low Hazard – Glass, Brick, Metal	Beverages Over 16% Alcohol Beverages 16% Or Less Alcohol															
Hazardous= H-1 H-2 H-3 H-4 H-5	Detonation -- <i>dynamite</i> Deflagration -- <i>accelerated burning</i> Physical – <i>Consumer fireworks</i> Health -- <i>Bleach</i> HPM = Hazardous Production Materials <i>Semi-Conductors</i>	Table 307.1(1) In all occupancies there is a limited amount of hazardous material allowed in a control area before it is reclassified as a hazardous location. Table 414.2.2 --Percentage and number of control areas per floor															
Institutional= I-1 I-2 I-3 I-4	Assisted Living (17 or more) Halfway Houses Hospitals, Nursing Home, Foster Care Jails, Prison, Prerelease Centers Adult & Child Day Care.	<table border="1"> <tr> <td>305.2</td> <td>6+ 24 hr)</td> <td>Older than 2½</td> <td>(less than</td> <td>E</td> </tr> <tr> <td>308.4</td> <td>6+ more)</td> <td>2½ or less</td> <td>(24 hr or</td> <td>I-2</td> </tr> <tr> <td>308.6</td> <td>6+ 24 hr)</td> <td>Any Age</td> <td>(less than</td> <td>I-4</td> </tr> </table>	305.2	6+ 24 hr)	Older than 2½	(less than	E	308.4	6+ more)	2½ or less	(24 hr or	I-2	308.6	6+ 24 hr)	Any Age	(less than	I-4
305.2	6+ 24 hr)	Older than 2½	(less than	E													
308.4	6+ more)	2½ or less	(24 hr or	I-2													
308.6	6+ 24 hr)	Any Age	(less than	I-4													
Mercantile = M	Home Depot, Sams, Shoe store, Gas station	308.6.1 5 to 100 2 ½ or less Exit Door Directly To The Exterior															
Residential= R-1 R-2 R-3 R-4	Hotels, Boarding Houses, B&Bs Apartments, Dormitories, Live/Work Units Single Family, Boarding/Congregate Living Assisted Living 6–16 people 24 Hrs	16 or less Transient = R-3 I-1, I-2, R-4 under 5 use the "IRC" Shall Meet Const. Req. Of R-3 Unless Noted															
Storage= S-1 S-2	Mod Hazard--Carpet, Clothing, Repair Garage Low Hazard- Glass, Brick, Parking Garage																
Utility = U	Carport, Barn, Green House, Private Garage																

Use	Class	Description	Section	Page
Gas Station	M	7-11, Truck Stops,	309	
Service Station	B	Lube, Tune-up, Tire Repairs	406.8	
Repair Garage	S-1	Transmission Shop, Motor Rebuilding, Painting	406.8	
Parking Garage	S-2	Other Than Private, Open Parking 406.5, Enclosed Parking 406.6	406.4	
Cover/Open Mall	M	Two or more businesses with the same entrance	402	
Atriums	Ex. H	Opening between two or more floors	404	
Legitimate Stage	Any	(overhead curtains, scenery) Proscenium Wall, Technical Production Area	410	
High Rise	Any	75' above the lowest fire department access (420' additional regulations) (403.6) 120' Fire service Elevator Door	403	



2018 IBC Types of Construction

Chapter 5 & 6

The following is only a guide and the code should be consulted for further information on all Types of Construction.

Type	Materials	Common Materials	Table 601 Structural Protection	Table 504.3 Height Un-sprinkled
IA	Non-Combustible	Steel and/ or concrete with fireproofing	3 Hr	UL
IB	Non-Combustible	Steel and/ or concrete with fireproofing	2 Hr	160'
IIA	Non-Combustible	Metal Building , Tilt-up Concrete, Block with metal roof	1 Hr	65'
IIB	Non-Combustible	Metal Building , Tilt-up Concrete, Block with metal roof	0 Hr	55'
IIIA	Mixed Walls= Non-Combust.. Roof/Ceiling = Combust.	Block with wood Roof Metal studs with wood roof	1 Hr	65'
IIIB	Mixed Walls= Non-Combust.. Roof/Ceiling = Combust.	Block with wood Floor/ Roof Metal studs with wood roof	0 Hr	55'
IV	HT = Heavy Timber	602.4 --- Ex. = 8" x 8" and larger	N/A	65'
VA	Any material (Combustible)	Light Wood Framing, Tents, Straw Construction, Adobe Construction	1 Hr	50'
VB	Any material (Combustible)	Light Wood Framing, Tents, Straw Construction, Adobe Construction	0 Hr	40'

Section	Structural elements can be protected in various ways-- sprayed on fireproofing, concrete, brick etc	Pg
721	Prescriptive Fire Resistance = The assemble has been approved (Prescribed) for a specific length of time	
722	Rated Fire-Resistance Periods = Specific (time of) materials can be added (calculated) to equal the required fire resistance rating.	
202	FIRE AREA. The aggregate floor area enclosed and bounded by firewalls, fire barriers, exterior walls or fire-resistance-rated horizontal assemblies of a building.	
706	Fire Wall. Each portion of a building separated by one or more fire walls that comply with the provisions of this section shall be considered a separate building.	
707	Fire Barriers. Fire barriers used for separation of shafts, exits, exit passageways, horizontal exits or incidental use areas, to separate different occupancies, to separate a single occupancy into different fire areas.	
708	Fire Partitions . The following wall assemblies shall comply with this section. 1. Walls separating dwelling units in the same building as required by Section 420.2 2. Walls separating sleeping units in occupancies in Group R-1, hotel occupancies, R-2 and I-1. 3. Walls separating tenant spaces in covered & open mall buildings as required by Section 402.4.2.1 4. Corridor walls as required by Section 1018.1.	
603	(list) Combustible materials permitted in Type I and II construction	
T-716.5	Opening fire protection –Doors, Transoms, Walls – Fire Protective v Fire Resistive	
709	Smoke Barrier = 1 hr smoke barrier with smoke dampers	
710	Smoke Partition = Wall designed to resist the movement of smoke = <i>No rating & No dampers</i>	

Important Legal Terms

Legal Aspects of Code Administration *Read Chapters 6 & 9*

Common Law = Laws that emerge from court decisions — not from legislative actions

Statue or Act = Law enacted by legislative

Enabling Legislation = Express legislation from the state which enables the local governments to enact building codes or zoning ordinances.

Due Process = a series of events that lead to enforcement

Absolute Immunity = Even though the person acted maliciously, they are immune from the law.

Qualified Immunity = Most government workers are not held liable for doing their job, as long as they do it with reasonable care.

Zoning:

Covenants = Agreements between parties to do or not to do something. Are not enforced by the zoning codes.

Easement = Entitles a person to use land owned by another.

Exception = A special use permitted in a particular district subject to conditions (**person**)

Eminent Domain = The government's right to take land against the owner's will for the good of the community. The government has to pay the owner fair market value.

Variance = Relaxation of the zoning ordinances (**property**)

Building:

Liability: Obligation that binds a person to perform a duty

Malfeasance: Act which a person should not do at all.

Misfeasance: Improper performance of duty

Nonfeasance: Non-performance of duty

(TRO) Temporary Restraining Order: A temporary order given without notice until a court can hear the evidence.

Temporary Injunction: A temporary order from the court to stop until the court can hear all the evidence. Both parties have input.

Permanent Injunction: A permanent ruling by the court.

Administrative Hearing: Such as a building appeals board.

BASIC BUILDING CODE INFORMATION						
DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
CONSTRUCTION CLASSIFICATION TYPE (IBC 602)	IB IBC (reno/add)	II SBC (existing) NO WORK	IV SBC (existing) NO WORK			
OCCUPANCY GROUP (indicate all) (IBC 302) (Note IBC 506.5)	E	E	E			
OCCUPANCY GROUP (indicate most restrictive) (IBC Table 503)	E	E	E			
Does building require Incidental Use Area Separation? (IBC 508.2.5)	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes
Does building have Accessory Occupancy (ies)? What percent of story is accessory occupancy? (IBC 508.2)	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes SF %	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes SF %	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes SF %	<input type="checkbox"/> no <input type="checkbox"/> yes SF %	<input type="checkbox"/> no <input type="checkbox"/> yes SF %	<input type="checkbox"/> no <input type="checkbox"/> yes SF %
Mixed Occupancy (IBC 508)	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes
Non separated (IBC 508.3)	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes
Separated (IBC 508.4) (IBC 506.5)	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> no <input type="checkbox"/> yes
OTHER FIRE PROTECTION SYSTEMS, DEVICES or FEATURES If the building has any special or notable fire protection or safety feature or hazard the designers should list	Fire extinguishers	Fire extinguishers	Fire extinguishers			
them here, describe the performance characteristics and refer to locations in construction documents. (e.g. fire extinguishers, smoke- evacuation/control/compartments. Note IBC 414.1.3.)						

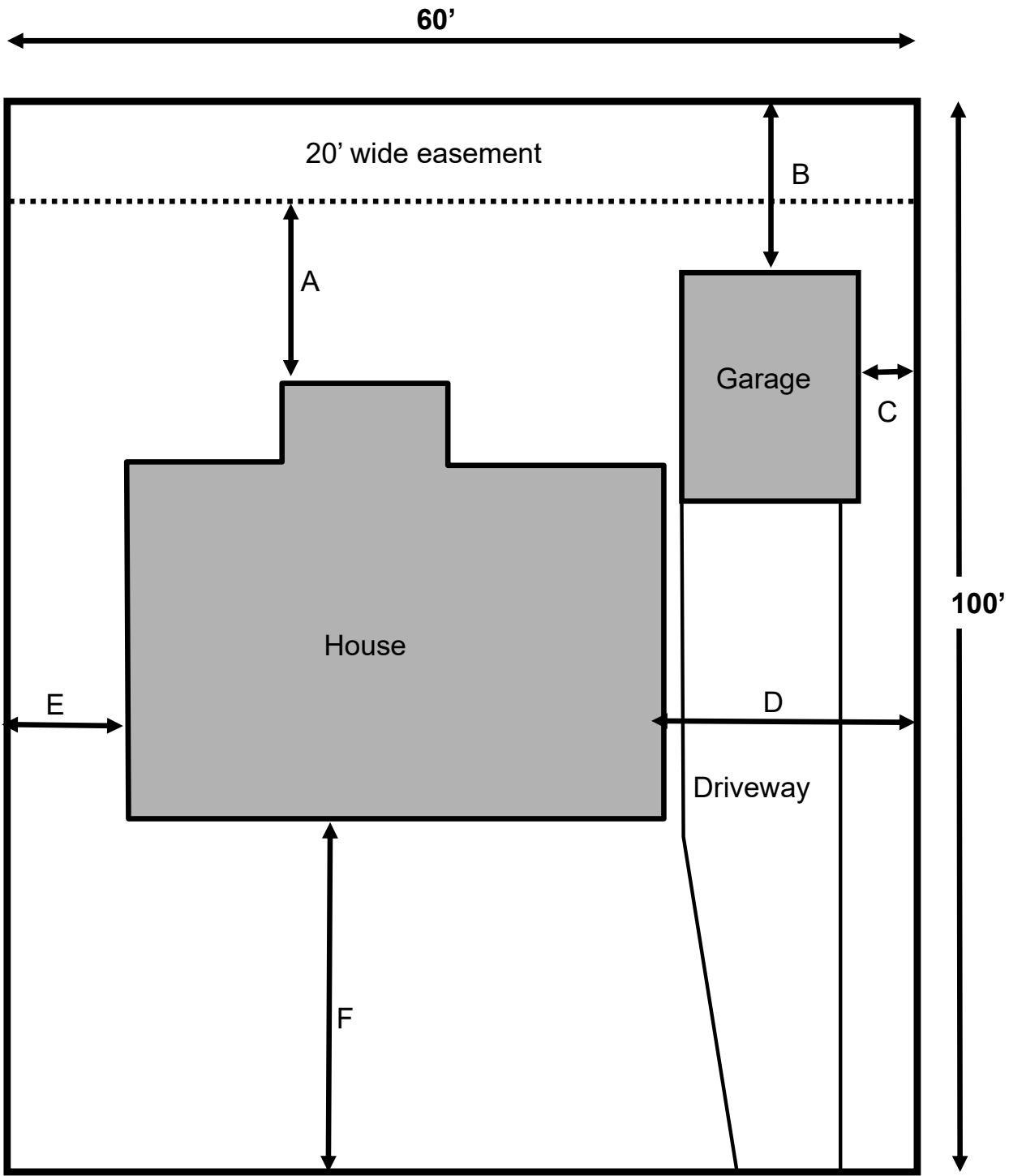
BUILDING AREA						
DESIGNATED AREAS OF BUILDING	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
AREA LIMIT BY PER STORY (IBC Table 503) (Do not indicate increases for sprinklers & street frontage.)	UL SF	UL SF	12,000 SF	SF	SF	SF
MAXIMUM AREA MODIFICATION PER STORY FROM EQUATION 5-1 OF IBC (Insert equation from IBC 506.1 with completed calculations in this box) (Equation 5-1) $A_a = A_t + [A_t \times I_f] + [A_t \times I_s]$ A _a = Allowable area per floor (square feet). A _t = Tabular area per floor in accordance with Table 503 I _f = Area increase factor due to frontage (percent) as calculated in accordance with Section 506.2. I _s = Area increase due to sprinkler protection as calculated in accordance with Section 506.3. (Repeat equation for each story of differing occupancies, IBC 506.5.2) Note: footnote "e." from table 601	SF	SF	SF	SF	SF	SF

STRUCTURAL DESIGN INFORMATION, AREA							
OCCUPANCY CATEGORY (IBC Table 1604.5)							
LIVE LOAD FOR EACH OCCUPANCY TYPE (IBC Figure 1608.2 or ASCE 7)	Floor Live Load, F_a	Classroom 40 PSF	Lobby/Corr 100 PSF	Office 50 PSF	PSF	PSF	PSF
	Roof Live Load, R_a	20 PSF	20 PSF	20 PSF	PSF	PSF	PSF
	Ground Snow Load, P_g	10 PSF	10 PSF	10 PSF	PSF	PSF	PSF
MISCELLANEOUS LOADS BY SPECIAL USE AREA (ARCHITECTURAL, MECHANICAL, DATA CENTER, ETC., ASCE 7)		PSF	PSF	PSF	PSF	PSF	PSF

SOILS & SITE	
SOILS INVESTIGATION REQUIRED? (IBC 1803.2)	<input type="checkbox"/> no <input checked="" type="checkbox"/> yes
SOILS CLASSIFICATION	
Seismic Site Class (IBC 1613.5.2)	C
Classes Soil of Materials (UCS System) (IBC 1803.5.1)	See Geotech Report
Allowable Footing Bearing Pressure	2000 psf
MINIMUM DESIGN SOIL BEARING LOAD (IBC Table 1806.2)	2000 psf
COMPACTION	
Subgrade (ASTM D698, ASTM D1557) or (AASHTO only for paving & roads)	95 %
Base (ASTM D698, ASTM D1557) or (AASHTO only for paving & roads)	95 %
Other (ASTM D698, ASTM D1557) or (AASHTO only for paving & roads)	100 %
MINIMUM DESIGN SOIL LATERAL LOAD (IBC 1610.1)	100 psf
FOOTINGS	
Undisturbed footings	<input type="checkbox"/> no <input checked="" type="checkbox"/> yes
Compacted Fill Material (IBC 1804.5)	<input type="checkbox"/> no <input checked="" type="checkbox"/> yes
ELEVATIONS	
Elevation of Water Table	MSL
Elevation of lowest footing	MSL
Elevation of lowest floor or basement	MSL

STRUCTURAL DESIGN INFORMATION, BUILDING		
WIND LOADS	Analysis Procedure (ASCE 7 or IBC 1609.6)	ASCE 7-16
	Basic Wind Speed, MPS (3 sec gust IBC Fig 1609)	$V_{3s} = 122$
	Exposure Category	
	Wind Importance Factor (ASCE 7 Table 6.1)	$I_w = 1.15$
	Internal Pressure Coefficient (ASCE 7)	$GC_{pi} = \pm .18$
SEISMIC LOADS	External Pressure Coefficient (ASCE 7)	$GC_{pe} = \pm .8$
	Seismic Importance Factor (ASCE 7)	$I = 1.25$
	Soil Class (IBC 1613.5.2)	D
	Mapped Spectral Response Accelerations	$S_s = .321$
		$S_1 = .106$
	Design Spectral Response Acceleration Parameters	$S_{DS} = .278$
		$S_{D1} = .106$
	Seismic Use Group (ASCE 7 and Seismic Occupancy Category IBC)	III
	Seismic Design Category (IBC Tables 1613.5.6(1) & 1613.5.6(2))	B
	Basic Seismic Force Resisting System	SRMSW
Design Base Shear	25 KIPS	
Seismic Response Coefficient(s) ASCE 7	$C_s = .056$	
Response Modification Factor(s) ASCE 7	R = 5	
Analysis Procedure	ELFP	

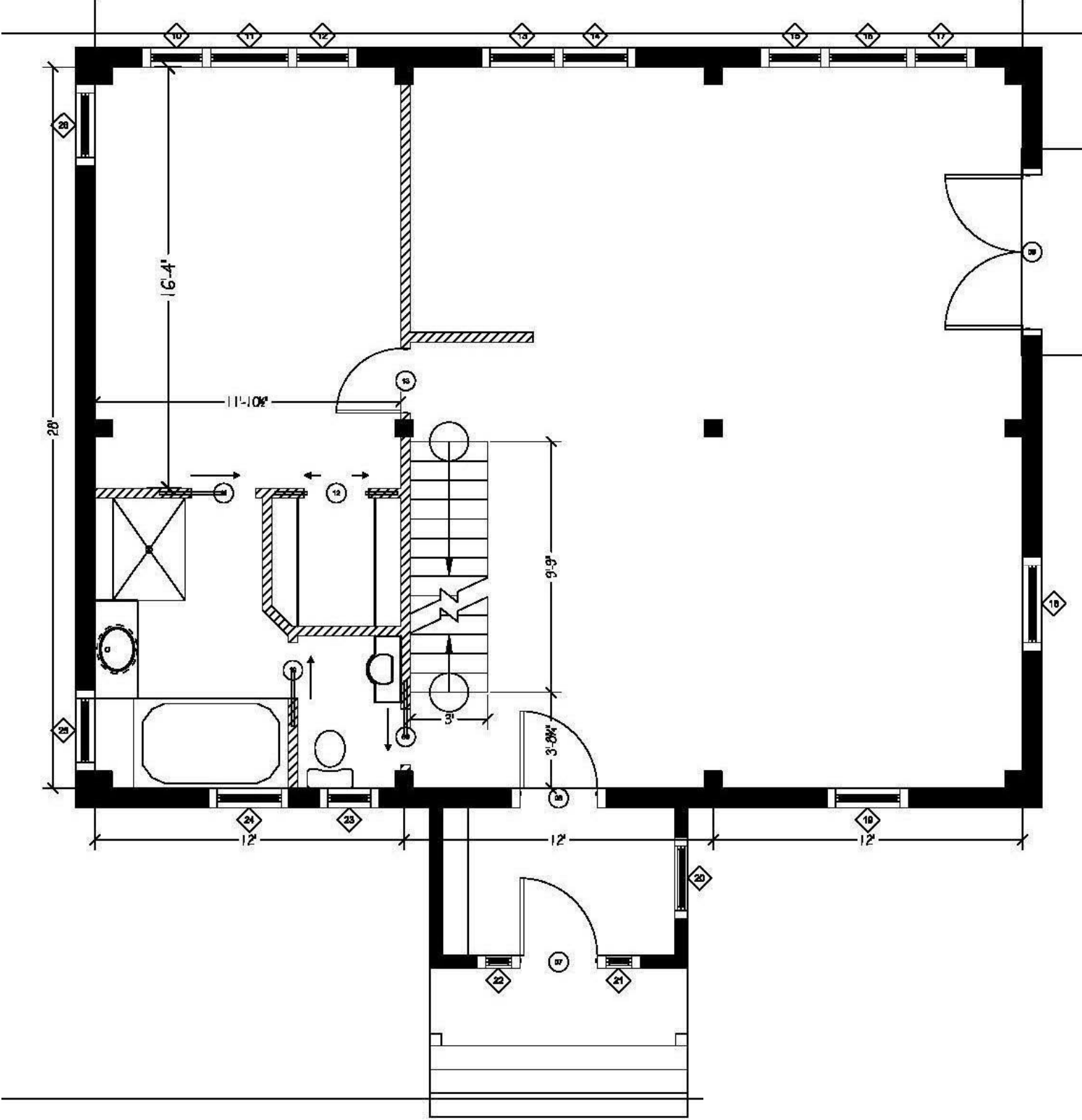
Plot Plan



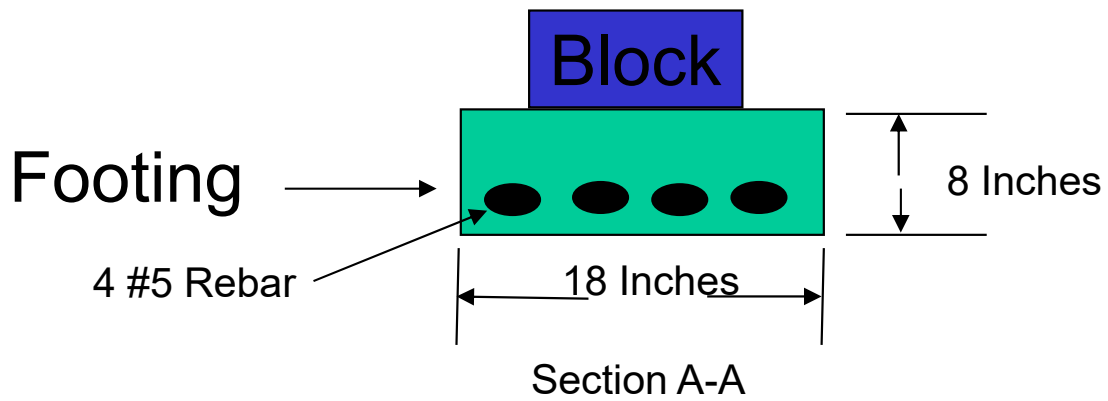
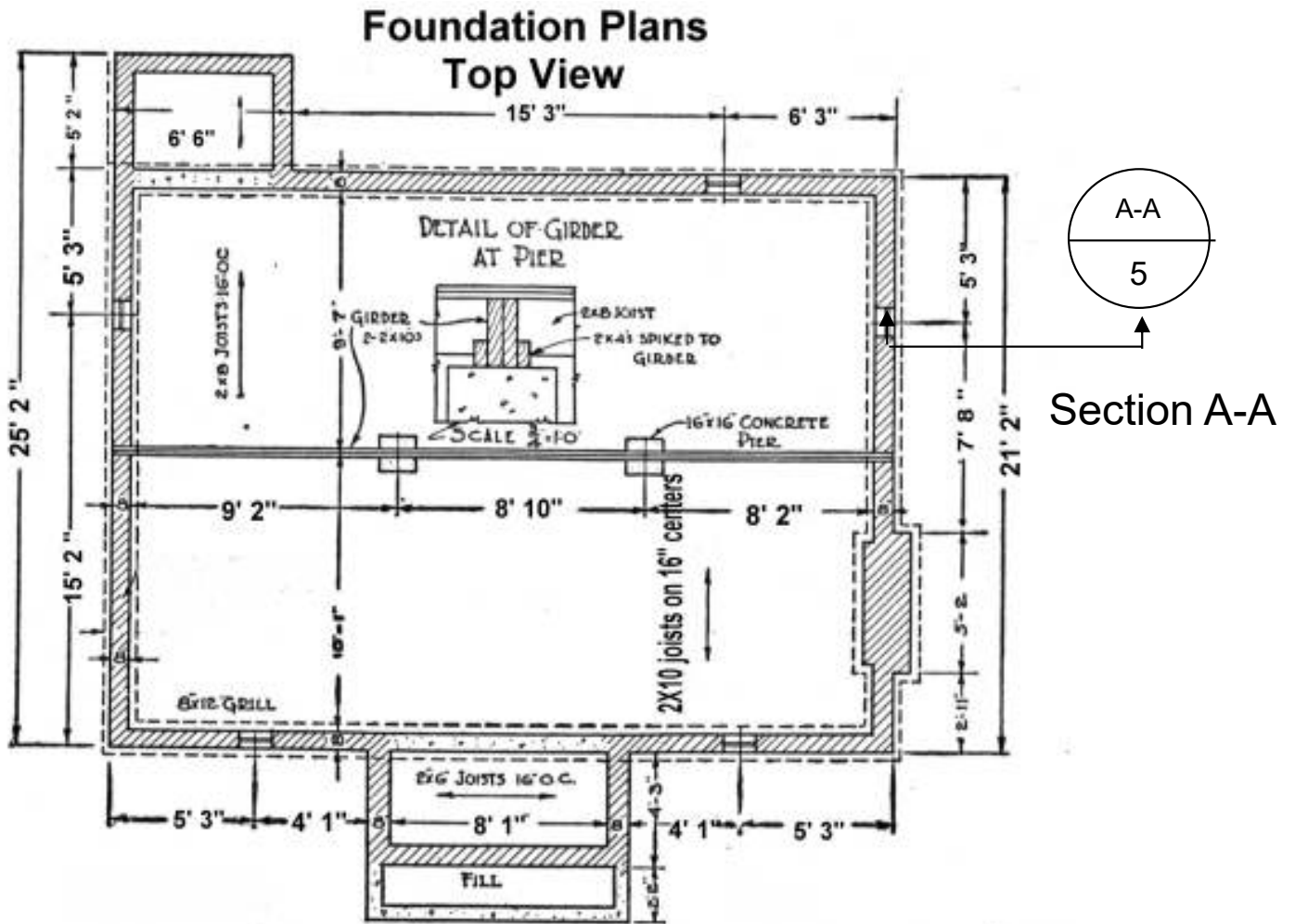
N 

Athens Court

Sample Floor Plan

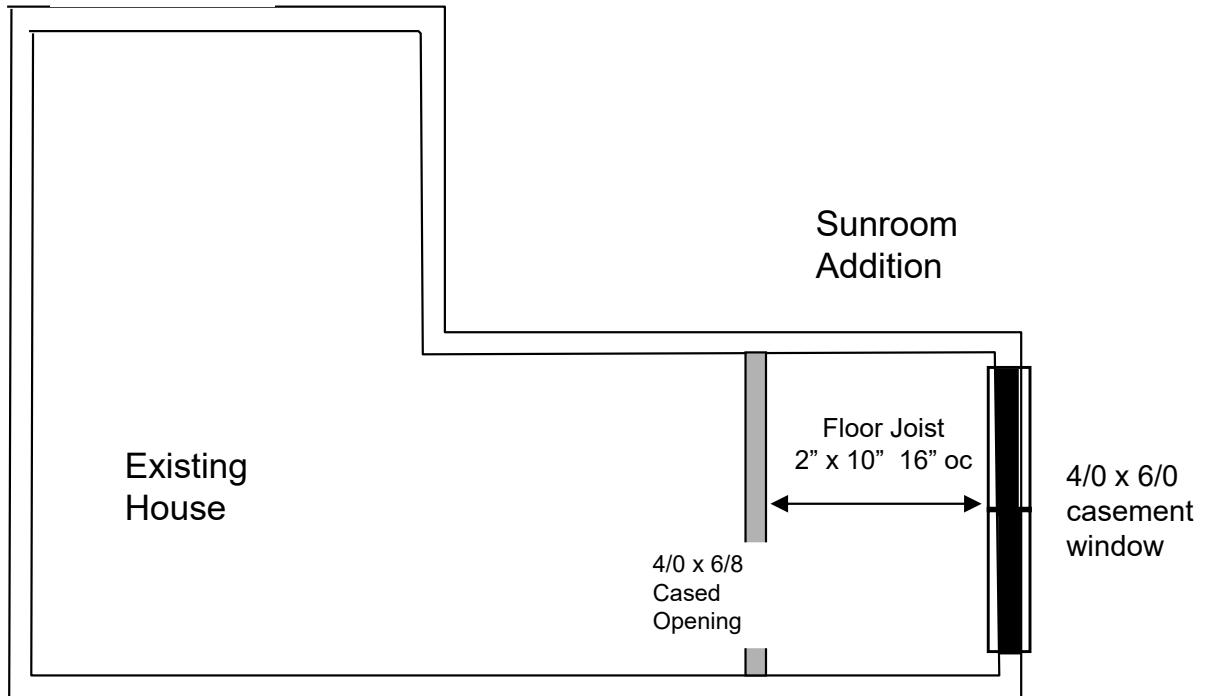


Foundation Plan

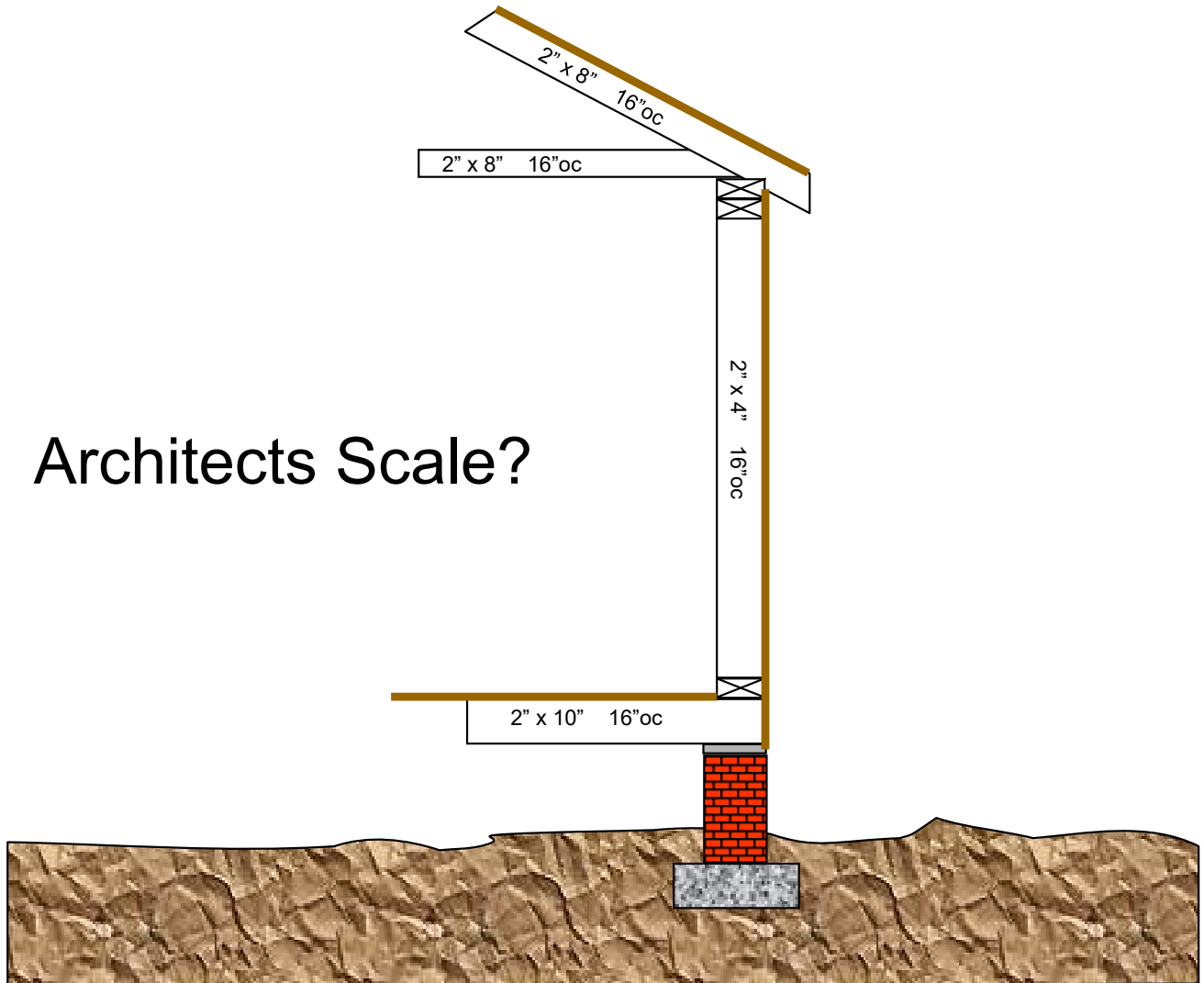


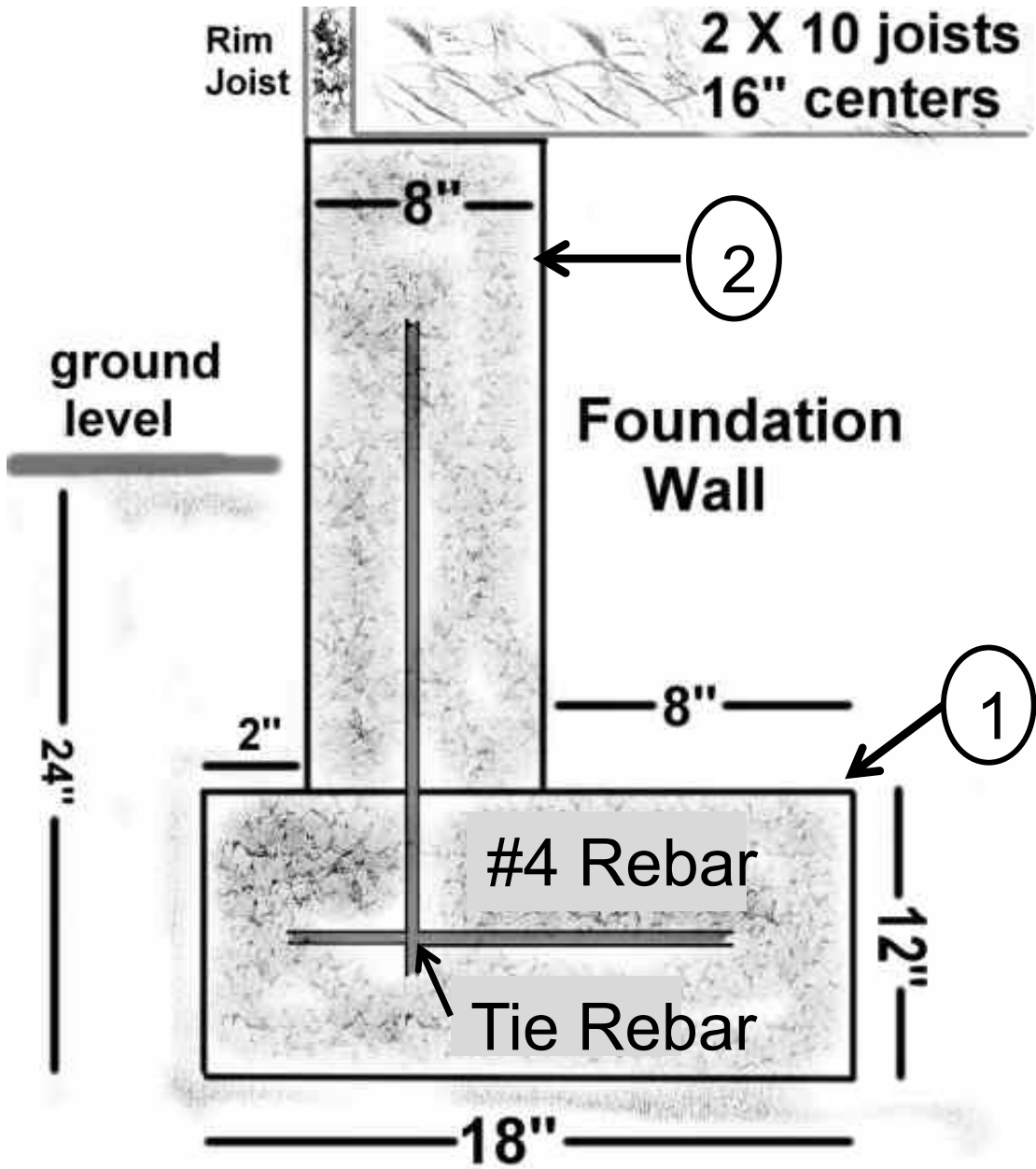


Framing Plan



Architects Scale?





Which Number Is Pointing To The Footing?



Typical Wood Framing

