

ASSESSORS' HANDBOOK  
SECTION 531

RESIDENTIAL BUILDING COSTS

JANUARY 2018

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CALIFORNIA STATE BOARD OF EQUALIZATION

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## FOREWORD

The 2018 revision of Assessors' Handbook Section 531 (AH 531), *Residential Building Costs*, updates costs contained in previous editions. These costs become effective as of January 1, 2018. The 2018 revision of AH 531 is available only on the Board's website. The entire text, photographs, and drawings of AH 531 are posted to the Board's website at [www.boe.ca.gov/proptaxes/ah531.htm](http://www.boe.ca.gov/proptaxes/ah531.htm).

Statutory and regulatory considerations, general instructions, and pertinent information concerning the use of this handbook are contained in the *Costing Information* (AH 531.10) chapter. Specific instructions and comments appropriate to each building type or topic are found in the introductory pages of the respective chapter devoted to a particular structure type or topic. Diligent efforts have been made to supply accurate and reliable information. AH 531 should serve as a guide, but it is important for the appraiser to research local costs as well as analyze permit costs and fees of jurisdictions in the region and to make appropriate adjustments where necessary. Due primarily to the wide variance in these costs, both within and among the counties, it may be necessary to supplement the data provided in AH 531 with local cost data.

The combination of historically low mortgage interest rates, low inventory, lower unemployment rates, and increased demand for housing has resulted in increased sale prices for single-family homes in most of the major cities in California. We are seeing prices approach and in some cases exceed 2005-2006 peak home sale prices throughout the major cities in California.

Costs in this 2018 revision of the AH 531 have increased, partly due to the ability of new home builders to increase their entrepreneurial profit as well as an increase in contractor's profit. Other parts of the cost structure have remained the same. Appraisal judgement should be used to adjust for any market change that could affect costs after the publication date of the AH 531.

/s/ Dean R. Kinnee

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Deputy Director  
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# AH 531.10: COSTING INFORMATION

## STATUTORY AND REGULATORY BASIS

Assessors' Handbook Section 531 (AH 531) was designed and developed for use by the 58 California counties as an aid to assessors in fulfilling their statutory and regulatory requirements in the assessment of all taxable property in the county.<sup>1</sup> AH 531 relies on the Standard Classification System in categorizing design and construction type, quality, shape, and area class to implement the cost approach portion of the three appraisal approaches. Unlike other published cost services that are not specifically used for tax assessment purposes (nor governed by California statutory law), AH 531 includes entrepreneurial profit.

The work in AH 531 is guided by Property Tax Rule 6<sup>2</sup> and Revenue and Taxation Code section 401.5. Rule 6 provides in part:

(a) The reproduction or replacement cost approach to value is used in conjunction with other value approaches and is preferred when neither reliable sales data (including sales of fractional interests) nor reliable income data are available and when the income from the property is not so regulated as to make such cost irrelevant. It is particularly appropriate for construction work in progress and for other property that has experienced relatively little physical deterioration, is not misplaced, is neither over- nor underimproved, and is not affected by other forms of depreciation or obsolescence.

(b) The reproduction cost of a reproducible property may be estimated either by (1) adjusting the property's original cost for price level changes and for abnormalities, if any, or (2) applying current prices to the property's labor and material components, *with appropriate additions for entrepreneurial services*, interest on borrowed or owner-supplied funds, and other costs typically incurred in bringing the property to a finished state (or to a lesser state if unfinished on the lien date). Estimates made under (2) above may be made by using square-foot, cubic foot, or other unit costs; a summation of the in-place costs of all components; a quantity survey of all material, labor, and other cost elements; or a combination of these methods. [Emphasis added.]

Section 401.5 reads as follows:

The board shall issue to assessors data relating to costs of property, or, with respect to commercial and industrial property, shall, after a public hearing, review and approve commercially available data, and shall issue to assessors other information as in the judgment of the board will promote uniformity in appraisal practices and in assessed values throughout the state. *An assessor shall adapt data received pursuant to this section to local conditions and may consider that data together with other factors as required by law in the assessment of property for tax purposes.* [Emphasis added.]

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<sup>1</sup> Revenue and Taxation Code section 405.

<sup>2</sup> Title 18, Public Revenues, California Code of Regulations, section 6.

## BASIS OF COST

Costs in this handbook are based on the cost to build on a level site in the four-county Sacramento area<sup>3</sup> as of the date in the lower right-hand corner of each page. They include, except for unusually high fees and permits required by governmental agencies, all necessary costs that must be incurred in placing the building or component in the hands of the ultimate consumer, including the following:

1. Excavation for foundations, piers, and other structural foundation components, considering a level site
2. Materials
3. Labor
4. Architectural fees
5. Engineering fees
6. Supervision
7. Normal permits, among others
8. Normal utility hook-ups
9. Contractor's overhead and profit
10. Contingencies
11. Carrying charges during construction
  - Taxes
  - Interest
  - Insurance
12. Legal expenses
13. Typical sales commissions or costs and transfer fees
14. Entrepreneurial profit

Costs are in the form of square foot cost tables for basic buildings and *additive or in-place costs for optional or extra components that might differ from building to building*. Building components included in basic square foot costs are:

1. Foundations as required for normal soil conditions
2. Floor, wall, and roof structures

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<sup>3</sup> Sacramento, Yolo, and the western portions of El Dorado and Placer counties.

3. Interior floor, wall, and ceiling finishes
4. Exterior wall finish and roof cover
5. Interior partitions
6. Cabinet work, doors, windows, trim, and similar items
7. Electrical wiring and fixtures
8. Rough and finish plumbing, including fire sprinklers where applicable, as described in applicable building specifications
9. Built-in appliances as described in applicable specifications

The cost of the following items may need to be added to the basic building cost, depending on variations in the class specifications and location, to arrive at total improvement costs:

1. Heating and cooling systems
2. Fireplaces
3. Plumbing fixtures, fire sprinklers, and built-in appliances not included in basic building costs
4. Basements
5. Porches and patios
6. Garages or carports
7. Yard improvements, such as, fences, curbs, paving, and others
8. Site-specific extraordinary permit fees
9. Extra utility hook-ups (for example, wells, or septic systems. Note that an adjustment of an appropriate amount may be necessary to account for the situation where the normal utility hook-ups, which are included in the basic building costs, are not present in the property being appraised)
10. Driveways, walkways
11. Landscaping

### **STANDARD CLASSIFICATION SYSTEM**

The Standard Classification System is a method of estimating basic building costs by referring to square foot cost tables. Basic building costs are then augmented by in-place or square foot costs of optional or extra components. Components included in the basic square foot costs vary with different building types.

In applying the square foot method of cost estimating, a square foot cost is assigned to the building being appraised on the basis of comparison with new buildings with known costs. The premise is that the subject building would have the same square foot cost as a similar new building.

A difficulty in applying this method arises in finding new buildings, with known costs for comparison, that are similar to the building to be appraised. Few buildings are exactly alike, and therefore few have the same square foot cost. A further complication is the matter of deciding which known costs are representative of typical replacement costs.

The Standard Classification System is a means of estimating square foot costs by systematically comparing the subject structure with structures whose costs are known. Buildings are classified according to variations in physical characteristics that cause square foot cost differences. The classification of a building then serves as a reference in finding a proper square foot cost from tables catalogued according to this system.

## **COST VARIABLES**

The physical characteristics used as variables in the standard classification system are:

- Design type
- Construction type
- Quality class
- Shape class
- Area class

Descriptive words, letters, and numbers are used to designate a particular type or class for each of the five cost characteristics. They are assigned on the basis of standards or specifications set up in the Standard Classification System. This means that any one building is assigned an overall classification and is identified by designations for each of these cost variables. Here is an example.

A building is classified as a single-family residence, D6A, with 1,450 square feet. "Single-family residence" refers to its design type; "D" to its construction type; "6" to its relative level of quality or quality class; "A" to its shape; and "1,450" is its square foot size or area class. All buildings that have this classification in the base area will have approximately the same cost.

## **DESIGN TYPES**

Buildings are first classified on the basis of the use for which they were designed. Square foot costs of buildings may vary considerably for different design types. Two buildings may be alike in area, shape, quality, and type of construction but have different square foot costs because one has the design-type features of a multiple-family residence and the other those of a single-family residence.



This handbook contains square foot costs for these design types:

- Conventional single-family residences
- Modern single-family residences
- Mountain residences
- Multiple-family residences
- Manufactured housing

## **CONSTRUCTION TYPE**

Construction type refers to the structural characteristics of a building. The letters A, B, C, D, and S are used to designate five different structural types recognized by the building trades. These types may be identified by the use of the following descriptions.

### **Class A Construction Type**

*Class A* buildings have structural steel frames which are fireproofed by encasing them in concrete or by spraying them with fireproofing material. Floor and roof structures are built of reinforced concrete. Walls are filler or curtain type and may be built of brick, concrete, aluminum, glass, or any other noncombustible material. Multiple-story office or hotel buildings are typical Class A buildings.

### **Class B Construction Type**

*Class B* buildings have a framework built of reinforced concrete columns and beams. As in Class A buildings, the floor and roof structures are built of reinforced concrete and the walls are built of noncombustible materials. Typical Class B buildings are multiple-story office buildings, hotels, and stores.

### **Class C Construction Type**

*Class C* buildings have masonry-type exterior walls. Floor structures may be built of wood frame or poured concrete. Roof structures are wood frame. The walls may be either a continuous bearing wall system or a pilaster and bond beam frame with a masonry filler or curtain wall. The masonry may be brick, tile, stone, or concrete, either poured in place or tilt-up. Interior partitions are usually wood frame. Class C buildings are usually restricted in height. They are used generally as stores, supermarkets, garages, and warehouses, and sometimes as offices or residences. Structural members may be wood or steel trusses, steel girders, or laminated wood beams.

### **Class D Construction Type**

*Class D* buildings have wood-frame construction such as that generally encountered in residences. The frame is usually made of two-by-four or two-by-six vertical studs, spaced about sixteen inches apart, with horizontal top and bottom plates. The exterior finish or skin may be wood siding, shingle, stucco, masonry veneer, or sheet metal. Class D construction seldom exceeds three stories.

## **Class S Construction Type**

*Class S* buildings are specialized ones that do not fit any of the above categories. Service station buildings are an example of Class S construction.

## **QUALITY CLASSIFICATION**

Quality class ranks buildings according to their amounts of materials, grades of materials, and workmanship. If two buildings are of the same design type, construction type, shape, and size, but one has more materials or better materials, it will have a higher square foot cost. Also, if two buildings are exactly alike, except that one was built with greater care and skill, it will be of better *quality* and will have a higher cost.

Of the five choices that lead to the overall classification of a building, the choice of a quality class is the most difficult. The relative quality of a building is not as obvious as its design type, construction type, shape, or size. Many points of reference must be observed. Many parts of a building cannot be seen, and their presence and nature must be inferred.

The quality class designations are usually numbered from 1 to 10. A class 1 building is the least costly to build per square foot, and a class 10 is the most costly. They are assigned on the basis of a comparison to numbered descriptions (specifications) of typical buildings of various quality levels.

The specifications for each quality class make a distinction between classes. This distinction often shows in the *quality* of a feature and not whether the feature is present. The same feature may exist in different classes, but the quality of the feature will help to determine the classification. Conversely, some features may be included in a particular classification, while in another class, the same feature must be treated as an additive.

**Each chapter of this handbook dealing with different design and construction types contains a set of applicable specifications.**

The building specification charts found in the various chapters are a compilation of attributes *typically* found in the building class listed on the individual charts. Not all structures will include all of the typical attributes listed in a particular classification. That does not automatically mean that it is an improper classification. ***The appraiser must use judgment to determine if the majority of attributes listed pertain to the structure being classified.***

Many times buildings have quality features that fall between those of two classes rather than being most like one or the other. For this reason, half-class gradations are used. For example, buildings can fall in the 5.5 class or the 6.5 class. The unit cost of a class 5.5 is halfway between the cost of a class 5 and the cost of a class 6. The square foot cost tables array costs for half-classes as well as for full classes.

The typical attributes listed in the specifications are the basis for the cost factors established in the square foot area cost tables. These factors recognize and include an element of cost for the typical attributes. **The factors do not, however, include costs for additives.**

Generally, more additives are found in the higher building classifications, particularly D8 and above. The appraiser must use judgment to determine if an additive is significant enough to add value to the structure being appraised. If so, an appropriate adjustment should be made utilizing the *Building Additives* chapter of this handbook.

## **MEASURING AND DIAGRAMMING**

A diagram of the building should be made showing the house, porches, garages, and any other significant plot plan features. This enables the appraiser to compute the area of the house, to select its shape, and to compute the area of any other components to which a square foot cost should be applied.

Usually measurements are begun at the left front corner of the building and proceed counterclockwise around the house. Measurements should be recorded as dots or angles properly located on the grid. When the house is completely measured, the dots or angles are tied together with ruled lines to form an outline of the house.

Measurements are made and plotted to the nearest foot rather than fractions of a foot. The scale of the diagram should be one inch to ten feet except when the house is too large to fit on the grid at this scale. The front of the house usually faces the bottom of the page. However, the diagram for some houses must be turned to face the side in order to fit the grid. Fireplaces are shown in their approximate location by a rectangle crossed in the middle.

### **Upper Floors and Basements**

The following color code is used to show the various floor levels:

- Main floor – black line
- Second floor – red line
- Third floor – blue line
- Basement – green line

If a first and a second, third, or basement wall fall on the same line, the second-floor line is drawn inside the first-floor line, the third-floor line is drawn inside the second-floor line, and the basement line is drawn inside any upper-floor line.

### **Porches and Inferior Areas**

Porches and patios are drawn with broken lines. If there is a balcony on the second floor, it is drawn with a broken red line.

Areas such as porches, patios, inferior additions, and restricted upper floors whose costs per square foot are a fraction or percentage of the cost per square foot of the main residence should have that fraction noted and circled in the proper color on the diagram.

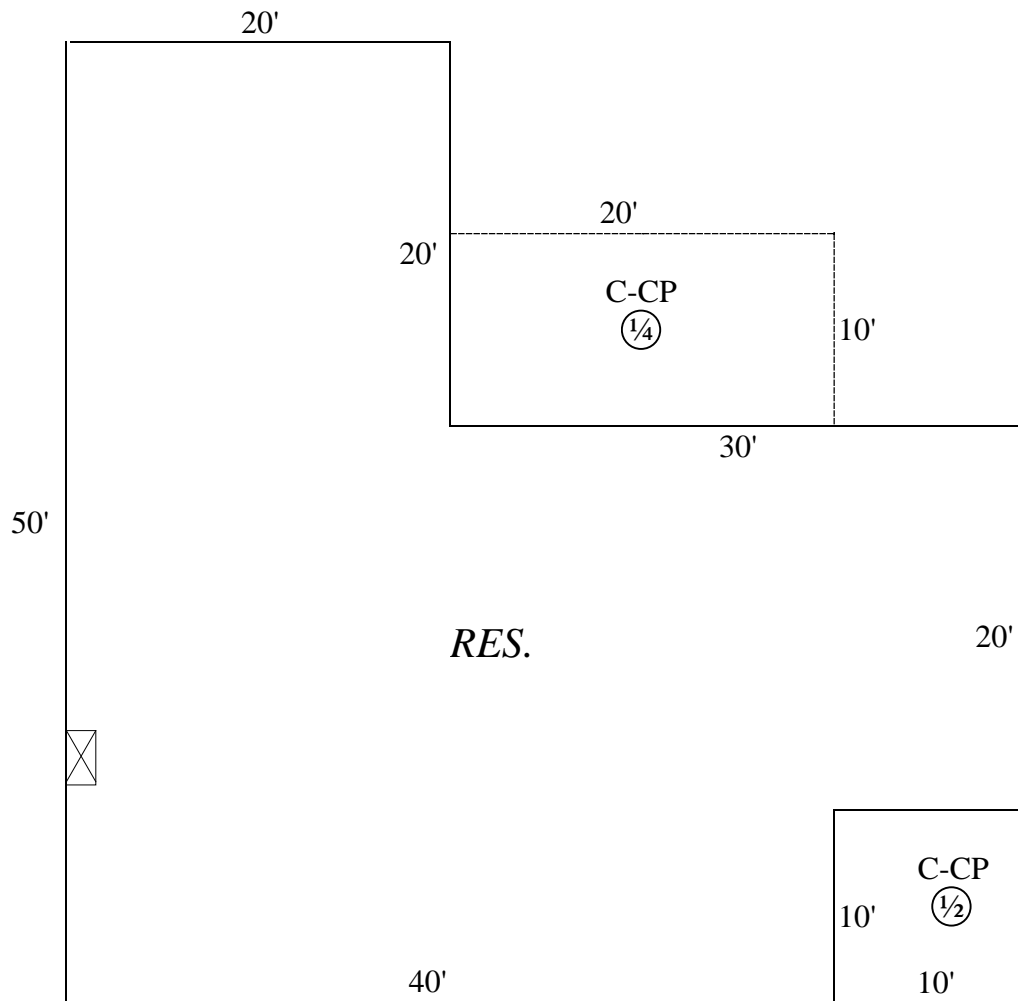
A description of the type of porch or patio involved should be indicated on the sketch of the building plan. It can be noted by the use of the following symbols:

|   |                 |      |                         |
|---|-----------------|------|-------------------------|
| C | Concrete Floor  | U.P. | Uncovered Porch/Patio   |
| W | Wood Floor      | C.P. | Covered Porch/Patio     |
| B | Brick Floor     | S.P. | Screened-in Porch/Patio |
| F | Flagstone Floor | G.P. | Glassed-in Porch/Patio  |

**Example:** C – CP = Concrete Floor, Covered Porch/Patio

### Dimensioning

The dimensions for the residence should be placed on the outside of the diagram except where a line is broken by an intersecting line as is the case in the 20,' 30,' and 40' lines in the following example. Dimensions for upper floors and basements are shown on the inside of the diagram. Dimensions are shown in the same color as the wall lines for the respective floor levels.



## Area Computation

Uniform procedures for computing building areas are desirable when possible. It is important that an appraisal reviewer is able to check the building area computations quickly and accurately.

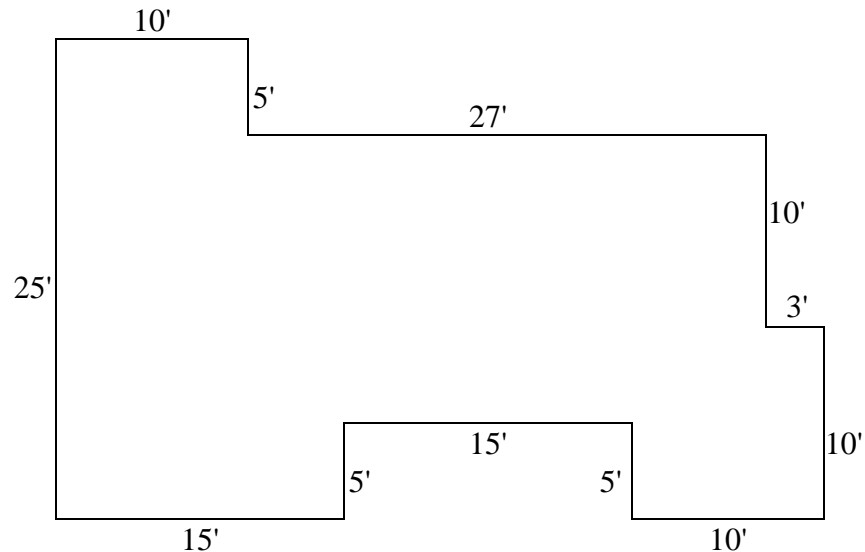
### Rectangular Buildings

Rectangular building areas are computed by dividing the building diagram into a series of rectangles, computing the area of each rectangle, and finding the sum of all the areas.

Rectangles are formed by starting at a point which is the extreme left of the lowest horizontal line on the drawing. The base of the first rectangle is a horizontal line between the point of beginning and the intersection of the first vertical line to the right. The altitude of this first rectangle is the distance between the base line and the next intersecting horizontal line above.

After eliminating areas previously formed into rectangles, this process is repeated until all areas have been formed into rectangles.

In listing dimensions, the horizontal distance is always listed first.



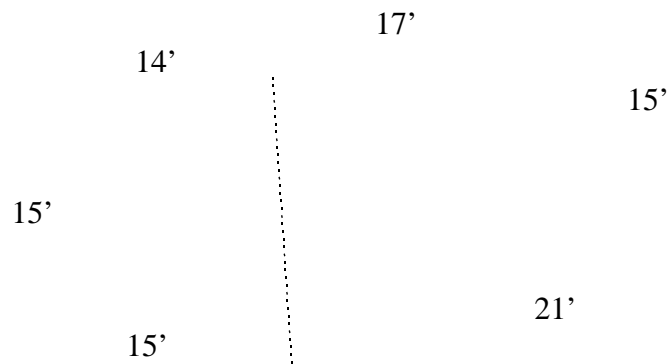
#### COMPUTATIONS

$$\begin{array}{r} 15 \times 5 = 75 \\ 10 \times 5 = 50 \\ 40 \times 5 = 200 \\ 37 \times 10 = 370 \\ 10 \times 5 = \underline{50} \\ 745 \end{array}$$

## Angular Buildings

Angular buildings are so variable that a uniform method of area computation is not feasible. Areas of these buildings are computed by dividing the diagram into a series of geometric shapes. The area of each of these segments is computed, and the areas of all parts are summed.

The best procedure for computing angular building areas is one that produces the simplest and most clear-cut division of the building area. Care should be taken to insure that a reviewer is able to follow each step of the calculation and that all areas are included.



### COMPUTATIONS

$$\frac{15 + 14}{2} \times 15 = 218$$

$$\frac{21 + 17}{2} \times 15 = 285$$

$$503$$

## AREA CLASSIFICATION

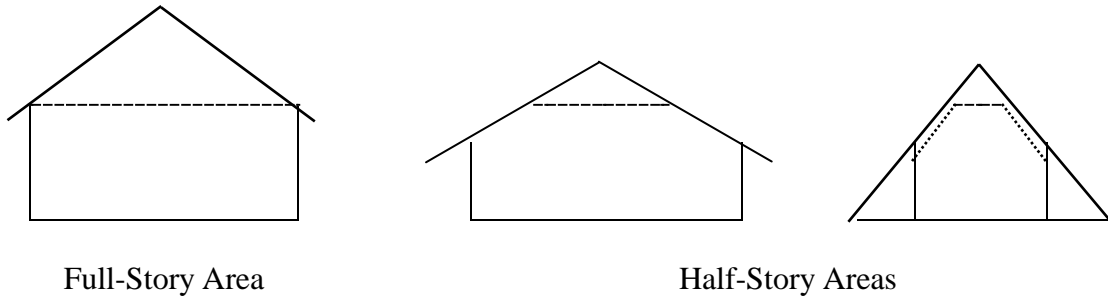
Area classification may take two forms: *total area classification* for single-family residences and *unit area classification* for multiple-family residences.

### Total Area Classification

Total area classification is made simply by selecting a square foot cost from the table that is applicable to the total building area. Total building area for this purpose includes the following areas:

- All full-story areas within and including the exterior walls of all floor levels of the building.
- Small inset areas such as entrances outside of the exterior wall but under the main roof.
- Any enclosed additions, annexes, and lean-tos with a square foot cost greater than two-thirds of the square foot cost of the main building.

A full-story area has eight or more feet of ceiling height at all exterior walls, as opposed to half-story areas which utilize the sloping roof as all or part of the exterior wall.



Total building area for single-family structures includes all full-story areas at all floor levels.

**Example:**

The square foot cost of a single-family residence with 1,200 square feet of full-story area on the first floor and 1,200 square feet of full-story area on the second floor is based upon the square foot cost for 2,400 square feet.

When portions of a building differ as to construction type, design type, or quality class, a square foot cost based upon the respective construction, design, and quality of each area is used for area classification in selecting each square foot cost; however, it is always the sum of all full-story areas on all floors of the building.

**Example:**

The first floor of a single-family residence is "C" construction type, "6" quality, and has 1,200 square feet of full-story area.

The second floor of this building is "D" construction type, "5.5" quality, and has 1,000 square feet of full-story area.

The square foot cost applied to the 1,200 square feet of full-story area on the first floor is based upon the cost of "C" construction type, "6" quality, and 2,200 square feet of full-story area.

The square foot cost applied to the 1,000 square feet of full-story area on the second floor is based upon the cost of "D" construction type, "5.5" quality, and 2,200 square feet of full-story area.

**Unit Area Classification**

Multiple-family residences square foot costs require modification for varying unit sizes.

Average unit area is found by dividing the total building area devoted to apartment use on *all* floors by the total number of units in the building. Area devoted to apartment use includes the following:

- Apartment units
- Manager's unit
- Normal office area
- A typical amount of utility room area
- Interior hallways and interior stairways

### **AREA CLASSIFICATION VARIABLES**

Other things equal, the smallest building is the most expensive to construct per square foot of floor area, while the largest is the cheapest. There are three major reasons for this—ratio of perimeter wall area to floor area, fixed costs, and quantity buying.

### **Ratio of Perimeter Wall Area to Floor Area**

The ratio of the area of the outside wall to the enclosed floor area tends to decrease with increased building size. Larger buildings have a greater floor area over which to spread the costs of the wall. Here is an example, which assumes that the two square buildings are similar in all respects except size.

| <b>Building</b> | <b>Floor Area</b> | <b>Perimeter (Feet)</b> | <b>Perimeter Wall Cost at \$140 Per Linear Foot</b> | <b>Wall Cost Per Square Foot of Floor Area</b> |
|-----------------|-------------------|-------------------------|---|--|
| A               | 400               | 80                      | \$11,200  | \$28   |
| B               | 1,600             | 160                     | \$22,400  | \$14   |

Though the larger building has a higher wall cost, there is proportionately more floor area over which to spread that cost.

### **Fixed Costs**

There are many items that cost the same regardless of building size. The cost of these items will therefore be greater per square foot in a small building than in a larger one of the same class.

Examples of fixed cost items are plumbing fixtures and kitchen cabinets in residences of the same class. These costs will be the same regardless of the area of the building; thus, the larger the building the lower the cost per square foot.

### **Quantity Buying**

Builders typically receive quantity discounts on large orders of materials for large buildings and competition may force them to pass the saving on to the consumer. This discount should not be confused with the quantity discounts that large-volume builders receive but may not pass on to the consumer in the finished product.

While costs per square foot do decrease with increasing building size, the decrease is most rapid at the lower end of the size scale and tapers off with increasing building size, eventually reaching a plateau. This can be demonstrated graphically and is noticeable in the square foot cost tables.



Area classification is made simply by computing the area of the building. A square foot cost is then selected from the proper table for this area. Building areas to be included for area classification will vary with different design types.

### SHAPE CLASSIFICATION

Shape is a consideration in the classification of single-family residences and mountain residences. Shape classification considers any cost differences that may arise from variations in the building outline. Buildings of the same design type, construction type, quality, and size will cost different amounts per square foot if they are of differing shapes. These cost differentials may be due to one or more of the following causes:

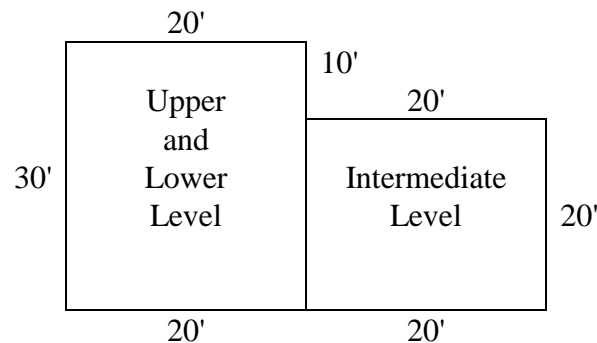
1. Differences in the number of corners for a given area.
2. Differences in the number of roof valleys and ridges for a given area (*cut-upness*).
3. Differences in the ratio of exterior wall area to floor area.

There are four shape designations: A, B, C, and D, with D the most irregular. Which designation is selected depends upon the interaction of the above three shape factors. The ratio of perimeter to floor area is the most important influence, but its importance in the selection of the shape class can be modified by the other two factors.

Shape classification of all multiple-story or split-level residential type buildings is based upon the outline formed by a composite of the extreme outside exterior walls of all full-story areas regardless of varying levels.

#### **Example:**

A split-level, single-family residence has a 20' x 30' lower level, a 20' x 30' upper level directly over the lower level, and a 20' x 20' intermediate level contiguous to the 30' side of the first rectangle. In this case, shape classification is determined from the outline formed by a composite of the 20' x 30' rectangle and the contiguous 20' x 20' square.



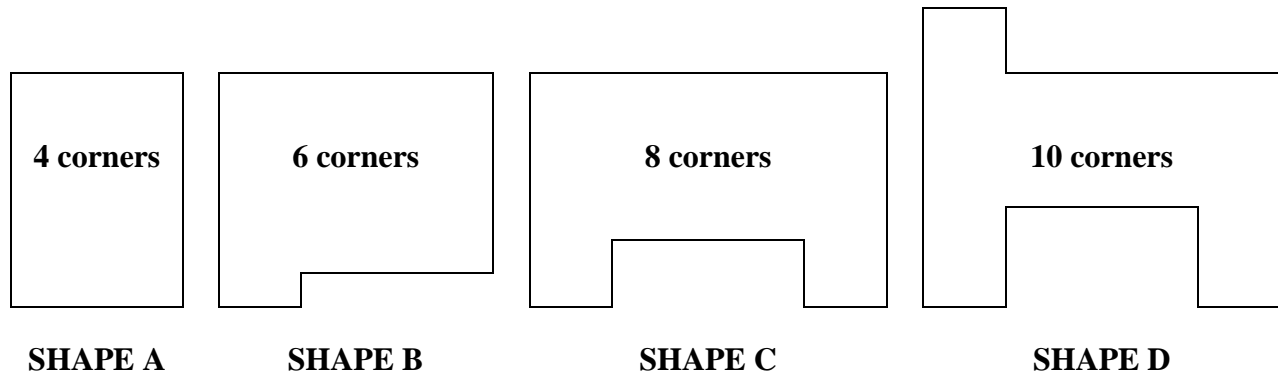
In selecting a shape classification, it is important to follow the roof and foundation line of the building. Porches, balconies, and garages are items that should not be included in the shape of the home. The shape outline should only follow the foundation outline of the main structure.

NOTE: There is no shape classification for apartments.

If the shape classification guide is used, the area used for area perimeter comparison is the area within the outline used for shape classification. In the example above, use the area of the lower level plus the area of the intermediate level or 1,000 square feet.

## Single-Family Residential Shape Classification Guides

### TYPICAL SHAPE ILLUSTRATIONS



The majority of single-family residences can be classified for shape by a visual comparison of a diagram of the subject structure with the typical shape illustrations above. If there is a question as to a proper shape classification, the Single-Family Residential Shape Classification Table (following in this chapter) may be helpful.

Buildings of the same design type, character of construction, quality of construction, and size will vary in costs because of their shape. The more irregular the shape, the greater the cost per square foot. There are three major factors that cause the costs to increase: (1) the number of corners, (2) the cut-upness of the roof, and (3) the ratio of perimeter to floor area.

#### Number of Corners

There are additional costs of materials when corners are added. With the cost of materials there are also more labor costs to build corners. With more materials and labor costs, the cost per square foot increases significantly.

#### Cut-Upness of the Roof

*Cut-upness* refers to the number of roof ridges, valleys, and hips and the manner in which the roof is broken up. As the shapes of houses become more complex, their roof systems are more cut-up. The more the roof is cut-up, the more the cost that must be absorbed by each square foot of floor area.

The cut-upness of the roof also adds to the costs in labor and materials. The increase in labor and material costs are absorbed in the total costs per square foot.

#### Ratio of Perimeter to Floor Area

The greatest effect of shape upon cost is caused by the differing ratios of perimeter to floor area in buildings of different shapes. Given two buildings of equal size but different shape, the building with the more irregular shape will require more wall area to enclose it, and the wall cost per square foot of floor area will therefore be greater.

Following is an example of two buildings, each with an area of 400 square feet and a wall cost of \$140 per linear foot.

| <b>Buildings</b> | <b>Dimensions<br/>(Feet)</b> | <b>Perimeter<br/>(Feet)</b> | <b>Wall<br/>Cost</b> | <b>Wall Cost Per Square<br/>Foot of Floor Area</b> |
|------------------|------------------------------|-----------------------------|----------------------|--|
| A                | 20 x 20                      | 80                          | \$11,200             | \$28   |
| B                | 40 x 10                      | 100                         | \$14,000             | \$35   |

### **Shape Classification Table**

Shape classification may be determined by comparing the length of the outline formed by the outermost exterior walls of a single-family residence (**excluding the porches, balconies, and garages**) and the area enclosed by this outline. Shape classification is indicated by a range of perimeter lengths for each shape class at various areas.

Notice in the following Single-Family Residential Shape Classification Table that the suggested ranges of perimeter lengths overlap between shape classes. This is because consideration has been given to variations in costs that might arise from building corners and framing irregular roof structures. If a perimeter length falls into an overlapping area, final determination of shape classification will consider the number of corners and roof design.

***Example:***

A residence of 800 square feet has a perimeter of 120 feet and will be classified as an "A" shape if it is a simple rectangle, and a "B" shape if it is of an irregular shape or if it has a cut-up roof.

**SINGLE-FAMILY RESIDENTIAL  
SHAPE CLASSIFICATION TABLE**

| Area  | Shape | Perimeter Length | Area  | Shape | Perimeter Length | Area  | Shape | Perimeter Length |
|-------|-------|------------------|-------|-------|------------------|-------|-------|------------------|
| 600   | A     | 98-106           | 1,600 | A     | 160-181          | 3,400 | A     | 233-277          |
|       | B     | 100-108          |       | B     | 175-196          |       | B     | 271-315          |
|       | C     | 102-110          |       | C     | 190-211          |       | C     | 309-353          |
|       | D     | 104-Up           |       | D     | 205-Up           |       | D     | 347-Up           |
| 700   | A     | 106-115          | 1,700 | A     | 165-188          | 3,600 | A     | 240-286          |
|       | B     | 109-118          |       | B     | 182-205          |       | B     | 280-326          |
|       | C     | 112-121          |       | C     | 199-222          |       | C     | 320-366          |
|       | D     | 115-Up           |       | D     | 216-Up           |       | D     | 360-Up           |
| 800   | A     | 113-124          | 1,800 | A     | 170-194          | 3,800 | A     | 247-296          |
|       | B     | 118-129          |       | B     | 188-212          |       | B     | 290-339          |
|       | C     | 123-134          |       | C     | 206-230          |       | C     | 333-382          |
|       | D     | 128-Up           |       | D     | 224-Up           |       | D     | 376-Up           |
| 900   | A     | 120-132          | 2,000 | A     | 178-205          | 4,000 | A     | 253-304          |
|       | B     | 126-138          |       | B     | 199-226          |       | B     | 298-351          |
|       | C     | 132-144          |       | C     | 220-247          |       | C     | 345-396          |
|       | D     | 138-Up           |       | D     | 241-Up           |       | D     | 390-Up           |
| 1,000 | A     | 126-139          | 2,200 | A     | 187-216          | 4,200 | A     | 259-313          |
|       | B     | 133-146          |       | B     | 210-239          |       | B     | 307-361          |
|       | C     | 140-153          |       | C     | 233-262          |       | C     | 355-409          |
|       | D     | 144-Up           |       | D     | 256-Up           |       | D     | 403-Up           |
| 1,100 | A     | 133-148          | 2,400 | A     | 196-228          | 4,400 | A     | 265-322          |
|       | B     | 142-157          |       | B     | 222-254          |       | B     | 316-374          |
|       | C     | 151-166          |       | C     | 248-280          |       | C     | 368-425          |
|       | D     | 160-Up           |       | D     | 274-Up           |       | D     | 419-Up           |
| 1,200 | A     | 138-154          | 2,600 | A     | 204-237          | 4,600 | A     | 271-330          |
|       | B     | 148-164          |       | B     | 231-264          |       | B     | 324-383          |
|       | C     | 158-174          |       | C     | 258-291          |       | C     | 377-436          |
|       | D     | 168-Up           |       | D     | 285-Up           |       | D     | 430-Up           |
| 1,300 | A     | 144-161          | 2,800 | A     | 212-248          | 4,800 | A     | 277-339          |
|       | B     | 155-172          |       | B     | 242-278          |       | B     | 333-395          |
|       | C     | 166-183          |       | C     | 272-308          |       | C     | 389-451          |
|       | D     | 177-Up           |       | D     | 302-Up           |       | D     | 445-Up           |
| 1,400 | A     | 149-168          | 3,000 | A     | 219-258          | 5,000 | A     | 283-347          |
|       | B     | 162-181          |       | B     | 252-291          |       | B     | 341-405          |
|       | C     | 175-194          |       | C     | 285-324          |       | C     | 399-463          |
|       | D     | 188-Up           |       | D     | 318-Up           |       | D     | 447-Up           |
| 1,500 | A     | 155-175          | 3,200 | A     | 226-267          |       |       |                  |
|       | B     | 169-189          |       | B     | 261-302          |       |       |                  |
|       | C     | 183-203          |       | C     | 296-337          |       |       |                  |
|       | D     | 197-Up           |       | D     | 331-Up           |       |       |                  |

## SQUARE FOOT COST ADJUSTMENTS

In some cases, basic square foot costs for all or a portion of a building may require adjustment. Situations where this is necessary are:

- Half-story areas
- Third and upper floors
- Superior or inferior areas
- Additions

### HALF-STORY AREAS

Half-story areas are upper floors of buildings that have less than eight feet of ceiling height at the exterior wall line. The sloping roof makes up all or a portion of the exterior wall. Square foot costs for half-story areas are based upon fractions of the main floor square foot costs as suggested in the *Building Additives* chapter. Half-story areas are *never* included in the area used for area modification.

### THIRD- AND UPPER-STORY ADJUSTMENTS

Basic square foot costs in this cost manual are applicable to first-floor level or second-floor level. Building costs tend to rise for floor levels above the second because of the increased cost of lifting materials. Square foot costs for floor levels above the second level are estimated by using the appropriate second-floor cost and increasing it by 2 percent for each floor above the second. For example:

Third Story = Second story square foot cost + 2 percent

Fourth Story = Second story square foot cost + 4 percent

Fifth Story = Second story square foot cost + 6 percent

### SUPERIOR AND INFERIOR AREA ADJUSTMENTS

There are several methods of estimating proper square foot costs for buildings with areas of different quality. The best method to use depends on the particular situation.

#### Composite Quality Class

If the difference in quality is slight or there is no distinct dividing line between areas of varying quality, use a square foot cost based on the building's average quality. For example, if a residence has D5 cost characteristics in certain areas and is more similar to a D6 in other areas, a D5.5 classification may be applicable. The total of all areas is used as the area for selecting a square foot cost from a cost table.

#### Separate Quality Classes

If two or more distinct areas are of a significantly different quality level, separate quality classes may be assigned to each area. In other words, the first-floor area may be classified as D6 quality, and the second floor may be classified as D5.5 quality. As in the case above, the total of all areas is used for selecting a square foot cost from a cost table.

## Fractions

If a small but distinct area of the building, such as an addition or a residential porch, is of significantly different quality than the main area, its cost may be estimated by applying a square foot cost that is based on a fraction of the square foot cost of the main area.

## ADDITIONS

The methodology of using the Cost Approach to estimate the value of an addition by calculation of its square foot cost using the square foot cost tables is as follows:

### Example:

A single family residence originally contained 2,000 square feet and was classed as a D-8.0B. The owner has completed a 400 square foot addition with the same characteristics as the original home. The appraiser will estimate the value of the addition using the Cost Approach. Take the original square feet (2,000) plus the square feet of the addition (400) which totals 2,400 square feet. Next, find the cost chart appropriate for the design type, construction type, quality class, and shape class. Select the column for 2,400 square feet. Take the number from the appropriate quality class row and multiply it by the square footage of the addition. The result is the indicated replacement cost new of the addition using the Cost Approach. A location adjustment may be needed depending on the location of home.

## LOCATION ADJUSTMENTS

The building costs shown in this handbook, with the exception of the *Mountain Residences* chapter (see AH 531.22), have been developed using the four-county area of Sacramento, Yolo, and the western portions of El Dorado and Placer counties as a base area (with a factor of 1.00). The building costs in the *Mountain Residences* chapter have been developed using the Lake Tahoe Basin area of California as the base area.

The maps shown at the end of this chapter provide suggested factors that are intended to provide an appropriate adjustment for the variance in costs due to differences in location compared to the base. *These factors, however, are not intended to adjust for the significant variation in permit costs and other fees charged by different jurisdictions within a region. Due to the wide variance in these costs, both within and among the counties, it is necessary for the appraiser to research and analyze permit costs and fees of jurisdictions in the region and to make appropriate adjustments where necessary. In other words, AH 531 should serve as a guide, but an appraiser must also research the market to determine which costs are most applicable for the appraisal assignment. It may be necessary to supplement the data provided in AH 531 with local cost data.*

Note that an additional adjustment for time should also be considered if costs in the county have changed since the January publication date of the current AH 531.

*Except for the Manufactured Housing chapter*, an appropriate location adjustment should be applied to all improvement costs in this handbook, including all square foot building costs and the costs found in the *Building Additives*, *Yard Improvements*, *In-Place Costs*, and *Compact Costs* chapters. In addition, all costs in this handbook, including manufactured housing, should be adjusted to account for any extraordinary permit or other cost differences that exist in the county.

Various counties have two or more location zones. The zone boundaries are as follows. The shaded areas [ ] represent those zones that are also shown in the *Mountain Residences* chapter (see AH 531.22).

**Alpine County**

|              |  |
|--------------|--|
| Western Zone | All areas west of the summit of the Sierra Nevada Mountains. |
| Eastern Zone | All areas east of the summit of the Sierra Nevada Mountains. |

**Amador County**

|              |  |
|--------------|--|
| Western Zone | All areas west of the western border of the El Dorado National Forest.                       |
| Middle Zone  | From the western boundary of the El Dorado National Forest to the 5,000-foot elevation line. |
| Eastern Zone | All areas east of the 5,000-foot elevation line.   |

**Butte County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western boundary of the Plumas National Forest. |
| Eastern Zone | All areas east of the western boundary of the Plumas National Forest. |

**Calaveras County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western boundary of the Stanislaus National Forest.                     |
| Middle Zone  | From the western boundary of the Stanislaus National Forest to the 5,000-foot elevation line. |
| Eastern Zone | All areas east of the 5,000-foot elevation line.  |

**El Dorado County**

|                     |   |
|---------------------|---|
| Western Zone        | All areas west of the western boundary of the El Dorado National Forest.                          |
| Western Middle Zone | From the western boundary of the El Dorado National Forest east to the 5,000-foot elevation line. |
| Eastern Middle Zone | From the 5,000-foot elevation line to the summit of the Sierra Nevada Mountains.                  |
| Eastern Zone        | From the summit of the Sierra Nevada Mountains to the Nevada border.                              |

**Fresno County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western border of the Sierra National Forest. |
|--------------|---|

|              |   |
|--------------|---|
| Middle Zone  | From the western boundary of the Sierra National Forest to the 5,000-foot elevation line. |
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county.                 |

### **Inyo County**

|                                 |   |
|---------------------------------|---|
| National Forest Zone            | All areas within the Inyo National Forest.  |
| Bishop/<br>Independence<br>Zone | All areas outside the Inyo National Forest. |

### **Kern County**

|                              |  |
|------------------------------|--|
| Western Zone                 | All areas west of a line following the western boundary of the Sequoia National Park in the northern portion of the county to the intersection of the Kern River, then continuing in a southerly direction east of the towns of Edison, Di Giorgio, and Arvin to a point on the Ventura County border west of the town of Lebec. |
| Sequoia National Forest Zone | All areas within and surrounded by the Sequoia National Forest, including the towns of Lake Isabella, Bodfish, Wooford Heights, Kernville, Onyx, Weldon, and Havilah.  |
| Middle Zone                  | All areas between the eastern boundary of the western zone and the Los Angeles Aqueduct, excluding the Sequoia zone.   |
| Eastern Zone                 | All areas east of the Los Angeles Aqueduct.  |

### **Los Angeles County**

|                      |   |
|----------------------|---|
| Western Zone         | All areas west of the San Bernardino National Forest boundary line. |
| Mountain Desert Zone | All areas east of the San Bernardino National Forest boundary line. |

### **Madera County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western boundary of the Sierra National Forest.                     |
| Middle Zone  | From the western boundary of the Sierra National Forest to the 5,000-foot elevation line. |
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county.                 |



## Mariposa County

|              |   |
|--------------|---|
| Western Zone | All areas west of the western border of the Stanislaus National Forest.                       |
| Middle Zone  | From the western boundary of the Stanislaus National Forest to the 5,000-foot elevation line. |
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county.                     |

## Mono County

|                      |   |
|----------------------|---|
| National Forest Zone | All areas within the Toiyabe and Inyo National Forests.           |
| Bridgeport Zone      | All areas outside the national forest areas.                      |
| Mammoth Lakes Zone   | To include Mammoth Lakes, June Lake Loop, and Lake Crowley areas. |

## Nevada County

|                     |   |
|---------------------|---|
| Western Zone        | All areas west of the western boundary of the Tahoe National Forest.                      |
| Western Middle Zone | From the western boundary of the Tahoe National Forest to the 5,000-foot elevation level. |
| Eastern Middle Zone | From the 5,000-foot elevation level to the summit of the Sierra Mountains.                |
| Eastern Zone        | From the summit of the Sierra Nevada Mountains to the Nevada border.                      |

## Placer County

|                     |  |
|---------------------|--|
| Western Zone        | All areas west of Highway 49 and excluding all towns on Highway 49.                                  |
| Western Middle Zone | From Highway 49 east to the Tahoe National Forest boundary and including the town of Auburn.         |
| Eastern Middle Zone | From the western boundary of the Tahoe National Forest to the summit of the Sierra Nevada Mountains. |
| Eastern Zone        | From the summit of the Sierra Nevada Mountains to the Nevada border.                                 |

## Plumas County

|               |                             |
|---------------|-----------------------------|
| Mountain Zone | All areas of Plumas County. |
|---------------|-----------------------------|

## **Riverside County**

|              |  |
|--------------|--|
| Western Zone | All areas west of San Gorgonio Pass and the western border of the San Bernardino National Forest, excluding the towns of Calimesa, Beaumont, and Banning.                  |
| Eastern Zone | All areas east of San Gorgonio Pass and the western boundary of the San Bernardino National Forest, including the towns of Calimesa, Beaumont, Banning, Anza, and Aguanga. |

## **San Bernardino County**

|                              |   |
|------------------------------|---|
| San Bernardino Zone          | All areas west of the San Bernardino National Forest boundary line. |
| Mountain Desert Zone         | All areas east of the San Bernardino National Forest boundary line. |
| Big Bear/Lake Arrowhead Zone | All areas around Lake Arrowhead and Big Bear Valley.                |

## **San Diego County**

|              |  |
|--------------|--|
| Western Zone | All areas west of the western boundary of the Cleveland National Forest. |
| Eastern Zone | All areas east of the western boundary of the Cleveland National Forest. |

## **Santa Barbara County**

|               |  |
|---------------|--|
| Northern Zone | All areas north of the Santa Ynez River. |
| Southern Zone | All areas south of the Santa Ynez River. |

## **Sierra County**

|              |  |
|--------------|--|
| Western Zone | All areas west of the 5,000-foot elevation line.                                 |
| Middle Zone  | From the 5,000-foot elevation line to the summit of the Sierra Nevada Mountains. |
| Eastern Zone | From the summit of the Sierra Nevada Mountains to the Nevada border.             |

## **Tulare County**

|              |  |
|--------------|--|
| Western Zone | All areas west of western boundary of the Sequoia National Forest.                         |
| Middle Zone  | From the western boundary of the Sequoia National Forest to the 5,000-foot elevation line. |
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county.                  |

**Tuolumne County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western boundary of the Stanislaus National Forest.                     |
| Middle Zone  | From the western boundary of the Stanislaus National Forest to the 5,000-foot elevation line. |
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county.                     |

**Yuba County**

|              |   |
|--------------|---|
| Western Zone | All areas west of the western boundary of the Plumas National Forest. |
| Eastern Zone | All areas east of the eastern boundary of the Plumas National Forest. |

# SINGLE FAMILY RESIDENTIAL

(Blue Area Shown on this Map)

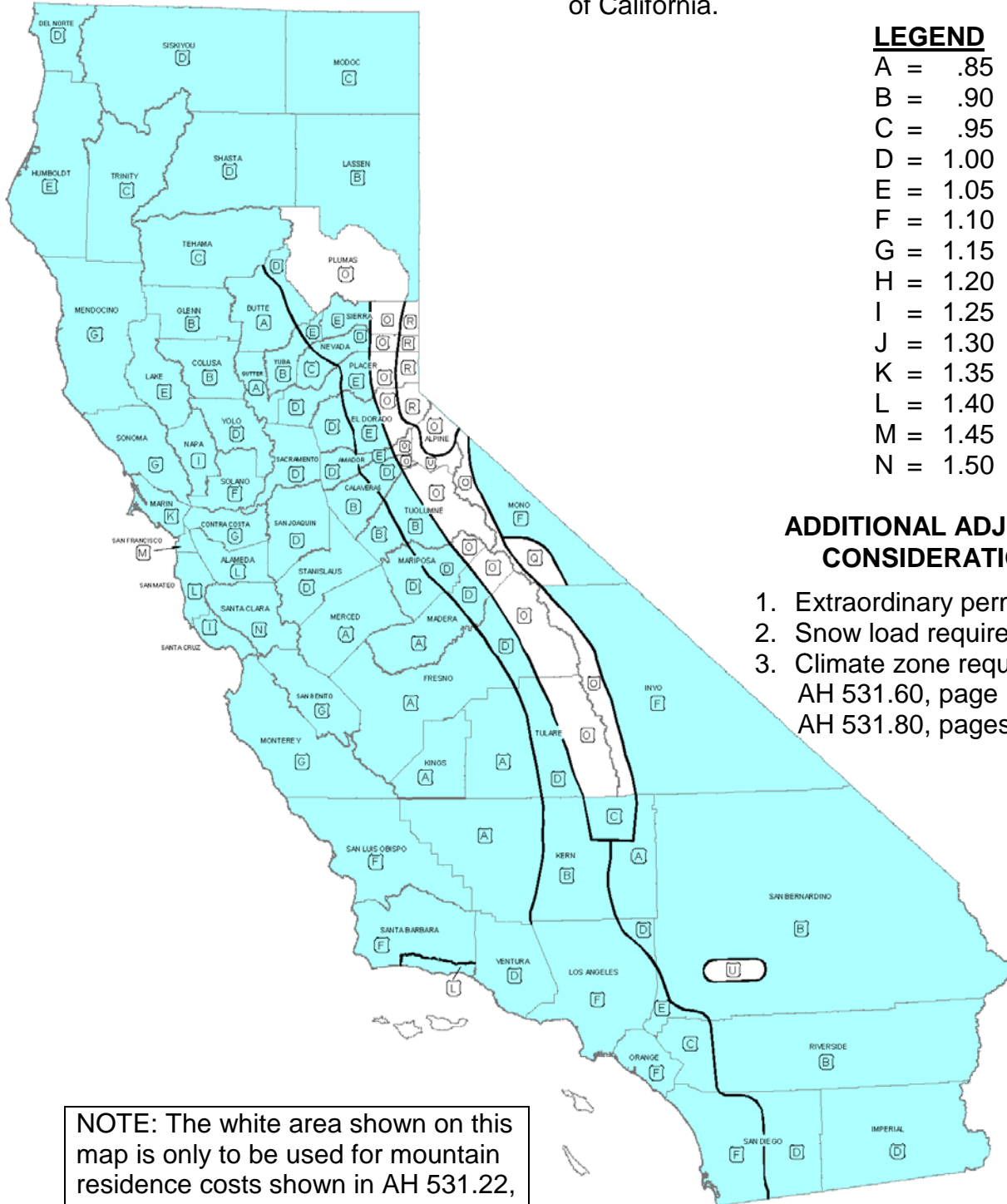
Factors to adjust 1-1-2018 to all locations in the State of California.

### LEGEND

- A = .85
- B = .90
- C = .95
- D = 1.00
- E = 1.05
- F = 1.10
- G = 1.15
- H = 1.20
- I = 1.25
- J = 1.30
- K = 1.35
- L = 1.40
- M = 1.45
- N = 1.50

### **ADDITIONAL ADJUSTMENT CONSIDERATIONS**

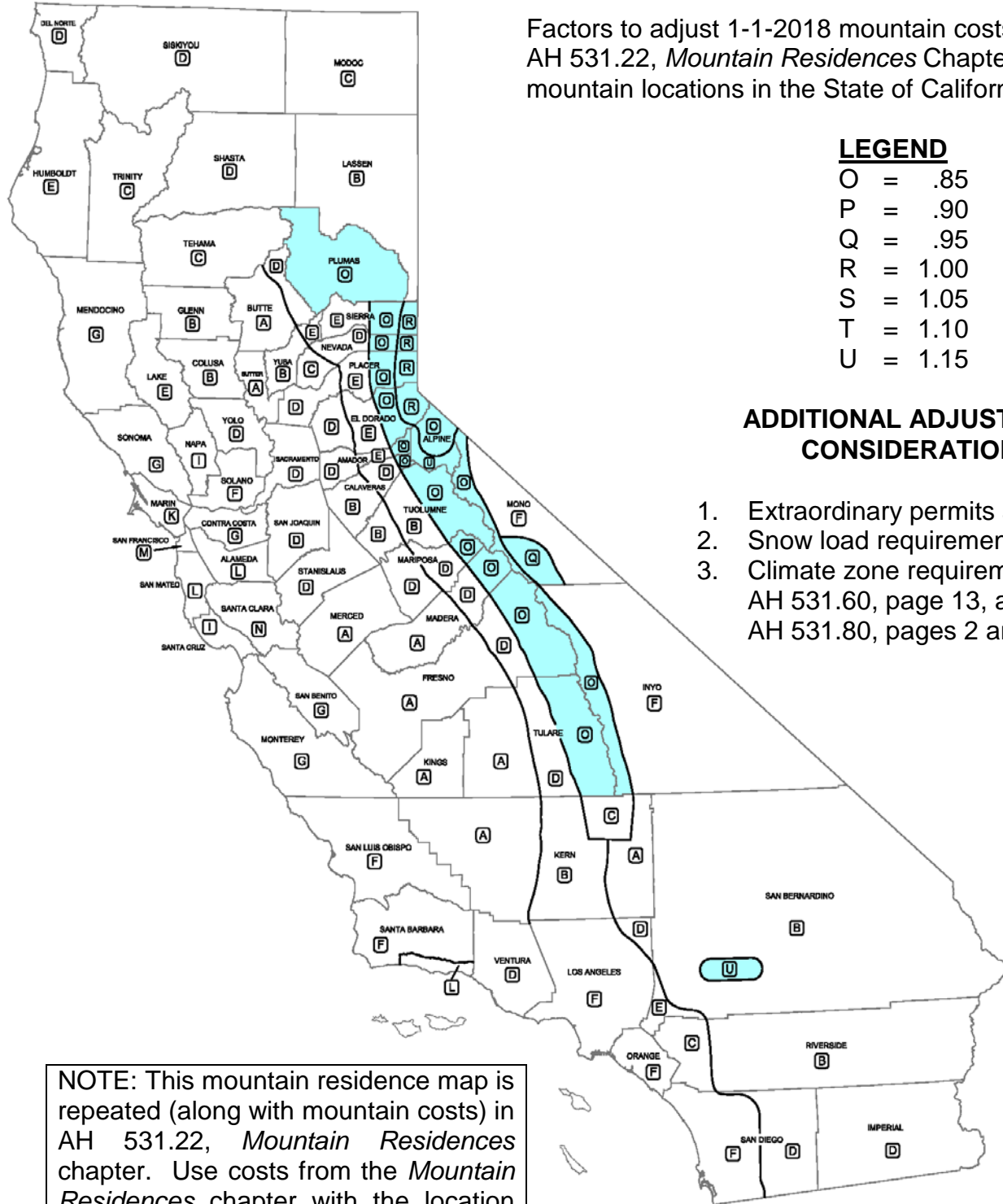
1. Extraordinary permits and fees
2. Snow load requirements
3. Climate zone requirements (see AH 531.60, page 13, and AH 531.80, pages 2 and 3).



**NOTE:** The white area shown on this map is only to be used for mountain residence costs shown in AH 531.22, *Mountain Residences* chapter.

**MOUNTAIN RESIDENCES**  
(Blue Area Shown on this Map)

Factors to adjust 1-1-2018 mountain costs (see AH 531.22, *Mountain Residences* Chapter) to other mountain locations in the State of California



**LEGEND**

- O = .85
- P = .90
- Q = .95
- R = 1.00
- S = 1.05
- T = 1.10
- U = 1.15

**ADDITIONAL ADJUSTMENT CONSIDERATIONS**

1. Extraordinary permits and fees
2. Snow load requirements
3. Climate zone requirements (see AH 531.60, page 13, and AH 531.80, pages 2 and 3).

NOTE: This mountain residence map is repeated (along with mountain costs) in AH 531.22, *Mountain Residences* chapter. Use costs from the *Mountain Residences* chapter with the location adjustment from this map for mountain residences.

## AH 531.20: SINGLE-FAMILY RESIDENTIAL CONVENTIONAL TYPE

Conventional single-family residences are residential buildings designed for permanent single-family occupancy and usually built before 1950. They differ from modern single-family residences in that they have fewer bathrooms and fewer built-in features such as ovens, ranges, and dishwashers. These differences are reflected in the respective building specifications.

Square foot costs include all costs and components as described on page 2 of AH 531.10, the *Costing Information* chapter of this handbook, including all plumbing fixtures and built-ins as described in the applicable building specifications.

Shape classification may be determined by using the guides in the *Costing Information* chapter of this handbook.

**NOTE:** The specifications for each quality class provide a distinction between classes. This distinction often shows in the *quality* of a feature and not whether the feature is present. The same feature may exist in different classes, but the quality of the feature will help to determine the classification. Conversely, some features may be included in a particular classification, while in another class, the same feature must be treated as an additive.

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-4 QUALITY**

**CONVENTIONAL**

|                           |  |
|---------------------------|--|
| <b>Foundation</b>         | Light concrete   |
| <b>Floor Structure</b>    | Joists: 2" x 6", 24" o.c., or 4" concrete  |
| <b>Walls and Exterior</b> | 6" reinforced concrete block, or clay tile<br>Painted exterior<br>Windows: Low-cost steel sash   |
| <b>Roof</b>               | Framing: 2" x 4" rafters, 24" o.c.<br>Cover: 3 ply built-up 15 lb. felt, mopped<br>Overhang: 16", unceiled<br>Gutters: None  |
| <b>Floor Finishes</b>     | Painted concrete or low-cost asphalt tile  |
| <b>Interior Finish</b>    | Painted concrete block; wallboard or plywood and paint on partition walls  |
| <b>Interior Detail</b>    | Trim: One member Douglas Fir painted or rubber base<br>Closets: One small closet per bedroom; minimum shelving   |
| <b>Bath Detail</b>        | Number: One<br>Floors: Painted concrete or low-cost asphalt tile<br>Walls: Painted concrete block; wallboard or plywood and paint on partition walls<br>Shower: None or metal shower in place of tub |
| <b>Kitchen</b>            | Base Cabinet: 6' Douglas Fir, painted<br>Wall Cases: Small area Douglas Fir, painted<br>Drain Board/Countertop: 6' wood or vinyl   |
| <b>Plumbing</b>           | Four fair quality fixtures<br>Laundry tray and small water heater  |
| <b>Special Features</b>   | None   |
| <b>Electrical</b>         | Knob and tube, Romex® or sheathed wiring; simple fixtures  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-5 QUALITY**

**CONVENTIONAL**

|                           |  |
|---------------------------|--|
| <b>Foundation</b>         | Reinforced concrete  |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete   |
| <b>Walls and Exterior</b> | 8" reinforced concrete block, painted exterior<br>Windows: Low-cost steel sash   |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Asphalt shingles or composition tar and pea gravel<br>Overhang: 12" to 16", unceiled<br>Gutters: Over entrances |
| <b>Floor Finishes</b>     | Asphalt tile or low-cost carpet  |
| <b>Interior Finish</b>    | Painted concrete block; drywall, taped, textured, and painted on partitions  |
| <b>Interior Detail</b>    | Trim: Douglas Fir, painted, or rubber base<br>Closets: Moderate amount; low-cost doors   |
| <b>Bath Detail</b>        | Number: One<br>Floors: Asphalt tile<br>Walls: Plaster painted or drywall and enamel<br>Shower: None or over tub; no tile                               |
| <b>Kitchen</b>            | Base Cabinet: 6' Douglas Fir, painted<br>Wall Cases: 20 sq. ft. Douglas Fir, painted<br>Drain Board/Countertop: 6' low-cost ceramic tile               |
| <b>Plumbing</b>           | Four average quality fixtures<br>Single laundry tray and small water heater  |
| <b>Special Features</b>   | None   |
| <b>Electrical</b>         | Romex® or sheathed wiring; simple fixtures   |



**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-6 QUALITY**

**CONVENTIONAL**

|  |
|--|
| <b>Foundation</b><br>Reinforced concrete   |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete   |
| <b>Walls and Exterior</b><br>8" reinforced colored concrete block, or 8" common brick<br>Windows: Average quality steel sash   |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Wood shingle, light shake, good composition shingles, or composition with tar and rock<br>Overhang: 16", unceiled<br>Gutters: 4" galvanized and painted at all eaves |
| <b>Floor Finishes</b><br>Good quality vinyl tile or low-cost carpet  |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted; colored interior plaster; some wallpaper  |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted<br>Closets: Average amount; low-cost wood or metal doors  |
| <b>Bath Detail</b><br>Number: One<br>Floors: Ceramic tile or good vinyl tile<br>Walls: Hard plaster enameled or drywall taped and enameled<br>Shower: Over tub with ceramic tile wainscot                                  |
| <b>Kitchen</b><br>Base Cabinet: 8' white pine, painted<br>Wall Cases: 36 sq. ft. white pine, painted<br>Drain Board/Countertop: 8' ceramic tile  |
| <b>Plumbing</b><br>Five medium-priced fixtures<br>Single laundry tray; water heater  |
| <b>Special Features</b><br>None  |
| <b>Electrical</b><br>Romex® or sheathed wiring; medium-priced fixtures   |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-7 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b> | 8" reinforced colored detailed concrete block, or 8" common brick<br>Windows: Good quality aluminum, or average quality steel sash                                  |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Medium shake, or composition with large rock<br>Overhang: 30", unceiled<br>Gutters: 6" galvanized and painted at all eaves   |
| <b>Floor Finishes</b>     | Average quality carpet; average quality sheet vinyl or good quality inlaid vinyl in kitchen and breakfast room  |
| <b>Interior Finish</b>    | Drywall, taped, textured, and painted; plaster with putty coat finish; some wallpaper   |
| <b>Interior Detail</b>    | Trim: Douglas Fir, painted; some hardwood members<br>Closets: Average amount with average quality wood doors  |
| <b>Bath Detail</b>        | Number: One and one-half<br>Floors: Ceramic tile in main; good vinyl tile in half bath<br>Walls: Hard plaster and enamel<br>Shower: 6' ceramic tile with glass door |
| <b>Kitchen</b>            | Base Cabinet: 10' good pine or hardwood veneer<br>Wall Cases: 36 sq. ft. good pine or hardwood veneer<br>Drain Board/Countertop: 10' ceramic tile with 14" splash   |
| <b>Plumbing</b>           | Six standard fixtures ; one double laundry tray; water heater   |
| <b>Special Features</b>   | 6' sliding glass or French doors; garbage disposer; kitchen exhaust vent; 4' ceramic tile top vanity in main bath   |
| <b>Electrical</b>         | Romex® or sheathed wiring; average fixtures with a special fixture in dining room   |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-8 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b> | 8" reinforced split face or concrete block<br>Windows: Good quality steel sash  |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Heavy shake or adobe tile<br>Overhang: 36", unceiled, or 24", ceiled<br>Gutters: 8" galvanized and painted at all eaves                  |
| <b>Floor Finishes</b>     | Terrazzo or mission tile in entry hall; good tongue and groove hardwood or good carpet in living, dining, and bedrooms; good sheet vinyl in kitchen and breakfast rooms         |
| <b>Interior Finish</b>    | Drywall with heavy texture and paint; plaster with putty coat finish; some good wallpaper or vinyl wall covering; some good hardwood veneer paneling                            |
| <b>Interior Detail</b>    | Trim: Two members pine base and shoe; some good hardwood<br>Closets: Ample closet space and shelving  |
| <b>Bath Detail</b>        | Number: One bath for two bedrooms<br>Floors: Good ceramic tile<br>Walls: Hard plaster and enamel<br>Shower: 6' good ceramic tile with glass door                                |
| <b>Kitchen</b>            | Base Cabinet: 10' good hardwood veneer<br>Wall Cases: Ample good hardwood veneer and utility cabinets<br>Drain Board/Countertop: Good ceramic tile                              |
| <b>Plumbing</b>           | Eight or more good fixtures; double laundry tray; two water heaters   |
| <b>Special Features</b>   | 8' sliding glass or French doors; 4' ceramic tile top vanity in each bath; deluxe range hood and fan; built-in oven and range; garbage disposer; plastic laminate breakfast bar |
| <b>Electrical</b>         | Romex® or sheathed wiring; good fixtures  |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"C" CONSTRUCTION - SHAPE A**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 87.86  | 84.04  | 81.02  | 78.40  | 75.99  | 74.19  | 72.45  | 70.94  | 69.67  | 68.57  | 67.42  |
| C-4.5 | 95.71  | 91.57  | 88.26  | 85.44  | 82.87  | 80.82  | 78.96  | 77.36  | 75.96  | 74.69  | 73.47  |
| C-5   | 104.30 | 99.92  | 96.26  | 93.07  | 90.31  | 88.05  | 86.02  | 84.32  | 82.84  | 81.43  | 80.18  |
| C-5.5 | 113.78 | 108.82 | 104.85 | 101.48 | 98.37  | 96.00  | 93.72  | 91.92  | 90.27  | 88.72  | 87.42  |
| C-6   | 129.92 | 124.38 | 119.75 | 115.84 | 112.41 | 109.72 | 107.03 | 104.90 | 103.03 | 101.50 | 99.77  |
| C-6.5 | 142.92 | 136.82 | 131.77 | 127.49 | 123.68 | 120.62 | 117.81 | 115.51 | 113.37 | 111.58 | 109.73 |
| C-7   | 157.21 | 150.41 | 144.96 | 140.31 | 136.03 | 132.77 | 129.65 | 127.12 | 124.80 | 122.73 | 120.83 |
| C-7.5 | 180.80 | 173.00 | 166.74 | 161.27 | 156.54 | 152.68 | 149.20 | 146.12 | 143.47 | 141.06 | 138.86 |
| C-8   | 207.53 | 198.57 | 191.32 | 185.10 | 179.54 | 175.23 | 171.22 | 167.78 | 164.72 | 161.99 | 159.39 |

**"C" CONSTRUCTION - SHAPE A**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 66.65  | 64.93  | 63.65  | 62.51  | 61.54  | 60.70  | 60.03  | 59.36  | 58.73  | 58.18  | 57.40  |
| C-4.5 | 72.60  | 70.87  | 69.44  | 68.14  | 66.99  | 66.20  | 65.44  | 64.74  | 64.11  | 63.44  | 62.57  |
| C-5   | 79.10  | 77.18  | 75.62  | 74.22  | 73.06  | 72.13  | 71.30  | 70.51  | 69.81  | 69.07  | 68.14  |
| C-5.5 | 86.19  | 84.18  | 82.39  | 80.96  | 79.66  | 78.64  | 77.79  | 76.82  | 76.06  | 75.32  | 74.29  |
| C-6   | 98.49  | 96.15  | 94.05  | 92.29  | 90.96  | 89.79  | 88.82  | 87.77  | 86.91  | 86.03  | 84.85  |
| C-6.5 | 108.37 | 105.70 | 103.51 | 101.71 | 100.14 | 98.74  | 97.58  | 96.54  | 95.64  | 94.67  | 93.31  |
| C-7   | 119.21 | 116.31 | 113.89 | 111.87 | 110.11 | 108.78 | 107.39 | 106.16 | 105.17 | 104.14 | 102.74 |
| C-7.5 | 137.10 | 133.70 | 131.03 | 128.63 | 126.58 | 124.99 | 123.56 | 122.13 | 120.95 | 119.79 | 118.09 |
| C-8   | 157.30 | 153.55 | 150.41 | 147.66 | 145.34 | 143.48 | 141.73 | 140.12 | 138.86 | 137.52 | 135.47 |

**"C" CONSTRUCTION - SHAPE B**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 90.37  | 86.68  | 83.50  | 80.82  | 78.64  | 76.72  | 74.98  | 73.47  | 72.24  | 70.94  | 70.08  |
| C-4.5 | 98.41  | 94.41  | 90.99  | 88.05  | 85.75  | 83.59  | 81.77  | 80.18  | 78.71  | 77.36  | 76.37  |
| C-5   | 107.33 | 103.02 | 99.11  | 96.00  | 93.49  | 91.10  | 89.04  | 87.42  | 85.82  | 84.32  | 83.19  |
| C-5.5 | 117.10 | 112.14 | 108.07 | 104.73 | 101.90 | 99.42  | 97.08  | 95.24  | 93.57  | 91.92  | 90.73  |
| C-6   | 133.59 | 128.16 | 123.33 | 119.48 | 116.31 | 113.37 | 110.90 | 108.67 | 106.86 | 104.90 | 103.57 |
| C-6.5 | 147.04 | 140.99 | 135.88 | 131.54 | 128.00 | 124.80 | 121.95 | 119.57 | 117.50 | 115.51 | 113.95 |
| C-7   | 161.81 | 155.08 | 149.40 | 144.67 | 140.85 | 137.25 | 134.19 | 131.59 | 129.26 | 127.12 | 125.32 |
| C-7.5 | 185.99 | 178.32 | 171.91 | 166.39 | 161.93 | 157.86 | 154.39 | 151.34 | 148.75 | 146.12 | 144.24 |
| C-8   | 213.49 | 204.72 | 197.26 | 190.95 | 185.90 | 181.17 | 177.16 | 173.73 | 170.70 | 167.78 | 165.60 |

**"C" CONSTRUCTION - SHAPE B**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 69.06  | 67.47  | 66.20  | 64.89  | 64.11  | 63.18  | 62.41  | 61.78  | 61.25  | 60.76  | 59.81  |
| C-4.5 | 75.30  | 73.51  | 72.13  | 70.83  | 69.81  | 68.88  | 68.01  | 67.36  | 66.75  | 66.24  | 65.18  |
| C-5   | 82.06  | 80.19  | 78.59  | 77.13  | 76.02  | 75.06  | 74.20  | 73.38  | 72.73  | 72.24  | 71.00  |
| C-5.5 | 89.43  | 87.43  | 85.70  | 84.13  | 82.94  | 81.80  | 80.89  | 79.99  | 79.32  | 78.71  | 77.40  |
| C-6   | 102.15 | 99.83  | 97.84  | 96.02  | 94.77  | 93.48  | 92.38  | 91.34  | 90.51  | 89.92  | 88.39  |
| C-6.5 | 112.34 | 109.92 | 107.76 | 105.63 | 104.22 | 102.88 | 101.59 | 100.50 | 99.73  | 98.95  | 97.33  |
| C-7   | 123.68 | 120.88 | 118.37 | 116.21 | 114.66 | 113.03 | 111.79 | 110.59 | 109.59 | 108.81 | 107.03 |
| C-7.5 | 142.24 | 139.03 | 136.21 | 133.65 | 131.78 | 130.02 | 128.53 | 127.12 | 126.06 | 125.07 | 123.14 |
| C-8   | 163.23 | 159.50 | 156.31 | 153.39 | 151.33 | 149.20 | 147.50 | 146.02 | 144.73 | 143.56 | 141.31 |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"C" CONSTRUCTION - SHAPE C**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C-4          | 93.06      | 89.27      | 86.17      | 83.59       | 81.17       | 79.21       | 77.61       | 76.24       | 74.82       | 73.55       | 72.62       |
| C-4.5        | 101.47     | 97.28      | 93.89      | 91.09       | 88.52       | 86.37       | 84.64       | 82.99       | 81.68       | 80.22       | 79.16       |
| C-5          | 110.56     | 106.10     | 102.37     | 99.27       | 96.42       | 94.23       | 92.20       | 90.47       | 88.94       | 87.50       | 86.34       |
| C-5.5        | 120.51     | 115.59     | 111.61     | 108.20      | 105.16      | 102.65      | 100.48      | 98.63       | 96.92       | 95.31       | 94.09       |
| C-6          | 137.61     | 132.07     | 127.33     | 123.55      | 120.00      | 117.25      | 114.80      | 112.63      | 110.70      | 108.94      | 107.41      |
| C-6.5        | 151.42     | 145.17     | 140.21     | 135.95      | 132.12      | 128.93      | 126.32      | 123.93      | 121.85      | 119.80      | 118.20      |
| C-7          | 166.51     | 159.79     | 154.25     | 149.60      | 145.31      | 141.90      | 138.92      | 136.33      | 133.99      | 131.76      | 129.97      |
| C-7.5        | 191.49     | 183.81     | 177.38     | 172.04      | 167.24      | 163.22      | 159.78      | 156.84      | 154.07      | 151.56      | 149.52      |
| C-8          | 219.91     | 210.96     | 203.62     | 197.49      | 191.83      | 187.37      | 183.49      | 179.94      | 176.91      | 173.92      | 171.67      |

**"C" CONSTRUCTION - SHAPE C**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C-4          | 71.62       | 70.10       | 68.70       | 67.69       | 66.70       | 65.85       | 65.10       | 64.46       | 63.80       | 63.43       | 62.09       |
| C-4.5        | 78.18       | 76.40       | 74.96       | 73.77       | 72.68       | 71.75       | 70.92       | 70.26       | 69.57       | 69.06       | 67.72       |
| C-5          | 85.13       | 83.22       | 81.76       | 80.27       | 79.20       | 78.21       | 77.30       | 76.55       | 75.84       | 75.31       | 73.78       |
| C-5.5        | 92.80       | 90.73       | 89.00       | 87.56       | 86.36       | 85.34       | 84.27       | 83.50       | 82.70       | 82.13       | 80.30       |
| C-6          | 105.99      | 103.70      | 101.67      | 99.91       | 98.59       | 97.39       | 96.25       | 95.33       | 94.44       | 93.88       | 91.73       |
| C-6.5        | 116.62      | 114.10      | 111.87      | 110.02      | 108.50      | 107.20      | 105.87      | 104.83      | 103.92      | 103.09      | 100.95      |
| C-7          | 128.32      | 125.51      | 123.09      | 121.06      | 119.40      | 117.93      | 116.45      | 115.39      | 114.25      | 113.47      | 111.11      |
| C-7.5        | 147.59      | 144.30      | 141.54      | 139.21      | 137.26      | 135.51      | 133.96      | 132.64      | 131.40      | 130.45      | 127.80      |
| C-8          | 169.42      | 165.65      | 162.39      | 159.75      | 157.51      | 155.57      | 153.81      | 152.36      | 150.96      | 149.87      | 146.66      |

**"C" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C-4          | 95.75      | 91.94      | 88.88      | 86.08       | 83.84       | 81.93       | 80.27       | 78.70       | 77.45       | 76.31       | 75.21       |
| C-4.5        | 104.38     | 100.33     | 96.89      | 93.88       | 91.50       | 89.27       | 87.56       | 85.81       | 84.40       | 83.09       | 82.00       |
| C-5          | 113.84     | 109.24     | 105.61     | 102.32      | 99.61       | 97.28       | 95.34       | 93.56       | 92.06       | 90.63       | 89.37       |
| C-5.5        | 124.07     | 119.15     | 115.07     | 111.54      | 108.71      | 106.10      | 104.00      | 101.98      | 100.35      | 98.78       | 97.39       |
| C-6          | 141.60     | 136.02     | 131.40     | 127.31      | 124.06      | 121.13      | 118.78      | 116.31      | 114.51      | 112.79      | 111.25      |
| C-6.5        | 155.86     | 149.60     | 144.55     | 140.09      | 136.49      | 133.28      | 130.65      | 128.00      | 126.00      | 124.11      | 122.33      |
| C-7          | 171.48     | 164.60     | 159.06     | 154.12      | 150.16      | 146.59      | 143.74      | 140.90      | 138.63      | 136.50      | 134.66      |
| C-7.5        | 197.25     | 189.35     | 182.91     | 177.32      | 172.70      | 168.64      | 165.27      | 162.12      | 159.43      | 156.96      | 154.84      |
| C-8          | 226.37     | 217.34     | 209.94     | 203.54      | 198.16      | 193.52      | 189.79      | 185.97      | 183.06      | 180.23      | 177.63      |

**"C" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| C-4          | 74.21       | 72.67       | 71.32       | 70.20       | 69.17       | 68.37       | 67.51       | 66.95       | 66.46       | 65.87       | 65.08       |
| C-4.5        | 80.95       | 79.19       | 77.80       | 76.51       | 75.47       | 74.60       | 73.55       | 73.03       | 72.44       | 71.80       | 70.87       |
| C-5          | 88.20       | 86.35       | 84.79       | 83.43       | 82.13       | 81.25       | 80.21       | 79.57       | 78.94       | 78.23       | 77.24       |
| C-5.5        | 96.21       | 94.09       | 92.32       | 90.95       | 89.60       | 88.56       | 87.52       | 86.72       | 86.07       | 85.38       | 84.22       |
| C-6          | 109.80      | 107.51      | 105.55      | 103.83      | 102.21      | 101.11      | 99.88       | 99.12       | 98.32       | 97.50       | 96.17       |
| C-6.5        | 120.86      | 118.25      | 116.09      | 114.24      | 112.47      | 111.25      | 109.95      | 108.96      | 108.12      | 107.23      | 105.82      |
| C-7          | 132.92      | 130.13      | 127.67      | 125.62      | 123.85      | 122.39      | 120.98      | 119.95      | 119.00      | 117.96      | 116.42      |
| C-7.5        | 152.86      | 149.65      | 146.87      | 144.51      | 142.34      | 140.84      | 139.08      | 137.91      | 136.84      | 135.69      | 133.85      |
| C-8          | 175.47      | 171.85      | 168.64      | 165.86      | 163.48      | 161.54      | 159.60      | 158.29      | 157.11      | 155.85      | 153.63      |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-1 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Redwood mudsills on grade   |
| <b>Floor Structure</b>    | Joists: 2" x 4" or 6", 24" o.c.<br>Sub-Floor: None  |
| <b>Walls and Exterior</b> | Framing: 1" x 12" vertical boards; 2" x 4" top and bottom plates<br>Cover: 1" x 12" vertical boards with 1" x 2" battens<br>Windows: Sliding barn sash<br>Front Door: 1-3/8" single panel |
| <b>Roof</b>               | Framing: 2" x 4" rafters, 32" o.c.<br>Cover: Rolled roofing<br>Overhang: 12", unceiled<br>Gutters: None   |
| <b>Floor Finishes</b>     | 1" x 4" or 6" Douglas Fir tongue and groove   |
| <b>Interior Finish</b>    | 1" x 12" boards; open ceiling   |
| <b>Interior Detail</b>    | Interior Doors: 1-3/8" single panel<br>Trim: None<br>Closets: None  |
| <b>Bath Detail</b>        | None  |
| <b>Kitchen</b>            | Small amount of painted Douglas Fir<br>Drain Board/Countertop: Douglas Fir  |
| <b>Plumbing</b>           | Two low-cost fixtures   |
| <b>Special Features</b>   | None  |
| <b>Electrical</b>         | Knob and tube wiring; one drop cord per room  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-2 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Light non-reinforced concrete   |
| <b>Floor Structure</b>    | Joists: 2" x 6", 24" o.c.<br>Sub-Floor: None  |
| <b>Walls and Exterior</b> | Framing: 1" x 12" boards; 2" x 4" top and bottom plate; 2" x 4" on either side of openings;<br>4" x 4" in corners; 2" x 4" center nail tie<br>Cover: 1" x 12" vertical boards with 1" x 2" battens<br>Windows: Wood casements, painted<br>Front Door: 1-3/8", 2 to 4 panels |
| <b>Roof</b>               | Framing: 2" x 4" rafters, 24" o.c.<br>Cover: Rolled roofing<br>Overhang: 12", unceiled<br>Gutters: None   |
| <b>Floor Finishes</b>     | 1" x 4" tongue and groove Douglas Fir; print vinyl in kitchen   |
| <b>Interior Finish</b>    | 1" x 12" boards with 2 coats lead and oil paint on walls<br>Wallboard or plywood on ceilings  |
| <b>Interior Detail</b>    | Interior Doors: 1-3/8" single panel<br>Trim: None<br>Closets: None  |
| <b>Bath Detail</b>        | Number: One<br>Floors: Vinyl tile<br>Walls: Painted 1" x 12" boards<br>Shower: None   |
| <b>Kitchen</b>            | Base Cabinet: 6' Douglas Fir, painted<br>Wall Cases: Small area Douglas Fir, painted<br>Drain Board/Countertop: 6" vinyl squares  |
| <b>Plumbing</b>           | Four fair quality fixtures; water heater  |
| <b>Special Features</b>   | None  |
| <b>Electrical</b>         | Knob and tube wiring; simple fixtures in living and dining rooms; drop cords in other rooms   |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-3 QUALITY**

**CONVENTIONAL**

|   |
|---|
| <b>Foundation</b><br>Concrete piers   |
| <b>Floor Structure</b><br>Joists: 2" x 6", 24" o.c.<br>Sub-Floor: None  |
| <b>Walls and Exterior</b><br>Framing: 2" x 4" studs, 24" o.c.<br>Sheathing: None<br>Cover: 1/2" redwood siding, painted<br>Windows: Wood casements, painted<br>Front Door: 1-3/8" stock, two panels |
| <b>Roof</b><br>Framing: 2" x 4" rafters, 24" to 32" o.c.<br>Cover: Rolled roofing<br>Overhang: 12", unceiled<br>Gutters: None   |
| <b>Floor Finishes</b><br>1" x 4" Douglas Fir tongue and groove; print vinyl in kitchen  |
| <b>Interior Finish</b><br>Wallboard, plaster board, or plywood, painted   |
| <b>Interior Detail</b><br>Interior Doors: 1-3/8" stock, single panel<br>Trim: One member baseboard, painted<br>Closets: One closet per bedroom with minimum shelving                                |
| <b>Bath Detail</b><br>Number: One<br>Floors: Print vinyl tile<br>Walls: Wallboard, painted<br>Shower: None or metal shower in place of tub  |
| <b>Kitchen</b><br>Base Cabinet: 6' Douglas Fir, painted<br>Wall Cases: Small area Douglas Fir, painted<br>Drain Board/Countertop: 6" wood squares   |
| <b>Plumbing</b><br>Four fair quality fixtures; water heater   |
| <b>Special Features</b><br>None   |
| <b>Electrical</b><br>Knob and tube wiring; simple fixtures in living and dining rooms; drop cords in other rooms  |



**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-4 QUALITY**

**CONVENTIONAL**

|   |
|---|
| <p><b>Foundation</b><br/>Light concrete</p>   |
| <p><b>Floor Structure</b><br/>Joists: 2" x 4", 24" o.c.<br/>Sub-Floor: None</p>   |
| <p><b>Walls and Exterior</b><br/>Framing: 2" x 4" studs, 16" o.c.<br/>Sheathing: None<br/>Cover: 1/2" redwood siding painted; light stucco<br/>Windows: Wood casements or double hung, painted<br/>Front Door: 1-3/8" stock, two or four panels</p> |
| <p><b>Roof</b><br/>Framing: 2" x 4" rafters, 24" o.c.<br/>Cover: 3 ply built-up 15 lb. felt, mopped<br/>Overhang: 16", unceiled<br/>Gutters: None</p>   |
| <p><b>Floor Finishes</b><br/>1" x 4" Douglas Fir tongue and groove; print vinyl in kitchen</p>  |
| <p><b>Interior Finish</b><br/>Two coats of sand plaster on wood or gypsum lath glue size and calcimine</p>  |
| <p><b>Interior Detail</b><br/>Interior Doors: 1-3/8" stock, single panel<br/>Trim: One member Douglas Fir, painted<br/>Closets: One closet per bedroom with minimum shelving</p>  |
| <p><b>Bath Detail</b><br/>Number: One<br/>Floors: Print vinyl tile<br/>Walls: Wallboard, painted<br/>Shower: None or metal shower in place of tub</p>   |
| <p><b>Kitchen</b><br/>Base Cabinet: 6' Douglas Fir, painted<br/>Wall Cases: Small area Douglas Fir, painted<br/>Drain Board/Countertop: 6" wood or vinyl squares</p>  |
| <p><b>Plumbing</b><br/>Four fair quality fixtures; laundry tray; water heater</p>   |
| <p><b>Special Features</b><br/>None</p>   |
| <p><b>Electrical</b><br/>Knob and tube, Romex® or sheathed wiring; simple fixtures</p>  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-5 QUALITY**

**CONVENTIONAL**

|   |
|---|
| <p><b>Foundation</b><br/>Standard concrete</p>  |
| <p><b>Floor Structure</b><br/>Joists: 2" x 6", 16" o.c.<br/>Sub-Floor: 1" x 6" or 8" in living room</p>   |
| <p><b>Walls and Exterior</b><br/>Framing: 2" x 4" studs, 16" o.c.<br/>Sheathing: Line wire and paper<br/>Cover: 1" stucco or 1" x 6" wood siding painted<br/>Windows: Painted wood, double hung<br/>Front Door: 1-3/8" stock, four rectangular panels</p> |
| <p><b>Roof</b><br/>Framing: 2" x 4" rafters, 24" o.c.<br/>Cover: Wood shingles or average composition shingles<br/>Overhang: 16", unceiled<br/>Gutters: Painted galvanized iron over entrances</p>  |
| <p><b>Floor Finishes</b><br/>Oak hardwood in living room; print vinyl in kitchen; 1" x 4" tongue and groove Douglas Fir in balance</p>  |
| <p><b>Interior Finish</b><br/>Colored interior stucco in living room, sand plaster calcimine on balance</p>   |
| <p><b>Interior Detail</b><br/>Interior Doors: 1 3/8" stock, one panel<br/>Trim: One member base, painted<br/>Closets: One closet for each bedroom with painted shelving and hook strip</p>  |
| <p><b>Bath Detail</b><br/>Number: One<br/>Floors: Print vinyl tile<br/>Walls: Wall plaster, painted<br/>Shower: None</p>  |
| <p><b>Kitchen</b><br/>Base Cabinet: 6' Douglas Fir, painted<br/>Wall Cases: 20" sq. ft. Douglas Fir, painted<br/>Drain Board/Countertop: 6" low-cost ceramic tile</p>   |
| <p><b>Plumbing</b><br/>Four average quality fixtures; a single laundry tray; water heater</p>   |
| <p><b>Special Features</b><br/>None</p>   |
| <p><b>Electrical</b><br/>Romex® or sheathed wiring; simple fixtures</p>   |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-6 QUALITY**

**CONVENTIONAL**

|                           |  |
|---------------------------|--|
| <b>Foundation</b>         | Reinforced concrete  |
| <b>Floor Structure</b>    | Joists: 2" x 6", 16" o.c.<br>Sub-Floor: 1" x 6" or 8"  |
| <b>Walls and Exterior</b> | Framing: 2" x 4" studs, 16" o.c.<br>Sheathing: Line wire and paper<br>Cover: 1" stucco or 1" clear heart redwood<br>Windows: Wood double hung, painted; steel or aluminum casements<br>Front Door: 1-3/4" hardwood veneer slab |
| <b>Roof</b>               | Framing: 2" x 4" rafters, 24" o.c.<br>Cover: Wood or good composition shingles<br>Overhang: 16" unceiled<br>Gutters: Painted galvanized iron over entrances  |
| <b>Floor Finishes</b>     | 1/2" x 2" oak; inlaid vinyl in kitchen   |
| <b>Interior Finish</b>    | Two coats plaster with putty finish; colored stucco or 1/2" drywall and texture; small amount of soft wood wainscot  |
| <b>Interior Detail</b>    | Interior Doors: Stock one panel or slab<br>Trim: One member base, painted<br>Closets: 15 linear ft. closet shelving with hook strip and pole; 15 linear ft. linen closet shelving  |
| <b>Bath Detail</b>        | Number: One<br>Floors: Average ceramic tile or vinyl tile<br>Walls: Wall plaster, painted<br>Shower: Over tub with average ceramic tile wainscot   |
| <b>Kitchen</b>            | Base Cabinet: 8' white pine, painted<br>Wall Cases: 36" sq. ft. white pine, painted<br>Drain Board/Countertop: 8" average ceramic tile   |
| <b>Plumbing</b>           | Five medium-priced fixtures; single laundry tray; water heater   |
| <b>Special Features</b>   | None   |
| <b>Electrical</b>         | Romex® or sheathed wiring; medium priced fixtures  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-7 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Joists: 2" x 8", 16" o.c.<br>Sub-Floor: 1" x 6" or 8"   |
| <b>Walls and Exterior</b> | Framing: 2" x 4" studs, 16" o.c.<br>Sheathing: 1/2" gypsum or insulated board ; 1" x 8" clear heart redwood rustic painted or stained; good cedar shakes or shingles painted or stained<br>Windows: Wood, double hung; steel sash<br>Front Doors: 1-3/4" good pine or wood veneer |
| <b>Roof</b>               | Framing: 2" x 4" rafters, 24" o.c.<br>Cover: Good wood or composition shingles<br>Overhang: Boxed or finished eaves<br>Gutters: Over entrances  |
| <b>Floor Finishes</b>     | 1/2" x 2" tongue and groove select plain oak; inlaid vinyl in kitchen   |
| <b>Interior Finish</b>    | Good plaster, white putty coat finish; some hardwood veneer paneling; some average wallpaper and enamel in kitchen  |
| <b>Interior Detail</b>    | Interior Doors: Stock slab or six flat panel<br>Trim: One member pine base and shoe, painted<br>Closets: 20 linear feet of closet shelving with hook strip and pole; 15 linear feet of linen closet shelving  |
| <b>Bath Detail</b>        | Number: One and one-half<br>Floors: Average ceramic tile in main; good vinyl tile in half bath<br>Walls: Hard plaster with enamel<br>Shower: 6" average ceramic tile with glass door  |
| <b>Kitchen</b>            | Base Cabinet: 10' good pine or hardwood veneer<br>Wall Cases: 36 sq. ft. good pine or hardwood veneer<br>Drain Board/Countertop: 10' average ceramic tile; 14" splash   |
| <b>Plumbing</b>           | Six standard fixtures; double laundry tray; water heater  |
| <b>Special Features</b>   | Picture window; French doors; garbage disposer; kitchen exhaust vent; 4' ceramic tile top vanity in main bath   |
| <b>Electrical</b>         | Romex® or sheathed wiring; average fixtures with a special fixture in dining room   |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-8 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Joists: 2" x 8", 16" o.c.<br>Sub-Floor: 1" x 4" tongue and groove   |
| <b>Walls and Exterior</b> | Framing: 2" x 4" studs, 16" o.c.<br>Sheathing: 2" x 6" or 8" boards<br>Cover: Good 1" stucco, 1" x 10" clear heart redwood, or good cedar shingles<br>Windows: Good wood double hung; good steel sash, painted<br>Front Doors: 1-3/4" Philippine Mahogany |
| <b>Roof</b>               | Framing: 2" x 6" rafters, 24" o.c.<br>Cover: 3/4" shakes, tile, or composition shingles<br>Overhang: Boxed eaves<br>Gutters: Painted galvanized iron at all eaves   |
| <b>Floor Finishes</b>     | 13/16" select plain oak; heavy inlaid vinyl in kitchen  |
| <b>Interior Finish</b>    | Two coats plaster, smooth white putty coat finish; coved ceilings; small amount of good hardwood veneer paneling; some good quality wallpaper   |
| <b>Interior Detail</b>    | Interior Doors: Philippine Mahogany or pine slab doors or 6 panel flat doors<br>Trim: Two member pine base and shoe; some good hardwood<br>Closets: Ample closet space and linen shelving   |
| <b>Bath Detail</b>        | Number: One bath for two bedrooms<br>Floors: Good ceramic tile<br>Walls: Hard plaster and enamel<br>Shower: 6" good ceramic tile with glass door  |
| <b>Kitchen</b>            | Base Cabinet: 10' good hardwood veneer<br>Wall Cases: Ample good hardwood<br>Drain Board/Countertop: Good ceramic tile  |
| <b>Plumbing</b>           | Eight or more good fixtures; double laundry tray; two water heaters   |
| <b>Special Features</b>   | Custom picture window; 4' ceramic tile top vanity in each bath; deluxe range hood and fan, built-in oven and range, garbage disposer; plastic laminate breakfast bar  |
| <b>Electrical</b>         | Romex® or sheathed wiring; good fixtures  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-9 QUALITY**

**CONVENTIONAL**

|  |
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| <p><b>Foundation</b><br/>Reinforced concrete</p>   |
| <p><b>Floor Structure</b><br/>Joists: 2" x 10", 16" o.c.<br/>Sub-Floor: 1" x 4" tongue and groove</p>  |
| <p><b>Walls and Exterior</b><br/>Framing: 2" x 4" studs, 16" o.c.<br/>Sheathing: 1" x 6" or 8" boards<br/>Cover: Good 1" stucco, 1" x 10" good redwood, some brick or stone veneer on front wall<br/>Windows: Good wood or steel sash, painted<br/>Front Doors: Good 2" hardwood</p> |
| <p><b>Roof</b><br/>Framing: 2" x 6" rafters, 16" o.c.<br/>Cover: 3/4" to 1-1/2" shake; adobe tile<br/>Overhang: Boxed eaves<br/>Gutters: Good quality at all eaves</p>   |
| <p><b>Floor Finishes</b><br/>Clear matched oak or good carpet in living, dining and bedrooms; terrazzo in entry; good sheet vinyl, or solid vinyl tile in family room, kitchen, utility room</p>   |
| <p><b>Interior Finish</b><br/>Good plaster, putty coat finish; ornamental acoustic plaster ceilings; good hardwood veneer paneling in den, family room and entry; some good wallpaper</p>  |
| <p><b>Interior Detail</b><br/>Interior Doors: Matched hardwood or six panel raised<br/>Trim: Hardwood to match paneling<br/>Closets: Extensive closets with cupboards and storage drawers</p>  |
| <p><b>Bath Detail</b><br/>Number: 1-1/2 for each two bedrooms<br/>Floors: Good ceramic tile<br/>Walls: Good ceramic tile wainscot, hard plaster and enamel<br/>Shower: Good ceramic tile with good glass door</p>  |
| <p><b>Kitchen</b><br/>Base Cabinet: 12' or more matched hardwood veneer<br/>Wall Cases: Many; matched hardwood veneer<br/>Drain Board/Countertop: Ceramic tile or good plastic laminate</p>  |
| <p><b>Plumbing</b><br/>Copper tubing; 10 or more good fixtures; double laundry tray; two or more water heaters</p>   |
| <p><b>Special Features</b><br/>Several custom picture windows; 6' ceramic tile vanity in each bath; built-in range, oven, range hood and fan, dishwasher, garbage disposer, breakfast bar and pantry</p>   |
| <p><b>Electrical</b><br/>Romex® or sheathed wiring; good fixtures with good chandelier in dining room</p>  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-10 QUALITY**

**CONVENTIONAL**

|  |
|--|
| <p><b>Foundation</b><br/>Reinforced concrete</p>   |
| <p><b>Floor Structure</b><br/>Joists: 2" x 10", 16" o.c.<br/>Sub-Floor: 1" x 4" tongue and groove</p>  |
| <p><b>Walls and Exterior</b><br/>Framing: 2" x 4" studs, 16" o.c.<br/>Sheathing: 1" x 4" boards<br/>Cover: Good wood siding or masonry veneer<br/>Windows: Best quality wood or steel sash<br/>Front Doors: Best hardwood, double</p>                  |
| <p><b>Roof</b><br/>Framing: 2" x 6" rafters, 16" o.c.<br/>Cover: Adobe tile or slate<br/>Overhang: Boxed eaves<br/>Gutters: Good quality at all eaves</p>  |
| <p><b>Floor Finishes</b><br/>Special matched oak or very good carpet in living, dining, and bedrooms; good terrazzo in entry; rubber, cork, or solid vinyl tile in kitchen, family room, and utility room</p>  |
| <p><b>Interior Finish</b><br/>Best plaster, putty coat finish; ornamental acoustic plaster ceilings; matched hardwood paneling in entry, dining room, den, family room, and living room; extensive use of best paint, vinyl, and cloth wall covers</p> |
| <p><b>Interior Detail</b><br/>Interior Doors: Good hardwood or six panel raised panel<br/>Trim: Good detailed pine; hardwood to match paneling<br/>Closets: Extensive with cupboards above and drawers below</p>                                       |
| <p><b>Bath Detail</b><br/>Number: One for each bedroom<br/>Floors: Good ceramic tile<br/>Walls: Good ceramic tile<br/>Shower: Good ceramic tile with good glass door</p>   |
| <p><b>Kitchen</b><br/>Base Cabinet: Good matched hardwood<br/>Wall Cases: Good matched hardwood<br/>Drain Board/Countertop: Good ceramic tile</p>  |
| <p><b>Plumbing</b><br/>Copper tubing; 12 or more very good fixtures; double laundry tray; three or more water heaters</p>  |
| <p><b>Special Features</b><br/>Several ornate picture windows; best quality built-in oven, range, dishwasher, range hood and fan, garbage disposer, breakfast bar, pantry, and special baths</p>   |
| <p><b>Electrical</b><br/>Romex® or sheathed or conduit wiring; very good fixtures; expensive chandelier in dining room</p>   |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE A**

| Class | 400    | 500   | 600   | 700   | 800   | 900   | 1000  | 1100  | 1200  | 1300  | 1400  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 59.35  | 55.15 | 51.95 | 49.57 | 47.50 | 45.87 | 44.53 | 43.36 | 42.34 | 41.60 | 40.80 |
| D-1.5 | 65.20  | 60.51 | 56.97 | 54.36 | 52.18 | 50.41 | 48.91 | 47.61 | 46.46 | 45.74 | 44.83 |
| D-2   | 71.55  | 66.46 | 62.67 | 59.73 | 57.38 | 55.34 | 53.68 | 52.24 | 51.13 | 50.14 | 49.23 |
| D-3   | 78.52  | 72.97 | 68.75 | 65.59 | 62.94 | 60.81 | 58.90 | 57.39 | 56.14 | 55.09 | 54.10 |
| D-3.5 | 86.24  | 80.08 | 75.53 | 72.04 | 69.12 | 66.73 | 64.71 | 63.05 | 61.64 | 60.47 | 59.35 |
| D-4   | 94.68  | 87.98 | 82.89 | 79.02 | 75.84 | 73.18 | 71.02 | 69.19 | 67.69 | 66.46 | 65.20 |
| D-4.5 | 103.93 | 96.51 | 91.02 | 86.83 | 83.36 | 80.36 | 78.02 | 76.01 | 74.33 | 72.90 | 71.55 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 95.27  | 91.52  | 88.24  | 85.61  | 83.44  | 81.53  | 80.03  | 78.52  | 77.29  | 76.17  | 75.17  |
| D-5.5 | 104.63 | 100.52 | 96.96  | 94.08  | 91.64  | 89.51  | 87.75  | 86.24  | 84.79  | 83.58  | 82.51  |
| D-6   | 120.26 | 115.66 | 111.47 | 108.22 | 105.39 | 103.00 | 100.94 | 99.20  | 97.63  | 96.09  | 94.84  |
| D-6.5 | 133.34 | 127.99 | 123.56 | 119.95 | 116.79 | 114.16 | 111.90 | 109.91 | 108.11 | 106.59 | 105.29 |
| D-7   | 147.81 | 142.00 | 136.97 | 132.93 | 129.42 | 126.52 | 124.08 | 121.83 | 119.85 | 118.09 | 116.69 |
| D-7.5 | 171.27 | 164.44 | 158.62 | 153.94 | 149.90 | 146.54 | 143.74 | 141.04 | 138.95 | 136.83 | 135.09 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 74.34  | 72.80  | 71.55  | 70.50  | 69.50  | 68.75  | 67.93  | 67.38  | 66.94  | 66.46  | 65.59  |
| D-5.5 | 81.63  | 79.97  | 78.52  | 77.49  | 76.39  | 75.45  | 74.66  | 73.98  | 73.51  | 72.97  | 72.04  |
| D-6   | 93.85  | 91.92  | 90.34  | 89.00  | 87.77  | 86.77  | 85.85  | 85.13  | 84.57  | 83.90  | 82.86  |
| D-6.5 | 104.14 | 101.88 | 100.10 | 98.65  | 97.41  | 96.24  | 95.16  | 94.39  | 93.71  | 92.99  | 91.84  |
| D-7   | 115.37 | 112.93 | 110.91 | 109.40 | 107.85 | 106.66 | 105.49 | 104.59 | 103.91 | 103.00 | 101.75 |
| D-7.5 | 133.61 | 130.84 | 128.60 | 126.80 | 124.96 | 123.52 | 122.14 | 121.16 | 120.31 | 119.38 | 117.90 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 174.12 | 170.99 | 168.14 | 165.58 | 163.62 | 161.85 | 158.40 | 155.70 | 154.00 | 151.45 | 149.55 |
| D-8.5 | 208.57 | 204.76 | 201.31 | 198.32 | 195.97 | 193.64 | 189.66 | 186.47 | 184.33 | 181.23 | 179.11 |
| D-9   | 296.78 | 291.36 | 286.58 | 282.32 | 278.90 | 275.72 | 269.89 | 265.17 | 262.43 | 258.03 | 254.95 |
| D-9.5 | 440.58 | 432.61 | 425.51 | 419.05 | 414.04 | 409.39 | 400.78 | 393.99 | 389.60 | 383.10 | 378.40 |
| D-10  | 524.95 | 515.39 | 506.90 | 499.43 | 493.45 | 487.85 | 477.62 | 469.66 | 464.19 | 456.49 | 450.99 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 3000   | 3200   | 3400   | 3600   | 3800   | 4000   | 4200   | 4400   | 4600   | 4800   | 5000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 148.00 | 146.77 | 145.71 | 144.55 | 143.58 | 143.00 | 142.33 | 141.71 | 141.41 | 140.68 | 140.47 |
| D-8.5 | 177.25 | 175.78 | 174.45 | 173.19 | 171.82 | 171.01 | 170.43 | 169.61 | 169.20 | 168.44 | 168.27 |
| D-9   | 252.32 | 250.18 | 248.36 | 246.43 | 244.49 | 243.30 | 242.60 | 241.33 | 240.89 | 239.77 | 239.34 |
| D-9.5 | 374.62 | 371.43 | 368.73 | 365.82 | 363.09 | 361.32 | 360.13 | 358.36 | 357.61 | 355.99 | 355.50 |
| D-10  | 446.38 | 442.61 | 439.36 | 436.07 | 432.68 | 430.60 | 429.08 | 427.18 | 424.69 | 424.22 | 423.67 |



**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE B**

| Class | 400    | 500   | 600   | 700   | 800   | 900   | 1000  | 1100  | 1200  | 1300  | 1400  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 60.57  | 56.28 | 53.07 | 50.46 | 48.44 | 46.80 | 45.37 | 44.41 | 43.32 | 42.47 | 41.63 |
| D-1.5 | 66.57  | 61.81 | 58.25 | 55.37 | 53.16 | 51.47 | 49.95 | 48.62 | 47.48 | 46.72 | 45.76 |
| D-2   | 73.05  | 67.81 | 63.97 | 60.87 | 58.40 | 56.47 | 54.78 | 53.54 | 52.20 | 51.21 | 50.19 |
| D-3   | 80.24  | 74.57 | 70.31 | 66.72 | 64.16 | 62.03 | 60.13 | 58.76 | 57.36 | 56.27 | 55.19 |
| D-3.5 | 88.05  | 81.78 | 77.14 | 73.31 | 70.47 | 68.13 | 66.02 | 64.49 | 62.99 | 61.79 | 60.57 |
| D-4   | 96.78  | 89.81 | 84.70 | 80.55 | 77.33 | 74.79 | 72.54 | 70.75 | 69.09 | 67.79 | 66.57 |
| D-4.5 | 106.20 | 98.55 | 92.97 | 88.46 | 84.90 | 82.15 | 79.63 | 77.71 | 75.85 | 74.35 | 73.05 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 96.98  | 93.18  | 90.12  | 87.35  | 85.30  | 83.33  | 81.64  | 80.18  | 79.05  | 77.82  | 76.80  |
| D-5.5 | 106.47 | 102.27 | 98.88  | 95.88  | 93.63  | 91.49  | 89.76  | 88.06  | 86.86  | 85.39  | 84.32  |
| D-6   | 122.57 | 117.69 | 113.73 | 110.36 | 107.63 | 105.27 | 103.13 | 101.38 | 99.83  | 98.26  | 97.06  |
| D-6.5 | 135.80 | 130.49 | 126.03 | 122.28 | 119.42 | 116.57 | 114.27 | 112.30 | 110.70 | 108.89 | 107.54 |
| D-7   | 150.51 | 144.61 | 139.76 | 135.59 | 132.28 | 129.23 | 126.77 | 124.44 | 122.67 | 120.71 | 119.09 |
| D-7.5 | 174.39 | 167.52 | 161.86 | 157.06 | 153.25 | 149.67 | 146.83 | 144.19 | 141.79 | 139.69 | 138.03 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 75.98  | 74.35  | 73.11  | 72.04  | 71.30  | 70.47  | 69.67  | 69.09  | 68.57  | 68.13  | 67.29  |
| D-5.5 | 83.42  | 81.74  | 80.24  | 79.19  | 78.31  | 77.46  | 76.50  | 75.85  | 75.27  | 74.79  | 73.88  |
| D-6   | 96.01  | 94.05  | 92.29  | 91.11  | 90.04  | 88.98  | 88.07  | 87.32  | 86.70  | 86.16  | 85.08  |
| D-6.5 | 106.36 | 104.18 | 102.41 | 100.92 | 99.81  | 98.63  | 97.61  | 96.78  | 96.01  | 95.37  | 94.23  |
| D-7   | 117.89 | 115.53 | 113.43 | 111.87 | 110.62 | 109.37 | 108.24 | 107.21 | 106.36 | 105.69 | 104.50 |
| D-7.5 | 136.65 | 133.78 | 131.44 | 129.65 | 128.19 | 126.77 | 125.33 | 124.28 | 123.21 | 122.48 | 121.02 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 177.86 | 174.57 | 171.66 | 169.08 | 167.05 | 165.37 | 162.03 | 159.10 | 157.04 | 155.17 | 153.35 |
| D-8.5 | 212.86 | 209.05 | 205.49 | 202.56 | 200.05 | 197.92 | 194.05 | 190.51 | 187.94 | 185.76 | 183.52 |
| D-9   | 303.15 | 297.50 | 292.59 | 288.32 | 284.76 | 281.77 | 276.19 | 271.24 | 267.50 | 264.45 | 261.16 |
| D-9.5 | 450.07 | 441.83 | 434.55 | 427.96 | 422.94 | 418.26 | 410.16 | 402.78 | 397.24 | 392.60 | 387.82 |
| D-10  | 536.34 | 526.39 | 517.73 | 510.12 | 503.91 | 498.45 | 488.66 | 479.99 | 473.44 | 467.90 | 462.26 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 3000   | 3200   | 3400   | 3600   | 3800   | 4000   | 4200   | 4400   | 4600   | 4800   | 5000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 151.80 | 150.41 | 149.26 | 148.36 | 147.13 | 146.50 | 145.98 | 145.38 | 144.97 | 144.44 | 144.10 |
| D-8.5 | 181.64 | 180.00 | 178.60 | 177.55 | 176.29 | 175.41 | 174.75 | 174.06 | 173.64 | 172.97 | 172.47 |
| D-9   | 258.59 | 256.29 | 254.31 | 252.67 | 250.78 | 249.69 | 248.74 | 247.75 | 247.07 | 246.15 | 245.63 |
| D-9.5 | 384.00 | 380.46 | 377.73 | 375.36 | 372.36 | 370.67 | 369.39 | 367.82 | 366.98 | 365.50 | 364.79 |
| D-10  | 457.53 | 454.01 | 449.93 | 447.19 | 443.91 | 441.81 | 440.36 | 438.34 | 437.29 | 435.68 | 434.76 |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT COST TABLES**

**"D" CONSTRUCTION - SHAPE C**

| Class | 400    | 500    | 600   | 700   | 800   | 900   | 1000  | 1100  | 1200  | 1300  | 1400  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 62.01  | 57.52  | 54.26 | 51.24 | 49.32 | 47.78 | 46.35 | 45.25 | 44.17 | 43.35 | 42.68 |
| D-1.5 | 68.14  | 63.20  | 59.52 | 56.30 | 54.26 | 52.47 | 50.93 | 49.63 | 48.53 | 47.61 | 46.80 |
| D-2   | 74.67  | 69.45  | 65.33 | 61.84 | 59.52 | 57.52 | 55.86 | 54.43 | 53.31 | 52.23 | 51.45 |
| D-3   | 81.99  | 76.19  | 71.77 | 67.88 | 65.33 | 63.12 | 61.42 | 59.86 | 58.60 | 57.39 | 56.43 |
| D-3.5 | 90.15  | 83.68  | 78.87 | 74.59 | 71.75 | 69.39 | 67.31 | 65.71 | 64.29 | 63.04 | 62.01 |
| D-4   | 98.92  | 91.83  | 86.52 | 81.81 | 78.72 | 76.17 | 73.90 | 72.07 | 70.66 | 69.19 | 68.11 |
| D-4.5 | 108.56 | 100.95 | 94.99 | 89.84 | 86.51 | 83.58 | 81.24 | 79.19 | 77.58 | 76.00 | 74.67 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 98.75  | 94.99  | 91.77  | 89.15  | 86.92  | 85.19  | 83.51  | 81.99  | 80.72  | 79.69  | 78.69  |
| D-5.5 | 108.50 | 104.30 | 100.76 | 97.87  | 95.39  | 93.54  | 91.70  | 90.15  | 88.60  | 87.55  | 86.46  |
| D-6   | 124.68 | 120.02 | 115.91 | 112.60 | 109.82 | 107.61 | 105.47 | 103.62 | 101.89 | 100.59 | 99.42  |
| D-6.5 | 138.23 | 133.00 | 128.47 | 124.83 | 121.76 | 119.17 | 116.93 | 114.86 | 113.00 | 111.57 | 110.19 |
| D-7   | 153.24 | 147.35 | 142.43 | 138.30 | 134.84 | 132.12 | 129.56 | 127.32 | 125.25 | 123.62 | 122.18 |
| D-7.5 | 177.42 | 170.68 | 168.93 | 160.26 | 156.27 | 153.14 | 150.17 | 147.51 | 147.14 | 143.22 | 141.48 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 77.78  | 76.31  | 75.07  | 73.88  | 73.03  | 72.24  | 71.58  | 70.95  | 70.43  | 69.97  | 69.09  |
| D-5.5 | 85.40  | 83.73  | 82.33  | 81.18  | 80.19  | 79.39  | 78.63  | 77.84  | 77.29  | 76.82  | 75.84  |
| D-6   | 98.25  | 96.44  | 94.77  | 93.39  | 92.28  | 91.25  | 90.39  | 89.56  | 88.94  | 88.37  | 87.22  |
| D-6.5 | 108.88 | 106.81 | 105.00 | 103.52 | 102.30 | 101.22 | 100.29 | 99.19  | 98.57  | 97.93  | 96.70  |
| D-7   | 120.72 | 118.44 | 116.44 | 114.66 | 113.33 | 112.14 | 111.11 | 110.00 | 109.24 | 108.60 | 107.17 |
| D-7.5 | 139.83 | 137.14 | 134.84 | 132.91 | 131.25 | 129.81 | 128.63 | 127.36 | 126.61 | 125.76 | 124.16 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 181.86 | 178.60 | 176.09 | 173.37 | 171.04 | 169.18 | 166.12 | 163.30 | 160.99 | 158.94 | 157.29 |
| D-8.5 | 217.81 | 213.85 | 210.73 | 207.49 | 204.85 | 202.64 | 198.87 | 195.60 | 192.77 | 190.34 | 188.38 |
| D-9   | 309.98 | 304.34 | 299.96 | 295.30 | 291.68 | 288.43 | 283.10 | 278.33 | 274.41 | 270.86 | 268.16 |
| D-9.5 | 460.35 | 452.03 | 445.57 | 438.45 | 433.02 | 428.33 | 420.38 | 413.38 | 407.33 | 402.43 | 398.11 |
| D-10  | 548.42 | 538.54 | 530.86 | 522.51 | 515.99 | 510.39 | 500.86 | 492.42 | 485.66 | 479.57 | 474.41 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 3000   | 3200   | 3400   | 3600   | 3800   | 4000   | 4200   | 4400   | 4600   | 4800   | 5000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 155.86 | 154.38 | 153.39 | 152.40 | 151.16 | 150.50 | 149.88 | 149.30 | 148.88 | 148.35 | 147.99 |
| D-8.5 | 186.59 | 184.83 | 183.56 | 182.41 | 181.01 | 180.26 | 179.53 | 178.64 | 178.26 | 177.54 | 177.23 |
| D-9   | 265.63 | 263.25 | 261.22 | 259.63 | 257.56 | 256.56 | 255.44 | 254.39 | 253.66 | 252.66 | 252.34 |
| D-9.5 | 395.60 | 390.71 | 387.88 | 385.42 | 382.50 | 380.74 | 379.22 | 377.80 | 376.75 | 375.21 | 374.62 |
| D-10  | 470.09 | 465.43 | 462.33 | 459.36 | 455.75 | 453.88 | 452.00 | 450.00 | 448.82 | 447.09 | 446.38 |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE D**

| Class | 400    | 500    | 600   | 700   | 800   | 900   | 1000  | 1100  | 1200  | 1300  | 1400  |
|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 63.45  | 58.90  | 55.28 | 52.47 | 50.48 | 48.83 | 47.43 | 46.33 | 45.30 | 44.49 | 43.69 |
| D-1.5 | 69.64  | 64.70  | 60.63 | 57.52 | 55.39 | 53.62 | 52.11 | 50.86 | 49.67 | 48.89 | 47.95 |
| D-2   | 76.42  | 70.98  | 66.64 | 63.20 | 60.89 | 58.79 | 57.18 | 55.81 | 54.68 | 53.62 | 52.60 |
| D-3   | 83.99  | 78.02  | 73.13 | 69.39 | 66.74 | 64.59 | 62.78 | 61.31 | 59.92 | 58.85 | 57.83 |
| D-3.5 | 92.22  | 85.57  | 80.33 | 76.19 | 73.34 | 70.95 | 68.98 | 67.28 | 65.84 | 64.66 | 63.53 |
| D-4   | 101.16 | 93.97  | 88.13 | 83.60 | 80.58 | 77.88 | 75.68 | 73.87 | 72.39 | 70.96 | 69.65 |
| D-4.5 | 111.20 | 103.26 | 96.67 | 91.77 | 88.49 | 85.50 | 83.21 | 81.12 | 79.43 | 77.92 | 76.49 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 100.70 | 97.01  | 93.80  | 91.24  | 89.08  | 87.11  | 85.50  | 84.06  | 82.83  | 81.76  | 80.69  |
| D-5.5 | 110.60 | 106.49 | 103.01 | 100.14 | 97.82  | 95.75  | 93.84  | 92.31  | 91.01  | 89.79  | 88.59  |
| D-6   | 127.23 | 122.59 | 118.51 | 115.23 | 112.52 | 110.01 | 108.00 | 106.02 | 104.64 | 103.19 | 101.89 |
| D-6.5 | 140.96 | 135.82 | 131.29 | 127.73 | 124.68 | 121.93 | 119.64 | 117.67 | 115.92 | 114.51 | 112.99 |
| D-7   | 156.21 | 150.53 | 145.56 | 141.48 | 138.12 | 135.09 | 132.59 | 130.31 | 128.56 | 126.81 | 125.22 |
| D-7.5 | 181.01 | 174.42 | 168.58 | 163.94 | 160.02 | 156.56 | 153.68 | 151.07 | 148.95 | 146.92 | 145.03 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 79.80  | 78.34  | 77.00  | 76.00  | 75.10  | 74.32  | 73.56  | 73.00  | 72.48  | 71.98  | 71.01  |
| D-5.5 | 87.61  | 85.98  | 84.56  | 83.45  | 82.44  | 81.61  | 80.72  | 80.15  | 79.55  | 78.98  | 78.03  |
| D-6   | 100.86 | 98.92  | 97.23  | 96.03  | 94.79  | 93.82  | 92.85  | 92.23  | 91.51  | 90.86  | 89.67  |
| D-6.5 | 111.79 | 109.61 | 107.82 | 106.37 | 105.08 | 103.98 | 103.00 | 102.15 | 101.42 | 100.77 | 99.50  |
| D-7   | 123.85 | 121.44 | 119.52 | 117.91 | 116.45 | 115.21 | 114.06 | 113.29 | 112.36 | 111.67 | 110.19 |
| D-7.5 | 144.31 | 140.83 | 138.42 | 136.68 | 134.98 | 133.46 | 132.22 | 131.13 | 130.19 | 129.20 | 127.73 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 185.91 | 182.73 | 179.79 | 177.47 | 175.34 | 173.87 | 170.47 | 167.64 | 165.42 | 163.48 | 161.83 |
| D-8.5 | 222.58 | 218.69 | 215.29 | 212.52 | 209.83 | 208.11 | 204.13 | 200.75 | 198.09 | 195.64 | 193.63 |
| D-9   | 316.75 | 311.43 | 306.40 | 302.42 | 298.79 | 296.23 | 290.57 | 285.59 | 281.94 | 278.57 | 275.70 |
| D-9.5 | 470.45 | 462.39 | 455.01 | 449.03 | 443.60 | 439.74 | 431.58 | 424.22 | 418.84 | 413.54 | 409.35 |
| D-10  | 560.52 | 551.09 | 542.09 | 535.32 | 528.71 | 524.10 | 514.04 | 505.50 | 498.92 | 492.82 | 487.81 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 3000   | 3200   | 3400   | 3600   | 3800   | 4000   | 4200   | 4400   | 4600   | 4800   | 5000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-8   | 160.20 | 158.93 | 157.66 | 156.57 | 155.43 | 154.79 | 154.19 | 153.51 | 153.07 | 152.48 | 152.27 |
| D-8.5 | 191.75 | 190.24 | 188.84 | 187.53 | 186.17 | 185.34 | 184.57 | 183.82 | 183.35 | 182.59 | 182.27 |
| D-9   | 273.10 | 270.83 | 268.78 | 267.00 | 264.96 | 263.73 | 262.69 | 261.60 | 260.94 | 259.90 | 259.40 |
| D-9.5 | 405.39 | 402.15 | 399.09 | 396.34 | 393.30 | 391.55 | 390.20 | 388.58 | 387.67 | 385.89 | 385.33 |
| D-10  | 483.15 | 479.38 | 475.48 | 472.34 | 468.73 | 466.55 | 465.06 | 462.97 | 461.85 | 460.01 | 459.23 |

**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-5 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-6 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-7 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-8 QUALITY**





**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-9 QUALITY**





**SINGLE-FAMILY RESIDENTIAL  
CONVENTIONAL  
D-10 QUALITY**



## AH 531.21: SINGLE-FAMILY RESIDENTIAL MODERN TYPE

Modern single-family residences are residences designed for permanent single-family occupancy and usually built after 1950. They differ from conventional single-family residences in that they have more bathrooms and more built-in features. These differences are reflected in the respective building specifications.

Modern type specifications are divided into two categories per quality classification:

- Pre 1990: Generally for residences built between 1950 and 1990
- Post 1990: Generally for residences built after 1990

The development of divided specifications for modern residences is due to the distinct changes that have occurred in the construction industry in California in recent years. Items such as plumbing, roofing, and flooring which used to be found in a D7.5 or above, are commonly found in a D6 after 1990. The additional specifications recognize and accommodate the changes in the industry.

Square foot costs include all costs and components as described on page 2 of AH 531.10, the *Costing Information* chapter of this handbook, and include all plumbing fixtures and built-ins as described in the applicable building specifications.

The AH 531 has been updated to account for the costs associated with fire sprinklers. Effective January 1, 2011 the State of California adopted building code changes that required all new one- and two-family homes and townhouses built in the state to have fire sprinklers. Fire sprinklers are now a listed component in the residential building specifications where applicable. In cases where the fire sprinkler component is present and is not included in the applicable building specification, the component should be treated as an additive. In cases where the fire sprinkler is not present and is present in the building specification, the cost associated with the component should be treated as a subtractive.

Shape classification may be determined by using the guides in the *Costing Information* chapter of this handbook.

**NOTE:** The specifications for each quality class provide a distinction between classes. This distinction often shows in the *quality* of a feature and not whether the feature is present. The same feature may exist in different classes, but the quality of the feature will help to determine the classification. Conversely, some features may be included in a particular classification, while in another class, the same feature must be treated as an additive.

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>PRE 1990</b>   | <b>D-5 QUALITY</b> | <b>MODERN</b> |
|---|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete  |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Line wire and paper<br>Cover: Light stucco<br>Windows: Low-cost, aluminum, sliding<br>Front Door: Low-cost slab |                    |               |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Asphalt shingles or composition tar and pea gravel<br>Overhang: 12" to 16", unceiled<br>Gutters: Over entrances                   |                    |               |
| <b>Floor Finishes</b><br>Vinyl tile   |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Low-cost hardboard or wood slab<br>Trim: Douglas Fir, painted<br>Closets: Moderate amount; low-cost doors                                     |                    |               |
| <b>Bath Detail</b><br>Number: Two, back to back<br>Floors: Vinyl tile<br>Walls: Drywall and enamel<br>Shower: Plastic faced hardboard   |                    |               |
| <b>Kitchen</b><br>Base Cabinet: 8' low-cost hardwood veneer<br>Wall Cases: Low-cost hardwood veneer<br>Countertop/Drain Board: 8' plastic laminate                                      |                    |               |
| <b>Plumbing</b><br>Galvanized pipe; 7 low-cost fixtures; washer outlet; water heater  |                    |               |
| <b>Special Features</b><br>None   |                    |               |
| <b>Electrical</b><br>Romex® or sheathed wiring; low-cost fixtures   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>PRE 1990</b>  | <b>D-6 QUALITY</b> | <b>MODERN</b> |
|--|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                    |               |
| <b>Floor Structure</b><br>Standard wood frame  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Line wire and paper<br>Cover: Hardwood siding, wood shingles, or low-cost wood siding on front wall; average stucco on sides and rear<br>Front Doors: Average quality slab |                    |               |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Wood shingle, light shake, good composition shingles, or composition with tar and colored rock<br>Overhang: 18", unceiled<br>Gutters: 4" galvanized and painted at all eaves                 |                    |               |
| <b>Floor Finishes</b><br>Average quality 3/8" square edge hardwood; low-cost carpet in living room, dining room, hall, and bedrooms; average quality vinyl in kitchen, family room, breakfast room, and utility room                               |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured and painted; some wallpaper   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Average quality, hollow core slab<br>Trim: Douglas Fir, painted; low-cost hardwood<br>Closets: Average amount; low-cost wood or metal doors  |                    |               |
| <b>Bath Detail</b><br>Number: Two, back to back<br>Floors: Vinyl tile<br>Walls: Drywall and enamel<br>Shower: Average ceramic tile or plastic coated hardwood with a glass door  |                    |               |
| <b>Kitchen</b><br>Base Cabinet: 12' low-cost hardwood veneer<br>Wall Cases: Low-cost hardwood veneer<br>Countertop/Drain Board: 12' average ceramic tile   |                    |               |
| <b>Plumbing</b><br>Galvanized pipe; 7 average fixtures; washer outlet; water heater  |                    |               |
| <b>Special Features</b><br>6' sliding glass door; average quality built-in oven, range, dishwasher, garbage disposer, and range hood; 2' to 4' ceramic tile or plastic laminate vanity in each bath  |                    |               |
| <b>Electrical</b><br>Romex® or sheathed wiring; average fixtures   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>PRE 1990</b>  | <b>D-7 QUALITY</b> | <b>MODERN</b> |
|--|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                    |               |
| <b>Floor Structure</b><br>Standard wood frame  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Drywall<br>Cover: Good hardboard or average wood siding with masonry veneer on front wall; good stucco on sides and rear<br>Windows: Average aluminum<br>Front Doors: 1-3/4" fir       |                    |               |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Medium shake or composition and large rock<br>Overhang: 24", unceiled<br>Gutters: 6" good quality at all eaves   |                    |               |
| <b>Floor Finishes</b><br>Average ceramic or terrazzo in entry; average quality tongue and groove hardwood; average quality carpet in living, dining, hall, and bedrooms; average quality sheet vinyl in kitchen, family room, breakfast room, and utility room |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted; some wallpaper; average quality hardwood veneer in family room  |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Average quality hollow core slab<br>Trim: Douglas Fir; painted; some hardwood<br>Closets: Average amount, with average quality wood doors  |                    |               |
| <b>Bath Detail</b><br>Number: Two<br>Floors: Sheet vinyl<br>Walls: Drywall and enamel; average ceramic tile over tub<br>Shower: Average ceramic tile, with glass door  |                    |               |
| <b>Kitchen</b><br>Base Cabinet: 16' average quality hardwood veneer<br>Wall Cases: Average quality hardwood veneer<br>Countertop/Drain Board: 16' average ceramic tile or good plastic laminate  |                    |               |
| <b>Plumbing</b><br>Galvanized pipe; 7 good fixtures; single laundry tray; water heater   |                    |               |
| <b>Special Features</b><br>8' sliding glass door; average quality built-in oven, range, dishwasher, garbage disposer, and range hood and fan; 4' to 6' ceramic tile vanity in each bath, 1 fireplace (additional, additive)                                    |                    |               |
| <b>Electrical</b><br>Romex® or sheathed wiring; average quality fixtures   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| PRE 1990   | D-8 QUALITY | MODERN |
|--|-------------|--------|
| <b>Foundation</b><br>Reinforced concrete   |             |        |
| <b>Floor Structure</b><br>Standard wood frame  |             |        |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Drywall or plywood<br>Cover: Good wood siding with masonry veneer trim on front wall; good stucco on sides and rear<br>Windows: Good aluminum<br>Front Doors: 1-3/4" hardwood or good pine, double |             |        |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Heavy shake or adobe tile<br>Overhang: 36", unsealed; 24", ceiled<br>Gutters: 8" good quality at all eaves   |             |        |
| <b>Floor Finishes</b><br>Terrazzo or mission tile in entry; good tongue and groove hardwood; good carpet in living, dining, and bedrooms; good sheet vinyl in kitchen, family room, breakfast room, and utility room   |             |        |
| <b>Interior Finish</b><br>Drywall with heavy texture and paint; some good wallpaper or vinyl wall cover; good hardwood veneer paneling in family room  |             |        |
| <b>Interior Detail</b><br>Interior Doors: Good hardwood veneer slab<br>Trim: Douglas Fir, painted, with some hardwood<br>Closets: Ample space; good solid wood doors; many linen closets   |             |        |
| <b>Bath Detail</b><br>Number: 2 1/2<br>Floors: Good ceramic tile<br>Walls: Drywall with vinyl or foil wall cover; good ceramic tile over tub<br>Shower: Good ceramic tile with glass doors   |             |        |
| <b>Kitchen</b><br>Base Cabinet: 20' good hardwood veneer<br>Wall Cases: Ample good hardwood veneer<br>Countertop/Drain Board: 20' good ceramic tile or plastic laminate  |             |        |
| <b>Plumbing</b><br>Copper tubing; 10 good fixtures; double laundry tray; two water heaters   |             |        |
| <b>Special Features</b><br>Two 8' sliding glass doors; good quality built-in oven, range, dishwasher, garbage disposer, range hood and fan, microwave oven, compactor, and wet bar; 4' to 6' ceramic tile vanity in each bath; 1 fireplace (additional, additive)          |             |        |
| <b>Electrical</b><br>Romex® or sheathed wiring; good quality fixtures  |             |        |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**PRE 1990**

**D-9 QUALITY**

**MODERN**

|  |
|--|
| <p><b>Foundation</b><br/>Reinforced concrete</p>   |
| <p><b>Floor Structure</b><br/>Joists: 2" x 8", 16" o.c.<br/>Sub-Floor: Plywood or 1" x 4" tongue and groove</p>  |
| <p><b>Walls and Exterior</b><br/>Framing: Standard wood frame<br/>Sheathing: Drywall or plywood, fully insulated to R-11 standards<br/>Cover: Good stucco or wood siding with extensive masonry veneer trim, or masonry veneer throughout<br/>Windows: Good steel sash with double pane glass<br/>Front Doors: Single or double, good quality wood</p> |
| <p><b>Roof</b><br/>Framing: 2" x 6" x 24" rafters<br/>Cover: Heavy shake or adobe tile<br/>Overhang: 36", unceiled, ceiled, or boxed<br/>Gutters: Good quality 8" at all eaves</p>   |
| <p><b>Floor Finishes</b><br/>Terrazzo, hardwood, or mission tile in entry; highest quality carpet in living, dining, and bedrooms; good sheet vinyl in kitchen, family room, and utility room</p>  |
| <p><b>Interior Finish</b><br/>Drywall with heavy texture and paint; some wallpaper or grass cloth; good hardwood paneling in family room</p>   |
| <p><b>Interior Detail</b><br/>Interior Doors: Good hardwood veneer<br/>Trim: Good detailed pine and hardwood<br/>Closets: Ample space; good solid wood doors; many linen closets</p>   |
| <p><b>Bath Detail</b><br/>Number: One bath for every bedroom<br/>Floors: Good ceramic tile<br/>Walls: Drywall with vinyl wallpaper; good ceramic tile over tub<br/>Shower: Good ceramic tile with good glass doors</p>   |
| <p><b>Kitchen</b><br/>Base Cabinets: Good 20' hardwood<br/>Wall Cases: Good hardwood<br/>Countertop/Drain Board: 20' good ceramic tile or good plastic laminate<br/>Cooking island with fixtures</p>   |
| <p><b>Plumbing</b><br/>Copper tubing; 10 or more good fixtures; two or more water heaters</p>  |
| <p><b>Special Features</b><br/>Picture windows, leaded and frosted glass; best quality built-in double oven, microwave, range, dishwasher, and garbage disposer; ceramic tile vanity in each bath; breakfast and wet bar; walk-in pantry; 2 fireplaces (additional, additive)</p>  |
| <p><b>Electrical</b><br/>Romex® or sheathed wiring; good fixtures, with expensive chandelier in dining room</p>  |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>PRE 1990</b>  | <b>D-10 QUALITY</b> | <b>MODERN</b> |
|--|---------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                     |               |
| <b>Floor Structure</b><br>Joists: 2" x 10", 16" o.c.<br>Sub-Floor: Plywood or 1" x 4" tongue and groove  |                     |               |
| <b>Walls and Exterior</b><br>Framing: Heavy wood frame<br>Sheathing: Drywall or plywood, fully insulated to R-19 standards<br>Cover: Decorative stucco or heavy wood siding with extensive or full brick veneer<br>Windows: Heavy steel sash with double pane glass                              |                     |               |
| <b>Roof</b><br>Framing: 2" x 8" x 24" rafters, extensively cut-up with many dormers<br>Cover: Heavy shake or adobe tile<br>Overhang: 36", ceiled or boxed<br>Gutters: Excellent quality 8" at all eaves  |                     |               |
| <b>Floor Finishes</b><br>Terrazzo, hardwood, or mission tile in entry; highest quality carpet in living, dining, and bedrooms; parquet hardwood in kitchen and family rooms; good sheet vinyl in utility room  |                     |               |
| <b>Interior Finish</b><br>Drywall with heavy texture and paint; extensive wallpaper, grass cloth, and excellent wood paneling throughout   |                     |               |
| <b>Interior Detail</b><br>Interior Doors: Excellent hardwood<br>Trim: Excellent scrolled hardwood<br>Storage: Cedar lined closets and extensive storage cabinets<br>Extras: Spiral staircases; chandeliers in entry hall, dining, and family rooms   |                     |               |
| <b>Bath Detail</b><br>Number: One bath for every bedroom<br>Floors: Good ceramic tile<br>Walls: Good ceramic tile wainscoting<br>Shower: Fully ceramic tiled walls and ceiling   |                     |               |
| <b>Kitchen</b><br>Extensive hardwood wall cabinets; fixtures on cooking island; butcher block; extensive good ceramic tile countertop/drain board  |                     |               |
| <b>Plumbing</b><br>Copper tubing; 15 or more quality fixtures; two or more water heaters   |                     |               |
| <b>Special Features</b><br>Picture windows, leaded and frosted glass; highest quality built-in double oven, microwave, range, dishwasher, and garbage disposer; ceramic tile vanity in each bath; jetted tub in master bath; walk-in pantry; built-in cases; 2 fireplaces (additional, additive) |                     |               |
| <b>Electrical</b><br>Romex® or sheathed wiring; excellent fixtures in each room  |                     |               |



**SINGLE-FAMILY RESIDENTIAL  
PRE-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE A**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 96.77  | 92.69  | 89.35  | 86.48  | 84.21  | 82.18  | 80.44  | 78.81  | 77.60  | 76.38  | 75.42  |
| D-5.5 | 106.44 | 101.97 | 98.30  | 95.15  | 92.63  | 90.42  | 88.46  | 86.65  | 85.38  | 84.02  | 83.00  |
| D-6   | 122.59 | 117.52 | 113.25 | 109.63 | 106.80 | 104.21 | 101.94 | 99.85  | 98.35  | 96.84  | 95.50  |
| D-6.5 | 136.20 | 130.47 | 125.82 | 121.74 | 118.54 | 115.65 | 113.12 | 110.99 | 109.24 | 107.56 | 106.11 |
| D-7   | 151.21 | 144.76 | 139.63 | 135.12 | 131.61 | 128.49 | 125.66 | 123.14 | 121.24 | 119.42 | 117.77 |
| D-7.5 | 175.51 | 168.07 | 162.03 | 156.88 | 152.68 | 149.08 | 145.87 | 142.93 | 140.80 | 138.54 | 136.72 |
| D-8   | 205.21 | 196.68 | 189.53 | 183.45 | 178.60 | 174.38 | 170.59 | 167.26 | 164.68 | 162.17 | 159.91 |
| D-8.5 | 235.17 | 225.38 | 217.19 | 210.21 | 204.76 | 199.84 | 195.51 | 191.63 | 188.68 | 185.80 | 183.18 |
| D-9   | 320.42 | 306.99 | 295.91 | 286.36 | 278.90 | 272.26 | 266.39 | 261.09 | 257.12 | 253.10 | 249.64 |
| D-9.5 | 458.48 | 439.28 | 423.40 | 409.78 | 399.03 | 389.45 | 381.11 | 373.47 | 367.84 | 362.28 | 357.14 |
| D-10  | 527.25 | 505.20 | 486.80 | 471.19 | 458.88 | 447.93 | 438.24 | 429.52 | 422.99 | 416.61 | 410.78 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 74.43  | 72.71  | 71.44  | 70.30  | 69.36  | 68.54  | 67.89  | 67.27  | 66.69  | 66.20  | 65.31  |
| D-5.5 | 81.90  | 80.04  | 78.68  | 77.38  | 76.29  | 75.33  | 74.71  | 73.97  | 73.31  | 72.78  | 71.85  |
| D-6   | 94.37  | 92.22  | 90.65  | 89.16  | 87.93  | 86.75  | 86.03  | 85.27  | 84.52  | 83.93  | 82.79  |
| D-6.5 | 104.84 | 102.38 | 100.68 | 99.01  | 97.51  | 96.41  | 95.48  | 94.73  | 93.79  | 93.23  | 91.97  |
| D-7   | 116.24 | 113.73 | 111.79 | 109.86 | 108.40 | 107.02 | 106.11 | 105.15 | 104.23 | 103.44 | 102.03 |
| D-7.5 | 135.02 | 132.04 | 129.73 | 127.54 | 125.81 | 124.27 | 123.09 | 121.99 | 120.98 | 120.16 | 118.48 |
| D-8   | 157.95 | 154.37 | 151.72 | 149.13 | 147.07 | 145.31 | 143.98 | 142.77 | 141.45 | 140.48 | 138.52 |
| D-8.5 | 181.07 | 176.90 | 173.85 | 170.96 | 168.59 | 166.50 | 164.96 | 163.53 | 162.11 | 161.02 | 158.76 |
| D-9   | 246.67 | 240.97 | 236.95 | 232.87 | 229.68 | 226.78 | 224.72 | 222.83 | 220.80 | 219.36 | 216.26 |
| D-9.5 | 352.82 | 344.85 | 338.93 | 333.18 | 328.58 | 324.50 | 321.58 | 318.91 | 315.99 | 313.83 | 309.44 |
| D-10  | 405.81 | 396.58 | 389.67 | 383.15 | 377.88 | 373.17 | 369.84 | 366.73 | 363.37 | 360.93 | 355.86 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 4200   | 4400   | 4600   | 5000   |
|-------|--------|--------|--------|--------|
| D-6   | 81.57  | 81.41  | 80.83  | 80.04  |
| D-6.5 | 91.13  | 90.41  | 89.77  | 88.88  |
| D-7   | 101.10 | 100.29 | 99.61  | 98.61  |
| D-7.5 | 117.42 | 116.48 | 115.67 | 114.50 |
| D-8   | 138.54 | 137.43 | 136.47 | 135.10 |
| D-8.5 | 157.32 | 156.05 | 154.97 | 153.42 |
| D-9   | 214.31 | 212.59 | 211.10 | 209.00 |
| D-9.5 | 306.65 | 304.19 | 302.06 | 299.05 |
| D-10  | 352.65 | 349.83 | 347.38 | 343.89 |

**SINGLE-FAMILY RESIDENTIAL  
PRE-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 98.69      | 94.57      | 91.02      | 88.26       | 85.85       | 83.83       | 82.19       | 80.61       | 79.27       | 78.09       | 77.06       |
| D-5.5        | 108.53     | 103.95     | 100.15     | 97.13       | 94.39       | 92.14       | 90.44       | 88.66       | 87.25       | 85.97       | 84.82       |
| D-6          | 125.04     | 119.87     | 115.32     | 111.89      | 108.82      | 106.21      | 104.22      | 102.25      | 100.64      | 99.08       | 97.71       |
| D-6.5        | 138.91     | 133.09     | 128.01     | 124.21      | 120.81      | 117.94      | 115.67      | 113.39      | 111.69      | 109.95      | 108.55      |
| D-7          | 154.16     | 147.70     | 142.20     | 137.89      | 134.15      | 131.00      | 128.51      | 125.94      | 123.87      | 122.10      | 120.55      |
| D-7.5        | 178.88     | 171.46     | 165.02     | 160.09      | 155.77      | 152.00      | 149.17      | 146.16      | 143.94      | 141.67      | 139.84      |
| D-8          | 209.22     | 200.47     | 193.09     | 187.21      | 182.11      | 177.84      | 174.41      | 170.99      | 168.27      | 165.75      | 163.52      |
| D-8.5        | 239.76     | 229.76     | 221.25     | 214.58      | 208.63      | 203.78      | 199.87      | 195.92      | 192.77      | 189.95      | 187.40      |
| D-9          | 326.68     | 313.02     | 301.42     | 292.34      | 284.27      | 277.68      | 272.28      | 266.89      | 262.63      | 258.75      | 255.30      |
| D-9.5        | 467.50     | 447.81     | 431.37     | 418.24      | 406.76      | 397.27      | 389.51      | 381.91      | 375.84      | 370.28      | 365.31      |
| D-10         | 537.59     | 514.99     | 496.05     | 480.99      | 467.79      | 456.96      | 448.00      | 439.17      | 432.21      | 425.84      | 420.02      |

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 76.08       | 74.48       | 73.27       | 72.16       | 71.17       | 70.31       | 69.64       | 68.96       | 68.39       | 67.90       | 67.16       |
| D-5.5        | 83.67       | 81.96       | 80.61       | 79.27       | 78.22       | 77.39       | 76.57       | 75.89       | 75.26       | 74.72       | 73.85       |
| D-6          | 96.51       | 94.40       | 92.88       | 91.46       | 90.27       | 89.17       | 88.22       | 87.40       | 86.69       | 86.05       | 85.14       |
| D-6.5        | 107.14      | 104.90      | 103.17      | 101.52      | 100.15      | 99.03       | 97.94       | 97.06       | 96.27       | 95.50       | 94.54       |
| D-7          | 118.95      | 116.35      | 114.54      | 112.71      | 111.16      | 109.87      | 108.80      | 107.70      | 106.92      | 106.13      | 104.98      |
| D-7.5        | 138.03      | 135.07      | 132.92      | 130.90      | 129.04      | 127.56      | 126.28      | 125.02      | 124.01      | 123.11      | 121.76      |
| D-8          | 161.52      | 158.06      | 155.48      | 153.10      | 150.93      | 149.16      | 147.76      | 146.29      | 145.09      | 144.01      | 142.47      |
| D-8.5        | 184.99      | 181.12      | 178.20      | 175.45      | 173.02      | 170.99      | 169.28      | 167.62      | 166.27      | 164.98      | 163.26      |
| D-9          | 252.06      | 246.78      | 242.86      | 238.99      | 235.68      | 232.91      | 230.59      | 228.37      | 226.51      | 224.76      | 222.44      |
| D-9.5        | 360.73      | 353.02      | 347.31      | 342.06      | 337.32      | 333.23      | 330.03      | 326.75      | 324.13      | 321.64      | 318.35      |
| D-10         | 414.82      | 405.98      | 399.45      | 393.32      | 387.83      | 383.22      | 379.47      | 375.82      | 372.73      | 369.90      | 366.03      |

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>4200</b> | <b>4400</b> | <b>4600</b> | <b>5000</b> |
|--------------|-------------|-------------|-------------|-------------|
| D-6          | 84.38       | 83.70       | 83.12       | 82.29       |
| D-6.5        | 93.69       | 92.93       | 92.29       | 91.36       |
| D-7          | 104.04      | 103.22      | 102.49      | 101.46      |
| D-7.5        | 120.66      | 119.70      | 118.85      | 117.68      |
| D-8          | 141.21      | 140.08      | 139.10      | 137.70      |
| D-8.5        | 162.04      | 160.02      | 158.79      | 157.69      |
| D-9          | 220.45      | 218.68      | 217.16      | 214.97      |
| D-9.5        | 315.46      | 314.37      | 312.17      | 309.04      |
| D-10         | 362.75      | 359.83      | 358.70      | 355.13      |

**SINGLE-FAMILY RESIDENTIAL  
PRE-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE C**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 100.24 | 96.18  | 92.72  | 89.91  | 87.49  | 85.60  | 83.83  | 82.34  | 80.82  | 79.76  | 78.74  |
| D-5.5 | 110.29 | 105.77 | 101.99 | 98.89  | 96.30  | 94.22  | 92.13  | 90.54  | 88.95  | 87.76  | 86.59  |
| D-6   | 127.08 | 121.89 | 117.57 | 113.99 | 110.93 | 108.54 | 106.20 | 104.32 | 102.40 | 101.13 | 99.76  |
| D-6.5 | 141.13 | 135.37 | 130.49 | 126.59 | 123.15 | 120.44 | 117.93 | 115.86 | 113.78 | 112.31 | 110.79 |
| D-7   | 156.64 | 150.23 | 144.89 | 140.52 | 136.73 | 133.76 | 130.99 | 128.60 | 126.32 | 124.72 | 123.01 |
| D-7.5 | 181.78 | 174.37 | 168.16 | 162.98 | 158.78 | 155.31 | 151.98 | 149.22 | 146.59 | 144.70 | 142.79 |
| D-8   | 212.67 | 203.98 | 196.77 | 190.73 | 185.76 | 181.61 | 177.83 | 174.47 | 171.53 | 169.26 | 167.02 |
| D-8.5 | 243.71 | 233.76 | 225.45 | 218.50 | 212.89 | 208.09 | 203.77 | 199.98 | 196.57 | 193.94 | 191.35 |
| D-9   | 331.98 | 318.46 | 307.15 | 297.73 | 290.01 | 283.49 | 277.61 | 272.44 | 267.75 | 264.18 | 260.78 |
| D-9.5 | 475.02 | 455.63 | 439.52 | 426.05 | 414.95 | 405.65 | 397.24 | 389.89 | 383.14 | 378.00 | 373.09 |
| D-10  | 546.23 | 523.97 | 505.46 | 489.97 | 477.26 | 466.50 | 456.92 | 448.29 | 440.61 | 434.69 | 429.05 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 75.95  | 74.53  | 73.27  | 71.77  | 71.25  | 70.60  | 69.95  | 69.34  | 68.71  | 68.27  | 67.53  |
| D-5.5 | 85.60  | 83.83  | 82.46  | 80.61  | 80.04  | 79.21  | 78.54  | 77.83  | 77.04  | 76.58  | 75.73  |
| D-6   | 98.71  | 96.56  | 94.95  | 92.87  | 92.23  | 91.33  | 90.42  | 89.68  | 88.82  | 88.33  | 87.22  |
| D-6.5 | 109.52 | 107.21 | 105.48 | 103.16 | 102.39 | 101.37 | 100.51 | 99.63  | 98.51  | 98.05  | 96.85  |
| D-7   | 121.61 | 119.07 | 117.06 | 114.53 | 113.74 | 112.57 | 111.53 | 110.69 | 109.52 | 108.80 | 107.52 |
| D-7.5 | 141.17 | 138.21 | 135.74 | 132.91 | 132.05 | 130.59 | 129.43 | 128.36 | 127.09 | 126.32 | 124.81 |
| D-8   | 165.14 | 161.68 | 158.91 | 155.47 | 154.38 | 152.79 | 151.37 | 150.10 | 148.60 | 147.77 | 147.18 |
| D-8.5 | 189.21 | 185.28 | 182.12 | 178.18 | 176.91 | 175.09 | 173.46 | 172.04 | 170.28 | 169.32 | 167.26 |
| D-9   | 257.70 | 252.38 | 248.07 | 242.84 | 240.99 | 238.53 | 236.39 | 234.34 | 231.91 | 230.61 | 227.83 |
| D-9.5 | 368.79 | 361.16 | 355.04 | 347.28 | 344.88 | 341.31 | 338.15 | 335.31 | 331.91 | 330.10 | 326.02 |
| D-10  | 424.09 | 415.28 | 408.29 | 407.40 | 396.62 | 392.52 | 388.86 | 385.58 | 381.71 | 379.55 | 374.82 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 4200   | 4400   | 4600   | 5000   |
|-------|--------|--------|--------|--------|
| D-6   | 86.44  | 85.73  | 85.13  | 84.30  |
| D-6.5 | 95.44  | 94.64  | 93.98  | 93.04  |
| D-7   | 106.53 | 105.69 | 104.95 | 103.91 |
| D-7.5 | 123.66 | 122.69 | 121.84 | 120.60 |
| D-8   | 145.89 | 144.75 | 143.74 | 142.31 |
| D-8.5 | 165.76 | 164.44 | 163.30 | 161.65 |
| D-9   | 225.80 | 223.98 | 222.42 | 220.18 |
| D-9.5 | 323.06 | 320.48 | 318.24 | 315.07 |
| D-10  | 371.45 | 368.46 | 365.90 | 362.24 |

**SINGLE-FAMILY RESIDENTIAL  
PRE-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 101.89     | 97.74      | 94.59      | 91.67       | 89.41       | 87.33       | 85.63       | 84.19       | 82.73       | 81.56       | 80.61       |
| D-5.5        | 112.00     | 107.55     | 103.96     | 100.80      | 98.36       | 96.09       | 94.24       | 92.59       | 91.03       | 89.75       | 88.65       |
| D-6          | 129.14     | 123.87     | 119.88     | 116.17      | 113.35      | 110.78      | 108.58      | 106.71      | 104.97      | 103.41      | 102.24      |
| D-6.5        | 143.35     | 137.64     | 133.10     | 128.99      | 125.88      | 122.98      | 120.54      | 118.52      | 116.54      | 114.93      | 113.38      |
| D-7          | 159.18     | 152.82     | 147.79     | 143.18      | 139.66      | 136.50      | 133.77      | 131.60      | 129.33      | 127.55      | 125.93      |
| D-7.5        | 184.73     | 177.26     | 171.46     | 166.17      | 162.18      | 158.37      | 155.33      | 152.63      | 150.07      | 148.00      | 146.15      |
| D-8          | 216.03     | 207.46     | 200.49     | 194.36      | 189.65      | 185.31      | 181.66      | 178.56      | 175.62      | 173.11      | 170.98      |
| D-8.5        | 247.58     | 237.77     | 229.76     | 222.77      | 217.35      | 212.33      | 208.14      | 204.58      | 201.21      | 198.30      | 195.90      |
| D-9          | 337.24     | 323.85     | 312.99     | 303.41      | 296.12      | 289.26      | 283.59      | 278.79      | 274.12      | 270.26      | 266.87      |
| D-9.5        | 482.60     | 463.56     | 447.93     | 434.14      | 423.69      | 413.91      | 405.75      | 398.93      | 392.22      | 386.63      | 381.90      |
| D-10         | 554.98     | 533.06     | 515.07     | 499.32      | 487.24      | 475.95      | 466.63      | 458.73      | 451.05      | 444.71      | 439.13      |

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 79.60       | 78.00       | 76.75       | 75.53       | 74.60       | 73.67       | 73.03       | 72.46       | 71.86       | 71.41       | 70.47       |
| D-5.5        | 87.52       | 85.84       | 84.38       | 83.13       | 82.01       | 81.02       | 80.26       | 79.70       | 79.06       | 78.55       | 77.52       |
| D-6          | 100.97      | 98.89       | 97.17       | 95.78       | 94.56       | 93.41       | 92.52       | 91.86       | 91.08       | 90.58       | 89.27       |
| D-6.5        | 112.07      | 109.80      | 108.07      | 106.35      | 104.99      | 103.72      | 102.81      | 101.95      | 101.13      | 100.52      | 99.16       |
| D-7          | 124.41      | 121.86      | 119.88      | 118.12      | 116.67      | 115.10      | 114.13      | 113.14      | 112.31      | 111.68      | 110.14      |
| D-7.5        | 144.48      | 141.46      | 139.09      | 137.07      | 135.29      | 133.67      | 132.50      | 131.35      | 130.36      | 129.45      | 127.73      |
| D-8          | 168.98      | 165.39      | 162.73      | 160.34      | 158.24      | 156.29      | 154.93      | 153.65      | 152.42      | 151.43      | 149.52      |
| D-8.5        | 193.56      | 189.55      | 186.47      | 183.65      | 181.29      | 179.15      | 177.55      | 176.12      | 174.65      | 173.51      | 171.33      |
| D-9          | 263.71      | 258.23      | 254.03      | 250.26      | 246.97      | 244.06      | 241.93      | 239.89      | 237.98      | 236.45      | 233.39      |
| D-9.5        | 377.43      | 369.51      | 363.57      | 358.06      | 353.47      | 349.15      | 346.21      | 343.28      | 340.52      | 338.25      | 334.01      |
| D-10         | 434.01      | 424.93      | 418.07      | 416.24      | 406.43      | 401.55      | 398.03      | 394.75      | 391.55      | 389.00      | 384.00      |

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>4200</b> | <b>4400</b> | <b>4600</b> | <b>5000</b> |
|--------------|-------------|-------------|-------------|-------------|
| D-6          | 88.47       | 87.76       | 87.14       | 86.28       |
| D-6.5        | 98.26       | 97.46       | 96.81       | 95.81       |
| D-7          | 109.17      | 107.89      | 106.78      | 105.72      |
| D-7.5        | 126.61      | 125.58      | 124.71      | 123.46      |
| D-8          | 148.18      | 147.00      | 145.97      | 144.52      |
| D-8.5        | 164.63      | 163.32      | 162.16      | 160.55      |
| D-9          | 231.29      | 229.41      | 227.83      | 225.54      |
| D-9.5        | 330.05      | 327.44      | 325.17      | 321.96      |
| D-10         | 380.54      | 377.49      | 374.85      | 371.05      |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>   | <b>D-5 QUALITY</b> | <b>MODERN</b> |
|--|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick   |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame<br>Sheathing: Line wire and paper, plywood, or particle board<br>Cover: Light stucco; lap or wood siding<br>Windows: Low-cost aluminum, sliding, double glaze<br>Front Door: Low-cost wood or metal |                    |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame<br>Cover: Composition shingle<br>Overhang: 0" to 12", unceiled<br>Gutters: Over entrances   |                    |               |
| <b>Floor Finishes</b><br>Low-cost vinyl tile or carpeting throughout   |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted<br>Ceiling: Standard 8' or vaulted   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Low-cost wood<br>Trim: Wood or plastic<br>Closets: Moderate amount; low-cost doors   |                    |               |
| <b>Bath Detail</b><br>Number: 1 1/2 to 2<br>Floors: Low-cost vinyl tile<br>Walls: Drywall and enamel<br>Shower & Tub: Fiberglass   |                    |               |
| <b>Kitchen</b><br>Base Cabinet: Low-cost wood veneer<br>Wall Cases: Low-cost wood veneer<br>Countertop: Low-cost plastic laminate or vinyl tile  |                    |               |
| <b>Plumbing</b><br>Galvanized, plastic, or copper pipe; fire sprinklers; 7 low-cost fixtures; washer outlet; water heater  |                    |               |
| <b>Special Features</b><br>Low-cost sliding glass doors; low-cost drop- or slide-in range and oven; garbage disposer   |                    |               |
| <b>Electrical</b><br>Sheathed wiring; low-cost fixtures  |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>  | <b>D-6 QUALITY</b> | <b>MODERN</b> |
|---|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete  |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame<br>Sheathing: Line wire and paper, plywood, or particle board<br>Cover: Wood shingles or low-cost wood siding or masonry trim on front wall; average stucco sides and rear<br>Windows: Average quality aluminum or wood; slide or double hung, double glaze<br>Front Door: Average quality metal or wood |                    |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame<br>Cover: Wood shingle, light wood shake, good composition shingle, or concrete shake or tile<br>Overhang: 0" to 18", unceiled<br>Gutters: Average quality at all eaves  |                    |               |
| <b>Floor Finishes</b><br>Average quality hardwood, carpet, vinyl, or ceramic tile throughout  |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured, painted; some wallpaper; average quality paneling<br>Decorative plant shelves<br>Ceilings: Standard 8' or vaulted; low-cost fans  |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Average quality wood<br>Trim: Wood or plastic<br>Closets: Average amount; low-cost doors  |                    |               |
| <b>Bath Detail</b><br>Number: Two<br>Floors: Average quality vinyl<br>Walls: Drywall and enamel<br>Shower & Tub: Fiberglass or average quality ceramic tile, with glass doors; twin basin vanities  |                    |               |
| <b>Kitchen</b><br>Base Cabinet: Average cost wood veneer<br>Wall Cases: Average cost wood veneer<br>Countertop: Average cost plastic laminate or vinyl tile<br>Some island cabinets without fixtures  |                    |               |
| <b>Plumbing</b><br>Galvanized, plastic, or copper pipe; fire sprinklers; 7 average-cost fixtures; washer outlet; water heater   |                    |               |
| <b>Special Features</b><br>Average quality sliding glass or French doors; average quality built-in oven, range, microwave, dishwasher, garbage disposer, range hood and fan; utility room/closet  |                    |               |
| <b>Electrical</b><br>Sheathed wiring; average quality fixtures; some bedroom ceiling fixtures   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>   | <b>D-7 QUALITY</b> | <b>MODERN</b> |
|--|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick   |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame<br>Sheathing: Line wire and paper, plywood, or particle board<br>Cover: Average stucco or wood siding, with brick or stone trim<br>Windows: Vinyl framed wood or aluminum; slide or double hung, double glaze<br>Front Doors: Single or double, good quality wood or metal; some glass trim |                    |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame<br>Cover: Medium wood shake, concrete shake or tile; good quality composition shingles<br>Overhang: 0" to 24", ceiled or unceiled<br>Gutters: Good quality at all eaves   |                    |               |
| <b>Floor Finishes</b><br>Good quality ceramic or terrazzo tile in entry; good quality hardwood, carpet, vinyl tile, or ceramic tile throughout   |                    |               |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted; rounded corners; wallpaper; average quality paneling<br>Decorative plant shelves and art niches<br>Ceilings: Standard 8' to 10'; vaulted; average cost fans   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Average quality wood<br>Trim: Wood or plastic<br>Closets: Average amount with average quality doors; some walk-in  |                    |               |
| <b>Bath Detail</b><br>Number: 2 or 2 1/2<br>Floors: Good quality vinyl tile<br>Walls: Drywall and enamel; wallpaper; good quality ceramic tile trim<br>Shower & Tub: Fiberglass, acrylic, or good quality ceramic tile with glass doors. Twin basin vanities and compartmentalized bath  |                    |               |
| <b>Kitchen</b><br>Base Cabinet: Good quality veneer<br>Wall Cases: Good quality veneer<br>Countertop: Good quality ceramic tile; some island cabinets with fixtures  |                    |               |
| <b>Plumbing</b><br>Galvanized, plastic, or copper pipe; fire sprinklers; 8 good fixtures; washer outlet; water heater  |                    |               |
| <b>Special Features</b><br>Multiple good quality sliding glass or French doors; good quality built-in oven, range, dishwasher, microwave, garbage disposer, range hood and fan; utility room with sink, 1 fireplace (additional, additive)   |                    |               |
| <b>Electrical</b><br>Sheathed wiring; good quality fixtures; some bedroom ceiling fixtures   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>  | <b>D-8 QUALITY</b> | <b>MODERN</b> |
|---|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete  |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame<br>Sheathing: Line wire and paper, plywood, or particle board<br>Cover: Good wood siding, masonry, or stucco<br>Windows: Vinyl framed wood or aluminum; divided light; slide or double hung, double glaze<br>Front Doors: Single or double, good quality decorative wood or metal; glass trim; side glass panels |                    |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame<br>Cover: Heavy wood shake, concrete shake, tile, or high definition composition roof<br>Overhang: 0" to 24", ceiled or unceiled<br>Gutters: Good quality at all eaves   |                    |               |
| <b>Floor Finishes</b><br>Terrazzo, mission, or quarry tile in entry; good hardwood, carpet, vinyl, slate, or quarry tile throughout   |                    |               |
| <b>Interior Finish</b><br>Drywall with good texture and paint; custom decorative woodwork and molding; rounded corners; some good wallpaper, vinyl wall cover, or veneer paneling<br>Ceilings: Standard 9' to 11', vaulted, crown molding, coffered, or arched; good quality fans   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Good quality wood<br>Trim: Good quality wood<br>Decorative plant shelves and art niches<br>Closets: Good wood and mirrored doors; some walk-ins   |                    |               |
| <b>Bath Detail</b><br>Number: 2 1/2 to 3<br>Floors: Good quality ceramic tile or vinyl tile<br>Walls: Drywall and enamel; good wallpaper and ceramic tile<br>Shower & Tub: Good acrylic or porcelain; good ceramic tile trim, with glass doors; glass block<br>Twin basin vanities and compartmentalized bath   |                    |               |
| <b>Kitchen</b><br>Base Cabinet: Good hardwood veneer<br>Wall Cases: Good hardwood veneer; under cabinet lighting<br>Countertop: Good ceramic tile, cultured marble, granite, or Corian®<br>Island cabinets with fixtures  |                    |               |
| <b>Plumbing</b><br>Galvanized, plastic, or copper pipe; fire sprinklers; 10 good fixtures; washer outlet; two water heaters   |                    |               |
| <b>Special Features</b><br>Multiple sliding glass or French doors; good quality built-in double oven, range, dishwasher, garbage disposer, range hood and fan, microwave, compactor, and wet bar; utility room with laundry sink; pre-wired for security; walk-in pantry; hot water recirculator; 1 fireplace (additional, additive)  |                    |               |
| <b>Electrical</b><br>Sheathed wiring; good quality fixtures; bedroom ceiling fixtures; recessed lighting  |                    |               |



**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>  | <b>D-9 QUALITY</b> | <b>MODERN</b> |
|---|--------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete  |                    |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick  |                    |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame, above code<br>Sheathing: Drywall or plywood fully insulated<br>Cover: Good stucco or wood siding with extensive masonry<br>Windows: Good quality vinyl framed wood or aluminum; divided light; slide/double hung, double glaze<br>Front Doors: Double, high quality wood or metal; leaded glass trim; side glass panels                       |                    |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame<br>Cover: Heavy wood shake; concrete shake or tile; slate; adobe tile<br>Overhang: 0" to 36", unceiled, ceiled, or boxed<br>Gutters: Good quality at all eaves   |                    |               |
| <b>Floor Finishes</b><br>Terrazzo, mission, marble, granite, or quarry tile in entry; high quality hardwood, carpet, vinyl tile, quarry tile, or inlaid wood throughout   |                    |               |
| <b>Interior Finish</b><br>Drywall with good texture and paint; custom decorative woodwork and molding; quality wallpaper and wood paneling; masonry<br>Ceilings: Standard 9' to 12', vaulted, coffered, or boxed beam; rounded corners; crown molding; arched doorways; high quality fans   |                    |               |
| <b>Interior Detail</b><br>Interior Doors: Good quality solid wood<br>Trim: Good detailed wood<br>Closets: High quality wood and mirrored doors; walk-ins  |                    |               |
| <b>Bath Detail</b><br>Number: 3 to 4<br>Floors: High quality ceramic tile or vinyl tile<br>Walls: Drywall and enamel; quality wallpaper; high quality quarry, terrazzo, or ceramic tile<br>Shower & Tub: High quality acrylic or porcelain; extensive ceramic tile or marble trim, with glass doors; glass block; jetted tubs; multiple head showers with bench<br>Twin basin vanities and compartmentalized bath |                    |               |
| <b>Kitchen</b><br>Base Cabinets: Quality hardwood<br>Wall Cases: Quality hardwood; under cabinet lighting<br>Countertop: High quality ceramic tile, marble, granite, or Corian®; island cabinets with fixtures  |                    |               |
| <b>Plumbing</b><br>Galvanized, plastic, copper pipe; fire sprinklers; 10 or more good quality fixtures; washer outlet; 2 or more water heaters  |                    |               |
| <b>Special Features</b><br>Architecturally designed windows, leaded/frosted glass; multiple sliding glass/French doors; best quality built-in double oven, microwave, range, dishwasher, garbage disposer, hot water recirculator, compactor, wet bar; walk-in pantry; utility room & laundry sink; alarm & intercom systems; built-in vacuum; 2 fireplaces (additional, additive)                                |                    |               |
| <b>Electrical</b><br>Sheathed wiring; good fixtures, with expensive chandeliers; good quality bedroom ceiling fixtures; extensive recessed lighting; special switches   |                    |               |

**SINGLE-FAMILY RESIDENTIAL  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

| <b>POST 1990</b>   | <b>D-10 QUALITY</b> | <b>MODERN</b> |
|--|---------------------|---------------|
| <b>Foundation</b><br>Reinforced concrete   |                     |               |
| <b>Floor Structure</b><br>Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick   |                     |               |
| <b>Walls and Exterior</b><br>Framing: Standard wood or steel frame, above code<br>Sheathing: Drywall or plywood fully insulated<br>Cover: Decorative stucco or heavy wood siding with extensive or full brick veneer<br>Windows: Excellent quality vinyl framed wood/aluminum; divided light; slide/double hung, double glaze<br>Front Doors: Double, highest quality wood or metal; leaded glass trim; side glass panels  |                     |               |
| <b>Roof</b><br>Framing: Standard wood or steel frame; multiple roof pitch<br>Cover: Heavy wood shake, adobe tile, copper, or slate<br>Overhang: 0" to 36", unceiled, ceiled, or boxed<br>Gutters: Excellent quality at all eaves   |                     |               |
| <b>Floor Finishes</b><br>Terrazzo, mission, quarry, marble, granite, or slate tile in entry; highest quality hardwood, parquet, plank, or inlaid wood or fine carpeting throughout   |                     |               |
| <b>Interior Finish</b><br>Drywall with good texture and paint; custom decorative woodwork and molding; excellent quality wallpaper, wood paneling; cloth covering; extensive masonry<br>Ceilings: Standard 9' to 12' coffered, boxed beamed, or vaulted; rounded corners; crown molding; arched doorways; highest quality fans   |                     |               |
| <b>Interior Detail</b><br>Interior Doors: Excellent quality solid wood; decorative trim: Good detailed wood; 4' wainscot<br>Closets: Highest quality wood and mirrored doors; walk-ins; extensive shelving   |                     |               |
| <b>Bath Detail</b><br>Number: One per bedroom<br>Floors: Highest quality quarry tile, concrete tile, or slate<br>Walls: Drywall, enamel; highest quality wallpaper; highest quality quarry, terrazzo, ceramic tile<br>Shower & Tub: Highest quality acrylic or porcelain; extensive ceramic tile or marble trim, with glass doors; glass block; jetted tubs; multiple head showers with bench<br>Multiple basin vanities and separate dressing rooms   |                     |               |
| <b>Kitchen</b><br>Custom cabinetry; under cabinet lighting<br>Countertop: Excellent quality ceramic tile, marble, granite, or Corian®; island cabinets with fixtures   |                     |               |
| <b>Plumbing</b><br>Galvanized, plastic, copper pipe; fire sprinklers; 15 plus excellent quality fixtures; washer outlet; 2 or more water heaters   |                     |               |
| <b>Special Features</b><br>Architecturally designed windows, leaded and frosted glass; multiple sliding glass or French doors; best quality built-in double oven, microwave, range, dishwasher, garbage disposer, hot water recirculator, compactor, built-in refrigerator, and wet bar; walk-in pantry; utility room with laundry sink; alarm and intercom systems; built-in vacuum; multiple fireplaces; extensive fenestration; built-in steam bath and/or sauna; 2 fireplaces (additional, additive) |                     |               |
| <b>Electrical</b><br>Sheathed wiring; excellent fixtures; extensive stylized and recessed lighting; expensive chandeliers; special switches  |                     |               |

**SINGLE-FAMILY RESIDENTIAL  
POST-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE A**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 99.67  | 95.47  | 92.04  | 89.07  | 86.74  | 84.65  | 82.85  | 81.18  | 79.92  | 78.67  | 77.68  |
| D-5.5 | 109.64 | 105.03 | 101.25 | 98.01  | 95.41  | 93.13  | 91.12  | 89.25  | 87.94  | 86.55  | 85.50  |
| D-6   | 126.27 | 121.05 | 116.65 | 112.92 | 110.00 | 107.33 | 105.00 | 102.85 | 101.30 | 99.74  | 98.36  |
| D-6.5 | 140.29 | 134.39 | 129.60 | 125.39 | 122.10 | 119.13 | 116.52 | 114.32 | 112.52 | 110.79 | 109.29 |
| D-7   | 155.75 | 149.11 | 143.82 | 139.18 | 135.56 | 132.35 | 129.43 | 126.83 | 124.87 | 123.01 | 121.31 |
| D-7.5 | 180.78 | 173.12 | 166.90 | 161.58 | 157.26 | 153.56 | 150.25 | 147.22 | 145.02 | 142.70 | 140.82 |
| D-8   | 211.37 | 202.58 | 195.21 | 188.96 | 183.97 | 179.61 | 175.71 | 172.28 | 169.62 | 167.04 | 164.71 |
| D-8.5 | 242.23 | 232.15 | 223.71 | 216.52 | 210.90 | 205.84 | 201.38 | 197.39 | 194.34 | 191.38 | 188.68 |
| D-9   | 330.00 | 316.18 | 304.77 | 294.93 | 287.25 | 280.40 | 274.36 | 268.91 | 264.81 | 260.68 | 257.11 |
| D-9.5 | 472.24 | 452.47 | 436.11 | 422.08 | 411.00 | 401.14 | 392.55 | 384.68 | 378.88 | 373.16 | 367.86 |
| D-10  | 543.08 | 520.37 | 501.41 | 485.33 | 472.66 | 461.37 | 451.40 | 442.41 | 435.69 | 429.11 | 423.11 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 76.67  | 74.90  | 73.59  | 72.41  | 71.44  | 70.60  | 69.93  | 69.29  | 68.69  | 68.19  | 67.27  |
| D-5.5 | 84.36  | 82.44  | 81.05  | 79.70  | 78.58  | 77.59  | 76.95  | 76.19  | 75.51  | 74.97  | 74.01  |
| D-6   | 97.21  | 94.99  | 93.37  | 91.84  | 90.57  | 89.36  | 88.61  | 87.83  | 87.05  | 86.45  | 85.27  |
| D-6.5 | 107.98 | 105.46 | 103.70 | 101.99 | 100.44 | 99.31  | 98.35  | 97.57  | 96.60  | 96.03  | 94.73  |
| D-7   | 119.73 | 117.14 | 115.15 | 113.15 | 111.65 | 110.24 | 109.29 | 108.30 | 107.36 | 106.54 | 105.09 |
| D-7.5 | 139.07 | 136.01 | 133.62 | 131.37 | 129.58 | 128.00 | 126.79 | 125.65 | 124.61 | 123.76 | 122.04 |
| D-8   | 162.69 | 159.00 | 156.27 | 153.61 | 151.48 | 149.67 | 148.31 | 147.05 | 145.70 | 144.69 | 142.67 |
| D-8.5 | 186.50 | 182.21 | 179.07 | 176.09 | 173.65 | 171.50 | 169.91 | 168.44 | 166.98 | 165.86 | 163.52 |
| D-9   | 254.07 | 248.20 | 244.06 | 239.86 | 236.58 | 233.59 | 231.46 | 229.52 | 227.43 | 225.94 | 222.75 |
| D-9.5 | 363.41 | 355.21 | 349.10 | 343.18 | 338.44 | 334.24 | 331.23 | 328.48 | 325.47 | 323.25 | 318.73 |
| D-10  | 417.99 | 408.49 | 401.37 | 394.65 | 389.23 | 384.37 | 380.94 | 377.74 | 374.28 | 371.77 | 366.54 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 4200   | 4400   | 4600   | 5000   |
|-------|--------|--------|--------|--------|
| D-6   | 84.02  | 83.86  | 83.25  | 82.44  |
| D-6.5 | 93.87  | 93.12  | 92.46  | 91.55  |
| D-7   | 104.13 | 103.30 | 102.60 | 101.57 |
| D-7.5 | 120.94 | 119.98 | 119.14 | 117.93 |
| D-8   | 142.70 | 141.55 | 140.56 | 139.16 |
| D-8.5 | 162.05 | 160.74 | 159.63 | 158.02 |
| D-9   | 220.75 | 218.98 | 217.44 | 215.27 |
| D-9.5 | 315.85 | 313.33 | 311.13 | 308.03 |
| D-10  | 363.23 | 360.33 | 357.80 | 354.21 |

**SINGLE-FAMILY RESIDENTIAL  
POST-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 101.64     | 97.40      | 93.74      | 90.90       | 88.42       | 86.34       | 84.65       | 83.02       | 81.64       | 80.43       | 79.37       |
| D-5.5        | 111.78     | 107.06     | 103.15     | 100.04      | 97.21       | 94.90       | 93.14       | 91.31       | 89.86       | 88.54       | 87.36       |
| D-6          | 128.78     | 123.46     | 118.77     | 115.24      | 112.08      | 109.39      | 107.34      | 105.31      | 103.65      | 102.04      | 100.64      |
| D-6.5        | 143.06     | 137.07     | 131.84     | 127.93      | 124.42      | 121.47      | 119.14      | 116.79      | 115.03      | 113.25      | 111.79      |
| D-7          | 158.78     | 152.12     | 146.45     | 142.01      | 138.17      | 134.92      | 132.36      | 129.71      | 127.58      | 125.76      | 124.15      |
| D-7.5        | 184.23     | 176.59     | 169.96     | 164.88      | 160.43      | 156.55      | 153.63      | 150.54      | 148.25      | 145.91      | 144.02      |
| D-8          | 215.48     | 206.47     | 198.87     | 192.81      | 187.56      | 183.17      | 179.62      | 176.11      | 173.31      | 170.71      | 168.41      |
| D-8.5        | 246.94     | 236.63     | 227.87     | 221.00      | 214.87      | 209.88      | 205.86      | 201.78      | 198.54      | 195.63      | 193.01      |
| D-9          | 336.45     | 322.38     | 310.44     | 301.09      | 292.78      | 285.99      | 280.43      | 274.88      | 270.49      | 266.50      | 262.94      |
| D-9.5        | 481.49     | 461.21     | 444.28     | 430.75      | 418.94      | 409.16      | 401.17      | 393.34      | 387.09      | 381.36      | 376.24      |
| D-10         | 553.68     | 530.40     | 510.90     | 495.39      | 481.79      | 470.63      | 461.41      | 452.31      | 445.14      | 438.58      | 432.59      |

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 78.36       | 76.71       | 75.46       | 74.32       | 73.30       | 72.41       | 71.73       | 71.02       | 70.44       | 69.93       | 69.17       |
| D-5.5        | 86.18       | 84.42       | 83.02       | 81.64       | 80.56       | 79.71       | 78.86       | 78.16       | 77.51       | 76.96       | 76.06       |
| D-6          | 99.40       | 97.23       | 95.66       | 94.19       | 92.98       | 91.84       | 90.86       | 90.01       | 89.28       | 88.62       | 87.69       |
| D-6.5        | 110.34      | 108.04      | 106.26      | 104.56      | 103.15      | 102.00      | 100.87      | 99.96       | 99.15       | 98.36       | 97.37       |
| D-7          | 122.51      | 119.83      | 117.97      | 116.08      | 114.48      | 113.16      | 112.05      | 110.92      | 110.12      | 109.30      | 108.12      |
| D-7.5        | 142.16      | 139.11      | 136.90      | 134.81      | 132.90      | 131.38      | 130.06      | 128.76      | 127.72      | 126.80      | 125.40      |
| D-8          | 166.36      | 162.79      | 160.13      | 157.68      | 155.45      | 153.62      | 152.18      | 150.67      | 149.43      | 148.32      | 146.74      |
| D-8.5        | 190.52      | 186.54      | 183.53      | 180.70      | 178.20      | 176.11      | 174.35      | 172.64      | 171.24      | 169.92      | 168.15      |
| D-9          | 259.60      | 254.16      | 250.12      | 246.15      | 242.73      | 239.88      | 237.49      | 235.20      | 233.29      | 231.48      | 229.10      |
| D-9.5        | 371.53      | 363.58      | 357.70      | 352.30      | 347.41      | 343.21      | 339.90      | 336.53      | 333.83      | 331.26      | 327.87      |
| D-10         | 427.23      | 418.13      | 411.40      | 405.09      | 399.43      | 394.69      | 390.83      | 387.06      | 383.89      | 380.97      | 376.98      |

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>4200</b> | <b>4400</b> | <b>4600</b> | <b>5000</b> |
|--------------|-------------|-------------|-------------|-------------|
| D-6          | 86.91       | 86.20       | 85.61       | 84.75       |
| D-6.5        | 96.49       | 95.71       | 95.05       | 94.10       |
| D-7          | 107.15      | 106.30      | 105.56      | 104.50      |
| D-7.5        | 124.27      | 123.28      | 122.41      | 121.20      |
| D-8          | 145.44      | 144.27      | 143.27      | 141.83      |
| D-8.5        | 166.89      | 164.81      | 163.55      | 162.41      |
| D-9          | 227.05      | 225.23      | 223.66      | 221.40      |
| D-9.5        | 324.90      | 323.78      | 321.51      | 318.29      |
| D-10         | 373.60      | 370.59      | 369.44      | 365.75      |

**SINGLE-FAMILY RESIDENTIAL  
POST-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE C**

| Class | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 103.25 | 99.07  | 95.50  | 92.61  | 90.12  | 88.17  | 86.34  | 84.81  | 83.25  | 82.15  | 81.10  |
| D-5.5 | 113.60 | 108.95 | 105.05 | 101.85 | 99.19  | 97.05  | 94.90  | 93.26  | 91.62  | 90.39  | 89.19  |
| D-6   | 130.89 | 125.55 | 121.10 | 117.41 | 114.26 | 111.79 | 109.39 | 107.45 | 105.48 | 104.17 | 102.75 |
| D-6.5 | 145.37 | 139.43 | 134.41 | 130.39 | 126.84 | 124.06 | 121.47 | 119.34 | 117.20 | 115.68 | 114.12 |
| D-7   | 161.34 | 154.74 | 149.24 | 144.74 | 140.83 | 137.78 | 134.92 | 132.46 | 130.11 | 128.46 | 126.70 |
| D-7.5 | 187.24 | 179.60 | 173.20 | 167.87 | 163.55 | 159.97 | 156.55 | 153.70 | 150.99 | 149.04 | 147.08 |
| D-8   | 219.05 | 210.11 | 202.68 | 196.46 | 191.34 | 187.06 | 183.17 | 179.71 | 176.67 | 174.34 | 172.03 |
| D-8.5 | 251.02 | 240.77 | 232.22 | 225.06 | 219.28 | 214.33 | 209.88 | 205.99 | 202.47 | 199.76 | 197.10 |
| D-9   | 341.94 | 328.01 | 316.37 | 306.67 | 298.71 | 292.00 | 285.94 | 280.62 | 275.79 | 272.11 | 268.61 |
| D-9.5 | 489.28 | 469.31 | 452.71 | 438.84 | 427.40 | 417.83 | 409.16 | 401.59 | 394.64 | 389.34 | 384.29 |
| D-10  | 562.63 | 539.70 | 520.64 | 504.68 | 491.58 | 480.50 | 470.63 | 461.74 | 453.83 | 447.74 | 441.93 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   | 3400   | 3600   | 4000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-5   | 78.23  | 76.77  | 75.47  | 73.92  | 73.39  | 72.72  | 72.05  | 71.42  | 70.77  | 70.32  | 69.56  |
| D-5.5 | 88.17  | 86.34  | 84.94  | 83.02  | 82.45  | 81.58  | 80.90  | 80.17  | 79.35  | 78.88  | 78.01  |
| D-6   | 101.68 | 99.46  | 97.80  | 95.66  | 94.99  | 94.07  | 93.13  | 92.37  | 91.49  | 90.98  | 89.84  |
| D-6.5 | 112.81 | 110.42 | 108.64 | 106.26 | 105.47 | 104.42 | 103.53 | 102.62 | 101.46 | 100.99 | 99.75  |
| D-7   | 125.26 | 122.64 | 120.58 | 117.97 | 117.15 | 115.95 | 114.87 | 114.01 | 112.81 | 112.06 | 110.74 |
| D-7.5 | 145.40 | 142.36 | 139.82 | 136.90 | 136.02 | 134.51 | 133.31 | 132.22 | 130.91 | 130.11 | 128.56 |
| D-8   | 170.10 | 166.53 | 163.68 | 160.13 | 159.01 | 157.37 | 155.91 | 154.61 | 153.06 | 152.20 | 151.60 |
| D-8.5 | 194.89 | 190.84 | 187.58 | 183.53 | 182.22 | 180.34 | 178.67 | 177.20 | 175.39 | 174.41 | 172.28 |
| D-9   | 265.44 | 259.96 | 255.52 | 250.12 | 248.22 | 245.69 | 243.49 | 241.38 | 238.87 | 237.53 | 234.67 |
| D-9.5 | 379.86 | 372.00 | 365.70 | 357.70 | 355.24 | 351.55 | 348.29 | 345.38 | 341.87 | 340.01 | 335.81 |
| D-10  | 436.82 | 427.74 | 420.54 | 419.63 | 408.52 | 404.30 | 400.53 | 397.16 | 393.17 | 390.95 | 386.07 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 4200   | 4400   | 4600   | 5000   |
|-------|--------|--------|--------|--------|
| D-6   | 89.03  | 88.30  | 87.69  | 86.83  |
| D-6.5 | 98.30  | 97.49  | 96.80  | 95.83  |
| D-7   | 109.73 | 108.87 | 108.10 | 107.02 |
| D-7.5 | 127.38 | 126.37 | 125.50 | 124.22 |
| D-8   | 150.27 | 149.10 | 148.06 | 146.58 |
| D-8.5 | 170.74 | 169.38 | 168.20 | 166.50 |
| D-9   | 232.58 | 230.71 | 229.10 | 226.79 |
| D-9.5 | 332.76 | 330.10 | 327.79 | 324.53 |
| D-10  | 382.60 | 379.52 | 376.89 | 373.11 |

**SINGLE-FAMILY RESIDENTIAL  
POST-1990 MODERN TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> |
|--------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 104.95     | 100.67     | 97.43      | 94.42       | 92.09       | 89.95       | 88.20       | 86.72       | 85.21       | 84.00       | 83.02       |
| D-5.5        | 115.36     | 110.78     | 107.08     | 103.82      | 101.31      | 98.97       | 97.07       | 95.37       | 93.77       | 92.44       | 91.31       |
| D-6          | 133.02     | 127.59     | 123.48     | 119.66      | 116.75      | 114.11      | 111.84      | 109.92      | 108.12      | 106.52      | 105.31      |
| D-6.5        | 147.66     | 141.77     | 137.09     | 132.87      | 129.65      | 126.67      | 124.15      | 122.08      | 120.03      | 118.38      | 116.79      |
| D-7          | 163.96     | 157.41     | 152.23     | 147.48      | 143.86      | 140.60      | 137.79      | 135.55      | 133.21      | 131.38      | 129.71      |
| D-7.5        | 190.27     | 182.58     | 176.60     | 171.16      | 167.05      | 163.12      | 159.99      | 157.21      | 154.57      | 152.44      | 150.54      |
| D-8          | 222.51     | 213.68     | 206.50     | 200.19      | 195.34      | 190.88      | 187.11      | 183.92      | 180.89      | 178.30      | 176.11      |
| D-8.5        | 255.01     | 244.91     | 236.65     | 229.45      | 223.87      | 218.70      | 214.39      | 210.72      | 207.25      | 204.25      | 201.78      |
| D-9          | 347.36     | 333.57     | 322.38     | 312.51      | 305.01      | 297.95      | 292.10      | 287.16      | 282.35      | 278.37      | 274.88      |
| D-9.5        | 497.08     | 477.48     | 461.37     | 447.17      | 436.41      | 426.34      | 417.93      | 410.91      | 403.99      | 398.23      | 393.37      |
| D-10         | 571.63     | 549.06     | 530.53     | 514.31      | 501.87      | 490.24      | 480.64      | 472.50      | 464.59      | 458.06      | 452.31      |

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> | <b>3400</b> | <b>3600</b> | <b>4000</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-5          | 81.99       | 80.34       | 79.06       | 77.79       | 76.84       | 75.88       | 75.22       | 74.63       | 74.02       | 73.56       | 72.59       |
| D-5.5        | 90.14       | 88.42       | 86.91       | 85.62       | 84.48       | 83.45       | 82.67       | 82.09       | 81.43       | 80.91       | 79.85       |
| D-6          | 104.00      | 101.85      | 100.08      | 98.65       | 97.40       | 96.21       | 95.30       | 94.62       | 93.81       | 93.29       | 91.95       |
| D-6.5        | 115.43      | 113.09      | 111.31      | 109.54      | 108.15      | 106.84      | 105.89      | 105.01      | 104.17      | 103.54      | 102.14      |
| D-7          | 128.14      | 125.52      | 123.48      | 121.66      | 120.17      | 118.56      | 117.55      | 116.54      | 115.68      | 115.03      | 113.45      |
| D-7.5        | 148.81      | 145.71      | 143.27      | 141.19      | 139.35      | 137.68      | 136.48      | 135.30      | 134.27      | 133.34      | 131.57      |
| D-8          | 174.05      | 170.36      | 167.62      | 165.15      | 162.99      | 160.98      | 159.58      | 158.26      | 156.99      | 155.98      | 154.01      |
| D-8.5        | 199.37      | 195.24      | 192.07      | 189.16      | 186.73      | 184.52      | 182.88      | 181.41      | 179.90      | 178.72      | 176.47      |
| D-9          | 271.62      | 265.98      | 261.66      | 257.77      | 254.39      | 251.39      | 249.19      | 247.09      | 245.12      | 243.55      | 240.40      |
| D-9.5        | 388.76      | 380.61      | 374.48      | 368.81      | 364.08      | 359.63      | 356.61      | 353.58      | 350.74      | 348.40      | 344.03      |
| D-10         | 447.03      | 437.68      | 430.62      | 428.73      | 418.63      | 413.60      | 409.98      | 406.60      | 403.31      | 400.67      | 395.53      |

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>4200</b> | <b>4400</b> | <b>4600</b> | <b>5000</b> |
|--------------|-------------|-------------|-------------|-------------|
| D-6          | 91.12       | 90.39       | 89.75       | 88.87       |
| D-6.5        | 101.20      | 100.39      | 99.72       | 98.69       |
| D-7          | 112.44      | 111.13      | 109.99      | 108.89      |
| D-7.5        | 130.41      | 129.35      | 128.45      | 127.16      |
| D-8          | 152.63      | 151.41      | 150.35      | 148.86      |
| D-8.5        | 169.57      | 168.22      | 167.03      | 165.36      |
| D-9          | 238.24      | 236.30      | 234.67      | 232.31      |
| D-9.5        | 339.96      | 337.27      | 334.93      | 331.63      |
| D-10         | 391.96      | 388.82      | 386.11      | 382.19      |

**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-5 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-5 QUALITY**





**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-6 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-6 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-7 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-7 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-8 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-8 QUALITY**





**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-9 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-9 QUALITY**





**SINGLE-FAMILY RESIDENTIAL  
MODERN - PRE 1990  
D-10 QUALITY**



**SINGLE-FAMILY RESIDENTIAL  
MODERN - POST 1990  
D-10 QUALITY**



## AH 531.22: MOUNTAIN RESIDENCES

Mountain residences are buildings designed for single-family occupancy, usually on an intermittent basis. These buildings are structurally designed to withstand snow load requirements which are typical in the higher mountain areas of the State of California. These mountain residences usually have a more rustic finish than comparable single-family residences found in non-mountainous areas of California

### CONVENTIONAL AND A-FRAME TYPES

Two types of residences are considered here: *Conventional* and *A-Frame*.

*Conventional* mountain residences have an exterior wall at least eight feet high on all sides with architectural designs that may have a lot in common with traditional single-family residences.

*A-Frame* residences are buildings in which the sloping gable-shaped roof can intersect the vertical plane of the exterior walls of the home anywhere between a point at or near the floor of the first level all the way up to two-thirds of the height of the exterior walls on the first floor. This design gives the home its unique "A"-shaped appearance. The architectural design of these homes makes them dramatically different from homes in non-mountainous areas.

### AREA ADJUSTMENTS

Area classification adjustments are applied using the same guidelines that are applicable to traditional single-family residences. The *Costing Information* chapter, AH 531.10, explains these considerations.

### SHAPE CLASSIFICATION

Shape classification is based on the same criteria that are applicable to traditional single-family residences. The guidelines shown in AH 531.10 should be used for shape class determination.

### ADJUSTMENTS FOR LOCATION

**The building costs in the *Mountain Residences* chapter have been developed using the Lake Tahoe Basin area of California as the base area (with a factor of 1.00) as of the date in the lower right-hand corner of each page. For other mountain areas, all square foot costs should be adjusted by the appropriate location factor as found on the map in this chapter, page 24.**

## ADDITIVE COSTS

Costs of additive items such as fireplaces, porches, and others, will be quite different in the mountain areas of the state than they are in the Sacramento base area. Therefore, a set of additive costs that are *specific* to mountain residences are included in this chapter following the cost tables, beginning on page 19. However, if costs are needed for additives not found in this chapter, use the costs in the *Building Additives* chapter (AH 531.40) and make appropriate adjustments. Since the additive costs in AH 531.40 were developed for the Sacramento area base, up to three location adjustments may be necessary for mountain residences:

1. The Sacramento base additive costs (AH 531.40) must be multiplied by a factor of 1.30 to adjust those costs to the Lake Tahoe Basin area.
2. If necessary, an adjustment for location within the mountain areas should be made using the instructions from the *Location Adjustments* section of this chapter, page 21.
3. If necessary, an adjustment may also be needed for any local cost differences present in the county (for example, high permit fees).

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-4 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Wood piers, light concrete, light concrete block, or light native stone   |
| <b>Floor Structure</b>    | 2" x 6", 24" o.c.; 1" sub-floor   |
| <b>Walls and Exterior</b> | Framing: 2" x 4", 16" o.c.<br>Siding: Low-cost wood siding or wood shingles<br>Windows: Low-cost wood                                   |
| <b>Roof</b>               | Framing: 2" x 4", 16" o.c.; or 2" x 6", 24" o.c.; with 1" sheathing<br>Cover: Composition shingles or corrugated metal<br>Pitch: Medium |
| <b>Interior Finish</b>    | Home-built with knotty pine or plywood  |
| <b>Bath Detail</b>        | One three-fixture bath  |
| <b>Kitchen</b>            | Base Cabinet: 6' home-built plywood<br>Wall Cabinet: Home-built plywood   |
| <b>Plumbing</b>           | Four low-cost fixtures; fire sprinklers; water heater   |
| <b>Electrical</b>         | Knob and tube, Romex® or sheathed wiring; low-cost fixtures   |
| <b>Special Features</b>   | None  |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-5 QUALITY**

**CONVENTIONAL**

|                           |  |
|---------------------------|--|
| <b>Foundation</b>         | Concrete block or standard concrete  |
| <b>Floor Structure</b>    | 4" x 6" girders, 48" o.c.; with 5/4" plywood sub-floor; or 2" tongue and groove sub-floor<br>Alternate: 2" x 6" joists, 16" o.c.; with 1" sub-floor  |
| <b>Walls and Exterior</b> | Framing: 2" x 6", 16" o.c.<br>Siding: Low-cost plywood, lap, or board and batten<br>Alternate: Low-cost wood shingle<br>Fully Insulated: Medium standards<br>Windows: Low-cost wood or metal                           |
| <b>Roof</b>               | Framing: 2" x 6", 24" o.c.; or 2" x 8", 24" o.c.; with 1" sheathing<br>Alternate: 4" x 8", 48" o.c.; 5/4" plywood; or 2" tongue and groove sheathing<br>Cover: Composition shingles or steel<br>Pitch: Medium to steep |
| <b>Floor Finish</b>       | Vinyl tile   |
| <b>Interior Finish</b>    | Low-cost wood paneling or drywall, taped, and textured   |
| <b>Bath Detail</b>        | One three-fixture bath   |
| <b>Kitchen</b>            | Base Cabinet: 6' to 8' low-cost plywood veneer, or paint-grade cabinets<br>Wall Cabinet: Low-cost plywood veneer, or paint-grade cabinets  |
| <b>Plumbing</b>           | Four low-cost fixtures; fire sprinklers; water heater  |
| <b>Electrical</b>         | Romex® or sheathed wiring; low-cost fixtures   |
| <b>Special Features</b>   | None   |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-6 QUALITY**

**CONVENTIONAL**

|                           |  |
|---------------------------|--|
| <b>Foundation</b>         | Reinforced concrete or concrete block  |
| <b>Floor Structure</b>    | 4" x 6" girders, 48" o.c.; with 5/4" plywood; or 2" tongue and groove sub-floor; or 2" x 6", 16" o.c.; with 1" sub-floor; insulation to R-11 standards   |
| <b>Walls and Exterior</b> | Framing: 2" x 6", 16" o.c.<br>Siding: Average quality plywood; average quality lap or board and batten siding; or average quality wood shingles<br>Fully Insulated: R-11 standards<br>Windows: Average quality metal or wood; double paned glass |
| <b>Roof</b>               | Framing: 2" x 6", 16" o.c.; 2" x 8", 24" o.c.; with 1" sheathing; or 4" x 8", 48" o.c.; with 2" sheathing<br>Insulation: Minimum of R-19 standards<br>Cover: Wood, composition shingles, or steel<br>Pitch: Medium to steep                      |
| <b>Floor Finish</b>       | Average quality carpet or vinyl in kitchen and baths   |
| <b>Interior Finish</b>    | Drywall, taped, textured, or average quality plywood veneer  |
| <b>Bath Detail</b>        | Two three-fixture baths; average quality fixtures  |
| <b>Kitchen</b>            | Base Cabinet: 8' to 12' average quality plywood veneer or painted<br>Wall Cabinet: Plywood veneer or painted<br>Countertop/Drain Board: 8' to 12' plastic laminate   |
| <b>Plumbing</b>           | Seven average fixtures; fire sprinklers; water heater  |
| <b>Electrical</b>         | Romex® or sheathed wiring; average fixtures  |
| <b>Special Features</b>   | Drop-in range with hood; one sliding glass door  |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-7 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete or concrete block   |
| <b>Floor Structure</b>    | 4" x 8" girders, 48" o.c.; with a 5/4" plywood; or 2" tongue and groove sub-floor<br>Alternate: 2" x 6" or 2" x 8", 16" o.c.; with 1" sub-floor<br>Fully Insulated: Minimum of R-11 standards   |
| <b>Walls and Exterior</b> | Framing: 2" x 6", 16" o.c.<br>Siding: Average to good plywood, lap, or board and batten<br>Alternate: Good wood shingles<br>Fully Insulated: Minimum of R-11 standards<br>Windows: Average quality wood or metal; double paned glass                          |
| <b>Roof</b>               | Framing: 4" x 8", 48" o.c.; with 2" or 3" tongue and groove sheathing<br>Alternate: 2" x 6", 12" o.c.; or 2" x 8", 16" o.c.; with 1" sheathing<br>Insulation: To R-30 standards<br>Cover: Medium shake, steel, or composition shingles<br>Pitch: Medium steep |
| <b>Floor Finish</b>       | Average to good quality carpet; sheet vinyl or good vinyl in kitchen and baths  |
| <b>Interior Finish</b>    | Drywall, taped, textured; plywood veneer; or good quality knotty pine   |
| <b>Bath Detail</b>        | Two three-fixture baths; average ceramic tile or plastic laminate vanities; average ceramic tile or plastic laminate showers  |
| <b>Kitchen</b>            | Base Cabinet: 12' to 16' hardwood veneer<br>Wall Cabinet: Hardwood veneer<br>Countertop/Drain Board: 12' to 16' average ceramic tile  |
| <b>Plumbing</b>           | Seven average quality fixtures; fire sprinklers; water heater   |
| <b>Electrical</b>         | Romex® or sheathed wiring; average fixtures   |
| <b>Special Features</b>   | One 8' sliding glass door; built-in range and oven, dishwasher, and garbage disposal  |



**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-8 QUALITY**

**CONVENTIONAL**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete or concrete block   |
| <b>Floor Structure</b>    | 4" x 8" girders, 48" o.c.; with 2" tongue and groove sub-floor<br>Alternate: 2" x 6" or 2" x 8", 16" o.c.; with 1" sub-floor<br>Fully Insulated: Minimum of R-11 standards  |
| <b>Walls and Exterior</b> | Framing: 2" x 6", 16" o.c.<br>Siding: Good plywood, lap, or board and batten<br>Fully Insulated: Minimum of R-11 standards<br>Windows: Good wood or metal; double paned glass   |
| <b>Roof</b>               | Framing: 4" x 8", 48" o.c.; with 2" or 3" tongue and groove sheathing<br>Alternate: 2" x 6", 12" o.c.; or 2" x 8", 16" o.c.; with 1" sheathing<br>Cover: Heavy shake. composition shingles, or steel<br>Pitch: Medium to steep<br>Alternate Roof: Heavy glu-lam beams, 2" x 8", or 2" x 10" purlins, 3" tongue and groove deck, composition cover, flat, or low pitch |
| <b>Floor Finish</b>       | Good carpet or hardwood sheet vinyl in kitchen and baths  |
| <b>Interior Finish</b>    | Good quality hardwood veneer paneling   |
| <b>Bath Detail</b>        | Two three-fixture baths; one two-fixture bath; good ceramic tile vanities   |
| <b>Kitchen</b>            | Base Cabinet: 15' to 18' good hardwood veneer<br>Wall Cabinet: Good hardwood veneer<br>Countertop/Drain Board: 15' to 18' good quality ceramic tile   |
| <b>Plumbing</b>           | Nine good fixtures; fire sprinklers; one or two water heaters   |
| <b>Electrical</b>         | Romex® or sheathed wiring; good fixtures  |
| <b>Special Features</b>   | Built-in double oven, range, garbage disposer; dishwasher, hood; large glass area; ornate entry doors, wet bar, microwave oven, pantry  |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-9 QUALITY**

**CONVENTIONAL**

|  |
|--|
| <p><b>Foundation</b><br/>Reinforced concrete or concrete block</p>   |
| <p><b>Floor Structure</b><br/>2" x 8" joists, 16" o.c.; with 2" tongue and groove sub-floor<br/>Alternate: 2" x 10" joists, 16" o.c.; with 2" tongue and groove sub-floor</p>  |
| <p><b>Walls and Exterior</b><br/>Framing: 2" x 6", 16" o.c.<br/>Siding: Good plywood, lap, board and batten, or wood shingle<br/>Fully Insulated: Minimum of R-11 standards<br/>Windows: Good quality wood or steel sash; double paned glass</p>   |
| <p><b>Roof</b><br/>Framing: 4" x 8", 48" o.c.; with 2" or 3" tongue and groove sheathing<br/>Alternate: 2" x 6", 12" o.c.; or 2" x 8", 16" o.c.; with 1" sheathing<br/>Insulation: To a minimum of R-30 standards<br/>Cover: Heavy shake, composition shingles, or steel<br/>Pitch: Medium steep to steep<br/>Alternate Roof: Heavy glu-lam beams 2" x 8", or 2" x 10" purlins, 3" tongue and groove deck, medium pitch with heavy shake cover</p> |
| <p><b>Floor Finish</b><br/>Good quality carpet or hardwood; parquet hardwood, slate, ceramic, or garden tile in entry; good vinyl tile in kitchen and utility room</p>   |
| <p><b>Interior Finish</b><br/>Good quality hardwood, cherry, or redwood paneling; some wallpaper or grass cloth covering; extensive cabinetry in corners</p>   |
| <p><b>Bath Detail</b><br/>Number: 1-1/2 baths for each two bedrooms<br/>Floors: Vinyl or good quality vinyl; two sinks in full baths; full ceramic tile showers; good ceramic tile vanities</p>  |
| <p><b>Kitchen</b><br/>Good 20' hardwood veneer base and wall cabinets; fixtures on cooking islands<br/>Countertop/Drain Board: Good quality ceramic tile, marble, granite, Corian®, or equivalent</p>  |
| <p><b>Plumbing</b><br/>Ten good fixtures; fire sprinklers; two water heaters</p>   |
| <p><b>Electrical</b><br/>Romex® or sheathed wiring; very good fixtures; indirect florescent lighting in kitchen and baths; expensive chandelier in dining room</p>   |
| <p><b>Special Features</b><br/>Picture and leaded glass windows; best quality built-in double oven, microwave, range, dishwasher, range hood and fan, garbage disposer, compactor; breakfast bar; pantry; wet bar; frosted glass</p>   |

**MOUNTAIN RESIDENCES  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE A**

| <b>Class</b> | <b>400</b> | <b>500</b> | <b>600</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> |
|--------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 164.43     | 147.56     | 136.43     | 127.48     | 120.90     | 115.79     | 111.30      | 108.00      | 104.74      | 102.34      | 99.99       |
| D-4.5        | 178.32     | 160.00     | 147.81     | 138.21     | 131.07     | 125.44     | 120.66      | 116.96      | 113.70      | 110.81      | 108.37      |
| D-5          | 193.30     | 173.34     | 160.33     | 149.83     | 142.14     | 135.96     | 130.75      | 126.79      | 123.19      | 120.24      | 117.43      |
| D-5.5        | 209.59     | 187.91     | 173.72     | 162.50     | 154.08     | 147.47     | 141.74      | 137.55      | 133.41      | 130.31      | 127.39      |
| D-6          | 227.13     | 203.71     | 188.35     | 176.01     | 167.04     | 159.76     | 153.63      | 149.10      | 144.71      | 141.33      | 138.02      |
| D-6.5        | 248.54     | 222.96     | 205.95     | 192.63     | 182.70     | 174.85     | 168.25      | 163.14      | 158.41      | 154.56      | 151.01      |
| D-7          | 271.97     | 243.92     | 225.47     | 210.86     | 199.94     | 191.27     | 183.97      | 178.50      | 173.26      | 169.08      | 165.22      |
| D-7.5        | 306.26     | 274.73     | 253.89     | 237.46     | 225.05     | 215.43     | 207.15      | 201.08      | 195.04      | 190.38      | 186.04      |
| D-8          | 352.96     | 316.55     | 292.55     | 273.64     | 259.49     | 248.29     | 238.85      | 231.59      | 224.91      | 219.52      | 214.37      |
| D-8.5        | 402.13     | 360.56     | 333.40     | 311.76     | 295.70     | 282.92     | 272.15      | 263.75      | 256.24      | 250.13      | 244.35      |
| D-9          | 457.35     | 410.13     | 379.27     | 354.55     | 336.45     | 321.82     | 309.65      | 299.92      | 291.60      | 284.42      | 277.89      |

**"D" CONSTRUCTION - SHAPE A**

| <b>Class</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 98.34       | 96.51       | 95.06       | 93.67       | 91.22       | 88.98       | 87.53       | 85.85       | 84.99       | 83.58       | 82.66       |
| D-4.5        | 106.56      | 104.65      | 103.04      | 101.63      | 98.95       | 96.46       | 94.99       | 93.08       | 92.12       | 90.58       | 89.39       |
| D-5          | 115.52      | 113.44      | 111.66      | 110.09      | 107.18      | 104.60      | 103.02      | 100.98      | 99.87       | 98.18       | 97.19       |
| D-5.5        | 125.19      | 122.89      | 121.18      | 119.26      | 116.12      | 113.28      | 111.61      | 109.43      | 108.30      | 106.43      | 105.40      |
| D-6          | 135.72      | 133.29      | 131.13      | 129.39      | 125.98      | 122.76      | 120.93      | 118.68      | 117.41      | 115.38      | 114.19      |
| D-6.5        | 148.47      | 145.80      | 143.58      | 141.54      | 137.80      | 134.41      | 132.30      | 129.87      | 128.36      | 126.21      | 124.99      |
| D-7          | 162.60      | 159.50      | 157.09      | 154.87      | 150.90      | 147.10      | 144.90      | 141.98      | 140.44      | 138.19      | 136.64      |
| D-7.5        | 182.11      | 178.84      | 176.07      | 173.53      | 169.03      | 164.82      | 162.25      | 159.20      | 157.42      | 154.82      | 153.21      |
| D-8          | 210.04      | 206.11      | 202.94      | 200.03      | 194.93      | 189.95      | 187.10      | 183.50      | 181.40      | 178.47      | 176.59      |
| D-8.5        | 238.35      | 234.75      | 231.22      | 227.89      | 222.04      | 216.55      | 213.09      | 209.03      | 206.74      | 203.35      | 201.24      |
| D-9          | 272.47      | 266.97      | 263.04      | 259.24      | 252.54      | 246.46      | 242.35      | 237.82      | 235.08      | 231.19      | 228.97      |

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>400</b> | <b>500</b> | <b>600</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> |
|--------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 167.46     | 150.55     | 139.00     | 130.24     | 123.73     | 118.43     | 113.90      | 110.56      | 107.44      | 104.87      | 102.59      |
| D-4.5        | 181.44     | 163.24     | 150.66     | 141.19     | 134.12     | 128.29     | 123.43      | 119.90      | 116.50      | 113.71      | 111.27      |
| D-5          | 196.65     | 176.92     | 163.31     | 153.01     | 145.30     | 139.06     | 133.77      | 129.93      | 126.23      | 123.29      | 120.53      |
| D-5.5        | 213.21     | 191.77     | 177.05     | 165.95     | 157.67     | 150.76     | 145.03      | 140.87      | 136.87      | 133.62      | 130.68      |
| D-6          | 231.08     | 207.93     | 192.05     | 179.87     | 170.76     | 163.42     | 157.19      | 152.51      | 148.37      | 144.86      | 141.67      |
| D-6.5        | 252.94     | 227.49     | 210.10     | 196.78     | 186.88     | 178.93     | 172.08      | 166.94      | 162.26      | 158.42      | 155.05      |
| D-7          | 276.77     | 248.99     | 229.80     | 215.36     | 204.46     | 195.67     | 188.20      | 182.75      | 177.69      | 173.33      | 169.61      |
| D-7.5        | 311.65     | 280.29     | 258.77     | 242.43     | 230.25     | 220.35     | 212.01      | 205.83      | 199.97      | 195.19      | 190.88      |
| D-8          | 359.06     | 323.07     | 298.19     | 279.33     | 265.41     | 253.98     | 244.31      | 237.27      | 230.55      | 225.01      | 220.14      |
| D-8.5        | 409.18     | 368.09     | 339.73     | 318.23     | 302.38     | 289.37     | 278.33      | 270.33      | 262.69      | 256.46      | 250.82      |
| D-9          | 465.36     | 417.21     | 386.22     | 361.97     | 343.86     | 329.05     | 316.58      | 307.43      | 298.89      | 291.83      | 285.49      |

**MOUNTAIN RESIDENCES  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE B**

| <b>Class</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 100.94      | 99.08       | 97.73       | 96.33       | 93.79       | 91.52       | 90.20       | 88.54       | 87.53       | 86.25       | 85.18       |
| D-4.5        | 109.42      | 107.44      | 105.95      | 104.44      | 101.70      | 99.18       | 97.73       | 96.03       | 94.99       | 93.47       | 92.20       |
| D-5          | 118.54      | 116.50      | 114.84      | 113.25      | 110.16      | 107.58      | 105.95      | 104.04      | 103.02      | 101.26      | 100.06      |
| D-5.5        | 128.57      | 126.23      | 124.51      | 122.70      | 119.53      | 116.54      | 114.84      | 112.84      | 111.61      | 109.83      | 108.58      |
| D-6          | 139.32      | 136.93      | 134.97      | 133.03      | 129.56      | 126.33      | 124.51      | 122.27      | 120.93      | 119.08      | 117.59      |
| D-6.5        | 152.43      | 149.74      | 147.61      | 145.50      | 141.74      | 138.21      | 136.25      | 133.78      | 132.30      | 130.24      | 128.67      |
| D-7          | 166.81      | 163.94      | 161.57      | 159.28      | 155.06      | 151.29      | 149.04      | 146.29      | 144.90      | 142.46      | 140.75      |
| D-7.5        | 186.84      | 183.74      | 180.98      | 178.36      | 173.75      | 169.56      | 167.02      | 164.03      | 162.25      | 159.62      | 157.75      |
| D-8          | 215.46      | 211.64      | 208.55      | 205.63      | 200.40      | 195.46      | 192.57      | 189.08      | 187.10      | 184.04      | 181.92      |
| D-8.5        | 245.55      | 241.01      | 237.63      | 234.23      | 228.24      | 222.67      | 219.48      | 215.39      | 213.06      | 209.62      | 207.33      |
| D-9          | 279.33      | 274.07      | 270.36      | 266.50      | 259.76      | 253.28      | 249.75      | 244.89      | 242.24      | 238.54      | 236.07      |

**"D" CONSTRUCTION - SHAPE C**

| <b>Class</b> | <b>400</b> | <b>500</b> | <b>600</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> |
|--------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 170.11     | 153.35     | 141.80     | 132.85     | 126.79     | 120.93     | 116.54      | 113.25      | 110.09      | 107.58      | 105.22      |
| D-4.5        | 184.44     | 166.27     | 153.68     | 144.00     | 137.55     | 131.13     | 126.24      | 122.69      | 119.26      | 116.55      | 114.03      |
| D-5          | 199.98     | 180.20     | 166.65     | 156.15     | 149.06     | 142.16     | 136.93      | 133.03      | 129.39      | 126.33      | 123.48      |
| D-5.5        | 216.76     | 195.35     | 180.69     | 169.18     | 161.60     | 154.14     | 148.38      | 144.16      | 140.28      | 137.00      | 134.03      |
| D-6          | 234.91     | 211.80     | 195.89     | 183.43     | 175.22     | 167.08     | 160.91      | 156.22      | 151.94      | 148.42      | 145.15      |
| D-6.5        | 257.11     | 231.81     | 214.27     | 200.81     | 191.71     | 182.79     | 176.11      | 170.96      | 166.27      | 162.50      | 158.83      |
| D-7          | 281.22     | 253.49     | 234.48     | 219.58     | 209.70     | 200.02     | 192.63      | 187.01      | 181.95      | 177.87      | 173.76      |
| D-7.5        | 315.25     | 284.11     | 262.73     | 246.15     | 234.97     | 224.13     | 215.84      | 209.55      | 203.88      | 199.26      | 194.71      |
| D-8          | 363.34     | 327.41     | 302.86     | 283.69     | 270.84     | 258.32     | 248.75      | 241.68      | 234.96      | 229.66      | 224.46      |
| D-8.5        | 413.98     | 373.08     | 345.13     | 323.32     | 308.66     | 294.28     | 283.39      | 275.43      | 267.57      | 261.81      | 255.72      |
| D-9          | 470.81     | 424.43     | 392.70     | 367.71     | 351.22     | 334.60     | 322.40      | 313.25      | 304.37      | 297.77      | 290.87      |

**"D" CONSTRUCTION - SHAPE C**

| <b>Class</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 103.41      | 101.63      | 100.06      | 98.95       | 96.45       | 94.13       | 92.70       | 91.12       | 90.08       | 88.58       | 87.83       |
| D-4.5        | 112.11      | 110.12      | 108.58      | 107.18      | 104.49      | 101.92      | 100.46      | 98.76       | 97.63       | 96.04       | 95.18       |
| D-5          | 121.57      | 119.27      | 117.59      | 116.29      | 113.26      | 110.56      | 108.99      | 107.06      | 105.81      | 104.08      | 103.15      |
| D-5.5        | 131.74      | 129.39      | 127.44      | 126.24      | 122.74      | 119.90      | 118.06      | 116.05      | 114.71      | 112.88      | 111.86      |
| D-6          | 142.92      | 140.28      | 138.20      | 136.64      | 133.11      | 129.93      | 127.94      | 125.85      | 124.34      | 122.28      | 121.28      |
| D-6.5        | 156.40      | 153.46      | 151.11      | 149.51      | 145.68      | 142.16      | 139.98      | 137.71      | 136.02      | 134.02      | 132.72      |
| D-7          | 171.03      | 167.84      | 165.45      | 163.59      | 159.33      | 155.50      | 153.21      | 150.63      | 148.87      | 146.55      | 145.12      |
| D-7.5        | 191.69      | 188.14      | 185.41      | 183.33      | 178.45      | 174.24      | 171.66      | 168.77      | 166.76      | 164.14      | 162.68      |
| D-8          | 221.04      | 216.95      | 213.75      | 211.33      | 205.70      | 200.95      | 197.82      | 194.52      | 192.24      | 189.21      | 187.48      |
| D-8.5        | 251.79      | 247.09      | 243.43      | 240.90      | 234.27      | 229.07      | 225.41      | 221.77      | 220.79      | 215.55      | 213.61      |
| D-9          | 286.49      | 280.98      | 276.81      | 274.03      | 266.50      | 260.78      | 256.35      | 252.28      | 249.33      | 245.22      | 242.94      |

**MOUNTAIN RESIDENCES  
CONVENTIONAL TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>400</b> | <b>500</b> | <b>600</b> | <b>700</b> | <b>800</b> | <b>900</b> | <b>1000</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> |
|--------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 173.17     | 156.15     | 144.62     | 135.64     | 129.01     | 123.73     | 119.20      | 115.92      | 112.84      | 110.16      | 107.88      |
| D-4.5        | 187.67     | 169.18     | 156.72     | 147.02     | 139.86     | 134.12     | 129.33      | 125.53      | 122.25      | 119.52      | 116.84      |
| D-5          | 203.49     | 183.43     | 169.91     | 159.36     | 151.65     | 145.30     | 140.10      | 136.20      | 132.50      | 129.43      | 126.71      |
| D-5.5        | 220.53     | 198.92     | 184.20     | 172.79     | 164.33     | 157.67     | 151.85      | 147.56      | 143.60      | 140.38      | 137.34      |
| D-6          | 238.93     | 215.56     | 199.64     | 187.35     | 178.12     | 170.76     | 164.75      | 160.00      | 155.72      | 152.16      | 148.92      |
| D-6.5        | 261.55     | 235.98     | 218.49     | 204.97     | 194.88     | 186.88     | 180.20      | 174.96      | 170.36      | 166.60      | 162.86      |
| D-7          | 286.19     | 258.10     | 239.03     | 224.23     | 213.29     | 204.46     | 197.05      | 191.52      | 186.41      | 182.07      | 178.20      |
| D-7.5        | 320.67     | 289.16     | 267.88     | 251.27     | 238.98     | 229.14     | 220.85      | 214.57      | 208.83      | 204.06      | 199.79      |
| D-8          | 369.64     | 333.32     | 308.67     | 289.62     | 275.50     | 264.13     | 254.66      | 247.38      | 240.84      | 235.34      | 230.29      |
| D-8.5        | 421.05     | 379.75     | 351.69     | 329.94     | 313.98     | 300.92     | 290.20      | 281.87      | 274.48      | 268.14      | 262.40      |
| D-9          | 478.87     | 431.91     | 399.95     | 375.27     | 357.28     | 342.20     | 330.14      | 320.62      | 312.32      | 305.27      | 298.49      |

**"D" CONSTRUCTION - SHAPE D**

| <b>Class</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> | <b>1800</b> | <b>2000</b> | <b>2200</b> | <b>2400</b> | <b>2600</b> | <b>2800</b> | <b>3000</b> | <b>3200</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 106.32      | 104.44      | 102.67      | 101.51      | 99.02       | 96.54       | 95.33       | 93.72       | 92.80       | 90.67       | 90.32       |
| D-4.5        | 115.25      | 113.25      | 111.40      | 110.08      | 107.37      | 104.72      | 103.39      | 101.68      | 100.49      | 98.34       | 97.78       |
| D-5          | 124.86      | 122.69      | 120.76      | 119.20      | 116.47      | 113.58      | 112.05      | 110.12      | 109.00      | 106.56      | 106.09      |
| D-5.5        | 135.41      | 133.03      | 130.92      | 129.33      | 126.21      | 123.10      | 121.39      | 119.52      | 118.08      | 115.52      | 115.09      |
| D-6          | 146.74      | 144.16      | 141.86      | 140.14      | 136.75      | 133.41      | 131.68      | 129.40      | 128.03      | 125.19      | 124.74      |
| D-6.5        | 160.59      | 157.78      | 155.19      | 153.42      | 149.72      | 146.11      | 144.03      | 141.55      | 140.10      | 137.07      | 136.45      |
| D-7          | 175.77      | 172.58      | 169.91      | 167.77      | 163.72      | 159.87      | 157.64      | 154.95      | 153.35      | 149.85      | 149.23      |
| D-7.5        | 196.86      | 193.31      | 190.40      | 188.02      | 183.46      | 179.03      | 176.66      | 173.73      | 171.74      | 168.00      | 167.33      |
| D-8          | 226.98      | 222.93      | 219.48      | 216.61      | 211.57      | 206.31      | 203.63      | 200.07      | 197.90      | 193.65      | 192.80      |
| D-8.5        | 258.81      | 254.01      | 250.04      | 246.69      | 241.12      | 235.11      | 232.11      | 227.91      | 225.53      | 220.64      | 219.57      |
| D-9          | 294.34      | 288.97      | 284.38      | 280.55      | 274.26      | 267.53      | 264.00      | 259.11      | 256.40      | 250.90      | 249.52      |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-4 QUALITY**

**A-FRAME**

|                         |  |
|-------------------------|--|
| <b>Foundation</b>       | Wood piers; light concrete; light concrete block; light native stone   |
| <b>Floor Structure</b>  | 2" x 6", 24" o.c.; with 1" sub-floor   |
| <b>Gable Ends</b>       | Framing: 2" x 4", 16" o.c.<br>Siding: Low-cost wood siding or wood shingles<br>Windows: Low-cost wood                                  |
| <b>Roof</b>             | Framing: 2" x 4", 16" o.c.; or 2" x 6", 24" o.c.; with 1" sheathing<br>Cover: Composition shingles or corrugated metal<br>Pitch: Steep |
| <b>Interior Finish</b>  | Home-built with knotty pine or plywood   |
| <b>Bath Detail</b>      | One three-fixture bath   |
| <b>Kitchen</b>          | Base Cabinet: 6' home-built plywood<br>Wall Cabinet: Home-built plywood  |
| <b>Plumbing</b>         | Four low-cost fixtures; fire sprinklers; water heater  |
| <b>Electrical</b>       | Knob and tube, Romex® or sheathed wiring; low-cost fixtures  |
| <b>Special Features</b> | None   |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-5 QUALITY**

**A-FRAME**

|   |
|---|
| <b>Foundation</b><br>Concrete block or standard concrete  |
| <b>Floor Structure</b><br>4" x 6" girders, 48" o.c.; with 5/4" plywood sub-floor; or 2" tongue and groove sub-floor<br>Alternate: 2" x 6" joists, 16" o.c.; with 1" sub-floor |
| <b>Gable Ends</b><br>Framing: 2" x 4", 16" o.c.<br>Siding: Low-cost plywood, lap, or board and batten<br>Windows: Low-cost wood or metal                                      |
| <b>Roof</b><br>Framing: 4" x 8", 48" o.c.; with 5/4" plywood; or 2" tongue and groove sheathing<br>Cover: Composition shingles or corrugated iron<br>Pitch: Steep             |
| <b>Floor Finish</b><br>Vinyl tile   |
| <b>Interior Finish</b><br>Low-cost wood paneling; drywall, taped, and textured  |
| <b>Bath Detail</b><br>One three-fixture bath  |
| <b>Kitchen</b><br>Base Cabinet: 6' to 8' low-cost plywood veneer or paint-grade cabinets<br>Wall Cabinet: Low-cost plywood veneer or paint-grade cabinets                     |
| <b>Plumbing</b><br>Four low-cost fixtures; fire sprinklers; water heater  |
| <b>Electrical</b><br>Romex® or sheathed wiring; low-cost fixtures   |
| <b>Special Features</b><br>None   |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-6 QUALITY**

**A-FRAME**

|  |
|--|
| <b>Foundation</b><br>Concrete block or standard concrete   |
| <b>Floor Structure</b><br>4" x 6" girders, 48" o.c.; with 5/4" plywood; or 2" tongue and groove sub-floor; or 2" x 6,"<br>16" o.c.; with 1" sub-floor  |
| <b>Gable Ends</b><br>Framing: 2" x 4", 16" o.c.<br>Siding: Average quality plywood; average quality lap, board and batten siding; average quality<br>wood shingles<br>Windows: Average quality metal or wood |
| <b>Roof</b><br>Framing: 4" x 8", 48" o.c.; with 2" sheathing<br>Cover: Wood or composition shingles<br>Pitch: Steep  |
| <b>Floor Finish</b><br>Average quality carpet or vinyl tile in kitchen and baths   |
| <b>Interior Finish</b><br>Drywall, taped, textured; average quality plywood veneer   |
| <b>Bath Detail</b><br>Two three-fixture baths; average quality fixtures  |
| <b>Kitchen</b><br>Base Cabinet: 8' to 12' average quality plywood veneer or painted cabinets<br>Wall Cabinet: Plywood veneer or painted<br>Countertop/Drain Board: 8' to 12' plastic laminate                |
| <b>Plumbing</b><br>Seven average fixtures; fire sprinklers; water heater   |
| <b>Electrical</b><br>Romex® or sheathed wiring; average fixtures   |
| <b>Special Features</b><br>Drop-in range with hood; one sliding glass door   |



**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-7 QUALITY**

**A-FRAME**

|                         |  |
|-------------------------|--|
| <b>Foundation</b>       | Concrete block or standard concrete  |
| <b>Floor Structure</b>  | 4" x 8" girders, 48" o.c.; with a 5/4" plywood; or 2" tongue and groove sub-floor<br>Alternate: 2" x 6" or 2" x 8" 16" o.c.; with 1" sub-floor   |
| <b>Gable Ends</b>       | Framing: 2" x 4", 16" o.c.<br>Siding: Average to good plywood, lap, or board and batten<br>Alternate: Good wood shingles fully insulated<br>Windows: Average quality wood or metal; double paned glass |
| <b>Roof</b>             | Framing: 4" x 8", 48" o.c.; with 2" or 3" tongue and groove sheathing<br>Cover: Medium wood or aluminum shakes<br>Pitch: Steep   |
| <b>Floor Finish</b>     | Average to good quality carpet with sheet vinyl or good vinyl in kitchen and baths   |
| <b>Interior Finish</b>  | Drywall, taped, textured, plywood, or good quality knotty pine   |
| <b>Bath Detail</b>      | Two three-fixture baths  |
| <b>Kitchen</b>          | Base Cabinet: 12' to 16' hardwood veneer<br>Wall Cabinet: Hardwood veneer<br>Countertop/Drain Board: 12' to 16' plastic laminate or average ceramic tile   |
| <b>Plumbing</b>         | Seven average fixtures; fire sprinklers; water heater  |
| <b>Electrical</b>       | Romex® or sheathed wiring; average fixtures  |
| <b>Special Features</b> | One 8' sliding glass door; built-in range and oven   |

**MOUNTAIN RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-8 QUALITY**

**A-FRAME**

|                         |   |
|-------------------------|---|
| <b>Foundation</b>       | Concrete block or standard concrete   |
| <b>Floor Structure</b>  | 4" x 8" girders, 48" o.c.; with 2" tongue and groove sub-floor<br>Alternate: 2" x 6" or 2" x 8", 16" o.c.; with 1" sub-floor                                    |
| <b>Gable Ends</b>       | Framing: 2" x 4", 16" o.c.<br>Siding: Good plywood, lap, or board and batten; fully insulated<br>Windows: Good wood or metal; double paned glass                |
| <b>Roof</b>             | Framing: 4" x 8", 48" o.c.; with 2" or 3" tongue and groove sheathing<br>Cover: Heavy shakes<br>Pitch: Steep  |
| <b>Floor Finish</b>     | Good carpet or hardwood sheet vinyl in kitchen and baths  |
| <b>Interior Finish</b>  | Good quality hardwood veneer paneling   |
| <b>Bath Detail</b>      | Two three-fixture baths, and one two-fixture bath   |
| <b>Kitchen</b>          | Base Cabinet: 15' to 18' good hardwood veneer<br>Wall Cabinet: Good hardwood veneer<br>Countertop/Drain Board: 15' to 18' good plastic laminate or ceramic tile |
| <b>Plumbing</b>         | Nine good fixtures; fire sprinklers; one or two water heaters   |
| <b>Electrical</b>       | Romex® or sheathed wiring; good fixtures  |
| <b>Special Features</b> | Built-in oven, range, garbage disposer, dishwasher, hood; large glass area; ornate entry doors  |

**MOUNTAIN RESIDENCES  
A-FRAME TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE A**

| Class | 400    | 500    | 600    | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 139.15 | 125.65 | 116.40 | 109.14 | 103.89 | 99.73  | 96.03  | 93.37  | 90.84  | 88.71  | 86.95  |
| D-4.5 | 152.59 | 137.65 | 127.54 | 119.69 | 113.93 | 109.28 | 105.28 | 102.22 | 99.46  | 97.29  | 95.24  |
| D-5   | 167.09 | 150.88 | 139.74 | 131.24 | 124.77 | 119.73 | 115.42 | 112.06 | 109.08 | 106.57 | 104.33 |
| D-5.5 | 183.22 | 165.38 | 153.23 | 143.73 | 136.77 | 131.29 | 126.44 | 122.82 | 119.59 | 116.80 | 114.39 |
| D-6   | 200.91 | 181.27 | 167.92 | 157.49 | 149.99 | 143.91 | 138.45 | 134.60 | 131.00 | 128.01 | 125.30 |
| D-6.5 | 222.24 | 200.53 | 185.79 | 174.30 | 165.88 | 159.18 | 153.24 | 148.89 | 144.95 | 141.63 | 138.72 |
| D-7   | 245.85 | 221.80 | 205.49 | 192.80 | 183.51 | 176.10 | 169.56 | 164.77 | 160.32 | 156.61 | 153.40 |
| D-7.5 | 265.35 | 239.47 | 221.87 | 208.13 | 198.09 | 190.15 | 183.08 | 177.86 | 173.07 | 169.10 | 165.65 |
| D-8   | 306.34 | 276.42 | 256.09 | 240.25 | 228.69 | 219.41 | 211.29 | 205.22 | 199.82 | 195.12 | 191.19 |

**"D" CONSTRUCTION - SHAPE A**

| Class | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 85.34  | 83.94  | 82.79  | 81.67  | 79.57  | 77.88  | 76.56  | 75.42  | 74.25  | 73.40  | 72.61  |
| D-4.5 | 93.56  | 91.93  | 90.75  | 89.57  | 87.18  | 85.34  | 83.97  | 82.74  | 81.46  | 80.42  | 79.67  |
| D-5   | 102.58 | 100.76 | 99.44  | 98.15  | 95.59  | 93.56  | 91.95  | 90.64  | 89.19  | 88.22  | 87.20  |
| D-5.5 | 112.41 | 110.44 | 109.06 | 107.56 | 104.80 | 102.58 | 100.88 | 99.35  | 97.78  | 96.62  | 95.62  |
| D-6   | 123.15 | 120.99 | 119.47 | 117.81 | 114.88 | 112.41 | 110.48 | 108.87 | 107.16 | 105.94 | 104.85 |
| D-6.5 | 136.27 | 133.92 | 132.23 | 130.38 | 126.96 | 124.35 | 122.28 | 120.39 | 118.63 | 117.14 | 115.99 |
| D-7   | 150.73 | 148.22 | 146.24 | 144.31 | 140.57 | 137.58 | 135.27 | 133.15 | 131.25 | 129.65 | 128.29 |
| D-7.5 | 162.81 | 159.87 | 157.82 | 155.59 | 151.67 | 148.49 | 146.03 | 143.80 | 141.57 | 139.94 | 138.50 |
| D-8   | 187.82 | 184.49 | 182.18 | 179.66 | 175.04 | 171.41 | 168.47 | 165.94 | 163.35 | 161.49 | 159.87 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 400    | 500    | 600    | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 141.32 | 127.80 | 118.55 | 111.37 | 106.04 | 101.88 | 98.24  | 95.43  | 93.08  | 90.85  | 88.95  |
| D-4.5 | 154.95 | 140.10 | 129.95 | 122.05 | 116.17 | 111.60 | 107.60 | 104.69 | 101.96 | 99.58  | 97.55  |
| D-5   | 169.76 | 153.60 | 142.36 | 133.73 | 127.35 | 122.36 | 118.03 | 114.58 | 111.82 | 109.13 | 106.87 |
| D-5.5 | 186.11 | 168.24 | 156.05 | 146.56 | 139.60 | 134.11 | 129.36 | 125.65 | 122.45 | 119.63 | 117.13 |
| D-6   | 203.95 | 184.40 | 171.00 | 160.62 | 153.00 | 146.86 | 141.74 | 137.70 | 134.25 | 131.09 | 128.37 |
| D-6.5 | 225.71 | 203.99 | 189.26 | 177.74 | 169.24 | 162.56 | 156.79 | 152.38 | 148.55 | 144.99 | 142.08 |
| D-7   | 249.67 | 225.65 | 209.27 | 196.58 | 187.19 | 179.84 | 173.52 | 168.60 | 164.37 | 160.43 | 157.12 |
| D-7.5 | 269.56 | 243.69 | 225.95 | 212.30 | 202.09 | 194.12 | 187.27 | 181.93 | 177.40 | 173.24 | 169.67 |
| D-8   | 311.05 | 281.20 | 260.77 | 244.92 | 233.27 | 224.02 | 216.13 | 210.00 | 204.78 | 199.90 | 195.73 |

**"D" CONSTRUCTION - SHAPE B**

| Class | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 87.52  | 86.00  | 84.90  | 83.68  | 81.75  | 80.04  | 78.68  | 77.55  | 76.51  | 75.41  | 74.70  |
| D-4.5 | 95.95  | 94.16  | 93.08  | 91.79  | 89.61  | 87.72  | 86.28  | 84.98  | 83.93  | 82.73  | 82.02  |
| D-5   | 105.12 | 103.26 | 101.96 | 100.55 | 98.24  | 96.13  | 94.55  | 93.10  | 91.92  | 90.63  | 89.82  |
| D-5.5 | 115.26 | 113.19 | 111.77 | 110.18 | 107.70 | 105.29 | 103.59 | 102.10 | 100.75 | 99.34  | 98.35  |
| D-6   | 126.29 | 124.04 | 122.45 | 120.81 | 118.03 | 115.53 | 113.49 | 111.89 | 110.43 | 108.86 | 107.86 |
| D-6.5 | 139.70 | 137.19 | 135.52 | 133.60 | 130.57 | 127.79 | 125.60 | 123.77 | 122.15 | 120.38 | 119.29 |
| D-7   | 154.54 | 151.80 | 149.92 | 147.81 | 144.38 | 141.30 | 138.90 | 136.97 | 135.10 | 133.13 | 131.93 |
| D-7.5 | 166.91 | 163.84 | 161.80 | 159.59 | 155.89 | 152.53 | 149.96 | 147.75 | 145.86 | 143.80 | 142.48 |
| D-8   | 192.61 | 189.18 | 186.81 | 184.17 | 179.94 | 176.04 | 173.10 | 170.59 | 168.32 | 165.94 | 164.44 |

**MOUNTAIN RESIDENCES  
A-FRAME TYPE  
SQUARE FOOT AREA COST TABLES**

**"D" CONSTRUCTION - SHAPE C**

| Class | 400    | 500    | 600    | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 143.38 | 129.92 | 120.65 | 113.49 | 108.14 | 103.89 | 100.32 | 97.40  | 94.09  | 92.82  | 91.01  |
| D-4.5 | 157.19 | 142.28 | 132.23 | 124.41 | 118.55 | 113.93 | 109.94 | 106.80 | 103.11 | 101.73 | 99.75  |
| D-5   | 172.29 | 156.01 | 144.90 | 136.22 | 129.95 | 124.77 | 120.46 | 117.02 | 113.10 | 111.55 | 109.33 |
| D-5.5 | 188.77 | 170.94 | 158.79 | 149.41 | 142.36 | 136.77 | 132.14 | 128.22 | 123.97 | 122.25 | 119.87 |
| D-6   | 206.85 | 187.45 | 174.00 | 163.75 | 156.12 | 149.99 | 144.71 | 140.55 | 135.85 | 133.91 | 131.30 |
| D-6.5 | 228.95 | 207.26 | 192.51 | 181.11 | 172.63 | 165.88 | 160.16 | 155.47 | 150.28 | 148.25 | 145.28 |
| D-7   | 253.20 | 229.36 | 213.00 | 200.41 | 191.02 | 183.51 | 177.14 | 171.96 | 166.22 | 163.99 | 160.81 |
| D-7.5 | 273.43 | 247.53 | 230.01 | 216.33 | 206.16 | 198.09 | 191.22 | 185.70 | 179.40 | 177.04 | 173.50 |
| D-8   | 315.57 | 285.77 | 265.34 | 249.71 | 237.99 | 228.70 | 220.72 | 214.35 | 207.12 | 204.33 | 200.29 |

**"D" CONSTRUCTION - SHAPE C**

| Class | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 89.58  | 87.70  | 86.95  | 85.71  | 83.87  | 82.07  | 80.72  | 79.66  | 78.47  | 77.55  | 76.74  |
| D-4.5 | 98.20  | 96.03  | 95.24  | 93.94  | 91.89  | 89.90  | 88.43  | 87.19  | 86.03  | 84.98  | 84.07  |
| D-5   | 107.56 | 105.28 | 104.33 | 103.01 | 100.63 | 98.42  | 97.00  | 95.61  | 94.36  | 93.10  | 92.12  |
| D-5.5 | 118.00 | 115.46 | 114.32 | 112.86 | 110.38 | 108.02 | 106.28 | 104.83 | 103.28 | 102.10 | 100.96 |
| D-6   | 129.22 | 126.44 | 125.30 | 123.63 | 120.92 | 118.24 | 116.51 | 114.89 | 113.24 | 111.89 | 110.71 |
| D-6.5 | 142.97 | 139.96 | 138.72 | 136.74 | 133.82 | 130.83 | 128.92 | 127.10 | 125.25 | 123.77 | 122.45 |
| D-7   | 158.19 | 154.77 | 153.40 | 151.37 | 147.96 | 144.88 | 142.62 | 140.64 | 138.53 | 136.97 | 135.52 |
| D-7.5 | 170.83 | 167.04 | 165.65 | 163.35 | 159.78 | 156.33 | 153.95 | 151.85 | 149.63 | 147.75 | 146.24 |
| D-8   | 197.13 | 192.88 | 191.19 | 188.58 | 184.45 | 180.39 | 177.65 | 175.20 | 172.67 | 170.58 | 168.79 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 400    | 500    | 600    | 700    | 800    | 900    | 1000   | 1100   | 1200   | 1300   | 1400   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 145.51 | 131.90 | 122.68 | 115.50 | 110.10 | 105.90 | 102.24 | 99.44  | 97.07  | 94.86  | 93.38  |
| D-4.5 | 159.42 | 144.60 | 134.41 | 126.53 | 120.73 | 116.03 | 112.09 | 109.06 | 106.33 | 104.06 | 102.20 |
| D-5   | 174.77 | 158.46 | 147.23 | 138.64 | 132.25 | 127.19 | 122.83 | 119.56 | 116.66 | 113.92 | 112.20 |
| D-5.5 | 191.46 | 173.63 | 161.51 | 151.89 | 144.95 | 139.42 | 134.67 | 130.90 | 127.77 | 124.95 | 122.93 |
| D-6   | 209.92 | 190.30 | 176.90 | 166.57 | 158.91 | 152.73 | 147.58 | 143.53 | 140.07 | 136.91 | 134.67 |
| D-6.5 | 232.25 | 210.56 | 195.78 | 184.30 | 175.82 | 169.07 | 163.26 | 158.84 | 155.02 | 151.44 | 149.07 |
| D-7   | 256.83 | 232.95 | 216.59 | 203.90 | 194.42 | 187.02 | 180.61 | 175.72 | 171.40 | 167.52 | 164.84 |
| D-7.5 | 277.40 | 251.58 | 233.88 | 220.16 | 209.91 | 201.85 | 195.04 | 189.74 | 185.06 | 180.92 | 178.01 |
| D-8   | 320.14 | 290.32 | 269.80 | 253.97 | 242.38 | 232.97 | 225.11 | 218.93 | 213.62 | 208.79 | 205.46 |

**"D" CONSTRUCTION - SHAPE D**

| Class | 1500   | 1600   | 1700   | 1800   | 2000   | 2200   | 2400   | 2600   | 2800   | 3000   | 3200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 91.42  | 90.17  | 88.91  | 87.71  | 85.88  | 84.06  | 82.76  | 81.62  | 80.50  | 79.65  | 78.81  |
| D-4.5 | 100.13 | 98.73  | 97.41  | 96.12  | 94.04  | 92.11  | 90.72  | 89.49  | 88.23  | 87.18  | 86.35  |
| D-5   | 109.72 | 108.13 | 106.84 | 105.28 | 103.05 | 100.95 | 99.38  | 98.06  | 96.68  | 95.60  | 94.63  |
| D-5.5 | 120.25 | 118.62 | 117.10 | 115.51 | 112.97 | 110.70 | 108.92 | 107.44 | 106.03 | 104.82 | 103.67 |
| D-6   | 131.79 | 129.96 | 128.33 | 126.54 | 123.78 | 121.36 | 119.32 | 117.75 | 116.19 | 114.88 | 113.63 |
| D-6.5 | 145.89 | 143.85 | 141.91 | 140.02 | 137.07 | 134.23 | 132.16 | 130.23 | 128.60 | 127.08 | 125.73 |
| D-7   | 161.29 | 159.12 | 157.00 | 154.91 | 151.52 | 148.49 | 146.06 | 144.08 | 142.20 | 140.62 | 139.09 |
| D-7.5 | 174.19 | 171.77 | 169.51 | 167.17 | 163.61 | 160.25 | 157.74 | 155.56 | 153.55 | 151.85 | 150.21 |
| D-8   | 201.02 | 198.29 | 195.67 | 193.00 | 188.87 | 185.03 | 182.06 | 179.60 | 177.18 | 175.20 | 173.25 |

## MOUNTAIN RESIDENCES

### WOOD DECKS AND PORCHES

| <u>2" wood deck with steps and railings</u> | <u>Cost Per Square Foot</u> |   |       |
|---|-----------------------------|---|-------|
| 1 to 3 feet above ground                    | 23.34                       | - | 32.23 |
| 4 to 6 feet above ground                    | 27.10                       | - | 35.01 |
| 6 to 9 feet above ground                    | 27.86                       | - | 36.88 |
| 9 to 12 feet above ground                   | 29.36                       | - | 38.40 |
| 12 to 15 feet above ground                  | 30.86                       | - | 39.90 |
| 15 to 18 feet above ground                  | 31.61                       | - | 42.15 |

### FIREPLACES

| <u>Type</u>                    | <u>Unit Cost</u> |   |        |
|--------------------------------|------------------|---|--------|
| Metal hood with concrete slab  | 2,559            | - | 3,161  |
| Simple concrete block          | 4,516            | - | 7,527  |
| Simple block with stone facing | 6,022            | - | 9,033  |
| Simple natural stone           | 10,538           | - | 15,055 |
| Brick                          | 7,527            | - | up     |
| Wood stove                     | 2,790            | - | 6,513  |
| Zero clearance                 | 3,721            | - | 5,582  |

### FLATWORK

| <u>Type</u>    | <u>Cost Per Square Foot</u> |   |      |
|----------------|-----------------------------|---|------|
| Asphalt paving | 4.71                        | - | 6.31 |
| 4" concrete    | 4.20                        | - | 5.27 |
| 6" concrete    | 5.27                        | - | 8.41 |

### GARAGES AND CARPORTS

| <u>Type</u>                     | <u>Cost Per Square Foot</u> |   |       |
|---------------------------------|-----------------------------|---|-------|
| Average carport, no slab        | 27.38                       | - | 33.47 |
| Average single garage with slab | 57.81                       | - | 68.46 |
| Average double garage with slab | 51.72                       | - | 62.37 |

### HEATING

| <u>Type</u>  | <u>Unit Cost</u> |   |        |
|--|------------------|---|--------|
| Wall heaters                                       |                  |   |        |
| 35,000 BTU   | 1,415            |   |        |
| 65,000 BTU   | 1,792            |   |        |
| Central heating, perimeter ducts (per square foot) | 7.92             |   |        |
| Baseboard hot water (per square foot)              | 5.67             |   |        |
| Geothermal heat pumps                              | 10,720           | - | 12,640 |

## MOUNTAIN RESIDENCES

### HALF-STORY FRACTIONS

| <u>Conventional Mountain Residences</u><br>Use suggested fractions as discussed in <i>Building Additives</i> chapter, AH 531.40, page 2                      | <u>Cost Per Square Foot</u> |
|--|-----------------------------|
| <u>A-Frame Mountain Residences</u>   |                             |
| <b>Type I:</b> Simple platform construction; low-cost floor cover; minimum partitions; and minimum lighting  | \$79.70 to \$86.92          |
| <b>Type II:</b> Average quality construction; average quality carpet; average amount of partitions finished with drywall or plywood veneer; average lighting | \$84.00 to \$92.72          |
| <b>Type III:</b> Good quality construction; good carpet; decorative rustic partitions and ceiling beams; good lighting                                       | \$108.22 to \$121.23        |

### EXTRA PLUMBING

| <u>Type</u>  | <u>Cost</u>        |
|--------------|--------------------|
| Sink         | \$1,516 to \$2,264 |
| Toilet       | \$1,853 to \$2,717 |
| Tub          | \$1,957 to \$2,573 |
| Stall Shower | \$1,439 to \$2,057 |

### SLOPE ADJUSTMENTS

Mountain cabins built on sloping lots will cost more than if they are built on level lots. If the land is a sloping lot, this extra cost should be included in the cost estimate of the building.

The cost of the walls of a building that are not a part of the area that square-foot costs are applied to are estimated using in-place costs. This estimate includes the in-place cost of all materials above a normal foundation (12" to 18" above ground) and the bottom of the next floor structure where square-foot costs have been applied.

The excessive cost of hillside construction called crippling should be included by adding an additional cost for the extra walls, structural members, and high foundation. This extra cost can be estimated by adding the following cost to the highest wall on the steepest side of the house.

| <u>Wall Height</u> | <u>Cost Per Linear Foot</u> |
|--------------------|-----------------------------|
| 4'                 | \$ 66.78                    |
| 6'                 | 122.66                      |
| 8'                 | 189.45                      |
| 10'                | 245.10                      |

## LOCATION ADJUSTMENTS

The building costs in the *Mountain Residences* chapter have been developed using the Lake Tahoe Basin area of California as the base area (with a factor of 1.00).

The map on page 24 of this chapter shows mountain residence locations in California and shows suggested factors that are intended to provide an appropriate adjustment for the variance in costs due to differences in location compared to the base. ***These factors, however, are not intended to adjust for the significant variation in permit costs and other fees charged by different jurisdictions within a region. Due to the wide variance in these costs, both within and among the counties, it is necessary for the appraiser to research and analyze permit costs and fees of jurisdictions in the region and to make appropriate adjustments where necessary. AH 531 should serve as a guide, but an appraiser must also research the market to determine which costs are most applicable for the appraisal assignment. It may be necessary to supplement the data provided in AH 531 with local cost data.***

An additional adjustment for time should be considered if costs in the county have changed since the January publication date of this AH 531.

The appropriate mountain residence location adjustment should be applied to the *Square Foot Area Cost Tables* and *Costs of Additives* sections found in this chapter.

**NOTE:** When developing costs for mountain residences by using data from other AH 531 chapters that have the Sacramento area base (*Building Additives, Residential Garages, Yard Improvements, In-Place Costs, and Compact Costs*), ***it is necessary to first make an upward adjustment using a 1.30 factor*** to bring the costs up to the mountain residences base. Then, the appropriate mountain residence location adjustment factor (from the map on page 24 this chapter) should be applied.

Finally, all costs in this handbook, except for manufactured housing, should be adjusted to account for any extraordinary permit or other cost differences that exist in the county.

Various mountain counties have two or more location zones. The zone boundaries are as follows:

### **Alpine County**

- |              |  |
|--------------|--|
| Western Zone | All areas west of the summit of the Sierra Nevada Mountains. |
| Eastern Zone | All areas east of the summit of the Sierra Nevada Mountains. |

### **Amador County**

- |              |  |
|--------------|--|
| Eastern Zone | All areas east of the 5,000-foot elevation line. |
|--------------|--|

**Calaveras County**

Eastern Zone All areas east of the 5,000-foot elevation line.

**El Dorado County**

Eastern Middle Zone From the 5,000-foot elevation line to the summit of the Sierra Nevada Mountains.

Eastern Zone From the summit of the Sierra Nevada Mountains to the Nevada border.

**Fresno County**

Eastern Zone From the 5,000-foot elevation line to the eastern boundary of the county.

**Inyo County**

National Forest Zone All areas within the Inyo National Forest.

**Madera County**

Eastern Zone From the 5,000-foot elevation line to the eastern boundary of the county.

**Mariposa County**

Eastern Zone From the 5,000-foot elevation line to the eastern boundary of the county.

**Mono County**

Mammoth Lakes Zone To include Mammoth Lakes, June Lake Loop, and Lake Crowley areas.

**Nevada County**

Eastern Middle Zone From the 5,000-foot elevation level to the summit of the Sierra Nevada Mountains.

Eastern Zone From the summit of the Sierra Nevada Mountains to the Nevada border.



## **Placer County**

- |                     |  |
|---------------------|--|
| Eastern Middle Zone | From the western boundary of the Tahoe National Forest to the summit of the Sierra Nevada Mountains. |
| Eastern Zone        | From the summit of the Sierra Nevada Mountains to the Nevada border.                                 |

## **Plumas County**

- |               |                             |
|---------------|-----------------------------|
| Mountain Zone | All areas of Plumas County. |
|---------------|-----------------------------|

## **San Bernardino County**

- |                              |  |
|------------------------------|--|
| Big Bear/Lake Arrowhead Zone | All areas around Lake Arrowhead and Big Bear Valley. |
|------------------------------|--|

## **Sierra County**

- |              |  |
|--------------|--|
| Middle Zone  | From the 5,000-foot elevation line to the summit of the Sierra Nevada Mountains. |
| Eastern Zone | From the summit of the Sierra Nevada Mountains to the Nevada border.             |

## **Tulare County**

- |              |   |
|--------------|---|
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county. |
|--------------|---|

## **Tuolumne County**

- |              |   |
|--------------|---|
| Eastern Zone | From the 5,000-foot elevation line to the eastern boundary of the county. |
|--------------|---|

**MOUNTAIN RESIDENCES**  
 (Blue Area Shown on this Map)

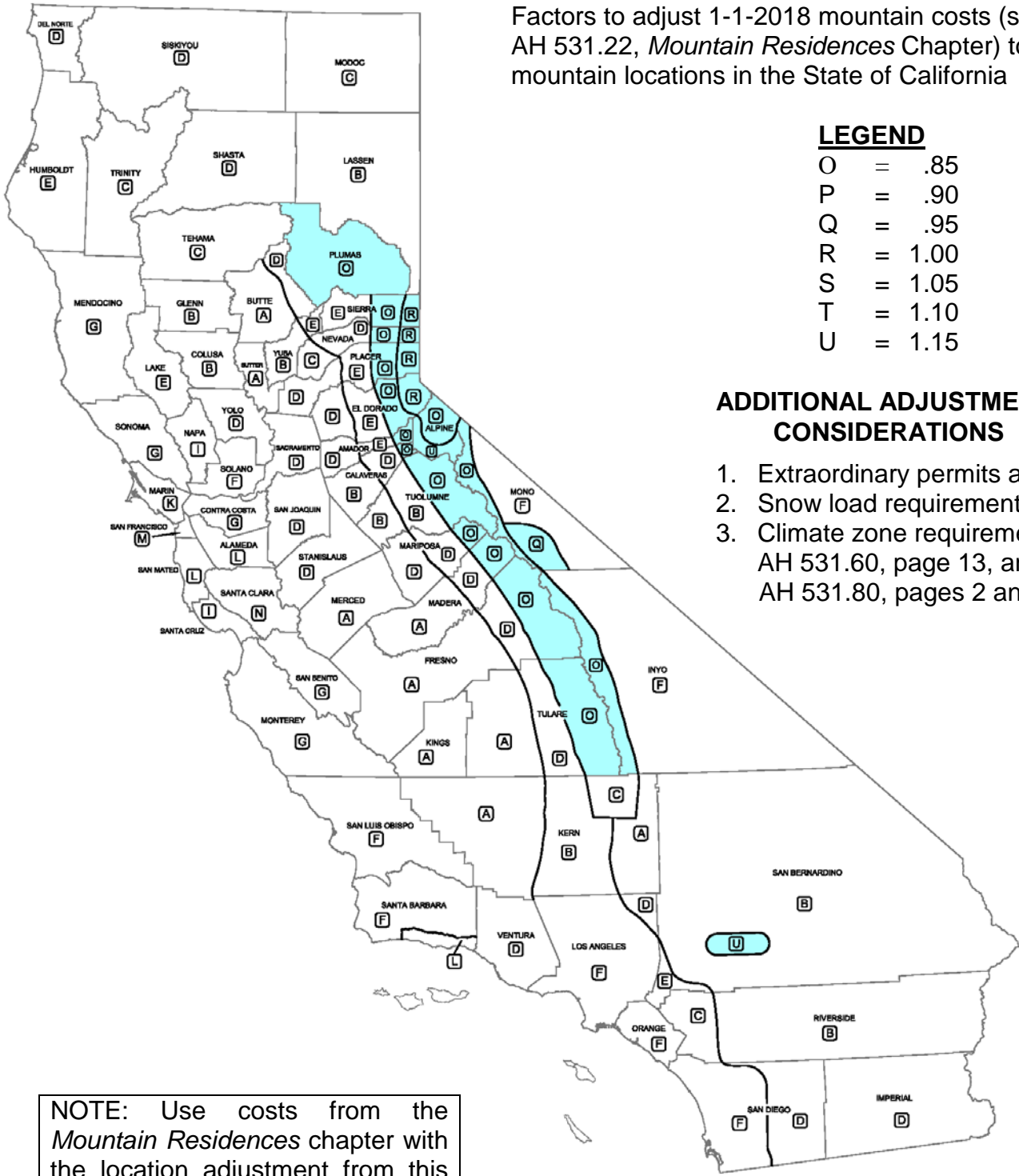
Factors to adjust 1-1-2018 mountain costs (see AH 531.22, *Mountain Residences* Chapter) to other mountain locations in the State of California

**LEGEND**

|   |   |      |
|---|---|------|
| O | = | .85  |
| P | = | .90  |
| Q | = | .95  |
| R | = | 1.00 |
| S | = | 1.05 |
| T | = | 1.10 |
| U | = | 1.15 |

**ADDITIONAL ADJUSTMENT CONSIDERATIONS**

1. Extraordinary permits and fees
2. Snow load requirements
3. Climate zone requirements (see AH 531.60, page 13, and AH 531.80, pages 2 and 3).



**NOTE:** Use costs from the *Mountain Residences* chapter with the location adjustment from this map for mountain residences.

**MOUNTAIN RESIDENCES  
D-5 QUALITY**



**MOUNTAIN RESIDENCES  
D-5 QUALITY**



**MOUNTAIN RESIDENCES  
D-6 QUALITY**



**MOUNTAIN RESIDENCES  
D-6 QUALITY**





**MOUNTAIN RESIDENCES  
D-7 QUALITY**



**MOUNTAIN RESIDENCES  
D-7 QUALITY**





**MOUNTAIN RESIDENCES  
D-8 QUALITY**



**MOUNTAIN RESIDENCES  
D-8 QUALITY**



**MOUNTAIN RESIDENCES  
D-9 QUALITY**



**MOUNTAIN RESIDENCES  
D-9 QUALITY**



## **AH 531.30: MULTIPLE-FAMILY RESIDENCES**

Multiple-family residences are residential buildings designed and built for permanent and separate occupancy of two or more family units.

Square foot costs include all costs and components described on page 2 of AH 531.10, the *Costing Information* chapter of this handbook. They include only those built-ins described in the building specifications.

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-4 QUALITY**

|   |
|---|
| <b>Foundation</b><br>Light concrete   |
| <b>Floor Structure</b><br>Joists: 2" x 6", 24" o.c.; or 4" concrete   |
| <b>Walls and Exterior</b><br>6" reinforced or 8" non-reinforced concrete block; painted exterior<br>Windows: Low-cost steel sash  |
| <b>Roof</b><br>Framing: 2" x 4" rafters, 24" o.c.<br>Cover: 3 ply built-up 15 lb. felt, mopped<br>Overhang: 16", unceiled<br>Gutters: None  |
| <b>Floor Finish</b><br>Painted concrete or low-cost vinyl tile  |
| <b>Interior Finish</b><br>Painted concrete block, wall board, or plywood and paint on partition walls   |
| <b>Interior Detail</b><br>Trim: One member Douglas Fir, painted; or rubber base<br>Closets: One closet per bedroom; minimum shelving  |
| <b>Bath Detail</b><br>Floors: Painted concrete or low-cost vinyl tile<br>Walls: Painted concrete block, wall board, or plywood and paint on partition walls<br>Shower: None or metal shower in place of tub |
| <b>Kitchen</b><br>Base Cabinet: 4' Douglas Fir, painted<br>Wall Cases: Small area Douglas Fir, painted<br>Countertop/Drain Board: 4' wood or sheet vinyl  |
| <b>Plumbing</b><br>Fair quality fixtures; fire sprinklers   |
| <b>Special Features</b><br>None   |
| <b>Electrical</b><br>Knob and tube, Romex® or sheathed wiring; simple fixtures  |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-5 QUALITY**

|   |
|---|
| <b>Foundation</b><br>Reinforced concrete  |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b><br>8" reinforced concrete block; painted exterior<br>Windows: Low-cost steel sash   |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Composition shingles or composition tar and pea gravel<br>Overhang: 12" to 16", unceiled<br>Gutters: Over entrances |
| <b>Floor Finish</b><br>Vinyl tile or low-cost carpet  |
| <b>Interior Finish</b><br>Painted concrete block; Drywall, taped, textured, and painted on partitions   |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted, or rubber base<br>Closets: Moderate amount; low-cost doors  |
| <b>Bath Detail</b><br>Floors: Asphalt tile<br>Walls: Drywall, taped, textured, and enamel<br>Shower: Plastic faced hardboard  |
| <b>Kitchen</b><br>Base Cabinets: 5' low-cost hardwood veneer<br>Wall Cases: Low-cost hardwood veneer<br>Countertop/Drain Board: 5' plastic laminate                       |
| <b>Plumbing</b><br>Galvanized pipe; low-cost fixtures; fire sprinklers  |
| <b>Special Features</b><br>None   |
| <b>Electrical</b><br>Romex® or sheathed wiring; low-cost fixtures   |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-6 QUALITY**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b> | 8" reinforced concrete block or 8" common brick<br>Windows: Average quality steel sash  |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Wood shingle, light shake, good composition shingles, or composition with tar and rock<br>Overhang: 16", unceiled<br>Gutters: 4" galvanized and painted at all eaves |
| <b>Floor Finish</b>       | Good quality vinyl tile or low-cost carpet; average quality vinyl tile in kitchen and breakfast room  |
| <b>Interior Finish</b>    | Drywall, taped, textured, and painted; colored interior stucco; some wallpaper  |
| <b>Interior Detail</b>    | Trim: Douglas Fir, painted<br>Closets: Average amount; low-cost wood or metal doors   |
| <b>Bath Detail</b>        | Floors: Vinyl tile<br>Walls: Drywall, taped and enameled<br>Shower: Average ceramic tile or plastic coated hardboard with a glass door  |
| <b>Kitchen</b>            | Base Cabinet: 6' low-cost hardwood veneer or average pine<br>Wall Cases: Low-cost hardwood veneer or average pine<br>Countertop/Drain Board: 6' average ceramic tile  |
| <b>Plumbing</b>           | Galvanized pipe; average quality fixtures; fire sprinklers  |
| <b>Special Features</b>   | 3' ceramic tile or plastic laminate vanity in bath  |
| <b>Electrical</b>         | Romex® or sheathed wiring; average fixtures   |



**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-7 QUALITY**

|   |
|---|
| <b>Foundation</b><br>Reinforced concrete  |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b><br>8" reinforced colored detailed concrete block<br>Windows: Good quality aluminum or average quality steel sash  |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Medium shake or composition and large rock<br>Overhang: 30", unceiled<br>Gutters: 6" galvanized and painted at all eaves        |
| <b>Floor Finish</b><br>Average quality carpet; average quality sheet vinyl or good quality inlaid vinyl in kitchen and breakfast room   |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted; plaster with putty coat finish; some wallpaper; average quality hardwood veneer in family room                       |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted; some hardwood members<br>Closets: Average amount with average quality wood doors  |
| <b>Bath Detail</b><br>Floors: Sheet vinyl<br>Walls: Drywall or smooth plaster and enamel; average ceramic tile over tub<br>Shower: Average ceramic tile with glass door               |
| <b>Kitchen</b><br>Base Cabinet: 8' average quality hardwood veneer<br>Wall Cases: Average quality hardwood veneer<br>Countertop/Drain Board: 8' ceramic tile or good plastic laminate |
| <b>Plumbing</b><br>Galvanized pipe; good fixtures; fire sprinklers  |
| <b>Special Features</b><br>Average quality garbage disposer, range hood and fan; 4' ceramic tile vanity in bath   |
| <b>Electrical</b><br>Romex® or sheathed wiring; average quality fixtures  |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

**C-8 QUALITY**

|  |
|--|
| <b>Foundation</b><br>Reinforced concrete   |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete   |
| <b>Walls and Exterior</b><br>8" reinforced split face or concrete block<br>Windows: Good quality steel sash  |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Heavy shake<br>Overhang: 36", unceiled, or 24", ceiled<br>Gutters: 8" galvanized and painted at all eaves                      |
| <b>Floor Finish</b><br>Terrazzo or mission tile in entry; good tongue and groove hardwood or carpet in living, dining, and bedrooms; good sheet vinyl in kitchen and breakfast rooms |
| <b>Interior Finish</b><br>Drywall with heavy texture and paint; plaster with putty coat finish; some good wallpaper or vinyl wall covering; some good hardwood veneer paneling       |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted; some hardwood members<br>Closets: Ample space; good wood doors   |
| <b>Bath Detail</b><br>Floors: Good ceramic tile<br>Walls: Drywall or plaster with vinyl or foil wall cover; good ceramic tile over tub<br>Shower: Good ceramic tile with glass door  |
| <b>Kitchen</b><br>Base Cabinet: 10' good hardwood veneer<br>Wall Cases: Ample good hardwood veneer<br>Countertop/Drain Board: 10' good ceramic tile                                  |
| <b>Plumbing</b><br>Copper tubing; good fixtures; fire sprinklers   |
| <b>Special Features</b><br>8' sliding glass door; good quality built-in oven, range, dishwasher, garbage disposer, and range hood and fan; 4' to 6' ceramic tile vanity in bath      |
| <b>Electrical</b><br>Romex® or sheathed wiring; good quality fixtures  |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"C" CONSTRUCTION - 2 or 3 UNITS**

| Class | 400    | 450    | 500    | 550    | 600    | 650    | 700    | 750    | 800    | 900    | 1000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 97.13  | 92.73  | 90.29  | 88.46  | 86.85  | 85.44  | 84.28  | 83.13  | 82.27  | 80.86  | 79.62  |
| C-4.5 | 105.07 | 100.41 | 97.82  | 95.81  | 94.11  | 92.59  | 91.35  | 90.03  | 89.12  | 87.52  | 86.27  |
| C-5   | 113.87 | 108.77 | 105.92 | 103.77 | 101.89 | 100.32 | 98.87  | 97.56  | 96.56  | 94.84  | 93.42  |
| C-5.5 | 123.32 | 117.83 | 114.75 | 112.32 | 110.27 | 108.62 | 107.10 | 105.59 | 104.56 | 102.67 | 101.12 |
| C-6   | 133.55 | 127.60 | 124.34 | 121.62 | 119.49 | 117.57 | 116.05 | 114.39 | 113.26 | 111.21 | 109.50 |
| C-6.5 | 146.07 | 139.45 | 135.87 | 133.02 | 130.67 | 128.52 | 126.77 | 124.98 | 123.85 | 121.59 | 119.75 |
| C-7   | 158.73 | 152.48 | 148.53 | 145.42 | 142.80 | 140.58 | 138.65 | 136.67 | 135.29 | 132.86 | 130.80 |
| C-7.5 | 182.38 | 174.17 | 169.72 | 166.16 | 163.10 | 160.61 | 158.39 | 156.25 | 154.62 | 151.81 | 149.63 |
| C-8   | 207.95 | 198.69 | 193.54 | 189.55 | 186.07 | 183.07 | 180.59 | 178.17 | 176.32 | 173.12 | 170.55 |
| C-8.5 | 236.84 | 226.16 | 220.34 | 215.76 | 211.76 | 208.50 | 205.73 | 202.70 | 200.66 | 197.21 | 194.24 |

**"C" CONSTRUCTION - 2 or 3 UNITS**

| Class | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   | 2200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 78.69  | 77.92  | 77.12  | 76.63  | 76.08  | 75.50  | 75.19  | 74.89  | 74.55  | 74.35  | 74.00  |
| C-4.5 | 85.22  | 84.40  | 83.60  | 82.99  | 82.42  | 81.75  | 81.41  | 81.09  | 80.84  | 80.51  | 80.21  |
| C-5   | 92.29  | 91.39  | 90.48  | 89.87  | 89.29  | 88.60  | 88.14  | 87.78  | 87.50  | 87.19  | 86.85  |
| C-5.5 | 99.92  | 98.94  | 98.08  | 97.34  | 96.70  | 95.89  | 95.45  | 95.16  | 94.77  | 94.34  | 94.16  |
| C-6   | 108.21 | 107.12 | 106.18 | 105.40 | 104.71 | 103.83 | 103.41 | 103.07 | 102.64 | 102.28 | 101.95 |
| C-6.5 | 118.36 | 117.16 | 116.05 | 115.26 | 114.41 | 113.61 | 113.09 | 112.59 | 112.22 | 111.67 | 111.41 |
| C-7   | 129.35 | 128.03 | 126.81 | 125.90 | 125.20 | 124.07 | 123.51 | 123.15 | 122.63 | 122.19 | 121.66 |
| C-7.5 | 147.76 | 146.30 | 144.99 | 143.95 | 142.98 | 141.78 | 141.21 | 140.66 | 140.12 | 139.64 | 139.11 |
| C-8   | 168.49 | 166.90 | 165.35 | 164.11 | 163.02 | 161.71 | 160.99 | 160.44 | 159.82 | 159.36 | 158.63 |
| C-8.5 | 191.85 | 190.03 | 188.20 | 186.92 | 185.65 | 184.17 | 183.31 | 182.57 | 181.92 | 181.25 | 180.59 |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**2 or 3 UNITS**

| Class | Cost Per Extra Bath |                |                |
|-------|---------------------|----------------|----------------|
|       | 2-Fixture Bath      | 3-Fixture Bath | 4-Fixture Bath |
| C-4   | 3,479               | 5,123          | 7,246          |
| C-5   | 4,250               | 6,667          | 8,214          |
| C-6   | 4,929               | 7,439          | 10,339         |
| C-7   | 5,412               | 8,966          | 11,596         |
| C-8   | 7,246               | 10,533         | 13,334         |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"C" CONSTRUCTION - 4 to 9 UNITS**

| Class | 400    | 450    | 500    | 550    | 600    | 650    | 700    | 750    | 800    | 900    | 1000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 91.49  | 87.52  | 85.26  | 83.50  | 81.82  | 80.52  | 79.46  | 78.47  | 77.69  | 76.34  | 75.05  |
| C-4.5 | 99.13  | 94.78  | 92.36  | 90.40  | 88.65  | 87.27  | 85.99  | 85.04  | 84.19  | 82.72  | 81.35  |
| C-5   | 107.27 | 102.65 | 99.93  | 97.95  | 96.09  | 94.53  | 93.10  | 92.04  | 91.18  | 89.55  | 88.12  |
| C-5.5 | 116.20 | 111.21 | 108.21 | 105.96 | 103.93 | 102.32 | 100.86 | 99.74  | 98.71  | 96.90  | 95.43  |
| C-6   | 125.88 | 120.45 | 117.24 | 114.87 | 112.59 | 110.88 | 109.26 | 108.08 | 106.94 | 105.01 | 103.30 |
| C-6.5 | 137.62 | 131.72 | 128.13 | 125.56 | 123.16 | 121.11 | 119.37 | 118.10 | 116.88 | 114.82 | 112.99 |
| C-7   | 150.41 | 143.91 | 140.17 | 137.20 | 134.58 | 132.48 | 130.54 | 129.06 | 127.88 | 125.54 | 123.41 |
| C-7.5 | 171.94 | 164.42 | 160.11 | 156.78 | 153.73 | 151.31 | 149.19 | 147.46 | 146.01 | 143.39 | 141.06 |
| C-8   | 196.03 | 187.52 | 182.57 | 178.80 | 175.36 | 172.62 | 170.11 | 168.22 | 166.51 | 163.51 | 160.80 |
| C-8.5 | 223.19 | 213.53 | 207.93 | 203.58 | 199.68 | 196.46 | 193.73 | 191.47 | 189.63 | 186.09 | 183.24 |

**"C" CONSTRUCTION - 4 to 9 UNITS**

| Class | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   | 2200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 74.16  | 73.40  | 72.89  | 72.28  | 71.82  | 71.31  | 70.89  | 70.77  | 70.37  | 70.08  | 69.88  |
| C-4.5 | 80.33  | 79.52  | 78.81  | 78.21  | 77.77  | 77.13  | 76.76  | 76.62  | 76.26  | 75.89  | 75.71  |
| C-5   | 86.96  | 86.15  | 85.41  | 84.74  | 84.23  | 83.60  | 83.20  | 82.98  | 82.51  | 82.17  | 82.11  |
| C-5.5 | 94.23  | 93.37  | 92.51  | 91.89  | 91.30  | 90.62  | 90.02  | 89.88  | 89.41  | 88.87  | 88.80  |
| C-6   | 101.98 | 100.92 | 100.21 | 99.36  | 98.78  | 98.05  | 97.54  | 97.31  | 96.83  | 96.27  | 96.15  |
| C-6.5 | 111.53 | 110.41 | 109.47 | 108.64 | 108.01 | 107.18 | 106.60 | 106.39 | 105.82 | 105.32 | 105.21 |
| C-7   | 121.82 | 120.64 | 119.71 | 118.76 | 118.10 | 117.23 | 116.52 | 116.34 | 115.74 | 115.16 | 114.95 |
| C-7.5 | 139.25 | 137.96 | 136.76 | 135.79 | 134.90 | 133.91 | 133.15 | 132.96 | 132.10 | 131.54 | 131.34 |
| C-8   | 158.88 | 157.26 | 156.00 | 154.78 | 153.85 | 152.71 | 151.89 | 151.60 | 150.66 | 150.08 | 149.71 |
| C-8.5 | 180.82 | 179.04 | 177.63 | 176.18 | 175.19 | 173.90 | 172.99 | 172.52 | 171.59 | 170.79 | 170.49 |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**4 to 9 UNITS**

| Class | Cost Per Extra Bath |                |                |
|-------|---------------------|----------------|----------------|
|       | 2-Fixture Bath      | 3-Fixture Bath | 4-Fixture Bath |
| C-4   | 3,189               | 4,727          | 6,305          |
| C-5   | 3,866               | 6,009          | 7,586          |
| C-6   | 4,636               | 7,389          | 9,164          |
| C-7   | 5,123               | 8,374          | 11,033         |
| C-8   | 6,667               | 9,456          | 13,102         |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"C" CONSTRUCTION - 10 or MORE UNITS**

| Class | 400    | 450    | 500    | 550    | 600    | 650    | 700    | 750    | 800    | 900    | 1000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 86.42  | 82.71  | 80.52  | 78.81  | 77.45  | 76.17  | 75.04  | 74.16  | 73.34  | 72.11  | 70.93  |
| C-4.5 | 93.70  | 89.54  | 87.26  | 85.32  | 83.83  | 82.42  | 81.35  | 80.33  | 79.48  | 78.12  | 76.88  |
| C-5   | 101.49 | 96.89  | 94.52  | 92.49  | 90.75  | 89.32  | 88.11  | 86.96  | 86.01  | 84.63  | 83.25  |
| C-5.5 | 109.89 | 105.00 | 102.32 | 100.21 | 98.28  | 96.71  | 95.42  | 94.23  | 93.20  | 91.59  | 90.21  |
| C-6   | 118.95 | 113.78 | 110.88 | 108.52 | 106.48 | 104.76 | 103.29 | 101.98 | 100.90 | 99.23  | 97.63  |
| C-6.5 | 130.02 | 124.40 | 121.10 | 118.57 | 116.35 | 114.52 | 112.98 | 111.53 | 110.35 | 108.53 | 106.76 |
| C-7   | 142.17 | 135.91 | 132.47 | 129.58 | 127.25 | 125.25 | 123.40 | 121.82 | 120.63 | 118.60 | 116.63 |
| C-7.5 | 162.47 | 155.31 | 151.30 | 148.01 | 145.39 | 143.04 | 141.05 | 139.25 | 137.89 | 135.45 | 133.40 |
| C-8   | 185.28 | 177.23 | 172.61 | 168.86 | 165.84 | 163.17 | 160.79 | 158.88 | 157.23 | 154.61 | 151.99 |
| C-8.5 | 210.98 | 201.65 | 196.45 | 192.30 | 188.72 | 185.78 | 183.22 | 180.82 | 179.01 | 175.93 | 173.06 |

**"C" CONSTRUCTION - 10 or MORE UNITS**

| Class | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   | 2200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| C-4   | 70.12  | 69.43  | 68.74  | 68.24  | 67.76  | 67.38  | 67.07  | 66.72  | 66.52  | 66.25  | 66.00  |
| C-4.5 | 75.93  | 75.18  | 74.49  | 73.93  | 73.34  | 72.96  | 72.56  | 72.30  | 72.02  | 71.79  | 71.42  |
| C-5   | 82.20  | 81.40  | 80.74  | 79.98  | 79.48  | 79.03  | 78.65  | 78.31  | 78.01  | 77.67  | 77.50  |
| C-5.5 | 89.05  | 88.13  | 87.35  | 86.60  | 86.01  | 85.57  | 85.17  | 84.77  | 84.45  | 84.17  | 83.84  |
| C-6   | 96.47  | 95.43  | 94.68  | 93.85  | 93.20  | 92.60  | 92.15  | 91.95  | 91.49  | 91.13  | 90.75  |
| C-6.5 | 105.36 | 104.35 | 103.47 | 102.58 | 101.88 | 101.27 | 100.71 | 100.37 | 100.03 | 99.55  | 99.22  |
| C-7   | 115.26 | 114.12 | 113.08 | 112.17 | 111.30 | 110.66 | 110.16 | 109.79 | 112.13 | 108.92 | 108.54 |
| C-7.5 | 131.68 | 130.43 | 129.28 | 128.21 | 127.17 | 126.49 | 125.89 | 125.48 | 124.94 | 124.39 | 124.06 |
| C-8   | 150.14 | 148.68 | 147.34 | 146.17 | 145.08 | 144.24 | 143.54 | 143.09 | 142.52 | 141.90 | 141.40 |
| C-8.5 | 170.83 | 169.26 | 167.78 | 166.44 | 165.24 | 164.23 | 163.41 | 162.82 | 162.14 | 161.55 | 161.01 |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**10 or MORE UNITS**

| Class | Cost Per Extra Bath |                |                |
|-------|---------------------|----------------|----------------|
|       | 2-Fixture Bath      | 3-Fixture Bath | 4-Fixture Bath |
| C-4   | 2,804               | 4,347          | 5,222          |
| C-5   | 3,383               | 5,123          | 7,389          |
| C-6   | 4,347               | 6,667          | 8,374          |
| C-7   | 5,123               | 7,729          | 10,539         |
| C-8   | 5,894               | 9,276          | 12,017         |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-4 QUALITY**

|  |
|--|
| <b>Foundation</b><br>Light concrete  |
| <b>Floor Structure</b><br>Joints: 2" x 4", 24" o.c.; or 4" concrete  |
| <b>Walls and Exterior</b><br>Framing: 2" x 4" studs, 16" o.c.<br>Sheathing: None<br>Cover: 1/2" redwood siding painted, or light stucco<br>Windows: Wood casements or double hung, painted |
| <b>Roof</b><br>Framing: 2" x 4" rafter, 24" o.c.<br>Cover: 3 ply built-up 15 lb. felt, mopped<br>Overhang: 16", unceiled<br>Gutters: None  |
| <b>Floor Finish</b><br>1" x 4" Douglas Fir tongue and groove; print vinyl tile in kitchen  |
| <b>Interior Finish</b><br>Two coats of sand plaster on wood or gypsum lath glue size and calcimine   |
| <b>Interior Detail</b><br>Trim: One member Douglas Fir, painted<br>Closets: One closet per bedroom; minimum shelving   |
| <b>Bath Detail</b><br>Floors: Print vinyl tile<br>Walls: Plaster, painted<br>Shower: None or metal shower in place of tub  |
| <b>Kitchen</b><br>Base Cabinet: 4' Douglas Fir, painted<br>Wall Cases: Small area; Douglas Fir, painted<br>Countertop/Drain Board: 4' wood or vinyl tile squares                           |
| <b>Plumbing</b><br>Fair quality fixtures; fire sprinklers  |
| <b>Special Features</b><br>None  |
| <b>Electrical</b><br>Knob and tube, Romex® or sheathed wiring; simple fixtures   |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-5 QUALITY**

|  |
|--|
| <b>Foundation</b><br>Reinforced concrete   |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete   |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Line wire and paper<br>Cover: Light stucco<br>Windows: Low-cost aluminum, steel, or wood               |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Composition shingles or composition with tar and pea gravel<br>Overhang: 12" to 16", unceiled<br>Gutters: Over entrances |
| <b>Floor Finish</b><br>Vinyl tile  |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted  |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted<br>Closets: Moderate amount; low-cost doors   |
| <b>Bath Detail</b><br>Floors: Vinyl tile<br>Walls: Drywall and enamel<br>Shower: Plastic faced hardboard   |
| <b>Kitchen</b><br>Base Cabinet: 5' low-cost hardwood veneer<br>Wall Cases: Low-cost hardwood veneer<br>Countertop/Drain Board: 5' plastic laminate                             |
| <b>Plumbing</b><br>Galvanized pipe; low-cost fixtures; fire sprinklers   |
| <b>Special Features</b><br>None  |
| <b>Electrical</b><br>Romex® or sheathed wiring; low-cost fixtures  |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-6 QUALITY**

|  |
|--|
| <b>Foundation</b><br>Reinforced concrete   |
| <b>Floor Structure</b><br>Standard wood frame or reinforced concrete   |
| <b>Walls and Exterior</b><br>Framing: Standard wood frame<br>Sheathing: Line wire and paper<br>Cover: Hardboard siding, wood shingles, low-cost wood siding, or average stucco<br>Windows: Average quality aluminum, steel, or wood sash |
| <b>Roof</b><br>Framing: Standard wood frame<br>Cover: Wood shingle, light shake, good composition shingles, or composition with tar and rock<br>Overhang: 16", unceiled<br>Gutters: 4" galvanized and painted at all eaves               |
| <b>Floor Finish</b><br>Average quality 3/8" square edge hardwood or low-cost carpet; average quality vinyl tile in kitchen and breakfast room  |
| <b>Interior Finish</b><br>Drywall, taped, textured, and painted; colored interior stucco; some wallpaper   |
| <b>Interior Detail</b><br>Trim: Douglas Fir, painted; some low-cost hardwood<br>Closets: Average amount; low-cost wood or metal doors  |
| <b>Bath Detail</b><br>Floors: Vinyl tile<br>Walls: Drywall, taped, and enameled<br>Shower: Average ceramic tile or plastic coated hardboard with a glass door  |
| <b>Kitchen</b><br>Base Cabinet: 6' low-cost hardwood veneer or average pine<br>Wall Cases: Low-cost hardwood veneer or average pine<br>Countertop/Drain Board: 6' average ceramic tile   |
| <b>Plumbing</b><br>Galvanized pipe; average quality fixtures; fire sprinklers  |
| <b>Special Features</b><br>3' average ceramic tile or plastic laminate vanity in bath  |
| <b>Electrical</b><br>Romex® or sheathed wiring; average fixtures   |



**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-7 QUALITY**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b> | Framing: Standard wood frame<br>Sheathing: Drywall<br>Cover: Good hardboard or average siding and masonry veneer on front wall; good stucco on sides and rear<br>Windows: Average aluminum; steel or wood |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Medium shake or composition and large rock<br>Overhang: 30", unceiled<br>Gutters: 6" galvanized and painted at all eaves   |
| <b>Floor Finish</b>       | Average quality tongue and groove hardwood or carpet; average quality sheet vinyl or good quality inlaid vinyl tile in kitchen and breakfast room   |
| <b>Interior Finish</b>    | Drywall, taped, textured, and painted; plaster with putty finish; some wallpaper, average quality hardwood veneer in family room  |
| <b>Interior Detail</b>    | Trim: Douglas Fir, painted; some hardwood members<br>Closets: Average amount with average quality wood doors  |
| <b>Bath Detail</b>        | Floors: Sheet vinyl or vinyl tile<br>Walls: Drywall or smooth plaster and enamel; average ceramic tile over the tub<br>Shower: Average ceramic tile with glass door                                       |
| <b>Kitchen</b>            | Base Cabinet: 12' average quality hardwood veneer<br>Wall Cases: Average quality hardwood veneer<br>Countertop/Drain Board: 12' average ceramic tile or good plastic laminate                             |
| <b>Plumbing</b>           | Galvanized pipe; good fixtures; fire sprinklers   |
| <b>Special Features</b>   | Average quality garbage disposer, range hood and fan; 4' ceramic tile vanity in bath  |
| <b>Electrical</b>         | Romex® or sheathed wiring; average quality fixtures   |

**MULTIPLE-FAMILY RESIDENCES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**D-8 QUALITY**

|                           |   |
|---------------------------|---|
| <b>Foundation</b>         | Reinforced concrete   |
| <b>Floor Structure</b>    | Standard wood frame or reinforced concrete  |
| <b>Walls and Exterior</b> | Framing: Standard wood frame<br>Sheathing: Drywall or 3/8" plywood<br>Cover: Good wood siding with masonry veneer trim on front wall; good stucco on sides and rear<br>Windows: Good aluminum, steel, or wood                 |
| <b>Roof</b>               | Framing: Standard wood frame<br>Cover: Heavy shake<br>Overhang: 30", unceiled, or 24", ceiled<br>Gutters: 8" galvanized and painted at all eaves  |
| <b>Floor Finish</b>       | Good ceramic tile or terrazzo in entry; good quality tongue and groove hardwood or carpet in living, dining, hall, and bedrooms; good quality sheet vinyl or good quality vinyl tile in kitchen, breakfast, and utility rooms |
| <b>Interior Finish</b>    | Drywall with heavy texture and paint; plaster with putty coat finish; some wallpaper or vinyl wall covering; some good hardwood veneer paneling   |
| <b>Interior Detail</b>    | Trim: Douglas Fir, painted; some hardwood members<br>Closets: Ample space; good wood doors; linen closets   |
| <b>Bath Detail</b>        | Floors: Good ceramic tile<br>Walls: Drywall or plaster with vinyl or foil wall cover; good ceramic tile over tub<br>Shower: Good ceramic tile with glass door   |
| <b>Kitchen</b>            | Base Cabinet: 16' good hardwood veneer<br>Wall Cases: Ample good hardwood veneer<br>Countertop/Drain Board: 16' good ceramic tile   |
| <b>Plumbing</b>           | Copper tubing; good fixtures; fire sprinklers   |
| <b>Special Features</b>   | 8' sliding glass door; good quality built-in oven, range, dishwasher, garbage disposer, and range hood and fan; 4' to 6' ceramic tile vanity in bath  |
| <b>Electrical</b>         | Romex® or sheathed wiring; good quality fixtures  |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"D" CONSTRUCTION - 2 or 3 UNITS**

| <b>Class</b> | <b>400</b> | <b>450</b> | <b>500</b> | <b>550</b> | <b>600</b> | <b>650</b> | <b>700</b> | <b>750</b> | <b>800</b> | <b>900</b> | <b>1000</b> |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| D-4          | 93.26      | 89.22      | 86.96      | 85.00      | 83.51      | 82.11      | 80.98      | 79.97      | 79.21      | 77.68      | 76.51       |
| D-4.5        | 101.05     | 96.55      | 94.14      | 92.02      | 90.31      | 88.88      | 87.78      | 86.52      | 85.78      | 84.19      | 82.84       |
| D-5          | 109.42     | 104.56     | 101.96     | 99.63      | 97.87      | 96.28      | 94.96      | 93.69      | 92.90      | 91.25      | 89.73       |
| D-5.5        | 118.48     | 113.23     | 110.45     | 107.90     | 105.97     | 104.34     | 102.99     | 101.50     | 100.60     | 98.78      | 97.22       |
| D-6          | 128.32     | 122.59     | 119.55     | 116.92     | 114.82     | 112.96     | 111.39     | 109.99     | 108.91     | 106.96     | 105.27      |
| D-6.5        | 140.22     | 134.02     | 130.76     | 127.71     | 125.43     | 123.48     | 121.85     | 120.21     | 119.04     | 116.99     | 115.09      |
| D-7          | 153.30     | 146.63     | 142.91     | 139.72     | 137.19     | 134.91     | 133.24     | 131.36     | 130.14     | 127.82     | 125.80      |
| D-7.5        | 175.19     | 167.49     | 163.29     | 159.54     | 156.76     | 154.21     | 152.23     | 150.14     | 148.70     | 146.03     | 143.74      |
| D-8          | 199.79     | 190.97     | 186.23     | 181.99     | 178.68     | 175.86     | 173.65     | 171.08     | 169.62     | 166.58     | 163.96      |
| D-8.5        | 227.39     | 217.45     | 212.01     | 207.18     | 203.51     | 200.16     | 197.64     | 194.74     | 193.06     | 189.73     | 186.62      |

**"D" CONSTRUCTION - 2 or 3 UNITS**

| <b>Class</b> | <b>1100</b> | <b>1200</b> | <b>1300</b> | <b>1400</b> | <b>1500</b> | <b>1600</b> | <b>1700</b> | <b>1800</b> | <b>1900</b> | <b>2000</b> | <b>2200</b> |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D-4          | 75.57       | 74.87       | 74.18       | 73.65       | 73.13       | 72.66       | 72.34       | 71.97       | 71.75       | 71.43       | 71.26       |
| D-4.5        | 81.92       | 81.07       | 80.40       | 79.68       | 79.25       | 78.73       | 78.33       | 78.05       | 77.65       | 77.42       | 77.17       |
| D-5          | 88.74       | 87.79       | 86.97       | 86.33       | 85.80       | 85.28       | 84.82       | 84.45       | 84.11       | 83.85       | 83.58       |
| D-5.5        | 96.10       | 95.01       | 94.20       | 93.46       | 92.93       | 92.33       | 91.96       | 91.46       | 91.07       | 90.84       | 90.54       |
| D-6          | 104.04      | 102.99      | 102.06      | 101.21      | 100.61      | 100.00      | 99.50       | 99.19       | 98.63       | 98.34       | 98.00       |
| D-6.5        | 113.78      | 112.44      | 111.65      | 110.71      | 110.02      | 109.33      | 108.79      | 108.40      | 107.84      | 107.52      | 107.16      |
| D-7          | 124.29      | 123.05      | 121.95      | 121.04      | 120.29      | 119.53      | 118.94      | 118.39      | 117.90      | 117.46      | 117.17      |
| D-7.5        | 142.05      | 140.60      | 139.32      | 138.26      | 137.47      | 136.59      | 135.87      | 135.32      | 134.72      | 134.36      | 133.92      |
| D-8          | 161.95      | 160.46      | 158.85      | 157.72      | 156.66      | 155.75      | 154.94      | 154.39      | 153.65      | 153.08      | 152.67      |
| D-8.5        | 184.53      | 182.53      | 180.89      | 179.55      | 178.40      | 177.35      | 176.44      | 175.65      | 174.87      | 174.30      | 173.74      |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**2 or 3 UNITS**

| <b>Class</b> | <b>Cost Per Extra Bath</b> |                       |                       |
|--------------|----------------------------|-----------------------|-----------------------|
|              | <b>2-Fixture Bath</b>      | <b>3-Fixture Bath</b> | <b>4-Fixture Bath</b> |
| D-4          | 3,424                      | 4,905                 | 6,938                 |
| D-5          | 4,163                      | 6,384                 | 7,864                 |
| D-6          | 4,905                      | 7,124                 | 9,899                 |
| D-7          | 5,460                      | 8,605                 | 11,103                |
| D-8          | 6,938                      | 10,361                | 12,767                |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"D" CONSTRUCTION - 4 to 9 UNITS**

| Class | 400    | 450    | 500    | 550    | 600    | 650    | 700    | 750    | 800    | 900    | 1000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 87.84  | 83.93  | 81.77  | 80.08  | 78.56  | 77.31  | 76.45  | 75.32  | 74.55  | 73.16  | 71.97  |
| D-4.5 | 95.10  | 90.92  | 88.67  | 86.70  | 85.06  | 83.71  | 82.74  | 81.55  | 80.81  | 79.27  | 78.05  |
| D-5   | 103.02 | 98.41  | 96.02  | 93.89  | 92.14  | 90.66  | 89.49  | 88.33  | 87.55  | 85.87  | 84.44  |
| D-5.5 | 111.64 | 106.61 | 103.85 | 101.64 | 99.83  | 98.24  | 96.97  | 95.54  | 94.82  | 93.00  | 91.45  |
| D-6   | 120.84 | 115.53 | 112.49 | 110.10 | 107.97 | 106.32 | 105.08 | 103.48 | 102.68 | 100.62 | 99.19  |
| D-6.5 | 132.09 | 126.23 | 123.04 | 120.39 | 118.14 | 116.26 | 114.86 | 113.20 | 112.24 | 110.03 | 108.40 |
| D-7   | 144.38 | 138.05 | 134.48 | 131.61 | 129.17 | 127.11 | 125.54 | 123.71 | 122.60 | 120.33 | 118.39 |
| D-7.5 | 164.94 | 157.70 | 153.63 | 150.45 | 147.54 | 145.24 | 143.51 | 141.45 | 140.22 | 137.56 | 135.32 |
| D-8   | 188.21 | 179.84 | 175.23 | 171.52 | 168.36 | 165.64 | 163.62 | 161.36 | 159.89 | 156.89 | 154.38 |
| D-8.5 | 214.15 | 204.67 | 199.47 | 195.25 | 191.55 | 188.54 | 186.26 | 183.67 | 181.97 | 178.47 | 175.65 |

**"D" CONSTRUCTION - 4 to 9 UNITS**

| Class | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   | 2200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 71.31  | 70.57  | 69.90  | 69.28  | 68.89  | 68.47  | 68.12  | 67.86  | 67.54  | 67.19  | 67.09  |
| D-4.5 | 77.19  | 76.44  | 75.71  | 75.03  | 74.54  | 74.14  | 73.74  | 73.46  | 73.07  | 72.80  | 72.61  |
| D-5   | 83.59  | 82.74  | 81.97  | 81.32  | 80.80  | 80.27  | 79.96  | 79.57  | 79.21  | 78.86  | 78.67  |
| D-5.5 | 90.60  | 89.48  | 88.76  | 88.00  | 87.47  | 86.96  | 86.51  | 86.18  | 85.77  | 85.37  | 85.22  |
| D-6   | 98.11  | 96.96  | 96.11  | 95.43  | 94.82  | 94.15  | 93.67  | 93.26  | 92.80  | 92.59  | 92.24  |
| D-6.5 | 107.22 | 106.06 | 105.07 | 104.21 | 103.67 | 103.01 | 102.44 | 101.99 | 101.44 | 101.09 | 100.88 |
| D-7   | 117.21 | 115.97 | 114.92 | 113.95 | 113.22 | 112.53 | 112.00 | 111.44 | 110.94 | 110.55 | 110.27 |
| D-7.5 | 133.91 | 132.47 | 131.35 | 130.24 | 129.37 | 128.54 | 127.95 | 127.38 | 126.77 | 126.36 | 126.00 |
| D-8   | 152.68 | 151.14 | 149.73 | 148.50 | 147.64 | 146.64 | 145.91 | 145.26 | 144.55 | 144.09 | 143.74 |
| D-8.5 | 173.88 | 172.00 | 170.45 | 169.08 | 168.04 | 166.88 | 166.06 | 165.39 | 164.55 | 163.97 | 163.61 |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**4 to 9 UNITS**

| Class | Cost Per Extra Bath |                |                |
|-------|---------------------|----------------|----------------|
|       | 2-Fixture Bath      | 3-Fixture Bath | 4-Fixture Bath |
| D-4   | 2,961               | 4,439          | 5,920          |
| D-5   | 3,700               | 4,905          | 7,124          |
| D-6   | 4,439               | 6,937          | 8,604          |
| D-7   | 5,183               | 7,863          | 10,361         |
| D-8   | 6,199               | 8,881          | 12,306         |

**MULTIPLE-FAMILY RESIDENCES  
SQUARE FOOT AVERAGE UNIT AREA COST TABLES**

**"D" CONSTRUCTION - 10 or MORE UNITS**

| Class | 400    | 450    | 500    | 550    | 600    | 650    | 700    | 750    | 800    | 900    | 1000   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 83.01  | 78.98  | 77.31  | 75.72  | 74.18  | 73.06  | 71.97  | 71.15  | 70.39  | 69.17  | 68.14  |
| D-4.5 | 89.92  | 85.57  | 83.71  | 81.98  | 80.40  | 79.11  | 78.05  | 77.00  | 76.25  | 74.89  | 73.81  |
| D-5   | 97.32  | 92.64  | 90.66  | 88.77  | 86.97  | 85.74  | 84.45  | 83.51  | 82.69  | 81.09  | 80.03  |
| D-5.5 | 105.43 | 100.37 | 98.24  | 96.12  | 94.20  | 92.71  | 91.46  | 90.31  | 89.43  | 87.89  | 86.59  |
| D-6   | 114.17 | 108.54 | 106.32 | 104.12 | 102.06 | 100.46 | 99.19  | 97.88  | 96.83  | 95.11  | 93.75  |
| D-6.5 | 124.80 | 118.73 | 116.26 | 113.89 | 111.65 | 109.89 | 108.40 | 106.99 | 105.96 | 104.04 | 102.49 |
| D-7   | 136.41 | 129.76 | 127.12 | 124.37 | 121.95 | 120.12 | 118.39 | 116.94 | 115.77 | 113.72 | 112.02 |
| D-7.5 | 155.88 | 148.34 | 145.24 | 142.19 | 139.32 | 137.25 | 135.32 | 133.57 | 132.28 | 129.89 | 128.06 |
| D-8   | 177.78 | 169.14 | 165.65 | 162.12 | 158.85 | 156.46 | 154.39 | 152.39 | 150.78 | 148.27 | 146.01 |
| D-8.5 | 202.48 | 192.51 | 188.54 | 184.60 | 180.89 | 178.09 | 175.65 | 173.45 | 171.71 | 168.71 | 166.22 |

**"D" CONSTRUCTION - 10 or MORE UNITS**

| Class | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   | 2200   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-4   | 67.33  | 66.65  | 66.07  | 65.55  | 64.96  | 64.57  | 64.39  | 64.06  | 63.81  | 63.50  | 63.38  |
| D-4.5 | 72.95  | 72.29  | 71.56  | 70.96  | 70.36  | 69.95  | 69.69  | 69.41  | 69.05  | 68.81  | 68.60  |
| D-5   | 78.98  | 78.17  | 77.42  | 76.80  | 76.22  | 75.83  | 75.44  | 75.07  | 74.86  | 74.45  | 74.33  |
| D-5.5 | 85.57  | 84.64  | 83.92  | 83.18  | 82.44  | 82.12  | 81.67  | 81.39  | 80.99  | 80.66  | 80.47  |
| D-6   | 92.64  | 91.72  | 90.84  | 90.08  | 89.35  | 88.89  | 88.57  | 88.11  | 85.42  | 87.37  | 87.04  |
| D-6.5 | 101.32 | 100.25 | 99.30  | 98.51  | 97.59  | 97.17  | 96.81  | 96.29  | 95.91  | 95.48  | 95.25  |
| D-7   | 110.67 | 109.57 | 108.54 | 107.62 | 106.71 | 106.27 | 105.75 | 105.29 | 104.76 | 104.34 | 104.12 |
| D-7.5 | 126.43 | 125.15 | 124.01 | 123.05 | 122.04 | 121.47 | 120.91 | 120.34 | 119.78 | 119.37 | 118.92 |
| D-8   | 144.18 | 142.74 | 141.44 | 140.23 | 139.18 | 138.42 | 137.91 | 137.22 | 136.70 | 136.02 | 135.67 |
| D-8.5 | 164.17 | 162.54 | 160.95 | 159.72 | 158.45 | 157.60 | 156.98 | 156.20 | 155.53 | 154.83 | 154.50 |

All multiple-family residence costs assume one bath per unit. Use the following table for adding the cost of extra baths.

**10 or MORE UNITS**

| Class | Cost Per Extra Bath |                |                |
|-------|---------------------|----------------|----------------|
|       | 2-Fixture Bath      | 3-Fixture Bath | 4-Fixture Bath |
| D-4   | 2,961               | 4,163          | 4,905          |
| D-5   | 3,425               | 4,905          | 5,143          |
| D-6   | 4,163               | 6,199          | 7,864          |
| D-7   | 5,183               | 7,401          | 9,899          |
| D-8   | 5,920               | 8,419          | 11,103         |

# AH 531.35: MANUFACTURED HOUSING

## INTRODUCTION

A manufactured home is a structure transportable in one or more sections, designed and equipped to be used with or without a permanent foundation. A manufactured home does not include a recreational vehicle or commercial coach.

A manufactured home can range from 8 to 36 feet wide and up to 80 feet long. Manufactured homes assembled from two or three attached sections are known as *double wide* or *triple wide*. Telescoping and/or attached rooms to the side of a manufactured home are known as *tip-out*, *expando*, or *tag-a-long* units. Include all sections in the total square footage computations.

## SITE INFLUENCE WITHIN MOBILEHOME PARKS

It is important to recognize that the full cash value of a manufactured home on rented or leased land does not include any value attributable to that rented or leased land. Section 5803(b) states:

The Legislature finds and declares that, because owners of manufactured homes subject to property taxation on rented or leased land do not own the land on which the manufactured home is located and are subject to having the manufactured home removed upon termination of tenancy, "full cash value" for purposes of subdivision (a) does not include any value attributable to the particular site where the manufactured home is located on rented or leased land which would make the sale price of the manufactured home at that location different from its price at some other location on rented or leased land. In determining the "full cash value" of a manufactured home on rented or leased land, the assessor shall take into consideration, among other relevant factors, cost data issued pursuant to Section 401.5 or sales prices listed in recognized value guides for manufactured homes, including, but not limited to, the National Automobile Dealers Association's Manufactured Housing Appraisal Guide.

Site value for manufactured homes located in parks may be attributable to factors such as:

- Vacancy levels in parks in the surrounding area
- Vacancy levels in the park in which the subject manufactured home is located
- Desirability of the park—as demonstrated by density, health and recreational amenities, quality of management, and quality of maintenance
- Location of the space within the park
- Space size
- Rent control

Site value for manufactured homes located on rented or leased land outside parks is attributable mainly to location.

## TYPES OF SITE INFLUENCE

The effect of the site on the sale price of a manufactured home can be either positive or negative. In the assessment of a manufactured home, a county assessor must not include any add-on value for positive site influence nor subtract any value where a negative site value exists. It is the site, not the manufactured home, that is entitled to a reduction in value. Such negatively impacted sites cannot command the same rental level as comparable sites that do not face the same adverse consequences. As a result, the manufactured home owners pay reduced rents for the negative sites; however, they should pay proportional taxes on the manufactured homes because the homes perform as constructed without any decrease in value.

## APPROACHES TO VALUE

The three approaches to value, including the method using a recognized value guide, are discussed below. The value indicator derived from a recognized value guide should be compared with the indicated values derived from the other two valuation approaches, where appropriate, to ensure that the value indicated by the value guide is within the market range.

Of the approaches to value described below, the replacement cost approach, using an indicator from a recognized value guide plus the value of all manufactured home accessories, buildings, and structures (items such as skirting, awnings, cabanas, storage cabinets, porches, flatwork, carports, garages, and landscaping) provides a county assessor with the best indication of value excluding site influence. Using this approach assures compliance with Revenue and Taxation Code section 5803(b) which requires that a county assessor must take into consideration values indicated by recognized value guides.

### COST APPROACH

In the cost approach, costs are not derived from actual building costs for new manufactured homes; instead, costs are estimated from retail sales. There are two cost approaches for manufactured homes: the *replacement cost approach* and the *replacement cost new less depreciation approach*.

#### Replacement Cost Approach

The *replacement cost approach* is an estimate of the value of a manufactured home that can be determined by locating the indicated value for the identical manufactured home in a recognized value guide such as the National Automobile Dealers Association's Manufactured Housing Appraisal Guide (N.A.D.A.) which contains an estimated value for most manufactured homes. The values are developed from analyzing the sales of manufactured homes in the United States and adjusting the sale prices for any site value. Since sales data exists for most makes, models, sizes, and ages of manufactured homes, an approximate replacement cost for a manufactured home of a specific make, model, size, and age can be determined using a recognized value guide.

#### Replacement Cost New Less Depreciation Approach

The *replacement cost new less depreciation* (RCNLD) approach estimates the cost of a new manufactured home and then reduces this cost by an estimate of depreciation. A cost estimate

may be developed using square foot costs found in this handbook or other commercial cost services such as *Marshall Swift Residential Cost Handbook*. Costs in this handbook and Marshall Swift costs are derived from retail sales of new manufactured homes. In using this approach, the estimate of depreciation is critical.

### **COMPARATIVE SALES APPROACH**

In the *comparative sales approach*, the appraiser derives a value indicator by comparing the manufactured home being appraised to similar manufactured homes which have recently sold, with appropriate adjustments to the selling prices for any differences. Frequently, the selling prices of comparable manufactured homes located on rented or leased land will include an increment attributable to site value. In order to comply with Revenue and Taxation Code section 5803(b), the effect of site value upon the sales price must be extracted from each sale before the sale can be used as a comparable. Since site value is inherent in most sales prices, it is more difficult to apply the comparative sales approach to manufactured homes located on rented or leased land.

### **INCOME APPROACH**

In the *income approach*, an anticipated income stream is converted into an estimate of value. The income approach is most appropriate for income-producing property. A gross rent multiplier can be developed if there is an active rental market for manufactured homes. However, a reliable multiplier may be difficult to develop since many mobilehome parks either prohibit or discourage rentals. In addition, most rents will reflect an increment attributable to location which must be extracted.

## **BASIS OF COSTS**

Costs in this handbook are based upon a variety of indicators, including dealers' sales and manufacturers' list prices.

The base cost factors are listed as retail square foot costs applicable to single- and multi-unit manufactured housing. The accessory and component costs are based upon retail in-place cost to the consumer.

Oftentimes, the length expressed in the manufactured housing industry is the overall length which would include the tow bar. The tow bars are normally about three feet long. The costs in this handbook are *net* lengths and **do not include the tow bar**. We suggest the appraiser measure the manufactured home to be certain that actual dimensions are calculated.

The cost factors in this handbook are to be used only in the valuation of manufactured homes that are in excess of 8 feet wide or in excess of 40 feet long, and/or in excess of 320 square feet.



## MANUFACTURED HOME ACCESSORY AND COMPONENT COSTS

The accessory and component cost listing represents retail in-place costs. A price range is indicated to account for variations in quality. Additional accessory and components are included in the basic cost as described in the applicable specifications. Some costs not included in this chapter may be found in other chapters of this manual, for example, concrete work or yard improvements. Concrete perimeter foundation costs are included in this handbook. *Foundations vary in type and cost. They are generally not included in the purchase price of a new manufactured home and must be added.*

### STANDARD CLASSIFICATION SYSTEMS

The square foot cost tables are constructed and arranged to be used with the Assessors' Standard Classification System. This is a system of tabulating and arranging known costs according to physical variations that cause cost differentials. The manufactured housing classification system is designed to coincide with the single-family residential quality class system. For example, the lowest class of manufactured home is a 4. This class is not currently in production and will not meet current building codes. However, older manufactured homes may be found which appear to be inferior to Class 5. No specifications are given for this class because of the great variation possible. Appraisal judgment must be used to estimate this class based on a comparison with Class 5. The Class 5 is given to the lowest priced manufactured home in current production. The quality of all the features is minimal, similar to those found in a minimum quality tract home. The Class 6 manufactured home is of average quality in a price range usually found in the older type mobilehome parks. The Class 7 manufactured home is above average in quality and is the most common and represents the average price manufactured home usually found in the majority of mobilehome parks. It is the equivalent of the average tract home.

Classes 8 and 9 reflect increasing quality, with Class 9 being the highest quality made. Very few Class 9 manufactured homes exist and care must be used before assigning this quality class.

The specifications for each quality class make a distinction between classes. This distinction often shows in the *quality* of a feature and not whether the feature is present. The same feature may exist in different classes, but the quality of the feature will help to determine the classification. Conversely, some features may be included in a particular classification, while in another class the same feature must be treated as an additive.

### LOCATION ADJUSTMENTS

Costs in this handbook are developed from sources in the Sacramento and San Joaquin Valleys, Southern California, and the San Francisco Bay area. Generally, **no adjustment for location is needed in these areas**. Adjustments for freight may be necessary. Transportation and set-up rates for each unit are negotiable between the dealer and purchaser. Local dealers or purchasers must be contacted for the amount charged which is applicable to a particular location. These charges include transportation fees, mileage charges, set-up, tie down, pilot cars, any normal or extraordinary permit costs not included in the sales contract, or other items. **For manufactured homes, do not use the location maps in Chapter 531.10, pages 24 and 25.**

**MANUFACTURED HOUSING  
BUILDING SPECIFICATIONS  
QUALITY CLASS 5**

This is the lowest quality manufactured home in current production. The features are of minimal quality and are similar to those found in a minimum quality tract home. These homes are typically found in older mobilehome parks.

|                            |  |
|----------------------------|--|
| <b>Roof</b>                | Painted lightweight galvanized steel with minimum pitch; or asphalt shingles   |
| <b>Exterior Walls</b>      | Covering is pre-finished aluminum panels with exposed hex-head holding screw fasteners; panels of modified corrugated pattern; panels are not imitation siding or flush type; exterior wall thickness 3" to 4"; lightweight skirting |
| <b>Trim and Sash</b>       | No ornamental trim; minimum window area and sash   |
| <b>Interior</b>            | Walls are pre-finished 3/16" fire rated paneling; hardboard or fiberboard ceiling cover with exposed fasteners and/or stapled holding strips; 7' 6" ceiling heights  |
| <b>Floors</b>              | Vinyl; lightweight carpet in living room and master bedroom only   |
| <b>Heating</b>             | Forced air furnace; minimum ducting and outlets  |
| <b>Kitchen</b>             | 10± linear foot plastic laminate counter; minimum quality plywood cabinets; built-in or drop-in range and oven   |
| <b>Baths and Plumbing</b>  | One bath; fiberglass tub or shower with curtain; small 4' plastic marble vanity; minimum quality cabinets  |
| <b>Bedrooms</b>            | Five to six linear feet of wardrobe; plain plywood sliding doors   |
| <b>Insulation</b>          | Fully insulated floors, side walls, and ceilings   |
| <b>Exterior Components</b> | Set on concrete and/or metal piers; axle and wheel assembly for each towable section   |

**MANUFACTURED HOUSING  
BUILDING SPECIFICATIONS  
QUALITY CLASS 6**

This is the average quality manufactured home in a price range usually found in the older type mobilehome parks.

|                            |   |
|----------------------------|---|
| <b>Roof</b>                | One piece fabricated steel; minimum pitch; small overhang in front; or asphalt shingles   |
| <b>Exterior Walls</b>      | Covering is pre-finished aluminum siding or flush-type Masonite® panels with some concealed fasteners; exterior wall thickness is 3" to 4"; skirting is lightweight or Masonite® hardboard panels             |
| <b>Trim and Sash</b>       | No trim; exterior decoration two types of color; coordinated exterior covering; tract house size and quality windows; optional 6' sliding glass door  |
| <b>Interior</b>            | Pre-finished fire rated plywood paneling or partial drywall; acoustical tile ceiling; 8' ceiling height; drapes in living room, dining room, and bedrooms   |
| <b>Floors</b>              | Carpet with 1/2" thick pad in living, dining, and bedrooms; vinyl in other areas  |
| <b>Heating</b>             | Forced air furnace; ducting in all rooms; perimeter floor return system; optional air conditioning  |
| <b>Kitchen</b>             | 12± linear foot plastic laminate counter; average quality plywood cabinets with raised panel doors; built-in range and oven, hood and fan; optional dishwasher  |
| <b>Baths and Plumbing</b>  | 1 and 3/4 baths; fiberglass shower with glass or plastic door; fiberglass or enameled steel tub; 4 to 5 linear foot cultured marble vanity single basin; average quality cabinets; 30-gallon hot water heater |
| <b>Bedrooms</b>            | 8± linear feet wardrobe; pre-finished and grooved plywood doors; mirrored wardrobe door in master bedroom   |
| <b>Insulation</b>          | Fully insulated floors, side walls, and ceilings  |
| <b>Exterior Components</b> | Set on concrete and/or metal piers; axle and wheel assembly for each towable section  |

**MANUFACTURED HOUSING  
BUILDING SPECIFICATIONS  
QUALITY CLASS 7**

This manufactured home is above average in quality. This class of home is usually found in the newer modern mobilehome parks.

|                            |   |
|----------------------------|---|
| <b>Roof</b>                | One piece white baked enamel metal; asphalt shingles on gable accented roof   |
| <b>Exterior Walls</b>      | Pre-finished aluminum (shiplap) siding and/or flush-type Masonite® panels with concealed fasteners; designer coordinated exterior colors; 4" exterior wall thickness; aluminum skirting                                 |
| <b>Trim and Sash</b>       | Little or no trim; two-tone exterior coverings; large, good, house-type sash; some picture windows; optional 6' sliding glass door  |
| <b>Interior</b>            | Pre-finished and grooved hardwood, plywood paneling, or drywall; 8' acoustical plank-type ceilings; decorator coordinated drapes in all rooms except kitchen and baths; optional vaulted ceilings with decorative beams |
| <b>Floors</b>              | Carpet with 1/2" thick pad in all rooms except baths and kitchen; vinyl in kitchen and baths  |
| <b>Heating</b>             | 80,000 BTU upflow or downflow forced air furnace; ducting to all rooms; optional air conditioning and fireplace   |
| <b>Kitchen</b>             | 14± linear foot plastic laminate counter; good quality cabinets; built-in range and oven with a hood and fan; optional dishwasher and pantry  |
| <b>Baths and Plumbing</b>  | 2 baths; vent fans; fiberglass shower with glass or plastic door; fiberglass or enameled steel tub; 6 to 8 linear foot cultured marble vanity, twin basin master bath; good cabinets; 30 to 40 gallon water heater      |
| <b>Bedrooms</b>            | 10± linear foot wardrobe; floor to ceiling mirrored sliding doors in master bedroom   |
| <b>Insulation</b>          | Fully insulated floors, walls, and ceilings   |
| <b>Exterior Components</b> | Set on concrete and/or metal piers; axle and wheel assembly for each towable section  |

**MANUFACTURED HOUSING  
BUILDING SPECIFICATIONS  
QUALITY CLASS 8**

This is the highest price manufactured home in a price range usually found in the majority of modern mobilehome parks. This is a luxury type manufactured home. It not only has extensive features, but of more importance, they are of a good quality.

|                            |  |
|----------------------------|--|
| <b>Roof</b>                | One piece white baked enamel metal; asphalt shingles on gable accented roof; residential-type front and rear overhangs   |
| <b>Exterior Walls</b>      | Pre-finished shiplap aluminum siding and/or flush-type Masonite® panels with concealed fasteners; designer coordinated exterior colors; exterior walls 4" thick; aluminum skirting   |
| <b>Trim and Sash</b>       | Painted aluminum and/or imitation stone (fiberglass) trim; large amount of good house-type sash; picture windows; sliding glass door; recessed entry   |
| <b>Interior</b>            | Pre-finished and grooved hardwood paneling or drywall; careful workmanship throughout; vaulted, decorative beam, and/or acoustical plank-type ceilings; 8' to 8' 6" ceiling height; floor to ceiling drapes over sheer underlays in living room and dining room; raised panel doors; window sills                                  |
| <b>Floors</b>              | Carpet with 1/2" thick pad in all rooms except guest bath and utility room; vinyl tile in kitchen, utility, and guest bath   |
| <b>Heating</b>             | 80,000 to 110,000 BTU upflow or downflow air condition ready furnace with exterior access door; ducting to all rooms; optional air conditioning and fireplace  |
| <b>Kitchen</b>             | Circular or elaborate kitchen; walk-in pantry; 16± linear feet of plastic laminate counter; good quality pre-finished wood cabinets with special hardware; lazy susan corner shelves; built-in range and oven, hood and fan, and dishwasher; dropped luminous ceiling with fluorescent lighting; island work space; microwave oven |
| <b>Baths and Plumbing</b>  | 2 baths; vent fans; master bath will have two basins, sunken tub, and stall shower; good quality medicine cabinets and fixtures; 6± linear foot cultured marble vanities; good cabinets; one piece fiberglass shower in guest bath; 30 to 40 gallon water heater; separate commode closet  |
| <b>Bedrooms</b>            | 9 to 14 linear foot floor to ceiling mirrored sliding wardrobe doors in master bedroom, or walk-in closets   |
| <b>Utility Room</b>        | 220 volt wiring or gas for dryer and plumbing for washer; built-in utility table; laundry sink   |
| <b>Insulation</b>          | Fully insulated floors, walls, and ceilings  |
| <b>Exterior Components</b> | Set on concrete and/or metal piers; axle and wheel assembly for each towable section   |

**MANUFACTURED HOUSING  
BUILDING SPECIFICATIONS  
QUALITY CLASS 9**

This quality class is the most luxurious manufactured home listed. Care should be used before assigning this class because only a few manufacturers make a manufactured home of this overall quality level.

|                            |   |
|----------------------------|---|
| <b>Roof</b>                | Gable accented roof; asphalt shingles; roof pitch of 3" in 12" or more; residential-type front and rear overhangs   |
| <b>Exterior Walls</b>      | Pre-finished shiplap aluminum (house type) horizontal siding or 1/2" Masonite® hardwood siding; decorative stone accent; skirting matches exterior wall material; designer coordinated exterior colors; 6" exterior wall construction   |
| <b>Trim and Sash</b>       | Painted aluminum and/or imitation stone (fiberglass) trim; large amount of good house-type sash; picture/bay windows; sliding glass doors; recessed entry; porch lights at exterior doors; dual glazed vinyl windows  |
| <b>Interior</b>            | Expensive hardwood paneling or drywall; careful workmanship throughout; coffered or vaulted ceiling with beams in living, dining, and family rooms; plank-type acoustical tile ceilings in bedrooms and utility room; 8' to 10' ceiling; wet bar; mirrored walls; built-in buffet cabinet in family and/or living rooms; custom drapes with sheer under-curtains in living room, dining room, and master bedroom; raised panel doors; skylights; window sills |
| <b>Floors</b>              | Hardwood or ceramic tile entry, deluxe carpet with foam padding in bedrooms, dining, living, and family rooms; vinyl tile in utility and guest bath. Good quality vinyl tile or hardwood flooring in kitchen.   |
| <b>Heating</b>             | 110,000 BTU upflow air condition ready forced air furnace with exterior access door; ducting to all rooms; optional air conditioning and fireplace; dual zone heating in larger units   |
| <b>Kitchen</b>             | 18± linear feet of plastic laminate or ceramic tile counter top; good quality pre-finished wood cabinets; special hardware; lazy susan corner shelves; dropped luminous ceiling; built-in range and oven, hood and fan, microwave oven, and dishwasher; broom and storage cabinets; island work space; walk-in pantry; may have good quality vinyl tile flooring  |
| <b>Baths and Plumbing</b>  | 2 to 2 ¾ baths; 8 fixtures; master bath has two basins, garden or sunken tub, one-piece fiberglass shower with glass door; good quality medicine cabinets; 4± linear feet of mirror over 8± linear feet of cultured marble or ceramic tile sink top; decorative faucets; 40 gallon water heater; separate commode closet  |
| <b>Bedrooms</b>            | 9 to 14 linear feet of floor to ceiling sliding mirrored wardrobe doors, or spacious walk-in closets  |
| <b>Utility Room</b>        | 220 volt wiring or gas for dryer and plumbing for washer; built-in utility table; laundry sink  |
| <b>Insulation</b>          | Fiberglass insulation; R-22 to R-33 in ceilings; R-15 to R-22 in floors and walls   |
| <b>Exterior Components</b> | Set on concrete and/or metal piers; axle and wheel assembly for each towable section  |

**MANUFACTURED HOUSING  
SQUARE FOOT AREA COST TABLE**

|              | <b>321-</b> | <b>501-</b> | <b>701-</b> | <b>901-</b> | <b>1101-</b> | <b>1301-</b> | <b>1501-</b> | <b>1701-</b> | <b>1901-</b> | <b>2101-</b> | <b>2301-</b> |
|--------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Class</b> | <b>500</b>  | <b>700</b>  | <b>900</b>  | <b>1100</b> | <b>1300</b>  | <b>1500</b>  | <b>1700</b>  | <b>1900</b>  | <b>2100</b>  | <b>2300</b>  | <b>2500</b>  |
| 4            | 46.14       | 45.08       | 44.02       | 39.84       | 38.87        | 37.82        | 36.82        | 35.87        | 34.87        | 33.98        | 32.89        |
| 4.5          | 48.49       | 47.45       | 46.38       | 42.04       | 41.06        | 40.05        | 39.07        | 38.08        | 37.08        | 36.10        | 35.07        |
| 5            | 51.18       | 50.15       | 49.08       | 44.54       | 43.52        | 42.54        | 41.57        | 40.54        | 39.57        | 38.59        | 37.61        |
| 5.5          | 54.39       | 53.31       | 52.27       | 48.87       | 46.49        | 45.51        | 44.54        | 43.52        | 42.54        | 41.57        | 40.54        |
| 6            | 57.87       | 56.83       | 55.75       | 52.21       | 49.72        | 48.73        | 47.74        | 46.73        | 45.76        | 44.76        | 43.77        |
| 6.5          | 62.15       | 61.05       | 60.03       | 56.29       | 53.67        | 52.69        | 51.68        | 50.71        | 49.72        | 48.73        | 47.74        |
| 7            | 66.41       | 65.38       | 64.23       | 60.33       | 57.63        | 56.61        | 55.67        | 54.66        | 53.67        | 52.69        | 51.68        |
| 7.5          | 71.26       | 70.12       | 69.10       | 64.91       | 63.88        | 62.86        | 61.85        | 60.84        | 59.83        | 58.78        | 57.82        |
| 8            | 76.26       | 75.20       | 74.16       | 71.06       | 70.03        | 69.02        | 67.94        | 66.93        | 65.84        | 64.86        | 63.84        |
| 8.5          | 81.37       | 80.27       | 79.23       | 78.19       | 77.07        | 76.01        | 74.90        | 73.88        | 72.79        | 71.75        | 70.67        |
| 9            | 86.43       | 85.35       | 84.29       | 83.20       | 82.14        | 81.07        | 80.02        | 78.93        | 77.88        | 76.83        | 75.75        |

**NOTE:** The above cost factors are to be used only in the valuation of manufactured homes that are in excess of 8 feet in width or in excess of 40 feet in length, and/or in excess of 320 square feet. To compute square footage, measure the exterior perimeter of the unit(s) at the floor level. DO NOT INCLUDE THE TOW BAR.

Cost factors for all manufactured home quality classes include a cost for forced-air heating. Air conditioning is an additive. These cost factors do not include an allowance for park location value.

**FOUNDATION**

|   |                                |                    |
|---|--------------------------------|--------------------|
| <u>Single Story</u>   |                                |                    |
| For units on permanent foundations  | 1,000 sq. ft. to 1,800 sq. ft. | \$3,400 to \$4,100 |
|   | 1,801 sq. ft. to 3,000 sq. ft. | \$4,101 to \$5,000 |
| <u>Two Story</u>  |                                |                    |
| Use the footprint of the first story for square foot calculation of foundation. |                                |                    |

## MANUFACTURED HOUSING

### AIR CONDITIONING

| <u>Type</u>   | <u>Cost</u>          |
|---|----------------------|
| Central Air for Ready Furnace Using Existing Ducts          |                      |
| 2 Ton                      Approximately 800 - 1100 sq. ft. | 2,867                |
| 2 1/2 - 3 Ton            Approximately 1101 - 1600 sq. ft.  | 3,294                |
| 4 - 5 Ton                 Approximately 1601 - 2500 sq. ft. | 3,615    -    4,253  |
|   | <u>Cost Per Unit</u> |
| Thru-wall Small Unit (1/2 H.P. 6,000 BTU)                   | 1,102                |
| Thru-wall Large Unit (1 H.P. 12,000 BTU)                    | 1,399                |
| Evaporative Cooler--Roof Mounted                            | 1,250    -    1,567  |
| Wired Only for Air Conditioning                             | 201    -    417      |

### BUILT-INS

| <u>Type</u>   | <u>Cost Each</u>    |
|---|---------------------|
| Dishwasher (included in Class 7, 8, or 9)                       | 809    -    1,002   |
| Garbage Disposal (included in all base cost, deduct if missing) | 168    -    327     |
| Built-in Microwave Oven   | 665    -    1,328   |
| Trash Compactor   | 734    -    925     |
| Wet Bar (walk-up--if not included in class)                     | 673    -    801     |
| Wet Bar (walk behind--if not included in class)                 | 2,194    -    2,432 |
| Separate Shower Master Bath                                     | 763    -    962     |
| One-half Bath: Toilet, Sink, and Pullman                        | 1,456    -    1,542 |
| Bathroom Sink or Laundry Sink                                   | 321                 |
| Fireplace (permanent--includes flue)                            | 2,835    -    3,851 |
| Fireplace (free standing--includes flue)                        | 1,294    -    2,309 |
| Built-in Buffet-Hutch (1 hutch included in Class 8)             | 1,018    -    1,281 |
| Jetted Tub in Master Bath                                       | 1,186    -    1,449 |

### SKIRTING

| <u>Type</u>                            | <u>Cost Per Linear Foot</u> |
|--|-----------------------------|
| Lightweight Aluminum Panels            | 7.08                        |
| Lap Aluminum Siding                    | 13.41                       |
| Painted Masonite® Panels               | 14.16                       |
| Flagstone-type Aluminum Panels         | 13.41                       |
| Concrete Composite Panels              | 17.32    -    21.41         |
| Vinyl Panels                           | 11.33                       |
| Brick or Stone - Cost per Surface Foot | 18.71                       |

### STORAGE BUILDINGS (Floor Included)

| <u>Type</u>             | <u>Cost Per Square Foot</u> |
|-------------------------|-----------------------------|
| Aluminum Exterior       | 14.44                       |
| Enameled Steel Exterior | 11.35                       |
| Masonite®               | 22.68                       |

### TIE DOWNS

| <u>Type</u>                   | <u>Cost</u>         |
|-------------------------------|---------------------|
| Cork Screw Anchors and Straps | 83    -    124 Each |



## MANUFACTURED HOUSING

### STEPS AND RAILS

|                  | <u>Cost</u> |       |
|------------------|-------------|-------|
| Fiberglass Steps | 205         | - 313 |
| Rail             | 44          | - 69  |

### UPGRADED COMPONENTS

| <u>Type</u>      | <u>Cost</u> |         |
|------------------|-------------|---------|
| Upgraded Carpets | 1,212       | - 3,030 |
| Upgraded Drapes  | 1,031       | - 2,578 |

### PORCHES AND DECKS (No Roofs Included)

| <u>Type</u>   | <u>Cost Per Square Foot</u> |         |
|---|-----------------------------|---------|
| Wooden Deck with Outdoor Carpet, Handrails, Skirting, and Steps (manufactured home floor level) | 17.01                       | - 22.66 |

### CARPORT, PORCH, AND DECK ROOFS

| <u>Type</u>  | <u>Cost Per Square Foot</u> |         |
|--|-----------------------------|---------|
| Aluminum Supports and Roof Cover - Free Standing     | 10.31                       | - 13.26 |
| Aluminum Supports and Roof Cover - Attached to House | 6.56                        | - 9.33  |
| Wooden Supports and Enameled Steel Cover             | 11.78                       | - 14.73 |

### SCREEN WALLS FOR PORCHES AND DECKS

| <u>Type</u>   | <u>Cost Per Square Foot</u> |       |
|---|-----------------------------|-------|
| Wood Frame with Screen Walls and Door                       |                             | 23.97 |
| Wood or Aluminum Frame with Screen and Glass Walls and Door |                             | 83.84 |

### EXTRA INSULATION PACKAGE

| <u>Type</u>                             | <u>Cost Per Square Foot</u> |        |
|---|-----------------------------|--------|
| Minimum Fiberglass                      | 0.81                        | - 1.19 |
| R-11 Floor, R-11 Sidewall, R-22 Ceiling | 1.13                        | - 1.22 |
| R-22 Floor, R-19 Sidewall, R-33 Ceiling | 1.30                        | - 1.77 |

### ROOF SNOW LOAD CAPABILITY

| <u>Pounds Per Square Foot</u> | <u>Cost Per Square Foot</u> |        |
|-------------------------------|-----------------------------|--------|
| 30 lbs.                       | 0.59                        | - 0.95 |
| 40 lbs.                       | 0.95                        | - 1.72 |
| 50 lbs.                       | 1.72                        | - 2.27 |
| 60 lbs.                       | 2.27                        | - 3.03 |
| 80 lbs.                       | 2.87                        | - 4.56 |
| 100 lbs.                      | 3.80                        | - 5.24 |
| 175 lbs.                      | 4.73                        | - 5.69 |

### MISCELLANEOUS

|   | <u>Cost</u> |       |
|---|-------------|-------|
| Hot Water Recirculating System (per unit) | 609         | - 641 |
| Tubular Skylight                          | 521         | - 685 |
| Foundation Ready                          | 577         | - 769 |

## DEPRECIATION

The depreciation table in this handbook is *suggested as a guide to appraisers*. The percentage rates are applicable to the replacement cost estimates and *no minimum percent good is intended*. They are *averages* based upon *an analysis of actual market purchase price information*, and revisions to the table may be necessary as more market data become available.

The percentages only apply to manufactured housing in average condition. A separate adjustment should be considered for deferred maintenance (cost to cure). It is strongly suggested that the appraiser carefully evaluate the *effective age* of the manufactured home. This is a critical adjustment that will dramatically affect the cost approach. *Investigation has shown that the condition of the manufactured home may have a greater influence on value than age.*

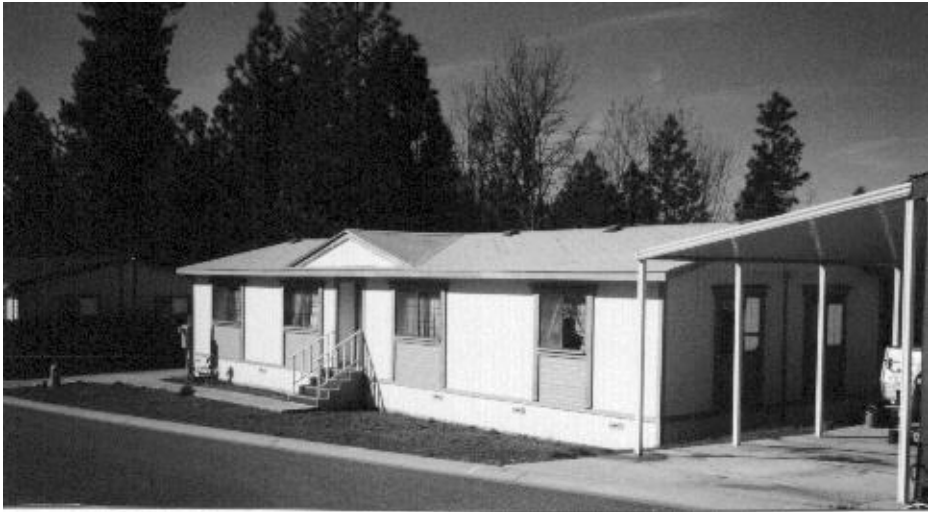
| <u>Effective Age (Years)</u> | <u>Percent Good</u> |
|------------------------------|---------------------|
| 0                            | 100%                |
| 1                            | 99%                 |
| 2                            | 98%                 |
| 3                            | 95%                 |
| 4                            | 91%                 |
| 5                            | 87%                 |
| 6                            | 84%                 |
| 7                            | 80%                 |
| 8                            | 76%                 |
| 9                            | 71%                 |
| 10                           | 66%                 |
| 11                           | 63%                 |
| 12                           | 61%                 |
| 13                           | 59%                 |
| 14                           | 56%                 |
| 15                           | 54%                 |
| 16                           | 52%                 |
| 17                           | 51%                 |
| 18                           | 50%                 |
| 19                           | 50%                 |
| 20                           | 49%                 |
| 21                           | 48%                 |
| 22                           | 47%                 |
| 23                           | 46%                 |
| 24                           | 45%                 |
| 25                           | 44%                 |

No minimum percent good is intended.

**MANUFACTURED HOUSING  
QUALITY CLASS 5**



**MANUFACTURED HOUSING  
QUALITY CLASS 6**



**MANUFACTURED HOUSING  
QUALITY CLASS 7**



**MANUFACTURED HOUSING  
QUALITY CLASS 8**



**MANUFACTURED HOUSING  
QUALITY CLASS 9**



# AH 531.40: BUILDING ADDITIVES

## DESCRIPTION

Building additives are optional items or extra components that can differ from building to building. The question of whether there should be an addition to the basic building cost depends on variations in the class specifications and location. If certain items are not included in the class specification, then an appropriate dollar amount must be added to the basic building cost to adjust for the disparity. The desired result is an accurate total improvement cost which reflects inclusion of all appropriate costs. Examples of items that may be considered in this category are fireplaces, porches, passenger elevators, residential basements, among others.

## BASE FOR ADDITIVE COSTS

The costs of additives shown in the *Building Additives* chapter (AH 531.40) are derived from the four-county Sacramento base area as of the date in the lower right-hand corner of each page.

Note that an adjustment for time should be considered if costs in the county have changed since the January publication date of this AH 531.

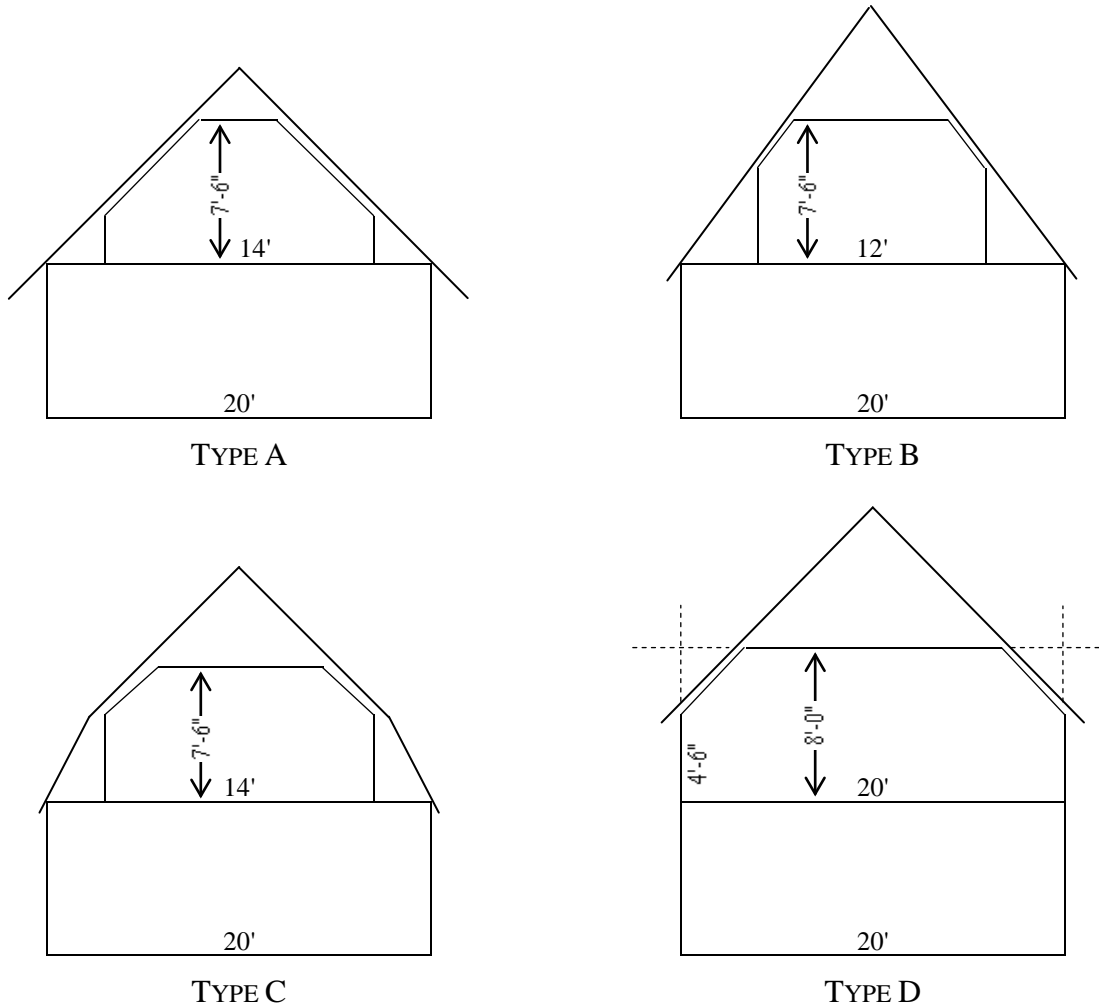
## ADDITIVE COSTS FOR MOUNTAIN RESIDENCES

The cost of additive items will be quite different in the mountain areas of the state than they are in the Sacramento base area. Therefore, a set of additive costs that are *specific* to mountain residences can be found in the *Costs of Additives* section of the *Mountain Residences* chapter (AH 531.22). However, there is a limited selection of additives included. If costs are needed for additives not found in the *Mountain Residences* chapter, then use this *Building Additives* chapter and make appropriate adjustments. Up to three location adjustments may be necessary when using costs from this *Building Additives* chapter for mountain residences:

1. The Sacramento base additive costs (AH 531.40) must be multiplied by a factor of 1.30 to adjust those costs to the Lake Tahoe Basin area.
2. If necessary, an adjustment for location within the mountain areas should be made using the instructions from the *Location Adjustments* section of the *Mountain Residences* chapter, AH 531.22 page 21.
3. If necessary, an adjustment may also be needed for any local cost differences present in the mountain county (for example, high permit fees).



## HALF-STORY AREAS



Information that will help analyze and cost half-story areas is included here because the cost data used to update the Sacramento base area does not typically include these areas. This is due to the rarity of half-story areas in new single-family home construction. The need for analysis of these costs tends to occur when attics are improved after initial construction.

### SUGGESTED FRACTIONS FOR HALF-STORY AREAS

| TYPE | SAME FINISH AS MAIN AREA | INFERIOR TO MAIN AREA |
|------|--------------------------|-----------------------|
| A    | 1/3                      | 1/4                   |
| B    | 1/2                      | 1/3                   |
| C    | 1/2                      | 1/3                   |
| D    | 2/3                      | 1/2                   |

Type "D" Includes Cost of Dormers

## BUILDING ADDITIVES

### COVERED PORCHES AND LEAN-TOS

|  |                           |       |
|--|---------------------------|-------|
| Costs of covered porches may be estimated by application of a fraction of the main building square-foot cost.                                      |                           |       |
| <u>Suggestions for Fractions</u>   | <u>Suggested Fraction</u> |       |
| Low (ground level) floor (usually concrete) without banister, with unceiled shed-type roof   | 1/4                       | - 1/3 |
| High (house floor level) floor (concrete or wood) with light banister. Unceiled shed-type roof   | 1/3                       | - 1/2 |
| Same ceiled and with roof-like residence (most typical)  |                           | 1/2   |
| Same partially enclosed with screen or glass   | 1/2                       | - 2/3 |
| Enclosed lean-to (sleeping porch or similar) with lighter foundation, wall structure, interior finish or roof than that of house to which attached | 1/2                       | - 3/4 |
| Roofed-unenclosed-recessed porch, under the same roof as the main building and with the same type and quality foundation (includes shape costs)    |                           | 3/4   |
| Roofed-enclosed-recessed porch with the same type roof and foundation as the main building (includes shape costs)                                  |                           | 4/4   |
| Good arbor or pergola with floor   | 1/4                       | - 1/3 |

### UNCOVERED PORCHES

| <u>Concrete Decks</u>     | <u>Cost Per Square Foot</u> |                |                |                |                |
|---------------------------|-----------------------------|----------------|----------------|----------------|----------------|
|                           | <u>8" High</u>              | <u>1' High</u> | <u>2' High</u> | <u>3' High</u> | <u>4' High</u> |
| Less than 100 square feet | 8.96                        | 11.99          | 19.50          | 26.16          | 36.96          |
| 100 to 200 square feet    | 7.81                        | 10.85          | 15.67          | 20.91          | 27.89          |
| 201 to 400 square feet    | 6.66                        | 8.56           | 13.33          | 18.55          | 24.03          |
| Over 401 square feet      | 6.47                        | 7.81           | 11.89          | 15.67          | 20.45          |

### WOOD DECKS AND PORCHES

| <u>2" wood deck with steps and railings</u> | <u>Cost Per Square Foot</u> |   |       |
|---|-----------------------------|---|-------|
| 1 to 3 feet above ground                    | 17.43                       | - | 20.97 |
| 4 to 6 feet above ground                    | 20.97                       | - | 27.99 |
| 6 to 9 feet above ground                    | 21.97                       | - | 29.42 |
| 9 to 12 feet above ground                   | 23.15                       | - | 30.85 |
| 12 to 15 feet above ground                  | 24.32                       | - | 32.37 |
| 15 to 18 feet above ground                  | 25.49                       | - | 33.85 |
| Plastic decking or fiberglass               | 20.36                       | - | 32.10 |

### PORCH ROOFS

| <u>Type</u>                                 | <u>Cost Per Square Foot</u>            |   |       |
|---|--|---|-------|
| Unceiled shed roof with wood shingle cover  | 8.68                                   | - | 10.27 |
| Ceiled shed roof with wood shingle cover    | 14.59                                  | - | 16.59 |
| Unceiled gable roof with wood shingle cover | 10.27                                  | - | 12.62 |
| Ceiled gable roof with wood shingle cover   | 16.59                                  | - | 18.16 |
| <u>Alternate Covers</u>                     | <u>Cost Difference Per Square Foot</u> |   |       |
| Rolled roofing                              | deduct 0.71                            | - | 0.86  |
| Corrugated aluminum                         | deduct 0.79                            | - | 0.94  |
| Corrugated iron                             | deduct 0.79                            | - | 0.94  |
| Asphalt shingles                            | deduct 0.94                            | - | 1.09  |
| Wood shakes                                 | add 1.09                               | - | 1.65  |
| Clay tile                                   | add 6.23                               | - | 7.51  |
| Slate                                       | add 6.72                               | - | 9.08  |

Covered porch costs may be estimated by adding a porch cover cost to an uncovered porch cost.

## BUILDING ADDITIVES

### RESIDENTIAL BASEMENTS

| <u>Size</u>               | <u>Cost Per Square Foot</u> |   |       |                           |   |       |
|---------------------------|-----------------------------|---|-------|---------------------------|---|-------|
|                           | <u>Unfinished Basements</u> |   |       | <u>Finished Basements</u> |   |       |
| Less than 400 square feet | 35.24                       | - | 47.68 | 62.43                     | - | 84.47 |
| 401 - 1,000 square feet   | 28.17                       | - | 38.11 | 49.91                     | - | 67.52 |
| Over 1,001 square feet    | 24.86                       | - | 33.64 | 44.05                     | - | 59.59 |

All basement costs assume normal soil conditions, 8' ceiling height, no plumbing, partitions, or windows.

Unfinished basements are based upon reinforced concrete floors and walls, open ceilings and minimum lighting.

Finished basement costs are based upon reinforced concrete floors with vinyl tile cover, reinforced concrete walls with plywood paneled finish, acoustical tile ceiling and lighting similar to average residences.

Stair access is not included in the basement cost and should always be added.

### BALCONIES

| <u>Type</u>   | <u>Cost Per Square Foot</u> |   |       |
|---|-----------------------------|---|-------|
| Standard wood frame supported by 4" x 4" posts, 1" wood floor, open on underside, open 2" x 4" railing.                                   | 22.04                       | - | 24.14 |
| Standard wood frame supported by 4" x 4" posts, 1" wood floor, ceiled on underside, solid stucco or wood siding on railing.               | 26.25                       | - | 28.33 |
| Standard wood frame supported by steel columns, lightweight concrete floors, ceiled on underside, solid stucco or open grillwork railing. | 39.89                       | - | 44.07 |
| Add for balcony roofs from porch roof cost on AH 531.40, page 3.  |                             |   |       |

### STAIRS

| <u>Type</u>  | <u>Cost Per Square Foot</u> |   |       |
|--|-----------------------------|---|-------|
| Standard wood frame, wood steps with open risers, open on underside, open 2" x 4" railing.               | 19.08                       | - | 21.09 |
| Standard wood frame with solid wood risers, ceiled on underside, solid stucco or wood siding on railing. | 23.10                       | - | 27.12 |
| Precast concrete steps with open risers, steel frame, pipe rail with ornamental grillwork                | 50.22                       | - | 56.25 |

## BUILDING ADDITIVES

### HEATING AND COOLING SYSTEMS

| <u>Type</u>   | <u>Cost Per Square Foot of Floor</u> |   |               |                         |   |                  |
|---|--------------------------------------|---|---------------|-------------------------|---|------------------|
| Central Ducted Air Systems  | <u>Perimeter</u>                     |   |               | <u>Overhead</u>         |   |                  |
| Single-Family Residences  | <u>Outlets</u>                       |   |               | <u>Outlets</u>          |   |                  |
| Forced air heating  | 6.08                                 | - | 6.75          | 4.72                    | - | 5.41             |
| Forced air heating and cooling  | 6.82                                 | - | 8.10          | 5.41                    | - | 6.89             |
| Gravity heat  | 3.81                                 | - | 4.53          |                         |   |                  |
| Multiple-Family Residences  |                                      |   |               |                         |   |                  |
| Forced air heating  | 3.81                                 | - | 4.18          | 3.48                    | - | 3.81             |
| Forced air heating and cooling  | 4.88                                 | - | 5.91          | 4.88                    | - | 5.22             |
| Hot and Chilled Water System<br>(Water is heated or cooled in a central installation and circulated to various parts of a building. Building is heated or cooled by blowing air over coils containing hot or cold water.) |                                      |   |               | 9.20                    | - | 10.63            |
| <u>Type</u>   | <u>Cost Each</u>                     |   |               |                         |   |                  |
| Gas Floor and Wall Furnaces   |                                      |   |               |                         |   |                  |
| Single floor unit   |                                      |   |               | 1,063                   | - | 1,132            |
| Dual floor unit   |                                      |   |               | 1,840                   | - | 1,982            |
| Single wall unit  |                                      |   |               | 563                     | - | 846              |
| Dual wall unit  |                                      |   |               | 1,546                   | - | 1,651            |
| Thermostat control - add  |                                      |   |               | 145                     | - | 226              |
| <u>Electric Baseboard Units</u>   |                                      |   |               |                         |   |                  |
|   | <u>Wattage</u>                       |   | <u>Length</u> |                         |   | <u>Cost Each</u> |
|   | 500                                  |   | 3'            | 311                     | - | 346              |
|   | 1,000                                |   | 4'            | 425                     | - | 459              |
|   | 1,500                                |   | 6'            | 459                     | - | 510              |
|   | 2,000                                |   | 8'            | 553                     | - | 630              |
|   | 2,500                                |   | 10'           | 650                     | - | 708              |
|   | 3,000                                |   | 12'           | 779                     | - | 849              |
| Electric Coils Under Bathroom Tile  |                                      |   |               | 1,618                   | - | 2,022            |
| Includes all electrical and wiring costs.   |                                      |   |               |                         |   |                  |
| <u>Geothermal</u>   |                                      |   |               | <u>Cost Per Sq. Ft.</u> |   |                  |
| Ground Source Heat Pump System  |                                      |   |               | 10.79                   | - | 14.83            |

## BUILDING ADDITIVES

### HEATING AND COOLING SYSTEMS (Contd.)

| <u>Electric Wall Heaters</u> |                  |   |     |
|------------------------------|------------------|---|-----|
| <u>Wattage</u>               | <u>Cost Each</u> |   |     |
| 1,000                        | 395              | - | 460 |
| 2,000                        | 421              | - | 494 |
| 3,000                        | 473              | - | 625 |
| 3,500                        | 559              | - | 690 |
| 4,000                        | 657              | - | 820 |
| 4,500                        | 723              | - | 920 |
| Add for circulating fan      | 168              | - | 230 |
| Add for thermostatic control | 195              | - | 206 |
| Cost includes wiring.        |                  |   |     |

| <u>Evaporative Coolers</u> |                            |   |                          |               |
|----------------------------|----------------------------|---|--------------------------|---------------|
| <u>Capacity</u>            | <u>Cost Each</u>           |   |                          |               |
|                            | <u>Window Installation</u> |   | <u>Roof Installation</u> |               |
| 2,200 CFM                  | 657                        | - | 722                      | 1,050 - 1,184 |
| 4,000 CFM                  | 788                        | - | 854                      | 1,184 - 1,249 |
| 4,500 CFM                  | 919                        | - | 1,050                    | 1,313 - 1,576 |
| 5,500 CFM                  | 986                        | - | 1,117                    | 1,447 - 1,708 |

| <u>Refrigerated Room Coolers</u>            |                  |   |       |
|---|------------------|---|-------|
| <u>Capacity</u>                             | <u>Cost Each</u> |   |       |
| 1/3 Ton                                     | 750              | - | 850   |
| 1/2 Ton                                     | 913              | - | 975   |
| 3/4 Ton                                     | 1,050            | - | 1,113 |
| 1 Ton                                       | 1,175            | - | 1,238 |
| 1 1/2 Ton                                   | 1,475            | - | 1,563 |
| 2 Ton                                       | 1,625            | - | 2,013 |
| Cost includes wiring and minimum duct work. |                  |   |       |

### SPRINKLER SYSTEMS

|                           | <u>Per Square Foot</u> |        |
|---------------------------|------------------------|--------|
| Single Family Residential | 3.39                   | - 5.31 |

### INSULATION

|              | <u>Per Square Foot</u> |        |
|--------------|------------------------|--------|
| Minimum Code | 0.90                   | - 1.67 |

## BUILDING ADDITIVES

### ELEVATORS, PASSENGER

| <u>Hydraulic</u>                                  | <u>Car and Machinery Cost Per Shaft</u>           |                   |
|---|---|-------------------|
| <u>Capacity</u>                                   | <u>Base-Two Floors</u>                            |                   |
|   | <u>Speed</u>                                      |                   |
|   | <u>100 F.P.M.</u>                                 | <u>200 F.P.M.</u> |
| 2,000 lbs.  | 55,351  | 63,264            |
| 2,500 lbs.  | 60,102  | 71,170            |
| 3,000 lbs.  | 63,264  | 77,494            |
| 3,500 lbs.  |   | 82,237            |
| 4,000 lbs.  |   | 86,982            |
| Add for deluxe car \$8,878 per car.               |   |                   |
| Add for doors and door openers, \$7,613 per floor |   |                   |
|   | Baked enamel doors and frame \$2,535 per stop.    |                   |
|   | Stainless steel doors and frame \$2,783 per stop. |                   |

### FIRE ESCAPES

|                   | <u>Unit</u> | <u>Cost</u> |   |       |
|-------------------|-------------|-------------|---|-------|
| Second story      | Each        | 4,718       | - | 6,248 |
| Additional floors | Per story   | 2,777       | - | 4,165 |

### BURGLAR ALARMS

|                     | <u>Cost</u> |   |       |
|---------------------|-------------|---|-------|
| Total cost in place | 2,118       | - | 5,648 |

## BUILDING ADDITIVES

### FIREPLACES/INSTALLED

| <u>Type</u>   | <u>One Story</u> |   | <u>Cost Each</u> |        | <u>Two Story</u> |        |
|---|------------------|---|------------------|--------|------------------|--------|
| Zero Clearance Metal Firebox, natural gas<br>Low Quality - Typically enclosed by painted or stuccoed wall board<br>36" width with 12.5' chimney pipe                                  | 1,745            | - | 2,177            |        |                  |        |
| Medium Quality - Typically enclosed in attractive wood paneling, simulated materials, or moderate brickwork, has average wood mantel.<br>36" width with 15' chimney pipe              | 2,177            | - | 2,519            | 2,397  | -                | 2,615  |
| High Quality - Firebox unit has fire-brick back and floor and glass door. Unit typically enclosed by brick or stone, also has raised brick hearth.<br>48" width with 15' chimney pipe | 2,995            | - | 4,697            | 3,594  | -                | 6,458  |
| Add: Insulation, gas line, mantel   | 999              | - | 1,174            |        |                  |        |
| Pellet fed fireplace  | 2,625            | - | 3,571            |        |                  |        |
| Free Standing Prefabricated Fireplace   | 1,563            | - | 2,467            |        |                  |        |
| Masonry:  |                  |   |                  |        |                  |        |
| 5' base, common brick or concrete block, low cost Douglas fir or common brick mantle  | 4,162            | - | 4,642            | 4,642  | -                | 5,156  |
| 6' base, common brick, used brick, or natural stone on interior face or with average wood mantle  | 4,642            | - | 5,156            | 5,156  | -                | 8,250  |
| 6' base, common brick, face brick with good wood mantle   | 5,156            | - | 8,250            | 8,250  | -                | 9,796  |
| 6' base, common brick, used brick, or natural stone on interior face, raised hearth   | 8,250            | - | 9,796            | 9,796  | -                | 12,376 |
| 8' base, common brick, used brick, or natural stone on interior face, raised hearth   | 9,796            | - | 12,376           | 12,376 | -                | 14,954 |
| Add 25 to 40 percent to above costs for additional openings using a common chimney.   |                  |   |                  |        |                  |        |

## BUILDING ADDITIVES

### STOVES (Franklin or Buck)

| <u>Type</u>  |       |   |       |
|--|-------|---|-------|
| Low Quality  |       |   |       |
| Steel body with cast iron legs and front                                       | 1,366 | - | 2,016 |
| Medium Quality   |       |   |       |
| Steel body with cast iron front, doors,<br>and legs, small glass panel in door | 2,421 | - | 2,730 |
| High Quality   |       |   |       |
| All cast iron with large glass panel<br>in door with slate or rock borders     | 3,381 | - | 4,811 |

### BUILT-IN APPLIANCES

| <u>Type</u>                                       |       |   | <u>Cost Each</u> |
|---|-------|---|------------------|
| Combination oven-range with single oven           |       |   |                  |
| Economy   | 392   | - | 636              |
| Good  | 636   | - | 1,112            |
| Excellent   | 1,030 | - | 1,922            |
| Surface Cooking Units--Ceramic Cook Top Over Oven |       |   |                  |
| Economy   | 545   | - | 834              |
| Good  | 834   | - | 1,177            |
| Excellent   | 1,091 | - | 1,502            |
| Built-ins   |       |   |                  |
| Single oven with broiler                          | 545   | - | 612              |
| Single convection oven                            | 1,152 | - | 1,865            |
| Double oven                                       | 1,789 | - | 2,203            |
| Range Top   |       |   |                  |
| Economy   | 466   | - | 612              |
| Good  | 612   | - | 900              |
| Excellent   | 3,604 | - | 6,006            |
| Range Top With Grill                              | 674   | - | 1,310            |
| Range Hoods and Fans                              | 166   | - | 350              |
| Dishwashers                                       |       |   |                  |
| Economy   | 233   | - | 371              |
| Good  | 344   | - | 687              |
| Excellent   | 636   | - | 1,093            |
| Garbage Disposer                                  | 195   | - | 554              |
| Wine Cooler                                       | 420   | - | 601              |
| Instant Hot Water Dispenser                       | 481   | - | 709              |
| Trash Compactor                                   | 360   | - | 601              |
| Hot Water Recirculator                            | 571   | - | 601              |
| Microwave Oven Stove Top                          | 552   | - | 660              |
| Miscellaneous Additives                           |       |   |                  |
| Intercom Systems                                  |       |   |                  |
| Central control-per station                       | 645   | - | 779              |
| Vacuum Systems                                    |       |   |                  |
| Power unit and three outlets                      | 1,802 | - | 3,604            |
| Additional outlets                                | 227   | - | 291              |
| Crown Molding (per linear foot)                   | 8     | - | 15               |
| Two-speaker surround sound                        | 720   | - | 841              |
| Four-speaker surround sound                       | 1,201 | - | 1,442            |
| Six-speaker surround sound                        | 2,162 | - | 2,522            |



## SOLAR HEATING AND COOLING

Solar heating is classified into two types—active and passive. An active solar system is an assembly of collectors, thermal storage devices, and transfer fluids or air to convert solar energy to heat. In an active system, mechanical components such as pumps, fans, and automatic valves are used to supply and distribute heat. The value of newly constructed *active* solar energy systems may be excluded from taxation (see Revenue and Taxation Code section 73, and Letter To Assessors 2012/053).

A passive system is an assembly of natural and architectural components which may include collectors, thermal storage devices, and transfer fluid which converts solar energy into thermal energy in a controlled manner and in which no pumps are used to transfer heat or cold.

Solar systems need auxiliary energy subsystems that function with equipment utilizing energy other than solar, both to supplement the output provided by the solar energy system, and to provide full energy backup during periods when the solar system is not operating.

The cost of a solar system depends on the geographic location, collector efficiency, and other factors. Installation costs vary greatly on a case-by-case basis depending on the design of the home and any structural modification required.

Commencing with the 1981-82 fiscal year, the law was amended defining active solar energy as a system that uses solar devices thermally isolated from living space or other area where energy is used to provide for collection, storage, or distribution of solar energy. Following are the common descriptions used by industry along with the installed cost.

### DOMESTIC HOT WATER SYSTEMS

|   |               |
|---|---------------|
| <p><b>Thermosyphon System</b><br/>This is a passive hot water system that operates without any moving parts or control. The solar collector panels are located below the hot water storage tank. The heated water naturally rises from the collector panel to the hot water storage tank and cold water in the tank circulates back to the collector to be heated. A thermosyphon system ordinarily requires a backup unit to furnish hot water on cloudy days. Cost does not include back-up unit.</p> | 5,169 - 6,614 |
| <p><b>Breadbox Hot Water Heaters</b><br/>This system consists of one or more tanks in a series painted black to absorb heat from the sun. These units are usually enclosed in a built-in addition on the roof in insulated tanks with exterior glass panels. Most breadbox solar water heaters are low cost, simple, home built systems which are constructed from recycled hot water tanks.</p>  | 2,732 - 3,024 |

## DOMESTIC HOT WATER SYSTEMS (Contd.)

|  |                        |
|--|------------------------|
| <p><b>Active Systems</b></p> <p>Active hot water heating systems come in two types—open and closed. In an open system, water is pumped through the collectors, heated, and returned to the storage tank. In a closed system, water does not circulate through the unit. An antifreeze or glycol solution is heated in collector panels and then circulated through coils either inside or outside the water storage tank. The water or glycol solution is circulated through the system by electric pumps which are controlled by thermostats.</p>   | <p>5,653 - 7,817</p>   |
| <p><b>Space Heating and Cooling</b></p> <p>Active solar heating, often called indirect space heating, is a solar heating system in which the solar heat is collected outside the building and transferred inside through ducts or piping using fans or pumps. One system uses blowers to circulate solar heated air through rock beds located underneath the building. The heat is then released into the building as needed. The collecting panels are located on the roof and should have one square foot of collecting area for every four square feet in the building. Liquid may also be used as a solar collector. In this system, water or antifreeze is circulated with a pump through collectors into an insulated storage tank. When heat is needed in the building, air is pumped through heated coils and circulated through the building.</p> | <p>15,786 - 21,852</p> |
| <p><b>Passive or Indirect</b></p> <p>Passive or indirect solar systems do not have any mechanical devices requiring auxiliary power. Instead, parts of the building such as glass-covered concrete walls, double-paned windows, skylights, and water-filled tanks are used to collect and store solar heat. Since these items are all part of the building, they may be considered as part of the quality class of the house.<br/>Cost per square foot of living area:</p>   | <p>8.50 - 9.72</p>     |
| <p><b>SOLAR HEATED SWIMMING POOLS</b></p>  |                        |
| <p>In a solar pool heating system, water is heated in solar heating panels and circulated by either the pool filter motor or an auxiliary electric motor from the collectors into the pool. The square footage of the solar panel collectors should be approximately one-half the size of the surface area of the pool.<br/>Cost per square foot of pool surface area:</p>   | <p>9.53 - 13.33</p>    |

## BUILDING ADDITIVES

### DOMESTIC WATER SYSTEMS

Homes that are not served by a public water system usually obtain necessary water from a well. However, wells (including the hole, casing, grouting, and gravel pack) are considered real property and appraised as part of the land value. The pump, motor, tank, and distribution piping are considered improvements and are appraised as part of the improvement value.

Many types of pumps are available for domestic wells, but two types are the most common. They are jet pumps and submersible pumps.

### SUBMERSIBLE PUMPS

A submersible pressure system consists of a multi-stage centrifugal pump coupled to an electric motor. The entire unit is submersed below the water level. Water enters a screened section of pipe and is pumped to the surface. This system is by far the most common as it is used in about 60 to 80 percent of all new pump installations.

SUBMERSIBLE PUMP COST TABLE  
EXCLUDES WELL AND CASING COSTS

| H.P.  | <u>Depth of Setting</u> |            |            |             |             |             |             |             |             |             |             |             |
|-------|-------------------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|       | <u>40'</u>              | <u>60'</u> | <u>80'</u> | <u>100'</u> | <u>120'</u> | <u>140'</u> | <u>160'</u> | <u>180'</u> | <u>200'</u> | <u>220'</u> | <u>260'</u> | <u>300'</u> |
| 1/2   | 2862                    | 2958       | 3053       | 3148        | 3244        | 3342        | 3435        |             |             |             |             |             |
| 3/4   | 3244                    | 3435       | 3627       | 3816        | 4008        | 4197        | 4387        | 4581        |             |             |             |             |
| 1     | 3816                    | 4008       | 4197       | 4387        | 4581        | 4771        | 4962        | 5151        | 5342        |             |             |             |
| 1 1/2 | 4581                    | 4771       | 4962       | 5151        | 5342        | 5535        | 5724        | 5916        | 6107        | 6295        |             |             |
| 2     | 5724                    | 5916       | 6107       | 6295        | 6488        | 6678        | 6870        | 7059        | 7251        | 7443        |             |             |
| 3     | 6678                    | 7059       | 7443       | 7823        | 8205        | 8586        | 8778        | 8967        | 9159        | 9350        | 9541        |             |
| 5     | 7632                    | 8013       | 8397       | 8778        | 9159        | 9350        | 9541        | 9732        | 9923        | 10113       | 10304       | 10494       |

| Submersible Pump, Installed at 100'<br>Depth Excluding Well and Casing<br>Typical Installation |                 |                 |               |                   |               |               |               |
|--|-----------------|-----------------|---------------|-------------------|---------------|---------------|---------------|
|  | <u>1/2 H.P.</u> | <u>3/4 H.P.</u> | <u>1 H.P.</u> | <u>1 1/2 H.P.</u> | <u>2 H.P.</u> | <u>3 H.P.</u> | <u>5 H.P.</u> |
| Total Cost   | 3,148           | 3,816           | 4,387         | 5,151             | 6,295         | 7,823         | 8,778         |
| Tank Size<br>(Gal)   | 84              | 84              | 122           | 224               | 224           | 321           | 321           |

## BUILDING ADDITIVES

### JET PUMPS

Jet pumps involve a centrifugal pump connected to an ejector consisting of a nozzle and venturi tube. Both the pump and motor are installed at ground level, and the only parts submerged are the pipes and ejector. Maximum pumping depth is 200 feet. Jet pump systems generally cost between 15 and 20 percent less than submersible systems.

### PRESSURE TANKS

| Cost Installed          |                |            |           |      |
|-------------------------|----------------|------------|-----------|------|
| <u>Galvanized Tanks</u> |                |            |           |      |
| 42 Gal.                 | 16" Diameter x | 48" Depth  | 50" Cir.  | 355  |
| 82 Gal.                 | 20" Diameter x | 60" Depth  | 63" Cir.  | 472  |
| 120 Gal.                | 24" Diameter x | 60" Depth  | 75" Cir.  | 590  |
| 220 Gal.                | 30" Diameter x | 72" Depth  | 94" Cir.  | 1299 |
| 315 Gal.                | 36" Diameter x | 72" Depth  | 113" Cir. | 1773 |
| 525 Gal.                | 36" Diameter x | 120" Depth | 113" Cir. | 2362 |

### WELL COSTS

| <u>Drilling Cost Per Linear Foot Including Casing and Gravel Pack</u> |                       |   |       |                     |   |       |
|---|-----------------------|---|-------|---------------------|---|-------|
| <u>Casing Diameter</u>  | <u>Plastic Casing</u> |   |       | <u>Steel Casing</u> |   |       |
| 6"  | 38.27                 | - | 41.91 | 41.91               | - | 45.55 |
| 8"  |                       |   |       | 45.55               | - | 49.17 |

Price ranges are due largely to the area in which wells are drilled. The harder the soil, the more costly to drill. Domestic wells rarely have casing greater than 8" in diameter.

### SEPTIC TANK COSTS

| <u>House Description</u> | <u>Tank Size</u>          | <u>Cost</u>     |
|--------------------------|---------------------------|-----------------|
| 2 bedroom house          | 1,000 - 1,250 gallon tank | 4,823 - 6,342   |
| 3 bedroom house          | 1,250 - 1,500 gallon tank | 5,869 - 7,310   |
| 4 bedroom house          | 1,500 - 2,000 gallon tank | 9,238 - 10,868  |
| 5 bedroom house          | 2,000 - 2,400 gallon tank | 10,325 - 11,411 |

The installed cost of septic tanks will vary greatly depending upon soil conditions and type of system. Heavy clay or rocky soil will increase the cost of the system.

## **AH 531.50: RESIDENTIAL GARAGES**

Residential garages, which include duplexes, townhouses, and condominiums, will usually be classified the same as the main residence. If there is a significant difference between the construction characteristics of the residence and the garage, the garage building specifications may be helpful as a guide to a proper quality class.

Residential garage costs are based upon the cost to build a garage in conjunction with the main residence. They include the costs of all components listed in the garage building specifications.

The cost of the wall of an attached garage that is common with the main residence is included in the construction cost of the main residence and therefore the common wall is not included in the construction cost of the attached garage. Drywall or any other interior finish on the garage side of the common wall is also included in the cost of the main residence.

Residential garages do not contain costs for fire sprinklers as the International Residential Code (IRC) does not require such installation. However, local building codes should be considered for requirements concerning garages, and if sprinklers are present in a garage, the cost should be an additive to the square foot costs contained in this section.

**RESIDENTIAL GARAGES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**PRE 1990**

|                   |   |
|-------------------|---|
| <b>Foundation</b> |   |
| D-1               | Mudsills  |
| D-2               | Light concrete  |
| D-3               | Light concrete  |
| D-4               | Light concrete  |
| D-5               | Standard concrete   |
| D-6               | Reinforced concrete   |
| D-7               | Reinforced concrete   |
| D-8               | Reinforced concrete   |
| D-9               | Reinforced concrete   |
| D-10              | Reinforced concrete   |
| <b>Floor</b>      |   |
| D-1               | Dirt  |
| D-2               | Asphalt   |
| D-3               | Asphalt   |
| D-4               | Light concrete  |
| D-5               | Concrete  |
| D-6               | Concrete  |
| D-7               | Concrete  |
| D-8               | Concrete  |
| D-9               | Concrete  |
| D-10              | Concrete  |
| <b>Walls</b>      |   |
| D-1               | 1" x 12" vertical board; no sheathing; board and batten exterior                      |
| D-2               | 1" x 12" vertical boards, no sheathing; board and batten exterior                     |
| D-3               | 2" x 4" studs, 24" o.c.; no sheathing; 1/2" wood siding                               |
| D-4               | 2" x 4" studs, 16" o.c.; no sheathing; 1/2" wood siding or light stucco               |
| D-5               | 2" x 4" studs, 16" o.c.; no sheathing; stucco or low-cost wood siding                 |
| D-6               | 2" x 4" studs, 16" o.c., no sheathing; stucco or 1" wood siding                       |
| D-7               | 2" x 4" studs, 16" o.c.; 1/2" drywall sheathing; good stucco or wood siding           |
| D-8               | 2" x 4" studs, 16" o.c.; 1" board sheathing; good stucco or wood siding               |
| D-9               | 2" x 4" studs, 16" o.c.; 1" board sheathing; very good wood siding or masonry veneer  |
| D-10              | 2" x 4" studs, 16" o.c.; 1" board sheathing; very good wood siding; or masonry veneer |
| <b>Roof Cover</b> |   |
| D-1               | Rolled roofing  |
| D-2               | Rolled roofing  |
| D-3               | Wood shingles   |
| D-4               | Wood shingles   |
| D-5               | Wood or composition shingles  |
| D-6               | Good wood or composition shingles or light shakes                                     |
| D-7               | Good wood shingles or medium shakes   |
| D-8               | Heavy shakes  |
| D-9               | Heavy shakes or mission tile  |
| D-10              | Mission tile  |

**RESIDENTIAL GARAGES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**PRE 1990 (Contd.)**

|                        |                                 |
|------------------------|---------------------------------|
| <b>Doors</b>           |                                 |
| D-1                    | Light hinged                    |
| D-2                    | Averaged hinged                 |
| D-3                    | Good hinged or light sliding    |
| D-4                    | Good hinged or light sliding    |
| D-5                    | Good hinged or light overhead   |
| D-6                    | Plywood overhead                |
| D-7                    | Plywood or metal overhead       |
| D-8                    | Good wood or metal              |
| D-9                    | Good wood with automatic opener |
| D-10                   | Good wood with automatic opener |
| <b>Lighting</b>        |                                 |
| D-1                    | None                            |
| D-2                    | None                            |
| D-3                    | None                            |
| D-4                    | One drop cord                   |
| D-5                    | One light with switch           |
| D-6                    | One light with switch           |
| D-7                    | One light with switch           |
| D-8                    | Ample lighting                  |
| D-9                    | Ample lighting                  |
| D-10                   | Ample lighting                  |
| <b>Interior Finish</b> |                                 |
| D-1                    | Unfinished                      |
| D-2                    | Unfinished                      |
| D-3                    | Unfinished                      |
| D-4                    | Unfinished                      |
| D-5                    | Unfinished                      |
| D-6                    | Unfinished                      |
| D-7                    | Drywall on walls                |
| D-8                    | Drywall on all walls            |
| D-9                    | Drywall and paint               |
| D-10                   | Drywall and paint               |

**RESIDENTIAL GARAGES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**POST 1990**

|                            |  |
|----------------------------|--|
| <b>Foundation</b>          |  |
| D-5                        | Reinforced concrete  |
| D-6                        | Reinforced concrete  |
| D-7                        | Reinforced concrete  |
| D-8                        | Reinforced concrete  |
| D-9                        | Reinforced concrete  |
| D-10                       | Reinforced concrete  |
| <b>Floor</b>               |  |
| D-5                        | Reinforced concrete  |
| D-6                        | Reinforced concrete  |
| D-7                        | Reinforced concrete  |
| D-8                        | Reinforced concrete  |
| D-9                        | Reinforced concrete  |
| D-10                       | Reinforced concrete  |
| <b>Walls and Sheathing</b> |  |
| D-5                        | Standard wood or steel frame; line wire and paper; plywood or particle board |
| D-6                        | Standard wood or steel frame; line wire and paper; plywood or particle board |
| D-7                        | Standard wood or steel frame; line wire and paper; plywood or particle board |
| D-8                        | Standard wood or steel frame; line wire and paper; plywood or particle board |
| D-9                        | Standard wood or steel frame; drywall or plywood; fully insulated            |
| D-10                       | Standard wood or steel frame; drywall or plywood; fully insulated            |
| <b>Exterior Cover</b>      |  |
| D-5                        | Light stucco; lap or wood siding   |
| D-6                        | Wood shingles or low-cost wood siding; masonry trim on wall; average stucco  |
| D-7                        | Average stucco or wood siding; brick or stone trim                           |
| D-8                        | Good wood siding; masonry or stucco  |
| D-9                        | Good stucco or wood siding; extensive masonry                                |
| D-10                       | Decorative stucco or heavy wood siding; extensive of full brick veneer       |
| <b>Windows</b>             |  |
| D-5                        | Low-cost wood or metal   |
| D-6                        | Average quality aluminum or wood   |
| D-7                        | Vinyl framed wood or aluminum  |
| D-8                        | Vinyl framed wood or aluminum  |
| D-9                        | Good quality vinyl framed wood or aluminum                                   |
| D-10                       | Excellent quality vinyl framed wood or aluminum                              |
| <b>Doors</b>               |  |
| D-5                        | Plywood or metal overhead  |
| D-6                        | Plywood or metal overhead  |
| D-7                        | Metal overhead with windows and design                                       |
| D-8                        | Metal overhead with windows and design                                       |
| D-9                        | High quality metal overhead with glass trim and design embossed              |
| D-10                       | Excellent quality metal overhead with glass trim and design embossed         |



**RESIDENTIAL GARAGES  
BUILDING SPECIFICATIONS  
"D" CONSTRUCTION**

**POST 1990 (Contd.)**

|                        |  |
|------------------------|--|
| <b>Roof Cover</b>      |  |
| D-5                    | Standard wood or steel frame; composition shingle; concrete shake; 0" to 12" overhang, unceiled  |
| D-6                    | Standard wood or steel frame; wood shingle; light wood shake; good composition shingle; concrete shake or tile; 0" to 18" overhang, unceiled |
| D-7                    | Standard wood or steel frame; medium wood shake; concrete shake or tile; 0" to 24" overhang, unceiled  |
| D-8                    | Standard wood or steel frame; heavy wood shake; concrete shake or tile; 0" to 24" overhang, ceiled or unceiled                               |
| D-9                    | Standard wood or steel frame; heavy wood shake; concrete shake or tile; adobe tile; 0" to 36" overhang, unceiled, ceiled, or boxed           |
| D-10                   | Standard wood or steel frame; heavy wood shake; adobe tile; copper; slate; 0" to 36" overhang, unceiled, ceiled, or boxed                    |
| <b>Lighting</b>        |  |
| D-5                    | One light with switch  |
| D-6                    | One light with switch  |
| D-7                    | One light with switch  |
| D-8                    | One light with switch  |
| D-9                    | Ample lighting   |
| D-10                   | Ample lighting   |
| <b>Interior Finish</b> |  |
| D-5                    | Unfinished   |
| D-6                    | Drywall  |
| D-7                    | Drywall, painted   |
| D-8                    | Drywall, painted   |
| D-9                    | Fully finished with some cabinets and shelving   |
| D-10                   | Fully finished with some cabinets and shelving   |

## RESIDENTIAL GARAGES

### ATTACHED SQUARE FOOT AREA COST TABLES

#### "D" CONSTRUCTION

| Class | 220   | 260   | 280   | 320   | 360   | 400   | 440   | 480   | 540   | 600   | 800   | 1000  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 10.24 | 9.86  | 9.72  | 9.44  | 9.16  | 9.02  | 8.89  | 8.75  | 8.62  | 8.49  | 8.29  | 8.25  |
| D-1.5 | 14.73 | 14.12 | 13.95 | 13.46 | 13.25 | 12.91 | 12.53 | 12.22 | 11.91 | 11.61 | 11.24 | 11.18 |
| D-2   | 19.08 | 18.41 | 18.12 | 17.56 | 17.04 | 16.62 | 16.13 | 15.72 | 15.34 | 14.95 | 14.48 | 14.41 |
| D-3   | 21.24 | 20.44 | 20.03 | 19.55 | 18.84 | 18.37 | 17.82 | 17.39 | 16.95 | 16.52 | 16.01 | 15.93 |
| D-3.5 | 23.45 | 22.51 | 21.99 | 21.37 | 20.77 | 20.26 | 19.65 | 19.17 | 18.69 | 18.23 | 17.64 | 17.55 |
| D-4   | 25.51 | 24.38 | 23.98 | 23.30 | 22.50 | 21.94 | 21.29 | 20.77 | 20.25 | 19.75 | 19.12 | 19.03 |
| D-4.5 | 27.41 | 26.05 | 25.64 | 24.86 | 23.98 | 23.38 | 22.69 | 22.13 | 21.57 | 21.03 | 20.36 | 20.25 |
| D-5   | 29.26 | 27.74 | 27.30 | 26.41 | 25.39 | 24.76 | 24.02 | 23.43 | 22.85 | 22.27 | 21.56 | 21.46 |
| D-5.5 | 33.40 | 31.53 | 30.83 | 29.64 | 28.53 | 27.83 | 26.99 | 26.33 | 25.67 | 25.03 | 24.24 | 24.11 |
| D-6   | 37.63 | 35.33 | 34.50 | 33.19 | 31.75 | 30.97 | 30.05 | 29.31 | 28.58 | 27.86 | 26.97 | 26.84 |
| D-6.5 | 40.19 | 38.01 | 37.17 | 35.94 | 34.65 | 33.79 | 32.79 | 31.98 | 31.17 | 30.41 | 29.43 | 29.29 |
| D-7   | 42.61 | 40.64 | 39.92 | 38.82 | 37.53 | 36.60 | 35.51 | 34.63 | 33.77 | 32.92 | 31.88 | 31.72 |
| D-7.5 | 48.11 | 46.18 | 45.38 | 44.00 | 42.41 | 41.34 | 40.11 | 39.13 | 38.16 | 37.20 | 36.02 | 35.84 |
| D-8   | 49.56 | 47.54 | 46.72 | 45.31 | 43.67 | 42.57 | 41.31 | 40.29 | 39.28 | 38.29 | 37.09 | 36.91 |
| D-8.5 | 51.04 | 48.97 | 48.12 | 46.67 | 44.98 | 43.85 | 42.54 | 41.50 | 40.46 | 39.44 | 38.22 | 38.01 |
| D-9   | 52.56 | 50.45 | 49.57 | 48.07 | 46.33 | 45.17 | 43.83 | 42.74 | 41.68 | 40.63 | 39.36 | 39.15 |
| D-9.5 | 54.14 | 51.95 | 51.05 | 49.51 | 47.72 | 46.53 | 45.14 | 44.02 | 42.93 | 41.84 | 40.54 | 40.34 |
| D-10  | 55.78 | 53.51 | 52.58 | 50.99 | 49.15 | 47.92 | 46.49 | 45.34 | 44.21 | 43.10 | 41.76 | 41.55 |

### DETACHED SQUARE FOOT AREA COST TABLES

#### "D" CONSTRUCTION

| Class | 220   | 260   | 280   | 320   | 360   | 400   | 440   | 480   | 540   | 600   | 800   | 1000  |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| D-1   | 12.29 | 11.48 | 11.15 | 10.73 | 10.50 | 10.27 | 10.04 | 9.89  | 9.75  | 9.59  | 9.39  | 9.33  |
| D-1.5 | 17.27 | 16.16 | 15.71 | 15.12 | 14.91 | 14.44 | 13.81 | 13.46 | 13.14 | 12.81 | 12.40 | 12.33 |
| D-2   | 22.13 | 20.89 | 20.39 | 19.51 | 19.27 | 18.66 | 17.84 | 17.39 | 16.97 | 16.54 | 16.01 | 15.93 |
| D-3   | 25.62 | 23.94 | 23.30 | 22.11 | 21.74 | 21.05 | 20.14 | 19.64 | 19.14 | 18.67 | 18.08 | 17.98 |
| D-3.5 | 27.96 | 26.11 | 25.45 | 24.15 | 23.88 | 23.12 | 22.12 | 21.57 | 21.04 | 20.51 | 19.85 | 19.75 |
| D-4   | 30.46 | 28.51 | 27.70 | 26.38 | 25.91 | 25.10 | 24.02 | 23.42 | 22.83 | 22.26 | 21.55 | 21.44 |
| D-4.5 | 32.26 | 30.09 | 29.34 | 27.87 | 27.71 | 26.83 | 25.66 | 25.02 | 24.41 | 23.81 | 23.05 | 22.93 |
| D-5   | 34.53 | 31.88 | 30.98 | 29.40 | 28.98 | 28.07 | 26.85 | 26.17 | 25.53 | 24.90 | 24.11 | 23.99 |
| D-5.5 | 39.63 | 36.58 | 35.33 | 33.51 | 32.94 | 31.90 | 30.51 | 29.75 | 29.00 | 28.29 | 27.38 | 27.24 |
| D-6   | 47.09 | 43.11 | 41.59 | 39.20 | 38.34 | 37.13 | 35.51 | 34.63 | 33.77 | 32.93 | 31.87 | 31.71 |
| D-6.5 | 49.85 | 46.39 | 45.04 | 42.43 | 42.24 | 40.91 | 39.13 | 38.15 | 37.20 | 36.28 | 35.11 | 34.95 |
| D-7   | 53.95 | 50.23 | 48.72 | 46.33 | 45.64 | 44.20 | 42.27 | 41.22 | 40.20 | 39.20 | 37.94 | 37.76 |
| D-7.5 | 61.17 | 56.93 | 55.21 | 52.56 | 51.78 | 50.13 | 47.94 | 46.76 | 45.60 | 44.47 | 43.05 | 42.82 |
| D-8   | 62.98 | 58.61 | 56.85 | 54.13 | 53.31 | 51.62 | 49.37 | 48.14 | 46.96 | 45.78 | 44.33 | 44.12 |
| D-8.5 | 64.88 | 60.38 | 58.56 | 55.73 | 54.92 | 53.16 | 50.86 | 49.59 | 48.35 | 47.15 | 45.65 | 45.44 |
| D-9   | 66.82 | 62.19 | 60.31 | 57.42 | 56.55 | 54.77 | 52.38 | 51.08 | 49.82 | 48.57 | 47.03 | 46.79 |
| D-9.5 | 68.82 | 64.06 | 62.12 | 59.13 | 58.26 | 56.40 | 53.96 | 52.61 | 51.31 | 50.02 | 48.45 | 48.20 |
| D-10  | 70.90 | 65.97 | 64.00 | 60.91 | 60.01 | 58.09 | 55.56 | 54.19 | 52.85 | 51.53 | 49.89 | 49.64 |

**RESIDENTIAL GARAGES  
BUILDING SPECIFICATIONS  
"C" CONSTRUCTION**

|                        |   |
|------------------------|---|
| <b>Foundation</b>      |   |
| C-4                    | Light concrete  |
| C-5                    | Standard concrete   |
| C-6                    | Reinforced concrete   |
| C-7                    | Reinforced concrete   |
| C-8                    | Reinforced concrete   |
| <b>Floor</b>           |   |
| C-4                    | Light concrete  |
| C-5                    | Concrete  |
| C-6                    | Concrete  |
| C-7                    | Concrete  |
| C-8                    | Concrete  |
| <b>Walls</b>           |   |
| C-4                    | 6" reinforced or 8" non-reinforced concrete block; painted exterior |
| C-5                    | 8" reinforced concrete block; painted exterior                      |
| C-6                    | 8" reinforced colored concrete block                                |
| C-7                    | 8" reinforced colored detailed block                                |
| C-8                    | 8" reinforced colored detailed block                                |
| <b>Roof Cover</b>      |   |
| C-4                    | Wood shingles   |
| C-5                    | Wood or composition shingle   |
| C-6                    | Good wood or composition shingles; light shakes                     |
| C-7                    | Good wood shingles; medium shakes                                   |
| C-8                    | Heavy shakes  |
| <b>Doors</b>           |   |
| C-4                    | Good hinged or light sliding  |
| C-5                    | Good hinged or light overhead                                       |
| C-6                    | Plywood overhead  |
| C-7                    | Plywood or metal overhead   |
| C-8                    | Good wood or metal  |
| <b>Lighting</b>        |   |
| C-4                    | One drop cord   |
| C-5                    | One light with switch   |
| C-6                    | One light with switch   |
| C-7                    | One light with switch   |
| C-8                    | Ample lighting  |
| <b>Interior Finish</b> |   |
| C-4                    | Unfinished  |
| C-5                    | Unfinished  |
| C-6                    | Unfinished  |
| C-7                    | Drywall on walls  |
| C-8                    | Drywall on all walls  |

**RESIDENTIAL GARAGES**  
**ATTACHED**  
**SQUARE FOOT COST TABLES**

**"C" CONSTRUCTION**

| <b>Class</b> | <b>220</b> | <b>260</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> | <b>440</b> | <b>480</b> | <b>540</b> | <b>600</b> | <b>720</b> |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| C-4          | 31.29      | 29.56      | 28.85      | 27.75      | 26.99      | 26.24      | 25.65      | 25.26      | 24.63      | 24.16      | 23.54      |
| C-4.5        | 32.65      | 30.84      | 30.23      | 29.08      | 28.22      | 27.51      | 26.99      | 26.50      | 25.93      | 25.44      | 24.54      |
| C-5          | 34.06      | 32.28      | 31.50      | 30.37      | 29.52      | 28.81      | 28.22      | 27.74      | 27.12      | 26.62      | 25.27      |
| C-5.5        | 35.87      | 33.99      | 33.21      | 32.05      | 31.11      | 30.33      | 29.71      | 29.20      | 28.59      | 28.07      | 26.86      |
| C-6          | 37.75      | 35.82      | 35.05      | 33.77      | 32.79      | 32.05      | 31.42      | 30.82      | 30.23      | 29.69      | 28.85      |
| C-6.5        | 40.38      | 38.24      | 37.44      | 36.17      | 35.05      | 34.31      | 33.58      | 33.03      | 32.37      | 31.76      | 30.92      |
| C-7          | 42.57      | 40.28      | 39.48      | 38.06      | 36.97      | 36.17      | 35.36      | 34.75      | 34.06      | 33.45      | 32.65      |
| C-7.5        | 47.18      | 44.86      | 43.89      | 42.38      | 41.12      | 40.21      | 39.34      | 38.66      | 37.88      | 37.25      | 36.30      |
| C-8          | 54.90      | 52.09      | 50.95      | 49.07      | 47.78      | 46.57      | 45.68      | 44.95      | 43.98      | 43.23      | 42.12      |

**DETACHED**  
**SQUARE FOOT COST TABLES**

**"C" CONSTRUCTION**

| <b>Class</b> | <b>220</b> | <b>260</b> | <b>280</b> | <b>320</b> | <b>360</b> | <b>400</b> | <b>440</b> | <b>480</b> | <b>540</b> | <b>600</b> | <b>720</b> |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| C-4          | 36.77      | 33.82      | 32.74      | 30.77      | 29.28      | 28.11      | 27.13      | 26.38      | 25.39      | 24.59      | 23.58      |
| C-4.5        | 38.25      | 35.24      | 34.01      | 32.96      | 30.51      | 29.36      | 28.39      | 27.60      | 26.62      | 25.81      | 24.70      |
| C-5          | 39.83      | 36.67      | 35.41      | 33.42      | 31.83      | 30.55      | 29.61      | 28.70      | 27.83      | 26.91      | 25.69      |
| C-5.5        | 41.81      | 38.55      | 37.28      | 35.09      | 33.51      | 32.20      | 31.14      | 30.30      | 29.20      | 28.31      | 27.72      |
| C-6          | 46.07      | 42.44      | 41.08      | 38.80      | 37.02      | 35.57      | 34.40      | 33.39      | 32.22      | 31.01      | 29.91      |
| C-6.5        | 49.06      | 45.30      | 43.80      | 41.33      | 39.48      | 37.97      | 36.78      | 35.66      | 34.49      | 33.51      | 31.93      |
| C-7          | 51.76      | 47.76      | 46.18      | 43.59      | 41.60      | 40.03      | 38.70      | 37.64      | 36.33      | 35.23      | 33.80      |
| C-7.5        | 57.65      | 53.12      | 51.37      | 48.53      | 46.34      | 44.50      | 43.03      | 41.89      | 40.43      | 39.28      | 37.55      |
| C-8          | 63.71      | 58.69      | 56.84      | 53.73      | 51.24      | 49.28      | 47.72      | 46.35      | 44.82      | 43.47      | 42.58      |

## RESIDENTIAL GARAGES

### MULTIPLE-FAMILY RESIDENTIAL GARAGES

Built at ground level and under a multiple-family unit.

#### SQUARE-FOOT COST TABLE

|      |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Area | 400   | 800   | 1,200 | 2,000 | 3,000 | 5,000 | 10,000 | 20,000 |
| Cost | 31.47 | 28.06 | 25.20 | 22.24 | 20.78 | 19.87 | 19.39  | 18.38  |

These costs include the following components.

1. A reinforced concrete floor in all areas.
2. Exterior walls, on one long side and two short sides, made up of a standard wood frame with stucco on both sides.
3. Steel support columns for the floor above.
4. A stucco ceiling in all areas.
5. The difference between the cost of a standard wood frame floor structure at the second floor level and one at the ground level.
6. An average quality light fixture per each 600 square feet.

For multiple-family residential garages built at ground level under a multi-family residence and including all components listed above except exterior walls, use \$16.21 per square foot.

### MULTIPLE-FAMILY RESIDENTIAL GARAGES BUILT AS SEPARATE BUILDINGS

#### SQUARE-FOOT COST TABLE

|      |       |       |       |       |       |       |        |        |
|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Area | 400   | 800   | 1,200 | 2,000 | 3,000 | 5,000 | 10,000 | 20,000 |
| Cost | 37.98 | 33.93 | 30.94 | 30.44 | 29.38 | 26.88 | 25.82  | 25.34  |

These costs include the following components:

1. Foundations.
2. A reinforced concrete floor in all areas.
3. Exterior walls, on one long side and two short sides made up of a standard wood frame with stucco on both sides.
4. Steel support columns supporting the roof.
5. An unceiled standard wood frame roof structure with composition tar and gravel, wood shingle, or light shake cover.
6. An average quality light fixture per each 600 square feet.

**Common wall: deduct \$3.96 per square foot of wall area**

### CARPORTS

Wood or steel posts, asphalt floors, built-up wood frame, or corrugated metal roof at \$14.77 to \$17.04 per square foot.

## RESIDENTIAL GARAGES

### BASEMENT GARAGES

One level, five feet below grade, directly beneath 2- to 4-story apartments with perimeter walls in vertical alignment.

SQUARE-FOOT AREA COST TABLE

| Type   | 5,000 | 7,500 | 10,000 | 15,000 | 20,000 | 30,000 | 40,000 | 60,000 |
|--|-------|-------|--------|--------|--------|--------|--------|--------|
| Reinforced concrete exterior walls, reinforced concrete columns and flat concrete roof slab                    | 48.95 | 46.48 | 43.38  | 42.11  | 40.91  | 40.40  | 39.81  | 39.36  |
| Concrete block exterior walls, reinforced concrete columns and flat concrete roof slab                         | 48.49 | 45.41 | 42.42  | 41.39  | 40.40  | 39.93  | 39.36  | 38.38  |
| Concrete block exterior walls, steel posts and beams, light concrete/metal roof fireproofed with spray plaster | 45.60 | 41.63 | 39.66  | 38.60  | 37.67  | 36.63  | 35.70  | 35.12  |
| Concrete block walls, wood posts and beams, light concrete/metal roof fireproofed with spray plaster           | 40.61 | 38.60 | 36.16  | 33.68  | 32.67  | 32.18  | 31.72  | 31.16  |

Basement garage costs include the following:

1. 5' excavation
2. Full wall enclosure
3. Storage facilities
4. Minimum lighting
5. Concrete floors
6. Two-car bays

Access stairways and driveway ramps outside the perimeter walls are considered to be part of the garage area.

Add \$780 for each security door with mechanical operation.

# AH 531.51: YARD IMPROVEMENTS

## SWIMMING POOLS

Swimming pool costs are based on the total surface square footage of the basic pool area. To this total, additives should be added that differ for each pool. The basic square-foot costs include permits, excavation, rough plumbing, rough electrical, steel reinforcing, Gunite®, plaster, filter, tile work, decking, finish work, profit, and overhead.

Extra costs to be added to the basic pool include costs for the heater, whirlpool spa, pool sweep, ladders, lights, steps, diving board, slide, and swim outs. Additionally, extra decking, long runs for electrical, water, and gas lines are costly. Soil conditions, right-of-way access, fence, and other obstacle removal and replacement increase total pool costs.

Various finish decorations such as rock, brick, flagstone trim, cantilevered decking, fancy or special tile, waterfalls, among others, add costs to the total pool costs. Care must be used to separate landscaping costs that are sometimes included in the total pool contract.

The typical pool includes filter, light, one set of steps, and three feet of perimeter decking. It is usually three feet to eight and one-half feet deep and will average 440 square feet of surface in size.

Pools can be classified into three categories: concrete, fiberglass, or in-ground liner. Concrete pools are usually built of Gunite®, wet pack, or poured and are the most common of the typical residential pools in use today.

Because of savings in cost, and rapid installation time, fiberglass pools are less expensive than concrete. A key cost in fiberglass pools is the distance between the manufacturer and consumer. Delivery charges can add between **\$18.00** and **\$22.00** per mile to the cost of the pool. In-ground liner pools are usually of concrete block or redwood base covered with a plastic liner, which in turn is sealed to the base.

### SWIMMING POOLS

|                  | <u>Cost Per Square Foot</u> |      |
|------------------|-----------------------------|------|
| Concrete Pools   | \$48 -                      | \$88 |
| Fiberglass Pools | 36 -                        | 48   |
| In-ground Liner  | 23 -                        | 36   |

A typical 440 square foot concrete pool will cost between **\$58.00** and **\$83.00** per square foot.

Swim spas are narrow lap pools with powerful jets that create a current. The swimmer swims in place against the current—**\$31,000 to \$52,000**.

**SWIMMING POOL ADDITIVES**

| <u>Heaters</u>                 |                      | <u>Other Additives</u>           |               |
|--------------------------------|----------------------|----------------------------------|---------------|
| <u>Average MBH<sup>4</sup></u> | <u>Average Price</u> |                                  |               |
| 125                            | 2,058                | Slides                           | 1,568 – 3,430 |
| 250                            | 3,528                | Diving Boards                    | 686 – 1,372   |
| 400                            | 3,920                | Concrete decking per square foot | 6.86          |
|                                |                      | Redwood decking per square foot  | 31.36         |

NOTE: Solar heating costs around three to four times more than standard gas heating, average **\$5,880 to \$7,840**. See AH 531.40, page 11, for additional data on solar heated pools.

Two typical types of filters are the cartridge and the diatomaceous earth. Typically, these costs are in the basic pool. Deduct for cartridge filter **\$588 - \$980**.

NOTE: Permit costs vary throughout the state ranging from **\$392 to \$1,764**.

NOTE: Pool sweeps average **\$1,470** but may be personal property.

**DETACHED SPAS (BELOW GROUND)**

|            | <u>With Pool</u> |          | <u>Without Pool</u> |          |
|------------|------------------|----------|---------------------|----------|
| Gunitite®  | 7,448            | - 13,818 | 14,504              | - 18,620 |
| Fiberglass | 5,880            | - 9,898  | 10,388              | - 13,320 |

**SPA ADDITIVES**

|                |       |
|----------------|-------|
| Remote Control | 980   |
| Solar Control  | 1,470 |

**RESIDENTIAL HOT TUBS AND SPAS**

Hot tubs are of wood construction, usually redwood, mahogany, or cedar. They sometimes have plastic liners.

Spas are usually constructed of formed fiberglass or acrylic. More expensive, but less often used, are units of ceramic tile on fiberglass backing.

Both spas and hot tubs commonly have pumps, filters, jets, blowers, and heaters that may be used in any class or size installation. Most units are gas and average about 8 percent more in cost than electric.

<sup>4</sup> One MBH = One thousand BTU's per hour.



There is little difference in spa and hot tub installed costs. Below- and aboveground have offsetting costs that are about equal. Replacement costs consider typical installations with normal access. Additions to existing residences may result in an excessive installation cost due to restricted access.

Standard sizes of spas are six, seven, and eight feet with 220 to 400 gallons capacity; wood tubs range from 500 to 800 gallons. Larger sizes are usually contracted under bid and are found primarily in health clubs, motor hotels, and apartment complexes. A large number of residential units are sold with the buyer doing the installation. Labor costs should be added to the historical cost of owner-installed units.

The following tables provide replacement costs for the most common installations, in place, and include materials, sales tax, and installation labor. Component deductions include materials, sales tax, and labor. Higher capacity components are interchangeably used in all classes. The components used will indicate where the replacement cost should fall in the table range of each class.

## YARD IMPROVEMENTS

### HOT TUBS-SPAS-ROUND-OCTAGONAL-SQUARE (Above Ground) INSTALLED COST WITH FULL EQUIPMENT GAS (Factor .92 for Electric Units)

| Installed Unit   | <u>Class I 6'</u> |       | <u>Class II 7'</u> |          | <u>Class III 8'</u> |       |
|--|-------------------|-------|--------------------|----------|---------------------|-------|
| Diameter   | 6'                |       | 7'                 |          | 8'                  |       |
| Hot Tub or Spa   | 5,496             | -     | 6,215              | 5,757    | -                   | 6,542 |
| Typical Contractors<br>Installation, Labor<br>(Included in Unit<br>Cost) | 2,093             | -     | 2,747              | 2,747    | -                   | 3,403 |
| Deduct for Lack of:  |                   |       |                    |          |                     |       |
| Heaters (Gas)  |                   |       | 1,113              |          | 1,244               | 1,439 |
| Heaters (Electric)   |                   |       | 556                |          | 622                 | 720   |
| Filters  |                   |       | 426                |          | 492                 | 589   |
| Blowers  |                   |       | 308                |          | 346                 | 426   |
| Pumps  |                   |       | 556                |          | 622                 | 655   |
| Jets (Spas)  |                   |       | 426                |          | 459                 | 492   |
| Jets (Hot Tubs)  |                   |       | 426                |          | 492                 | 523   |
| <b>Additional Costs</b>  |                   |       |                    |          |                     |       |
| Decks 30" Around Spa up to 8' Octagon                                    |                   |       |                    |          |                     |       |
| 6" High  |                   | Brick | 851                | Concrete |                     | 720   |
| 12" High 2 Steps   |                   | Brick | 1,112              | Concrete |                     | 1,046 |
| <u>12' x 12' Square Pattern</u>  |                   |       |                    |          |                     |       |
| Flush  |                   | Brick | 1,046              | Concrete |                     | 915   |
| 6" High  |                   | Brick | 1,439              | Concrete |                     | 1,112 |
| 12" High 2 Steps   |                   | Brick | 1,570              | Concrete |                     | 1,389 |

|  |                |     |
|--|----------------|-----|
| Mahogany wood hot tub - \$622 more than redwood.                         |                |     |
| Tile work - concrete base - see tile-in place costs.                     |                |     |
| Tile spa - glass base installed \$2,595 more than installed acrylic spa. |                |     |
| Excavation and dirt removal - sunken installation                        | 515            | 785 |
| Extra material above ground installation                                 | 459            | 523 |
| Extra installation on spas 1" thick                                      | 130            |     |
| Wood decks (common in Northern California)                               | 21 per sq. ft. |     |
| Remote Controls  | 130            | 197 |

## YARD IMPROVEMENTS

### CURBS

| <u>Type</u>                   | <u>Cost Per Linear Foot</u> |   |       |
|-------------------------------|-----------------------------|---|-------|
| Asphalt 6" high               | 7.19                        | - | 9.70  |
| Concrete Bumper Strip 6" x 6" | 9.14                        | - | 9.81  |
| Concrete 6" wide 12" high     | 9.81                        | - | 10.46 |
| Concrete 6" wide 18" high     | 11.11                       | - | 13.06 |
| Wood bumper rail 6" x 6"      | 10.46                       | - | 12.42 |
| Vertical curb and gutter      | 15.68                       | - | 17.64 |

### FENCES

|   | <u>Cost Per Linear Foot</u><br><u>Six Feet High</u> |   |       |
|---|---|---|-------|
| Redwood                                 |   |   |       |
| 1" x 4"                                 | 21.59   | - | 23.20 |
| 1" x 6"                                 | 22.39   | - | 25.13 |
| 1" x 8"                                 | 23.20   | - | 27.07 |
| 1" x 10"                                | 23.20   | - | 30.93 |
| 1" x 6" Picket                          | 21.59   | - | 27.07 |
| Cedar                                   |   |   |       |
| 1" x 4"                                 | 20.08   | - | 20.57 |
| 1" x 6"                                 | 21.59   | - | 23.20 |
| Douglas Fir                             | 18.41   | - | 26.82 |
| Tri Stake                               | 27.60   | - | 32.87 |
| Grape Stake                             | 24.98   | - | 28.92 |
| Good Neighbor                           | 18.41   | - | 21.03 |
| Basket Weave                            | 22.34   | - | 26.30 |
| Split Rail                              | 12.05   | - | 17.41 |
| Corral Fence                            |   |   |       |
| Two Rail                                | 12.05   | - | 17.41 |
| Three Rail                              | 14.46   | - | 22.34 |
| Picket                                  | 12.92   | - | 18.44 |
| Vinyl - 6' Solid (Add 10-15% for color) | 18.34   | - | 29.65 |

### WOOD GATES

| <u>Size</u> | <u>Range</u> |   |        |
|-------------|--------------|---|--------|
| 3' x 6'     | 265.00       | - | 313.00 |
| 4' x 4'     | 259.00       | - | 307.80 |
| 5' x 6'     | 325.00       | - | 383.50 |

### CHAIN LINK GATES

| <u>Width</u> | <u>Height</u> |           |           |           |
|--------------|---------------|-----------|-----------|-----------|
|              | <u>3'</u>     | <u>4'</u> | <u>5'</u> | <u>6'</u> |
| 3'           | 227           | 261       | 295       | 348       |
| 5'           | 263           | 315       | 430       | 486       |
| 15'          | 494           | 641       | 864       | 939       |

## YARD IMPROVEMENTS

### FENCES (Contd.)

| Chain Link Fences: 11 Gauge, 2" Mesh, Top Rail | Per Linear Foot |       |       |       |       |
|--|-----------------|-------|-------|-------|-------|
|  | Height          |       |       |       |       |
|  | 4'              | 6'    | 8'    | 10'   | 12'   |
|  | 12.15           | 16.57 | 21.10 | 25.52 | 29.84 |

### PAVING

| Type   | Cost Per Square Foot |                    |              |  |
|--|----------------------|--------------------|--------------|--|
|  | 0 to<br>1,000        | 1,001 to<br>10,000 | 10,001<br>Up |  |
| 2" asphalt on 4" rock base                         | 2.96                 | 2.82               | 1.90         |  |
| 2" pea gravel                                      | 0.57                 | 0.50               | 0.45         |  |
| 2" concrete on 4" rock base                        | 4.93                 | 3.87               | 3.45         |  |
| 4" concrete aggregate on 4" rock base (reinforced) | 5.62                 | 4.77               | 4.17         |  |
| 2" concrete salt finish with color                 | 7.70                 | 6.76               | -            |  |
| Broom finish                                       | 6.08                 | 5.48               | 4.39         |  |
| Decorator concrete, stamped and stenciled          |                      | 12.38              | 10.26        |  |

### UNCOVERED PATIOS

| Type            | Cost Per Square Foot |
|-----------------|----------------------|
| Brick in mortar | 17.97                |
| Brick in sand   | 16.60                |
| Flagstone       | 19.57                |
| Quarry tile     | 14.23                |

### GARDEN STEPS AND STAIRS

| Type                    | Cost Per Square Foot |
|-------------------------|----------------------|
| Concrete steps          | 27.60                |
| Brick surface steps     | 34.79                |
| Flagstone surface steps | 15.44                |

### MOWING STRIP

| Type               | Cost Per Linear Foot |   |       |
|--------------------|----------------------|---|-------|
| 6" wide concrete   | 8.80                 | - | 9.49  |
| 12" wide concrete  | 10.98                | - | 13.04 |
| 12" wide/3" rise   | 14.53                | - | 16.01 |
| 1 row brick on top | 14.65                | - | 16.91 |

### CONCRETE BLOCK WALLS - INCLUDING FOUNDATION AND CAPPING COSTS

| Height | Cost Per Linear Foot |          |          |
|--------|----------------------|----------|----------|
|        | 4" Thick             | 6" Thick | 8" Thick |
| 40"    | 29.10                | 33.26    | 38.81    |
| 48"    | 34.65                | 40.20    | 44.36    |
| 56"    | 38.81                | 47.13    | 51.28    |
| 64"    | 45.73                | 52.67    | 58.22    |
| 72"    | 51.28                | 65.15    | 63.76    |

## YARD IMPROVEMENTS

### LAWN SPRINKLERS

| <u>Type</u>                        | <u>Cost</u>          |
|------------------------------------|----------------------|
| Lawn - shrubbery and bubbler heads | 0.89 per. sq. ft.    |
| Rotary pop-up sprinkler heads      | 0.95 per. sq. ft.    |
| Sprinkler heads                    | 0.95 per. sq. ft.    |
| Skinner lines                      | 5.21 l. f.           |
| Automatic Valve -                  | Add 0.85 per sq. ft. |

### PATIOS

|   |         |                                     |
|---|---------|-------------------------------------|
| <p>Minimum Quality Wood<br/>                     Concrete slab with footings under posts, 4" x 4" posts, 4" x 6" beam, 2" x 4" rafters, 1" x 6" sheathing, and 12" overhang all around. Composition with gravel or aluminum roof cover. Wood painted or stained.</p>                                |         |                                     |
| 16.41   | to      | <u>Cost</u><br>18.23 sq. ft.        |
| <p>Good Quality Wood<br/>                     Concrete slab with continuous footing. 6" x 6" posts, 6" x 8" beam, 2" x 6" or 4" x 6" rafters with 2" x 6" fascia. 1" x 8" vee groove shiplap sheathing, and 18" overhang all around. Composition with rock roof cover. Wood painted or stained.</p> |         |                                     |
| 21.47   | to      | <u>Cost</u><br>29.28 square foot    |
| <p><u>Additions</u></p>   |         |                                     |
| Shingle roof  |         | 3.30 per square foot                |
| Shake roof  |         | 3.78 per square foot                |
| Screen walls (includes door)  | 40.88 - | 58.19 per linear foot               |
| Lights  | 83.35 - | 99.07 each                          |
| <p><u>Deduct for Lack of</u></p>  |         |                                     |
| Concrete slab   |         | <u>Cost</u><br>5.90 per square foot |
| Continuous footing  |         | 7.38 per linear foot                |
| <p><u>Aluminum Patios</u></p>   |         |                                     |
| Concrete slab, aluminum framework and enameled aluminum roof cover  | 11.95 - | 15.12 per square foot               |
| Additions - Screen walls (includes door)  |         | 37.54 per linear foot               |
| Screen walls - removable plastic panels   | 77.25 - | 98.90 per linear foot               |
| Styrofoam insulated ceilings  |         | 3.33 per square foot                |
| Lights  |         | 93.45 - 116.80 each                 |
| Deduct - for lack of slab   | 4.03 -  | 6.56 per square foot                |
| Sun rooms   | 30.00 - | 100.80 per square foot              |
| Lattice sun screen, fiberglass or aluminum  | 13.35 - | 14.83 per square foot               |
| Barbeque islands  | 1,397 - | 11,858 each                         |

## AH 531.60: IN-PLACE COSTS (SEGREGATED COSTS)

In-place costs are the total cost per unit, such as a square foot or cubic foot, of individual components or parts of a building. These *individual* costs can be used to build up square-foot costs or provide total costs of items or surfaces ***not included in the basic square-foot costs***.

Costs in this chapter may be used for additions and construction-in-progress appraisals, as well as the unit-in-place cost estimating method. *Unit-in-place* is a cost estimating method in which the total building cost is estimated by adding together the unit costs for the various building components as installed. This method is also called the *segregated cost method*.

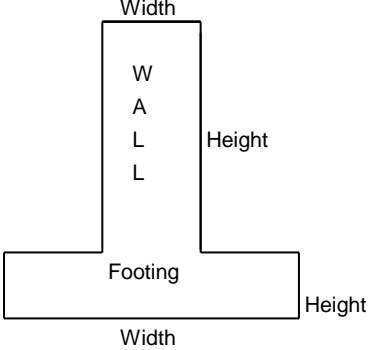
A replacement cost estimate is made by the unit-in-place method by first estimating the in-place costs per square foot of all flat surfaces such as floors, walls, ceilings, or roofs and multiplying them by the areas of the respective surfaces. The next step consists of computing the volume of other components such as foundations or footings and multiplying it by an in-place cost per unit of volume. The total cost is the sum of these costs plus the in-place cost of components such as plumbing systems, electrical systems, cabinets, doors, among others. The in-place costs used should include all elements of cost, for example, a pro rata share of general costs such as overhead, profit, and financing fees as well as labor and material costs.

## IN-PLACE COSTS

### FOUNDATIONS - REINFORCED CONCRETE

| <u>Type</u> | <u>Cost Per Cubic Foot</u> |   |       |
|-------------|----------------------------|---|-------|
| Footings    | 17.45                      | - | 20.30 |
| Walls       | 17.76                      | - | 22.20 |

| Foundation cost per linear foot - including footing.                              |                |               |              |               |                             |   |       |
|---|----------------|---------------|--------------|---------------|-----------------------------|---|-------|
|  | <u>Footing</u> |               | <u>Wall</u>  |               | <u>Cost per Linear Foot</u> |   |       |
|   | <u>Width</u>   | <u>Height</u> | <u>Width</u> | <u>Height</u> |                             |   |       |
| W   | 12"            | 6"            | 6"           | 6"            | 15.81                       | - | 20.52 |
| A   | 12             | 6             | 6            | 12            | 21.02                       | - | 23.63 |
| L   | 12             | 6             | 6            | 18            | 24.20                       | - | 27.01 |
| L   | 12             | 6             | 6            | 24            | 28.23                       | - | 31.83 |
| Footing   | 16             | 8             | 8            | 12            | 30.80                       | - | 36.36 |
| Height  | 16             | 8             | 8            | 24            | 42.70                       | - | 47.02 |
| Width   | 16             | 8             | 8            | 36            | 48.52                       | - | 51.23 |

### HILLSIDE FOUNDATIONS

|  | <u>Cost</u> |   |                        |
|--|-------------|---|------------------------|
| Retaining walls  | 27.22       | - | 38.58 per cubic foot   |
| Reinforced concrete columns 16" circular               | 54.46       | - | 75.63 per linear foot  |
| Steel columns: 6" diameter                             | 70.69       | - | 106.03 per linear foot |
| 8" diameter  | 88.36       | - | 141.37 per linear foot |
| 10" diameter   | 114.86      | - | 176.72 per linear foot |
| Pipe columns: 4" diameter                              | 41.24       | - | 42.84 per linear foot  |
| 6" diameter  | 43.38       | - | 44.98 per linear foot  |
| 8" diameter  | 45.52       | - | 47.12 per linear foot  |
| Wood poles: 10" diameter                               | 25.70       | - | 29.99 per linear foot  |
| 12" diameter   | 29.99       | - | 34.27 per linear foot  |
| 14" diameter   | 34.27       | - | 36.41 per linear foot  |
| Caissons: 24" diameter (depending on depth to bedrock) | 5,655       | - | 16,965 each            |

For Class 8 and above on 35% to 40% slope, add 30% to 40% to total building costs.

### FLOORS - REINFORCED CONCRETE

| <u>Size and Type</u>                        | <u>Cost Per Square Foot</u> |   |      |
|---|-----------------------------|---|------|
| 4" slab only                                | 4.24                        | - | 4.83 |
| 6" slab only                                | 5.04                        | - | 5.47 |
| 8" slab only                                | 5.47                        | - | 6.56 |
| 4" with 4" rockfill and waterproof membrane | 4.67                        | - | 5.47 |
| 6" with 6" rockfill and waterproof membrane | 6.11                        | - | 6.50 |
| 8" with 8" rockfill and waterproof membrane | 6.50                        | - | 7.64 |

### MUDSILLS

| <u>Size and Type</u> | <u>Cost Per Linear Foot</u> |   |      |
|----------------------|-----------------------------|---|------|
| 2" x 4" redwood      | 3.17                        | - | 3.54 |
| 2" x 6" redwood      | 3.70                        | - | 4.28 |

Cost includes treating, boring, and bedding.

## IN-PLACE COSTS

### GIRDERS

| <u>Size and Type</u> | <u>Cost Per Linear Foot</u> |   |       |
|----------------------|-----------------------------|---|-------|
| 4" x 6" Douglas Fir  | 4.98                        | - | 6.50  |
| 4" x 8" Douglas Fir  | 5.78                        | - | 6.74  |
| 4" x 10" Douglas Fir | 6.74                        | - | 7.32  |
| 4" x 12" Douglas Fir | 8.27                        | - | 10.65 |
| 6" x 6" Douglas Fir  | 6.74                        | - | 8.27  |
| 6" x 8" Douglas Fir  | 7.32                        | - | 8.84  |
| 6" x 10" Douglas Fir | 8.12                        | - | 9.64  |
| 6" x 12" Douglas Fir | 9.18                        | - | 10.61 |
| 8" x 8" Douglas Fir  | 10.61                       | - | 11.30 |

### FLOOR JOISTS

| <u>Size and Type</u>     | <u>Cost Per Square Foot of Floor Area</u> |   |      |
|--------------------------|---|---|------|
| 2" x 4" - 16" on center  | 1.86                                      | - | 2.38 |
| 2" x 4" - 24" on center  | 1.68                                      | - | 2.23 |
| 2" x 6" - 16" on center  | 2.38                                      | - | 2.81 |
| 2" x 6" - 24" on center  | 1.96                                      | - | 2.44 |
| 2" x 8" - 16" on center  | 2.99                                      | - | 3.28 |
| 2" x 8" - 24" on center  | 2.77                                      | - | 3.07 |
| 2" x 10" - 16" on center | 3.07                                      | - | 3.54 |
| 2" x 10" - 24" on center | 2.87                                      | - | 3.28 |
| 2" x 12" - 16" on center | 3.53                                      | - | 3.90 |
| 2" x 12" - 24" on center | 3.31                                      | - | 3.63 |

### WALLS - CONCRETE OR MASONRY

| <u>Size and Type</u>                | <u>Cost Per Square Foot of Wall Area</u> |   |       |
|-------------------------------------|--|---|-------|
| <b>Brick</b>                        |  |   |       |
| 8" common brick                     | 31.44                                    | - | 36.61 |
| 12" common brick                    | 39.16                                    | - | 44.22 |
| 8" common brick, 1 side face brick  | 36.61                                    | - | 39.16 |
| 12" common brick, 1 side face brick | 41.56                                    | - | 47.32 |
| <b>Concrete block reinforced</b>    |  |   |       |
| 8" gray                             | 17.95                                    | - | 19.25 |
| 8" colored                          | 19.25                                    | - | 20.51 |
| 8" detailed blocks, gray            | 19.25                                    | - | 20.51 |
| 8" detailed blocks, colored         | 19.25                                    | - | 20.51 |
| 8" sandblasted                      | 17.95                                    | - | 19.25 |
| 8" splitface, gray                  | 33.27                                    | - | 35.84 |
| 8" splitface, colored               | 31.77                                    | - | 34.54 |
| 8" slumpstone, gray                 | 31.77                                    | - | 34.54 |
| 8" slumpstone, colored              | 33.27                                    | - | 35.84 |
| 12" gray                            | 19.25                                    | - | 20.51 |
| 4" screen block                     | 17.95                                    | - | 20.51 |



## IN-PLACE COSTS

### SUBFLOORING

| <u>Size and Type</u> | <u>Cost Per Square Foot of Floor Area</u> |   |      |
|----------------------|---|---|------|
| 1" x 6" or 8"        | 2.62                                      | - | 2.69 |
| 2" T & G             | 3.63                                      | - | 4.28 |
| 5/8" plywood         | 2.74                                      | - | 3.13 |
| 3/4" plywood         | 3.00                                      | - | 3.45 |
| 1 1/8" plywood       | 3.21                                      | - | 3.53 |
| 1/2" particle board  | 1.86                                      | - | 2.36 |
| 3/8" particle board  | 1.60                                      | - | 2.15 |

### WOOD FRAME WALL FRAMING

| <u>Size and Type</u>    | <u>Cost Per Square Foot of Wall Area</u> |   |      |
|-------------------------|--|---|------|
| 2" x 3" - 16" on center | 2.41                                     | - | 2.96 |
| 2" x 3" - 24" on center | 2.17                                     | - | 2.59 |
| 2" x 4" - 16" on center | 2.59                                     | - | 3.13 |
| 2" x 4" - 24" on center | 2.41                                     | - | 2.96 |
| 2" x 6" - 16" on center | 3.13                                     | - | 3.57 |
| 2" x 6" - 24" on center | 2.96                                     | - | 3.31 |

### WOOD POSTS

| <u>Size and Type</u>  | <u>Cost Per Linear Foot of Height</u> |   |       |
|-----------------------|---------------------------------------|---|-------|
| 4" x 4" Douglas Fir   | 5.17                                  | - | 5.84  |
| 4" x 6" Douglas Fir   | 5.44                                  | - | 6.13  |
| 6" x 6" Douglas Fir   | 5.84                                  | - | 6.29  |
| 8" x 8" Douglas Fir   | 6.95                                  | - | 7.90  |
| 10" x 10" Douglas Fir | 9.43                                  | - | 10.35 |
| 12" x 12" Douglas Fir | 14.10                                 | - | 16.92 |

### WALL SHEATHING

| <u>Size and Type</u>             | <u>Cost Per Square Foot of Wall Area</u> |   |      |
|----------------------------------|--|---|------|
| #15 felt                         | 0.56                                     | - | 0.67 |
| Line wire                        | 0.48                                     | - | 0.55 |
| 1/2" asphalt impregnated drywall | 1.64                                     | - | 1.72 |
| 1/2" fiber board                 | 1.68                                     | - | 1.77 |
| 3/8" plywood                     | 2.19                                     | - | 2.74 |
| 1" boards solid                  | 2.43                                     | - | 3.14 |
| 1" x 4" or 6" spaced             | 1.68                                     | - | 1.94 |

### CEILING JOISTS

| <u>Size and Type</u>     | <u>Cost Per Square Foot of Floor Area</u> |   |      |
|--------------------------|---|---|------|
| 2" x 4" - 16" on center  | 2.58                                      | - | 2.72 |
| 2" x 4" - 24" on center  | 2.36                                      | - | 2.49 |
| 2" x 6" - 16" on center  | 2.74                                      | - | 2.91 |
| 2" x 6" - 24" on center  | 2.49                                      | - | 2.58 |
| 2" x 8" - 16" on center  | 2.84                                      | - | 3.00 |
| 2" x 8" - 24" on center  | 2.58                                      | - | 2.74 |
| 2" x 10" - 16" on center | 2.91                                      | - | 3.09 |
| 2" x 10" - 24" on center | 2.67                                      | - | 2.84 |
| 2" x 12" - 16" on center | 3.00                                      | - | 3.18 |
| 2" x 12" - 24" on center | 2.74                                      | - | 2.91 |

## IN-PLACE COSTS

### ROOF RAFTERS

| <u>Size and Type</u>    | <u>Cost Per Square Foot of Floor Area</u> |                     |                      |
|-------------------------|---|---------------------|----------------------|
|                         | <u>Flat-roof</u>                          | <u>5 in 12 Rise</u> | <u>12 in 12 Rise</u> |
| 2" x 4" - 16" on center | 2.86                                      | 3.33                | 3.86                 |
| 2" x 4" - 24" on center | 2.48                                      | 3.14                | 3.71                 |
| 2" x 4" - 30" on center | 2.38                                      | 3.05                | 3.50                 |
| 2" x 6" - 16" on center | 3.14                                      | 3.61                | 4.14                 |
| 2" x 6" - 24" on center | 2.76                                      | 3.41                | 3.98                 |
| 2" x 8" - 16" on center | 3.41                                      | 3.86                | 4.44                 |
| 2" x 8" - 24" on center | 3.05                                      | 3.71                | 4.23                 |

Includes ridge boards, collar ties, purlins, bracing, and typical overhang.

### ROOF SHEATHING AND DECKING

| <u>Size and Type</u>            | <u>Cost Per Square Foot of Floor Area</u> |                     |                      |
|---------------------------------|---|---------------------|----------------------|
|                                 | <u>Flat-roof</u>                          | <u>5 in 12 Rise</u> | <u>12 in 12 Rise</u> |
| 3/4" cellular concrete          | 1.71                                      |                     |                      |
| 2" gypsum poured                | 2.08                                      |                     |                      |
| 1 1/2" insulation board         | 4.53                                      | 4.72                | 6.18                 |
| 2" insulation board             | 5.16                                      | 5.54                | 7.21                 |
| 1" solid wood boards            | 1.94                                      | 2.13                | 2.97                 |
| 1" x 4" or 6" spaced wood board | 1.12                                      | 1.23                | 1.57                 |
| 3/8" plywood                    | 1.69                                      | 1.79                | 2.69                 |
| 1/2" plywood                    | 2.17                                      | 2.28                | 3.04                 |
| 5/8" plywood                    | 2.28                                      | 2.36                | 3.23                 |
| 2" T & G                        | 4.42                                      | 4.80                | 6.65                 |

### ROOFING

| <u>Size and Type</u>   | <u>Cost Per Square Foot of Floor Area</u> |                     |
|--|---|---------------------|
|  | <u>Flat-roof to 3 in 12 Rise</u>          | <u>6 in 12 Rise</u> |
| Built-up roofing   |   |                     |
| 3 layers 15 lb. felt hot mopped with pea gravel                      | 1.99                                      | 2.76                |
| 4 layers 15 lb. felt hot mopped with pea gravel                      | 2.45                                      | 2.36                |
| 1 layer 30 lb. felt with a 90 lb. cap sheet                          | 1.77                                      | 2.15                |
| 1 layer 30 lb. felt, 2 layers 15 lb. felt hot mopped with pea gravel | 1.99                                      | 2.57                |
| 1 layer 30 lb. felt, 3 layers 15 lb. felt hot mopped with pea gravel | 2.45                                      | 2.77                |

## IN-PLACE COSTS

### ROOFING (Contd.)

| <u>Size and Type</u>                  | <u>Cost Per Square Foot of Floor Area</u> |                         |                          |
|---------------------------------------|---|-------------------------|--------------------------|
|                                       | <u>3 in 12<br/>Rise</u>                   | <u>5 in 12<br/>Rise</u> | <u>12 in 12<br/>Rise</u> |
| Composition shingles                  |   |                         |                          |
| 168 lb. hex. strip with 15 lb. felt   |   | 2.00                    | 2.61                     |
| 235 lb. square strip with 15 lb. felt |   | 2.61                    | 4.02                     |
| Wood shingles                         |   |                         |                          |
| 16" #1 red cedar 4 1/2" exposure      |   | 3.71                    | 4.55                     |
| 24" royals 7 1/2" exposure            |   | 3.90                    | 5.00                     |
| Natural shakes                        |   |                         |                          |
| 1/2" to 3/4" red cedar                |   | 3.73                    | 4.55                     |
| 3/4" to 1 1/4" red cedar              |   | 4.96                    | 5.62                     |
| Composition shingles with 38 lb. felt |   | 4.60                    | 5.89                     |
| Clay tile                             |   |                         |                          |
| Red mission tile with 2 layers        |   |                         |                          |
| 40 lb. felt and 1 layer of            |   |                         |                          |
| 30 lb. felt hot mopped                |   | 5.80                    | 7.26                     |
| Red shingle tile with 2 layers        |   |                         |                          |
| 40 lb. felt with 1 layer              |   |                         |                          |
| 30 lb. felt hot mopped                |   | 4.88                    | 5.68                     |
| Concrete tile/shake                   | 2.91                                      | 3.31                    | 4.59                     |
| Slate                                 |   |                         |                          |
| Pennsylvania black 30 lb. felt        | 11.30                                     | 12.69                   | 18.41                    |
| Metal                                 |   |                         |                          |
| Aluminum interlock shingles           |   | 5.91                    | 7.36                     |
| Aluminum corrugated 24 gauge          | 3.03                                      | 3.49                    | 3.36                     |
| Galvanized iron corrugated 26 gauge   | 3.90                                      | 3.97                    | 4.55                     |
| Copper standing seam 10 oz.           | 13.96                                     | 14.37                   | 17.92                    |
| Copper flat lock 10 oz.               | 14.54                                     | 15.28                   | 18.98                    |

Cost includes typical overhangs.

### SKYLIGHTS and OPTIONS

|                  | <u>Cost</u> |                       |
|------------------|-------------|-----------------------|
| Skylights        | 1,463       | - 1,777 each          |
| Tubular Skylight | 521         | - 685 each            |
| Extra tubing     |             | 26.13 per linear foot |

### GUTTERS

| <u>Size and Type</u>                  | <u>Cost Per Linear Foot</u> |         |
|---------------------------------------|-----------------------------|---------|
| Seamless galvanized gutters - painted | 7.66                        | - 8.40  |
| 6" deep galvanized gutters - painted  | 10.16                       | - 11.04 |
| 8" deep galvanized gutters - painted  | 11.04                       | - 11.85 |
| Downspouts, galvanized - painted      | 5.98                        | - 6.81  |

## IN-PLACE COSTS

### WALL COVER - EXTERIOR

| <u>Size and Type</u>               | <u>Cost Per Square Foot of Wall Area</u> |   |       |
|------------------------------------|--|---|-------|
| Aluminum siding                    |  |   |       |
| Horizontal, colored                | 4.85                                     | - | 5.26  |
| Horizontal, colored, insulated     | 5.06                                     | - | 5.47  |
| Vertical, colored                  | 5.26                                     | - | 5.56  |
| Vertical, colored, insulated       | 5.47                                     | - | 5.66  |
| Masonry veneer - Brick             |  |   |       |
| Select common                      | 14.13                                    | - | 16.95 |
| Red jumbo                          | 13.55                                    | - | 15.51 |
| Roman                              | 21.92                                    | - | 23.79 |
| Norman                             | 18.06                                    | - | 19.98 |
| Glazed                             | 29.42                                    | - | 31.40 |
| Rock facia                         | 17.17                                    |   | 19.63 |
| Concrete block                     |  |   |       |
| 4" gray                            | 12.86                                    | - | 13.94 |
| 4" colored                         | 13.42                                    | - | 14.48 |
| 4" splitface, gray                 | 21.24                                    | - | 23.37 |
| 4" splitface, colored              | 23.37                                    | - | 25.78 |
| 4" slumpstone, gray                | 23.37                                    | - | 24.68 |
| 4" slumpstone, colored             | 21.24                                    | - | 23.37 |
| Imitation stone                    | 23.69                                    | - | 28.71 |
| Natural stone                      | 27.67                                    | - | 30.77 |
| Shingles and shakes                |  |   |       |
| Aluminum                           | 6.58                                     | - | 7.15  |
| Composition                        | 4.14                                     | - | 4.59  |
| Asphalt                            | 2.19                                     | - | 2.36  |
| Natural shakes                     | 6.28                                     | - | 6.72  |
| Wood shingles                      | 5.41                                     | - | 5.86  |
| Shake panels                       | 5.86                                     | - | 6.28  |
| Stucco                             |  |   |       |
| 1" on masonry                      | 3.85                                     | - | 4.94  |
| 1" on wire                         | 4.47                                     | - | 5.61  |
| Wood siding                        |  |   |       |
| 1/4" hardboard prime painted       | 2.91                                     | - | 3.24  |
| 7/16" hardboard prime painted      | 3.63                                     | - | 4.06  |
| 3/8" plywood prime painted         | 3.32                                     | - | 3.59  |
| 3/8" plywood plastic coated        | 4.49                                     | - | 4.76  |
| 3/8" plywood rough cedar           | 2.98                                     | - | 3.18  |
| 5/8" plywood texture III           | 3.18                                     | - | 3.59  |
| 5/8" plywood redwood textured      | 4.04                                     | - | 4.22  |
| 1/2" bevel siding                  | 2.90                                     | - | 3.24  |
| 3/4" bevel siding                  | 3.59                                     | - | 3.79  |
| 3/4" bevel siding, mitered corners | 3.79                                     | - | 4.15  |
| 1" rustic or lap siding (cedar)    | 3.59                                     | - | 3.79  |
| 1" rustic or lap siding (redwood)  | 4.42                                     | - | 4.66  |

## IN-PLACE COSTS

### FLOOR COVERING

| <u>Size and Type</u>                      | <u>Cost Per Square Foot</u> |   |       |
|---|-----------------------------|---|-------|
| Asphalt tile                              | 1.47                        | - | 1.80  |
| Carpet                                    |                             |   |       |
| Low cost cotton, nylon, or acrylic        | 2.72                        | - | 3.14  |
| Medium price wool, nylon, or acrylic      | 3.68                        | - | 4.17  |
| High price wool, nylon, or acrylic        | 5.23                        | - | Up    |
| Ceramic tile (mosaic including base)      | 11.59                       | - | 15.70 |
| Cork tile                                 | 4.13                        | - | 4.94  |
| Cork tile, vinyl coated                   | 4.76                        | - | 6.75  |
| Leather                                   | 32.77                       | - | 54.00 |
| Linoleum                                  | 3.39                        | - | 7.05  |
| Epoxy-type floor only (decorative flakes) | 5.79                        | - | 7.75  |
| Quarry tile                               |                             |   |       |
| Regular grout                             | 14.84                       | - | 16.82 |
| Epoxy grout                               | 17.76                       | - | 18.73 |
| Rubber tile                               | 9.04                        | - | 13.69 |
| Terrazzo                                  | 15.15                       | - | 18.95 |
| Vinyl composition tile                    | 2.28                        | - | 4.83  |
| Vinyl sheeting                            | 4.07                        | - | 4.75  |
| Vinyl tile - solid                        | 4.16                        | - | 5.68  |
| Wood flooring                             |                             |   |       |
| Douglas fir                               |                             |   |       |
| 1" x 4" flat grain T & G                  | 7.50                        | - | 7.96  |
| 1" x 4" vertical grain T & G              | 7.96                        | - | 8.84  |
| Oak                                       |                             |   |       |
| 5/16" x 1 1/2" square edge #. 2 common    | 9.95                        | - | 10.53 |
| 5/16" x 1 1/2" square edge #. 1 common    | 10.68                       | - | 11.44 |
| 1/2" x 2" T & G #. 2 common               | 10.87                       | - | 11.71 |
| 1/2" x 2" T & G #. 1 common               | 12.33                       | - | 12.90 |
| 1/2" x 2" T & G select                    | 12.35                       | - | 12.92 |
| 1/2" x 2" T & G clear                     | 12.59                       | - | 13.19 |
| 13/16" x 2 1/4" T & G #. 2 common         | 12.76                       | - | 13.09 |
| 13/16" x 2 1/4" T & G #. 1 common         | 12.96                       | - | 13.24 |
| 13/16" x 2 1/4" T & G select              | 12.90                       | - | 13.45 |
| 13/16" x 2 1/4" T & G clear               | 13.45                       | - | 14.30 |
| 13/16" x 2 1/4" T & G select quartered    | 13.73                       | - | 14.87 |
| Oak parquetry                             |                             |   |       |
| 5/16" #. 1 common set in mastic           | 11.36                       | - | 12.01 |
| 3/16" clear plain                         | 11.85                       | - | 12.62 |
| Oak random plank                          |                             |   |       |
| 5/16" beveled edge                        | 10.76                       | - | 11.38 |
| 3/16" T & G                               | 12.66                       | - | 13.29 |
| Maple                                     |                             |   |       |
| 13/16" x 2 1/4" T & G                     | 13.51                       | - | 17.17 |

## IN-PLACE COSTS

### FLOOR BASE

| <u>Size and Type</u>            | <u>Cost Per Linear Foot</u> |   |       |
|---------------------------------|-----------------------------|---|-------|
| Epoxy cover base (2 1/2" to 6") | 13.03                       | - | 15.09 |
| Rubber (4" to 6")               | 5.01                        | - | 6.06  |
| Wood (pine) (2 1/2" to 6")      | 5.59                        | - | 6.98  |
| Wood (hardwood) (2" to 6")      | 8.82                        | - | 9.25  |
| Terrazzo                        | 15.49                       | - | 19.11 |
| Vinyl (2 1/2" to 4")            | 2.83                        | - | 3.74  |

### INTERIOR WALL LINING

| <u>Size and Type</u>                | <u>Cost Per Square Foot of Wall Area</u> |   |       |
|-------------------------------------|--|---|-------|
| <b>Drywall</b>                      |  |   |       |
| 1/2" taped and sanded               | 1.53                                     | - | 1.75  |
| 5/8" taped and sanded               | 1.62                                     | - | 1.82  |
| 1/2" taped, textured and painted    | 2.12                                     | - | 2.55  |
| 5/8" taped, textured and painted    | 2.32                                     | - | 2.72  |
| 1/2" taped, stippled and enameled   | 2.72                                     | - | 3.14  |
| 5/8" taped, stippled and enameled   | 2.94                                     | - | 3.34  |
| <b>Hardboard</b>                    |  |   |       |
| 1/8"                                | 2.46                                     | - | 2.87  |
| 1/4"                                | 2.87                                     | - | 3.07  |
| 1/8" plastic coated with metal trim | 6.65                                     | - | 8.68  |
| 1/4" plastic coated with metal trim | 7.64                                     | - | 9.76  |
| 1/4" wood grain finish              | 3.39                                     | - | 5.15  |
| <b>Lath</b>                         |  |   |       |
| Gypsum lath                         | 1.29                                     | - | 1.65  |
| Metal lath                          | 1.75                                     | - | 2.01  |
| <b>Plaster</b>                      |  |   |       |
| 2 coats, no lath                    | 4.13                                     | - | 5.17  |
| 3 coats, no lath                    | 5.17                                     | - | 6.19  |
| <b>Plywood paneling (hardwood)</b>  |  |   |       |
| 1/4" prefinished                    | 4.90                                     | - | 7.61  |
| 1/4" unfinished                     | 4.20                                     | - | 7.13  |
| 7/16" prefinished                   | 7.13                                     | - | 11.47 |
| 3/4" unfinished                     | 7.61                                     | - | 9.72  |
| <b>Tile</b>                         |  |   |       |
| Ceramic                             | 11.41                                    | - | 14.85 |
| Plastic                             | 8.46                                     | - | 10.58 |
| Tile board or marlite, metal trim   | 8.02                                     | - | 9.97  |
| Terrazzo                            | 20.13                                    | - | 25.28 |
| Wallpaper - Standard                | 1.31                                     | - | 2.84  |
| <b>Wood Paneling</b>                |  |   |       |
| Knotty Pine                         | 4.57                                     | - | 5.06  |
| Red Cedar                           | 5.26                                     | - | 6.42  |
| Redwood                             | 5.26                                     | - | 6.42  |

## IN-PLACE COSTS

### CEILING FINISH

| <u>Size and Type</u>  | <u>Cost Per Square Foot</u> |   |      |
|---|-----------------------------|---|------|
| <b>Drywall</b>  |                             |   |      |
| 1/2" taped and sanded   | 1.64                        | - | 1.86 |
| 5/8" taped and sanded   | 1.74                        | - | 2.06 |
| 1/2" taped, textured and painted                                  | 2.28                        | - | 2.54 |
| 5/8" taped, textured and painted                                  | 2.51                        | - | 3.20 |
| 1/2" taped, stippled and enameled                                 | 2.93                        | - | 3.26 |
| 5/8" taped, stippled and enameled                                 | 3.13                        | - | 3.37 |
| 1/2" taped with acoustical texture                                | 2.15                        | - | 2.65 |
| 5/8" taped with acoustical texture                                | 2.30                        | - | 2.82 |
| <b>Lath</b>   |                             |   |      |
| Gypsum lath   | 1.25                        | - | 1.40 |
| Metal lath  | 1.52                        | - | 1.72 |
| <b>Plaster</b>  |                             |   |      |
| 2 coats, no lath  | 4.13                        | - | 4.86 |
| 3 coats, no lath  | 4.33                        | - | 5.31 |
| 3 coats, suspended on metal lath                                  | 7.29                        | - | 7.75 |
| 1/2" acoustical plaster, no lath                                  | 6.43                        | - | 6.84 |
| <b>Acoustical tile</b>  |                             |   |      |
| Stapled to furring strips (not including strips)                  |                             |   |      |
| 3/4" x 12" x 12"  | 3.27                        | - | 4.29 |
| Suspended in "T" bar grid (including cost of grid)                |                             |   |      |
| 1/2" x 24" x 48"  | 3.34                        | - | 4.39 |
| 1/2" x 24" x 24"  | 3.50                        | - | 4.82 |
| 1/2" x 24" x 24" vinyl coated                                     | 4.67                        | - | 5.70 |
| Suspended in concealed "Z" bar-type grid (including cost of grid) |                             |   |      |
| 3/4" x 12" x 12"  | 4.75                        | - | 5.95 |
| 3/4" x 12" x 12" vinyl coated                                     | 5.25                        | - | 6.31 |
| Suspended on 1/2" drywall (including grid and drywall)            |                             |   |      |
| 3/4" x 12" x 12"  | 5.95                        | - | 6.84 |

### EXTERIOR PAINTING

| <u>Type</u>              | <u>Cost Per Square Foot of Residence</u> |   |      |
|--------------------------|--|---|------|
| Latex, 1 coat            | 1.14                                     | - | 1.34 |
| Oil base, 2 coats        | 1.92                                     | - | 2.15 |
| Oil base, 3 coats        | 2.38                                     | - | 2.55 |
| Spray painting, 2 coats  | 2.15                                     | - | 2.38 |
| Stain, 1 coat and sealer | 1.41                                     | - | 1.62 |
| Stucco wash, 1 coat      | 1.11                                     | - | 1.32 |
| Stucco wash, 2 coats     | 1.32                                     | - | 1.53 |
| Vinyl on stucco, 2 coats | 1.81                                     | - | 2.08 |

## IN-PLACE COSTS

### INTERIOR DECORATING

| <u>Type</u>               | <u>Cost Per Square Foot of Residence</u> |   |       |
|---------------------------|--|---|-------|
| Painting                  |  |   |       |
| On drywall or plaster     |  |   |       |
| Primer and 1 coat flat    | 3.36                                     | - | 3.76  |
| Primer and 2 coats flat   | 4.79                                     | - | 5.63  |
| Primer and 1 coat enamel  | 3.36                                     | - | 3.76  |
| Primer and 2 coats enamel | 4.79                                     | - | 5.63  |
| Wood work                 |  |   |       |
| Primer and 1 coat enamel  | 4.79                                     | - | 5.63  |
| Primer and 2 coats enamel | 5.63                                     | - | 6.71  |
| Masonry                   |  |   |       |
| Primer and 1 coat latex   | 4.32                                     | - | 4.79  |
| Primer and 2 coats latex  | 5.14                                     | - | 5.63  |
| Wall covering             |  |   |       |
| Aluminum foil             | 15.97                                    | - | 18.17 |
| Paper                     | 12.07                                    | - | 13.64 |
| Vinyl wall cover          | 9.26                                     | - | 12.27 |

### TRIM PAINTING

| <u>Type</u>                  | <u>Cost Per Linear Foot</u> |   |      |
|------------------------------|-----------------------------|---|------|
| Exterior trim to 6", 2 coats | 1.13                        | - | 1.28 |
| Interior trim                |                             |   |      |
| Primer and 1 coat enamel     | 0.69                        | - | 0.86 |
| Primer and 2 coats enamel    | 1.03                        | - | 1.22 |

### DOORS

| <u>Size and Type</u>                          | <u>Cost Per Door</u> |   |       |
|---|----------------------|---|-------|
| Exterior doors                                |                      |   |       |
| Colonial 1 3/4" fir                           | 356                  | - | 414   |
| Dutch door 1 3/4" fir                         | 519                  | - | 609   |
| French doors                                  | 464                  | - | 519   |
| Solid core slab single door                   | 395                  | - | 414   |
| Solid core slab double door                   | 356                  | - | 395   |
| Hardwood door                                 | 609                  | - | Up    |
| Includes frame, trim, threshold, and hardware |                      |   |       |
| Garage doors - Overhead type                  |                      |   |       |
| 8' x 7' all aluminum                          | 1049                 | - | 1230  |
| 16' x 7' all aluminum                         | 1304                 | - | 1,737 |
| 8' x 7' aluminum - wood frame                 | 486                  | - | 601   |
| 16' x 7' aluminum - wood frame                | 924                  | - | 1041  |
| 8' x 7' plywood                               | 601                  | - | 647   |
| 16' x 7' plywood                              | 1103                 | - | 1290  |
| 18' x 7' plywood                              | 996                  | - | 1086  |



## IN-PLACE COSTS

### DOORS (Contd.)

| <u>Size and Type</u>                  | <u>Cost Per Door</u> |   |       |
|---------------------------------------|----------------------|---|-------|
| Sectional roll up                     |                      |   |       |
| 8' x 7' aluminum                      | 2,368                | - | 2,523 |
| 16' x 7' aluminum                     | 2,677                | - | 2,780 |
| 8' x 7' fiberglass on aluminum frame  | 2,368                | - | 2,481 |
| 16' x 7' fiberglass on aluminum frame | 2,512                | - | 2,657 |
| 8' x 7' steel                         | 2,162                | - | 2,368 |
| 16' x 7' steel                        | 2,780                | - | 2,883 |
| Interior doors                        |                      |   |       |
| Hollow core slab doors                | 285                  | - | 322   |
| Solid core slab doors                 | 322                  | - | 362   |
| Panel doors - flat panel              | 285                  | - | 322   |
| Panel doors - raised panel            | 322                  | - | 362   |
| Includes frame, trim, and hardware    |                      |   |       |
| Sliding glass doors                   |                      |   |       |
| 6' x 6'8" aluminum                    | 463                  | - | 525   |
| 8' x 6'8" aluminum                    | 518                  | - | 671   |
| 12' x 6'8" aluminum                   | 957                  | - | 1,021 |
| Mirrored wardrobe closet doors        | 219                  | - | 257   |
| French pantry door                    | 457                  | - | 518   |

### WINDOWS

| <u>Type</u>                              | <u>Cost Per Window</u> |   |     |
|--|------------------------|---|-----|
| Aluminum                                 | 594                    | - | 883 |
| Steel                                    | 649                    | - | 929 |
| Wood                                     | 511                    | - | 743 |
| Decorative glass block (per square foot) | 63                     | - | 82  |

### CABINETS

| <u>Type</u>                   | <u>Cost Per Linear Foot</u> |   |                        |        |                              |        |                             |   |        |
|-------------------------------|-----------------------------|---|------------------------|--------|------------------------------|--------|-----------------------------|---|--------|
|                               | <u>Painted Fir</u>          |   | <u>Low Cost Veneer</u> |        | <u>Good Hard-wood Veneer</u> |        |                             |   |        |
| Base cabinet                  | 111.88                      | - | 120.18                 | 101.51 | -                            | 116.04 | 116.04                      | - | 145.03 |
| Upper cabinet                 | 80.81                       | - | 101.51                 | 74.58  | -                            | 87.03  | 101.51                      | - | 116.04 |
| Full height                   | 174.04                      | - | 207.19                 | 155.40 | -                            | 194.76 | 186.47                      | - | 225.85 |
| Bath pullman                  | 84.93                       | - | 120.18                 |        |                              |        |                             |   |        |
| Open shelving                 | 5.38                        | - | 7.25                   |        |                              |        |                             |   |        |
| Melamine Interiors            |                             |   |                        |        |                              |        | 84.39                       | - | 112.52 |
|                               |                             |   |                        |        |                              |        | <u>Cost Each</u>            |   |        |
| Wood entertainment center     |                             |   |                        |        |                              | 1,754  | -                           |   | 3,988  |
|                               |                             |   |                        |        |                              |        |                             |   |        |
|                               |                             |   |                        |        |                              |        | <u>Cost Per Linear Foot</u> |   |        |
| Counter Tops Including Splash |                             |   |                        |        |                              |        |                             |   |        |
| Ceramic tile                  |                             |   |                        |        |                              | 71.00  | -                           |   | 79.76  |
| Plastic laminate              |                             |   |                        |        |                              | 49.73  | -                           |   | 43.00  |
| Imitation marble              |                             |   |                        |        |                              | 65.27  | -                           |   | 79.36  |
| Granite                       |                             |   |                        |        |                              | 203.43 | -                           |   | 271.23 |
| Concrete                      |                             |   |                        |        |                              | 78.75  | -                           |   | 189.87 |
| Kitchen Corian®               |                             |   |                        |        |                              | 155.96 | -                           |   | 189.87 |
| Butcher block                 |                             |   |                        |        |                              | 81.38  | -                           |   | 135.62 |

## IN-PLACE COSTS

### ELECTRICAL

| <u>Type</u>                                | <u>Cost Per Outlet</u> |     |
|--|------------------------|-----|
| 110 volt average Romex® or sheathed wiring | 85                     | 106 |
| 110 volt average conduit                   | 125                    | 161 |
| 220 volt wiring for range and oven         | 533                    | 631 |
| 220 volt wiring for dryer                  | 533                    | 631 |

### PLUMBING

| <u>Type</u>       | <u>Cost Per Fixture</u> |       |
|-------------------|-------------------------|-------|
| Bathtubs          | 911                     | 2,107 |
| Laundry trays     | 859                     | 1,519 |
| Sinks             | 479                     | 1,038 |
| Service sinks     | 864                     | 1,150 |
| Shower stall      | 957                     | 1,341 |
| Tile shower stall | 1,056                   | 2,008 |
| Urinals           | 718                     | 864   |
| Toilets           | 670                     | 1,531 |

All fixture costs include the cost of rough plumbing.

### LIGHTING

|                      | <u>Cost Per Fixture</u> |     |
|----------------------|-------------------------|-----|
| Track lights, 4 foot | 380                     | 484 |
| Track lights, 8 foot | 518                     | 656 |
| Recessed can         | 139                     | 172 |
| Recessed mini can    | 172                     | 208 |
| Eyeball spot light   | 172                     | 208 |

### FANS

|              | <u>Cost Per Fixture</u> |       |
|--------------|-------------------------|-------|
| Ceiling fans | 356                     | 1,184 |

### ENERGY REQUIREMENTS MANDATED BY TITLE 24 (AB 970, 2001)

|                                     | <u>Cost</u> | <u>Climate Zones *</u> |
|-------------------------------------|-------------|------------------------|
| Radiant barrier                     | 448         | 2, 4, 7-15             |
| Spectrally selective glass          | 596         | 2, 4, 8-15             |
| Duct sealing with testing           | 261 - 448   | All                    |
| Thermostatic expansion valves (TXV) | 76          | 2, 8-15                |

Adds approximately **\$1,700** for a typical 2,000 square foot residence for Climate Zones 2 and 8-15.  
Climate zones 1,3, 5, and 6 only require duct sealing.

\* See section AH 531.80, Page 3, *Useful Information*, following in this handbook for the California Climate Zones map.

# AH 531.70: DEPRECIATION

## DEFINITIONS

An essential part of the cost approach is the estimation of depreciation, and the usefulness of this approach depends greatly upon the appraiser's ability to make this estimate. This discussion is confined to the application of normal percent good factors to replacement cost new to arrive at replacement cost less normal depreciation. A more detailed discussion of depreciation may be found in Assessors' Handbook Section 501, *Basic Appraisal*.

### PERCENT GOOD TABLES

*Accrued depreciation* is considered to be the difference between replacement cost new and current value.

*Percent good* is the complement of accrued depreciation. If accrued depreciation is 20 percent, percent good is 80 percent. The percent good concept is used because it saves one arithmetic operation in calculating replacement cost new less normal depreciation.

In a mass appraisal program, speed and uniformity in depreciation estimates are accomplished by the use of normal percent good tables. Percent good factors reflect the average loss in value that improvements suffer over time from normal or usual causes. They include normal physical deterioration and normal functional obsolescence, but they do not include value losses caused by unusual physical deterioration, unusual functional obsolescence, or economic obsolescence.

There are two types of normal percent good tables for structures. They are designated as "R" and "OR" tables. "R" tables are generally applicable to residential-type buildings, and "OR" tables are applicable to "other-than-residential" buildings. For each of the two types there are a number of different tables for buildings with various life expectancies

Individual tables are designated as type "R" or "OR," with a total life expectancy in years. For example, the proper table for a residential building with a 60-year total life expectancy is designated as "R-60."

### AVERAGE LIFE TABLES

Average life tables direct the appraiser to the proper normal percent good table. This selection is based upon the following three factors:

- Use type
- Construction type
- Quality classification

Use type refers to the use that is currently being made of the improvement. It may or may not be the same as the original design type that the building cost is based upon.

Construction type and quality classification are based upon the same standards as those set forth in the standard classification system for these two building characteristics.

### **REMAINING LIFE EXPECTANCY TABLES**

Remaining life expectancy tables are also included with the normal depreciation tables. These tables show a remaining life expectancy for an item at each age of its life. These tables are intended as general information for the appraiser and may or may not be applicable in a specific instance.

### **EXTENDED LIFE CONCEPT**

The percent good tables incorporate an extended life concept. In this concept, percent good and remaining life expectancy are based upon the expectancy at any age of a surviving item of a larger original group. Thus, a given item that has a probable life expectancy of 60 years when new may have some remaining life, and therefore value, when it is 60 years old. This stems from the fact that the 60-year average life for the group is attained by the early retirement of some items and the later retirement of others.

### **EFFECTIVE YEAR**

Two items must be known in order to select the proper normal percent good of a structure from the table—the average life and the age of the structure. The average life is obtained from the "average-life table," and the age is calculated by subtracting the *effective year* (see next paragraph) from the appraisal year. Normal percent good and remaining life can be found from the table by selecting the age in years from the age column and reading horizontally to the proper average life column.

In most buildings the effective year is the same as the year of construction. Changes in effective year should not be made unless a significant change has been made in the improvement. However, when a building has been remodeled or added to, or is not architecturally representative of its date of original construction, the effective year may differ from the actual year of construction.

The assignment of an effective year is an appraisal estimate rather than a mechanical calculation. Knowledge of architectural and functional characteristics of structures and the changes in these characteristics over time is the key to estimating the effective year of structures. These characteristics cause structures to fall into eras or age groups. Age groups may be identified by the appraiser, and a year that most nearly reflects the effective age of a structure is assigned.

### **REMODELING**

Remodeling is the major reason for adjusting the effective year. Remodeling may be such that a building *appears* to be new. If this is the case, the effective year should be selected as if it were a new building. Usually, however, remodeling only partially cures functional obsolescence and remodeling certain portions of a building has a greater influence on the effective year than

remodeling other portions would have. Remodeling the bathrooms and the kitchen of a house will have greater effect than remodeling of less-used or less-seen portions of a house.

Some remodeling may be classified as normal maintenance. For example, the individual replacement of water heaters, a worn-out roof, new paint inside and out, are not usually reasons for adjusting the effective year. A combination of these things could, if extensive enough, change the effective year. As a general rule, the effective year should not be changed unless the remodeling has cured some functional obsolescence or has significantly cured some physical deterioration.

### **ADDITIONS**

Additions may cause a change in effective year if the addition increases the overall utility of the improvement. If an addition modernizes the improvement, the effective year may be shifted forward. The addition of a family room, an extra bath, extra bedrooms, or a formal dining room to a residence could, individually or jointly, cause a change in effective year. On the other hand, the addition of a bedroom to a five-bedroom house would probably not change the effective year.

### **PHYSICAL CONDITION**

While the value of a building may vary considerably with its condition, effective year changes are not generally made as a result of condition. Normal percent good computations are based on the assumption that the building is in average condition for its age.

While the condition of a building does have a significant influence on its value, the effective year is not generally changed for this reason because it is a temporary situation relative to total building life. Building conditions may vary considerably in a short period of time; for example, a building may be in poor condition one year, completely renovated the next year, and then allowed to deteriorate again. Effective year changes should be reserved for permanent situations.

Value differences due to physical condition should be considered in a step in the appraisal process that is subsequent to the computation of RCNLD.

### **MECHANICAL AIDS FOR ESTIMATING AGE**

The average age of construction of a single-family home can be calculated by weighting the estimated current replacement cost of the original improvement and the estimated current cost of any subsequent new construction. An alternative method of calculation is performed by applying comparative cost multipliers to historical costs of different periods.

**Example A:**

Assume that an estimate of the current replacement cost new (RCN) of an original portion of a home built in January 2006 is \$225,000 and that the RCN of an addition built in January 2012 is \$50,000. The mathematical process that results in a weighted age as of January 2014 is as follows:

$$\begin{array}{rcl}
 \$225,000 \times 8 \text{ (Age of Original Construction)} & = & \$1,800,000 \\
 \underline{\$50,000 \times 2 \text{ (Age of Addition)}} & = & \underline{100,000} \\
 \$275,000 & & \underline{\underline{\$1,900,000}}
 \end{array}$$

Average age of construction:  $\$1,900,000 \div \$275,000 = 6.91$  years, rounded to 7 years.

**Example B:**

Historical costs may be used in a similar manner, but they must first be converted to current costs by applying comparative cost multipliers.

| Year of Construction | Historical Cost | *Jan 2014 Comparative Cost Multiplier | Cost Trended to 2014 | Age (Years) | Weighted Dollar Years |
|----------------------|-----------------|---------------------------------------|----------------------|-------------|-----------------------|
| 2006                 | \$160,000       | 1.252                                 | \$200,320            | 8           | \$1,602,560           |
| 2012                 | \$40,000        | 1.071                                 | <u>42,840</u>        | 2           | <u>85,680</u>         |
|                      |                 |                                       | \$243,160            |             | \$1,688,240           |

Average age of construction:  $\$1,688,240 \div \$243,160 = 6.9$  years, rounded to 7 years.

\* The Board recommends that county assessors use the *Marshall Valuation Service* (MVS) to provide comparative cost multipliers for trending analysis. The MVS develops comparative cost multipliers for eight locations in California. Select a multiplier for a location that is most similar to your location and make appropriate adjustments to achieve fair market value assessments. Variances from the indicated multiplier should be based on reasonable evidence and be documented.

The multipliers in the example above are found in MVS, Section 98, pages 33 and 34, dated January 2014 using the wood-frame construction category and the Sacramento location.

These methods are, at best, only guides. Additional capital outlays on a building may not change its architectural or functional characteristics in proportion to the amount of the outlay, or they may not change these characteristics at all. In the final analysis, the estimation of an effective year is dependent upon the appraiser's knowledge and judgment. At best, an average age of construction tends to set the latest year that should be assigned for effective age.

**AVERAGE LIFE TABLES FOR BUILDINGS**

| <b>Type of Schedule and Average Life</b> |                                      | <b>Classification</b> |          |          |          |          |           |
|--|--------------------------------------|-----------------------|----------|----------|----------|----------|-----------|
| <b>Construction Type</b>                 | <b>Use Type</b>                      | <b>5</b>              | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> | <b>10</b> |
| C  | Multiple Residence <sup>1</sup>      | 50                    | 55       | 55       | 60       | 60       | 60        |
| C  | Single-Family Residence <sup>2</sup> | 55                    | 60       | 60       | 60       | 60       | 60        |
| D  | Multiple Residence <sup>1</sup>      | 50                    | 55       | 55       | 60       | 60       | 60        |
| D  | Single-Family Residence <sup>2</sup> | 55                    | 60       | 60       | 60       | 60       | 60        |

Average life assumes normal maintenance but no functional obsolescence due to poor design.

When a decimal classification is used, apply the average life for the nearest whole classification. When a half-classification (for example, 7.5) is used, raise to the next higher classification (that is, 8) for selection of the average life.

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<sup>1</sup> This table is applicable to residential buildings of more than two living units each.

<sup>2</sup> This table is applicable to residential buildings of one or two living units each.

## DEPRECIATION

### NORMAL PERCENT GOOD TABLES - RESIDENTIAL BUILDINGS

| Age<br>Years | 20 Year Avg. Life    |                 | 25 Year Avg. Life    |                 | 30 Year Avg. Life    |                 | 40 Year Avg. Life    |                 |
|--------------|----------------------|-----------------|----------------------|-----------------|----------------------|-----------------|----------------------|-----------------|
|              | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good |
| 0            | 20                   | 100             | 25                   | 100             | 30                   | 100             | 40                   | 100             |
| 1            | 19                   | 94              | 24                   | 95              | 29                   | 96              | 39                   | 98              |
| 2            | 18                   | 88              | 23                   | 90              | 28                   | 93              | 38                   | 96              |
| 3            | 17                   | 81              | 22                   | 86              | 27                   | 89              | 37                   | 94              |
| 4            | 16                   | 75              | 21                   | 81              | 26                   | 86              | 36                   | 92              |
| 5            | 15                   | 69              | 20                   | 77              | 25                   | 82              | 35                   | 90              |
| 6            | 14                   | 63              | 19                   | 72              | 24                   | 79              | 34                   | 87              |
| 7            | 13                   | 59              | 18                   | 68              | 23                   | 75              | 33                   | 84              |
| 8            | 12                   | 57              | 17                   | 63              | 22                   | 71              | 32                   | 82              |
| 9            | 11                   | 55              | 16                   | 60              | 21                   | 67              | 31                   | 80              |
| 10           | 11                   | 53              | 16                   | 58              | 20                   | 64              | 30                   | 77              |
| 11           | 10                   | 50              | 15                   | 56              | 19                   | 60              | 29                   | 74              |
| 12           | 9                    | 48              | 14                   | 54              | 19                   | 59              | 28                   | 72              |
| 13           | 8                    | 46              | 13                   | 53              | 18                   | 57              | 27                   | 70              |
| 14           | 7                    | 44              | 12                   | 51              | 17                   | 56              | 27                   | 67              |
| 15           | 7                    | 42              | 11                   | 49              | 16                   | 54              | 26                   | 65              |
| 16           | 6                    | 40              | 11                   | 48              | 15                   | 53              | 25                   | 62              |
| 17           | 5                    | 38              | 10                   | 46              | 14                   | 52              | 24                   | 60              |
| 18           | 5                    | 36              | 9                    | 44              | 13                   | 50              | 23                   | 59              |
| 19           | 4                    | 33              | 8                    | 43              | 13                   | 49              | 22                   | 58              |
| 20           | 4                    | 31              | 7                    | 41              | 12                   | 47              | 21                   | 56              |
| 21           | 3                    | 29              | 7                    | 39              | 11                   | 46              | 21                   | 55              |
| 22           | 3                    | 27              | 6                    | 37              | 11                   | 44              | 20                   | 54              |
| 23           | 3                    | 25              | 6                    | 35              | 10                   | 43              | 19                   | 53              |
| 24           | 3                    | 23              | 5                    | 34              | 9                    | 42              | 18                   | 52              |
| 25           | 2                    | 21              | 5                    | 32              | 9                    | 40              | 17                   | 51              |
| 26           | 2                    | 19              | 4                    | 30              | 8                    | 39              | 17                   | 50              |
| 27           | 2                    | 16              | 4                    | 29              | 7                    | 37              | 16                   | 49              |
| 28           | 2                    | 14              | 4                    | 27              | 7                    | 36              | 15                   | 48              |
| 29           | 2                    | 12              | 3                    | 25              | 6                    | 34              | 14                   | 47              |
| 30           | 1                    | 10              | 3                    | 24              | 6                    | 33              | 14                   | 46              |
| 31           |                      |                 | 3                    | 22              | 5                    | 31              | 13                   | 45              |
| 32           |                      |                 | 3                    | 20              | 5                    | 30              | 12                   | 44              |
| 33           |                      |                 | 2                    | 18              | 5                    | 29              | 12                   | 43              |
| 34           |                      |                 | 2                    | 17              | 4                    | 27              | 11                   | 42              |
| 35           |                      |                 | 2                    | 15              | 4                    | 26              | 11                   | 41              |
| 36           |                      |                 | 2                    | 13              | 4                    | 24              | 10                   | 40              |
| 38           |                      |                 | 1                    | 10              | 3                    | 21              | 9                    | 38              |
| 40           |                      |                 |                      |                 | 2                    | 19              | 7                    | 35              |
| 42           |                      |                 |                      |                 | 2                    | 16              | 6                    | 33              |
| 46           |                      |                 |                      |                 | 1                    | 10              | 5                    | 29              |
| 50           |                      |                 |                      |                 |                      |                 | 4                    | 25              |
| 55           |                      |                 |                      |                 |                      |                 | 3                    | 20              |
| 60           |                      |                 |                      |                 |                      |                 | 2                    | 14              |
| 65           |                      |                 |                      |                 |                      |                 | 1                    | 10              |



## DEPRECIATION

### NORMAL PERCENT GOOD TABLES - RESIDENTIAL BUILDINGS

| Age<br>Years | 45 Year Avg. Life    |                 | 50 Year Avg. Life    |                 | 55 Year Avg. Life    |                 | 60 Year Avg. Life    |                 |
|--------------|----------------------|-----------------|----------------------|-----------------|----------------------|-----------------|----------------------|-----------------|
|              | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good | Rem<br>Life<br>Years | Percent<br>Good |
| 0            | 45                   | 100             | 50                   | 100             | 55                   | 100             | 60                   | 100             |
| 2            | 43                   | 97              | 48                   | 97              | 53                   | 98              | 58                   | 98              |
| 4            | 41                   | 93              | 46                   | 94              | 51                   | 96              | 56                   | 96              |
| 6            | 39                   | 89              | 44                   | 91              | 49                   | 94              | 54                   | 94              |
| 8            | 47                   | 85              | 42                   | 88              | 47                   | 91              | 52                   | 92              |
| 10           | 35                   | 81              | 40                   | 85              | 45                   | 88              | 50                   | 90              |
| 12           | 33                   | 77              | 38                   | 82              | 43                   | 85              | 48                   | 88              |
| 14           | 32                   | 73              | 36                   | 78              | 41                   | 82              | 46                   | 86              |
| 16           | 30                   | 69              | 35                   | 74              | 40                   | 79              | 45                   | 83              |
| 18           | 28                   | 65              | 33                   | 70              | 38                   | 76              | 43                   | 80              |
| 20           | 26                   | 60              | 31                   | 67              | 36                   | 73              | 41                   | 77              |
| 22           | 24                   | 58              | 29                   | 63              | 34                   | 69              | 39                   | 74              |
| 24           | 23                   | 56              | 28                   | 60              | 32                   | 65              | 37                   | 71              |
| 26           | 22                   | 54              | 26                   | 58              | 31                   | 62              | 35                   | 68              |
| 28           | 20                   | 52              | 24                   | 56              | 29                   | 60              | 34                   | 65              |
| 30           | 18                   | 50              | 23                   | 54              | 27                   | 58              | 32                   | 63              |
| 32           | 17                   | 48              | 21                   | 53              | 26                   | 56              | 30                   | 60              |
| 34           | 15                   | 47              | 20                   | 41              | 24                   | 55              | 29                   | 58              |
| 36           | 14                   | 45              | 18                   | 49              | 23                   | 53              | 27                   | 57              |
| 38           | 12                   | 43              | 17                   | 48              | 21                   | 51              | 26                   | 55              |
| 40           | 11                   | 41              | 16                   | 45              | 20                   | 50              | 24                   | 54              |
| 42           | 10                   | 39              | 14                   | 44              | 19                   | 48              | 23                   | 52              |
| 44           | 9                    | 37              | 13                   | 42              | 17                   | 46              | 21                   | 51              |
| 46           | 8                    | 35              | 12                   | 40              | 16                   | 45              | 20                   | 49              |
| 48           | 7                    | 33              | 11                   | 38              | 15                   | 43              | 19                   | 47              |
| 50           | 6                    | 31              | 10                   | 37              | 14                   | 41              | 18                   | 46              |
| 52           | 5                    | 29              | 9                    | 35              | 12                   | 40              | 16                   | 44              |
| 54           | 5                    | 28              | 8                    | 33              | 11                   | 38              | 15                   | 43              |
| 56           | 4                    | 26              | 7                    | 31              | 10                   | 36              | 14                   | 41              |
| 58           | 4                    | 24              | 6                    | 30              | 9                    | 35              | 13                   | 40              |
| 60           | 3                    | 22              | 5                    | 28              | 8                    | 33              | 12                   | 38              |
| 62           | 3                    | 20              | 4                    | 26              | 7                    | 31              | 11                   | 37              |
| 64           | 3                    | 18              | 4                    | 24              | 6                    | 30              | 10                   | 35              |
| 66           | 2                    | 16              | 3                    | 22              | 5                    | 28              | 9                    | 33              |
| 68           | 2                    | 14              | 3                    | 21              | 5                    | 27              | 8                    | 32              |
| 70           | 2                    | 12              | 3                    | 19              | 4                    | 25              | 7                    | 30              |
| 72           | 1                    | 10              | 2                    | 17              | 4                    | 23              | 6                    | 29              |
| 76           |                      |                 | 2                    | 14              | 3                    | 20              | 6                    | 26              |
| 80           |                      |                 | 1                    | 10              | 2                    | 17              | 5                    | 23              |
| 84           |                      |                 |                      |                 | 1                    | 10              | 3                    | 16              |
| 96           |                      |                 |                      |                 |                      |                 | 2                    | 10              |

# AH 531.80: USEFUL INFORMATION

## ABBREVIATIONS

For use on building records

|                     |         |                        |         |                 |         |
|---------------------|---------|------------------------|---------|-----------------|---------|
| Acoustic            | Acou    | Improvements           | Imp     | Rustic, V.      | V Rus   |
| Addition            | Add     | Knotty Pine            | KP      | Sand Plaster    | S Pl    |
| Air Conditioning    | AC      | Laundry                | Ldry    | Sandstone       | S Stn   |
| Aluminum            | Al      | Lavatory               | Lav     | Second Story    | 2nd Sty |
| Asbestos            | Asb     | Linear Feet            | Lin Ft  | Shake           | Shk     |
| Asphalt             | Asp     | Linoleum               | Lino    | Sheathing       | Shtg    |
| Basement            | Bsmt    | Masonite®              | Mas     | Sheetrock       | SR      |
| Barbecue            | Bbq     | Medium                 | Med     | Shingle         | Shg     |
| Beam                | Bm      | Metal                  | Met     | Sliding Door    | Sld Dr  |
| Bidet               | Bid     | Mud Sills              | MS      | Sprinkler       | Spr     |
| Block               | Blk     | On Center              | o.c.    | Steel           | Stl     |
| Board & Batten      | B&B     | Oregon Pine            | OP      | Stucco          | Stc     |
| Brick               | Br      | Overhead Balanced Door | OB Dr   | Terrazzo        | Trzo    |
| Ceiled              | Cld     | Paint                  | Pt      | Thermostat      | Thermo  |
| Ceramic Tile        | C Ti    | Paper                  | Pa      | Thousand        | M       |
| Composition         | Comp    | Parquet                | Parq    | Tile            | Ti      |
| Concrete            | Conc    | Partially Complete     | PC      | Tongue & Groove | T&G     |
| Construction        | Constr  | Philippine Mahogany    | P Mng   | Unfinished      | Unf     |
| Corrugated Aluminum | Cor Al  | Plaster Board          | Pl Bd   | Urinal          | Ur      |
| Corrugated Iron     | Cor I   | Plaster & Paint        | Pl&Pt   | Veneer          | Ven     |
| Diagonal            | Diag    | Plaster & Paper        | Pl&Pa   | Vinyl           | Vin     |
| Douglas Fir         | DF      | Plastic                | Plas    | Wainscot        | Wsct    |
| Electric            | Elec    | Plate                  | Plt     | Wallboard       | W Bd    |
| Enameled            | En      | Plumbing               | Plmg    | Wallpaper       | W Pa    |
| Fireplace           | Fp      | Plywood                | Pw      | Walnut          | Wal     |
| First Story         | 1st Sty | Porcelain              | Porc    | Water Closet    | WC      |
| Flagstone           | Flag    | Porch                  | P       | Weather-strip   | Ws      |
| Floor               | Fl      | Printed                | Pr      | White Pine      | Wh P    |
| Formica             | Mica    | Radiator               | Rad     | Wire & Paper    | Wi&Pa   |
| Frame               | Fr      | Redwood                | Rdw     | Wood            | Wd      |
| Gable               | Gab     | Reinforced Concrete    | Re Conc |                 |         |
| Garage              | Gar     | Residence              | Res     |                 |         |
| Glass               | Gl      | Rock                   | Rk      |                 |         |
| Gravel              | Gr      | Room                   | Rm      |                 |         |
| Hard Plaster        | H Pl    | Round Edge Beveled     | REB     |                 |         |
| Hardwood            | H Wd    | Rubble                 | Rbl     |                 |         |
| Heavy               | Hvy     | Rustic, Channel        | Ch Rus  |                 |         |
| Horsepower          | HP      | Rustic, Cove           | Cv Rus  |                 |         |

### **Porches**

|             |   |                 |    |                   |    |
|-------------|---|-----------------|----|-------------------|----|
| Concrete    | C | Flagstone floor | F  | Screened-in porch | SP |
| Wood floor  | W | Uncovered porch | UP | Glassed-in porch  | GP |
| Brick floor | B | Covered porch   | CP | Enclosed porch    | EP |

### ***Example***

W SP = wood floor, screened-in porch

## COST BREAKDOWN

Cost breakdown of a *residence* of average quality, shape, and size—D7C, 2,000 sq. ft.—exclusive of basement, air conditioning, and fireplace (to be considered as additives), but inclusive of general overhead and contractor's and subcontractor's profits, expressed in percent per item and percent of total cost, and in the approximate order of installation or completion.

|    | Item   | Percent of Total | Cumulative Percent of Total |
|----|--|------------------|-----------------------------|
| 1  | Excavation, foundation and piers             | 7                | 7                           |
| 2  | Girders, floor joist, and subfloor (or slab) | 5                | 12                          |
| 3  | Wall framing and ceiling joist               | 10               | 22                          |
| 4  | Rafters, sheathing and flashing              | 5                | 27                          |
| 5  | Roof covering                                | 4                | 31                          |
| 6  | Plumbing—sewer connections and rough-in      | 4                | 35                          |
| 7  | Wiring, HVAC                                 | 3                | 38                          |
| 8  | Exterior stucco or siding                    | 9                | 47                          |
| 9  | Interior drywall                             | 10               | 57                          |
| 10 | Finish floors (including kitchen and bath)   | 8                | 65                          |
| 11 | Sash and doors                               | 7                | 72                          |
| 12 | Built-ins and interior trim                  | 6                | 78                          |
| 13 | Plumbing fixtures (including water heater)   | 9                | 87                          |
| 14 | Light fixtures                               | 3                | 90                          |
| 15 | Finish hardware                              | 2                | 92                          |
| 16 | Painting and decorating                      | 8                | 100                         |

This table may be used as a guide in estimating the percentage of construction in progress involved in buildings under construction on the lien date.

## CALIFORNIA CLIMATE ZONES

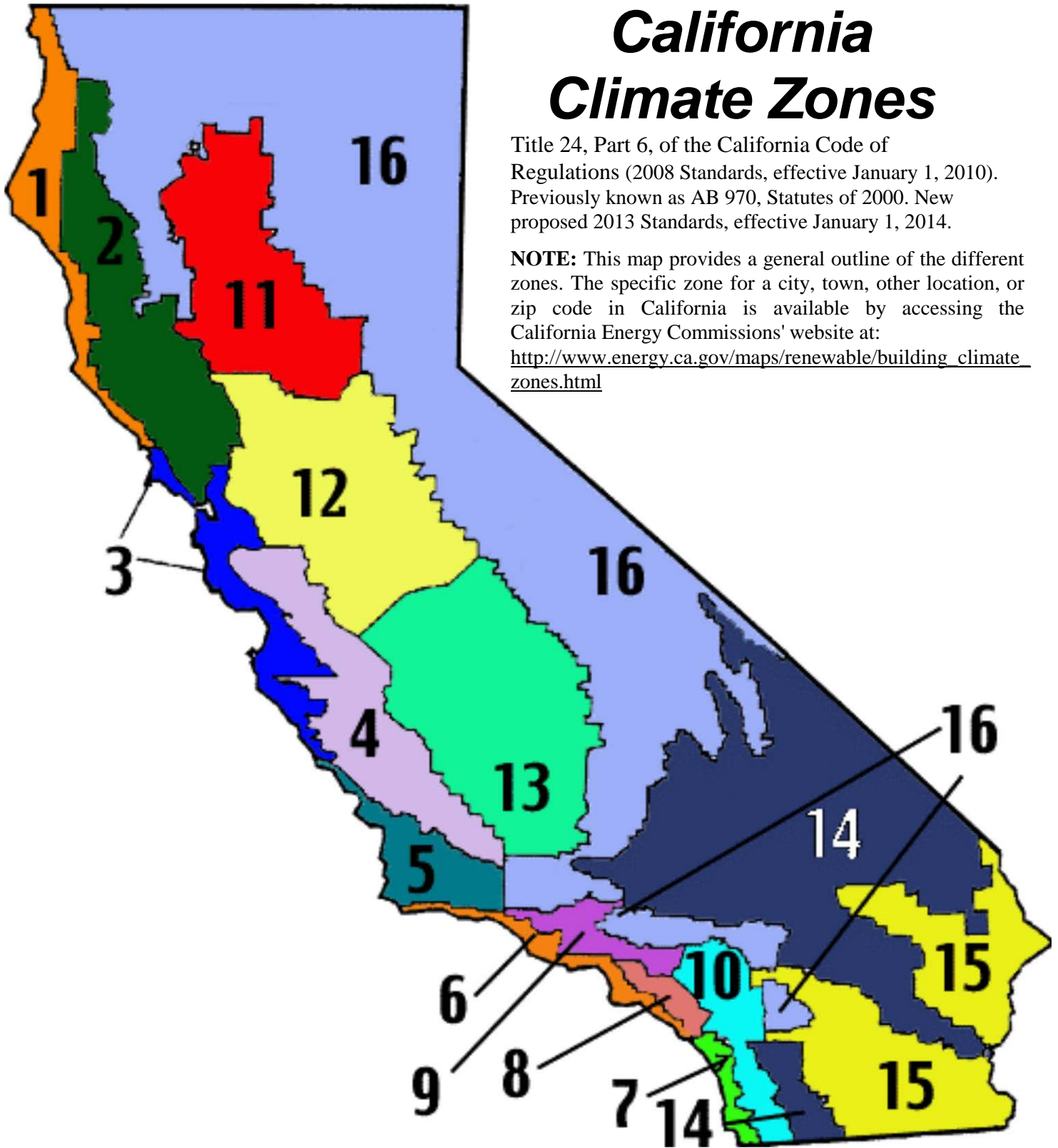
The numbers shown on the map on the following page represent the 16 different climate zones that have been established by the California Energy Commission under Title 24, part 6, of the California Code of Regulations. A zone represents certain energy use, temperature, weather and other factors. Each zone is basically a geographic area that has similar climatic characteristics. An energy budget has been created which establishes the zone's building standards and indicates the maximum amount of energy that a building, or portion of a building can be designed to consume per year. For further information on the zones and building requirements, see [www.energy.ca.gov/maps/building\\_climate\\_zones.html](http://www.energy.ca.gov/maps/building_climate_zones.html) (California Energy Commissions' website).

# California Climate Zones

Title 24, Part 6, of the California Code of Regulations (2008 Standards, effective January 1, 2010). Previously known as AB 970, Statutes of 2000. New proposed 2013 Standards, effective January 1, 2014.

**NOTE:** This map provides a general outline of the different zones. The specific zone for a city, town, other location, or zip code in California is available by accessing the California Energy Commissions' website at:

[http://www.energy.ca.gov/maps/renewable/building\\_climate\\_zones.html](http://www.energy.ca.gov/maps/renewable/building_climate_zones.html)



## GLOSSARY OF TERMS

| <b>Term</b>                 | <b>Definition</b>  |
|-----------------------------|--|
| <b>Bent</b>                 | A framework that is perpendicular to the length of a building.   |
| <b>Coffer</b>               | A recessed portion of a ceiling used for decorative purposes.  |
| <b>Gunite®</b>              | A registered trademark name for material composed of cement, sand or crushed slag, and water mixed together and forced through a cement gun by pneumatic pressure commonly used to spray the lining of in-ground swimming pools.       |
| <b>Knob and Tube Wiring</b> | An early type of residence wiring system where the electrical wires are run through porcelain tubes to isolate the wire from wood members. When the wiring parallels a wood member, it is held away from the wood by the knob portion. |
| <b>Mudsills</b>             | The lowest sill of a structure, as a foundation timber placed directly on the ground or foundation.  |
| <b>Purlin</b>               | Horizontal structural members that support the common rafters in roofs.  |
| <b>Romex®</b>               | A registered trademark name for sheathed electrical wiring commonly used in residential electrical wiring systems.   |
| <b>Terrazzo</b>             | A type of material in which cement is used as a matrix. It is generally for producing modern floor finishes, but is also used for bases, borders, and wainscoting.   |

# AH 531.90: COMPACT COSTS

## GENERAL

This chapter describes a method of costing intended to speed up the residential cost estimating process without reducing accuracy. Square-foot costs can include the cost of typical additive items such as porches, yard improvements, fireplaces, and heating systems. Time is saved by eliminating the need for measuring and computing the cost of a number of items that comprise only a small part of the total cost.

NOTE: These compact costs do not apply to the *Mountain Residences* chapter of AH 531, due to the nature of building in mountainous areas which requires more individual analysis of elements such as construction site slope, and construction materials, among others.

## COMPOSITION OF COMPACT COSTS

Compact costs include the following items as a part of the basic square-foot cost:

- Basic building costs
- Typical heating costs when applicable
- Typical fireplace costs when applicable
- Typical porch costs
- Typical yard improvement costs

Shape classification is not a consideration in this method. It is assumed that in a proper replacement cost the shape class will be relative to the quality class and size of the building. Small buildings of lower-quality class will tend to be "A" or "B" shape; larger, higher-quality class houses will tend to be of "C" or "D" shape. Basic square-foot costs will reflect what is a typical shape class for the quality and size of the building.

## PROCEDURE

Cost estimates are made by selecting a proper square-foot cost from a table and multiplying it by the living area of the building. If the building has air conditioning and/or fire sprinklers, a square-foot cost is added to the basic square-foot cost. If a garage is present, a lump sum amount for a single, double, triple, or other size, garage is added.

Following is an example of a cost estimate made using the standard cost tables and a cost estimate using compact costs.

**STANDARD COST TABLES**

|   |               |   |        |   |              |
|---|---------------|---|--------|---|--------------|
| Residence D7C (Post- 1990 Modern Type)            | 2,200 sq. ft. | x | 120.58 | = | 265,276      |
| Concrete Covered Porch (1/3)                      | 56 sq. ft.    | x | 40.19  | = | 2,251        |
| Forced Air Heating and Cooling (Overhead Outlets) | 2,200 sq. ft. | x | 5.41   | = | 11,902       |
| Garage (Attached)                                 | 440 sq. ft.   | x | 35.51  | = | 15,624       |
| Wood Covered Concrete Patio                       | 300 sq. ft.   | x | 21.47  | = | 6,441        |
| Fence (1" x 4" Redwood)                           | 130 lin. ft.  | x | 21.59  | = | 2,807        |
| Concrete Flatwork                                 | 1,000 sq. ft. | x | 4.93   | = | <u>4,930</u> |
| RCN   |               |   |        |   | 309,231      |

**COMPACT COST METHOD**

|                       |               |   |        |   |               |
|-----------------------|---------------|---|--------|---|---------------|
| Residence D7          |               |   |        |   | 126.97        |
| A-C (cool only)       |               |   |        |   | 4.24          |
| Fire Sprinkler System |               |   |        |   | 4.45          |
| Residence             | 2,200 sq. ft. | x | 135.66 | = | 298,452       |
| Garage, Double        |               |   |        |   | <u>19,000</u> |
| RCN                   |               |   |        |   | 317,452       |

Extra items such as swimming pools, septic systems, or pressure systems should be added to the cost estimate.

**LOCATION ADJUSTMENTS**

Compact costs are based on the cost to build in the four-county Sacramento area as are all other residential building costs. The Single-Family Residential Map in the *Costing Information* chapter, AH 531.10, page 24, gives location adjustments for all locations in the State of California, *except mountainous areas*. These factors adjust for location only and reflect the typical adjustments necessary for the 2018 period.

**ADDITIONS**

Additions can be cost estimated using a compact square foot cost based upon the quality class of the addition and the total area of the original house plus the addition. The square foot cost is applied to the addition area only.

If the addition has built-ins, plumbing fixtures, cabinets, or other additives that were not included in the original structure, the cost of the additives should be added by appropriately increasing the quality class of the addition.

The cost of the addition is then adjusted for location by using the Single-Family Residential Map in the *Costing Information* chapter, AH 531.10, page 24.

**Example:**

Assume an original 1,200 square foot, D7.0, air conditioned residence with a two-car garage in Mendocino County that was built and first sold in 1996.

On January 1, 2017, a 400 square foot addition with a quality class of D7.0 is built. The RCN of the addition is computed as follows:

|                             |   |                    |  |
|-----------------------------|---|--------------------|--|
| Total Area for Modification |   |                    |  |
| Original Residence          | = | 1,200 sq. ft.      |  |
| Addition                    | = | <u>400</u> sq. ft. |  |
| Total Square Feet           | = | 1,600 sq. ft.      |  |

**COMPACT COSTS**

|                           |             |   |        |   |              |
|---------------------------|-------------|---|--------|---|--------------|
| Addition                  | 400 sq. ft. | x | 134.10 | = | 53,640       |
| Air Conditioning          | 400 sq. ft. | x | 4.24   | = | <u>1,696</u> |
| Total RCN January 1, 2017 |             |   |        |   | 55,336       |
| Location Adjustment       |             |   |        |   | <u>1.15</u>  |
| RCN Addition              |             |   |        |   | 63,636       |



## COMPACT COSTS

All square-foot costs include typical porches, yard improvements, and heating systems. Air conditioning systems and garages are to be added. Built-ins, plumbing fixtures, and fireplaces may be included as per building quality class specifications.

### SINGLE-FAMILY RESIDENCES

|      | <u>Residence</u> | <u>Garage</u> |
|------|------------------|---------------|
| D1   | 44.31            | 12.68         |
| D1.5 | 48.47            | 17.51         |
| D2   | 57.52            | 22.73         |
| D3   | 62.05            | 26.29         |
| D3.5 | 66.76            | 28.07         |

|              | <u>Square-Foot Area</u> |            |            |            |            |              |              |              |              |              |
|--------------|-------------------------|------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|
| <u>Class</u> | <u>500</u>              | <u>600</u> | <u>700</u> | <u>800</u> | <u>900</u> | <u>1,000</u> | <u>1,100</u> | <u>1,200</u> | <u>1,300</u> | <u>1,400</u> |
| D4           | 92.24                   | 87.01      | 84.59      | 79.38      | 76.72      | 74.54        | 72.70        | 71.32        | 69.68        | 68.07        |
| D4.5         | 101.72                  | 95.67      | 91.44      | 87.42      | 84.40      | 82.59        | 79.38        | 78.56        | 76.15        | 74.71        |

Add: \$3.55 per square foot for central air conditioning, \$3.45 per square foot for fire sprinklers, \$26.88 per square foot for garage area, or \$5,900 single, \$11,800 double, or \$16,000 triple garage. Fireplace not included.

|              | <u>Square-Foot Area</u> |            |              |              |              |              |              |              |              |              |
|--------------|-------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <u>Class</u> | <u>800</u>              | <u>900</u> | <u>1,000</u> | <u>1,100</u> | <u>1,200</u> | <u>1,300</u> | <u>1,400</u> | <u>1,500</u> | <u>1,600</u> | <u>1,700</u> |
| D5           | 102.32                  | 98.47      | 95.86        | 93.25        | 90.22        | 89.02        | 87.41        | 85.40        | 84.58        | 83.59        |
| D5.5         | 112.19                  | 108.55     | 105.15       | 102.10       | 99.70        | 97.69        | 96.05        | 94.47        | 92.66        | 91.43        |

Add: \$3.55 per square foot for central air conditioning, \$3.45 per square foot for fire sprinklers, \$31.38 per square foot for garage area, or \$7,000 single, \$13,700 double, or \$18,600 triple garage. Fireplace not included.

|              | <u>Square-Foot Area</u> |              |              |              |              |              |              |              |              |              |
|--------------|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <u>Class</u> | <u>900</u>              | <u>1,000</u> | <u>1,100</u> | <u>1,200</u> | <u>1,300</u> | <u>1,400</u> | <u>1,500</u> | <u>1,600</u> | <u>1,700</u> | <u>1,800</u> |
| D6           | 126.29                  | 122.46       | 119.04       | 116.23       | 114.42       | 111.61       | 110.38       | 108.37       | 107.17       | 105.36       |
| D6.5         | 139.40                  | 135.97       | 132.35       | 128.93       | 126.09       | 123.89       | 122.26       | 120.43       | 118.85       | 116.02       |
| <u>Class</u> | <u>2,000</u>            | <u>2,200</u> | <u>2,400</u> | <u>2,600</u> | <u>2,800</u> | <u>3,000</u> | <u>3,200</u> | <u>3,400</u> | <u>3,800</u> | <u>4,200</u> |
| D6           | 100.79                  | 98.62        | 96.95        | 95.29        | 93.65        | —            | —            | —            | —            | —            |
| D6.5         | 110.78                  | 108.70       | 106.78       | 104.72       | 102.91       | 100.91       | 97.63        | 96.99        | 94.18        | 90.37        |

Add: \$4.04 per square foot for central air conditioning, \$3.96 per square foot for fire sprinklers, \$38.14 per square foot for garage area, or \$8,400 single, \$16,800 double, or \$22,800 triple garage. Fireplace not included.

## COMPACT COSTS

### SINGLE-FAMILY RESIDENCES (Contd.)

|              |   | <u>Square-Foot Area</u> |              |              |              |              |              |              |              |              |  |
|--------------|---|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
| <u>Class</u> | <u>1,500</u>  | <u>1,600</u>            | <u>1,700</u> | <u>1,800</u> | <u>2,000</u> | <u>2,200</u> | <u>2,400</u> | <u>2,600</u> | <u>2,800</u> | <u>3,000</u> |  |
| D7           | 136.08  | 134.10                  | 132.32       | 130.74       | 128.56       | 126.97       | 124.72       | 122.92       | 121.16       | 119.98       |  |
| D7.5         | 162.09  | 159.05                  | 155.84       | 153.23       | 150.79       | 148.56       | 146.75       | 145.35       | 144.33       | 143.52       |  |
| <br>         |   |                         |              |              |              |              |              |              |              |              |  |
| <u>Class</u> | <u>3,400</u>  | <u>3,800</u>            | <u>4,200</u> | <u>4,600</u> | <u>5,000</u> |              |              |              |              |              |  |
| D7           | 117.42  | 113.67                  | 109.06       | 104.49       | 99.85        |              |              |              |              |              |  |
| D7.5         | 139.79  | 135.31                  | 129.84       | 124.40       | 118.88       |              |              |              |              |              |  |
| <br>         |   |                         |              |              |              |              |              |              |              |              |  |
| Add:         | \$4.24 per square foot for central air conditioning, \$4.45 per square foot for fire sprinklers, \$45.77 per square foot for garage area, or \$10,100 single, \$19,000 double, or \$27,300 triple garage. Fireplace is included in D7 and D7.5 costs. |                         |              |              |              |              |              |              |              |              |  |

|              |   | <u>Square-Foot Area</u> |              |              |              |              |              |              |              |              |  |
|--------------|---|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
| <u>Class</u> | <u>1,800</u>  | <u>2,000</u>            | <u>2,200</u> | <u>2,400</u> | <u>2,600</u> | <u>2,800</u> | <u>3,000</u> | <u>3,200</u> | <u>3,600</u> | <u>4,000</u> |  |
| D8           | 185.39  | 182.14                  | 179.11       | 177.08       | 174.26       | 172.43       | 170.43       | 168.79       | 167.18       | 165.58       |  |
| D8.5         | 243.11  | 234.36                  | 226.69       | 222.84       | 219.86       | 217.10       | 214.76       | 212.18       | 210.47       | 209.00       |  |
| <br>         |   |                         |              |              |              |              |              |              |              |              |  |
| <u>Class</u> | <u>4,400</u>  | <u>4,800</u>            | <u>5,200</u> | <u>5,600</u> | <u>6,000</u> |              |              |              |              |              |  |
| D8           | 164.98  | 161.63                  | 157.17       | 151.57       | 145.03       |              |              |              |              |              |  |
| D8.5         | 206.24  | 202.03                  | 196.44       | 189.46       | 181.28       |              |              |              |              |              |  |
| <br>         |   |                         |              |              |              |              |              |              |              |              |  |
| Add:         | \$4.87 per square foot for central air conditioning, \$4.98 per square foot for fire sprinklers, \$51.05 per square foot for garage area, or \$11,200 single, \$22,300 double, or \$30,300 triple garage. Fireplace is included in D8 and D8.5 costs. |                         |              |              |              |              |              |              |              |              |  |