HOW TO DETERMINE CLASS OF CONSTRUCTION

	Class D Economy	Class CD Tract Type	Class C Standard
	Constructed with cost as the primary determining factor. Materials and workmanship may or may not meet Federal or local building codes. Basement, if present, of minimum head room.	Constructed with materials and workmanship meeting minimum Federal and local building codes. Mass produced from standard plans, or prefabricated. The primary determining characteristic is that the residence is usually found among others of same design or with minor exterior modifications.	Construction with average-quality materials and workmanship from stock-type plans with little or no architectural change. Some interior and exterior aesthetic features available as stock items. Built-ins few and of average quality. Interior surfaces drywall.
Exterior Walls			
Height	8 feet	8 feet	8 feet
Sheathing	1/2" insulation board	1/2" insulation board	1/2" insulation board
Insulation	None	3-1/2" batt	3-1/2" batt
Interior	3/8" drywall	3/8" drywall	1/2" drywall
Roof	210# asphalt shingles	235# asphalt shingles	235# asphalt shingles
	3/8" plywood	3/8" plywood	1/2" plywood
	2" x 4" truss, 24" o.c.	2" x 4" truss, 24" o.c.	2" x 6" rafters, 16" o.c.
Interior Partitions			
Partition height	8 feet	8 feet	8 feet
Partition surface	3/8" drywall	3/8" drywall	3/8" drywall
Trim	Softwood	Softwood	Softwood
Floor finish	Softwood and linoleum or carpet and pad and linoleum	Softwood and vinyl, carpet and pad and vinyl sheets	Carpet and pad with underlayment and vinyl sheet
Basement walls	10 course, 8" concrete block	10 course, 8" concrete block	11 course, 8" concrete block
Basement floors			
Concrete	3" floor	3-1/2" floor	4" floor
Base	3" gravel base	4" gravel base	4" gravel base
Floor construction			
Subfloor	1/2" plywood	1/2" plywood	1/2" plywood
Joists	2" x 8", 16" o.c.	2" x 8", 16" o.c.	2" x 10", 16" o.c.

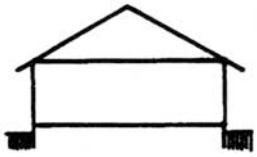
HOW TO DETERMINE CLASS OF CONSTRUCTION

Class BC Standard Deluxe	Class B Custom	Class A Class	
Constructed with average-quality materials and workmanship using modified stock-type plans. Built-ins of average to better than average quality. Some distinguishing interior and exterior qualities for individuality. Interior surfaces plaster.	Constructed with good-quality materials and workmanship from custom-made plans and specifications. Some built-ins and special interior and exterior features. Interior surfaces plaster. Roof with asphalt shingles.	Constructed with excellent-quality materials and workmanship. Includes many built-ins and special interior and exterior features. Interior wall surfaces are plaster. Roof with better than average shingles.	
			Exterior Walls
8 feet	8 feet	8 feet	Height
25/32" insulation board	5/32" insulation board	25/32" insulation board	Sheathing
3-1/2" batt	3-1/2" batt	6" batt	Insulation
Plaster on 1/2" drywall	Plaster on 5/8" drywall	Plaster on lath	Interior
290# asphalt shingles	290# asphalt shingles	290# asphalt shingles	**Roof**
5/8" plywood	5/8" plywood	1 x 6" plywood	
2" x 6" rafters, 16" o.c.	2" x 8" rafters, 16" o.c.	2" x 8" rafters, 16" o.c.	
			Interior Partitions
8 feet	8 feet	8 feet	Partition height
Plaster on 1/2" drywall	Plaster on 5/8" drywall	Plaster	Partition surface
Hardwood	Hardwood	Hardwood	Trim
Carpet and pad, hardwood, vinyl tile, ceramic tile	Carpet and pad, hardwood vinyl tile, ceramic tile	Carpet and pad, hardwood vinyl tile, ceramic tile, slate	**Floor finish**
11 course 12" reinforced concrete block	12" reinforced concrete block	12" reinforced concrete block	**Basement walls**
			Basement floors
5" floor	6" floor	6" floor	Concrete
6" gravel base	6" gravel base	6" gravel base	Base
			Floor construction
5/8" plywood	5/8" plywood	5/8" plywood	Subfloor
2" x 10", 16" o.c.	2" x 12", 16" o.c.	2" x 12", 16" o.c.	Joists

GUIDE TO SELECTING STORY HEIGHT

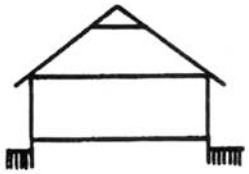
1-Story

A 1-story residence has no attic and one floor of living area at or near grade level.



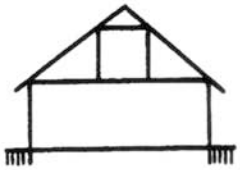
1+ -Story

A 1-story residence with an unfinished attic (having a ceiling height of at least 7 feet) with a floor and an area approximating 25% of that of the first floor.



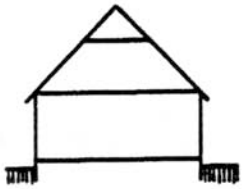
1-1/4-Story

A 1-story residence with a finished attic and an attic area (where the ceiling height is at least 7 feet) approximately 25% of that of the first floor.



1-1/2-Story

A 1-story residence with a finished attic and an attic area (where the ceiling height is at least 7 feet) approximating 50% of that of the first floor. If the attic is unfinished, use 1-1/4-Story.



GARAGE TYPES

Attached Garage

Attached garage, a structure for automobiles, has one or two walls in common with the residence.

Detached Garage

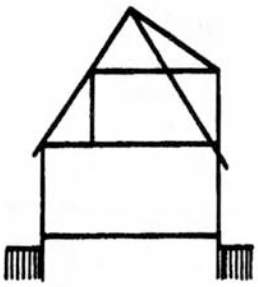
Detached garage is free-standing, separate from the residence.

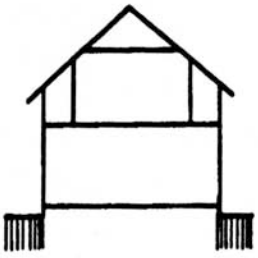
Carport

A roofed cover for automobiles, usually attached to residence and either open or enclosed by one or two walls.

1-3/4-Story

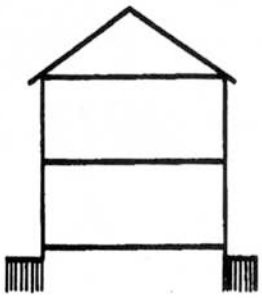
A 1-story residence with a finished area (where the ceiling height is at least 7 feet) approximating 75% of that of the first floor. If the attic is unfinished, use 1-1/4-story.





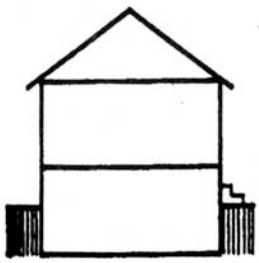
2-Story

A 2-story residence has two floors of living area, one at grade and one above grade, both with full ceiling heights.



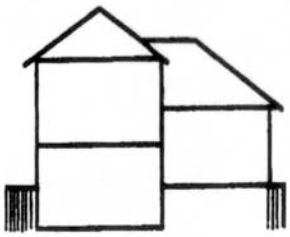
Bi-Level

A bi-level residence typically has a lower or ground level 4 feet below grade and an upper level 4 to 5 feet above grade, both with full ceiling heights. Entry is at grade level. Full-size windows in the lower level make the area suitable for a family room or a bedroom. Typically the lower level is 80% finished, allowing an unfinished area for utility and mechanical needs. Bi-levels are often located on a sloping lot so the lower level is partially exposed. Bi-levels have no basements.



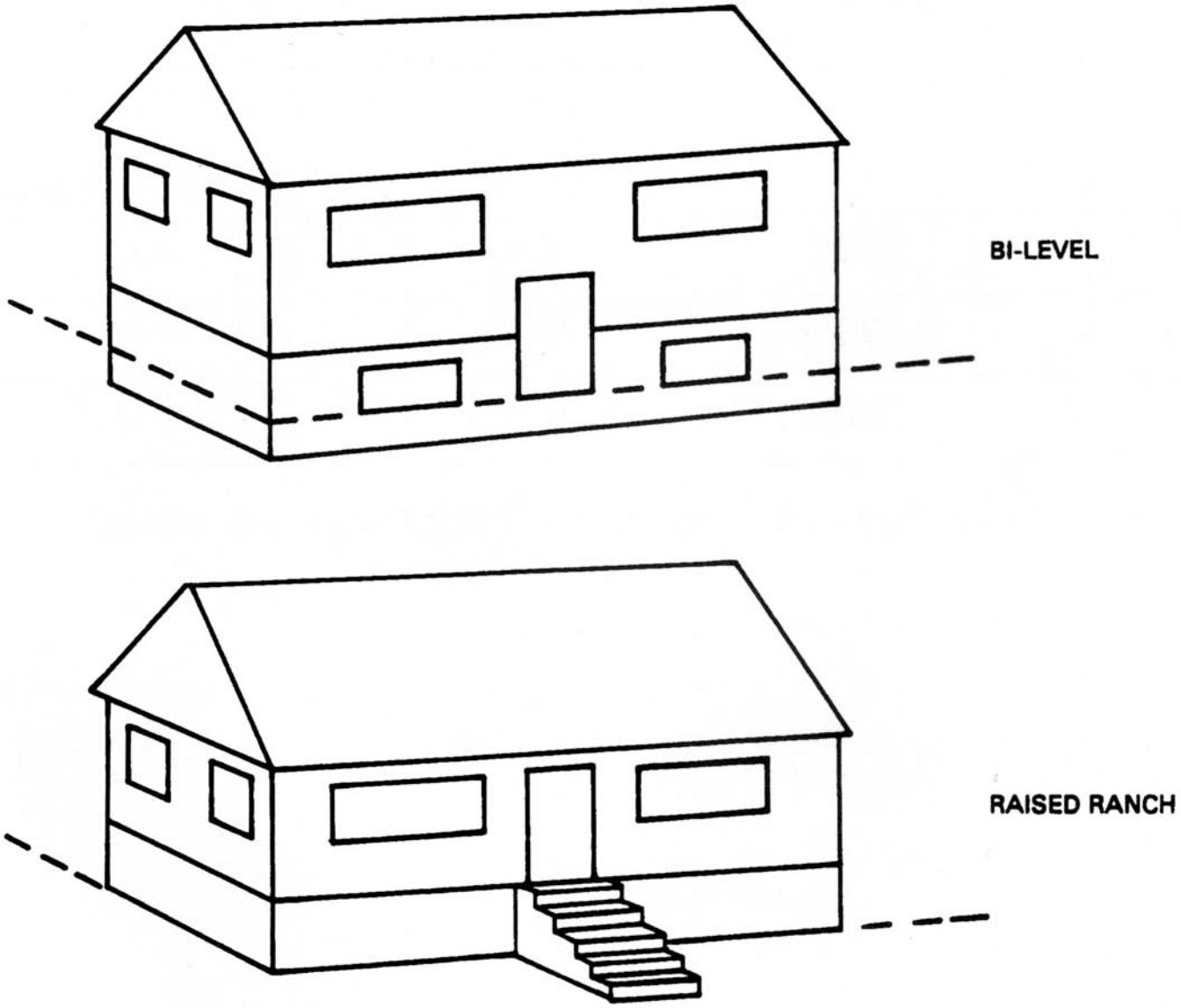
Tri-Level

A tri-level residence has three levels of living area; one 4 feet below grade, one at grade, and one 4 feet above grade, all with full ceiling heights. The pricing schedules include a basement in the base rates for the level at grade.



BI-LEVEL VS RAISED RANCH

The bi-level residence is a two-level structure typically having its lower level 4 feet below grade and its upper level 4 to 5 feet above grade. Two characteristics of the bi-level residence are the split-foyer entry and the fact that the lower level includes required elements of living area, those usually being the living/dining area or bedrooms. The bi-level should be distinguished from the raised ranch, which is merely a 1-story plus basement with basement walls partially exposed. The raised ranch typically has its entrance at the upper level, and the upper level contains all the required elements of the living area, those being living room, kitchen, dining area, bathroom and bedrooms. The raised ranch should be priced as a 1-story plus basement with additions for walk-out basement, basement garage and basement finish as needed.

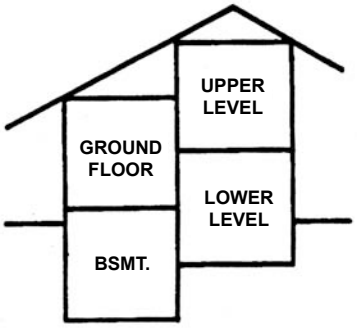


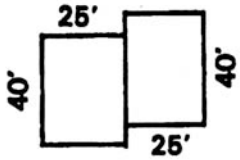
The bi-level schedules assume that the lower level is 80% finished. If the lower level is completely unfinished, price as a 1-story with basement. If the lower level is completely finished, price as a 2-story on a slab. For finished levels of 20%, 40% and 60%, adjust the base rate by the amount listed under “Lower Level Finish” located on the Square Foot cost page.

TRI-LEVEL

The tri-level is a house which has living area on three different levels. The tri-level can be thought of as a combination of a bi-level and a 1-story structure.

The tri-level schedule assumes that the ground area of the bi-level and the 1-story sections of the house are equal in size as depicted in the sketch below.





Ground Area:

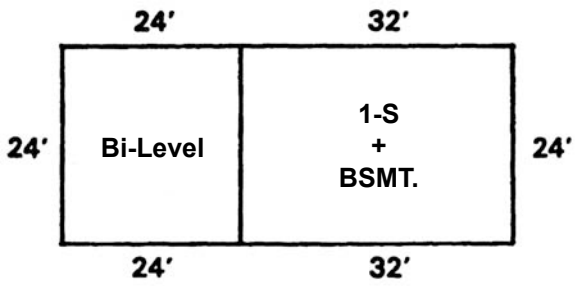
1-S + BSMT
40' x 25' = 1,000 sq. ft.

Bi-level
40' x 25' = 1,000 sq. ft.

Total Ground Area = 2,000 sq. ft.

The square foot rates are applied to the total ground area, which in the case of the example above is 2,000 sq. ft. The basement adjustment for the 1-story section must be applied to the total ground area, as the rates have already been adjusted for the fact that only 1/2 of the house would need a basement adjustment. A tri-level with an equal split between the 1-story and bi-level sections has been included as one of the pricing examples in this chapter.

If the ground area of the tri-level is not approximately equally split between the 1-story and bi-level sections, the tri-level pricing schedule cannot be used. In this situation, the bi-level section should be priced separately from the bi-level schedule, and the 1-story section should be priced separately as a 1-story plus basement, crawl space or slab as the facts dictate. The size for rates is determined from the combined ground area of the 1-story and bi-level sections. The resulting answer must then be increased by 8% to reflect the extra cost built into a tri-level house. Below is an example of this pricing procedure.



Ground Area:

1-S + BSMT
24' x 32' = 768 sq. ft.

Bi-level
24' x 24' = 576 sq. ft.

Total Ground Area = 1,344 sq. ft.
Size for Rates = 1,350 sq. ft.

As an example, the Class C rates for the example above follow:

1-S + BSMT	768' x $63.83 =	$49,021
Bi-level	576' x $82.20 =	$47,347
	Total	$96,368
	Add 8%	x 1.08
		$104,077

GUIDE TO THE CALCULATION OF GROUND AREA LIVING AREA AND WALL AREA

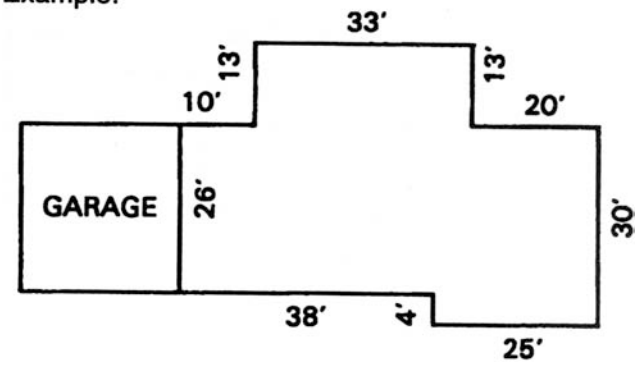
Calculation of Ground Area

Ground area is defined as the area computed from the exterior dimensions of the ground floor.

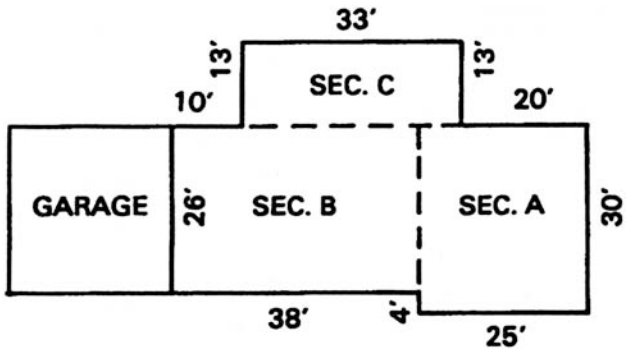
Step 1 – To calculate ground area, measure all exterior dimensions of the ground floor only, excluding garage, and construct a diagram showing these measurements.

***Note:** Measurements should be made at a place on the exterior wall where there is exterior finish, NOT at the ground level where there is no exterior finish on the wall. Do not add to the size of a house where owner has installed new siding over old siding.

Example:



Step 2 – Divide the diagram of the ground floor into sections approximating squares or rectangles.



Step 3 – Calculate the area of each square and/or rectangle.

Section A: 30' x 25' = 750 sq.ft.

Section B: 38' x 26' = 988 sq. ft.

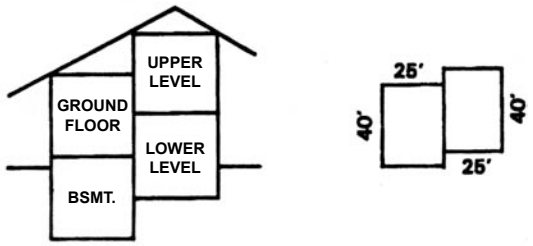
Section C: 33' x 13' = 429 sq. ft.

Ground Area = 2,167 sq. ft.

Size for Rates = 2,150 sq.ft.

A tri-level home has its ground floor split into two levels. To compute ground area, add the area of the lower level in the bi-level section and the area of the ground floor in the 1-story section.

Example:



Ground Floor:

40' x 25' = 1,000 sq. ft.

Lower Level:

40' x 25' = 1,000 sq. ft.

Ground Area = 2,000 sq. ft.

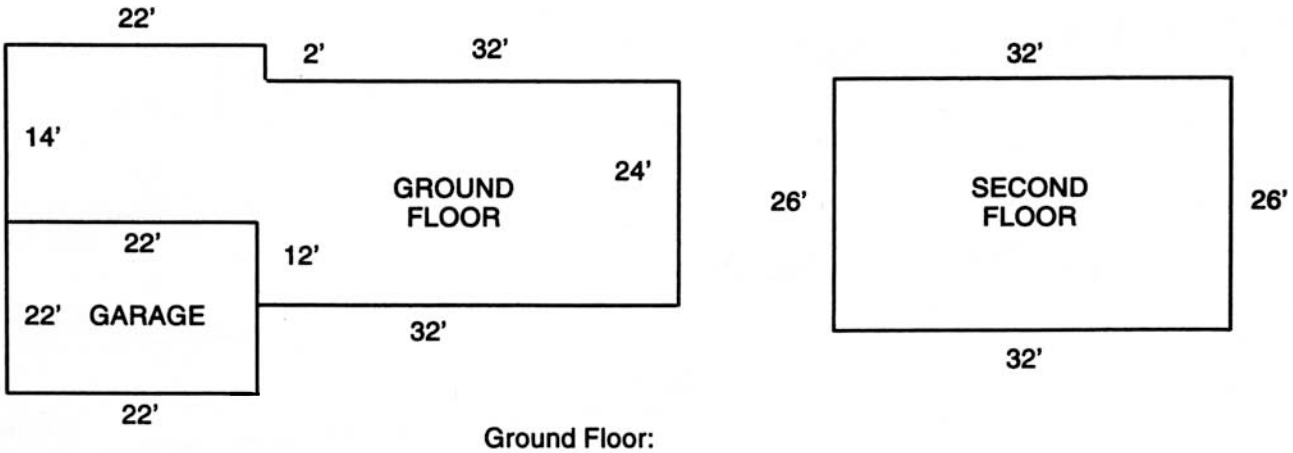
Size for Rates = 2,000 sq. ft.

Calculation of Living Area

Living area is defined as the area computed using the exterior dimensions of the entire living area of the residence. Minimum ceiling height of living area is 7 feet.

In a 1-story house, living area and ground area are equal, and calculations are the same as those for ground area. To compute living area in a residence other than 1-story, add the area of the upper floors to the total ground area.

Example:
(**Note:** drawing not to scale)



Ground Floor:

24' x 32' = 768 sq. ft.
14' x 22' = 308 sq. ft.
Total = 1,076 sq. ft.

Second Floor:

26' x 32' = 832 sq. ft.

Total Living Area: 1,908 sq. ft.

CALCULATION OF EXTERIOR WALL AREA

Measure the number of linear feet and the height of all exterior walls, including walls separating attached garage from living area and excluding basement walls and foundation walls.

Multiply wall length by wall height to compute wall area.

Example: Calculate wall area of the 2-story residence described above.

Ground floor: 32' + 24' + 32' + 2' + 22' + 14' + 22' + 12' = 160 L.F. x 8' high = 1,280 sq. ft. of wall area

Second floor: 32' + 26' + 32' + 26' = 116 L.F. x 8' high = 928 sq. ft. of wall area

TOTAL: 1,280 + 928 = 2,208 sq. ft. wall area

DEPRECIATION

In the cost approach for most structures, the appraiser must deduct depreciation from the estimate of cost new, because an old or used property is usually less valuable than a similar new one. Appraisal depreciation is defined as a loss in value resulting from physical deterioration, functional obsolescence and economic obsolescence. These three categories of depreciation are defined in the appraisal theory section of Volume III of the manual. However, there are many times when the appraiser will estimate total depreciation directly, instead of, or as a check against, the results found by estimating each category separately.

An estimate of total normal depreciation, expressed as a percent of the cost of reproduction or replacement new, can be made if the appraiser:

- rates the physical condition of the building and its degree of desirability and usefulness, using the system described below as a guide.

- uses this rating as a check on the remaining condition for the building's age indicated by the depreciation table on the following page.

Rating can be done during inspection using these definitions and the corresponding percent conditions.

These are the same terms prospective buyers would use when inspecting a home. Sound valuation theory presupposes the existence of prospective buyers with intelligence enough to compare the advantages and disadvantages of competing properties, then rate each one according to its physical condition and degree of desirability and usefulness.

Rating	Description	Corresponding Percent Condition	Mid Point
Excellent	Building is in perfect condition, very attractive and highly desirable.	95 – 100%	98%
Very good	Slight evidence of deterioration, still attractive and quite desirable.	85 – 94%	90%
Good	Minor deterioration visible, slightly less attractive and desirable, but useful.	75 – 84%	80%
Average	Normal wear and tear is apparent, average attractiveness and desirability.	60 – 74%	67%
Fair	Marked deterioration, rather unattractive and undesirable but still quite useful.	45 – 59%	52%
Poor	Definite deterioration is obvious, definitely undesirable and barely usable.	30 – 44%	37%
Very poor	Condition approaches unsoundness, extremely undesirable and barely usable.	20 – 29%	25%
Unsound	Building is definitely unsound and practically unfit for use.	0 – 19%	10%

DEPRECIATION TABLE FOR RESIDENCES
(All Classes)

Age	Remaining Condition	Age	Remaining Condition
1	99%	31	69%
2	98%	32	68%
3	97%	33	67%
4	96%	34	66%
5	95%	35	65%
6	94%	36	64%
7	93%	37	63%
8	92%	38	62%
9	91%	39	61%
10	90%	40	60%
11	89%	41	59%
12	88%	42	58%
13	87%	43	57%
14	86%	44	56%
15	85%	45	55%
16	84%	46	54%
17	83%	47	53%
18	82%	48	52%
19	81%	49	51%
20	80%	50	50%
21	79%	51	49%
22	78%	52	48%
23	77%	53	47%
24	76%	54	46%
25	75%	55	45%
26	74%	Older	45%
27	73%		
28	72%		
29	71%		
30	70%		

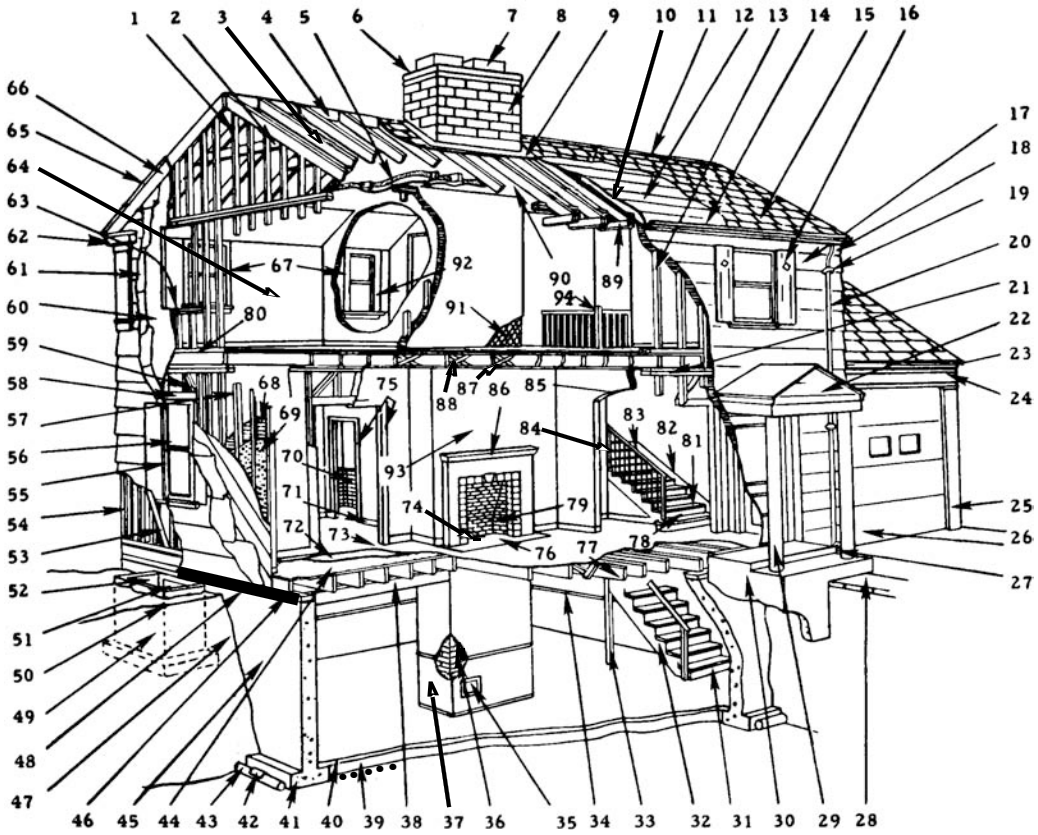
The depreciated condition will be held at 45% as long as the residence is habitable.

Age = Tax Year - date of construction

Example: A 2003 assessment is being figured for a building constructed in 1983. The age is 20 years.

The appraiser is to recognize exceptional maintenance, remodeling, replacements and additions in adjusting the % condition from that listed in this table to the actual observed condition. Exceptionally poor maintenance is also to be recognized.

VIEW OF RESIDENTIAL CONSTRUCTION



1. Gable stud
2. Collar beam
3. Ceiling joist
4. Ridgeboard
5. Cap/plate
6. Chimney wash
7. Chimney pot
8. Chimney
9. Chimney flashing
10. Insulation
11. Ridge
12. Roof sheathing
13. Stud
14. Eave trough or gutter
15. Roofing
16. Shutter
17. Horizontal board siding
18. Downspout or leader gooseneck
19. Downspout or leader strap
20. Downspout leader or conductor
21. Double plate
22. Entrance canopy
23. Garage cornice
24. Frieze
25. Doorjamb
26. Garage door
27. Entrance step
28. Sidewalk
29. Entrance post platform
30. Entrance platform
31. Basement stair riser
32. Stair stringer
33. Girder post
34. Chair rail
35. Cleanout door
36. Masonry chimney
37. Plaster over masonry
38. Furring strips
39. Cinder or gravel fill
40. Concrete basement floor
41. Footing for foundation wall
42. Filter mat
43. Foundation drain tile
44. Subflooring
45. Foundation wall
46. Mudsill
47. Backfill
48. Termite shield
49. Areaway wall
50. Grade line
51. Basement sash
52. Areaway
53. Corner brace
54. Corner studs
55. Window frame
56. Window light
57. Wall stud
58. Window header
59. Window cripple
60. Wall sheathing
61. Building paper
62. Frieze or barge board
63. Rough opening
64. Wall finish
65. Cornice molding
66. Fascia board
67. Window casing
68. Lath
69. Insulation
70. Wainscoting
71. Baseboard
72. Building paper
73. Finish floor
74. Ash dump
75. Door trim
76. Fireplace hearth
77. Floor joists
78. Stair riser
79. Fire brick
80. Sole plate
81. Stair tread
82. Finish stringer
83. Stair rail
84. Balusters
85. Plaster arch
86. Mantel
87. Floor joist
88. Bridging
89. Lookout/soffit framing
90. Attic space
91. Metal lath
92. Window sash
93. Chimney breast
94. Newel post

PERCENTAGE BREAKDOWN OF BASE COSTS

The following percentages indicate the approximate portion of the total cost of average-quality wood frame houses attributable to each component listed, as derived from an analysis of several groups of residences. Costs of plans and other components are based on several developments containing between five and fifty houses each.

AVERAGE-QUALITY HOUSE

Plans	.5%
Plan check and permit	1.7%
Survey	.3%
Water meter and temporary facilities	.5%
Excavation, forms, concrete and backfill	10.2%
Lumber, rough	9.0%
Carpenter labor, rough	9.1%
Roofing	2.3%
Insulation and weatherstrip	3.4%
Exterior finish: siding, stucco, masonry veneer	5.9%
Interior finish: plaster and drywall	6.8%
Sash, doors and shutters	3.3%
Lumber, finish	.5%
Carpenter labor, finish	1.4%
Hardware, rough	.3%
Hardware, finish	.4%
Cabinets	3.0%
Countertops/tile	1.7%
Floor covering: hardwood or carpeting	2.1%
resilient	1.3%
Plumbing	5.4%
Shower doors/mirrors/tub enclosure	.4%
Electrical	4.5%
Light fixtures	.5%
Built-in appliances	1.7%
Heating	6.5%
Sheet metal	.5%
Ornamental iron	.2%
Painting	3.0%
Sewer connection	.5%
Miscellaneous	.6%
Cleanup	.4%
General contractors' overhead and profit	12.6%
TOTAL	100.0%

The 12.6% listed for general contractors' overhead and profit is the percentage of the total cost. This is the equivalent of 14.8% of the labor, material and subcontract cost, excluding costs of plans, survey, plan check and permit, with a range from 10.2% to 20.8%.