State of California

Board of Equalization
Property and Special Taxes Department

Memorandum

To: Mr. Ramon J. Hirsig
Executive Director

Date: October 31, 2008

From: David J. Gau, Deputy Director
Property and Special Taxes Department

Subject: ***Assessors' Handbook Section 531, Residential Building Costs (November 2008 Administrative Consent Agenda)***

I am requesting that Assessors' Handbook Section 531, *Residential Building Costs*, be approved for publication. Revenue and Taxation Code section 401.5 requires that the Board issue to county assessors data relating to costs of property to promote uniformity in appraisal practices and in assessed values throughout the state. Pursuant to that mandate, staff developed the January 2009 version of AH 531 which contains current cost data for residential properties.

It is likely that 2009 will again be another very difficult year for the single-family residential market in California. The market continues to be in great turmoil with foreclosures at high levels, large inventories of resale homes, as well as many new unsold homes. Median home prices in many areas were declining in the latter part of 2008, and that trend may continue during 2009. As a result, a number of the major builders of new homes are still avoiding single-family home construction in areas of California, while other builders are not changing their scaled-back new home construction projects. Many of the costs in this 2009 revision of AH 531 have declined from last year, partly due to the ongoing significant reduction in developer's entrepreneurial profit. Other parts of the cost structure have remained the same or have actually increased. Therefore, appraisal judgment will still be especially important for 2009 to adjust for any market change that would affect costs after the publication date of AH 531.

Please place this item on the Board's November 2008 Administrative Consent Agenda for approval.

DJG:sk
Attachment

cc: Ms. Diane Olson

Approved:_____
Ramon J. Hirsig, Executive Director

BOARD APPROVED
at the_____ Board Meeting

_____
Diane Olson, Chief
Board Proceedings

ASSESSORS' HANDBOOK
SECTION 531

RESIDENTIAL BUILDING COSTS

JANUARY 2009

CALIFORNIA STATE BOARD OF EQUALIZATION

BETTY T. YEE, SAN FRANCISCO	FIRST DISTRICT
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RAMON J. HIRSIG, EXECUTIVE DIRECTOR

FOREWORD

This edition of Assessors' Handbook Section 531 (AH 531), *Residential Building Costs*, provides current basic building costs to be used as of January 1, 2009. The pages are printed in loose-leaf form to allow for insertion of revisions by chapter and page when updates are necessary.

Statutory considerations, general instructions, and pertinent information concerning the use of this handbook are contained in the *Costing Information* chapter. Specific instructions and comments appropriate to each building type are found in the introductory pages of the respective chapter of the handbook devoted to a particular structure type.

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 and 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. Extraordinary costs may include, for example, building permit fees, water and sewer connections, environmental studies, handicap access requirements, expanded engineering and architectural costs, etc.

NOTE: 2009 is likely to be a another very difficult year for the single-family residential market in California. The market continues to be in great turmoil with foreclosures at high levels, large inventories of resale homes, as well as many new unsold homes. Median home prices in many areas were declining in the latter part of 2008, and that trend may continue during 2009. As a result, a number of the major builders of new homes are still avoiding single-family home construction in areas of California, while other builders are not changing their scaled-back new home construction projects. Many of the costs in this 2009 revision of AH 531 have declined from last year, partly due to the ongoing significant reduction in developer's entrepreneurial profit. Other parts of the cost structure have remained the same or have actually increased. Therefore, appraisal judgment will still be especially important for 2009 to adjust for any market change that would affect costs after the publication date of AH 531.

This revision was prepared by County-Assessed Properties Division staff under the direction of the Property and Special Taxes Department.

David J. Gau
Deputy Director
Property and Special Taxes Department
California State Board of Equalization
January 2009

- 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.

Building	Floor Area	Perimeter (Feet)	Perimeter Wall Cost at $140 Per Linear Foot	Wall Cost Per Square Foot of Floor Area
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:

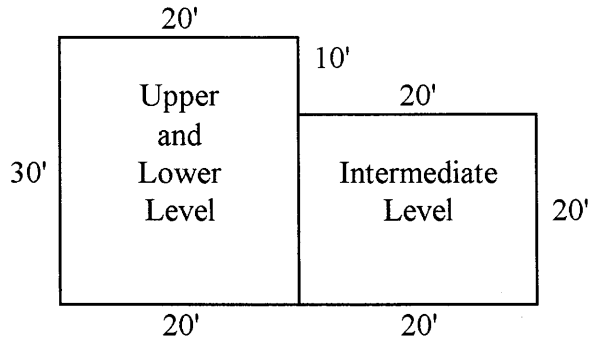
1. Differences in the number of corners for a given area.
2. Differences in the number of roof valleys and ridges for a given area (*cut-upness*).
3. Differences in the ratio of exterior wall area to floor area.

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.



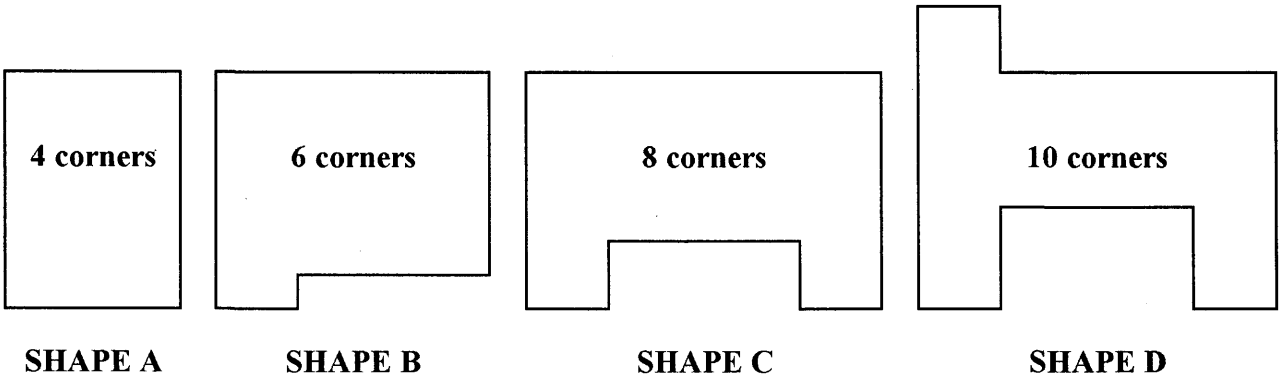
In selecting a shape classification, it is important to follow the roof and foundation line of the building. Porches, balconies, and garages are items that should not be included in the shape of the home. The shape outline should only follow the foundation outline of the main structure.

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.

Buildings	Dimensions (Feet)	Perimeter (Feet)	Wall Cost	Wall Cost Per Square Foot of Floor Area
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			

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)

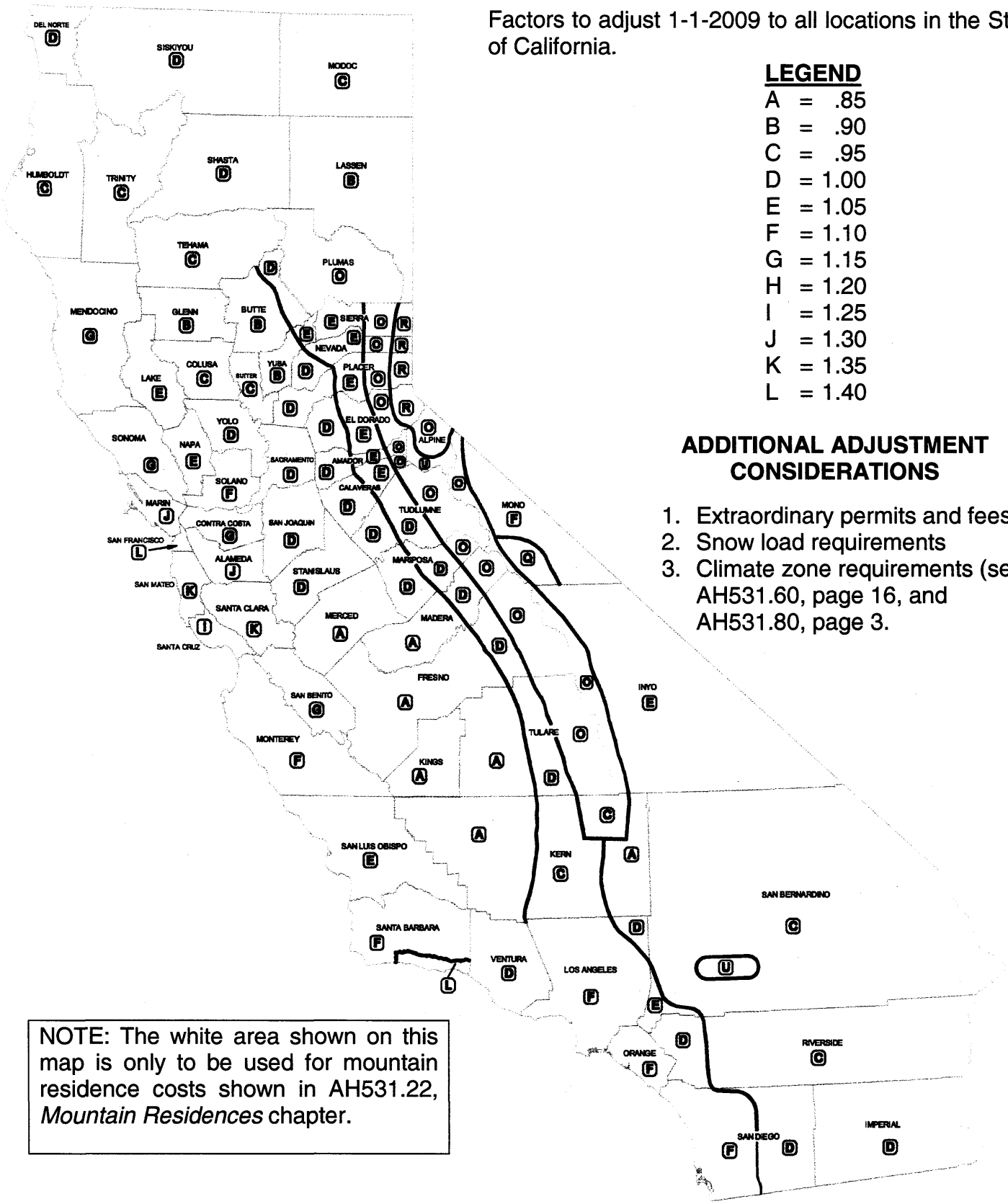
Factors to adjust 1-1-2009 to all locations in the State of California.

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

ADDITIONAL ADJUSTMENT CONSIDERATIONS

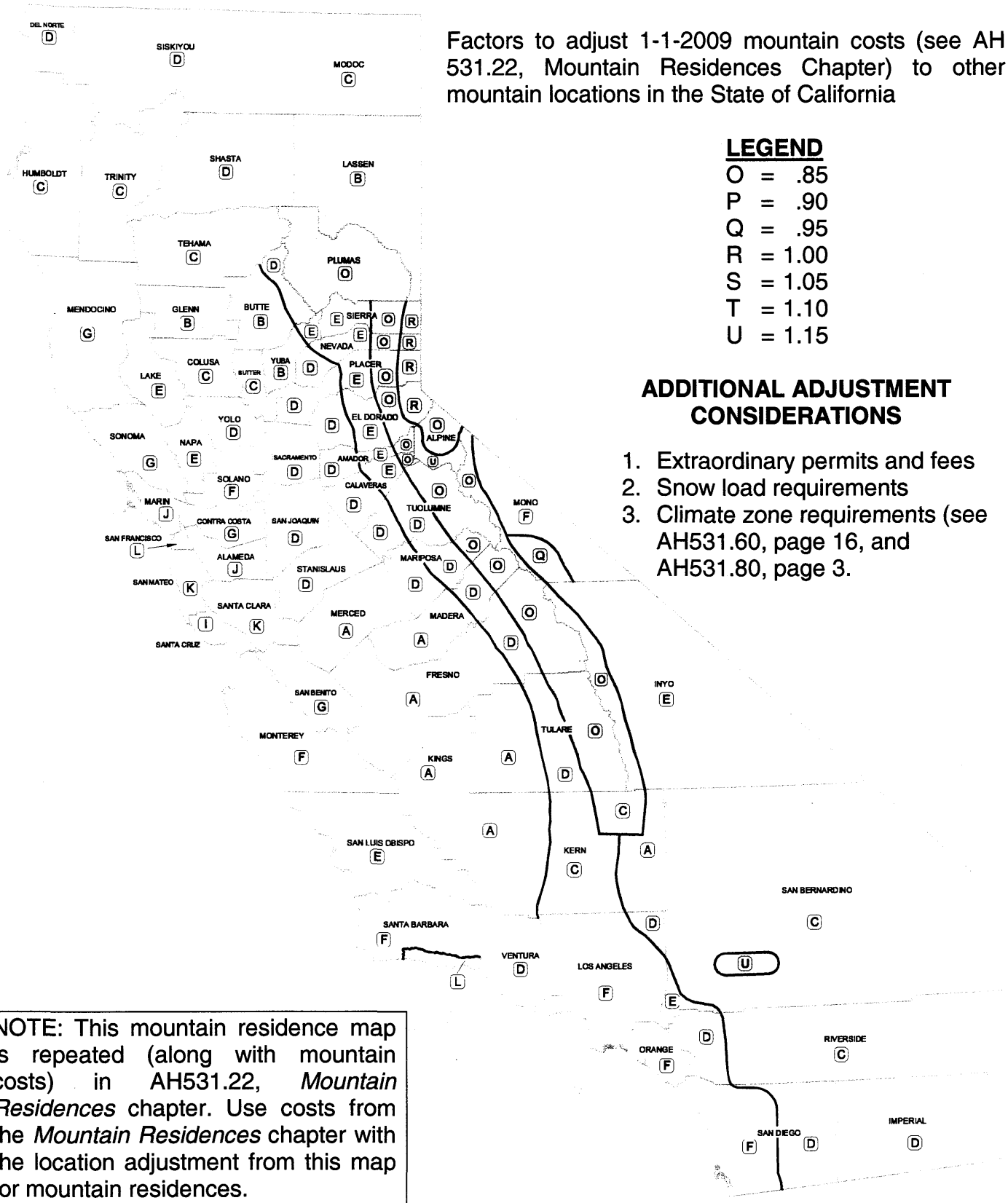
1. Extraordinary permits and fees
2. Snow load requirements
3. Climate zone requirements (see AH531.60, page 16, and AH531.80, page 3.



NOTE: The white area shown on this map is only to be used for mountain residence costs shown in AH531.22, *Mountain Residences* chapter.

MOUNTAIN RESIDENCES

(Blue Area Shown on this Map)



Factors to adjust 1-1-2009 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 AH531.60, page 16, and AH531.80, page 3.

NOTE: This mountain residence map is repeated (along with mountain costs) in AH531.22, *Mountain Residences* chapter. Use costs from the *Mountain Residences* chapter with the location adjustment from this map for mountain residences.

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	50.06	46.52	43.82	41.81	40.06	38.69	37.56	36.57	35.71	35.09	34.41
D-1.5	54.99	51.04	48.05	45.85	44.01	42.52	41.25	40.16	39.19	38.58	37.81
D-2	60.35	56.06	52.86	50.38	48.40	46.68	45.28	44.06	43.13	42.29	41.52
D-3	66.23	61.55	57.99	55.32	53.09	51.29	49.68	48.41	47.35	46.47	45.63
D-3.5	72.74	67.54	63.71	60.76	58.30	56.28	54.58	53.18	51.99	51.00	50.06
D-4	79.86	74.21	69.91	66.65	63.97	61.72	59.90	58.36	57.09	56.06	54.99
D-4.5	87.66	81.40	76.77	73.24	70.31	67.78	65.81	64.11	62.69	61.49	60.35

"D" CONSTRUCTION - SHAPE A

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	80.36	77.19	74.43	72.21	70.38	68.77	67.50	66.23	65.19	64.25	63.40
D-5.5	88.25	84.78	81.78	79.35	77.29	75.50	74.01	72.74	71.52	70.50	69.59
D-6	101.43	97.55	94.02	91.28	88.89	86.88	85.14	83.67	82.35	81.05	79.99
D-6.5	112.47	107.95	104.22	101.17	98.51	96.29	94.38	92.70	91.19	89.90	88.81
D-7	124.67	119.77	115.53	112.12	109.16	106.71	104.66	102.76	101.09	99.60	98.42
D-7.5	144.46	138.70	133.79	129.84	126.43	123.60	121.24	118.96	117.20	115.41	113.94

"D" CONSTRUCTION - SHAPE A

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	62.70	61.40	60.35	59.46	58.62	57.99	57.30	56.83	56.46	56.06	55.32
D-5.5	68.85	67.45	66.23	65.36	64.43	63.64	62.97	62.40	62.00	61.55	60.76
D-6	79.16	77.53	76.20	75.07	74.03	73.19	72.41	71.80	71.33	70.77	69.89
D-6.5	87.84	85.93	84.43	83.21	82.16	81.17	80.26	79.61	79.04	78.43	77.46
D-7	97.31	95.25	93.55	92.27	90.97	89.96	88.98	88.22	87.64	86.88	85.82
D-7.5	112.69	110.36	108.47	106.95	105.40	104.18	103.02	102.19	101.48	100.69	99.44

"D" CONSTRUCTION - SHAPE A

Class	1300	1400	1500	1600	1700	1800	2000	2200	2400	2600	2800
D-8	146.86	144.22	141.82	139.66	138.01	136.51	133.60	131.33	129.89	127.74	126.14
D-8.5	175.92	172.71	169.80	167.27	165.29	163.33	159.97	157.28	155.47	152.86	151.07
D-9	250.32	245.75	241.72	238.12	235.24	232.56	227.64	223.66	221.35	217.64	215.04
D-9.5	371.61	364.89	358.90	353.45	349.22	345.30	338.04	332.31	328.61	323.13	319.16
D-10	442.77	434.71	427.55	421.25	416.20	411.48	402.85	396.14	391.52	385.03	380.39

"D" CONSTRUCTION - SHAPE A

Class	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
D-8	124.83	123.79	122.90	121.92	121.10	120.61	120.05	119.53	119.27	118.66	118.48
D-8.5	149.50	148.26	147.14	146.08	144.92	144.24	143.75	143.06	142.71	142.07	141.93
D-9	212.84	211.03	209.50	207.87	206.23	205.23	204.64	203.57	203.20	202.25	201.89
D-9.5	316.00	313.31	311.03	308.58	306.28	304.78	303.78	302.29	301.65	300.29	299.87
D-10	376.53	373.35	370.61	367.84	364.98	363.22	361.94	360.34	358.24	357.84	357.38

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	51.11	47.49	44.78	42.58	40.87	39.49	38.28	37.47	36.55	35.84	35.13
D-1.5	56.17	52.16	49.15	46.72	44.86	43.43	42.15	41.03	40.06	39.42	38.61
D-2	61.64	57.22	53.98	51.36	49.28	47.65	46.22	45.18	44.05	43.21	42.35
D-3	67.71	62.92	59.33	56.30	54.14	52.34	50.74	49.58	48.40	47.48	46.57
D-3.5	74.30	69.01	65.09	61.86	59.46	57.49	55.71	54.42	53.15	52.14	51.11
D-4	81.66	75.78	71.47	67.97	65.25	63.11	61.21	59.70	58.30	57.20	56.17
D-4.5	89.61	83.16	78.45	74.64	71.64	69.32	67.19	65.57	64.00	62.74	61.64

"D" CONSTRUCTION - SHAPE B

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	81.83	78.62	76.04	73.70	71.97	70.31	68.88	67.65	66.70	65.66	64.80
D-5.5	89.83	86.29	83.43	80.90	79.00	77.19	75.73	74.30	73.29	72.05	71.14
D-6	103.41	99.29	95.95	93.11	90.80	88.81	87.01	85.53	84.22	82.90	81.89
D-6.5	114.57	110.09	106.33	103.16	100.75	98.35	96.41	94.74	93.39	91.87	90.73
D-7	126.98	122.00	117.91	114.39	111.60	109.03	106.95	104.99	103.49	101.84	100.47
D-7.5	147.13	141.33	136.56	132.51	129.29	126.27	123.88	121.65	119.62	117.85	116.45

"D" CONSTRUCTION - SHAPE B

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	64.11	62.74	61.69	60.79	60.16	59.46	58.79	58.30	57.86	57.49	56.78
D-5.5	70.39	68.97	67.71	66.82	66.08	65.36	64.55	64.00	63.51	63.11	62.34
D-6	81.00	79.35	77.86	76.87	75.96	75.07	74.30	73.67	73.15	72.69	71.78
D-6.5	89.73	87.89	86.40	85.14	84.21	83.21	82.35	81.65	81.00	80.46	79.50
D-7	99.46	97.47	95.70	94.38	93.33	92.27	91.32	90.45	89.73	89.17	88.16
D-7.5	115.29	112.87	110.89	109.38	108.15	106.95	105.74	104.85	103.95	103.33	102.10

"D" CONSTRUCTION - SHAPE B

Class	1300	1400	1500	1600	1700	1800	2000	2200	2400	2600	2800
D-8	150.07	147.29	144.84	142.66	140.95	139.53	136.71	134.24	132.50	130.92	129.39
D-8.5	179.60	176.38	173.38	170.91	168.79	166.99	163.73	160.74	158.57	156.73	154.84
D-9	255.76	250.99	246.85	243.25	240.24	237.72	233.01	228.84	225.68	223.11	220.33
D-9.5	379.71	372.76	366.62	361.06	356.82	352.87	346.04	339.81	335.14	331.22	327.19
D-10	452.49	444.10	436.79	430.37	425.13	420.53	412.27	404.95	399.43	394.75	389.99

"D" CONSTRUCTION - SHAPE B

Class	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
D-8	128.08	126.91	125.94	125.18	124.14	123.61	123.17	122.66	122.32	121.87	121.58
D-8.5	153.26	151.87	150.69	149.81	148.74	148.00	147.44	146.86	146.51	145.94	145.52
D-9	218.18	216.24	214.57	213.19	211.59	210.67	209.87	209.04	208.46	207.69	207.25
D-9.5	323.97	320.98	318.68	316.68	314.15	312.72	311.64	310.32	309.61	308.36	307.76
D-10	386.00	383.03	379.59	377.28	374.51	372.74	371.52	369.81	368.93	367.57	366.79

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	52.31	48.52	45.77	43.22	41.60	40.30	39.10	38.17	37.26	36.57	36.00
D-1.5	57.48	53.31	50.21	47.49	45.77	44.26	42.96	41.86	40.94	40.16	39.48
D-2	62.99	58.58	55.11	52.16	50.21	48.52	47.12	45.91	44.97	44.06	43.40
D-3	69.16	64.27	60.54	57.26	55.11	53.24	51.81	50.49	49.43	48.41	47.60
D-3.5	76.04	70.59	66.53	62.92	60.52	58.53	56.78	55.43	54.23	53.18	52.31
D-4	83.44	77.46	72.98	69.01	66.40	64.25	62.34	60.79	59.60	58.36	57.45
D-4.5	91.57	85.15	80.13	75.78	72.97	70.50	68.53	66.80	65.44	64.11	62.99

"D" CONSTRUCTION - SHAPE C

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	83.30	80.13	77.41	75.20	73.32	71.86	70.44	69.16	68.09	67.22	66.38
D-5.5	91.52	87.98	84.99	82.56	80.46	78.90	77.35	76.04	74.74	73.85	72.93
D-6	105.17	101.24	97.77	94.98	92.64	90.77	88.97	87.41	85.95	84.85	83.86
D-6.5	116.60	112.19	108.37	105.30	102.71	100.52	98.63	96.89	95.32	94.11	92.95
D-7	129.26	124.29	120.14	116.66	113.74	111.45	109.29	107.40	105.65	104.28	103.06
D-7.5	149.66	143.97	142.50	135.18	131.82	129.18	126.67	124.43	124.12	120.81	119.34

"D" CONSTRUCTION - SHAPE C

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	65.61	64.37	63.32	62.32	61.60	60.94	60.38	59.85	59.41	59.02	58.28
D-5.5	72.04	70.63	69.45	68.48	67.64	66.97	66.33	65.66	65.20	64.80	63.97
D-6	82.88	81.35	79.94	78.78	77.84	76.97	76.25	75.55	75.02	74.54	73.57
D-6.5	91.84	90.10	88.57	87.32	86.29	85.38	84.60	83.67	83.15	82.61	81.57
D-7	101.83	99.91	98.22	96.72	95.60	94.59	93.72	92.79	92.15	91.61	90.40
D-7.5	117.95	115.68	113.74	112.11	110.71	109.50	108.50	107.43	106.80	106.08	104.73

"D" CONSTRUCTION - SHAPE C

Class	1300	1400	1500	1600	1700	1800	2000	2200	2400	2600	2800
D-8	153.40	150.65	148.54	146.24	144.28	142.71	140.13	137.75	135.80	134.07	132.68
D-8.5	183.73	180.39	177.76	175.02	172.80	170.93	167.75	164.99	162.61	160.56	158.90
D-9	261.48	256.72	253.02	249.09	246.04	243.30	238.80	234.78	231.47	228.48	226.20
D-9.5	388.32	381.30	375.85	369.84	365.26	361.31	354.60	348.70	343.59	339.46	335.82
D-10	462.61	454.27	447.79	440.75	435.25	430.53	422.49	415.37	409.67	404.53	400.18

"D" CONSTRUCTION - SHAPE C

Class	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
D-8	131.47	130.22	129.39	128.55	127.51	126.95	126.43	125.94	125.58	125.14	124.83
D-8.5	157.39	155.91	154.84	153.87	152.69	152.05	151.44	150.69	150.37	149.76	149.50
D-9	224.05	222.04	220.33	218.99	217.24	216.40	215.45	214.57	213.95	213.11	212.84
D-9.5	333.70	329.57	327.19	325.11	322.65	321.16	319.88	318.68	317.80	316.50	316.00
D-10	396.53	392.60	389.99	387.48	384.44	382.86	381.27	379.59	378.59	377.13	376.53

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	53.52	49.68	46.63	44.26	42.58	41.19	40.01	39.08	38.21	37.53	36.85
D-1.5	58.74	54.58	51.14	48.52	46.72	45.23	43.96	42.90	41.90	41.24	40.45
D-2	64.46	59.87	56.21	53.31	51.36	49.59	48.23	47.08	46.12	45.23	44.37
D-3	70.85	65.81	61.69	58.53	56.30	54.48	52.96	51.72	50.54	49.64	48.78
D-3.5	77.79	72.18	67.76	64.27	61.86	59.85	58.19	56.75	55.54	54.54	53.59
D-4	85.33	79.27	74.34	70.52	67.97	65.69	63.84	62.31	61.06	59.86	58.75
D-4.5	93.80	87.10	81.54	77.41	74.64	72.12	70.19	68.43	67.00	65.73	64.52

"D" CONSTRUCTION - SHAPE D

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	84.94	81.83	79.12	76.96	75.14	73.48	72.12	70.91	69.87	68.97	68.06
D-5.5	93.29	89.83	86.89	84.47	82.51	80.77	79.16	77.87	76.77	75.74	74.73
D-6	107.32	103.41	99.97	97.20	94.91	92.80	91.10	89.43	88.27	87.04	85.95
D-6.5	118.90	114.57	110.75	107.74	105.17	102.85	100.92	99.26	97.78	96.59	95.31
D-7	131.77	126.98	122.78	119.34	116.51	113.95	111.84	109.92	108.44	106.97	105.63
D-7.5	152.69	147.13	142.20	138.29	134.98	132.06	129.63	127.43	125.64	123.93	122.34

"D" CONSTRUCTION - SHAPE D

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	67.31	66.08	64.95	64.11	63.35	62.69	62.05	61.58	61.14	60.72	59.90
D-5.5	73.90	72.53	71.33	70.39	69.54	68.84	68.09	67.61	67.10	66.62	65.82
D-6	85.08	83.44	82.02	81.00	79.96	79.14	78.32	77.80	77.19	76.64	75.64
D-6.5	94.30	92.46	90.95	89.73	88.64	87.71	86.88	86.17	85.55	85.00	83.93
D-7	104.47	102.44	100.82	99.46	98.23	97.18	96.21	95.56	94.78	94.20	92.95
D-7.5	121.73	118.79	116.76	115.29	113.86	112.58	111.53	110.61	109.82	108.98	107.74

"D" CONSTRUCTION - SHAPE D

Class	1300	1400	1500	1600	1700	1800	2000	2200	2400	2600	2800
D-8	156.82	154.14	151.66	149.70	147.90	146.66	143.80	141.41	139.54	137.90	136.51
D-8.5	187.75	184.47	181.60	179.27	177.00	175.55	172.19	169.34	167.09	165.03	163.33
D-9	267.19	262.70	258.46	255.10	252.04	249.88	245.10	240.90	237.82	234.98	232.56
D-9.5	396.84	390.04	383.81	378.77	374.19	370.93	364.05	357.84	353.30	348.83	345.30
D-10	472.81	464.86	457.27	451.56	445.98	442.09	433.61	426.40	420.85	415.71	411.48

"D" CONSTRUCTION - SHAPE D

Class	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
D-8	135.13	134.06	132.99	132.07	131.11	130.57	130.06	129.49	129.12	128.62	128.44
D-8.5	161.75	160.47	159.29	158.19	157.04	156.34	155.69	155.06	154.66	154.02	153.75
D-9	230.37	228.45	226.72	225.22	223.50	222.46	221.59	220.67	220.11	219.23	218.81
D-9.5	341.96	339.22	336.64	334.32	331.76	330.28	329.14	327.78	327.01	325.51	325.04
D-10	407.55	404.37	401.08	398.43	395.39	393.55	392.29	390.53	389.58	388.03	387.37

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

POST 1990 **D-7 QUALITY** **MODERN**

Foundation Reinforced concrete
Floor Structure Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick
Walls and Exterior Framing: Standard wood or steel frame Sheathing: Line wire and paper, plywood, or particle board Cover: Average stucco or wood siding, with brick or stone trim Windows: Vinyl framed wood or aluminum; slide or double hung, double glaze Front Doors: Single or double, good quality wood or metal; some glass trim
Roof Framing: Standard wood or steel frame Cover: Medium wood shake, concrete shake or tile; good quality composition shingles Overhang: 0" to 24", ceiled or unceiled Gutters: Good quality at all eaves
Floor Finishes Good quality ceramic or terrazzo tile in entry; good quality hardwood, carpet, vinyl tile, or ceramic tile throughout
Interior Finish Gypsum board taped, textured, and painted; rounded corners; wallpaper; average quality paneling Decorative plant shelves and art niches Ceilings: Standard 8' to 10'; vaulted; average cost fans
Interior Detail Interior Doors: Average quality wood Trim: Wood or plastic Closets: Average amount with average quality doors; some walk-in
Bath Detail Number: 2 or 2 1/2 Floors: Good quality vinyl tile Walls: Gypsum board and enamel; wallpaper; good quality ceramic tile trim Shower & Tub: Fiberglass, acrylic, or good quality ceramic tile with glass doors Twin basin vanities and compartmentalized bath
Kitchen Base Cabinet: Good quality veneer Wall Cases: Good quality veneer Drain Board: Good quality ceramic tile; some island cabinets with fixtures
Plumbing Galvanized, plastic, or copper pipe; 8 good fixtures; washer outlet; water heater
Special Features 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
Electrical Cable wiring; good quality fixtures; some bedroom ceiling fixtures

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

PRE 1990	D-8 QUALITY	MODERN

Foundation
Reinforced concrete

Floor Structure
Standard wood frame

Walls and Exterior
Framing: Standard wood frame
Sheathing: Gypsum board or plywood
Cover: Good wood siding with masonry veneer trim on front wall; good stucco on sides and rear
Windows: Good aluminum
Front Doors: 1-3/4" hardwood or good pine, double

Roof
Framing: Standard wood frame
Cover: Heavy shake or adobe tile
Overhang: 36", unsealed; 24", ceiled
Gutters: 8" good quality at all eaves

Floor Finishes
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

Interior Finish
Gypsum board with heavy texture and paint; some good wallpaper or vinyl wall cover; good hardwood veneer paneling in family room

Interior Detail
Interior Doors: Good hardwood veneer slab
Trim: Douglas Fir, painted, with some hardwood
Closets: Ample space; good solid wood doors; many linen closets

Bath Detail
Number: 2 1/2
Floors: Good ceramic tile
Walls: Gypsum board with vinyl or foil wall cover; good ceramic tile over tub
Shower: Good ceramic tile with glass doors

Kitchen
Base Cabinet: 20' good hardwood veneer
Wall Cases: Ample good hardwood veneer
Drain Board: 20' good ceramic tile or plastic laminate

Plumbing
Copper tubing; 10 good fixtures; double laundry tray; two water heaters

Special Features
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; fireplace

Electrical
Romex wiring; good quality fixtures

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

POST 1990 **D-8 QUALITY** **MODERN**

Foundation Reinforced concrete
Floor Structure Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick
Walls and Exterior Framing: Standard wood or steel frame Sheathing: Line wire and paper, plywood, or particle board Cover: Good wood siding, masonry, or stucco Windows: Vinyl framed wood or aluminum; divided light; slide or double hung, double glaze Front Doors: Single or double, good quality decorative wood or metal; glass trim; side glass panels
Roof Framing: Standard wood or steel frame Cover: Heavy wood shake, concrete shake, tile, or high definition composition roof Overhang: 0" to 24", ceiled or unceiled Gutters: Good quality at all eaves
Floor Finishes Terrazzo, mission, or quarry tile in entry; good hardwood, carpet, vinyl, slate, or quarry tile throughout
Interior Finish Gypsum board with good texture and paint; custom decorative woodwork and molding; rounded corners; some good wallpaper, vinyl wall cover, or veneer paneling Ceilings: Standard 9' to 11', vaulted, crown molding, coffered, or arched; good quality fans
Interior Detail Interior Doors: Good quality wood Trim: Good quality wood Decorative plant shelves and art niches Closets: Good wood and mirrored doors; some walk-ins
Bath Detail Number: 2 1/2 to 3 Floors: Good quality ceramic tile or vinyl tile Walls: Gypsum board and enamel; good wallpaper and ceramic tile Shower & Tub: Good acrylic or porcelain; good ceramic tile trim, with glass doors; glass block Twin basin vanities and compartmentalized bath
Kitchen Base Cabinet: Good hardwood veneer Wall Cases: Good hardwood veneer; under cabinet lighting Drain Board: Good ceramic tile, cultured marble, granite, or Corian Island cabinets with fixtures
Plumbing Galvanized, plastic, or copper pipe; 10 good fixtures; washer outlet; two water heaters
Special Features 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; fireplace
Electrical Cable wiring; good quality fixtures; bedroom ceiling fixtures; recessed lighting

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

PRE 1990 **D-9 QUALITY** **MODERN**

Foundation Reinforced concrete
Floor Structure Joists: 2" x 8" x 16" Sub-Floor: Plywood or 1" x 4" tongue and groove
Walls and Exterior Framing: Standard wood frame Sheathing: Gypsum board or plywood, fully insulated to R-11 standards Cover: Good stucco or wood siding with extensive masonry veneer trim, or masonry veneer throughout Windows: Good steel sash with thermopane glass Front Doors: Single or double, good quality wood
Roof Framing: 2" x 6" x 24" rafters Cover: Heavy shake or adobe tile Overhang: 36", unceiled, ceiled, or boxed Gutters: Good quality 8" at all eaves
Floor Finishes 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
Interior Finish Gypsum board with heavy texture and paint; some wallpaper or grass cloth; good hardwood paneling in family room
Interior Detail Interior Doors: Good hardwood veneer Trim: Good detailed pine and hardwood Closets: Ample space; good solid wood doors; many linen closets
Bath Detail Number: One bath for every bedroom Floors: Good ceramic tile Walls: Gypsum board with vinyl wallpaper; good ceramic tile over tub Shower: Good ceramic tile with good glass doors
Kitchen Base Cabinets: Good 20' hardwood Wall Cases: Good hardwood Drain Board: 20' good ceramic tile or good plastic laminate Cooking island with fixtures
Plumbing Copper tubing; 10 or more good fixtures; two or more water heaters
Special Features 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; multiple fireplaces
Electrical Romex wiring; good fixtures, with expensive chandelier in dining room

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

POST 1990 **D-9 QUALITY** **MODERN**

Foundation Reinforced concrete
Floor Structure Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick
Walls and Exterior Framing: Standard wood or steel frame, above code Sheathing: Gypsum board or plywood fully insulated Cover: Good stucco or wood siding with extensive masonry Windows: Good quality vinyl framed wood or aluminum; divided light; slide/double hung, double glaze Front Doors: Double, high quality wood or metal; leaded glass trim; side glass panels
Roof Framing: Standard wood or steel frame Cover: Heavy wood shake; concrete shake or tile; slate; adobe tile Overhang: 0" to 36", unceiled, ceiled, or boxed Gutters: Good quality at all eaves
Floor Finishes Terrazzo, mission, marble, granite, or quarry tile in entry; high quality hardwood, carpet, vinyl tile, quarry tile, or inlaid wood throughout
Interior Finish Gypsum board with good texture and paint; custom decorative woodwork and molding; quality wallpaper and wood paneling; masonry Ceilings: Standard 9' to 12', vaulted, coffered, or boxed beam; rounded corners; crown molding; arched doorways; high quality fans
Interior Detail Interior Doors: Good quality solid wood Trim: Good detailed wood Closets: High quality wood and mirrored doors; walk-ins
Bath Detail Number: 3 to 4 Floors: High quality ceramic tile or vinyl tile Walls: Gypsum board and enamel; quality wallpaper; high quality quarry, terrazzo, or ceramic tile 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 Twin basin vanities and compartmentalized bath
Kitchen Base Cabinets: Quality hardwood Wall Cases: Quality hardwood; under cabinet lighting Drain Board: High quality ceramic tile, marble, granite, or Corian ; island cabinets with fixtures
Plumbing Galvanized, plastic, copper pipe; 10 or more good quality fixtures; washer outlet; 2 or more water heaters
Special Features 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; multiple fireplaces
Electrical Cable wiring; good fixtures, with expensive chandeliers; good quality bedroom ceiling fixtures; extensive recessed lighting; special switches

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

PRE 1990	D-10 QUALITY	MODERN

Foundation
Reinforced concrete

Floor Structure
Joists: 2" x 10" x 16"
Sub-Floor: Plywood or 1" x 4" tongue and groove

Walls and Exterior
Framing: Heavy wood frame
Sheathing: Gypsum board or plywood, fully insulated to R-19 standards
Cover: Decorative stucco or heavy wood siding with extensive or full brick veneer
Windows: Heavy steel sash with thermopane glass

Roof
Framing: 2" x 8" x 24" rafters, extensively cut-up with many dormers
Cover: Heavy shake or adobe tile
Overhang: 36", ceiled or boxed
Gutters: Excellent quality 8" at all eaves

Floor Finishes
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

Interior Finish
Gypsum board with heavy texture and paint; extensive wallpaper, grass cloth, and excellent wood paneling throughout

Interior Detail
Interior Doors: Excellent hardwood
Trim: Excellent scrolled hardwood
Storage: Cedar lined closets and extensive storage cabinets
Extras: Spiral staircases; chandeliers in entry hall, dining, and family rooms

Bath Detail
Number: One bath for every bedroom
Floors: Good ceramic tile
Walls: Good ceramic tile wainscoting
Shower: Fully ceramic tiled walls and ceiling

Kitchen
Extensive hardwood wall cabinets; fixtures on cooking island; butcher block; extensive good ceramic tile drain board

Plumbing
Copper tubing; 15 or more quality fixtures; two or more water heaters

Special Features
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; multiple fireplaces

Electrical
Romex wiring; excellent fixtures in each room

SINGLE-FAMILY RESIDENTIAL
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

POST 1990 **D-10 QUALITY** **MODERN**

Foundation Reinforced concrete
Floor Structure Standard wood frame or slab on grade reinforced concrete, vapor barrier, base 4" thick
Walls and Exterior Framing: Standard wood or steel frame, above code Sheathing: Gypsum board or plywood fully insulated Cover: Decorative stucco or heavy wood siding with extensive or full brick veneer Windows: Excellent quality vinyl framed wood/aluminum; divided light; slide/double hung, double glaze Front Doors: Double, highest quality wood or metal; leaded glass trim; side glass panels
Roof Framing: Standard wood or steel frame; multiple roof pitch Cover: Heavy wood shake, adobe tile, copper, or slate Overhang: 0" to 36", unceiled, ceiled, or boxed Gutters: Excellent quality at all eaves
Floor Finishes Terrazzo, mission, quarry, marble, granite, or slate tile in entry; highest quality hardwood, parquet, plank, or inlaid wood or fine carpeting throughout
Interior Finish Gypsum board with good texture and paint; custom decorative woodwork and molding; excellent quality wallpaper, wood paneling; cloth covering; extensive masonry Ceilings: Standard 9' to 12' coffered, boxed beamed, or vaulted; rounded corners; crown molding; arched doorways; highest quality fans
Interior Detail Interior Doors: Excellent quality solid wood; decorative Trim: Good detailed wood; 4' wainscot Closets: Highest quality wood and mirrored doors; walk-ins; extensive shelving
Bath Detail Number: One per bedroom Floors: Highest quality quarry tile, concrete tile, or slate Walls: Gypsum board , enamel; highest quality wallpaper; highest quality quarry, terrazzo, ceramic tile 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 Multiple basin vanities and separate dressing rooms
Kitchen Custom cabinetry; under cabinet lighting Drain Board: Excellent quality ceramic tile, marble, granite, or Corian; island cabinets with fixtures
Plumbing Galvanized, plastic, copper pipe; 15 plus excellent quality fixtures; washer outlet; 2 or more water heaters
Special Features 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; multiple fireplaces
Electrical Cable wiring; excellent fixtures; extensive stylized and recessed lighting; expensive chandeliers; special switches

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SINGLE-FAMILY RESIDENTIAL
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	84.44	80.88	77.97	75.46	73.48	71.71	70.19	68.77	67.71	66.65	65.81
D-5.5	92.88	88.98	85.78	83.03	80.83	78.90	77.19	75.61	74.50	73.32	72.43
D-6	106.97	102.55	98.82	95.66	93.19	90.93	88.95	87.13	85.82	84.50	83.33
D-6.5	118.85	113.85	109.79	106.23	103.44	100.92	98.71	96.85	95.32	93.86	92.59
D-7	131.95	126.32	121.84	117.91	114.84	112.12	109.65	107.45	105.79	104.21	102.77
D-7.5	153.15	146.66	141.39	136.89	133.23	130.09	127.29	124.72	122.86	120.89	119.30
D-8	179.07	171.62	165.38	160.08	155.85	152.16	148.86	145.94	143.70	141.51	139.54
D-8.5	205.21	196.67	189.52	183.43	178.67	174.38	170.60	167.22	164.64	162.13	159.84
D-9	279.57	267.86	258.19	249.86	243.35	237.55	232.43	227.81	224.34	220.84	217.82
D-9.5	400.07	383.32	369.46	357.57	348.19	339.83	332.56	325.89	320.98	316.13	311.64
D-10	460.08	440.84	424.78	411.16	400.42	390.86	382.41	374.80	369.10	363.53	358.45

"D" CONSTRUCTION - SHAPE A

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	64.95	63.45	62.34	61.34	60.52	59.81	59.24	58.70	58.19	57.77	56.99
D-5.5	71.47	69.84	68.66	67.52	66.57	65.73	65.19	64.55	63.97	63.51	62.70
D-6	82.35	80.47	79.10	77.80	76.73	75.70	75.07	74.41	73.75	73.24	72.24
D-6.5	91.48	89.34	87.85	86.40	85.09	84.13	83.32	82.66	81.84	81.35	80.25
D-7	101.43	99.24	97.55	95.86	94.59	93.39	92.59	91.75	90.95	90.26	89.03
D-7.5	117.82	115.22	113.20	111.29	109.78	108.44	107.41	106.45	105.57	104.85	103.39
D-8	137.83	134.70	132.39	130.13	128.33	126.80	125.64	124.58	123.43	122.58	120.87
D-8.5	158.00	154.36	151.70	149.18	147.11	145.29	143.94	142.70	141.46	140.51	138.53
D-9	215.24	210.27	206.76	203.20	200.42	197.89	196.09	194.44	192.67	191.41	188.71
D-9.5	307.87	300.92	295.75	290.73	286.72	283.16	280.61	278.28	275.73	273.85	270.02
D-10	354.11	346.06	340.03	334.34	329.74	325.63	322.72	320.01	317.08	314.95	310.52

"D" CONSTRUCTION - SHAPE A

Class	4200	4400	4600	5000
D-6	71.18	71.04	70.53	69.84
D-6.5	79.52	78.89	78.33	77.56
D-7	88.22	87.51	86.92	86.05
D-7.5	102.46	101.64	100.93	99.91
D-8	120.89	119.92	119.08	117.89
D-8.5	137.28	136.17	135.23	133.87
D-9	187.01	185.51	184.21	182.37
D-9.5	267.58	265.44	263.58	260.95
D-10	307.72	305.26	303.12	300.08

SINGLE-FAMILY RESIDENTIAL
MODERN TYPE
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION - SHAPE B

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	86.10	82.51	79.41	77.00	74.90	73.14	71.71	70.33	69.16	68.13	67.23
D-5.5	94.69	90.69	87.38	84.74	82.35	80.39	78.90	77.35	76.12	75.00	74.00
D-6	109.09	104.58	100.61	97.62	94.94	92.66	90.93	89.21	87.80	86.44	85.25
D-6.5	121.19	116.11	111.68	108.37	105.40	102.90	100.92	98.93	97.44	95.93	94.70
D-7	134.50	128.86	124.06	120.30	117.04	114.29	112.12	109.88	108.07	106.53	105.17
D-7.5	156.06	149.59	143.97	139.67	135.90	132.61	130.14	127.52	125.58	123.60	122.00
D-8	182.53	174.90	168.46	163.33	158.88	155.16	152.16	149.18	146.81	144.61	142.66
D-8.5	209.18	200.45	193.03	187.21	182.02	177.79	174.38	170.93	168.18	165.72	163.50
D-9	285.01	273.09	262.97	255.05	248.01	242.26	237.55	232.85	229.13	225.75	222.74
D-9.5	407.87	390.69	376.35	364.89	354.88	346.60	339.83	333.20	327.90	323.05	318.71
D-10	469.02	449.30	432.78	419.64	408.12	398.67	390.86	383.15	377.08	371.52	366.45

"D" CONSTRUCTION - SHAPE B

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	66.38	64.98	63.92	62.96	62.09	61.34	60.76	60.16	59.67	59.24	58.59
D-5.5	73.00	71.51	70.33	69.16	68.24	67.52	66.80	66.21	65.66	65.19	64.43
D-6	84.20	82.36	81.03	79.79	78.76	77.80	76.97	76.25	75.63	75.07	74.28
D-6.5	93.47	91.52	90.01	88.57	87.38	86.40	85.45	84.68	83.99	83.32	82.48
D-7	103.78	101.51	99.93	98.33	96.98	95.86	94.92	93.96	93.28	92.59	91.59
D-7.5	120.42	117.84	115.97	114.20	112.58	111.29	110.17	109.07	108.19	107.41	106.23
D-8	140.92	137.90	135.65	133.57	131.68	130.13	128.91	127.63	126.58	125.64	124.30
D-8.5	161.39	158.02	155.47	153.07	150.95	149.18	147.69	146.24	145.06	143.94	142.44
D-9	219.91	215.30	211.88	208.51	205.62	203.20	201.18	199.24	197.62	196.09	194.07
D-9.5	314.72	307.99	303.01	298.43	294.29	290.73	287.93	285.07	282.79	280.61	277.74
D-10	361.91	354.20	348.50	343.15	338.36	334.34	331.07	327.88	325.19	322.72	319.34

"D" CONSTRUCTION - SHAPE B

Class	4200	4400	4600	5000
D-6	73.62	73.02	72.52	71.79
D-6.5	81.74	81.08	80.52	79.71
D-7	90.77	90.05	89.42	88.52
D-7.5	105.27	104.43	103.69	102.67
D-8	123.20	122.21	121.36	120.14
D-8.5	141.37	139.61	138.54	137.58
D-9	192.33	190.79	189.46	187.55
D-9.5	275.22	274.27	272.35	269.62
D-10	316.48	313.93	312.95	309.83

SINGLE-FAMILY RESIDENTIAL
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	87.46	83.92	80.90	78.45	76.34	74.69	73.14	71.84	70.52	69.59	68.70
D-5.5	96.23	92.29	88.99	86.28	84.02	82.21	80.39	79.00	77.61	76.57	75.55
D-6	110.88	106.35	102.58	99.46	96.79	94.70	92.66	91.02	89.35	88.24	87.04
D-6.5	123.14	118.11	113.86	110.45	107.45	105.09	102.90	101.09	99.28	97.99	96.67
D-7	136.67	131.08	126.42	122.61	119.30	116.71	114.29	112.21	110.22	108.82	107.33
D-7.5	158.61	152.14	146.72	142.20	138.54	135.51	132.61	130.20	127.90	126.25	124.59
D-8	185.56	177.98	171.69	166.42	162.08	158.46	155.16	152.23	149.66	147.68	145.73
D-8.5	212.64	203.96	196.71	190.65	185.75	181.56	177.79	174.49	171.51	169.22	166.96
D-9	289.66	277.86	268.00	259.78	253.04	247.35	242.22	237.71	233.62	230.50	227.54
D-9.5	414.47	397.55	383.49	371.74	362.05	353.94	346.60	340.19	334.30	329.81	325.53
D-10	476.60	457.18	441.03	427.51	416.42	407.03	398.67	391.14	384.44	379.28	374.36

"D" CONSTRUCTION - SHAPE C

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	66.27	65.03	63.93	62.62	62.17	61.60	61.03	60.50	59.95	59.57	58.92
D-5.5	74.69	73.14	71.95	70.33	69.84	69.11	68.53	67.91	67.22	66.82	66.08
D-6	86.13	84.25	82.85	81.03	80.47	79.69	78.89	78.25	77.50	77.07	76.10
D-6.5	95.56	93.54	92.03	90.01	89.34	88.45	87.70	86.93	85.95	85.55	84.50
D-7	106.11	103.89	102.14	99.93	99.24	98.22	97.31	96.58	95.56	94.93	93.81
D-7.5	123.17	120.59	118.44	115.97	115.22	113.94	112.93	112.00	110.89	110.22	108.90
D-8	144.09	141.07	138.65	135.65	134.70	133.31	132.07	130.97	129.66	128.93	128.42
D-8.5	165.09	161.66	158.90	155.47	154.36	152.77	151.35	150.11	148.57	147.74	145.94
D-9	224.85	220.21	216.45	211.88	210.27	208.12	206.26	204.47	202.35	201.21	198.79
D-9.5	321.78	315.12	309.78	303.01	300.92	297.80	295.04	292.57	289.60	288.02	284.46
D-10	370.03	362.34	356.24	355.47	346.06	342.48	339.29	336.43	333.05	331.17	327.04

"D" CONSTRUCTION - SHAPE C

Class	4200	4400	4600	5000
D-6	75.42	74.80	74.28	73.55
D-6.5	83.27	82.58	82.00	81.18
D-7	92.95	92.22	91.57	90.66
D-7.5	107.90	107.05	106.31	105.23
D-8	127.29	126.30	125.42	124.17
D-8.5	144.63	143.48	142.48	141.04
D-9	197.02	195.43	194.07	192.11
D-9.5	281.88	279.63	277.67	274.91
D-10	324.10	321.49	319.26	316.06

SINGLE-FAMILY RESIDENTIAL
MODERN TYPE
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION - SHAPE D

Class	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
D-5	88.90	85.28	82.53	79.98	78.01	76.20	74.71	73.46	72.18	71.16	70.33
D-5.5	97.72	93.84	90.71	87.95	85.82	83.84	82.23	80.79	79.43	78.31	77.35
D-6	112.68	108.08	104.60	101.36	98.90	96.66	94.74	93.11	91.59	90.23	89.21
D-6.5	125.08	120.09	116.13	112.55	109.83	107.30	105.17	103.41	101.68	100.28	98.93
D-7	138.89	133.34	128.95	124.93	121.86	119.10	116.72	114.82	112.84	111.29	109.88
D-7.5	161.18	154.66	149.60	144.99	141.51	138.18	135.53	133.17	130.94	129.13	127.52
D-8	188.49	181.01	174.93	169.58	165.47	161.69	158.50	155.80	153.23	151.04	149.18
D-8.5	216.02	207.46	200.47	194.37	189.64	185.26	181.61	178.50	175.56	173.02	170.93
D-9	294.25	282.57	273.09	264.73	258.37	252.39	247.44	243.25	239.18	235.81	232.85
D-9.5	421.08	404.47	390.83	378.80	369.68	361.15	354.03	348.08	342.22	337.34	333.22
D-10	484.23	465.11	449.41	435.67	425.13	415.28	407.15	400.25	393.55	388.02	383.15

"D" CONSTRUCTION - SHAPE D

Class	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	4000
D-5	69.45	68.06	66.97	65.90	65.09	64.28	63.72	63.22	62.70	62.31	61.49
D-5.5	76.36	74.90	73.62	72.53	71.56	70.69	70.03	69.54	68.98	68.54	67.64
D-6	88.10	86.28	84.78	83.57	82.51	81.50	80.73	80.15	79.47	79.03	77.89
D-6.5	97.78	95.80	94.29	92.79	91.61	90.50	89.70	88.95	88.24	87.71	86.52
D-7	108.55	106.33	104.60	103.06	101.80	100.43	99.58	98.72	97.99	97.44	96.10
D-7.5	126.06	123.43	121.36	119.60	118.04	116.63	115.61	114.61	113.74	112.95	111.45
D-8	147.44	144.31	141.99	139.90	138.07	136.37	135.18	134.06	132.99	132.13	130.46
D-8.5	168.89	165.39	162.70	160.24	158.18	156.31	154.92	153.67	152.39	151.39	149.49
D-9	230.09	225.31	221.65	218.36	215.49	212.95	211.09	209.31	207.64	206.31	203.64
D-9.5	329.32	322.41	317.22	312.42	308.41	304.64	302.08	299.52	297.11	295.13	291.43
D-10	378.68	370.76	364.78	363.18	354.62	350.36	347.29	344.43	341.64	339.41	335.05

"D" CONSTRUCTION - SHAPE D

Class	4200	4400	4600	5000
D-6	77.19	76.57	76.03	75.28
D-6.5	85.73	85.04	84.47	83.60
D-7	95.25	94.14	93.17	92.24
D-7.5	110.47	109.57	108.81	107.72
D-8	129.29	128.26	127.36	126.10
D-8.5	143.64	142.50	141.49	140.08
D-9	201.81	200.17	198.79	196.79
D-9.5	287.98	285.70	283.72	280.92
D-10	332.03	329.37	327.07	323.75

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MOUNTAIN RESIDENCES
CONVENTIONAL TYPE
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION - SHAPE A

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	151.55	136.00	125.74	117.49	111.43	106.72	102.58	99.54	96.53	94.32	92.16
D-4.5	164.35	147.47	136.23	127.38	120.80	115.61	111.21	107.80	104.79	102.13	99.88
D-5	178.16	159.76	147.77	138.09	131.00	125.31	120.51	116.86	113.54	110.85	108.23
D-5.5	193.17	173.19	160.11	149.77	142.01	135.92	130.64	126.77	122.96	120.10	117.41
D-6	209.34	187.75	173.59	162.22	153.95	147.24	141.59	137.42	133.37	130.26	127.21
D-6.5	229.07	205.49	189.82	177.54	168.39	161.15	155.07	150.36	146.00	142.45	139.18
D-7	250.66	224.81	207.81	194.34	184.28	176.29	169.56	164.52	159.69	155.83	152.28
D-7.5	351.13	314.99	291.09	272.25	258.03	247.00	237.50	230.54	223.62	218.27	213.30
D-8	404.68	362.93	335.42	313.74	297.51	284.67	273.85	265.52	257.86	251.68	245.78
D-8.5	461.05	413.39	382.25	357.44	339.03	324.37	312.03	302.40	293.79	286.78	280.15
D-9	524.36	470.23	434.84	406.50	385.75	368.98	355.02	343.87	334.33	326.10	318.61

"D" CONSTRUCTION - SHAPE A

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	90.64	88.95	87.61	86.33	84.07	82.01	80.67	79.12	78.33	77.03	76.18
D-4.5	98.21	96.45	94.97	93.67	91.20	88.90	87.55	85.79	84.90	83.48	82.39
D-5	106.47	104.55	102.91	101.47	98.78	96.41	94.95	93.07	92.05	90.49	89.58
D-5.5	115.38	113.26	111.69	109.92	107.02	104.41	102.87	100.86	99.82	98.09	97.14
D-6	125.09	122.85	120.86	119.25	116.11	113.14	111.46	109.38	108.21	106.34	105.24
D-6.5	136.84	134.38	132.33	130.45	127.00	123.88	121.94	119.70	118.30	116.32	115.20
D-7	149.86	147.00	144.78	142.74	139.08	135.58	133.55	130.86	129.44	127.36	125.94
D-7.5	209.80	206.04	202.84	199.92	194.74	189.89	186.92	183.41	181.36	178.36	176.51
D-8	241.98	237.45	233.80	230.45	224.57	218.84	215.55	211.41	208.99	205.61	203.44
D-8.5	274.60	270.45	266.38	262.55	255.81	249.48	245.49	240.82	238.18	234.27	231.84
D-9	313.90	307.57	303.04	298.66	290.94	283.94	279.21	273.99	270.83	266.35	263.79

"D" CONSTRUCTION - SHAPE B

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	154.34	138.76	128.11	120.04	114.04	109.15	104.98	101.90	99.02	96.65	94.55
D-4.5	167.23	150.45	138.86	130.13	123.61	118.24	113.76	110.51	107.37	104.80	102.55
D-5	181.24	163.06	150.52	141.02	133.92	128.17	123.29	119.75	116.34	113.63	111.09
D-5.5	196.51	176.75	163.18	152.95	145.32	138.95	133.67	129.83	126.15	123.15	120.44
D-6	212.98	191.64	177.00	165.78	157.38	150.62	144.88	140.56	136.75	133.51	130.57
D-6.5	233.12	209.67	193.64	181.36	172.24	164.91	158.60	153.86	149.55	146.01	142.90
D-7	255.09	229.48	211.80	198.49	188.44	180.34	173.46	168.43	163.77	159.75	156.32
D-7.5	357.30	321.35	296.67	277.94	263.98	252.63	243.06	235.98	229.26	223.78	218.84
D-8	411.65	370.39	341.87	320.24	304.29	291.18	280.09	272.02	264.32	257.97	252.38
D-8.5	469.11	422.01	389.49	364.84	346.67	331.75	319.10	309.93	301.17	294.02	287.56
D-9	533.52	478.32	442.79	414.99	394.23	377.25	362.95	352.46	342.67	334.58	327.31

MOUNTAIN RESIDENCES
CONVENTIONAL TYPE
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION - SHAPE B

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	93.03	91.32	90.07	88.78	86.44	84.35	83.13	81.60	80.67	79.49	78.51
D-4.5	100.85	99.02	97.65	96.26	93.73	91.41	90.07	88.51	87.55	86.15	84.98
D-5	109.25	107.37	105.84	104.38	101.53	99.15	97.65	95.89	94.95	93.33	92.22
D-5.5	118.50	116.34	114.76	113.09	110.17	107.41	105.84	104.00	102.87	101.23	100.07
D-6	128.41	126.20	124.40	122.61	119.41	116.43	114.76	112.69	111.46	109.75	108.38
D-6.5	140.49	138.01	136.05	134.10	130.64	127.38	125.58	123.30	121.94	120.04	118.59
D-7	153.74	151.10	148.91	146.80	142.91	139.44	137.36	134.83	133.55	131.30	129.72
D-7.5	215.25	211.68	208.50	205.48	200.17	195.35	192.42	188.98	186.92	183.89	181.74
D-8	248.23	243.82	240.27	236.90	230.87	225.18	221.85	217.83	215.55	212.03	209.58
D-8.5	282.89	277.66	273.77	269.85	262.95	256.53	252.86	248.15	245.46	241.50	238.86
D-9	321.81	315.75	311.47	307.03	299.26	291.80	287.73	282.13	279.08	274.81	271.97

"D" CONSTRUCTION - SHAPE C

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	156.78	141.34	130.69	122.44	116.86	111.46	107.41	104.38	101.47	99.15	96.98
D-4.5	169.99	153.24	141.64	132.72	126.77	120.86	116.35	113.08	109.92	107.42	105.10
D-5	184.31	166.08	153.59	143.92	137.38	131.02	126.20	122.61	119.25	116.43	113.81
D-5.5	199.78	180.05	166.53	155.93	148.94	142.06	136.76	132.87	129.29	126.27	123.53
D-6	216.51	195.21	180.54	169.06	161.49	153.99	148.30	143.98	140.04	136.79	133.78
D-6.5	236.97	213.65	197.48	185.08	176.69	168.47	162.31	157.57	153.24	149.77	146.39
D-7	259.19	233.63	216.11	202.38	193.27	184.35	177.54	172.36	167.70	163.94	160.15
D-7.5	363.19	327.32	302.68	283.58	270.70	258.21	248.66	241.42	234.89	229.56	224.32
D-8	418.60	377.20	348.92	326.83	312.03	297.60	286.58	278.43	270.69	264.59	258.59
D-8.5	476.94	429.82	397.62	372.49	355.60	339.03	326.49	317.32	308.26	301.62	294.61
D-9	542.41	488.97	452.42	423.63	404.63	385.48	371.43	360.89	350.66	343.05	335.10

"D" CONSTRUCTION - SHAPE C

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	95.31	93.67	92.22	91.20	88.89	86.76	85.44	83.98	83.02	81.64	80.95
D-4.5	103.33	101.49	100.07	98.78	96.30	93.94	92.59	91.02	89.98	88.52	87.72
D-5	112.05	109.93	108.38	107.18	104.39	101.90	100.45	98.67	97.52	95.93	95.07
D-5.5	121.42	119.25	117.46	116.35	113.12	110.51	108.81	106.96	105.72	104.04	103.10
D-6	131.72	129.29	127.37	125.94	122.68	119.75	117.92	115.99	114.60	112.70	111.78
D-6.5	144.15	141.44	139.27	137.80	134.27	131.02	129.01	126.92	125.36	123.52	122.32
D-7	157.63	154.69	152.49	150.77	146.85	143.32	141.21	138.83	137.21	135.07	133.75
D-7.5	220.84	216.75	213.61	211.21	205.59	200.74	197.77	194.44	192.12	189.10	187.42
D-8	254.65	249.94	246.26	243.47	236.98	231.51	227.90	224.10	221.48	217.98	215.99
D-8.5	290.08	284.67	280.45	277.54	269.90	263.90	259.69	255.50	254.37	248.33	246.10
D-9	330.06	323.71	318.91	315.70	307.03	300.44	295.33	290.64	287.25	282.51	279.89

MOUNTAIN RESIDENCES
CONVENTIONAL TYPE
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION - SHAPE D

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	159.60	143.92	133.29	125.01	118.90	114.04	109.86	106.84	104.00	101.53	99.43
D-4.5	172.97	155.93	144.44	135.50	128.90	123.61	119.20	115.70	112.67	110.16	107.69
D-5	187.55	169.06	156.60	146.88	139.77	133.92	129.12	125.53	122.12	119.29	116.78
D-5.5	203.25	183.34	169.77	159.25	151.46	145.32	139.95	136.00	132.35	129.38	126.58
D-6	220.21	198.67	184.00	172.67	164.17	157.38	151.84	147.47	143.52	140.24	137.25
D-6.5	241.06	217.49	201.37	188.91	179.61	172.24	166.08	161.25	157.01	153.55	150.10
D-7	263.77	237.88	220.30	206.66	196.58	188.44	181.61	176.52	171.81	167.81	164.24
D-7.5	369.42	333.12	308.61	289.47	275.31	263.98	254.43	247.19	240.58	235.08	230.17
D-8	425.84	384.00	355.60	333.65	317.39	304.29	293.38	284.99	277.46	271.12	265.30
D-8.5	485.06	437.49	405.16	380.10	361.72	346.67	334.32	324.72	316.21	308.91	302.29
D-9	551.68	497.57	460.76	432.32	411.60	394.23	380.33	369.36	359.80	351.68	343.87

"D" CONSTRUCTION - SHAPE D

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	97.99	96.26	94.63	93.56	91.26	88.98	87.86	86.38	85.53	83.57	83.24
D-4.5	106.22	104.38	102.67	101.46	98.96	96.52	95.29	93.71	92.62	90.64	90.12
D-5	115.08	113.08	111.30	109.86	107.35	104.68	103.27	101.49	100.46	98.21	97.78
D-5.5	124.80	122.61	120.66	119.20	116.32	113.46	111.88	110.16	108.83	106.47	106.07
D-6	135.24	132.87	130.75	129.16	126.04	122.96	121.36	119.26	118.00	115.38	114.97
D-6.5	148.01	145.42	143.03	141.40	137.99	134.66	132.75	130.46	129.12	126.33	125.76
D-7	162.00	159.06	156.60	154.63	150.89	147.35	145.29	142.81	141.34	138.11	137.54
D-7.5	226.80	222.71	219.35	216.61	211.36	206.25	203.52	200.15	197.86	193.55	192.78
D-8	261.50	256.83	252.86	249.55	243.74	237.69	234.60	230.50	227.99	223.10	222.12
D-8.5	298.17	292.64	288.07	284.21	277.79	270.86	267.41	262.57	259.83	254.19	252.96
D-9	339.10	332.91	327.63	323.21	315.97	308.22	304.15	298.51	295.39	289.06	287.47

MOUNTAIN RESIDENCES
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

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

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	149.13	134.66	124.75	116.96	111.34	106.88	102.91	100.06	97.35	95.07	93.18
D-4.5	163.53	147.52	136.68	128.27	122.10	117.12	112.83	109.55	106.59	104.26	102.07
D-5	179.07	161.70	149.76	140.65	133.72	128.31	123.69	120.09	116.90	114.21	111.81
D-5.5	196.36	177.24	164.22	154.04	146.58	140.70	135.51	131.63	128.16	125.17	122.59
D-6	215.31	194.27	179.96	168.78	160.74	154.23	148.38	144.25	140.39	137.19	134.28
D-6.5	238.17	214.91	199.11	186.80	177.77	170.59	164.23	159.57	155.34	151.78	148.67
D-7	263.48	237.70	220.22	206.62	196.67	188.73	181.72	176.58	171.81	167.84	164.40
D-7.5	355.39	320.73	297.16	278.75	265.30	254.67	245.20	238.21	231.79	226.48	221.86
D-8	410.28	370.21	342.99	321.77	306.29	293.86	282.98	274.86	267.62	261.33	256.07

"D" CONSTRUCTION - SHAPE A

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	91.45	89.95	88.72	87.52	85.27	83.46	82.04	80.82	79.57	78.65	77.81
D-4.5	100.26	98.51	97.25	95.98	93.42	91.45	89.98	88.66	87.29	86.18	85.37
D-5	109.92	107.97	106.56	105.18	102.43	100.26	98.53	97.13	95.57	94.54	93.44
D-5.5	120.46	118.35	116.87	115.26	112.30	109.92	108.10	106.46	104.78	103.54	102.46
D-6	131.97	129.65	128.02	126.24	123.10	120.46	118.39	116.66	114.83	113.52	112.35
D-6.5	146.02	143.51	141.70	139.71	136.05	133.25	131.03	129.01	127.12	125.53	124.29
D-7	161.52	158.83	156.71	154.64	150.63	147.43	144.95	142.68	140.64	138.93	137.47
D-7.5	218.05	214.11	211.37	208.39	203.13	198.88	195.58	192.59	189.61	187.43	185.50
D-8	251.55	247.09	243.99	240.62	234.43	229.57	225.63	222.25	218.78	216.29	214.11

"D" CONSTRUCTION - SHAPE B

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	151.45	136.96	127.05	119.35	113.64	109.18	105.28	102.27	99.75	97.36	95.33
D-4.5	166.06	150.14	139.27	130.80	124.50	119.60	115.31	112.20	109.27	106.72	104.54
D-5	181.93	164.61	152.57	143.32	136.48	131.13	126.49	122.79	119.84	116.95	114.53
D-5.5	199.45	180.30	167.24	157.07	149.61	143.72	138.64	134.66	131.23	128.21	125.53
D-6	218.57	197.62	183.26	172.14	163.97	157.39	151.90	147.57	143.87	140.49	137.57
D-6.5	241.89	218.62	202.83	190.48	181.37	174.22	168.03	163.31	159.20	155.38	152.27
D-7	267.57	241.83	224.27	210.67	200.61	192.73	185.96	180.69	176.16	171.93	168.38
D-7.5	361.02	326.38	302.62	284.34	270.66	259.99	250.82	243.66	237.59	232.02	227.24
D-8	416.59	376.61	349.26	328.02	312.42	300.03	289.46	281.25	274.27	267.73	262.15

"D" CONSTRUCTION - SHAPE B

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	93.79	92.17	90.99	89.68	87.61	85.78	84.32	83.11	82.00	80.82	80.06
D-4.5	102.83	100.91	99.75	98.37	96.03	94.01	92.47	91.07	89.95	88.66	87.90
D-5	112.66	110.66	109.27	107.76	105.28	103.02	101.33	99.78	98.51	97.13	96.26
D-5.5	123.52	121.30	119.78	118.08	115.42	112.84	111.02	109.42	107.97	106.46	105.40
D-6	135.34	132.93	131.23	129.47	126.49	123.81	121.63	119.91	118.35	116.66	115.59
D-6.5	149.72	147.03	145.24	143.18	139.93	136.95	134.60	132.64	130.91	129.01	127.84
D-7	165.62	162.68	160.67	158.41	154.73	151.43	148.86	146.79	144.79	142.68	141.39
D-7.5	223.55	219.43	216.70	213.74	208.79	204.29	200.85	197.89	195.35	192.59	190.83
D-8	257.96	253.37	250.20	246.66	240.99	235.77	231.84	228.47	225.44	222.25	220.24

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	153.66	139.24	129.30	121.63	115.89	111.34	107.51	104.38	100.84	99.48	97.54
D-4.5	168.46	152.48	141.71	133.33	127.05	122.10	117.82	114.46	110.50	109.02	106.90
D-5	184.64	167.20	155.29	145.99	139.27	133.72	129.10	125.41	121.21	119.55	117.17
D-5.5	202.30	183.20	170.17	160.12	152.57	146.58	141.61	137.41	132.86	131.02	128.46
D-6	221.68	200.89	186.47	175.49	167.31	160.74	155.09	150.63	145.59	143.51	140.71
D-6.5	245.37	222.12	206.31	194.09	185.01	177.77	171.64	166.62	161.05	158.88	155.70
D-7	271.35	245.80	228.27	214.78	204.72	196.67	189.84	184.29	178.14	175.75	172.34
D-7.5	366.20	331.51	308.05	289.72	276.11	265.30	256.10	248.70	240.27	237.11	232.36
D-8	422.63	382.72	355.36	334.43	318.74	306.29	295.61	287.08	277.39	273.66	268.24

"D" CONSTRUCTION - SHAPE C

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	96.00	93.99	93.18	91.85	89.88	87.95	86.51	85.37	84.10	83.11	82.24
D-4.5	105.24	102.92	102.07	100.68	98.48	96.35	94.77	93.44	92.20	91.07	90.10
D-5	115.27	112.83	111.81	110.40	107.85	105.48	103.95	102.46	101.13	99.78	98.72
D-5.5	126.46	123.74	122.52	120.95	118.29	115.76	113.90	112.35	110.68	109.42	108.20
D-6	138.48	135.51	134.28	132.49	129.59	126.72	124.86	123.13	121.36	119.91	118.65
D-6.5	153.22	149.99	148.67	146.54	143.41	140.21	138.16	136.21	134.23	132.64	131.23
D-7	169.53	165.87	164.40	162.22	158.57	155.27	152.84	150.72	148.46	146.79	145.24
D-7.5	228.80	223.72	221.86	218.78	214.00	209.38	206.19	203.38	200.40	197.89	195.86
D-8	264.02	258.33	256.07	252.57	247.04	241.60	237.93	234.65	231.26	228.47	226.06

"D" CONSTRUCTION - SHAPE D

Class	400	500	600	700	800	900	1000	1100	1200	1300	1400
D-4	155.98	141.39	131.50	123.81	118.02	113.52	109.59	106.59	104.05	101.68	100.10
D-4.5	170.89	155.00	144.08	135.63	129.41	124.38	120.15	116.90	113.98	111.55	109.55
D-5	187.34	169.86	157.82	148.61	141.76	136.34	131.66	128.16	125.05	122.11	120.27
D-5.5	205.23	186.12	173.13	162.82	155.38	149.45	144.36	140.32	136.96	133.94	131.77
D-6	225.02	203.99	189.62	178.55	170.34	163.71	158.19	153.85	150.14	146.76	144.36
D-6.5	248.96	225.71	209.86	197.56	188.47	181.23	175.00	170.26	166.17	162.33	159.79
D-7	275.30	249.70	232.17	218.57	208.40	200.47	193.60	188.36	183.73	179.57	176.70
D-7.5	371.53	336.95	313.24	294.87	281.13	270.34	261.22	254.12	247.86	242.31	238.41
D-8	428.77	388.83	361.35	340.14	324.62	312.02	301.49	293.22	286.10	279.63	275.17

"D" CONSTRUCTION - SHAPE D

Class	1500	1600	1700	1800	2000	2200	2400	2600	2800	3000	3200
D-4	97.99	96.64	95.30	94.01	92.05	90.10	88.70	87.48	86.28	85.37	84.47
D-4.5	107.32	105.82	104.40	103.02	100.79	98.72	97.23	95.92	94.57	93.44	92.55
D-5	117.60	115.90	114.51	112.84	110.45	108.20	106.52	105.10	103.62	102.46	101.43
D-5.5	128.89	127.14	125.51	123.81	121.08	118.65	116.74	115.16	113.64	112.35	111.12
D-6	141.25	139.29	137.55	135.63	132.67	130.07	127.89	126.21	124.53	123.13	121.79
D-6.5	156.37	154.18	152.10	150.08	146.91	143.87	141.65	139.58	137.83	136.21	134.76
D-7	172.87	170.55	168.27	166.03	162.40	159.15	156.55	154.43	152.41	150.72	149.08
D-7.5	233.29	230.06	227.03	223.90	219.13	214.62	211.26	208.35	205.65	203.38	201.18
D-8	269.23	265.57	262.06	258.49	252.95	247.81	243.83	240.54	237.30	234.65	232.04

MOUNTAIN RESIDENCES

WOOD DECKS AND PORCHES

2" wood deck with steps and railings	Cost Per Square Foot		
1 foot above ground	22.68	-	26.33
4 to 6 feet above ground	26.33	-	34.02
6 to 9 feet above ground	27.07	-	35.84
9 to 12 feet above ground	28.53	-	37.31
12 to 15 feet above ground	29.99	-	38.77
15 to 18 feet above ground	30.72	-	40.96

FIREPLACES

Type	Unit Cost		
Metal hood with concrete slab	2,611	-	3,226
Simple concrete block	4,608	-	7,681
Simple block with stone facing	6,145	-	9,217
Simple natural stone	10,753	-	15,362
Brick	7,681	-	up
Wood stove	2,847	-	6,646
Zero clearance	3,797	-	5,696

FLATWORK

Type	Cost Per Square Foot		
Asphalt paving	4.02	-	6.03
4" concrete	4.02	-	5.04
6" concrete	5.04	-	8.04

GARAGES AND CARPORTS

Type	Cost Per Square Foot		
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

Type	Unit Cost		
Wall heaters			
35,000 BTU	1,223		
65,000 BTU	1,549		
Central heating, perimeter ducts (per square foot)	6.85		
Baseboard hot water (per square foot)	4.90		
Geothermal heat pumps	9,266	-	10,926

MOUNTAIN RESIDENCES

HALF-STORY FRACTIONS

Conventional Mountain Residences	Cost Per Square Foot
Use suggested fractions as discussed in *Building Additives* chapter, AH 531.40, page 2	
A-Frame Mountain Residences	
Type I: Simple platform construction; low-cost floor cover; minimum partitions; and minimum lighting	$80.50 to $87.80
Type II: Average quality construction; average quality carpet; average amount of partitions finished with drywall or plywood veneer; average lighting	$84.85 to $93.65
Type III: Good quality construction; good carpet; decorative rustic partitions and ceiling beams; good lighting	$109.31 to $122.45

EXTRA PLUMBING

Type	Cost
Lavatory	$1,563 to $2,334
Water Closet	$1,910 to $2,334
Tub	$2,018 to $2,653
Stall Shower	$1,483 to $2,121
Sink	$1,594 to $2,334

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.

Wall Height	Cost Per Linear Foot
4'	$ 67.45
6'	123.90
8'	191.37
10'	247.58

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

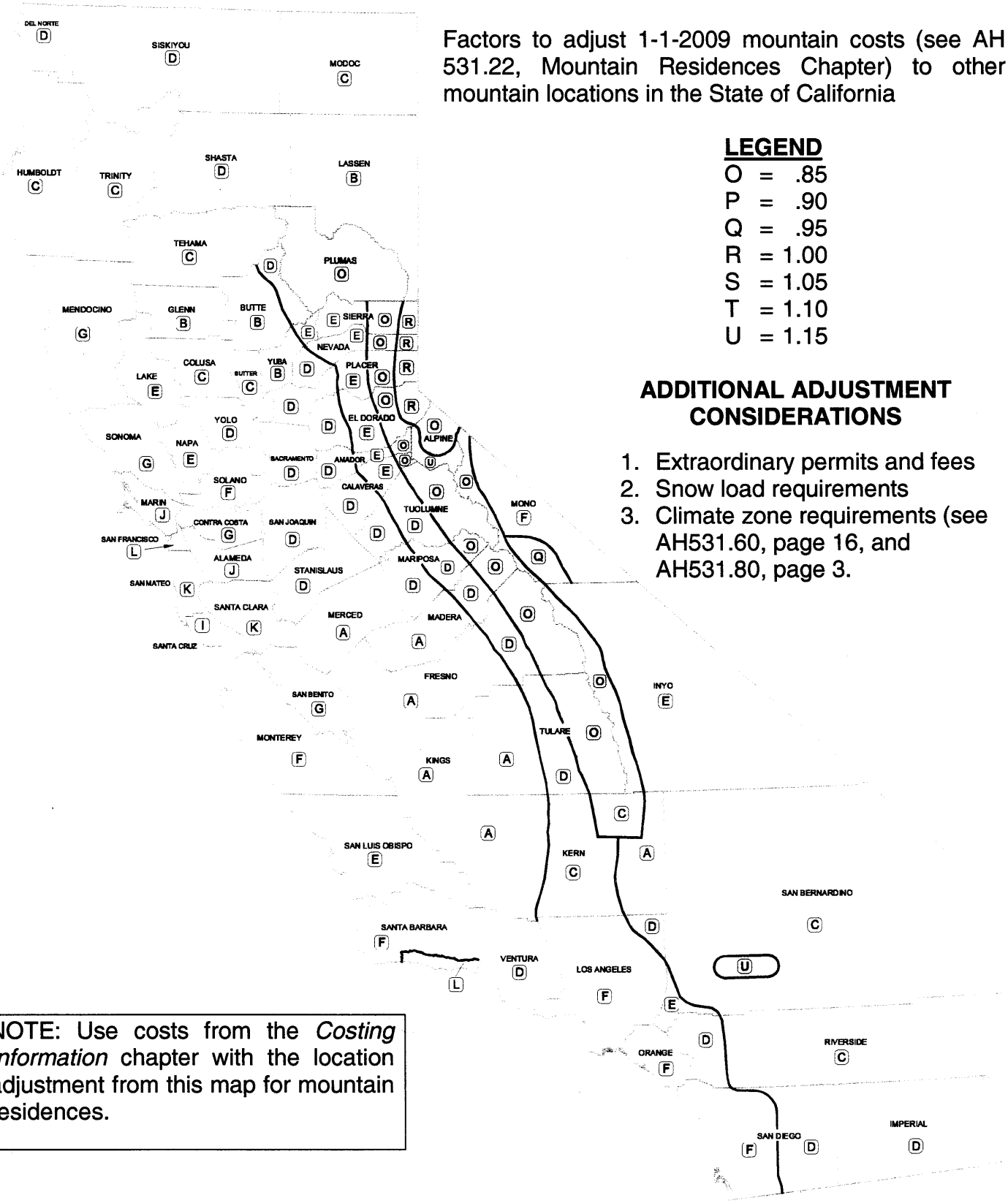
Eastern Zone	From the 5,000-foot elevation line to the eastern boundary of the county.

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 1-1-2009 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 AH531.60, page 16, and AH531.80, page 3.

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

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	77.49	73.98	72.04	70.58	69.29	68.17	67.24	66.32	65.64	64.51	63.52
C-4.5	83.83	80.11	78.04	76.44	75.08	73.87	72.88	71.83	71.10	69.83	68.83
C-5	90.85	86.78	84.51	82.79	81.29	80.04	78.88	77.84	77.04	75.67	74.53
C-5.5	98.39	94.01	91.55	89.61	87.98	86.66	85.45	84.24	83.42	81.91	80.68
C-6	106.55	101.80	99.20	97.03	95.33	93.80	92.59	91.26	90.36	88.73	87.36
C-6.5	116.54	111.26	108.40	106.13	104.25	102.54	101.14	99.71	98.81	97.01	95.54
C-7	126.64	121.65	118.50	116.02	113.93	112.16	110.62	109.04	107.94	106.00	104.36
C-7.5	145.51	138.96	135.41	132.57	130.13	128.14	126.37	124.66	123.36	121.12	119.38
C-8	165.91	158.52	154.41	151.23	148.45	146.06	144.08	142.15	140.67	138.12	136.07
C-8.5	188.96	180.44	175.79	172.14	168.95	166.35	164.14	161.72	160.09	157.34	154.97

"C" CONSTRUCTION - 2 or 3 UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
C-4	62.78	62.17	61.53	61.14	60.70	60.24	59.99	59.75	59.48	59.32	59.04
C-4.5	67.99	67.34	66.70	66.21	65.76	65.22	64.95	64.70	64.50	64.23	63.99
C-5	73.63	72.91	72.19	71.70	71.24	70.69	70.32	70.03	69.81	69.56	69.29
C-5.5	79.72	78.94	78.25	77.66	77.15	76.50	76.15	75.92	75.61	75.27	75.12
C-6	86.33	85.46	84.71	84.09	83.54	82.84	82.50	82.23	81.89	81.60	81.34
C-6.5	94.43	93.47	92.59	91.96	91.28	90.64	90.23	89.83	89.53	89.09	88.89
C-7	103.20	102.15	101.17	100.45	99.89	98.99	98.54	98.25	97.84	97.49	97.06
C-7.5	117.89	116.72	115.68	114.85	114.07	113.12	112.66	112.22	111.79	111.41	110.99
C-8	134.43	133.16	131.92	130.93	130.06	129.02	128.44	128.00	127.51	127.14	126.56
C-8.5	153.06	151.61	150.15	149.13	148.12	146.94	146.25	145.66	145.14	144.61	144.08

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
C-4	3,640	5,360	7,582
C-5	4,447	6,976	8,594
C-6	5,157	7,784	10,818
C-7	5,663	9,381	12,133
C-8	7,582	11,021	13,951

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	72.99	69.82	68.02	66.61	65.27	64.24	63.39	62.60	61.98	60.90	59.87
C-4.5	79.08	75.61	73.68	72.12	70.72	69.62	68.60	67.84	67.16	65.99	64.90
C-5	85.58	81.89	79.72	78.14	76.66	75.41	74.27	73.43	72.74	71.44	70.30
C-5.5	92.70	88.72	86.33	84.53	82.91	81.63	80.46	79.57	78.75	77.30	76.13
C-6	100.42	96.09	93.53	91.64	89.82	88.46	87.16	86.22	85.31	83.77	82.41
C-6.5	109.79	105.08	102.22	100.17	98.25	96.62	95.23	94.22	93.24	91.60	90.14
C-7	119.99	114.81	111.82	109.45	107.36	105.69	104.14	102.96	102.02	100.15	98.45
C-7.5	137.17	131.17	127.73	125.07	122.64	120.71	119.02	117.64	116.48	114.39	112.53
C-8	156.39	149.60	145.65	142.64	139.90	137.71	135.71	134.20	132.84	130.44	128.28
C-8.5	178.05	170.35	165.88	162.41	159.30	156.73	154.55	152.75	151.28	148.46	146.18

"C" CONSTRUCTION - 4 to 9 UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
C-4	59.17	58.56	58.15	57.67	57.30	56.89	56.56	56.46	56.14	55.91	55.75
C-4.5	64.09	63.44	62.88	62.40	62.05	61.54	61.24	61.13	60.84	60.55	60.40
C-5	69.38	68.73	68.14	67.61	67.20	66.70	66.38	66.20	65.83	65.56	65.51
C-5.5	75.18	74.49	73.81	73.31	72.84	72.30	71.82	71.71	71.33	70.90	70.85
C-6	81.36	80.52	79.95	79.27	78.81	78.23	77.82	77.64	77.25	76.81	76.71
C-6.5	88.98	88.09	87.34	86.68	86.17	85.51	85.05	84.88	84.43	84.03	83.94
C-7	97.19	96.25	95.51	94.75	94.22	93.53	92.96	92.82	92.34	91.88	91.71
C-7.5	111.10	110.07	109.11	108.34	107.63	106.84	106.23	106.08	105.39	104.95	104.79
C-8	126.76	125.47	124.46	123.49	122.75	121.84	121.18	120.95	120.20	119.74	119.44
C-8.5	144.26	142.84	141.72	140.56	139.77	138.74	138.02	137.64	136.90	136.26	136.02

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
C-4	3,337	4,946	6,597
C-5	4,045	6,287	7,937
C-6	4,851	7,731	9,588
C-7	5,360	8,762	11,544
C-8	6,976	9,894	13,709

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	68.95	65.99	64.24	62.88	61.79	60.77	59.87	59.17	58.51	57.53	56.59
C-4.5	74.76	71.44	69.62	68.07	66.88	65.76	64.90	64.09	63.41	62.33	61.34
C-5	80.97	77.30	75.41	73.79	72.40	71.26	70.30	69.38	68.62	67.52	66.42
C-5.5	87.67	83.77	81.63	79.95	78.41	77.16	76.13	75.18	74.36	73.07	71.97
C-6	94.90	90.78	88.46	86.58	84.95	83.58	82.41	81.36	80.50	79.17	77.89
C-6.5	103.73	99.25	96.62	94.60	92.83	91.37	90.14	88.98	88.04	86.59	85.18
C-7	113.43	108.43	105.69	103.38	101.52	99.93	98.45	97.19	96.24	94.62	93.05
C-7.5	129.62	123.91	120.71	118.09	116.00	114.12	112.53	111.10	110.01	108.07	106.43
C-8	147.82	141.40	137.71	134.72	132.31	130.18	128.28	126.76	125.44	123.35	121.26
C-8.5	168.33	160.88	156.73	153.42	150.57	148.22	146.18	144.26	142.82	140.36	138.07

"C" CONSTRUCTION - 10 or MORE UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
C-4	55.94	55.39	54.84	54.44	54.06	53.76	53.51	53.23	53.07	52.86	52.66
C-4.5	60.58	59.98	59.43	58.98	58.51	58.21	57.89	57.68	57.46	57.28	56.98
C-5	65.58	64.94	64.42	63.81	63.41	63.05	62.75	62.48	62.24	61.97	61.83
C-5.5	71.05	70.31	69.69	69.09	68.62	68.27	67.95	67.63	67.38	67.15	66.89
C-6	76.97	76.14	75.54	74.88	74.36	73.88	73.52	73.36	72.99	72.71	72.40
C-6.5	84.06	83.25	82.55	81.84	81.28	80.80	80.35	80.08	79.81	79.42	79.16
C-7	91.96	91.05	90.22	89.49	88.80	88.29	87.89	87.59	89.46	86.90	86.60
C-7.5	105.06	104.06	103.14	102.29	101.46	100.92	100.44	100.11	99.68	99.24	98.98
C-8	119.79	118.62	117.55	116.62	115.75	115.08	114.52	114.16	113.71	113.21	112.81
C-8.5	136.29	135.04	133.86	132.79	131.83	131.03	130.37	129.90	129.36	128.89	128.46

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
C-4	2,934	4,548	5,464
C-5	3,540	5,360	7,731
C-6	4,548	6,976	8,762
C-7	5,360	8,087	11,027
C-8	6,167	9,706	12,573

MULTIPLE-FAMILY RESIDENCES
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

D-4 QUALITY

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

MULTIPLE-FAMILY RESIDENCES
SQUARE FOOT AVERAGE UNIT AREA COST TABLES

"D" CONSTRUCTION - 2 or 3 UNITS

Class	400	450	500	550	600	650	700	750	800	900	1000
D-4	66.93	64.03	62.41	61.00	59.93	58.93	58.12	57.39	56.85	55.75	54.91
D-4.5	72.52	69.29	67.56	66.04	64.81	63.79	63.00	62.09	61.56	60.42	59.45
D-5	78.53	75.04	73.17	71.50	70.24	69.10	68.15	67.24	66.67	65.49	64.40
D-5.5	85.03	81.26	79.27	77.44	76.05	74.88	73.91	72.84	72.20	70.89	69.77
D-6	92.09	87.98	85.80	83.91	82.40	81.07	79.94	78.94	78.16	76.76	75.55
D-6.5	100.63	96.18	93.84	91.65	90.02	88.62	87.45	86.27	85.43	83.96	82.60
D-7	110.02	105.23	102.56	100.27	98.46	96.82	95.62	94.27	93.40	91.73	90.28
D-7.5	125.73	120.20	117.19	114.50	112.50	110.67	109.25	107.75	106.72	104.80	103.16
D-8	143.38	137.05	133.65	130.61	128.23	126.21	124.62	122.78	121.73	119.55	117.67
D-8.5	163.19	156.06	152.15	148.69	146.05	143.65	141.84	139.76	138.55	136.16	133.93

"D" CONSTRUCTION - 2 OR 3 UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
D-4	54.23	53.73	53.23	52.85	52.48	52.14	51.91	51.65	51.49	51.26	51.14
D-4.5	58.79	58.18	57.70	57.18	56.87	56.50	56.21	56.01	55.72	55.56	55.38
D-5	63.68	63.00	62.41	61.95	61.57	61.20	60.87	60.60	60.36	60.17	59.98
D-5.5	68.96	68.18	67.60	67.07	66.69	66.26	65.99	65.63	65.35	65.19	64.97
D-6	74.66	73.91	73.24	72.63	72.20	71.76	71.40	71.18	70.78	70.57	70.33
D-6.5	81.65	80.69	80.12	79.45	78.95	78.46	78.07	77.79	77.39	77.16	76.90
D-7	89.19	88.30	87.51	86.86	86.32	85.78	85.35	84.96	84.61	84.29	84.08
D-7.5	101.94	100.90	99.98	99.22	98.65	98.02	97.50	97.11	96.68	96.42	96.10
D-8	116.22	115.15	113.99	113.18	112.42	111.77	111.19	110.79	110.26	109.85	109.56
D-8.5	132.42	130.99	129.81	128.85	128.02	127.27	126.62	126.05	125.49	125.08	124.68

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
D-4	3,583	5,132	7,259
D-5	4,356	6,680	8,228
D-6	5,132	7,454	10,357
D-7	5,713	9,003	11,617
D-8	7,259	10,841	13,358

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	63.04	60.23	58.68	57.47	56.38	55.48	54.86	54.05	53.50	52.50	51.65
D-4.5	68.25	65.25	63.63	62.22	61.04	60.07	59.38	58.52	57.99	56.89	56.01
D-5	73.93	70.62	68.91	67.38	66.12	65.06	64.22	63.39	62.83	61.62	60.60
D-5.5	80.12	76.51	74.53	72.94	71.64	70.50	69.59	68.56	68.05	66.74	65.63
D-6	86.72	82.91	80.73	79.01	77.48	76.30	75.41	74.26	73.69	72.21	71.18
D-6.5	94.79	90.59	88.30	86.40	84.78	83.43	82.43	81.24	80.55	78.96	77.79
D-7	103.61	99.07	96.51	94.45	92.70	91.22	90.09	88.78	87.98	86.35	84.96
D-7.5	118.37	113.17	110.25	107.97	105.88	104.23	102.99	101.51	100.63	98.72	97.11
D-8	135.07	129.06	125.75	123.09	120.82	118.87	117.42	115.80	114.74	112.59	110.79
D-8.5	153.68	146.88	143.15	140.12	137.46	135.30	133.67	131.81	130.59	128.08	126.05

"D" CONSTRUCTION - 4 to 9 UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
D-4	51.18	50.65	50.17	49.72	49.44	49.14	48.89	48.70	48.47	48.22	48.15
D-4.5	55.40	54.86	54.34	53.85	53.50	53.21	52.92	52.72	52.44	52.25	52.11
D-5	59.99	59.38	58.83	58.36	57.99	57.61	57.39	57.11	56.85	56.60	56.46
D-5.5	65.02	64.22	63.70	63.16	62.78	62.41	62.09	61.85	61.56	61.27	61.16
D-6	70.41	69.59	68.98	68.49	68.05	67.57	67.23	66.93	66.60	66.45	66.20
D-6.5	76.95	76.12	75.41	74.79	74.40	73.93	73.52	73.20	72.80	72.55	72.40
D-7	84.12	83.23	82.48	81.78	81.26	80.76	80.38	79.98	79.62	79.34	79.14
D-7.5	96.11	95.07	94.27	93.47	92.85	92.25	91.83	91.42	90.98	90.69	90.43
D-8	109.58	108.47	107.46	106.58	105.96	105.24	104.72	104.25	103.74	103.41	103.16
D-8.5	124.79	123.44	122.33	121.35	120.60	119.77	119.18	118.70	118.10	117.68	117.42

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
D-4	3,098	4,645	6,194
D-5	3,872	5,132	7,454
D-6	4,645	7,259	9,003
D-7	5,423	8,228	10,841
D-8	6,486	9,293	12,876

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	59.57	56.68	55.48	54.34	53.23	52.43	51.65	51.06	50.51	49.64	48.90
D-4.5	64.53	61.41	60.07	58.83	57.70	56.77	56.01	55.26	54.72	53.74	52.97
D-5	69.84	66.48	65.06	63.70	62.41	61.53	60.60	59.93	59.34	58.19	57.43
D-5.5	75.66	72.03	70.50	68.98	67.60	66.53	65.63	64.81	64.18	63.07	62.14
D-6	81.93	77.89	76.30	74.72	73.24	72.09	71.18	70.24	69.49	68.25	67.28
D-6.5	89.56	85.20	83.43	81.73	80.12	78.86	77.79	76.78	76.04	74.66	73.55
D-7	97.89	93.12	91.22	89.25	87.51	86.20	84.96	83.92	83.08	81.61	80.39
D-7.5	111.86	106.45	104.23	102.04	99.98	98.49	97.11	95.85	94.93	93.21	91.90
D-8	127.58	121.38	118.87	116.34	113.99	112.28	110.79	109.36	108.20	106.40	104.78
D-8.5	145.30	138.15	135.30	132.47	129.81	127.80	126.05	124.47	123.22	121.07	119.28

"D" CONSTRUCTION - 10 or MORE UNITS

Class	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2200
D-4	48.32	47.83	47.41	47.04	46.62	46.34	46.21	45.97	45.79	45.57	45.48
D-4.5	52.35	51.88	51.35	50.92	50.49	50.20	50.01	49.81	49.55	49.38	49.23
D-5	56.68	56.10	55.56	55.11	54.70	54.42	54.14	53.87	53.72	53.43	53.34
D-5.5	61.41	60.74	60.22	59.69	59.16	58.93	58.61	58.41	58.12	57.88	57.75
D-6	66.48	65.82	65.19	64.64	64.12	63.79	63.56	63.23	61.30	62.70	62.46
D-6.5	72.71	71.94	71.26	70.69	70.03	69.73	69.47	69.10	68.83	68.52	68.35
D-7	79.42	78.63	77.89	77.23	76.58	76.26	75.89	75.56	75.18	74.88	74.72
D-7.5	90.73	89.81	88.99	88.30	87.58	87.17	86.77	86.36	85.96	85.66	85.34
D-8	103.47	102.43	101.50	100.63	99.88	99.33	98.97	98.47	98.10	97.61	97.36
D-8.5	117.81	116.64	115.50	114.62	113.71	113.10	112.65	112.09	111.61	111.11	110.87

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

	Cost Per Extra Bath		
Class	2-Fixture Bath	3-Fixture Bath	4-Fixture Bath
D-4	3,098	4,356	5,132
D-5	3,583	5,132	5,381
D-6	4,356	6,486	8,228
D-7	5,423	7,743	10,357
D-8	6,194	8,809	11,617

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.

BASIS OF COST

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 used in the manufactured housing industry are 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, e.g., concrete work or yard improvements. Concrete foundation costs are not included in this handbook. ***Foundations vary in type and cost. They are generally not included in the purchase price 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

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. The class of 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 7 manufactured home is the most common and represents the average price manufactured home usually found in the majority of mobilehome parks. It represents 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, etc. **For manufactured homes, do not use the location map in Chapter 531.10, page 26.**

Section 5803(b) of the Revenue and Taxation Code 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.

MANUFACTURED HOUSING
SQUARE FOOT AREA COST TABLE

	321-	501-	701-	901-	1101-	1301-	1501-	1701-	1901-	2101-	2301-
Class	**500**	**700**	**900**	**1100**	**1300**	**1500**	**1700**	**1900**	**2100**	**2300**	**2500**
4	44.71	43.68	42.66	38.60	37.67	36.64	35.68	34.75	33.79	32.92	31.87
4.5	46.99	45.98	44.94	40.73	39.79	38.81	37.85	36.90	35.93	34.98	33.98
5	49.59	48.59	47.55	43.15	42.17	41.22	40.28	39.28	38.34	37.39	36.44
5.5	52.70	51.65	50.64	47.35	45.04	44.10	43.15	42.17	41.22	40.28	39.28
6	56.08	55.07	54.02	50.59	48.18	47.22	46.25	45.28	44.34	43.37	42.41
6.5	60.22	59.15	58.17	54.54	52.00	51.05	50.08	49.13	48.18	47.22	46.25
7	64.34	63.35	62.23	58.46	55.84	54.86	53.94	52.97	52.00	51.05	50.08
7.5	69.04	67.94	66.95	62.90	61.90	60.91	59.93	58.95	57.98	56.96	56.02
8	73.89	72.87	71.85	68.85	67.86	66.88	65.83	64.86	63.80	62.84	61.85
8.5	78.84	77.78	76.77	75.77	74.68	73.65	72.58	71.59	70.53	69.52	68.48
9	83.74	82.70	81.68	80.62	79.59	78.55	77.53	76.48	75.47	74.44	73.40

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

Single Story

For units on permanent foundations	1,000 sq. ft. to 1,800 sq. ft.	$3,800 to $5,800
	1,800 sq. ft. to 3,000 sq. ft.	$5,800 to $7,900

Two Story

Use the footprint of the first story for square foot calculation of foundation.

MANUFACTURED HOUSING

AIR CONDITIONING

Type		Cost		
Central Air for Ready Furnace Using Existing Ducts				
2 Ton	Approximately 800 - 1100 sq. ft.		2,811	
2 1/2 - 3 Ton	Approximately 1101 - 1600 sq. ft.		3,229	
4 - 5 Ton	Approximately 1601 - 2500 sq. ft.	3,544	-	4,170
		Cost Per Unit		
Thru-wall Small Unit (1/2 H.P. 6,000 BTU)				982
Thru-wall Large Unit (1 H.P. 12,000 BTU)				1,247
Evaporative Cooler--Roof Mounted		1,114	-	1,397
Wired Only for Air Conditioning		179	-	372

BUILT-INS

Type	Cost Each		
Dishwasher (included in Class 7, 8, or 9)	721	-	893
Garbage Disposal (included in all base cost, deduct if missing)	150	-	291
Built-in Microwave Oven	593	-	1,184
Trash Compactor	654	-	824
Wet Bar (walk-up--if not included in class)	600	-	714
Wet Bar (walk behind--if not included in class)	1,955	-	2,168
Separate Shower Master Bath	680	-	857
One-half Bath: Toilet, Sink, and Pullman	1,298	-	1,374
Bathroom Sink or Laundry Sink			286
Fireplace (permanent--includes flue)	2,527	-	3,432
Fireplace (free standing--includes flue)	1,153	-	2,058
Built-in Buffet-Hutch (1 hutch included in Class 8)	907	-	1,142
Whirlpool Tub in Master Bath	1,057	-	1,291

SKIRTING

Type	Cost Per Linear Foot		
Lightweight Aluminum Panels		7.01	
Lap Aluminum Siding		13.28	
Painted Masonite Panels		14.02	
Flagstone-type Aluminum Panels		13.28	
Concrete Composite Panels	17.15	-	21.20
Vinyl Panels		11.22	
Brick or Stone - Cost per Surface Foot		18.53	

STORAGE BUILDINGS (Floor Included)

Type	Cost Per Square Foot
Aluminum Exterior	15.73
Enameled Steel Exterior	12.37
Masonite	24.71

TIE DOWNS

Type	Cost			
Cork Screw Anchors and Straps	81	-	122	Each

MANUFACTURED HOUSING

STEPS AND RAILS

	Cost		
Fiberglass Steps	199	-	304
Rail	43	-	67

UPGRADED COMPONENTS

Type	Cost		
Upgraded Carpets	1,200	-	3,001
Upgraded Drapes	1,200	-	2,553

PORCHES AND DECKS (No Roofs Included)

Type	Cost Per Square Foot		
Wooden Deck with Outdoor Carpet, Handrails, Skirting, and Steps (manufactured home floor level)	16.68	-	22.22

CARPORT, PORCH, AND DECK ROOFS

Type	Cost Per Square Foot		
Aluminum Supports and Roof Cover - Free Standing	12.48	-	16.04
Aluminum Supports and Roof Cover - Attached to House	7.93	-	11.29
Wooden Supports and Enameled Steel Cover	14.26	-	17.82

SCREEN WALLS FOR PORCHES AND DECKS

Type	Cost Per Linear Foot
Wood Frame with Screen Walls and Door	56.69
Wood or Aluminum Frame with Screen and Glass Walls and Door	98.80

EXTRA INSULATION PACKAGE

Type	Cost Per Square Foot		
Minimum Fiberglass	0.79	-	1.17
R-11 Floor, R-11 Sidewall, R-22 Ceiling	1.11	-	1.20
R-22 Floor, R-19 Sidewall, R-33 Ceiling	1.27	-	1.74

ROOF SNOWLOAD CAPABILITY

Pounds Per Square Foot	Cost Per Square Foot		
30 lbs.	0.58	-	0.93
40 lbs.	0.93	-	1.69
50 lbs.	1.69	-	2.23
60 lbs.	2.23	-	2.97
80 lbs.	2.81	-	4.47
100 lbs.	3.73	-	5.14
175 lbs.	4.64	-	5.58

MISCELLANEOUS

	Cost		
Hot Water Recirculating System (per unit)	597	-	628
Solar Tube Skylight	315	-	377
Foundation Ready	566	-	754

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***.

PERCENT GOOD TABLE

Effective Age (Years)	*Percent Good*
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.

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.

Suggestions for Fractions	Suggested Fraction		
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, etc.) 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

Concrete Decks	Cost Per Square Foot				
	8" High	1' High	2' High	3' High	4' High
Less than 100 square feet	8.36	11.19	18.20	24.42	34.50
100 to 200 square feet	7.29	10.13	14.63	19.52	26.04
201 to 400 square feet	6.22	7.99	12.44	17.32	22.43
Over 401 square feet	6.04	7.29	11.10	14.63	19.09

WOOD DECKS AND PORCHES

2" wood deck with steps and railings	Cost Per Square Foot		
1 foot above ground	15.21	-	18.30
4 to 6 feet above ground	18.30	-	24.42
6 to 9 feet above ground	19.17	-	25.67
9 to 12 feet above ground	20.20	-	26.92
12 to 15 feet above ground	21.22	-	28.25
15 to 18 feet above ground	22.24	-	29.54
Plastic decking or fiberglass	17.77	-	28.01

PORCH ROOFS

Type	Cost Per Square Foot		
Unceiled shed roof with wood shingle cover	8.96	-	10.60
Ceiled shed roof with wood shingle cover	15.06	-	17.12
Unceiled gable roof with wood shingle cover	10.60	-	13.02
Ceiled gable roof with wood shingle cover	17.12	-	18.74

Alternate Covers	Cost Difference Per Square Foot			
Rolled roofing	deduct	0.73	-	0.89
Corrugated aluminum	deduct	0.82	-	0.97
Corrugated iron	deduct	0.82	-	0.97
Asphalt shingles	deduct	0.97	-	1.12
Wood shakes	add	1.12	-	1.70
Clay tile	add	6.43	-	7.75
Slate	add	6.94	-	9.37

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

BUILDING ADDITIVES

RESIDENTIAL BASEMENTS

Size	Cost Per Square Foot					
	Unfinished Basements			Finished Basements		
Less than 400 square feet	63.21	-	113.78	97.25	-	130.32
400 - 1,000 square feet	48.63	-	65.64	97.25	-	111.84
Over 1,001 square feet	39.48	-	49.36	53.49	-	72.94

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

Type	Cost Per Square Foot		
Standard wood frame supported by 4" x 4" posts, 1" wood floor, open on underside, open 2" x 4" railing.	20.68	-	22.65
Standard wood frame supported by 4" x 4" posts, 1" wood floor, ceiled on underside, solid stucco or wood siding on railing.	24.63	-	26.58
Standard wood frame supported by steel columns, lightweight concrete floors, ceiled on underside, solid stucco or open grillwork railing.	37.42	-	41.35
Add for balcony roofs from porch roof cost on AH 531.40, page 3.			

OUTSIDE STAIRWAYS

Type	Cost Per Square Foot		
Standard wood frame, wood steps with open risers, open on underside, open 2" x 4" railing.	17.01	-	18.80
Standard wood frame with solid wood risers, ceiled on underside, solid stucco or wood siding on railing.	20.59	-	24.17
Precast concrete steps with open risers, steel frame, pipe rail with ornamental grillwork	44.76	-	50.14

ELEVATORS, PASSENGER

Hydraulic

Capacity	Car and Machinery Cost Per Shaft Base-Two Floors — Speed: 100 F.P.M.	200 F.P.M.
2,000 lbs.	49,332	56,385
2,500 lbs.	53,567	63,431
3,000 lbs.	56,385	69,068
3,500 lbs.		73,295
4,000 lbs.		77,524

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

	Unit	Cost		
Second story	Each	4,004	-	5,303
Additional floors	Per story	2,357	-	3,535

BURGLAR ALARMS

	Cost		
Total cost in place	1,716	-	4,576

FIREPLACES/INSTALLED

Type	Cost Each One Story			Cost Each Two Story		
Zero Clearance Metal Firebox, natural gas and/or wood burning Low Quality - Typically enclosed by painted or stuccoed wall board 36" width with 12.5' chimney pipe	1,445	-	1,803			
Medium Quality - Typically enclosed in attractive wood paneling, simulated materials, or moderate brickwork, has average wood mantel. 36" width with 15' chimney pipe	1,803	-	2,086	1,985	-	2,166
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. 48" width with 15' chimney pipe	2,480	-	3,890	2,976	-	5,348
Add: Insulation, gas line, mantel	827	-	972			
Pellet fed fireplace	1,488	-	1,984			
Free Standing Prefabricated Fireplace	1,488	-	1,984			
Masonry:						
5' base, common brick or concrete block, low cost Douglas fir or common brick mantle	3,925	-	4,376	4,376	-	4,862
6' base, common brick, used brick, or natural stone on interior face or with average wood mantle	4,376	-	4,862	4,862	-	7,779
6' base, common brick, face brick with good wood mantle	4,862	-	7,779	7,779	-	9,238
6' base, common brick, used brick, or natural stone on interior face, raised hearth	7,779	-	9,238	9,238	-	11,669
8' base, common brick, used brick, or natural stone on interior face, raised hearth	9,238	-	11,669	13,614	-	14,100

Add 25 to 40 percent to above costs for additional openings using a common chimney.

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, etc., 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 **$22.50** 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

	Cost Per Square Foot
Concrete Pools	$50 - $90
Fiberglass Pools	38 - 50
In-ground Liner	25 - 38

A typical 440 square foot concrete pool will cost between **$65.00 and $90.00** per square foot.

Swim spas are narrow lap pools with powerful jets that create a current. The swimmer swims in place against the current—**$36,000 to $48,000.**

SWIMMING POOL ADDITIVES

Heaters		Other Additives	
Average MBH[1]	Average Price	Slides	1,400 – 3,600
125	1,900	Diving Boards	700 – 1,300
250	3,100	Concrete decking per square foot	7.00
400	3,700	Redwood decking per square foot	30.00

NOTE: Solar heating costs around three to four times more than standard gas heating, average **$6,000 to $8,000**. See AH 531.40, page 10, 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 **$500 - $700**.

NOTE: Permit costs vary throughout the state ranging from **$400 to $1,800**.

NOTE: Pool sweeps average **$1,500** but may be personal property.

DETACHED SPAS (BELOW GROUND)

	With Pool	Without Pool
Gunite	6,700 - 12,600	14,800 - 19,000
Fiberglass	4,500 - 8,500	10,600 - 13,500

SPA ADDITIVES

Remote Control	1,000
Solar Control	1,500

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.

[1] One MBH = One thousand BTU's per hour.

RESIDENTIAL GARAGES
BUILDING SPECIFICATIONS
"D" CONSTRUCTION

POST 1990 (Contd.)

Roof Cover	
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
Lighting	
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
Interior Finish	
D-5	Unfinished
D-6	Gypsum board
D-7	Gypsum board, painted
D-8	Gypsum board, 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	10.58	10.19	10.05	9.76	9.47	9.32	9.19	9.04	8.91	8.78	8.57	8.53
D-1.5	15.22	14.59	14.42	13.91	13.69	13.34	12.95	12.63	12.31	12.00	11.62	11.56
D-2	19.72	19.03	18.73	18.15	17.61	17.18	16.67	16.25	15.86	15.45	14.97	14.89
D-3	21.95	21.13	20.70	20.21	19.47	18.99	18.42	17.97	17.52	17.08	16.55	16.46
D-3.5	24.24	23.27	22.73	22.09	21.47	20.94	20.31	19.81	19.32	18.84	18.23	18.14
D-4	26.37	25.20	24.79	24.08	23.26	22.68	22.01	21.47	20.93	20.41	19.76	19.67
D-4.5	28.33	26.93	26.50	25.69	24.79	24.17	23.45	22.87	22.29	21.74	21.04	20.93
D-5	30.24	28.67	28.22	27.30	26.24	25.59	24.83	24.22	23.62	23.02	22.28	22.18
D-5.5	34.52	32.59	31.87	30.64	29.49	28.76	27.90	27.21	26.53	25.87	25.05	24.92
D-6	38.89	36.52	35.66	34.30	32.82	32.01	31.06	30.29	29.54	28.80	27.88	27.74
D-6.5	41.54	39.29	38.42	37.15	35.81	34.93	33.89	33.05	32.22	31.43	30.42	30.27
D-7	44.04	42.00	41.26	40.12	38.79	37.83	36.70	35.79	34.90	34.03	32.95	32.79
D-7.5	49.73	47.73	46.90	45.48	43.83	42.73	41.46	40.44	39.44	38.45	37.23	37.04
D-8	51.22	49.14	48.29	46.83	45.14	44.00	42.70	41.64	40.60	39.58	38.34	38.15
D-8.5	52.75	50.62	49.74	48.24	46.49	45.32	43.97	42.89	41.82	40.77	39.50	39.29
D-9	54.33	52.14	51.24	49.68	47.89	46.69	45.30	44.18	43.08	41.99	40.68	40.47
D-9.5	55.96	53.70	52.77	51.17	49.32	48.09	46.66	45.50	44.37	43.25	41.90	41.69
D-10	57.65	55.31	54.35	52.70	50.80	49.53	48.05	46.86	45.70	44.55	43.16	42.95

DETACHED
SQUARE FOOT AREA COST TABLES

"D" CONSTRUCTION

Class	220	260	280	320	360	400	440	480	540	600	800	1000
D-1	12.30	11.49	11.16	10.74	10.51	10.28	10.05	9.90	9.76	9.60	9.40	9.34
D-1.5	17.29	16.18	15.73	15.14	14.92	14.45	13.82	13.47	13.15	12.82	12.41	12.34
D-2	22.15	20.91	20.41	19.53	19.29	18.68	17.86	17.41	16.99	16.56	16.03	15.95
D-3	25.65	23.96	23.32	22.13	21.76	21.07	20.16	19.66	19.16	18.69	18.10	18.00
D-3.5	27.99	26.14	25.48	24.17	23.90	23.14	22.14	21.59	21.06	20.53	19.87	19.77
D-4	30.49	28.54	27.73	26.41	25.94	25.13	24.04	23.44	22.85	22.28	21.57	21.46
D-4.5	32.29	30.12	29.37	27.90	27.74	26.86	25.69	25.05	24.43	23.83	23.07	22.95
D-5	34.56	31.91	31.01	29.43	29.01	28.10	26.88	26.20	25.56	24.92	24.13	24.01
D-5.5	39.67	36.62	35.37	33.54	32.97	31.93	30.54	29.78	29.03	28.32	27.41	27.27
D-6	47.14	43.15	41.63	39.24	38.38	37.17	35.55	34.66	33.80	32.96	31.90	31.74
D-6.5	49.90	46.44	45.09	42.47	42.28	40.95	39.17	38.19	37.24	36.32	35.15	34.98
D-7	54.00	50.28	48.77	46.38	45.69	44.24	42.31	41.26	40.24	39.24	37.98	37.80
D-7.5	61.23	56.99	55.27	52.61	51.83	50.18	47.99	46.81	45.65	44.51	43.09	42.86
D-8	63.04	58.67	56.91	54.18	53.36	51.67	49.42	48.19	47.01	45.83	44.37	44.16
D-8.5	64.94	60.44	58.62	55.79	54.97	53.21	50.91	49.64	48.40	47.20	45.70	45.49
D-9	66.89	62.25	60.37	57.48	56.61	54.82	52.43	51.13	49.87	48.62	47.08	46.84
D-9.5	68.89	64.12	62.18	59.19	58.32	56.46	54.01	52.66	51.36	50.07	48.50	48.25
D-10	70.97	66.04	64.06	60.97	60.07	58.15	55.62	54.24	52.90	51.58	49.94	49.69

RESIDENTIAL GARAGES
BUILDING SPECIFICATIONS
"C" CONSTRUCTION

Foundation	
C-4	Light concrete
C-5	Standard concrete
C-6	Reinforced concrete
C-7	Reinforced concrete
C-8	Reinforced concrete
Floor	
C-4	Light concrete
C-5	Concrete
C-6	Concrete
C-7	Concrete
C-8	Concrete
Walls	
C-4	6" reinforced or 8" nonreinforced 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
Roof Cover	
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
Doors	
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
Lighting	
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
Interior Finish	
C-4	Unfinished
C-5	Unfinished
C-6	Unfinished
C-7	Gypsum board on walls
C-8	Gypsum board on all walls

RESIDENTIAL GARAGES

ATTACHED
SQUARE FOOT COST TABLES

"C" CONSTRUCTION

Class	220	260	280	320	360	400	440	480	540	600	720
C-4	45.76	43.24	42.20	40.59	39.48	38.38	37.51	36.94	36.03	35.34	34.43
C-4.5	47.76	45.11	44.22	42.53	41.27	40.24	39.48	38.76	37.92	37.21	35.89
C-5	49.81	47.22	46.08	44.42	43.18	42.14	41.27	40.58	39.66	38.93	36.96
C-5.5	52.47	49.72	48.57	46.87	45.50	44.36	43.45	42.71	41.82	41.05	39.29
C-6	55.22	52.39	51.26	49.39	47.96	46.87	45.95	45.08	44.22	43.43	42.20
C-6.5	59.06	55.93	54.76	52.91	51.26	50.19	49.11	48.31	47.34	46.45	45.23
C-7	62.26	58.91	57.74	55.67	54.08	52.90	51.72	50.82	49.82	48.92	47.75
C-7.5	69.01	65.62	64.19	61.99	60.14	58.81	57.54	56.54	55.41	54.49	53.09
C-8	80.30	76.19	74.52	71.77	69.89	68.11	66.81	65.74	64.32	63.23	61.61

DETACHED
SQUARE FOOT COST TABLES

"C" CONSTRUCTION

Class	220	260	280	320	360	400	440	480	540	600	720
C-4	53.78	49.46	47.89	45.00	42.82	41.12	39.68	38.58	37.13	35.96	34.49
C-4.5	55.94	51.55	49.74	48.21	44.63	42.95	41.53	40.37	38.93	37.75	36.13
C-5	58.26	53.64	51.79	48.88	46.56	44.69	43.31	41.98	40.71	39.36	37.58
C-5.5	61.15	56.39	54.52	51.32	49.02	47.10	45.55	44.32	42.71	41.41	40.55
C-6	67.39	62.07	60.08	56.75	54.14	52.02	50.32	48.84	47.13	45.36	43.75
C-6.5	71.76	66.25	64.07	60.45	57.75	55.54	53.79	52.16	50.44	49.02	46.70
C-7	75.70	69.85	67.54	63.76	60.84	58.55	56.61	55.06	53.14	51.53	49.43
C-7.5	84.32	77.70	75.13	70.98	67.78	65.08	62.93	61.27	59.13	57.45	54.92
C-8	93.18	85.84	83.14	78.58	74.95	72.08	69.79	67.79	65.56	63.58	62.28

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.*

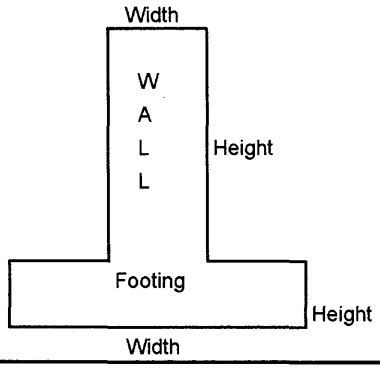
A replacement cost estimate is made by the unit-in-place method by first estimating the in-place costs per square foot of all flat surfaces such as floors, walls, ceilings, or roofs and multiplying them by the areas of the respective surfaces. The next step consists of computing the volume of other components 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, etc. The in-place costs used should include all elements of cost, e.g., 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

Type	Cost Per Cubic Foot		
Footings	17.04	-	19.11
Walls	17.04	-	26.94

Foundation cost per linear foot - including footing.



Footing Width	Footing Height	Wall Width	Wall Height	Cost per Linear Foot		
12"	6"	6"	6"	15.50	-	20.12
12	6	6	12	20.12	-	23.17
12	6	6	18	23.17	-	26.48
12	6	6	24	26.48	-	31.21
16	8	8	12	30.20	-	35.65
16	8	8	24	41.86	-	46.10
16	8	8	36	46.10	-	50.23

HILLSIDE FOUNDATIONS

	Cost			
Retaining walls	26.69	-	37.82	per cubic foot
Reinforced concrete columns 16" circular	53.39	-	74.15	per linear foot
Steel columns: 6" diameter	69.30	-	103.95	per linear foot
8" diameter	86.63	-	138.60	per linear foot
10" diameter	112.61	-	173.25	per linear foot
Pipe columns: 4" diameter	40.43	-	42.00	per linear foot
6" diameter	42.53	-	44.10	per linear foot
8" diameter	44.63	-	46.20	per linear foot
Wood poles: 10" diameter	25.20	-	29.40	per linear foot
12" diameter	29.40	-	33.60	per linear foot
14" diameter	33.60	-	35.70	per linear foot
Caissons: 24" diameter (depending on depth to bedrock)	5,544	-	16,632	each

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

FLOORS - REINFORCED CONCRETE

Size and Type	Cost Per Square Foot		
4" slab only	4.16	-	4.74
6" slab only	4.94	-	5.36
8" slab only	5.36	-	6.43
4" with 4" rockfill and waterproof membrane	4.58	-	5.36
6" with 6" rockfill and waterproof membrane	5.99	-	6.37
8" with 8" rockfill and waterproof membrane	6.37	-	7.49

MUDSILLS

Size and Type	Cost Per Linear Foot		
2" x 4" redwood	3.11	-	3.47
2" x 6" redwood	3.47	-	4.20

Cost includes treating, boring, and bedding.

IN-PLACE COSTS

INTERIOR DECORATING

Type	Cost Per Square Foot of Residence		
Painting			
On gypsum board or plaster			
Primer and 1 coat flat	3.73	-	4.18
Primer and 2 coats flat	5.32	-	6.25
Primer and 1 coat enamel	3.73	-	4.18
Primer and 2 coats enamel	5.32	-	6.25
Wood work			
Primer and 1 coat enamel	5.32	-	6.25
Primer and 2 coats enamel	6.25	-	7.46
Masonry			
Primer and 1 coat latex	4.80	-	5.32
Primer and 2 coats latex	5.71	-	6.25
Wall covering			
Aluminum foil	17.74	-	20.19
Paper	13.41	-	15.15
Vinyl wall cover	10.29	-	13.63

TRIM PAINTING

Type	Cost Per Linear Foot		
Exterior trim to 6", 2 coats	1.19	-	1.35
Interior trim			
Primer and 1 coat enamel	0.73	-	0.90
Primer and 2 coats enamel	1.08	-	1.28

DOORS

Size and Type	Cost Per Door		
Exterior doors			
Colonial 1 3/4" fir	324	-	376
Dutch door 1 3/4" fir	472	-	554
French doors	422	-	472
Solid core slab single door	359	-	376
Solid core slab double door	324	-	359
Hardwood door	554	-	Up
Includes frame, trim, threshold, and hardware			
Garage doors - Overhead type			
8' x 7' all aluminum	954	-	1118
16' x 7' all aluminum	1185	-	1,579
8' x 7' aluminum - wood frame	442	-	546
16' x 7' aluminum - wood frame	840	-	946
8' x 7' plywood	546	-	588
16' x 7' plywood	1003	-	1173
18' x 7' plywood	905	-	987

DOORS (Contd.)

Size and Type	Cost Per Door		
Sectional roll up			
8' x 7' aluminum	2,631	-	2,803
16' x 7' aluminum	2,974	-	3,089
8' x 7' fiberglass on aluminum frame	2,631	-	2,757
16' x 7' fiberglass on aluminum frame	2,791	-	2,952
8' x 7' steel	2,402	-	2,631
16' x 7' steel	3,089	-	3,203
Interior doors			
Hollow core slab doors	317	-	358
Solid core slab doors	358	-	402
Panel doors - flat panel	317	-	358
Panel doors - raised panel	358	-	402
Includes frame, trim, and hardware			
Sliding glass doors			
6' x 6'8" aluminum	514	-	583
8' x 6'8" aluminum	576	-	745
12' x 6'8" aluminum	1,063	-	1,134
Mirrored wardrobe closet doors	243	-	285
French pantry door	508	-	576

WINDOWS

Type	Cost Per Window		
Aluminum	600	-	892
Steel	656	-	938
Wood	516	-	750
Decorative glass block (Per square foot)	64	-	83

CABINETS

Type	Cost Per Linear Foot								
	Painted Fir			Low Cost Veneer			Good Hard-wood Veneer		
Base cabinet	96.86	-	104.04	87.88	-	100.46	100.46	-	125.56
Upper cabinet	69.96	-	87.88	64.57	-	75.34	87.88	-	100.46
Full height	150.67	-	179.37	134.53	-	168.61	161.43	-	195.52
Bath pullman	73.53	-	104.04						
Open shelving	4.66	-	6.28						
Melamine Interiors							73.06	-	97.41
							Cost Each		
Wood entertainment center							1,519	-	3,453

Counter Tops Including Splash	Cost Per Linear Foot		
Ceramic tile	61.47	-	69.06
Plastic laminate	43.06	-	37.23
Imitation marble	56.51	-	68.71
Granite	176.13	-	234.83
Concrete	63.75	-	170.00
Kitchen Corian	135.03	-	164.39
Butcher block	70.46	-	117.42

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. The individual replacement of water heaters, a worn-out roof, new paint inside and out, etc., 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 1982 is $225,000 and that the RCN of an addition built in January 1992 is $50,000. The mathematical process that results in a weighted age as of January 2008 is as follows:

$225,000	x 26 (Age of Original Construction)	=	$5,850,000
$50,000	x 16 (Age of Addition)	=	800,000
$275,000			$6,650,000

Average age of construction: $6,650,000 ÷ $275,000 = 24.18 years, rounded to 24 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 2008 Comparative Cost Multiplier	Cost Trended to 2008	Age (Years)	Weighted Dollar Years
1982	$100,000	2.139	$213,900	26	$5,561,400
1992	$30,000	1.656	$49,680	16	$794,880
			$263,580		$6,356,280

Average age of construction: $6,356,280 ÷ $263,580 = 24.12 years, rounded to 24 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.

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

Type of Schedule and Average Life		Classification					
Construction Type	Use Type	5	6	7	8	9	10
C	Multiple Residence[1]	50	55	55	60	60	60
C	Single-Family Residence[2]	55	60	60	60	60	60
D	Multiple Residence[1]	50	55	55	60	60	60
D	Single-Family Residence[2]	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 (e.g., 7.5) is used, raise to the next higher classification (e.g., 8) for selection of the average life.

[1] This table is applicable to residential buildings of more than two living units each.
[2] This table is applicable to residential buildings of one or two living units each.

NORMAL PERCENT GOOD TABLES - RESIDENTIAL BUILDINGS

Age Years	20 Years Avg Life		25 Years Avg Life		30 Years Avg Life		40 Years Avg Life	
	Rem Life Years	Percent Good	Rem Life Years	Percent Good	Rem Life Years	Percent Good	Rem Life Years	Percent 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
64							1	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.

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 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 construction site slope, construction materials, etc.

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, 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, etc., 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 (Modern Type)	2,200 sq. ft.	x	102.14	=	224,708
Concrete Covered Porch (1/3)	56 sq. ft.	x	34.04	=	1,906
HVAC	2,200 sq. ft.	x	4.58	=	10,076
Garage (Attached)	540 sq. ft.	x	34.90	=	18,846
Wood Covered Concrete Patio	300 sq. ft.	x	20.87	=	6,261
Fence (1" x 4" Redwood)	130 lin. ft.	x	21.19	=	2,755
Concrete Flatwork	1,000 sq. ft.	x	5.30	=	5,300
RCN					269,852

COMPACT COST METHOD

Residence D7			111.95		
A-C (cool only)			3.12		
Residence	2,200 sq. ft.	x	115.07	=	253,154
Garage, Double					16,300
RCN					269,454

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 Residence Map in the *Costing Information* chapter, AH 531.10, page 26, 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 2009 period. This map should not be confused with similar maps that contain factors for time as well as location.

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 Residence Map in the *Costing Information* chapter, AH 531.10, page 26.

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

On January 1, 2009, 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	=	400 sq. ft.
Total Square Feet	=	1,600 sq. ft.

COMPACT COSTS

Addition	400 sq. ft.	x	118.23	=	47,292
Air Conditioning	400 sq. ft.	x	3.12	=	1,248
Total RCN January 1, 2009					48,540
Location Adjustment					1.15
RCN Addition					55,821

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 are included as per building quality class specifications.

SINGLE-FAMILY RESIDENCES

	Residence	Garage
D1	38.66 S.F.	10.87 S.F.
D1.5	42.29 S.F.	15.01 S.F.
D2	50.19 S.F.	19.48 S.F.
D3	54.14 S.F.	22.53 S.F.
D3.5	58.25 S.F.	25.87 S.F.

	Square-Foot Area									
Class	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
D4	80.50	75.93	73.82	69.27	66.95	65.05	63.44	62.24	60.81	59.40
D4.5	88.77	83.49	79.80	76.29	73.65	72.07	69.27	68.56	66.45	65.20

Add: $2.75 per square foot for central air conditioning, $22.73 per square foot for garage area, or $5,200 single, $9,900 double, or $16,000 triple garage. Fireplace not included.

	Square-Foot Area									
Class	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700
D5	89.30	85.94	83.66	81.38	78.74	77.69	76.29	74.53	73.82	72.95
D5.5	97.91	94.74	91.77	89.11	87.01	85.26	83.83	82.45	80.87	79.80

Add: $2.75 per square foot for central air conditioning, $24.63 per square foot for garage area, or $5,700 single, $11,300 double, or $17,100 triple garage. Fireplace not included.

	Square-Foot Area									
Class	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800
D6	110.20	106.86	103.87	101.42	99.84	97.39	96.32	94.56	93.52	91.94
D6.5	121.64	118.65	115.49	112.50	110.03	108.11	106.68	105.09	103.71	101.24
Class	2,000	2,200	2,400	2,600	2,800	3,000	3,200	3,400	3,800	4,200
D6	87.96	86.06	84.61	83.16	81.73	—	—	—	—	—
D6.5	96.67	94.85	93.18	91.38	89.80	88.05	85.19	84.63	82.19	78.86

Add: $3.12 per square foot for central air conditioning, $28.44 per square foot for garage area, or $6,600 single, $13,000 double, or $19,500 triple garage. Fireplace not included.

SINGLE-FAMILY RESIDENCES (Contd.)

	Square-Foot Area									
Class	1,500	1,600	1,700	1,800	2,000	2,200	2,400	2,600	2,800	3,000
D7	119.98	118.23	116.66	115.27	113.35	111.95	109.96	108.38	106.82	105.78
D7.5	142.92	140.24	137.41	135.11	132.96	130.99	129.40	128.16	127.26	126.55

Class	3,400	3,800	4,200	4,600	5,000
D7	103.53	100.22	96.16	92.13	88.04
D7.5	123.26	119.31	114.49	109.69	104.82

Add: $3.12 per square foot for central air conditioning, $34.88 per square foot for garage area, or $8,700 single, $16,300 double, or $25,200 triple garage.

	Square-Foot Area									
Class	1,800	2,000	2,200	2,400	2,600	2,800	3,000	3,200	3,600	4,000
D8	161.74	158.91	156.26	154.49	152.03	150.44	148.69	147.26	145.86	144.46
D8.5	212.14	204.50	197.81	194.45	191.85	189.44	187.40	185.15	183.66	182.37

Class	4,400	4,800	5,200	5,600	6,000
D8	143.94	141.01	137.12	132.24	126.53
D8.5	179.93	176.26	171.38	165.29	158.16

Add: $3.75 per square foot for central air conditioning, $44.05 per square foot for garage area, or $12,000 single, $22,600 double, or $35,500 triple garage.