Wisconsin Department of Revenue

2026 Wisconsin Property Assessment Manual

Volume 2 – Residential, Apartments and Agricultural

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2026 Wisconsin Real Property Assessment Manual

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Introduction

The Wisconsin Property Assessment Manual (WPAM) serves as the guide for uniform property assessment throughout the State under sec. 73.03(2a), Wis. Stats. Sec. 70.32, Wis. Stats., requires that assessors use the WPAM when valuing real property. The WPAM is maintained by the Department of Revenue (DOR), Office of Technical and Assessment Services.

The WPAM Volume 2 includes instructions, cost tables, depreciation and residual schedules, area modifiers, and a glossary of terms for Residential, Apartment and Agricultural buildings. The basis of the WPAM Volume 2 is the January 1, 2026 local construction costs. Modifiers are included to reflect local conditions.

The WPAM Volume 2 refers to, and affirms, recognized practices in the professional appraisal of property; however, it is not a comprehensive textbook in the theory and practice of professional appraising. The assessor is expected to be grounded in these theories which can be found in a multitude of textbooks such as *The Principles of Appraisal Practices*, published by The Appraisal Institute. In addition, the assessor is expected to have knowledge of mass appraisal principles which are discussed in textbooks such as Property Assessment Valuation and Mass Appraisal of Real Property, both published by the International Association of Assessing Officers.

The WPAM Volume 2 is meant to be interpreted in its entirety. Extracting material from one section without understanding how it fits into the whole can result in misunderstandings. For these reasons, DOR has developed guides that answer common questions for property owners. These guides can be found on the DOR website. It is recommended that property owners direct questions regarding a specific property to the municipal assessor where the property is located.

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An appraisal, or an assessment, is nothing more than an opinion of value. This does not imply, however, that one opinion is necessarily as good as another; there are valid and accurate assessments, and there are invalid and inaccurate ones. The validity of an assessment can be measured against the supporting evidence from which it was derived and its accuracy against that very thing it is supposed to predict—the actual behavior of the market. Each is fully contingent upon the ability of the assessor to document adequate data and to interpret that data into an indication of value.

FULL MARKET VALUE

The basis for the assessor's valuation of real property is found in s. 70.32, (1) Stats., "Real property shall be valued by the assessor in the manner specified in the Wisconsin Property Assessment Manual under s. 73.03(2a), Stats., from actual view or from the best information that the assessor can practicably obtain at the full value which could ordinarily be obtained therefore at private sale." Numerous Wisconsin court cases have held that full value is equivalent to market value.

In the book, *Real Estate Appraisal Terminology*, market value is defined as, "The highest price in terms of money which a property will bring in a competitive and open market under all conditions requisite to a fair sale. The buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus." Thus, the goal of the assessor is to estimate the full or market value of the real property.

TRADITIONAL APPROACHES TO VALUE

Market value can be defined for many different purposes, and the forces which create, sustain or destroy value are numerous and varied. The assessor's function is to compile and analyze related data, consider all factors influencing value, and process and translate that data into a final conclusion or estimate of value. The assessor must do this for each property.

Three approaches can be used to process this data into an estimate of market value. These approaches are: the Cost Approach, the Direct Sales Comparison Approach and the Income Approach. Each approach is based on the principle that the market value of a property is no more than the cost of acquiring and/or reproducing an equally desirable substitute property. The quantity, quality and accuracy of the data available to the assessor determine which approach or approaches the assessor should use.

THE COST APPROACH involves estimating the depreciated cost of reproducing or replacing the building and site improvements. Reproduction Cost refers to the cost of reproducing a replica property, whereas Replacement Cost refers to the cost of producing improvements of equal utility. From this cost new, depreciation is deducted for loss in value caused by physical deterioration and functional and economic obsolescence. The estimated value of the land is added to the depreciated cost to give an estimate of the market value of the property.

The benefit of the Cost Approach lies in its extent of application; it is the one approach that can be used on all types of properties. It is a starting point for assessors and therefore a very effective "yardstick" in estimating market value. Its widest application is in assessing properties lacking adequate market and income data.

THE DIRECT SALES COMPARISON APPROACH involves compiling sales of properties which are comparable to the property being assessed. These sales are then adjusted for any differences, and a value estimate is obtained by comparing the adjusted prices of the sold properties. The approach is most valid when the sold properties are very similar to the subject property. The procedure for using this approach is essentially the same for all types of property, with the only difference being the elements of comparison.

The benefit of this approach lies in its ability to produce estimates of value which directly reflect the actions of the market. Its application depends upon the availability of comparable sales.

THE INCOME APPROACH measures the present worth of the future benefits of a property by capitalizing the net income stream over the remaining economic life of the property. The approach involves making an estimate of the economic rent of a property, deducting the appropriate vacancy and collection losses and all applicable operating expenses, such as the cost of insurance and reserve allowances for replacements, to derive the net income, which is capitalized into an estimate of market value.

The income approach is most often used to assess commercial properties but can be used to assess any income-producing property. The income approach requires the assessor to be able to relate to the changing economic environment and to analyze income, expenses and capitalization rates.

These three approaches to value are discussed in greater detail in Volume I and in most assessment and appraisal textbooks.

The Cost Approach assumes that a valid indication of value may be derived by estimating the value of the land and adding the land value to the depreciated cost of the structures on the land; the general cost approach model is:

Estimated Land Value
\+ Estimated Replacement Cost New of Structures
\- Estimated Depreciation
= Indication of Property Value

Volume II is designed to assist the assessor in estimating the Replacement Cost and the Depreciation for the various structures.

REPLACEMENT COST

Replacement Cost is the current cost of producing an improvement of equal utility to the subject property; it may or may not be the cost of reproducing a replica property. The distinction is between Replacement Cost, which refers to a substitute property of equal utility, and Reproduction Cost, which refers to a substitute replica property. In a particular situation, the two concepts may be interchangeable, but they are not necessarily so. They both, however, have application in the Cost Approach to value, the difference being reconciled in the consideration of depreciation allowances.

In actual practice, outside of a few historic-type communities in this country, developers and builders, for obvious economic reasons, replace buildings, not reproduce them. It logically follows that if an assessor's job is to measure the actions of knowledgeable persons in the market place, the use of proper replacement costs should provide an accurate point of beginning in the valuation of most improvements.

The replacement cost includes the total cost of construction incurred by the builder, whether preliminary to, during the course of, or after completion of the construction of a particular building. Among these are material, labor, all subcontracts, builders' overhead and profit, architectural and engineering fees, consultation fees, survey and permit fees, legal fees, taxes, insurance and cost of interim financing.

DEPRECIATION

Simply stated, depreciation can be defined as a loss in value from all causes. As applied to real estate, it represents the loss in value between market value and the sum of the replacement cost new of the improvements plus the land value as of a given time. The causes for the loss in value may be divided into three broad classifications: physical deterioration, functional obsolescence, and economic obsolescence.

Physical deterioration is the wearing out of the various building components, referring to both short-life and long-life items, through the action of the elements, age and use. The condition may be considered either curable or incurable, depending upon whether it may or may not be practical and economically feasible to cure the deficiency by repair and replacement.

Functional Obsolescence is caused by either inadequacies or overadequacies in design, style, composition or arrangement inherent in the structure itself, which lessen its usefulness. Like physical deterioration, the condition may be considered either curable or incurable. Some of the more common examples of functional obsolescence are excessive wall and ceiling heights, excessive structural construction, surplus capacity, ineffective layouts and inadequate building services.

Economic Obsolescence is caused by factors extraneous to the property, such as changes in population characteristics and economic trends, encroachment of inharmonious land uses and governmental restrictions. The condition is generally incurable in that the causes lie outside the property owner's realm of control.

ESTIMATING DEPRECIATION

Depreciation represents the assessor's estimate of the degree that the present and future appeal of a property has been diminished by deterioration and obsolescence. Of the three estimates necessary to the Cost Approach, depreciation is the most difficult. The accuracy of the estimate will be a product of the assessor's experience in recognizing the symptoms of deterioration and obsolescence, and the ability to exercise sound judgment in equating all observations to the proper amount to be deducted from the replacement cost new. Several acceptable methods may be employed:

- Physical deterioration and/or functional obsolescence can be measured by observing and comparing the physical condition and/or functional deficiencies of the subject property as of a given date with either an actual or hypothetical comparable, new and properly planned structure.

- Curable physical deterioration and functional obsolescence can be measured by estimating the cost of restoring each item of depreciation to a physical condition as good as new, or estimating the cost of eliminating the functional deficiency.

- Functional and economic obsolescence can be measured by capitalizing the estimated loss in rental due to the deficiency.

- Total accrued depreciation may be estimated by first estimating the total useful life of a structure and then translating its present condition, desirability and usefulness into an effective age (rather than an actual age) which would represent that portion of its total life (percentage) which has been used up.

- Total accrued depreciation can be estimated by deriving the amount of depreciation recognized by purchasers as evidenced in the prices paid for property in the marketplace; the loss of value is the difference between the cost of replacing the structure new and its actual selling price (total property selling price less the estimated value of the land).

In addition to providing an estimate of market value, the Cost Approach provides the assessor with a data inventory of each property. The assessor must make a complete interior and exterior inspection of each property in order to apply the Cost Approach. This inspection will enable the assessor to make the comparisons and evaluations necessary to apply the Direct Sales Comparison and Income Approaches. The assessor can also use the inspection to verify the information provided on building permits and to make note of any other changes to the property since the previous inspection.

Volume II explains how the assessor can use the Cost Approach to develop market value estimates for residential, apartment and agricultural properties.

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INTRODUCTION

The property record card is the most valuable single document available to the appraiser. Its main use is as a listing document. It provides space to accurately list in detail all of the pertinent characteristics of the subject property that contribute to value. This gives the appraiser a mental picture of what actually constitutes each subject property. Space is provided on the property record card (PRC) to price the land and improvement by utilizing this manual's cost approach to value. Other features of the PRC include an area for sales data, past assessment information, building permit records, etc.

The PRC is a four-sided folded card. The front side is utilized to enter property identification data such as parcel number, name and address of owner, legal description, etc. The area is large enough to incorporate preprinted labels if desired. Up to three years of assessment history can also be posted on the front side of the property record card.

The second side provides an area for a detailed listing of the dwelling characteristics, an area to sketch the dwelling and a pricing ladder to compute the value of the dwelling utilizing the cost approach to value.

Other features and additional attachments not found in the cost tables of this manual are listed and priced on the third side of the property record card. An area is also provided on the third side to list and price other minor buildings and apartments. A blank area is provided to attach a photograph and make notations.

The fourth side of the property record card provides space for all land listing data and computations including: a sketch of the parcel, property identifiers such as parcel number and property location, sales data, building permit records and the assessor's final report information.

The four-sided folded property record card was designed to meet the appraiser's needs as a functional, useful document in the assessment process. It was designed to provide the appraiser with one single detailed document containing all pertinent property characteristics necessary to make a sound, timely appraisal and to provide adequate listing documentation to assist in defending that appraisal.

The Pricing Schedules and Cost Tables in this manual are provided to assist the appraiser in arriving at accurate and uniform valuations. Used properly, they should prove to be an invaluable tool. Quality Valuations, however, are not the product of schedules and tables themselves, but rather of the appraiser's ability to use them effectively. In order to bring this about, a thorough understanding of the make-up, and the capabilities and limitations of each schedule, is essential. The appraiser must know the specifications from which the base prices were derived, the composition of the prices, and the proper techniques and procedures for applying the prices. More important, the appraiser must be able to exercise good common sense and sound judgment in selecting and using them.

Extensive effort has been made in developing the schedules to minimize these compromises and limit them to variables which have minimal influence on the final value of the building. The schedules have been designed to reflect actual building costs and practices. Field tests have proven them to be both accurate and reliable, and, when applied properly, highly effective in arriving at realistic replacement costs.

Pricing schedules and related cost tables are included in this manual to assist the appraiser in arriving at an accurate estimation of Replacement Cost New. They have been developed by applying unit-in-place costs to the construction of specified hypothetical or model buildings. Application of the schedules involves the selection of the model in terms of component construction which most nearly resembles the subject building and adjusting its price to compensate for all significant variations.

Cost adjustments for the variations which are most frequently encountered in a particular type building are included. Adjustments for other variations may be made by using either the Other Features cost tables, or other appropriate schedules.

SIDE 1: PROPERTY ID & ASSESSMENT HISTORY

A blank area on the front side of the property record card is provided for property identifiers such as parcel number, name and address of owner, legal description, etc. This area is large enough to incorporate labels preprinted with this information.

The lower portion of the front side of the property record card provides space to enter three years of assessment history by class for land, improvements and total assessments. It also provides space to enter the number of acres and dollar assessment value per acre by class. Areas not requiring entries are indicated by Xs.

SIDE 2: IMPROVEMENT DATA

VACANT LOT

If the parcel is vacant, circle the descriptor V and do not enter any other data on this side of the card.

500	(V) VACANT	D DWELLING	O OTHER

DWELLING

If there is a dwelling on the parcel, circle the descriptor D and enter the appropriate data necessary.

500	V VACANT	(D) DWELLING	O OTHER

OTHER

If the parcel is not vacant but contains buildings that would be listed under Other Building Improvements and/or the Gross Building Summary, circle the descriptor O and enter the appropriate data necessary.

500	V VACANT	D DWELLING	(O) OTHER

STORY HEIGHT

Circle the numeric characters that are most representative of the story height of the dwelling.

505	STORY HEIGHT				
	1.0	1.5	2.0	2.5	3.0

Circle 1.0 to indicate one story.
Circle 1.5 to indicate one and one-half stories.
Circle 2.0 to indicate two stories.
Circle 2.5 to indicate two and one-half stories.
Circle 3.0 to indicate three stories.

Note: Refer to story height illustrations found in the appendix of this manual.

STYLE

Circle the numeric code (01–21) which is most representative of the style of the dwelling. Only one entry may be circled.

505	STYLE		
	01 RANCH	09 BASIC SINGLE STORY	17 CONDOMINIUM
	02 BI-LEVEL	10 FARMHOUSE	18 TOWN HOUSE
	03 SPLIT LEVEL	11 VICTORIAN	19 DUPLEX
	04 CAPE COD	12 COLONIAL	20 APARTMENT
	05 BUNGALOW	13 CONTEMPORARY	21 MANUFACTURED
	06 COTTAGE	14 MODERN SINGLE STORY	22 OTHER
	07 CRAFTSMAN	15 MODERN MULTI-STORY	
	08 PRAIRIE	16 EXECUTIVE MANSION	

Circle 01 to indicate RANCH
Circle 02 to indicate BI--LEVEL
Circle 03 to indicate SPLIT-LEVEL
Circle 04 to indicate CAPE COD
Circle 05 to indicate BUNGALOW
Circle 06 to indicate COTTAGE
Circle 07 to indicate CRAFTSMAN
Circle 08 to indicate PRAIRIE
Circle 09 to indicate BASIC SINGLE STORY
Circle 10 to indicate FARMHOUSE
Circle 11 to indicate VICTORIAN
Circle 12 to indicate COLONIAL
Circle 13 to indicate CONTEMPORARY
Circle 14 to indicate MODERN SINGLE STORY
Circle 15 to indicate MODERN MULTI-STORY
Circle 16 to indicate EXECUTIVE MANSION
Circle 17 to indicate CONDOMINIUM
Circle 18 to indicate TOWN HOUSE
Circle 19 to indicate DUPLEX
Circle 20 to indicate APARTMENT
Circle 21 to indicate MANUFACTURED
Circle 22 to indicate OTHER

Note: Style should be circled for all residential dwellings whether they be single-family residences or multifamily such as duplexes or condominiums.

USE

If the dwelling being listed is a multifamily unit such as a duplex or condominium, the numeric code which is most representative of the use should be circled. The following example shows a Colonial-style duplex listed as Colonial under style and duplex under use.

	STYLE		
505	01 RANCH	09 BASIC SINGLE STORY	17 CONDOMINIUM
	02 BI-LEVEL	10 FARMHOUSE	18 TOWN HOUSE
	03 SPLIT LEVEL	11 VICTORIAN	(19) DUPLEX
	04 CAPE COD	(12) COLONIAL	20 APARTMENT
	05 BUNGALOW	13 CONTEMPORARY	21 MANUFACTURED
	06 COTTAGE	14 MODERN SINGLE STORY	22 OTHER
	07 CRAFTSMAN	15 MODERN MULTI-STORY	
	08 PRAIRIE	16 EXECUTIVE MANSION	

Note: If the dwelling is a single-family residence, use is to be left blank.

Ranch (01)
Ranch style is a one-story house that usually has an attached garage and a large picture window facing the street. The shape of the house is either rectangular or an "L" or "U" shape. The houses have low-pitched roofs and extended eaves. This became the dominant style in 50's and 60's.

Bi-Level (02)
Bi-level, also known as a raised ranch, is a variation of the ranch style. It is a one-story house with a full basement at half grade. The partially excavated basement typically has daylight windows in the lower level. The two levels are split by a foyer at grade level. A Bi-level should be listed as a one-story with a full basement. The lower level often has finished basement living area with the same quality of finish as the upper level. This adaptation of the ranch style was popular during the 70's.

Split-Level (03)
A split-level, also known as a tri-level or quad-level, has living areas staggered on two or more levels, separated by one half grade. There are typically two or more short sets of stairs running up or down. Split-level residences have a split roof design.

Cape Cod (04)
A one story with attic or a one and one-half story house with dormers, extra gables, or shed dormers, generally built after the 1920's. It is characterized by a steep roof slope and dormers which project from the roof and have windows on their fronts. Because of the roof design, the area of the second floor is usually 40% to 75% of the ground floor area.

Bungalow (05)
A one-story house, often with finished attic area, popular in the early 20th century, and generally built from 1905 to 1930. This style has one or more low-pitched overhanging gables, and is characterized by exposed beams, projecting brackets, and use of natural materials. Porches usually extend across the front and are supported by wide columns. Windows are generally casement or double hung. Bungalow is often associated with Craftsman style.

Cottage (06)
A small, plain single family house. It is usually one story built with minimum construction standards resulting in narrow boxy exterior appearance with little or no ornamentation, low pitch roof, few window openings, low basement wall height, simple floor plan with small rooms, minimal closet facilities and electrical outlets, softwood trim and often inadequate plumbing facilities for today's standard of living.

Craftsman (07)
Craftsman style homes are usually constructed of mixed natural materials (wood, stone, and brick) with low-pitched roofs, wide eaves, and exposed brackets. Most homes of this style have porches with thick round or tapered square columns. Built-in, hand crafted features are common, often with a fireplace as a dominant feature. The style is generally symmetrical with double hung windows and multi-gables or hipped roofs. The style is related to Prairie and Bungalow styles.

Prairie (08)
A home characterized by low pitched roofs, generally gabled and enclosed, often with hip or flat roofs. Prairie homes are boxy and low-proportioned with strong horizontal lines and oversized eaves originated by Frank Lloyd Wright and most popular in the Midwest. Prairie style often includes open interiors and rows of clerestory windows, art glass and cantilevered projections, and centrally massed chimneys.

Basic Single Story (09)
This style is a basic one-story home generally built between 1900 and 1950 that is typically built at a quality grade less than C. It has a simple design that often includes only a single bathroom and has small bedrooms. It often includes an unfinished attic and an unfinished basement. These comparatively low cost houses have few amenities and little to no fenestration.

Farmhouse (10)
This multi-story style derives its name from the original simple and functional house built in the early to mid-20th century in rural America. These houses often have large front porches or wraparound decks and have gable roofs that may cover the porch. They are minimally ornamental and have large windows to bring in light. The exterior is faced with horizontal siding and the homes often have a simple rectangular floor plan with side wings.

Victorian (11)
This style includes several types of architecture dating to the second half of the 19th century. The last authentic Victorians were constructed in the early 1900's. Contemporary builders have carried this eclectic design to current day, using modern materials and incorporating the detail from the era which can now be economically mass produced. This style home is asymmetrical, two + stories with steep roof pitches which may include turrets and dormers. Large porches are embellished with decorative railings and posts. Modern versions of this style remain popular in Wisconsin. Related styles that included in this category include Queen Anne, Stick, Shingle, Gothic and Folk, among others.

Colonial (12
Colonial style is typically a rectangular shaped two-story home. Each floor is two rooms deep and has approximately the same square footage. The roof structure has a medium slope, with limited attic space that is not intended for living area.

Contemporary (13)
A modernistic style of architecture that incorporates irregular, asymmetrical facades with strong geometric shapes. Contemporary design homes may be single or multi-story and may be of split level construction. Houses typically incorporate tall, irregularly shaped windows, open planning and angular exterior lines. Roofs may be flat, shed, gable or various combinations thereof. These homes often have green HVAC and plumbing systems to conserve energy.

Modern Single Story (14)
Like the Modern Multi-Story this style has gained popularity in the 21st century and is replacing the ranch style as the dominant single story design. This style is characterized by its single story, high ceilings, and moderate to steep pitched hip or multi-gabled roof. Windows are large and abundant, permitting extensive natural light. There is often an emphasis on intelligent and/or green materials. Prominent garages with 3-4 stalls are common.

Modern Multi-Story (15)
Popular from 2000 to the present, this style dominates modern American suburbs, borrowing elements from a variety of styles to create an entirely new look. Prominent 3-4 stall garages, and a mix of exterior wall coverings are common in this style. Features include tall entrance ways, abundant large windows, and high ceilings.

Executive Mansion (16)
A large, luxury home built using the highest quality materials of brick or cut stone. These homes commonly have three or more baths, two or more fireplaces, and expansive entries with elaborate open stairways. These large-scale homes are typically 4,000 to 12,000 square feet per story and are often located in prestigious neighborhoods.

Condominium (17)
A form of fee ownership of whole units or separate portions of multi-unit buildings by statute, which provides the mechanics and facilities for formal filing and recording of a divided interest in real property, where the division is vertical as well as horizontal. Fee ownership of units in a multi- unit property and joint ownership of the common areas. Not to be confused with Cooperative.

Town House (18)
The town house is a hybrid between a condo and a single-family home. It is both a style of residence and a form of ownership. These are side by side units joined by one or two common walls and having multiple stories. Each town house unit is one of a group of two to six units that are similar but may not be identical. Such units never have units above or below and always have individual exterior walls. There may be shared common areas.

Duplex (19)
Any two-unit residence not qualifying as a townhouse, built after the mid-20th century. New Style Duplexes have separate entrances, kitchens and separate full baths.

Apartment (20)
A building containing multiple self-contained living units. Apartment buildings of less than four units should be listed as residential class. Apartment buildings of four or more units should be listed as commercial class.

Manufactured (21)
Manufactured Homes built in the factory under a federal building code administered by the U.S. Department of Housing and Urban Development (HUD). Manufactured homes may be single- or multi-section and are transported to the site and installed. This style includes homes typically known as mobile homes, modular or pre-fab.

Other (22)
Any residence that does not fit into any category defined above. Examples include geodesic homes, earth homes, buildings converted from other uses such as schools or churches.

EXTERIOR WALL CONSTRUCTION

Circle the numeric code which is most representative of the exterior wall construction of the dwelling.

Circle 1 to indicate WOOD . . . . . will be priced as Frame.
Circle 2 to indicate CONCRETE BLOCK . . . . . will be priced as Concrete Block.
Circle 3 to indicate STUCCO . . . . . will be priced as Frame.
Circle 4 to indicate ALUMINUM/VINYL . . . . . will be priced as Frame.
Circle 5 to indicate CEMENT FIBER . . . . . will be priced as Frame.
Circle 6 to indicate METAL . . . . . will be priced as Frame.
Circle 7 to indicate BRICK . . . . . will be priced as Brick or Stone.
Circle 8 to indicate STONE . . . . . will be priced as Brick or Stone.
Circle 9 to indicate MASONRY/FRAME . . . . . will be priced as Masonry Veneer or Frame with a Masonry Adjustment
Circle 10 to indicate HARDBOARD/PLYWOOD . . . . . will be priced as Frame.
Circle 11 to indicate SHINGLE/SHAKE . . . . . will be priced as Frame.
Circle 12 to indicate SYNTHETIC PLASTER on RIGID INSULATION (EIFS) . . . . . will be priced as Frame.
Circle 13 to indicate MASONRY VENEER . . . . . will be priced as Masonry Veneer.
Circle 14 to indicate STAY-IN-PLACE POURED CONCRETE (SIP) . . . . . will be priced as Concrete Block.
Circle 15 to indicate LOG . . . . . will be priced as Rustic Log.
Circle 16 to indicate HAND-HEWN LOG . . . . . will be priced as Hand-Hewn Log.
Circle 17 to indicate OVERSIZED LOG . . . . . will be priced as Hand-Hewn Log.
Circle 18 to indicate OTHER . . . . . to be determined by Assessor.

	EXTERIOR WALL CONSTRUCTION					
505	1	WOOD	7	BRICK	13	MASONRY VENEER
	2	BLOCK	8	STONE	14	SIP
	3	STUCCO	9	MASONRY/FRAME	15	LOG
	4	ALUM/VINYL	10	HRDBRD/PLYWD	16	HAND-HEWN LOG
	5	CEMENT FIBER	11	SHINGLE/SHAKE	17	OVERSIZED LOG
	6	METAL	12	EIFS	18	OTHER

Note: Refer to residential cost schedule section of this manual.

AGE

Space is provided to enter four numeric characters denoting the year of construction, the year of remodeling and the effective year.

510	AGE		
	ERECTED _ _ _ _	REMODELED _ _ _ _	EFFECTIVE _ _ _ _

ERECTED

Refers to the original date of construction. This item should always be entered. If the exact date cannot be determined, make the best estimate possible based on known construction dates in the immediate area.

REMODELED

Refers to the date of the last extensive remodeling, i.e., remodeling which significantly alters the "effective age" of the dwelling. If the dwelling has not been remodeled, leave the item blank.

EFFECTIVE

Refers to the age of the structure along with physical wear and tear. Effective age can be more or less than the Erected Age.

BASEMENT

Refers to the extent or size of the basement. Three alternatives are provided. Circle the numeric code which is most representative of the subject property. Only one selection should be circled.

515	BASEMENT				
	1 NONE	2 CRAWL	3 PART	4 FULL	5 WALKOUT

Circle 1 NONE to indicate slab construction: no basement or crawl space.
Circle 2 CRAWL to indicate crawl space to 1/4 basement excavation.
Circle 3 PART to indicate 1/4 to 3/4 basement excavation area.
Circle 4 FULL to indicate 3/4 to full basement excavation area.
Circle 5 WALKOUT to indicate floor area above grade with doorway to the outside.

Note: These basement ratings correspond to the total first floor living area (including additions).

HEATING

Refers to the presence and type of heating system. Five (5) alternatives are provided. Circle the type code which is most representative of the subject property. Only one selection may be circled.

	HEATING				
520	1	2	3	4	5
	NONE	BASIC	AIR CON	AIR CON (SEP DUCTS)	GEOTHERMAL

Circle 1 NONE to indicate that the subject dwelling does not have a heating system, which can be classified as BASIC, warranting a full deduction from the Base Price for "no heating" as indicated by the pricing schedule.

Circle 2 BASIC to indicate that the subject dwelling has a central heating system commensurate with the quality grade specifications of the dwelling, warranting no addition to or deduction from the Base Price.

Circle 3 AIR CON to indicate that in addition to the BASIC heating system, the subject dwelling has a central cooling system commensurate with quality grade specifications of the dwelling, warranting an addition to the Base Price for "air conditioning" as indicated by the pricing schedule. If a cooling system as described exists, circle this numeric code only. This code implies that a combined central heating and air conditioning system exists.

Circle 4 AIR CON (SEP DUCTS) to indicate that in addition to the BASIC heating system, the subject dwelling has a central cooling system commensurate with quality grade specifications of the dwelling, warranting an addition to the Base Price for "air conditioning" as indicated by the pricing schedule. If a cooling system as described exists, circle this numeric code only. This code implies that a separate cooling system exists.

Circle 5 GEOTHERMAL to indicate that the subject dwelling has a geothermal heat pump or ground source heat pump used for central heating and/or cooling system that transfers heat to or from the ground.

Note: Permanent "non-central" types of heating/air conditioning systems should be listed as no heat (1–none) and priced in the Other Features section under Total Additional Other Features (field 559).

HEATING FUEL TYPE

Refers to the type of fuel used to power the heating system. Four (4) alternatives are provided, but only one may be circled.

	FUEL TYPE			
520	1 GAS	2 ELECT	3 OIL	4 WD/COAL

Circle 1 to indicate GAS
Circle 2 to indicate ELECTRIC
Circle 3 to indicate OIL
Circle 4 to indicate WD/COAL or a woodburning or coal central heating system.

Note: If NONE has been circled for heating entry, leave this entry blank.

HEATING SYSTEM TYPE

Refers to the actual type of heating system. Four (4) alternatives are provided. Only one selection should be circled.

	SYSTEM TYPE			
520	1 WARM AIR	2 ELECT	3 HOT WATER	4 STEAM

Circle 1 WARM AIR to indicate the presence of a forced warm-air system. With this system, the furnace has a fan or blower that pushes the warmed air through relatively small ducts. These ducts may run horizontally or vertically. Filters can be installed in the system to clean the air, and a humidifying system may be included to add the needed moisture.

Circle 2 ELECTRIC to indicate the presence of an electric heating system. This system is characterized by electric resistance elements that convert electricity into heat. These elements are embedded in the floors, walls and ceilings or baseboard to provide radiant heat.

Circle 3 HOT WATER to indicate the presence of a hot water (hydronic) system. With this system, water is heated in a boiler of cast iron or steel. It is then pumped by one or more circulators through small tubes into baseboard panels, radiators or tubes which are embedded in the walls, ceilings or concrete slab.

Circle 4 STEAM to indicate the presence of a steam heating system. With this system, steam heat is produced by a furnace which is a boiler with a firebox underneath it. When the water in the boiler boils, it makes steam, which is forced by pressure through pipes into radiators throughout the dwelling.

Note: If NONE has been circled for heating entry, leave this entry blank.

LIVING ACCOMMODATIONS

Blanks are provided to enter either one or two numeric characters denoting the quantities of each of the items described below. Each character position should be filled in. If the item does not exist, zeros or hash marks should be entered for assurance of a more complete, accurate and uniform record keeping system.

TOTAL ROOMS – Refers to the total number of separate rooms, excluding bathroom(s), comprising the living area of the dwelling, i.e., kitchens, living rooms, dining rooms, family rooms, dens, studies and bedrooms.

BEDROOMS – Refers to the total number of separate rooms designed to be used as bedrooms. If a room was designed to be a bedroom but is being utilized for some other purpose, such as a den, it is to be included in this count.

FAMILY ROOMS – Refers to the number of informal living rooms. The quality of finish is consistent with the general finish of the dwelling.

FULL BATHS – Refers to the number of three-fixture bathrooms which include a water closet, lavatory and bathtub or shower stall. (A bathtub with a shower outlet is considered one fixture.)

HALF BATHS – Refers to the number of two-fixture toilet rooms including a water closet and lavatory.

ADDITIONAL FIXTURES – Refers to individual fixtures that do not fall into the categories previously named, i.e., utility sinks, water closets, etc.

Note: Each style/grade of dwelling has a standard complement of fixtures built into its base price. A standard complement includes a kitchen sink, hot water heater and three bathroom fixtures (a full bath) totaling five fixtures.

Additional fixtures are those fixtures in the dwelling that are in addition to the standard complement and in addition to any full or half bathrooms.

TOTAL FIXTURES – Refers to the total number of plumbing fixtures. This includes the standard complement of five fixtures plus any additional fixtures found in the dwelling.

ROUGH-IN – Refers to the total number of plumbing rough-ins. None are included in the Base Dwelling Price. Add as needed. A rough-in consists of a drain and water line hookup for laundry facilities or for future plumbing installations.

WHIRLPOOL TUB – Indicates a deluxe bathtub (Jacuzzi) with water jets to produce a therapeutic massage.

HOT TUB – Indicates a therapeutic tub, sometimes referred to as a redwood hot tub, which can be found either indoors or outdoors, usually for two or more persons.

The example below shows the correct listing for a dwelling with a total of eight rooms, four of which are bedrooms, and one of which is a family room; the dwelling also has two full baths, one half bath and one additional fixture (a utility sink). There are three rough-ins for a future bath. There is also one whirlpool tub.

	LIVING ACCOMMODATIONS
525	TOTAL ROOMS 0 8 · BED ROOMS 0 4 · FAMILY ROOMS 0 1 FULL BATHS 2 · HALF BATHS 1 · ADDN'L FIXTURES 1 · TOTAL FIXTURES 1 1 ROUGH IN"S 3 · WHIRLPOOL 1 · HOT TUB ___

Total fixtures equal: 5 (standard complement) + 3 (one additional full bath) + 2 (one half bath) + 1 (one additional fixture, utility sink) = 11 total fixtures.

KITCHEN RATING

Circle the numeric code which is most representative of the overall desirability of the kitchen, including the quality and number of cupboards and built-in appliances, relative to the quality and age of the dwelling.

	KITCHEN RATING			
530	1 VG	2 GD	3 AV	4 PR

Circle 1 VERY GOOD to indicate that you judge the overall desirability of the kitchen to be vastly superior to what you would normally expect to find in a dwelling of this type and quality.

Circle 2 GOOD to indicate that you judge the overall desirability of the kitchen to be superior to what you would normally expect to find in a dwelling of this type and quality.

Circle 3 AVERAGE to indicate that you judge the overall desirability of the kitchen to be about equal to what you would normally expect to find in a dwelling of this type and quality.

Circle 4 POOR to indicate that you judge the overall desirability of the kitchen to be definitely inferior to what you would normally expect to find in a dwelling of this type and quality.

Note: Base Dwelling Prices do not include the costs for any built-in appliances. Comments pertaining to appliances are included only to assist the lister in the valuation of the property.

The following guidelines are provided to assist the lister in making the proper judgment:

VERY GOOD QUALITY An abundantly lighted, spacious and attractive kitchen of coordinated styling and decor, having high-quality components consisting of an extensive amount 20 to 25 linear feet of floor-standing cabinets with marble, quartz or the highest-quality granite countertops and splash. A comparable complement of wall mounted cabinets and all major built-in appliances and modern conveniences will be found.

GOOD QUALITY A well lighted, relatively roomy and attractive kitchen of coordinated styling and decor, having good-quality components consisting of at least 16 to 20 linear feet of floor-standing cabinets with countertops and splash of either quartz, simulated marble or good-quality granite countertops. A comparable complement of wall-mounted cabinets and most of the major built-in appliances, as well as a limited number of other modern conveniences will be found.

AVERAGE QUALITY An adequately lighted, compact, color-coordinated kitchen having average-quality components consisting of at least 12 to 16 linear feet of floor-standing cabinets with countertops and splash of ceramic tile, quartz, or granite. A comparable complement of wall-mounted cabinets, a range exhaust and at least two additional major built-in appliances, i.e., garbage disposal, oven, range or dishwasher will normally be found.

POOR QUALITY — An adequately lighted, compact, color-coordinated kitchen having fair but below average quality components consisting of at least 8 to 12 linear feet of floor-standing cabinets with countertops and small splash of ceramic tile or laminated plastic. A comparable deficiency of wall-mounted cabinets and no built-in appliances.

Note: These descriptions are supplied as guidelines only. They are not meant to be strictly adhered to. Sound judgment and consistency should always prevail.

BATHROOM RATING

Circle the numeric character provided which is most representative of the overall desirability of the bathroom(s) relative to the quality and age of the dwelling.

	BATHROOM RATING			
530	1 VG	2 GD	3 AV	4 PR

Circle 1 — VERY GOOD to indicate that you judge the overall desirability of the bathroom(s) to be vastly superior to what you would normally expect to find in a dwelling of this type and quality.

Circle 2 — GOOD to indicate that you judge the overall desirability of the bathroom(s) to be superior to what you would normally expect to find in a dwelling of this type and quality.

Circle 3 — AVERAGE to indicate that you judge the overall desirability of the bathroom(s) to be about equal to what you would normally expect to find in a dwelling of this type and quality.

Circle 4 — POOR to indicate that you judge the overall desirability of the bathroom(s) to be definitely inferior to what you would normally expect to find in a dwelling of this type and quality.

The following guidelines are provided to assist the lister in making the proper judgment:

VERY GOOD QUALITY — An abundantly lighted, relatively large and attractive, color-coordinated bathroom, having high-quality fixtures and built-ins, including a large vanity with quartz, marble or high-end granite top, and expansive mirror, marble or import ceramic tile bath and/or shower recesses with high quality shower doors, import ceramic tile, stone or comparable quality floor covering and a quality ventilation system.

GOOD QUALITY — A well-lighted, relatively roomy and attractive, color-coordinated bathroom, having good-quality fixtures and built-ins, including a medium vanity with quartz, marble or granite top, a large mirror, marble or ceramic tile bath and/or shower recesses with good quality shower doors, ceramic tile, stone or comparable quality floor covering and a quality ventilation system.

AVERAGE QUALITY — An adequately lighted, compact, color-coordinated bathroom, having average-quality fixtures and built-ins including a small vanity with granite or ceramic tile top, a standard mirror, ceramic tile bath recesses, vinyl tile, ceramic tile or comparable quality floor covering and an adequate ventilation system.

POOR QUALITY	A poorly lighted, unattractive bathroom, having cheap, poor-quality fixtures and floor covering.

Note: These descriptions are supplied as guidelines only. They are not meant to be strictly adhered to. Sound judgment and consistency should always prevail.

PHYSICAL CONDITION

Refers to a composite judgment of the overall physical condition or state of repair of the interior and exterior features of the dwelling relative to its age; or the level of maintenance which you would normally expect to find in a dwelling of a given age.

Consideration should be given to foundation, porches, walls, exterior trim, roofing, chimneys, wall finish, interior trim, kitchen cabinets, heating system and plumbing. Four alternatives are provided: circle the numeric code which is most representative of the subject property. Only one selection should be circled.

550	PHYSICAL CONDITION				
	1 VG	2 GD	3 AV	4 PR	5 UN

Circle 1 VERY GOOD to indicate that the dwelling exhibits a high standard of maintenance and upkeep in relation to its age.

Circle 2 GOOD to indicate that the dwelling exhibits an above ordinary standard of maintenance and upkeep in relation to its age.

Circle 3 AVERAGE to indicate that the dwelling shows only minor signs of deterioration caused by normal wear and tear. The dwelling exhibits an ordinary standard of maintenance and upkeep in relation to its age.

Circle 4 POOR to indicate that the dwelling shows many signs of deferred maintenance and definitely exhibits a below ordinary standard of maintenance and upkeep in relation to its age.

Circle 5 UNSOUND to indicate that the dwelling is unsound and unfit for use.

Note: Deferred maintenance may be defined as existing but unfulfilled repairs and rehabilitation that will require immediate expenditures. It does not necessarily imply inadequate prior maintenance.

OTHER FEATURES

Eight features are included for consideration, seven individual features and one composite. Space is provided to enter the actual square footage or dimensions for masonry adjustment or recreation room.

	OTHER FEATURES	AMOUNT
551	MASONRY ADJ [ ] __ __ x __ __	
552	REC ROOM __ __ x __ __	
553	WB FP: STACKS __ OPENINGS __	
554	METAL FP: STACKS __ OPENINGS __	
555	GAS FP __	
556	BASEMENT GARAGE, NO. CARS __	
557	BUILT-IN GARAGE, NO. CARS __	
558	DORMERS, TYPE: _____ ____ L.F.	
559	TOTAL ADDITIONAL OTHER FEATURE AMT	
	TOTAL OTHER FEATURES _____	

MASONRY ADJUSTMENT

A bracket [ ] is provided to enter a plus sign (+) to indicate the presence of brick or stone walls on a dwelling listed to be priced as frame, or a minus sign (–) to indicate the presence of frame or equivalent walls on a dwelling listed to be priced as masonry. Enter the appropriate dimensions or square footage in the character positions provided. Space is provided at the far right to enter the actual value of the masonry adjustment. Please refer to the Other Features section of the cost schedules in this manual for appropriate square foot masonry adjustment costs.

The example below for a frame constructed house shows a positive masonry adjustment for 4 feet of stone wainscoting across the front of the house. The stone covers an area 4 feet high by 30 feet long or 120 square feet. The cost is per square foot (taken from the cost table) or for the adjustment.

	OTHER FEATURES	AMOUNT
551	1 MASONRY ADJ [+] 0 4 x 3 0	

RECREATION ROOM FINISH

Space is provided to enter either the square foot or dimension measure of a basement recreation room in the dwelling plus the dollar value attributable to it. Please refer to the Base Price Adjustments section of the cost schedules in this manual for appropriate square foot recreation room costs.

The example below shows a 14 ft. by 20 ft. basement recreation room, or 280 square feet. The cost is per square foot (taken from the cost table) or attributed to the recreation room.

	OTHER FEATURES	AMOUNT
552	2 REC ROOM 1 4 x 2 0	

Note: A recreation room is always considered to be of lesser quality construction than the rest of the dwelling. If a recreation room is of the same quality as the rest of the dwelling, it should be listed as finished living area.

WOOD-BURNING FIREPLACE

This parameter indicates the presence of one or more wood-burning masonry fireplaces. No other type is considered in this field. Character positions are provided to enter the number of stacks and the number of openings, as well as the dollar value of the fireplace(s). Please refer to the Other Features Section of the cost schedules for appropriate wood-burning masonry fireplace costs.

The example below shows one wood-burning masonry fireplace with two openings and two stacks (for a two-story dwelling). The value taken from the cost table for this fireplace is plus (for the additional opening) plus (for the additional stack above the base of one). + + =

	OTHER FEATURES	AMOUNT
553	3 WB FP: STACKS 2 OPENINGS 2	

METAL FIREPLACE

Indicates the presence of prefabricated metal fireplace(s). A character position is provided to enter the number of stacks as well as the dollar value of the fireplace(s). Please refer to the Other Features section of the cost schedules for appropriate metal fireplace costs.

The example below shows one prefabricated metal fireplace with two stacks (for a two-story dwelling). The value taken from the cost table for this fireplace is plus (for the additional stack above the base of one). + =

	OTHER FEATURES	AMOUNT
554	4 METAL FP: STACKS 2 OPENINGS 1	

GAS FIREPLACE

Indicates the presence of a gas-only (not wood burning) prefabricated metal fireplace(s). A character position is provided to enter the number of fireplaces as well as the dollar value of the fireplace(s).

	OTHER FEATURES	AMOUNT
555	5 GAS FP	

BASEMENT GARAGE

Indicates the presence of a garage in the basement level of the dwelling. A character position is provided to enter the car capacity of the basement garage. Space is also provided to enter the additional dollar value necessary for the basement garage. Please refer to the Attachments section of the cost schedules in this manual for appropriate additional costs attributed to basement garages.

The example below shows a dwelling with a 2-car basement garage. The additional cost necessary for the 2-car basement garage is (taken from the cost table).

	OTHER FEATURES	AMOUNT
556	6 BASEMENT GARAGE NO. CARS 2	

BUILT-IN GARAGE

Indicates the presence of a garage at grade level having living areas both adjacent to and above the garage. A character position is provided to enter the car capacity of the built-in garage. Space is also provided to enter the additional dollar value necessary for the built-in garage. Please refer to the Attachments section of the cost schedules in this manual for appropriate additional costs attributed to built-in garages.

The example below shows a dwelling with a 2-car built-in garage. The additional cost necessary for the 2-car built-in garage (frame in this example) is (taken from the cost table).

	OTHER FEATURES	AMOUNT
557	7 BUILT-IN GARAGE NO. CARS 2 Type: Frame	

DORMERS

Whether gable, hip or shed, the cost is per linear foot of the projected face. The cost is an adjustment to the dwelling price and accounts for the exterior construction. When finished, the interior should be included with the total floor area and priced with the dwelling. Space is provided for the type, i.e., shed, gable, and for the linear footage.

The example below shows 28 linear feet of gabled dormer. The additional cost for these dormers is (taken from the cost page). x 28 linear feet =

	OTHER FEATURES	AMOUNT
553	8 DORMERS, TYPE: *Gable* *28* L.F	

ROOF ADJUSTMENT

Indicates the presence of a metal roof, whether it be shingles, shakes, vertical panels. The cost is an adjustment to the dwelling price and accounts for the number of stories.

ADDITIONAL OTHER FEATURES	AMOUNT
ROOF ADJ – METAL	

WHOLE HOUSE OR COMMERCIAL GENERATOR

Indicates the presence of a whole house or commercial generator. A character position is provided to enter the number of generators as well as the dollar value of the generator.

ADDITIONAL OTHER FEATURES	AMOUNT
WHOLE HOUSE GENERATOR	

WOOD BURNING FURNACE

Indoor

Indoor wood-burning forced air furnaces use a large firebox to burn wood. Heat from these furnaces is distributed using a blower.

Outdoor

Outdoor wood-burning furnaces are typically part of a hydronic system in which the furnace heats water and the hot water is pumped into the house, where it transmits its heat to the interior air via radiators or other radiant-heating mechanisms.

ADDITIONAL OTHER FEATURES	AMOUNT
WD FURNACE IN __ OUT __	

ADDITIONAL OTHER FEATURES	AMOUNT
ROOF ADJ – METAL	
WHOLE HOUSE GENERATOR	
WD FURNACE IN __ OUT __	
1	
2	
3	
4	
5	
6	
7	
8	
TOTAL ADD'L. OTH: FEATURES CARRY TOTAL TO 559	

TOTAL ADDITIONAL OTHER FEATURES

This entry is provided as a dollar value summary of any additional other features not found in 1 through 7. Each additional other feature should be listed on side 3 in the Additional Other Features area by using an abbreviated written description. Each item must then be soundly valued utilizing the appraiser's best judgment of value. Cost tables are not provided for Additional Other Features.

Once each item has been valued, the values are summed, and the total is carried to the (559 field) Total Additional Other Features line on side 2 under Other Features.

The following example shows two entries under Additional Other Features. One is for sliding glass patio doors with an estimated value of The other entry is for a residential (indoor) fountain.

ADDITIONAL OTHER FEATURES	AMOUNT
ROOF ADJ – METAL	
WHOLE HOUSE GENERATOR	
WD FURNACE IN __ OUT __	
1 *Sliding glass patio doors*	
2 *Residential fountain*	
3	
4	
5	
6	
7	
8	
TOTAL ADD'L. OTH: FEATURES CARRY TOTAL TO 559	

	OTHER FEATURES	AMOUNT
559	9 TOTAL ADDITIONAL OTHER FEATURE AMT	____

The total of the two additional other features ( ) is then carried to the Total Additional Other Features line.

Note: As a guideline, an item should be listed under Other Features if it is permanently affixed or part of the original dwelling structure and has approximately the same life. If it does not meet either of these requirements, it should be listed and priced as an attachment.

TOTAL OTHER FEATURES

This one-line dollar value entry is the total of all other features.

The example below shows the positive masonry adjustment of ; a recreation room worth ; a woodburning masonry fireplace worth ; a metal fireplace worth plus (additional stack); the additional cost for a basement garage of the cost for a two-car built-in frame garage of ; the cost of 28 linear feet of gable dormer or ; and a total estimate figure for sliding patio doors and a residential fountain of The items are totaled to for all of the other features.

	OTHER FEATURES	AMOUNT
551	1 MASONRY ADJ x S/B [+] 4 x 30	
552	2 REC ROOM 30 x 30	
553	3 WB FP: STACKS 1 OPENINGS 2	
554	4 METAL FP: STACKS 2 OPENINGS __	
555	5 GAS FP __	
556	6 BASEMENT GARAGE, NO. CARS 2	
557	7 BUILT-IN GARAGES, NO. CARS 2 TYPE: *Frame*	
558	8 DORMERS, TYPE: *Gable* 28 L F.	
559	9 TOTAL ADDITIONAL OTHER FEATURE AMT	
	TOTAL OTHER FEATURES	

GRADE FACTOR

The letter grades are preprinted on the card. Circle the appropriate letter grade. A bracket [ ] is provided to enter a plus or minus, if necessary.

Four principal Quality Grade classifications are utilized, plus two additional classifications: AA grade is for the very best of materials and workmanship, and E grade is for the cheapest, most inferior quality of materials and workmanship.

The grade classifications are:

AA Grade - Very Best Quality
A Grade - Excellent Quality
B Grade - Good Quality
C Grade - Average Quality
D Grade - Fair Quality
E Grade - Poor Quality

Each of the six grades or classifications above is assigned a factor based on the models utilized to establish the cost tables. This promotes and maintains uniformity in value relationship between grades.

These factors are:

AA Grade - 2.50
A Grade - 1.55
B Grade - 1.28
C Grade - 1.00
D Grade - 0.85
E Grade - 0.55

However, in an effort to more precisely define dwelling grade, intermediate factors of pluses (+) and minuses (–) were developed. A grade of C+ is better than a straight C grade, and a C- poorer than a straight C grade.

By utilizing these intermediate ratings, a full range of quality grade factors is listed below. These factors are:

AA Plus (+)	3.25	C Plus (+)	1.10
AA	2.50	C	1.00
AA Minus (–)	2.00	C Minus (–)	0.95
A Plus (+)	1.75	D Plus (+)	0.90
A	1.55	D	0.85
A Minus (–)	1.45	D Minus (–)	0.75
B Plus (+)	1.35	E Plus (+)	0.65
B	1.28	E	0.55
B Minus (–)	1.20	E Minus (–)	0.45

The quality grade factor should represent a composite judgment of the overall quality of materials and workmanship throughout the dwelling. Extreme caution must also be exercised so as not to confuse the concepts of “quality” and “condition.” The grade cannot be influenced in any way by the physical condition of the dwelling. The example listing below shows a (B–) dwelling with a grade factor of 1.20. The (B) is circled, a minus is placed in the bracket, and the grade factor is written in the space to the right of the bracket.

Note: Please refer to the residential photographs section of this manual for further quality grade specifications.

COST AND DESIGN FACTOR

Space is provided to enter a plus or minus symbol (within the brackets) and a percentage (to the right of the bracket).

Examples of the cost and design factor are: architectural fees, material quantities, labor efficiency, energy adjustments, etc., i.e., factors that influence total construction costs and could vary from dwelling to dwelling.

The proper selection of the cost and design factor is largely a product of the experience and sound judgment of the appraiser, who must have the ability to analyze various variable construction components and determine the influence of each upon the overall cost.

The following example illustrates one appraiser's utilization of the cost and design factor for a raised ranch. The appraiser's judgment and experience indicated that a 5% additional cost was necessary to construct that particular dwelling.

Note: Please refer to the residential section of this manual for a further explanation of the cost and design-factor and its use.

CONDITION, DESIRABILITY AND USEFULNESS (CDU) FACTOR

This is the most critical entry the appraiser must estimate based upon sound judgment and experience. This single percentage entry must reflect the normal "loss of value" attributed to depreciation as well as the influence of desirability of that property in the marketplace.

To better understand and determine CDU, depreciation and desirability must first be defined. The standardized causes for depreciation are:

1. Physical Depreciation – pertains to the wearing out of various building components through the action of the elements, age and use.

2. Functional Obsolescence – is a condition caused by either inadequacies or overadequacies in design, style, composition or arrangement inherent to the structure itself, which tend to lessen the usefulness and utility.

3. Economic Obsolescence – is a condition caused by factors extraneous to the property itself such as changes in population characteristics and economic trends, encroachment of inharmonious land uses, excessive taxes and governmental restrictions.

Estimates of the causes above for depreciation are all necessary to determine CDU in the cost approach but do not constitute the entry in themselves. It is also necessary to estimate desirability, which is judged on those qualities that make a dwelling either more or less desirable to a typical purchaser in the market. To determine each cause of depreciation, along with desirability as four separate entities, is very difficult under normal conditions because of the tendencies of these factors to overlap. Therefore, this manual has segregated each under the heading it is most apt to represent. The causes for depreciation and desirability are treated throughout this manual as the following table illustrates:

Condition	Desirability	Usefulness
Physical depreciation	Economic Obsolescence Market Influence	Functional Obsolescence

"Condition" is physical depreciation and "usefulness" is functional obsolescence. Desirability, however, may involve both economic obsolescence and market influences.

“Depreciation” is a loss of value or, in other words, a negative factor. “Desirability,” on the other hand, may have either a negative or positive effect.

To combine depreciation and desirability into one factor represented by a “percent good” is a most difficult judgment for the appraiser. To aid the appraiser in making this decision, two workspaces are provided on the property record card. One utilizes checkmark entries for exterior components, mechanical systems and interior room CDU’s. The second workspace is a locational checkmark entry to aid the appraiser in determining a portion of desirability.

The large grid workspace provides an area to indicate CDU based individually on each room, each major exterior characteristic, and each major system found in the dwelling. It also indicates the number of rooms and where each room is located with reference to floor level. The grid provides the appraiser with a more detailed and defendable summary of each dwelling. It also aids the appraiser in determining the overall CDU and assists in analyzing comparable properties.

The locational checkmark entry is provided as an aid to determine a portion of desirability by indicating whether the location of the subject property is improving, stable or declining.

The following example shows how one appraiser utilized the CDU workspace as an aid in determining CDU:

COND/DES/USFL		NO.	EX	VG	GD	AV	FR	PR	VP	UN	UNF
EXTERIOR WALLS						X					
ROOF & COVER					X						
WINDOWS & DOORS						X					
HEATING						X					
ELECTRICAL						X					
PLUMBING							X				
B	REC ROOM	1					X				
	FBLA										
	OTHER										
1st	KITCHEN	1				X					
	DINING RM										
	LIVING RM	1				X					
	BATHROOM	1					X				
	POWDER RM										
	BEDROOM										
	FAMILY RM										
	OTHER										
2nd OR ATT	KITCHEN										
	DINING RM										
	LIVING RM										
	BATHROOM	1			X						
	BEDROOM	3				X					
	OTHER										
3rd	LIVING AREA										
LOCATION		❑ IMPROVING				■ STABLE			❑ DECLINING		

560	CDU	EX	VG	GD	(AV)	FR	PR	VP	UN

As a final note, in making any appraisal, be it individual or comparative, the appraiser must consider each cause for depreciation and desirability as separate factors.

ATTACHMENTS

Space is provided for six (6) separate entries of attachments. However, listing procedures are different for the last, or number (6), entry. In the first five entries, only those attachments which have been coded may be entered, although the same attachment code may be entered any number of times. The appropriate two-digit attachment code is to be entered in the column that corresponds to its position of floor location, either first, second or third. Square footage is to be entered in the Area column, and a cost in the last column. For example, an appraiser listed an open frame porch on the first floor, 80 square feet in area with a value of $4,338.40 (value taken from cost table section of this manual).

	ATTACHMENTS					ATTACHMENT CODES
	1st	2nd	3rd	AREA	AMOUNT	11 OFP 21 OMP 12 EFP 22 EMP 13 FR GA 23 M GAR 29 CARPORT 30 COMPOSITE DECK 31 WOOD DECK 32 CANOPY 33 CONC/M PATIO 34 STN/TL PATIO 35 MS/TERRACE 99 ADD'L ATTACHMENT
601	1 11					
602	2					
603	3					
604	4					
605	5					
606	6					
TOTAL ATTACHMENT AMOUNT						

The last entry, or the 606 field, must be handled differently from those above. This entry is for additional attachments. It is a dollar value summary of any additional attachments not coded in 1 through 5 above. Each additional attachment should be listed on side 3, in the additional attachment area, by using an abbreviated written description. Each item must then be soundly valued utilizing the appraiser's best judgment of value. Cost tables are not provided for additional attachments.

The following example illustrates one appraiser's use of the additional attachments field.

ADDITIONAL ATTACHMENTS	AMOUNT
1 *Masonry flower box*	
2 *Built-in trash compactor*	
3 *(–) Att Gar. Adj., 20 LF*	
4 *Concrete driveway, 680 SF*	
5	
6	
7	
8	
TOTAL ADDITIONAL ATTACHMENTS CARRY TOTAL TO 606	

This appraiser listed a masonry flower box and a built-in trash compactor which, based on his best judgment and experience, he felt were worth and respectively.

It also lacks drywall interior finish on the common wall of the attached garage. From Page 3-76, the cost of x 20 linear feet = a deduction of .

Finally, the cost for the 680 square feet of concrete driveway from Page 3-76 must be added. 680 x = .

The amounts were then totaled and the total, , carried to the 606 field of the attachment section.

TOTAL ATTACHMENT AMOUNT

Space is provided to enter the total of the dollar values entered in the attachment's category. For example, utilizing the preceding examples plus additional examples for illustration, the attachments section would look like the following:

	ADDITIONAL ATTACHMENTS				
	1st	2nd	3rd	AREA	**AMOUNT**
601	1 11			80	
602	2 23			400	
603	3	31		60	
604	4				
605	5				
606	6 99				
	TOTAL ATTACHMENT AMOUNT				

ADDITIONAL ATTACHMENTS	AMOUNT
1 *Masonry flower box*	
2 *Built-in trash compactor*	
3 *(–) Att Gar. Adj., 20 LF*	
4 *Concrete driveway, 680 SF*	
5	
6	
7	
8	
TOTAL ADDITIONAL ATTACHMENTS CARRY TOTAL TO 606	

This attachment section shows an open frame porch on the first floor, 80 square feet in area, with a value of ; a masonry attached garage, 400 square feet in area, with a value of ; and a wood deck on the second floor, 60 square feet in area, with a value of . (The values for the coded attachments are taken from the cost table section of this manual.) Also shown is a 99 entry which is the total of the additional attachments found on side 3 of the property record card that had to be soundly valued. In this example positive (+) adjustments for the masonry flower box and built-in trash compactor, the attached garage common wall, and finally the positive adjustment (+) for the concrete driveway were totaled for an additional attachment total of . The attachments were then totaled to .

LIVING AREAS

BASEMENT

Space is provided to enter the square footage of the basement area of the dwelling. When a basement extends under an attachment such as an open or enclosed porch, this area should also be included. Enter the entire basement area, whether or not it is finished.

LIVING AREAS		
570	575	580
BSMT _ _ _ _	ADD'L FLOOR _ _ _ _	ATTIC UNFIN _ _ _ _
FIN BSMT LIV _ _ _ _	ATTIC FIN _ _ _ _	½ STORY UNFIN _ _ _ _
FIRST FLOOR _ _ _ _	½ STORY FIN _ _ _ _	UNFIN ROOM _ _ _ _
SECOND FLOOR _ _ _ _		

FIN BSMT LIV (Finished Basement Living Area)

Space is provided to enter the square footage of the basement area which is finished with a quality of materials and workmanship consistent with that of the main living area of the dwelling—such as the lower or grade level of Raised Ranch or Split Level dwellings. To be included, rooms must be fully finished with interior walls, ceilings, and floor coverings, as well as heating and electrical facilities in keeping with the rest of the dwelling. These rooms should also have larger than normal basement windows for good light and ventilation and should be intended for year–round occupancy.

LIVING AREAS		
570	575	580
BSMT _ _ _ _	ADD'L FLOOR _ _ _ _	ATTIC UNFIN _ _ _ _
FIN BSMT LIV _ _ _ _	ATTIC FIN _ _ _ _	½ STORY UNFIN _ _ _ _
FIRST FLOOR _ _ _ _	½ STORY FIN _ _ _ _	UNFIN ROOM _ _ _ _
SECOND FLOOR _ _ _ _		

FIRST FLOOR

Space is provided to enter the square footage of all living area on the first floor of the dwelling. This area should not include any area which would be considered an attachment, such as a garage or porch.

Note: A sunroom or enclosed porch should be included if and only if it has a finished interior, and is heated and intended for year–round occupancy.

LIVING AREAS		
570	575	580
BSMT _ _ _ _	ADD'L FLOOR _ _ _ _	ATTIC UNFIN _ _ _ _
FIN BSMT LIV _ _ _ _	ATTIC FIN _ _ _ _	½ STORY UNFIN _ _ _ _
FIRST FLOOR LIV _ _ _ _	½ STORY FIN _ _ _ _	UNFIN ROOM _ _ _ _
SECOND FLOOR _ _ _ _		

SECOND FLOOR

Space is provided to enter the square footage of living area on the second floor. A dwelling is usually considered to have a second story if the wall height at the eaves is 5 feet or more. When judging from exterior observation, if the roof line at the eaves is above the top of a full double-hung window, the house is a two story dwelling. (Please refer to the Appendix for story height illustrations.)

LIVING AREAS					
570		575		580	
BSMT	_ _ _ _	ADD'L FLOOR	_ _ _ _	ATTIC UNFIN	_ _ _ _
FIN BSMT LIV	_ _ _ _	ATTIC FIN	_ _ _ _	½ STORY UNFIN	_ _ _ _
FIRST FLOOR	_ _ _ _	½ STORY FIN	_ _ _ _	UNFIN ROOM	_ _ _ _
SECOND FLOOR	_ _ _ _				

ADDITIONAL FLOOR

Space is provided to enter the square footage of living area of a third floor.

LIVING AREAS					
570		575		580	
BSMT	_ _ _ _	ADD'L FLOOR	_ _ _ _	ATTIC UNFIN	_ _ _ _
FIN BSMT LIV	_ _ _ _	ATTIC FIN	_ _ _ _	½ STORY UNFIN	_ _ _ _
FIRST FLOOR	_ _ _ _	½ STORY FIN	_ _ _ _	UNFIN ROOM	_ _ _ _
SECOND FLOOR	_ _ _ _				

ATTIC FINISHED

Space is provided to enter the square footage of the finished attic area. This square footage should be based upon the exterior dimensions of the attic floor. For example, a full finished attic on a 1,000-square-foot house should be listed as 1,000 square feet in the first story entry and 1,000 square feet in the finished attic entry.

LIVING AREAS					
570		575		580	
BSMT	_ _ _ _	ADD'L FLOOR	_ _ _ _	ATTIC UNFIN	_ _ _ _
FIN BSMT LIV	_ _ _ _	ATTIC FIN	1000	½ STORY UNFIN	_ _ _ _
FIRST FLOOR	1000	½ STORY FIN	_ _ _ _	UNFIN ROOM	_ _ _ _
SECOND FLOOR	_ _ _ _				

Note: If the attic space could be finished and utilized as living area, it is termed an attic in this manual. Any other attic space (i.e., storage attics) which cannot be utilized as living area is not treated as an attic. This manual defines attics as having usable living area square footage equivalent to 50% of the attic exterior floor dimensions. (Please refer to the appendix for story height illustrations.) Stated another way, 50% of the area as listed in the finished attic entry is actual usable area. This representation has been designed as such to provide an efficient pricing procedure with a negligible compromise to the final property value estimate.

If, however, the actual square footage of attic finished area is known and you desire to price it as such, in order to employ the cost tables accurately, the known square footage must be doubled and listed in the finished attic area entry, and a note should be made on the card to that effect. (Remember that the costs for finished attic area have been calculated at 50% of the area listed.)

ONE-HALF STORY FINISHED

Space is provided to enter the square footage of finished area in a half story. This square footage should be based upon the exterior dimensions of the half story floor. For example, a full one-half story on a 1,000-square-foot home should be listed as both 1,000 square feet in the first story entry and 1,000 square feet in the one-half story entry.

LIVING AREAS					
570		575		580	
BSMT	____	ADD'L FLOOR	____	ATTIC UNFIN	____
FIN BSMT LIV	____	ATTIC FIN	____	½ STORY UNFIN	____
FIRST FLOOR	1000	½ STORY FIN	1000	UNFIN ROOM	____
SECOND FLOOR	____				

Note: For the purposes of this manual, half stories are defined as having usable square footage equivalent to 75% of the half-story exterior floor dimensions. (Please refer to the Appendix for story height illustrations.) Simply stated, 75% of the area as listed in the one-half story entry is actual usable area. This representation has been designed as such to provide an efficient pricing procedure with a negligible compromise to the final property value estimate.

If, however, the actual square footage of half-story living area is known and you desire to price it as such, in order to employ the cost tables accurately, the known square footage must be multiplied by 1.33 and listed in the one-half story entry, and a note should be made on the card to that effect. (Remember that the costs for finished one-half stories have been calclated at 75% of the area listed.)

ATTIC UNFINISHED

Space is provided to enter the square footage of unfinished attic area. The unfinished attic area entry is determined in the same manner as the finished attic entry, with the square footage based upon the attic exterior floor dimensions.

LIVING AREAS					
570		575		580	
BSMT	____	ADD'L FLOOR	____	ATTIC UNFIN	500
FIN BSMT LIV	____	ATTIC FIN	500	½ STORY UNFIN	____
FIRST FLOOR	1000	½ STORY FIN	____	UNFIN ROOM	____
SECOND FLOOR	____				

The example above shows an attic with one-half the area finished on a 1,000-square-foot house would have 1,000 square feet listed in the first floor area, 500 square feet listed in the finished attic area and 500 square feet in the unfinished attic area. The total attic floor area of 1,000 square feet would be transferred to the dwelling computation area, and all attic structural components including finish would be priced. It is then necessary to deduct that finish which does not exist. This is accomplished by first adjusting the unfinished square footage to the actual available area. For attics, this adjustment figure is 50%; this procedure in our example would be to multiply the 500 square feet of unfinished area by 50%, yielding 250 actual square feet. The 250 actual square feet would then be multiplied by the unfinished area cost per square foot adjustment to yield the total dollar deduction for that unfinished area. In the case of unfinished areas, the cost is not previously adjusted as with finished attic areas. It is necessary therefore to adjust the listed square footage by the 50% prior to costing.

Stated differently, the entire attic is priced as finished in order to include all structural components. Then, the amount attributable to the unfinished area is deducted. The remaining area is the actual square footage of finished attic.

ONE-HALF STORY UNFINISHED

Space is provided to enter the square footage of unfinished one-half story area. The unfinished one-half story entry is determined in the same manner as the finished one-half story, with the square footage based upon the exterior dimensions of the half-story floor.

LIVING AREAS					
570		575		580	
BSMT	____	ADD'L FLOOR	____	ATTIC UNFIN	500
FIN BSMT LIV	____	ATTIC FIN	500	½ STORY UNFIN	500
FIRST FLOOR	1000	½ STORY FIN	____	UNFIN ROOM	____
SECOND FLOOR	____				

The example above, which shows a one-and-one-half story house with 1,000 square feet of ground area and half of the upper story finished, would be listed as 1,000 square feet in the first floor area, 500 square feet in the one-half story finished area and 500 square feet in the one-half story unfinished area. The total half-story area of 1,000 square feet (500 + 500) would be transferred to the dwelling computation area, thereby pricing all half-story structural components including finish. It is then necessary to deduct that finish which does not exist. This is accomplished by first adjusting the unfinished square footage to the actual usable area. For one-half stories, this adjustment figure is 75%. This procedure in our example would be to multiply the 500 square feet of unfinished area by 75%, yielding 375 square feet. The 375 actual square feet would then be multiplied by the unfinished area cost per square foot adjustment to yield the total dollar deduction for that unfinished area. In the case of unfinished areas, the cost is not previously adjusted as with finished half-story areas. It is necessary therefore to adjust the listed square footage by 75% prior to costing.

Stated differently, the entire attic is priced as finished in order to include all structural components. Then, the amount attributable to the cost of finish is deducted.

UNFINISHED ROOM

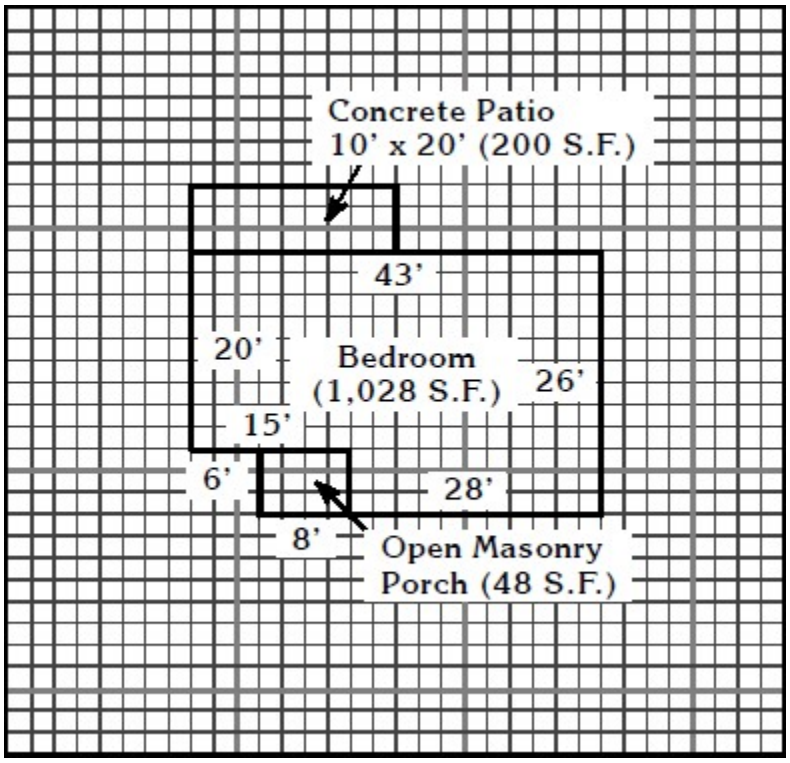
Space is provided to enter the square footage of floor area of a portion of the main living area of the subject dwelling that has been left unfinished. An example would be a room on the first floor planned for later finishing as a den, study or family room, or a room on the second floor planned for later finishing as a spare bedroom. If more than one such room exists, enter the total square footage of all unfinished rooms in this field.

LIVING AREAS					
570		575		580	
BSMT	____	ADD'L FLOOR	____	ATTIC UNFIN	____
FIN BSMT LIV	____	ATTIC FIN	____	½ STORY UNFIN	____
FIRST FLOOR	____	½ STORY FIN	____	UNFIN ROOM	____
SECOND FLOOR	____				

SKETCH AREA

Space is provided to record a sketch of the principal building(s). The sketch should consist of a plan view showing the main portion of the structure along with any significant attached additions such as porches, etc. All components should be identified by the proper abbreviations or symbols, and the exterior dimensions and square foot area shown for each.

Example:



DWELLING COMPUTATIONS

The following is a step-by-step explanation of the general application of the residential dwelling pricing ladder utilizing the cost tables from this manual.

1. Enter the type of wall construction and square foot area for each floor level in the columns provided. Be sure to enter the total of finished and unfinished areas for attics and half stories.

2. Select the Square Foot Cost amounts from the cost tables of this manual for each level based on exterior wall construction and square foot area and enter the amount in the appropriate value entry.

3. Add the value amounts obtained from the cost schedules for the following finished areas:

   A. First Floor

   B. Second Floor

   C. Additional Floor

   D. One-half Story

   E. Attic

   and enter the total in the base price area provided.

   Note: The values above are taken from the cost table section of this manual. At this point, this figure implies that all areas above the basement are finished. Adjustments for unfinished areas are now necessary.

4. Unfinished Area: enter the floor square footage of unfinished areas—unfinished room, ½ story unfinished and attic unfinished; adjust the unfinished area by the appropriate factor and sum the square footages for each; multiply the sum by the cost per square foot of unfinished area (square foot cost taken from the cost table of this manual); and enter the total as a negative adjustment in the unfinished value area provided.

5. Basement Adjustment: Space is provided to calculate the net basement adjustment when the size of the basement does not correspond to the first floor living area of the dwelling. Enter the actual basement, crawl and first floor area in the space provided. From the basement cost schedule, enter the appropriate dollar amount of each item as indicated in the examples below. Then total the column. This can be either a positive (+) or negative (–) adjustment, which is entered in the net basement adjustment area provided.

   Example A: Full Crawl Area

   An example of this pricing procedure is a dwelling with a 1,000-square-foot floor area and a full crawl space. The basement adjustment area would be tested as follows:

Basement Area	0	= +
Crawl Area	1,000	= +
First Floor Area	1,000	= –
Net Basement Adjustment		= –

Example B:

This example has 1,000 square feet of first floor area with a 500-square-foot crawl and 500-square-foot basement. The basement adjustment area would be listed as follows:

Basement Area	500	=	+
Crawl Area	500	=	+
First Floor Area	1,000	=	–
Net Basement Adjustment		=	–

Note: Dwellings with full basements require no adjustments.

6. Enter the square footage of finished basement living area and the price per square foot of finished basement living area (from the cost schedules) if applicable. Compute the cost and enter the amount in the area provided.

7. If the dwelling has no central heating system or if it does have central air conditioning, enter the total square footage of living area and select the appropriate amount (from the cost schedules) for the required adjustment. Be certain to adjust the ½ story finished living area (as listed) by 75% and the finished attic area (as listed) by 50% prior to summing the living area for the adjustment.

   Note: This can be either a positive or negative adjustment.

8. Enter the total number of plumbing fixtures. Subtract the standard complement of five fixtures. Multiply the remaining number of fixtures times the value per fixture (taken from the cost schedules of this manual) and enter the product in the plumbing value space provided.

   Note: This can be either a positive or negative adjustment.

9. Enter the amount of the total other features value in the area provided.

10. Enter the amount of the total attachment value in the area provided.

11. Add the value amounts of the following:

    A. Base Price

    B. Unfinished Area

    C. Basement Adjustment

    D. Finished Basement Living Area

    E. Heating/Air Conditioning

    F. Plumbing

    G. Total Other Feature Amount

    H. Total Attachment Amount

    and enter the total in the adjusted base price area provided.

12. Enter the appropriate quality grade factor and multiply the quality grade factor times the adjusted base price; enter the result in the area provided.

13. If applicable, enter the Cost and Design Factor and multiply that factor times the graded value; enter the result in the area provided.

14. Enter the appropriate local modifier, multiply the local modifier times the last previous entry in the pricing ladder and enter the Replacement Cost New in the area provided.

15. Enter the appropriate CDU rating (from the dwelling percent good table) in the area provided and multiply the Replacement Cost New times the CDU rating, entering the result in the Replacement Cost New Less Depreciation area provided.

16. If applicable, enter the total Replacement Cost New Less Depreciation from the Other Building Improvements section in the area provided. (Other Building Improvements are addressed in another section.)

17. If applicable, enter the total Market Value from the Gross Building Summary in the area provided.

18. Then total the following value amounts:

    A. Replacement Cost New Less Depreciation of the dwelling

    B. Replacement Cost New Less Depreciation of the Other Building Improvements

    C. Market Value of Gross Building Summary and enter the total for the Total Improvement Value in the space provided.

SIDE 3: OTHER BUILDING IMPROVEMENTS, ADDITIONAL OTHER FEATURES AND ATTACHMENTS, AND APARTMENT DATA

OTHER BUILDING IMPROVEMENTS

This section provides guidelines for collecting and recording characteristics of additional structures which affect property value.

STRUCTURE TYPE CODES

Refers to a category of improvements such as pools, sheds, etc. The structure type code, therefore, stands for the overall structure itself and is made up of three parts. The first character stands for the overall property component with which the structure is associated.

R = Residential

A = Agricultural

The second character in the structure type code stands for the structural category of the improvement. There are many of these, and several examples are listed below.

G = Garage

S = Shed

P = Pool

The third character is numeric and distinguishes one type of structure from another within the same category. Two examples are listed below.

Structure Type Code	1st Character Meaning	2nd Character Meaning	3rd Character Meaning
RGl	Residential	Garage	Frame or CB
RG2	Residential	Garage	Brick, Stone or Log
RG3	Residential	Garage	Pole Frame

QUANTITY

This item refers to the number or quantity of like structures being listed.

CONSTRUCTION

This category refers to the general construction of the item being listed. Circle the appropriate construction type.

F - Denotes Frame/Concrete Block Construction.

M - Denotes Masonry/ Brick/ Stone/ Log Construction.

P - Denotes Pole Frame Construction

O - Denotes Construction other than Frame or Masonry. An example would be a fiberglass pool.

YEAR

This entry refers to the year the item was constructed.

SIZE

Enter either the square foot area or the dimensions (width and length) of the item.

Space is provided to enter the square foot area of the item (up to 999,999 square feet). The square footage should be entered to the right.

To enter the dimensions, space is provided to enter the width or diameter, a multiplication symbol (X), and the length or height of the item. The multiplication symbol should be entered on the third character position from the left (within the two vertical hash marks).

GRADE

Space is provided to enter the quality grade of the item.

Note: Refer to the cost schedule section of this manual for applicable grades.

RATE

Space is provided to enter dollar and cent positions to denote the pricing rate utilized from the cost schedules for the item(s).

MODIFICATIONS

This topic refers to an addition or deduction to modify the cost complement to match the base specification. Modifications should only be utilized for the specific structure(s) intended. If more than one modification is necessary for a specific structure, they should be noted in the memorandum, totaled and the combined total dollar value modification listed in the Other Building Improvements under modifications.

SPECIAL MODIFICATIONS

This area refers to a special modification made to the cost component from the base specifications. Special modifications are also identified by three-character codes, similar to the structure codes. The difference between using special modification codes as opposed to structure type codes is that a special modification code necessitates a separate line entry immediately below the structure type code being modified. Other items necessary to describe the special modification must also be entered to allow for proper processing of the modification to an indication of value.

Note: Special modification codes should only be utilized for the specific structures intended.

LOCAL MODIFIER

Space is provided to enter the appropriate local modifier utilized in the jurisdiction.

REPLACEMENT COST NEW (RCN)

Space is provided to enter the calculated replacement cost new of the item(s) after application of the local modifier. Replacement cost new is defined as the current cost of replacing the improvement with a substitute improvement of equal utility.

CONDITION (COND.)

Space is provided to enter one (1) alpha character denoting the overall condition of the item. Enter “E” for excellent, “G” for good, “A” for average, “F” for fair, “P” for poor, and “U” for unsound.

PERCENT (%) GOOD

Space is provided to enter the percent good of the improvement being described. Percent good is defined as the resultant estimate of the diminishing value of an improvement after subtracting the amount of estimated depreciation from the Replacement Cost New. For example: a structure which is estimated to be 45 percent depreciated as of a given time has a percent good of 55. Therefore, depreciation and percent good are complements of each other.

Note: For further explanation, refer to the Percent Good tables in this manual.

OBSOLESCENCE/MARKET ADJUSTMENT (OB/MA)

This area refers to the resultant value after deduction of functional obsolescence and deduction or addition of a market adjustment factor, expressed as a percentage.

Note: If this entry is utilized, it will function as a deduction or addition to the resultant value generated from the percent good entry.

REPLACEMENT COST NEW LESS DEPRECIATION (RCNLD)

This topic refers to the resultant value of the improvement after deduction of all forms of depreciation and/or the deduction or addition of a market adjustment factor.

To further explain the concept of Other Building Improvements, the following examples are provided:

RESIDENTIAL

1. Detached brick garage, 22' x 24'.
2. Metal utility shed, 12' x 20'.
3. Reinforced concrete pool, 16' x 32', with electric heating, a diving board and four underwater lighting fixtures.

OTHER BUILDING IMPROVEMENTS															
	TYPE CODE	QUAN	CONST.	YEAR BUILT	SIZE	G	HGT	RATE	MODIFICATIONS	LM	RCN	COND	% GOOD	OB/MA	R C N L D
701	RG2	1	F(M)PSO	1990	528	C				.980		A	75		
702	RS2	1	FMPS(O)	1985	12 x 20					.980		F	30		
703	RP3	1	F(M)PSO	1995	16 x 32					.980		A	35		
704	SP1	1	FMPSO	1995						.980			35		
705	SP3	4	FMPSO	1995						.980			35		
706			FMPSO							.					
707			FMPSO							.					
708			FMPSO							.					
709			FMPSO							.					
710			FMPSO							.					

Note: For the reinforced concrete swimming pool, it is necessary to adjust the rate per square foot price to accommodate the modification adjustment for electric heating.

Note: For the special modifications of a diving board and underwater lighting fixtures, it is only necessary to enter the type code, quantity of each, Replacement Cost New after application of the local modifier, percent good (same as the base structure type being described) and Replacement Cost New Less Depreciation.

RESIDENTIAL OTHER BUILDING IMPROVEMENT CODES

RESIDENTIAL CARPORTS AND GARAGES STRUCTURE TYPE CODES

RC1 – Carport . . . . . SF
RC2 – Canopy . . . . . SF
RC3 – Driveway, concrete . . . . . SF
RC4 – Driveway, asphalt . . . . . SF
RC5 – Driveway, gravel . . . . . SF
RG1 – Frame or concrete block detached garage. . . . . SF
RG2 – Brick, stone or log detached garage. . . . . SF
RG3 – Pole frame detached garage . . . . . SF

RESIDENTIAL POOLS STRUCTURE TYPE CODES

RP1 – Plastic liner pool . . . . . SF
RP2 – Prefabricated vinyl pool . . . . . SF
RP3 – Reinforced concrete pool . . . . . SF
RP4 – Fiberglass pool . . . . . SF
RP5 – Gunite pool . . . . . SF

RESIDENTIAL POOLS MODIFICATION CODES

1. No filter
2. Gas or propane heating
3. Electric heating

RESIDENTIAL POOLS SPECIAL MODIFICATION CODES

SP1 – Diving board . . . . . QTY
SP2 – Chrome or steel ladder . . . . . QTY
SP3 – Underwater lighting . . . . . QTY

RESIDENTIAL SHEDS STRUCTURE TYPE CODES

RS1 – Frame utility shed . . . . . SF
RS2 – Metal utility shed . . . . . SF

GROSS BUILDING SUMMARY & TOTAL OTHER IMPROVEMENTS

This section is provided to list, price and summarize all buildings (improvements) other than those processed in DWELLING DATA and/or OTHER BUILDING IMPROVEMENTS. The data is entered into a series of columns allowing one line per item. The column entries are as follows:

ID

This refers to an alpha or numeric item identifier as it appears in the sketch.

USE

This entry refers to the present use of the item, i.e., tennis court, cabana, etc.

CONSTRUCTION

This refers to the story height and exterior wall construction of the item.

GRADE

This topic refers to the Quality Grade of the subject item.

AGE

Erected refers to the year the item was originally constructed; remodeled refers to the date of the last extensive remodeling—i.e., remodeling which significantly altered the "effective age" of the item.

Note: If the year is estimated, it should be followed by a plus and/or minus sign, i.e., 1932+/–, 1900–, etc.; if the year submitted by the owner is questionable, it should be followed by a question mark, i.e., 1932?

SIZE

This refers to the dimensions, square foot area or volume of the item.

RATE

This is the unit value to be applied to the size in order to compute the Replacement Cost New of the item.

LOCAL MODIFIER

This item refers to the local modifier to be used in calculating the Replacement Cost New of the item.

REPLACEMENT COST NEW

This term refers to the current cost of replacing the item with a substitute item of equal utility.

CONDITION (COND.)

Space is provided to enter the overall condition of the item. Enter "E" for excellent, "G" for good, "A" for average, "F" for fair, "P" for poor and "U" for unsound.

PERCENT GOOD

This concept refers to the resultant value after deduction of physical depreciation from Replacement Cost New, expressed as a percentage.

OBSOLESCENCE/MARKET ADJUSTMENT

This term refers to the resultant value after deduction of functional obsolescence and deduction or addition of a market adjustment factor, expressed as a percentage.

MARKET VALUE

This refers to the actual value of the item.

TOTAL OTHER IMPROVEMENTS

Space is provided to enter a general description of the item or items described in the Gross Building Summary. All "Improvement Market Values" shown in the Summary should be totaled and entered in the area provided, denoting the total market value of all improvements other than those processed in the DWELLING Data and/or OTHER BUILDING IMPROVEMENT DATA.

PERSONNEL DATA

Space is provided to enter the name or number and the date of the person measuring, listing, calculating and reviewing the property data.

ADDITIONAL OTHER FEATURES

See the instructions for other features entries on Page 2 of the property record card.

ADDITIONAL ATTACHMENTS

See the instructions for attachments entries on Page 2 of the property record card.

APARTMENT DATA

See “Apartments, 2 to 7 units” in this manual for apartment data listing instructions.

NOTATIONS AND PHOTOGRAPH

Space is provided for any notations pertinent to the subject property. Space is also provided to attach a photograph of the subject property.

SIDE 4: OWNERSHIP, PARCEL IDENTIFICATION AND LAND DATA

OWNERSHIP

BUILDING PERMIT RECORD

Space is provided to record building permit data as required. The data entered in this section should include: the issuance date of the permit, the appropriate permit number and the amount and purpose of the permit. This data is useful in the valuation process—i.e., determining remodeling, new construction of building additions, etc.

PROPERTY IDENTIFICATION

The upper right hand portion of the Property Record Card is reserved for entering the parcel identification information utilized by the taxing jurisdiction. Property identification must be entered for each parcel. The property identification will be the key to establishing a file of all property and is utilized for file maintenance.

MAP NUMBER

Space is provided to enter the alpha and/or numeric characters used to denote the division of properties generally defined on an individual tax map.

ROUTING NUMBER

Character positions are provided to enter three numeric characters ranging from 001 to 999 to the left of the vertical hash mark and two numeric characters ranging from 01 to 99 to the right of the vertical hashmark denoting a sequential routing number assigned to each parcel of property. The character positions to the right of the hashmark are provided to facilitate the identification of property splits, the first split from a property being identified as 01, the second as 02, etc.

Note 1: This entry should be utilized when a jurisdiction's mapping system is deemed inadequate to account for all parcels and/or inadequate to facilitate an easy property by property inspection of all parcels.

Note 2: For parcels requiring multiple card listing, the same routing number must be entered on each card.

CARD NUMBER

Character positions are provided to enter two sets of two numeric characters each. The last two positions are reserved to enter the total number of cards required to list the parcel, and the first two positions are reserved to enter the sequential number assigned to each particular card: i.e., for parcels requiring one card, enter 01 of 01; for parcels requiring two cards, enter 01 of 02 on the first card and 02 of 02 on the second card; for three cards, 01 of 03,02 of 03, and 03 of 03, etc., up to 01 of 99 and 99 of 99. For record-keeping purposes, a card number should be entered on every card.

When listing a parcel requiring multiple cards, it is generally necessary for the data collector to insert the additional card(s) in the field. The owner's name and the permanent parcel identification data, along with any other information specified, should be entered on each of the additional cards.

NEIGHBORHOOD

Character positions are provided to enter three numeric characters ranging from 001 to 999 to the left of the vertical hash mark to denote a specific neighborhood identification number. A character position is provided to the right of the vertical hash mark to enter an additional digit, 1 to 9, to denote the creation of a sub neighborhood within a neighborhood subsequent to the initial neighborhood delineation. For example: Neighborhood 200 is being redefined as Neighborhood 200/1 and 200/2. If the subject property's neighborhood identification number does not include the sub neighborhood, simply leave it blank. A neighborhood may be defined as a geographical area exhibiting a high degree of homogeneity in residential amenities, land use, economic trends, and housing characteristics, such as structural quality, age and condition.

LAND USE

Character positions are provided to enter a three-digit numeric code denoting the present use of each particular parcel of land. A land use code should be entered on all cards. In the case of multiple uses on the same parcel, enter the land use code which is predominant. If multiple cards are used to list the parcel, enter the land use code which is most representative of the improvements listed on that particular card.
Note: Appropriate land use codes may be found in the appendix of this manual.

LIVING UNITS

Three character positions are provided to denote the number of living units which exist in the subject dwelling. Enter the number of living units.

A living unit is defined as any room or group of rooms designed as the living quarters of one family or household, equipped with cooking and toilet facilities and having an independent entrance from a public hall or from the outside.

Note: A single-family residence contains one (1) living unit.

ZONING

Character positions are provided to enter up to six alpha and/or numeric characters denoting "local" zoning symbols. A bracket is provided to enter a check mark [✓] to denote that the property does not conform to local zoning regulations.

PROPERTY LOCATION

Twenty–four character positions are provided to enter alpha and numeric characters denoting the existing property address. This may include any combination of street number, street direction, and street name. If there is no street number, leave this space blank. Always enter street, road, or route number in the street name area.

Note: The property address is not necessarily the same as the mailing address.

SALES DATA

TRANSFER OF OWNERSHIP

Space is provided to record ownerships which are subsequent to the present ownership. The data entered in this section should include the name or names of the grantee, the conveyance, and the volume and page number identifying where the original transfer document is recorded.

Space is provided to enter the data for three sales. The data is arranged in vertical columns. All the data should be listed in order of occurrence, allowing one line for each sale.

DATE

Character positions are provided to enter the number of the month and the last two digits of the year of the sale.

UNIQUE SALES NUMBER

Space is provided to enter the five-digit unique sales number assigned to the real estate transfer form by the Department of Revenue.

TYPE

This entry refers to the distinction between a type of sale involving LAND ONLY as opposed to a sale involving both LAND & BUILDINGS. Enter the numeric code which is representative of the sale.

Enter 1: LAND to indicate that the sale involved land only.

Enter 2: LAND & BUILDINGS to indicate that the sale involved both land and buildings.

Note: For building only sales on leased land, enter 2.

SALE PRICE

Space is provided to enter the sale price.

SOURCE

The category refers to the source of the sales data entered in this section. Enter the numeric code which is representative of the source.

Enter 1 BUYER to indicate that the information was obtained from the grantee, or buyer.

Enter 2 SELLER to indicate that the information was obtained from the grantor, or seller.

Enter 3 FEE to indicate that the information was obtained from conveyance fee, or similar transfer records.

Enter 4 AGENT to indicate that the information was obtained from an agent representing the current owner.

SALES VALIDITY CODES

This entry refers to the verification of available sales data. Enter the numeric code which is most representative of the validity of the sale.

Enter 1 to indicate that the sale can be considered a valid “arm’s length” transaction for validity purposes.

Enter 2 to indicate that the sale involved more than one parcel.

Enter 3 to indicate that the property was not exposed to the open market or that the marketing time on the property could be considered abnormal.

Enter 4 to indicate that either one or both of the parties in the transaction were acting under any form of duress or coercion.

Enter 5 to indicate that the highest and best use of the property has changed since the sale or that construction and/or demolition of improvements has taken place after the transaction occurred.

Enter 6 to indicate that the parties of the transaction were either related or individuals of corporations.

Enter 7 to indicate that the cause of the transaction was either a liquidation of assets or a foreclosure of a mortgage.

Enter 8 to indicate that the sale involved abnormal financing or that the transaction was a land contract arrangement.

Enter 9 to indicate that the sale included an excessive amount of personal property or any other situation that would make the sale not an “arm’s length” transaction.

Note: All of the sales data fields are required if a sales entry is made.

LAND DATA & COMPUTATIONS

There are five categories of land entries: NONE, LOTS, SQUARE FEET, ACREAGE and GROSS. Each category is designated by a descriptor. The descriptors are N, L, S, A and G, respectively.

Each category comprises a number of coded land type descriptions, such as Primary Site, Secondary Site, etc.

Each entry is preceded by a descriptor. In the same column, immediately following the descriptor, is a space to enter the code number of the land type (within the category) involved in that particular entry. As an example, a regular lot would have a descriptor of L and a code entry of 1 to indicate a regular lot as in the sample entry below.

LAND DATA & COMPUTATIONS										
NONE	300	N ___	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
LOTS 1 Regular lot 2 Rear lot 3 Apartment site 4 Waterfront	301	L ___	176.5	177	150	___ ___ | 400	1.06	___ [ ] ___	___	75,048
	302	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	
	303	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	
	304	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	
SQUARE FEET 1 Primary site 2 Secondary site 3 Residual 4 Waterfront	311	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___.___	Influence Factors 1 Unimp 2 Exc Fr 3 Topo 4 Shape or Size 5 Econ Misimp 6 Restric Noncon 7 Land Locked 8 Corner Alley (+) 9 View (+)	___ [ ] ___	___	
	312	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___.___		___ [ ] ___	___	
	313	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___.___		___ [ ] ___	___	
ACREAGE 1 Homesite 2 Tillable 3 Pasture 4 Woodland 5 Undev 6 Primary site 7 Secondary site 8 Residual 9 Waterfront 0 Other	321	A ___	___.___ ___ ACRES		PROD RTG ___ ___	___ ___ | ___		___ [ ] ___	___	
	322	A ___	___.___ ___ ACRES		___ ___	___ ___ | ___		___ [ ] ___	___	
	323	A ___	___.___ ___ ACRES		___ ___	___ ___ | ___		___ [ ] ___	___	
	324	A ___	___.___ ___ ACRES		___ ___	___ ___ | ___		___ [ ] ___	___	
	325	A ___	___.___ ___ ACRES		___ ___	___ ___ | ___		___ [ ] ___	___	
	326	A ___	___.___ ___ ACRES		___ ___	___ ___ | ___		___ [ ] ___	___	
GROSS 1 Irregular lot 2 Site value 3 Residual 4 Waterfront 0 Minus R.O.W.	330	G ___	___ ___ ___ | ___ ___ ___ | ___ ___ ___				SUMMARY OF VALUES			
							TOTAL VALUE LAND			
							TOTAL VALUE BUILDING			
							TOTAL VALUE LAND & BLDGS			

NONE

Use this field for computations on sales involving no land. Enter the code number 0.

LOTS

Use this field for all Lot and Apartment Site computations. Enter the proper code number (1 to 4 inclusive). Complete the remaining corresponding areas as indicated below. Space is provided for four (4) entries.

REGULAR, REAR, WATERFRONT

Enter the code number 1, 2 and/or 4. Complete the corresponding areas of each entry—actual frontage, effective frontage, effective depth, actual unit price (price per front foot) and depth factor expressed as a percent.

Note: Refer to the appendix of this manual for depth factor tables. Land Computations are based on the following:

Effective Frontage x Actual Unit Price x Depth Factor = Land Value

Note: Effective frontage and effective depth are determined by applying the lot sizing procedures found in the appendix of this manual.

Note: All character positions in actual frontage, effective frontage and effective depth should be filled in for more effective record keeping.

LAND DATA & COMPUTATIONS										
NONE	300	N ___	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
LOTS 1 Regular lot 2 Rear lot 3 Apartment site 4 Waterfront	301	L 1	176.5	177	150	___ ___ | 400	1.06	___ [ ] ___	___	75,048
	302	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	
	303	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	
	304	L ___	___.___	___	___	___ ___ | ___		___ [ ] ___	___	

SQUARE FEET

Use this part of the form for square foot computations. Enter the proper code number (1 to 4 inclusive). Complete the remaining corresponding areas—square foot size and unit price. Space is provided for three entries. If additional entries are required, use an additional property record card.

Land computations are based on the following:

Square Footage x Actual Unit Price = Land Value

LAND DATA & COMPUTATIONS										
NONE	300	N ___	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
SQUARE FEET 1 Primary site 2 Secondary site 3 Residual 4 Waterfront	311	S 2	___ I ___ 2 0 I 0 0 0 SQ FT			___ ___ 2 • 4 0	Influence Factors 1 Unimp 2 Exc Fr 3 Topo	3 4 [ ] 2 0	___ ___ ___	38,400
	312	S ___	___ I ___ ___ ___ I ___ ___ ___ SQ FT			___ ___ ___ • ___ ___		___ ___ [ ] ___ ___	___ ___ ___	
	313	S ___	___ I ___ ___ ___ I ___ ___ ___ SQ FT			___ ___ ___ • ___ ___		___ ___ [ ] ___ ___	___ ___ ___	

ACREAGE

Use for acreage computations. Enter the proper code number (0 to 9 inclusive). Complete the remaining corresponding areas—acreage size, productivity rating and unit price. Space is provided for six entries. If additional entries are required, use an additional property record card.

Land computations are based on the following:

Acreage x Actual Unit Price = Land Value

LAND DATA & COMPUTATIONS										
NONE	300	N ___	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
ACREAGE 1 Homesite 2 Tillable 3 Pasture 4 Woodland 5 Undev 6 Primary site 7 Secondary site 8 Residual 9 Waterfront 0 Other	321	A 5	___ 1 • 2 5 ACRES		PROD RTG ___ ___	___ ___ I 5 0 0	4 Shape or Size 5 Econ Misimp 6 Restric Noncon 7 Land Locked 8 Corner Alley (+) 9 View (+)	___ ___ [ ] ___ ___	5 1 2	625
	322	A ___	___ ___ • ___ ___ ACRES		___ ___	___ ___ I ___ ___ ___		___ ___ [ ] ___ ___	___ ___ ___	
	323	A ___	___ ___ • ___ ___ ACRES		___ ___	___ ___ I ___ ___ ___		___ ___ [ ] ___ ___	___ ___ ___	
	324	A ___	___ ___ • ___ ___ ACRES		___ ___	___ ___ I ___ ___ ___		___ ___ [ ] ___ ___	___ ___ ___	
	325	A ___	___ ___ • ___ ___ ACRES		___ ___	___ ___ I ___ ___ ___		___ ___ [ ] ___ ___	___ ___ ___	
	326	A ___	___ ___ • ___ ___ ACRES		___ ___	___ ___ I ___ ___ ___		___ ___ [ ] ___ ___	___ ___ ___	

PRODUCTIVITY RATING

The Department of Revenue will provide, on request, the productivity ratings and instructions in their use, to counties with detailed soil surveys.

GROSS

Use to 1) site value Irregular Lots, Residual Land, Waterfront and any other such sites for which you cannot or do not wish to show computations; or 2) make a gross value deduction for utility, rights of way and other similar property obstructions, (code 0). Enter the proper code number. Enter the gross sound value. Space is provided for one entry.

Note: The total gross value in this entry should be added to or deducted from the other land entries in arriving at the total Land Value. Codes 1 to 4 inclusive can be used without other

land entries. However, accurate record keeping is lost when this field is used as the only land entry. Therefore, it should be utilized with discretion. Code 0 can only be used with other land entries, and providing that the total amount deducted does not exceed the sum of the other entries. In the following example, the total value of the land is the sum of the four entries described.

LAND DATA & COMPUTATIONS

NONE	300	N	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
LOTS 1 Regular lot 2 Rear lot 3 Apartment site 4 Waterfront	301	L 1	176.5	177	150	200	1.06	[ ]		75,048
	302	L						[ ]		
	303	L						[ ]		
	304	L						[ ]		
SQUARE FEET 1 Primary site 2 Secondary site 3 Residual 4 Waterfront	311	S 2	20 000 SQ FT			2.40	Influence Factors 1 Unimp 2 Exc Fr 3 Topo	34 [ ] 20		38,400
	312	S	SQ FT					[ ]		
	313	S	SQ FT					[ ]		
ACREAGE 1 Homesite 2 Tillable 3 Pasture 4 Woodland 5 Undev 6 Primary site 7 Secondary site 8 Residual 9 Waterfront 0 Other	321	A 5	1.25 ACRES	PROD RTG		500	4 Shape or Size 5 Econ Misimp 6 Restric Noncon 7 Land Locked 8 Corner Alley (+) 9 View (+)	[ ]	512	625
	322	A	ACRES					[ ]		
	323	A	ACRES					[ ]		
	324	A	ACRES					[ ]		
	325	A	ACRES					[ ]		
	326	A	ACRES					[ ]		
GROSS 1 Irregular lot 2 Site value 3 Residual 4 Waterfront 0 Minus R.O.W.	330	G 1				2000				

SUMMARY OF VALUES	
TOTAL VALUE LAND	116,073
TOTAL VALUE BUILDING	
TOTAL VALUE LAND & BLDGS	

INFLUENCE FACTORS

Each land entry, with the exception of the “Gross” entry, provides two character positions for entering up to two, separate one-digit influence factor codes, a bracket in which to enter either a plus or minus symbol, and two character positions to enter the corresponding influence factor as a percentage to be added to (plus) or deducted from (minus) the calculated land value for each entry. Up to two (any combination of two) influence factors may be used with each entry. In entries where a single factor is used, enter the factor in the first character position to the left and leave the second character position blank.

Enter 1 [-] to indicate comparative value loss attributable to a lack of improvements.

Enter 2 [-] to indicate comparative value loss attributable to excessive frontage in relation to utility.

Enter 3 [-] to indicate comparative value loss attributable to topographical features.

Enter 4 [-] to indicate comparative value loss (over and above the adjustment considered in lot sizing procedures) attributable to the shape or size of the lot in relation to its utility.

Enter 5 [-] to indicate comparative value loss attributable to economic misimprovement (either underimprovement or overimprovement) of the site.

Enter 6 [-] to indicate comparative value loss attributable to restrictions regulating its use.

Enter 7 [-] to indicate comparative value loss attributable to the site being land-locked.

Enter 8 [+] to indicate comparative value- enhancement attributable to corner and/or alley influence.

Enter 9 [+] to indicate comparative value enhancement attributable to the capability of the site to provide an appealing and desirable view.

LAND DATA & COMPUTATIONS										
NONE	300	N ___	ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
LOTS 1 Regular lot 2 Rear lot 3 Apartment site 4 Waterfront	301	L 1	10.0	100	150	400	.82	9 [+] 20		39,360
	302	L 1	176.5	177	150	150	1.06	1 [-] 15		23,922
	303	L ___	___.__	___	___	___		[ ] ___		
	304	L ___	___.__	___	___	___		[ ] ___		

The example shows that the first land entry was enhanced twenty percent because it had a great view; the second entry indicates a fifteen percent loss due to lack of sewer and water.

LAND USE CODE

Character positions are provided to enter a three-digit numeric code denoting the present use of each entry of land that deviates or is an exception to the predominant land use code entered in field 102—Land Use. If no entry is necessary, simply leave the field blank.

Note: Refer to the appendix of this manual for the appropriate land use codes.

PROPERTY FACTORS

TOPOGRAPHY

This entry refers to the topographical features of the subject property. Seven alternatives are provided. Enter a checkmark [✓] in the space provided to the immediate right of the numerical code which is most representative of the subject property. Only one code maybe checked. This code reflects the predominant topographical feature of the subject property.

Check 1 LEVEL to indicate the subject property is level to the access street.

Check 2 ABOVE STREET to indicate the property is above the street level.

Check 3 BELOW STREET to indicate that the property is below the street level.

Check 4 ROLLING to indicate the property comprises many small hills.

Check 5 STEEP to indicate the property has excessive grade as compared to the access roadway.

Check 6 LOW to indicate the property has a low terrain.

Check 7 SWAMPY to indicate wet, spongy land, marsh or bog.

Additional topographical features may be indicated by writing in the left hand margin the percentage of the total parcel represented by each feature. As the sample below shows, the major topography of the parcel is level, indicated by the check mark after the numeric identifier of 1 for level. The left hand margin shows the percentage entries: 60% is level, 20% is rolling and 20% is swampy.

400			
	TOPOGRAPHY		
60%	LEVEL	1	✓
	ABOVE STREET	2	
	BELOW STREET	3	
20%	ROLLING	4	
	STEEP	5	
	LOW	6	
20%	SWAMPY	7	

UTILITIES

This topic refers to services which are available to the property. These can be private or public. Six alternatives are available, and any number of codes may be checked. Enter a checkmark [✓] in the space provided to the immediate right of the numerical codes which are most representative of the subject property.

Check 1 ALL PUBLIC to indicate all public utilities to include water, sewer, gas and electric are available.

Check 2 PUBLIC WATER to indicate public water is available to the property.

Check 3 PUBLIC SEWER to indicate public sewer is available to the property.

Check 4 GAS to indicate that natural gas is available to the property.

Check 5 WELL to indicate that the only water available to the property is a private well.

Check 6 SEPTIC to indicate only private sewer (septic tank) is available to the property.

Note: If code 1 is checked, no other code or combination of codes should be checked.

STREET OR ROAD

This category refers to the primary fronting street or the street providing the most immediate access to the subject property and the features which exist at the property. Enter a checkmark [✓] in the space provided to the immediate right of the numerical codes which are representative of the subject property. Six (6) alternatives are provided. Only one (1) entry should be made for codes 1 through 5.

Check 1 PAVED to indicate concrete, blacktop, or a comparably surfaced street.

Check 2 SEMI–IMPROVED to indicate a gravel or comparably semi-improved street.

Check 3 UNPAVED to indicate an existing street or road which has no surface improvements.

Check 4 PROPOSED to indicate that a street or road does not actually exist but is planned (and approved) for the future. This is commonly referred to as a paper road.

Check 5 LANDLOCKED to indicate a property without access to any type of street or road.

Check 6 SIDEWALK to indicate the presence of a paved sidewalk available for public use.

DWELLING SETBACK

This topic refers to the amount of setback (in feet) from which a dwelling is separated from its primary fronting street or most immediate access way, and its relationship to other dwellings in the neighborhood. Three (3) alternatives are provided. Enter a check mark [✓] in the space provided to the immediate right of the numerical code which is most representative of the subject property. Only one (1) code should be checked.

Check 1 MORE THAN NEIGHBORHOOD AVERAGE to indicate that the subject dwelling is situated significantly farther back from its primary fronting street when compared with others in the neighborhood.

Check 2 SAME AS NEIGHBORHOOD AVERAGE to indicate that there is no significant difference in the setback of the dwelling when compared with others in the neighborhood.

Check 3 LESS THAN NEIGHBORHOOD AVERAGE to indicate that the subject dwelling is located significantly closer to its primary fronting street when compared with others in the neighborhood.

Note: If the property has no dwelling, leave this entry blank.

FRONTING TRAFFIC

This subject refers to the volume of vehicular traffic on the street fronting the subject property. Five (5) alternatives are provided. Enter a checkmark [✓] in the space provided to the immediate right of the numerical code which is most representative of the subject property. Only one (1) code should be checked.

Check 1 LIGHT to indicate a negligible volume of traffic, peaking at a level which is typical of residential neighborhood ingress and egress and causing no significant degree of traffic hazards and nuisance.

Check 2 MEDIUM to indicate a significant volume of traffic comparable to that found on main inter-neighborhood thoroughfares, and causing some degree of traffic hazards and nuisance.

Check 3 HEAVY to indicate a heavy volume of traffic comparable to that found on main ingress and egress arteries connecting residential neighborhoods to primary centers of activity, and causing a significant degree of traffic hazards and nuisance.

Check 4 NONE to indicate no traffic.

Check 5 CUL-DE-SAC to indicate a street open at one end only, having an enlarged turnaround area at the enclosed end.

OWNERSHIP

This issue involves the type of present ownership of the subject property. Nine (9) alternatives are available. Enter a check mark [✓] to the right of the numerical code which is most representative of the subject property. Only one code should be checked.

Check 1 PRIVATE if the property is privately owned by an individual or individuals.

Check 2 CITY if the property is owned by the city government.

Check 3 COUNTY if the property is owned by the county government.

Check 4 STATE if the property is owned by the state government.

Check 5 FEDERAL if the property is owned by the federal government.

Check 6 RELIGIOUS if the property is owned by a religious organization.

Check 7 FRATERNAL if the property is owned by a fraternal organization.

Check 8 UTILITY if the property is owned by a public utility company.

Check 9 PUBLIC SERVICE if the property is owned by a public service organization.

ENTRANCE CODES

This field refers to the type and ability of contact made with the occupant of the subject dwelling. Seven (7) alternatives are available. Enter the numeric code which is most representative of the type and ability of contact. Space is also provided for the responsible occupant from whom the information was obtained, to sign the Property Record Card, verifying that the property was inspected.

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The quality grade of materials and workmanship is the one most significant variables to be considered in estimating the replacement cost of a structure. Two buildings may be built from the same general plan, each offering exactly the same facilities and with the same specific features, but with widely different costs due entirely to the quality of materials and workmanship in their construction. For instance, the cost of a dwelling constructed of high-quality materials and with the best workmanship throughout can be more than twice that of one built from the same floor plan but with inferior materials and workmanship prevailing.

The schedules included in this manual have been developed to provide the appraiser with a range of grades comprehensive enough to distinguish all significant variations in the quality of materials and workmanship which may be encountered; the basic specifications for each grade as to the type of facility furnished remain relatively consistent throughout, and the primary criterion for establishing the grade is the overall quality of materials and workmanship prevailing.

The majority of buildings erected fall within a definite class of construction, involving the use of average-quality materials with average-quality workmanship. This type of construction being the most common, it can readily be distinguished by the layman as well as the professional appraiser. Consequently, better- or inferior-quality construction can be comparatively observed. The quality grading system and pricing schedules in this manual are keyed to this obvious condition; the basic grade being representative of that cost of construction using average-quality materials with average-quality workmanship. The four principal Quality Grade classifications are as follows:

Grade A . . . . . Excellent Quality

Grade B . . . . . Good Quality

Grade C . . . . . Average Quality

Grade D . . . . . Fair Quality

To cover the entire range of construction quality, two additional Quality Grade classifications must be established: AA Grade, incorporating the very best quality materials and workmanship, and E Grade, incorporating materials and workmanship of the cheapest and most inferior quality.

The six established grades or classes of quality discussed above will cover the entire range of dwelling construction from the cheapest to the finest quality. The general quality specifications for each grade follow:

AA GRADE: Buildings generally having an outstanding architectural style and design, constructed with the finest-quality materials and workmanship throughout. Superior-quality interior finish and built-in features. Deluxe heating system and high-grade plumbing and lighting fixtures.

A GRADE: Architecturally attractive buildings constructed with excellent-quality materials and workmanship throughout. High-quality interior finish and built-in features. Deluxe heating system and very good grade plumbing and lighting fixtures.

B GRADE: Building constructed with good-quality materials and above average workmanship throughout. Moderate architectural treatment. Good-quality interior finish and built-in features. Good grade heating, plumbing and lighting fixtures.

C GRADE: Buildings constructed with average-quality materials and workmanship throughout, conforming to the base specifications used to develop the pricing schedule. Minimal architectural treatment. Average-quality interior finish and built-in features. Standard grade heating, plumbing and lighting fixtures.

D GRADE: Buildings constructed with economy-quality materials and fair workmanship throughout. Void of architectural treatment. Cheap-quality interior finish and built-in features. Low grade heating, plumbing and lighting fixtures.

E GRADE: Buildings constructed with a very cheap grade of materials, usually culls and seconds, and very poor quality workmanship resulting from unskilled, inexperienced, do-it-yourself type labor. Low grade heating, plumbing and lighting fixtures.

By assigning the factor 1.00 to C Grade construction, the other factors either above or below C Grade can be illustrated as follows:

AA Grade 2.50

A Grade 1.55

B Grade 1.28

C Grade 1.00

D Grade 0.85

E Grade 0.55

In order to facilitate using this grading system, and again to promote and maintain uniformity in approach, the value relationship of grade to grade as described above has been incorporated into the development of the base specifications relating to each schedule used in the manual

Note: The appraiser must exercise extreme caution not to confuse the concepts “quality” and “condition” when selecting the proper grade. This is especially applicable to older buildings, wherein a deteriorated condition can have a noticeable effect on physical appearance. A building will always retain its initial grade of construction, regardless of its existing deteriorated condition. The Quality Grade ultimately selected must reflect that original built-in quality, and the selection of that grade cannot be influenced in any way by the physical condition of the building.

Grading would be a relatively simple process if all buildings were built to conform to the quality grade specifications outlined above. The fact is, however, that this ideal condition does not exist. It is not unusual for any conventional building to incorporate construction qualities that fall between the established grade levels. The grading system in this manual has been designed in such a way as to provide the appraiser with a method for accounting for such variations by establishing intermediate grades.

If the subject building is judged to be of a better or inferior quality compared to these actual grade levels, a grade factor of plus (+) or minus (-) should be applied; i.e., C+ would be better than a straight C Grade, B- poorer than a straight B Grade, etc.

Following these procedures results in the full range of Quality Grade Factors, which are listed below:

AA Plus (+)	**2.75**	**C Plus (+)**	**1.10**
AA	**2.50**	**C**	**1.00**
AA Minus (--)	**2.00**	**C Minus (--)**	**0.95**
A Plus (+)	**1.75**	**D Plus (+)**	**0.90**
A	**1.55**	**D**	**0.85**
A Minus (--)	**1.45**	**D Minus (--)**	**0.75**
B Plus (+)	**1.35**	**E Plus (+)**	**0.65**
B	**1.28**	**E**	**0.55**
B Minus (--)	**1.20**	**E Minus (--)**	**0.45**

Note: The quality factor ultimately selected is to represent a composite judgment of the overall Quality Grade. Generally, the quality of materials and workmanship is fairly consistent throughout the construction of a specific building; however, since this is not always the case, it is frequently necessary to weight the quality of each major component in order to arrive at the proper overall Quality Grade. Equal consideration must also be given to any attachments which are constructed of materials and workmanship inconsistent with the quality of the main building.

Note: The new Executive Residence section of this pricing manual, starting on Page 3–92, will have the appropriate pricing for these upscale dwellings. When the factor above is applied to the base dwelling pricing (Pages 3–68 to 3–73), the resulting prices can approach the Grade E executive Residence prices. If this occurs, the valuator should consider whether or not to use the price from the Executive Residence section.

Architectural fees, material quantities, labor efficiency and other factors influencing total construction costs may vary considerably from one building to another depending upon the particular design. For instance, two dwellings showing no marked difference in size or quality may still show a measurable difference in cost, attributable primarily to a difference in design.

In computing the replacement cost of any building, therefore, it is necessary to adjust the cost to account for any features varying significantly from the base specifications from which the pricing schedules were developed.

The pricing schedules included in this manual, unless otherwise specified, have been developed to reflect perimeter-to-area wall ratios of rectangularly shaped buildings, uniform eave lines and roof slopes, overhangs, ceiling heights and other architectural features most typical of conventional designs.

The adjustment for variations in design must be made by applying a Cost and Design Factor denoting a percentage adjustment of the subtotal replacement cost, i.e., apply a +5% to indicate a 5% increase in the replacement cost, apply a +10% to indicate a 10% increase, etc.

The Cost and Design Factors applicable to dwellings will normally range from 0 to 15%. However, the Cost and Design Factors applicable to special architectural designs may range considerably higher. The selection of the proper Cost and Design Factor is largely a product of the experience and sound judgment of the appraiser. The appraiser must have the ability to analyze various construction components and determine the influence of each upon the overall cost.

Dwellings constructed of the finest-quality materials and workmanship, exhibiting unique and elaborate architectural styling and treatment and having all the features typically characteristic of mansion-type homes.

FOUNDATION

Masonry walls, waterproofed; reinforced concrete footings, drain tile. Full basement.

EXTERIOR WALLS

Shake shingles; cedar or redwood siding; stucco or synthetic plaster on rigid insulation (EIFS); half timbers; bevel siding; face brick or native stone veneers; hand-hewn or oversized logs; stucco, common or face brick, stone or ashlar granite over concrete block; or solid brick. Framing will consist of 2” x 6” wood or 6” steel studs, 16” o.c., for the walls, with 1” D&M sheathing, Finest-quality solid-core exterior doors and wood, metal or vinyl windows. Three coats of exterior paint or stain. All doors and windows weather-stripped with wall insulation (see Energy Package below).

ROOF

Gable, hipped or gambrel type, heavy slate, tile, wood shingle roofing or equal. 1” D&M sheathing, 2” x 10” rafters 16” o.c., insulation, ornamental wood cornice, copper flashing, gutters and conductors.

FLOORS

Basement 4” cement floor with monolithic finish on gravel base. Upper floors -- 1” clear oak, herringbone or parquetry pattern, sanded, filled and varnished including areas with marble, tile, slate, solid vinyl and fine grade of carpet. 1” D&M subfloor or 3/4” plywood on 2” x 12” wood joist, 16” o.c. with bridging; steel girders and column supports for first floor. Attic floor and stairs not included in base price.

INTERIOR FINISH

Hardwood or enamel doors and trim throughout, excellent built-in kitchen and china cabinets, broom and linen cabinets with abundant shelving; 2” x 4” wood stud partition walls, plaster and paint on interior walls, ceiling and partitions. High-grade ornamental moldings in main rooms and high-grade hardwood paneled rooms. Tiled bathroom with high-quality shower doors, and large vanity with the highest-quality laminated plastic, ceramic tile or marble countertops.

HEATING

Forced warm air, steam, vapor, hot water, radiant or equal with thermostatic controls. Automatic fired furnace or boiler. Exhaust fans in kitchen and bathroom.

PLUMBING

Fine-grade vitreous fixtures, copper piping, one bathroom with shower outlet over tub, kitchen sink, water heater.

LIGHTING

Electric lighting, conduit wiring, fine-grade fixtures throughout.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Modern Multi-story_ Grade AA

RESIDENCE - Modern Multi-story _Grade AA

Dwellings constructed of excellent-quality materials and workmanship, exhibiting outstanding architectural styling and treatment and having an abundance of built-in features. Architect designed and supervised homes would normally fall into this classification.

FOUNDATION

Masonry walls, waterproofed; concrete footings, drain tile. Full basement.

EXTERIOR WALLS

Shake shingles; high-grade aluminum, vinyl, metal, cement fiber or wood siding, stucco or synthetic plaster on rigid insulation (EIFS); hand-hewn, oversized or rustic logs; brick or native stone veneers; stucco, common or face brick or native stone over concrete block; solid brick. Framing will consist of 2" x 6" wood or 6" steel studs, 16" o.c., with 1" D&M sheathing, best quality solid-core exterior doors and wood, metal or vinyl windows. Three coats of exterior paint or stain. All doors and windows weather-stripped with wall insulation (see Energy Package below).

ROOF

Gable, hipped or gambrel, stained wood, slate or heavy asphalt shingles, 1" D&M sheathing, 2" x 8" rafters, 16" o.c., insulation, boxed cornice, copper flashing, gutters and conductors.

FLOORS

Basement, 4" cement on gravel base. Upper floors, 1" first grade oak or equal, sanded, filled and varnished, and areas with vinyl tile, ceramic tile or carpet; 1" D&M or 5/8" plywood subfloor, 2" x 10" wood joists, 16" o.c. with bridging; steel girder and column supports for first floor. Attic floor and stairs not included in base price.

INTERIOR FINISH

Hardwood or high-grade enameled doors and trim throughout; good-grade built-in kitchen cabinets, broom closet, linen closets and clothes closets. Plaster or drywall interior walls and ceilings, painted or papered. Tiled bathroom with best quality laminated plastic, ceramic tile or simulated marble countertops.

HEATING

Forced warm air; steam, vapor, hot water, radiant or equal with thermostatic controls and automatic fired furnace or boiler. Exhaust fan in kitchen and bathroom.

PLUMBING

High-grade vitreous fixtures, copper piping, one bathroom with shower over tub, kitchen sink, water heater.

LIGHTING

Electric lighting, conduit wiring, ample outlets, high-grade fixtures throughout.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Modern Multi-story _ Grade A minus (-)

RESIDENCE - Modern Single Story _ Grade A

RESIDENCE - Modern Single Story _Grade A minus (-)

RESIDENCE - Contemporary_ Grade A minus (-)

RESIDENCE - Prairie_ Grade A

RESIDENCE - Craftsman_ Grade A

RESIDENCE - Colonial_ Grade A plus (+)

RESIDENCE - Colonial_ Grade A minus (-)

RESIDENCE - Victorian_ Grade A plus (+)

RESIDENCE - Victorian_ Grade A

RESIDENCE - Victorian_ Grade A

RESIDENCE - Victorian_ Grade A minus (-)

Dwellings constructed of good-quality materials and workmanship, exhibiting pronounced architectural styling and treatment and having an ample number of built-in features. Custom-built homes would normally fall into this classification.

FOUNDATION

Masonry or concrete block walls, concrete footings, drain tile. Full basement.

EXTERIOR WALLS

Shake shingles; aluminum, vinyl, metal, cement fiber or wood siding, stucco or synthetic plaster on rigid insulation (EIFS); hand-hewn, oversized or rustic logs; brick or native stone veneers; stucco, common or face brick or native stone over concrete block; solid brick. Framing will consist of 2" x 6" wood or 6" steel studs, 16" o.c., with 1" D&M wood sheathing or plywood, Solid-core exterior doors and good-quality wood, metal or vinyl windows. Two coats of exterior paint or stain. All doors and windows weather-stripped with wall insulation (see Energy Package below).

ROOF

Gable, hipped or gambrel-type, wood, asphalt shingles, 1" D&M or plywood sheathing, 2" x 6" rafters, 16" o.c., insulation, plain cornice, metal flashing, gutters and conductors.

FLOORS

Basement 4" cement on gravel base. Upper floors, 1" hardwood, sanded and varnished, and areas with vinyl tile or sheet, ceramic tile and carpet; 1" D&M subfloor or 5/8" plywood subfloor; 2" x 10" wood joists, 16" o.c., timber on steel girders and pipe columns supports first floor. Attic floor and stairs not included in base price.

INTERIOR FINISH

Enameled trim, fir or white pine doors, good kitchen cabinets, linen and clothes closets. Drywall or plaster walls and ceilings, papered or painted, tiled bathroom, with good-quality laminated plastic or ceramic tile vanity top.

HEATING

Forced warm air, steam, vapor, hot water, radiant or equal with thermostatic controls and automatic fired furnace or boiler. Exhaust fan in kitchen and bathroom.

PLUMBING

Good grade fixtures, copper piping, one bathroom, kitchen sink, water heater.

LIGHTING

Electric lighting, BX or non-metallic cable wiring, good-grade fixtures throughout.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Modern Multi-story_ Grade B plus (+)

RESIDENCE - Modern Multi-story _Grade B

RESIDENCE - Modern Multi-story _Grade B

RESIDENCE - Modern Single Story_ Grade B plus (+)

RESIDENCE - Modern Single Story_ Grade B plus (+)

RESIDENCE - Modern Single Story_ Grade B

RESIDENCE - Modern Single Story_ Grade B minus (-)

RESIDENCE - Split-Level_ Grade B plus (+)

RESIDENCE - Split-Level_ Grade B minus (-)

RESIDENCE - Bi-Level_ Grade B minus (-)

RESIDENCE - Bi-Level_ Grade B minus (-)

RESIDENCE - Colonial_ Grade B

RESIDENCE - Colonial_ Grade B minus (-)

RESIDENCE - Colonial_ Grade B minus (-)

RESIDENCE - Colonial_ Grade B minus (-)

RESIDENCE - Contemporary_ Grade B minus (-)

RESIDENCE - Contemporary_ Grade B minus (-)

RESIDENCE - Craftsman_ Grade B

RESIDENCE - Craftsman_ Grade B minus (-)

RESIDENCE - Victorian_ Grade B plus (+)

RESIDENCE - Bungalow_ Grade B plus (+)

RESIDENCE - Bungalow_ Grade B minus (-)

RESIDENCE - Bungalow_ Grade B minus (-)

RESIDENCE - Cape Cod_ Grade B plus (+)

RESIDENCE - Cape Cod_ Grade B minus (-)

RESIDENCE - Ranch_ Grade B

RESIDENCE - Ranch_ Grade B minus (-)

RESIDENCE - Prairie_ Grade B plus (+)

RESIDENCE - Prairie_ Grade B

RESIDENCE - Prairie_ Grade B minus (-)

RESIDENCE - Prairie_ Grade B minus (-)

RESIDENCE - Farmhouse_ Grade B

Dwellings constructed of average-quality materials and workmanship, exhibiting moderate architectural styling and treatment and having a minimal number of built-in features. Typical tract-built homes would normally fall into this classification.

FOUNDATION

Poured concrete walls and concrete footings. Full basement.

EXTERIOR WALLS

Average-quality frame, masonry veneer, concrete block, brick or native stone veneers; rustic log; hand-hewn. Framing will consist of 2” x 6” wood or 6” steel studs, 16” o.c., with 1” D&M sheathing or plywood, Paneled exterior doors and average-quality wood, metal or vinyl windows. Two coats of exterior paint or stain. All doors and windows weather-stripped with wall insulation (see Energy Package below).

ROOF

Gable or hipped, asphalt shingles, 1” sheathing, 2” x 6” rafters 16” o.c., plain cornice, galvanized metal flashing, gutters and conductors.

FLOORS

Basement: 4” cement on compacted earth. Upper floors: hardwood, sanded and varnished, and areas with vinyl sheet or tile, ceramic tile and carpet; 1” wood subfloor or 1/2” plywood subfloor, 2” x 8” wood joists, 16” o.c., timber or steel beam and lolly column first floor supports. Attic floor and stairs not included in base price.

INTERIOR FINISH

Pine or fir doors and trim enameled or varnished, average-quality built-in kitchen cabinets, broom closet, linen and clothes closets. Drywall walls and ceilings, papered or painted. Average-quality laminated plastic or ceramic tile countertops.

HEATING

Forced air, steam, vapor, hot water or radiant with thermostatic controls and automatically fired furnace or boiler. Exhaust fan in kitchen.

PLUMBING

Average-grade fixtures, copper piping, one bathroom, kitchen sink, water heater.

LIGHTING

Electric lighting, non-metallic cable wiring, average-grade fixtures.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Modern Multi-story_ Grade C plus (+)

RESIDENCE - Modern Multi-story_ Grade C plus (+)

RESIDENCE - Modern Multi-story_ Grade C plus (+)

RESIDENCE - Modern Multi-story_ Grade C

RESIDENCE - Modern Single Story_ Grade C plus (+)

RESIDENCE - Modern Single Story_ Grade C plus (+)

RESIDENCE - Modern Single Story_ Grade C

RESIDENCE - Basic Single Story_ Grade C minus (-)

RESIDENCE - Split-Level_ Grade C plus (+)

RESIDENCE - Split-Level_ Grade C plus (+)

RESIDENCE - Split-Level_ Grade C minus (-)

RESIDENCE - Split-Level_ Grade C

RESIDENCE - Bi-Level_ Grade C plus (+)

RESIDENCE - Bi-Level_ Grade C

RESIDENCE - Bi-Level_ Grade C minus (-)

RESIDENCE - Craftsman_ Grade C plus (+)

RESIDENCE - Craftsman_ Grade C

RESIDENCE - Craftsman_ Grade C

RESIDENCE - Craftsman_ Grade C

RESIDENCE - Craftsman_ Grade C

RESIDENCE - Colonial_ Grade C plus (+)

RESIDENCE - Colonial_ Grade C plus (+)

RESIDENCE - Colonial_ Grade C

RESIDENCE - Contemporary_ Grade C plus (+)

RESIDENCE - Contemporary_ Grade C

RESIDENCE - Victorian_ Grade C plus (+)

RESIDENCE - Victorian_ Grade C

RESIDENCE - Cape Cod_ Grade C plus (+)

RESIDENCE - Cape Cod_ Grade C plus (+)

RESIDENCE - Cape Cod_ Grade C

RESIDENCE - Cape Cod_ Grade C minus (-)

RESIDENCE - Bungalow_ Grade C plus (+)

RESIDENCE - Bungalow_ Grade C

RESIDENCE - Bungalow_ Grade C minus (-)

RESIDENCE - Prairie_ Grade C plus (+)

RESIDENCE - Prairie_ Grade C plus (+)

RESIDENCE - Prairie_ Grade C

RESIDENCE - Cottage_ Grade C plus (+)

RESIDENCE - Cottage_ Grade C minus (-)

RESIDENCE - Cottage_ Grade C minus (-)

RESIDENCE - Ranch_ Grade C

RESIDENCE - Ranch_ Grade C

RESIDENCE - Ranch_ Grade C

RESIDENCE - Farmhouse_ Grade C plus (+)

RESIDENCE - Farmhouse_ Grade C plus (+)

RESIDENCE - Farmhouse_ Grade C

Dwellings constructed of fair-quality materials and workmanship, generally lacking architectural styling and treatment and having only a scant number of built-in features. Economy mass-built homes would normally fall into this classification.

FOUNDATION

Concrete block walls, concrete footings. Full basement.

EXTERIOR WALLS

1" drop siding, aluminum siding, 4" face brick or split block, Y" insulation board, 2" x 6" studs 16" o.c., 1-3/8" wood doors and double-hung wood sash or aluminum frame windows. Two coats exterior paint.

ROOF

Gable or hipped type asphalt shingles, wood sheathing, 2" x 4" rafters 16" o.c., wood cornice, galvanized metal gutters and conductors.

FLOORS

Basement: 3" cement on compacted earth. Upper floors: 1" D&M pine flooring with areas of linoleum, asphalt tile or carpet, 2" x 8" wood joists, 16" o.c. wood girder and lolly column first floor supports. Attic floor and stairs not included in base price.

INTERIOR FINISH

Pine doors and trim throughout, drywall or plaster, painted walls and ceilings. Cheap kitchen cabinets and clothes closets.

HEATING

Radiant, steam, forced warm air system or equal, with thermostat and automatically fired furnace or boiler.

PLUMBING

Cheap-quality piping and fixtures, one bathroom, kitchen sink, water heater.

LIGHTING

Electric lighting, non-metallic wiring, scarcity of outlets, and low cost fixtures.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Basic Single Story_ Grade D

RESIDENCE - Bi-Level_ Grade D

RESIDENCE - Split-Level_ Grade D

RESIDENCE - Colonial_ Grade D plus (+)

RESIDENCE - Bungalow_ Grade D

RESIDENCE - Cape Cod_ Grade D plus (+)

RESIDENCE - Cape Cod_ Grade D

RESIDENCE - Cottage_ Grade D plus (+)

RESIDENCE - Cottage_ Grade D

RESIDENCE - Cottage_ Grade D minus (-)

RESIDENCE - Ranch_ Grade D

RESIDENCE - Ranch_ Grade D minus (-)

RESIDENCE - Farmhouse_ Grade D plus (+)

RESIDENCE - Farmhouse_ Grade D

Dwellings constructed of cheap-quality materials and poor workmanship, devoid of any architectural treatment and built-in features. Normally self built, with assistance from a mechanical contractor.

FOUNDATION

Cement block walls, concrete footings. Full basement.

EXTERIOR WALLS

Inexpensive aluminum, vinyl, cement fiber or wood lap siding, plywood or hardboard; stucco, rustic logs; brick or stone veneers; stucco, common brick or stone over concrete block; painted or unpainted concrete block or solid brick. Framing will be 2" x 4" wood, 16" o.c., paneled exterior doors, aluminum or wood windows. Two coats of exterior paint. All doors and windows weather-stripped with wall insulation (see Energy Package below).

ROOF

Gable or shed-type, roll-type, cheap shingles or metal roofing, 1" sheathing, 2" x 4" wood rafters 24" o.c., no cornice, gutters or conductors.

FLOORS

Basement: 3" cement on earth. Upper floors: softwood flooring, 2" x 8" wood joists, 20" o.c., wood girders and columns supporting first floor. Attic floor and stairs not included in base price.

INTERIOR FINISH

Cheap pine doors and trim. Cheap kitchen cabinets and closets. Drywall, cheap panel or equal walls and ceilings, painted.

HEATING

Forced warm air system with thermostat control.

PLUMBING

Cheap-quality piping and fixtures, one bathroom, kitchen sink, water heater.

LIGHTING

Electric lighting, non-metallic wiring, cheap fixtures, scarcity of outlets.

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

RESIDENCE - Cottage_ Grade E plus (+)

RESIDENCE - Cottage_ Grade E

The Dwelling Pricing Schedule is to be used for computing the replacement cost new of all dwellings. Square Foot C Grade base prices are provided for different floor levels of frame and masonry exterior wall construction, along with tables of base price adjustments, attachments and other features.

GENERAL APPLICATION

The general application of the pricing schedule is to select the base price which is most representative of the subject dwelling, and to adjust that base price to account for any variations between the subject dwelling and the model. Refer to the dwelling computations section of the property record card specifications for detailed pricing procedures.

SPECIAL APPLICATION

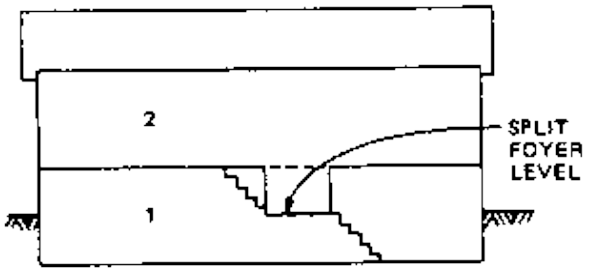

Figure 1. A Typical Bi–Level Design

Bi-level designs (as shown in Figure 1) are also referred to as "raised ranches." These are basically two-level designs with approximately one half of the lower level above grade level and the other half below, with the two levels split by a foyer at grade level, thus giving the effect of three-level dwelling. The upper level (2) generally houses the main living areas as found in a typical one-floor plan. The lower level (1) generally houses the family room, utility area and garage, but depending on the size of the dwelling, may house additional living space such as a den and an extra bedroom, as well as a utility room partially finished for use as a recreation room. Classify as a one-story dwelling with a full basement; the first story area is equal to the size of the upper level (2). Follow the general pricing procedures as described, being certain to consider the following items as applicable:

1. ADD for finished basement living area.

2. ADD for finished basement recreation room.

3. ADD for basement garage.

4. ADD for masonry trim below the upper floor level.

5. ADD a cost and design factor of 0% to 5%, (depending upon the extent to which the design and related features add to the construction cost over and above base considerations) to account for the bi-level design.

Split-level designs, also referred to as tri-level and four-level dwellings. These are three- or four-level designs distinguishable by their irregular wall heights and different roof elevations. The split may be side to side or front to back. There are three basic variations:

A. A typical tri-level dwelling is shown in Figure 2. The upper two levels (2 and 3) generally house the main living area as found in a typical one-story plan, with bedrooms in the upper level (3), and the living, dining, kitchen and foyer areas at the grade level (2).The lower level (1) is normally the same size as level 3, approximately one half above and one half below grade level, and generally houses the family room or recreation room and utility areas. It may also house the garage, but with this design the garage is more often attached to level 2. (Note the similarity between level 1 in Figure 1 and Figure 2.)

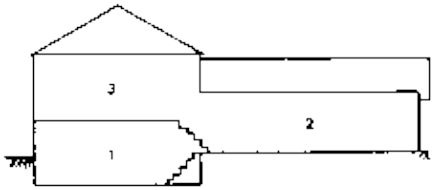

Figure 2. A Typical Tri–Level Design

Classify as a one story and dwelling with a partial basement and a first-story area equal to the combined size of the two upper levels (2 and 3), and follow the general pricing procedures described, being certain to consider the following items as applicable:

1. DEDUCT for partial basement.
2. ADD for finished basement living area and/or finished basement recreation rooms. (There is generally one or the other.)
3. ADD for masonry trim below the upper two levels (levels 2 and 3).
4. ADD a cost and design factor of 5% to 10%,(depending upon the extent to which the design and related features add to the construction cost over and above base considerations) to account for the split-level design.

B. A typical four-level dwelling is shown in Figure 3. It is the same design as that shown in Figure 2, with the addition of level B to house the utility area, generally, and recreation room, leaving level 1 to house the family room and garage.

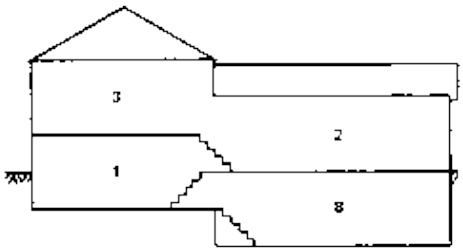

Figure 3. A Typical Four–Level Design

Classify as a one-story dwelling with a full basement and a first-story area equal to the combined size of the two upper levels (2 and 3), and follow the general pricing procedures described, being certain to consider the following items as applicable:

1. ADD for finished basement living area.
2. ADD for finished basement recreation rooms.
3. ADD for basement garage.
4. ADD for masonry trim below the upper two levels (levels 2 and 3).
5. ADD a cost and design factor of 5% to 10% (depending upon the extent to which the design and related features add to the construction cost over and above base considerations) to account for the split-level design.

A. A typical variation of the four-level dwelling is shown in Figure 4. The difference between this design and that shown in Figure 3 is that level 1, rather than level 2, is at grade and level is approximately one half above and one half below grade. The foyer, family room and garage are generally located at the grade level (l), giving the appearance of a part two-story and part one-story dwelling with a basement.

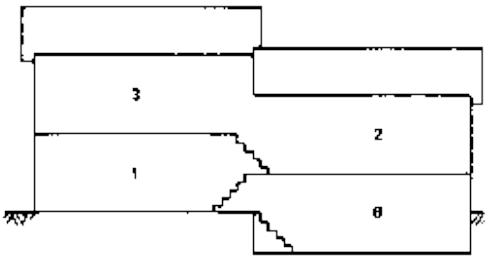

Figure 4. A Typical Four–Level Design

Classify as a one-story and full basement dwelling with a first-story area equal to the combined size of the two upper levels (2 and 3), and follow the general pricing procedures prescribed, being certain to consider the following items as applicable:

1. ADD for finished basement living area.
2. ADD for finished basement recreation rooms.
3. ADD for basement garage.
4. ADD for masonry trim below the upper two levels (levels 2 and 3).
5. ADD a cost and design factor of 10% to account for the split-level design and related features.

Crop Drying System – Building-mounted Solar Collector – The cost is per square foot of building area.

For Unique Residence Types – Grade factors may be used in addition to cost and design factors to recognize quality differences in homes. Use the Dwelling CDU table for depreciation.

A-Frame – List as one-story frame. The loft is handled through the cost and design factor.

Envelope Homes – The area of the home should be determined by using the interior wall dimension. The exterior wall is handled through the cost and design factor.

Residential Greenhouses – For depreciation, use Percent Good Table 5 on Page 6-14.

LARGE RESIDENCE MULTIPLIERS

To estimate a dwelling price for residences greater than 4,000 square feet, apply the following multipliers to the 4,000-square-foot base price for the appropriate exterior wall (Pages 3–68 through 3–73). Use these same multipliers for Upper and Half-Story, Attic Finish and all Base Price Adjustments found on Page 3-74.

AREA	MULTIPLIER	AREA	MULTIPLIER	AREA	MULTIPLIER	AREA	MULTIPLIER
4050		4800		5550		6300	
4100		4850		5600		6350	
4150		4900		5650		6400	
4200		4950		5700		6450	
4250		5000		5750		6500	
4300		5050		5800		6550	
4350		5100		5850		6600	
4400		5150		5900		6650	
4450		5200		5950		6700	
4500		5250		6000		6750	
4550		5300		6050		6800	
4600		5350		6100		6850	
4650		5400		6150		6900	
4700		5450		6200		6950	
4750		5500		6250		7000	

FRAME BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

FRAME BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

MASONRY VENEER BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

MASONRY VENEER BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

CONCRETE BLOCK BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

CONCRETE BLOCK BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

BRICK OR STONE BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

BRICK OR STONE BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

RUSTIC LOG BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

RUSTIC LOG BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

HAND-HEWN LOG BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
400				
450				
500				
550				
600				
650				
700				
750				
800				
850				
900				
950				
1000				
1050				
1100				
1150				
1200				
1250				
1300				
1350				
1400				
1450				
1500				
1550				
1600				
1650				
1700				
1750				
1800				
1850				
1900				
1950				
2000				
2050				
2100				
2150				

HAND-HEWN LOG BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC, FIN.
2200				
2250				
2300				
2350				
2400				
2450				
2500				
2550				
2600				
2650				
2700				
2750				
2800				
2850				
2900				
2950				
3000				
3050				
3100				
3150				
3200				
3250				
3300				
3350				
3400				
3450				
3500				
3550				
3600				
3650				
3700				
3750				
3800				
3850				
3900				
4000				

DWELLING PRICING SCHEDULE – BASE PRICE ADJUSTMENTS

BASEMENTS							
AREA	FULL	PARTIAL	WALKOUT	AREA	FULL	PARTIAL	WALKOUT
400				2200			
450				2250			
500				2300			
550				2350			
600				2400			
650				2450			
700				2500			
750				2550			
800				2600			
850				2650			
900				2700			
950				2750			
1000				2800			
1050				2850			
1100				2900			
1150				2950			
1200				3000			
1250				3050			
1300				3100			
1350				3150			
1400				3200			
1450				3250			
1500				3300			
1550				3350			
1600				3400			
1650				3450			
1700				3500			
1750				3550			
1800				3600			
1850				3650			
1900				3700			
1950				3750			
2000				3800			
2050				3850			
2100				3900			
2150				4000			

QUALITY GRADE FACTOR	
	+ 2.75
AA	2.50
	– 2.00
	+ 1.75
A	1.55
	– 1.45
	+ 1.35
B	1.28
	– 1.20
	+ 1.10
C	1.00
	– .95
	+ .90
D	.85
	– .75
	+ .65
E	.55
	– .45

BASE PRICE ADJUSTMENTS
Crawlspace
Full Finish
Recreation Room Finish
Unfinished Living Area

HEATING
No Heat - Deduct (–)
Air Conditioning - Same Ducts
Air Conditioning - Separate Ducts
GEO Thermal
Secondary Heating System
Wood-fired Furnace - Indoor
Outdoor
Space Heater

PLUMBING
Base Price Includes 5 Fixtures w/ no Rough-Ins
Add/Deduct for each addition or fixture less than 5
Add/Deduct for each addition or rough-in less than 5
Add for Whirlpool Tub

DWELLING PRICING SCHEDULE – ATTACHMENTS
(COSTS PER SQUARE FOOT)

TYPE	PORCHES								CAR-PORT	DECK	CAN-OPY	PATIOS		MS or TERR
	FRAME or CB				MASONRY or LOG									
CODE	11		12		21		22		29	31	32	33	34	35
AREA	OPEN		ENCLOSED		OPEN		ENCLOSED		Open	Wood	Wood or Alum.	Conc. or Brick	Flgstn. or Tile	Conc. or Brick
	First Floor	Upper Floor	First Floor	Upper Floor	First Floor	Upper Floor	First Floor	Upper Floor						
20 40 60														
80 100 120														
140 160 180														
200 220 240														
260 280 300														
320 340 360														
380 400 420														
OVER														

*Factors for wood decks other than base (base = softwood, fir or pine): cedar or redwood, 1.45; PVC, 1.40; composite, 1.30

QUALITY GRADE FACTORS FOR ALL ATTACHMENTS AND OTHER FEATURES

AA = 2.50 A = 1.55 B = 1.28 C = 1.00 D = 0.85 E = 0.55

CODE	DWELLING PRICING SCHEDULE – OTHER FEATURES				
551	MASONRY ADJUSTMENT (+ or –)	Adjustment per square foot of wall area			
553	WOODBURNING FIREPLACES	Add per item Stack and one opening Each additional opening Each additional story of chimney stack (base = one story)			
554	PREFABRICATED METAL FIREPLACES	Stack and one opening Each additional story of chimney stack (base = one story)			
555	GAS FIREPLACES	Add for each			
558	DORMERS	Add per linear foot of roof dormer; measure across the face.		Shed	Gable/Hip
	ROOF ADJUSTMENT	Metal Roof– Shingles, Shakes, Vertical Panels	1-Story	1½ Story	2-Story
	WHOLE HOUSE OR COMMERCIAL GENERATOR	Add per item			

DETACHMENTS

DETACHMENT PRICING SCHEDULE (COSTS PER SQUARE FOOT)			
TYPE	*DETACHED GARAGE		
CODE	RG1	RG2	RG3
AREA	FRAME OR CONCRETE BLOCK	MASONRY OR LOG	POLE FRAME
160 180 200			
220 240 260			
280 300 320			
340 360 380			
400 420 440			
460 480 500			
520 540 560			
580 600 620			
640 660 680			
700 720 760			
800 840 880			
920 960 1000 OVER			

*For interior finish, use the Attached Garage Adj.

DETACHED GARAGE QUALITY GRADE FACTOR

AA = 2.50 A = 1.55 B = 1.28 C = 1.00 D = 0.85 E = 0.55

CARPORT	RC1
CANOPY	RC2
DRIVEWAY	
Concrete	RC3
Asphalt	RC4
Gravel	RC5
UTILITY SHEDS	
Frame	RS1
Metal	RS2
Add for shop additions	RS3

ATTACHMENTS

DWELLING PRICING SCHEDULE – ATTACHMENTS (COSTS PER SQUARE FOOT)		
TYPE	ATTACHED GARAGES	
CODE	13	23
AREA	Frame or CB	Mas. or Log
160 180 200		
220 240 260		
280 300 320		
340 360 380		
400 420 440		
460 480 500		
520 560 600 OVER		

‡ATTACHED GARAGE ADJUSTMENT (–)
Deduction for exposed stud common wall (no drywall).
Priced per linear foot of common wall $.

CODE	DWELLING PRICING SCHEDULE – OTHER FEATURES				
556	BASEMENT GARAGES	Refers to any garage located within that area of a dwelling priced as a basement. Price includes doors, enclosure walls, interior finish and lighting. Add per car space	1-Car Garage	2-Car Garage	3-Car Garage
557	BUILT-IN GARAGES	Price includes doors, enclosure walls, slab, interior finish of common wall and ceiling, and lighting. Add per car space. Frame or concrete block Masonry or log	1-Car Garage	2-Car Garage	3-Car Garage

RESIDENTIAL SWIMMING POOL PRICING SCHEDULE

BASE SPECIFICATIONS

Base prices include — Basic pool structure, filter and pump equipment, all plumbing and drains, minimum of 3" perimeter concrete deck, completely contractor erected.

RP1 PLASTIC LINER TYPE

Sand hopper or sloping bottom, concrete block walls or equal.

RP2 PREFABRICATED POOLS

Vinyl liner, sand hopper bottom, galvanized steel walls or equal.

RP3 REINFORCED CONCRETE POOLS

Good-quality poured concrete walls and bottom.

RP4 FIBERGLASS POOLS

1/4" rigid fiberglass self-supporting pools.

RP5 GUNITE-TYPE POOLS

Gunite sprayed steel walls and bottom.

BASE PRICES

STRUCTURE TYPE	AREA	COST PER S. F.
PLASTIC LINER RP1	**300**	
	450	
	525	
	650	
	800	
	1000	
PREFABRICATED RP2	**300**	
	450	
	525	
	650	
	800	
	1000	
REINFORCED CONCRETE RP3	**300**	
	450	
	525	
	650	
	800	
	1000	
FIBERGLASS RP4	**300**	
	450	
	525	
	650	
	800	
	1000	
GUNITE RP5	**300**	
	450	
	525	
	650	
	800	
	1000	

BASE PRICE ADJUSTMENTS

CODE	MODIFICATION CODES
1	Filter – None (–) . . . . . $
2	Pool heating, gas or propane (+) . . . . .
3	Pool heating, electric (+) . . . . .
4	Ceramic or quarry tile walls and bottom (+), per S.F . . . . .
5	Plastic tile walls and bottom (+), per S.F.

CODE	SPECIAL MODIFICATION CODES
SP1	Diving stand, rock or board (+) . . . . . $
SP2	Pool ladder (+) . . . . .
SP3	Underwater lighting (+), per fixture . . . . .
SP4	Pool heating (+), per solar collector . . . . .
SP5	Two-pump spa system (+) . . . . .
SP6	Fiber optic lighting (+) . . . . .
SP7	Slide (+) . . . . .
SP8	Pool lip waterfall (+), per linear foot . . . . .
SP9	Waterfalls, precast (+) . . . . .
SP10	Mosaic tile bottom (+) . . . . .
SP11	Rockscape grotto (+) . . . . .
SP12	Swim-up bar (+) . . . . .
SP13	Handicap lift (+) . . . . .
SP14	Automatic cleaner, hydrosweep (+) . . . . .
SP15	Automatic sanitation system, chlorinator (+)
SP16	Ozone generator (+) . . . . .
SP17	Ionizer (+) . . . . .
SP18	Automatic controls (+), spa only, (–) 50% . .

SPAS AND HOT TUBS

Exterior gunite spas and tubs. For interior installations, add 5% to 15%. Custom free-form and rockscape spas may run 75% to 150% more. Typical decking will add 40% to the basic spa cost.

	COST RANGE
attached to pool, shared pool equipment	–
detached, including equipment	–
portable, self-contained fiberglass or wood units, complete	–
acrylic/thermorplastic, single lounge	–
double lounge	–
redwood hot tubs	–

RESIDENTIAL GREENHOUSES

Conventional

BASE SPECIFICATIONS
Two glass-enclosed ends, concrete floor, masonry sidewall, heat, electric.

BASE PRICES	
AREA	STRUCTURE TYPE RN1 Cost per Square Foot
60 80 100	
120 140 160	
180 200 220	
240 260 280	
300 350 400	
450 500 600	

Solar

BASE SPECIFICATIONS
Double insulated, tempered glass on ends and sidewall, aluminum extrusions, concrete floor, electric, no heat.

BASE PRICES	
AREA	STRUCTURE TYPE RN2 Cost per Square Foot
60 80 100	
120 140 160	
180 200 220	
240 260 280	
300 350 400	
450 500 600	

For Conventional Greenhouses – For gable end doors, add for each door. For tempered or laminated safety glass or structural polycarbonate or for tinted or heat-reflective glass, use a factor of 1.25. For insulated glass, use a factor of 1.50. For polyethylene cover, use a factor of .75; for double polyglazed, use a factor of .80; for semicircular structure, use a factor of .75; for a modified bow (3' side wall), use a factor of .80.

Deduct for floors other than concrete: dirt, ; gravel, ; asphalt, Add for the following: humidifiers, ; ventilating fans, ; planting benches, per square foot; for glazed partitions, per square foot of partition.

For Solar Greenhouses (Sunrooms) – For additional gable end doors, add for each door. For laminated wood framing, use a factor of 1.10. For built-in shades, add per square foot of covered area. For motorized operation, add per operator. For heaters, add . For two-sided greenhouses reduce by one quality.

QUALITY GRADE FACTORS FOR GREENHOUSES	AA = 2.50	A = 1.55	B = 1.28	C = 1.00	D = 0.85	E = 0.55

SAUNA BATHS – Per square foot of floor area.

Prefabricated units including interior wall finish, door, heater and controls.

15 sq. ft. to 24 sq. ft. . . . . .
25 sq. ft. to 48 sq. ft. . . . . .
50 sq. ft. to 74 sq. ft. . . . . .
75 sq. ft. to 100 sq. ft. . . . . .

SOLAR HEATING SYSTEMS

Domestic water heating and space heating systems – Include installation and equipment – Add per solar collector.
Attic system – Use Finished Attic prices from Dwelling Pricing Schedule for total living area heated.
Photovoltaic system – Add per watt.
Trombe wall heating system – Add per square foot of living area.
Water wall heating system – Includes installation, heat exchanger, control panel and storage tanks – Add per panel.
Window wall – Priced per linear foot of wall (8 ft. high) – .

Solar Energy components may be exempt under Wisconsin Statute Section 70.111(18).

UNIQUE RESIDENCE TYPES

These are types of dwellings that, due to their uniqueness in style of construction or materials utilized, require a cost and design factor to be added in order to allow the pricing tables to value them correctly. Factors are to be applied to the Frame Base Prices, unless otherwise stated.

A-Frames

List as one story.
Pine exterior – No cost and design factor is necessary.
Cedar exterior – Add a cost and design factor of (+) 15%.

Geodesic Dome Homes

List as 1-story masonry construction.
Add a cost and design factor of (+) 10%.

Earth Homes

List as 1-story masonry construction – no basement.
Add a cost and design factor of (+) 15%.

Envelope House

Add a cost and design factor of (+) 10%.

WIND ENERGY SYSTEMS

15/50 Hz Wind Turbine – Three-phase

Turbine is designed to cut in at 4.6 meters/second and to reach a rated output of 50 kilowatts at 11.3 meters/second. Peak output of 66 kilowatts is reached at 15 meters/second. Assuming 100% availability, turbine is calculated to produce 153,000 kilowatt-hours/year at an average wind speed of 6.7 meters/second. 80-foot galvanized tower.

Price range: –

Mechanical Windmills

Tower Height	Windmill Cost					
	6 Ft.	8 Ft.	10 Ft.	12 Ft.	14 Ft.	16 Ft.
21						
27						
33						
40						
47						

SPECIAL LISTING INSTRUCTIONS

Solar and Wind Energy costs may be exempt under Wisconsin Statute Section 70.111(18).

Solar Energy Costs are to be treated as a "total other" feature, so that a grade factor and a local modifier can be applied to them.

For Unique Residence Types – Grade factors may be used in addition to cost and design factors to recognize quality differences in homes. Use the Dwelling CDU table for depreciation.

A-Frame – List as one-story frame. The loft is handled through the cost and design factor.

Log Cabins – The cost and design factor should be applied only to recently constructed log cabins. The small and cheaply built log cabins should be handled through the use of the grading system.

Envelope Homes – The area of the home should be determined by using the interior wall dimensions. The exterior wall is handled through the cost and design factor.

Residential Greenhouses – For depreciation, use Percent Good Table 5 on Page 6-15.

WIND ENERGY SYSTEMS

Pumping capacities* of windmills shown in the table below are approximate, based on the mill set on the long stroke, operating in a 15- to 20-mile-per-hour wind. The short stroke increases elevation by one third and reduces pumping capacities by one fourth. See the cost table at the top of this page.

Size of Cylinder, Inches	*Capacity, Gallons per Hour		Elevation in Feet to Which Water Can Be Raised: Size of Windmill					
	6 Ft.	8 – 16 Ft.	6 Ft.	8 Ft.	10 Ft.	12 Ft.	14 Ft.	16 Ft.
1 7/8	125	180	120	175	260	390	560	920
2	130	190	95	140	215	320	460	750
2 1/4	180	260	75	110	170	250	360	590
2 1/2	225	325	65	95	140	210	300	490
2 3/4	265	385	55	80	120	180	260	425
3	320	470	45	65	100	150	220	360
3 1/2	440	640	35	50	75	110	160	265
3 3/4	-----	730	-----	-----	65	95	140	230
4	570	830	25	35	55	85	125	200
5	900	1,300	15	25	35	55	80	130
6	-----	1,875	-----–	15	25	35	55	85

The following is a guideline for estimating percent of completion for typical residential construction.

	Percent of Total	Cumulative Percent of Total
Plans, permits and survey	2	2
Foundation, excavation, forms	4	6
Water/sewage hookup	2	8
Concrete	5	13
Concrete flatwork	3	16
Rough framing and sheathing	21	37
Windows and exterior doors	4	41
Roof cover	3	44
Rough-in plumbing	4	48
Insulation	1	49
Rough-in electrical and mechanical	11	60
Exterior cover	5	65
Interior drywall	8	73
Built-in cabinets, interior doors, trim, etc.	9	82
Plumbing fixtures	5	87
Flooring covers	4	91
Built-in appliances	2	93
Light fixtures and finish hardware	2	95
Painting and decorating	4	99
Landscaping	1	100
TOTAL	100%	

GENERAL

Mobile homes, also referred to as Manufactured Housing, are residential structures built on steel undercarriages with necessary wheel assemblies to be transported to permanent or semipermanent sites. The wheel assembly can be removed when a unit is placed on a permanent foundation, but the steel undercarriage may remain intact if it is a necessary structural component. In some instances, the presence of a steel undercarriage as a necessary structural component is the primary distinguishing factor between a higher-quality mobile home and a modular house.

Note: Manufactured homes built (in the U.S.) after June 15, 1976, must meet the Federal Manufactured Home Construction and Safety Standards as outlined in Title VI, Housing and Community Development Act of 1974. A HUD seal certifying compliance with these standards must be displayed on each unit. For purposes of estimating replacement cost for those built prior to the enactment of these standards, as well as for those manufactured homes built after 1976, this section should be used.

Mobile homes consist of single or multi-sectional units, eight feet or greater in width and at least thirty-two feet in length. After being transported on their own wheel chassis to the site, the units are set up as permanent or semipermanent residences and are connected to the necessary utilities.

The residences are usually described in terms of width and length and are priced accordingly (i.e., 12' x 52', 24' x 64', with a 10' x 40' tag, etc.). In calculating actual square footage, do not include the hitch in the overall dimensions. Mobile homes are categorized into six quality levels: AA, A, B, C, D and E.

Costs are retail prices, including normal charges for delivery and setup on post and piers within 100 miles of the dealer. Although some units are sold furnished, furnishings or appliances are not included in the base costs. Generally these structures are purchased directly from factory dealers/installers and can, at times, be influenced by inventory discounting, predatory pricing, etc., which are not contemplated here. Local fees, licenses and utility costs are not included and should be added when applicable. Appliances, drapes, skirting, patio roofs, carports and other optional items can be priced separately from other pages in the section.

Double sections, triple sections or quads (four sections) are terms used to describe manufactured houses having two or more sections. Square foot costs for double sections, based on length and gross width, are provided on the cost page.

Triple sections are priced by using the double section costs for the two main sections and a single section cost for the third section. The third section is often considered a tagalong and requires a cost adjustment as provided on the cost page.

Quads (four sections) are to be priced as two double sections with the tagalong percentage adjustment applied to the second double section base cost.

A tagalong is an attached section, usually a full width, but not necessarily the full length of the main section(s). It is the same in both structure and quality as the unit to which it is attached. A tagalong is priced as a single section but requires a percentage cost adjustment as indicated on each of the cost pages.

The higher-quality mobile homes are similar in both design and appearance to modular manufactured houses, and, to an extent, site-built residences as found in tract developments. Costs for these types of construction will overlap. The higher-quality mobile homes will often exceed minimum manufactured home code requirements and will often meet, in part, local building codes.

These homes are similar in both design and appearance to modular constructed houses and to an extent, site-built residences typically found in tract development. Costs for these types of construction will overlap. Mobile homes at this quality level will exceed minimum requirements of manufactured home codes and will often meet, in part, local building codes.

FOUNDATION

Setup on concrete or steel piers. Add for continuous perimeter wall foundation.

FRAME

Heavy steel beam undercarriage with outriggers and cross members. The undercarriage is a necessary structural component.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

High-quality, medium-weight carpet and vinyl.

EXTERIOR WALL

2” x 6” wood or steel studs. Exterior finish is plywood with batts or hardboard sheets. Ample fenestration with aluminum or wood sash windows. Exterior trim could typically consist of brick or stone veneer.

ROOF

Engineered truss system and sheathing. Roof covers can include composition shingles, wood shake or shingles, concrete or clay tile. Roof slope is typically 3 in 12 to 4 in 12, with a minimum overhang of 16”.

INTERIOR FINISH

2” x 4” stud interior walls. Interiors have good tape and textured finished drywall with some paper or vinyl wall covering or natural wood veneer paneling. Good natural wood veneer cabinets and vanities with laminated plastic or simulated marble countertops and backsplash. Veneered hollow-core or raised-panel doors. Walk-in closets or large sliding-door wardrobes. Typical ceiling height is 8’ 0”. Ceilings are drywall, textured, and, where practical, may be dropped, sloped or cathedral, and have exposed beams.

HEATING

A forced-air furnace based on an extreme climate, with adequate output and duct-work is included in the basic residence cost.

LIGHTING

Numerous convenience outlets. Some recessed fluorescent fixtures in kitchen and bath areas.

PLUMBING

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: deluxe whirlpool tub, lavatory, toilet, tub with shower over, tiled or modular stall shower, kitchen sink, laundry tray, water heater and wet bar.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

These homes are typically found in high-quality manufactured housing parks. Exterior finishes and interior refinements will resemble those of site-built housing. They will exceed minimum requirements of manufactured home codes.

FOUNDATION

Setup on concrete or steel piers. Add for continuous perimeter foundation wall.

FRAME

Heavy steel beam undercarriage with outriggers and cross members.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

High-quality, medium-weight carpet and vinyl.

EXTERIOR WALL

Wood or steel 2" x 6" studs. Exterior finish is plywood with batts or hardboard sheets. Ample fenestration, with aluminum or wood sash windows, and may have a sliding glass door and an ornamental, recessed entrance. Exterior trim could typically consist of some imitation stone or brick.

ROOF

Engineered truss system and sheathing. Roof covers can include composition shingles, wood shingles, concrete or clay tiles. Roof slope is typically 3 in 12 to 4 in 12, with a moderate overhang.

INTERIOR FINISH

2" x 4" stud interior walls with paper, vinyl or paint and textured drywall or natural wood veneer. Natural wood veneer cabinets and vanities with laminated plastic or simulated marble countertops and backsplash. Veneered hollow-core doors. Walk-in closets or large sliding-door wardrobes. Typical ceiling height is 8' 0". Ceilings are drywall, textured and, where practical, may be dropped, sloped or cathedral, and have exposed beams.

HEATING

A forced-air furnace based on an extreme climate, with adequate output and ductwork is included in the basic residence cost.

LIGHTING

Numerous convenience outlets. May have recessed fluorescent fixtures in kitchen and bath areas.

PLUMBING

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: lavatory, toilet, tub with shower over, tiled or modular stall shower, kitchen sink, laundry tray, water heater and whirlpool tub.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

These homes will generally exceed the minimum manufactured home code requirements. Exterior design and interior finishes will include some detail and ornamentation. Connection seams will be somewhat apparent on multisectional houses.

FOUNDATION

Setup on steel or concrete piers. Add for continuous foundation wall.

FRAME

Rigid steel beam undercarriage with outriggers and cross members.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

Good-quality, medium-weight carpet and vinyl composition tile.

EXTERIOR WALL

2" x 4" studs. Exterior finish is aluminum, vinyl, plywood or hardboard, sometimes a combination of two. The finish is often in various textures such as horizontal siding and board and batten. Ample fenestration, with aluminum or vinyl windows and a sliding glass door. Exterior finish often will include some ornamentation.

ROOF

Engineered truss system and sheathing. Roof covers can include composition shingles, wood shingles, and metal, corrugated or ribbed. Roof slope is typically 3 in 12, with a minimal overhang.

INTERIOR FINISH

Good-quality prefinished plywood paneling, natural wood or paper veneer on 2" x 4" studs. Large wardrobe closets and ample storage space. Laminated plastic or simulated marble countertops and backsplash. Veneered hollow-core doors. Paint-grade, vinyl-covered particleboard or inexpensive wood veneer kitchen cabinets and bathroom vanity. Ceiling typically 8' 0" high and, where practical, sloped or cathedral with exposed beams.

HEATING

A forced-air furnace based on an extreme climate, with adequate ductwork is included.

LIGHTING

Ample number of convenience outlets. Some fluorescent fixtures in kitchen and bath areas.

PLUMBING

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: lavatory, toilet, tub with shower over, tiled or modular stall shower, kitchen sink, laundry tray and water heater.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

These homes meet or exceed manufactured home code requirements. The overall quality of materials and workmanship is average and of standard grade. The front elevation will often have some ornamentation.

FOUNDATION

Setup on steel or concrete piers. Add for continuous foundation wall.

FRAME

Medium-weight steel beam undercarriage with outriggers and cross members.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

Lightweight carpet and pad, asphalt or vinyl composition tile.

EXTERIOR WALL

Exterior finish is prefinished aluminum, hardboard or plywood sheet, vinyl or hardboard lap siding on 2" x 4" studs. Adequate fenestration with some trim around aluminum windows. Often the exteriors will have a combination of two textures or two colors.

ROOF

Engineered trusses and sheathing with corrugated or ribbed metal roofing or composition shingles. Roofs are typically sloped or arched, with front overhang.

INTERIOR FINISH

Medium-quality prefinished plywood or hardboard paneling on 2" x 3" or 2" x 4" studs. Adequate wardrobe closets and storage. Laminated plastic countertops and backsplash. Standard-grade hollow-core doors. Paint-grade, vinyl-covered particle- board or inexpensive wood veneer kitchen cabinets and bathroom vanity. Ceiling height is typically 7' 6" to 8' 0".

HEATING

A forced-air furnace based on an extreme climate, with adequate ductwork is included.

LIGHTING

Ample number of convenience outlets. Some luminous fixtures in the kitchen and bath areas.

PLUMBING

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: lavatory, toilet, tub with shower over, tiled or modular stall shower, kitchen sink, laundry tray and water heater.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

These homes are designed to meet standard manufactured home code requirements. The overall quality of materials and workmanship, while average, will be relatively plain in finish and appearance. The floor plan is usually simple, with plumbing wet wall on a single outside wall.

FOUNDATION

Setup on steel or concrete piers. Add for continuous foundation wall.

FRAME

Medium-weight steel beam undercarriage with outriggers and cross members.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

Inexpensive carpet and pad, asphalt or vinyl composition tile. Floor cover is not included in the basic residence cost.

EXTERIOR WALL

Exterior finish is aluminum prefinished or hardboard sheet siding on 2" x 3" or 2" x 4" studs. Limited standard fenestration with little ornamentation.

ROOF

Engineered trusses and sheathing with corrugated or ribbed metal roofing or composition shingles. Roofs are typically low-pitched, arched or sloped, with minimal overhang on front elevation.

INTERIOR FINISH

Low-quality prefinished plywood paneling, printed hardboard or thin, paper-veneered drywall on 2" x 3" or 2" x 4" studs. Small wardrobes. Laminated plastic countertops and backsplash. Standard-grade hollow-core doors. Paint-grade or vinyl-covered particleboard kitchen cabinets and bathroom vanity. Ceiling height is typically 7' 6" to 8' 0".

HEATING

A forced-air furnace based on an extreme climate, with adequate ductwork, is included.

LIGHTING

Minimum number of convenience outlets. Low-cost lighting fixtures.

PLUMBING

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: lavatory, toilet, tub, tub with shower over, kitchen sink and water heater. All fixtures are usually located along one side of the house (wet wall) with minimal runs.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

These homes are designed to meet minimum manufactured home code requirements. The overall quality of materials and workmanship is below average. The floor plan is usually simple, with little or no attention given to detail.

FOUNDATION

Setup on steel or concrete piers. Add for continuous perimeter wall.

FRAME

Light steel beam undercarriage with outriggers and cross members.

FLOOR STRUCTURE

Wood floor joists with particleboard or plywood decking, waterproofing and insulation.

FLOOR COVER

Inexpensive carpet and pad, asphalt or vinyl composition tile.

EXTERIOR WALL

Exterior finish is prefinished aluminum wall and roof panels. Minimum fenestration using economy-grade windows.

ROOF

Engineered trusses and sheathing with corrugated or ribbed metal roofing or composition shingle. Roofs are flat or slightly arched, with no overhang.

INTERIOR FINISH

Low-quality printed hardboard or prefinished plywood paneling on 2" x 3" studs. Small wardrobes. Economy-grade hollow core doors. Paint-grade or vinyl-covered particleboard kitchen cabinets and bathroom vanity. Ceiling height is typically 7' 6" to 8' 0".

HEATING

A forced-air furnace based on an extreme climate.

LIGHTING

Minimum number of electrical outlets. Low-cost lighting fixtures.

PLUMBING:

Five plumbing fixtures are included in the base cost. The fixtures can include any of the following: lavatory, toilet, tub, tub with shower over, kitchen sink and water heater. All fixtures are usually located along one side of the house (wet wall) with minimal runs.

INSULATION

Floor, wall and ceiling insulation for an extreme climate is included in the basic residence cost. Use the negative (-) adjustment list on the cost page.

Grade AA

Grade A

Grade B

Grade C+Plus

Grade C

Grade D

Grade E

MOBILE HOME PRICING SCHEDULE

LENGTH	SINGLE WIDE						DOUBLE WIDE				
FEET	8	10	12	14	16	18	20	24	28	32	36
20 24 28 32											
36 40 44 48											
52 56 60 64											
68 72 76 80											

EXTERIOR WALL ADJUSTMENTS

For other than hardboard sheet wall finish (Base) adjust the price above by the following factors: Aluminum, .97; Lap siding, 1.04; Cement fiber, lap, 1.03; Cement fiber, sheet 1.01; Plywood with batts, 1.02; Stucco, 1.07; Wood stresskin sandwich panels, 1.05; Log siding, 1.05.

TRIPLE WIDE: Apply a factor of .85 to the single-wide price for a tagalong section; use full price for the double-wide portion. See example below.

QUADS (four sections): Use full price for the first double-wide portion; use a factor of .85 for the second double-wide portion.

BASE PRICE ADJUSTMENTS

HEATING: Add for air conditioning at per square foot of living area.

PLUMBING: Base price includes: Five fixtures equal to , with no rough-ins. Add or deduct per fixture, . Add for each rough-in at .

FOUNDATION ADJUSTMENTS: Priced per linear foot of perimeter: concrete wall ; concrete block walls, ; treated wood, .

SKIRTING: Priced per linear foot of perimeter: metal or vinyl, ; simulated stone or brick panels, ; brick or stone veneer, .

OTHER

ATTACHMENTS AND OTHER FEATURES . . . . . Price from Residential pricing schedule.

POOLS . . . . . .Price from the appropriate Residential pricing schedule.

OTHER BUILDING IMPROVEMENTS . . . . . Price from the appropriate Residential pricing schedule.

QUALITY GRADE FACTORS

AA = 1.75 **A = 1.45** **B = 1.20** **C = 1.00** **D = 0.85** **E = 0.75**

EXAMPLE

Dwelling Computations for a Triple-wide Mobile Home

HOME: Double-wide Section: 24' x 64' = 1,536

TAGALONG: 8' x 40' = 320

1,856 Sq. Ft.

BASIC SQUARE FOOT PRICE

Double: x .828 (82.8% of the total square footage) =

Tagalong: x .85 x .172

(17.2% of the total square footage) = _____

TOTAL BASIC SQUARE FOOT PRICE

TOTAL MOBILE HOME PRICE

per sq. ft. x 1,856 sq. ft. =

Executive residences (commonly referred to as Mansions) are individually designed with many varied interior appointments. They will normally have extensive ornamentation or special design features of top-quality materials and workmanship. There are six broad classifications based upon the amount and finish of the custom features encountered. Certain residences may fit into one grade by the overall size and exterior finish of the basic structure, and another by the quality of the interior finish and other appointments. However the price given, even with the grade factor adjustments, may not be high enough for the most luxurious residences, built without regard to cost, since each listed price represents the average of the costs within that grade range, excluding extremes.

Review the following base specifications to determine the proper grade for the residences being valued. A residence can be of one grade on the exterior and another on the interior. Each of these custom residences, when designed, will be heavily influenced by the owner: hence the varied qualities among exterior and interior details.

For consistency with the rest of Volume II, these executive residences have the same quality grades, AA, A, B, etc. The six grades, while all of the best-quality materials and workmanship, could easily be defined as Executive Residences Grade I, Grade II, etc. see below.

GRADE AA . . . . . GRADE VI QUALITY
GRADE A. . . . . GRADE V QUALITY
GRADE B . . . . . GRADE IV QUALITY
GRADE C . . . . . GRADE III QUALITY
GRADE D . . . . . GRADE II QUALITY
GRADE E . . . . . GRADE I QUALITY

Note: The AA Plus (+) factor (found on Page 3-3) has been reduced since the last up date of Volume II. When that factor is applied to the base dwelling pricing (Pages 3-68 to 3-73), the resulting price can approach the Grade E Executive Residence price If this occurs the valuator should consider whether or not to obtain the price from the Executive Residence section.

ADJUSTMENTS

ATTACHMENTS AND OTHER FEATURES: Price from Residential pricing schedule.

POOLS: Price from the appropriate Residential pricing schedule.

OTHER BUILDING IMPROVEMENTS: Price from the appropriate Residential pricing schedule.

LARGE RESIDENCE MULTIPLIERS

To estimate a dwelling price for executive residences greater than 8,000 square feet, apply the following multipliers to the 8,000-square-foot base price (Pages 3–113 to 3–116) for the appropriate exterior wall. Use these same multipliers for Upper and Half Story, Attic Finish and all Base Price Adjustments found on Page 3-117.

AREA	MULTIPLIER	AREA	MULTIPLIER	AREA	MULTIPLIER	AREA	MULTIPLIER	AREA	MULTIPLIER
8200		10600		13000		15400		17800	
8400		10800		13200		15600		18000	
8600		11000		13400		15800		18200	
8800		11200		13600		16000		18400	
9000		11400		13800		16200		18600	
9200		11600		14000		16400		18800	
9400		11800		14200		16600		19000	
9600		12000		14400		16800		19200	
9800		12200		14600		17000		19400	
10000		12400		14800		17200		19600	
10200		12600		15000		17400		19800	
10400		12800		15200		17600		20000	

Residences of Grade AA Quality are individually designed and are characterized by the very finest quality of workmanship, finishes and appointments, and considerable attention to detail. Although residences at this quality level are inclusive of the very finest quality materials and workmanship, and each is unique in its design, these costs still do not represent the highest costs in residential construction.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this finest-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. Floor covers include the very finest quality carpet or hardwoods (parquet or plank), as well as the very finest custom carpets and hardwood floors. Also, terrazzo, ceramic or quarry tile and imported tile of the very finest quality can be found. Marble and granite floor tile of the very finest quality in entries and/or in master bath, etc. Resilient floor covers of the very finest quality for areas of heavy wear, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of the very finest custom designs, and the custom entry and sash are of the highest quality. The very finest custom ornamentation and trim above windows, doors, roofline, etc., are displayed. Wall ornamentation of the finest wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of the very finest quality custom design, with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne, or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, as well as taped and painted drywall, with the very finest grades of paper or vinyl wall coverings, hardwood paneling or the very finest quality custom ceramic, marble, granite and glass tiles. Built-in book shelving and the very finest custom cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry, peninsula (double sided), etc. All kitchen cabinetry will display the very finest quality resins or baked enamel finishes, or the very finest natural, lacquer-finished woods. Drawer and door hardware will be of the very finest quality grades. Kitchen counters and sinktops will be of the very finest grades of solid plastics (Avonite, Corian, Nevamar, etc.), the very finest custom ceramic tiles, or the finest marble or granite and woods. Some floor plans may even

have two kitchens, one for everyday use, the other for entertaining or special occasions. At this quality, the kitchen can be a focal point of the residence. In some floor plans, though, the kitchen may be used only by servants. In such cases, the quality of the cabinetry may not equal that of other residences at this quality level. However, such a kitchen is usually larger in square footage, and this should offset the costs of the finer-quality cabinetry. The very finest quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops, splash and walls will be of the very finest quality custom ceramic tile, the very finest quality solid plastics and the very finest quality marble. The very finest quality tub and shower enclosures throughout. The very finest quality raised-panel, solid-hardwood or enameled doors with the very finest quality hardware. All baseboards, casings and moldings around doors, windows and cabinetry will have tight-mitered corners. Spacious walk-in closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. More than one master suite can be found in some plans. Other bedrooms can have sitting-room areas, with large baths and walk-in closets. Ceilings are plaster, as well as taped and painted drywall, with the very finest custom wallpaper or stenciling, suspended ceiling systems with the very finest light panels, decorative hardwood with coffered/vaulted panels with molding, the very finest embossed metal tiles, mirror-face panels, etc. For multistory homes, main stairways will be of custom hardwood with tile, stone, marble or granite and with the very finest hardwood or marble railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial-quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems, to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and the very finest quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas, and finally, cabinetry lighting and undercounter lighting are found throughout.

PLUMBING

Five of the very finest quality white or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, pedestal-type vanities (all designs), tub, tub with shower over, kitchen sink, wet bar, hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade AA

Residences of Grade A Quality are individually designed and are characterized by the finest quality of workmanship, finishes and appointments, and considerable attention to detail. Residences at this quality level are inclusive of finest-quality materials and workmanship, and each is unique in its design.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this finest-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. Floor covers include the finest-quality carpet or hardwoods (parquet or plank), as well as the finest custom carpets and custom hardwood floors. The finest-quality terrazzo, ceramic or quarry tile and the finest custom imported tiles can also be found. Marble and granite floor tile of the finest quality in entries and/or in master bath, etc. Resilient floor covers of the finest quality for areas of heavy wear, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of the finest custom designs, and the entry and sash are of the highest quality. The finest custom ornamentation and trim above windows, doors, roofline, etc., are displayed. Wall ornamentation of wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of the finest-quality custom design, with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne, or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, as well as taped and painted drywall, with the finest grades of paper or vinyl wall coverings, hardwood paneling or the finest-quality custom ceramic, marble, granite and glass tiles. Built-in book shelving and the finest custom cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry and peninsula (double sided). All kitchen cabinetry will display the finest-quality resins or baked enamel finishes or the finest natural, lacquer-finished woods. Drawer and door hardware will be the finest quality grades. Kitchen counters and sinktops will be of the finest grades of solid plastics (Avonite, Corian, Nevamar, etc.), the finest custom ceramic tiles, the finest marble or granite and woods. Some floor plans may even have two kitchens, one for everyday use, the other for entertaining or special occasions. At this quality and the next, the kitchen can be a focal point of the residence. In some floor plans though, the kitchen may be

used only by servants; in such cases the quality of the cabinetry may not equal that of other residences at this quality level. However, such a kitchen is usually larger in square footage, and this should offset the costs of the finer-quality cabinetry. The finest-quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops, splash and walls will be of the finest-quality custom ceramic tile, the finest-quality solid plastics and the finest-quality marble. The finest-quality tub and shower enclosures throughout. The finest-quality raised-panel, solid-hardwood or enameled doors with finest-quality hardware. All baseboards, casings and moldings around doors, windows and cabinetry will have tight-mitered corners. Spacious walk-in-closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. More than one master suite can be found in some plans. Other bedrooms can have sitting-room areas, with large baths and walk-in closets. Ceilings are plaster, as well as taped and painted drywall, with custom wallpaper or stenciling, suspended ceiling systems with the finest light panels, decorative hardwood with coffered/vaulted panels with molding, finest embossed metal tiles, mirror-face panels, etc. For multistory homes, main stairways will be of custom hardwood with tile, stone, marble or granite and have the finest hardwood or marble railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial-quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems, to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and the finest-quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas. Cabinetry lighting and undercounter lighting are found throughout.

PLUMBING

Five finest-quality white or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, pedestal-type vanities (all designs), tub, tub with shower over, kitchen sink, wet bar, hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade A plus (+)

Grade A minus (-)

Residences of Grade B Quality are individually designed and are characterized by the very best quality of workmanship, finishes and appointments, and considerable attention to detail. Residences at this quality level are inclusive of finest-quality material and workmanship, and each is unique in its design.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this finest-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. Floor covers include the very best quality carpet or hardwoods (parquet or plank), as well as very best custom carpets and custom hardwood floors. The very best quality terrazzo, ceramic or quarry tile and the finest custom imported tiles can also be found. Marble and granite floor tile of the finest quality in entries and/or in master bath, etc. Resilient floor covers of the very finest quality for areas of heavy wear, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of the finest custom designs, and the entry and sash are of the highest quality. The finest custom ornamentation and trim above windows, doors, roofline, etc., are displayed. Wall ornamentation of wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of the finest-quality design with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, as well as taped and painted drywall, with the very best grades of paper or vinyl wall coverings, hardwood paneling or the very best quality custom ceramic, marble, granite and glass tiles. Built-in book shelving and the finest custom cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry, peninsula (double sided), etc. All kitchen cabinetry will be of the very best quality resins or baked enamel finishes or the very best natural, lacquer-finished woods. Drawer and door hardware will be the very best quality grades. Kitchen counters and sinktops will be of the very best grades of solid plastics (Avonite, Corian, Nevamar, etc.), the very best custom ceramic tiles, the finest marble or granite and woods. Some floor plans may even have two kitchens, one for everyday use, the other for entertaining or special occasions. The very best quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops,

splash and walls will be of the very finest quality custom ceramic tile, finest-quality solid plastics and finest-quality marble. The finest-quality tub and shower enclosures throughout. Finest-quality raised-panel, solid-hardwood or enameled doors with finest-quality hardware. All baseboards, casings and moldings around doors, windows and cabinetry will have tight-mitered corners. Spacious walk-in closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. More than one master suite can be found in some plans. Other bedrooms can have sitting-room areas, with large baths and walk-in closets. Ceilings are plaster, as well as taped and painted drywall, with custom wallpaper or stenciling, suspended ceiling systems with the finest light panels, decorative hardwood with coffered/vaulted panels with molding, finest embossed metal tiles, mirror-face panels, etc. For multi-story homes, main stairways will be of custom hardwood with tile, stone, marble or granite and have the very best hardwood or marble railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial-quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems, to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and the very best quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas. Cabinetry lighting and undercounter lighting are also included

PLUMBING

Five very best quality whites or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, pedestal-type vanities (all designs), tub, tub with shower over, kitchen sink, wet bar, hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade B plus (+)

Grade B

Grade B

Residences of Grade C Quality are individually designed and are characterized by the best quality of workmanship, finishes and appointments, and considerable attention to detail.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this best-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. Floor covers include the best-quality carpet or hardwoods (parquet or plank), as well as best custom carpets and custom hardwood floors. Terrazzo, ceramic or quarry tile of the best quality and the best custom imported tiles can also be found. Marble and granite floor tile of best quality in entries and/or in master bath. Resilient floor cover of the finest quality for areas of heavy wears, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of best custom design, and entry and sash are high quality. The best custom ornamentation and trim above windows, doors, roofline, etc., are displayed. Wall ornamentation of wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of the best-quality custom design with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, as well as taped and painted drywall, with best grades of paper or vinyl wall coverings, hardwood paneling, custom ceramic tile or best-quality marble and glass tiles. Built-in book shelving and the best custom cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry, peninsula (double sided), etc. All kitchen cabinetry will exhibit the best-quality resins or baked enamel finish or the best natural, lacquer-finished woods. Drawer and door hardware will be of the best-quality grades. Kitchen counters and sinktops will be of the best grades of solid plastics (Avonite, Corian, Nevamar, etc.), cultured marble, the best custom ceramic, marble or granite tile and woods. Some floor plans may even have two kitchens, one for everyday use, the other for entetaining or special occasions. The best-quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops, splash and walls will be of best-quality custom ceramic tile, finest-quality laminates, cultured marble and best-quality marble

tiles. The best-quality tub and shower enclosures throughout. The best-quality raised-panel solid hardwood or enameled doors with best-quality hardware. All baseboards, casings and moldings around doors, windows and cabinetry will have tight-mitered corners. Spacious walk-in closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. More than one master suite can be found in some plans. Other bedrooms can have sitting-room areas, with large baths and walk-in closets. Ceilings are plaster, as well as taped and painted drywall, with custom wallpaper or stenciling, suspended ceiling systems with best light panels, decorative hardwood with coffered/vaulted panels with molding, best embossed metal tiles, etc. For multi-story homes, main stairways will be of custom hardwood with tile, stone, marble or granite and with the best hardwood railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial-quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems, to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and best-quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas, as well as cabinetry lighting and undercounter lighting, will be found.

PLUMBING

Five best-quality white or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, pedestal-type vanities, tub, tub with shower over, kitchen sink, wet bar or hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update, and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade C plus (+)

Grade C

Grade C minus (-)

Residences of Grade D Quality are generally individually designed and are characterized by the highest quality of workmanship, finishes and appointments, and considerable attention to detail.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this high-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. Floor covers include best-quality carpet or hardwoods (parquet or plank), as well as high-quality custom carpets and hardwood floors. Best-quality terrazzo, ceramic or quarry tile and custom, imported tiles can also be found. Marble and granite floor tile of very good quality in entries and/or in master bath. Resilient floor cover of the very best quality for areas experiencing heavy wear, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of highest-quality design, and entry and sash are high quality. Custom ornamentation and trim above windows, doors, roofline, etc. Wall ornamentation of wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of high-quality custom design with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne, or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, and taped and painted drywall with highest grades of paper or vinyl wall coverings, hardwood paneling, ceramic tile or very good quality marble and glass tiles. Built-in book shelving and custom cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry, peninsula (double sided), etc. All kitchen cabinetry will exhibit the finest-quality paint or laminate or high-quality, custom, natural, lacquer-finished woods. Drawer and door hardware will be of the highest-quality grades. Kitchen counters and sinktops will be of the highest grades of laminates, solid plastics (Avonite, Corian, Nevamar, etc.), cultured marble, ceramic tile and wood. Highest-quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops, splash and walls will be of highest-quality ceramic tile, highest-quality laminates, cultured marble and very good quality marble and custom ceramic tiles. Highest-quality tub and shower enclosures throughout. Highest-quality raised-panel solid-hardwood or enameled doors

with highest-quality hardware. All baseboards, casings and moldings around doors, windows and cabinetry will have tight-mitered corners. Spacious walk-in closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. Ceilings are plaster, as well as taped and painted drywall, suspended ceiling systems with light panels, decorative hardwood with coffered/vaulted panels with molding, metal tiles, etc. For multistory homes, stairways will be of custom hardwood and tile, with hardwood railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial-quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems, to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and high-quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas, and finally, cabinetry lighting and undercounter lighting will be found throughout.

PLUMBING

Five high-quality white or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, tub, tub with shower over, kitchen sink, wet bar or hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade D

Residences of Grade E Quality are generally individually designed and are characterized by the custom quality of workmanship, finishes and appointments, and considerable attention to detail.

FOUNDATION

Poured concrete or concrete block perimeter walls to accommodate the wider-studded exterior walls or wide masonry exterior walls and interior bearing-wall foundation. Concrete footing, drain tiles, full basement.

FRAME

A partial steel frame is included to allow for long spans in great rooms, living rooms, etc.

FLOOR STRUCTURE

Wood or steel joists and subfloor on the first and upper floors. Joists are properly spaced to accommodate the additional interior components of this custom-quality housing. Foamed concrete surfacing throughout is included for leveling of the floors, as well as for sound insulation. High-quality carpet or hardwood (parquet or plank), as well as custom carpets and hardwood floors are used. Floor covers include high-quality terrazzo, ceramic or quarry tile, and custom, imported tiles can also be found. Marble and granite floor tile of good quality in entries and/or in master bath. Resilient floor covers of the best quality for areas experiencing heavy wear, in laundry room, bonus rooms, etc.

EXTERIOR WALL

Fenestration is of custom design, and entry and sash are custom quality. Some custom ornamentation and trim above windows and doors. Wall ornamentation of wood, select brick, cut stone, glass block, local stone, marble, granite, etc., is used throughout the exterior walls. Extra-heavy-framed exterior walls are of 2" x 6" or 2" x 8" or appropriate steel stud construction with some pocket doors. Masonry exterior walls are approximately 12 inches thick.

ROOF

A roof of custom design with many ridges and valleys. With heavy wood or steel rafters and sheathing. Roof covers are typically concrete or clay tile, copper or terne or formed metal or wood shake or shingle. Additional features include good flashing, ample gutters and downspouts, along with some skylights. Roofline is of a steep slope with a pitch up to 6:12 for one-story homes. Large roof overhangs up to 3 feet can also be found.

INTERIOR FINISH

Interior walls are plaster, as well as taped and painted drywall, with custom grades of paper or vinyl wall coverings, hardwood paneling, ceramic tile or good-quality marble and glass tiles. Built-in book shelving and ample cabinets, which may include such specialty cabinetry items as a cooking island, wet bar, built-in desk, walk-in pantry, peninsula (double sided), etc. All kitchen cabinetry will exhibit best-quality paint or laminate or custom, natural, lacquer-finished woods. Drawer and door hardware will be custom-quality grades. Kitchen counters and sinktops will be custom-grade laminate, solid plastics (Avonite, Corian, Nevamar, etc.), cultured marble, ceramic tile and wood. Custom-quality pullmans or vanity cabinets in the bathrooms and dressing areas. Countertops, splash and walls will be of high-quality ceramic tile, highest-quality laminates, cultured marble and good-quality marble tiles. Custom-quality tub and shower enclosures throughout. Custom-quality, raised-panel, solid hardwood or enameled doors with custom-quality hardware. All baseboards, casings, and mold-

ings around doors, windows, and cabinetry will have tight-mitered corners. Spacious walk-in closets, his and hers in the master suite, with many built-in features. Large linen storage closets and pantry are fully shelved. Master suite can have sitting room, exercise room, private den, vaulted or cathedral ceilings, etc. More than one master suite can be found in some plans. Ceilings are plaster, as well as taped and painted drywall, suspended ceiling systems with light panels, decorative hardwood with coffered/vaulted panels with molding, metal tiles, etc. For multistory homes, stairways will be of custom hardwood, with hardwood railings. Not included in the base dwelling price, these homes will include numerous built-in appliances, including commercial quality range tops, double ovens, dishwashers, trash compactors, refrigerators and freezers, custom stainless steel or copper exhaust fans and hoods, intercoms and vacuum-cleaning systems to name a few.

HEATING/COOLING

A complete heating/cooling system with multiple controls, large capacity and insulated ductwork to all main areas is included in the basic residence cost. The system is based on an extreme climate.

LIGHTING

Numerous well-positioned outlets and custom-quality fixtures throughout. Large luminous fixtures in kitchen, bath and dressing areas. Cabinetry lighting and undercounter lighting.

PLUMBING

Five custom-quality white or colored plumbing fixtures with one plumbing rough-in are included in the basic residence cost. The fixtures can include any of the following: water heater, laundry tray, tiled shower stall, toilet, bidet, vanities, tub, tub with shower over, kitchen sink, wet bar or hydrotherapy tub (Jacuzzi).

ENERGY PACKAGE

Dwelling base costs are for residences that meet building codes as of the last manual update and include the costs of meeting current energy guidelines for extreme climate locations. Adjustments for residences that either fall below the current codes or exceed the current codes should be made using a Cost and Design adjustment as needed. See Chapter Two for Cost and Design application.

Grade E plus (+)

Grade E

EXECUTIVE DWELLING PRICING SCHEDULE

FRAME BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
1600				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800				

FRAME BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
4900				
5000				
5100				
5200				
5300				
5400				
5500				
5600				
5700				
5800				
5900				
6000				
6100				
6200				
6300				
6400				
6500				
6600				
6700				
6800				
6900				
7000				
7100				
7200				
7300				
7400				
7500				
7600				
7700				
7800				
7900				
8000				

EXECUTIVE DWELLING PRICING SCHEDULE

MASONRY VENEER BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
1600				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800				

MASONRY VENEER BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
4900				
5000				
5100				
5200				
5300				
5400				
5500				
5600				
5700				
5800				
5900				
6000				
6100				
6200				
6300				
6400				
6500				
6600				
6700				
6800				
6900				
7000				
7100				
7200				
7300				
7400				
7500				
7600				
7700				
7800				
7900				
8000				

EXECUTIVE DWELLING PRICING SCHEDULE

CONCRETE BLOCK BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
1600				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800				

CONCRETE BLOCK BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
4900				
5000				
5100				
5200				
5300				
5400				
5500				
5600				
5700				
5800				
5900				
6000				
6100				
6200				
6300				
6400				
6500				
6600				
6700				
6800				
6900				
7000				
7100				
7200				
7300				
7400				
7500				
7600				
7700				
7800				
7900				
8000				

EXECUTIVE DWELLING PRICING SCHEDULE

BRICK OR STONE BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
1600				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800				

BRICK OR STONE BASE PRICES (COSTS PER SQUARE FOOT)				
AREA	1ST STORY & BSMT.	UPPER STORY	HALF STORY	ATTIC FIN.
4900				
5000				
5100				
5200				
5300				
5400				
5500				
5600				
5700				
5800				
5900				
6000				
6100				
6200				
6300				
6400				
6500				
6600				
6700				
6800				
6900				
7000				
7100				
7200				
7300				
7400				
7500				
7600				
7700				
7800				
7900				
8000				

EXECUTIVE DWELLING PRICING SCHEDULE – BASE PRICE ADJUSTMENTS

BASEMENTS							
AREA	FULL	PARTIAL	WALKOUT	AREA	FULL	PARTIAL	WALKOUT
1600				4900			
1800				5000			
1900				5100			
2000				5200			
2100				5300			
2200				5400			
2300				5500			
2400				5600			
2500				5700			
2600				5800			
2700				5900			
2800				6000			
2900				6100			
3000				6200			
3100				6300			
3200				6400			
3300				6500			
3400				6600			
3500				6700			
3600				6800			
3700				6900			
3800				7000			
3900				7100			
4000				7200			
4100				7300			
4200				7400			
4300				7500			
4400				7600			
4500				7700			
4600				7800			
4700				7900			
4800				8000			

QUALITY GRADE FACTOR	
AA	1.65
A	1.40
B	1.25
C	1.00
D	.90
E	.80

BASE PRICE ADJUSTMENTS
Crawlspace
Full Finish
Recreation Room Finish
Unfinished Living Area

HEATING
No Heat - Deduct (–)
Heat Only - Deduct (–)
Air Conditioning - Separate Ducts
GEO Thermal

PLUMBING
Base Price Includes 5 Fixtures w/ no Rough-Ins
Add/Deduct for each fixture greater or less than 5
Add for each Rough-In
Add for Whirlpool Tub

As given in this section, are to be used with both methods and may be added to the residence cost to estimate the complete cost of the improvements.

For large installations of fencing or walls, such as subdivision uses or farms, use the following factors: 400 - 1,000 linear feet, .95; 1,000 - 3,000 linear feet, .90; 3,000 - 6,000 linear feet, .85; over 6,000 linear feet, .80.

CHAIN-LINK FENCES

Average cost per linear foot, including complete installation on 2" round or "H" posts set in concrete, 10' on centers. Gates are priced on a per each basis adding 25% for sliding gates.

	HEIGHT				
TYPE	**4’**	**6’**	**8’**	**10’**	**12’**
2” mesh, 9# wire					
#11 wire					
add for rails					
add for 3-strand barbed wire					
add for barbed coils					
add for privacy slats					
Gates, 3’ wide					
5’ wide					
10’ wide					
15’ wide					
20’ wide					
25’ wide					
Aluminum or vinyl covered,					
2” mesh, 9# wire					
#11 wire					
add for rails					
Gates, 3’ wide					
5’ wide					
10’ wide					
15’ wide					
20’ wide					
25’ wide					

WOOD FENCES - Price per linear foot including complete installation.

Solid board, horizontal or vertical
- 6’
- 5’

Solid prefabricated panels, lattice top
- 6’
- 4’

Split redwood, solid palings
- 6’
- 5’

Basketweave
- 6’
- 5’

Wood picket, 12” – 24”
- 30” - 40”
- 50” - 60”

two rails, split, 24” – 36” high

three rails, split, 36” – 48” high

four rails, split, 42” – 54” high

6’ stockade, half pole
- whole

Wood gates, per sq. ft.

VINYL FENCES - Price per linear foot including complete installation.

Spaced slat panels
- 6’
- 4’ – 5’

Basketweave, 5’

Solid board panels
- 6’
- 4’ – 5’

Picket, 36” – 48’”high

Lattice, framed 24” – 50” high

Two rails, 36” – 48” high

Three rails, 60” high

Four rails, 60” high

MASONRY WALLS - Priced per linear foot including complete installation including normal footings.

	HEIGHT				
TYPE	**4'**	**6'**	**8'**	**10'**	**12'**
4" block with pilasters, reinforced					
6" block, reinforced					
8" block, reinforced					
Brick, 8" thick					
12" thick					
8" block backup					
8" precast, retaining					
post and solid panels					

METAL FENCES AND GRILLES - Priced per linear foot including installation.

	HEIGHT				
TYPE	**4'**	**6'**	**8'**	**10'**	**12'**
Hand-forged wrought iron or modular, steel					
gates, per linear foot					

PAVING/DECKING

Typical costs per square foot, except as otherwise specified. For paved areas between 500 and 1,000 square feet, use a factor of .90. 1,000 to 3,000 square feet, use a factor of .80. Small separate pours of 100 square feet or less may run 25% higher, hand mixed and spread, up to 75% more.

2" asphalt
3" asphalt
4" asphalt
2" aggregate base
3" aggregate base
4" aggregate base
2" concrete, unreinforced
3" concrete, unreinforced
4" concrete, unreinforced

2" concrete, mesh reinforced
3" concrete, mesh reinforced
4" concrete, mesh reinforced
2" concrete, bar reinforced
3" concrete, bar reinforced
4" concrete, bar reinforced
salt finish
4" sand base
2" gravel base
3" gravel base
4" gravel base

Concrete sidewalk
Asphalt block pavers on concrete base
Brick on concrete, grouted, flat
on edge
Concrete pavers on concrete base
Flagstone on concrete, grouted
Tile, quarry on concrete base
Wood, on grade
2" x 4" flat
2" x 4" on edge
Steps on ground, per. lin. ft. of tread, brick on concrete
concrete
Snow melting, including controls, electric
hydronic, large areas (excluding heat source)

SURFACE PARKING LOTS

The following are based on a cost per space and average area per space including asphalt paving, striping, some lighting, landscaping and drainage. Older lots, sized for large cars or lots designed for much in and out traffic tend toward the higher area per space, while newer lots sized for smaller cars or lots designed for maximum parking tend toward the lower side of the range.

COST PER SPACE		
Low Cost (285 Sq. Ft./Space)	Average (315 Sq. Ft./Space)	Good (345 Sq. Ft./Space)

LANDSCAPING – Typical costs as specified.

	Low	Average	High Cost
Soil preparation, per sq. ft., fine grading			
mulching			
top dressing or bedding			
Lawns, per sq. ft., seeding			
hydroseeding only			
sodded			
Ground cover, per sq. ft., gravel or wood chips			
spreading plants			
Edging, per lin. ft., masonry			
cast stone			
metal			
redwood			
timber of ties			
Shrubs and hedges, each, small			
medium			
large			
Trees, each, small, 15 gal. – 20” box			
medium, 24’ – 36” box			
large, 42” box or larger			
Tree grates, including frame, per sq. ft.			
Planter boxes, per sq. ft., concrete, precast			
cast stone, ornate troughs			
fiberglass			
wood			
Planters, each, round, concrete, 24” diameter			
48” diameter			
tree size, 3’ – 10” diameter			
Bollards, each, wood			
concrete			
add for lighting			
*Complete residential developments			

* The prices above are to be applied to the entire landscape area including common areas and are used when actual unit pricing is not feasible. Costs will vary greatly due to the number of variables involved. The cost ranges include soil preparation and some post-installation maintenance commensurate with the quality, excluding extremes.

LOW COST areas have a minimum number of 1- to 5-gallon shrubs, small trees and ground-cover plants proportioned for a light visual effect, manual irrigation and seeded lawn. AVERAGE COST areas include an average number of 3- to 5-gallon shrubs, small to large trees, closer spacing of small ground-cover plants, automatic irrigation and seeded lawn. HIGH COST areas will have a high visual content of 5- to 15-gallon shrubs, a greater proportion of large trees, closely spaced ground cover with top dressing, automatic irrigation, seeded lawn and sodded turf areas.

LAWN SPRINKLERS

Cost per square foot installed, including trenching and backfill. Intricate shrub-type strip areas may be twice as high as conventional systems. For automatic control, add per station.

Conventional, small areas . . . . .
Rain Bird or Rain Jet systems, large areas . . . . .

OUTDOOR LIGHTING – Typical cost range per fixture.

Spotlights or luminaries, decorative, each . . . . .
underwater lighting . . . . .
low voltage . . . . .
Post lantern . . . . .
Floodlights, per fixture, high-pressure sodium . . . . .
LED . . . . .
mercury vapor . . . . .
fluorescent or quartz-iodine . . . . .
incandescent . . . . .
Poles, metal, per lin. ft. . . . . .
Poles, metal, per lin. ft. (ornamental) . . . . .
add per bracket . . . . .

CANOPIES – Cantilevered portion of building that extends over and entrance

Wood Frame . . . . .
Steel Frame . . . . .

GAZEBO – Freestanding roofed structure, typically open on the sides

Standard . . . . .
Deluxe . . . . .

BASE SPECIFICATIONS
FOUNDATION – Concrete footings. WALLS – Wood, metal on pole frame or metal on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing. OTHER FEATURES – Windows, cabinets, electric lighting and water service.

BASE PRICES – 12' HIGH			
STRUCTURE TYPE	**Wood Frame/ Wood Siding**	**Pole Frame/ Metal Siding**	**Steel Frame/ Steel Siding**
Area	**Price per Square Foot**		
100			
200			
300			
400			
500			
1000			
1500			
2000			
2500			
3000			
+ 2% Foot in Height			

BASE SPECIFICATIONS
FOUNDATION – Concrete footings. WALLS – Open, one side, wood, metal on pole frame or metal on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing. OTHER FEATURES – Some end-wall windows, some cabinets, electric lighting and water service.

BASE PRICES – 12' HIGH			
STRUCTURE TYPE	**Wood Frame/ Wood Siding**	**Pole Frame/ Metal Siding**	**Steel Frame/ Steel Siding**
Area	**Price per Square Foot**		
100			
200			
300			
400			
500			
1000			
1500			
2000			
2500			
3000			
+ 2% Foot in Height			

BOAT STORAGE RACKS

Costs of storage racks are included in the buildings and sheds. Costs of racks only are as follows:

	HIGH	AVERAGE	MINIMUM
Sq. Ft. Costs:	–	–	–

BOAT DOCKS

The following are typical cost ranges per square foot including fenders, railings, utilities, and miscellaneous items commensurate with the type and quality, exclusive of buildings.

LIGHT CONSTRUCTION	2" floating deck, light posts. . . . .
(Wood girders, nailed)	2" decking, light posts. . . . .
	3" decking, light piling. . . . .
MEDIUM CONSTRUCTION	2" floating deck, winch or light piling. . . . .
(Wood girders, bolted)	3" decking, light piling. . . . .

WATER WELLS

Average costs of water wells, 100 to 1,000 feet deep. Costs include drilling, casings, gravel pack, setup, testing, and miscellaneous costs up to a point of actual operation excluding pumps.

SIZE	AVERAGE
5”	
9”	
13”	
17”	
21”	
25”	
29”	

SEWAGE DISPOSAL

SEPTIC TANK Average costs installed and connected in normal soil

	AVERAGE		AVERAGE
750 gallon		2,000	
1,000		4,000	
1,200		6,000	
1,500		10,000	

Leaching lines, tile, per linear foot	
plastic pipe, per linear foot	
add for gravel or stone backfill, per cubic foot	

Cesspools, plus per linear foot of depth

SEPTIC MOUNDS

Engineered drainfield used in areas where septic systems are more prone to failure due to extremely permeable or impermeable soils. Typically soils with shallow cover over porous bedrock, and soils that have a high seasonal water table.

	AVERAGE
1000 gallon	
2000	
4000	

PUBLIC UTILITIES

	Cost
Water main, 6” ducting iron, lin. ft.	
6” asbestos cement	
6” steel	
6” plastic	
add or deduct per inch of diameter	
Water lateral, 1” lin. ft.	

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An apartment is a residential living unit with the same living accommodations normally found in a single-family-type residence. An apartment house is a multifamily residence containing two or more residential living units and generally providing them with a number of common facilities and services. Two or more apartment buildings operating as a single unit are generally referred to as an apartment complex.

Recent years have seen a tremendous increase in multifamily residential developments, especially in the areas of apartment complexes and high-rise apartment buildings. Each of these offers complete living accommodations with all the modern conveniences. In addition, they generally provide a variety of recreational facilities and personal services for their occupants.

VALUATION

As with other types of property, the starting point for the appraiser is to determine the replacement cost new of the apartment building. An Apartment Pricing Schedule is provided in the Manual to assist the appraiser in doing so.

Apartment units found in a given apartment building or complex of buildings vary in size and arrangement. They may be one-room efficiency units consisting of a bedroom and kitchenette; two-room studio units consisting of a bedroom and living room/den and kitchenette combination; or conventional units consisting of a kitchen, dining area, living room and one or more bedrooms. Each apartment has one or more bathrooms, and conventional units often have a separate dining room and a den or family room.

The most significant variable in determining the replacement cost of an apartment building is the size of the individual units. The Pricing Schedule provided in this section is designed to account for this variation.

BASE PRICES

Base square foot prices have been developed for typical C Grade apartment units based on average unit sizes, and at various floor levels, for wood joist, fire resistant, and reinforced concrete construction. Base prices are also given for both brick (or equal) and frame/concrete block exterior walls in the wood joist construction type.

The foundation and roof construction are included in the first-floor prices, making the schedule applicable to both one-story and multistory buildings.

QUALITY FACTOR

The schedule prices are for normal C Grade construction erected with average-quality materials and workmanship throughout. A table of Quality Factors is provided to adjust the C Grade prices to account for variations in construction quality. Reference should be made to the Residential Grade Specifications and the determination and use of Quality Grade and Design Factors detailed in the Residential Section of the *Manual*.

APPLICATION

Application of the schedule involves the selection of the appropriate base price and adjusting the price to account for any variations between the subject building and the model building.

NOTE

The Apartment Pricing Schedule is designed for apartment buildings of two to seven units.

INCOME APPROACH

Apartment buildings, regardless of their type, are built, bought and sold as investment or income-producing property. The appraisal of apartments follows the same procedures discussed in the sections of the Manual dealing with the Capitalization or Income Approach to value. The basic procedure is 1) the collection and analysis of income and expense data in order to determine the net return; and 2) the capitalization of the net return into an indication of value, generally by using either the Building or the Land Residual Technique.

DEPRECIATION

Apartment building depreciation factors should be based on personal observation. Consideration should be given to physical wear and tear, deferred maintenance and inherent obsolescence.

APARTMENT LISTING INSTRUCTIONS

TYPE

Enter the type of apartment building of two (2) to seven (7) units, being described as:

Enter 1: GARDEN to indicate an apartment building of the garden variety. This type is the most common and normally ranges from one (1) to two (2) stories.

Enter 2: TOWNHOUSE to indicate an apartment building which has its own outside entrance and serves as a completely self-sufficient unit except for the fact that it ordinarily shares a common wall with adjacent units. Townhouses are usually two-story units with the living area on the first floor and bedrooms on the second floor.

Enter 3: OTHER to indicate especially unusual complexes that do not fit into the categories mentioned above.

GRADE

Enter the letter grade (AA, A, B, C, D or E) corresponding to the appropriate quality.

NUMBER OF BEDROOMS

Enter the number of bedrooms per apartment unit. Bedrooms should be counted if they were constructed for use as a bedroom even though they may be utilized for another purpose.

BATHS

One bathroom = 1.0

One and one-half bathrooms = 1.5, etc.

NUMBER OF UNITS

Enter the total number of individual units contained in the apartment building, each having a specified number of bedrooms and bathrooms for a given type.

RENTAL

Enter the gross monthly rental paid for individual units of a given type having a specified number of bedrooms and bathrooms.

INCOME DATA

ACTUAL RENT (Contract Rent)

Enter the total amount of potential gross annual rent paid for the use of land and improvements under lease contracts.

VACANCY

Enter the amount deducted from potential annual gross income to reflect the effect of probable vacancy and turnover, or nonpayment of rent by tenants, expressed as a percent.

ECONOMIC RENT

Economic rent may be defined as the rental income that a property should command on the open market.

EXPENSES

Enter the total annual amount of expenses necessary to obtain and maintain income. This should include operating expenses, fixed expenses, and reserves for replacements, expressed as a percentage.

The following is an explanation of the procedure to manually calculate apartment building values from the apartment pricing schedule located in this Manual.

1. Enter the exterior wall construction in the appropriate column - l - Finished Basement, 2 - First Floor, 3 - Upper Floor.

2. Enter the average unit size per level.

3. Enter the appropriate Base Price per square foot from the Apartment Pricing Schedule, based on type of exterior wall construction, floor level and average unit size.

4. Enter the square footage based on exterior measurements for each floor level.

5. Multiply the Base Price by the square footage for each level and enter the amount in the corresponding subtotal column.

6. Add the amounts located in the subtotal columns and enter the result in the Adjusted Base Price area.

7. Calculate the unfinished basement cost from the Apartment Pricing Schedule and enter the amount in the Unfinished Basement area.

8. Add or deduct the amount of value for an excess or lack of plumbing fixtures, based on the plumbing specifications in the Apartment Pricing Schedule, and enter the amount in the plumbing area.

   Note: Do not add an unfinished basement cost when utilizing the finished basement column. This entry is for crawl space or unfinished basement only.

9. Calculate the cost for central air conditioning, based on average unit size and square footage from the Apartment Pricing Schedule, and enter the amount in the air conditioning area.

10. Calculate the cost of any attachments and other features from the appropriate residential listing instructions and pricing schedules and enter the amount in the attachments area.

11. Total the following:

    a. Adjusted Base

    b. Unfinished Basement

    c. Plumbing

    d. Air Conditioning

    e. Attachments

    and enter the amount in the subtotal portion of the computation ladder.

12. Multiply the appropriate grade factor by the subtotal and enter the amount in the Base Value area.

13. Enter the local modifier factor utilized by the jurisdiction in the local modifier portion of the computation ladder.

	OTHER FEATURES	AMOUNT
551	1 MASONRY ADJ [ ] _____ x _____	
552	2 REC ROOM _____ x _____	
553	3 WB FP: STACKS __ OPENINGS __	
554	4 METAL FP: STACKS __	
555	5 GAS FP __	
556	6 BASEMENT GARAGE, NO. CARS __	
557	7 BUILT-IN GARAGE, NO. CARS __	
558	8 DORMERS, TYPE: _____ ____ L.F.	
	ROOF ADJUSTMENT – METAL	
	WHOLE HOUSE GENERATOR	
559	9 TOTAL ADDITIONAL OTHER FEATURE AMT	
	TOTAL OTHER FEATURE AMT _____	

ATTACHMENTS		1st	2nd	3rd	AREA	AMOUNT
601	1	21			60	
602	2	35			40	
603	3	35			40	
604	4	35			40	
605	5	35			40	
606	6	35				
	TOTAL ATTACHMENT AMOUNT				$_____	

ATTACHMENT CODES

11 OFP	21 OMP
12 EFP	22 EMP
13 FR GA	23 M GAR
29 CARPORT	
30 COMPOSITE DECK	
31 WOOD DECK	
32 CANOPY	
33 CONC/M PATIO	
34 STN/TL PATIO	
35 MS/TERRACE	
99 ADD'L ATTACHMENT	

Base price for fire-resistant construction = base price x

820	APARTMENT DATA				
TYPE	GR	BEDS	BATHS	NO. UNITS	RENTAL
1 1	C	2	1 • 0	6	475
2 __	__	__	__ • __	__	__
3 __	__	__	__ • __	__	__

830	INCOME DATA		
Actual Rent	_____	Economic Rent	_____
Vacancy	____	Expenses	____

APARTMENT COMPUTATIONS	1-FIN BSMT	2-FRST	3-UPPER
EXTERIOR WALLS	Conc.	Fr.	Fr.
AVERAGE UNIT SIZE	Unfin.	1,067	1,067
BASE PRICE*			
SQUARE FEET	3,200	3,200	3,200
SUBTOTAL			
ADJ BASE 1+2+3			
UNFINISHED BSMT			
PLUMBING + 2 fixtures			
AIR CONDITIONING			
ATTACHMENTS			
SUBTOTAL			
X GRADE FACTOR = BASE VALUE			
X LOCAL MODIFIER			

APARTMENT TYPE
1. GARDEN
2. TOWNHOUSE
3. OTHER

APARTMENT GRADE FACTOR

AA	1.75
A	1.55
B	1.28
C	1.00
D	0.85
E	0.55

14. Multiply the Base Value by the local modifier, and enter the resultant Replacement Cost New in the Gross Building summary section of the property record card, along with any descriptive information desired.

GROSS BUILDING SUMMARY													
ID	USE	CONST	GRADE	AGE EREC	AGE REM	SIZE	RATE	LM	RCN	COND.	% GOOD	OB/MA	MARKET VALUE
	6-unit apt.	FR	C	71		6,400		.933		G	80		
800	TOTAL OTHER IMPROVEMENTS												

SUMMARY OF VALUES	
TOTAL VALUE LAND	
TOTAL VALUE BUILDING	
TOTAL VALUE LAND & BLDGS	

15. Enter the overall condition of the building. Enter E for excellent, G for good, A for average, F for fair, P for poor, and U for unsound.

16. Enter the percent good of the building being described. Percent good is defined as the resultant estimate of the diminishing value of an improvement after subtracting the amount of estimated depreciation from the replacement cost new.

17. Enter the obsolescence/market adjustment (08/MA) of the building. This is the resultant value after deduction of functional obsolescence and deduction or addition of a market adjustment factor expressed as a percentage.

    Note: This is not a required entry. If this entry is utilized, it will function as a deduction or addition to the resultant value generated from the percent good entry.

18. Enter the replacement cost new less depreciation (RCNLD). This is the resultant value of the building after deduction of all forms of depreciation and/or the deduction or addition of a market adjustment factor.

19. Complete the gross building summary by adding to the main dwelling any additional minor buildings (improvements). Refer to the residential property record card listing instructions (side 3) for recommended procedure on the use of the gross building summary for listing and valuing additional improvements.

20. Then total the main dwelling and all additional (if any) improvements for a total improvement replacement cost new less depreciation value. This figure is entered in the (800) Total Other Improvements value space along with a brief general description of the item(s) being described in the Gross Building Summary.

PERSONNEL DATA

Enter the name or number and the date of the person measuring, listing, calculating, and reviewing the property data.

APARTMENT - Townhouse_ Grade A minus (-)

APARTMENT - Townhouse_ Grade B

APARTMENT - Townhouse_ Grade B minus (-)

APARTMENT - Townhouse_ Grade C

APARTMENT - Townhouse_ Grade C minus (-)

APARTMENT PRICING SCHEDULE

2 OR MORE UNITS

BASE PRICES PER SQUARE FOOT								
	FRAME OR CONC. BLOCK				BRICK OR STONE			
AVERAGE UNIT SIZE	Finished Bsmt.	First Floor	Upper Floor	AVERAGE UNIT SIZE	Finished Bsmt.	First Floor	Upper Floor	AVERAGE UNIT SIZE	Add for Air Cond. per Floor
300				300				300	
350				350				350	
400				400				400	
450				450				450	
500				500				500	
550				550				550	
600				600				600	
650				650				650	
700				700				700	
750				750				750	
800				800				800	
850				850				850	
900				900				900	
950				950				950	
1000				1000				1000	
1050				1050				1050	
1100				1100				1100	
1150				1150				1150	
1200				1200				1200	
1250				1250				1250	
1300				1300				1300	
1350				1350				1350	
1400				1400				1400	
1450				1450				1450	
1500				1500				1500	
1550				1550				1550	
1600				1600				1600	
1650				1650				1650	
1700				1700				1700	
1750				1750				1750	
1800				1800				1800	
1850				1850				1850	
1900				1900				1900	
1950				1950				1950	
2000				2000				2000	
Over				Over				Over	

Base Prices are for normal (C Grade) walk-up-type Apartment Buildings of wood joist construction.
For fire-resistant construction, add 20%. For reinforced concrete fireproof construction, add 25%.

BASE PRICE ADJUSTMENTS AND ADDITIONAL FEATURES						QUALITY GRADE FACTOR	
Base Prices for ground floor slab construction. Add per square foot of total basement.				**PLUMBING**	Base Prices — include street services, five fixtures per unit, hot water system and normal drainage. Add or Deduct per Fixture	**AA**	1.75
						A	1.55
UNFINISHED BASEMENT	**AREA**	**CRAWL SPACE**	**BSMT.**			**B**	1.28
	1,000			**ATTACHMENTS and OTHER FEATURES**	Price from Residential Pricing Schedule.	**C**	1.00
	1,500						
	2,000						
	3,000						
	4,000						
	5,000			**POOLS**	Price from the appropriate Residential Pricing Schedule	**D**	0.85
	6,000						
	7,000						
	8,000						
	9,000			**OTHER BUILDING IMPROVEMENTS**	Price from the appropriate Pricing Schedule.	**E**	0.55
	10,000						

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Note*

*The following items have been omitted in this edition as they are no longer being built or in use:
Prefabricated Steel Buildings
Feed Bunks, Circular Type
Galvanized Steel - Automated Nipple Watering System for Hogs
Prefabricated Steel Silos and Butler LMS Silos

This section deals with the Other Building Improvements (O.B.I.) portion of the Property Record Card (P.R.C.), Agriculture Structure Type & Modification Codes, the Agricultural (Manual)Work Card (A.W.C.) and the various pricing tables applicable to the agricultural industry.

The chapters preceding this section are used in conjunction with the agricultural information supplied herein to properly complete the P.R.C. if listing and valuing agricultural property.

OTHER BUILDING IMPROVEMENTS (O.B.I.)

This section provides guidelines for collecting and recording additional structural characteristics affecting property value. Agricultural properties, i.e., barns, silos and the like may be priced (valued) in this area. However, another tool is available for the assessor in the form of an Agricultural (Manual) Work Card. This card is a combination of the existing Agricultural Work Card and the new headings listed in this section, now referred to as other Building Improvements. (A further discussion of the Agricultural Work Card will follow and is located at the front of the agricultural cost tables.) This Work Card allows more flexibility than the O.B.I. section we will now be discussing. Should you choose to utilize the Agricultural Work Card for listing and calculating, you may either bring your total values to the Gross Building Summary section (located below the O.B.I. area) or place your totals and other necessary information in the O.B.I. area in summary fashion. In either case, these summary values are then brought forward to Page 2 and placed in the appropriate area under Dwelling Computations.

STRUCTURE TYPE CODES

This term refers to a category of improvements such as pools or barns. The structure type code, therefore, stands for the overall structure itself and is made up of three parts. The first character stands for the overall property component with which the structure is associated. There are three possible codes for this first character:

R = Residential
A = Agricultural
B = Agricultural

The second character in the structure type code stands for the structural category of the improvement. There are many of these, and several examples are listed below.

G = Grain bin, Garage
S = Shed, Silo
P = Pool, Pole building

The third character is numeric and distinguishes one type of structure from the others within the same category. Several examples are listed below.

Structure Type Code	1st Character Meaning	2nd Character Meaning	3rd Character Meaning
RG1	Residential	Garage	Frame or CB
RG2	Residential	Garage	Brick or Stone
AM1	Agricultural	Milk House	Attached CB
AM2	Agricultural	Milk House	Attached Wood Frame

QUANTITY (QUAN)

This term refers to the number or quantity of like structures being listed.

CONSTRUCTION

This term refers to the general construction of the item being listed. Circle the appropriate construction type.

F = Frame/Concrete block construction

M = Masonry/Brick/Stone construction

P = Pole frame construction

S = Steel frame construction

O = Construction other than frame or masonry, for example: porcelain silo, wire corn cribs, etc.

YEAR

This term refers to the year the item was constructed. Enter all four digits.

SIZE

Enter either the ground floor area in square feet or the dimensions (width and length) of the item.

GRADE (G)

Space is provided to enter one alpha character denoting the quality grade of the item. If a quality grade denotation is not applicable to the item, draw a line through the character position.

Note: Refer to the cost schedule section of this manual for applicable grades.

HEIGHT (HGT.)

Space is provided to enter the actual height or depth of a structure whose type code will necessitate a deviation from the base specification prices.

For example: the base height specification for a Dairy Barn is 16 ft. If the subject Dairy Barn has a height of 16 ft., simply leave the entry blank. If the subject Dairy Barn has a height of 20 ft., it is necessary to enter the 20 in the height entry.

Note: For base height specifications, refer to the cost schedule section of this manual.

RATE

Space is provided to enter the pricing rate utilized from the cost schedules.

MODIFICATION CODES

Modification codes refer to additions or deductions to modify cost components from the base specifications. Modification codes are identified by one numeric character and should only be utilized for the specific structure(s) intended.

SPECIAL MODIFICATION CODES

Special modification codes refer to special modifications made to modify the cost components from the base specifications. Special modifications are identified by three character codes, as are the structure codes. The difference between using special modification codes and using structure type codes is that a special modification code necessitates a separate line entry immediately below the structure type code being modified. Other items necessary to describe the special modification must also be entered to allow for proper processing of the modification to an indication of value.

Note: Special modification codes should only be utilized for the specific structures intended.

LOCAL MODIFIER (LM)

Space is provided to enter the appropriate local modifier.

REPLACEMENT COST NEW (RCN)

Space is provided to enter the calculated replacement cost new of the item(s) after application of the local modifier. Replacement cost new is defined as the current cost of replacing the improvement with a substitute improvement of equal utility.

CONDITION (COND.)

Space is provided to enter one alpha character denoting the overall condition of the item. Enter E for excellent, G for good, A for average, F for fair, P for poor and U for unsound.

PERCENT (%) GOOD

Space is provided to enter the percent good of the improvement being described. Percent good is defined as the resultant estimate of the diminishing value of an improvement after subtracting the amount of estimated depreciation from the replacement cost new. For example: a structure which is estimated to be 45 percent depreciated as of a given time has a percent good of 55. Depreciation and percent good are complements of each other.

Note: For further explanation, refer to the Percent Good Tables in this manual.

OBSOLESCENCE/MARKET ADJUSTMENT (OB/MA)

OB/MA refers to the resultant value after deduction of functional obsolescence and deduction or addition of a market adjustment factor, expressed as a percentage. Allowable percentages range from 000% (0.00) to 200% (2.00).

Note: This is not a required entry. If this entry is utilized, it will function as a deduction or addition to the resultant value generated from the percent good entry.

REPLACEMENT COST NEW LESS DEPRECIATION (RCNLD)

RCNLD refers to the resultant value of the improvement after deduction of all forms of depreciation and/or the deduction or addition of a market adjustment factor.

To further explain the concept of Other Building Improvements, the following examples are provided:

AGRICULTURAL

1. A masonry bank barn, 24' x 60', with a height of 22', a gambrel roof and a water connection
2. A one-story metal poultry house, 24' x 60', without insulation
3. A concrete stave silo with a roof, 14' in diameter x 40' high
4. A concrete stave silo without a roof, 14' in diameter x 50' high

OTHER BUILDING IMPROVEMENTS															
	TYPE CODE	QUAN	CONST.	YEAR BUILT	SIZE	G	HGT	RATE	MODIFI CATIONS	LM	RCN	COND	% GOOD	OB/MA	R C N L D
701	AB1	01	F (M) P S O	1933	1440	C	22		2	.980		P	20		
702	FB1	01	F M P S O										20		
703	AH5	01	F M P S (O)	1940	24 X 060				1	.980		P	20		
704	AS1	01	F M P S (O)	1961	24 X 040							G	60		
705	AS2	01	F M P S (O)	1961	24 X 050							P	40		
706			F M P S O												
707			F M P S O												
708			F M P S O												
709			F M P S O												
710			F M P S O												

Breakdown of AB1:
1440 sq. ft. at (interpolation)

Modification:
4% height adjustment (–) =
\+ per sq. ft. for gambrel roof = _____
Total Adj. Rate

Breakdown of AH5 should be:
1440 sq. ft. at (interpolation)
with adjustment for not having insulation

Modification Code 1 for insulation – /sq. ft. = _____
Total Adj. Rate =

Note: For the masonry bank barn, it is necessary to adjust the base rate downward 4% to account for the deviation of 2 feet from the standard 24-foot height. The square foot price for the modification adjustment for a gambrel roof should then be added to reflect the actual base rate of the barn.

Note: For the special modification of a water connection, it is only necessary to enter the type code, quantity, rate, Replacement Cost New after application of the local modifier, percent good (same as the base structure type being described), and Replacement Cost New Less Depreciation.

Note: For the poultry house, it is necessary to adjust the base rate downward to reflect the modification adjustment because there is no insulation.

Note: For the silos, enter the Replacement Cost New after application of the local modifier in lieu of the rate.

AGRICULTURAL STRUCTURE TYPE AND MODIFICATION CODES

GENERAL-PURPOSE BANK BARNS

STRUCTURE TYPE CODES

AB1 –	Masonry	DIM or SF
AB2 –	Wood	DIM or SF
AB3 –	Pole frame	DIM or SF

GENERAL-PURPOSE BANK BARNS

MODIFICATION CODES

1.	Wood loft floor	SF
2.	Gambrel/arch-type roof	SF
3.	Stalls and partitions	SF
4.	Earth floor	SF
5.	No lighting	SF

GENERAL-PURPOSE BANK BARNS

SPECIAL MODIFICATION CODES

FB1 –	Water connection	SF
FB2 –	Roof ventilators	QTY
FB3 –	Loose stanchion	QTY
FB4 –	Stall only, w/out stanchion	QTY

GENERAL-PURPOSE FLAT BARNS

STRUCTURE TYPE CODES

AB4 –	Masonry	DIM or SF
AB5 –	Wood frame/wood siding	DIM or SF
AB6 –	Pole frame/metal siding	DIM or SF

GENERAL-PURPOSE FLAT BARNS

MODIFICATION CODES

1.	Wood loft floor	SF
2.	Gambrel/arch-type roof	SF
3.	Stalls and partitions	SF
4.	Earth floor	SF
5.	No lighting	SF

GENERAL-PURPOSE FLAT BARNS

SPECIAL MODIFICATION CODES

FB1 –	Water connection	SF
FB2 –	Roof ventilators	QTY

FREE-STALL DAIRY/BEEF BARNS

(Plastic Cloth Curtain Side Walls)

STRUCTURE TYPE CODES

AB7 –	Wood frame/wood siding	DIM or SF
AB8 –	Pole frame/metal siding	DIM or SF
AB9 –	Steel frame/metal siding	DIM or SF
AB10 –	Steel arch-rib frame/wire panels	DIM or SF

FREE-STALL DAIRY/BEEF BARNS

(Plastic Cloth Curtain Side Walls)

MODIFICATION CODES

1.	Concrete floor	SF
2.	Insulation, 1½”	SF
3.	Insulation, polystyrene bd., 7/8”	SF
4.	Insulation, 4”	SF
5.	Lighting	SF
6.	36” box stir fan	QTY
7.	48” box stir fan	QTY
8.	3’ high sidewall curtain	LF
9.	5’ high sidewall curtain	LF

FREE-STALL DAIRY/BEEF BARNS (Cont’d.)

(Plastic Cloth Curtain Side Walls)

MODIFICATION CODES

10.	8’ high sidewall curtain	LF
11.	10’ high sidewall curtain	LF
12.	Automatic curtain machine	QTY
13.	Curtain drop safety system	QTY
14.	Jan Aire 8’ high side curtain	LF
15.	Jan Aire 10’ high side curtain	LF
16.	Jan Aire 12’ high side curtain	LF

FREE-STALL DAIRY/BEEF BARNS

(Plastic Cloth Curtain Side Walls)

SPECIAL MODIFICATION CODES

FB5 –	14’ x 12’ sliding door	QTY
FB6 –	14’ x 10’ sliding door	QTY
FB7 –	14’ x 8’ sliding door	QTY
FB8 –	16’ x 7’ overhead door	QTY
FB9 –	9’ x 7’ overhead door	QTY

FRAME CORN CRIBS

STRUCTURE TYPE CODES

AC1 –	Wood board	DIM or SF
AC2 –	Welded wire	DIM or SF

FRAME CORN CRIBS

MODIFICATION CODES

1.	Storage bin over wood board	SF
2.	Storage bin over welded wire	SF
3.	Lighting	SF
4.	Drive-through crib	SF

WIRE CORN CRIBS

STRUCTURE TYPE CODES

AC3 –	#2-gauge wire crib	DIA x HGT
AC4 –	#4-gauge wire crib	DIA x HGT

WIRE CORN CRIBS

MODIFICATION CODE

1.	No concrete slab	SF

SPECIAL-PURPOSE DAIRY AND HORSE BARNS

STRUCTURE TYPE CODES

AD1 –	2-story masonry	DIM or SF
AD2 –	2-story wood	DIM or SF
AD3 –	2-story pole frame	DIM or SF
AD4 –	1-story masonry	DIM or SF
AD5 –	1-story wood	DIM or SF
AD6 –	1-story pole frame	DIM or SF

SPECIAL-PURPOSE DAIRY AND HORSE BARNS

MODIFICATION CODES

1.	Earth floor	SF
2.	No lighting	SF

SPECIAL-PURPOSE DAIRY AND HORSE BARNS

SPECIAL MODIFICATION CODES

FD1 –	Barn cleaner gutter	LF
FD2 –	Concrete feed bunker	LF
FD3 –	Wood feed bunk	LF
FD4 –	Mechanical feeder, automatic	LF
FD5 –	Mechanical feeder, manual	LF
FD6 –	Stable ceiling	SF

HOPPER SCALES

STRUCTURE TYPE CODE

AE1 –	Hopper scales	QTY

45-DEGREE HOPPER BOTTOM TANKS

STRUCTURE TYPE CODE

AE2 –	Hopper bottom tanks	QTY

45-DEGREE HOPPER BOTTOM TANKS

MODIFICATION CODES

1.	3” concrete slab	SF
2.	4” concrete slab	SF
3.	5” concrete slab	SF
4.	6” concrete slab	SF

45-DEGREE HOPPER BOTTOM TANKS

MODIFICATION CODES

Piling: Concrete in drilled holes

5.	12” diameter	LF
6.	16” diameter	LF
7.	24” diameter	LF
8.	36” diameter	LF
9.	48” diameter	LF

FIBERGLASS BOTTOM BULK STORAGE TANKS

STRUCTURE TYPE CODE

AE3 –	Fiberglass bottom bulk storage tanks	QTY

FIBERGLASS BOTTOM BULK STORAGE TANKS

MODIFICATION CODES

45-DEGREE HOPPER BOTTOM TANKS

MODIFICATION CODES

1.	3” concrete slab	SF
2.	4” concrete slab	SF
3.	5” concrete slab	SF
4.	6” concrete slab	SF

Piling: Concrete in drilled holes

5.	12” diameter	LF
6.	16” diameter	LF
7.	24” diameter	LF
8.	36” diameter	LF
9.	48” diameter	LF

CATTLE FEED BUNKS AND FENCE BUNKS

STRUCTURE TYPE CODES

AF1 –	Concrete feed bunk	LF
AF2 –	Post and plank bunk	LF
AF3 –	Concrete fence bunk	LF
AF4 –	Post and plank fence bunk	LF

CATTLE FEED BUNKS AND FENCE BUNKS

SPECIAL MODIFICATION CODES

FF1 –	Roof, 10' wide	LF
FF2 –	Mechanical feeder, automatic	LF
FF3 –	Mechanical feeder, manual	LF
FF4 –	Concrete apron, 10' wide	LF

CATTLE FEED BUNKS AND FENCE BUNKS

SPECIAL MODIFICATION CODES —

ADD FOR STOCK WATERER

FF5 –	Cattle	QTY
FF6 –	Hog or sheep	QTY
FF7 –	Combination cattle and hog	QTY

STEEL GRAIN BINS

STRUCTURE TYPE CODES

AG1 –	Without drying bins	DIA x HGT
AG2 –	With drying bins	DIA x HGT

STEEL GRAIN BINS

MODIFICATION CODES

1.	Ladder	LF
2.	Safety cage	LF
3.	Grain spreaders	QTY
4.	Stirrators	DIA

STEEL GRAIN BINS

SPECIAL MODIFICATION CODES

FS1 –	15' diameter	QTY
FS2 –	18' diameter	QTY
FS3 –	21' diameter	QTY
FS4 –	24' diameter	QTY
FS5 –	27' diameter	QTY
FS6 –	30' diameter	QTY
FS7 –	36' diameter	QTY
FS8 –	42' diameter	QTY
FS9 –	48' diameter	QTY
FS10 –	60' diameter	QTY
FS11 –	75' diameter	QTY
FS12 –	90' diameter	QTY
FS13 –	105' diameter	QTY

AERATION

MODIFICATION CODE

FG1 –	Aeration system	BU

STEEL TANKS

STRUCTURE TYPE CODE

AG3 –	Steel tanks	BU CAP

POULTRY LAYER HOUSES

STRUCTURE TYPE CODES

AH1 –	1-story concrete block	DIM or SF
AH2 –	2-story concrete block	DIM or SF
AH3 –	1-story pole frame/metal siding	DIM or SF
AH4 –	2-story pole frame/metal siding	DIM or SF
AH5 –	1-story steel frame/steel siding	DIM or SF
AH6 –	2-story steel frame/steel siding	DIM or SF

POULTRY LAYER HOUSES

MODIFICATION CODES

1.	Insulation, first floor	SF
2.	Insulation, second floor	SF
3.	Interior partitions (excl. cages)	SF
4.	Earth floor	SF
5.	Clay floor	SF
6.	Heating	SF
7.	A-frame layer cages with chain feeding system	QTY
8.	Auger feeder bin and fill system	QTY
9.	Nipple watering system	QTY
10.	Egg collection system	QTY
11.	House fan system	QTY
12.	Evaporative cooling pad system	QTY
13.	Sidewall curtain and air inlet system	QTY
14.	Battery layer cages with feeding system	QTY
15.	Auger feeder bin and fill system	QTY
16.	Nipple watering system	QTY
17.	Egg collection system	QTY
18.	Manure removal system	QTY
19.	House fan system	QTY
20.	Evaporative cooling pad system	QTY
21.	Sidewall curtain and air inlet system	QTY

SPECIAL MODIFICATION CODE

FH1 –	Water connection	SF

POULTRY BROILER HOUSES

STRUCTURE TYPE CODES

AH7 –	Concrete block	DIM or SF
AH8 –	Pole frame/metal siding	DIM or SF
AH9 –	Steel frame/steel siding	DIM or SF

POULTRY BROILER HOUSES

MODIFICATION CODES

1.	Clay floor	SF
2.	Pan feeder system	QTY
3.	Auger feeder bin and fill system	QTY
4.	Nipple watering system	QTY
5.	Heating system	QTY
6.	House fan system	QTY
7.	Evaporative cooling pad system	QTY
8.	Sidewall curtain and air inlet system	QTY

TURKEY BARNS

STRUCTURE TYPE CODES

AH10 –	Pole frame/metal siding	DIM or SF
AH11 –	Steel frame/steel siding	DIM or SF

TURKEY BARNS

MODIFICATION CODES

1.	Clay floor	SF
2.	Pan feeder systems with direct drives	QTY
3.	Auger feeder bin and fill system	QTY
4.	Nipple watering system	QTY
5.	Heating system	QTY
6.	House fan system	QTY
7.	Evaporative cooling pad system	QTY
8.	Sidewall curtain and air inlet system	QTY

CATTLE FEED BUNKS AND FENCE BUNKS

STRUCTURE TYPE CODES

AF1 –	Concrete feed bunk	LF
AF2 –	Post and plank bunk	LF
AF3 –	Concrete fence bunk	LF
AF4 –	Post and plank fence bunk	LF

CATTLE FEED BUNKS AND FENCE BUNKS

SPECIAL MODIFICATION CODES

FF1 –	Roof, 10’ wide	LF
FF2 –	Mechanical feeder, automatic	LF
FF3 –	Mechanical feeder, manual	LF
FF4 –	Concrete apron, 10’ wide	LF

CATTLE FEED BUNKS AND FENCE BUNKS

SPECIAL MODIFICATION CODES —

ADD FOR STOCK WATERER

FF5 –	Cattle	QTY
FF6 –	Hog or sheep	QTY
FF7 –	Combination cattle and hog	QTY

MAN LIFTS

STRUCTURE TYPE CODE

AI1 –	Personnel lifts	QTY

BUNKER SILOS

STRUCTURE TYPE CODES

AK1 –	Concrete panels w/ 3” concrete floor	HGT x LF
AK2 –	Wood plank w/ 3” concrete floor	HGT x LF

LEAN-TO

STRUCTURE TYPE CODE

AL1 –	Wood frame/wood siding	DIM or SF
AL2 –	Pole frame/metal siding	DIM or SF
AL3 –	Steel frame/steel siding	DIM or SF

LEAN-TO

MODIFICATION CODE

1.	Concrete floor	SF
2.	Insulation, 1½”	SF
3.	Insulation, polystyrene bd., 7/8”	SF
4.	Insulation, 4”	SF
5.	Wallboard	SF
6.	No electricity	SF
7.	Heating	SF
8.	Wall partitions	SF

MILK HOUSES

STRUCTURE TYPE CODES

AM1 –	Att., concrete block	DIM or SF
AM2 –	Att., wood frame/wood siding	DIM or SF
AM3 –	Att., pole frame/metal siding	DIM or SF
AM4 –	Det., concrete block	DIM or SF
AM5 –	Det., wood frame/wood siding	DIM or SF
AM6 –	Det., pole frame/metal siding	DIM or SF

MILK HOUSES

MODIFICATION CODES

1.	Metal roof	SF
2.	Wood shingle	SF
3.	Asphalt roof	SF
4.	Heating	SF

MILK HOUSES

SPECIAL MODIFICATION CODE

FM2 –	Roof ventilator	QTY

MILKING PARLORS

STRUCTURE TYPE CODES

AM7 –	Att., concrete block	DIM or SF
AM8 –	Att., wood frame/wood siding	DIM or SF
AM9 –	Att., pole frame/metal siding	DIM or SF
AM10 –	Det., concrete block	DIM or SF
AM11 –	Det., wood frame/ wood siding	DIM or SF
AM12 –	Det., pole frame/metal siding	DIM or SF
AM13 –	Det., steel frame/ steel siding	DIM or SF

MILKING PARLORS

MODIFICATION CODES

1.	Metal roof	SF
2.	Wood shingle	SF
3.	Asphalt roof	SF
4.	Heating	SF
5.	Parlor within a barn	SF

MILKING PARLORS

SPECIAL MODIFICATION CODE

FM2 –	Roof ventilator	QTY

COMMERCIAL GREENHOUSES

STRUCTURE TYPE CODES

Straight-Wall Structures

AN1 –	Steel and aluminum frame/glass	DIM or SF
AN2 –	Pipe frame/glass	DIM or SF
AN3 –	Light pipe or wood frame/glass	DIM or SF
AN4 –	Steel frame/plastic	DIM or SF
AN5 –	Light pipe or wood frame/plastic	DIM or SF

COMMERCIAL GREENHOUSES

STRUCTURE TYPE CODES

Hoop Structures

AN6 –	Pipe frame/polycarbonate or acrylic cover	DIM or SF
AN7 –	Light pipe frame/arch frame/ fiberglass panels	DIM or SF
AN8 –	Pipe or light tubular arch/ double polyethylene cover	DIM or SF
AN9 –	Light pipe arch/wide spacing, polyethylene cover	DIM or SF

POTATO STORAGE BUILDINGS

STRUCTURE TYPE CODES

Below Ground

AO1 –	Concrete block	DIM or SF
AO2 –	Wood frame/wood siding	DIM or SF
AO3 –	Pole frame/metal siding	DIM or SF

POTATO STORAGE BUILDINGS

STRUCTURE TYPE CODES

Above Ground

AO4 –	Concrete block/heaped earth	DIM or SF
AO5 –	Wood frame/wood siding	DIM or SF
AO6 –	Pole frame/metal siding	DIM or SF
AO7 –	Steel frame/steel siding	DIM or SF

POTATO STORAGE BUILDINGS

MODIFICATION CODE

1.	No insulation	SF

TOBACCO BARNS

STRUCTURE TYPE CODES

AO8 –	Wood frame/wood siding	DIM or SF
AO9 –	Wood frame/vented walls	DIM or SF
AO10 –	Pole frame/metal siding	DIM or SF
AO11 –	Steel frame/steel siding	DIM or SF

TOBACCO BARNS

MODIFICATION CODES

1.	No lighting	SF
2.	Concrete floor	SF
3.	No water service	SF

TOBACCO BARNS

SPECIAL MODIFICATION CODES

FO1 –	24” ventilating fan	QTY
FO2 –	36” ventilating fan	QTY

POLE FRAME UTILITY BUILDINGS

STRUCTURE TYPE CODES

AP1 –	Four sides, closed, metal	DIM or SF
AP2 –	Four sides, closed, wood	DIM or SF
AP3 –	One side, open, metal	DIM or SF
AP4 –	One side, open, wood	DIM or SF
AP5 –	Four sides, open, metal	DIM or SF
AP6 –	Four sides, open, wood	DIM or SF

POLE FRAME UTILITY BUILDINGS

MODIFICATION CODES

1.	Concrete floor	SF
2.	Insulation, 1½" thick	SF
3.	Insulation, polystyrene bd., 7/8"	SF
4.	Insulation, 4"	SF
5.	Wallboard	SF
6.	No electricity	SF
7.	Heating	SF
8.	Wall partitions	SF

POLE FRAME UTILITY BUILDINGS

SPECIAL MODIFICATION CODES

FP1 –	14' x 12' sliding door	QTY
FP2 –	14' x 10' sliding door	QTY
FP3 –	14' x 8' sliding door	QTY
FP4 –	16' x 7' overhead door	QTY
FP5 –	9' x 7' overhead door	QTY

ARCH-RIB (QUONSET) FARM UTILITY BUILDINGS

STRUCTURE TYPE CODES

	With end walls	
AQ1 –	Wood arch frame/wood siding	DIM or SF
AQ2 –	Pole arch frame/metal siding	DIM or SF
AQ3 –	Steel quonset frame/metal siding	DIM or SF
	With open ends	
AQ4 –	Wood arch frame/wood siding	DIM or SF
AQ5 –	Pole arch frame/metal siding	DIM or SF
AQ6 –	Steel quonset frame/metal siding	DIM or SF

ARCH-RIB (QUONSET) FARM UTILITY BUILDINGS

MODIFICATION CODES

1.	Lighting	SF
2.	Asphalt floor	SF
3.	Concrete floor	SF
4.	No water service	SF
5.	Heating	SF

ARCH-RIB (QUONSET) FARM IMPLEMENT BUILDINGS

STRUCTURE TYPE CODES

	With end walls	
AQ7 –	Wood arch frame/wood siding	DIM or SF
AQ8 –	Pole arch frame/metal siding	DIM or SF
AQ9 –	Steel quonset frame/metal siding	DIM or SF
	With open ends	
AQ10 –	Wood arch frame/wood siding	DIM or SF
AQ11 –	Pole arch frame/metal siding	DIM or SF
AQ12 –	Steel quonset frame/metal siding	DIM or SF

ARCH-RIB (QUONSET) FARM IMPLEMENT BUILDINGS

MODIFICATION CODES

1.	Lighting	SF
2.	Asphalt floor	SF
3.	Concrete floor	SF
4.	No water service	SF
5.	Heating	SF

ARCH-RIB (QUONSET) FARM UTILITY/IMPLEMENT HOOP BUILDINGS

STRUCTURE TYPE CODES

AQ13 –	Hoop utility building	DIM or SF
AQ14 –	Hoop implement building	DIM or SF

ARCH-RIB (QUONSET) FARM UTILITY/IMPLEMENT HOOP BUILDINGS

MODIFICATION CODES

1.	Lighting	SF
2.	Asphalt floor	SF
3.	Concrete floor	SF

GRANARIES

STRUCTURE TYPE CODES

AR1 –	Wood frame/wood siding	DIM or SF
AR2 –	Pole frame/metal siding	DIM or SF
AR3 –	Steel frame/steel siding	DIM or SF

GRANARIES

MODIFICATION CODES

1.	Wood storage bins	SF
2.	Wood ventilating ducts	SF
3.	No lighting	SF
4.	Pier foundation	SF
5.	Second floor	SF

CONCRETE STAVE AND CONCRETE POURED SILOS

STRUCTURE TYPE CODES

AS1 –	Concrete stave w/ roof	DIA x HGT
AS2 –	Concrete stave w/out roof	DIA x HGT
AS5 –	Concrete poured w/ roof	DIA x HGT
AS6 –	Concrete poured w/out roof	DIA x HGT

CONCRETE STAVE AND CONCRETE POURED SILOS

MODIFICATION CODES

Silo unloaders (top)

8.	10’ diameter	QTY
9.	12’ diameter	QTY
10.	14’ diameter	QTY
11.	16’ diameter	QTY
12.	18’ diameter	QTY
13.	20’ diameter	QTY
14.	22’ diameter	QTY
15.	24’ diameter	QTY
16.	30’ diameter	QTY

CONCRETE STAVE AND CONCRETE POURED SILOS

MODIFICATION CODES

Typical silo access piping

17.	30’ high	QTY
18.	40’ high	QTY
19.	50’ high	QTY
20.	60’ high	QTY
21.	70’ high	QTY
22.	80’ high	QTY
23.	90’ high	QTY
24.	100’ high	QTY

Gunite interior finish

25.	16’ diameter	QTY
26.	20’ diameter	QTY
27.	24’ diameter	QTY
28.	30’ diameter	QTY

Epoxy interior finish

29.	16’ diameter	QTY
30.	20’ diameter	QTY
31.	24’ diameter	QTY
32.	30’ diameter	QTY

PORCELAIN SILOS (HARVESTORE™)

STRUCTURE TYPE CODES

AS3 –	Price new	DIA x HGT
AS4 –	Price pre-owned/rebuilt	DIA x HGT

PORCELAIN SILOS (HARVESTORE™)

MODIFICATION CODES

1.	14’ automatic unloader	QTY
2.	17’ automatic unloader	QTY
3.	20’ automatic unloader	QTY
4.	25’ automatic unloader	QTY
5.	30’ automatic unloader	QTY
6.	14’, 17’, 20’ sweep arm auger (used)	QTY
7.	14’, 17’, 20’ sweep arm auger (new tube and screw)	QTY

TRENCH SILOS

STRUCTURE TYPE CODES

AT1 –	Concrete panels w/ 3” concrete floor	DEPTH x LF
AT2 –	Wood plank w/ 3” concrete floor	DEPTH x LF
AT3 –	Dirt, plastic lined, no flooring	DEPTH x LF

HOG NURSERY, FARROWING, BREEDING/GESTATION AND FINISHING BARNS

STRUCTURE TYPE CODES

Nursery

AV1 –	Wood frame/wood siding	DIM or SF
AV2 –	Pole frame/metal siding	DIM or SF
AV3 –	Steel frame/steel siding	DIM or SF

Farrowing

AV4 –	Wood frame/wood siding	DIM or SF
AV5 –	Pole frame/metal siding	DIM or SF
AV6 –	Steel frame/steel siding	DIM or SF

Breeding/Gestation

AV7 –	Wood frame/wood siding	DIM or SF
AV8 –	Pole frame/metal siding	DIM or SF
AV9 –	Steel frame/steel siding	DIM or SF

Finishing

AV10 –	Wood frame/wood siding	DIM or SF
AV11 –	Pole frame/metal siding	DIM or SF
AV12 –	Steel frame/steel siding	DIM or SF

HOG BARNS

MODIFICATION CODES

1.	Flush pit	SF
2.	Shallow pit	SF
3.	Deep pit	SF
	Slotted floors	
4.	Nursery	SF
5.	Farrowing	SF
6.	Finishing	SF
7.	Farrowing crate, finger	QTY
8.	Farrowing crate, riser	QTY
9.	Gestation stall	QTY
	Confinement partitions	
10.	PVC	LF
11.	Solid rod	LF
12.	Galvanized panel	LF

HOG SHEDS

STRUCTURE TYPE CODES

AV13 –	Wood frame/wood siding	DIM or SF
AV14 –	Pole frame/metal siding	DIM or SF
AV15 –	Arch-rib/fabric cover	DIM or SF
AV16 –	Steel frame/steel siding	DIM or SF

HOG SHEDS

MODIFICATION CODES

1.	Flush pit	SF
2.	Shallow pit	SF
3.	Deep pit	SF

AUTOMATED NIPPLE WATERING SYSTEM FOR HOGS

STRUCTURE TYPE CODES

AV17 –	Obsolete – galvanized steel	QTY
AV18 –	Stainless steel	QTY

BUCKET ELEVATORS

STRUCTURE TYPE CODES

AW1 –	3000 to 5000 bu/hr	HGT
AW2 –	6000 to 8000 bu/hr	HGT

BUCKET ELEVATORS

MODIFICATION CODES

1.	Discharge transition to 10” round	QTY
2.	Discharge transition to 12” round	QTY
3.	Discharge transition to 14” round	QTY
4.	Discharge transition to 16” round	QTY

HORIZONTAL DRAG (U-TROUGH) CONVEYORS

STRUCTURE TYPE CODE

AW3 –	Horizontal drag (U-trough) conveyors	DIA x LF

LOADING/UNLOADING SYSTEMS

STRUCTURE TYPE CODES

AX1 –	Auger-type conveyors	LF
AX2 –	Belt-type conveyors	LF

GRAIN ELEVATORS

STRUCTURE TYPE CODES

AY1 –	Wood crib/metal clad	BU CAP
AY2 –	Concrete (slip form construction)	BU CAP

GRAIN ELEVATORS

MODIFICATION CODES

1.	Attached covered elevator driveway	SF
2.	Detached annex silos without tunnel or conveyor gallery	Running Ft.
3.	No intersticing	BU CAP
4.	Concrete jump form construction	BU CAP
5.	Single concrete silos, use annex costs	Percent
6.	Concrete stave silos	Percent
7.	Commercial installations	Percent
8.	Industrial bulk applications	Percent

GRAIN ELEVATORS

SPECIAL MODIFICATION CODES

Machinery and equipment

FY1	Low	BU CAP
FY2	Average	BU CAP
FY3	Good	BU CAP
FY4	Excellent	BU CAP

GRAIN ELEVATORS

MODIFICATION CODES

Machinery and equipment

1.	Steel bin storage over 100,000 bushels	Percent

GRAIN DRYERS

STRUCTURE TYPE CODES

AZ1 –	Batch type	BU CAP
AZ2 –	Continuous flow type	BU CAP

STABLES

STRUCTURE TYPE CODES

BA1 –	Wood frame/wood siding	DIM or SF
BA2 –	Pole frame/metal siding	DIM or SF
BA3 –	Steel frame/steel siding	DIM or SF

STABLES

MODIFICATION CODES

1.	Concrete floor	SF
2.	No lighting	SF
3.	Stable ceiling	SF

STABLES

SPECIAL MODIFICATION CODES

FJ1 –	Stalls	QTY
FJ2 –	Horse walkers	QTY
FJ3 –	Portable pipe corrals	LF
FJ4 –	Portable pipe corral gate	QTY
FJ5 –	Corner-mount stall water	QTY

HIGH-VALUE (ESTATE) STABLES

STRUCTURE TYPE CODES

BA4 –	Concrete block/brick, stone or tile	DIM or SF
BA5 –	Wood frame/brick, stone or tile	DIM or SF

ARENAS

STRUCTURE TYPE CODES

	w/ feed, tack and washrooms	
BC1 –	Pole frame/metal siding	DIM or SF
BC2 –	Steel frame/steel siding	DIM or SF
	Arena only	
BC3 –	Pole frame/metal siding	DIM or SF
BC4 –	Steel frame/steel siding	DIM or SF

ARENAS

MODIFICATION CODES

1.	Concrete floor	SF
2.	No lighting	SF
3.	Stable ceiling	SF

FARM COMMODITY STORAGE SHEDS

STRUCTURE TYPE CODES

BD1 –	Concrete block	DIM or SF
BD2 –	Wood frame/wood siding	DIM or SF
BD3 –	Pole frame/metal siding	DIM or SF
BD4 –	Steel frame/steel siding	DIM or SF

FLATHOUSE STORAGE BUILDINGS

STRUCTURE TYPE CODES

BF1 –	Pole frame/metal siding	DIM or SF
BF2 –	Steel frame/steel siding	DIM or SF
BF3 –	Steel slant-wall frame/ heavy steel siding	DIM or SF

FLATHOUSE STORAGE BUILDINGS

MODIFICATION CODES

	Eave height	
1.	12 feet (x)	HGT
2.	14 feet (x)	HGT
3.	16 feet (x)	HGT
4.	20 feet (x)	HGT
5.	24 feet (x)	HGT

FEEDER BARNS (CATTLE SHEDS)

STRUCTURE TYPE CODES

BG1 –	Wood frame/wood siding	DIM or SF
BG2 –	Pole frame/metal siding	DIM or SF
BG3 –	Steel frame/steel siding	DIM or SF

FARM IMPLEMENT (EQUIPMENT SHOP) BUILDINGS

STRUCTURE TYPE CODES

BH1 –	Wood frame/wood siding	DIM or SF
BH2 –	Pole frame/metal siding	DIM or SF
BH3 –	Steel frame/steel siding	DIM or SF

FARM IMPLEMENT (EQUIPMENT SHOP) BUILDINGS AND FARM IMPLEMENT EQUIPMENT SHEDS

MODIFICATION CODES

1.	Concrete floor	SF
2.	Insulation, 1½”	SF
3.	Insulation, polystyrene bd., 7/8”	SF
4.	Insulation, 4”	SF
5.	Wallboard	SF
6.	Heating	SF
7.	Wall partitions	SF

FARM IMPLEMENT EQUIPMENT SHEDS

STRUCTURE TYPE CODES

BH4 –	Wood frame/wood siding	DIM or SF
BH5 –	Pole frame/metal siding	DIM or SF
BH6 –	Steel frame/steel siding	DIM or SF

FARM IMPLEMENT (EQUIPMENT SHOP) BUILDINGS AND FARM IMPLEMENT EQUIPMENT SHEDS

SPECIAL MODIFICATION CODES

FP1 –	14’ x 12’ sliding door	QTY
FP2 –	14’ x 10’ sliding door	QTY
FP3 –	14’ x 8’ sliding door	QTY
FP4 –	16’ x 7’ overhead door	QTY
FP5 –	9” x 7” overhead door	QTY

SLURRY TANKS

STRUCTURE TYPE CODE

BK1 –	Slurry tank	DIA x HGT

SLURRY TANKS

MODIFICATION CODES

1.	Concrete slab, slurry tank	CU FT
2.	Plank cover	SF
3.	No cover	SF
4.	Agitator and pumps	QTY
5.	Lagoon flotation systems	QTY

SLURRY TANKS

SPECIAL MODIFICATION CODES

	Liquid manure tank	
FK1 –	Concrete rectangular tank	CU FT
FK2 –	Concrete round tank	CU FT
FK3 –	Concrete open pits	CU FT
FK4 –	Large clay lagoon	CU FT
	Slotted floors	
FK5 –	Shallow pit/scrapper alley	SF
FK6 –	Deep pit/tractor access	SF

TRUCK SCALES

STRUCTURE TYPE CODE

BL1 – Truck scales ..... QTY

FARM LABOR HOUSING – DORMITORIES STRUCTURE TYPE CODES		FARM LABOR HOUSING – DORMITORIES MODIFICATION CODES	
BM1 – Concrete block	DIM or SF	1. Insulation, 1½"	SF
BM2 – Wood frame/wood siding	DIM or SF	2. Insulation, polystyrene bd., 7/8"	SF
BM3 – Steel frame/steel siding	DIM or SF	3. Insulation, 4"	SF
		4. Wallboard	SF
		5. No electricity	SF
		6. Heating	SF
		7. Wall partitions	SF

TRANSIENT LABOR CABINS STRUCTURE TYPE CODES		TRANSIENT LABOR CABINS MODIFICATION CODES	
BM4 – Wood frame/wood siding	DIM or SF	1. Insulation, 1½"	SF
		2. Insulation, polystyrene bd., 7/8"	SF
		3. Insulation, 4"	SF
		4. Wallboard	SF
		5. No electricity	SF
		6. Heating	SF
		7. Wall partitions	SF

This is a data collection card to offer the local official the opportunity to list and summarize information on building values. This information summary is then posted on the manual data collection card. By using the work card, additional notes on the improvements can be added and used to substantiate and develop one's values.

THE LISTING SECTION OF THIS CARD IS SPELLED OUT BELOW.

BUILDING NAME

This field is used to identify the structure: barn, shed, silo, etc.

STRUCTURE TYPE CODES

This term refers to a category of improvements such as barns or sheds. This code is found in the identifying header information of the individual type of farm improvement. It is identified by two letters and a number such as AD1, AB1, etc.

CONSTRUCTION (Const.)

This term refers to the general construction of the item being listed. Circle the appropriate construction type.

F = Frame/Concrete block construction

M = Masonry/Brick/Stone construction

P = Pole frame construction

S = Steel frame construction

O = Construction other than wood frame, masonry, pole frame or steel frame, for example: porcelain silo, wire corn cribs, etc.

YEAR (Yr.)

This term refers to the year the item was constructed. Enter all four digits.

GRADE (Gr.)

Space is provided to enter one alpha character denoting the quality grade of the item. If a quality grade denotation is not applicable to the item, draw a line through the character position. If the number is other than 1.00, this number must be applied by multiplication to the Subtotal Base Cost column. (See that column description for additional instructions.)

SIZE

Enter either the ground floor area in square feet or the dimensions (width and length) of the item.

COST PER SQUARE FOOT

From the appropriate table, determine the proper square foot cost for that unit, and write that figure in the column.

BUILDING HEIGHT (Bldg. Hgt.)

Enter the actual height of building if it is different from the specifications in the manual. As you will note, all buildings listed are of a particular height. For example: The base height specification for a two-story Special-Purpose Dairy Barn is 16'. If the subject Dairy Barn has a height of 16', simply leave the entry blank. If the subject Dairy Barn has a height of 20', it is necessary to enter the 20' in the height space.

Note: For base height specifications, refer to the cost schedule section of this manual.

COST ADJUSTMENT FOR HEIGHT

If the subject building is of a height different from that specified as the standard, the price adjustment per square foot is to be placed here. Example: If a 2-story Dairy Barn with a ground floor area of 3,000 square feet is 18' high, as opposed to 16', which is the standard, a price adjustment must be made.

The table at the right indicates that an AD1 masonry barn with a ground floor area of 3,000 sq. ft. is priced at $75.31. At the bottom of the table a price adjustment of ± 2% per foot in height is indicated. An 18' barn would be 2' higher than the standard height of 16', so 2% for each of 2 feet would be 4% of $75.31 or $3.01. This amount, $3.01 per square foot would be the amount entered in the Cost Adjustment for Height column.

BASE PRICES						
STRUCTURE TYPE	AD1	AD2	AD3	AD4	AD5	AD6
	Masonry	Wood	Pole Frame	Masonry	Wood	Pole Frame
Height	2-Story – 16' High			1-Story – 10' High		
Area	Price per Square Foot					
1,200						
1,400						
1,600						
1,800						
2,000						
2,200						
2,400						
2,600						
2,800						
3,000						
3,200						
3,400						
3,600						
3,800						
4,000						
4,500						
5,000						
5,500						
6,000						
6,500						
7,000						
7,500						
8,000						
8,500						
9,000						
10,000						
Over						
± 2%/Foot In Height						

SUBTOTAL COST

This column would be the total of the Cost Per Square Foot and the Cost Adj. for Height columns, times the square footage of the building column times the grade factor if this figure is not 1.00.

MODIFICATION CODES

This refers to regular modification and special modification codes as listed in connection with the table best describing the subject building. Place the letter and number codes in this area.

SQ. FT./L.F./$ (SQUARE FEET/LINEAL FEET/DOLLAR AMOUNT)

This is the column corresponding to modification codes. It indicates the dollar value to be applied to the number of square feet or lineal feet as listed.

Note: THERE MAY BE AS MANY ENTRIES AS NEEDED IN THE MODIFICATION CODE AND SQ. FT./L.F./$ COLUMNS. THESE ENTRIES ARE THEN TOTALED IN THE SAME COLUMN.

TOTAL BASE COST

This is the total of the Subtotal Base Cost column and the Sq. Ft./L.F./$ column.

LOCAL MODIFIER (LM)

Character positions are provided to enter numeric characters denoting the appropriate Local Modifier.

REPLACEMENT COST NEW (RCN)

Space is provided to enter the calculated replacement cost new of the item(s) after application of the local modifier. Replacement cost new is defined as the current cost of replacing the improvement with a substitute improvement of equal utility. (RCN=Total Base Cost Column x Local Modifier.

CONDITION (Cond.)

Space is provided to enter the overall condition of the item. Enter E for excellent, G for good, A for average, F for fair, P for poor, and U for unsound. Then see the CDU tables at the rear of this manual for the percentage to be applied against the RCN.

OB/MA or OBSOLESCENCE/MARKET ADJUSTMENT

This term refers to the resultant value after deduction of functional obsolescence and deduction or addition of a market adjustment factor expressed as a percentage. Allowable percentages range from 000% (0.00) to 20% (2.00).

Note: This is not a required entry. If this entry is utilized, it will function as a deduction or addition to the resultant value generated from the percent good entry.

RCNLD or REPLACEMENT COST NEW LESS DEPRECIATION

This term refers to the resultant value of the improvement after deduction of all forms of depreciation and/or the deduction or addition of a market adjustment factor.

WORK CARD EXAMPLE

List the following buildings on the next page:

A **2-story masonry special-purpose dairy barn** (AD1) 18' high, 30' wide by 100' long. Grade of B with 200 lin. ft. of barn cleaner gutter, 200 lin. ft. of concrete feed bunks, and ceiling in the entire stable area. The barn is 20 years old and in good condition. The local modifier is .929. Calculate the RCNLD.

A pole frame building (AP1) has a 46' span with a length of 100'. It was built in 1982 and is average in construction quality. It is 16' high and has a 14 x 12 slide door. It has a 90% Market Adjustment (M.A.) as determined by the local assessor. The local modifier is .952. Calculate the RCNLD.

A concrete stave silo with roof (AS1). It is 16' in diameter and 55' in height. It has an unloader and typical access piping. It was built in 1957 and is in average condition. The local modifier for this item is 1.00. Calculate the RCNLD.

A concrete elevator (AY2) with a 78,500-bushel capacity. It has a workinghouse with a capacity of 22,000 BU. It was built in 1967 and is in good condition. The local modifier is .980. Calculate the RCNLD.

Building Name	Type Code	Const. F M P S O	Yr.	Gr.	Size	Cost per Sq. Ft.	Bldg. Hgt.	Cost Adj. for Hgt.	Subtotal Base Cost	Mod. Codes	Sq. Ft./L.F./$	Total Base Cost	L.M.	R.C.N.	Cond.	OB/MA	RCNLD
Barn	AD1	M		1.32	3000 SF			3.012		FD1 FD2 FD6 Total			0.929		0.70	None	
Pole bldg.	AP1	P			4600 SF			1.87		FP1			0.952			MA 90%	
Concrete stave silo	AS1	M								11 19/20			1.00		0.45	None	
Concrete elevator & working-house	AY2	M			100,500 BU								0.98		0.40	None	

*Interpolation

Building Name	Type Code	Const. F M P S O	Yr.	Gr.	Size	Cost per Sq. Ft.	Bldg. Hgt.	Cost Adj. for Hgt.	Subtotal Base Cost	Mod. Codes	Sq. Ft./L.F./$	Total Base Cost	L.M.	R.C.N.	Cond.	OB/MA	RCNLD

Information gathered on the agricultural (manual) work card may be summarized on the manual property record card in the gross building summary section. The headings are the same. This area may be totaled, and the total value carried to the gross building summary line of Page 2 of the same form.

BA1

BA2

BASE PRICES – 12' HIGH			
STRUCTURE TYPE	BA1	BA2	BA3
	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price Per Square Foot		
1,200 1,400 1,300 1,800			
2,000 2,200 2,400 2,600 2,800			
3,000 3,200 3,400 3,600 3,800			
4,000 4,500 5,000 5,500 6,000 6,500			
7,000 7,500 8,000 8,500 9,000 10,000 Over			
±2% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Concrete floor (–) per Sq. Ft. . . . .
2	No lighting (–) , per Sq. Ft. . . . .
3	Stable ceiling (+) , per Sq. Ft. . . . .
CODE	SPECIAL MODIFICATION CODES
FJ1	Stalls (+), each box. . . . .
FJ2	Horse walkers (+), four horses each . . . . .
FJ3	Portable pipe corrals, per Lin Ft. . . . .
FJ4	Per portable pipe corral gate, (+). . . . .
FJ5	Corner-mount stall waterer (+), each. . . . .

QUALITY	GRADE FACTOR
B	1.54
C	1.00
D	0.65

BASE SPECIFICATIONS: B

FOUNDATION – Concrete foundation and footings. WALLS – Best siding or brick veneer; good metal panels on pole frame or steel; finished inside and some trim. FLOOR – Dirt; concrete in tack and feed rooms. ROOF – Double pitch, asphalt shingles, metal on wood rafters and framing, or metal on steel frame. OTHER FEATURES – Some windows and ornamentation, T&G finished stalls, finished tack and feed rooms, good quality throughout, good lighting and water outlets, restrooms.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete foundation and footings. WALLS – Wood, metal on pole frame or steel. FLOOR – Dirt. ROOF – Double pitch, asphalt shingles, metal on wood rafters and framing, or metal on steel frame. OTHER FEATURES – Doors on stalls, wainscot in stalls, concrete floors in tack and feed rooms, adequate lighting and water outlets.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete foundation and footings. WALLS – Wood on post and beam, metal on pole frame or galvanized steel. FLOOR – Dirt. ROOF – Double pitch, asphalt shingles, metal on wood rafters and framing or metal on steel frame. OTHER FEATURES – Rough finished stalls, no lighting or water outlets.

BA4

QUALITY	GRADE FACTOR
B	1.42
C	1.00
D	0.72

BASE SPECIFICATIONS: B

FOUNDATION – Concrete foundation and footings. WALLS – Concrete block or wood frame with fine wood siding, face brick, stone trim, slate or tile; custom arches, cupolas and/or dormers. FLOOR – Concrete floors in lounge, office, restroom, tack, feed and horse bath areas. ROOF – Gambrel, hip or double pitch with asphalt shingles, concrete or fiberglass tiles/shingles on wood rafters and framing or wood sheathing on steel frame. OTHER FEATURES– Skylights, custom sash, fully insulated, custom finished stalls; lounge, office, restrooms, shower and dressing rooms; extensive fixtures and custom hardware throughout, high-quality electrical and plumbing services.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete foundation and footings. WALLS – Concrete block or wood frame with fine wood siding, face brick, stone trim, slate or tile. FLOOR – Concrete floors in lounge, office, restroom, tack, feed and horsebath areas. ROOF – Gambrel, hip or double pitch with asphalt shingles, concrete or fiberglass tile/shingle on wood rafters and framing or wood sheathing on steel frame. OTHER FEATURES – Skylights, some custom sash, insulated, good to fine finished stalls; lounge, office and restrooms; quality finishes, shower and dressing room areas, high quality and some special custom fixtures, high-quality electrical and plumbing services.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete foundation and footings. WALLS – Decorative block or wood frame with good wood siding or masonry veneer. FLOOR – Concrete floors in lounge, office, restroom, tack, feed and horsebath areas. ROOF – Hip or double pitch with asphalt shingles, concrete or fiberglass tiles/shingles on wood rafters and framing or wood sheathing on steel frame. OTHER FEATURES – Insulated, finished stalls, lounge, office, restrooms, shower and dressing room areas, good finishes, high-quality electrical and plumbing services.

BASE PRICES – 16' HIGH		
STRUCTURE TYPE	BA4 Concrete Block/ Brick, Stone or Tile	BA5 Wood Frame/ Brick, Stone or Tile
Area	Price Per Square Foot	
1,200 1,400 1,300 1,800 2,000		
2,200 2,400 2,600 2,800 3,000		
3,200 3,400 3,600 3,800 4,000		
4,500 5,000 5,500 6,000 6,500		
7,000 7,500 8,000 8,500 9,000		
10,000 Over		
±2% Foot in Height		

BC1

BC3

BASE SPECIFICATIONS: C w/ Feed, Tack and Washrooms
FOUNDATION – Concrete foundation and footings. WALLS – Metal on pole frame or steel. FLOOR – Dirt arena floor; concrete in feed, tack and washrooms. ROOF – Double pitch, metal on wood rafters and framing or metal on steel frame. OTHER FEATURES – Some interior finish, adequate lighting and water service.

BASE PRICES – 16' HIGH		
STRUCTURE TYPE	BC1 Pole Frame/ Metal Siding	BC2 Steel Frame/ Steel Siding
Area	Price Per Square Foot	
1,200 1,400 1,300 1,800 2,000		
2,200 2,400 2,600 2,800 3,000		
3,200 3,400 3,600 3,800 4,000		
4,500 5,000 5,500 6,000 6,500		
7,000 7,500 8,000 8,500 9,000		
10,000 Over		
±2% Foot in Height		

BASE SPECIFICATIONS: C Arena Only
FOUNDATION – Concrete foundation and footings. WALLS – Metal on pole frame or steel. FLOOR – Dirt. ROOF – Double pitch, metal on wood rafters and framing or metal on steel frame. OTHER FEATURES – Minimum electrical and water services.

BASE PRICES – 16' HIGH		
STRUCTURE TYPE	BC3 Pole Frame/ Metal Siding	BC4 Steel Frame/ Steel Siding
Area	Price Per Square Foot	
1,200 1,400 1,300 1,800 2,000		
2,200 2,400 2,600 2,800 3,000		
3,200 3,400 3,600 3,800 4,000		
4,500 5,000 5,500 6,000 6,500		
7,000 7,500 8,000 8,500 9,000		
10,000 Over		
±2% Foot in Height		

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Concrete floor (–) per Sq. Ft. . . . .
2	No lighting (–) , per Sq. Ft. . . . .
3	Stable ceiling (+) , per Sq. Ft. . . . .

AD2

AD3

BASE PRICES						
STRUCTURE TYPE	AD1	AD2	AD3	AD4	AD5	AD6
	Masonry	Wood	Pole Frame	Masonry	Wood	Pole Frame
Height	2-story – 16' High			1-story – 10' High		
Area	Price Per Square Foot					
1,200 1,400 1,300 1,800						
2,000 2,200 2,400 2,600 2,800						
3,000 3,200 3,400 3,600 3,800						
4,000 4,500 5,000 5,500						
6,000 6,500 7,000 7,500						
8,000 8,500 9,000 10,000 Over						
±2% Foot in Height						

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Earth floor (–) per Sq. Ft.. . . . .
2	No lighting (–) per Sq. Ft. . . . .
CODE	SPECIAL MODIFICATION CODES
FD1	Barn cleaner gutter (+), per Lin. Ft. . . . .
FD2	Concrete feed bunk (+), per Lin. Ft. . . . .
FD3	Wood feed bunk (+), per Lin. Ft. . . . .
FD4	Mechanical feeder, automatic (+), per Lin. Ft. . . .
FD5	Mechanical feeder, manual (+), per Lin. Ft. . . .
FD6	Stable ceiling (+), per Sq. Ft. . . . .

QUALITY	GRADE FACTOR
B	1.32
C	1.00
D	0.75

Note: For three-wall additions, see Lean-Tos, Page 5-33.

BASE SPECIFICATIONS: B

FOUNDATION – Concrete frost walls and footings. STABLE WALLS – Brick or block masonry, good wood siding on heavy frame, or good metal siding on pole frame. LOFT WALLS – Good wood siding on wood framing or good metal siding on pole frame; wood sash windows. STABLE FLOOR – Concrete. LOFT FLOOR – T&G wood floors on heavy timber. ROOF – Gambrel or arch type, good asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Good fenestration, painted, wainscot, insulated, good stalls and dairy facilities, partitions, lighting and power wiring, water service and drains.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete frost walls and footings. STABLE WALLS – Brick or block masonry, wood siding on wood framing, or metal siding on pole frame. LOFT WALLS – Good wood siding on wood framing, or metal siding on pole frame; some windows. STABLE FLOOR – Partially concrete and dirt. LOFT FLOOR – Wood plank flooring with adequate support. ROOF – Gambrel or arch type, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Few partitions and stalls, feed room, adequate lighting and electrical service, water outlets and floor drains.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete frost walls and footings. STABLE WALLS – Block masonry, wood siding on light wood frame, or metal siding on pole frame. LOFT WALLS – Wood siding on light wood frame, or metal siding on pole frame; some windows. STABLE FLOOR – Dirt. LOFT FLOOR – Light wood flooring with minimum support. ROOF – Gambrel or arch type, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Few cheap stalls, no electrical or water service.

AB2

AB3

BASE PRICES – 2-STORY – 24' HIGH			
STRUCTURE TYPE	AB1 Masonry	AB2 Wood	AB3 Pole Frame
Area	Price Per Square Foot		
600 800 1,000 1,200 1,400 1,600			
1,800 2,000 2,200 2,400 2,600			
2,800 3,000 3,400 6,600 4,000 4,400 4,800			
5,200 5,600 6,000 7,000 8,000 9,000 10,000 Over			
±2% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Wood loft floor (+) per Sq. Ft. . . . .
2	Gambrel/Arch-type roof (+) per Sq. Ft. . . . .
3	Stalls and partitions (+) per Sq. Ft. . . . .
4	Earth floor (–) per Sq. Ft. . . . .
5	No lighting (–) per Sq. Ft. . . . .
CODE	SPECIAL MODIFICATION CODES
FB1	Water connection (+), per Sq. Ft. . . . .
FB2	Roof ventilators (+), each . . . . .
FB3	Loose stanchion (manual, no stall) (+), each. . . .
FB4	Stall only (without stanchion) (+), each. . . . .

QUALITY	GRADE FACTOR
B	1.35
C	1.00
D	0.73

Note: For three-wall additions, see Lean-Tos, Page 5-33.

BASE SPECIFICATIONS: B

FOUNDATION – Concrete foundation and footings. WALLS – Brick or block masonry, good wood siding on heavy frame, or good metal siding on pole frame. FLOORS – First, concrete; second, T&G wood floors on heavy timber. ROOF – Gambrel or arch type, good asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Some wainscot, insulated, adequate electrical and plumbing services.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete foundation and footings. WALLS – Brick or block masonry, wood siding on wood frame, or metal siding on pole frame. FLOORS – First, concrete; second, wood plank flooring with adequate support. ROOF – Double pitched, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Minimum electrical and plumbing services.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete foundation and footings. STABLE WALLS – Block masonry, wood siding on light wood frame, or metal siding on pole frame. LOFT WALLS – Wood siding on light wood frame, or metal siding on pole frame; some windows. STABLE FLOOR – Dirt. LOFT FLOOR – Light wood flooring with minimum support. ROOF – Double pitched, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Few cheap stalls, no electrical or water service.

AB5

AB4

BASE PRICES – 1-STORY – 16' HIGH			
STRUCTURE TYPE	AB4	AB5	AB6
	Masonry	Wood	Pole Frame
Area	Price Per Square Foot		
600 800 1,000 1,200 1,400 1,600			
1,800 2,000 2,200 2,400 2,600			
2,800 3,000 3,400 6,600 4,000 4,400 4,800			
5,200 5,600 6,000 7,000 8,000 9,000 10,000 Over			
±2% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Wood loft floor (+) per Sq. Ft. . . . .
2	Gambrel/Arch-type roof (+) per Sq. Ft. . . . .
3	Stalls and partitions (+) per Sq. Ft. . . . .
4	Earth floor (–) per Sq. Ft. . . . .
5	No lighting (–) per Sq. Ft. . . . .
CODE	SPECIAL MODIFICATION CODES
FB1	Water connection (+) per Sq. Ft. . . . .
FB2	Roof ventilators (+), each . . . . .

QUALITY	GRADE FACTOR
B	1.35
C	1.00
D	0.74

Note: For three-wall additions, see Lean-Tos, Page 5-33.

BASE SPECIFICATIONS: B

FOUNDATION – Concrete foundation and footings. WALLS – Brick or block masonry, good wood siding on heavy frame, or good metal siding on pole frame. FLOORS – Concrete. ROOF – Double pitched, good asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Adequate electrical and plumbing services.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete foundation and footings. WALLS – Brick or block masonry, wood siding on wood frame, or metal siding on pole frame. FLOORS – Some concrete. ROOF – Double pitched, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – Minimum electrical and plumbing services.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete foundation and footings. WALLS – Block masonry, wood siding on light wood frame or metal siding on pole frame. FLOOR – Dirt. ROOF – Double pitched, asphalt shingles on wood decking, rafters and framing. OTHER FEATURES – No electrical or plumbing service.

AL1

AL2 or AL3

BASE PRICES – 10' HIGH			
STRUCTURE TYPE	AL1	AL2	AL3
	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
50			
100			
150			
200			
250			
300			
350			
400			
450			
500			
±2% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Concrete floor (–) per Sq. Ft. . . . .
2	Insulation, 1½" (+), per Sq. Ft. of wall area. . . . .
3	Insulation, polystyrene bd, 7/8" (+) per Sq. Ft. of wall area. . . . .
4	Insulation, 4" (+), per Sq. Ft. of wall area . . . . .
5	Wallboard (+) per Sq. Ft. of wall area . . . . .
6	No electricity (–), per Sq. Ft. . . . .
7	Heating (+), per Sq. Ft. . . . .
8	Wall partitions (+), per Sq. Ft. . . . .

QUALITY	GRADE FACTOR
B	1.65
C	1.00
D	0.61

BASE SPECIFICATIONS: B

FOUNDATION – Concrete footings. WALLS – Wood siding on wood frame, metal siding on pole frame or steel siding on steel frame. FLOOR – Some concrete. ROOF – Single pitch, asphalt shingles on wood decking, rafters and framing, metal on wood rafters and framing or steel on steel frame. OTHER FEATURES – Windows and side doors, partition walls, adequate lighting and water service.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete footings. WALLS – Wood siding on wood frame, metal siding on pole frame or steel siding on steel frame. FLOOR – Some concrete. ROOF – Single pitch, asphalt shingles on wood decking, rafters and framing, metal on wood rafters and framing or steel on steel frame. OTHER FEATURES – Some partition walls, minimum lighting and water service.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete footings. WALLS – Wood siding on wood frame, metal siding on pole frame or steel siding on steel frame. FLOOR – Dirt. ROOF – Single pitch, asphalt shingles on wood decking, rafters and framing; metal on wood rafters and framing; or steel on steel frame. OTHER FEATURES – Unfinished interior, no lighting or water service.

FREE-STALL DAIRY/BEEF BARNS
(Plastic Cloth Curtain Side Walls)

AB9

AB8 or AB9

BASE PRICES – 12' HIGH				
STRUCTURE TYPE	AB7 Wood Frame/ Wood Siding	AB8 Pole Frame/ Metal Siding	AB9 Steel Frame/ Metal Siding	AB10 *Steel Arch-Rib Frame/ Wire Panels
Area	Price per Square Foot			
2,500 5,000 7,500 10,000				
12,500 15,000 17,500 20,000				
25,000 30,000 35,000 40,000				
50,000 60,000 70,000 80,000				
90,000 100,000 110,000 120,000				
130,000 140,000 150,000				
±2% Foot in Height				

QUALITY	GRADE FACTOR
B	1.36
C	1.00
D	0.74

BASE SPECIFICATIONS: B

FOUNDATION – Concrete foundation and footings. WALLS – Good-quality wood siding on wood frame, good-quality metal on pole frame or steel frame; end walls – fully sheeted, side walls; high-quality plastic cloth curtain. FLOOR – Concrete alleys and curbs. ROOF – Double pitched, good-quality asphalt shingles or good-quality metal roofing on wood rafters and framing, metal roofing on steel framing. OTHER FEATURES – Insulated or sheathed, good stalls, good electrical and plumbing services. Note: Barns are naturally ventilated.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete foundation and footings. WALLS – Wood siding on wood frame, metal on pole frame, or steel frame; end walls – fully sheeted, side walls; plastic cloth curtain. FLOOR – Concrete alleys and curbs, dirt. ROOF – Double pitched, asphalt shingles or metal roofing on wood rafters and framing, metal roofing on steel framing. OTHER FEATURES – Good stalls, good electrical and plumbing services. Note: Barns are naturally ventilated.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete foundation and footings. WALLS – Wood frame, pole frame or steel frame; end walls and side walls; plastic cloth curtain. FLOOR – Concrete alleys and curbs, dirt. ROOF – Double pitched, asphalt shingles or metal roofing on wood rafters and framing, metal roofing on steel framing. OTHER FEATURES – Average-quality stalls, adequate electrical and plumbing services. Note: Barns are naturally ventilated.

*BASE SPECIFICATIONS – 14' HIGH
Steel Arch-Rib Frame/Wire Panels

FOUNDATION – Concrete foundation and footings. WALLS – Wire panels on greenhouse pipe frame. FLOOR – Dirt, concrete alleys and curbs. ROOF – Fabric. OTHER FEATURES – Wall curtains, metal free stalls, minimum electrical, adequate water service.

Note: For three-wall additions, see Lean-Tos, Page 5-33.

BASE PRICE ADJUSTMENTS

CODE	MODIFICATION CODES
1	Concrete floor (–) per Sq. Ft. . . . .
2	Insulation, 1½" (–), per Sq. Ft.. . . . .
3	Insulation, polystyrene bd., 7/8" (–), per Sq. Ft. . .
4	Insulation, 4" (–), per Sq. Ft.. . . . .
5	Lighting (+), per Sq. Ft. . . . .
6	36" box stir fan, post mounted (+), each . . . . .
7	48" box stir fan, post mounted (+), each. . . . .

Sidewall Curtains – Cost/Linear Foot

	Height	Curtain	Curtain w/ Suspension
8	3		
9	5		
10	8		
11	10		

CODE	MODIFICATION CODES
12	Automatic curtain machine, travel length (+), each 25.5", ; 37.5", ; 49.5", ; 73.5",
13	Curtain drop safety system (+), each. . . . .
	Jan Aire side curtains – automatic
14	8' high (+), per Lin. Ft.. . . . .
15	10' high (+), per Lin. Ft.. . . . .
16	12' high (+), per Lin. Ft.. . . . .

CODE	SPECIAL MODIFICATION CODES
FB5	14 x 12 slide door, each. . . . .
FB6	14 x 10 slide door, each. . . . .
FB7	14 x 8 slide door, each. . . . .
FB8	16 x 7 overhead, each. . . . .
FB9	9 x 7 overhead, each. . . . .

MILK HOUSES

AM3

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footings. WALLS – Concrete block, wood siding on wood frame or metal on pole frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal on wood decking and framing. OTHER FEATURES – Plaster or finished wainscot, adequate electrical and plumbing services.

BASE PRICES – 8' HIGH						
STRUCTURE TYPE	AM1	AM2	AM3	AM4	AM5	AM6
	Concrete Block	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Concrete Block	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding
	Attached			Detached		
Area	Price Per Square Foot					
200 400 600						
800 1,000 1,200						
±2% Foot in Height						

MILKING PARLORS

AM7

AM10

AM12

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footings. WALLS – Concrete block, wood siding on wood frame or metal on pole frame; windows or shutters. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal on wood decking and framing. OTHER FEATURES – Plaster or gypsum wainscot, cooler and washroom, adequate electrical and plumbing services, pipe stanchions.

BASE PRICES – 8' HIGH							
STRUCTURE TYPE	AM7	AM8	AM9	AM10	AM11	AM12	AM13
	Concrete Block	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Concrete Block	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
	Attached			Detached			
Area	Price Per Square Foot						
200 400 600							
800 1,000 1,200							
1,400 1,600 1,800 2,000							
±2% Foot in Height							

Note: Costs for Specialized Steel Buildings, formerly found on Page 6-27, have been omitted from this edition. This type of building is no longer in use.

AM13

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Metal roof, per Sq. Ft. . . . .
2	Wood shingle, per Sq. Ft. . . . .
3	Asphalt roof, per Sq. Ft. . . . .
4	Heating, per Sq. Ft.. . . . .
5	Parlor within a barn, multiply detached square footage price by. . . . .
CODE	SPECIAL MODIFICATION CODES
FM2	Roof ventilators (+), each. . . . .

MILK HOUSE EQUIPMENT

The following is a breakdown cost list of some of the equipment that is typically found in a milk house.

Milk bulk tanks, per gallon, refrigerated . . . . . .
Not refrigerated . . . . . .

Compressors, each . . . . . .
Plate coolers, floor mounted, each . . . .
Chillers, each . . . . . .
Water heaters, gas, each . . . . . .
Automatic wash systems, each . . . . . .

MILKING PARLOR COSTS

Accurate prices are difficult to obtain and present for a number of reasons: 1) The parlor systems vary greatly in scope and quality; 2) the parlor setups require raised platforms, which are usually concrete with sand fill, but vary as to size, design, complexity of arrangement, etc., so it becomes virtually impossible to price these components in realistic terms; 3) the price indicators below are, as nearly as can be determined, that portion which can reasonably be assumed to be assessable as opposed to exempt milk house equipment; 4) personal judgment and caution must be exercised by the assessor in viewing these costs as a point of beginning only. They are general in nature and offer a point at which to start individual research concerning the parlor components and their attributable value to the parlor as a whole. The assessor must then analyze the result of this effort in relation to the current law (70.111 (14)) to ascertain the true assessability of the various components.

FULLY AUTOMATIC SYSTEMS

The stalls are full sized with automatic feeders, hydraulic crowd gates with electric-eye openers, automatic udder washers, prep stalls, piping, vacuum pump equipment and typical electrical hookups. (Costs do not include bulk tank, wash sinks, compressors, water heater, softeners, etc., which, as typical milk house equipment, would be exempt.) Typical parlors of this type and quality are priced as follows:

Double 6 or double 8, per stall . . . . . .
Double 10, per stall . . . . . .
Double 12, per stall . . . . . .
Double 16 or double 20, per stall . . . . . .

MANUAL SYSTEMS

This would apply to all smaller operations and would most typically include four stalls. The feeders would be manual, with no automatic udder washers or hydraulic gates; however, the stall would be of similar design and/or quality. The system would include piping, vacuum pump equipment and typical electrical hookup. The price for the manual system is in the range of $5527.04 to $7585.36 per stall.

Milking parlor partial cost breakdown list.

Walk-thru stalls, base price per stall . . . . . .
Parallel stalls, base price per stall . . . . . .
Herringbone stalls, base price per stall . . . . . .
Rotary stall system, fully automatic, 40 to 60 cows, complete system . . . . . .
Feed systems, each . . . . . .
Computerized automation . . . . . .
Power gates . . . . . .

FEEDER BARNS (CATTLE SHEDS)

BG2

BG2

BG3

BASE SPECIFICATIONS Open One Side
FOUNDATION – Concrete foundation and footings. WALLS – Wood on wood frame, metal on pole frame or metal on steel frame. FLOOR – Dirt. ROOF – Double pitched, asphalt shingles or metal on wood rafters and frame or steel frame. OTHER FEATURES – Rub boards, feeders and water troughs.

BASE PRICES –12' HIGH			
STRUCTURE TYPE	**BG1**	**BG2**	**BG3**
	Wood Frame/ Wood Siding	**Pole Frame/ Metal Siding**	**Steel Frame/ Steel Siding**
Area	**Price per Square Foot**		
200 **300** **400**			
500 **600** **700**			
800 **900** **1,000**			
1,200 **1,400** **1,600**			
1,800 **2,000** **2,200**			
2,400 **2,600** **2,800**			
3,000 **3,200** **3,400**			
3,600 **3,800** **4,000**			
± 2% / Foot in Height			

CATTLE FEED BUNKS

AF1

CATTLE FENCE BUNKS

AF4

BASE SPECIFICATIONS
Concrete base with plank sides or post-and-plank construction

BASE SPECIFICATIONS
Concrete or post-and-plank construction

BASE PRICES				
STRUTURE TYPE	**AF1**	**AF2**	**AF3**	**AF4**
	Concrete Feed Bunk	**Post-and-Plank Feed Bunk**	**Concrete Fence Bunk**	**Post-and-Plank Fence-Bunk**
Price per Lin. Ft.				

BASE PRICE ADJUSTMENTS	
CODE	**SPECIAL MODIFICATION CODES**
FF1	Roof, 10' wide (+), per Lin. Ft. . . . .
FF2	Mechanical feeder, automatic (+), per Lin. Ft. . . .
FF3	Mechanical feeder, manual (+), per Lin. Ft. . . . .
FF4	Concrete apron 10' wide (+), per Lin. Ft.. . . . .

BASE PRICE ADJUSTMENTS (Continued)	
CODE	**SPECIAL MODIFICATION CODES — ADD FOR STOCK WATERER**
FF6	Cattle, (+), each . . . . .
FF8	Hog or sheep, (+), each . . . . .
FF7	Combination cattle and Hog, (+), each . . . . .

Note: Costs for Feed Bunks, circular type, formerly found on Page 6–29, have been omitted in this edition, as they are no longer being built.

POULTRY LAYER HOUSES

AH1

AH4

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footing. WALLS – Metal on pole frame, concrete block or steel on steel. GROUND FLOOR – Concrete. SECOND FLOOR – Wood flooring on wood joists and framing. ROOF – Double pitched, metal or asphalt shingle on wood sheathing and framing. OTHER FEATURES – Good fenestration and ventilation, insulated, some partitions, electrical lighting and water service.

BASE PRICES PER SQUARE FOOT OF GROUND AREA						
STRUCTURE TYPE	AH1	AH2	AH3	AH4	AH5	AH6
	Concrete Block	Concrete Block	Pole Frame/ Metal Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding	Steel Frame/ Steel Siding
Height	One-story	Two-story	One-story	Two-story	One-story	Two-story
Area	Price per Square Foot					
200 400 600 800						
1,000 1,200 1,400 1,600 1,800						
2,000 2,400 2,800 3,200 3,600						
4,000 5,000 6,000 7,000						
8,000 9,000 10,000 Over						

Note: For Base Price Adjustments, see Page 5-40.

BASE PRICE ADJUSTMENTS		
CODE	**MODIFICATION CODES**	**Per Sq. Ft.**
1	Insulation, first floor (**–**)	
2	Insulation, second floor (**–**)	
3	Interior partitions (excluding cages) (**–**)	
4	Earth floor (**–**)	
5	Clay floor (**–**)	
6	Heating (+)	
	POULTRY LAYER A-FRAME EQUIPMENT SYSTEMS **Costs Calculated at 0.48 Square Foot per Bird**	**COST PER BIRD**
7	A-frame layer cages with chain feeding system	
8	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system)	
9	Nipple watering system	
10	Egg collection system (transports eggs from layer house to egg packing building	
11	House fan system (fans, shutters, and other miscellaneous equipment)	
12	Evaporative cooling system (does not include framing materials or plumbing equipment from water source to the cooling system)	
13	Sidewall curtain and air inlet system	
	POULTRY LAYER BATTERY CAGE EQUIPMENT SYSTEMS **Costs Calculated at 0.48 Square Foot per Bird**	**COST PER BIRD**
14	Battery layer cages with feeding system (cages with manure removal belts under every tier and direct-drive chain feeding system)	
15	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system)	
16	Nipple watering system	
17	Egg collection system (transports eggs from layer house to egg packing building)	
18	Manure removal system (belt conveyor system located in the rear of the building transports the manure to a secondary conveyor, which transports the manure to the outside of the building)	
19	House fan system (fans, shutters and other miscellaneous equipment)	
20	Evaporative cooling system (does not include framing materials or plumbing equipment from water source to the cooling system)	
21	Sidewall curtain and air inlet system	

CODE	SPECIAL MODIFICATION CODE
FH1	Water connection (–), per Sq. Ft.

POULTRY BROILER HOUSES

AH8

AH9

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footing. WALLS – Minimum block, metal on pole frame or steel on steel. Top half of sidewalls, mesh screen; bottom half of sidewalls, shutters. FLOOR – Dirt. ROOF – Double pitch, metal on wood or steel on wood. OTHER FEATURES – Natural ventilation only, insulated, some partitions, electrical lighting and water service.

BASE PRICES PER SQUARE FOOT OF GROUND AREA			
STRUCTURE TYPE	AH7	AH8	AH9
	Concrete Block	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
200 400 600 800			
1,000 1,200 1,400 1,600 1,800			
2,000 2,400 2,800 3,200 3,600			
4,000 5,000 6,000 7,000			
8,000 9,000 10,000 Over			

BASE PRICE ADJUSTMENTS		
CODE	MODIFICATION CODES	
1	Clay floor (+), per Sq. Ft.	
2	Concrete floor (+), per Sq. Ft.	
	POULTRY BROILER EQUIPMENT SYSTEMS **Costs Calculated at 0.80 Square Foot per Bird**	**COST PER BIRD**
3	Pan feeder system	
4	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system).	
5	Nipple watering system	
6	Heating system (infrared brooders with wall heaters operating on propane gas)	
7	House fan system (fans, shutters and other miscellaneous equipment)	
8	Evaporative cooling pad system (does not include framing materials or plumbing equipment from water source to the cooling system)	
9	Sidewall curtain and air inlet system	

TURKEY BARNS

AH10

AH11

AH10

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footing. WALLS – Metal on pole frame or steel on steel. SIDEWALLS –Top half of sidewalls mesh screen; bottom half of sidewalls shutters. FLOOR – Partial concrete floor. ROOF – Double pitched, metal on wood or steel framing. OTHER FEATURES – Natural ventilation only, some partitions, electrical lighting and water service.

BASE PRICES – 8' HIGH		
STRUCTURE TYPE	AH10	AH11
	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot	
200		
400		
600		
800		
1,000		
1,200		
1,400		
1,600		
1,800		
2,000		
2,400		
± 2% / Foot in Height		

BASE PRICES – 8' HIGH		
STRUCTURE TYPE	AH10	AH11
	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot	
2,800		
3,200		
3,600		
4,000		
5,000		
6,000		
7,000		
8,000		
9,000		
10,000		
Over		
± 2% / Foot in Height		

BASE PRICE ADJUSTMENTS		
CODE	MODIFICATION CODES	
1	Clay floor (+), per Sq. Ft.	
	TURKEY FINISHING BARN EQUIPMENT SYSTEMS **Costs Calculated at 3 Square Feet per Bird**	**COST PER BIRD**
2	Pan feeder systems with direct drives	
3	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system).	
4	Nipple watering system	
5	Heating system (infrared brooders with wall heaters operating on propane gas)	
6	House fan system (fans, shutters and other miscellaneous equipment)	
7	Evaporative cooling pad system (does not include framing materials or plumbing equipment from water source to the cooling system)	
8	Sidewall curtain and air inlet system	

HOG NURSERY, FARROWING, BREEDING/GESTATION AND FINISHING BARNS

AV5 or AV8

AV3 or AV6

AV8 or AV11

AV5 or AV8

BASE SPECIFICATIONS Nursery	BASE SPECIFICATIONS Farrowing	BASE SPECIFICATIONS Breeding/Gestation	BASE SPECIFICATIONS Finishing
FOUNDATION – Concrete foundation and footings. WALLS – Wood, metal on pole frame or steel on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing or metal roofing on steel rafters and framing. OTHER FEATURES – Good ventilation and fenestration, fully insulated, interior sheathing, subdivided, office, electric lighting, plumbing and lab.	FOUNDATION – Concrete foundation and footings. WALLS – Wood, metal on pole frame or steel on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing or metal roofing on steel rafters and framing. OTHER FEATURES – Good ventilation and fenestration, fully insulated, interior sheathing, subdivided, electric lighting and plumbing.	FOUNDATION – Concrete foundation and footings. WALLS – Wood, metal on pole frame or steel on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing or metal roofing on steel rafters and framing. OTHER FEATURES – Insulated, plywood interior, some subdivision, electric lighting and plumbing.	FOUNDATION – Concrete foundation and footings. WALLS – Wood, metal on pole frame or steel on steel frame. FLOOR – Partial concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing or metal roofing on steel rafters and framing. OTHER FEATURES – Some wainscot, some division of space, electric lighting and plumbing.

BASE PRICES – PER SQUARE FOOT – 8' HIGH

	Nursery			Farrowing			Breeding/Gestation			Finishing		
	AV1	AV2	AV3	AV4	AV5	AV6	AV7	AV8	AV9	AV10	AV11	AV12
STRUCTURE TYPE	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot											
200												
300												
400												
500												
700												
1,000												
2,000												
3,000												
4,000												
5,000												
6,000												
7,000												
8,000												
9,000												
10,000												
Over												
± 2% / Foot in Height												

Note: For Base Price Adjustments, see Page 5-44.

BASE SPECIFICATIONS Wood, Pole frame and Steel
FOUNDATION – Concrete foundation and footings. WALLS – Open-front, wood, metal on pole frame or steel on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing or metal roofing on steel rafters and framing. OTHER FEATURES – Some wainscot, back vents, some subdivision of space, water service.

*BASE SPECIFICATIONS Arch-Rib
FOUNDATION – Concrete foundation and footings. WALLS – Wood-pole, knee wall, pipe hoop frame, end gates. FLOOR – Partial concrete. ROOF– Fabric cover. OTHER FEATURES – Some wainscot, some division of space, minimum water service.

BASE PRICES – PER SQUARE FOOT – 8' HIGH				
	AV13	AV14	AV15	AV16
STRUCTURE	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	*Arch-Rib/ Fabric Cover	Steel Frame/ Steel Siding
Area	Price per Square Foot			
200				
300				
400				
500				
700				
1,000				
2,000				
3,000				
4,000				
5,000				
6,000				
7,000				
8,000				
9,000				
10,000				
Over				
± 2% / Foot in Height				

HOG SHEDS

CODE	MODIFICATION CODES
1	Flush pit (+) . . . . .
2	Shallow pit (+), per Sq. Ft. of area . . . . .
3	Deep pit (+) . . . . .

AUTOMATED NIPPLE WATERING SYSTEM FOR HOGS

BASE SPECIFICATIONS
Heated nipple drinker, constructed of 1/4-inch-thick PVC outer casing and stainless steel cap. Stainless steel nipples, fully insulated, heating element, all plumbing and electrical equipment.

Cost per pen . . . . . .

HOG BARN ADJUSTMENTS

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Flush pit (+) . . . . .
2	Shallow pit (+), per Sq. Ft. of area . . .
3	Deep pit (+) . . . . .
	Slotted floors
4	Nursery (+), per Sq. Ft. . . . .
5	Farrowing (+), per Sq. Ft. . . . .
6	Finishing (+), per Sq. Ft. . . . .
7	Farrowing crate, finger (+), each. . . . .
8	Farrowing crate, riser (+), each. . . . .
9	Gestation stall (+), each . . . . .
	Confinement partitions (+), per linear foot
10	PVC: 20" high, ; 30" high, 38" high,
11	Solid rod: 27" high, ; 32" high, 42" high,
12	Galvanized: 35" high, ; 42" high,

BK1

BASE SPECIFICATIONS
Glass-lined slurry storage tanks with ladder, erected on buyer's slab.

BASE PRICES		
BK1		
Diameter	**Height**	**Price**
25'	14'	
25'	23'	
42'	14'	
42'	23'	
62'	14'	
62'	23'	
81'	14'	
81'	19'	
81'	23'	
101'	14'	
101'	19'	
101'	23'	

BASE PRICE ADJUSTMENTS	
CODE	**SPECIAL MODIFICATION CODES**
1	Concrete slab, slurry tanks (+), per Cu. Ft of concrete . . . . .
2	Plank cover, (–), per Sq. Ft. of Top . . . . .
3	No cover, (–), per Sq. Ft. of Top . . . . .
4	Agitator and pumps (+), Each .
5	Large floatation systems (+), Each . . . . .
CODE	**SPECIAL MODIFICATION CODES**
	LIQUID MANURE TANKS
FK1	Concrete rectangular tank (+), per Cu. Ft.
FK2	Concrete round tank (+), per Cu. Ft. . . . .
FK3	Concrete open pits (+), per Cu. Ft. . . . .
FK4	Large clay lagoons (+), per Cu. Ft. . . . .
	SLOTTED FLOORS
FK5	Shallow pit/scraper alley (+), per Sq. Ft of pit area . . . . .
FK6	Deep pit/tractor access (+), per Sq. Ft of pit area . . . . .

TRENCH SILOS

AK1

BASE SPECIFICATIONS
Concrete base with plank sides or post-and-plank construction.

BASE PRICES			
STRUCTURE TYPE	AT1	AT2	AT3
	Concrete Panels w/3" Concrete Floor	Wood Plank w/3" Concrete Floor	Dirt, Plastic Lined No Flooring
Trench Depth, Ft.	Price per Lin. Ft. – 30' Wide		
8'			
10'			
12'			
16'			
20'			
25'			
30'			

BUNKER SILOS

AK1

BASE SPECIFICATIONS
Concrete panels or treated plank sidewalls with open ends. Usually above ground with a concrete floor on grade.

BASE PRICES		
STRUCTURE TYPE	AK1	AK2
	*Concrete Panels w/3" Concrete Floor	Wood Plank w/3" Concrete Floor
Wall Height Ft.	Price per Lin. Ft. – 30' Wide	
8'		
10'		
12'		
16'		
20'		
25'		
*Free-standing panels; no support.		

BASE PRICE UNIT COSTS	
3" concrete floor per Square Foot	8.5 ft. high end panel, per Lineal Foot . . . . .
4" concrete floor per Square Foot	10 ft. high end panel, per Lineal Foot . . . . .
5" concrete floor per Square Foot	12 ft. high end panel, per Lineal Foot . . . . .
6" concrete floor per Square Foot	16 ft. high end panel, per Lineal Foot . . . . .
3" asphalt floor per Square Foot	8.5 ft. high divider panel, per Lineal Foot . . . . .
4" asphalt floor per Square Foot	12 ft. high divider panel, per Lineal Foot . . . . .
5" asphalt floor per Square Foot	16 ft. high divider panel, per Lineal Foot . . . . .
6" asphalt floor per Square Foot	**Note:** Divider panels are free standing

BASE PRICE UNIT COST EXAMPLES

BD3

BD4

BASE SPECIFICATIONS Open One Side
FOUNDATION – Concrete foundation and footings. WALLS – Concrete block with masonry bay separation walls; plywood, siding or metal on pole frame or metal on steel frame; concrete and upper frame bay walls. FLOOR – Concrete. ROOF – Single pitch, rolled asphalt composition or metal on wood rafters and frame or steel frame.

BASE PRICES 16' HIGH				
STRUCTURE TYPE	BD1 Concrete Block	BD2 Wood Frame/ Wood Siding	BD3 Pole Frame/ Metal Siding	BD3 Steel Frame/ Steel Siding
Area	Price per Square Foot			
800 1,000 1,200				
1,400 1,600 1,800				
2,000 2,200 2,400				
2,600 2,800 3,000				
3,200 3,400 3,600				
3,800 4,000				
± 2% / Foot in Height				

BASE PRICES					
STRUCTURE TYPE		AS1	AS2	AS5	AS6
		Concrete Stave		Concrete Poured	
		w/ Roof	w/out Roof	w/ Roof	w/out Roof
Dia.	Height	Price			
10’	30’ 40’ 50’				
12’	30’ 40’ 50’ 60’				
14’	30’ 40’ 50’ 60’ 70’				
16’	30’ 40’ 50’ 60’ 70’ 80’				
18’	30’ 40’ 50’ 60’ 70’ 80’ 90’				
20’	30’ 40’ 50’ 60’ 70’ 80’ 90’				
22’	30’ 40’ 50’ 60’ 70’ 80’ 90’				
24’	50’ 60’ 70’ 80’ 90’				
30’	60’ 70’ 80’ 90’ 100’ 110’ 120’ 130’				
Price includes foundation and erection on site					

AS1

AS5

	BASE PRICE ADJUSTMENTS
CODE	MODIFICATION CODES
	Silo Unloaders (Top)
8	10’ diameter(+)
9	12’ diameter(+)
10	14’ diameter(+)
11	16’ diameter(+)
12	18’ diameter(+)
13	20’ diameter(+)
14	20’ diameter(+)
15	24’ diameter(+)
16	30’ diameter(+)
	Costs include motor, auger and tripod, but exclude any electrical work such as hookup.
	Typical Silo Access Piping
17	30’ high silo (+)
18	40’ high silo (+)
19	50’ high silo (+)
20	60’ high silo (+)
21	70’ high silo (+)
22	80’ high silo (+)
23	90’ high silo (+)
24	100’ high silo (+)
	Gunite interior finish
25	16’ diameter, per vertical foot (+)
26	20’ diameter, per vertical foot (+)
27	24’ diameter, per vertical foot (+)
28	30’ diameter, per vertical foot (+)
	Epoxy interior finish
29	16’ diameter, per vertical foot (+)
30	20’ diameter, per vertical foot (+)
31	24’ diameter, per vertical foot (+)
32	30’ diameter, per vertical foot (+)

Note: The International Silo Association recommends that the maximum height for a silo not be more than 3.5 to 4 times its diameter.

AS4

AS3

BASE PRICES				
STRUCTURE TYPE			AS3	AS4
Model	Dia.	Height	Price New	Price Pre-owned/ Rebuilt
34B'	14'	23'		
	14'	32'		
	14'	41'		
11B	17'	31'		
	17'	40'		
	17'	49'		
12B, 13B, 14B, 40B' INCLUSIVE	20'	28'		
	20'	32'		
	20'	33'		
	20'	38'		
	20'	41'		
	20'	43'		
	20'	50'		
	20'	59'		
Price includes foundation and erection				

BASE PRICES				
STRUCTURE TYPE			AS3	AS4
Model	Dia.	Height	Price New	Price Pre-owned/ Rebuilt
12B, 13B, 14B, 40B' INCLUSIVE	20'	68'		
	20'	77'		
	20'	87'		
16B, 17B, 18B, 42B' INCLUSIVE	25'	34'		
	25'	42'		
	25'	43'		
	25'	51'		
	25'	60'		
	25'	69'		
	25'	79'		
	25'	88'		
20B	31'	70'		
	31'	80'		
	31'	89'		
Price includes foundation and erection				

BASE PRICE MULTIPLIERS	
CODE	MODIFICATION CODES
1	14' automatic unloader (+). . . . .
2	17' automatic unloader (+). . . . .
3	20' automatic unloader (+). . . . .
4	25' automatic unloader (+). . . . .
5	31' automatic unloader (+). . . . .
6	14', 17', 20' sweep-arm auger (used) (+) . . . . .
7	14', 17', 20' sweep-arm auger (new tube and screw) (+) . . . . .

Note: Costs for Prefabricated Steel Silos and Butler LMS Silos, formerly found on the next page, have been omitted in this edition, as they are no longer being built.

BASE SPECIFICATIONS
Tank and installation only.

BASE PRICES				
STRUCTURE TYPE			AG1	AG2
Diam.	Height	Bushel Capacity	Without Drying Bin	With Drying Bin
15’	7’-4”	1,257		
	11’-0”	1,792		
	14’-8”	2,329		
	18’-4”	2,864		
18’	11’-0”	2,647		
	14’-8”	3,422		
	18’-4”	4,198		
	22’-0”	4,973		
	25’-8”	5,748		
	33’-0”	7,299		
	40’-4”	8,849		
	47’-8”	10,400		
21’	11’-0”	3,693		
	14’-8”	4,753		
	18’-4”	5,813		
	22’-0”	6,874		
	25’-8”	7,934		
	33’-0”	10,055		
	40’-4”	12,175		
	47’-8”	14,296		
24’	11’-0”	4,949		
	14’-8”	6,344		
	18’-4”	7,739		
	22’-0”	9,134		
	25’-8”	10,528		
	33’-0”	13,318		
	40’-4”	16,107		
	47’-8”	18.897		
27’	11’-0”	6,409		
	14’-8”	8,182		
	18’-4”	9,955		
	22’-0”	11,728		
	25’-8”	13,500		
	33’-0”	17,046		
	40’-4”	20,591		
	47’-8”	24,137		
30’	14’-8”	10,278		
	18’-4”	12,473		
	22’-0”	14,668		
	25’-8”	16,863		
	33’-0”	21,252		
	40’-4”	25,624		
	47’-8”	30,031		
36’	14’-8”	15,297		
	18’-4”	18,473		
	22’-0”	21,648		
	25’-8”	24,823		
	33’-0”	31,174		
	40’-4”	37.524		
	47’-8”	43,875		
	58’-8”	53,400		
42’	14’-8”	21,416		
	18’-4”	25,738		
	22’-0”	30,060		
	25’-8”	34,382		

AG1

AG2

BASE PRICES				
STRUCTURE TYPE			AG1 (Cont’d.)	AG2 (Cont’d.)
Diam.	Height	Bushel Capacity	Without Drying Bin	With Drying Bin
42’ (Cont’d.)	33’-0”	43,026		
	40’-4”	51,670		
	47’-8”	60,314		
	58’-8”	73,279		
48’	14’-8”	28,749		
	18’-4”	34,394		
	22’-0”	40,039		
	25’-8”	45,684		
	33’-0”	56,947		
	40’-4”	68,264		
	47’-8”	79,554		
	58’-8”	96,488		
60’	18’-4”	56,170		
	25’-8”	73,810		
	40’-4”	109,092		
	47’-8”	126,732		
	58’-8”	152,870		
	64’-0”	165,536		
75’	32’-0”	147,000		
	40’-0”	176,000		
	48’-0”	206,000		
	58’-8”	246,000		
	64’-0”	266,000		
90’	32’-0”	221,000		
	40’-0”	263,000		
	48’-0”	305,000		
	58’-8”	358,223		
105’	32’-0”	306,180		
	40’-0”	363,558		
	48’-0”	420,936		
	58’-8”	500,000		
NOTE: Drying bins should never have eave heights greater than 18’-4” or diameters greater than 48’.				

BASE PRICE ADJUSTMENTS						
CODE	**MODIFICATION CODES**					
1	Ladder, (+)					
2	Safety cage, (+), per Lin Ft.					
3	Grain spreaders, (+), each.					
4	Stirators, (+), per foot of diameter					
CODE	**SPECIAL MODIFICATION CODES**					
	Costs includes 5” slab	**Base Cost**	**4” Slab, (–)**	**6” Slab, (+)**	**8” Slab, (+)**	**10” Slab, (+)**
FS1	15’ diameter (+)					
FS2	18’ diameter (+)					
FS3	21’ diameter (+)					
FS4	24’ diameter (+)					
FS5	27’ diameter (+)					
FS6	30’ diameter (+)					
FS7	36’ diameter (+)					
FS8	42’ diameter (+)					
FS9	48’ diameter (+)					
FS10	60’ diameter (+)					
FS11	75’ diameter (+)					
FS12	90’ diameter (+)					
FS13	105’ diameter (+)					

GRAIN DRYERS			
AZ1		**AZ2**	
Batch Type		**Continuous-flow Type**	
Dry/Cool, 25% to 15%			
Capacity	**Price**	**Capacity**	**Price**
150		**250**	
200		**375**	
270		**500**	
390		**625**	
		750	
		1,000	
		1,250	
		1,500	
		1,875	
		2,000	
		2,500	
		3,000	
		3,125	
		3,750	
		4,000	
Price based on rated capacity in bushels per hour.			

AZ2

LOADING – UNLOADING SYSTEMS			
AX1		**AX2**	
Auger-type Conveyors		**Belt-type Conveyors**	
Diam.	**Price/ Lin. Ft.**	**Width**	**Price/ Lin. Ft.**
6”		**12”**	
8”		**18”**	
10”		**24”**	
12”		**30”**	
14”		**36”**	
16”		**48”**	

AX2

AERATION
FG1
Aeration systems, (+), per bushel

MAN LIFTS
AI1
Uncoded, electrically operated personal lifts.
Per stop over two, (+) . . . . .

TRUCK SCALES	
BL1	
Capacity	**Price**
20-ton	
30-ton	
40-ton	
50-ton	
60-ton	
70-ton	
100-ton	

HOPPER SCALES	
AE1	
Capacity	**Price**
25-ton	
36-ton	
75-ton	
100-ton	

STEEL TANKS	
AG3	
BUSHEL CAPACITY	**PRICE PER BUSHEL**
500,000	
600,000	
700,000	
800,000	
900,000	
1,000,000	
Prices do not include loading system or other features.	

CONVERSION SYSTEMS
1 cubic foot = .8036 bushel
1 bushel = 1.24446 cubic foot
1 gallon = 0.1337 cubic foot = 0.1074 bushel

HORIZONTAL DRAG (U–TROUGH) CONVEYORS

BASE PRICES					
STANDARD BOTTOM DISCHARGE					
AW3					
Type	**Drive and Tail Section**		**U-Trough Complete w/ Chain and Paddles**	**Bypass Inlet**	
Diameter	**Length**	**Price**	**Price per Linear Foot**	**Length**	**Price**
6”	**28”**			**13”**	
9”	**32”**			**18”**	
12”	**40”**			**21”**	
14”	**46”**			**24”**	
16”	**52”**			**27”**	
18”	**58”**			**30”**	
20”	**64”**			**-----**	
24”	**75”**			**37”**	

Price Explanation

When calculating the cost of a drag conveyor, first determine the overall length. Then take the overall length minus head and tail length (of the selected drag) and bypass inlet if needed. This number represents the length of the trough needed. Next multiply that number by the price per foot for the trough. (Prices do not include the drive.)

Price Example

Specifications: 9” conveyor, 60’ overall w/ bypass inlet, 3000 bu., 5-HP drive w/ guard, less motor.

60’ (720”) 32” (head and tail section) **–** 18” (bypass inlet) = 670’’ = 55’ 10”

Head and tail section
Bypass Inlet
U-trough
Total Cost _____

BF1-2

BF2

BASE SPECIFICATIONS
FOUNDATION – Concrete foundation and footings. WALLS – Metal on pole frame, heavy steel panels on steel frame. FLOOR – Concrete. ROOF – Metal on wood truss framing or steel truss framing. OTHER FEATURES – Bulkheads, adequate electrical service.

BASE PRICES – 10' HIGH			
	BF1	BF2	BF3
STRUCTURE	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding	Steel Slant-Wall Frame/ Heavy Steel Siding
Area	Price per Square Foot		
2,500 5,000 7,500			
10,000 12,500 15,000			
17,500 20,000 25,000			
30,000			
Prices do not include loading systems and/ or other features			

BASE PRICE MULTIPLIERS	
CODE	MODIFICATION CODES
	Eave Height
1	12 feet (x) . . . . .
2	14 feet (x) . . . . .
3	16 feet (x) . . . . .
4	20 feet (x) . . . . .
5	24 feet (x) . . . . .

BASE SPECIFICATIONS
Tank and installation only.

AE2				
Base Diameter	Eave Height	Bushel Capacity	Tonnage Capacity	Price
7’	10’ 9”	157	4.71	
	13’ 5”	239	7.17	
	16’ 1”	321	9.63	
	18’ 9”	403	12.09	
9’	17’ 0”	458	13.74	
	19’ 8”	594	17.82	
	22’ 4”	730	21.90	
	24’ 11”	866	25.98	
12’	20’ 0”	870	26.10	
	25’ 0”	1,345	40.35	
	31’ 0”	1,825	54.75	
15’	32’ 7”	4,030	120.90	
	40’ 7”	5,220	156.60	
	48’ 7”	6,400	192.00	
	56’ 7”	7,580	227.40	
18’	33’ 10”	5,980	179.40	
	41’ 10”	7,810	234.30	
	49’ 10”	9,530	285.90	
	57’ 10”	11,250	337.50	
	63’ 2”	12,396	371.88	
21’	35’ 1”	8,340	250.20	
	43’ 1”	10,640	319.20	
	51’ 1”	12,959	388.50	
	59’ 1”	15,260	457.80	
	64’ 5”	16,800	504.00	
24’	36’ 4”	11,170	335.10	
	44’ 4”	14,170	425.10	
	52’ 4”	17,170	515.10	
	60’ 4”	20,170	605.10	
	65’ 9”	22,170	665.10	
30’	39’ 1”	18,347	550.41	
	47’ 1”	23,048	691.44	
	55’ 1”	27,749	832.47	
	63’ 1”	32,450	973.50	
	68’ 5”	35,584	1,067.52	

AE2

AE2

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	3” concrete slab, (+) per Sq. Ft . . . . .
2	4” concrete slab, (+) per Sq. Ft . . . . .
3	5” concrete slab, (+) per Sq. Ft . . . . .
4	6” concrete slab, (+) per Sq. Ft . . . . .
	Piling: Concrete in drilled holes
5	12” diameter, (+) per Lin. Ft. . . . .
6	16” diameter, (+) per Lin. Ft. . . . .
7	24” diameter, (+) per Lin. Ft. . . . .
8	36” diameter, (+) per Lin. Ft. . . . .
9	48” diameter, (+) per Lin. Ft. . . . .

AE3

BASE SPECIFICATIONS	
Tank, tank assembly, ladder and cage.	*Tank, tank assembly, ladder.

AE3					
DIAMETER	**OVERALL HEIGHT**	**CAPACITY, CU. FT.**	**CAPACITY, BUSHELS**	**CAPACITY, TONS**	**PRICE**
6	10’ 6”	130	104	3.12	
7	12’ 6”	228	183	5.49	
8	15’ 6”	400	321	9.63	
8	20’ 6”	525	422	12.66	
10	19’	550	442	13.26	
10	21’	700	583	16.89	
10	23’	850	683	20.49	
10	25’	1,000	804	24.12	
10	27’	1,150	924	27.72	
10	29’	1,300	1,045	31.35	
10	31’	1,450	1,165	34.95	
10	33’	1,600	1,286	38.58	
10	35’	1,750	1,406	42.18	
10	37’	1,900	1,527	45.81	
10	39’	2,050	1,647	49.41	

BASE PRICE ADJUSTMENTS			
CODE	**MODIFICATION CODES**	**CODE**	**MODIFICATION CODES**
			Piling, concrete, in drilled holes
1	3’ concrete slab (+), per Sq. Ft.	**5**	12” diameter (+), per Lin. Ft. . . . .
2	4’ concrete slab (+), per Sq. Ft.	**6**	16” diameter (+), per Lin. Ft. . . . .
3	5’ concrete slab (+), per Sq. Ft.	**7**	24” diameter (+), per Lin. Ft. . . . .
4	6’ concrete slab (+), per Sq. Ft.	**8**	36” diameter (+), per Lin. Ft. . . . .
		9	48” diameter (+), per Lin. Ft. . . . .

AY1

AY2

Grain elevators are built for the processing and storage of grain. There are three principal types of construction: poured concrete, laminated wood and fabricated steel. Structural requirements will vary, not only due to size, but also due to the type of grain handled. Grain elevator facilities are divided into several categories consisting of storage tanks built in groups, usually of concrete or steel, in large elevators, and wood in smaller units, a headhouse for handling and cleaning the grain, and conveyors for transporting the grain. The replacement cost tables provided in this section are based upon the specifications of size, design and type of construction and are to be used as a guide for estimating the replacement cost of grain elevators and their auxiliary buildings.

Most facilities may consist of a combination of structures as listed below or in other categories in this section. Any separate offices, warehouses or other nonfarm structures should be priced separately.

Costs are based on total licensed bushel capacity of the elevator and/or annex facility except for steel tanks and bins, which are priced on a cost-per-tank basis. Special foundation work such as pilings or extremely large concrete pads are not included and must be added separately.

Elevator costs will include the complete headhouse (working house), tunnel, conveyor gallery and storage tanks or bins commensurate with the type and size of facilities listed.

Annex costs are for vertical storage facilities. They are to be used for elevators when there is an exposed leg system and no headhouse or for additional detached storage which utilizes the headhouse of the original elevator as well as its basic machinery. If the annex has a headhouse, it should be priced from the elevator cost tables, using the total capacity of both the elevator and the annex.

BASE SPECIFICATIONS

STORAGE TANKS: Structures used to store grain.

Concrete - Reinforced concrete, slip-form construction. Tanks vary from 40 to 130 feet in height and 20 to 40 feet in diameter. Wall thickness varies from 4 to 10 inches depending upon design. The circular bins rest directly on a concrete slab, which, in turn, is carried by exterior walls and interior columns resting on a thick concrete mat

Wood - Wood cribbing usually 2” x 6” lumber on outer walls and 2” x 4” lumber on partitions, all set in heavy concrete foundations. The outside walls may be covered with sheet metal, asbestos, or wood sheathing. Small capacity, usually under 200,000 bushels.

Steel - Bolted welded steel construction with a concrete floor and a heavy concrete foundation. Small capacity, usually under 200,000 bushels.

BASE SPECIFICATIONS (Continued)

HEADHOUSES: Structures containing the machinery necessary for cleaning, weighing, and separating the grain; may contain some additional small-capacity storage tanks

Concrete - Reinforced concrete structural frame with concrete curtain walls and steel sash lights.

Wood - Wood frame with corrugated iron, asbestos, or wood sheathed siding resting on a concrete foundation; steel sash lights.

Steel - Structural steel with corrugated steel or asbestos siding and steel sash lights.

DEPRECIATION

Grain elevators are subject to the same depreciating forces as any other type of structure. Physical deterioration, as well as functional and economic obsolescence, apply the greatest depreciating factors. Obsolescence, both functional and economic, can be caused by changes in the local grain industry, availability of transportation and the overall economy of the area. It is advisable to base the economic and functional depreciation upon the previous year's annual usage, and the physical depreciation upon the actual condition of the structure.

BASE PRICES				
STRUCTURE TYPE	AY1		AY2	
	Wood Crib/ Metal Clad		Concrete (Slip Form Construction)	
	Elevator	Annex	Elevator	Annex
Total Bushel Capacity	Price per Bushel			
8,000				
10,000				
15,000				
20,000				
30,000				
40,000				
50,000				
75,000				
100,000				
200,000				
500,000				
750,000				
1,000,000				
2,000,000				
OVER 2,000,000				

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Attached covered elevator driveway (+), per Sq. Ft. . . . .
2	Detached annex silos without tunnel or conveyor gallery (–), per running foot of silo . . . . .
3	No intersticing (–), per bushel . . . . .
4	Concrete jump form construction (–), per bushel . . . . .
5	Single concrete silos, use annex costs (–), percent . . . . .
6	Concrete stave silos (–), percent . . . . .
7	Concrete installations (+), percent. . . . .
8	Industrial bulk applications (+), percent . . . . .

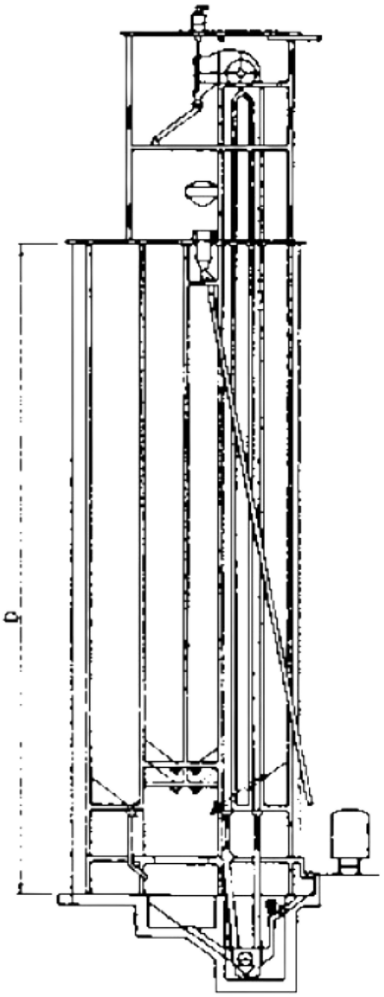
Machinery and equipment costs are very variable, depending on the exact job the elevator performs. The lower end of the range represents storage only, and the higher end of the range includes processing equipment. Costs of the various types of equipment overlap to some degree.

When pricing new equipment having greater flow capacity, a higher cost rank should be used than when pricing older elevators utilizing original equipment. The higher rank costs include newer, computerized terminal facilities.

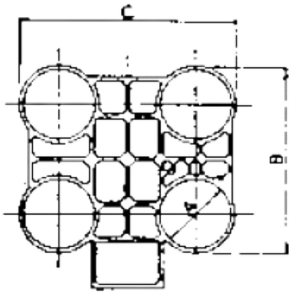
All costs should be applied to total licensed capacity of both the elevator and the annexes it serves.

SPECIAL MODIFICATION CODES				
CODE	FY1	FY2	FY3	FY4
	Low	Average	Good	Excellent
Total Bushel Capacity	Price per Bushel			
8,000				
10,000				
15,000				
20,000				
30,000				
40,000				
50,000				
75,000				
100,000				
200,000				
500,000				
750,000				
1,000,000				
2,000,000				
OVER 2,000,000				

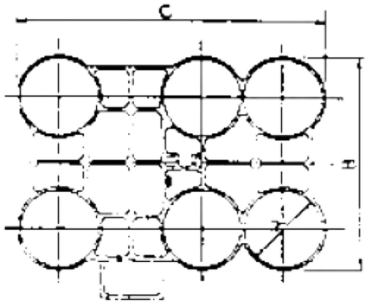
BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	For steel bin storage over 100,000 bushels, deduct 20% from the low-cost range for each additional 100,000 bushels.



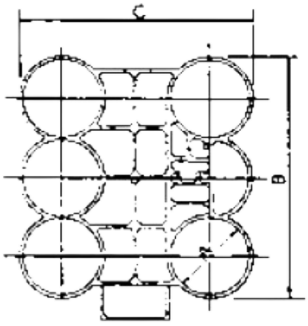
SPECIFICATIONS OF "TYPICAL" COUNTRY ELEVATORS DESIGNED BY BORTON, INCORPORATED



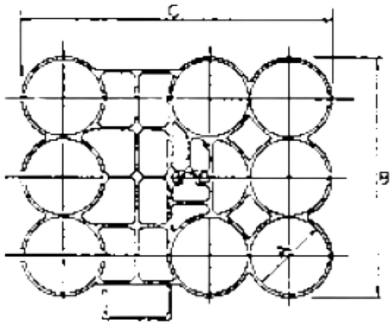
4 TANK



6 TANK



5½ TANK



8½ TANK

SPECIFICATIONS	TYPE									
	4 TANK	5½ TANK			6 TANK			8½ TANK		
BUSHEL CAPACITY	100,000	150.000	200,000	250,000	150,000	200,000	250,000	200,000	250,000	300,000
Dimension A	15'0"	16'0"	18'0"	20'0"	15'0"	18'0"	20'0"	16'0"	18'0"	20'0"
Dimension B	39'0"	50'0"	56'0"	62'0"	39'0"	45'0"	49'0"	50'0"	56'0"	62'0"
Dimension C	45'0"	47'0"	51'0"	55'0"	60'5"	69'6"	75'6"	63'0"	69'0"	76'9"
Dimension D	107'0"	128'0"	129'0"	129'0"	113'0"	111'0"	117'0"	114'0"	112'0"	110'0"
Leg capacity (bu./hr.)	5,000	5,000	6,500	7,500	5,500	6,500	7,500	6,500	7,000	7,500
Hooper scale capacity (tons)	10	15	15	25	15	15	25	15	25	25
Bushels/foot	1,100	1,400	1,730	2,200	1,480	1,975	2,350	1,960	2,425	2,930

AW2

BASE SPECIFICATIONS
Painted construction. Alloyed head shaft; double drum head and boot pulley; Holz lagging; 3-ply 330 rubber belt; head explosion vents; jack bolts under the head bearings; SCM/SC series bearings; throat wiper; access doors at the head, boot, inspections section and lagging access.

STRUCTURE TYPE	AW1				AW2		
Discharge Height	Price for 3,000 Bu/Hr	Price for 3,500 Bu/Hr	Price for 4,000 Bu/Hr	Price for 5,000 Bu/Hr	Price for 6,000 Bu/Hr	Price for 7,000 Bu/Hr	Price for 8,000 Bu/Hr
20’							
25’							
30’							
35’							
40’							
45’							
50’							
55’							
60’							
65’							
70’							
75’							
80’							
85’							
90’							
95’							
100’							
105’							
110’							
115’							
120’							
125’							
130’							
135’							
140’							
145’							
150’							

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Discharge transition to 10’ round, (+) . . . . .
2	Discharge transition to 12’ round, (+) . . . . .
3	Discharge transition to 14’ round, (+) . . . . .
4	Discharge transition to 16’ round, (+) . . . . .

AP1

AP1

AP3

AP5

BASE SPECIFICATIONS
FOUNDATION – Concrete footings. WALLS – Wood or metal on pole frame. FLOOR – Dirt. ROOF – Double pitch, asphalt shingles or metal roofing wood rafters and framing. OTHER FEATURES – Minimum electrical service.

BASE PRICES FOR TRUSS ROOF – 12' STANDARD HEIGHT						
STRUCTURE TYPE	AP1	AP2	AP3	AP4	AP5	AP6
	Four Sides, Closed, Metal	Four Sides, Closed, Wood	One Side, Open, Metal	One Side, Open, Wood	Four Sides, Open, Metal	Four Sides, Open, Wood
Area	Price per Square Foot					
600 1,000 1,400						
2,000 3,000 4,000						
5,000 6,000 7,000						
8,000 9,000 10,000						
	± 3% Foot in Height		± 2% Foot in Height		± 2% Foot in Height	

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Concrete floor (+), per Sq. Ft. . . . .
2	Insulation 1½" (+), per Sq, Ft. of wall area . . .
3	Insulation, polystyrene bd., 7/8" (+), per Sq. Ft. of wall area . . . . .
4	Insulation, 4" (+) per Sq. Ft. of wall area . . . . .
5	Wallboard (+) per Sq. Ft. of wall area . . . . .
6	No electricity, (–), per Sq. Ft. . . . .
7	Heating, (+), per Sq. Ft. . . . .
8	Wall Partitions, (+), per Sq. Ft. . . . .

BASE PRICE ADJUSTMENTS	
CODE	SPECIAL MODIFICATION CODES
FP1	14 x 12 slide door, each . . . . .
FP2	14 x 10 slide door, each . . . . .
FP3	14 x 8 slide door, each . . . . .
FP4	16 x 7 overhead door, each . . . . .
FP5	9 x 7 overhead door, each . . . . .

FARM IMPLEMENT (EQUIPMENT SHOP) BUILDINGS

BH2

BH3

BASE SPECIFICATIONS
FOUNDATION – Concrete footings. WALLS – Wood, metal on pole frame or metal on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing. OTHER FEATURES – Windows, cabinets, electric lighting and water service.

BASE PRICES – 12" HIGH			
STRUCTURE TYPE	BH1	BH2	BH3
	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
600			
1,000			
1,400			
2,000			
3,000			
4,000			
5,000			
6,000			
7,000			
8,000			
9,000			
10,000			
	± 2% Foot in Height		

FARM IMPLEMENT EQUIPMENT SHEDS

BH5

BASE SPECIFICATIONS
FOUNDATION – Concrete footings. WALLS – Open one side, wood, metal on pole frame or metal on steel frame. FLOOR – Concrete. ROOF – Double pitch, asphalt shingles or metal roofing on wood rafters and framing. OTHER FEATURES – Some end-wall windows, some cabinets, electric lighting and water service.

BASE PRICES – 12" HIGH			
STRUCTURE TYPE	BH4	BH5	BH6
	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
600			
1,000			
1,400			
2,000			
3,000			
4,000			
5,000			
6,000			
7,000			
8,000			
9,000			
10,000			
	± 2% Foot in Height		

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Concrete floor (–), per Sq. Ft.
2	Insulation 1½" (+), per Sq, Ft. of wall area
3	Insulation, polystyrene board., 7/8" (+) per Sq. Ft. of wall area
4	Insulation, 4" (+) per Sq. Ft. of wall area
5	Wallboard (+) per Sq. Ft. of wall area
6	Heating, (+), per Sq. Ft.
7	Wall Partitions, (+), per Sq. Ft.
CODE	SPECIAL MODIFICATION CODES
FF1	14 x 12 slide door, each
FF2	14 x 10 slide door, each
FF3	14 x 8 slide door, each
FF4	16 x 7 overhead door, each
FF5	9 x 7 overhead door, each

ARCH-RIB (QUONSET) FARM UTILITY BUILDINGS

AQ3

AQ2

AQ5

AQ13

BASE SPECIFICATIONS w/ End Walls
FOUNDATION – Concrete foundation and footings. WALLS – Shingles and wood siding on arched frame or metal on pre-engineered arched frame or metal on pre-engineered quonset frame; end wall with sliding door entry. FLOOR – Concrete. OTHER FEATURES – Adequate lighting, outlets and water service.

BASE SPECIFICATIONS w/ Open Ends
FOUNDATION – Concrete foundation and footings. WALLS – Shingles and wood siding on arched frame or metal on light arch-rib frame or metal on light steel quonset frame; open end walls. FLOOR – Dirt. OTHER FEATURES – Minimum electric service.

BASE PRICES							
16' HIGH ARCH FRAMES W/ END WALLS				16' HIGH ARCH FRAMES W/ OPEN ENDS			
STRUCTURE TYPE	AQ1 Wood Arch Frame/ Wood Siding	AQ2 Pole Arch Frame/ Metal Siding	AQ3 Steel Quonset Frame/ Metal Siding	STRUCTURE TYPE	AQ4 Wood Arch Frame/ Wood Siding	AQ5 Pole Arch Frame/ Metal Siding	AQ6 Steel Quonset Frame/ Metal Siding
Area	Price per Square Foot			Area	Price per Square Foot		
200				200			
300				300			
400				400			
500				500			
700				700			
1,000				1,000			
2,000				2,000			
3,000				3,000			
4,000				4,000			
5,000				5,000			
6,000				6,000			
7,000				7,000			
8,000				8,000			
9,000				9,000			
10,000				10,000			
Over				Over			

BASE PRICE ADJUSTMENTS		BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES	CODE	MODIFICATION CODES
1	Lighting (–), per Sq. Ft.	1	Lighting (–), per Sq. Ft. . . . .
2	Asphalt floor (–), per Sq. Ft.	2	Asphalt floor (+), per Sq. Ft. . . . .
3	Concrete floor (–), per Sq. Ft.	3	Concrete floor (+), per Sq. Ft. . . . .
4	No water service, (–), per Sq. Ft.		
5	Heating, (+), per Sq. Ft.		

Note: Costs for Panel Buildings, formerly found on Page 6-28, have been incorporated into the different occupancies. Please see the appropriate use.

ARCH-RIB (QUONSET) FARM IMPLEMENT BUILDINGS

BASE SPECIFICATIONS
Pre-Engineered Frame

FOUNDATION – Concrete foundation and footings. WALLS – Shingles and wood siding on arched frame or metal on pre-engineered arched frame or metal on pre-engineered quonset frame; end walls; windows, overhead door. FLOOR – Concrete. OTHER FEATURES – Some cabinets, adequate lighting, outlets and water service.

BASE SPECIFICATIONS
Arch Rib Frame

FOUNDATION – Concrete foundation and footings. WALLS – Shingles and wood siding on arch-rib frame or metal on light steel quonset frame; end walls; sliding door entry. FLOOR – Light concrete. OTHER FEATURES – Few extras; minimum electric service.

BASE PRICES

16' HIGH ARCH FRAMES W/ END WALLS				16' HIGH ARCH FRAMES W/ OPEN ENDS			
STRUCTURE TYPE	AQ7 Wood Arch Frame/ Wood Siding	AQ8 Pole Arch Frame/ Metal Siding	AQ9 Steel Quonset Frame/ Metal Siding	STRUCTURE TYPE	AQ10 Wood Arch Frame/ Wood Siding	AQ11 Pole Arch Frame/ Metal Siding	AQ12 Steel Quonset Frame/ Metal Siding
Area	Price per Square Foot			Area	Price per Square Foot		
200				200			
300				300			
400				400			
500				500			
700				700			
1,000				1,000			
2,000				2,000			
3,000				3,000			
4,000				4,000			
5,000				5,000			
6,000				6,000			
7,000				7,000			
8,000				8,000			
9,000				9,000			
10,000				10,000			
Over				Over			

BASE PRICE ADJUSTMENTS		BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES	CODE	MODIFICATION CODES
1	Lighting (–), per Sq. Ft.	1	Lighting (–), per Sq. Ft. . . . .
2	Asphalt floor (–), per Sq. Ft.	2	Asphalt floor (–), per Sq. Ft. . . . .
3	Concrete floor (–), per Sq. Ft.	3	Concrete floor (–), per Sq. Ft. . . . .
4	No water service, (–), per Sq. Ft.		
5	Heating, (+), per Sq. Ft.		

ARCH-RIB (QUONSET) FARM UTILITY/IMPLEMENT HOOP BUILDINGS

BASE SPECIFICATIONS
Pre-Engineered Frame

FOUNDATION – Concrete foundation and footings. WALLS – Wood pole, knee wall, pipe hoop frame, fabric cover. FLOOR – Dirt. OTHER FEATURES – Minimum electric service.

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Lighting (–), per Sq. Ft. . . . .
2	Asphalt floor (+), per Sq. Ft. . . . .
3	Concrete floor (+), per Sq. Ft. . . . .

BASE PRICES – 16' HIGH ARCH

STRUCTURE TYPE	AQ13 Hoop Utility Building	AQ14 Hoop Implement Building*	STRUCTURE TYPE	AQ13 (Cont.'d) Hoop Utility Building	AQ14 (Cont.'d) Hoop Implement Building*
Area	Price per Square Foot		Area	Price per Square Foot	
200			4,000		
300			5,000		
400			6,000		
500			7,000		
700			8,000		
1,000			9,000		
2,000			10,000		
3,000			Over		

***Note:** FLOOR **–** Light concrete floor. OTHER FEATURES **–** Few extras.

FRAME CORN CRIBS

AC1

AC2

BASE SPECIFICATIONS
FRAME – Wood skeleton frame; spaced boards or wire mesh. FLOOR – Concrete slab or wood plank. INTERIOR CONSTRUCTION – No lighting, plumbing or heat. ROOF – Double pitch, asphalt shingles on wood decking and wood rafters. OTHER FEATURES – Wood slat partitions.

BASE PRICES PER SQUARE FOOT – 10' HIGH		
	AC1	AC2
STRUCTURE TYPE	Wood Board	Welded Wire
Area	Price per Square Foot	
200		
300		
400		
500		
600		
700		
800		
900		
1,000		
1,200		
± 7% Foot in Height		

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Storage bin over (wood board) (+), per Sq. Ft.
2	Storage bin over (welded wire) (+), per Sq. Ft.
3	Lighting (+), per Sq. Ft. . . . .
4	Drive-through cribs (+), per Sq. Ft. . . . .

GRANARIES

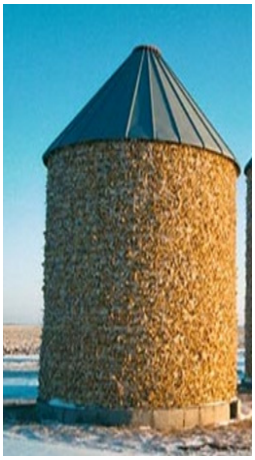
AR2

BASE SPECIFICATIONS – 10’ HIGH
FOUNDATION – Concrete walls and footings. WALLS – Drop siding on wood framing; interior wall, 1” x 4” wood crib siding. FLOOR – Concrete. ROOF – Double-pitch, asphalt shingles or wood decking, timber rafters and framing. OTHER FEATURES – Electric lighting.

BASE PRICES			
STRUCTURE TYPE	AR1	AR2	AR3
	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
800			
900			
1,000			
1,100			
1,000			
1,400			
± 5% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Wood storage bins (+), per Sq. Ft. . . . .
2	Wood ventilating Ducts (+), per Sq. Ft. . . . .
3	No Lighting (–), per Sq. Ft. . . . .
4	Pier foundation (–), per Sq. Ft. . . . .
5	Second floor (+), per Sq. Ft. . . . .

WIRE CORN CRIBS



AC3

AC4

BASE SPECIFICATIONS
Concrete foundation and floor, wire mesh walls on steel frame, metal roof, central air duct.

BASE PRICES			
STRUCTURE TYPE			AC3
Diameter	Height	Bushel Capacity	#2-Gauge Wire
12’ 8”	16’	611	
	21’	865	
16’ 6”	18’	1,085	
	23’	1,515	
	28’	1,940	

BASE PRICES			
STRUCTURE TYPE			AC4
Diameter	Height	Bushel Capacity	#4-Gauge Wire
12’ 8”	16’	611	
	21’	865	
16’ 6”	18’	1,085	
	23’	1,515	

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	No concrete slab (–), per Sq. Ft. . . . .

POTATO STORAGE BUILDING

AO7

AO7

BASE SPECIFICATIONS – BELOW GROUND
STRUCTURE – No foundation, dirt floor and side walls. END WALLS ONLY – Concrete block, wood or metal on pole frame. ROOF – Double-pitched roof with roll asphalt on wood rafters and decking covered with straw and dirt; INTERIOR CONSTRUCTION – Electric lighting.

BASE PRICES – 10' HIGH			
STRUCTURE TYPE Above Ground	AO1	AO2	AO3
	Concrete Block	Wood Frame/ Wood Siding	Pole Frame/ Metal Panels
Area	Price per Square Foot		
1,000			
2,000			
3,000			
4.000			
6,000			
8,000			
10,000			
15,000			

BASE SPECIFICATIONS – ABOVE GROUND
FOUNDATION – Concrete foundation and footing. WALLS – Block/heaped earth, wood, metal on pole frame or steel. CEILING – Insulated ceiling. FLOOR – Concrete floor. ROOF – Double-pitched roof with asphalt shingles on wood rafters and decking or steel sheeting. INTERIOR CONSTRUCTION – Electric lighting.

BASE PRICES – 16' HIGH				
STRUCTURE TYPE Above Ground	AO4	AO5	AO6	AO7
	Concrete Block/ Heaped Earth	Wood Frame/ Wood Siding	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot			
1,000				
2,000				
3,000				
4.000				
6,000				
8,000				
10,000				
15,000				
± 2% Foot in Height				

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	No insulation (–), per Sq. Ft. . . . .

TOBACCO BARNS

AO8

BASE SPECIFICATIONS
STRUCTURE – Concrete foundation and footing. WALLS – Wood, pole frame or steel. FLOOR – Concrete floor. ROOF – Asphalt shingles on decking with wood framing or steel. INTERIOR CONSTRUCTION – Partially finished interior; flue-curing; racks; electric lighting; water service.

BASE PRICES – 10' HIGH				
STRUCTURE TYPE	AO8	AO9	AO10	AO11
	Wood Frame/ Wood Siding	*Wood Frame/ Vented Walls	Pole Frame/ Metal Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot			
500				
1,000				
2,000				
3,000				
4,000				
6,000				
8,000				
10,000				

***Note:** Wood frame with vented wood walls. Concrete pier foundation; dirt floor; asphalt shingles on decking with wood framing. Unfinished interior; rack; air curing.

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	No lighting (–), per Sq. Ft. . . . .
2	Concrete floor (–), per Sq. Ft. . . . .
3	No water service (–), per Sq. Ft. . . . .
CODE	SPECIAL MODIFICATION CODES
FO1	24" ventilating fan, add each . . . . .
FO2	36" ventilating fan, add each . . . . .

AN8

AN3

AN8

STRAIGHT-WALL STRUCTURES – 12' HIGH (Heating systems and benches are not included.)					
STRUCTURE TYPE	**AN1**	**AN2**	**AN3**	**AN4**	**AN5**
	Steel and Aluminum Frame/Glass	**Pipe Frame/Glass**	**Light Pipe or Wood Frame/Glass**	**Steel Frame/Plastic**	**Light Pipe or Wood Frame/Plastic**
Area	**Price per Square Foot**				
500					
1,000					
3,000					
6,000					
10,000					
20,000 & Over					

BASE SPECIFICATIONS FOR:
AN1, AN2 – Tempered glass, polycarbonate/ acrylic, vents, concrete walks, electrical and water service.
AN3, AN4 – Glass, or fiberglass covering, some vents, gravel, some concrete, electrical and hose bibs.
AN5 – Double polyethylene arch roof, fiberglass walls, gravel floor. Minimum electrical, lighting and water.

HOOP STRUCTURES – 12' HIGH (Heating systems and benches are not included.)				
STRUCTURE TYPE	**AN6**	**AN7**	**AN8**	**AN9**
	Pipe Frame/ Polyethylene or Acrylic Cover	**Light Pipe Frame/ Arch Frame/ Fiberglass Panels**	**Pipe or Light Tubular Arch/Double Polyethylene Cover**	**Light Pipe Arch/Wide Spacing Polyethylene Cover**
Area	**Price per Square Foot**			
500				
1,000				
3,000				
6,000				
10,000				
20,000 & Over				

BASE SPECIFICATIONS FOR:
AN6 – Roof and wall vents, concrete walks, electrical and water service.
AN7 – Some vents, gravel, some concrete, electrical and hose bibs.
AN8 – Double polyethylene cover, fiberglass ends and knee walls, gravel floor, minimum electrical lighting and hose bibs.
AN9 – Polyethylene cover, dirt floor, no electrical, hose bib only.

NORMAL DEPRECIATION TABLE FOR GREENHOUSES					
AGE IN YEARS	**DEPRECIATION**	**AGE IN YEARS**	**DEPRECIATION**	**AGE IN YEARS**	**DEPRECIATION**
0 – 1	**10%**	**6 – 7**	**35%**	**16 – 17**	**60%**
2	**15%**	**0 – 9**	**45%**	**18 – 19**	**65%**
3	**20%**	**10 – 11**	**45%**	**20 – 21**	**70%**
4	**25%**	**12 – 13**	**55%**	**Over**	**75%**
5	**30%**	**14 – 15**	**55%**		

FARM LABOR HOUSING – DORMITORIES

BM2

BM2

QUALITY	GRADE FACTOR
B	1.32
C	1.00
D	0.76

BASE PRICES – 8' HIGH			
STRUCTURE TYPE	BM1	BM2	BM3
	Concrete Block	Wood Frame/ Wood Siding	Steel Frame/ Steel Siding
Area	Price per Square Foot		
800			
1,000			
1,200			
1.400			
1,600			
1,800			
2,000			
2,200			
2,400			
2,600			
2,800			
3,000			
± 2% Foot in Height			

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Insulation 1½" (+), per Sq, Ft. of wall area . . .
2	Insulation, polystyrene bd., 7/8" (+) per Sq. Ft. of wall area . . . . .
3	Insulation, 4" (+) per Sq. Ft. of wall area . . . . .
4	Wallboard (+) per Sq. Ft. of wall area . . . . .
5	No electricity, (–), per Sq. Ft. . . . .
6	Heating, (+), per Sq. Ft. . . . .
7	Wall Partitions, (+), per Sq. Ft. . . . .

BASE SPECIFICATIONS: B

FOUNDATION – Concrete footings. WALLS – Low-cost brick or block masonry, wood siding on wood frame or steel siding on steel frame. FLOOR – Concrete. ROOF – Double pitched, asphalt shingle on wood decking, rafters and framing or steel on steel frame. OTHER FEATURES – Good fenestration, insulation, gypsum or plywood partitions, individual rooms, lighting and outlets in each room, common shower room.

BASE SPECIFICATIONS: C

FOUNDATION – Concrete footings. WALLS – Block masonry, wood siding on wood box frame or wide-spaced studs, or steel panels on steel frame. FLOOR – Concrete. ROOF – Double pitched, asphalt shingle on wood decking, rafters and framing or steel on steel frame. OTHER FEATURES – Adequate fenestration, common rooms, adequate lighting, plumbing and common restroom.

BASE SPECIFICATIONS: D

FOUNDATION – Concrete footings. WALLS – Low-cost block masonry, wood siding with battens on wood box frame or low-cost steel panels on steel frame. FLOOR – Concrete. ROOF – Double pitched, asphalt shingles on wood decking, rafters and framing or steel on steel frame. OTHER FEATURES – Unfinished interior, no partitions, minimum lighting and water service.

TRANSIENT LABOR CABINS

BASE PRICES – 8' HIGH	
STRUCTURE TYPE	BM4
	Wood Frame/ Wood Siding
Area	Price per Square Foot
800	
1,000	
1,200	
1.400	
1,600	
1,800	
2,000	
2,200	
2,400	
2,600	
2,800	
3,000	
± 2% Foot in Height	

BASE SPECIFICATIONS

FOUNDATION – concrete. WALLS – Wood box frame with plywood, board and battens or metal siding. FLOOR – Concrete or boards on wood joists. ROOF – Double pitched, asphalt shingle on wood decking, rafters and framing. OTHER FEATURES – No partitions, minimum cabinetry, one or two lights and outlets, sink with cold water.

BASE PRICE ADJUSTMENTS	
CODE	MODIFICATION CODES
1	Insulation 1½" (+), per Sq, Ft. of wall area . . .
2	Insulation, polystyrene bd., 7/8" (+), per Sq. Ft. of wall area . . . . .
3	Insulation, 4" (+) per Sq. Ft. of wall area . . . . .
4	Wallboard (+) per Sq. Ft. of wall area . . . . .
5	No electricity, (–), per Sq. Ft. . . . .
6	Heating, (+), per Sq. Ft. . . . .
7	Wall Partitions, (+), per Sq. Ft. . . . .

Railroad Spurs

Average costs per linear foot for a 500-foot spur. Costs include rails, ties, ballast, spikes and alignment. Cost of turnouts are an additive to the rail cost.

Add or deduct 2% for each 100 feet of track under 500 feet. (25% maximum deduction)

Weight of Rail (pounds per yard)	Cost Installed (per foot of track)	Add for Switch and Turnout
40#		
60#		
80#		
100#		
130#		

Elevated Steel Tanks

Costs include: tank, tower or pedestal, riser pipe, ladder, and other equipment normally installed, completely erected as well as typical foundations and painting.

Capacity	Tower Height			
(gallons)	50’	75’	100’	150’
25,000				
50,000				
75,000				

Welded Steel Pressure Tanks

Costs are for complete standard horizontal installation on legs or saddle pads, including normal fittings on tank but not pipe, values or foundation.

Capacity (gallons)	Cost
30,000	
45,000	
60,000	
90,000	

Underground Steel Double Wall Tanks

Costs are for Completely installed tanks, including fittings, access mainway, excavation and backfill. For difficult soil conditions, add for extra cost of excavation and bedding, a necessary. Costs do not include piping.

Nominal Capacity (gallons)	Cost
1,000	
2,000	
8,000	
10,000	
12,000	
15,000	
20,000	

Vertical Welded Steel Tanks

Costs are averages for mild steel welded tanks, including sand and gravel foundations, fittings, and roof.

Capacity (gallons)	Cost
10,000	
20,000	
30,000	

Auxiliary power generators	**KW Rating**	**Engine HP**	**Price Range**
Specifications:			
Recoil start with decompressor – main breaker	4.5	8.0	$ – $
Low oil and hot temperature auto shutdown	6.0	11.0	–
Commercial brushless alternater with copper windings	7.0	13.5	–
120-volt receptacle, 15amp – full power outlet 120/240	12.0	22.0	–
steel frame – full suspension	*5.5	10.0	–
*Diesel motor			

Bale loaders	**Capacity, lb.**	**Price Range**
Specifications:		
Front loader attachment – bale spear	1,500 – 3,000	$ – $
Rear 3 -point attachment – bale spear	1,500 – 2,800	–

Barn elevators	**0-deg to 15-deg Pitch Adjustment Price Range**	**16-deg to 30-deg Pitch Adjustment Price Range**
Specifications:		
14” x 50’ reversible belt conveyor	$ – $	$ – $
16” x 50’ reversible belt conveyor	–	–
18” x 50’ reversible belt conveyor	–	–

Conveyors	**Price Range**
Specifications:	
14” x 50’ reversible belt conveyor	$ – $
16” x 50’ reversible belt conveyor	–
18” x 50’ reversible belt conveyor	–

Feed elevators and augers
Loading/unloading systems — see Page 5–51

Grain dryers
See Page 5–51

Horizontal drag (U-trough) conveyors
See Page 5–52

Manure storage tanks and lagoons
See Page 5–45

Milk house equipment
See Page 5–36

Milking parlor equipment
See Page 5–36

Powered feeders	**Feeder Price Range**	**Feeder w/ Wind Boards Price Range**
Specifications:		
16 gauge, weather resistant galvanized steel		
14” x 105’	$ – $	$ – $
18” x 105’	–	–
Each control	$	

Silo unloaders
See Pages 5–48, 5–49

CDU RATING SYSTEM 6–1

APPLYING THE CDU SYSTEM 6–2

OTHER BUILDING IMPROVEMENT DEPRECIATION 6–5

BASIC PERCENT GOOD TABLES 6–6

CDU RATING SYSTEM

As houses grow older, they wear out; they become less desirable, less useful. This universal decline in value is called depreciation, and appraisers are required to determine the degree of this loss in each property they examine.

If all houses deteriorated at the same rate, this decline in value would be a simple function of the age of the structure—a certain percentage per year. However, houses depreciate at varying rates depending on a score or so of variables.

Every building is acted upon by two depreciating forces. One tends to shorten its physical life. The other shortens its economic life. Both depreciating forces act concurrently. They overlap and affect each other.

A new house, or any type of structure for that matter, has its greatest value at the moment of completion. Its expectancy of life—both physical and economic—is longest the day the key is handed over by the builder. The building is most desirable. It is most useful. The future benefits the occupant may expect to enjoy are at the maximum. From that day forward, however, decay and wear and tear act to lessen the value of the structure by curtailing its remaining capacity for use.

At the same time the house is wearing out, it is also going out of style. It is becoming less desirable. It is progressively becoming less useful both from the effect of forces within the property (obsolescence), and from those outside of it as well (encroachment of undesirable influences).

Neither physical decline nor functional loss is constant in its action. Deterioration is a relatively steady process offset periodically by maintenance. Worn-out elements of the building are repaired or replaced at intervals depending upon the policy of the owner. Cheaper houses generally deteriorate faster than better ones. Obsolescence and encroachment may come slowly or may happen almost overnight.

The forces which cause both deterioration and functional/economic depreciation may, and often do, act simultaneously, but they are not necessarily related. A house may decline in physical condition and yet throughout its entire life remain relatively functional.

Obviously enough, the age of a house remains an important factor in estimating accrued depreciation. A certain number of houses will receive “normal” maintenance and will experience “average” economic loss due to obsolescence and functional depreciation. These buildings will depreciate at an “average” rate as they grow older.

Other houses will lose value (depreciate) at lesser or more rapid rates. CDU Ratings provide a logical reasoning process by means of which normal age depreciation may be modified according to the appraiser’s best determination of the relative loss of value in a structure as compared with the average loss that might be expected.

Thus, the age of a dwelling is an unreliable indicator of the degree of depreciation from its cost new. For houses depreciate not merely because they grow older, but because they wear out and become less desirable and less useful from a variety of causes.

To assist the appraiser in establishing the CDU Ratings of buildings, eight simple classifications have been established. These classifications or ratings are entirely natural

and will fit the normal impressions of the appraiser examining a building. The table below is a tabulation of CDU Ratings, with their accompanying definitions of the observed physical condition of the building, and the building's degree of desirability and usefulness, for its AGE and for its TYPE.

CDU RATING GUIDE

CDU RATING OF DWELLING	DEFINITION
Excellent	Building is in perfect condition; very attractive and highly desirable.
Very good	Slight evidence of deterioration; still attractive and quite desirable.
Good	Minor deterioration visible; slightly less attractive and desirable, but useful.
Average	Normal wear and tear is apparent; average attractiveness and desirability.
Fair	Marked deterioration—but quite usable; rather unattractive and undesirable.
Poor	Definite deterioration is obvious; definitely undesirable, and barely usable.
Very poor	Condition approaches unsoundness; extremely undesirable and barely usable.
Unsound	Building is definitely unsound and practically unfit for use.

AGE is reflected as an index of the normal deterioration and obsolescence in a structure which may be expected over the years. *CONDITION* represents a variable measure of the effects of maintenance and remodeling on a building. *DESIRABILITY* is a measure of the degree of appeal a particular building may have to prospective purchasers. *USEFULNESS* is a measure of the utility value of the structure for the purpose for which it may be used.

Once the CDU Rating of a building has been established through a consideration of its condition, desirability and usefulness, for its age and its type, reference to the Basic Depreciation Table will indicate the appropriate depreciation allowance for a structure possessing these qualities, in the degree observed and noted by the appraiser.

The term *Basic Depreciation* is appropriate to define the allowance for depreciation established by the method suggested here, for it is truly basic depreciation which has been sought and found. It represents a determination of a single depreciation allowance which reflects the total combined effect upon value of all of the depreciating forces, both physical and functional in nature.

The degree of deterioration and obsolescence, or loss of value from all causes, both within and outside the property, are automatically taken into account. This is accomplished by means of a simple rating of the capabilities and qualities of the structure, in precisely the same terms as would a prospective purchaser. And sound valuation theory presupposes the existence of a prospective buyer with intelligence enough to compare the advantages and disadvantages of competing properties and then rate the property he is examining according to its relative degree of desirability and usefulness.

Percent good is defined as the resultant estimate of the diminishing value of an improvement after subtracting the amount of estimated depreciation from the Replacement Cost New. For example, a structure which is estimated to be 45 percent depreciated as of a given time has a percent good of 55. Therefore, depreciation and percent good are complements of each other.

APPLYING THE CDU SYSTEM

To apply the CDU System, the appraiser rates each house according to his or her composite impression of its relative condition, desirability and usefulness—for its age and

type. The following four actual cases illustrate this convenient and practical method of determining percent good in houses.

CASE ONE: A fifteen-year-old single-family residence situated in an attractive residential suburb of a typical American community. Grade B, with two baths. Minor deterioration is visible; slightly less attractive and desirable than new, but useful. A qualified observer would rate this house above average on the CDU Rating System. Accordingly, our appraiser has assigned it a CDU Rating of Good. Referring to the table, we find 85% Good would be appropriate.

CASE TWO: A one-story frame house, seven years old. Grade C or average-quality construction; three bedrooms, one and one-half baths. Structure shows normal wear and tear and has average attractiveness and desirability. The appraiser's impression is that, "For a seven-year-old Grade C house, this would be rated as Average." From the table, we find 88% Good to be indicated.

CASE THREE: This century-old Colonial-style frame house is located in a New England seaport community; erected 1858. Grade B or good-quality construction. Building has been extremely well maintained and completely modernized with central heating, electric lighting and modern plumbing added. The structure is in good physical condition in spite of its age. Building is architecturally attractive and quite desirable. The appraiser's impression is that, "For a very old house of Grade B quality, this is an Excellent one." From the table, 65% Good is indicated.

CASE FOUR: A twenty-four-year-old single-family residence of Grade C quality; one story and basement, frame construction; three bedrooms with bath. Structure has had normal maintenance and is in average physical condition. Within the past two years an elevated six-lane expressway has been erected passing over the adjoining lot. This encroachment has seriously detracted from the attractiveness and desirability of the property. Accordingly, the appraiser has assigned a CDU Rating of Very Poor. From the table, 54% Good is indicated.

DWELLING DEPRECIATION

1. Rate the dwelling in terms of its overall condition, desirability and usefulness.

2. Select the proper percent good relative to its actual age.

BASIC PERCENT GOOD TABLE	
RATING GUIDE	
Excellent	Building is in perfect condition; very attractive and highly desirable.
Very good	Slight evidence of deterioration; still attractive and quite desirable.
Good	Minor deterioration visible; slightly less attractive and desirable, but useful.
Average	Normal wear and tear is apparent; average attractiveness and desirability.
Fair	Marked deterioration—but quite usable; rather unattractive and undesirable.
Poor	Definite deterioration is obvious; definitely undesirable, and barely usable.
Very poor	Condition approaches unsoundness; extremely undesirable and barely usable.
Unsound	Building is definitely unsound and practically unfit for use.

Actual Age	CDU RATING OF DWELLING							
	Excel.	V. Good	Good	Average	Fair	Poor	V. Poor	Unsound
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26 - 30								
31 - 40								
41 - 50								
51 - 60								
61 - 70								
71 - 80								
81 & over								

Note: This dwelling CDU table is based on a weighted average of parcel samples taken throughout the state, and consequently is meant to be used as a guide only. It may or may not be an accurate measure for each municipality.

The appraisal of other building improvements for both residential and agricultural properties is a difficult task. Other building improvements are rarely purchased or sold separately from the balance of the property. The cost of construction of a swimming pool, which is built for the convenience and comfort of a property owner, will rarely add an equivalent amount to the market value of the property. The cost of construction of a farm outbuilding that can be justified by its contribution to the farming operation, will again, seldom add an equivalent amount to the market value of the property.

In effect, other building improvements have value in direct proportion to their degree of utility or usefulness. This is an extension of the principle of contribution, which affirms that the value of any factor in production is dependent upon the amount to which it contributes to the overall net return irrespective of the cost of its construction. Any effective approach to the valuation of other building improvements must reflect the action of investors. Informed farm owners and operators would not invest in buildings which could not pay for themselves by either maintaining or adding to the required level of productivity. Homeowners would not invest in swimming pools, detached garages, etc., which would not supply the degree of comfort and/or convenience they desire.

The physical condition of any other building improvement bears a direct relationship to the desirability and usefulness of that improvement. It is, therefore, possible to apply the CDU system previously explained to generate a percent good estimate for different types of improvements of varying ages based on condition, desirability and usefulness.

The CDU Rating system has been modified to assist the appraiser in developing applicable depreciation guidelines based upon the condition, desirability and usefulness of various out-building improvements.

For the appraisal of other building improvements, the term CDU Rating is modified to become Condition Rating. The term Condition Rating will still give the same consideration to all the factors which influence the overall condition, desirability and degree of usefulness of each structure. The eight CDU Ratings have been modified to become six Condition Ratings. These ratings are again intended to fit the normal impressions of an appraiser as he or she examines an improvement. Condition Ratings, with their accompanying definitions, are as follows:

COND. RATING OF IMPROVEMENT	DEFINITION
Excellent	Improvement is in “like new” condition; very useful and highly desirable.
Good	Minor deterioration visible; slightly less desirable, but useful.
Average	Normal wear and tear is apparent; average usefulness and desirability.
Fair	Marked deterioration—but quite usable; rather undesirable.
Poor	Definite deterioration is obvious; definitely undesirable, and barely usable.
Unsound	Building is definitely unsound and practically unfit for use.

Six individual Percent Good Tables have been developed to assist the appraiser in valuing the various other building improvements that are normally encountered. The

following is a list of these six tables, the type of applicable improvements and their respective structure type codes.

1. Select the proper table based on the type of structure.
2. Rate the structure in terms of its overall condition, desirability and usefulness.
3. Select the proper percent good relative to actual age.

TABLE 1

1. RG1 – detached frame or concrete block garage
2. RG2 – detached masonry or log garage
3. RG3 – pole-frame garage
4. AB1 – general–purpose bank barns -- masonry
5. AB2 – general–purpose bank barns – wood frame
6. AB3 – general–purpose bank barns -- pole frame
7. AD1 – special–purpose dairy and horse barns – 2-story masonry
8. AD2 – special–purpose dairy and horse barns – 2-story wood
9. AD3 – special–purpose dairy and horse barns – 2-story pole frame
10. AD4 – special–purpose dairy and horse barns – 1-story masonry
11. AD5 – special–purpose dairy and horse barns – 1-story wood
12. AD6 – special–purpose dairy and horse barns – 1-story pole frame
13. BM1 – farm labor housing – dormitories – concrete block
14. BM2 – farm labor housing – dormitories – wood frame/wood siding
15. BM3 – farm labor housing – dormitories – steel frame/steel siding
16. BM4 – transient labor cabins – wood frame/wood siding

PERCENT GOOD TABLE 1						
STRUCTURE TYPE CODES: RG1, RG2, RG3, AB1, AB2, AB3, AD1, AD2, AD3, AD4, AD5, AD6, BM1, BM2, BM3, BM4						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15						
16 - 20						
21 - 25						
26 - 30						
31 - 35						
36 - 40						
41 - 45						
46 - 50 & over						

TABLE 2

1. AB4 – general-purpose flat barns – masonry
2. AB5 – general-purpose flat barns – wood frame
3. AB6 -- general-purpose flat barns – pole frame
4. AM1 – milk houses – attached concrete block
5. AM2 – milk houses – attached wood frame
6. AM3 – milk houses – attached pole frame
7. AM4 – milk houses – detached concrete block
8. AM5 – milk houses – detached wood frame
9. AM6 – milk houses – detached pole frame
10. AM7 – milking parlors – attached concrete block
11. AM8 – milking parlors – attached wood frame
12. AM9 – milking parlors – attached pole frame
13. AM10 – milking parlors – detached concrete block
14. AM11 – milking parlors – detached wood frame
15. AM12 – milking parlors – detached pole frame
16. AM13 – milking parlors – steel frame/steel siding
17. AS1 – concrete stave silo – with roof
18. AS2 – concrete stave silo – without roof
19. AS5 – concrete poured silo – with roof
20. AS6 – concrete poured silo – without roof

PERCENT GOOD TABLE 2						
STRUCTURE TYPE CODES: AB4, AB5, AB6, AM1, AM2, AM3, AM4, AM5, AM6, AM7, AM8, AM9, AM10, AM11, AM12, AM13, AS1, AS2, AS5, AS6						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15						
16 - 20						
21 - 25						
26 - 30						
31 - 35						
36 - 40						
41 - 45						
46 - 50 & over						

TABLE 3

1. AC1 – frame corn cribs – wood board
2. AC2 – frame corn cribs – welded wire
3. AE2 – 45-degree hopper bottom tanks
4. AE3 – Fiberglass bottom bulk storage tanks
5. AH1 – poultry layer houses – 1-story pole frame/metal siding
6. AH2 – poultry layer houses – 2-story pole frame/metal siding
7. AH3 – poultry layer houses – 1-story concrete block
8. AH4 – poultry layer houses – 2-story concrete block
9. AH5 – poultry layer houses – 1-story steel frame/steel siding
10. AH6 – poultry layer houses – 2-story steel frame/steel siding
11. AH7 – poultry broiler houses – concrete block
12. AH8 – poultry broiler houses --pole frame/metal siding
13. AH9 – poultry broiler houses - steel frame/steel siding
14. AH10 – turkey barns - pole frame/metal siding
15. AH11 – turkey barns - steel frame/steel siding
16. AO1 – potato storage buildings – concrete block
17. AO2 – potato storage buildings – wood frame/wood siding
18. AO3 – potato storage buildings – pole frame/metal siding
19. AO4 – potato storage buildings – concrete block/heaped earth
20. AO5 – potato storage buildings – wood frame/wood siding
21. AO6 – potato storage buildings – pole frame/metal siding
22. AO7 – potato storage buildings – steel frame/steel siding
23. AO8 – tobacco barns – wood frame/wood siding
24. AO9 – tobacco barns – wood frame/vented walls
25. AO10 – tobacco barns – pole frame/metal siding
26. AO11 – tobacco barns – steel frame/steel siding
27. AR1 – granaries – wood frame/wood siding
28. AR2 – granaries – pole frame/metal siding
29. AR3 – granaries – steel frame/steel siding
30. AS3 – porcelain silos (Harvestore™) – price new
31. AS4 – porcelain silos (Harvestore™) – price preowned/rebuilt
32. AV1 – hog nursery barns - wood frame/wood siding
33. AV2 – hog nursery barns - pole frame/metal siding
34. AV3 – hog nursery barns - steel frame/steel siding
35. AV4 – hog farrowing barns - wood frame/wood siding
36. AV5 – hog farrowing barns - pole frame/metal siding
37. AV6 – hog farrowing barns - steel frame/steel siding
38. AV17 – automated nipple watering system for hogs – galvanized steel, obsolete
39. AV18 – automated nipple watering system for hogs – stainless steel
40. AX1 – loading/unloading system – auger-type conveyors
41. AX2 – loading/unloading system – belt-type conveyors

PERCENT GOOD TABLE 3						
STRUCTURE TYPE CODES: AC1, AC2, AE2, AE3, AH1, AH2, AH3, AH4, AH5, AH6, AH7, AH8, AH9, AH10, AH11, AO1, AO2, AO3, AO4, AO5, AO6, AO7, AO8, AO9, AO10, AO11, AR1, AR2, AR3, AS3, AS4, AVA1, AV2, AV3, AV4, AV5, AV6, AV17, AV18, AX1, AX2						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15						
16 - 20						
21 - 25						
26 - 30						
31 - 35						
36 - 40						
41 - 45						
46 - 50 & over						

TABLE 4

1. RC1 – carport
2. RC2 – canopy
3. RS1 – frame utility shed
4. RS2 – metal utility shed
5. AB7 – free-stall dairy/beef barns - wood frame/wood siding
6. AB8 – free-stall dairy/beef barns - pole frame/metal siding
7. AB9 – free-stall dairy/beef barns - steel frame/steel siding
8. AB10 – free-stall dairy/beef barns – steel arch-rib frame/wire panels
9. AE1 – hopper scales
10. AF1 – concrete feed bunk
11. AF2 – post-and-plank feed bunk
12. AF3 – concrete fence bunk
13. AF4 – post-and-plank fence bunk
14. AI1 – personal manlift
15. AL1 – lean-to - wood frame/wood siding
16. AL2 – lean-to - pole frame/metal siding
17. AL3 – lean-to - steel frame/steel siding
18. AP1 – pole-frame utility buildings – four sides, closed metal
19. AP2 – pole-frame utility buildings – four sides, closed wood
20. AP3 – pole-frame utility buildings – one side, open metal
21. AP4 – pole-frame utility buildings – one side, open wood
22. AP5 – pole-frame utility buildings – four sides, open metal
23. AP6 – pole-frame utility buildings – four sides, open wood
24. AQ1 – arch-rib (quonset) farm utility buildings – wood arch frame/wood siding, with end walls
25. AQ2 – arch-rib (quonset) farm utility buildings – pole arch frame/metal siding, with end walls
26. AQ3 – arch-rib (quonset) farm utility buildings – steel quonset frame/metal siding, with end walls
27. AQ4 – arch-rib (quonset) farm utility buildings – wood arch frame/wood siding, with open ends
28. AQ5 – arch-rib (quonset) farm utility buildings – pole arch frame/metal siding, with open ends
29. AQ6 – arch-rib (quonset) farm utility buildings – steel quonset frame/metal siding, with open ends
30. AQ7 – arch-rib (quonset) farm implement buildings – wood arch frame/wood siding, with end walls
31. AQ8 – arch-rib (quonset) farm implement buildings - pole arch frame/metal siding, with end walls
32. AQ9 – arch-rib (quonset) farm implement buildings - steel quonset frame/metal siding, with end walls
33. AQ10 – arch-rib (quonset) farm implement buildings - wood arch frame/wood siding, with open ends
34. AQ11 – arch-rib (quonset) farm implement buildings - pole arch frame/metal siding, with open ends

35. AQ12 – arch-rib (quonset) farm implement buildings – steel quonset frame/metal siding, with open ends
36. AQ13 – arch-rib (quonset) farm utility hoop buildings
37. AQ14 – arch-rib (quonset) farm implement hoop buildings
38. AV7 – hog breeding/gestation barns - wood frame/wood siding
39. AV8 – hog breeding/gestation barns - pole frame/metal siding
40. AV9 – hog breeding/gestation barns - steel frame/steel siding
41. AV10 – hog finishing barns - wood frame/wood siding
42. AV11 – hog finishing barns - pole frame/metal siding
43. AV12 – hog finishing barns - steel frame/steel siding
44. AV13 – hog sheds - wood frame/wood siding
45. AV14 – hog sheds - pole frame/metal siding
46. AV15 – hog sheds – arch-rib/fabric cover
47. AV16 – hog sheds –steel frame/steel siding
48. AY1 – grain elevators – wood crib/metal clad
49. AY2 – grain elevators – concrete (slip form construction)
50. BA1 – stables – wood frame/wood siding
51. BA2 – stables – pole frame/metal siding
52. BA3 – stables – steel frame/steel siding
53. BA4 – high value (estate) stables – concrete block/brick, stone or tile
54. BA5 – high value (estate) stables – wood frame/brick, stone or tile
55. BC1 – arenas – w/feed, tack and washrooms - pole frame/metal siding
56. BC2 – arenas – w/feed, tack and washrooms - steel frame/steel siding
57. BC3 – arenas – arena only - pole frame/metal siding
58. BC4 – arenas – arena only - steel frame/steel siding
59. BD1 – farm commodity storage buildings – concrete block
60. BD2 – farm commodity storage buildings – wood frame/wood siding
61. BD3 – farm commodity storage buildings – pole frame/metal siding
62. BD4 – farm commodity storage buildings – steel frame/steel siding
63. BG1 – feeder barns (cattle sheds) - wood frame/wood siding
64. BG2 – feeder barns (cattle sheds) - pole frame/metal siding
65. BG3 – feeder barns (cattle sheds) - steel frame/steel siding
66. BH1 – farm implement (equipment shop) buildings - wood frame/wood siding
67. BH2 – farm implement (equipment shop) buildings - pole frame/metal siding
68. BH3 – farm implement (equipment shop) buildings - steel frame/steel siding
69. BH4 – farm implement equipment sheds - wood frame/wood siding
70. BH5 – farm implement equipment sheds - pole frame/metal siding
71. BH6 – farm implement equipment sheds - steel frame/steel siding
72. BL1 – truck scales

PERCENT GOOD TABLE 4						
STRUCTURE TYPE CODES: RC1, RC2, RS1, RS2, AB7, AB8, AB9, AB10, AE1, AF1, AF2, AF3, AF4, AI1, AL1, AL2, AL3, AP1, AP2, AP3, AP4, AP5, AP6, AQ1, AQ2, AQ3, AQ4, AQ5, AQ6, AQ7, AQ8, AQ9, AQ10, AQ11, AQ12, AQ13, AQ14, AV7, AV8, AV9, AV10, AV11, AV12, AV13, AV14, AV15, AV16, AY1, AY2, BA1, BA2, BA3, BA4, BA5, BC1, BC2, BC3, BC4, BD1, BD2, BD3, BD4, BG1, BG2, BG3, BH1, BH2, BH3, BH4, BH5, BH6, BL1						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15						
16 - 20						
21 - 25						
26 - 30 & over						

TABLE 5

1. RN1 – greenhouses (conventional)
2. RN2 – greenhouses (solar)
3. AC3 – wire corn cribs - #2 gauge wire
4. AC4 – wire corn cribs - #4 gauge wire
5. AG1 – steel grain bins – without drying bins
6. AG2 – steel grain bins – with drying bins
7. AG3 – steel tanks
8. AK1 – bunker silos – concrete panels w/ 3" concrete floor
9. AK2 – bunker silos – wood plank w/ 3" concrete floor
10. AN1 – commercial greenhouses – straight wall structures – steel and aluminum frame/glass
11. AN2 – commercial greenhouses – straight wall structures – pipe frame/glass
12. AN3 – commercial greenhouses – straight wall structures – light pipe or wood frame/glass
13. AN4 – commercial greenhouses – straight wall structures – steel frame/plastic
14. AN5 – commercial greenhouses – straight wall structures – light pipe or wood frame/plastic
15. AN6 – commercial greenhouses – hoop structures – pipe frame/polycarbonate or acrylic cover
16. AN7 – commercial greenhouses – hoop structures – light pipe frame/arch frame/fiberglass panels
17. AN8 – commercial greenhouses – hoop structures – pipe or light tubular arch/double polyethylene cover
18. AN9 – commercial greenhouses – hoop structures – light pipe arch/wide spacing polyethylene cover
19. AT1 – trench silos – concrete panels w/ 3" concrete floor
20. AT2 – trench silos – wood plank w/ 3" concrete floor
21. AT3 – trench silos – dirt, plastic lined, no flooring
22. AW1 – bucket elevators – 3,000 to 5,000 bu/hr
23. AW2 – bucket elevators – 6,000 to 8,000 bu/hr
24. AW3 – horizontal drag (u-trough) conveyors
25. AZ1 – grain dryers – batch type
26. AZ2 – grain dryers – continuous-flow type
27. BF1 – flathouse storage buildings – pole frame/metal siding
28. BF2 – flathouse storage buildings – steel frame/steel siding
29. BF3 – flathouse storage buildings – steel slant-wall frame/steel siding
30. BK1 – slurry tanks

PERCENT GOOD TABLE 5						
STRUCTURE TYPE CODES: RN1, RN2, AC3, AC4, AG1, AG2, AG3, AK1, AK2, AN1, AN2, AN3, AN4, AN5, AN6, AN7, AN8, AN9, AT1, AT2, AT3, AW1, AW2, AW3, AZ1, AZ2, BF1, BF2, BF3, BK1						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15						
16 - 20						
21 - 25 & over						

TABLE 6

1. RP1 - plastic lined pool
2. RP2 - prefabricated vinyl pool
3. RP3 - reinforced concrete pool
4. RP4 - fiberglass pool
5. RP5 - gunite pool

PERCENT GOOD TABLE 6						
STRUCTURE TYPE CODES: RP1, RP2, RP3, RP4, RP5						
Actual Age	CONDITION RATING					
	Excel.	Good	Average	Fair	Poor	Unsound
0 - 5						
6 - 10						
11 - 15 & over						

TABLE 7

1. RM1 - mobile home

PERCENT GOOD TABLE 5								
STRUCTURE TYPE CODES: RM1,								
Actual Age	CONDITION RATING							
	Excel.	V. Good	Good	Average	Fair	Poor	V. Poor	Unsound
1 2 3 4 5								
6 7 8 9 10								
11 12 13 14 15								
16 17 18 19 20								
21 – 25 26 – 30 31 – 35 36 – 40 Over 40								

The tables mentioned above are supplied as guidelines to the appraiser and are not intended to replace sound appraisal judgment.

SKETCH

1s FR — One-story frame

1s Br — One-story brick

1s STN — One-story stone

1s CB — One-story concrete block

1s Stucco — One-story stucco

$\frac{\frac{1}{2}^{S}\ FR}{\frac{1^{S}\ FR}{B}}$ — One-and-one-half-story frame and basement

$\frac{1^{S}\ BR}{1^{S}\ BR}$ — Two-story brick

$\frac{\frac{1}{2}^{S}\ BR}{\frac{1^{S}\ BR}{1^{S}\ BR}}$ — Two-and-one-half-story brick

OFP — Open frame porch

OMP — Open masonry porch

EFP — Enclosed frame porch

EMP — Enclosed masonry porch

F GAR — Frame garage

M GAR — Masonry garage

CPT — Carport

WD DK — Wood deck

CNPY — Canopy

MP — Masonry (concrete) patio

FSP — Flagstone patio

MS — Masonry stoop

MT — Masonry terrace

LAND AND LEGAL DESCRIPTIONS

Ac — Acre

Acg — Acreage

Act Frt — Actual frontage

175' — 175-foot average

Bk — Book

CI — Corner influence

Calc Acg — Calculated acreage

Dist — District

Eff Frt — Effective frontage

Eff D — Effective depth

EMF — Economical misimprovement factor

Esmt — Easement

F 33' — Figured frontage of 33 feet

FR 56' — Figured rear frontage of 56 feet

Frt — Frontage

HS — Homesite

IF — Influence factor

Imp — Improvement

Irr — Irregular

LI — Land improvement

L & B — Land and buildings

Mp — Map

Par — Parcel

Pg — Page

Prop — Property

R 75' — Rear frontage of 75 feet

Rd — Road

R. O. W. — Right-of-way

Rtg No — Routing number

St — Street

Swr — Sewer

Till — Tillable

Topo — Topography

Twn — Town

Twp — Township

UD — Undeveloped

UI — Unimproved

Utl — Utility

Vill — Village

Wd Lnd — Woodland

Wtr — Water

XF — Excessive frontage

XD — Excessive Depth

Zng — Zoning

MEASUREMENTS AND SYMBOLS

Ac — Acre

Acg — Acreage

Bd Ft — Board Feet

BDP — Barrels per day

Brl — Barrels

BTU — British thermal unit

Bu — Bushel

Cap — Capacity

C/F or Cu/Ft — Cubic Feet

Dbl — Double

Dia — Diameter

Ea — Each

Ft — Foot, feet

Ga — Gauge

Gal — Gallon

GDP — Gallons per day

Ht — Height

Lb — Pound

L/F or Lin Ft — Lineal feet

No — Number

o.c. — On Center

S/F or Sq Ft — Square feet

31^6 — 31 feet, 6 inches

YD — Yard

⌀ — Square feet

□ — Cubic feet

S — Story

 # (xx) — Number

(xx) # — Pounds

° — Degree

’ — Feet (or minutes)

” — Inches (or seconds)

+ — Plus

– — Minus

± — Plus or Minus

x — Times or by

= — Equals

> — Is greater than

< — Is less than

π — Pi (3.1416)

∞ — Infinity

@ — At, e.g., 10 lb. @ $1.00/lb

∥ — Parallel

∠ — Angle

∠ — Angles

⌐ — Channel

⌐S — Channels

/ — Per, e.g., price/lb.

ARCHITECTURAL

Apt — Apartment

Art — Artificial

Asb — Asbestos

Att — Attached

Bldg — Building

Bsmt — Basement

Bt Pav — Black top paving

CB — Concrete block

Clg — Ceiling

Cmt — Cement

Col — Column

Com — Common

Comp — Composition

Conc — Concrete

Const — Construction

Dbl — Double

DH — Double hung

Dk — Deck

Dkg — Decking

Drs — Doors

DP — Double pitch

D&M — Dressed and matched

Dwg — Dwelling

Elec — Electric

Elev — Elevators

Equip — Equipment

Excav — Excavation

Excl — Excluding

Ext — Exterior

Fibr Gls — Fiberglass

Fin — Finish
Fixt — Fixtures
Flr — Floor
Flrg — Flooring
Ftg — Footing
Fdtn — Foundation
Fr — Frame
Frt — Freight
Galv — Galvanized
GI — Galvanized iron
Gar — Garage
Gls DK — Glass
H Col — H column
Hd Wd — Hardwood
Htr — Heater
Htg — Heating
HT — Hollow tile
Horiz — Horizontal
HP — Horsepower
Hse — House
I Bm — I beam
Incl — Including
I.D. — Inside diameter or identification
Int — Interior
Int Fin — Interior Finish
I-Com — Intercom system
Jst — Joist
K & T — Knob and tube
Lam — Laminated
Ldg — Landing
L & P — Lath and plaster
Lav — Lavatory
L & O — Lead and oil
Lt — Light
Ltg — Lighting
Lts — Lights
Linol — Linoleum
Mach — Machine
Mas — Masonry
Mech — Mechanical
MF — Mechanical features
Met — Metal
Mezz — Mezzanine
Misc — Miscellaneous
Mono — Monolithic
Obsol — Obsolete, obsolescence
Ofc — Office
o.c. — On center
1 E — One end
1 S — One side
OF — Other features
OD — Overhead or overhang
OH — Overhead or overhang
Pnt — Paint
Par — Parapet
Pt — Part
PW — Partition
PW — Party wall
Pass — Passenger
Pav — Paving
Pil — Pilaster
Plk — Plaster
Plstr — Plaster
Plstrd — Plastered
Plbg — Plumbing
Pch — Porch
Purl — Purlin
Rec Room — Recreation room
Rftr — Rafter
RR — Railroad
Refrig — Refrigerated
Rein — Reinforced
Rein Conc — Reinforced concrete
Ret Wl — Retaining wall
Rf — Roof
Rfg — Roofing
Rm — Room
Shtg — Sheathing
Sdg — Siding
SP — Single pitch
SS — Slop sinks
Sprink — Sprinkler

Sq — Square
Strs — Stairs
Std — Standard
Stdg — Standing
Stm — Steam
Stl — Steel
Stl Pl — Steel plate
Stge — Storage
Sup — Supports
Sys — System
T & G — Tar and gravel or tongue and groove
Terr — Terrace
Tbr — Timber
Toil — Toilet
TR — Toilet room
Unfin — Unfinished
Urin — Urinal
Ven — Veneer
Vent — Ventilator
Vit — Vitrified
VT — Vitrified tile
Wsct — Wainscot
Whse — Warehouse
w c — Water closet
WP — White pine
WF — Wide flange
Wind — Window
Wir — Wiring
Wd — Wood
Wb Fp — Wood-burning fireplace
Yd — Yard
YP — Yellow pine

GENERAL

Agr — Agriculture
Assmt — Assessment
Av — Average
CDU — Condition, desirability, usefulness
C & D — Cost and design
Comm — Commercial
Depr — Depreciation
EDP — Electronic data processing
Est — Estimate(d)
Ex — Exempt
Excl — Excluding
Gr — Grade
I & E — Income and expense
Incl — Including
Ind — Industrial
LDS — Live data system
N/A — Not applicable
N/C — New construction
NF — Nothing furnished
NV — No value
Obsol — Obsolete or obsolescence
PIF — Priced in field
PRC — Property record card
PU — Public utility
RC — Replacement cost
RCLD — Replacement cost less depreciation
Res — Residential
RV — Replacement value
Sched — Sched
SV — Sound value
T or Tot — Total
UF — Utilities furnished
Utl Val — Utility value
Val — Value

Apartment hotel, a building designed for nontransient residential use, divided into dwelling units similar to an apartment house, but having such hotel accommodations as room furnishings, lounges, public dining room, maid service, etc.

Apartment house, a multifamily residence containing three or more nontransient residential living units and generally providing them with a number of common facilities and services. Compare *Tenement, Flat, Terrace.*

Attic, an unfinished or semifinished portion of a building lying between the highest finished story and the roof and wholly within the roof framing.

Basement, a building story which is wholly or partly below the grade level.

Bay, (1) a horizontal area division of a building, usually defined as the space between columns or division walls; (2) an internal recess formed by causing a wall to project beyond its general line.

Bay window, a window or group of continuous windows projecting from the main wall of a building.

Beam, a long structural load-bearing member which is placed horizontally or nearly so and which is supported at both ends or, infrequently, at intervals along its length.

Beam, spandrel, a wall beam supporting the wall above, as well as the floor.

Building, any structure partially or wholly above ground which is designed to afford shelter to persons, animals or goods.

Building, fireproof, a building in which all parts carrying loads or resisting stresses and all exterior and interior walls, floors and staircases are made of incombustible materials and in which all metallic structural members are encased in materials which remain rigid at the highest probable temperature in case its contents are burned or which provide ample insulation from such a temperature.

Building, loft, a building having three or more stories, with few or no interior bearing walls and designed for storage, wholesaling or light industrial purposes. See also *Loft*.

Building, single-purpose, a building designed for a specific purpose and which cannot be used for another purpose without substantial alterations, e.g., a theater or church.

Bungalow, a one-story dwelling unit which is somewhat more pretentious than a cottage.

Column, a structurally isolated vertical member which is at least 8 to 10 times as long as its least lateral dimension and which is designed to carry loads. Compare *Pier*.

Conduit, a tube, pipe or small artificial tunnel used to enclose wires or pipes or to convey water or other fluids.

Construction, brick, a type of construction in which the exterior walls are bearing walls (q.v.) made of solid brick and tile masonry.

Construction, brick veneer, a type of construction in which the exterior walls are one-layer brick curtain walls backed by a wood frame.

Construction, fireproof, see *Building, fireproof*.

Construction, mill, a type of construction in which the exterior walls are substantial masonry bearing walls, in which the structural members are of heavy timber, and which is further characterized by an open design and by other safeguards against fire hazards. Sometimes called *Slow Burning Construction.*

Construction, reinforced concrete, a type of construction in which the principal structural members, such as the floors, columns, etc., are made of concrete poured around isolated steel bars or steel meshwork in such a manner that the two materials act together in resisting forces.

Construction, steel frame, a type of construction in which a framework of steel structural members supports all loads and resists all stresses.

Construction, wood frame, a type of construction in which a framework of wooden structural members supports all loads and resists all stresses. Loosely called Frame Construction.

Coping, a special capping at the top of a wall, serving principally as a watershed.

Cornice, a projecting element at the top of a wall, serving principally as a decoration or as part of the coping.

Cottage, a one-story to two-story dwelling unit of small size and humble character.

Course, a uniform horizontal layer of brick, stone, terra cotta, shingles, or some other structural material, extending continuously around a building or along a wall.

Court, an open space bordered on two or more sides by the walls of a single building, or of two or more buildings, and by a lot line or a yard on any side not so bordered.

Dormer, (1) a relatively small structure projecting from a sloping roof; (2) a window set upright in the face of such a structure.

Dwelling, any building or portion thereof designed or occupied in whole or in part as a place of residence.

Dwelling, attached, a multi-family dwelling in which the dwelling units are separated vertically by means of common or party walls. See also *Terrace.*

Dwelling, double, a two-family dwelling in which the dwelling units are separated vertically by means of a common or party wall. Synonymous with *Semidetached dwelling.*

Dwelling, duplex, a two-family dwelling in which the two dwelling units are separated horizontally, with a private street entrance for each, i.e., a two-family flat.

Dwelling, multi-family, a building designed as a place of residence for more than two families or households, e.g., an apartment house or tenement.

Dwelling, row, any one of a series of similar single family, two-family or multi-family dwellings having one or more contiguous, common, or party walls. Compare *Terrace; Dwelling, double.*

Dwelling, unit, any room or group of rooms designed as the living quarters of one family or household, equipped with cooking and toilet facilities, and having an independent entrance from a public hall or from the outside.

Eaves, the portion of a sloping roof which projects beyond the outside walls of a building.

Elevation, a drawing representing a projection of any one of the vertical sides or vertical cross-sections of a building or of any other object. Compare *Plan*.

Facade, the face of a building.

Firewall, a wall of fire-resisting material erected between two parts of a building to prevent the spread of fire from one part to the other.

Flashing, small metal strips used to keep roofs from leaking around chimneys, dormers, hips and valleys.

Flat, (1) any one floor of a building two or more stories high, each floor of which constitutes a single dwelling unit and has a private street entrance; (2) the building containing two or more such floors. Compare *Apartment House; Tenement; Terrace.*

Footing, a spreading base to a wall, column or other supporting member, which serves to widen the ground area to which structural loads are transmitted.

Foundation, the structural members below grade level, or below the first tier of beams above grade level, which transmit the load of a superstructure to the ground.

Gable, (1) the triangular portion of a wall between the slopes of a double-sloping (i.e., gable) roof; (2) the whole of the wall containing such a triangular portion; (3) a portion of a building extending from the remainder of the building and covered with a gable roof.

Girder, a large or principal beam (q.v.) used to support concentrated loads at isolated points along its length. Girders usually support the beams and structure above. Compare *Truss*.

Header, (1) a structural member which is laid perpendicularly to a parallel series of similar members and against which the latter members abut; (2) a brick or other piece of masonry which is laid in a wall in such a manner that its longest dimension extends along the thickness of the wall. Contrast *Stretcher*.

Hip, (1) a sloping line along which two roof surfaces meet to form an external angle of more than 180 degrees; (2) a hip rafter (q.v.). Compare *Ridge; Valley*.

Hotel, a building designed for transient or semi-transient residential use, divided into furnished single rooms and suites and having such accommodations as lounges, public dining rooms and maid service, etc.

Hotel, apartment, see Apartment hotel.

Joist, one of a series of small parallel beams laid on edge and used to support floor and ceiling loads and usually supported in turn by larger beams and girders.

Lintel, a beam over a wall opening, such as a door or window, designed to carry the load of the wall over such an opening.

Loft, an unpartitioned or relatively unpartitioned upper story of a building, designed for storage, wholesaling or light manufacturing. See also *Building, loft*.

Louver (or louvre), a ventilator containing slats which are placed lengthwise across the ventilator opening, each slat being slanted in such a manner as to overlap the next lower slat and to permit ventilation but exclude rain.

Marquise, a flat roof-like structure which shelters a doorway; it has no floor beneath it and is usually supported wholly from the walls or the building.

Mezzanine, low story formed by placing a floor between what would ordinarily be the floor and ceiling of a high story. Note: the mezzanine floor frequently has a smaller area than other floors and, if present at all, is usually between the first and second stories.

Millwork, all of the wooden portions of a building, whether frame construction or otherwise, which are customarily purchased in finished form from a planing mill, such as doors, windows, trim, balusters, etc.

Overhang, a finished portion of a building, having full-story height and extending beyond the foundation wall line if part of the ground story, or beyond the exterior walls of the ground story if part of any higher story.

Overhead structure, similar to overhang above a ground story, as O.H. bridge or passage, O.H. walk, O.H. addition.

Partition, see *Wall, partition*.

Pier, (1) a thick, solid mass of masonry which is fully or partially isolated from a structural standpoint and which is designed to transmit vertical loads to the earth; (2) a structure projecting from land into water for use in loading and unloading vessels. Compare *Column*.

Pilaster, a flat-faced pillar projecting somewhat from, but engaged in, the wall of a building and used for decorative purposes or to help support truss and girder loads or both.

Pile, a heavy timber, metallic or masonry pillar forced into the earth to form a foundation member.

Pitch, the slope of any structural member, such as a roof or rafter, usually expressed as a simple fraction representing the rise per lateral foot.

Plan, a drawing representing a projection of any one of the floors or horizontal cross-sections of a building or of the horizontal plane of any other object or area. Compare *Elevation*.

Purlin, a beam running along the underside of a sloping roof surface and at right angles to the rafters, used to support the common rafters, and usually supported in turn by larger structural members, such as trusses or girders (usually runs along length of building). See also *Rafter*.

Rafter, a structural member placed, as a rule, in a sloping position and used as the supporting element for the structural material forming the plane of the roof. See also *Purlin*.

Rafter, hip, a rafter placed in an inclined position to support the edges of two sloping roof surfaces which meet to form an external angle of less than 180 degrees.

Rafter, valley, a rafter placed in an inclined position to support the edges of two sloping roof surfaces which meet to form an external angle of less than 180 degrees.

Ramp, an inclined plane connecting two different floor levels and used in lieu of steps.

Residence, see *Dwelling*.

Ridge, a horizontal line along which the upper edges of two roof surfaces meet to form an external angle of more than 180 degrees. Compare *Hip; Valley*.

Rise, (1) in general, any vertical distance; (2) specifically, the rise of a roof, being the distance between the top of an exterior wall and the peak of the roof; the rise of a stair, being the distance from tread to tread.

Roof, curb (or curbed), a roof in which the pitch of the upper part of a sloping side is less than the pitch of the lower part.

Roof, flat, a roof which is flat or sloped only enough to provide proper drainage.

Roof, gable, a double-sloped roof having a cross section similar to the shape of the inverted letter V.

Roof, gambrel, a curbed gable roof.

Roof, hip (or hipped), (1) in general, any roof having one or more hips; (2) usually, a roof with four sloping sides meeting along four hips or along four hips and a ridge. Compare *Roof, pyramid*.

Roof, lean-to, (1) a roof having a single sloping side which is supported at the upper edge by the wall of an attached building or of a larger and higher portion of the same building; (2) any roof with a single slope.

Roof, mansard, a special type of curb roof in which the pitch of the upper part of each of the four equally sloping sides is small or negligible and that of the lower part very great, and from the lower part of which a series of dormers project.

Roof, monitor, a type of gable roof, commonly found on industrial buildings, having a small, raised portion along the ridge with openings for the admission of light and air.

Roof, pyramid, a hip roof having four sloping triangular sides, usually of equal pitch, meeting together at the peak. Compare *Roof, hip*.

Roof, ridges, a roof having one or more ridges (q.v.).

Roof, saw tooth, a roof with a series of parallel sloping surfaces interspersed between a series of vertical surfaces which rise from the lower edges of such sloping surfaces and which contain windows for the admission of light and air.

Roof, single pitch, any roof (other than a lean-to roof) with a single slope.

Sash, the wooden or metal framework in which the glass of a door or window is set.

Sheathing, the covering, usually of rough lumber, placed immediately over studding or rafters.

Sill, (1) the lower horizontal part of a door-case (the threshold) or of a window; (2) the lowest horizontal structural member of a frame building, upon which the superstructure is supported.

Sleeper, a structural member laid horizontally on the ground or upon a masonry base as a support to a floor or other superstructures.

Specifications, detailed descriptions of the dimensions, materials, quantities, structural procedures, etc., applicable to projected or completed pieces of construction.

Story, that portion of a building enclosed by a floor, a ceiling and the exterior walls.

Story, ground, the first story lying wholly above the ground level. Synonymous with *First Story.*

Story, half (or one-half), (1) for buildings with a mansard or gambrel roof, a finished portion of a building which lies above the wall plate or cornice and which has a usable floor area substantially less than that of the next lower story; (2) for all other buildings, a finished portion of a building which is above one or more full stories and which is wholly or partly within the roof frame and which has one or more exterior walls substantially lower than the full height of the story.

Story, one, a building having no finished story above the ground story.

Stretcher, a brick or other piece of masonry which is laid lengthwise in a wall. Contrast *Header*.

Strut, any structural member which holds apart two or more other members by counteracting a pressure tending to bring them together. Contrast *Tie*.

Stud, one of a series of small slender structural members placed vertically and used as the supporting element of exterior or interior walls.

Subfloor, the flooring laid directly on top of the floor joists but beneath the finish floor.

Tenement, a building, usually of obsolete nature, designed primarily for nontransient residential use and divided into three or more dwelling units having common stairs, halls and street entrances, and sometimes common bath and toilet rooms. Compare *Apartment House; Flat; Terrace*.

Terrace, (1) an unroofed level area covered with grass or masonry or both, raised above the surrounding ground level, and having a vertical or sloping front; (2) a multifamily dwelling in which the dwelling units are separated vertically by means of common or party walls. Compare *Dwelling, row; Dwelling, double; Apartment House; Flat; Tenement*.

Terra cotta, a hard-baked pottery molded into decorative tiles, bricks, etc., and used particularly for facing and trim on buildings.

Tie, any structural member which binds together two or more members by counteracting a stress which tends to draw them apart. Contrast *Strut.*

Trim, (1) the wooden portions of a plastered room, such as the doors, windows, wainscoting and molding, or the corresponding portions of a room finished with a material other than plaster; (2) the contrasting elements on the exterior of a building which serve no structural purpose but are intended to enhance its appearance; e.g., the cornice; (3) occasionally, the hardware of a house, such as locks, hinges, doorknobs, etc.

Truss, a combination of structural pieces fastened together into a rigid open member which is supported at both ends and upon which loads are superimposed. Compare *Girder.*

Valley, a sloping line along which two roof surfaces meet to form an external angle of less than 180 degrees. Compare *Hip, Ridge.*

Veneer, a thin ornamental or protective facing which does not add appreciably to the strength of the body to which it is attached.

Wainscot (or wainscoting), (1) a wooden facing on the lower portion of a contrasting interior wall; (2) by extension, a facing of marble tile, or the like, on the lower portion of interior walls.

Wall, bearing, a wall designed primarily to withstand vertical pressure in addition to its own weight.

Wall, common, a wall owned by one party but jointly used by two parties, one or both of whom is entitled to such use under the provisions of a lease.

Wall, curtain, a non-bearing wall which is supported by columns, beams or other structural members, and whose primary function is to enclose space.

Wall fire, see *Firewall*.

Wall, partition, an interior bearing or nonbearing wall which separates portions of a story. Synonymous with *Partition*.

Wall, party, a wall jointly used by two parties under easement agreement and erected at or upon a line separating two parcels of land held under different ownership.

Wall, retaining, a wall designed primarily to withstand lateral pressures of earth or other filling or backing deposited behind it after construction.

Window, bay, see *Bay Window*.

Window, dormer, see *Dormer*.

Wing, a subordinate part of a building extending from the main part, or any one of two or more substantially coordinate parts of a building which extend out from one or more common junctions.

Abstract, a computer-printed report of appraised and/or assessed values for each parcel of real property in a given taxing district; generally sequenced geographically.

Accrued depreciation, see *Depreciation.*

Actual age, the number of years elapsed since the original construction, as of the effective valuation date. Compare *Effective age*.

Ad valorem tax, in reference to property, a tax based upon the value of the property.

Aesthetic value, a value, intangible in nature, which is attributable to the pleasing appearance of a property.

Agricultural property, land and improvements devoted to or best adaptable for the production of crops, fruits and timber and the raising of livestock.

Air rights, the right to the use of a certain specified space within the boundaries of a parcel of land and above a specified elevation.

Alley influence, the enhancement to the value of a property rising out of the presence of an abutting alley; generally applicable to commercial properties.

Amenities, in reference to property, the intangible benefits arising out of ownership; amenity value refers to the enhancement of value attributable to such amenities.

Appraisal, an estimate, usually in written form, of the value of a specifically described property as of a specified date; may be used synonymously with *Valuation* or *Appraised Value.*

Appraisal schedules, any standardized schedules and tables used in conjunction with a revaluation program such as replacement cost pricing schedules, depreciation tables, land depth tables, etc.

Appraised value, see *Appraisal.*

Appraiser, one who estimates value. More specifically, one who possesses the expertise to execute or direct the execution of an appraisal.

Assessed value, see *Assessment.*

Assessing, the act of valuing a property for the purpose of establishing a tax base.

Assessment, the value of taxable property to which the tax rate is to be applied in order to compute the amount of taxes;may be used synonymously with *Assessed Value, Taxable Value* and *Tax Base.*

Assessment district, an assessor's jurisdiction; it may or may not be an entire tax district.

Assessment period, the period of time during which the assessment of all properties within a given assessment district must be completed; the period between tax lien dates.

Assessment ratio, the ratio of assessed value to a particular standard of value, generally the appraised value. A percentage to be applied to the appraised value in order to derive the assessed value.

Assessment roll, the official listing of all properties within a given taxing jurisdiction by ownership, description and location, showing the corresponding assessed values for each; also referred to as tax list, tax book, tax duplicate and tax roll.

Assessor, the administrator charged with the assessment of property for ad valorem taxes; his precise duties differ from state to state depending upon state statutes.

Average deviation, in a distribution of values, the average amount of deviation of all the values from the mean value, equal to the total amount of deviation from the mean divided by the number of deviations. As applied to an assessment-to-sale ratio distribution, the average amount which all the ratios within the distribution deviate from the mean ratio.

Base price, a value or unit rate established for a certain specified model, and subject to adjustments to account for variations between that particular model and the subject property under appraisement.

Blighted area, a declining area characterized by marked structural deterioration and/ or enviromental deficiencies.

Board of Equalization, a nonjurisdictional board charged with the responsibility of reviewing assessments across properties and taxing districts to ensure that said properties and districts are assessed at a uniform level, either raising or lowering assessments accordingly; also referred to as the Board of Appeals and Board of Review.

Building residual technique, a building valuation technique which requires the value of the land to be a known factor; the value of the buildings can then be indicated by capitalizing the residual net income remaining after deducting the portion attributable to the land.

Capitalization, a mathematical procedure for converting the net income which a property is capable of producing into an indication of its current value. See also Income approach.

CDU rating, a composite rating of the overall condition, desirability and usefulness of a structure as developed by the Cole-Layer-Trumble Company and used nationally as a simple, direct and uniform method of estimating accrued depreciation.

Central business district, the center of the city in which the primary commercial, governmental and recreational activities are concentrated.

Certified assessment evaluator, a professional designation (CAE) conferred by the International Association of Assessing Officers (IAAO) upon qualifying assessors.

Certified property tax, an ad valorem property tax under which the assessment ratio varies for different property classes.

Component part-in-place method, the application of the unit-in-place method to unit groupings or construction components. See also *Unit-in-place method.*

Corner influence, the enhancement of the value of a property, rising out of its corner location; most generally applicable to commercial properties.

Cost approach, one of the three traditional aproaches to value, under which an indication of the value of a property is arrived at by estimating the value of the land, the replacement or reproduction cost new of the improvements and the amount of accrued depreciation to the improvements; the estimated land value is then added to the estimated depreciated value of the improvements to arrive at the estimated property value. Also referred to as the cost-to-market approach to indicate that the value estimates are derived from market data abstraction and analysis.

Cost factor, a factor or multiplier applied to replacement or reproduction costs to account for variations in location and time, aswell as for other elements of construction costs not otherwise considered.

Cubic content, the cubic volume of a building within the outer surface of the exterior walls and roof and the upper surface of the lowest floor.

Deed, a written instrument which conveys an interest in real property. A quit claim deed conveys the interest described therein without warranty of title. A trust deed conveys interest described there in to a trustee. A warranty deed conveys the interest described therein with the provisions that the freehold is guaranteed by the grantor, his heirs or successors.

Depreciation, loss in value from all causes; may be further classified as physical, referring to the loss of value caused by physical deterioration; functional, referring to the loss of value caused by obsolescence inherent in the property itself; and economic, referring to the loss of value caused by factors extraneous to the property.

Accrued depreciation refers to actual depreciation in a particular property as of a specified date.

Normal depreciation refers to that amount of accrued depreciation one would normally expect to find in buildings of certain construction, design, quality and age.

Depreciation allowance, loss of value expressed in terms of a percentage of replacement or reproduction cost new.

Depth factor, a factor or multiplier applied to a unit of land value to adjust that value to account for variations from an adopted standard depth.

Depth table, a table of depth factors.

Design factor, a factor or multiplier applied to a computed replacement cost as an adjustment to account for cost variations attributable to the particular design of the subject property which were not accounted for in the particular pricing schedule used.

Deterioration, impairment of structural condition evidenced by the wear and tear caused by physical use and the action of the elements; also referred to as *Physical Depreciation.*

Economic depreciation, see *Depreciation.*

Economic life, the life expectancy of a property, during which it can be expected to be profitably utilized.

Economic obsolescence, obsolescence caused by factors extraneous to the property. Also referred to as *Economic Depreciation.*

Economic rent, the rent which a property can be expected to bring in the open market, as opposed to contract rent or the rent the property is actually realizing at a given time.

Effective age, an age assigned to a structure based upon its condition as of the effective valuation date; it may be greater or less than the structure's actual age. Compare *Actual age.*

Effective depth, in reference to property valuation, that depth, expressed in feet, upon which the selection of the depth factor is based.

Effective frontage, in reference to property valuation, the total frontage, expressed in lineal feet, to which the unit land value is applied; it may or may not be the same as the actual frontage.

Effective gross income, the estimated gross income of a property, less an appropriate allowance for vacancies and credit losses.

Effective valuation date, in reference to a revaluation program, the date as of which the value estimate is applicable.

Encroachment, the displacement of an existing use by another use.

Environmental deficiency, a neighborhood condition such as adverse land uses, congestion, poorly designed streets, etc., operating to cause economic obsolescence and, when coupled with excessive structural deterioration or blight.

Equalization program, a mass appraisal (or reappraisal) of all property within a given taxing - jurisdiction with the goal of equalizing values in order to ensure that each taxpayer is bearing only his fair share of the tax load; may be used synonymously with a *Revaluation program.*

Equity, in reference to property taxes, a condition in which the tax load is distributed fairly or equitably; opposite of inequity, which refers to a condition characterized by an unfair or inequitable distribution of the tax burden. Inequity is a natural product of changing economic conditions which can only be effectively cured by periodical equalization programs.

In reference to value, it is that value of the property remaining after all liens and charges against it are deducted

Excessive frontage, frontage which, because of the particular utility of the lot, does not serve to add value to the lot.

Exempt property, see *Tax exemption.*

Fee appraisal, see *Mass appraisal.*

Field crew, the total professional staff assigned to a specific appraisal project, including data collectors, reviewers, staff appraisers and clerical and administrative supporting personnel.

Functional depreciation, see *Depreciation.*

Functional obsolescence, obsolescence caused by factors inherent in the property itself. Also referred to as *Functional depreciation.*

Functional utility, the composite effect of a property's usefulness and desirability upon its market ability.

Grade, the classification of an improvement based upon certain construction specifications and quality of materials and workmanship.

Grade factor, a factor or multiplier applied to a base grade level for the purpose of interpolating between grades or establishing an intermediate grade.

Grantee, a person to whom property is transferred and property rights are granted by deed, trust instrument or other similar documents. Compare with *Grantor.*

Grantor, a person who transfers property or grants property rights by deed, trust instrument or other similar documents. Compare with *Grantee.*

Gross area, the total floor area of a building, measured from the exterior of the walls.

Gross income, the scheduled annual income produced by the operation of a business or by the property itself.

Gross income multiplier, a multiplier representing the relationship between the gross income of a property and its estimated value.

Gross sales, the total amount of invoiced sales before making any deductions for returns, allowances, etc.

Ground lease, a document entitling the lessee to certain specified rights relating to the use of the land.

Ground rent, net rent from a ground lease; that portion of the total rent which is attributable to the land only.

Improved land, land developed for use by the erection of buildings and other improvements.

Income approach, one of the three traditional approaches to value, which measures the present worth of the future benefits of a property by the capitalization of its net income stream over its remaining economic life. The approach involves making an estimate of the potential net income the property may be expected to yield, and capitalizing that income into an indication of value. See also *Capitalization.*

Income property, a property primarily used to produce monetary income.

Industrial park, a subdivision designed and developed to accommodate specific types of industry.

Industrial property, land and improvements, and/or machinery used or adaptable for use in the production of goods either for materials, or by changing other materials and products . . . i.e., assembling, processing and manufacturing . . . as well as the supporting auxiliary facilities thereof.

Inequity, see *Equity.*

Influence factor, a factor serving to either devalue or enhance the value of a particular parcel of land, or portions thereof, relative to the norm for which the base unit values were established; generally expressed in terms of a percentage adjustment.

Institutional property, land and improvements used in conjunction with providing public services and generally owned and operated by the government or nonprofit organizations—hospitals, schools, prisons, etc. Such property is generally held exempt from paying property taxes.

Interest rate, the rate of return from an investment.

Land classification, the classification of land based upon its capabilities for use and/or production.

Land contract, a purchase contract wherein the grantee takes possession of the property with the grantor retaining the deed to the property until the terms of the contract are met as specified.

Land residual technique, land valuation technique which requires the value of the building(s) to be known; the value of the land can then be indicated by capitalizing the residual net income remaining after deducting the portion attributable to the building(s).

Landscaping, natural features such as lawns, shrubs and trees added to a plot of ground or modified in such a way as to make it more attractive.

Land use restrictions, legal restrictions regulating the use to which land may be put.

Land value maps, a map used in conjunction with mass appraising, generally drawn to small scale and showing comparative unit land values, on a block to block basis.

Lease, lessee, lessor, a written contract by which one party (lessor) gives to another party (lessee) the possession and use of a specified property, for a specified time, and under specified terms and conditions.

Leasehold, a property held under the terms of a lease.

Leasehold improvements, additions, renovation and similar improvements made to a leased property by the lessee.

Leasehold value, the value of a leasehold; the difference between the contractual rent and the currently established economic or market rent.

Legal description, a description of a parcel of land, which serves to identify the parcel in a manner sanctioned by law.

Lister, a field inspector whose principal duty is to collect and record property data (not an appraiser). Also referred to as a *Data Collector.*

Market data approach, one of the three traditional approaches to value, by which an indication of the value of a property is arrived at by compiling data on recently sold properties which are comparable to the subject property and adjusting their selling prices to account for variations in time, location and property characteristics between the comparables and the subject property.

Market value, the price an informed and intelligent buyer, fully aware of the existence of competing properties and not compelled to act would be justified in paying for a particular property.

Mass appraisal, appraisal of property on a wholesale scale, such as an entire community, generally for ad valorem tax purposes, using standardized appraisal techniques and procedures to effect uniform equitable valuations within a minimum of detail and within a limited time period and at a limited cost . . . as opposed to a fee appraisal, which is generally used to refer to a rather extensive detailed appraisal of a single property or singularly used properties for a specified purpose.

Member, Appraisal Institute, a professional designation (M.A.I.) conferred by the American Institute of Real Estate Appraisers upon qualifying real estate appraisers.

Mineral rights, the right to extract subterranean deposits such as oil, gas, coal and minerals as specified in the grant.

Minimum rental, that portion of the rent in a percentage lease which is fixed.

Model method, a method of computing the replacement or the reproduction cost of an improvement by applying the cost of a specified model and adjusting the cost to account for specified variations between the subject improvement and the model.

Modernization, the corrective action taken to update a property so that it will conform to current standards.

Mortgage, mortgagee, mortgagor, a legal document by which the owner of a property (mortgagor) pledges the property to a creditor (mortgagee) as security for the payment of a debt.

Neighborhood, a geographical area exhibiting a high degree of homogeneity in residential amenities, land use, economic and social trends and housing characteristics.

Neighborhood trend, three stages in the life cycle of a neighborhood . . .the improving stage, characterized by development and growth; the static stage, characterized by a leveling off of values; and the declining stage, characterized by infiltration and decay.

Net income, the income remaining from the effective gross income after deducting all operating expenses related to the cost of ownership.

Net lease, a lease wherein the lessee assumes all applicable operating expenses related to the cost of ownership; also referred to as net net, or net net net lease.

Net sales, gross sales less returns and allowances.

Net sales area, the actual floor area used for merchandising, excluding storage rooms, utility and equipment rooms, etc.

Non-conforming use, a use which, because of modified or new zoning ordinances, no longer conforms to current use regulations, but which is nevertheless upheld to be legal so long as certain conditions are adhered to.

Observed depreciation, that loss in value which is discernable through physical observation by comparing the subject property with a comparable property either new or capable of rendering maximum utility.

Obsolescence, a diminishing of a property's desirability and usefulness brought about by either functional inadequacies and overadequacies inherent in the property itself, or by adverse economic factors external to the property. Refer to *Functional depreciation* and *Economic depreciation.*

Operating expenses, the fixed expenses, operating costs and reserves for replacements which are required to produce net income before depreciation, and which are to be deducted from effective gross income in order to arrive at net income.

Overage income, rental received in addition to the minimum contract rental based upon a specified percentage of a tenant's business receipts.

Overall rate, a capitalization rate representing the relationship of the net income (before recapture) of a property to its value as a single rate; it necessarily contains, in their proper proportions, the elements of both the land and building capitalization rates.

Overassessed, a condition wherein a property is assessed proportionately higher than comparable properties.

Parcel, piece of land held in one ownership.

Percentage lease, a type of lease in which the rental is stipulated to be a percentage of the tenant's gross or net sales, whichever specified.

Permanent parcel number, an identification number, which is assigned to a parcel of land to uniquely distinguish that parcel from any other parcel within a given taxing jurisdiction.

Personal property, property which is not permanently affixed to and a part of the real estate, as specified by state statutes.

Physical depreciation, see *Depreciation.*

Preferential assessment, an assessing system which provides preferential treatment in the form of reduced rates to a particular class of property, such as a system providing for farm properties to be assessed in accordance with their value in use as opposed to their value in the open market.

Property class, a division of like properties generally defined by statutes and generally based upon their present use. The basis for establishing assessment ratios in a classified property assessment system. See *Classified property tax.*

Property inspection, a physical inspection of a property for the purpose of collecting and/or reviewing property data.

Property record card, a document specially designated to record and process specified property data; may serve as a source document, a processing form and/or a permanent property record.

Public utility property, property devoted to the production of commodities or services for public consumption under the control of governmental agencies such as the Public Utility Commission.

Quantity survey method, a method of computing the replacement or the reproduction cost of an improvement by applying unit costs to the actual or estimated material and labor quantities and adding an allowance for overhead, profit and all other indirect construction costs.

Real estate, the physical land and appurtenances affixed there to; often used synonymously with *Real property.*

Real property, all the interests, benefits and rights enjoyed by the ownership of the real estate.

Reassessment, the revaluation of all properties within a given jurisdiction for the purpose of establishing a new tax base.

Rent, the amount paid for the use of a capital good. See *Economic rent.*

Replacement cost, the current cost of reproducing an improvement of utility equal to the subject property; it may or may not be the cost of reproducing a replica property. Compare with *Reproduction cost.*

Reproduction cost, the current cost of reproducing a replica property. Compare with *Replacement cost.*

Reserve for replacements, a reserve established to cover renewal and replacements of fixed assets.

Residential property, vacant or improved land devoted to or available for use primarily as a place to live.

Revaluation program, see *Equalization program.*

Sales ratio study, a statistical analysis of the distribution of assessment or appraisal-to-sale ratios of a sample of recent sales made for the purpose of drawing inferences regarding the entire population of parcels from which the sample was abstracted.

Salvage value, the price one would be justified in paying for an item of property to be removed from the premises and used elsewhere.

Site development costs, all costs incurred in the preparation of a site for use.

Soil productivity, the capacity of a soil to produce crops.

Sound value, the depreciated value of an improvement.

Sound value estimate, an estimate of the depreciated value of an improvement made directly by comparing condition, desirability and usefulness without first estimating its replacement cost new.

Standard depth, that lot depth selected as the norm against which other lots are to be compared; generally the most typical depth.

Sublease, see Lease, the lessee in a prior lease simply becomes a lessor in a sublease.

Tax bill, an itemized statement showing the amount of taxes owed for a certain property described therein and forwardable to the party(s) legally liable for payment thereof.

Tax book, see *Assessment roll.*

Tax district, a political subdivision over which a governmental unit has authority to levy a tax.

Tax duplicate, see *Assessment roll.*

Tax exemption, either total or partial freedom from the obligation to pay tax; total exemption is that granted to governmental, education, charitable, religious and similar non-profit organizations, and partial exemption is that granted on homesteads, etc.

Tax levy, in reference to property taxes, the total revenue which is to be realized by the tax.

Tax list, see *Assessment roll.*

Taxmapping, the creation of accurate representations of property boundary lines at appropriate scales to provide a graphic inventory of parcels for use in accounting, appraising and assessing; such maps show dimensions and the relative size and location of each tract with respect to other tracts.

Tax notice, a written notification to a property owner of the assessed value of certain properties described therein; often a law requires that a tax notice be given to each property owner following a revaluation of his property.

Tax rate, the rate, generally expressed in dollars per hundred or dollars per thousand (mills), which is to be applied against the tax base (assessed value) to compute the amount of tax to be paid. The tax rate is derived by dividing the total amount of the tax levy by the total assessed value of the taxing district.

Tax roll, see *Assessment roll.*

Tillable land, land suitable for growing annual crops.

Underassessed, a condition wherein a property is assessed proportionately lower than comparable properties.

Uniformity, as applied to assessing, a condition wherein all properties are assessed at the same ratio to market value, or other standard of value depending upon the particular assessing practices followed.

Unimproved land, vacant land; a parcel for which there is no improvement value.

Unit cost or price, the price or cost of one item of a quantity of similar items.

Unit-in-place method, method of computing the replacement or reproduction cost of an improvement by applying established unit-in-place rates, developed to include the cost of materials, equipment, labor, overhead and profit, to the various construction units. See also *Component part-in-place method.*

Use density, the number of buildings in a particular use per unit of area, such as a density of so many apartment units per acre.

Use value, the actual value of a commodity to a specific owner, as opposed to its value in exchange or market value.

Vacancy, an unrented unit of rental property.

Vacant land, unimproved land; a parcel for which there is no improvement.

Valuation, see *Appraisal.*

View, the prospect as viewed from a property.

Waterfrontage, land abutting a body of water.

Woodland, land which is fairly densely covered with trees.

Zoning regulations, governmental restrictions relating to the use of land.

Aggregate ratio, as applied to real estate, the ratio of the total assessed value to the total selling price.

Average deviation, in a distribution of values, the average amount of deviation of all the values from the mean value, equal to the total amount of deviation from the mean divided by the number of deviations.

Cells, the basic units making up a stratified sample; each sale representing a distinct group within the total universe.

Coefficient, a value prefixed as a multiplier to a variable or an unknown quantity.

Coefficient of dispersion, as applied to an assessment-to-sale ratio distribution, a measure of dispersion in a given distribution equal to the average deviation of the ratios from the mean ratio divided by the mean ratio.

Frequency distribution, a display of the frequency with which each value in a given distribution occurs; or in a grouped frequency distribution, a display of the frequency with which the values within various intervals, or value groupings, occur.

Mean, a measure of central tendency equal to the sum of the values divided by the number. Also referred to as arithmetic average or arithmetic mean.

Median, a measure of central tendency equal to that point in a distribution above which 50% of the values fall and below which 50% of the values fall. The 50th percentile. The 2nd quartile.

Mode, a measure of central tendency equal to that value occurring most frequently in a given distribution. In a grouped-frequency distribution, the mode is equal to the midpoint of the interval with the greatest frequency.

Normal distribution, a distribution in which all the values are distributed symmetrically about the mean value, with 68.26% of the values falling between ± 1 standard deviation, 95.44% between ± 2 standard deviations, and 99.74% between ± 3 standard deviations.

Percentile rank, the relative position of a value in a distribution of values expressed in percentage terms; for instance, as applied to an assessment-to-sale ratio distribution, a ratio with a percentile rank of 83 would indicate that 83% of the ratios were lower and 17% of the ratios were higher than that particular ratio.

Precision, as applied to real estate, refers to the closeness of estimated value to actual selling price on an aggregate basis.

Price-related differential, as applied to real estate, an analytical measure of the vertical uniformity of values in a given distribution calculated by dividing the mean ratio by the aggregate ratio; a ratio of more than 1 being generally indicative of the relative undervaluation of high-priced properties as compared to the less valuable properties, whereas a ratio of less than 1 would indicate the converse relationship.

Quartile, positions in a distribution at 20 percentile intervals; the first quartile being equal to the 25th percentile, the second quartile being equal to the 50th percentile or the median, and the third quartile being equal to the 75th percentile.

Regression analysis, a statistical technique for making statements as to the degree of linear association between a criterion (dependent) variable and one or more predicator (independent) variables; a simple linear regression has one ind pendent variable, and multiple linear regression has more than one independent variable.

Range, the difference between the highest and the lowest value in a distribution.

Ratio, a fixed relationship between two similar things expressed in terms of the number of times the first contains the second; the quotient of one quantity divided by another quantity of the same type, generally expressed as a fraction.

Sample, as applied to real estate, a set of parcels taken from a given universe, which is used to make inferences about values for that universe.

A probability sample is a sample in which each parcel in the universe is given equal chance of being included. Also referred to as random sample.

A nonprobability sample is a sample in which each parcel in the universe being chosen by other criteria is not given an equal chance of being included. Essentially all assessment-to-sale ratio studies are nonprobability samples.

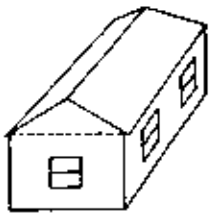
Sample size, as applied to real estate, the number of parcels needed from a universe to achieve a desired level of precision, given the total number of parcels in the universe and the standard deviation thereof.

Standard deviation, a measure of dispersion, variability or scatter of values in a given distribution equal to the square root of the arithmetic mean of the squares of deviations from the mean.

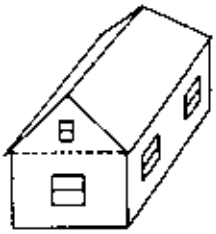
Standard error of the mean, a measure of the statistical variability of the mean equal to the standard deviation of the distribution divided by the square root of the sample size.

Stratified sampling, the selection of sample parcels from distinct groups within the total universe, based upon the known sizes and characteristics of these distinct groups.

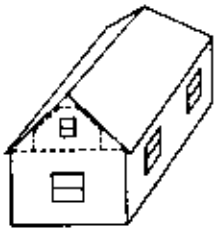
Universe, as applied to real estate, all the parcels of a given type in the group under study, i.e., all the parcels of a given neighborhood, district, etc. Also referred to as population.



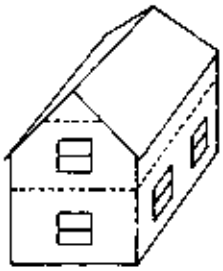
(A) 1 Story. All rooms are on one floor and are below the square of house at the eave line. This type usually has a low pitch roof with a slope of about ⅙.



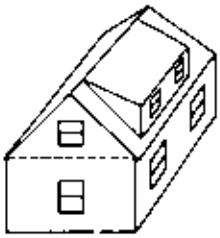
(B) 1 Story and Attic. Same basic design as *1 story* except the pitch of the roof is usually greater with a slope of about ¼ or ⅓. This type design has a permanent stairway to a usable floored attic area. There are usually windows at each end of the attic.



(C) 1 Story and Finished Attic. Same basic design as *1 story and attic* except the attic interior is finished and is usually divided into rooms. The attic floor is approximately 50% of the first floor area.

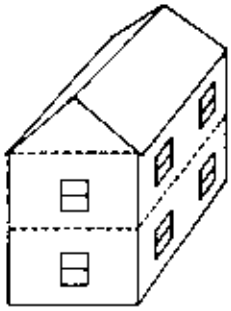


(D) 1½ Story. The second floor area of this type is equal to the area of the first floor, however, the wall height of the second floor is approximately ½ that of the first floor with the balance of wall height as sloping ceiling.

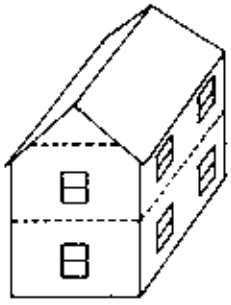


(E) 1½ Story. This type is similar to the *1 story and finished attic* design except the roof pitch is greater with a slope of about ⅓ or ½ and there is a large dormer on one side of the roof and possibly one or 2 small dormers on the opposite side of the roof. Area of the finished second floor is approximately 75% of the first floor area.

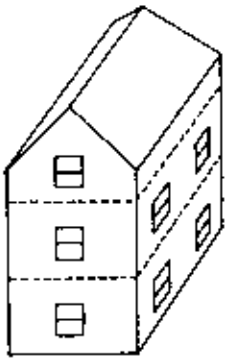
(F) 1½ Story. This type has a high pitch roof with a slope of about ⅝ or ¾ with small dormers on one or both sides of the roof. The area of the finished second floor is approximately 75% of the first floor area.



(G) 2 Story. This is a typical *2 story* dwelling with the second floor area equal to the first floor area.

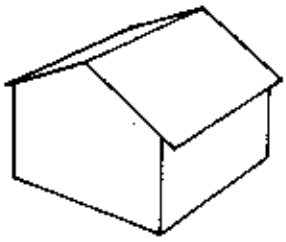


(H) 2 Story. Similar to the *2 Story* in example (G) except the second floor side walls are less than full height. Consequently part of the second floor ceiling follows the slope of the roof.

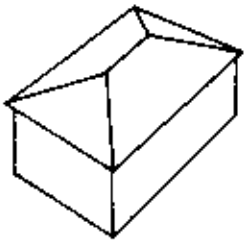


(I) 2½ Story. This type has two full stories and a ½ story similar to example (D). A *2½ story* dwelling may also be similar in design to examples (E) or (F).

GABLE



HIP



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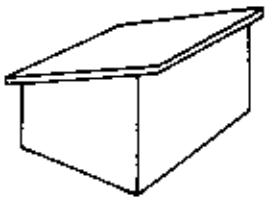

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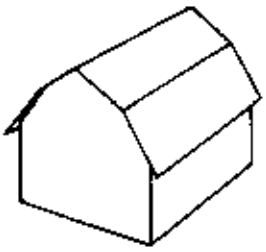

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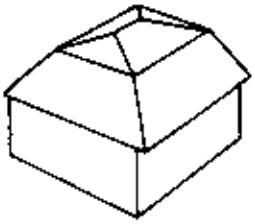

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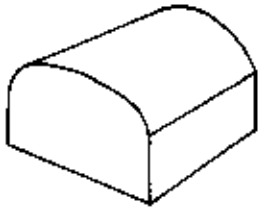

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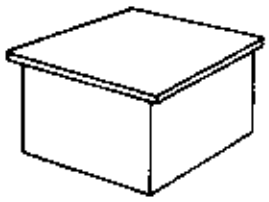
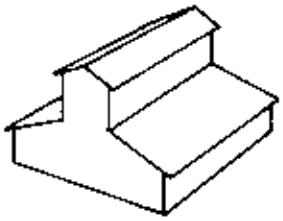
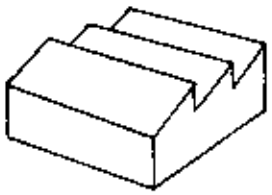


MONITOR



SAWTOOTH



100 FEET

Depth	Factor	Depth	Factor	Depth	Factor	Depth	Factor
		50	73	100	100	150	114
1	3	51	74	101	100	151	114
2	5	52	74	102	101	152	115
3	8	53	75	103	101	153	115
4	10	54	76	104	101	154	115
5	13	55	77	105	102	155	115
6	15	56	77	106	102	156	115
7	17	57	78	107	102	157	115
8	20	58	79	108	102	158	116
9	22	59	79	109	103	159	116
10	24	60	80	110	103	160	116
11	26	61	81	111	103	161	116
12	28	62	81	112	104	162	116
13	30	63	82	113	104	163	117
14	32	64	82	114	104	164	117
15	34	65	83	115	105	165	117
16	36	66	84	116	105	166	117
17	38	67	84	117	105	167	117
18	40	68	85	118	105	168	117
19	41	69	85	119	106	169	117
20	43	70	86	120	106	170	118
21	44	71	86	121	106	175	118
22	46	72	87	122	107	180	119
23	47	73	87	123	107	185	120
24	48	74	88	124	107	190	120
25	49	75	88	125	108	195	121
26	50	76	89	126	108	200	121
27	51	77	89	127	108	205	121
28	53	78	90	128	109	210	122
29	54	79	90	129	109	215	122
30	55	80	91	130	109	220	122
31	56	81	92	131	110	225	122
32	57	82	92	132	110	230	123
33	58	83	93	133	110	235	123
34	59	84	93	134	110	240	123
35	60	85	94	135	111	250	124
36	61	86	94	136	111	260	124
37	62	87	94	137	111	270	125
38	63	88	95	138	111	280	125
39	64	89	95	139	112	290	126
40	65	90	96	140	112	300	126
41	66	91	96	141	112	310	127
42	67	92	97	142	112	320	127
43	68	93	97	143	113	330	128
44	68	94	98	144	113	340	128
45	69	95	98	145	113	350	129
46	70	96	98	146	113	360	129
47	71	97	99	147	114	370	130
48	71	98	99	148	114	380	130
49	72	99	100	149	114	390	131

120 FEET

Depth	Factor	Depth	Factor	Depth	Factor	Depth	Factor
		50	64	100	91	150	111
1	3	51	65	101	91	151	112
2	5	52	65	102	92	152	112
3	8	53	66	103	92	153	112
4	10	54	66	104	93	154	112
5	13	55	67	105	93	155	113
6	15	56	68	106	94	156	113
7	17	57	68	107	94	157	113
8	19	58	69	108	95	158	113
9	21	59	69	109	95	159	114
10	24	60	70	110	96	160	114
11	26	61	71	111	96	161	114
12	27	62	71	112	97	162	114
13	29	63	72	113	97	163	115
14	31	64	73	114	97	164	115
15	33	65	73	115	98	165	115
16	35	66	74	116	98	166	115
17	36	67	75	117	99	167	115
18	38	68	75	118	99	168	116
19	40	69	76	119	100	169	116
20	41	70	76	120	100	170	116
21	42	71	77	121	100	175	117
22	43	72	78	122	101	180	118
23	44	73	78	123	101	185	119
24	45	74	79	124	102	190	120
25	46	75	79	125	102	195	121
26	47	76	80	126	103	200	122
27	48	77	80	127	103	205	122
28	48	78	81	128	103	210	123
29	49	79	81	129	104	215	123
30	50	80	82	130	104	220	123
31	51	81	82	131	105	225	123
32	52	82	83	132	105	230	124
33	53	83	83	133	105	235	124
34	53	84	84	134	106	240	124
35	54	85	84	135	106	250	125
36	55	86	85	136	107	260	125
37	56	87	85	137	107	270	125
38	57	88	86	138	107	280	125
39	57	89	86	139	108	290	126
40	58	90	87	140	108	300	126
41	59	91	87	141	108	310	126
42	59	92	87	142	109	320	126
43	60	93	88	143	109	330	127
44	60	94	88	144	109	340	127
45	61	95	89	145	110	350	127
46	62	96	89	146	110	360	127
47	62	97	90	147	110	370	128
48	63	98	90	148	111	380	128
49	63	99	91	149	111	390	128

132 FEET

Depth	Factor	Depth	Factor	Depth	Factor	Depth	Factor
		50	62	100	89	150	106
1	2	51	63	101	89	151	107
2	4	52	63	102	90	152	107
3	6	53	64	103	90	153	107
4	8	54	64	104	90	154	107
5	9	55	65	105	91	155	108
6	11	56	66	106	91	156	108
7	13	57	67	107	91	157	108
8	15	58	68	108	92	158	108
9	16	59	68	109	92	159	109
10	18	60	69	110	93	160	109
11	20	61	70	111	93	161	109
12	21	62	70	112	93	162	109
13	23	63	71	113	94	163	110
14	24	64	71	114	94	164	110
15	26	65	72	115	94	165	110
16	27	66	73	116	95	166	110
17	29	67	73	117	95	167	111
18	30	68	74	118	95	168	111
19	32	69	74	119	96	169	111
20	33	70	75	120	96	170	111
21	34	71	75	121	96	175	112
22	35	72	76	122	97	180	113
23	37	73	76	123	97	185	114
24	38	74	77	124	97	190	114
25	39	75	77	125	98	195	115
26	40	76	78	126	98	200	115
27	41	77	78	127	99	205	115
28	42	78	79	128	99	210	116
29	43	79	79	129	99	215	116
30	44	80	80	130	100	220	116
31	45	81	80	131	100	225	116
32	46	82	81	132	100	230	117
33	47	83	81	133	101	235	117
34	48	84	82	134	101	240	117
35	49	85	82	135	101	250	118
36	50	86	83	136	102	260	118
37	51	87	83	137	102	270	119
38	52	88	84	138	102	280	119
39	53	89	84	139	103	290	120
40	54	90	85	140	103	300	120
41	55	91	85	141	103	310	121
42	56	92	86	142	104	320	121
43	57	93	86	143	104	330	122
44	57	94	87	144	104	340	122
45	58	95	87	145	105	350	123
46	59	96	87	146	105	360	123
47	60	97	88	147	105	370	124
48	60	98	88	148	106	380	124
49	61	99	89	149	106	390	125

150 FEET

Depth	Factor	Depth	Factor	Depth	Factor	Depth	Factor
		50	56	100	82	150	100
1	2	51	56	101	82	151	100
2	3	52	57	102	83	152	101
3	5	53	58	103	83	153	101
4	6	54	58	104	84	154	101
5	8	55	59	105	84	155	102
6	9	56	60	106	85	156	102
7	11	57	60	107	85	157	102
8	12	58	61	108	85	158	102
9	14	59	61	109	86	159	103
10	15	60	62	110	86	160	103
11	16	61	63	111	87	161	103
12	18	62	63	112	87	162	104
13	19	63	64	113	87	163	104
14	20	64	64	114	88	164	104
15	22	65	65	115	88	165	104
16	23	66	65	116	88	166	105
17	24	67	66	117	89	167	105
18	26	68	66	118	89	168	105
19	27	69	67	119	90	169	105
20	28	70	67	120	90	170	106
21	29	71	68	121	90	175	107
22	30	72	68	122	91	180	108
23	31	73	69	123	91	185	109
24	32	74	69	124	91	190	110
25	34	75	70	125	92	195	110
26	35	76	70	126	92	200	111
27	36	77	71	127	93	205	111
28	37	78	71	128	93	210	112
29	38	79	72	129	93	215	112
30	39	80	72	130	94	220	112
31	40	81	73	131	94	225	112
32	41	82	73	132	94	230	113
33	42	83	74	133	95	235	113
34	43	84	74	134	95	240	113
35	44	85	75	135	95	250	114
36	44	86	75	136	96	260	114
37	45	87	76	137	96	270	115
38	46	88	76	138	96	280	115
39	47	89	77	139	97	290	116
40	48	90	77	140	97	300	116
41	49	91	78	141	97	310	117
42	50	92	78	142	98	320	117
43	50	93	79	143	98	330	118
44	51	94	79	144	98	340	118
45	52	95	80	145	99	350	119
46	53	96	80	146	99	360	119
47	53	97	81	147	99	370	120
48	54	98	81	148	100	380	120
49	55	99	82	149	100	390	121

200 FEET

Depth	Factor	Depth	Factor	Depth	Factor	Depth	Factor
		50	46	100	70	150	89
1	2	51	46	101	71	151	89
2	3	52	46	102	71	152	90
3	5	53	47	103	71	153	90
4	6	54	47	104	72	154	91
5	8	55	48	105	72	155	91
6	9	56	48	106	73	156	92
7	11	57	49	107	73	157	92
8	12	58	49	108	73	158	92
9	14	59	50	109	74	159	93
10	15	60	50	110	74	160	93
11	16	61	51	111	74	161	94
12	18	62	51	112	75	162	94
13	19	63	52	113	75	163	95
14	20	64	52	114	75	164	95
15	22	65	53	115	76	165	95
16	23	66	53	116	76	166	96
17	24	67	54	117	76	167	96
18	26	68	54	118	77	168	97
19	27	69	55	119	77	169	97
20	28	70	55	120	77	170	97
21	29	71	56	121	78	175	98
22	30	72	56	122	78	180	98
23	31	73	57	123	78	185	99
24	32	74	57	124	79	190	99
25	34	75	58	125	79	195	100
26	35	76	58	126	79	200	100
27	35	77	59	127	80	205	100
28	36	78	59	128	80	210	100
29	36	79	60	129	80	215	101
30	37	80	60	130	81	220	101
31	37	81	61	131	81	225	101
32	37	82	61	132	82	230	101
33	38	83	62	133	82	235	102
34	38	84	62	134	82	240	102
35	39	85	63	135	83	250	102
36	39	86	63	136	83	260	102
37	40	87	64	137	84	270	102
38	40	88	64	138	84	280	103
39	40	89	65	139	84	290	103
40	41	90	65	140	85	300	103
41	41	91	66	141	85	310	103
42	42	92	66	142	86	320	104
43	42	93	67	143	86	330	104
44	43	94	67	144	87	340	104
45	43	95	68	145	87	350	104
46	44	96	68	146	87	360	104
47	44	97	69	147	88	370	105
48	45	98	69	148	88	380	105
49	45	99	70	149	89	390	105

January 1, 2026

The following Location Modifiers reflect local cost conditions for each of the localities listed. They are based on surveys of weighted labor and material costs with District II AREA A as the base. These modifiers will be updated annually.

WISCONSIN RESIDENTIAL PROPERTY ASSESSMENT MANUAL, VOLUME II

Location	Residential		
	Frame, Masonry Veneer or Log	Brick, Stone or Concrete Block	Agricul-tural Buildings
Adams			
Ashland			
Barron			
Bayfield			
Brown			
Buffalo			
Burnett			
Calumet			
Chippewa			
Clark			
Columbia			
Crawford			
Dane			
Dodge			
Door			
Douglas			
Dunn			
Eau Claire			
Florence			
Fond du Lac			
Forest			
Grant			
Green			
Green Lake			
Iowa			
Iron			
Jackson			
Jefferson			
Juneau			
Kenosha			
Kewaunee			
La Crosse			
Lafayette			
Langlade			
Lincoln			
Manitowoc			

Location	Residential		
	Frame, Masonry Veneer or Log	Brick, Stone or Concrete Block	Agricul-tural Buildings
Marathon			
Marinette			
Marquette			
Menominee			
Milwaukee			
Monroe			
Oconto			
Oneida			
Outagamie			
Ozaukee			
Pepin			
Pierce			
Polk			
Portage			
Price			
Racine			
Richland			
Rock			
Rusk			
Sauk			
Sawyer			
Shawano			
Sheboygan			
St. Croix			
Taylor			
Trempealeau			
Vernon			
Vilas			
Walworth			
Washburn			
Washington			
Waukesha			
Waupaca			
Waushara			
Winnebago			
Wood			

For Mobile Homes, use for the entire state.

A Standard System of Identifying and Coding
Local Assessment Classification – Three-Digit Level

Category	Code
Residential Sites	160
Residential River Frontage Value	181
Residential Lake Frontage Value	182
Residential Road Frontage Value	183
Residential Unmeandered Land	184
Total Residential Frontage Value	180
Residential Parcel Size Adjustment	190
Total Residential Lands	100
Commercial Sites	260
Commercial River Frontage Value	281
Commercial Lake Frontage Value	282
Commercial Road Frontage Value	283
Commercial Unmeandered Land	284
Total Commercial Frontage Value	280
Commercial Parcel Size Adjustment	290
Total Commercial Lands	200
Manufacturing Sites	360
Manufacturing River Frontage Value	381
Manufacturing Lake Frontage Value	382
Manufacturing Road Frontage Value	383
Manufacturing Unmeandered Land	384
Total Manufacturing Frontage Value	380
Manufacturing Parcel Size Adjustment	390
Total Manufacturing Lands	300
1st Grade Tillable Land	411
2nd Grade Tillable Land	412
3rd Grade Tillable Land	413
Irrigated Land	414
Total Tillable Land	410
Orchards	420
Prime Pasture	441
Secondary Pasture	442
Residual Pasture	443
Total Pasture	440
Cranberry Bogs	451
Tobacco	452
Ginseng	453
Muck	454
Ponds	455
All Other Agricultural Land Not Coded Elsewhere	456
Total Specialty Lands	450

Category	Code
Agricultural River Frontage Value	481
Agricultural Lake Frontage Value	482
Agricultural Road Frontage Value	483
Agricultural Unmeandered Land	484
Total Agricultural Frontage Value	480
Agricultural Parcel Size Adjustment	490
Total Agricultural Lands	400
Fallow 1st Grade Tillable Land	501
Fallow 2nd Grade Tillable Land	502
Fallow 3rd Grade Tillable Land	503
Fallow Pasture Land	504
Total Fallow Lands	505
Swamp	511
Waste	512
Conservation Easements	513
Total Swamp and Waste	510
Quarries, Pits and Mines	531
Privately Owned Dumps, Sanitary Land Fills, etc.	532
Total Quarries, Pits, Mines & Privately Owned Sanitary Land Fills, Dumps, etc.	530
Unmeandered Waters (Privately Owned Non-navigable)	540
Residual River Frontage Value	581
Residual Lake Frontage Value	582
Residual Road Frontage Value	583
Residual Unmeandered Land	584
Total Residual Frontage Value	580
Residual Parcel Size Adjustment	590
Total Residual Lands	500
Primary Forest	611
Secondary Forest	612
Residual Forest	613
Cutover	614
Total Forest and Cutover	610
Seedlings	651
Pine Plantation	652
Christmas Tree Plantation	653
Total Seedling Pine and Christmas Tree Plantations	650
Forest River Frontage Value	681
Forest Lake Frontage Value	682
Forest Road Frontage Value	683
Forest Unmeandered Land	684
Total Forest Frontage Value	680
Forest Parcel Size Adjustment	690
Total Forest Lands	600
Other Homesites	700

Category	Code
Regular Forest Crop, Special Forest Crop, Managed Forest Land and Woodland Tax	811
Utilities	812
Total Specially Taxed Lands	810
County Forest Crop	820
Federally Owned	830
State Owned Meandered Waters	841
State Owned Navigable Waters (not on government survey)	842
All Other State Owned	843
Total State Owned	840
County Owned	850
School Owned	860
Municipal Owned	870
Other Exempt	881
Exempt Unmeandered Land	884
Total Other Exempt and Exempt Unmeandered Land	880
Total Other Lands	800
Total Parcel	900

A Standard System of Identifying and Coding
Local Assessment Classification – Three-Digit Level

160 Residential Sites include all of the land under the buildings and area immediately surrounding them; land that is used for wells, septic systems, etc.

181 Residential River Frontage Value.

182 Residential Lake Frontage Value.

183 Residential Road Frontage Value.

184 Residential Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be residential.

180 Total Residential Frontage Value.

190 Residential Parcel Size Adjustment.

100 Total Residential Lands are the total of all the residential land within a specified area.

260 Commercial Sites include all of the land under buildings, parking lots, etc., and area immediately surrounding them. Also includes the land used for wells, septic systems, etc.

281 Commercial River Frontage Value.

282 Commercial Lake Frontage Value.

283 Commercial Road Frontage Value.

284 Commercial Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be commercial.

280 Total Commercial Frontage Value.

290 Commercial Parcel Size Adjustment.

200 Total Commercial Lands is a total of all the commercial land within a specified area.

360 Manufacturing Sites include the acreages of manufacturing sites taken directly from the SAM rolls.

381 Manufacturing River Frontage Value.

382 Manufacturing Lake Frontage Value.

383 Manufacturing Road Frontage Value.

384 Manufacturing Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be used for manufacturing.

380 Total Manufacturing Frontage Value.

390 Manufacturing Parcel Size Adjustment.

300 Total Manufacturing Lands is a total of all the manufacturing land.

411 1st Grade Tillable Land is land being used for farm purposes and made up of all those soil series and types shown on the County or Regional Soil Survey as possessing the best production capabilities, with suitable slope and erosion ratings.

412 2nd Grade Tillable Land is land being used for farm purposes and which is plowed or capable of being plowed and made up of all those soil series and types shown on the County Soil Survey as having a lesser production capability than 1st grade soils, though of good slope and erosion ratings. It also includes lands comprising those soil types with the best production capability but whose poor slopes and erosion ratings exclude them from being classed as 1st grade.

413 3rd Grade Tillable Land is land being used for farm purposes and which is plowed or capable of being plowed and made up of all those soil series and types shown on the Soil Survey with the poorest productivity rating or those soils of higher productivity with the poorest slope and erosion ratings, which prevent them from being classed in a higher grade. Sometimes the poorest lands in this grade have been cultivated for a period of years, and then cultivation has been abandoned. Such land is not included in this grade, but in pasture.

414 Irrigated Land is tillable land that is being irrigated.

410 Total Tillable Land is the total of all tillable land which constitutes the 1st grade, 2nd grade, 3rd grade and irrigated subclasses.

420 Orchards are plots of an acre or more of land with any type of orchard planted on them, i.e., apples, cherries, etc.

441 Prime Pasture is pasture adjacent to a road, with water, well drained, near buildings, having good forage grasses, and relatively open.

442 Secondary Pasture is pasture lacking three or more of the elements of prime pasture.

443 Residual Pasture is transitional land; it is not E or F, but has marginal usefulness among tillable acreage, e.g., drainage ditches, rocky knobs, frost pockets, sink holes or water swamp.

440 Total Pasture is all pasture land.

451 Cranberry Bogs include producing bogs and any surrounding land used directly in production such as ditches, dams, dykes, etc. It does not include, however, the reservoirs; they should be classed as swamp. NOTE: Producing bogs are limited by the Federal Market Order, and all producers are members of the Wisconsin Cranberry Growers Association. A list of growers can be obtained from the association. Non-producing bogs should, of course, be classed as swamp.

452 Tobacco is land used to produce tobacco.

453 Ginseng is land used to produce ginseng.

454 Muck is land composed of very poorly drained organic soils. Typically, muck is black or dark gray in color. Some of this land is cleared of natural vegetation, drained and used for producing mint, horseradish and potatoes. Some of the land has remained in natural vegetation.

455 Pond is a small body of water not surrounded by swampland.

456 All Other Agricultural Land Not Elsewhere Coded is any other specialty agricultural land that is not included in any other category in the 450 series.

450 Total Specialty Lands is the total of specialty lands and other agricultural land not coded elsewhere in the 450 series of codes.

481 Agricultural River Frontage Value.

482 Agricultural Lake Frontage Value.

483 Agricultural Road Frontage Value.

484 Agricultural Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be agricultural.

480 Total Agricultural Frontage Value.

490 Agricultural Parcel Size Adjustment.

400 Total Agricultural Lands is a total of all tillable land plus total pasture and transitional land, orchards, cranberry bogs and agricultural homesites. The total for this code represents all land used for agricultural purposes.

501 Fallow 1st Grade Tillable Land represents Code 411 lands left fallow.

502 Fallow 2nd Grade Tillable Land represents Code 412 lands left fallow.

503 Fallow 3rd Grade Tillable Land represents Code 413 lands left fallow.

504 Fallow Pasture Land is pasture land left fallow.

505 Total Fallow Lands is all fallow land.

511 Swamp is, as the name implies, water saturated land. The land is always low and usually displays small bodies or winding channels of open water. Organic soil texture and very highwater tables are also characteristic of swamp.

512 Waste can refer to many land features such as bedrock outcrops, extremely steep slopes (over 30%), slag piles and other non-productive land.

513 Conservation Easements are normally lands in which a permanent easement, either restricting farm use or supporting hunting or fishing rights, is held by either the DNR or the Federal Fish and Wildlife Service. These lands would normally be classified as pasture or swamp and waste.

510 Total Swamp and Waste is the total of 511, 512 and 513.

531 Quarries, Pits and Mines are quarries, pits and mines not listed on the SAM roll. If they are producing, they may be listed on the SAM roll and carried as manufacturing. If they are not, they are classed as 531, whether they are nonproducing or abandoned.

532 Privately Owned Sanitary Land Fills, Dumps, etc.

530 Total Quarries, Pits and Mines and Privately Owned Sanitary Land Fills, Dumps, etc., is the total of 531 and 532.

540 Unmeandered Waters (Privately Owned Non-navigable) are waters whose bounds have not been established on the government survey. An example would be a non-navigable stream that has changed its course. The government survey would indicate land where the water now flows. This section would be unmeandered privately owned water. By the same token, the former river bed would be classed as unmeandered land.

581 Residual River Frontage Value.

582 Residual Lake Frontage Value.

583 Residual Road Frontage Value.

584 Residual Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be residual.

580 Total Residual Frontage Value.

590 Residual Parcel Size Adjustment.

500 Total Residual Lands is the total of all residual land.

611 Primary Forest is land covered with productive timber; it has excellent access and utilities available and is “high and dry.”

612 Secondary Forest has small wooded pockets interspersed among tillable land; it has poor access and is marginal in production.

613 Residual Forest is low and wet and nearly inaccessible.

614 Cutover is land in a transitional stage between forest and its next use; trees have been removed by logging.

610 Total Forest and Cutover is the total of forest lands coded in the 610 series.

651 Seedlings represents land planted in pines 0 to 3 feet tall, where it cannot be determined whether the ultimate use is logging or cutting Christmas trees.

652 Pine Plantation is land planted with unsheared pines for the purpose of logging.

653 Christmas Tree Plantation is land planted with sheared pines to be cut for Christmas trees. Shearing usually begins when trees are approximately 4 feet tall. Cutting usually occurs at 8 to 10 years in maturity.

650 Total Seedling, Pine and Christmas Tree Plantations represent the total amount of land planted in seedlings, pine or Christmas trees.

681 Forest River Frontage Value.

682 Forest Lake Frontage Value.

683 Forest Road Frontage Value.

684 Forest Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be forest land.

680 Total Forest Frontage Value.

690 Forest Parcel Size Adjustment.

600 Total Forest Lands is the total of all forest lands.

700 Other Homesites represents all of the land under the buildings and the area immediately surrounding them; this includes land used for wells, septic systems, etc.

811 Regular Forest Crop, Special Forest Crop, Managed Forest Land and Woodland Tax.

812 Utilities include all utilities such as electric companies, gas companies, railroads, etc., subject to taxation under Chapter 76.

810 Total Specially Taxed Lands is what the category title implies.

820 County Forest Crop includes forest lands which have been entered by action of county boards under Section 28.10 into the forest crop program under Section 77. This land is listed in the assessment roll under County Forest Crop Acres.

830 Federally Owned includes all federally owned lands. Federally owned property may be exempt from assessments. Examples are U.S. highways, federally owned forests, etc.

841 State Owned Meandered Waters include all navigable bodies of water, which are property of the state. Their bounds have been established on the government survey.

842 State Owned Navigable Waters. Again, all navigable waters are property of the state. State-owned navigable waters are those whose bounds have not been established on the government surveys. For example, new river channels or elevated lake levels may have developed since the original government survey.

843 All Other State-Owned is what the category title implies. Examples are state highways state-owned forests, conservation lands, etc.

840 Total State Owned is the total of the 840 series.

850 County Owned includes all county owned lands.

860 School Owned is all school owned lands.

870 Municipal Owned includes such things as dumps and sanitary land fills if not privately owned. All municipality-owned lands fall into this category.

881 Other Exempt includes lands used for Lions foundations, Boy and Girl Scouts, Bible camps, etc. (Sec. 70.11).

884 Exempt Unmeandered Land is land which, because of a change in the course of a river or a drop in the water level, now is “high and dry.” This land may be exempt property belonging to a unit of government or may be part of a parcel qualifying for an exemption under Sec. 70.11.

880 Total Other Exempt and Exempt Unmeandered Land is the total of 881 and 884.

800 Total, Other Lands is the total of all exempt lands.

900 Total Parcel is the total acreage summation. For example, the 100, 200, 300, 400, 500, 600, 700 and 800 categories, when added together, will equal the total parcel.

Appraisers use a wide variety of mathematical techniques ranging from simple arithmetic and algebraic formulas to the statistical techniques of multiple regression analysis. Addition, subtraction, multiplication and division can be done manually or with a simple calculator, but more sophisticated calculators may be needed to solve algebraic formulas and to perform linear regression analyses. Computers are required for nearly all stepwise multiple regression analyses.

With the general availability of calculators and computers, the use of sophisticated techniques is increasing in appraisal practice. This section provides a review of the mathematical procedures and terminology used by appraisers. Familiar processes are illustrated, and the rules that apply to each process are discussed.

Basic Arithmetic for Data Processing

Data collected in the market are analyzed in the valuation process to derive an estimate of value. These data may include building dimensions, population figures, reproduction and replacement costs, rents, and sale prices. Processing these data ultimately leads to conclusions and final value estimates, which are expressed numerically. The mathematical relationships represented by rates and factors are usually stated as decimals rather than fractions.

Rates

Rates are percentages expressed in terms of a specific time period. For example,

$8 interest per year on $100 principal = 8% interest per year

$0.50 interest per month on $100 = 0.005 or 0.5% interest per month

A rate reflects the relationship between one quantity and another. In the first example, the 8% rate relates the $8 of interest returned to the $100 of principal invested. In appraising, an unknown capital amount can be determined when only the rate and the amount of annual return are known.

Reciprocals

The reciprocal of a number is 1 divided by that number. For example, the reciprocal of 4 is ¼, which may be expressed as 0.25. When two numbers have a reciprocal relationship, 1 divided by either number equals the other number. Reciprocal relationships exist between some financial factors. For example, the present value of $1 per period factor and the partial payment factor are reciprocals. These annual factors in the 10% tables for 10 periods are 6.144567 and 0.162745, respectively. Because they are reciprocals,

$$\frac{1}{6.144567} = 0.162745$$

and

$$\frac{1}{0.162745} = 6.144567$$

When a reciprocal relationship exists, multiplication by one of the numbers is equivalent to division by the other.

Factors

Factors are the reciprocals of rates and may be used to express relationships between income and capital value. Using *I, R* and *V* to represent income, rate and value, and *F* to represent a factor, the relationships may be expressed as

$$I = V \times R \qquad I = \frac{V}{F}$$

$$R = \frac{I}{V} \qquad F = \frac{V}{I}$$

$$V = \frac{I}{R} \qquad V = I \times F$$

These relationships, which are commonly referred to as IRV and VIF, may be shown as follows.

$$\frac{I}{R|V} \text{ and } \frac{V}{I|F}$$

The formula for any single component is represented by the horizontal or vertical relationship of the remaining two components as one multiplied by, or divided by, the other.

Basic Statistics

Statistics can be applied to interpret available data and to support a value conclusion. In the language of statistics, a *population* is defined as all the items in a specific category. If, for example, the category is houses in Chicago, the population consists of all the houses in Chicago. However, data pertaining to an entire population are rarely available and conclusions often must be developed from incomplete data.

Using statistical concepts, conclusions about a population can be derived and evaluated from sample data. A *sample* is part of a population; the quality of conclusions based on a sample will vary with the quality and extent of the sample.

One item in a population is called a *variate*. In appraising, statistics can be used to identify the attributes of the typical variate in a population. When observations about a population can be measured, the analysis may be quantitative; when these observations cannot be measured, the analysis is qualitative—i.e., it reflects the attributes of the population.

A variate is *discrete* when it can assume a limited number of values on a measuring scale and *continuous* when it can assume an infinite number of values. A typical population of attributes for house types might include one-story, two-story, and split-level houses. It is usually impractical to display or identify a population of variates because there are many.

One common problem in statistics is how to describe a population in universally understandable terms. For example, how does one describe all the houses in a community that have sold in the past year without describing each sale individually? One possible solution is to use a single number called a *parameter* to describe the whole population. When one parameter is used to describe a population, it is called an *aggregate*, which is the sum of all the variates. For example, all the house sales in a commu-

nity in a given year can be described by the total dollar amount of all the sales. In statistical language this is written as

Σ = sigma or sum of

X = variate

ΣX = aggregate (summation of the variates)

Measures of Central Tendency

Three common statistical measures are the mean, the median, and the mode. All three measure central tendency and are used to identify the typical variate in a population or sample. Measures that refer to a population are called *parameters,* while similar measures in a sample are called *statistics.*

The *mean*, which is commonly called the *average*, is by far the most commonly used parameter. It is obtained by dividing the sum of all the variates in a population by the number of variates. In real estate appraising, the mean may represent an average sale price, an average number of days on the market, an average apartment rent, or an average cost per square foot.

When the mean is used to describe a population, it can be distorted by extreme variates. Consider the following list of 36 house sales in a neighborhood. From these figures, the mean of the population can be calculated. (The list indicates the median and the mode of the population, which are discussed next.)

$72,000	
74,600	
76,000	
77,200	
78,000	
79,000	
79,800	
79,800	
82,000	
82,000	
84,000	
85,600	
85,800	
86,000	
87,000	
87,200	
87,400	
87,800	
87,800	← median (Md.) = $87,800
87,800	
88,000	
89,800	
90,000	} mode (Mo.) = $90,000
90,000	
90,000	
90,000	

	90,600
	91,000
	91,000
	93,800
	93,800
	96,600
	97,000
	97,200
	97,200
	98,800
	$3,131,600

$$\text{Mean} = \overline{X} = \frac{\Sigma X}{N} = \frac{\$3,131,600}{36} = \$86,989$$

where ΣX = sum of the variates and N = number of variates.

The same procedure can be performed with grouped data. To group the data, the frequency (f) with which a given sale price occurs must be identified and its contribution must be effectively weighted. Given the same data, identical results are produced.

X	f	fX
$72,000	1	$72,000
74,600	1	74,600
76,000	1	76,000
77,200	1	77,200
78,000	1	78,000
79,000	1	79,000
79,800	2	159,600
82,000	2	164,000
84,000	1	84,000
85,600	1	85,600
85,800	1	85,800
86,000	1	86,000
87,000	1	87,000
87,200	1	87,200
87,400	1	87,400
87,800	3	263,400
88,000	1	88,000
89,800	1	89,800
90,000	4	360,000
90,600	1	90,600
91,000	2	182,000
93,800	2	187,600
96,600	1	96,600
97,000	1	97,000
97,200	2	194,400
98,800	1	98,800
	$N = 36$	$\Sigma fX = \$3,131,600$

$$\text{Mean} = \overline{X} = \frac{\Sigma fX}{N} = \frac{\$3,131,600}{36} = \$86,989$$

The average, or mean, price in this example might not accurately represent the population of houses that have been sold at prices outside the indicated range.

The *median* is another measure used to describe a population, a sample, or an average variate. The median divides the variates of a population or sample into equal halves. To find the median, the variates are arranged in numerical order like the list of sale prices in the example. If the total number of variates is odd, the median is the middle variate. If the total number of variates is even, as in the example, the median is the arithmetic mean of the two middle variates.

In the list of 36 house sales, the middle two variates are $87,800 and $87,800.The mean of these two variates is $87,800, which is the median of the 36 sales. The same number of sales occurs above the median as below it.

Like the median and the mean, the *mode* is a parameter used to describe the typical variate of a population. The mode is the variate or attribute that appears most frequently in a population. Of the 36 house sales, four were sold at $90,000. No other sale price occurs with this frequency, so the mode in this sample is $90,000. If two variates occur with equal frequency, both are modes and the sample is bimodal.

To illustrate, consider the following population of the types of condominium apartments available in a nine-unit complex.

efficiency
efficiency
efficiency
town house
town house
town house
town house
town house
multibedroom

} mode (the most frequent attribute)

One of the problems in using statistics is selecting the appropriate measure of central tendency to describe a population. The following numbers could be used to describe the 36 variates in the group of house sales.

$\overline{X}$ = $86,989 (the mean of all the sales)
Md. = $87,800 (the median of the sales)
Mo. = $90,000 (the mode of the sales)

The mean is often used to describe a sample or population because this measure is widely understood and amenable to further statistical analysis.

Measures of Variation

The parameters of mean, median, and mode are used to describe the central tendencies of a population. Other sets of parameters can provide more information about the population being described. *Measures of variation*, or *measures of dispersion,* describe the disparity among the values of the variates that make up the population. They indicate the degree of uniformity among the variates and reflect the quality of the data as a basis for a conclusion.

Range

One way to measure the disparity between the variates is with a *range (R)*. The range is the difference between the highest and the lowest variates.

R = maximum variate minus minimum variate

The range for the 36 house sales is calculated as

$$R = \$98,800 - \$72,000 = \$26,800$$

As a measure of variation, the range has limited usefulness because it considers only the variation between the highest and lowest values, not the variation in the remaining values. Furthermore, a range does not lend itself to further statistical analysis.

Average Deviation

Another parameter used to measure the variation in a population is the average deviation, which is also known as the *average absolute deviation* because positive and negative signs are ignored. The average deviation is a measure of how much the actual values of a population or sample deviate from the mean. It is the mean of the sum of the absolute differences of each of the variates from the mean of the variates.

The average deviation of the 36 sales can be calculated from ungrouped or grouped data.

Ungrouped Data

X Sale Price		$\lvert X - \overline{X} \rvert$ Absolute Deviation Between Each Variate and the Mean Sale Price of $86,989	
$ 72,000		$ 14,989	
74,600		12,389	
76,000		10,989	
77,200		9,789	
78,000		8,989	
79,000		7,989	
79,800		7,189	
79,800		7,189	
82,000		4,989	
82,000		4,989	
84,000		2,989	
85,600		1,389	
85,800		1,189	
86,000		989	
87,000		11	
87,200		211	
87,400		411	
87,800		811	
87,800		811	
87,800		811	
88,000		1,011	
89,800		2,811	
90,000		3,011	
90,000		3,011	
90,000		3,011	
90,000		3,011	
90,600		3,611	
91,000		4,011	
91,000		4,011	
93,800		6,811	
93,800		6,811	
96,600		9,611	
97,000		10,011	
97,200		10,211	
97,200		10,211	
98,800		11,811	
$3,131,600	Total of sale prices	$192,088	Total deviation from mean $\Sigma \lvert X - \overline{X} \rvert$

Grouped Data

x	$\lvert x - \bar{x} \rvert$	f	$f\lvert x - \bar{x} \rvert$
$72,000	$14,989	1	$ 14,989
74,600	12,389	1	12,389
76,000	10,989	1	10,989
77,200	9,789	1	9,789
78,000	8,989	1	8,989
79,000	7,989	1	7,989
79,800	7,189	2	14,378
82,000	4,989	2	9,978
84,000	2,989	1	2,989
85,600	1,389	1	1,389
85,800	1,189	1	1,189
86,000	989	1	989
87,000	11	1	11
87,200	211	1	211
87,400	411	1	411
87,800	811	3	2,423
88,000	1,011	1	1,011
89,800	2,811	1	2,811
90,000	3,011	4	12,044
90.600	3,611	1	3,611
91,000	4,011	2	8,022
93,800	6,811	2	13,622
96,600	9,611	1	9,611
97,000	10,011	1	10,011
97,200	10,211	2	20,422
98,800	11,811	1	11,811
		36	$192,088 Total deviation from mean $\Sigma f\lvert x - \bar{x} \rvert$

$$\text{A.D. (ungrouped data)} = \frac{\Sigma|X - \bar{X}|}{n} = \frac{\$192,088}{36} = \$5,336$$

$$\text{A.D. (grouped data)} = \frac{\Sigma f|X - \bar{X}|}{n} = \frac{\$192,088}{36} = \$5,336$$

A.D. = average deviation
Σ = sum of
f = frequency
X = observed value
$|\ |$ = absolute value (ignore whether the difference is positive or negative)
n = number of observations in sample
$\bar{X}$ = mean of sample

These calculations indicate that the average deviation of the individual values in the population from the mean is $5,336, or about 6%. This relatively small variation suggests that the mean is an acceptable representation of the population.

Like the range, the average deviation does not lend itself to further statistical calculations.

Standard Deviation

The standard deviation is a way to describe a sample or a population that lends itself to further mathematical treatment. When this measure is used, the rules of probability can be applied to draw inferences from samples concerning the attributes of the population. The square of the difference between each observation and the mean of the observations is used in lieu of the absolute deviation. In this way the effects of extreme variance from the mean are magnified.

In the example the mean house sale price is $86,989; for an $82,000 sale, the standard deviation is $4,989 squared, or $24,890,121.

When the standard deviation of an entire population is being calculated, it is symbolized by the lowercase sigma (σ). The formula may be expressed verbally as follows: *The standard deviation of a population is the square root of the sum of the squared differences between each observation and the mean of all the observations in the population, divided by the number of observations in the population.*

When the standard deviation of a sample of a population is being calculated, it is symbolized by the lowercase letter *s*. Expressed verbally, the formula is: *The standard deviation of a sample is the square root of the sum of the squared differences between each observation and the mean of all the observations in the sample, divided by the number of observations in the sample minus one*.

One is subtracted from the number of observations in a sample to adjust for the one degree of freedom that is lost when the mean is calculated. (See the discussion of simple linear regression analysis that is presented later in this appendix.) A set of data starts with as many degrees of freedom as there are observations; each time a statistic is calculated directly from the data, one degree of freedom is lost.

Formulas for calculating the standard deviations follow.

For a population:

Ungrouped

$$\sigma = \sqrt{\frac{\Sigma(X - \overline{X})^2}{N}}$$

Grouped

$$\sigma = \sqrt{\frac{\Sigma f(X - \overline{X})^2}{N}}$$

For a sample:

Ungrouped

$$s = \sqrt{\frac{\Sigma(X - \overline{X})^2}{n - 1}}$$

Grouped

$$s = \sqrt{\frac{\Sigma f(X - \overline{X})^2}{n - 1}}$$

Samples are typically used in real estate appraising, so the second formula is usually applicable. The standard deviation for the 36 house sales as grouped data is calculated in Table B.1.

The standard deviation is a useful way to describe the dispersion of a population or sample. It indicates how well the mean represents the whole sample or population by describing a standard measure of variation. The standard deviation is used and understood in many disciplines and it can be calculated easily with an electronic calculator. It will undoubtedly be more widely used by appraisers in the future.

The standard deviation can also indicate what percentage of the sample of a population may be expected to fall within selected ranges of *confidence intervals.* (Confidence levels are discussed later in this appendix.) Approximately 68.26% of the sample or population will generally fall within plus or minus one standard deviation from the mean, provided the data meet the tests of normal distribution, which are explained later. Many types of real estate data conform to the pattern of a normal distribution when they are developed with appropriate sampling techniques.

TABLE B.1
Standard Deviation for 36 House Sales

x	f	$(x - \bar{x})$	$(x - \bar{x})^2$	$f(x - \bar{x})^2$
$72,000	1	$14,989	$224,670,000	$224,670,000
74,600	1	12,389	153,487,000	153,487,000
76,000	1	10,989	120,758,000	120,758,000
77,200	1	9,789	95,824,500	95,824,500
78,000	1	8,989	80,802,100	80,802,100
79,000	1	7,989	63,824,100	63,824,100
79,800	2	7,189	51,681,700	103,363,000
82,000	2	4,989	24,890,100	49,780,200
84,000	1	2,989	8,934,120	8,934,120
85,600	1	1,389	1,929,320	1,929,320
85,800	1	1,189	1,413,720	1,413,720
86,000	1	989	978,121	978,121
87,000	1	11	121	121
87,200	1	211	44,521	44,521
87,400	1	411	168,921	168,921
87,800	3	811	657,721	1,973,160
88,000	1	1,011	1,022,120	1,022,120
89,800	1	2,811	7,901,720	7,901,720
90,000	4	3,011	9,066,120	36,264,500
90.600	1	3,611	13,039,300	13,039,300
91,000	2	4,011	16,088,100	32,176,200
93,800	2	6,811	46,389,700	92,779,400
96,600	1	9,611	92,371,300	92,371,300
97,000	1	10,011	100,220,000	100,220,000
97,200	2	10,211	104,265,000	208,530,000
98,800	1	11,811	139,500,000	139,500,000
				$1,631,755,444
				Rounded $1,631,760,000

Assuming this is a normal distribution, 68.26% of the house sales in the population will fall between $80,161 ($86,989 - $6,828) and $93,817 ($86,989 + $6,828). Approximately 95.44% of the sales should fall within two standard deviations from the mean and approximately 99.74% should fall within three standard deviations from the mean.

Because the standard deviation lends itself to further mathematical calculations, it can be used for analytical purposes as well as to describe a population.

$$s = \sqrt{\frac{\Sigma f(X - \bar{X})^2}{n - 1}}$$

Mean: $86,989

$$s = \sqrt{\frac{\$1,631,760,000}{36 - 1}}$$

$$s = \sqrt{\$46,621,714}$$

$$s = \$6,828$$

Statistical Inference

Statistical inference is based on the assumption that past market actions provide a valid basis for forecasting present or future market actions. In the example, past sale prices are used to estimate current sale prices. The same technique can be used to forecast rents, costs, depreciation, and other amounts using the rules of probability.

A normal curve is produced when a normal distribution is plotted on a graph to illustrate a distribution of data. Although the original data may not be normally distributed,

the results of repeated random samples may approximate a normal distribution. Sales are often treated as though they were normally distributed in competitive, open-market situations.

A normal curve often takes the form of a bell curve. One major characteristic of a bell curve is its symmetry. Both halves of the curve have the same shape and contain the same number of observations. The mean, median, and mode are the same value and fall at the midpoint, or apex, of the curve.

Figure B.l is a bell curve that illustrates the 36 house sales. It shows that 68.26% of the observations will fall within the range of the mean, plus or minus one standard deviation; 95.44% will fall within plus or minus two standard deviations; and 99.74% will fall within plus or minus three standard deviations. The figure depicts an analysis of the probable population distribution for the 36 sales, assuming a normal distribution.

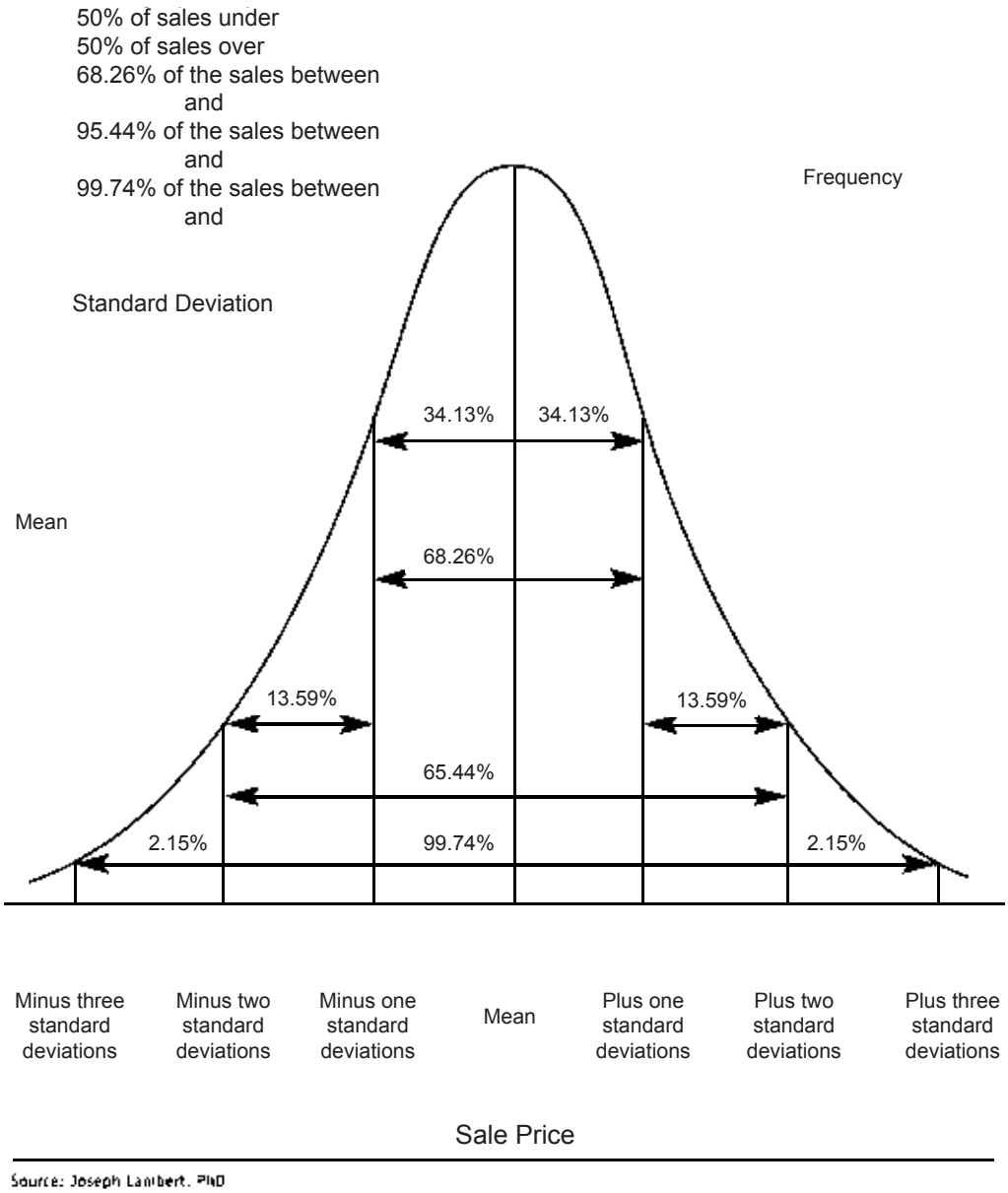


Figure B.1 **Area Under the Normal Curve for 36 House Sales**

Under the bell curve, the ranges for one, two, and three standard deviations are shown. The percentage of the population that will fall within a given distance from the mean or within any specified range can be calculated. For example, the percentage of sales included within a range of $91,989 to $81,989 (i.e., the mean of $86,989 plus or minus $5,000) may be estimated by calculating the *Z* value for this range with the formula presented below and then consulting a table of areas under the normal curve for the calculated value of *Z*.

Z = the deviation of *X* from the mean measured in standard deviations

$$Z = \frac{\text{X} - \text{mean}}{\text{standard deviation}}$$

$$Z = \frac{\$91,989 - \$86,989}{\$6,828} = 0.73$$

This formula shows that $91,989 and $81,989 each deviate from the mean of $86,989 by 0.73 standard deviations.

The percentage of sales within this *Z* range of plus or minus 0.73 standard deviations can be found by locating 0.7 in the *Z* column of Table B.2 and then looking across the top of the table for the next digit—i.e., 0.03. The table indicates that 26.73% of the sales fall between $86,989 and $91,989 or between $86,989 and $81,989; therefore, 53.46% of the sales will fall between $91,989 and $81,989.

The probability of a randomly selected sale falling within a given range can also be determined with the *Z* value. Using the sample of 36 house sales, which has a mean of $86,989 and a standard deviation of $6,828, the probability of a randomly selected sale falling between $86,989 and $88,989 is calculated as follows:

$$Z = \frac{\text{X} - \text{mean}}{\text{standard deviation}} = \frac{\$88,989 - \$86,989}{\$6,828} = 0.29$$

The table of areas under the normal curve, Table B.2, shows that a Z value of 0.29 corresponds to 0.1141. This indicates that there is an 11.41% chance that the sale will fall within $2,000 above the mean. Because the curve of a normal distribution is symmetrical, there is the same probability that a sale will fall within $2,000 below the mean.

Probability a sale will fall between $88,989 and $86,989	11.41%
Probability a sale will fall between $84,989 and $86,989	11.41%
Probability a sale will fall between $84,989 and $88,989	22.82%

If the range in this example is expanded to $4,000 plus or minus the mean of $86,989—i.e., between $82,989 and $90,989—the probability of a randomly selected sale falling within this range is increased.

$$Z = \frac{\text{X} - \text{mean}}{\text{standard deviation}} = \frac{\$90,989 - \$86,989}{\$6,828} = 0.59$$

TABLE B.2
Areas Under the Normal Curve

Z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990

According to Table B.2, a Z value of 0.59 corresponds to 0.2224.

Probability a sale will fall between $90,989 and $86,989	22.24%
Probability a sale will fall between $82,989 and $86,989	22.24%
Probability a sale will fall between $82,989 and $90,989	44.48%

In these examples the range being tested has been equally distributed above and below the mean sale price. However, the probability of a randomly selected sale falling within any selected range in the population can also be tested. For example, the probability of a sale falling between $80,000 and $100,000 can be calculated as follows:

$$Z\ \text{area}_1 = \frac{X_1 - \text{mean}}{\text{standard deviation}} = \frac{\$80,000 - \$86,989}{\$6,828} = 1.02$$

$$Z\ \text{area}_2 = \frac{X_2 - \text{mean}}{\text{standard deviation}} = \frac{\$100,000 - \$86,989}{\$6,828} = 1.91$$

A Z value of 1.02 in Table B.2 indicates a probability of	0.3461
A Z value of 1.91 in Table B.2 indicates a probability of	0.4719
Probability	0.8180

There is an 81.8% chance that a randomly selected sale in this sample will fall between $80,000 and $100,000.

Confidence Level

Using statistical inference and the laws of probability for a normal distribution, the previous examples have shown how confidence intervals can be constructed for a sample when normally distributed data have been assumed or approximated. These calculations may be valuable in loan administration, housing development, appraising, and other decision-making situations involving real estate.

The examples have illustrated that, with 36 sales as a sample, an appraiser can state with a 95% degree of confidence that any sale randomly selected from the population will fall between $73,333 and $100,645. Similarly, there is a 68% level of confidence that a given sale will fall between $80,161 and $93,817.

These measures may be meaningful when used in conjunction with other statistical conclusions. However, they depend on how accurately the estimated mean represents the true population mean, so some confidence in the reliability of the mean must be established. Regardless of the size of the population, there is a specific sample size that will permit a certain level of confidence in the estimated mean.

For the 36 house sales, the standard deviation for price has been calculated as $6,828. The arithmetic mean is $86,989, or approximately $87,000. If an appraiser wants to be 95% certain that the true mean is within $1,000 of the estimated mean of $86,989—i.e., between $86,000 and $88,000—the necessary sample size can be calculated with the following formula:

$$n = \frac{z^2 s^2}{e^2}$$

$$n = \frac{(1.96)^2(\$6,828)^2}{(\$1,000)^2} = 179 \text{ sales}$$

where n = sample size required

z = Z statistic at 95% confidence level

s = standard deviation of the sample

e = required maximum difference in the mean

Thus, with a sample of 179 sales, the required level of confidence could be met. Similarly, for a confidence interval of not more than $1,500, the calculations would be

$$n = \frac{(1.96)^2(\$6,828)^2}{(\$1,500)^2} = 80 \text{ sales}$$

Using the original sample of 36 sales, an appraiser may want to know the limits within which the true population mean may fall at a 95% confidence level. By substitution

$$e^2 = \frac{z^2 s^2}{n^2}$$

and

$$e^2 = \frac{(1.96)^2(\$6,828)^2}{36} = \$4,975,041$$

$$e = \sqrt{\$4,975,041} = \$2,230$$

Thus, the appraiser can be 95% certain that the true population mean falls between $84,759 and $89,219.

Although calculations such as these may not seem to be directly related to day-to-day appraising, professional appraisers have a continuing interest in obtaining adequate data and understanding the markets in which they appraise. Statistical calculations can be useful in quantifying change and performing the neighborhood analyses that are essential to value estimation. Many appraisers routinely analyze the inferences that can be drawn from measures such as the standard deviations of raw and adjusted sale or rental data. These calculations are also applied in appraisal review, loan underwriting, and other analyses.

Regression Analysis

Regression analysis is another technique used by appraisers to analyze market data. It can be applied to estimate value and to isolate and test the significance of specific value determinants.

Simple Linear Regression Analysis

To estimate a probable sale price in the market, it is seldom sufficient to develop a sample of sales, calculate the standard deviation, and base an estimate on this evidence. In most cases the range of values at the confidence level required is too broad to be useful. However, the accuracy of an estimate can be substantially increased by considering one or more characteristics of the sale properties in addition to their sale prices.

In simple linear regression analysis, one independent variable, or property characteristic, is used to reflect a relationship that changes on a straight-line basis. In other words, a change in the independent variable is reflected in the same proportion in the dependent variable, which is unknown. The basic regression equation is

$$Yc = a + bX$$

where Yc is the predicted value of the dependent variable; a is the constant; b is the coefficient, or multiplier, for the independent variable; and X is the value of the variable. If, for example, the independent variable is the square foot area of a building and the dependent variable is its sale price, the simple linear regression equation $Yc = 10{,}000 + 45X$ means that the sale price of the building is predicted to be $10,000 plus $45 times its square foot area.

To find the constant, a, the data for this regression must be graphed. Increasing square foot areas are indicated along the horizontal axis of the graph and increasing sale prices are indicated along the vertical axis. Then a number of sales are plotted on the graph and a line that evenly divides these points is drawn. This is the regression line, and its slope is the b coefficient. The point on the vertical axis of the graph at which the regression begins is the intercept, or the constant symbolized as a. In other words, this is a base value that represents all positive and negative factors that are not explained by the equation and to which the coefficients, or adjustment factors, are added.

Another important statistic that results from a simple linear regression is the coefficient of determination, r^2. This statistic represents the approximate percentage of variation in the dependent variable, which is explained by the equation and is one

measure of the efficacy of the regression. When a regression is performed on an electronic, handheld calculator, the coefficient of determination given is unadjusted for degrees of freedom (i.e., the number of observations minus the number of variables). This adjustment should be applied to the resulting coefficient of determination:

$$r^2_{adj} = 1 - (1 - r^2)\ (n - 1/n - 2)$$

The standard error of the estimate is another measure of how well the regression fits. It is expressed as S_{yx} and represents the remaining dispersion in the data after the regression equation is applied. The equation for arriving at the standard error of the estimate is:

$$S_{yx} = S_y\sqrt{1 - r^2}$$

The *b* coefficient also has a *t* value. The *t* value is the coefficient expressed as a ratio to its standard deviation; it is a measure of the significance of the coefficient. The precise degree of significance represented by a particular *t* value depends on several factors and must be calculated. As a general rule, however, coefficients with *t* values greater than 2 are usually significant at a reasonably high confidence level.

Simple regression analysis is particularly useful when one element is overwhelmingly important in determining a property's sale price. Furthermore, this technique allows appraisers to analyze the relationships between real estate values and the significance of their various components.

Example of Simple Linear Regression

Using the 36 house sales analyzed earlier, simple linear regression can be used to demonstrate the apparent relationship between the sale price of a property and its living area in square feet. The gross living area (*GLA*) of each of the 36 houses is shown in Table B.3. Most appraisers would only analyze properties with the same approximate square foot area as the subject property and disregard the other sales.

The appraiser is valuing a 1,375-sq.-ft. dwelling, so Sales 1, 2, and 3 are most similar in terms of size. Their prices are reported as $57.53, $64.14, and $55.95 per square foot, respectively. The other sales may provide a clue to the "right answer," but they do little to resolve the discrepancy between these figures. Adjustments could be made for other differences in the properties, but complications would develop if multiple adjustments produced overlapping effects.

Sales 1, 2, and 3 indicate a price range of $55.95 to $64.14 per square foot; when these figures are applied to the 1,375-sq.-ft. area of the subject property, a value range of $76,931 to $88,192 is indicated. (These figures would be rounded in the appraiser's report.) The remaining market information cannot be used effectively in traditional appraisal analysis except perhaps to reinforce the appraiser's judgment.

With simple linear regression, however, more of the market data can be analyzed. To apply the formula $Y_c = a + bX$, the 36 sales were analyzed with a calculator and produced the following figures.

a	=	$49,261
b	=	$22.59
r	=	0.6599 (simple correlation coefficient)
r^2	=	0.4354
r^2_{adj}	=	1 – (1 – 0.4354) (36 – 1/36 – 2)
	=	0.4188 (adjusted coefficient of determination)

TABLE B.3
Comparable Sales Data Set for Simple Regression Analysis

Sale	*GLA* in Square Feet	Sale Price	Price per Square Foot *GLA*
1	1,321	$76,000	$57.53
2	1,372	88,000	64.14
3	1,394	78,000	55.95
4	1,403	74,600	53.17
5	1,457	85,800	58.89
6	1,472	87,400	59.38
7	1,475	84,000	56.95
8	1,479	85,600	57.88
9	1,503	72,000	47.90
10	1,512	77,200	51.06
11	1,515	82,000	54.13
12	1,535	79,000	51.47
13	1,535	87,800	57.20
14	1,577	91,000	57.70
15	1,613	90,000	55.80
16	1,640	79,800	48.66
17	1,666	91,000	54.62
18	1,681	79,800	47.47
19	1,697	87,200	51.38
20	1,703	87,000	51.09
21	1,706	89,800	52.64
22	1,709	90,600	53.01
23	1,709	93,800	54.89
24	1,720	93,800	54.53
25	1,732	82,000	47.34
26	1,749	97,200	55.57
27	1,771	97,200	54.88
28	1,777	86,000	48.40
29	1,939	87,800	45.28
30	1,939	90,000	46.42
31	1,939	90,000	46.42
32	1,939	90,000	46.42
33	1,939	96,600	49.82
34	1,940	87,800	45.26
35	2,014	98,800	49.06
36	2,065	97,000	46.97

Thus, for the 1,375-sq.-ft. property being appraised,

$$Y_C = \$49{,}261 + \$22.59 \times 1{,}375$$
$$= \$80{,}322, \text{ or } \$58.42 \text{ per square foot}$$

The 36 sales are plotted on the graph shown in Figure B.2, and the calculated regression line is indicated. The graph also shows the standard error of the estimate, which allows the appraiser to construct confidence intervals around the regression line. The calculations in this example produce a standard error estimate of $5,205. When this figure is applied to the property being appraised, the appraiser can state that 36 sales in the market support an estimate of $80,300 for the appraised property, based only on a comparison of their square foot area. Moreover, at a 68% confidence level, the market price should fall between $80,300 + $5,205—i.e., from $75,095 to $85,505. At a 95% confidence level, the price should fall between $80,300 $\pm$ 2 x $5,205, or from $69,890 to $90,710.

Although other statistical measures such as the standard error of the forecast (S*f*) may be used, most appraisers would consider this analysis to be sufficient and reasonably representative of most single-family market situations. Although a more refined analysis of these data could be performed, this example illustrates a simple application

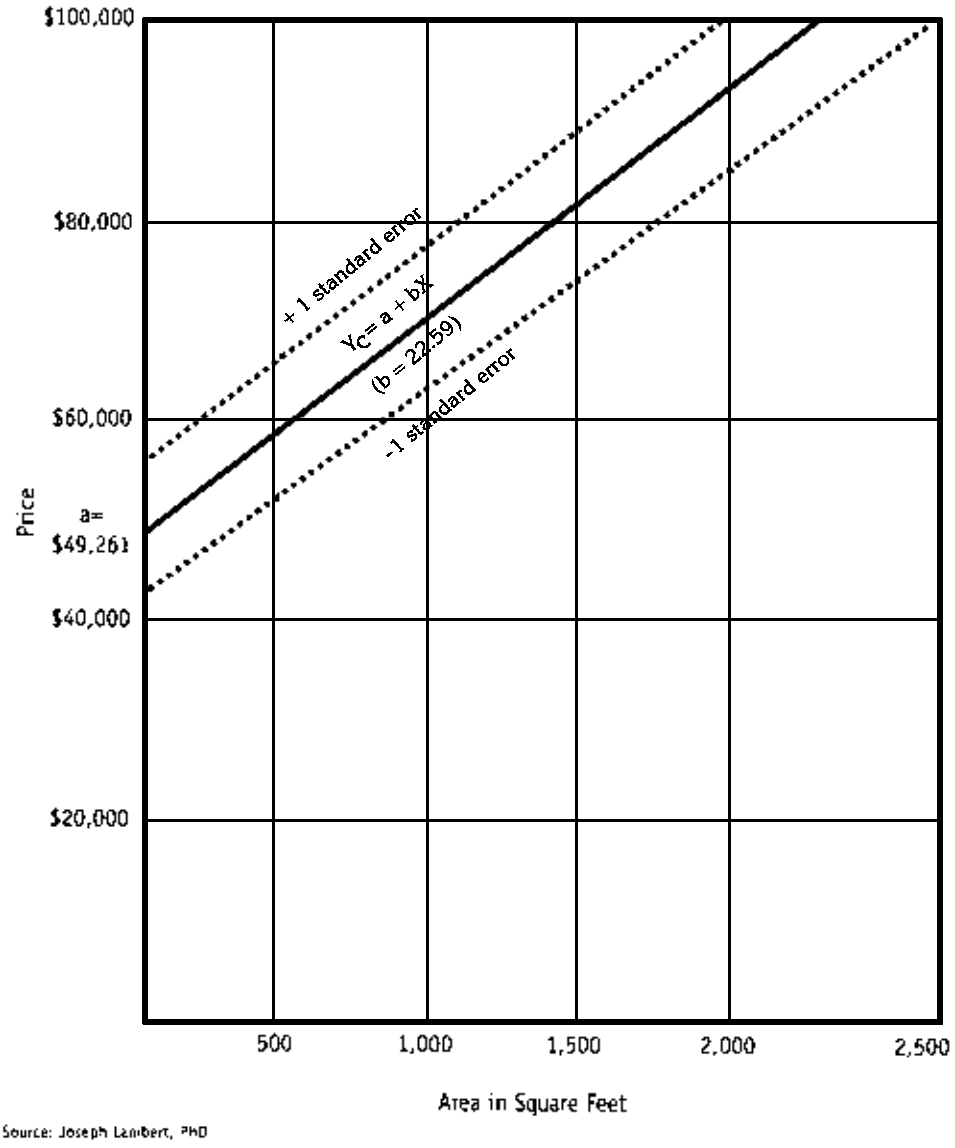


Figure B.2 **Plot of Sales, Regression Line, and Standard Error for 36 Sales**

of a regression technique. The standard error of the forecast for the appraised property could be calculated as follows:

$$Sf = S_{yx} \sqrt{1 + \frac{1}{n} + \frac{(X_K - \overline{X})^2}{(X - \overline{X})^2}}$$

$$Sf = 5{,}205 \sqrt{1 + \frac{1}{36} + \frac{(1{,}720 - 1{,}670)^2}{1{,}469{,}045}}$$

$$Sf = 5{,}281$$

Applying this adjustment to the standard error makes only a small change because the measure of value (i.e., square footage) of the subject property is quite close to the mean square footage of the sample data. The greater the difference between the appraised property and the mean of the sample in regard to any property attribute, the

more this distortion affects the standard error as a measure of variation in the regression prediction.

Multiple Regression Analysis

Multiple regression analysis is performed with the same basic methods as simple linear regression, but the analysis is expanded to include more than one independent variable. Some handheld calculators are preprogrammed or can be programmed to perform regressions using two or three independent variables, but multiple regressions are generally performed on a computer. Stepwise regression is an improvement on the standard regression procedure because variables can be added or removed from the regression equation depending on their degree of explanatory power. This type of regression produces an optimum combination of variables by retaining only the most significant.

Curvilinear Regression Analysis

Most appraisal data do not reflect straight-line relationships, but appraisers often deal with short segments of a curve so tools such as linear regression and correlation can be used. However, inferences can be distorted when linearity is assumed for data that are clearly curvilinear. Fortunately, many sets of curvilinear data may also be transformed rather easily and processed as if they were linear.

Decimal and Fractional Equivalents of a Foot (in./ft. Equivalents)

Inch	Decimal	Fraction	Inch	Decimal	Fraction	Inch	Decimal	Fraction
1”	.08	1/12	5”	.42	5/12	9”	.75	3/4
2”	.17	1/6	6”	.50	1/2	10”	.83	5/6
3”	.25	1/4	7”	.58	7/12	11”	.92	11/12
4”	.33	1/3	8”	.67	2/3	12”	1.00	1

Weights

1 ounce	16 drams (dr.)	4 quarters	one-hundred weight (cwt.)
1 pound	16 ounces (oz.)	1 short ton (s.t.)	2,000 pounds
1 quarter	25 pounds (lb.)	1 long ton (l.t.)	2,240 pounds

Measures

LINEAR MEASURES

1 inch:	.0833 ft.	1 chain:	66 ft.	1 acre:	208.71033 ft. sq.
1 link:	7.92 in.		4 rods		132 ft. x 330 ft.
1 foot:	12 in.		100 links		110 ft. x 396 ft.
1 yard:	3 ft.	1 mile:	5,280 ft.		145.2 ft. x 300 ft.
1 rod:	16.5 ft.		1,760 yd.		198 ft. x 220 ft.
	25 links		320 rods		or any rectangular tract with an
			80 chains		area of 43,560 sq. ft.

SQUARE MEASURES

				CUBIC MEASURES	
1 sq. ft.:	144 sq. in.	1 acre:	43,560 sq. ft.	1 board ft.:	144 cu. in.
1 sq. yd.:	9 sq. ft.		4,840 sq. yd.	1 cu. ft.:	1,728 cu. in.
1 sq. rod:	272.25 sq. ft.		160 sq. rods	1 cu. yd.:	27 cu. ft.
	30.25 sq. yd.		10 sq. chains	1 cu. ft.:	7.481 gal.
1 sq. chain:	4,356 sq. ft.	1 sq. mile:	640 acres		
	16 sq. rods	1 full section:	1 sq. mile		
		1 township:	36 sections		

Metric Conversion Table

LINEAR MEASURES	SQUARE MEASURES	CUBIC MEASURES
inches x 2.54 = centimeters	sq. in. x 6.452 = sq. cm.	cu. in. x 16.387 = cu. cm.
feet x .305 = meter	sq. ft. x .093 = sq. m.	cu. ft. x .283 = cu. m.
yards x .914 = meter	sq. yd. x .836 = sq. m.	cu. yd. x .7645 = cu. m.

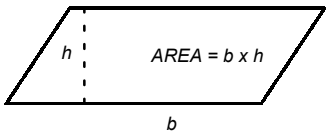
NOTES:

1. Cost per linear foot x 3.281 = cost per meter
2. Cost per square foot x 10.764 = cost per square meter
3. Cost per cubic foot x 35.315 = cost per cubic meter
4. Cost per cubic yard x 1.308 = cost per cubic meter

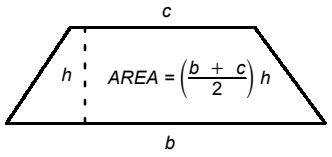
IRREGULAR AREAS

Computing Irregular Areas

PARALLELOGRAM .... A quadrilateral having its opposite sides parallel.

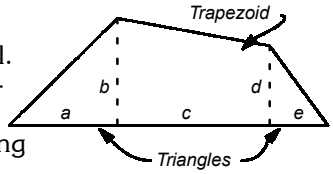


TRAPEZOID .... A quadrilateral having two and only two sides parallel.



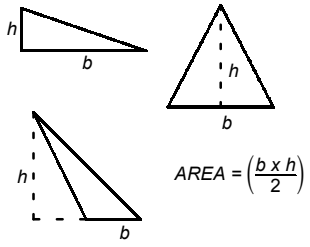
The altitude (h) of a parallelogram or trapezoid is the perpendicular distance between the parallel sides.

TRAPEZIUM .... A quadrilateral having no two sides parallel. The area of a trapezium can only be determined by dividing the figure into triangles, parallelograms and/or trapezoids and totaling the individual areas.



$$AREA = \left(\frac{a \times b}{2}\right) + \left(\frac{b + d}{2}\right) c + \left(\frac{e \times d}{2}\right)$$

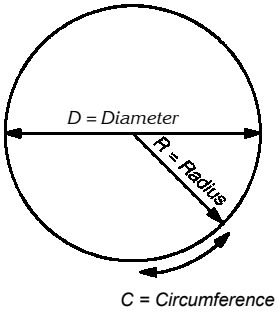
TRIANGLE ..... A three-sided polygon. The altitude (h) of a triangle is the perpendicular from any vertex to the opposite side (extended if necessary).



$$AREA = \left(\frac{b \times h}{2}\right)$$

PROPERTIES OF A CIRCLE

Area	$= D^2 \times .7854$	Circumference	$= D \times 3.1416$
	$= R^2 \times 3.1416$		$= R \times 6.283185$
	$= C^2 \times .07958$		
Diameter	$= R \times 2$	Radius	$= D \div 2$
	$= C \times .3183$		$= C \times .159155$



FORMULAS

Areas and Volumes

Area of a rectangle:	length x width = area
Perimeter of a rectangle:	2 x length + 2 x width = perimeter
Area of a square:	side x side = area
Perimeter of a square:	4 x side = perimeter
Area of a parallelogram:	base x height = area
Area of a triangle:	½ (base x height) = area
Area of a circle:	πr^2 = area
Circumference of a circle:	πd = circumference
Volume:	length x width x height = volume
Cost to build a home: house	length x width x cost per square foot = cost to build

Ratios

Assessment Ratio	$\frac{\textit{Assessor's estimate of value}}{\textit{Selling price of property}}$
Perimeter Ratio	$\frac{\textit{Square feet of ground area}}{\textit{Linear feet of building perimeter}}$

Basic Math Functions and Order of Operations

Find s in each of the equations

(s + 25) ÷ 2 -100 x 10 = 5	Answer (s = 1985)
(s x 4) + [300 ÷ (10 - 20)] = 14	Answer (s = 11)

WORD PROBLEMS

Example: If two masons can lay 120 bricks per day, how many bricks can be laid by three masons in five days?

Answer = 3 x 60 x 5 = 900 bricks

Example 1: How much does it cost to cover the floor of a recreation room 20 feet by 35 feet if the linoleum is $2.65 a square yard?

Example 2: How many acres are in a rectangular field with a frontage of 565 yards and a depth of 420 yards? (43,560 square feet = 1 acre)

Example 3: The base length of a truss is 45 feet and its height is 8 feet. What is the area enclosed by the truss?

Example 4: A legal description, when drawn out, is a parallelogram. The road frontage of the prop-erty is 100 linear feet, and the distance from the road to the back line of the property is 245 feet. What is the area of the legal description?

Example 5: Farmer A constructs a 70-foot-high Harvestore silo. The radius of the concrete footing for the silo is 15 feet. Farmer B constructs a 90-foot-high Rochester concrete stave silo. The diameter of this silo is 35 feet. Farmer C constructs a 65-foot-high stave silo. Its concrete footing has a circumference of 70 feet. What ground area does each of these silos cover?

Example 6: Mr. Smith owns a grocery store. In order to handle all of his new business, he has to build an addition onto his current store. The addition measures 40 feet wide by 30 feet long. The height of the addition is 12 feet. How many cubic feet of volume are in the addition?

Example 7: A contractor orders the following for framing a garage:

40 studs, 2" x 4" x 8'
6 sills, 2" x 4" x 20'
6 plates, 2" x 4" x 20'
26 rafters, 2" x 4" x 14'
65 pieces, 1" x 6" x 22' for sheathing

With a per-board-foot cost of $2.50, what is the total cost of this order?

Example 8: Mr. Jones is the assessor for the town of XYZ. He wanted to find out what his level of assessment was, so he decided to analyze the sales that had occurred in his district. These are the sales:

Sale	Sale Amount	Assessment
A	145,000	101,500
B	86,000	43,000
C	235,000	70,650
D	179,400	152,490
E	364,900	164,205

Based on the information above, what are the mean, median and aggregate assessment ratios for Town XYZ?

Example 9: As an assessor, you obtain the following cost information from a local contractor:

Item	Cost
Drywall	$ .40 per sq. ft.
Insulation	.38 per sq. ft.
Plywood	.42 per sq. ft.
Carpet padding	.25 per sq. yd.
Carpet	10.99 per sq. yd.
Linoleum	8.99 per sq. yd.
Paneling	1.50 per sq. ft.
Paint	10.00 per gallon
Nails	.59 per lb.

Mr. Brown plans to finish off his basement, and he finds that he needs the following:

595 sq. ft. of drywall, 595 sq. ft. of insulation, 300 sq. ft. of paneling, 2 gallons of paint, 10½ lb. of nails, 4 sq. yd. of plywood, 810 sq. ft. of carpet and padding and 10 sq. yd. of linoleum. What is the total cost of the required materials?

Example 10: How many sheets of metal, each 1/32" thick, are there in a pile 12 7/8" high?

Example 11: How many flooring boards, each 3 1/5" wide are there in the width of a corridor 5'5" wide?

ANSWERS TO MATH PROBLEMS

(1) $206.11
(2) 49.03 acres
(3) 180 sq. ft.
(4) 24,500 sq. ft.
(5) A. 706.86 sq. ft.
B. 962.11 sq. ft.
C. 389.93 sq. ft.
(6) 14,400 cu. ft.
(7) $3,327.50
(8) mean = 56%
median = 50%
aggregate ratio = 53%
(9) $2,056.92
(10) 412
(11) 20 5/16 or 20.3125

500 **V** VACANT **D** DWELLING **O** OTHER

505 STORY HEIGHT

1.0 1.5 2.0 2.5 3.0

505 STYLE

01 RANCH	09 BASIC SINGLE STORY	17 CONDOMINIUM
02 BI-LEVEL	10 FARMHOUSE	18 TOWN HOUSE
03 SPLIT LEVEL	11 VICTORIAN	19 DUPLEX
04 CAPE COD	12 COLONIAL	20 APARTMENT
05 BUNGALOW	13 CONTEMPORARY	21 MANUFACTURED
06 COTTAGE	14 MODERN SINGLE STORY	22 OTHER
07 CRAFTSMAN	15 MODERN MULTI-STORY	
08 PRAIRIE	16 EXECUTIVE MANSION	

505 EXTERIOR WALL CONSTRUCTION

1 WOOD	7 BRICK	13 MASONRY VENEER
2 BLOCK	8 STONE	14 SIP
3 STUCCO	9 MASONRY/FRAME	15 LOG
4 ALUM/VINYL	10 HRDBRD/PLYWD	16 HAND-HEWN LOG
5 CEMENT FIBER	11 SHINGLE/SHAKE	17 OVERSIZED LOG
6 METAL	12 EIFS	18 OTHER

510 AGE

ERECTED __ __ __ | REMODELED __ __ | EFFECTIVE __ __

515 BASEMENT

1 NONE 2 CRAWL 3 PART 4 FULL 5 WALKOUT

520 HEATING

1 NONE 2 BASIC 3 AIR CON 4 AIR CON (SEP DUCTS) 5 GEOTHERMAL

FUEL TYPE

1 GAS 2 ELECT 3 OIL 4 WOOD/COAL

SYSTEM TYPE

1 WARM AIR 2 ELECT 3 HOT WATER 4 STEAM

525 LIVING ACCOMMODATIONS

TOTAL ROOMS __ __ | BED ROOMS __ __ | FAMILY ROOMS __ __

FULL BATHS __ | HALF BATHS __ | ADDN'L FIXTURES __ | TOTAL FIXTURES __ __

ROUGH IN'S __ | WHIRLPOOL __ | HOT TUB __

530 KITCHEN RATING: 1 VG 2 GD 3 AV 4 PR — BATHROOM RATING: 1 VG 2 GD 3 AV 4 PR

550 PHYSICAL CONDITION

1 VG 2 GD 3 AV 4 PR 5 UN

	OTHER FEATURES	AMOUNT
551	MASONRY ADJ [ ] __ __ x __ __	
552	REC ROOM __ __ x __ __	
553	WB FP: STACKS __ OPENINGS __	
554	METAL FP: STACKS __ OPENINGS __	
555	GAS FP __	
556	BASEMENT GARAGE, NO. CARS __	
557	BUILT-IN GARAGE, NO. CARS __	
558	DORMERS, TYPE: _____ _____ L F.	
559	TOTAL ADDITIONAL OTHER FEATURE AMT	

TOTAL OTHER FEATURES _____

560	GRADE FACTOR	AA	A	B	C	D	E	[ ]	
	COST & DESIGN FACTOR							[ ] __ __	
	CDU	EX	VG	GD	AV	FR	PR	VP	UN

LIVING AREAS

570	575	580
BSMT __ __ __ __	ADD'L FLOOR __ __ __ __	ATTIC UNFIN __ __ __ __
FIN BSMT LIV __ __ __ __	ATTIC FIN __ __ __ __	½ STORY UNFIN __ __ __ __
FIRST FLOOR __ __ __ __	½ STORY FIN __ __ __ __	UNFIN ROOM __ __ __ __
SECOND FLOOR __ __ __ __		

ATTACHMENTS

	1st	2nd	3rd	AREA	AMOUNT
601	1 __ __	__ __	__ __	__ __ __	
602	2 __ __	__ __	__ __	__ __ __	
603	3 __ __	__ __	__ __	__ __ __	
604	4 __ __	__ __	__ __	__ __ __	
605	5 __ __	__ __	__ __	__ __ __	
606	6 __ __	__ __	__ __	__ __ __	

TOTAL ATTACHMENT AMOUNT $ _____

ATTACHMENT CODES

11 OFP	21 OMP
12 EFP	22 EMP
13 FR GA	23 M GAR
29 CARPORT	
30 COMPOSITE DECK	
31 WOOD DECK	
32 CANOPY	
33 CONC/M PATIO	
34 STN/TL PATIO	
35 MS/TERRACE	
99 ADD'L ATTACHMENT	

DWELLING COMPUTATIONS

	EXT WALL CONST	AREA	VALUE
FIRST FLOOR			
SECOND FLOOR			
ADD'L STORY			
½ STORY			
ATTIC			

BASE PRICE

UNFINISHED AREA	FACTOR	ADJ AREA
UNFINISHED ROOM _____	X 1 • 0 0	= _____
½ STORY UNFINISHED _____	X 0 • 7 5	= _____
ATTIC UNFINISHED _____	X 0 • 5 0	= _____
PRICE PER SQ FT _____	X TOTAL AREA	_____

BASEMENT ADJUSTMENT			COST
UNFINISHED ROOM _____	=	+	_____
CRAWL AREA _____	=	+	_____
1ST FLOOR AREA _____	=	-	_____
NET BASEMENT ADJUSTMENT	=		_____ ±

FIN BSMT LIV AREA	SFLA _____	+
HEATING/AC	SFLA _____	±
PLUMBING	5 FIXTURES IN BASE	
TOTAL FIXTURES _____ – 5 = _____	X _____/FX	±
ROUGH IN'S WHIRLPOOL HOT TUB		
ADD'L PLUMBING (____ x ____) + (____ x ____) + (____ x ____)		+
TOTAL OTHER FEATURE AMOUNT	=	+
TOTAL ATTACHMENT AMOUNT	=	+
ADJUSTED BASE PRICE	=	
X GRADE FACTOR _____		
X COST & DESIGN FACTOR _____	=	
X LOCAL MODIFIER _____	RCN =	
X PERCENT GOOD _____	RCNLD =	
X MARKET ADJUSTMENT		
+ OTHER BUILDING IMPROVEMENTS		
+ GROSS BUILDING SUMMARY		
TOTAL IMPROVEMENT VALUE		

ADDITIONAL OTHER FEATURES	AMOUNT
ROOF ADJUSTMENT – METAL	
WHOLE HOUSE GENERATOR	
WD FURNACE IN __ OUT __	
1	
2	
3	
4	
5	
6	
7	
8	
TOTAL ADD'L. OTH. FEATURES CARRY TOTAL TO 559	

ADDITIONAL ATTACHMENTS	AMOUNT
1	
2	
3	
4	
5	
6	
7	
8	
TOTAL 99 ADDITIONAL ATTACHMENTS CARRY TOTAL TO 606	

CON/DES/USFL		NO.	EX	VG	GD	AV	FR	PR	VP	UN	UNF
EXTERIOR WALLS											
ROOF & COVER											
WINDOWS & DOORS											
HEATING											
ELECTRICAL											
PLUMBING											
B	REC ROOM										
	FBLA										
	OTHER										
1st	KITCHEN										
	DINING RM										
	LIVING RM										
	BATHROOM										
	POWDER RM										
	BEDROOM										
	FAMILY RM										
	OTHER										
2nd OR ATT	KITCHEN										
	DINING RM										
	LIVING RM										
	BATHROOM										
	BEDROOM										
	OTHER										
3rd	LIVING AREA										

LOCATION ❑ IMPROVING ❑ STABLE ❑ DECLINING

820 APARTMENT DATA

TYPE	GR	BEDS	BATHS	NO. UNITS	RENTAL
1 __	__	__	__ • __	__ __ __	__ __ __
2 __	__	__	__ • __	__ __ __	__ __ __
3 __	__	__	__ • __	__ __ __	__ __ __

830 INCOME DATA

Actual Rent	____	Economic Rent	_____
Vacancy	___	Expenses	____

APARTMENT COMPUTATIONS

	1-FIN BSMT	2-FRST	3-UPPER
EXTERIOR WALLS			
AVERAGE UNIT SIZE			
BASE PRICE			
SQUARE FEET			
SUBTOTAL			
ADJ BASE 1+2+3			
UNFINISHED BSMT			
PLUMBING			
AIR CONDITIONING			
ATTACHMENTS			
SUBTOTAL			
X GRADE FACTOR = BASE VALUE			
X LOCAL MODIFIER			

APARTMENT TYPE
1. GARDEN
2. TOWNHOUSE
3. OTHER

APARTMENT GRADE FACTOR
AA 1.75
A 1.55
B 1.28
C 1.00
D 0.85
E 0.55

OTHER BUILDING IMPROVEMENTS

	TYPE CODE	QUAN	CONST.	YEAR BUILT	SIZE	G	HGT	RATE	MODIFICATIONS	LM	RCN	COND	% GOOD	OB/MA	R C N L D
701	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
702	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
703	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
704	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
705	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
706	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	
707	___	__	F M P S O	__ __ __ __	__ __ __ __	_	__	__ • __	__ __ __ __	_ • ___		__	___	___	

GROSS BUILDING SUMMARY

ID	USE	CONST	AGE EREC	AGE REM	SIZE	RATE	LM	RCN	COND.	% GOOD	OB/MA	MARKET VALUE
800	TOTAL OTHER IMPROVEMENTS											

MEASURED BY _____ DATE _____ LISTED BY _____ DATE _____ CALCULATED BY _____ DATE _____ REVIEWED BY _____ DATE _____

KEY NO. ADDRESS BOOK NO. PLAT NO. KEY NO.

BUILDING PERMIT RECORD

DATE	NUMBER	AMOUNT	PURPOSE

010

__ __ CARD __ __ OF CARDS

MAP NUMBER __ __ __ __

ROUTING NUMBER __ __ __ __ __

X ____ Y ____

101 NEIGHBORHOOD __ __ __ | __

102 LAND USE __ __ __ __

103 LIV UNITS __ __ __ __

104 ZONING __ __ __ __ __ [ ]

105 NUMBER __ __ __ __ | STREET NAME __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __ __

TRANSFER OF OWNERSHIP

GRANTEE	CONV	VOL	PG	200	MO	YR	UNIQUE SALES NUMBER	TYPE	SALES PRICE	SOURCE	VALID
					__ __	__ __ __ __	__ __ __ __	__	__ __ | __ __ __ | __ __ __	___	___
					__ __	__ __ __ __	__ __ __ __	__	__ __ | __ __ __ | __ __ __	___	___
					__ __	__ __ __ __	__ __ __ __	__	__ __ | __ __ __ | __ __ __	___	___

LAND DATA & COMPUTATIONS

			ACTUAL FRONTAGE	EFFECTIVE FRONTAGE	EFFECTIVE DEPTH	ACTUAL UNIT PRICE	DEPTH FACTOR	INFLUENCE FACTOR	LAND USE CODE	LAND VALUE
NONE	300	N ___								
LOTS	301	L ___	__ __ __•__	__ __ __	__ __ __	__ __ | __ __ __		__ __ [ ] __ __	__ __ __	
1 Regular lot	302	L ___	__ __ __•__	__ __ __	__ __ __	__ __ | __ __ __		__ __ [ ] __ __	__ __ __	
2 Rear lot	303	L ___	__ __ __•__	__ __ __	__ __ __	__ __ | __ __ __		__ __ [ ] __ __	__ __ __	
3 Apartment site	304	L ___	__ __ __•__	__ __ __	__ __ __	__ __ | __ __ __		__ __ [ ] __ __	__ __ __	
4 Waterfront										
SQUARE FEET	311	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___•___ ___	Influence Factors	__ __ [ ] __ __	__ __ __	
1 Primary site	312	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___•___ ___	1 Unimp	__ __ [ ] __ __	__ __ __	
2 Secondary site	313	S ___	___ | ___ ___ ___ | ___ ___ ___ SQ FT			___ ___ ___•___ ___	2 Exc Fr	__ __ [ ] __ __	__ __ __	
3 Residual							3 Topo			
4 Waterfront							4 Shape or Size			
ACREAGE	321	A ___	__ __ __•__ __ ACRES		PROD RTG ___ ___	__ __ | __ __ __	5 Econ Misimp	__ __ [ ] __ __	__ __ __	
1 Homesite	322	A ___	__ __ __•__ __ ACRES		___ ___	__ __ | __ __ __	6 Restric Noncon	__ __ [ ] __ __	__ __ __	
2 Tillable	323	A ___	__ __ __•__ __ ACRES		___ ___	__ __ | __ __ __	7 Land Locked	__ __ [ ] __ __	__ __ __	
3 Pasture	324	A ___	__ __ __•__ __ ACRES		___ ___	__ __ | __ __ __	8 Corner Alley (+)	__ __ [ ] __ __	__ __ __	
4 Woodland	325	A ___	__ __ __•__ __ ACRES		___ ___	__ __ | __ __ __	9 View (+)	__ __ [ ] __ __	__ __ __	
5 Undev	326	A ___	__ __ __•__ __ ACRES		___ ___	__ __ | __ __ __				
6 Primary site										
7 Secondary site										
8 Residual										
9 Waterfront										
0 Other										
GROSS	330	G ___	___ ___ ___ | ___ ___ ___ | ___ ___ ___							
1 Irregular lot										
2 Site value										
3 Residual										
4 Waterfront										
0 Minus R.O.W.										

SUMMARY OF VALUES

TOTAL VALUE LAND	
TOTAL VALUE BUILDING	
TOTAL VALUE LAND & BLDGS	

TYPE CODES

1 LAND
2 LAND & BUILDING

SOURCE CODES

1 BUYER
2 SELLER
3 FEE
4 AGENT

VALIDITY CODES

1 VALID SALE
2 Sale involves additional parcels
3 Not open market; not reasonable marketing time
4 Parties under compulsion to act
5 Property changed after sale
6 Related individuals or corporations
7 Liquidation/Foreclosure
8 Financing/Land contracts
9 Included excessive personal property or other (see memo)

402 __ ENTRANCE CODES

0 Entrance gained
1 Not applicable – Unimproved parcel
2 Entrance and information refused
3 Entrance refused; info at door
4 Currently unoccupied
5 Est. for misc. reasons (see memo)
6 Occupant not at home

INSPECTION WITNESSED BY

NOTES

PROPERTY FACTORS

400

TOPOGRAPHY			UTILITIES			STREET OR ROAD			DWELLING SETBACK			FRONTING TRAFFIC		
LEVEL	1		ALL PUBLIC	1		PAVED	1		MORE THAN NEIGHBORHOOD AVG.	1		LIGHT	1	
ABOVE STREET	2		PUBLIC WATER	2		SEMI-IMPROVED	2					MEDIUM	2	
BELOW STREET	3		PUBLIC SEWER	3		UNPAVED	3		LESS THAN NEIGHBORHOOD AVG.	2		HEAVY	3	
ROLLING	4		GAS	4		PROPOSED	4					NONE	4	
STEEP	5		WELL	5		LANDLOCKED	5		SAME AS NEIGHBORHOOD AVG.	3		CUL-DE-SAC	5	
LOW	6		SEPTIC	6		SIDEWALK	6							
SWAMPY	7													

OWNERSHIP

401

PRIVATE	1	
CITY	2	
COUNTY	3	
STATE	4	
FEDERAL	5	
RELIGIOUS	6	
FRATERNAL	7	
UTILITY	8	
PUBLIC SERVICE	9	

CLASS		YEAR NO AC	YEAR PER AC	YEAR LAND	YEAR IMPTS	YEAR TOTAL	YEAR NO AC	YEAR PER AC	YEAR LAND	YEAR IMPTS	YEAR TOTAL
1	RESIDENTIAL										
2	COMMERCIAL										
	AGRICULTURAL										
	1st GR TILLABLE										
	2nd GR TILLABLE										
	3rd GR TILLABLE										
	PASTURE										
	SPECIALTY LAND										
	TOTAL CLASS 4										
5	UNDEVELOPED										
	FALLOW										
	SWAMP										
	WASTE										
	RIGHT OF WAY										
	SPECIALTY LAND										
	TOTAL CLASS 5										
5M	AGRICULTURAL FOREST										
	PRIMARY AG FOREST										
	OTHER AG FOREST										
	TOTAL CLASS 5M										
6	PRODUCTIVE FOREST										
	PRIMARY PROD FOREST										
	OTHER PROD FOREST										
	TOTAL CLASS 6										
7	OTHER - GENERAL AG SITE										
	OTHER - MEGA DAIRY SITE										
	OTHER - CRANBERRY SITE										
	FCL										
	FCL										
	MFL OPEN										
	MFL CLOSED										
	BUILDING ON LEASED LAND										
	EXEMPT										
	OTHER EXEMPT										
	TOTAL										