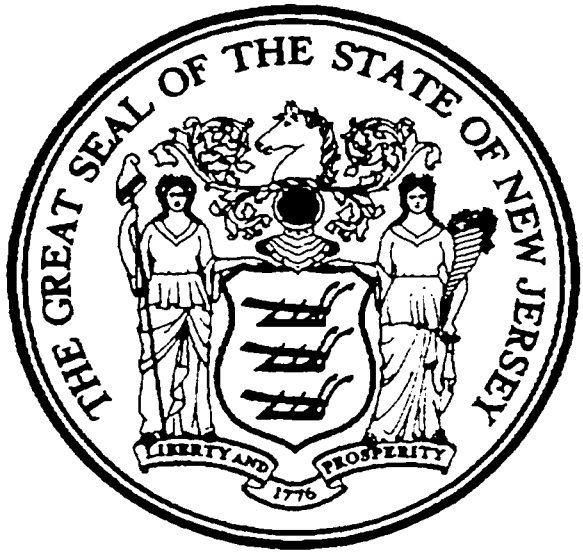
REAL PROPERTY APPRAISAL MANUAL
FOR
NEW JERSEY ASSESSORS

Third Edition



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REAL PROPERTY APPRAISAL MANUAL FOR NEW JERSEY ASSESSORS
Third Edition

FOREWORD

The introduction of the Real Property Appraisal Manual for New Jersey Assessors, by the Local Property Tax Bureau in 1955, established a standard uniform statewide appraisal procedure. Since its inception, the Manual has been taught in every in-service training course and today is employed in all revaluation programs. The Appraisal Manual enables the assessor to maintain those revaluation programs. The Manual continues to be a firm foundation for professional assessing practices in New Jersey.

New Jersey, because of its continued reliance upon local property taxes as the prime financial foundation of local government, strives for, and has realized, continued improvement in the quality of local property tax assessment administration. The State requirements of certification and re-certification of tax assessors, the growth of professional associations and in-service training for assessors, computerization and improved application of mass appraisal techniques have all contributed to that progress. The publication and use of the Real Property Appraisal Manual for New Jersey Assessors continues to be an integral part of that effort.

In November 2000, the Division of Taxation began an ambitious initiative to re-write the current Local Property Tax System (MODIV) and to create a web-enabled Property Assessment and Management System (PAMS). One intended portion of that system is the integration of a Computer Assisted Mass Appraisal (CAMA) program. Although this revised edition (mandated by value changes since the 1981 update) was already in development, it was designed to be included in the new CAMA program.

This revision of the Third Edition is an update of all the residential building costs and unit adjustments. Particular emphasis was made to examine and represent all existing residential construction categories throughout the state. Also, new upper end building classes were developed to address changes in the New Jersey residential housing market. Two years of concentrated effort in collecting and analyzing sales data by the Assessor Assistance Section of Property Administration went into the preparation of this revision.

Assessors are urged to make maximum use of the Real Property Appraisal Manual in order to provide taxpayers within their municipality with the highest possible quality of assessment administration.

Robert K. Thompson
Director
Division of Taxation

Trenton, New Jersey
March, 2002

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VOLUME II - COST AND MISCELLANEOUS SECTION

LEGAL BASIS AND ORGANIZATION FOR REAL PROPERTY ASSESSMENT IN NEW JERSEY

Legal Basis for the Assessment of Real Property

The 1947 Constitution of the State of New Jersey is the guiding instrument to all State Legislation, including that dealing with local property taxation. It sets forth in Article VIII, Section 1, paragraph 1, that all property shall be assessed for taxation under general laws and by uniform rules. All real property shall be assessed according to the same standard of value and taxed at the general tax rate of the taxing districts, for the use of such taxing district.

This means that the legislature may provide for the assessment of real property at full and true value or any percentage thereof, so long as the statute applies uniformly throughout taxing jurisdictions sharing a common burden.

Article VIII, Section 1, paragraph 2 of the Constitution provides that exemption from taxation may be granted only by general laws.

The requirement for "general laws" and "uniform rules" first appeared in the tax clause, Art. IV, Sec. VII, par. 12, added to the Constitution of 1844 by amendment in 1875. In Switz v. Middletown Township, 23 N.J. 580, 594 (1957), the New Jersey Supreme Court announced:

> "* * * The direction for the assessment of property 'under general laws, and by uniform rules, according to its true value, the standard laid down in the 1875 amendment to the 1844 Constitution, 'requires, and is fulfilled by such regulations as should impose the same percentage of its actual value upon all the taxable property in the township for township purposes, in the county for county purposes, and in the state for state purposes', Stratton v. Collins, 43 N.J.L., 562 (Sup. Ct. 1881), State Board of Assessors v. Central R. Co., 48 N.J.L. 146, 307 (E. & A. 1886)."

The Constitution of 1947 continued the same basic mandate and to the same end, i.e., equality in the distribution of the burden of government among the owners of taxable real property. The Constitution of 1947, however, made certain changes. The one immediately pertinent is the substitution of "the same standard of value" for the term "true value" which the 1875 amendment specified as the basis for assessment. In the proceedings of the Constitutional Convention of 1947 it plainly appears that "true" value was abandoned because it was thought to restrict the Legislature to a single, inescapable concept of "value". The term "the same standard of value" was designed to permit flexibility in the approach to the valuation of property. At the same time, to avoid discriminatory treatment, the Constitution of 1947 requires that whatever "standard of value" is legislated, that "same" standard shall be applied to all real property taxable for local government (i.e.. municipal, county, or regional school districts).

Thus equality in the distribution of the burden of local government upon taxable real property is the basic goal. The "general" character of the laws and the "uniform" nature of the rules, as well as the singleness of the "standard of value", are intended, not as exquisite abstractions of form, but rather as meaningful limitations to achieve equality of result. The thought is that things equal to each other in the context of the local real property tax involved shall be treated equally.

Though the true value clause of the 1875 constitutional amendment was replaced by "the same standard of value" provision under The Constitution of 1947, the implementing legislation (R.S. 54:4-1; R.S. 54:4-23) continued to provide for assessment at "true value" until the adoption of Chapter 51, Laws of 1960. Chapter 51 modified the true value assessment standard by permitting optional percentage common levels to be declared in each county. After three postponements, Chapter 51 became operative for the first time in the tax year 1965.

Primarily a personal property reform law, Chapter 51, as it relates to real estate, provides that all real property subject to assessment and taxation for local use shall be assessed according to "the same standard of value", which shall be the "true value" but that the assessment shall be expressed in terms of the "taxable value". The "taxable value" is defined as that "percentage of true value" which each County Board of Taxation may establish for the taxing districts within the county (L. 1960, C. 51, sec. 1; N.J.S.A. 54:4-2.25). The percentage must be a multiple of 10 and may be no lower than 20 or higher than 100 (L. 1960, C. 51, sec. 2; N.J.S.A. 54:4-2.26), and the percentage of 50 will apply if the county board fails to fix a different percentage (L. 1960, C. 51, sec. 3; N.J.S.A. 54:4-2.27).

The constitutionality of Chapter 51, was upheld by the New Jersey Supreme Court in all respects with exception to a provision for the assessment of farm acreage at its farm value as opposed to the standard of value applicable to all other classes of real property, Switz v. Kingsley. 37 N.J. 566 (1962).

Another court decision of significance to assessors following the adoption of Chapter 51 was Borough of Englewood Cliffs v. Allison's Estate, 69 N.J. Super. 514 (1961), holding that the assessor must determine "true value" of property assessed which means market value as of the assessment date.

The holding by the Supreme Court that the special treatment given to farm acreage was unconstitutional, resulted in a constitutional amendment effected by voter approval of SCR-5 in the 1963 November election. Pursuant to the constitutional amendment the Legislature was empowered to provide for the preferential treatment of farm acreage and it acted accordingly by the enactment of Chapter 48, Laws of 1964 (N.J.S.A. 54:4-23.2 et seq).

Chapter 48, known and referred to as the "Farmland Assessment Act of 1964" provides in part that "for general property tax purposes, the value of land, not less than 5 acres in area, which is actively devoted to agricultural or horticultural use and which has been so devoted for at least the 2 successive years immediately preceding the tax year in issue, shall, on application of the owner, and approval thereof as hereinafter provided, be that value which such land has for agricultural or horticultural use". (emphasis provided).

Approaches to Value Approved by the Courts

It is clearly established by New Jersey Law that real property, with the exception of certain farmland cited above, shall be assessed for taxes on the basis of full and fair value, which means the price at which the assessor would believe the property would sell for at fair and bonafide sale by private contract on October 1 of the pretax year. The sale should be considered as one between the willing seller and the willing buyer; that is, one not obligated to sell, dealing with one not obliged to buy. This fundamental principle was pronounced by the New Jersey Supreme Court in the landmark decision Colwell v. Abbott, 42 N.J.L. 111 (1880). Legislative adoption of this principle is expressed in N.J.S.A. 54:4-23, as amended. The Latter states:

> "All real property shall be assessed to the person owning the same on October 1 in each year. The assessor shall ascertain the names of the owners of all real property situate in his taxing district, and, after examination and inquiry, determine the full and fair value of each parcel of real property situate in the taxing district at such price as, in his judgement, it would sell for at fair and bona fide sale by private contract on October 1 next preceding the date on which the assessor shall complete his assessments, as hereinafter required. For the purposes of assessment, the assessor shall compute and determine the taxable value of such real property at the level established for the county pursuant to law."

Cost less depreciation and obsolescence, the capitalization of net income and comparative sales are recognized approaches but not controlling evidence in determining value. The selling price of property at a fair and bona fide sale by private contract is a guide to determining value, but ordinarily it is merely evidential and not controlling, N.J.S.A. 54:4-23; City of Trenton v. John A. Roebling & Sons Co., 24, N.J. Super. 213 (App. Div. 1963).

"Depreciation" in a general sense, is the loss not restored by current maintenance which is due to all the factors causing the ultimate retirement of the property. These factors embrace wear and tear, decay, inadequacy and obsolescence.

"Obsolescence" refers to an element that is separate from the physical decline in value and is utilized to describe the fact that the useful life of an asset is often terminated or its value decreased by reason other than physical deterioration.

Income capitalization is a guide to value which may be utilized but is not a sole determinant, Aetna Life Insurance Company v. City of Newark, 10 N.J. 99 (1956). In recognizing the use of "trends", "price indices" and other statistical data, the Supreme Court stated in In re Erie Railroad System, 19 N.J. 110 (1955):

> "* * * (assessors) should recognize that the true value of a fixed asset, such as real estate, is fairly constant and must be gauged by conditions, not temporary and extraordinary, but by those which are over a period of time will be regarded as measurably stable. * * * Relevant price-current lists and market reports which are recognized for trustworthiness by commercial trade experience are admissable, but must be closely scrutinized to determine the weight to be accorded them.* * *"

It may be properly concluded that many factors form the basis for statutory valuation and the general doctrine is that valuation is not to be tested rigidly by any constant factor.

Assessment Administration in New Jersey

Assessment administration in New Jersey with authority from the 1947 Constitution is specifically provided for under Title 54 of the Revised Statutes, Chapters 1, 2, 3, and 4.

The Director of the Division of Taxation, Department of the Treasury, is vested with full statewide power to investigate, review, revise and equalize assessments, and to assess property so as to conform with the standard of value as defined by the legislature. ** He has powers and duties with regard to assessors and their work, the preparation of taxation and other matters as set forth in N.J.S.A. 54:6 et seq.

The Division of Tax Appeals, Department of the Treasury, has the power and duty of review and determination of appeals from judgments by the county boards of taxation and revision and correction of the county equalization table. Where serious discrepancies exist on equalization tables, this Division may revise the table. These duties and powers are covered in N.J.S.A. 54:22 et seq.

The county boards of taxation are charged with the responsibility of the enforcement, review, revision, and equalization of taxes within the county as set forth in N.J.S.A. 54:3-17 et seq. The board has supervision and control over all offices charged with the duty of making assessments for taxes in every taxing district in the county, N.J.S.A. 54:3-16.

The assessor ~~or board of assessors~~ is annually required to diligently ascertain the names of all persons owning real property in his district and to assess real property at full value as of October 1st of the pre-tax year, N.J.S.A. 54:4-23. Tax lists and duplicates are to be completed and delivered to the County Board of Taxation on or before the 10th of January of the tax year. All applications for exemption are to be examined and approved by the assessor. He shall be responsible for the administrative affairs of the office of assessor as prescribed and required under the statutes, N.J.S.A. 54:4-1 to 54:4-63.30.

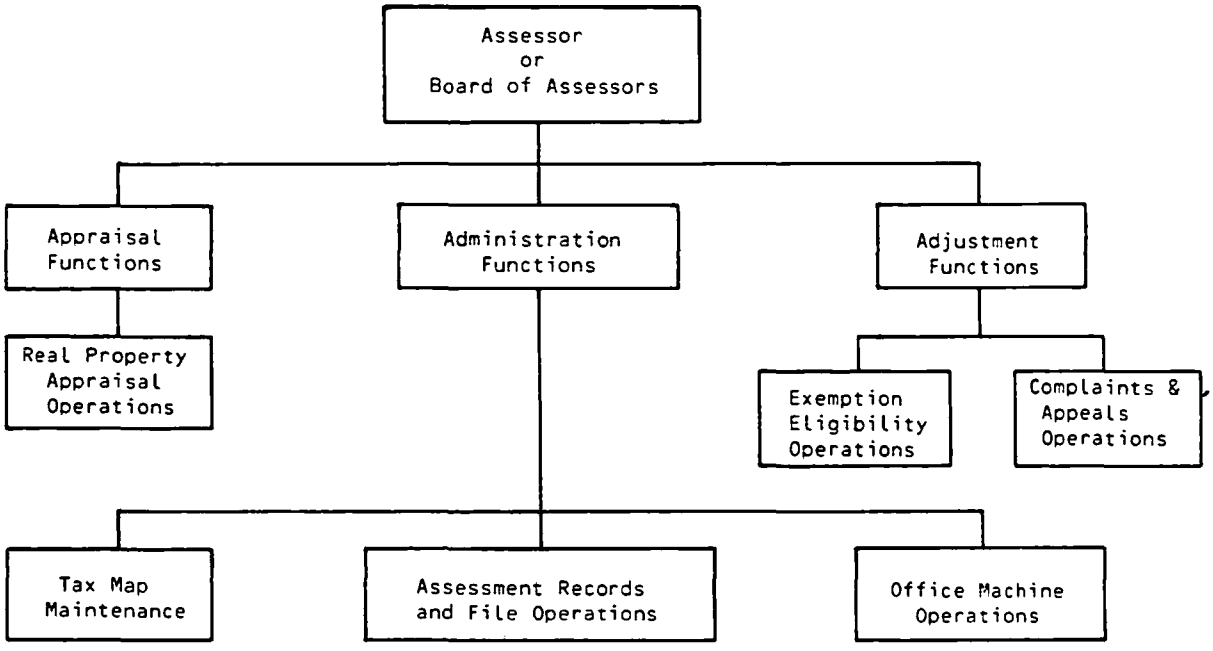
Organization of Local Assessment Functions

The law clearly defines the types or classes of property which must be annually assessed, N.J.S.A. 54:4-1. The law also specifies that the assessor shall make a list in tabular form of the names of owners in his taxing district, and set down in proper columns opposite each name the description and area of each parcel, sufficient to ascertain its location and extent, and the value of each parcel as determined by him, N.J.S.A. 54:4-24. Some additional records are specifically required such as tax maps, exemption forms and exempt property records.

Exemptions from assessed valuation, when authorized by law, are to be administered in accordance with prescribed statutory procedures. Forms to be used in processing exemptions are only those prescribed by the Director of Taxation, N.J.S.A. 54:4-4.4.

The law or Division of Taxation regulations do not specifically define how the assessor shall organize his office for the performance of his duties. However, whether the assessment work in a specific jurisdiction is performed by one man or an organization of several or many assistants, the assessment work naturally divides itself into several functions. These functions include field appraisal of real property, administration of office record keeping and maintenance and adjustment or appeal functions. The following organization chart indicates one method of internal organizational arrangement of the assessment functions.

Example of Functional Organization



Local Assessment Administration

It is not the purpose of this manual to define or recommend rigid assessment administrative regulations which may vary from time to time depending on changed laws and court decisions. The following is a summary check list description of assessment administration operations. Detailed procedures or requirements of administration are contained in regulations promulgated by the Division of Taxation which have been promulgated to cover certain areas.

(a) Assessment forms and tax maps as required by law and additional essential assessment records.

As stated above, the law and Division of Taxation regulations require certain assessment records to be used and maintained. The County Board of Taxation may also prescribe certain forms and records to be used by assessing officials under their jurisdictions. In addition, the assessment records described in the essential records section of this manual will be invaluable for the assessors' office in the development and maintenance of a sound and equitable assessment system.

(b) Assessment list and duplicate

N.J.S.A. 54:4-23 and 4-35 provide that the assessor shall assess real property as of October 1 of the pre-tax year and shall complete the work by January 10 following. He shall, on the latter date, attend before the county board of taxation and file his completed assessment list, and a true copy thereof, called the tax duplicate. The assessor's affidavit containing a statement as provided by statute, N.J.S.A. 54:4-36, is also filed at this time. The county board then examines the list and makes any revisions or corrections.

(c) Preparation of added and omitted assessment list, and property previously exempt.

N.J.S.A. 54:4-63.2 et seq. requires the preparation of an added assessment list in instances where property not needed for public use has been sold by a municipality or where improvements are made upon properties during the tax year.

The Assessors Handbook published by the Local Property and Public Utility Branch sets forth a timetable for performance of the various administrative provisions of this law.

N.J.S.A. 54:4-63.26 to 30 contains provisions for the assessment of property previously exempt while N.J.S.A. 54:4-63.12 to 23 embraces the correlative law with respect to omitted property.

The Assessors Handbook published by the Local Property and Public Utility Branch sets forth the step-by-step procedures and calendar for processing omitted assessments.

(d) Exempt property - determination of eligibility, and filing of property list.

The basic laws concerning property which is exempt by the legislature are contained in N.J.S.A. 54:4-3 to 54:4-4.4.

(e) Defense of assessments under appeal by assessor with assistance of municipal solicitor.

N.J.S.A. 54:2-33 to 54:2-43 prescribes the appellate procedure which any aggrieved taxpayer or taxing district may take.

The assessor should contest all appeals by the taxpayer against his assessments before the County Board of Taxation. Failure to do this can cost his community substantial tax revenue and may upset the uniformity of assessments in the class of property affected. All too often an assessor fails to contest an appeal, believing that an insignificant amount of money is involved, not realizing that a lowered assessment on a particular property may be the binding basis for numerous other reductions in assessments.

Where a reduction is in order, in the opinion of the assessor, he should appear before the county board and testify to the facts as he knows them in order that the board may have the benefit of his knowledge to weigh against the appellant's statements. Failure to do this may result in an excessive reduction.

When appeals involve large assessments or peculiar circumstances, the assessor should promptly notify the municipal attorney so that the interest of the district may be protected. When required, competent expert witnesses may be called upon by authorization of the governing body to substantiate the values and the assessment.

It is not in criticism of these boards to advise assessors to scrutinize reductions or exemptions which they believe to be of questionable merit and bring them to the attention of their municipality for possible appeal before the State's Division of Tax Appeals. All of the facts, as pointed out above, may not have been presented to the Board clearly, thus resulting in a judgement which may not only be out of order, but also set an undesirable pattern for other assessments. Appeals by the taxpayer to the Division of Tax Appeals should be contested with the aid of the municipal attorney. There are few assessors who have the training and

experience to successfully present their case alone and stand up to the cross-examination of the taxpayer's counsel.

(f) Important dates to the tax assessor.

Law and regulations require the assessor to perform various portions of his work according to a definite time schedule. The Annual Report of the Division of Taxation contains a local property tax work calendar which is helpful to the assessor in planning his work and in meeting the various legal critical dates.

(g) EDP, Machine Accounting and Modern Office Methods

The extent of an assessor's need for mechanical equipment varies as to the size of his taxing district and the number and types of items on his tax list. However, as a matter of general policy, every possible mechanical device should be utilized to free the assessor from time consuming clerical work in the office for more time in the field which is productive of increased and more equitable ratables. Modern office machines not only save time but also minimize the number of errors.

Every assessor should have ready access to an adding machine or calculator. While it may be possible to use the manual as an appraisal tool without a calculator, it will be impractical to do so.

The New Jersey Property Tax System (NJPTS) has been mandated by the Director, Division of Taxation for use by all taxing districts. The NJPTS, often referred to as the "4-Line System", is a set of programs. Making minimum use of its capabilities will produce:

> The Tax List and Duplicate, Extended Tax Duplicate, Added Assessment List, Omitted Assessment Lists, Alphabetic Index of Owners, page totals recapitulations, A district summary (SR-3) breakdown by property class and the extension necessary for all of the lists.

When an assessor is ready to make fuller use of the NJPTS he can enter, compare and retrieve more than 35 property characteristics to aid him in the appraisal of properties.

Partial or complete mechanization of the assessor's office, as a separate installation, or tied in with the machine accounting system in the tax collector's office has been effected in many municipalities throughout the State.

Public Relations Practices

Outstandingly important in the program for equitable assessments is sound public relations between the assessor and municipal officials and the taxpayers. This cannot be stressed too strongly in connection with the initiation and carrying out of a revaluation program and its continued administration. The cooperation of the assessing office with both the individual taxpayer and citizen groups is important. This insures wider understanding and support of systematic and equalized property assessments.

Good public relations require that the assessing official obtain and hold the respect and confidence of the taxpayers. Such respect and confidence is generated with the use of efficient, impartial, and business-like methods and procedures. The assessor or his staff when on assignment to their field or office work, act as official representatives of the tax district. It is, therefore, of the utmost importance that in all contact with property owners, tenants, and others, that they so conduct themselves as to reflect credit to the organization and the work in which they are engaged.

In any case where an owner or occupant is not clear about the purpose of field inspections and is not prepared to permit the inspection of his property, the assessor or deputy should explain briefly the object and use of such field records. Such explanation will, in most instances, result in obtaining permission to proceed.

Information furnished on the cost or appraised value of individual properties should be treated as confidential. Such information is for the property record only, and should not be discussed or used for any other purpose.

Revaluation Projects

A revaluation project involving the reappraisal and reassessment of every parcel of real property for the purpose of fairly distributing the tax burdens amongst all property owners within a municipality is often desirable. This is particularly true in cases where the municipality's assessent system has not been maintained or where maintenance has lagged.

A revaluation project is an expensive undertaking in the nature of a capital expenditure. Therefore, the municipal and assessing officials should be fully aware of the need for revaluation. This need is often indicated by many factors. Among these factors are the wide variations in assessed value to sale value ratios, the growth of the municipality in recent years, the lack of property records, tax maps, and uniform appraisal and assessment procedures, and evidence of properties missing from the assessment roll. Another, but less important factor, is the number and nature of complaints and number of appeals to the County Board resulting in adjustments.

Conducting a revaluation is a difficult task requiring sound public relations, public support, trained personnel and organization. The Local Property and Public Utilities Branch, will, upon request, provide advice and will discuss alternate approaches with assessors and municipal officials considering a revaluation.

Frequently, municipalities require the services of outside appraisal firms to perform this task.

Under the provisions of Chapter 424, Laws of 1971 (N.J.S.A. 54:1-35.35, et seq) and the regulations promulgated thereunder, standards have been established to be used in determining the qualifications of persons or businesses under consideration by a municipality to perform a revaluation. Under the law, any contract proposal must be reviewed and approved by the Director of Taxation.

ESSENTIAL RECORDS FOR PROPERTY APPRAISAL AND ASSESSMENT

Essential Tax Maps and Real Property Records

Establishment and maintenance of an equitable assessment system involves the use of tax maps and individual property inventory records, systematic unit land and building standards and uniform procedures for property appraisal and equalization.

Tax maps, unit land value maps, individual property records and property ownership index cards are essential for installation of the standardized assessment system and for maintenance of complete and accurate property assessments. Such maps and records are the necessary tools and controls for use by the assessing office in determining and maintaining sound and equitable assessments for all property within the assessment jurisdiction.

The maps and records desirable and necessary for a complete assessment and for operating each assessment office on a businesslike basis, include the following:

Necessary for All Districts

1) Index or key maps for outline identification of all tax maps within the assessment jurisdiction.

2) Uptodate tax maps showing the location and size of each lot, parcel, or tract of land within the assessment jurisdiction.

3) Property index system consisting of a tax map sheet number, block number and lot number for each lot, parcel, or tract.

4) Up-to-date property record and appraisal cards for each individual property, containing information on important elements considered in the appraisal of the land and buildings.

5) Property ownership index consisting of a card file of all parcels arranged alphabetically by the owner's surname.

6) Legal description index cards, including the complete or summary legal description of each parcel with the corresponding index number for such parcel.

Necessary for Districts Containing Urban and Suburban Areas

1) Unit land value maps for the subdivided and acreage lands in urban and suburban areas.

Necessary for Districts Containing Rural Areas

1) Aerial photographs, land capability or soil survey maps, Bulletin 811 - "Productive Capacity of New Jersey Soils".

Supplemental Records

In addition to the above essential records, several other records are usually helpful and are to be provided whenever practicable. These include:

1) Block or rural map sheet record folders, including a block map or rural map sheet print showing the location and measurement of all parcels in each block or rural map sheet.

2) Market data records to assist in finding unit values and as a check on appraisals and for calculating assessment ratios of taxable properties.

3) Photographs of principal buildings for identifying and describing individual buildings.

4) Rental and Income Data.

Tax Maps

Tax maps (often known as lot and block plats or farm tract maps) contain a variety of information. It is necessary that they show all lots, tracts and parcels in their true relative size, shape and location. Tax maps for rural areas and for the urban and suburban areas of the assessment jurisdiction are drawn to scale to show all property lines and linear dimensions and/or areas, and provide a simple index system of identifying each parcel which is separately assessed. A combination of map sheet number, block number and lot number form an easily developed and useful property index number.

Up-to-date tax maps insure the identification of every land parcel in the district. They also are helpful in checking descriptions and showing property characteristics and factors which affect land values.

The tax maps are necessary to furnish a complete and accurate inventory of all lands, the description of property on the assessment rolls and the maintenance of accurate assessment and tax records. Each parcel shown on the tax maps represents one property record card, one item on the assessment roll and one item on other tax records.

The law provides that the Director, Division of Taxation, "shall have full control over the preparation, maintenance and revision of all tax maps however prepared" (Chapter 175, Laws of 1913). Assessment jurisdictions planning to prepare tax maps should consult the "Tax Map Specifications" adopted by the Director, Division of Taxation, before starting on this all important project.

Consultation with the Local Property and Public Utility Branch

Before any tax map is started, the specifications recommended by the Branch should be studied and a systematic effort made to analyze the problems that may be encountered.

Consultation with the Local Property and Public Utility Branch is strongly recommended if any details pertaining to the preparation of the map are not clear. At this consultation, if desired, formerly approved maps will be shown, and methods and ideas for preparing the new map will be indicated.

Experience has proven that advanced and detailed planning of the methods to be followed produces a better tax map at less cost.

After maps have been completed they shall be submitted to the Local Property and Public Utility Branch for examination, and any revisions or corrections found to be necessary shall be made. When all the required revisions have been made, the maps will be approved by the Director, Division of Taxation, and his official approval will be stamped on each tracing. Approval by the Director merely indicates that the information shown on the Map is presented in accordance with the specifications. The Branch is not in a position to check the details of the Map for accuracy.

All new Tax Maps must be prepared by a licensed New Jersey land surveyor.

Rural Land Value Maps

For rural or agricultural lands, the land capability maps or soil maps showing the land classifications for each parcel or tract are used for the unit land value maps, as the value per acre is based upon each capability class. Each capability or soil class is assigned a uniform value and such values are adjusted with necessary additions or deductions as are based upon special location, highway and other physical conditions affecting specific parcels or tracts.

Detailed procedures for appraising lands are included in the section dealing with "Procedure for Rural Land Appraisal".

Urban Land Value Maps

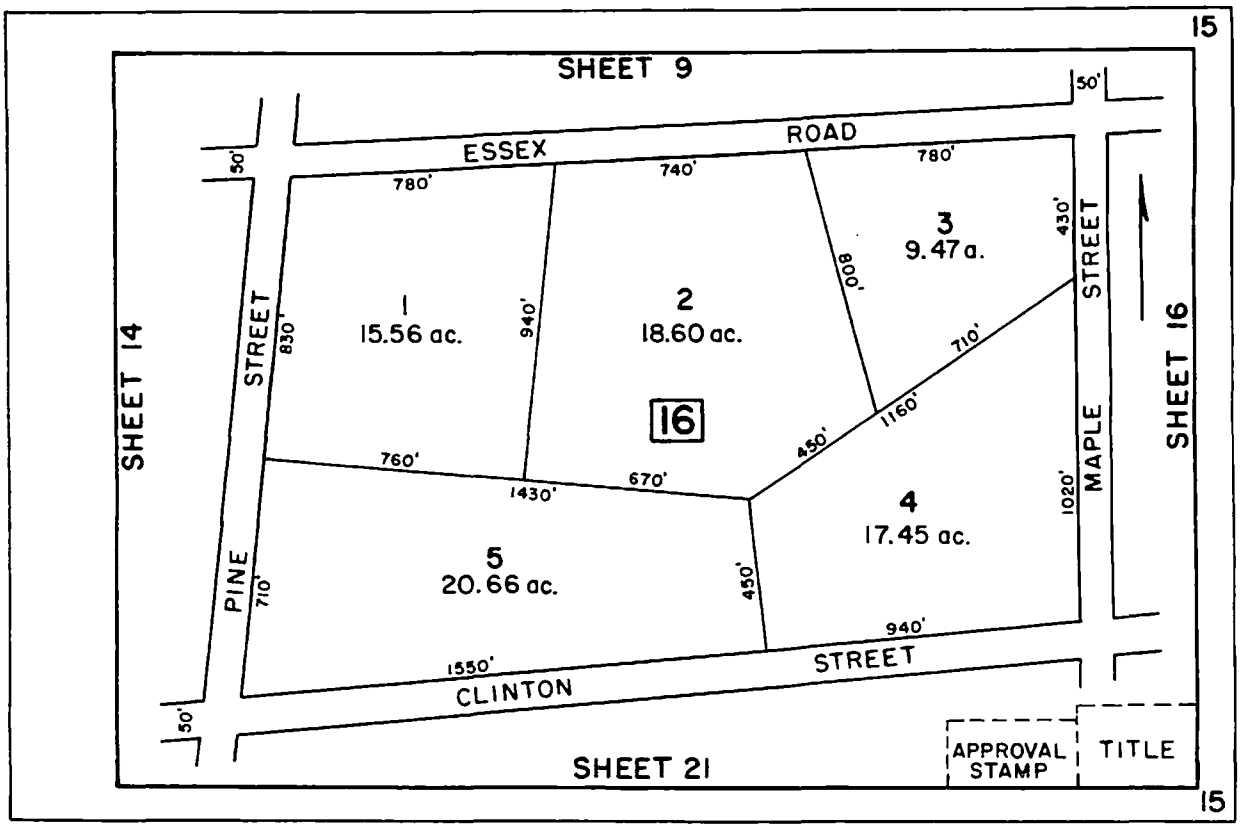
Land value maps have entries of the unit land values as set by the assessing official. Such unit values are entered at the time of the installation of the systematic assessment and are reviewed and revised when land values and use trends have changed sufficiently to require any assessment change. Similar factual data on sales and other pertinent information are used in both initial and subsequent reviews and land value findings.

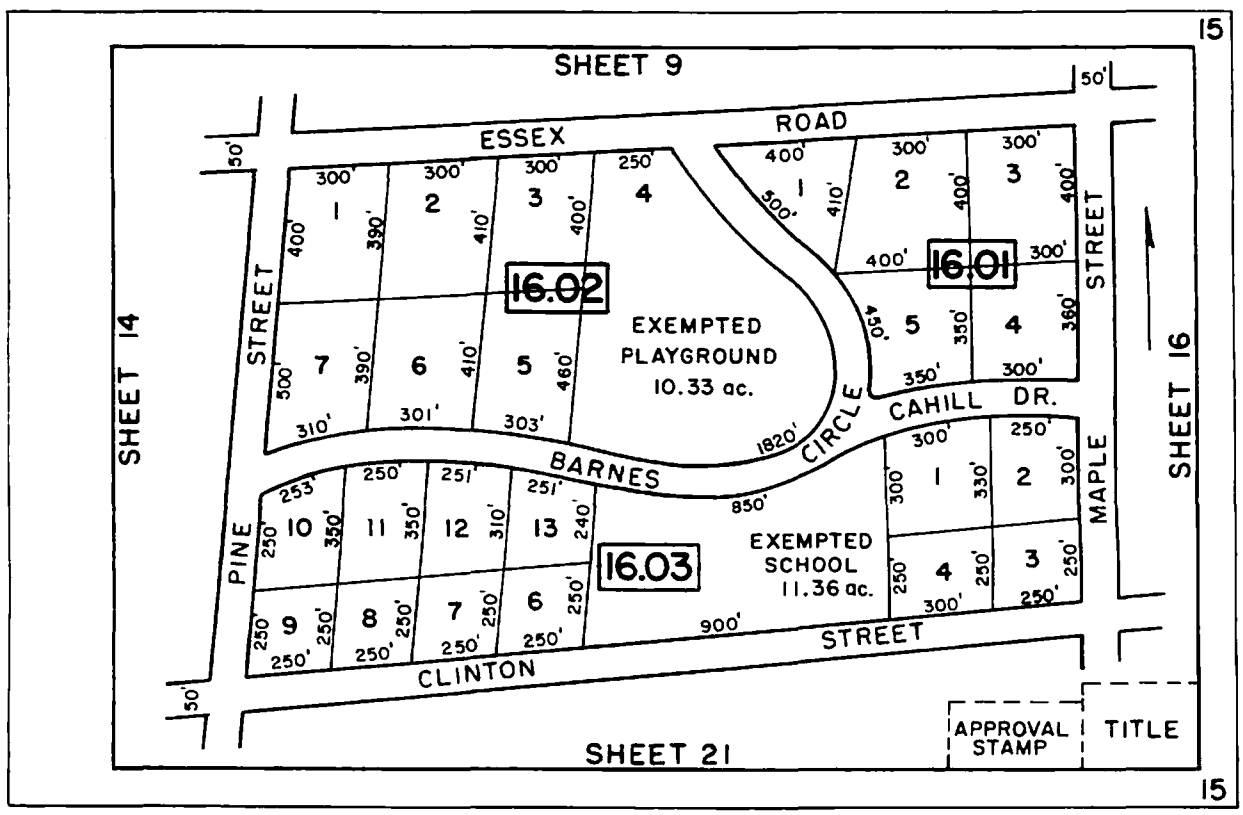
For urban areas, such maps may be prepared from the index or key maps or outline maps which show important physical features such as blocks, streets, railroads, etc. Lot lines are now shown and block lines may be distorted in order to provide space for entering the street name and the inside unit front foot values on each street.

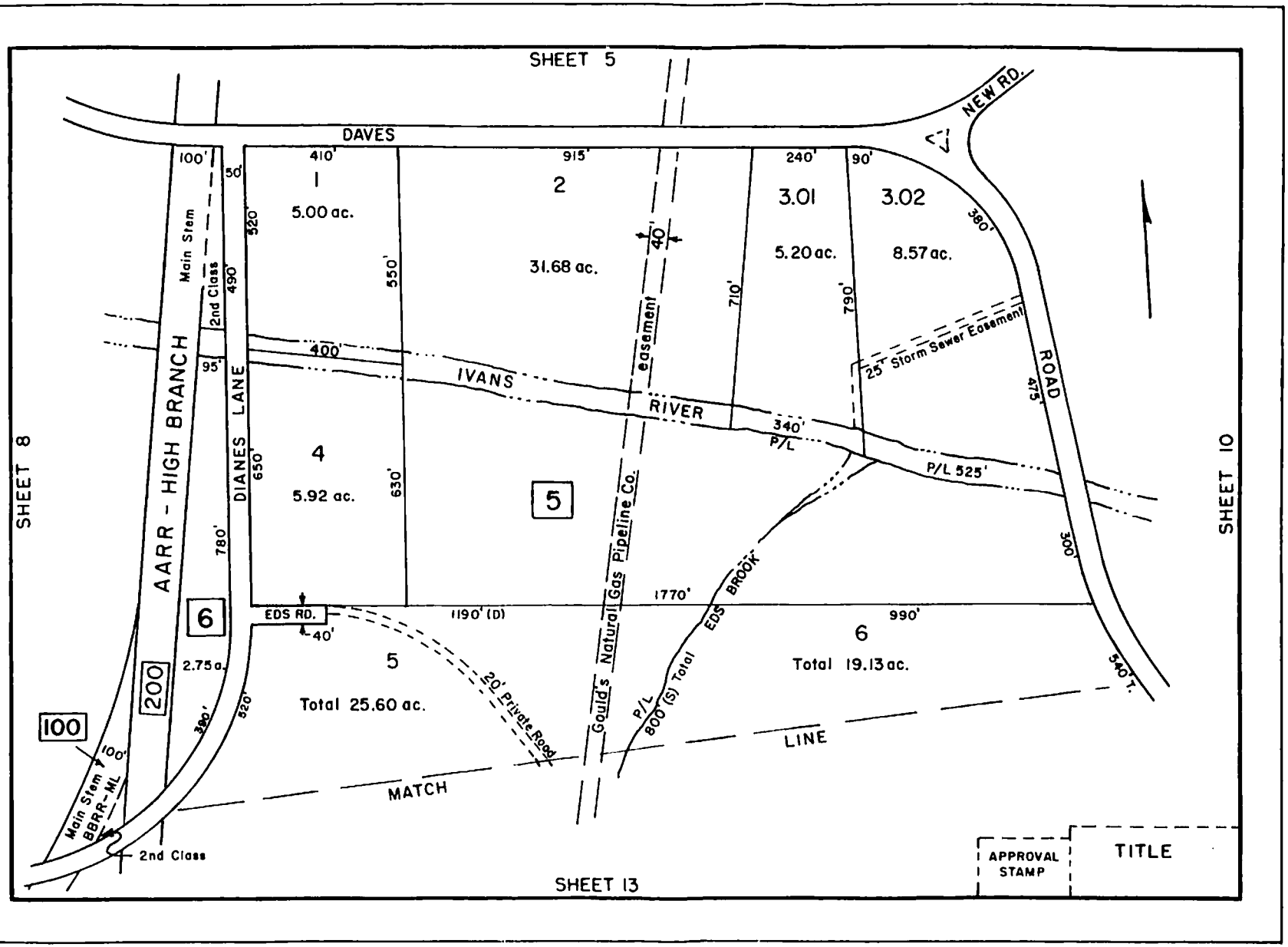
In larger cities which have many districts it is advisable to have more than one unit land value map for the entire city.

TAX MAPS

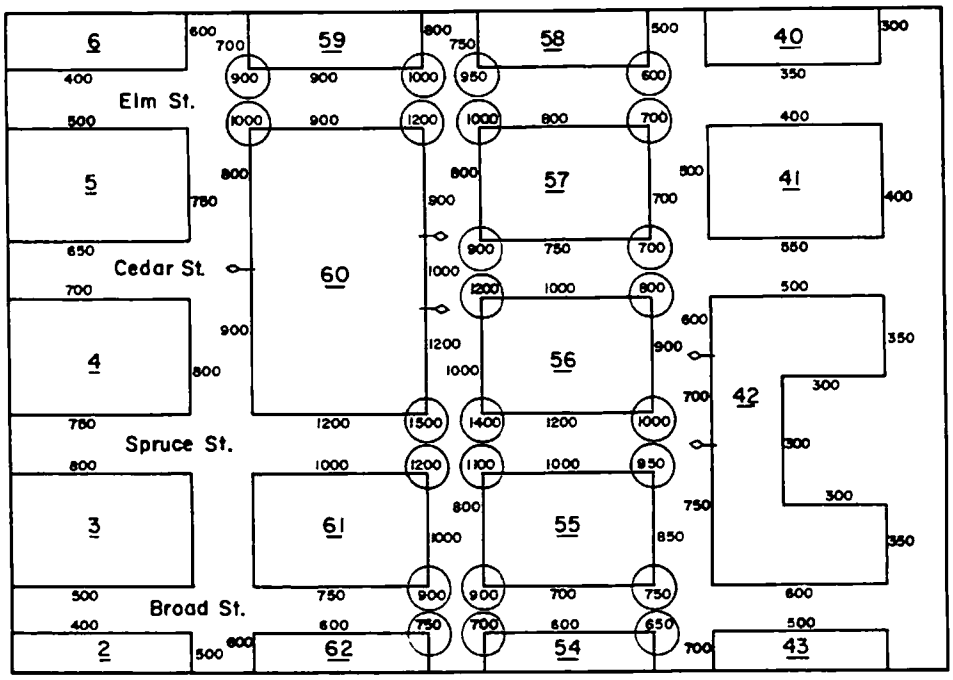
SHOWING BLOCK AND LOT DESIGNATION






SHEET 5
DAVES
NEW RD.
100'
50'
410'
915'
240'
90'
1
5.00 ac.
2
31.68 ac.
3.01
5.20 ac.
3.02
8.57 ac.
320'
550'
40'
710'
790'
380'
Main Stem
2nd Class
490'
400'
95'
IVANS
RIVER
easement
25' Storm Sewer Easement
ROAD
475'
340'
P/L
P/L 525'
SHEET 8
SHEET 10
AARR - HIGH BRANCH
DIANES LANE
650'
630'
4
5.92 ac.
5
780'
300'
EDS BROOK
1770'
EDS RD.
40'
1190' (D)
990'
6
2.75 a.
5
Total 25.60 ac.
6
Total 19.13 ac.
540' T.
20' Private Road
Gould's Natural Gas Pipeline Co.
P/L
800' (S) Total
100
200
320'
380'
100'
Main Stem BBRR-ML
2nd Class
MATCH
LINE
SHEET 13
APPROVAL STAMP
TITLE

Portion of Urban Land Value Map



After the land value maps are checked and corrected by field inspections, they are available to be exhibited to property owners.

Detailed procedures for developing unit land values on these maps are included in the section dealing with "Procedure for Urban Land Appraisal".

Permanent Property Record and Appraisal Cards

Permanent property record and appraisal cards have been redesigned as illustrated in this section of the manual. The redesign of the cards is necessary for two reasons; one, the cost schedules and specifications have had a major format revision and two, it is desired that the replacement cost calculations be capable of being performed either by hand or by computer.

The residential card has been designed for the front and back of a standard 10" x 14" card with a horizontal format similar to the present card. Because of the possible computer application, very precise and uniform entries must be made for each item relating to building costs. The example of completed property record cards will illustrate the nature of the entries required. It should be noted that the exact format of the property record cards will be dependant upon the system finally adopted for computer applications and the illustrated format is only one workable suggestion.

Each assessment jurisdiction may exercise its own option as to the design and size of its property record cards providing that the cards contain the essential features and information illustrated on the redesigned cards and the required data can be recorded uniformly.

The sides or pages of the Residential and Farm Property Record Card contain the following information:

Illustration #1 (Page I-18): Ownership and property description; sales record; land record, residential and non-qualified farms; qualified farm land value record; land value calculation; special notes; assessment record.

Illustration #2 (Page I-19): Building age and condition information; building description; building replacement cost calculation.

Illustration #3 (Page I-20): Building plot plan; floor area computations; porches, garages, carports; structure flat adds; accessory flat adds; accessory and farm building calculations.

The Commercial-Industrial property record card has undergone the greatest change in format, because of the requirement that there be the capability of either hand or computer calculation. Due to the many variations found in these types of structures, care is required to assure that any construction item of significance be accounted for and its cost calculated. Uniformity in method of recording data is the key to successful calculation in either instance but is more vital in a computerized calculation system.

The volume of information necessary on the commercial-industrial card has made it necessary to recommend a folded card with an overall size of 14" x 20" but folded to 14" x 10" resulting in four 14" x 10" sides. In addition, it may be necessary at times to use additional cards and supplementary cards for accessory items and buildings. These additional cards may be filed conveniently using the principal building card as a file folder.

Illustration #4 (Page I-21): Ownership and property identification data; sales control data; land data; land value calculation; assessment record.

Illustration #5 (Page I-22): Principal building description and calculation.

Illustration #6 (Page I-23): Standard building accessories data; special building accessories data; standard exterior accessories data; special exterior accessories data; building plot sketch; building area calculations; building valuation summary.

Illustration #7 (Page I-24): Building accessory codes; exterior accessory codes.

Property Ownership Index Cards

The permanent property record and appraisal cards contain the important data pertaining to each parcel. The property record cards are normally arranged geographically by map, block (or area) and lot numbers. To provide a quick method of retrieving assessment information for property owners, an alphabetical cross reference property ownership index consisting of a card file arranged in alphabetical order by the surnames of property owners may be employed. Each ownership entry is identified by a county number, a district number, a block number and suffix card, a lot number and suffix corresponding to the information required for the New Jersey Property Tax four line system and to the key data shown on the property record card as well as on the tax maps.

Property ownership index cards arranged alphabetically according to the property owners' names should be provided for all parcels, tracts or lots within the assessment jurisdiction including tax exempt parcels.

Block or Rural Map Sheet Record Folder

The permanent property record and appraisal cards for all parcels in each block or area covered by a rural map sheet should be kept in a block or area folder with any other records that are used in identifying property and in estimating the property values of the block area.

Each block or area folder is identified by the same key data as used on the block or rural map sheet for that particular block or area. Each property record card in the folder will also be identified by the block or area index number and the lot or parcel number shown on the map sheet for that property. When the block or map sheet folders are filed in the proper county, district, block and lot order, all information and valuable data pertaining to the lots or parcels in the block or area are readily available for reference and comparison.

The inside of the front cover of each block folder should contain a block map with block and lot numbers and the unit land values for the block and adjacent blocks. Each record folder for rural lands should contain a tax map print of the map sheet covering the parcels included in the folder.

Legal Description Index Cards

Another cross index that is helpful in providing quick access to property data may be provided by preparation of index cards filed by legal description and containing ownership information as well as the district, block and lot information. Two sets of these cards, one filed by legal description and the other by owners name, provide an additional means of quickly locating property records for reference.

Abstract of Deed

In most instances, the assessor receives an Abstract of Deed for each sales transaction. The abstract will serve as an aid in keeping the legal description current.

Market Data Records

Sales data are extremely important in the appraisal process. Such data serve as useful guides for determinig unit land values and as checks on the valuations of land and buildings and for calculating the ratio of the assessed values to fair cash values of properties.

The information included on each sale or transfer is of assistance in determing the validity and proper use of the sale data. Each transfer must be carefully scrutinized and those sales which do not appear to be bona fide must be set aside. These include sales between relatives, transfers by land contract, sales under financial duress, sales involving parties who are ignorant of value, transfers involving trades and sales consummated because of some special or unusual circumstances. The deeds must also be checked to make sure that additional property, perhaps personal property, is not included. It is desirable to contact either the grantor or grantee in each transfer. In this way it is possible in many cases to obtain information about the exact consideration and other data which are useful in the appraisal process.

The appraiser can obtain sales data on real property from the county records, market data from newspapers, other periodicals and SR-1A Forms. Upon request by any assessing official, the Local Property and Public Utility Branch will give assistance on the use of sales information.

SR-1A Forms

This form is used to report transfers of real estate and the assessed values of sales in each taxing jurisdiction. This information is checked and verified by the Local Property and Public Utility Branch for developing sales-assessment ratios throughout the State. Detailed instructions for the use of the form are furnished.

Capitalization of Income

Income and rental data are of value where they cover a large sample of properties of similar classifications as well as on specific properties. Sources of this data include information obtained from property owners, real estate agents, newspapers, banks, building and loan associations and housing associations.

Capitalized income is an important factor in arriving at value of income property. Procedures and examples of income analysis and the use of income as an approach to value are explained in the Section "Income Approach to Value".

Photographs of Prinicpal Buildings

Photographs of individual principal buildings are found helpful in identifying, appraising and comparing the valuations of similar properties. These building photographs may be mounted on the individual permanent property record cards or on separate block or map sheet cards. The picture of each building is mounted in the space provided for each lot in the block or map sheet and the cards are kept in the respective block or map sheet folder.

RESIDENTIAL PROPERTY RECORD

COMMERCIAL – INDUSTRIAL PROPERTY RECORD CARD

Sample of Front Section of the "R" Series Residential and Farm Property Record Card

Card of Cards

Identification Data

Site Data

Land Use Code
Neighborhood Type 1 = Rural 2 = Crossroads 3 = Suburbs 4 = Urban 5 = Subdivision 6 = Commercial 7 = Industrial
Road Type 0 = None 1 = Dirt 2 = Gravel 3 = Paved
Traffic 1 = Light 2 = Medium 3 = Heavy
View Influence 0 = None 1 = Detrimental 2 = Enhancing
Topography 1 = Level 2 = Low 3 = High 4 = Rolling
Corner Lot 0 = No 1 = Yes
Alley Adjoining Lot 0 = No 1 = Yes
Back Lot 0 = No 1 = Yes
Street Lights 0 = No 1 = Yes
Sidewalks 0 = No 1 = Yes
Underground Utilities 0 = No 1 = Yes
Sewer 0 = None 1 = Septic 2 = Private 3 = Public
Water 0 = None 1 = Well 2 = Private 3 = Public
Other Utilities 0 = None 1 = Gas 2 = Electricity 3 = Gas and Electricity
Easements 0 = None 1 = Moderate 2 = Extensive
Neighborhood Conformity 1 = Inferior 2 = Typical 3 = Superior
Neighborhood Trend 1 = Declining 2 = Static 3 = Improving
Proximity to Services 1 = Inferior 2 = Typical 3 = Superior
Cul-de-sac 0 = No 1 = Yes
Landscaping 1 = Inferior 2 = Typical 3 = Superior

Notes

Staff Control Data

Card Code
Source of Information 1 = Owner 2 = Spouse 3 = Tenant 4 = Agent 5 = Other 6 = Estimate 7 = Refusal
Interior Inspection 0 = No 1 = Yes
Cost Base Year
Enumerated By
Enumation Date (mo/yr)
Appraised By
Appraisal Date (mo/yr)
Reviewed By
Review Date (mo/yr)
Permanent Land Review Code
Permanent Improvement Review Code
Number of Principle Buildings

Sales Verification Data

Card Code
Sales Price
Sales Date (mo/yr)
Source 1 = Buyer 2 = Seller 3 = R.T. Fee 4 = Agent
Validity 0 = Not Valid 1 = Valid
Type of Sale 1 = Land 2 = Building 3 = Land and Building

Land Data

Unit Codes 1 = Front Feet 2 = Square Feet 3 = Acreage 4 = Site
Influence Factor Codes 1 = Depth Factor 2 = Frontage Factor 3 = Backlot Factor 4 = Triangle Factor (.3 or .6) 5 = Corner Lot Factor 6 = Topography Factor

Card Code	Unit	Frontage	Depth	Backlot Setback	Standard Depth	Area (decimal if acres)	Unit Value	Card Code	Influence Factors 1	2	3	4	5	6	Adjusted Unit Value	Land Value
															Total Land Value	

Sales Ratio Date	Sales Price	Ratio	Year	%	Assessment Building	Land	Total	Exempt SC/Vet	Appeal Decision C or S	Building	Land	Total

Qualified Farmland

Type	Price	Acres	Value
		Total Qualified Value	

State of New Jersey
Revised 7/1/2002

RESIDENTIAL PROPERTY RECORD CARD "R" SERIES

Owner

Street Address

Residence Description Data

Card Code

Residence Class ____ Numer of Units

Number of Stories ____ Number of Rooms

Number of Bedrooms ____ Year Built

Rowhouse/Townhouse End Unit 0 = No 1 = Yes

Depreciation

Condition 1 = Poor 2 = Fair 3 = Fair 4 = Good 5 = Excel.

Effective Age in Years

100% - (Eff. Age Depr. __.__% + Observ. Phys. Cond. ___%)

= Physical Net Condition

Obsolescence

100% - (Func. Obsol. __.__% + Econ. Obsol. __.__%)

= Obsol. Net Condition

Physical Net Cond. __.__% * Obsol Net Cond __.__%

= Final Net Condition

1 Roof

Roof Type 1 = Flat 2 = Hip 3 = Gable 4 = Gambrel 5 = Other

Roof Pitch 1 = None 2 = Shallow 3 = Normal 4 = Steep

Roof Material 1 = Shingle 2 = Slate 3 = Tile 4 = Copper 5 = Galvanized 6 = Shake 7 = Rolled Composition 8 = Other

2 Foundation

Foundation Type 1 = Concrete 2 = Concrete Block 3 = Post & Pier 4 = Concrete Slab 5 = Other

3 Basement

Basement 0 = No 1 = Yes

	Ql.	Area	Rate	Qual. Factor	Cost
Basement Area					
Bsmt Finish					
Basement Total Cost					

Bsmt. Area Qual. Factors 12 = 0.76 13 = 0.85 14 = 0.93 15 = 0.97 16 = 1.00 17 = 1.15 18 = 1.32 19 = 1.44 20 = 1.54 21 = 1.66 22 = 1.85 23 = 2.04

Bsmt. Finish Qual. Factors 12 = 0.55 13 = 0.70 14 = 0.85 15 = 0.92 16 = 1.00 17 = 1.15 18 = 1.30 19 = 1.30 20 = 1.30 21 = 1.42 22 = 1.56 23 = 1.72

4 Structure

Card Code

Exterior Wall Type 1 = Frame or Masonry Wall w/ wood stucco, aluminum or shingle 2 = Frame or Masonry Wall w/ Brick 3 = Frame or Masonry Wall w/ Stone 4 = Other

Built-In Garage 0 = No 1 = Yes

Built-In Porch 0 = No 1 = Yes

	Wall Type	Area	Rate	Wall Factor	Cost
First Floor					
Upper Floor					
Half Story					
Structure Base Cost					
Row/Townhouse End Unit Factor					
Adjusted Structure Base Cost (A,S,B,C.)					

	Area	Rate	Qual Factor	Cost
Unfin. Story				
Unfin 1/2 Story				
Partial Brick				
Partial Stone				
Final Adjusted Structure Base Cost (Includes A S B C.)				

Unfin Area Quality Factors 12 = 0.48 13 = 0.67 14 = 0.82 15 = 0.91 16 = 1.00 17 = 1.14 18 = 1.35 19 = 1.62 20 = 1.90 21 = 2.08 22 = 2.28 23 = 2.51

5 Floors

Construction 1 = Slab 2 = Supported Wood 3 = Other

Finish 1 = Wood 2 = Carpet 3 = Combination 4 = Other

	Area	Rate	Factor	(-)	Cost
Concrete Slab					
Concrete Slab Adjustment				(-)	

Concrete Slab Qual. Factors 12 = 0.82 13 = 0.82 14 = 0.82 15 = 0.91 16 = 1.00 17 = 1.14 18 = 1.35 19 = 1.62 20 = 1.95 21 = 2.13 22 = 2.34 23 = 2.58

6 Heating and Cooling

Card Code

Source 0 = None 1 = Coal 2 = Oil 3 = Gas 4 = Elec. 5 = Other

Heating System 0 = None 1 = Floor/Wall Furnace 2 = Gravity Hot Air 3 = Forced Hot Air 4 = Hot Water B.B. 5 = Hot Water/Steam 6 = Elec B.B. 7 = Radiant Elec 8 = Heat Pump

Central Cooling 0 = No 1 = Added to Heating Ductwork 3 = With Own Ductwork

	Ql.	Area	Rate	Qual. Factor	Cost
Heating					
Cooling					
Heating and Cooling Total Cost					

Heating/Cooling Quality Factors 12 = 0.69 13 = 0.82 14 = 0.95 15 = 1.00 16 = 1.00 17 = 1.12 18 = 1.15 19 = 1.30 20 = 1.49 21 = 1.63 22 = 1.79 23 = 1.97

7 Plumbing

Plumbing 0 = None 1 = Yes 2 = Water Only

	Base	Adj.	Ql.	Rate	Qual. Factor	Cost
4 Fix Bath						
3 Fix Bath						
2 Fix Bath						
1 Fix Bath						
Kitchen Sink						
Laundry Tub						
Hot Water Heater						
Plumbing Total Cost						

Plumbing Quality Factors 12 = 0.69 13 = 0.82 14 = 0.95 15 = 1.00 16 = 1.00 17 = 1.12 18 = 1.15 19 = 1.30 20 = 1.49 21 = 1.63 22 = 1.79 23 = 1.97

8 Electric Lighting

Electric Lighting 0 = No 1 = Yes

9 Built-In Appliances

Base Specs. Include Some Type of Stove and Oven for Each Dwelling Unit

Card Code

Built-In Appliances 0 = No 1 = Yes

	Base	Adj.	Ql.	Rate	Qual. Factor	Cost
Range Top/Oven						
Drop-In Range						
Stove w/ Oven						
Dishwasher						
Garbage Disposal						
Exh Hood & Fan						
Central Vacuum						
Electronic Oven						
Food Clr Pwr Ut						
Gar Door Opener						
Conv Kitchen						
Intercom System						
Built-In Appliance Total Cost						

Built-In Appliance Quality Factors 12 = 0.67 13 = 0.67 14 = 0.67 15 = 1.00 16 = 1.00 17 = 1.00 18 = 1.25 19 = 1.31 20 = 1.37 21 = 1.60 22 = 1.65 23 = 1.61

10 Fireplaces

Card Code

	Ql.	No.	Rate	Qual. Factor	Cost
Fireplace - 1 Story					
F.P. - 1 1/2 Story					
F.P. - 2 Story					
Add F.P. Same Stack					
Freestanding					
Heatilator & Fan					
Fireplace Total Cost					

Fireplace Quality Factors 12 = 0.90 13 = 0.90 14 = 0.95 15 = 0.95 16 = 1.00 17 = 1.15 18 = 1.30 19 = 1.45 20 = 1.60 21 = 1.75 22 = 1.92 23 = 2.12

11 Attic/Dormer

Expanded Attic 0 = No 1 = Yes Finished 0 = No 1 = Yes

Dormer 0 = No 1 = Yes

	Ql.	Area/LF	Rate	Qual. Factor	Unf. Factor	Cost
Attic						
Dormer						
Attic/Dormer Total Cost						

Attic/Dormer Quality Factors 12 = 0.70 13 = 0.88 14 = 0.93 15 = 0.97 16 = 1.00 17 = 1.15 18 = 1.30 19 = 1.30 20 = 1.34 21 = 1.46 2 = 1.61 23 = 1.77

12 Porches and Decks/Porches

Card Code

	Ql.	Area	Rate	Qual Factor	Cost
Deck/Patio					
Deck/Patio					
Open Porch					
Open Porch					
Enc. Porch					
Enc. Porch					
Porches & Decks/Patios Total Cost					

Porches & Decks/Patios Quality Factors 12 = 0.55 13 = 0.70 14 = 0.85 15 = 0.92 16 = 1.00 17 = 1.15 18 = 1.30 19 = 1.30 20 = 1.30 21 = 1.42 22 = 1.56 23 = 1.72

13 Attached Garages, Carports, and Canopies

Card Code

	Ql.	Area	Rate	Qual Factor	Wall Factor	Cost
Basement Garage						
Attached Garage						
Garage Total Cost						

Garage Quality Factors 12 = 0.52 13 = 0.66 14 = 0.85 15 = 0.93 16 = 1.00 17 = 1.13 18 = 1.24 19 = 1.39 20 = 1.58 21 = 1.73 22 = 1.90 23 = 2.09

	Ql.	Area	Rate	Qual Factor	Cost
Attached Carport					
Attached Canopy					
Garage Total Cost					

Carport/Canopy Quality Factors 12 = 0.59 13 = 0.78 14 = 0.92 15 = 0.96 16 = 1.00 17 = 1.06 18 = 1.10 19 = 1.13 20 = 1.19 21 = 1.30 22 = 1.43 23 = 1.57

Building Valuation Summary

3	Basement Total Cost	+
4	Final Adjusted Structure Base Cost	+
5	Slab Adjustment (-)	-
6	Heating & Cooling Total Cost	+
7	Plumbing Total Cost (+ or -)	
9	Built-In Appliance Total Cost	+
10	Fireplace Total Cost	+
11	Attic/Dormer Total Cost	+
12	Porches and Decks/Patios Total Cost	+
13	Garage (Att & Bsmt) Total Cost	+
	Attach Carport or Canopy Total Cost	+
	Total Base Replacement Cost	=
	Cost Conversion Factor	x
	Base Replacement Cost New	=
	Final Net Condition	x
	Structure Appraised Value	=
	Structure Flat Adds	+
	Principal Building Appraised Value	=
14	Accesory Buildings RCNLD	+
	Accesory Improvements RCNLD	+
	Accessory Flat Adds	+
	Accesory Items Total Value	=
	Total Building & Accessories Appraised Value	+
	Other Principal Structures	+
	Total Land Value	+
	Total Property Appraised Value (rounded)	=

I-19

State of New Jersey
Revised 7/1/2002

Floor Area Computations

Segment	Width	Length	Basement	First Story	Upper Stories	Half Story
Total Floor Area						

Porches/Decks, Garages, Carports, etc.

Item	Width	Length	Area	Item	Width	Length	Area

Notes

Structural Additions

Accessory Flat Additions

Building Sketch

Accessory and Farm Buildings

Card Code	*ID/Clm*	*Description*	*Quality Grade*	*Width*	*Length*	*Height*	*Area*	*Rate*	*Quality Factor*	*Cost*	*Cost Conv*	*RCH*	*Net Cond*	*RCHLD*
Accessory and Farm Buildings Total Depreciation														

COMMERCIAL-INDUSTRIAL PROPERTY RECORD CARD

CARD ___ OF ___ CARDS

IDENTIFICATION DATA

STAFF CONTROL DATA

Field	Column
Card Code	28
Source of Information 1 = Owner 2 = Spouse 3 = Tenant 4 = Agent 5 = Other 6 = Estimate 7 = Refusal	30
Interior Inspection 0 = No 1 = Yes	31
Cost Base Year	32
Enumerated By	34
Enumeration Date Month/Year	37
Appraised By	41
Appraisal Date Month/Year	44
Reviewed By	48
Review Date Month/Year	51
Permanent Land Review Code	55
Permanent Improvement Review Code	56
Number of Principal Buildings	57

SALES VERIFICATION DATA

Field	Column
Card Code	28
Sales Price	30
Sales Date Month/Year	40
Source 1 = Buyer 2 = Seller 3 = R.T. Fee 4 = Agent	44
Validity 0 = Not Valid 1 = Valid	45
Type of Sale 1 = Land 2 = Building 3 = Land and Building	46

SITE DATA

Field	Column
Land Use Code	47
Neighborhood Type 1 = Rural 2 = Crossroads 3 = Suburbs 4 = Urban 5 = Subdivision 6 = Commercial 7 = Industrial	49
Road Type 0 = None 1 = Dirt 2 = Gravel 3 = Paved	50
Traffic 1 = Light 2 = Medium 3 = Heavy	51
View Influence 0 = None 1 = Detrimental 2 = Enhancing	52
Topography 1 = Level 2 = Low 3 = High 4 = Rolling	53
Corner Lot 0 = No 1 = Yes	54
Alley Adjoining Lot 0 = No 1 = Yes	55
Back Lot 0 = No 1 = Yes	56
Street Lights 0 = No 1 = Yes	57
Sidewalks 0 = No 1 = Yes	58
Underground Utilities 0 = No 1 = Yes	59
Sewer 0 = None 1 = Septic 2 = Private 3 = Public	60
Water 0 = None 1 = Well 2 = Private 3 = Public	61
Other Utilities 0 = None 1 = Gas 2 = Electricity 3 = Gas and Electricity	62
Easements 0 = None 1 = Moderate 2 = Extensive	63
Neighborhood Conformity 1 = Inferior 2 = Typical 3 = Superior	64
Neighborhood Trend 1 = Declining 2 = Static 3 = Improving	65
Proximity to Services 1 = Inferior 2 = Typical 3 = Superior	66
Cul-de-sac 0 = No 1 = Yes	67
Landscaping 1 = Inferior 2 = Typical 3 = Superior	68

NOTES

LAND DATA

Unit Codes 1 = Front Feet 2 = Square Feet 3 = Acreage 4 = Site

Influence Factor Codes 1 = Depth Factor 2 = Frontage Factor 3 = Backlot Factor 4 = Triangle Factor .30 or .60 5 = Corner Lot Factor 6 = Topography Factor

Card Code 28	Unit 30	Frontage 32	Depth 36	Backlot Setback 40	Standard Depth 44	Area (decimal if acres) 48	Unit Value 55	Card Code 28	Influence Factors 1 30	2 33	3 36	4 39	5 41	6 44	Adjusted Unit Value 46	Land Value 52

Total Land Value

SUMMARY

Building No.	Building Value

All Principal Bldgs.	
Exterior Access.	
Total Bldgs & Ext. Acc.	
Total Land Value	
Total Appr. Value	

Sales Ratio: Date	Sales Price	Ratio	Assessment: Yr.	%	Building	Land	Total	Exempt SC/VET	C or S	Appeal Decision: Building	Land	Total

ILLUSTRATION #4

Sample of Front Section of the Commercial and Industrial Property Record Card

Owner

Street Address

COMMERCIAL BUILDING DATA

Card Code 28
Building Number 30
Predominant Shell Type 32
Predominant Use Type 1 - Apt. 2 - Comm. 3 - Indus. 35
Overall Quality 1 - Low 3 - Average 5 - High 36
Year Built 37

DEPRECIATION

Condition 1 - Poor 2 - Fair 3 - Normal 4 - Good 5 - Excel. 41
Effective Age in Years 42
100% - (Eff. Age Dep. ___.___% Obser. Phys. Cond. ___%)
= Physical Net Condition 45

OBSOLESCENCE

100% - (Func. Obsol. ___% + Econ. Obsol. ___%)
= Obsol. Net Condition 48
Physical Net Cond. ___.___% x Obsol. Net Cond. ___%
= Final Net Condition 51

1

STRUCTURAL SHELL

Card Code 28

Structural Shell Type Codes 101 - Lt. Wood Frame 102 - Heavy Timber 103 - Masonry Load Bearing 104 - Reinf. Conc. 105 - Steel 106 - Fireproof Steel 107 - Lt. Steel with Galvanized Steel Exterior 108 - Lt. Steel with Enameled Steel or Aluminum Exterior 109 - Lt. Steel with Insulated Sandwich Panel Exterior 110 - Bsmt. with Conc. Floor 111 - Bsmt. with Wood Floor 112 - Dock High Foundation 123 - Low Quality Service Station 124 - Below Average Quality Service Station 125 - Average Quality Service Station 126 - Above Average Quality Service Station 127 - Good Quality Service Station 133 - Low Quality Specialty Bldg. 134 - Below Average Quality Specialty Bldg. 135 - Average Quality Specialty Bldg. 136 - Above Average Quality Specialty Bldg. 137 - Good Quality Specialty Bldg. 145 - Garden Apartments

Shell Segment Quality Codes 1 - Low 3 - Average 5 - High

Segmt.	Ql	Type	Sty/Hgt	Ground Area	Perimeter
30	31	32	35	38	44
48	49	50	53	56	62
Card Code					28
30	31	32	35	38	44
48	49	50	53	56	62
Card Code					28
30	31	32	35	38	44
48	49	50	53	56	62
Card Code					28
30	31	32	35	38	44
48	49	50	53	56	62

Segmt.	MR	Quality Factor	Rate	Apt. Factor	Cost

Structural Shell Base Cost

2

EXTERIOR WALL FINISH

Card Code 28

Exterior Wall Finish Codes 1 - Grooved Plywood or Equiv. 2 - Wood Siding or Equiv. 3 - Cement Block or Equiv. 4 - Tilt-up Concrete Panels or Equiv. 5 - Common Brick on Block or Equiv. 6 - Face Brick on Wood Sheathing or Equiv. 7 - Face Brick on Block or Equiv. 8 - Common Brick on Reinf. Conc. or Equiv. 9 - Face Brick on Reinf. Conc. or Equiv. 10 - Precast Con. Panels with Expose Aggregate or Equiv. 11 - Metal and Glass Curtain Walls or Equiv. 12 - Stone or Equiv. 13 - Limestone or Equiv. 14 - Marble or Equiv. 15 - Polished Granite or Equiv. 16 - Store Front

Quality Codes 1 - Low 3 - Average 5 - High

Type	Ql.		Wall Area	Rate	W/D Factor	Cost
30	32	33				
				±		
40	42	43				
				±		
50	52	53				
				±		
60	62	63				
				±		
70	72	73				
				±		
Card Code					28	
30	32	33				
				±		
40	42	43				
				±		
50	52	53				
				±		

Exterior Wall Total Cost ±

3

INTERIOR FINISH

Card Code 28

Interior Finish Codes 1 - Apt. - Avg. Size 300 s.f. 400 s.f. 500 s.f. 600 s.f. 700 s.f. 800 s.f. 900 s.f. 1000 s.f. and over 2 - Apt. Utility Area 3 - Hotel or Equiv. 4 - Small Off. or Equiv. 5 - Large Open Offices or Equiv. 6 - Prof. Off. or Equiv. 7 - Clinics or Equiv. 8 - Large Retail Stores or Equiv. 9 - Retail Stores or Equiv. 10 - Banks or Equiv. 11 - Warehouse 12 - Light Mfg. Area 13 - Heavy Mfg. Area

Quality Codes 1 - Low 2 - Below Average 3 - Average 4 - Above Average 5 - High

Gross Apartment Floor Area ÷ Number of Apartment Units = Average Sq. Feet per Apartment 30

Type	Ql.		Floor Area	Rate	Cost
34	36	37			
				±	
44	46	47			
				±	
54	56	57			
				±	
64	66	67			
				±	
Card Code				28	
30	32	33			
				±	

Interior Finish Total Cost ±

4

HEATING/COOLING

Card Code 28

Building Use Type Codes 1 - Apt. 2 - Comm. 3 - Indust.

Heating/Cooling Unit Type Codes 1 - Hot Water 2 - Forced Hot Air 3 - Unit Heaters 4 - Central Cooling 5 - Package Cooling 6 - Central Combined 7 - Package Combined

Heating/Cooling Quality Codes 1 - Low 3 - Average 5 - High

Boiler Present for Type 1 Unit 0 - No 1 - Yes 30

Building Use Code	Unit Code	Ql.		Floor Area	Rate	Cost
31	32	33	34			
42	43	44	45			
53	54	55	56			

Heating/Cooling Base Cost
Type 1 Boiler Adjustment Factor
Heating/Cooling Predominant Class Quality Factor
Heating/Cooling Adjusted Cost

Industrial Unit Heaters

	Number	Rate	Cost
Small Ind. Ht.	64		
Med. Ind. Ht.	69		
Large Ind. Ht.	74		

Unit Heaters Total Cost

5

PLUMBING FIXTURES

Card Code 28

Plumbing Fixture Quality Codes 1 - Low 3 - Average 5 - High

	Number	Ql.	Rate	Cost
Apt. Fix.	30	35		
Comm. Fix.	36	41		
Ind. Fix.	42	47		

Plumbing Total Cost

6

ELECTRICAL INSTALLATION

Light Intensity 1 - Minimum 2 - Adequate 3 - Bright 48

Quality Codes 1 - Low 3 - Average 5 - High

Type	Floor Area	Ql.	Rate	Cost
Apt.	49	56		
Comm.	57	64		
Ind.	65	72		

Electrical Installation Total Cost

7

SPRINKLER SYSTEM

Card Code 28

Quality Codes 1 - Low 3 - Average 5 - High

Type	Floor Area	Ql.	Rate	Cost
Apt.	30	37		
Comm.	38	45		
Ind.	46	53		

Sprinkler System Base Cost
Sprinkler System Quality Factor
Sprinkler System Total Cost

STATE OF NEW JERSEY - L.P. & P.U.B. 6/1/78

ILLUSTRATION #5

Sample of Inside Top Section of the Commercial and Industrial Property Record Card

REVISED 4/79

ILLUSTRATION #6

Sample of the Inside Lower Section of the Commercial and Industrial Property Record Card

STANDARD BUILDING ACCESSORIES DATA

Card Code 28	Seq. No. 30-31	Access. Code 32-35	Measure One 36-41	Measure Two 42-47	Qi. 48	Rate	Quality + Factor -	Cost
Standard Building Accessories Total Cost								

SPECIAL BUILDING ACCESSORIES DATA

Card Code 28	Seq. No. 30-31	Description 32-58	Depr. Full Value 59-67
Special Building Accessories Total Depr. Full Value			

STANDARD EXTERIOR ACCESSORIES DATA

Card Code 28	Seq. No. 30-31	Access. Code 32-35	Measure One 36-41	Measure Two 42-47	Qi. 48	Rate	Quality Factor	Final Net Cond.	Cost
Standard Exterior Accessories Total Depreciated Cost									
Cost Conversion Factor									
Standard Exterior Accessories Total Cost									

SPECIAL EXTERIOR ACCESSORIES DATA

Card Code 28	Seq. No. 30-31	Description 32-58	Depr. Full Value 59-67
Special Exterior Accessories Total Depr. Full Value			

BUILDING SKETCH Scale 1 □ =

Segment	Width x Length	Height	Ground Area	Perimeter	Notes
	x				
	x				
	x				
	x				
	x				
	x				
	x				
	x				
	x				

BUILDING VALUATION SUMMARY

1.	Structural Shell Base Cost	
2.	Exterior Finish Total Cost	
3.	Interior Finish Total Cost	
4.	Heating/Cooling Total Cost	
	Industrial Unit Heaters Total Cost	
5.	Plumbing Fixtures Total Cost	
6.	Electrical Installation Total Cost	
7.	Sprinkler System Total Cost	
8.	Standard Bldg. Access. Total Cost (+)	
	1975 Replacement Cost	
	COST CONVERSION FACTOR	
	Replacement Cost New	
	Final Net Condition	
	Depreciated Building Cost	
	Special Bldg. Access. Depr. Full Cost	
	TOTAL BUILDING VALUE	
9.	Standard Ext. Access. Total Cost	
	Special Ext. Access. Depr. Full Cost	
	EXTERIOR ACCESSORIES TOTAL COST	
10.	TOTAL VALUE - Bldg. & Ext. Access.	
	Land Value	
	TOTAL PROPERTY APPRAISED VALUE	

ILLUSTRATION # 7

Sample of Code Section of the Commercial and Industrial Property Record Card

BUILDING ACCESSORY CODES

Item	Code	Measure One	Measure Two	Quality Codes	Quality Adj.
Special Purpose Doors	SD01	No. of Units		1, 3, 5	No
Auto. Swinging Pedestrian Door	SD02	No. of Leafs		1, 3, 5	No
Auto. Slide Pedestrian Door	SD03	No. of Leafs		1, 3, 5	No
Air Curtain Pedestrian Door	SD04	No. of Leafs		1, 3, 5	No
Wood Sectional Industrial Door	SD05	No. of Doors	S.F. Door Area	1, 3, 5	No
Steel Sectional Industrial Door	SD06	No. of Doors	S.F. Door Area	1, 3, 5	No
Steel Roll-up Industrial Door	SD07	No. of Doors	S.F. Door Area	1, 3, 5	No
Steel Hangar Door	SD08	No. of Doors	S.F. Door Area	1, 3, 5	No
Electric Door Operator	SD09	No. of Units		1, 3, 5	No
Exterior Stairs					
Wood Stairs	ES01	No. of Flights		1, 3, 5	No
Reinforced Concrete Stairs	ES02	No. of Flights		1, 3, 5	No
Steel and Concrete Stairs	ES03	No. of Flights		1, 3, 5	No
Steel Stairs	ES04	No. of Flights		1, 3, 5	No
Fireplaces	FP01	No. of Units		1 thru 5	No
Floor Adjustments					
Concrete Slab Floor	FA01		S.F. Floor Area	1, 3, 5	No
Wood Deck Floor	FA02		S.F. Floor Area	1, 3, 5	No
Concrete Deck Floor	FA03		S.F. Floor Area	1, 3, 5	No
Reinforced Concrete Floor	FA04		S.F. Floor Area	1, 3, 5	No
Balconies and Decks					
Wood Balcony/Deck	BA01		S.F. Floor Area	1, 3, 5	No
Concrete Balcony/Deck	BA02		S.F. Floor Area	1, 3, 5	No
Steel/Concrete Balcony/Deck	BA03		S.F. Floor Area	1, 3, 5	No
Floor Grating					
Steel Grating	FG01		S.F. Grating Ar.	1, 3, 5	No
Aluminum Grating	FG02		S.F. Grating Ar.	1, 3, 5	No
Plastic Grating	FG03		S.F. Grating Ar.	1, 3, 5	No
Roof Adjustments					
Light Wood	RA01		S.F. Roof Area	1, 3, 5	No
Heavy Timber	RA02		S.F. Roof Area	1, 3, 5	No
Steel	RA03		S.F. Roof Area	1, 3, 5	No
Concrete	RA04		S.F. Roof Area	1, 3, 5	No
Galvanized Steel	RA05		S.F. Roof Area	1, 3, 5	No
Enameled Steel	RA06		S.F. Roof Area	1, 3, 5	No
Insulated Sandwich Panels	RA07		S.F. Roof Area	1, 3, 5	No
Precast Concrete	RA08		S.F. Roof Area	1, 3, 5	No
Canopies	RA09		S.F. Canopy Ar.	1, 3, 5	No
Wide Span Roofing					
Wood Truss	WR01	Span Width	S.F. Roof Area	1, 3, 5	Yes
Wood Glu-Lam Beam	WR02	Span Width	S.F. Roof Area	1, 3, 5	Yes
Steel Truss	WR03	Span Width	S.F. Roof Area	1, 3, 5	Yes
Precast Concrete Beam	WR04	Span Width	S.F. Roof Area	1, 3, 5	Yes
Bank Vaults and Doors					
Cash Type Bank Vault	BV01		S.F. Floor Area	None	No
Record Type Bank Vault	BV02		S.F. Floor Area	None	No
Cash Type Vault Door	BV03	Door Thickness	S.F. Door Area	None	No
Record Type Vault Door	BV04	Door Thickness	S.F. Door Area	None	No
Bank Accessories					
Drive-In Windows	BA01	No. of Units		1, 3, 5	No
Night Depositories	BA02	No. of Units		1, 3, 5	No
Pneumatic Tube System	BA03	No. of Stations		1, 3, 5	No
Cold Storage Rooms					
Cooler (35° - 60°)	CS01		S.F. Floor Area	None	No
Chiller (5° - 35°)	CS02		S.F. Floor Area	None	No
Freezer (-15° - 5°)	CS03		S.F. Floor Area	None	No
Quick Freezer (-45° - -15°)	CS04		S.F. Floor Area	None	No
Escalators					
10 Foot Height	EF01	No. of Flights	Unit Width	1, 3, 5	Yes
12 Foot Height	EF02	No. of Flights	Unit Width	1, 3, 5	Yes
14 Foot Height	EF03	No. of Flights	Unit Width	1, 3, 5	Yes
16 Foot Height	EF04	No. of Flights	Unit Width	1, 3, 5	Yes
18 Foot Height	EF05	No. of Flights	Unit Width	1, 3, 5	Yes
20 Foot Height	EF06	No. of Flights	Unit Width	1, 3, 5	Yes
Elevators					
Passenger - Auto. - Local	EV01	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Passenger - Auto. - Express	EV02	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Passenger - Manual - Local	EV03	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Passenger - Manual - Express	EV04	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Passenger - Hydraulic	EV05	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Freight - Electric	EV06	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Freight - Hydraulic	EV07	No. of Units	Capacity (Lbs.)	1, 3, 5	Yes
Passenger Elevators - Total Stops	EV08	No. of Stops		1, 3, 5	Yes
Freight Elevators - Total Stops	EV09	No. of Stops		1, 3, 5	Yes
Sidewalk - Electric	EV10	No. of Units		None	No
Sidewalk - Hydraulic	EV11	No. of Units		None	No
Sidewalk - Manual	EV12	No. of Units		None	No
Dumbwaiters - Electric	EV13	No. of Units		None	No
Dumbwaiters - Manual	EV14	No. of Units		None	No
Personal Lift - Vertical Belt Type	EV15	No. of Units		None	No
Personal Lift - Total Floors Over 2	EV16	No. of Units		None	No

EXTERIOR ACCESSORY CODES

Item	Code	Measure One	Measure Two	Quality Codes	Quality Adj.
Service Station Accessories					
Two Pump Island - Concrete	SS01	No. of Islands		None	No
Three Pump Island - Concrete	SS02	No. of Islands		None	No
Four Pump Island - Concrete	SS03	No. of Islands		None	No
Canopies	SS04		S.F. Canopy Ar.	1 thru 5	No
Paving					
Concrete - Light	PV01		S.F. Paved Area	None	No
Concrete - Average	PV02		S.F. Paved Area	None	No
Concrete - Heavy	PV03		S.F. Paved Area	None	No
Asphalt - Light	PV04		S.F. Paved Area	None	No
Asphalt - Average	PV05		S.F. Paved Area	None	No
Asphalt - Heavy	PV06		S.F. Paved Area	None	No
Curbing	PV07				
Swimming Pools					
Rectangular Shape	SP01		S.F. Surface Ar.	1, 3, 5	Yes
Irregular Shape	SP02		S.F. Surface Ar.	1, 3, 5	Yes
Pole-Mounted Floodlights					
Poles - Wood	FL01	No. of Poles		1, 3, 5	No
Poles - Steel	FL02	No. of Poles		1, 3, 5	No
Poles - Aluminum and Concrete	FL03	No. of Poles		1, 3, 5	No
Light Fixtures - Incandescent	FL04	No. of Fixtures		1, 3, 5	No
Light Fixtures - Flourescent	FL05	No. of Fixtures		1, 3, 5	No
Light Fixtures - Mercury Vapor	FL06	No. of Fixtures		1, 3, 5	No
Mobile Home Parks/Drive-In Theatres					
Drive-In Theatre	MT01	No. of Spaces		1 thru 5	No
Mobile Home Park	MT02	No. of Spaces		1 thru 5	No
Theatre Screen	MT03		S.F. Screen Ar.	1 thru 5	No
Utility Buildings					
Wood Frame	UB01		S.F. Floor Area	1, 3, 5	No
Wood Frame with Metal Siding	UB02		S.F. Floor Area	1, 3, 5	No
Concrete Block	UB03		S.F. Floor Area	1, 3, 5	No
Shed Lean-to Addition	UP		S.F. Floor Area	1, 3, 5	No
Greenhouses					
Unheated	GH01		S.F. Floor Area	1, 3, 5	Yes
Heated	GH02		S.F. Floor Area	1, 3, 5	Yes
Utility Building/Greenhouse Flooring					
Wood Floor	FR01		S.F. Floor Area	1, 3, 5	No
Concrete Floor	FR02		S.F. Floor Area	1, 3, 5	No
Fencing and Gates					
Wood Fence	FC01	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Concrete Block Fence	FC02	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Brick/Stone Fence	FC03	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Chain Link Fence	FC04	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Chain Link Swing Gate	FC05	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Wood Swing Gate	FC07	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Extra Rail/Barbed Wire Top Bracket	FC08	Fence Mgt.(Ft.)	Fence Lgt. (Ft.)	1, 3, 5	Yes
Marine Docks					
Small Boat Moorage	MD01		S.F. Area	1 thru 5	No
Enclosure Roof	MD02		S.F. Area	1 thru 5	No
Enclosure Walls	MD03		S.F. Area	1 thru 5	No
Ship Dock	MD04		S.F. Area	1 thru 5	No
Marine Bulkhead - Wood	MD05		L.F. Perimeter	1 thru 5	No
Marine Bulkhead - Steel	MD06		L.F. Perimeter	1 thru 5	No
Marine Bulkhead - Concrete	MD07		L.F. Perimeter	1 thru 5	No
Bulkhead - Residential Type	MD08		L.F. Perimeter	1 thru 5	No
Grain Elevators					
50 Foot Height	GE01	Diameter (Ft.)	Perimeter (Ft.)	None	No
70 Foot Height	GE02	Diameter (Ft.)	Perimeter (Ft.)	None	No
90 Foot Height	GE03	Diameter (Ft.)	Perimeter (Ft.)	None	No
110 Foot Height	GE04	Diameter (Ft.)	Perimeter (Ft.)	None	No
130 Foot Height	GE05	Diameter (Ft.)	Perimeter (Ft.)	None	No
Headhouse/Conveyor Gallery	GE06	Enter Yes or No		None	No
Industrial Stacks/Chimneys					
Unlined Brick	IC01	Diameter (Ft.)	Height (Ft.)	None	No
Lined Firebrick	IC02	Diameter (Ft.)	Height (Ft.)	None	No
Concrete	IC03	Diameter (Ft.)	Height (Ft.)	None	No
Craneways					
Indoor	CW01	Capacity (Tons)	Length (Ft.)	None	No
Outdoor	CW02	Capacity (Tons)	Length (Ft.)	None	No
Truck Scales	TSD1	Capacity (Tons)		None	No
Loading Docks					
Lightwood Dock	LD01		S.F. Surface Ar.	1 thru 5	No
Heavy Timber Dock	LD02		S.F. Surface Ar.	1 thru 5	No
Concrete Dock	LD03		S.F. Surface Ar.	1 thru 5	No
Dock Ramp	LD04		S.F. Surface Ar.	1 thru 5	No
Ramp Floor to Floor	LD05		S.F. Surface Ar.	1 thru 5	No
Mechanical Leveler	LD06		S.F. Surface Ar.	None	No
Hydraulic Leveler	LD07		S.F. Surface Ar.	None	No
Railroad Spurs					
Bumper Stop	RR01	No. of Units		None	No
Switch	RR02	No. of Units		None	No
Pair Flasher Signals	RR03	No. of Units		None	No
Siding Trackage	RR04		Length (Ft.)	None	No
Steel Grain Storage Tanks	GT01	No. of Tanks	Capacity (Bu.)	None	No
Elevated Storage Tanks					
Wood Tank and Tower	ST01	Height (Ft.)	Capacity (Gal.)	None	No
Steel Tank and Tower	ST02	Height (Ft.)	Capacity (Gal.)	None	No
Bulk Petroleum Storage Tanks					
Flat or Cone Roof	PT01	No. of Tanks	Capacity (Bbls.)	None	No
Floating or Pontoon Roof	PT02	No. of Tanks	Capacity (Bbls.)	None	No
Double Deck Roof	PT03	No. of Tanks	Capacity (Bbls.)	None	No
Fuel Storage Tanks					
Underground	FT01	No. of Tanks	Capacity (Gal.)	None	No
Above Ground - Horizontal	FT02	No. of Tanks	Capacity (Gal.)	None	No
Above Ground - Vertical	FT03	No. of Tanks	Capacity (Gal.)	None	No
Propane Pressure Storage Tanks	PP01	No. of Tanks	Capacity (Gal.)	None	No
Large Pressure Storage Tanks					
5 PSI Hemisphere Type	LT01	No. of Tanks	Capacity (Bbls.)	None	No
10 PSI Hemisphere Type	LT02	No. of Tanks	Capacity (Bbls.)	None	No
20 PSI Hemisphere Type	LT03	No. of Tanks	Capacity (Bbls.)	None	No
30 PSI Sphere Type	LT04	No. of Tanks	Capacity (Bbls.)	None	No
50 PSI Sphere Type	LT05	No. of Tanks	Capacity (Bbls.)	None	No
75 PSI Sphere Type	LT06	No. of Tanks	Capacity (Bbls.)	None	No

Note Quality Codes 1 = Low
2 = Below Average
3 = Average
4 = Above Average
5 = High

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Reserved for future use

THE THREE APPROACHES TO VALUE

Introduction

An appraisal is an estimate of value. An appraisal is the base for an assessment. Therefore, an assessment requires an estimate of value. There are three basic economic approaches to estimate the value of property:

A. The Cost Approach - sometimes referred to as cost less depreciation or the summation approach because the value of land must be added to the value of the structure.

B. The Sales Approach - sometimes referred to as sales comparison or the market approach.

C. The Income Approach - sometimes referred to as the capitalization approach or the income capitalization approach.

The cost approach, applicable to structures and other land improvements, is based on the premise that the cost new of a structure is the highest possible value. From this highest possible value is deducted depreciation composed of physical deterioration and obsolescence applicable to the subject structure. The cost new less depreciation results in an estimate or evidence of value.

The sales approach, applicable to land and structures, is based on the premise that the sales price agreed upon between a willing buyer and willing seller for a specific property is an evidence of value. The size, quality and effective age of properties which have sold are compared to the characteristics of the subject property. Based on this comparison, the value of a subject property is estimated from the sale prices of comparable properties.

The income approach, applicable only to income producing property such as commercial property and farms, is based on the premise that the net income (gross income less operating expenses) when capitalized by a rate commensurate with the risk, yields an evidence of the full value of the property. The income approach, described in detail in another section of the manual, is more difficult for the assessor/appraiser to use because the key information, gross income and operating expenses, is difficult to obtain. The fee appraiser obtains this information from his client before he starts his appraisal. The assessor/appraiser may find it difficult to obtain all the key information desired from property owners simply because the information may tend to increase the property appraisal and assessment. Nevertheless, enough information can usually be obtained to make this approach important and useful to the assessor/appraiser. Furthermore, if a property owner should appeal an assessment, the desired information can be obtained by request or subpoena prior to adjudication of the appeal. A knowledge of the income approach is thus most important to the assessor/appraiser.

The Correlation of the Three Approaches

It is necessary for the assessor to compare the three indications of value derived by the three approaches outlined previously. It could be that the three estimates might be reasonably close together, but it could also be that one or two of the estimates or all three of them may be widely different. In this event, it would be necessary to review the three calculations and also the data used in the three calculations and to consider in detail the sources from which the data was obtained. By this process it is possible to review and correlate the three estimates of value in order to arrive at a conclusion.

Applicability of the Three Approaches to Value

As indicated in the introduction, all approaches are not applicable to all types and classes of property. However, all approaches, if applicable, are useful in arriving at a final estimate of value.

For the assessor/appraiser, the cost approach will be used as a starting point for all structures. However, the important element of loss in value due to deterioration and obsolescence can be best measured by use of the sales or income approaches. The sales approach also will be used for estimating the value of residential and industrial land. The income approach also will be used for estimating the value of rural and commercial land. Therefore, the Manual, although containing many more pages pertaining to the cost approach, can only be used intelligently if all approaches to value are involved.

The following chart illustrates the applicability of the three approaches to value to various types and classes of property:

APPLICABILITY OF APPROACHES TO VALUE

	TYPE OF PROPERTY	Cost or Summation Approach (Replacement Cost Less Depreciation)	Sales or Market Approach (Comparison With Sales or Market)	Income Approach (Capitalization of Net Income)
LAND				
	residential	NO	YES	NO seldom rented
	commercial	NO	*Doubtful too few sales	YES
	industrial	NO	*Doubtful too few sales	*Doubtful-seldom rented
	rural	NO	NO	YES
BUILDINGS				
	residential	YES	YES	NO seldom rented
	commercial	YES	YES	YES
	industrial	YES	*Doubtful too few sales	*Doubtful-seldom rented
	rural	YES	YES	NO

* Comparable sales and/or rentals for this type of property usually can be obtained from other areas if not available in the subject municipality.

INTRODUCTION TO LAND VALUATION

The appraisal of real property for assessment purposes is separated into the appraisal of land itself and the improvements, if any, added to the land. The improvements will deteriorate but the land, except for the depletion by erosion or physical removal, is a permanent asset.

The appraisal of land involves the analysis of each parcel for its ability to produce profitably or perform services for the owner. This is accomplished by judging the use which, in the opinion of the appraiser, will produce the greatest future benefits to the owner of the land.

In this analysis of land, the appraiser should understand the application and effect of the various elements which tend to establish the value. Some items, having little or no influence on the value of land if used for one purpose, will be of vital importance for land utilized for another purpose. The items or factors to be considered include the following:

1. Supply and demand - the supply of and demand for land will regulate the value of land for all uses.

2. Highest and best use - an opinion of the land use which will produce the greatest future benefits must be formed for all types of land. The highest value will be placed on land capable of being used in a profitable manner as regulated by the supply and demand.

   The utility of land will vary from time to time. For example, the demand for housing may require the development of good farm land into lots or parcels for residential use; the development of land for residential purposes may, in turn, create a demand for commercial and industrial uses for more farm land. Conversely, a lessening in the demand for the higher uses of land will tend to cause the values to revert to a lower level.

3. Frontage - the location of land on a street or highway is desirable for uses such as residential or commercial sites but frontage on a highway is of less importance for use as farm or industrial land.

4. Depth - farm land and industrial sites require greater depths than residential and commercial sites.

5. Shape - the shape of small residential and commercial sites is more important than for farm and industrial tracts which require larger areas.

6. Size - the importance of size of land parcels varies for different uses. Economic farm size has increased with the mechanization of farming methods. The demand for large residential sites decreases as the economic capability of the potential buyer decreases.

7. Topography - the effect of topography depends upon the uses. Extreme variations in topography within a small area tend to limit the land use more than minor variations in elevation.

8. Soil Type - the type of soil is of vital importance for farm use. Commercial and industrial uses ofter require certain subsoil qualities for heavy foundations but residential land requires only the ability to support the structure and produce a lawn.

9. Productivity and capability of soil - the productivity and capability of soil to produce crops and support livestock is important to farm valuation.

10. Location - the location of land is of importance for all uses but to varying degrees. For instance, farm land does not require the same degree of accessability as commercial or residential land and a corner location is of much more importance for commercial use than for industrial use.

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PROCEDURE FOR RURAL LAND APPRAISAL

The procedures used in the appraisal of rural lands and their improvements are the same as those used in appraising any other type of property. Consideration must be given to (1) the productive and earning capacity, if any, past, present and prospective, (2) value of the land and the depreciated value (physical, functional and economic) of the improvements, if any, (3) the market value by comparison, (4) all other matters that may affect the value of the property.

Primary emphasis is placed on the earning capacity of the land, but special consideration must be given to market demand for tracts of accessible rural property possessing varying physical and economic characteristics peculiar only to the individual tracts, irrespective of their ownership.

With this measure of productivity and the resultant equity of assessment, with consistency, uniformity and equality as a main objective, it is apparent that the primary steps to be taken must include the identification and classification of the rural tracts to be assessed and the interpretation of these classifications into terms of dollar value.

While the land capability and productivity are main factors, other considerations such as the location of the property, types of roads, social and educational facilities, as well as the proximity of residential or industrial and suburban developments influence the value of a particular tract.

Since land value is a "local product", no set values for various land classes can be developed which will apply uniformly throughout the state. The appraiser in each jurisdiction must develop his own land values and standards, based on an analysis of his own area or areas. Therefore, it is not intended for the values used for illustrative purposes in this section of the manual to be applied in any area as all land values must be proven by proper analysis of all factors affecting the land value.

It is most evident that, for purposes of rural land appraisal, it will be necessary to obtain basic data which should include information concerning the productivity and distribution of soils for the purpose for which the land is or could be used, the locational and other amenities possessed by the land, the hazards connected with the operational processes as well as information indicating the way in which the local market evaluates these factors.

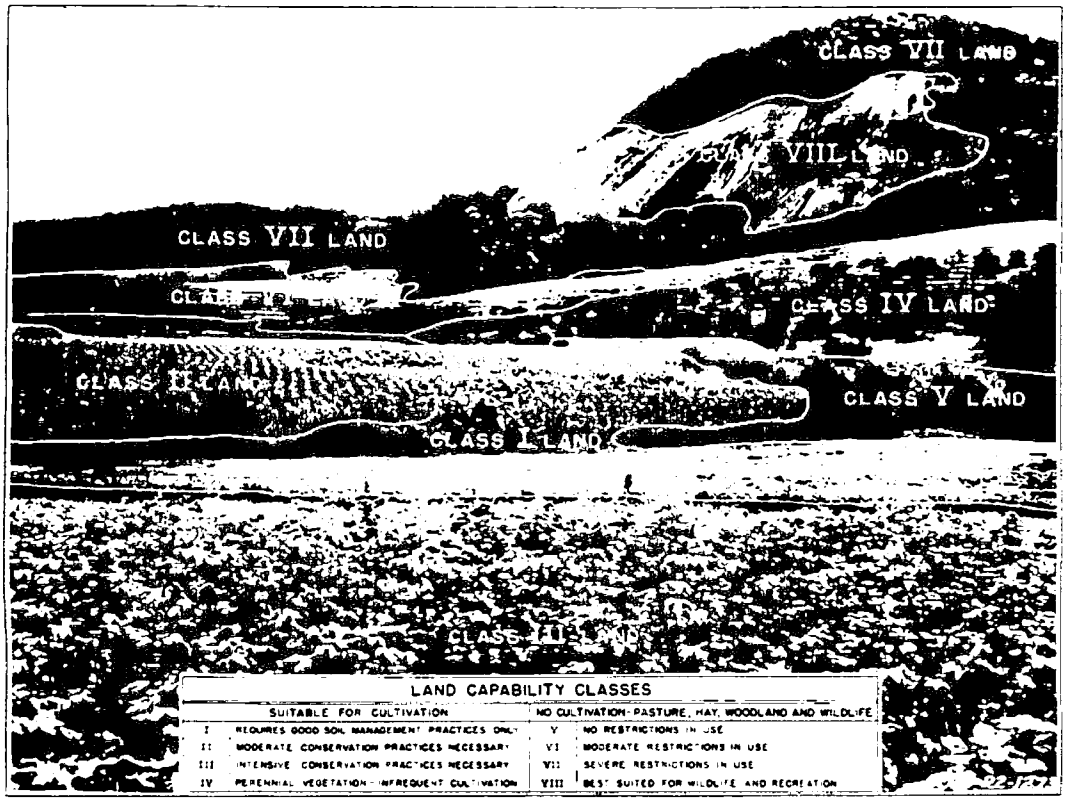
Land capability classifications have been determined on the basis of careful examinations of the land by the Soil Conservation Service and other agricultural and private agencies. They also determine the slope, the erosion, the overflow hazards, the wetness of the land and other significant characteristics as well as the present use of the land. These facts are recorded on aerial photographs which are useful to the assessor in determining land classifications.

Soil Conservation Service Land Capability Classes

The land capability classes range from the best and most easily farmed land to land that has no value for cultivation, grazing, or forestry but may be suitable for wildlife, recreation, or watershed protection.

There are eight classes of land which fall into two broad groups. Lands which are suitable for cultivation are included in classes I to IV, and lands not suitable for cultivation are included in classes V to VIII inclusive.

Oblique Photo Showing Typical Example of Land Capability Classes



The classes are defined by the Soil Conservation Service as follows:

Class I - Very good land that is easy to work and can be cultivated safely with ordinary good farming methods. Soils are deep and productive. The land is nearly level and there is little or no erosion.

Class II - Good land that can be cultivated safely with easily applied practices. Soils are deep and productive but need liming and fertilizing. Gentle slopes need contouring. Bottom land needs improved drainage.

Class III - Moderately good land; can be cultivated safely with intensive treatments. Soils are good; slopes are from 4 to 14 percent. It has moderate to severe erosion and washes easily. It needs contour strip cropping, a rotation with more than one clean tilled crop every 5 years, cover crops, and soil-building practices.

Class IV - Fairly good land that can be cultivated only occasionally. Slopes are from 12 to 18 percent and erosion is moderate to severe. It is best suited to pasture or hay, and if cultivated, should be contour cropped and protected with diversion terraces.

Class V - Land is suited for grazing or forestry with slight or no limitations. It is nearly level and usually there is little or no erosion. It is wet or stony or otherwise unsuited for cultivation. It needs only management to remain productive for grass or trees.

Class VI - Land not suited for cultivation but should make good pasture with careful management and improvement through reseeding and fertilizing. It is also suited for trees. It washes easily and has steep slopes that range from 18 to 20 percent.

Class VII - Land not suited for cultivation but suited for grass or trees with very careful management. It has shallow soil and steep slopes that range from 26 to 60 percent.

Class VIII - Land not suited for cultivation, grazing or forestry, but is suited for wildlife or recreation or for watershed protection. It is usually very steep, rough, stony, sandy, wet or severly eroded.

The eight land classifications are general classes. The appraiser may find that subclasses will have to be developed to properly classify the rural land in his jurisdiction. The soil surveyor and farm planner of the local soil conservation district can assist the appraiser in developing sub-class definitions and in pointing out examples of such classes in the assessment jurisdiction.

Interpretation of Land Capability Maps for Assessment Purposes

Land capability photo maps as prepared by the Soil Conservation Service for cooperating farm operators may be obtained by the assessing officials as an aid in the classification of rural lands from individual farmers or from the local soil conservation district supervisor.

Land Capability Map

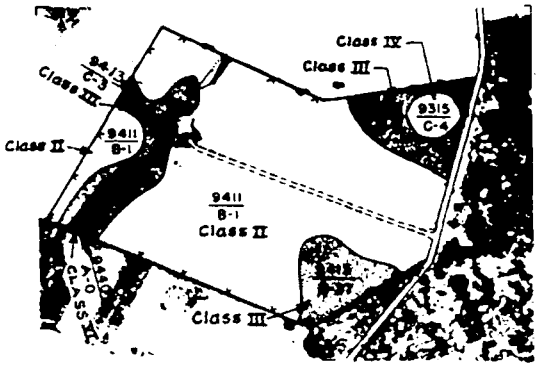


Figure A

LAND USE CAPABILITY MAP

of

a 50 acre section of a Monmouth County vegetable farm

Land Use Capability Classes

Class I land. Deep soil, Sassafras loam (9411); gentle slope, 2-5 percent, little erosion. Can be cultivated with easily applied practices to controll runoff and erosion.

Class III land. Deep soil, Sassafras sandy loam (9413); slope 2-5 percent (B) or 5-10 percent (C); severe erosion; can be cultivated with intensive treatment to control runoff and erosion. Also deep sandy soil, Evesboro loamy sand (9315); slope 2-5 percent; moderate erosion; can be cultivated with intensive treatment to build up fertility and save moisture.

Class IV land. Deep sandy soil, Evesboro loamy sand (9315); slope 5-10 percent; severe erosion. Too droughty and erodible for regular use as cropland. Can be used for hay or pasture.

Class VI land. Level, wet land, Pocomoke silt loam (9440). Suitable for pasture or woodland.

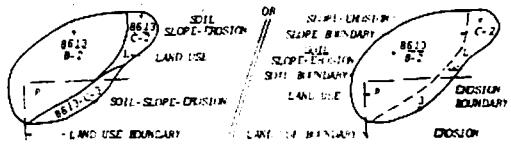
Form No. NJ-3 (2-1-55)

RELATIONSHIP OF LAND CAPABILITY CLASSES TO SAFE LAND USE

LAND CAPABILITY CLASS	LAND USES						
	Woodland and Grassland			Cultivation			
	Wildlife, Recreation	Woodland	Grassland, Woodland	Very Limited	Moderately Limited	Somewhat Limited	With no special Limitations
I	Suitable for wide variety of uses: cultivation requires only ordinary good farm practices.						
II	Suitable for variety of uses, but simple practices are needed for cultivation.						
III	Suitable for variety of uses, but intensive special practices are needed for cultivation.						
IV	Suitable for limited variety of uses, but only occasional cultivation.						
V	Suitable for pasture, woodland or wildlife with only ordinary treatments.						
VI	Suitable for pasture, woodland or wildlife, but subject to slight injury in good cover.						
VII	Suitable for woodland, but only limited or very specially managed pasture.						
VIII	Suitable for wildlife or recreation. Unsuited for economical cultivation, pasture or woodland.						

(Note: Classes V and VI generally are combined in New Jersey as Class VI.)

LEGEND FOR SOIL SURVEY MAP



SLOPE

A level or nearly level	D strongly sloping
B gently sloping	E steep
C moderately sloping	F very steep

EROSION

- accumulations	5 very severe erosion
1 slight erosion	7 occasional shallow gullies
2 moderate erosion	8 frequent shallow gullies
3 moderately severe erosion	8 deep gullies
4 severe erosion	M accumulations by wind

R removals by wind

These symbols may be used in combination, i.e., E2, 37

LAND USE

L cultivated land	F woodland
P pasture land	I idle land

H homestead

SOILS ON YOUR FARM

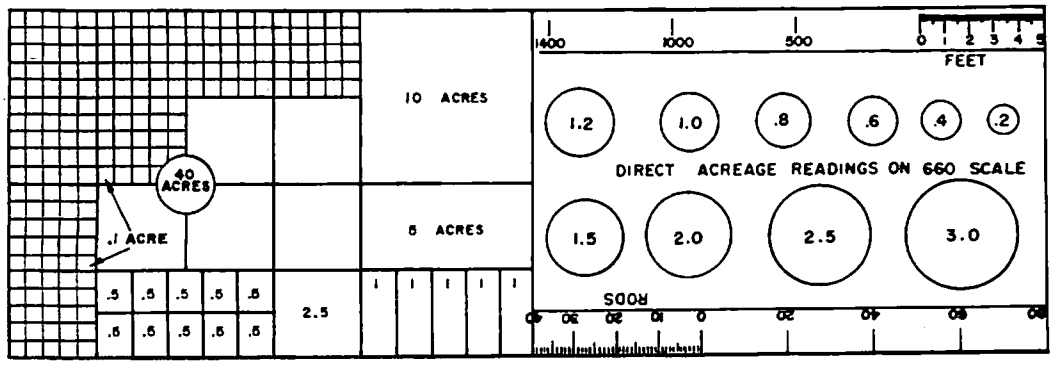
This land capability photo map shows each of the eight classes by a distinctive color and by numerals indicating the classification, degree of erosion and slope. The photo map also shows the land areas suitable for cultivation and those that are not suitable. As present land use is also shown, the map reveals the areas now in cultivation that are not suitable and areas now in grass or trees that are suitable for cultivation.

The grouping of lands with different soils and relating physical characteristics under eight classes makes the maps easy to understand and use. Detailed physical land information used in determining the classes is retained on the maps by symbols. This detailed information is valuable for the appraiser in determining differences in land classifications and in answering questions by property owners regarding the basis of such classification.

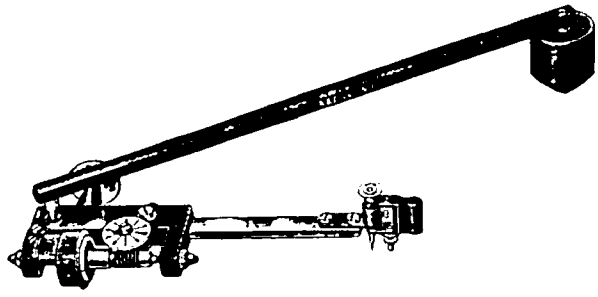
The land classes thus group together the areas of similar productive capability or capacity so that a uniform "base value" may be assigned to these areas. This "base value" assigned to all areas of similar productive capacity is then modified or adjusted for any given tract to account for differences in value due to variations in factors such as location, roads, timber, minerals, etc.

The number of acres of each land class on a specific tract can be obtained from the land capability map by measuring the areas labeled for each class with a plastic grid or planimeter. The planimeter is a mechanical device for measuring the areas of plane surfaces. It is readily adaptable to measuring the irregular outlined areas on the land capability map.

Plastic Grid for Measuring Areas on Aerial Photographs



Compensating Polar Planimeter



The recording of the number of acres in each land class for a specific farm tract on the property record card is described in the essential records section.

Other Rural Land Classifications

The Soil Conservation Service land capability classification is recommended as the best classification for assessment purposes. All counties in the State with farm lands are in soil conservation districts which produce the land capability maps. However, since not all counties have complete land capability maps of the entire county, it is necessary to use the available land capability maps of individual farms as key farms and to classify unmapped farm land by comparison.

Two other rural land classification systems can be used. One alternate system is the land classifications developed by the United States Department of Agriculture and the New Jersey Agriculture Experiment Station in the form of soil survey maps. These soil survey maps were made 50 to 60 years ago and published at a scale of 1 inch equals 1 mile. They can be used only as a general guide. Another alternate system is general land use classifications which can be developed locally in each assessment jurisdiction.

General rural land use classifications with corresponding land capability classifications, are as follows:

Class	Description	Applicable Soil Conservation Service Land Capability Class
	Cultivatable Land	
C-1	Best cultivatable land; 1% slope, no erosion	I
C-2	Good cultivatable land, up to 4% slope, slight erosion	II
C-3	Fair cultivatable land; up to 14% slope, moderate erosion	III
C-4	Poor cultivatable land; up to 18% slope, moderately severe erosion	IV
	Pasture or Grazing Land	
P-1	Wet or stony land; little slope, little erosion, fair pasture or forest land	V
P-2	Good permanent pasture land; steep slopes, up to 20%, erosion severe if cultivated	VI
	Woodland or Waste Land	
W-1	Fair permanent pasture or woodland, shallow soil, steep slopes up to 60%, severe erosion possible if not carefully managed	VII
W-2	Waste land not suitable for cultivation, pasture or forestry. Usually very steep, rough, stony, sandy, wet or severly eroded land	VIII

PROCEDURES ACCEPTABLE FOR RURAL LAND APPRAISAL

Certain basic steps should be followed in making equitable appraisals of farm lands to assure continuity of action and to reflect the conditions encountered in the process of evaluation.

The following represents the steps to be taken in the assembling of basic data pertinent to the appraisal:

1. Prepare adequate maps for the areas and tracts to be appraised.

2. Classify the land by soil type distribution, capability of use, or a combination of these methods to reflect the variations in values caused by physical features.

3. Make a market value study of the area by compiling and analyzing data relative to the sales of farm lands in the area. (Sales data covering a reasonable period not to exceed 5 years prior to the appraisal date.)

4. Make a study of the earning capacity of the area by compiling and analyzing long term production records (5 to 10 year period), prices received from sale of crops, costs of production, and rate of capitalization. Establish base values from this study. By using a sliding weighted average the most weight is given to the immediate preceding years.

5. Calculate the values of individual parcels by (a) applying the appropriate base value to each kind of soil and land use, (b) adjusting the base values as necesary to reflect the effects of benefits or hazards peculiar to the parcels.

6. Record the information on property record cards designed for the purposes of developing and maintaining an inventory of individual parcel values within a given area.

7. Determine special influences to individual tract values.

8. Value buildings by replacement cost - depreciated method. Add to land values to obtain total value of rural parcel.

The appraiser should gather information on:

(1) The land class which is most nearly average for the assessment jurisdiction.

(2) The relative productivity of other land classes in the assessment jurisdiction including those poorer than, and those better than the average for the assessment jurisdiction.

(3) The influences on base land values arising out of distance from roads, trading center, schools, type of roads and other factors.

(4) The acreage values of various land classes for which soil conservation service maps have not been made or on the basis of recent soil maps, if available.

The appraiser reviews the above data and establishes his opinion of the base values of the various land classes in a typical location for the land class. Base values should reflect the average income producing capability for capacity of bare land without the influence of buildings and location factors. It is suggested that the typical location might be on a concrete or black-top road, five miles from a local trading center.

Establishment of Base Unit Values

Following is a summary procedure for establishing the base value of the average land class and other land classifications.

Assume the average value is $300 per acre for the average acre in the assessment jurisdiction and that the land classification which is determined to be nearest capable of producing the average production in the county is Class III land. This then becomes the base value of the average land class. For example:

Class I
Class II
Class III . . . . . $300 per acre
Class IV
Class V
Class VI
Class VII
Class VIII

Proportion this base value to the other land classes, up and down, based on the relative long range productivity of each of the eight land classes. This gives base values for each of the eight land classes.

		Appraisers Opinion of Relative productivity	Base Value of Average Class	Proportionate Base Value of Other Classes
Class	I	190%		$570
Class	II	140		420
Class	III	100	$300	300
Class	IV	50		150
Class	V	30		90
Class	VI	30		90
Class	VII	20		60
Class	VIII	10		30

While farm sales are sometimes not numerous enough to provide a complete picture of the fair cash values for different classes of land, the records of bona fide transfers are given proper consideration in establishing such values. It is of great assistance to the assessing official to enter data of individual sales on maps which show land capability classifications for the parcels.

In assessment jurisdictions which do not have complete farm coverage of land capability maps, systematic methods of rural land valuation using the Soil Conservation Service land capability classification alone need not be postponed pending completion of all such mapping.

The soil survey classifications and maps and the land capability maps completed to date, together with records of sales, can be used to estimate base land values and the relative values of other farm tracts.

Adjustment of Individual Base Land Values due to Special Conditions

Following are suggested guides for adjusting the base land value to allow for differences in type of road, location and other factors. These rules should be reviewed and adjusted to meet local conditions. IN NO EVENT SHOULD THE FACTORS SUGGESTED BE USED UNTIL IT HAS BEEN PROVEN THAT THEY APPLY IN THE LOCALITY BEING APPRAISED.

(1) Type of road on which tract is located - The adjustments for type of road on which a tract of land is located are expressed in percent of base value, for example:

(a) For concrete or black-top road, make no addition or reduction.
(b) For other all-weather road, such as gravel, subtract 5% of base value.
(c) For dirt road, subtract 10% of base value.
(d) For no road outlet, subtract 20% of base value.

(2) Location - The adjustments for location are based on a review of studies made in various sections of the United States on the effect that the location factors have upon the value of rural lands. The adjustments for distance from farm to a trading center are expressed in percent of base value, for example:

Distance in miles	Percent Change from Base Values For Distance to Trading center
0 to 1	+ 10%
1 to 5	0
5 to 9	- 3%
Over 9	- 5%

The distance of unimproved tracts (land without buildings) from the closest trading center is measured from the corner of the tract nearest the road and trading center.

On improved tracts which have buildings, the distance is measured from the building site to the nearest trading center.

The term trading center refers to the town nearest the tract where the trading is generally done and where such facilities as stores, banks and post offices are usually available.

(3) Minerals and merchantable timber - Value of mineral rights or merchantable timber are added to the value of the surface land.

Market Value Study

(a) Compilation of Sales Data

It is important that a perpetual record of rural land sales be maintained by the assessor. It is this information that enables him to watch the trends of market values and the importance placed on certain areas of his jurisdiction by the market demand.

Since farm sales per year are seldom numerous enough in a given area to actually establish a stable basis for determining the market value of the land, it is necessary that sales for a period of not exceeding five years be compiled, qualified concerning their bona fide status and analyzed to determine their usefulness in a reconciliation of market demand against the actual earning capacity of the land derived through capitalization of income.

A sales record card may be designed for use in keeping a sales record file as illustrated. Through the use of the information accumulated in this file, the assessor will be able to keep a current record of the market trends throughout his assessment districts.

The prices shown on the sales record cards represent the total price per acre for both land and buildings. Since the prime concern at this point is for the value of the land only, it will be necessary to ascertain the percentage of the total to deduct for building values in order to obtain an indication of the value of the land alone.

(b) Adjusting sale to Reflect Land and Building Component Values

Research will reflect that there tends to be a pattern or ratio of building value to land in total sales price per acre.

To determine the local percentage allowable for building values on local sales, it is advisable to make an appraisal of the buildings by the replacement cost-depreciated method on a number of farms which have recently sold. Computing the average percentage of appraised building values to the known total sales prices will indicate the relative importance between land and building values. This figure will serve as a guide for an allowable deduction necessary to obtain land value alone.

The following form may be used to record real estate transfers.

ASSESSOR'S COPY

RURAL REAL ESTATE TRANSFER

SR-1A #_____

_____
Municipality

Date_____ Book_____ Page_____ Type of Transfer_____

Grantor_____ Improved_____

Grantee_____ Unimproved_____

Legal Description_____

_____

_____ Acres_____

	Unit Price	Total
Land Class____ _____	_____	_____
_____	_____	_____
_____	_____	_____

Estimated Land Value $_____ Av. p/Ac._____

Improvements (depreciated) _____

Total Land & Buildings $_____ Av. p/Ac._____

Sales Price_____ Assessed Value_____

Verified Sales Price_____ Sales/Assessment Ratio_____

(use back of card for comments on transfer)

FARMLAND ASSESSMENT UNDER THE FARMLAND ASSESSMENT ACT OF 1964 (CHAPTER 48, LAWS OF 1964)

Statutory Limitation

The Farmland Assessment Act authorizes and mandates assessment of qualified farmland on the basis of its productivity value in agriculture or horticulture rather than on the basis of its market value.

Productivity Value

Assessment of farmland on the basis of its productivity value presents a number of difficulties. The principal difficulties arise for two important reasons:

1. Exact measures of the innate productivity of the 215 soil types in New Jersey are not available although there is a scientific base for making reasonable estimates of productivity.

2. The productivity of farmland varies with its particular use.

A method of overcoming the principal difficulties lies in combining the scientific knowledge available on the characteristics of New Jersey soils and their economic potential according to the current uses in agriculture. The procedure is simplified by grouping the 215 soil types into five rated soil groups and four of the most common uses of land by farmers. Net income from the land is capitalized and allocated on the basis of the above rated capabilities.

Agricultural Soil Grouping

New Jersey is fortunate in having a complete set of maps and a description of all of its soils. To aid in the assessing process, the agricultural soils have been categorized 1/ into five 2/ groups:

Group A - Very productive farmland, suitable for permanent cultivation. With proper management, yields tend to be high. Usually the most desirable soil in the area.

Group B - Good farmland, suitable for permanent cultivation. Yields are generally fairly high.

Group C - Fair farmland, suitable for permanent cultivation. Yields tend to be lower than those in Groups A and B. The limiting factors are usually shallowness, droughtiness, or excessive moisture.

Group D - Rather poor farmland, usually wet, stony, droughty, or otherwise unsuitable for permanent cultivation.

Group E - Land unsuitable for tillage, usually because of excessive water, shallowness, stoniness, or droughtness.

In arriving at a realistic classification (placing each soil into one of five groups), the following factors were primarily used: General suitability of the soil for farming, mechanical composition, depth of the soil, drainage, stoniness, and other related properties. This grouping, however, does not take into consideration availability of water, topography, soil erosion, and the degree of slope.

1/ Productive Capability of New Jersey Soils; Dr. J.C.F. Tedrow, Department of Soils and Crops, Rutgers - The State University. A Soils Guide for Use in Connection with the Valuation, Assessment and Taxation of Land Under the "Farmland Assessment Act of 1964" Chapter 48, Laws of 1964.
(N.J.S.A. 54:4-23.1 et. seq.)

2/ There is a sixth group, Group F, which is land of no agricultural value, consisting of rock outcrop, rough stony land, coastal beaches and clay pits. Such land is not deemed eligible for assessment under the Farmland Assessment Act of 1964.

Land Use Classes

Land use on the typical New Jersey farm differs for various reasons but the primary uses of land can be combined into four distinct classes: cropland harvested, cropland pastured, permanent pasture, and woodland. These classes are described below:

1. Cropland Harvested This is the heart of the farm and represents the highest use of land in agriculture. All land from which a crop was harvested in the current year falls into this category.

2. Cropland Pastured This land can be and sometimes is used for cropland. However, because of the organization of certain types of farming, it is often found in pasture from which the maximum potential income may not be realized in any particular year. All cropland pastured falls into this category.

3. Permanent Pasture This land is not cropped because its economic potential is greater in pasture. It is meadow land, the rough and stony land, the land with a high degree of slope. It is usually unimproved land which farmers have found to be nonproductive except for pasturing and haying.

4. Woodland This is land producing trees. Woodlands are found on all soil groups, however, a large portion of this land is not suitable for other agricultural uses due to slope, drainage, soil type, or rough rocky topography and its best agricultural use is to remain as trees.

   Wetlands Those lands as determined by Regulations adopted by the Department of Environmental Protection.

Deriving Ranges of Value for Farmland

See the latest annual report of The State Farmland Evaluation Advisory Committee for the method used in determining the ranges of value for farmland in each county. These reports are published on October 1.

PROCEDURE FOR URBAN LAND APPRAISAL

The appraisal of land involves the estimation of its economic productivity which is measured by its demand in the market place. The demand for urban land is made up of various uses such as residential, commercial and industrial sites.

The methods of estimating land values are limited to the market approach and the income approach since land does not lend itself to the replacement cost approach.

Gathering and Analyzing Sales Data

Sales are gathered, verified and analyzed according to the use of the land. The unit land value for a standard unit of measurement is determined for each land sale. This unit may be the front foot, square foot or acre depending on the type of use. The front foot unit of measurement is generally used for residential and commercial parcels while the square foot and acre are used when appraising industrial land.

Summary Procedure and Steps for Urban Land Appraisal

The following procedure and guides are suggested to aid the appraiser in establishing and maintaining sound and equitable appraisals of urban lots and parcels used for residential, commercial and industrial purposes.

The main steps for appraising urban lots and parcels are summarized as follows:

1. Classifying urban lots and parcels according to use. (see zoning ordinance, if in force)
2. Gathering and recording market data, income data and other important information.
3. Reconciling the market data, income data and other pertinent information and establishing tentative unit land values.
4. Reviewing and correlating unit land values for various land use classes in each urban community or district.
5. Establishing the final unit front foot values, unit acreage values and unit square foot values, where applicable.
6. Determining individual lot and parcel values through application of unit foot values adjusted for depth, corner influence, shape and size of lots and parcels, and other factors.

Tax and Unit Land Value Maps

Tax and unit land value maps for the city or each district within the city are essential for sound land assessment.

The urban tax maps show the location and size of every lot and parcel of property, with section, block and lot numbers for the respective parcels. These tax maps are used for recording the descriptions, sales and other supporting information which are useful for appraising individual urban lots and parcels.

The unit land value maps give the unit front foot, square foot or acre values of all lots and parcels on each street in all blocks and sections in each urban area. The unit of front foot means a piece of land one foot wide fronting on the street and extending back to the standard depth adopted for specific land use classes in the community.

Urban lots and parcels are classified primarily according to use and then according to topography and public improvements, such as street, water and sewer services. The use classification is generally according to residential, apartment, commercial, and light and heavy industrial sections.

Gathering Land Value Information

The appraiser must rely on all available sources of information in order to establish his opinion of sound land values throughout the community or district. In so doing, he solicits information from members of the community who are familiar with the market for the various uses of land and who have a practical opinion of the trend in land use and its value.

The information solicited will include the following:

a. market data from records of recent sales, offers, asking prices and information pertaining to land values.

b. data information on future development and land uses particularly in new or dormant subdivisions or commercial districts.

c. rental data for use in estimating land values by the land residual process of income capitalization.

d. information regarding neighborhood and location conditions as they affect values and economic stability of real property in such areas.

e. opinions of unit land values.

This information obtained from realtors, developers, contractors, bankers and appraisers together with sales data obtained from land conveyance records is entered on the tax maps together with other factual data for parcels in the urban areas of the assessment jurisdiction.

Establishing Residual Land Values by Capitalization of Rents

The procedures for estimating commercial land values are basically the same as those followed for residential land. Sales of vacant land are used whenever possible. However, it is usually necessary to supplement these sales with other guides to values since there is seldom an adequate number of vacant land sales in the Commercial Area. The land residual technique of income capitalization, which is explained in the "Income Approach" section, is utilized in such instances.

In using this method of estimating unit land values it is important that the improvement represents the highest and best use of the land. This means that the improvement and its gross rents should be typical for the area. That is, the improvement should have no element of major depreciation or obsolescence that cannot be measured with a reasonable degree of accuracy. If none of the improvements in the area fit this requirement, it is possible to estimate the replacement cost and the type income of an improvement typical of the area from data gathered previously in other areas or by analyzing available data of existing improvements and projecting the rentals.

The following example outlines the essential steps of the land residual technique.

Assume that a 25' x 100' lot in an outlying business district is improved with a new, one-story building which is considered to be the highest and best use for this parcel of land. The replacement cost, new, of the building has been established as $50,000. The effective gross income of $12,500 is obtained from comparable rents in the area. The operating expenses including the management fee, repairs and maintenance, and reserve for replacement are $1,475 and the fixed charges are $750. (insurance)

Gross Income	$12,500
Less: Operating expenses and fixed charges	2,225
Net income (land and buildings)	$10,275
Less: Income Attributable to Building $50,000 (replacement cost @ 14.5%) (over-all rate = 8.5% Return + 2.5% Depreciation + 3.5% for Taxes)	7,250
Income Attributable to Land	3,025
Land Income $3,025 Capitalized @ 12% = Land Value (8.5% Return + 3.5% Taxes)	25,208
Building Value (from physical appraisal)	50,000
Total Value of Land & Improvements	$75,208

Land Value $25,208 ÷ 25' frontage = $1,008 a front foot

Recording of Estimates of Land Value

These facts and estimates of value are analyzed, compared and adjusted for differences in location, zoning, topography, use, type of utilities and public improvement available, and any other factors affecting the use of the land.

Any restrictions in the use of the land by zoning or other limitations will tend to reduce the supply of land for a particular use. The levels of land value depend on the supply of and demand for land. Zoning may restrict the supply of land but it does not create or guarantee the demand for the use of such land. This situation is often present where more land than necessary has been zoned for industrial or commercial use. Such zoning may not be justified by prospective demand and may result in an oversupply of land for the particular use.

Land zoned for a higher use than the demand reflects the market should be valued at a level such, in the opinion of the appraiser reflects its highest and best use regardless of the zoning requirements.

The presence or lack of city furnished water and sewer mains, paved streets, curbs, sidewalks, utilities, etc., will be reflected in land values as they are recorded on the land value maps.

The units of measurements usually followed are:

a. For platted residential and commercial property - per front foot.

b. For industrial property - per square foot (per front foot or per acre units may also be used).

c. For unsubdivided areas - per acre or per square foot.

The recording of the front foot values of each street in each block or square is made on the tax maps. These include front foot values for all frontage which contain or may contain individual lots fronting on each street. In the treatment of the majority of blocks, values are placed on all sides of the block, although some of the narrower blocks may not be so subdivided for use.

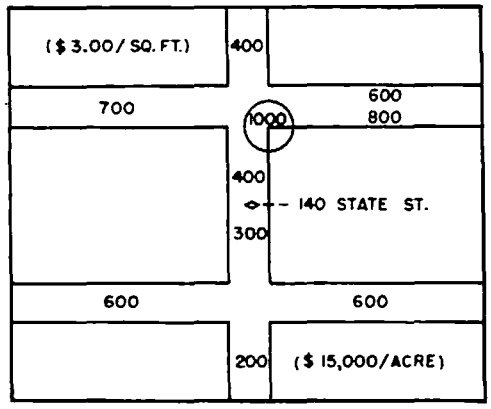
The front foot values recorded reflect the values for the street frontage with a standard depth of the lots. If the front foot value of lots on one side of a street is higher than the lots on the other side, separate values are shown for each side. Similarly, if one end of the block is more valuable than the other end, separate values are entered for each part of the block.

Where unit front foot land value indicators vary sharply within a short distance, the lots between the market value changes are graded gradually between the extreme. This procedure tends to reduce large values as entered for each part of the block.

A small diamond (400 ◇ 300) shows the exact location of the change. To further identify the point of value change, a street address or building name is indicated under the diamond.

The unit front foot values are written in the street space of the tax map. Each value figure in the street space is applicable to both sides of the street from intersection to intersection unless otherwise marked.

Where the values on each side of the street differ, the separate figures are written on the street-lot lines, or, if necessary, indicated by arrows pointing to the specific lots.



Where the corner value is higher than the inside lot value — the corner lot value is designated in the circle.

All designated land values are considered the front foot values unless otherwise indicated. The value per acre (ac.) or per square foot (sq. ft.) is entered in parentheses inside the lot or parcel lines.

Reviewing, Correlating and Establishing Unit Land Values

The preliminary land values are set up on the basis of the above data and the opinions of the appraiser.

These opinions of value and the independent information gathered by the appraiser from cooperating public and private agencies are brought together on the tax maps and the combined data are reviewed by the appraiser.

Such review and correlation of the land value information insures a uniform relationship according to value. In those cases where the appraising staff deem any changes necessary, a record is made on the tax maps showing the adjusted values. The application of such land valuation procedure furnishes the appraiser with the required data and expert opinions for use in establishing equitable land value.

Following approval by the appraiser of the correlated land values in the different districts or sections in the assessment jurisdiction, the unit land values are entered on unit land value maps for use in calculating the land values of the individual parcels.

Application of the Standard Unit Land Values

The appraised value of lots and parcels is calculated on a unit basis. Such units depend on the type and use of the land. For example, the standard of a unit front foot is used for urban residential and commercial lots. For industrial lands, the standard unit is the acre, the square foot, or occasionally the unit front foot.

The lot depth may vary between different use areas such as residential and apartment or commercial and industrial land uses. Variations from the standard depths are accounted for by the depth factors as shown in the "Depth Factor Tables". Each of the depth factor tables is based on specified standard depths for residential or commercial land uses.

The standard or base unit land values are the values per unit front foot (standard depth) or per square foot or per acre. To the unit front foot values are applied the depth factors shown on the applicable depth tables in order to obtain actual front foot values for specified lot depths. The full values of each lot or parcel is computed with the use of such standard unit value and adjusted for depth, corner and other influencing factors.

For example, to determine the value of a regular rectangular lot, the unit front foot value is multiplied by the street frontage. In a residential section with a standard lot depth of 100 feet, a rectangular lot has a width of 50 feet and has the normal depth of 100 feet. The unit front foot value of such lot is determined to be $100. The value of this lot is obtained by multiplying the frontage of 50 feet by the unit front foot value of $100 or a total land value of $5,000. A lot depth greater than normal increases the land value, while a lot with less depth than normal reduces lot value.

Uniform rules and procedure for calculating the values of lots of different shape, size and use are described on the following pages. These describe the factor variations for different uses, depths and shapes of lots and for corner influence, together with examples for the application of such factors to lots of different shapes and sizes.

Procedure for Entering Site Data on Property Record Card in the Field

As previously described, each block record folder contains a map of the block showing individual parcels with lot index numbers, property lines and dimensions of all lots and parcels in the block. Separate property cards for each of the lots are also placed in each block folder.

To identify each parcel in the field operation, a check is made of the location of the parcels on the block map and a similar check of the street number on the building with the property address on the property record card. After the parcel is definitely located, the description pertaining to the land should be entered in the spaces provided for the "SITE DATA" using the codes specified on each line. The codes are designed in a manner that requires an entry of some type for each line. For example: For View Influence, if there is no "special" view (either very good or very bad) an entry of "o" should be made in the space provided.

Depth Factor Tables for Different Standard Depths

If a recognized table applicable to the assessment jurisdiction is not now in use, the following depth factor tables for different standard depth lots may be used after checking the local market and determining that the tables are applicable.

The front foot values are for lots of predetermined standard depth. Depth factors are applied to front foot values for lots to reflect variations in values of lots with less or greater depths than the predetermined standard depth. In the case of lots with depths between indicated depths, the next lower factors should be used.

In highly commercialized areas, consideration by the appraiser should be given to increasing the depth factor for the excess land over the standard depth where a local market data indicates such increase value for off street parking or other purposes.

The Local Property and Public Utility Branch will furnish depth tables for other standard depths in any jurisdiction upon the request of the assessing official.

Commercial Depth Factor Tables

Standard Depth

Depth in Feet	100'	125'	150'	200'	250'
5	.15	.12	.10	.10	.10
10	.25	.21	.18	.15	.14
15	.34	.29	.25	.20	.18
20	.42	.36	.31	.25	.22
25	.50	.43	.36	.30	.26
30	.58	.50	.41	.34	.30
35	.63	.55	.46	.38	.34
40	.68	.59	.50	.42	.38
45	.72	.63	.54	.46	.41
50	.75	.66	.58	.50	.44
55	.78	.69	.62	.54	.47
60	.81	.72	.66	.57	.49
65	.84	.75	.69	.60	.51
70	.87	.78	.72	.63	.53
75	.90	.80	.74	.65	.55
80	.92	.82	.76	.67	.57
85	.94	.84	.78	.69	.59
90	.96	.86	.80	.71	.61
95	.98	.88	.82	.73	.63
100	1.00	.90	.84	.75	.65
105	1.02	.92	.86	.77	.67
110	1.04	.94	.88	.79	.69
115	1.06	.96	.90	.81	.71
120	1.08	.98	.92	.83	.73
125	1.10	1.00	.94	.85	.75
130	1.12	1.02	.96	.86	.77
135	1.14	1.04	.97	.87	.79
140	1.16	1.06	.98	.88	.80
145	1.18	1.08	.99	.89	.81
150	1.20	1.10	1.00	.90	.82
155	1.22	1.12	1.01	.91	.83
160	1.24	1.14	1.02	.92	.84
165	1.26	1.16	1.03	.93	.85
170	1.28	1.18	1.04	.94	.86
175	1.30	1.20	1.05	.95	.87
180	1.32	1.21	1.06	.96	.88
185	1.33	1.22	1.07	.97	.89
190	1.34	1.23	1.08	.98	.90
195	1.35	1.24	1.09	.99	.91
200	1.36	1.25	1.10	1.00	.92
250	1.39	1.28	1.15	1.05	1.00
300	1.42	1.31	1.18	1.07	1.02
350	1.44	1.34	1.21	1.09	1.04
400	1.46	1.36	1.24	1.11	1.06
450	1.48	1.38	1.27	1.13	1.08
500	1.50	1.40	1.30	1.15	1.10

Add .02 for each 50 ft. over 500.

Residential and Apartment Depth Factor Tables

Standard Depth

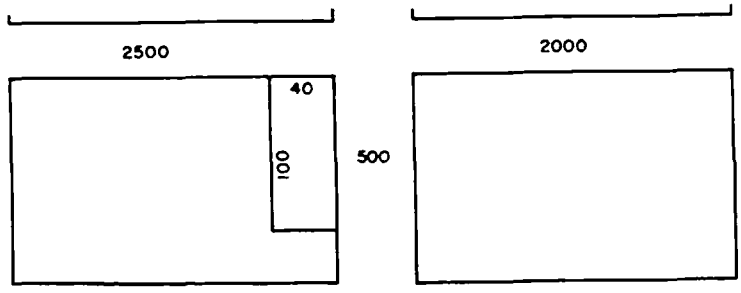
Depth in Feet	100'	125'	150'	175'	200'	300'	400'
5	.10	.10	.10	.10	.10	.02	.02
10	.18	.16	.16	.14	.14	.05	.04
15	.26	.22	.20	.18	.18	.07	.06
20	.33	.28	.24	.22	.22	.10	.08
25	.40	.34	.28	.26	.25	.12	.10
30	.47	.40	.32	.30	.28	.16	.12
35	.53	.45	.36	.34	.31	.18	.14
40	.59	.50	.40	.38	.34	.21	.16
45	.65	.54	.44	.42	.37	.24	.18
50	.70	.58	.48	.46	.40	.26	.20
55	.75	.62	.52	.49	.43	.29	.22
60	.79	.66	.56	.52	.46	.32	.24
65	.83	.70	.60	.55	.49	.34	.26
70	.87	.74	.64	.58	.52	.37	.28
75	.90	.78	.68	.61	.55	.40	.30
80	.92	.81	.72	.64	.58	.42	.32
85	.94	.84	.75	.67	.61	.44	.34
90	.96	.86	.78	.70	.64	.46	.36
95	.98	.88	.81	.73	.67	.48	.38
100	1.00	.90	.84	.76	.70	.50	.40
105	1.02	.92	.87	.79	.72	.52	.42
110	1.04	.94	.89	.81	.74	.53	.43
115	1.06	.96	.91	.84	.76	.55	.45
120	1.08	.98	.93	.86	.78	.58	.46
125	1.10	1.00	.95	.88	.80	.60	.47
130	1.12	1.02	.96	.90	.82	.61	.49
135	1.14	1.04	.97	.92	.84	.63	.50
140	1.15	1.06	.98	.93	.86	.65	.52
145	1.16	1.08	.99	.94	.88	.67	.53
150	1.17	1.10	1.00	.95	.90	.70	.55
155	1.18	1.12	1.01	.96	.91	.71	.56
160	1.19	1.14	1.02	.97	.92	.72	.58
165	1.20	1.15	1.03	.98	.93	.74	.60
170	1.21	1.16	1.04	.99	.94	.75	.61
175	1.22	1.17	1.05	1.00	.95	.77	.63
180	1.23	1.18	1.06	1.01	.96	.78	.64
185	1.24	1.19	1.07	1.02	.97	.80	.65
190	1.25	1.20	1.08	1.03	.98	.81	.67
195	1.26	1.21	1.09	1.04	.99	.83	.68
200	1.27	1.22	1.10	1.05	1.00	.84	.70
250	1.30	1.25	1.15	1.10	1.06	.93	.80
300	1.32	1.27	1.20	1.14	1.10	1.00	.90
350	1.34	1.29	1.24	1.18	1.13	1.05	.95
400	1.36	1.31	1.26	1.21	1.16	1.08	1.00
450	1.38	1.33	1.28	1.23	1.18	1.10	1.04
500	1.40	1.35	1.30	1.25	1.20	1.11	1.05

Add .02 for each 50 ft. over 500.

Corner Influence Table

The application of the corner influence factors depend on local conditions. Market analysis will show where corner influence factors should be applied.

The following is the standard corner influence table applicable to commercial parcels. The corner influence is applied to the corner property holding only up to 50 feet from the corner on the high value street in the central business district, as shown on the unit land value maps.



Corner Influence Table T-A

Depth in Feet From Low Value Street	Low Value Street Depth Factor
5	.21
10	.31
15	.38
20	.43
25	.47
30	.51
35	.54
40	.57
45	.59
50	.60

CORNER INFLUENCE FACTOR RULE

To find the value of a corner lot, in cases where Table T-A is adopted, calculate first the value of the lot from the high value street; add to this sum the value of the lot calculated from the low value street to the depth of the corner holding up to 50 feet. Multiply the low value front foot value by the low value street depth factor T-A to obtain the side street adjusted front foot.

EXAMPLE: Lot Dimensions	Unit Value		Depth Factor	Adjusted Unit Value	Lot Value
40' x 100'	40' x ($2500	x	1.00)=)	$2,500	$100,000
100' x 40'	100 x ($ 500	x	.57=)	285	28,500
				Total Land Value	$128,500

On land zoned and used for apartments, a flat corner influence percentage may be added to unit front foot values for the first 50 feet of the corner holding only if there is an indication that the corner lot has an increment of value over an inside lot.

On land in small or outlying business sections, the corner influence is shown on the unit land value maps by circled unit front foot values applicable to the corner holding up to 50 feet on the high value street.

Alley Influence

On land adjacent to rear or side public alleys, the following alley influence factors are applicable in larger cities and may be added to unit front foot values if the market so indicates.

Rear alley - add 5% (multiply the unit land value of affected property by factor 1.05)

Side alley - add 7% to adjacent property holdings only up to 50 feet frontage of such property from the side alley (multiply the unit land value of affected property by factor 1.07)

Unit Values of Industrial Lands

The standard unit of valuation for industrial lands is the square foot or the acre. Exceptions to this rule obtain where light industrial lands are improved with loft and similar light structure buildings in commercial and other subdivided areas and also where platted areas have been zoned for industrial use. In such areas, the standard (unless otherwise indicated) is the unit front foot.

Unit Values of Unsubdivided Lands

The standard unit valuation for unsubdivided lands is the acre. Exceptions to this rule obtain where unsubdivided lands front on a business or main thoroughfare, in which case the applicable standard unit front foot bases apply.

Office Procedure for Urban Land Value Calculation

The determination of urban land values is made on the basis of uniform procedure and standards as described in this section and as shown in the examples on the application of the specific land value rules.

The land value calculation is made on the property record card under the space for the land value calculation.

The entries on the card include the unit code indicating either front feet, square feet or acreage is to be used for the subject property; the frontage and depths of the lot or segment of lot if the lot is irregular in shape; the backlot set back if a rear lot; the standard depth for lots in the area; the area of the lot if square feet or acres are used; the dollar unit value and the influence factor codes which apply.

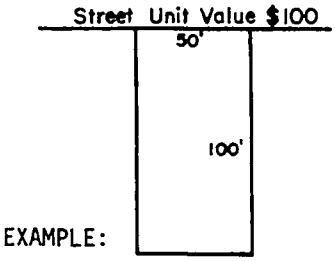
The adjusted unit land value is calculated by multiplying the unit value by the influence factor and is entered in the space provided for adjusted unit value. The adjusted unit value is rounded off to the nearest dollar value.

The total value of the parcel or portion of the parcel is determined by multiplying the adjusted unit value by the parcel frontage. In the case of square feet or acre unit values, the total number of square feet or acres is multiplied by the adjusted unit value to arrive at the land value.

The following twelve land rules present examples of calculations and applications of standards and guides above described.

Examples of Land Value Rules and Calculations for Lots of Various Shapes and Sizes

(Rules 1 to 9 are examples based on Residential Standard Lot Depth of 100 Feet, Table R-100; rules 10 to 12 are examples based on Commercial Standard Lot Depth of 100 Feet, Table C-100)

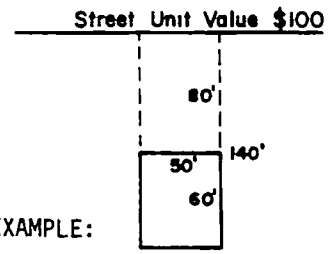


EXAMPLE:

RULE 1
RECTANGULAR LOT

To find the value of a rectangular lot, multiply the unit front foot value by the depth factor. Multiply the resulting adjusted front foot value (rounded off to the nearest dollar) by the lineal feet of frontage or width of the lot.

Lot Dimensions		Unit Value		Depth Factor	Adjusted Unit Value	Lot Value
50' x 100'	50' x	($100 x		1.00 =)	$100	$5000



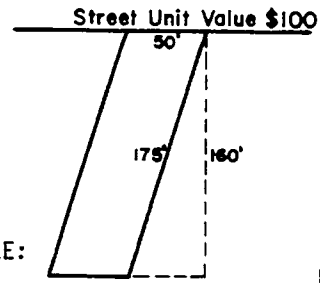
EXAMPLE:

RULE 2
REAR RECTANGULAR LOT

To find the value of a rear rectangular lot, multiply the unit front foot value by the difference between the depth factors for the farthest and nearest distances of the lot from the street. Multiply the resulting adjusted front foot value by the frontage.

Lot Dimensions		Unit Value		Depth Factor	Adjusted Unit Value	Lot Value
50' x 60'	50' x	(100 x		.23 =)	$23	$1150

Depth (140' - 80'). Depth factor (1.15 - .92) = .23

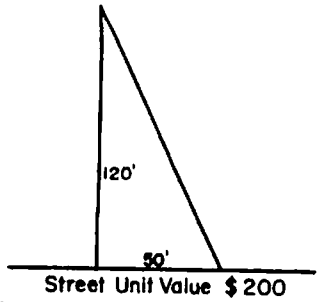


EXAMPLE:

RULE 3
PARALLELOGRAM-SHAPED LOT
(Oblique to the Street)

To find the value of the lot, multiply the unit front foot value by the depth factor for the perpendicular depth of the lot. Multiply this adjusted front foot value by the frontage.

Lot Dimensions		Unit Value		Depth Factor	Adjusted Unit Value	Lot Value
50' x 160'	50' x (	$100 x		1.19 =)	$119	$5950

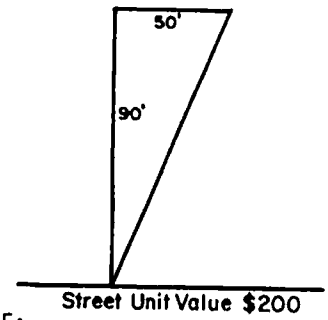


RULE 4
TRIANGULAR LOT
(With base on the street at right angles to the street)

To find the value of the lot, first compute as a rectangular or parallelogram lot of identical frontage and perpendicular depth. Take 60% of the value of this lot for the value of a triangular lot with base on the street at right angles to the street.

EXAMPLE:

Lot Dimensions	Unit Value		Depth Factor	Triangle Factor	Adjusted Unit Value	Lot Value
50' x 120'	50' x	($200 x	1.08 x	.60 =)	$130	$6500



RULE 5
TRIANGULAR LOT
(With apex on the street and at right angles to the street)

To find the value of the lot, first compute as a rectangular or parallelogram lot with frontage and perpendicular depth identical to the base and depth of the triangular lot. Take 30% of the value of this lot for the value of a triangular lot with apex on the street and at right angles to the street.

EXAMPLE:

Lot Dimensions	Unit Value		Depth Factor	Triangle Factor	Adjusted Unit Value	Lot Value
50' x 90'	50' x (	$200 x	.95 x	.30 =)	$58	$2900

LAND DATA

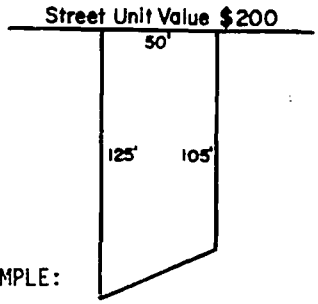
Unit Codes 1 = Front Feet 2 = Square Feet 3 = Acreage 4 = Site

Influence Factor Codes 1 = Depth Factor 2 = Frontage Factor 3 = Backlot Factor 4 = Triangle Factor .30 or .60 5 = Corner Lot Factor 6 = Topography Factor

Card Code 28	unit 30	frontage 32	depth 34	backlot setback 40	standard depth 44	area (decimal $f 48 acres)	unit value 55	Card code 28	Influence Factors 1 30	2 33	3 36	4 39	5 41	6 44	Adjusted Unit Value 46	Land Value 52
	01	50	90		100		200		96			30			58	2900

Total Land Value

Sales Ratio Date	Sales Price	Ratio	Yr.	X	Assessment Building	Land	Total	Exempt SC/VET	C or S	Appeal Decision Building	Land	Total

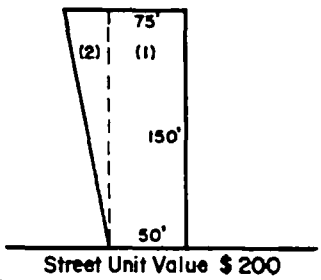


EXAMPLE:

RULE 6
TRAPEZOIDAL LOT
(at right angles to the street)

To find the value of a trapezoidal lot at right angles to the street, multiply the unit front foot value by the depth factor for the average depth of the parallel sides of the lot. Multiply this adjusted front foot value by the frontage.

Lot Dimensions	Unit Value	Depth Factor	Adjusted Unit Value	Lot Value
50' x 115' (average)	50' x ($200 x	1.06 =)	$212	$10600



EXAMPLE:

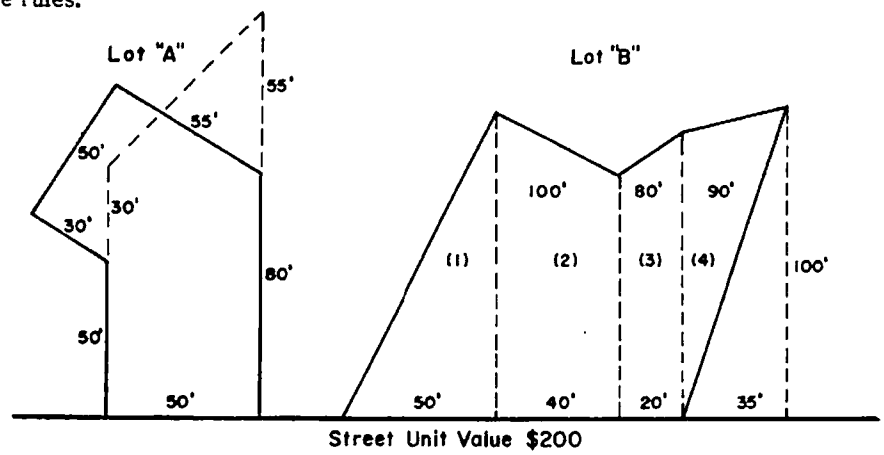
RULE 7
TRAPEZOIDAL LOT
(parallel front and rear)

To find the value of the lot, compute the rectangular and triangular portions separately, according to rule, and take the sum of the two computations for the total value.

Lot Dimensions		Unit Value	Depth Factor	Triangle Factor	Adjusted Unit Values	Lot Value
(1) 50' x 150'	50' x	($200 x	1.17 =)		$234	$11700
(2) 25' x 150'	25' x	($200 x	1.17 x	.30 =)	70	1750
				Total Land Value		$13450

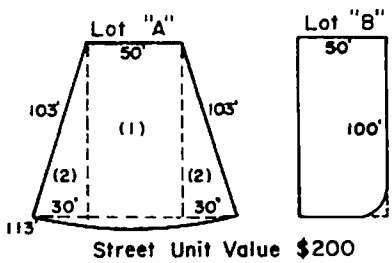
RULE 8
IRREGULAR LOT

Reduce the irregular lot to the nearest equivalent rectangular, trapezoidal or triangular sections and apply the applicable rules.



EXAMPLE:

Lot Dimensions	Unit Value	Depth Factor	Triangle Factor	Adjusted Unit Value	Lot Value
Lot "A"					
50' x 108' (average 50	x ($200 x	1.02 =)		$204	$10200
Lot "B"					
(1) 50' x 100'	50' x ($200 x	1.00 x	.60 =)	$120	$ 6000
(2) 40' x 90'	40' x ($200 x	.96 =)		$192	$ 7680
(3) 20' x 85'	20' x ($200 x	.94 =)		$188	$ 3760
(4) 35' x 95'	35' x ($200 x	.98 x	.30 =)	$ 59	$ 2065
		Lot "B" Total Land Value			$29705

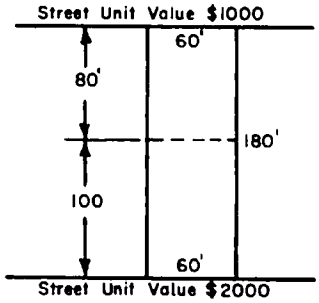


RULE 9
CURVED LOT

To find the value of a curved lot, rectify the curvatures and reduce the lot to its nearest equivalent lot shape. Then compute according to the applicable rules.

EXAMPLE:

Lot Dimensions		Unit Value	Depth Factor	Triangle Factor	Adjusted Unit Value	Lot Value
Lot "A"						
(1) 50' x 100'	50' x	($200 x	1.00 =)		$200	$10000
(2) 60' x 100'	60 x	($200 x	1.00 x	.60 =)	$120	7200
			Lot "A" Total Land Value			$17200
Lot "B"						
50' x 100'	50' x	($200 x	1.00 =)		$200	$10000



RULE 10
BUSINESS THROUGH LOT

To find the value of a through lot with two street fronts, compute from the high-value street to the standard depth or from half the depth whichever is greater and from the low-value street for the remaining depth, and add together for the total value.

EXAMPLE:

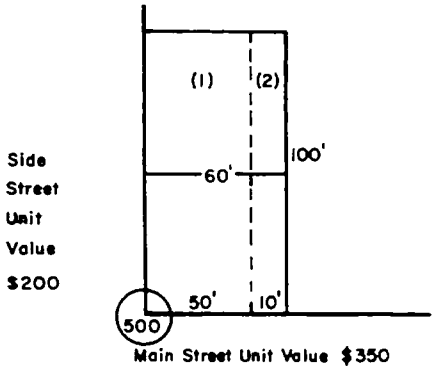
Lot Dimensions	Unit Value	Depth Factor	Adjusted Unit Value	Lot Value
60' x 180'				
High Value Street 60' x 100'	60' x ($2000 x	1.00 =)	$2000	$120000
Low Value Street 60' x 80'	60' x ($1000 x	.92 =)	$ 920	55200
		Total Land Value		$175200

LAND DATA

Unit Codes 1 = Front Feet 2 = Square Feet 3 = Acreage 4 = Site

Influence Factor Codes 1 = Depth Factor 2 = Frontage Factor 3 = Backlot Factor 4 = Triangle Factor .30 or .60 5 = Corner Lot Factor 6 = Topography Factor

Card Code 28	Unit 30	Frontage 32	Depth 36	Backlot Setback 40	Standard Depth 44	Area (decimal if acres) 48	Unit Value 55	Card Code 28	Influence Factors 1 30	2 33	3 36	4 39	5 41	A 42	Adjusted Unit Value 46	Land Value 52
	01	60	100		100		2000		1.00						2000	120000
	01	60	80		100		1000		.92						920	55200
															Total Land Value	175200



RULE 11
BUSINESS CORNER LOT

To find the value of a business corner lot:

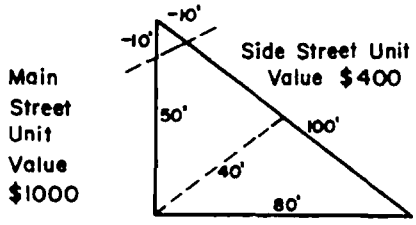
(a) Compute the frontage up to 50' on the high unit value street to depth of the lot on the basis of the circled unit front foot value.

(b) Compute the remainder of frontage on the high unit value street to depth of the lot on the basis of the unit front foot value of the street.

EXAMPLE:

Lot Dimensions		Unit Value	Depth Factor	Adjusted Unit Value	Lot Value
(1) 50' x 100'	50' x	($500 x	1.00 =)	$500	$25000
(2) 10' x 100'	10' x	($350 x	1.00 =)	$350	$ 3500
			Total Land Value		$28500

RULE 12
TRIANGULAR CORNER ON TWO STREETS*



To find the value of the lot:

(a) Deduct 10' from frontage on both streets if the angle is 45° or less.

(b) Compute the frontage on the high unit value street as a triangle.

(c) Compute the frontage on the low unit value street as a triangle.

EXAMPLE:

Lot Dimensions		Unit Value		Depth Factor		Triangle Factor	Adjusted Unit Value	Lot Value
(b) 40' (50'-10') x 80'	40' x	($1000	x	.92	x	.60 =)	$552	$22080
(c) 90' (100'-10') x 40'	90' x	($ 400	x	.68	x	.60 =)	$163	$14670
								$36750

* Triangle corner lots may present unusual problems, if the rules develop unrealistic results, judgement and special consideration should be given in comparison with similar properties.

TRANSITIONAL LAND

When land values change, either upward or downward, from an established value for an existing use, a period of time is usually necessary to make the change complete. Land values during this transition period may fluctuate rapidly and create a problem for the appraiser unless he can analyze the market and establish a sound program for adjusting values.

These changes are sometimes caused by the encroachment of a higher and better use such as commercial buildings in a residential neighborhood. In other instances an old commercial area may become obsolete when another area is developed by new stores and office buildings. In either instance, a careful and constant analysis of rentals, sales, vacancies, etc., must be made if the market value is to be properly reflected.

Some causes for a shift in commercial land use and value are:

1. New, more efficient and attractive store and office buildings in another section of the business district.
2. New commercial facilities in undeveloped outlying areas which have relatively low land values and rent.
3. Development of new residential developments which create a demand for neighborhood shopping facilities.
4. Maintaining rents at too high a level for the facilities available thereby encouraging the construction of more modern facilities in another area.
5. Poor maintenance and a lack of modernization.
6. Urban renewal and the redevelopment of obsolete neighborhoods.
7. Expressway and highway construction programs which tend to direct the consumer to other commercial centers.

Shifts in residential land values are caused by:

1. New residential areas developing in more desirable surroundings.
2. Changes in the design or style of residential construction which is more attractive to buyers.
3. Urban renewal of older residential areas with the redevelopment and/or rehabilitation of all structures.
4. Encroachment upon residential areas by another type of use.

The analysis of the area in transition requires the constant attention of the appraiser in order that he can properly reflect the land values. The assessor/appraiser has an additional problem of maintaining uniform values on all properties as reflected by the market, therefore, the assessed values will tend to lag somewhat behind the market as land values are adjusted by the fluctuations that take place during the transition period. One difficulty in analyzing values in a changing neighborhood is that the actions and reactions of individuals are unpredictable. There is often a reluctance on the part of property owners to recognize the fact that their property has lost or is losing value because of the transition. This leads to their refusal to accept lower prices for their property and the property and area continues to deteriorate.

Summary Steps for Analysis of Transitional Land

1. Collect sales, offers, listings and rentals.
2. Analyze market information.
3. Develop unit land values based on information collected and analyzed.
4. Check a sample of parcels appraised with revised unit land value standards against recent sales and make necessary adjustments in unit value standards to obtain current unit land values.

PROCEDURE FOR RURBAN LAND APPRAISAL

Definition of Rurban Land

Rural land is a term denoting land used for farm purposes. Urban land is a term used to denote land located in a city or other incorporated municipality. Urban land may also be located outside of corporate limits where land is subdivided into lots and has the characteristics of a highly developed community.

Urban-Rural land refers to farm land developed into small parcels or tracts beyond city or corporate limits and beyond thickly settled unincorporated communities. This type of land development is referred to as "Rurban" land, coined from the two words "rural" and "urban", and therefore is land with both rural and urban characteristics. It is usually located on or near main highways and usually consists of tracts too small to be considered as farms. It is not urban because it is out of town. It is not rural because the tracts are small and usually not used for farming purposes. The automobile, good roads, electricity and modern septic tanks have made living on rurban land tracts quite desirable.

Establishing Base Values

Establishment of rurban base unit land values, necessary for appraisal for assessment purposes, combines both urban and rural procedures. The base units are homesite, front foot, square foot and acre. The appraiser develops land value per homesite, unit foot on the highway and acre value of land contiguous to the frontage. All customary market data in the nature of sales, asking prices and offers and informed local opinion are employed as evidence of value.

Usually a frontage of 100 feet on the highway by a depth of 200 feet (approximately 1/2 acre) is given a flat homesite value or a unit front foot value. The balance of the tract is given the classified acre unit value increased by a small tract additional value factor. Analysis of sales of small rural tracts will usually show a higher unit acre value for small tracts as compared to larger tracts of similar land.

When the maximum size of a rurban tract has been determined by an analysis of all of such tracts in the municipality, the appraiser establishes this size as the breaking point in classifying such tracts as either completely rural or as rurban.

For example, if the local type of farming generally requires at least 30 acres of land in order to make it economically feasible to conduct farming operations, the breaking point of 30 acres would be established for the maximum size rurban tracts. The breaking point in another area might be 20 acres, 15 acres or 40 acres depending on the local practice.

After establishing the rurban base unit land values, adjustments are made for tracts on paved roads and for piped water and public sewer facilities which may be available.

Approaches to Rurban Land Valuation

The following are descriptions of various approaches to rurban land valuation and examples of classification and general land value rules. These rules are outlined as typical land rules to guide the appraiser to develop rules which are realistic for this assessment jurisdiction. The appraiser may find it desirable to use one or all approaches to rurban land valuation in the various rurban developments in his community.

A. Rurban Unit Homesite Approach

In the early development of rurban land where only a few scattered residential homesites have been sold off from farms, the rurban homesite approach is applicable. This approach requires the definition of homesite.

1. Homesite Sizes: Determine standard size of rurban site. The common homesite is 100 feet of frontage x 200 feet or approximately 1/2 acre. A 150 foot x 150 foot tract is also approximately 1/2 acre.

2. Example of Base Rurban Homesite Classifications and Values:

The following classifications and unit homesite values are examples only. The relationships between classes may not hold true in all conditions.

(a) Minimum value of a rurban site not on a graded road - $5,000 provided the site is improved with a dwelling for all year occupancy.

(b) Rurban site on a dirt road with no piped water or sewer - $7,000 minimum site value.

(c) Rurban site on paved road with no piped water - $10,000 site value.

(d) Rurban site on a paved road with piped water - $12,000 site value.

(e) Rurban site on a paved road with piped water and public sewer - $17,000 site value.

3. Example of Adjustments to Base Rurban Homesite Values:

(a) Add $4,000 to rurban sites within 1 mile from the limits of a trading center.

(b) Many rurban sites will be larger than 1/2 acre. In such case, select the site value and add the value of the classified rural land for the remainder multiplied by the small tract additional value factor. Deduct 1/2 acre for the site from the total acreage of the tract before adding for the balance of acreage in the tract.

(c) For small rurban sites with only slightly more frontage than standard site, give road frontage which is vacant pro rata 1/2 the value of the site.

4. Example of Rurban Land Valuation Using Homesite Approach:

(a) A rurban homesite is 150 feet x 200 feet in size. It is located on a paved road and has piped water available. The homesite is appraised at $12,000 for the 100 feet x 200 feet portion. The remaining 50 feet of frontage is appraised at $3,000 or one half the front foot value of the standard site. The total appraised value of the site is $15,000.

B. Small Acreage Tract Additional Value Factors

Some rurban sites may contain up to 30 acres, particularly in "estate type" developments. Sales data generally indicate a higher acre value for these tracts than unit acre values of larger farm tracts. If the market data indicate a higher unit acre value, the appraiser can develop small tract additional value factors to uniformly increase the unit acre value of affected tracts.

1. Example of Small Tract Additional Value Factors

Acreage (less homesite)	Multiplication Factor (To be applied to acreage only, not including homesite)
5	2.5
10	2.0
15	1.75
20	1.5
30	1.2

2. Example of Rurban Land Valuation Using Small Tract Additional Value Factors:

A rurban tract contains 20 acres of land. The tract fronts on a paved road and is practically square. It does not have piped water or public sewer available.

Classification of rural land -

Class II - 10 acres	$420/acre	$ 4,200
Class III - 9 1/2 acres	$300/acre	2,850
	Base Land Value	$ 7,050
Multiplied by 1.5 Small Tract Additional Value Factor		$ 10,575
Rurban homesite value (1/2 acre)		10,000
	Total Value of Land	$ 20,575

It should be pointed out that adjustments applicable to rural land such as for type of road or location should be made to classified land in rurban tracts.

C. Rurban Unit Front Foot Approach

In certain rurban areas where string type development of housing sites is confined to relatively small parcels (from 50' x 100' parcels to 1 acre tracts approximately 200' x 200' in size), the most desirable approach to valuation is unit front foot land value with depth factor corrections, rather than the "homesite" unit value approach.

The actual depth of lots in such situations may vary considerably along a highway or road. An average or standard depth of 200 to 400 feet may be required. This is a greater average depth than found in most urban land developments and may require the development of special depth tables to fit the local standard depths.

1. Example of Depth Factors for Rurban Land - 200 Foot Standard Depth

Depth in Feet	Depth Factor	Depth in Feet	Depth Factor
10	.07	130	.82
20	.15	140	.85
30	.21	150	.88
40	.35	160	.90
50	.55	170	.92
60	.65	180	.94
70	.69	190	.97
80	.71	200	1.00
90	.73	225	1.10
100	.75	250	1.20
110	.77	275	1.25
120	.80	300	1.30
		400	1.50

2. Examples of Application of Depth Factors for Rurban Land

(a) Rurban lots along a string type highway development average 200 feet in depth. Subject lot has a frontage of 100 feet and depth of 225 feet. Unit front foot value is established at $45 per front foot. The land appraisal is $4,950. ($45/front foot x 1.10 depth factor = $49.50 adjusted front foot value x 100 feet frontage = $4,950 lot appraisal).

(b) Considering same conditions as above, a lot 50 feet wide and 120 feet deep is appraised at $1,800. ($45/front foot x .80 depth factor = $36.00 adjusted front foot value x 50 feet frontage = $1,800 lot appraisal).

D. Excess Frontage Adjustments

In certain situations, where available market data indicate that all highway frontage has an increased value over and above farm acre unit values the appraiser may find it more realistic to place a unit front foot value on all highway frontages including undeveloped frontages.

In such situations, however, the greater the total width of undeveloped frontage owned by one owner, the lesser the unit front foot value because of greater costs of developing and selling the sider frontage. Some appraisers have found "excess frontage" factors useful in uniformly and systematically reducing this highway unit frontage value as an adjustment for the greater costs in developing sider frontages.

1. Example of Excess Frontage Deduction Factors

Total Undeveloped Frontage of Tract	Percentage Factor
200 Feet	1.00
400 Feet	.90
600 Feet	.85
800 Feet	.80
1000 Feet	.75
1500 Feet	.65
2000 Feet and over	.60

2. Example of Application of Excess Frontage Factors

(a) Total undeveloped highway frontage is 600 feet in rurban tract. The unit front foot added value is established at $15 per front foot. The added frontage value is appraised at $7,650 ($15/front foot x .85 frontage factor = $12.75 adjusted front foot value x 600 feet of frontage = $7650.

(b) In the same example, if the frontage is 800 feet, the added value would be $9,600 ($15/front x .80 frontage factor = $12.00 adjusted front foot value x 800 feet frontage = $9,600).

Summary

The appraiser has a number of approaches to rurban land valuation available to him. The chronological stage of rurban land development will determine which approach or combination of approaches is most applicable. Since rurban land generally develops out from an urban community in all directions, but not at the same rapidity of development, it is conceivable that the appraiser may use all approaches to rurban land value in his assessment jurisdiction. The values, tables and examples shown in this section are GUIDES only and should not be used unless proven to be applicable to the local situation.

PROCEDURE FOR RESIDENTIAL BUILDING APPRAISAL

Approaches used in Building Appraisal

In appraising real property for tax purposes, all factors and available evidence of value are given consideration. The cost of replacement, the market or sales value, income and related approaches to value are given appropriate weight and are employed as tools in estimating the value of the respective properties.

The initial approach to building appraisal is to estimate the cost of replacement of the structure. "Replacement Cost" is defined as the cost to replace an improvement of like utility today using similar materials. The terms reproduction cost and replacement cost have been accepted generally by appraisers as tending to be synonymous, although a certain degree of confusion has been developed due to the strict interpretation of the two terms by some authorities. For instance, it has been said that if a 150 year old high grade residence were to be "replaced" today, the builder would use dimension lumber for framing and good quality interior walls instead of the heavy rafter and beams and plaster walls used in the original construction. In using the manual, the appraiser would classify the structure using the specifications for a building which is as similar to the construction and utility of the improvement as possible. The replacement cost is estimated on the basis of local material costs, labor and other construction items. From this cost is deducted an amount to cover the estimated loss in value of the building due to wear and tear by use and the elements, obsolescence due to changes in use and other causes affecting the value of each building. For any special condition, appropriate additions or deductions are made in order to estimate a fair, sound building valuation.

In order to estimate uniform, sound appraisals for individual properties, the following procedures provide for determination of replacement cost for buildings of similar type and construction. Examinations of typical buildings in different sections of the State show that there are basic similarities in building type and construction to permit classification into several classes of buildings. Variations in the construction and size of buildings within such groups are reflected by the unit replacement costs of the different building classes.

Following is the list of the major groups of building classes for which base replacement costs and depreciation allowances have been developed. These are included in Volume II of this manual.

Single Family Dwelling

Low Quality Dwelling	R-12
Fair Quality Dwelling	R-13
Below Average Quality Dwelling	R-14
Average Quality Dwelling	R-15
Standard Quality Dwelling	R-16
Above Standard Quality Dwelling	R-17
Good Quality Dwelling	R-18
High Quality Dwelling	R-19
Superior Quality Dwellings	R-20
Mansion Quality Dwellings	R-21
Estate Quality Dwellings	R-22
Highest Estate Quality Dwellings	R-23

Semi-Detached Dwellings

Fair Quality	R-27
Average Quality	R-28
Above Average Quality	R-29
Good Quality	R-30

Row-Town House

Fair Quality	R-33
Average Quality	R-35
Above Average Quality	R-37
Good Quality	R-39

Two to Four Family Apartments

Fair Quality	R-43
Average Quality	R-45
Above Average Quality	R-47
Good Quality	R-49

Mobile Homes

Low Quality Dwelling	R - 50
Fair Quality Dwelling	R - 51
Average Quality Dwelling	R - 52
Good Quality Dwelling	R - 53
Highest Quality Dwelling	R - 54

Farm Buildings

Farm Barns	150-151
Other Farms Structures	152-156

Definition and Unit Costs of Different Building Classes

For each building class, there have been developed base specifications including specific definitions and distinction between the building classes. On the basis of the costs of labor and bills of material provided in the building class specifications, the base unit replacement cost and variations according to area or volume for each typical class have been calculated.

For example, the unit replacement cost for a residential building is expressed at so many dollars per square foot of floor area. Adjustments (additions or deductions) account for important variations in an individual building from the base specifications, which, when totaled together, form the base replacement cost.

The building descriptions and their base specifications furnish the basis for recording the building classifications and other essential information on the property record cards and for the determination of the replacement cost of each building.

The unit replacement costs in this manual are based on average prices of material, labor and other construction items throughout New Jersey, as of October 1, 2001. The base cost prices for various classes of building can be revised at any time by the Branch to reflect changes in material costs and labor rates.

Field Procedure for Building Valuation

The field inspection of each property is the first step used in recording the information necessary for estimating the land and building value. At this inspection, important data in regard to the lot or tract of land, the measurements and classification of buildings, a ground plan sketch of the principal buildings and descriptive data on the principal accessory buildings on each lot or tract are entered on the individual property record cards.

The field operations of the appraiser consist of determining and entering on the respective property record cards all descriptive information about (a) each parcel of land, (b) measurements of each principal building and garage or other accessory buildings, (c) preparing an additional property card for each additional principal building on the same lot or parcel, (d) preparing an outline ground plan of the buildings and other improvements, and (e) inspecting the building exterior and interior and entering required information on the property record card as to building type, use, condition, structure construction, heating, plumbing, etc. (Along with specific data as to quality of the various components.)

The appraiser, when inspecting the interior of the building, may request the owner or occupant to accompany him through the building. This will help in assuring expeditious inspection and recording of the desired information.

The necessity of accuracy, thoroughness, and neatness in the preparation of the records for the individual parcels and the buildings cannot be stressed too strongly. The soundness and fairness of the valuation of individual properties cannot be established on the procedures and standards applicable to the respective properties alone but must also depend on the accuracy and thoroughness of the inspection and recording of each individual property.

BASE COST PER SQUARE FOOT FLOOR AREA							
Sq. Ft. Area	First Story	Upper Story	Half Story	Sq. Ft. Area	First Story	Upper Story	Half Story
	$	$	$		$	$	$
200	-	68.62	37.02	950	72.79	42.01	23.84
250	-	61.88	33.69	1000	71.62	41.63	23.65
300	-	57.39	31.45	1100	69.58	41.03	23.35
350	-	54.18	29.85	1200	67.86	40.52	23.10
400	-	51.75	29.22	1300	66.42	40.08	22.88
450	-	49.90	27.75	1400	65.20	39.73	22.69
500	-	48.38	26.99	1600	63.18	39.10	22.39
550	-	47.15	26.39	1800	61.63	38.64	22.18
600	86.58	46.15	25.88	2000	60.38	38.26	21.99
650	83.70	45.28	25.47	2200	59.35	37.96	21.85
700	81.22	44.54	25.09	2400	58.50	37.71	21.71
750	79.10	43.89	24.79	2600	57.77	37.50	21.60
800	77.22	43.32	24.49	2800	57.17	37.30	21.52
850	75.56	42.83	24.24	3000	56.62	37.14	21.44
900	74.09	42.39	24.03	3500	56.08	36.98	21.36

Individual Property Cards and Block or Designated Area Folders

Each property record card has space provided for a label containing data necessary for describing the subject property. This data is prescribed by the Branch and conforms to the four line system used by all jurisdictions in the State. Included are entries of the owners name, the address of the property, together with the block or designated area and lot number or parcel number. It is recommended that the block or area folder have a tax map showing the location and size of the parcels in the block or area glued to the inside of the folder.

In any case where a parcel or tract has more than one principal building, the appraiser fills out a separate card for each principal building and enters the number of each card and the total number of cards for such parcel in the space provided under Key Data on the front of the property record card.

Recording Description and Outside Measurements and Building Outline Ground Plan

As soon as the descriptive material on the land has been completed, the appraiser proceeds to check the outside measurements and enters information about the principal building, garage, and any other accessory buildings or improvements.

The front of each building is measured first, starting with the right front corner, then proceeding around each building in clockwise direction to the place of beginning. Measurements are taken along the exterior surface of the ground floor. They should be taken directly on the walls and not from minor projections. Measurements should be read to the nearest foot. Building dimensions are entered on the outline sketch so that each dimension can be read.

Building measurements are entered in the appropriate spaces under "Floor Area Computations". Irregular shaped buildings are divided into parts with dimensions shown for each part. The building segments are labeled A, B, C, etc., both on the ground plan sketch and in the "Floor Area Computations".

Story heights are entered on the sketch and indicated by a circle. The "B" indicates a basement.

(2B) (2) (1) (1B) (1 1/2) (1 1/2B)

In case two or more different story heights occur in the same building, the different sections are divided by a dotted or broken line. Dimensions and story heights are indicated for each individual section.

Porches are measured, sketched and identified by the designation "P#1", "P#2", etc., on the sketch of the ground plan. Built-in porches and built-in garages are shown on the ground plan sketch with dotted lines with measurements and the area is shown under Item 4 " Structure – Unfinished Story" on the property record card.

Example of Preparing Ground Plan Sketches of Buildings and Recording Dimensions on the Property Record Card

The following example shows the method for preparing ground plan sketches and recording dimensions of buildings on the property record card.

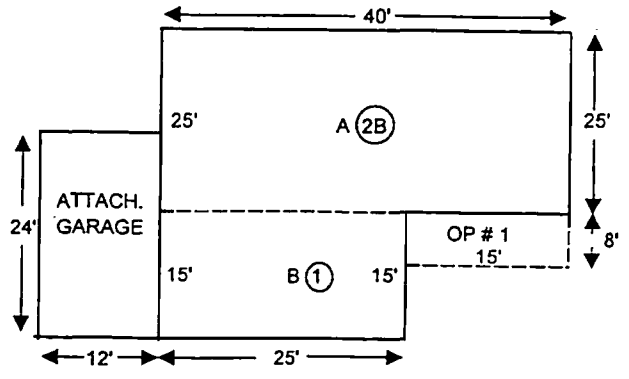
This building is an L-shaped building. Part A is 2 stories high and has a full basement. Part B is only 1 story high and has no basement. The building also has an open porch, OP#1 and an attached garage. The dimensions of this building are recorded as follows on the Property Record Card:

FLOOR AREA COMPUTATIONS

Segment	Width	Length	Basement	First Story	Upper Story	Half Story
A 2B	40	25	1000	1000	1000	-
B 1	25	15	-	375	-	-
Total Floor Area			1000	1375	1000	-

Porches, Decks, Garage, Carports, Etc.

Item	Width	Length	Area
OP#1	15	8	120
ATT. G.	12	24	288



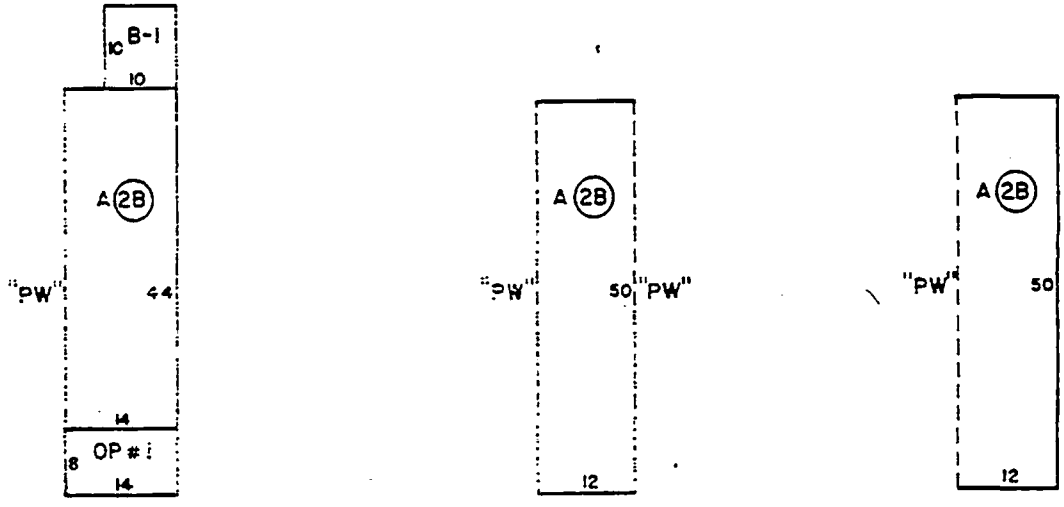
Recording Party Walls on Sketches of Individually Owned Units of Semi-Detached or Duplex Dwellings and Attached or Row Houses

One Family Semi-Detached or Duplex Dwellings and Attached or Row Houses contain two or more dwelling units which may be owned by more than one owner.

The replacement cost schedules are prepared on a unit floor area basis. It is necessary therefore, for the appraiser to indicate the existence of party walls on the ground plan sketch for individually owned units which are part of the complete buildings.

Party (or common) walls are indicated on the ground sketch with broken lines and letters "PW" along the party wall side or sides.

The following examples illustrate the methods for preparing ground plan sketches for Semi-Detached and Town House dwellings:



Ground Plan Sketches of Split level Residential Buildings

Split level residential buildings are essentially a combination of one and two story buildings with many variations of layout and design. The common difference between conventional one and two story building and the split level is that the second floor of the two story section of the split level is usually less than a full story height above the one story level while the first floor is lower than the level of the one story section. The net effect is that, while the vertical distance from the one story level to either level of the two story portion is less than a full story, the total vertical distance (number of steps) is the same as in a conventional two-story house.

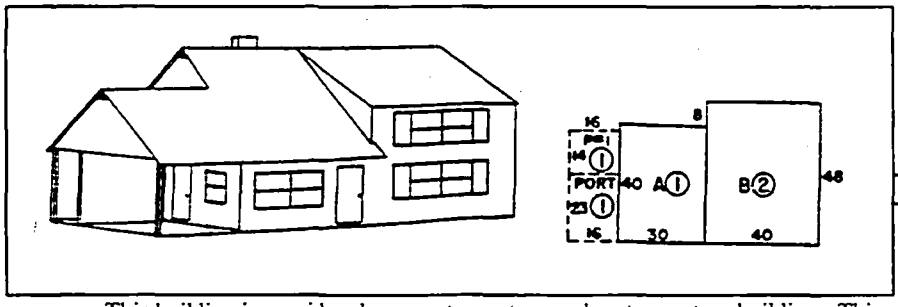
The lower level of a split level house may be completely finished into living quarters or it may be unfinished with facilities similar to that of a basement. In many instances, a garage comparable to a basement garage is found in the lower level. In other instances, recreation rooms may be developed.

The appraiser must determine and record the story heights and degree of interior finish for each part of the structure at the time of inspection. The building classification will be based on the same factors as in other structures and the calculation of the replacement cost is identical to other buildings of the same class, story height and exterior wall construction.

In order to interpret the proper story height of split level dwellings, the appraiser need only to visualize the various sections of the building as though each was separate conventional type built with or without a basement. If the lower level is finished for living quarters, that section can be considered as having two stories without a basement. However, if the lower level is finished for use as a garage or recreation room, the section might be considered as having only one story with a basement and garage.

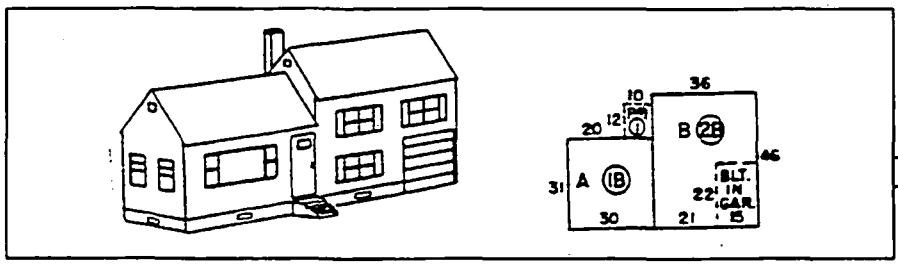
The following examples illustrate a few of the more common approaches used in determining story height of split level dwellings.

Examples of Recording Measurements and Story Heights of Split Level Residential Buildings



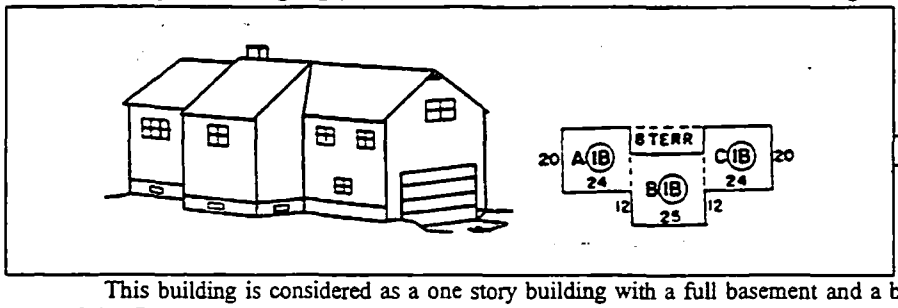
A	[1]	30 x 40
B	[2]	40 x 48
P#1	[1]	16 x 14
PORT		16 x 23

This building is considered as a part one story and part two-story building. This can be readily appreciated by considering sections A and B to be separate structures. The result, a one story building for section A and a two story building for section B. Following this procedure all other considerations are identical to a standard single family residence.



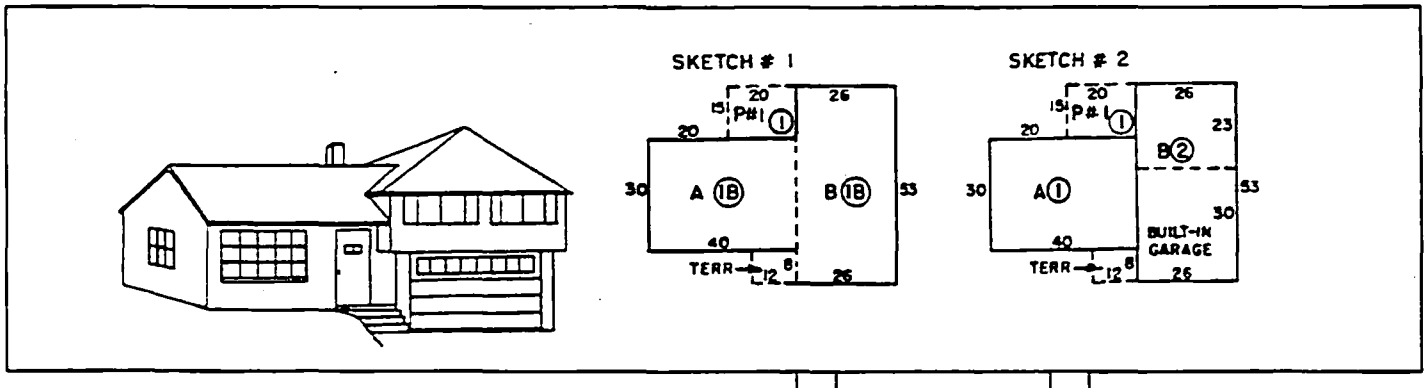
A	[1B]	30 x 31
B	[2B]	36 x 46
P#1	[1]	10 x 12

This building is considered as a one story and Two story building with a built-in garage. Assuming the building to have a basement, except under the garage, all other considerations are identical to standard single family residence.



A	[1B]	24 x 20
B	[1B]	25 x 24
C	[1B]	24 x 20
TERR		25 x 8

This building is considered as a one story building with a full basement and a basement garage. By visually lowering the floor level of the first floor of section C to same level as sections A and B, the result is a one story house with a full basement and basement garage. The additions necessary to adjust for the basement garage are required to complete the calculations of the building.



SKETCH # 1			SKETCH # 2		
A	[1B]	40 x 30	A	[1]	40 x 30
B	[1B]	26 x 53	B	[2]	26 x 53
P#1	[1]	20 x 15	P#1	[1]	20 x 15
TERR		12 x 8	TERR		12 x 8

There are two alternatives for recording measurements and story height to this building, depending upon the presence or absence of a basement in the portion of the building where the floor is a ground level.

Sketch (1) With basement – the higher section would be lowered, visually, until its first floor is even with the first of the lower section. The garage floor would then be relatively even with the first floor of lower section. The garage floor would then be relatively even with the basement floor. The appraiser indicates the building part, story height and dimensions as shown on sketch #1 above. An adjustment is necessary for the basement garage.

Sketch (2) Without basement – the most simplified procedure is to consider the higher section as two story and the lower section as one story, as shown on sketch #2 above. It is necessary to indicate the built-in garage under Item 4 of the property record card (780 square feet.) No basement is checked.

The interpretation of story heights of split level dwellings is determined by the appraiser by properly indicating measurements and story heights on the ground plan sketch and in the building description notes. The classification is identical to other buildings of the same classification. The calculation of the replacement of split level dwellings is identical to other buildings.

RECORDING AND CALCULATING PROCEDURE FOR RESIDENTAL DWELLINGS

Building Description on Residential and Farm Property Record Card

The following items and information are checked or written in by the appraiser under each part of the " Residence Description Data" section on the property record card for residential and farm buildings. The definitions and instructions under each item provides the appraiser with a uniform method of recording descriptive information of residential buildings.

The first section of the property record card relates to information of an overall nature necessary for classification and depreciation of the principal building. Data, which must be recorded, includes overall building classification, special features or conditions which may effect value and physical condition together with any possible functional or economic obsolescence that may be observed.

This data, as well as all other information required, must be recorded carefully and uniformly in the spaces designated in order for the data to be capable of being encoded for computer input. Even if there is no intention of computer application in the near future, it is helpful to have required data recorded with uniformity.

Owner	DOE, JOHN
Street Address	331 MAPLE AVE.

RESIDENCE DESCRIPTION DATA

Residence Class	30[16]	Number of Units	32[01]
Number of Stories	34[02]	Number of Rooms	36[07]
Number of Bedrooms	38[03]	Year Built	40[2001]
Rowhouse/Townhouse End Unit	0 = No 1 = Yes		44[0]

DEPRECIATION

Condition 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Excel.	45 [3]
Effective Age in Years	46 [000]
100% - (Eff. Age Dep. 0.0 % + Obser. Phys. Cond. 0 %) = Physical Net Condition	49 [100]

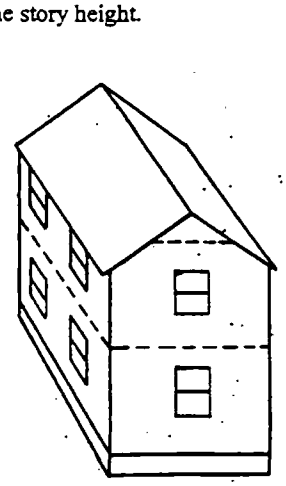
OBSOLESCENCE

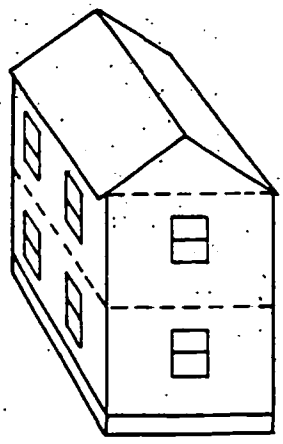
100% - (Func. Obsol. 0 % + Econ. Obsol. 0 % = Obsol. Net Condition	52 [100]
Physical Net Cond. 100 % x Obsol. Net Cond. 100 % = Final Net Condition	55 [100]

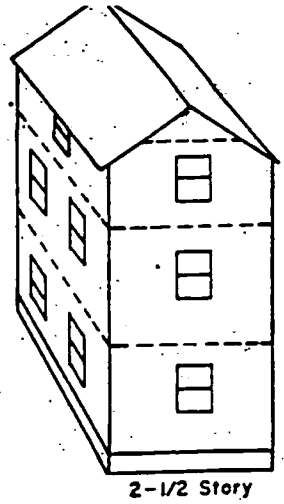
All other items in this section should be filled in as indicated. It is important that they be filled in completely and accurately to facilitate calculation procedures. In a principal building with different story heights, enter the story height of the segment with the most stories. Areas in a principal building such as hallways, bathrooms, basement rooms and attic space are not included in the room count.

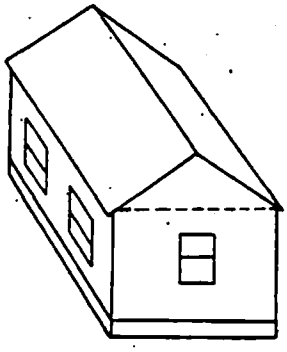
In determining the number of stories, "1 story" refers to building all on one floor level and also any buildings in which the usable second story covers less than 40% of the first story floor area. A 1- 1/2 story building is described as a building which the roof meets the

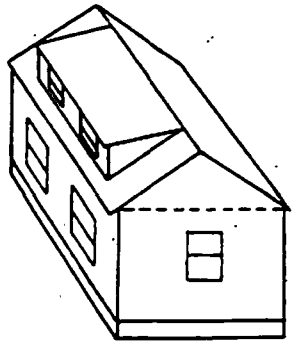
walls at a point high enough above the ground floor or at an angle steep enough to permit the use of floor area in the half story equivalent to 50 to 80 percent of the ground floor area. Buildings with over 80% of ground area usable as second floor space are considered as 2 story buildings. Diagrams of typical residential buildings are shown below. Dormers add to the usable area of the top story and are considered in determining the story height.

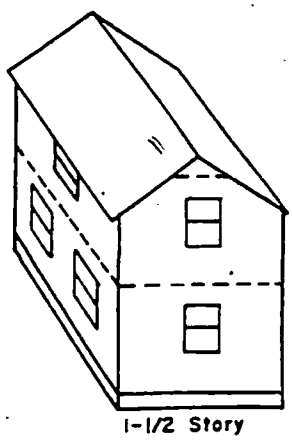

2 Story


2 Story


2-1/2 Story


1 Story


1-1/2 Story


1-1/2 Story

Specific building component information is recorded either for information only or in order that special calculations may be carried out by hand or by computer.

Component # 1 Roof. The roof type, pitch and material are recorded for information only. This is done by selecting the appropriate code number for each of these items from those listed i.e., Roof Type 3=gable; Roof pitch 4=Steep; Roof materials 1=Shingle.

1 ROOF

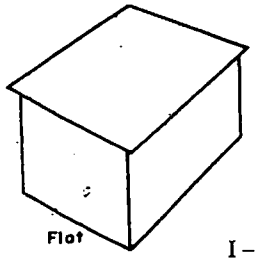
Roof Type 1 = Flat 2 = Hip 3 = Gable 4 = Gambrel 5 = Other 58 3

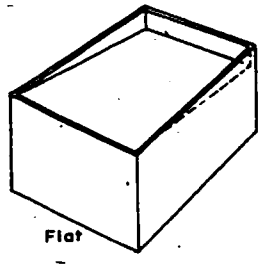
Roof Pitch 1 = None 2 = Shallow 3 = Normal 4 = Steep 59 4

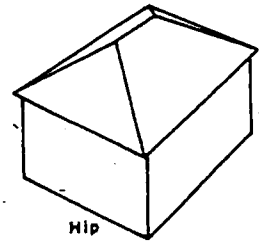
Roof Material 1 = Shingle 2 = Slate 3 = Tile 4 = Copper

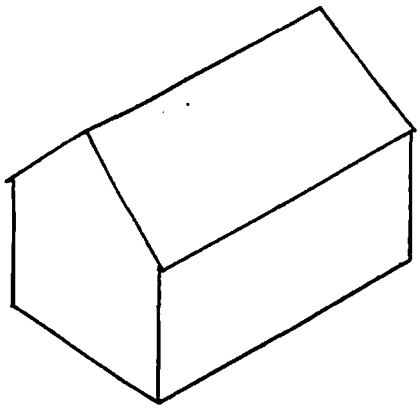
5 = Galvanized 6 = Shake 7 = Rolled Composition 8 = Other 60 1

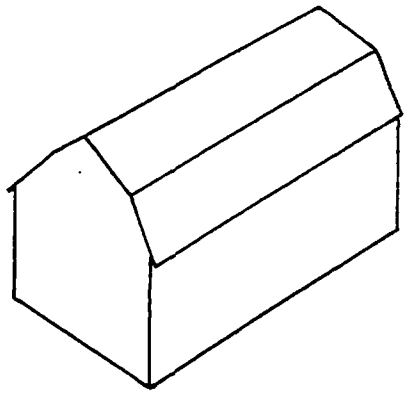
Examples of various roof types are shown in the sketches below.

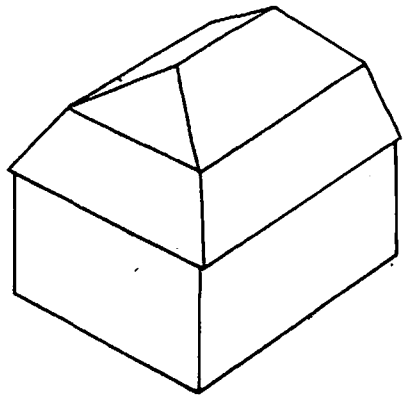

Flat


Flat


Hip


Gable


Gambrel


Mansard

Component #2 – Foundation – The foundation type is recorded for information and classification purposes only. Select the code number for the foundation type and enter the number in the box provided.

[2] **FOUNDATION**

Foundation Type 1 = Concrete 2 = Concrete Block
3 = Post & Pier 4 = Concrete Slab 5 = Other 61[2]

Component # 3 – Basement – Indicate whether there is a basement or not. If there is a basement, the enumerator enters the square foot area and selects the class factor which most closely represents the quality of the basement found. Most often the class of basement closely follows the classification of the main structure, however, if the quality of the basement is noticeably better than or poorer than the main structure, that class factor should be entered in the spaces provided. To record the class and class factor for future reference, circle the class and class factor, i.e., Basement Class factors – 16 = 1.00.

Finished Basement –If all or a portion of the basement is finished, enter the square foot of finished area and the class factor which should be selected from those listed. To record the class for future reference, circle the class and class factor which most closely represents the finished basement. Since many basements are finished by the owner after the house has been built, the quality of the finish may be different from the quality of the rest of the building. The appraiser must use his judgement to select the appropriate class since there are innumerable variables to consider.

[3] **BASEMENT**

Basement 0 = No 1 = Yes 62[1]

		Ql.	Area	Rate	Quality Factor	Cost
Basement Area	63	16	1000	11.68	1.00	11,680.
Basement Finish	69	14	400	16.50	0.85	5,610.
Basement Total Cost						= 17,290.

The information recorded above indicates there is 1,000 square feet of average quality basement area. Part of this is finished area of a fair quality. The rate for each is obtained from Section 3 "Residential Buildings Adjustments to Base Costs". After the appropriate class factors are entered, the calculations are extended to obtain an indicated cost for each item.

Component # 4 – Structure – The enumerator records the basic wall type or types initially by circling the appropriate item, i.e., 1 = Frame. The next entry is used to indicate whether or not the building contains a Built-in Garage or Built-in Porch. The appropriate code (0 = no, 1 = yes) is entered to indicate this information.

The floor areas according to stories are entered next. Also, space is provided to enter the proper wall type code for each story. For stories with full brick or stone, the appropriate factor is entered under the "wall factor" column. These factors are 1.15 for brick, and 1.30 for stone. Buildings with one wall or a portion of a wall with Brick or Stone finish are adjusted in the appropriate sections by entering the square feet of brick or stone and applying the proper rate. It is important to remember that a " Half Story" rate is selected based on the square feet in the area of the full story below.

Unfinished floor and half story areas are noted and appropriate adjustments made. An area may be unfinished with plans to be completed at a later date, or the area may be devoted to a Build-in Porch or a Built-in Garage. (For further explanation and definition see

page I – 79). Under most circumstances unfinished areas will be assigned the same classification as the structure itself, however, to make certain this item has been considered, a class factor must be selected and entered.

4 STRUCTURE

Exterior Wall Type 1 = Frame or Masonry Wall with wood, stucco, Aluminum or shingle 2 = Frame or Masonry Wall with Brick 3 = Frame or Masonry Wall with Stone 4 = Other — 30 [1]

Built-in Garage 0 = No 1 = Yes — 31 [0]

Built-in Porch 0 = No 1 = Yes — 32 [0]

		Wall Type	Area	Rate	Qual. Factor	Cost
First Floor	53	1	1375	65.20	1.00	89,650.
Upper Floor	58	1	1000	41.63	1.00	41,630.
Half Story	43	-	-	-	-	- .
Structure Base Cost						131,280.
Row/Townhouse End Unit Factor					x( )	
Adjusted Structure Base Cost (A.S.B.C.)						= 131,280.

		Area	Rate	Qual. Factor		Cost
Unfin. Story	48	-	-	-	(-)	- .
Unfin. Half Story	52	-	-	-	(-)	- .
Partial Brick	56	200	9.86	1	(+)	1,972.
Partial Stone	60	-	-	-	(+)	- .
Final Adjusted Structure Base Cost (Includes A.S.B.C.)						= 133,252.

The information recorded in the above example indicates that the building has a first floor area of frame construction totaling 1,375 square feet and an upper floor area of frame construction totaling 1,000 square feet. The areas are then multiplied by the base cost per square foot floor area for the class selected (The above rates were selected for Class 16). The proper wall factor is entered to arrive at a cost per story. These story costs are totaled to arrive at the " Structure Base Cost". Since the above property is not a Row/Townhouse, the structure base cost is carried down to the line labeled " Adjusted Structure Base Cost".

The above example also indicates that the building has 200 square feet face brick veneer. The rate is found in Section 4 of the "Residential Building Adjustments to Base Cost". This result is added to the adjusted structure base cost to arrive at a " Final Adjusted Structure Base Cost".

Component #5 Floors – Except for concrete slabs, this is a descriptive item only. The enumerator selects the appropriates code to identify the predominate floor cover found in the building, i.e., 1 = Carpet. In the case of combination finishes or variations from the item listed, the enumerator can be specific in the "Notes" section of the Property Record Card.

5 FLOORS

Construction 1 = Slab 2 = Supported Wood 3 = Others — 64 [2]

Finish 1 = Wood 2 = Carpet 3 = Combination 4 = Other — 65 [3]

		Area	Rate	Qual. Factor		Cost.
Concrete Slab	66	375	3.82	1.00	(-)	1,432.
Concrete Slab Adjustment						= (-) 1,432.

The information recorded above indicates a portion of the building has a concrete slab of 375 square feet. The rate is found in Section 5 of the "Residential Building Adjustments to Base Cost". The result will be deducted from overall cost. It is also noted that the building has a combination floor finish consisting of carpet and hardwood floors. This information was recorded in the "Notes" section for future reference.

Component # 6 – Heating/Cooling – the source of heat such as coal, oil, gas, elec., is indicated by code number in the space provided, i.e., 3 = Gas. The code number for type of heating system is also selected and entered in the box provided at the far right of the column, i.e., 3 = Forced Hot Air.

The enumerator must indicate by code number whether or not there is central cooling and if there is, whether it is added to the heating ductwork or has its own ductwork system.

It is also necessary to record the square feet of floor area heated or cooled and the quality factors. Generally the heating and cooling system will be a quality similar to the house itself and the same class factor would be assigned.

6 **HEATING and COOLING**

Source 0 = None 1 = Coal 2 = Oil 3 = Gas 4 = Elec. 5 = Other 30 [3]

Heating System 0 = None 1 = Floor/Wall Furnace 2 = Gravity Hot Air 31 [3]
3 = Forced Hot Air 4 = Hot Water B.B. 5 = Hot Water/Steam
6 = Elec. B.B. 7 = Radiant Elec. 8 = Heat Pump

Central Cooling 0 = No 1 = Added to Heating Ductwork 32 [1]
2 = With Own Ductwork

		Ql.	Area	Rate	Quality Factor	Cost
Heating	33	16	2775	2.82	1.00	7,825.
Cooling	39	16	2375	1.79	1.00	4,251.
Heating/Cooling Total Cost						= 12,076.

The information recorded above indicates that the building has combined Hot Air Heating and Cooling system with one set of ducts. The total area heated is 2,775 square feet and the area cooled is 2,375 square feet. The rate is found in section 6 of the "Adjustments for Residential Buildings" and applied to the respective areas. The quality factor selected is then applied to arrive at the cost for each item. The results are then totaled to arrive at Heating/Cooling Total Cost.

Component # 7 – Plumbing – An entry is required indicating whether or not there is plumbing or if there is only a water service.

The enumerator must record the number of plumbing items or units and the quality factor to be applied to each. In addition, either the enumerator or the calculator must indicate if the item or unit is included in the base cost. For example, Class 16 Residence specifications include a full 3 fixture bath, a kitchen sink, laundry tub and hot water heater. These would be recorded in the "Base" column by a "1" after each item. The number of units of items found which differ from the base is then recorded in the "Adjustment" column. A plus (+) is entered in the appropriate column, if there are more fixtures then specified. If an item specified in the class of building is not found, it will be necessary to deduct for that item. This is accomplished by entering a minus sign (-) in the appropriate column. If no changes are necessary, this can be indicated by leaving the "(+)" column blank.

7 **PLUMBING**

Plumbing 0 = None 1 = Yes 2 = Water Only 45 [1]

		Base	Adj.	Ql.	Rate	Quality Factor		Cost
4 Fixture Bath	46	-	-	-	-	-	( )	
3 Fixture Bath	50	1	1	16	2.595	1.00	( )	2,595.
2 Fixture Bath	54	-	1	16	1.895	1.00	(+)	1,895.
Single Fixture	58	-	-	-	-	-	( )	
Kitchen Sink	62	1	-	-	-	-	( )	
Laundry Tub	66	1	-	-	-	-	( )	
Hot Water Heater	70	1	-	-	-	-	( )	
Plumbing Total Cost							= (+)	4,490.

The information recorded in this example indicates that the building has two 3 fixture baths, one 2-fixture bath, a kitchen sink, laundry tub and hot water heater. The adjustments necessary for this section are made by adding one 3-fixture bath and one 2-fixture bath. The rates are found in Section 7 of the "Residential Adjustments to Base Costs" and applied to the qualities indicated above the base specifications. This figure is then multiplied by the quality factor to arrive at the cost per item. These costs are then totaled to arrive at Plumbing Total Cost.

Component # 8 - Electric Lighting – This is an entry for classification purposes only. Record the appropriate code number (0 for no; 1 for yes) in the space provided.

8

ELECTRIC LIGHTING

Electric Lighting 0 = No 1 = Yes 74 1

Component # 9 – Built-in Appliances – First record whether or not there are built-in appliances by code numbers (0 for no; 1 for yes). Then record the type of built-ins found, indicating the total number of each and the quality.

9

BUILT-IN APPLIANCES

Base Specs. Include Some Type of Stove and Oven for Each Dwelling Unit

Built-in Appliances 0 = No 1 = Yes 30 1

		Base	Adj.	Ql.	Rate	Quality Factor	Cost	
Range Top/Oven	31	1	-	-	-	-	-	.
Drop-in Range	34	-	-	-	-	-	-	.
Stove w/Oven	37	-	-	-	-	-	-	.
Dishwasher	40	-	-	-	-	-	-	.
Garbage Disposal	43	-	-	-	-	-	-	.
Exh. Hood & Fan	46	-	1	2	365	1.00	365.	
Central Vacuum	49	-	-	-	-	-	-	.
Electronic Oven	52	-	-	-	-	-	-	.
Food Ctr. Pwr. Ut.	55	-	-	-	-	-	-	.
Gar. Door Opener	58	-	-	-	-	-	-	.
Conv. Kitchen	61	-	-	-	-	-	-	.
Intercom System	64	-	-	-	-	-	-	.
Built-in Appliances Total Cost							=	365.

The information recorded on the above example indicates that the building has one average quality range and one average quality exhaust hood and fan. The adjustment necessary is the addition of the average quality exhaust hood and fan. The rate is found in Section 9 of the "Adjustments Section for Residential Buildings" and applied to quality indicated. This result is multiplied by the quality factor to arrive at the cost. The items are then totaled to arrive at Built-in Appliance Total Cost.

Component # 10 – Fireplaces – Record the number and quality factor of fireplaces as appropriate. In most instances when there is more than one fireplace, all will be approximately the same quality. In instances where two or more fireplaces are drastically different in quality, it will be necessary to record the extra fireplace in the accessory building section.

10

FIREPLACES

		Ql.	No.	Rate	Quality Factor	Cost	
Fireplace – 1 Sty.	30	16	1	4,245	1.00	4,245.	
Fireplace – 1 ½ Sty.	34	-	-	-	-	-	.
Fireplace – 2 Sty.	38	-	-	-	-	-	.
Additional Fireplace Same Stack	42	-	-	-	-	-	.
Freestanding Fireplace	46	-	-	-	-	-	.
Heatilator and Fan	50	-	-	-	-	-	.
Fireplace Total Cost						=	4,245.

The information recorded above indicates that the building has a one story fireplace of average quality. The rate is found in Section 10 of the "Residential Adjustments to Base Costs" and applied to the number indicated. The result is then multiplied by the quality factor to arrive at the cost. The items are then totaled to arrive at Fireplace Total Cost.

Component # 11 – Attics and Dormers – Indicate whether or not there is an expanded attic or dormer and if they are finished or unfinished by placing a 0 for No and a 1 for Yes in the appropriate boxes. If there is an attic, enter the quality code and the square feet of floor area directly below the attic in the appropriate boxes. If there is a dormer(s) enter the quality code and the lineal feet in the appropriate boxes.

11 **ATTICS and DORMERS**

Expanded Attic	0 = No	1 = Yes	54 [1]	Finished	0 = No	1 = Yes	55 [1]
Dormer	0 = No	1 = Yes	56 [0]				

		Ql.	Area/L.F.	Rate	Quality Factor	Unf. Fact.	Cost.
Attic	57	16	1000	9.86	1.00	-	9,860.
Dormer	63	-	-	-	-	-	- .
Attic/Dormer Total Cost						=	9,860.

The information recorded above indicates that there is an expanded attic which is finished. The area below the attic is 1,000 square feet. The rate is found in Section 11 of the "Residential Adjustments to Base Costs" section and is applied to the area indicated. The result is then multiplied by the quality factor to arrive at the total cost. If a building has an expanded attic or dormer which is unfinished, the cost will be factored by placing .50 in the box labeled "Unf. Fact." (See page I – 76 for definitions of attic).

Component # 12 – Porches, Decks and Patios – Enter the quality and square foot floor area for the various types of porches, decks and patios. If there are several open porches of the same class or quality, the floor areas may be added together and one area entry recorded. Space is provided for up two different grades or qualities of each porch type. If more variations are found necessary, record the data in the space provided for Accessory Buildings.

12 **PORCHES, DECKS and PATIOS**

		Ql.	Area	Rate	Quality Factor	Cost.
Deck	30	12	120	6.22	0.50	373.
Patio	36	16	200	6.22	1.00	1,244.
Open Porch	42	16	120	13.04	1.00	1,564.
Open Porch	48	-	-	-	-	- .
Enclosed Porch	54	-	-	-	-	- .
Enclosed Porch	60	-	-	-	-	- .
Porches and Decks/Patios Total Cost						= 3,181.

The information recorded above indicates the building has an average quality patio of 200 square feet, an extremely poor deck of 120 square feet and an average grade porch of 120 square feet. The rates are found in section 12 of the "Residential Adjustments to Base Costs" and applied to the square footage indicated. The result is multiplied by the quality factor for each item to arrive at the cost per item. These costs are totaled to arrive at Porches, Decks and Patios Totals Cost.

Component # 13 – Garages – Basement garages, attached garages, carports and canopies require an entry for quality plus the square feet of floor area of each type. If there is more than one item of a type, add the area together and record the overall quality of all items (For Built-in Garages – See page I – 79).

13 **ATTACHED GARAGES, CARPORTS and CANOPIES**

		Ql.	Area	Rate	Quality Factor	Cost
Basement Garage	30	-	-	-	-	- .
Attached Garage	36	16	288	23.05	1.00	6,638.
Garage Total Cost						= 6,638.

The information recorded above indicates that the building has an average grade attached garage with 288 square feet. The rate is found in Section 13 of the "Adjustments for Residential Buildings" and applied to the square feet area indicated. The result is multiplied by the quality factor to arrive at the cost. The items are totaled to arrive at Garage Total Cost. (Built-in Garages should be calculated under items 4 Structure as Unfinished Area.)

Component # 14 – Other Items – This section includes such items as paving, swimming pools, carports, canopies, detached garages and farm buildings. Farm buildings are located in Volume II (pages II-107 through 114). The remaining items are found under Section 14 of the "Adjustments for Residential Buildings". These items are recorded in the space provided on the Property Record Card. The ID Numbers together with a brief legal description of the accessory buildings are recorded with the Class of quality, width, length, and height if required to arrive at the cost per item. The cost conversion and final net condition are applied to arrive at depreciated cost for the items.

Flat Adds – For items which occur infrequently or which do not lend themselves to uniform tabular presentations, it is necessary for the enumerator to identify, price and depreciate each item. Space for these entries is provided in the area under Floor Area computations. NOTE: items considered in this section are at the discretion of the appraiser and should be made carefully and with supporting data.

Building Valuation Summary – After all information is recorded and calculated in the appropriate section, it is transferred to the Building Valuation Summary Section of the Property Record Card. An example of how the information is recorded is shown below.

BUILDING VALUATION SUMMARY

3	Basement Total Cost	(+) 17,290.
4	Final Adjustment Structure Base cost	(+) 133,252.
5	Slab Adjustment (-) (- minus)	(-) 1,432.
6	Heating/ Cooling Total Cost	(+) 12,076.
7	Plumbing Total Cost (+)	(+) 4,490.
9	Built-In Appliances Total Cost	(+) 365.
10	Fireplace Total Cost	(+) 4,245.
11	Attic/Dormer Total Cost	(+) 9,860.
12	Porches and Decks/Patios Total Cost	(+) 3,181.
13	Garages (Att. & Bsmt.) Total Cost	(+) 6,638.
	Att. Carport or Canopy Total Cost	(+)---------.
	TOTAL BASE REPLACEMENT COST (2001)	= 189,965.
	Cost Conversion Factor	(x) 1.00
	Base Replacement Cost New	= 189,965.
	Final Net Condition	(x) 1.00
	Structure Appraised Value	= 189,965.
	Structure Flat Adds	(+) ---------.
	PRINCIPAL BUILDING APPRAISED VALUE	= 189,965.
14	Accessory Buildings RCNL	(+)---------.
	Accessory Improvements RCNLD	(+)---------.
	Accessory Flat Adds	(+)---------.
	ACCESSORY ITEMS TOTAL VALUE	= ---------.
	TOTAL BUILDING AND ACCESSORIES APPRAISED VALUE	(+) 189,965.
	Other Principal Structures	(+)---------.
	Total Land Value	(+) 75,000.
	TOTAL PROPERTY APPRAISED VALUE ⟹	= 264,965.

In this section the appraiser applies the cost conversion to the 2001 Building Replacement Cost to arrive at the Replacement Cost New for the year in which the appraisal is being done. Depreciation from all causes is also entered in this section and applied to arrive at the Depreciated Building Cost. Land value is added to the Appraised Value to arrive at the Total Appraised Value.

UPPER FLOORS

In buildings with more than two full stories, all upper floors should be added together and the total square footage placed in the Upper Floors Section of the Property Record Card. The price selected would be the price for the total square footage for upper floors. For example; in a three story building with 750 square feet on each floor, the upper floor area will be the total floor area on the second and third floor, i.e. 1,500 square feet. The price selected would be from the upper floors table at 1,500 square feet.

UNFINISHED HALF STORY DEDUCTIONS

If a half story is unfinished, this is adjusted under the unfinished half story adjustment of the Property Record Card. When making this adjustment the square footage used should be based on the floor area below the half story and not the usable area in the half story.

SLAB ADJUSTMENTS

Any portion of a building that is on a concrete slab should be adjusted under Item #5. This applies to living areas of a building on a slab and also portions of a building classified as either a built-in garage or a built-in porch.

ATTIC

All residential classes include an unfinished attic in base cost. This attic is assumed to be an area suitable only for storage space and cannot be realistically converted into usable living area.

EXPANDED ATTIC

Any area less than a half story, which could realistically be used for living space, should be treated as an expanded attic. Costs are given under Section # 11 of the "Residential Adjustment to Base Costs". These costs are for a finished, expanded attic and should be applied based on the floor area directly below the expanded attic. Included in the cost are interior finish and exterior structure. For expanded attics that are unfinished, the cost selected should be factored by .50 to adjust for the unfinished area.

BUILT-IN PORCHES

A built-in porch is defined as an area under the main roof of the principal building which is actually an unfinished portion of the principal building. It may have living area above or below it.

When considering enclosed built-in porches, the area of the porch should be included in the floor area calculation for the base cost. The unfinished porch should then be deducted under Item # 4. "Unfinished Full Story".

For built-in open porches the area of the porch should not be included in the floor area calculations. Only the actual living area per floor in the dwelling should be considered to obtain the base cost. The porch should be added under Section # 12, "Porches and Decks".

RESIDENTIAL ("R" SERIES) BUILDING CLASS DETERMINATION

In order to classify residential structures, it is necessary to understand the construction characteristics of the various classes of buildings. The quantity, quality and types of materials and quality of workmanship determine construction characteristics. Building class is determined by comparing the building characteristics given for each class with the building construction found during physical inspections. Actual value determinations may dictate a shift in class, up or down, as results may demonstrate.

A general description of each building class is as follows:

CLASS R-12: LOW (POOREST) QUALITY

The lowest cost dwelling unit providing minimal shelter. Materials and construction methods are of the lowest quality. Plumbing typically includes minimal bathroom and kitchen facilities. Construction methods may not meet today's building standards.

CLASS R-13: FAIR QUALITY

This class of dwelling is built with sub standard quality material having defects (seconds). Workmanship is below professional standard, of a semi or unskilled caliber. These units typically have wood floors in a portion of the dwelling. Plumbing usually consists of a three-fixture bath and kitchen sink.

CLASS R-14: BELOW AVERAGE QUALITY

The dwellings in this class will generally be found with adequate electricity, heat and plumbing, but the fixtures are commonly below average quality. The floors will occasionally be of inferior quality hardwood or a mix of hard and softwood. Partitions are dry wall or low quality plaster. The floors and roof framing is usually less than standard. This class is considered to have the essential conveniences.

CLASS R-15: AVERAGE QUALITY

This class of dwelling is almost comparable to one of standard quality, an average of all existing housing. It contains all the conveniences usually found in a standard quality dwelling, but either the materials or workmanship used in the construction of this type of dwelling is slightly inferior to that used in a standard quality dwelling built today.

CLASS R-16: STANDARD QUALITY

Dwellings in this class are typical of today's construction, materials and methods. This class unit meets current building code standards. They are well framed, with rafters and floor joists of standard size and spacing. Plumbing consists of a kitchen sink, dish washer, water heater, laundry facilities and multiple baths. The floors are carpet or hardwood, but with occasional tile finish. A developer typically builds this class of dwelling on a mass production basis (large-scale residential developments).

CLASS R-17: ABOVE STANDARD QUALITY

The dwellings in this class have materials and fixtures of above average quality and good workmanship. Plumbing fixtures and fittings are of above average quality. The kitchen has ample built-in cabinets. This class dwelling may have some exterior ornamentation and interior refinements. These units are found mass-produced in better grade developments.

CLASS R-18: GOOD QUALITY

This class dwelling has materials and fixtures of good quality and good workmanship. They are well framed with rafters and joists exceeding minimal standards. The plumbing and heating found in these dwellings are of better quality. The floors and walls have better quality materials and finish. These dwellings typically have some exterior ornamental (brick or stone fronts) as well as interior refinements. This class of dwelling may be found in smaller developments. Units have some degree of customization.

CLASS R-19: HIGH QUALITY

This class includes dwellings of a higher quality than those cited above. Better grade construction, quality materials and workmanship are evident. Good quality plumbing is included, which may also include additional fixtures, such as whirlpool baths or saunas. Interior finish includes cabinets and wood trim of finer woods, including some wood paneling. These units typically show some emphasis on both interior and exterior refinements. This class of dwelling reflects custom housing built from the developer's plans.

CLASS R-20: SUPERIOR QUALITY

These dwellings use superior quality construction, having a low maintenance exterior of stone, stucco, or brick and with some special architectural highlights. Interior finishes and appointments are superior quality. Heating and cooling units are of superior quality utilizing multiple zones. Units are typically custom designed by an architect for the property owner.

CLASS R-21: MANSION QUALITY

This mansion quality class dwelling is based upon a customized architectural design with construction typically supervised by the architect. Workmanship, interior elements and finishes, and exterior ornamentation are high quality. Multiple HV/AC units are typical in this class. Some dwellings may have gated or brick/stone entrance ways.

CLASS R-22: ESTATE QUALITY

This class of dwelling has an excellent quality of construction, being supervised by an architect. These homes are built from detailed architectural plans and written specifications for a custom builder. Workmanship on exterior and interior ornamentation is of very high quality requiring exceptionally skilled craftsmanship. Special engineering and special construction may be needed to support unusual architectural elements. This class may have housing for staff or guests within the same building and a separate service entrance.

CLASS R-23: HIGHEST ESTATE QUALITY

The dwellings in this class use the highest luxury quality of construction. This dwelling is built for an individual without regard to resale value. Architectural expression may be a major element of the design. Opulence and eccentric details are considered typical in this class. Unusual features, such as imported tile, bronze and gilded fixtures, hand carvings, rare woods and stones and works of art are characteristic of this class. May contain special structural elements to support special features not typically found in residential construction. Arrangements frequently include separate service entrance areas, housing for staff and guests in separate buildings.

CLASS R-27, R-28, R-29, R-30: FAIR, AVERAGE, ABOVE AVERAGE AND GOOD QUALITY SEMI-DETACHED RESIDENCES

These classes are comparable, in quality of materials and workmanship used in their construction, to a single-family residence of the same quality. They differ from the single-family residence in that one or a portion of one of their walls is a party wall.

CLASS R-33, R-35, R-37, R-39: FAIR, AVERAGE, ABOVE AVERAGE AND GOOD QUALITY ROWHOUSE/TOWNHOUSE

These classes are comparable, in quality of materials and workmanship used in their construction, to a single-family residence of the same quality. They differ from the single-family residence in that two or a portion of two of their side-walls are party walls, except for, the end units which have one party wall.

CLASS R-43, R-45, R-47, R-49: FAIR, AVERAGE, ABOVE AVERAGE AND GOOD QUALITY TWO TO FOUR FAMILY APARTMENTS

These classes are comparable, in quality of materials and workmanship used in their construction, to a single-family residence of the same quality. They differ in that they are multi-family dwellings having two to four apartments in each building.

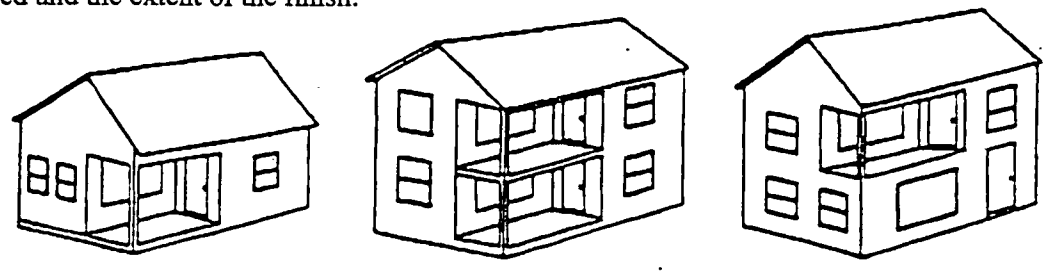
CLASS R-50, R-51, R-52, R-53, R-54: LOW, FAIR, AVERAGE, GOOD AND HIGHEST QUALITY MOBILE HOMES

Mobile homes are typically towed to the site. The lowest class (R-50) mobile home provides minimal shelter, with low quality material and construction. The quality of material and construction increases as the classes progress to the highest quality class (R-54), which is almost comparable in quality to a prefabricated dwelling.

Examples of Open and Built-in Porches and Attached and Built-in Garages

Porches and Decks/Patios – A distinction must be made between porches which are actually an unfinished portion of the principal building and classified as "Built-in" and porches which have their own roof and are attached to the principal buildings.

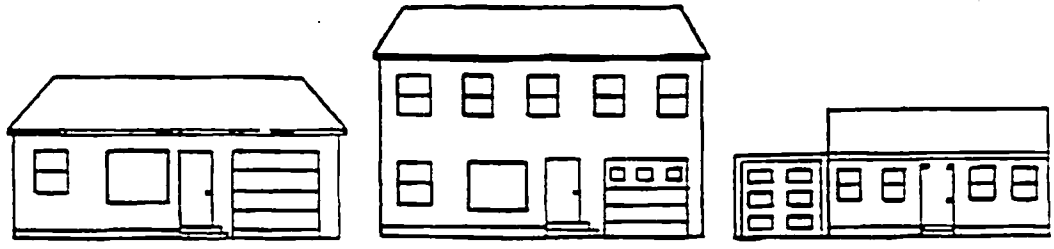
These attached porches are either "open" meaning there are no sidewalls except those of the principal building or "enclosed" with permanent type walls and windows. The class of porch depends on the quality of the materials used and the extent of the finish.



Open Porch | Two-Story Open Porch | Built-in Porch

Garages – Built-in garages are defined as having garage area built into the first floor level of the principal building and covered by an upper story that is or could be used as living space. The area used for built-in garages is recorded as unfinished area under "Structures". A garage is also considered built-in if two full walls are common with the principal building.

An "Attached Garage" is defined as a garage with one wall common with the principal building having its own roof. It may be considered as having its own roof even though there is no break in the roofline between the garage roof and the roof principal building.



Attached Garage | Built-in Garage | Attached Garage

Computation Procedures for Semi-Detached Dwellings

This classification is provided for single ownership of each dwelling unit of a semi-detached dwelling the definition of which is two side by side, attached, single family residences.

The base replacement cost is based on the floor area per story of each dwelling unit with a party wall included.

This base replacement cost is computed by multiplying the square feet of floor area per story of that dwelling by the unit cost per square feet of floor area per story that is provided.

As an example, a semi-detached dwelling of average quality, with a first floor area of 1,400 square feet and a second floor area of 1,000 square feet, has two dwelling units. One has a first floor area of 800 square feet and a second floor area of 500 square feet and the other has a first floor area of 600 square feet and a second floor area of 500 square feet. Each of these dwelling units should be computed separately on its own property record card. The computation procedure for determining the base replacement cost of each of them is as follows:

Dwelling #1

Item	Area	Rate	Base Replacement Cost
First Floor Story	800 sq. ft.	$65.04	$52,032
Second Floor or Upper Story	500 sq. ft.	$44.25	$22,125
			$74,157

Dwelling #2

Item	Area	Rate	Base Replacement Cost
First Floor or Story	600 sq. ft.	$69.77	$41,862
Second Floor or Upper Story	500 sq. ft.	$44.25	$22,125
			$63,987

For adjustments of semi-detached dwellings, see residential adjustment procedures and cost schedules.

NOTE: Each of the dwelling units of a semi-detached dwelling should be enumerated and computed on separate property record cards, even though the entire dwelling is under one ownership. This is due to one or more factors that may influence the market value of each of the units. These factors may be remodeling, an addition to one of the units, effective age, etc.

Rowhouse/Townhouses

The base replacement cost for units of rowhouses/townhouses is based on a dwelling unit with two party walls included. This base replacement cost is determined by multiplying the square feet of floor area per unit by the square foot cost per story.

For exterior or end units of rowhouses/townhouses, a factor of 1.07 should be applied because the unit costs are based on the interior units which have two party walls whereas an exterior or end unit has only one party wall and an outside wall (or its own wall).

As an example, an interior unit rowhouse of average quality of 600 square feet first floor and 500 square feet second floor would be computed as follows:

Item	Area	Rate	Base Replacement Cost
First Floor or Story	600 sq. ft.	$64.43	$38,658
Second Floor or Upper Story	500 sq. ft.	$35.38	$17,690
			$56,348

As another example, an exterior unit rowhouse of average quality with 600 square feet first floor and 500 square feet second floor would be computed as follows:

Item	Area	Rate	Base Replacement Cost
First Floor or Story	600 sq. ft.	$64.43	$38,658
Second Floor or Upper Story	500 sq. ft.	$35.38	$17,690
			$56,348
			x 1.07
			$60,292

Single Family Residences Converted to Multi-family Use

Whenever a single family residence has been converted to multi-family use, it should be enumerated and computed as a single family residence, then by use of the adjustments provided, adjusted for plumbing and kitchen units over and above those which are found in the single family residence. Other adjustments should be made in the same manner as those of a single family residence.

Two to Four Family Apartments

This classification is provided for those buildings designed and built as two, three or four family apartments, with over and under or side by side apartment units and of one ownership. For single ownership of each side by side unit see Semi-detached Residences or Rowhouse/Townhouse.

The base replacement cost of two to four family apartments is based on the total floor area per story of the building. This base replacement cost is computed by multiplying the floor area per story of the building by the unit cost per square foot of floor area per story that is provided for each of the types of apartments included in this classification.

As an example, a two story, four family apartment, two apartments per floor, having a first floor area of 1,200 square feet and a second floor area of 1,200 square feet would be computed in the following manner:

Item	Area	Rate	Base Replacement Cost
First Story	1,200 sq. ft.	$75.27	$90,324
Second or Upper Story	1,200 sq. ft.	$44.96	$53,952
			$144,276

A four-story four family apartment, one apartment per floor, having 1,000 square feet of floor area per story would be computed as follows:

Item	Area	Rate	Base Replacement Cost
First Story	1,000 sq. ft.	$79.42	$79,420
Second through Fourth or Upper Stories	3,000 sq. ft.	$41.12	$123,360
			$202,780

For adjustments to two to four family apartments, see residential adjustment procedures and cost schedules.

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MOBILE HOME VALUATION

Introduction

This section of the Real Property Appraisal Manual includes procedures which will enable tax assessors to estimate the fair market value of mobile homes located in their respective taxing districts.

The base cost schedules are arranged in five mobile home classes and may be found starting on Page II-44.1 of the appraisal manual.

Class R-50 – Low Quality
Class R-51 – Fair Quality
Class R-52 – Average Quality
Class R-53 - Good Quality
Class R-54 – High Quality

All dimensions are exterior measurements excluding the front hitch. The cost schedules do not include the typical costs for personal property items such as furniture, free standing appliances and draperies. The allowance that has been made for these items depends upon the quality of the unit. The base costs do include permanently installed built-in cabinets, wardrobes, vanities, appliances and floor coverings as well as those items listed in base specifications for the respective class.

Most adjustments to the mobile home base specifications can be made from the Mobile Home Adjustment Section which may be found on Page II-54. Adjustments for heating and cooling may be secured from the Residential Adjustment Section of the Manual.

The costs provided for mobile homes are as of October 2001, which is the same base year for all other costs in the Manual. Typical delivery costs, set up charges, and all standard items listed in the base specification for each class are included in the base cost schedules. Separate effective age depreciation tables are provided for the mobile home classes. The depreciation tables may be found on Page II-136.1.

Cost Conversion Factors, for the appropriate year, may be obtained from Table RR-1 on Page II-153.

DESCRIPTION OF SUBJECT PROPERTY

Example

The mobile home valued in this example is an average grade 12′ x 56′ unit with two bedrooms, living room, kitchen, two full bathrooms and a 4′ x 10′ tip-out room. The unit has an actual age of 8 years and an effective age of 5 years. The kitchen includes wood cabinets, formica covering on the counter, a counter top electric range and electric wall oven, built-in dishwasher, a double stainless steel kitchen sink, vinyl asphalt flooring and acoustical paneled tile ceiling. The living room and bedrooms have wall to wall carpeting, paneled walls and acoustical paneled tile ceilings. In addition, the living room has built-in shelves and the bedroom each contain built-in dressers. The bathroom has vinyl asphalt tile flooring, marlite walls and acoustical paneled tile ceiling.

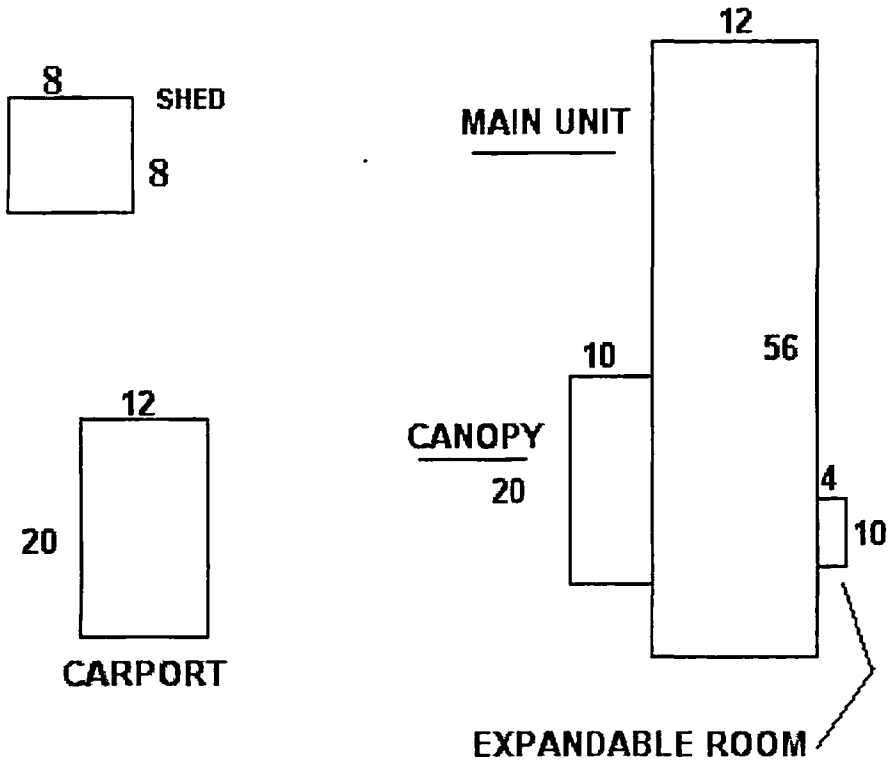
The unit has oil fired forced hot air heat with central air conditioning and a 30-gallon electric hot water heater.

In addition, the property has a 10′ x 20′ aluminum porch covering, a separate 12′ x 20′ carport, an 8′ x 8′ aluminum storage shed and aluminum skirting, (excluding tip-out area).

This mobile home is located in an average grade park with paved streets, paved off-street parking, concrete patios for all sites, and street lights. The unit does not suffer from any location or economic obsolescence. For units located in parks that are above or below average, the "Mobile Home Calculation Sheet" contains provisions for the application of Market/Location Factor to reflect the value impact an individual park may have on the Market Value of a unit.

PLOT PLAN

Example:



SQUARE FOOT CALCULATIONS

Main Unit	12' x 56'	=	672 Sq. Ft.
Expandable Room	4' x 10'	=	40 Sq. Ft.
Total Floor Area		=	712 Sq. Ft.
Skirting	12' + 56' + 12' + 56'	=	136 Lin. Ft.
Canopy	10' x 20'	=	200 Sq. Ft.
Carport	12' x 20'	=	240 Sq. Ft.
Storage Shed	8' x 8'	=	64 Sq. Ft.

MOBILE HOME CALCULATION SHEET
DEMO CLASS R - 52

Identification Data	
Owners Name	JOHN DOE
Site Number	9
Address	KADOT COURT

Model	CHAMPION Year 2001
Sales Data	PURCHASED SEPT. 2001
	$30,000

COMPUTATIONS

PORCHES/DECKS, GARAGES, CARPORTS ETC

Item	Width	Length		Area
CANOPY	10'	20'		200
CARPORT	12'	20'		240
STORAGE				
SHED	8'	8'		64

DESCRIPTION	
Foundation:	Yes No **X**
Roof:	Flat **X** Gable
	Wood Metal Shingle
Exterior Wall:	Alum. **X** Wood
Int. Fin.	Plywd Panel **X** Other **X**
Floors:	Vinyl **X** Carpet **X** Other
Plumbing:	4 Fix. 3 Fix **2** 2 Fix
	1 Fix Rough – in
Heating:	F. H. A. **X** Electric
	Comb. Heat. & Cool. **X** Other
Built-in App.:	Dishwasher **X** Other
Fireplace:	Yes No **X**
Number of Rooms	**4**
Number of Bedrooms	**2**
Other Items	

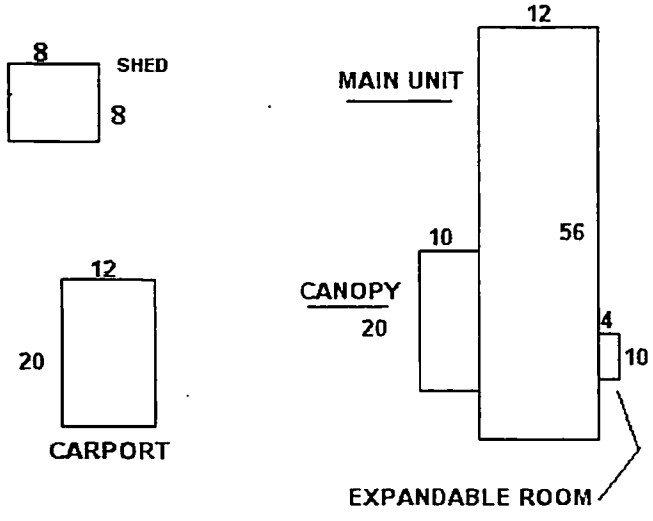
BASE COST CALCULATION

Item Number	Quality	Unit Cost		Total
Base	712	37.70		26,842

ADJUSTMENTS TO BASE COST

Item Number	Area or Quality	Unit Cost	+ -	Total
20.2	1	1040	+	1040
21.7	1	954	+	954
22.1	200	5.24	+	1048
22.2	240	8.65	+	2076
22.4	64	10.31	+	659
22.8	136	4.81	+	654
* 6.9	712	3.58	+	2548

MOBILE HOME SKETCH



Sub Total	8,979
A. Replacement Cost	35,821
B. Cost Conversion Factor (Mercer)	1.00
C. Total Replacement Cost New	35,821

DEPRECIATION

D. Eff. Age Dep.	0
E. Obs. Phys. Cond.	0
F. Total Phys. Dep.	0

G. Net Phys. Cond. (100% - F)	1.00
H. Deprec. Value of Improvements (c) x (g)	35,821
I. Market/ Locator Factor	1.00
Indicated Improvement(s) Value	35,821
Add Land Value (If Applicable)	
TOTAL APPRAISED VALUE	35,821

Notes

Rounded **$ 35,800**

MOBIL HOME CLASS R - 52 Effective Age 1

FLOOR AREA COMPUTATIONS

Floor or Part	Width	Length	Area
MAIN UNIT	12'	56'	672
EXPANDABLE			
ROOM	4'	10'	40

Measured by GJL Classified by TJR Extended by FHM Checked by JVL

Date 10/2001

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Introduction

The structural shell of commercial and industrial type buildings is used as the basic cost component for calculation of the replacement cost. The structural shell, as used in this manual includes the foundation, structural frame, 1st floor (no floor finish) roof and roof cover. Costs of all other components, which vary greatly from building to building, must be added to the base cost of the structural shell.

Specialized shell types with somewhat standard construction materials and costs are set aside as specialty classes. Included are pre-engineered, light steel buildings (Butler type), service stations and special use buildings such as those used by quick food franchise businesses (McDonald's, Ginos, Burger King, etc). The base costs of pre-engineered buildings include the structural frame, floor, roof and a standard exterior wall such as aluminum, enameled steel, etc.

Base costs of service stations and special use buildings include the structural shell, exterior wall and interior finish but none include the costs of the plumbing, heating and accessory items (except for vehicle overhead doors which are included in the service station base costs).

The eleven basic structural shell types are described briefly as follows:

Class 101 - Light Wood - includes all buildings having a structural frame of predominantly dimensional lumber (2" x 4", 2" x 6", 2" x 8", etc.) using construction techniques similar to those used for residential buildings.

Class 102 - Heavy Timber - includes all buildings having a structural frame predominantly of heavy wood timbers (4" x 4", 4" x 6", 6" x 8", etc.). This type includes the so-called "mill construction".

Class 103 - Masonry Load Bearing - includes all buildings having a structural frame of predominantly masonry materials. These may include a combination of brick, block, tile,or stone. The interior structure members may be either steel or wood if the masonry load bearing walls are limited to the exterior walls.

Class 104 - Reinforced Concrete - includes all buildings having a structural frame of predominantly reinforced concrete.

Class 105 - Steel Frame - includes all buildings having a structural frame of predominantly steel members.

Class 106 - Fireproof Steel Frame - includes all buildings having a structural frame of predominantly steel members covered with a variety of fireproofing materials including concrete encased steel.

Class 107, 108, 109 - Lightweight Steel Frame - Class 107 has a galvanized steel exterior; Class 108,an enameled steel or aluminum exterior and Class 109 has an insulated sandwich panel exterior. These shell types will include the majority of buildings usually classified as pre-engineered buildings using such trade names as Butler, Armco, Stran-Steel, etc. Occasionally pre-engineered techniques will be applied to produce structures which do not fall under the classification or specifications intended here. For example, a pre-engineered building with a height over one story should be classified as a Class 105 (Steel Frame) and the exterior wall finishes accounted for separately.

Classes 123, 124, 125, 126, 127 - Service Stations and Classes 133, 134, 135, 136, 137, - Specialty Buildings and 145 - Garden Apartments - are included in the structural shell groupings although buildings in these classes have specialized characteristics or are generally recognized as a special class. There are 5 special classes of service stations and specialty buildings which reflect the use of special construction materials as well as the quality of materials and workmanship. The specialty buildings are generally considered to be standardized types of buildings built for fast food chains where efficiency, uniformity and instant recognition are the main objectives. Garden apartments are included in Class 145 with quality factor adjustments because this class of property is generally classified separately for convenience.

For information of what is included in each shell type, see the base specifications for that shell type.

Commercial-Industrial Building Classes

Shell Types	Class
Light Wood	101
Heavy Timber	102
Masonry Load Bearing	103
Reinforced Concrete	104
Steel Frame	105
Fireproof Steel Frame	106
Lightweight Steel Frame	
Galvanized Steel Exterior	107
Enameled Steel or Aluminum Exterior	108
Insulated Sandwich Panel Exterior	109
One Story Basement with Concrete First Floor	110
One Story Basement with Wood First Floor	111
Dock High Foundation	112
Service Stations	123 thru 127
Specialty Buildings	133 thru 137
Garden Apartments	145

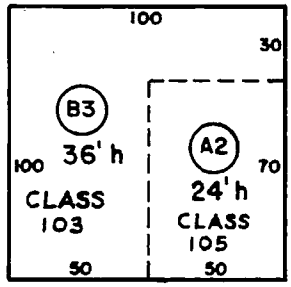
Wall Ratio

The base unit cost applicable to commercial and industrial buildings is influenced by the relationship of the perimeter to the ground area of the building. This relationship is expressed as the "Wall Ratio" and the base unit cost tables show such wall ratios for commercial and industrial buildings.

The wall ratio is computed by dividing the ground area of the building by the perimeter. For example, the wall ratio of a building 36' high, 80 feet by 20 feet is 8, computed as follows: 80 x 20 = 1,600 square feet ground area. Two sides of 80 feet(80 x 2 = 160) plus front and rear 20 feet each(20 x 2 = 40) or 200 feet. 1,600 divided by 200 = 8 (wall ratio).

This procedure applies for buildings with the same structural shell type regardless of any variations in story height.

For buildings with variations in structural shell, the wall ratio for each section of the building must be calculated separately. For example, the sketch below shows a building with a steel shell type (Class 105) and a masonry load bearing shell type (Class 103).



To calculate the wall ratio for this building each section should be considered separately and computed as follows:

Class 105	2 story area (24' high)	=	50 x 70 = 3,500 square feet
	Perimeter	=	50 + 70 + 50 + 70 = 240 feet
	Wall ratio	=	3,500 divided by 240 = 14.58
Class 103	3 story area (36' high)	=	50 x 100 = 5,000 square feet
			50 x 30 = 1,500 square feet
			6,500
	Perimeter	=	50 + 100 + 100 + 30 + 50 + 70 = 400
	Wall Ratio	=	6,500 square feet divided by 400 - 16.25

Since the base costs reflect only the structural shell of the building, wall ratios must be calculated in this fashion to arrive at the proper replacement costs.

Recording and Calculating Procedures for Commercial-Industrial Buildings

Building Description on Commercial-Industrial Property Record Card

The first section of the Property Record Card relates to information of an overall nature necessary for classification and depreciation of the principal building. Data which must be recorded includes overall building classification, predominant use and special features or conditions which may effect value and the physical condition together with any possible functional or economic obsolescence that may be observed.

This data, as well as all other information required, must be recorded carefully and uniformly in the spaces designated in order for the data to be capable of being encoded for computer input. Even if there is no intention of computer application in the near future, it is helpful to have the required data recorded with uniformity.

Owner ADAMS INC.		
Street Address 115 MAIN ST.		
COMMERCIAL BUILDING DATA		
Card Code	28	
Building Number	30	01
Predominant Shell Type	32	105
Predominant Use Type 1 = Apt. 2 = Comm. 3 = Indus.	35	2
Overall Quality 1 = Low 3 = Average 5 = High	36	3
Year Built	37	1975
DEPRECIATION		
Condition 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Excel.	41	3
Effective Age in Years	42	000
100% - (Eff. Age Dep. 0.0 % Obser. Phys. Cond. 0 %) = Physical Net Condition	45	100
OBSOLESCENCE		
100% - (Func. Obsol. 0 % + Econ. Obsol. 0 %) = Obsol. Net Condition	48	100
Physical Net Cond. 100.0 % x Obsol. Net Cond. 100% = Final Net Condition	51	100

Card Code - At this time, since no computer program is in effect, the enumerator need not make an entry in this space whenever it appears on the card. This entry will be necessary only when a computer program is in effect for the manual.

All other items in this section should be filled in as indicated. It is important that they be filled in completely and accurately to facilitate calculation procedures. In Commercial-Industrial buildings with more than one shell type or more than one use, the PREDOMINANT Shell Type and use of the building should be entered.

Structural Shell - The information required to be recorded in this section of the Commercial-Industrial Property Record Card by the appraiser under the appropriate heading includes:

Segment - The structural shell of the building being listed is given a segment number. If the building has more than one shell type and/or one shell type but different story heights (for example - a four story segment and a five story segment), each is given a segment number which is recorded in the space provided.

Quality - The quality code number (for example 3 = Average) given in this section is recorded in the proper space for the building or for each segment of the building.

Stories/Height - The height (for example 60 feet) of the building or of each segment is recorded in the space provided. NOTE: The number of stories are entered for Class 145, Garden Apartments.

Ground Area - The ground area in square feet of the building, or of each building segment, is recorded in the space provided.

Perimeter - The perimeter in lineal feet of the building or, of each segment, is recorded in the space provided. NOTE: The perimeter should not be recorded for Shell Types 123 thru 127, 133 thru 137 and 145. (Service Stations, Specialty Building and Garden Apartments).

Shown below is an example of how this information is recorded and calculated.

Segmt.	Ql	Type	Sty/Hgt	Ground Area	Perimeter
1	3	104	60	1770	190
2	3	105	48	19004	640
Card Code					28
3	3	110	12	1770	190
Card Code					28
Card Code					28

Segmt.	WR	Quality Factor	Rate	Apt. Factor	Cost
1	10	1.00	39.13		69260
2	30	1.00	14.41		273848
3	10	1.00	17.95		31772

Structural Shell Base Cost 374880

The information recorded in the example above shows that we have a building with three shell types; 104 Reinforced Concrete, 105 Steel and 110 Basement with concrete first floor. Segment 1 is average quality, 60' high with a ground area of 1,770 square feet and a perimeter of 190 lineal feet. Segment 2 is also average quality, 48' high with a ground area of 19,004 square feet and a perimeter of 640 lineal feet. Segment 3, the basement area, is average quality, 12' high with 1,770 square feet of ground area and a perimeter of 190 lineal feet.

Extension of the figures indicate a Wall Ratio of 10 for Segment 1, 30 for Segment 2, and 10 for Segment 3. Since all segments were classed as average, a quality factor of 1.00 is used for each segment. Rates are found in the cost schedules for the various shell types and placed in the spaces provided. The costs are then added to arrive at the Structural Shell Base Cost.

NOTE: 1. Any variations from base specifications should be made under the Standard Building Accessories heading on the Property Record Card.

2. All upper floors must be added as found since none are included in the base specifications for Shell Types 101-106. This is accomplished in the Standard Building Accessories portion of the Property Record Card. (See Page I-91).

Exterior Wall Finish - The information required to be recorded in this section to properly record the construction characteristics of the exterior wall includes:

Type - The code number (for example 7 = Face Brick on Block) is recorded in the space provided for each type of exterior wall finish found. If a material is found that is not listed on the Commercial-Industrial Property Record Card, it should be compared with those that are listed and placed in an equivalent category. NOTE: More than one type of exterior wall finish may be found on a segment of a building. Each type should be recorded as a separate entry.

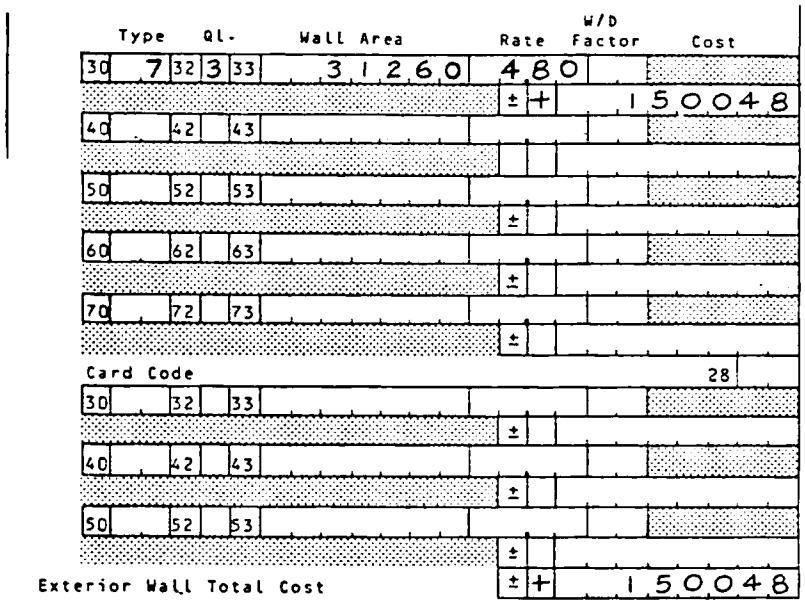
Quality - The quality code number (for example 3 = Average) for each type of exterior wall finish is recorded in the space provided. NOTE: More than one degree of quality of exterior may be found on a segment of a building. If found, each should be recorded as a separate entry.

Wall Area - The square feet of wall area of each type and/or quality of exterior wall finish found on each segment should be recorded in the spaces provided.

NOTE: It is necessary to record this information only for Shell Types 101 thru 106. It is only necessary to record the exterior wall finish for Types 107 thru 109, 123 thru 127, 133 thru 137 and 145 if the exterior wall finish differs from that which is included in the base specifications for these types. The exterior

wall finish when different from the base specifications of these shell types should be recorded as an addition (+) and the wall finish included in the base specifications should be recorded as a deduction (-) since it is necessary to deduct the type of wall specified and add for the wall found. No entry is made for Shell Types 110 thru 112 since these types are for basements and dock high foundation.

An example of how the exterior wall finish is recorded and calculated on the Commercial-Industrial Property Record Card is shown below.



The information recorded above shows that the entire building has an exterior wall finish of Average Quality face brick on block totalling 31,260 square feet. The rate is found in Section 2 of the Adjustments section for Commercial-Industrial Buildings and applied to the wall area. The costs are added to arrive at the Exterior Wall Total Cost.

NOTE: For buildings with more than one segment, it is not necessary to list each segment separately if the wall type is the same for all. The only time more than one entry is necessary is if more than one wall type is found.

Interior Finish - The information that is required to be recorded in this section includes:

Type - The code number of the interior finish type (for example 4 - Small Offices) or equivalent type of interior finish that is found should be recorded in the spaces provided for each type found.

These types of interior finish include all architectural items inside a building such as ceilings, partitions, walls, floors, doors, floor coverings, painting, millwork, cabinets,and built-ins for all types of apartment and commercial construction. Industrial interior finish includes the various types of special utility systems required for industrial purposes including compressed air, cooling water, exhaust systems, water, gas, sewer,and power wiring systems.

The type of interior finish selected depends on the actual occupancy or use which may be different than was originially intended.

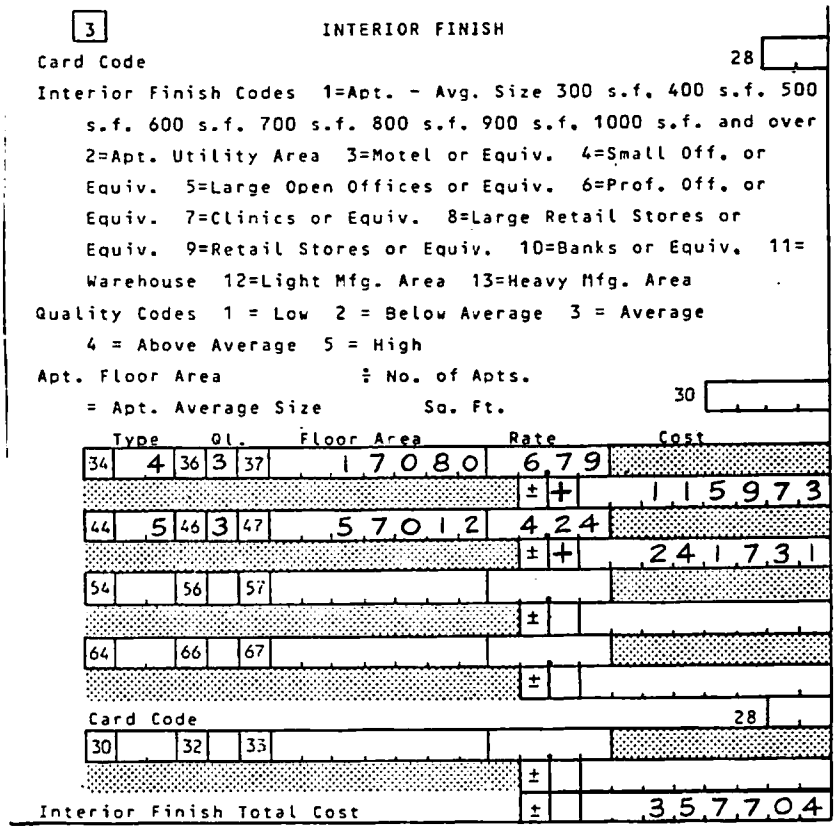
If a type of interior finish is found that is not listed in this section, it should be compared with the types that are listed and placed in an equivalent category.

NOTE: No interior finish type is given for Services Stations (Shell Types 123 thru 127), Specialty Buildings (133 thru 137) and 145 (Garden Apartments) because the interior finish is included in the base specifications for these types of structures. No entry needs to be made in this section for these types of finishes.

Quality - The quality code number (for example 3 = Average) for the overall quality of the type of interior finish found should be recorded in the space provided.

Floor Area The square feet of floor area of each type of interior finish found should be recorded in the spaces provided.

An example of how this information is recorded and calculated in this section of the Commercial-Industrial Property Record Card is shown below.



The information in the above example shows that one portion of the building has a small office interior finish of average quality with a floor area of 17,080 square feet. Another portion has a large open office interior finish of average quality with a floor area of 57,012 square feet. The rate is found in Section 3 of the Adjustments section for Commercial-Industrial Buildings and applied to the square footage indicate. The extended costs are then added to arrive at Interior Finish Total Cost.

Heating/Cooling - The information required to be recorded on the Commercial-Industrial Property Record Card for this section includes:

Building Use Type - The code number for the building use type (for example 2 = Commercial) as listed in this section should be recorded in the space provided.

Type of Unit - The code number for the type of heating and/or cooling unit should be recorded in the space provided. For example; 6 = Central Combined (Central heating and Cooling).

If a building has one system that serves more than one type of building use, the most predominant type of building use should be recorded.

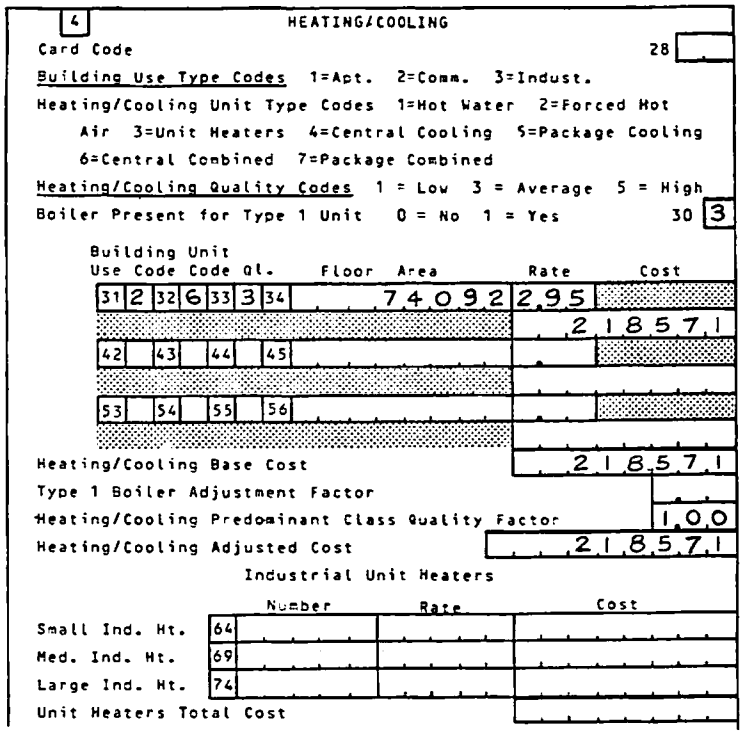
If two or more types of heating and/or cooling units are found, each should be listed separately. NOTE: If a type 1 heating unit (Hot Water/Steam) is found, it should be indicated 0 = no or 1 = yes if the unit includes a boiler.

If industrial type unit heaters are found, the number of the types (small, medium or large) found should be recorded in the spaces provided for these types of units.

Quality - The quality code number (for example 3 = Average) for the overall quality of each type of unit found should be recorded in the space provided.

Floor Area - The square feet of floor area heated and/or cooled of each type of unit found should be recorded in the spaces provided.

An example of how this information is recorded and calculated is shown below.



4 HEATING/COOLING

Card Code 28

Building Use Type Codes 1=Apt. 2=Comm. 3=Indust.

Heating/Cooling Unit Type Codes 1=Hot Water 2=Forced Hot Air 3=Unit Heaters 4=Central Cooling 5=Package Cooling 6=Central Combined 7=Package Combined

Heating/Cooling Quality Codes 1 = Low 3 = Average 5 = High

Boiler Present for Type 1 Unit 0 = No 1 = Yes 30 3

Building Use	Code	Unit Code	Code	Qt.	Floor Area	Rate	Cost
31	2	32	6	33	3	34	74,092	2.95	
									218,571
42		43		44		45			
53		54		55		56			

Heating/Cooling Base Cost 218,571

Type 1 Boiler Adjustment Factor

Heating/Cooling Predominant Class Quality Factor 1.00

Heating/Cooling Adjusted Cost 218,571

Industrial Unit Heaters

		Number	Rate	Cost
Small Ind. Ht.	64			
Med. Ind. Ht.	69			
Large Ind. Ht.	74			
Unit Heaters Total Cost				

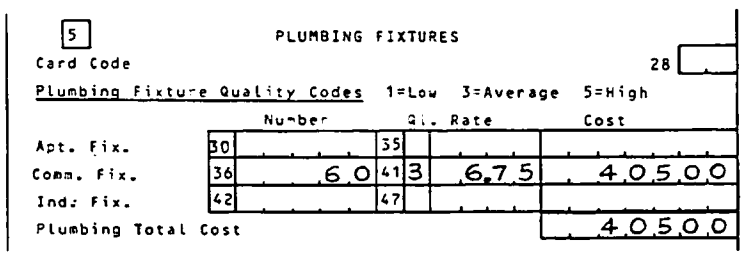
The information recorded on the example indicates that the building has a commercial type central combined system (Central Heating and Cooling) of average quality with a total floor area heated and cooled of 74,092 square feet. The rate is found in Section 4 of the Adjustments section for Commercial-Industrial Buildings and applied to the square footage indicated to arrive at Heating/Cooling Base Cost. This figure is then factored by a boiler adjustment for Type 1 heat if necessary, and a Class Quality Factor to arrive at Heating/Cooling Adjusted Cost. In the example above, no boiler factor was necessary. The Class Factor applied was 1.00 since this item was classified as average.

Plumbing - The information required to be recorded in this section consists of:

Number - The total number of each type of plumbing fixture given should be recorded in the spaces provided.

Quality - The quality code number (for example 3 = Average) for the overall quality of each type of fixture found should be recorded in the space provided. NOTE: The type of fixtures that are recorded as industrial types of plumbing include circular or semi-circular sinks, multi-stall showers and other similar special purpose items. Commercial type fixtures found in an industrial building should be recorded as commercial fixtures.

An example of how this information is recorded and calculated on the property record card is shown below.



5 PLUMBING FIXTURES

Card Code 28

Plumbing Fixture Quality Codes 1=Low 3=Average 5=High

		Number		Qt.	Rate	Cost
Apt. Fix.	30		35			
Comm. Fix.	36	60	41	3	67.5	4,050.00
Ind. Fix.	42		47			
Plumbing Total Cost						4,050.00

The information shown on the example indicates that the building has 60 commercial type fixtures of average quality.

The rate is found in Section 5 of the Adjustments section for Commercial-Industrial Buildings and applied to the number indicated to arrive at Plumbing Total Cost.

Electrical Installation - The types of electrical installation given include lighting fixtures, outlets, and all associated equipment, panels, wire, conduit, etc.

Power wiring systems for manufacturing or associated equipment should not be recorded as such systems are a part of the special utility systems and included in the interior finish of industrial type buildings.

NOTE: Do not record any information in this section for Shell Types 123 thru 127 (Service Stations), 133 thru 137 (Specialty Buildings) and 145 (Garden Apartments) as the electrical equipment has already been included in the base specifications.

The information required to be recorded in this section includes:

Light Intensity - Indicate in the space provided a number (for example 2, Adequate) to describe the intensity of the lighting.

Floor Area - The square feet of floor area of each type found should be recorded in the spaces provided.

Quality - The quality code number (for example 3 = Average) of the overall quality of each type found should be recorded in the space provided

An example of how this information is recorded and calculated is shown below.

6 ELECTRICAL INSTALLATION

Light Intensity 1 = Minimum 2 = Adequate 3 = Bright 48 [2]

Quality Codes 1 = Low 3 = Average 5 = High

Type		Floor Area		Ql.	Rate	Cost
Apt.	49		56			
Comm.	57	74,092	64	3	2.25	166,707
Ind.	65		72			
Electrical Installation Total Cost						166,707

The example shown indicates that the building has a commercial electric installation of 74,092 square feet and is of average quality and adequate intensity. The rate is found in Section 6 of the Adjustments Section for Commercial-Industrial Buildings and is applied to the total square feet to arrive at Electrical Installation Total Cost.

Sprinkler System - The information required to be recorded in this section includes:

Floor Area - The square feet of floor area of the type of system found should be recorded in the spaces provided.

Quality The quality code number for the overall quality of the type of system found should be recorded in the space provided.

An example of how this information is recorded and calculated is shown on the following example.

7 SPRINKLER SYSTEM

Card Code 28 [ ]

Quality Codes 1 = Low 3 = Average 5 = High

Type		Floor Area		Ql.	Rate	Cost
Apt.	30		37			
Comm.	38	74,092	45	3	.79	58,533
Ind.	46		53			
Sprinkler System Base Cost						
Sprinkler System Quality Factor						1.00
Sprinkler System Total Cost						58,533

The information recorded in the example indicates the building has a sprinkler system of 74,092 square feet of floor area and of average quality. The rate is found in Section 7 of the Adjustments section for Commercial-Industrial Buildings and applied to the total square feet to arrive at Sprinkler System Base Cost. The quality factor for Sprinkler system is then applied (in this example 1.00) to arrive at Sprinkler System Total Cost.

Standard Building Accessories - In this section, any upper floors for shell types 101-106 are added. For example, a building with segments 48' high and 60' high consisting of 4 and 5 stories respectively, requires the addition of all the upper floors

Also included under this heading are all items normally associated with the building i.e. elevators, canopies, exterior stairs, etc.

An illustration of these items is shown below.

STANDARD BUILDING ACCESSORIES DATA

Card Code 28

Card Code 30-31	Seq. No. 32-33	Access. Code 34-37	Measure One 38-42	Measure Two 43-49	Cl. 50	Rate	Quality Factor	±	Cost
	1	FA03	4	1770	3	3.44	1.00	+	24355
	1	FA03	3	19004	3	3.44	1.00	+	196121
		RA09	1	5000	3	5.67	1.00	+	28350
	1	EV02	1		3	64,500	1.00	+	64500
	1	EV08	5		3	1,900	1.00	+	9500
Standard Building Accessories Total Cost								+	322826

The information recorded above indicates the building has 4 upper concrete floors with 1,770 square feet each and 3 upper concrete floors with 19,004 square feet each, an average grade canopy of 5,000 square feet and one average quality passenger elevator with 5 stops. The rates are found under general headings in Section 8 of the Adjustments section for Commercial-Industrial Buildings and entered in the space provided. The quality factor (for this example 1.00) and whether the item is to be added or deducted is also indicated in the appropriate spaces. The rate and quality factor are then applied to the measure indicated (Measure one = per unit, Measure two = per square foot) to arrive at the cost for each item. The various items are then totaled to arrive at Standard Building Accessories Total Cost.

This section of the Property Record Card also provides for variations from the base specifications of a shell type. These variations include roof type and floor construction. The adjustment is accomplished by entering the variation in roof or floor construction and placing a plus (+) in the ± column. The components included in base specifications affected by the adjustment are deducted and a minus (-) in the ± column is indicated.

An example of how this information is recorded and calculated is shown below.

STANDARD BUILDING ACCESSORIES DATA

Card Code 28

Card Code 30-31	Seq. No. 32-33	Access. Code 34-37	Measure One 38-42	Measure Two 43-49	Cl. 50	Rate	Quality Factor	±	Cost
		RA03		45207	3	2.77	1.00	-	125223
		RA01		45207	3	2.55	1.00	+	115278
Standard Building Accessories Total Cost								-	9945

The information in this example indicates that a steel deck roof is being deducted from the building and a wooden roof is being added.

The rate is found under general headings in Section 8 of the Adjustments section for Commercial-Industrial Buildings and entered in the space provided. The quality factor and whether the item is to be added or deducted is also indicated in the appropriate spaces. The rate and quality factor are then applied to the measure indicated to arrive at the cost for each item. The various items are then totalled to arrive at Standard Building Accessories Total Cost. In the above example this item will be a deduction from building cost and should be labeled clearly so a deduction will be made under Building Valuation Summary section of the Property Record Card.

Special Building Accessories - This section is provided on the card for other items associated with the building but not found in the adjustments section. These are entered on the card in narrative form.

An example of how this information is recorded and calculated is shown below.

SPECIAL BUILDING ACCESSORIES DATA

Card Code 30-31	Sec. No. 32-33	Description 34-60	Depr. Full Value 61-69
		PEDESTAL FLOOR 4500 SQ FT	22500
Special Building Accessories Total Depr. Full Value			22500

The information recorded in this example indicates the building is equipped with pedestal floor for computer use with a total depreciated value of $22,500.

NOTE: Entries made in this section are at the discretion of the appraiser and should be made carefully and with supporting data.

Standard Exterior Accessories - Under this heading are found items normally considered as land improvements, such as paving, flood lights, fencing, loading docks etc., and accessory structures such as grain elevators, smoke stacks, storage tanks, etc.

An example of how this information is recorded and calculated is shown below.

STANDARD EXTERIOR ACCESSORIES DATA

Card Code 30-31	Sec. No. 32-33	Acces. Code 34-37	Measure One 38-43	Measure Two 44-49	Qlt. 50	Rate	Quality Factor	Final Net Cond.	Cost
		PV02		5000	3	.86	1.00	.80	3440
		LD03		400	3	5.76	1.00	.80	1843
		FL02	5		3	1.80	1.00	.80	720
		FL05	15		3	1.20	1.00	.80	1440
Standard Exterior Accessories Total Depreciated Cost									7443
Cost Conversion Factor									1.00
Standard Exterior Accessories Total Cost									7443

The information recorded in this example indicates the building has 5,000 square feet of average concrete paving, a 400 square foot concrete loading dock, 5 steel flood light poles with 15 flourescent light fixtures. The rates are found under general headings in Section 9 of the Adjustments section for Commercial-Industrial Buildings and entered in the spaces provided. The quality factor and final net condition are then applied to the measure indicated to arrive at Standard Exterior Accessories Total Depreciated Cost. The cost conversion factor for the year in which the appraisal applies is entered and multiplied by the total depreciated cost to arrive at the Standard Exterior Accessories Total Cost.

Special Exterior Accessories - This section is provided for other items associated with the property but not found in the adjustment section. These are entered on the card in narrative form.

An example of how this information is recorded is shown below.

SPECIAL EXTERIOR ACCESSORIES DATA

Card Code 30-31	Seq. No. 32-33	Description 34-60	Depr. Full Value 61-69
		UNDERGROUND PIPING 450LF	1000
Special Exterior Accessories Total Depr. Full Value			1000

The information recorded in this example indicates the building has 450 lineal feet of underground piping with a depreciated value of $1,000.

NOTE: Entries made in this section are at the discretion of the appraiser and should be made carefully and with supporting data.

Building Valuation Summary - After all information has been recorded and calculated in the appropriate section it is transferred to the Building Valuation Summary section of the Property Record Card.

An example of how this information is recorded is shown below.

	BUILDING VALUATION SUMMARY	
1.	Structural Shell Base Cost	374880
2.	Exterior Finish Total Cost	150048
3.	Interior Finish Total Cost	357704
4.	Heating/Cooling Total Cost	218571
	Industrial Unit Heaters Total Cost	
5.	Plumbing Fixtures Total Cost	40500
6.	Electrical Installation Total Cost	166707
7.	Sprinkler System Total Cost	58533
8.	Standard Bldg. Access. Total Cost (±) +	322826
	1975 Replacement Cost	1689769
	COST CONVERSION FACTOR	1.00
	Replacement Cost New	1689769
	Final Net Condition	1.00
	Depreciated Building Cost	1689769
	Special Bldg. Access. Depr. Full Cost	22500
	TOTAL BUILDING VALUE	1712269
9.	Standard Ext. Access. Total Cost	7443
	Special Ext. Access. Depr. Full Cost	1000
	EXTERIOR ACCESSORIES TOTAL COST	8443
10.	TOTAL VALUE - Bldg. & Ext. Access.	1720712
	Land Value	50000
	TOTAL PROPERTY APPRAISED VALUE	1770712

In this section the appraiser applies the cost conversion factor to the 1975 Building Replacement Cost to arrive at the Replacement Cost New for the year in which the appraisal is being done. Depreciation from all causes is also entered in this section and applied to the Replacement Cost New to arrive at the Depreciated Building Cost. Land Value is added to the Appraised Value of the building to arrive at the Total Property Appraised Value.

Special Calculation Procedures - Commercial-Industrial Buildings

The following section outlines some special calculation techniques to be used for Commercial and Industrial Buildings. Most of the items listed in the Adjustments section require no further explanation. However, some adjustments as listed below are elaborated to promote uniform use of the manual and to resolve most questions which may arise as to their applicability.

Party Walls

Since Classes 101 to 106 require the addition of exterior wall finish, a special procedure is necessary to compensate for buildings with party walls. To determine the square feet of wall area to be added, the common wall is considered by calculating one-half of the common wall area and adding that amount to each buildings' exterior wall area.

EXAMPLE:

A commercial structure with a wall finish of face brick on concrete block 40 feet high, 50 feet wide, 100 feet in length, has a 100 foot party wall. The square feet of wall area would be calculated as follows:

50' + 100' + 50' + $\frac{1}{2}$ (100') = 250 L.F.
250 L.F. x 40' high = 10,000 sq. ft. wall area

Base Cost Interpolation

Base Costs for Shell Types 101-106 are predicated on building heights with increments of 12 feet. A base cost for heights between those listed in the cost tables must be interpolated. For example, a load bearing warehouse building has a height of 20 feet and a wall ratio of 50. Base costs in this Class appear as follows:

Wall Ratio	12'	24'	36'	etc.
50	$6.69	$8.72	$11.18	

To arrive at a base cost for the 20' high building the appraiser must take the following steps:

1. Find the difference between the 2 costs

   $8.72 - $6.69 = $2.03

2. Divide the result by 12 to arrive at an increment of value for each foot.

   $2.03 ÷ 12 = $.17

3. Multiply the result by the number of excess feet in the building.

   8' x $.17 = $1.36

4. Add this result to the lower cost to arrive at a cost for the height found.

   $6.69 + $1.36 = $8.05 Base Cost for 20' high building

Upper Floor Calculation

Base costs for Shell Types 101 to 106 do not include upper floors. The type of upper floor found in buildings classified in any of these Shell Types must be added. Upper floor costs are selected from "Standard Building Accessories", Section 8 of the Commercial and Industrial Adjustments.

An example, illustrating upper floor entries on the Property Record Card may be found on Page I-91.

Wide Span Roofing

The base specifications allow for normal span with proper support for the roof. However, when a wide, clear span is desired, special beams or trusses are used to support the roof, therefore, it is necessary to adjust for wide span construction when encountered. The unit costs are not the total cost of the special beams and trusses, but are the additional costs over and above the cost of conventional span construction. This item is always an addition to base cost and no deduct is necessary if the roof found meets base specifications.

EXAMPLE:

A warehouse 100' x 500' with wide span roofing of steel trusses (100' span, High quality). This would be calculated as follows:

Code	Span Width	Roof Area	Rate	Quality	Cost
WRO 3	100'	50,000 sq. ft.	1.63	1.15	$93,725+

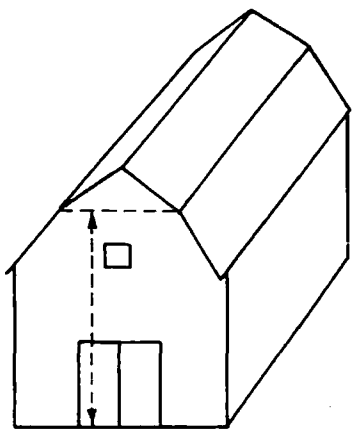
PROCEDURE FOR FARM BUILDING APPRAISAL

This section includes all farm buildings normally found in rural areas, such as General Purpose and Dairy Barns, Sheds and Outbuildings, Pole Barns and Equipment Sheds, Horse Stables, Poultry Houses, and Farm Silos. The specifications for these types of construction are based on quality of construction. Therefore, these specifications are very broad and assume many equivalencies. The base specifications should be studied very carefully before considering making any adjustment to the base cost of these buildings. If an adjustment is needed to the base replacement cost, the adjustment can be made with the quality factors provided. Adjustments for minor variations from base specifications should not be made to the base cost as they have little or no effect on the market value of these buildings.

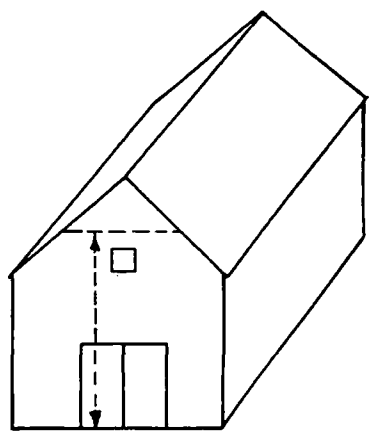
The base replacement costs given are determined in the following manners:

1. General Purpose Barns are based on cost per cubic foot of content with and without loft. The cubic foot of content of a General Purpose and Dairy Barn is determined through the use of the following procedures.

   The following diagrams illustrate a standard procedure to be used in estimating the height of a farm barn which in turn is multiplied by the ground area to obtain the cubic foot content of barns.



Height consideration on gambrel roofs from ground level to a point 2/3 of the distance from the eaves to the peak.



Height consideration on gable roofs from ground level to a point of 1/2 of the distance from the eaves to the peak.

After the cubic footage has been determined it is multiplied by the unit cost given per cubic foot and also factored according to the quality of construction.

An example of this computation is:

A 20' x 30' average quality General Purpose concrete block and wood frame barn 28' high with loft.

ACCESSORY AND FARM BUILDINGS

Card Code	Id./Cls.	Description	Quality Grade	Width	Length	Height	Area	Rate	Quality Factor	Cost	Cost Conv.
28	1.50	WD FRAME & CONCRETE	3	20	30	28	1.6800	35	1.00	5880	
		BLOCK G.P. BARN									
		W/LOFT									

2. Dairy barns are also based on cubic foot of content with or without loft. The procedure used to determine base replacement cost is the same as that of a general purpose barn (See General Purpose Barn for computation procedures and example of computation).

3. Farm Sheds and Outbuildings are based on square foot of ground area and quality. The replacement cost of this item is computed in the following manner.

Example - Two average quality concrete block sheds, one 20' x 30' and one 10' x 10'.

ACCESSORY AND FARM BUILDINGS

Card Code	Id./Cls.	Description	Quality Grade	Width	Length	Height	Area	Rate	Quality Factor	Cost	Cost Conv.
28	1.52	CONC. BLOCK SHED	3	20	30		600	5.55	1.00	3330	
	1.52	CONC BLOCK SHED	3	10	10		100	1.75	1.00	175	

4. Pole barns/equipment sheds are based on square foot of ground area and quality of construction. The base replacement cost for them are computed in the following manner.

Example - A 30' x 60' High Quality Pole Barn.

ACCESSORY AND FARM BUILDINGS

Card Code	Id./Cls.	Description	Quality Grade	Width	Length	Height	Area	Rate	Quality Factor	Cost	Cost Conv.
28	1.53	POLE BARN	5	30	60		1800	3.75	1.15	7763	

5. Horse stables are based on cost per square foot of ground area and quality of construction. The replacement cost is computed in the following manner.

Example - A 20' x 80' low quality horse stable.

ACCESSORY AND FARM BUILDINGS

Card Code	Id./Cls.	Description	Quality Grade	Width	Length	Height	Area	Rate	Quality Factor	Cost	Cost Conv.
28	1.54	WO FRAME HORSE STAB.	1	20	80		1600	8.75	.55	7700	

6. Poultry houses are based on replacement cost per square foot of ground area, story height (one or two stories) and quality of construciton. An example of the computation of this item is as follows.

Example - A high quality one story poultry house 40' x 600'.

ACCESSORY AND FARM BUILDINGS

Card Code	Id./Cls.	Description	Quality Grade	Width	Length	Height	Area	Rate	Quality Factor	Cost	Cost Conv.
28	1.55	ONE STORY POULTRY HOUSE	5	40	600		24000	5.50	1.35	178200	

7. Farm silos are based on total cost per lineal foot of height (28' high standard), diameter or circumference and construction type of each. The replacement cost of this item is computed by determining the appropriate unit cost for each silo based on its diameter or circumference and its wall or construction type. Then adding for variations in height from standard (28' high) and adjusting for differences in roof cover or for no roof. This item should be computed in the accessory flat adds section of the property record card. An example of the computation of this item is as follows.

Example - Two silos - one steel and one concrete stave, both with steel roof, 40' high and 22' diameter - no chute or lining.

ACCESSORY FLAT ADDS
SILO (156C-STEEL) 22'DIA-40'HIGH - STEEL ROOF 1@ 8180 + (6×350 = $2100) + 105 = $11295
SILO (156B-CONC. STAVE) 22'DIA-40'HIGH-STEEL ROOF 1@ 4820 + (6×225 = $1350) + 1015 = 7185

Procedure for Checking Office Operations

Following are summary steps and procedures for checking the building replacement cost and appraisal calculations on the Property Record Card.

1. Compare the building dimensions shown on the ground plan sketch against the dimensions used in calculating the area or cube or wall ratio and check the area, cube, or wall ratio calculations.

2. Refer to the building specifications and base cost schedules for the building classification number shown on the Property Record Card; check the base unit cost shown on the card against that shown in the cost schedule; check the base replacement cost extension computations.

3. Compare the building specifications against the items checked or written on the Property Record Card by the appraiser; check for any additions and variations from the base replacement cost.

4. Refer to the appropriate schedule of adjustments to base unit costs; check the item number, area, or quantity and unit cost entries on the Property Record Card; check the addition and deduction extension computations.

5. Add the base replacement cost with the addition extensions and subtract the deduction extensions to check the total replacement cost of the building.

6. Check cost conversion factor and multiply by 1975 building replacement cost to obtain total building replacement cost.

7. Check the effective age depreciation percentage; compare the percentage shown on the card against the percentage shown in the depreciation table for the particular building; check the net condition percentage; check any obsolescence allowances in the same manner.

8. Multiply the total building replacement cost by the final net condition percentage to obtain the net building appraisal.

9. Check the item number, area, or quantity and unit cost entries and extension computations of miscellaneous and land improvements as well as the depreciation calculation.

10. Check the appraisal calculations of other principal and accessory buildings in the same manner as the principal building on the lot or tract.

11. Check front foot value, depth factor, adjusted front foot value, and total land value.

12. Check the entries of the principal building and other principal and accessory building values in the "Building Valuation Summary"; check the addition of the building appraisals to arrive at the total building value on the lot or tract of land; check the addition of the total building appraisal and total land appraisal to arrive at the total appraised value of the parcel.

PROCEDURE AND GUIDES GOVERNING PHYSICAL OR AGE DEPRECIATION

Depreciation and Obsolescence

Depreciation may be defined as the difference between the cost new of a structure and its present day value. The broad term, depreciation, may be subdivided into several headings: Physical Deterioration Curable, Physical Deterioration Incurable, Functional Obsolescence Curable, Functional Obsolescence Incurable, and Economic Obsolescence. However, for descriptive purposes in this manual, the various subheadings are combined into only two major headings, (1) depreciation, the loss in value which takes place during the life of a building through wear, aging, and the effects of the elements and (2) obsolescence, the loss in value due to economic conditions or functional deficiencies.

The initial steps in wholesale building appraisals are the field inspection, classification, and calculation of the replacement cost (new) of each individual property. In order to complete the appraisal, it is necessary to account for the loss in value due to physical causes and obsolescence. This manual provides an age-life depreciation schedule as a guide for measuring the physical loss in value and also several guides to assist in arriving at a proper allowance for obsolescence.

The loss in value which takes place during the life of a building is chargeable to a number of causes. As soon as a building is completed, the materials from which it was constructed begin to deteriorate. Unless a normal, reasonable amount of maintenance is provided, the building and its value depreciate at a much faster rate. Even with normal maintenance, there is an irrecoverable loss which cannot be offset or counteracted. This type of depreciation is designated as "physical or age depreciation".

To properly use the physical depreciation schedules, it is first necessary to arrive at an effective age for the property. It is important to remember that the effective age may or may not be the same as the actual age of the property. Effective age and actual age are substantially the same in a property which has had average care and maintenance, no remodeling, renovation, modernization, nor additions, and which has a normal life expectancy.

In addition to physical deterioration, the losses in value due to functional and economic obsolescence are just as real and play a most important part in the estimation of market value. These items are described in more detail under the section on Obsolescence.

Procedure for Depreciation Deductions

Physical depreciation factors are applied to the replacement cost to arrive at a sound value before any factor for special functional or economic obsolescence are applied to the sound value to arrive at the current fair value or market value.

Specific guides and examples for determining the percentage allowance attributable to normal and special deterioration, or to building enhancement resulting from major alterations and modernization, are set out under the following headings:

1. Normal structural depreciation due to effective age.
2. Enhancement due to major alterations, additions or modernization.

Normal Structural Depreciation Due to Effective Age

The percentage depreciation due to normal structural depreciation is based on the average construction, normal maintenance and probable useful life. The appropriate normal age depreciation percentage deduction is applied against the cost of replacement of each building to reflect the loss in value due to the above causes.

In order to establish the normal age depreciation percentage deduction, the loss in value due to age is estimated by the careful analysis of the market values (sale prices) of comparable buildings of different ages. All other factors being equal, the older the building, the lower the sales price. The loss in value, represented in the sale price, is measured in terms of a percentage which may be used as a guide in developing depreciation schedules.

Although it is possible to develop complete and reasonably accurate schedules for age depreciation by use of comparable sales (see Market Approach), the volume of sales required for analysis usually prohibits such a detailed study without the aid of a computer. The alternate approach used by most appraisers is the adjustment of existing age depreciation tables by means of a Sales - Appraisal comparison. The market data analysis should include as many buildings whose effective age is the same as the actual age as possible. This condition exists when the building has had normal maintenance preventing deterioration except wear, aging, and the effects of the elements. Proper maintenance includes periodic painting, roof repairs or replacement, replacing minor building components which have deteriorated or which have been damaged by wind, vandalism, etc. Buildings with deferred maintenance (Those in fair or poor physical condition or in dilapidated or unusable condition) must either be eliminated from the analysis or, if reliable opinions of rehabilitation costs are available, adjusted because of the additional loss in value beyond that expected under normal conditions. The

same is true for buildings with major additions or renovations. In both instances the depreciation is adjusted to compensate for the change in "Effective Age".

When the market analysis is completed and the degree of physical depreciation has been expressed in terms of a percentage, the appraiser compares the average percentage of buildings in one age group with the "Effective Age Depreciation Deduction Tables" and analyzes the variations. Adjustments may be made in these tables for any local variations which are clearly related to physical deterioration.

The suggested percentages of depreciation for effective age of different classes of buildings are shown in the tables found in this section. The depreciation table to be used for a specific building class is indicated at the bottom of each builidng class specification and building cost schedule.

Determination of the actual and effective age of each building should be made by the field appraiser and recorded on the individual Property Record Cards for the respective buildings.

In order to achieve uniformity in applying depreciation percentages, it is a general practice to limit the effective age depreciation to certain levels depending on the condition of the building. For example, a building 60 years old is depreciated by use of the depreciation schedule, Table D-IV. The loss in value due to age is 48%. This percentage does not include dilapidated or unusable condition. The above building, in poor physical condition, would receive an extra 10% depreciation, or 48% + 10% = 58%. This same building, in dilapidated condition, would receive an additional 20% depreciation or 48% + 20% = 68%. Structures which are in an unusable condition may be depreciated up to 90%. The total accrued depreciation in excess of 70% applies where abnormal physical condition exists which requires special depreciation allowances above normal structural depreciation.

Enhancement Due to Major Alterations, Additions, or Modernization

In any case where major alterations, additions, or modernizations have been made in a building, the nature and extent of such alteration or modernization should be noted on the Property Record Card at the time of the field examination. The sketch and notes section should be used to record this information. Such alterations and additions may include major additions or improvements in the way of exterior architectural design, interior room arrangement, interior finish, heating, plumbing, electrical wiring, lighting fixtures, etc..

Where major alterations or modernization definitely increases or adds to the value of the building, the percentage of appreciation is determined by estimating the probable increase in sale value or the increase in life expectancy of the building. In other words, the effect of alteration decreases the actual age of the building to a lower "effective age." The cost of such alterations or modernization does not necessarily indicate the enhancement or added building value. Judgment must be exercised in estimating the "effective age" due to such modernization.

Three methods or procedures are shown below for determining the "effective age" of a building. Each produces substantially the same results but utilizes different items of information. One method may be more applicable than another because of the data available concerning such alterations or modernization.

1. A simple procedure to arrive at the effective age of a building is to multiply the actual age by the cost of modernization or alteration and to divide by the calculated replacement cost. This amount is then subtracted from the actual age.

For example, a 20 year old low grade store building had a new store front added and the basement remodeled into additional selling space for $10,000. The building replacement cost was calculated as $40,000. The "effective age" of the building is determined as follows:

$$\text{Effective Age} = \text{Actual Age} - \frac{(\text{Actual Age} \times \text{Cost of Remodeling})}{\text{Replacement Cost}}$$

$$20 - \frac{(20 \times 10{,}000)}{(\ 40{,}000\ )} \qquad 20 - \frac{(200{,}000)}{(\ 40{,}000)} = 20 - 5 = 15 \text{ years effective age}$$

2. The effective age formula described above may at times be difficult to properly use due to lack of information regarding the cost of the alterations or remodeling. Other methods can be used that will provide a substantially correct answer.

The approach using replacement cost can be used. In this approach, the effective age is the actual age times the replacement cost before remodeling divided by the replacement cost after remodeling. For example, a 32 year old hotel with a replacement cost of $90,000, has a section added at a replacement cost of $35,000. The "effective age" of the building is determined as follows:

$$\text{Effective Age} = \frac{\text{Actual Age} \times \text{Replacement Cost before Remodeling}}{\text{Replacement Cost after Remodeling}}$$

$$\text{Effective Age} = \frac{32 \times 90{,}000}{125{,}000} = \frac{2{,}880{,}000}{125{,}000} = 23 \text{ yrs. effective age}$$

This approach applies particularly where a major conversion has been made rather than a series of replacements and modernization and would apply only when the addition is new.

3. Another method is to estimate the percentage of the structure which has been replaced or modernized and take that percentage at the number of years from the date of remodeling and the balance at the number of years from the original date, in other words, a weighted average of the years. For example, a structure with an original age of 50 years was 20% remodeled 10 years ago. The procedure for calculation is as follows:

20% at 10 years	=	200	
80% at 50 years	=	4000	
TOTAL	=	4200	
Divided by 100	=		42 years
or			
.2 x 10 years	=	2.	
.80 x 50 years	=	40.	
TOTAL	=	42	years effective age of building

The following is a suggested uniform guide based on method 3, for estimating the effective age of a building where the approximate percentage of the building alterations for additions is known and where the number of years since making the alterations or additions, and the actual age of the building are ascertained and recorded on the Property Record Card.

Summary Steps on Use of Suggested Uniform Guide for Estimating Effective Age

Follow these simple summary steps to use the table titled, "Suggested Uniform Guide for Estimating Effective Age".

Step 1. Obtain the actual age of the building from owner, occupant, building permit records, or by comparison with similar buildings of known age, i.e.,40 years. Enter the left hand column and read down until in line with 40 years.

Step 2. Ascertain or estimate the percentage of the total building which has been increased in useful life because of remodeling, alterations or additions, i.e.,20%. At the top of the table read across the line titled, "Estimated Percent of Building Remodeled, Altered or Added" to the column labeled 20%.

Step 3. Ascertain or estimate the average age in years since the remodeling, alteration, or additions were completed, i.e., 5 years. Within the 20% column, located in Step 2, read down and select the sub-column for 5 years under "Average Age of Remodeling, Alterations or Additions in Years."

Step 4. Read down the sub-column, for 5 years, until in line with the actual age of building in years, i.e.,40 years. Where these lines intersect the estimated effective age of the building in years is obtained, i.e.,33 years.

The following tabulation represents suggested guides for effective age percentage depreciation tables for different types of building construction. Each building class specification indicates the tables which are applicable to the building class.

Effective Age In Years	Table D	Table D-I	Table D-II	Table D-III	Table D-IV	Table D-V	Table D-VI	Table D-VII
1	4.0%	2.5%	2.0%	1.5%	1.5%	1.0%	1.0%	.5%
2	7.0	4.5	3.5	2.5	2.5	2.0	2.0	1.5
3	11.0	7.0	4.5	3.5	3.0	2.5	2.5	2.0
4	16.0	9.0	6.0	4.5	4.0	3.5	3.5	3.0
5	20.0	11.0	7.0	5.5	4.5	4.0	4.0	3.5
6	22.0	13.0	8.5	6.5	5.5	5.0	5.0	4.5
7	27.0	15.5	10.0	8.0	6.5	6.0	5.5	5.0
8	30.0	17.5	11.0	9.0	8.0	7.0	6.5	6.0
9	34.0	20.0	12.5	10.5	9.0	8.0	7.0	7.0
10	37.5	22.0	14.0	11.5	10.0	9.0	8.0	7.5
11	41.0	24.0	15.5	13.0	11.0	10.0	9.0	8.0
12	44.0	25.5	17.0	14.0	12.0	10.5	9.5	9.0
13	47.0	27.5	18.0	15.5	13.0	11.5	10.5	9.5
14	50.0	29.0	19.5	16.5	14.0	12.5	11.0	10.0
15	52.0	31.0	21.0	18.0	15.0	13.5	12.0	10.5
16	54.0	33.0	22.5	19.0	16.0	14.5	13.0	11.0
17	56.0	34.5	24.0	20.5	17.5	15.5	13.5	12.0
18	58.0	36.5	25.5	21.5	18.5	16.5	14.5	12.5
19	60.0	38.0	27.0	23.0	20.0	17.5	15.0	13.5
20	62.0	40.0	28.5	24.0	21.0	18.5	16.0	14.0
21	64.0	41.5	30.0	25.5	22.0	19.5	17.0	14.5
22	65.0	43.0	32.0	27.0	23.0	20.5	17.5	15.0
23	67.0	45.0	33.5	28.0	24.5	21.5	18.5	16.0
24	68.5	46.5	35.0	29.5	25.5	22.5	19.0	16.5
25	70.0	48.0	36.5	31.0	26.5	23.5	20.0	17.0
26		49.5	38.0	32.5	28.0	24.5	21.0	18.0
27		51.0	39.5	34.0	29.0	25.5	22.0	19.0
28		52.0	41.0	35.0	30.5	26.0	23.0	20.0
29		53.5	42.0	36.5	32.0	27.0	24.0	21.0
30		55.0	43.5	38.0	33.0	28.0	25.0	22.0
35		61.0	49.0	44.0	38.5	33.5	29.0	26.0
40		65.0	54.0	47.5	43.0	37.0	33.0	30.0
45		68.0	58.0	50.5	44.5	38.5	34.5	31.5
50		70.0	62.5	53.0	45.5	39.5	35.5	32.5
55			65.0	55.0	47.0	41.0	37.0	34.0
60			68.0	57.0	48.0	42.0	38.0	35.0
65			70.0	59.0	49.5	43.5	39.5	36.5
70				60.5	50.5	44.5	40.5	37.5
75				62.0	52.0	46.0	42.0	39.0
80				63.0	53.0	47.0	43.0	40.0

NOTE: Buildings marked Fair Physical Condition increase deduction 5%
Poor Physical Condition increase deduction 10%
Dilapidated Condition increase deduction 20%
Unusable and Beyond Repair increase deduction to total of 90%

SUGGESTED UNIFORM GUIDE FOR ESTIMATING EFFECTIVE AGE

Actual Age of Building in Years	Estimated Percent of Building Remodeled, Altered or Added						
	10%	20%	30%	40%	50%	60%	75% & Above
	Average Age of Remodeling, Alterations or Additions in Years						
	5 15 25 35	5 15 25 35	5 15 25 35	5 15 25 35	5 15 25 35	5 15 25 35	5 15 25 35
	Estimated Effective Age of Building in Years						
10 years	10 - - -	9 - - -	9 - - -	8 - - -	8 - - -	7 - - -	6 - - -
15	14 - - -	13 - - -	12 - - -	11 - - -	10 - - -	9 - - -	7 - - -
20 years	18 19 - -	17 19 - -	16 19 - -	14 18 - -	13 18 - -	11 17 - -	9 16 - -
25	23 24 - -	21 23 - -	19 22 - -	17 21 - -	15 20 - -	13 19 - -	10 17 - -
30 years	28 29 30 -	25 27 29 -	23 26 29 -	20 24 28 -	18 23 28 -	15 21 27 -	11 19 26 -
35	32 33 34 -	29 31 33 -	26 29 32 25	23 27 31 35	20 25 30 35	17 23 29 35	12 20 27 35
40 years	37 38 39 40	33 35 37 39	30 33 36 39	26 30 34 38	23 28 33 38	19 25 31 37	14 21 29 36
45	41 42 43 44	37 39 41 43	33 36 39 42	29 33 37 41	25 30 35 40	21 27 33 39	15 22 30 37
50 years	46 47 48 49	41 43 45 47	37 40 43 46	32 36 40 44	28 33 38 43	23 29 35 41	16 24 31 39
55	50 51 52 53	45 47 49 51	40 43 46 49	35 39 43 47	30 35 40 45	25 31 37 43	17 25 32 40
60 years	55 56 57 58	49 51 53 55	44 47 50 53	38 42 46 50	33 38 43 48	27 33 39 45	19 26 34 41
65	59 60 61 62	53 55 57 59	47 50 53 56	41 45 49 53	35 40 45 50	29 35 41 47	20 27 35 42
70 years	64 65 66 67	57 59 61 63	51 54 57 60	44 48 52 56	38 43 48 53	31 37 43 49	21 29 36 43
75	68 69 70 71	61 63 65 67	54 57 60 63	47 51 55 59	40 45 50 55	33 39 45 51	22 30 37 44
80 years	73 74 75 76	65 67 69 71	58 61 64 67	50 54 58 62	43 48 53 58	35 41 47 53	24 31 39 46
85	77 78 79 80	69 71 73 75	61 64 67 70	53 57 61 65	45 50 55 60	37 43 49 55	25 32 40 47
90 years	82 83 84 85	73 75 77 79	65 68 71 74	56 60 64 68	48 53 58 63	39 45 51 57	26 34 41 49
95	86 87 88 89	77 79 81 83	68 71 74 77	59 63 67 71	50 55 60 65	41 47 53 59	27 35 42 50
100 or over	91 92 93 94	81 83 85 87	72 75 78 81	62 66 70 74	53 58 63 68	43 49 55 61	29 36 44 51

Special Depreciation Allowances for Buildings in Fair and in Poor Physical Condition

The "Condition" space on the building valuation side of the Property Record Card is filled in by the appraiser to indicate the degree of maintenance of each principal building. "Excellent" condition indicates the physical condition is like new; "Good" condition indicates good physical condition and no maintenance is currently needed; "Normal" condition indicates that only minor maintenance is needed to bring the structure up to good condition; "Fair" condition indicates some below normal physical condition to the extent that some loss in value has resulted from deferred maintenance; "Poor" condition indicates low physical condition from lack of maintenance which has resulted in considerable loss in value to the structure.

In estimating the physical condition of a building, the actual age and the class or grade of the building must be considered. A very old building must be in conspicuously poor condition to be considered as in poor physical condition. A low class or low grade building, i.e. Class 13, must be in much poorer condition than an average grade building, i.e.,Class 16 to be rated as being in poor physical condition.

For buildings in "Fair" physical condition, a special depreciation allowance may be made by increasing the effective age of the building up to 5 years more than the actual age. For buildings in "Poor" physical condition, a special depreciation allowance may be made by an increase in effective age of up to 10 years more than the actual age.

"Dilapidated" physical condition indicates that the building still has limited use but, due to deferred maintenance for an extended period of time, the physical condition is such that the expenditure required to restore it to sound condition will exceed the value after restoration. Dilapidated physical condition may be indicated on the "Note" section of the Property Record Card.

"Unusable and beyond repair" indicates that the building has deteriorated to the point where only salvage value remains. Unusable and beyond repair may be indicated in the "Note" section of the Property Record Card.

This special depreciation percentage deduction is also accounted for by adjusting the effective age of the structure an appropriate number of years to properly reflect the loss in value.

As described previously, determination of the effective age and physical condition of each building should be made in the field, and the information explaining the physical condition is recorded on the individual record cards for the respective buildings.

Care should be exercised to distinguish between the physical condition of a structure and the grade or class assigned for classification purposes. The quantity and relative quality of materials and workmanship used in the construction of a building indicate the grade or classification of structure for the purpose of determining the replacement cost before deterioration takes place.

The condition of a structure reflects, in terms of a percentage, the value remaining after accounting for the deterioration that has taken place since the structure was built. The condition of a structure may indicate that the quantity and/or quality of materials and workmanship is of a particular grade or class,but it is always indicative of a loss of value due to physical deterioration. For example, a cracked foundation or a sagging floor is evidence of deterioration (condition) which may have been caused by substandard construction (class).

Example of Application of the Age or Physical Depreciation to Buildings

In using the effective age depreciation tables, the following steps are used:

a. Note the building class and exterior wall type on the Property Record Card, such as Class 16.

b. Find the depreciation table applicable by reference to the bottom of the page showing specifications and replacement costs for Class 16. For masonry wall types, this would be Table D-V.

c. Note the effective age of the building as shown on the Property Record Card, i.e., 40 years.

d. Note the "Condition" section of the Property Record Card, paying particular attention to the buildings indicated to be in fair or poor physical condition and to buildings which are considered to be dilapidated or unusable and beyond repair. This can be indicated by comments in the "Notes" section of the Property Record Card.

e. Enter the percentage depreciation from the effective age depreciation table applicable for the building class or shell type in the appropriate spaces on the Property Record Card.

When the total depreciation percentage for the building is determined and entered on the Property Record Card, subtract the total building depreciation from 100% and enter the "net condition" figure in the proper space on the Property Record Card.

Example:

RESIDENCE DESCRIPTION DATA

Card Code				28
Residence Class	30 1.6	Number of Units		32 0.1
Number of Stories	34 0.2	Number of Rooms		36 0.8
Number of Bedrooms	38 0.3	Year Built		40 1.9.2.8
Rowhouse/Townhouse End Unit 0 - No 1 - Yes				44 0

DEPRECIATION

Condition 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Excel.	45 3
Effective Age in Years	46 4.0
100% - (Eff. Age Dep. 37.0% + Obser. Phys. Cond. 0%) = Physical Net Condition	49 6.3

OBSOLESCENCE

100% - (Func. Obsol. 0% + Econ. Obsol. 0%) = Obsol. Net Condition	52 1.0.0
Physical Net Cond. 63.0% x Obsol. Net Cond. 100% = Final Net Condition	55 6.3

In each case where there is a barn, private garage, shed, or other accessory building, the determination of the depreciation due to age and condition is made in the same manner as indicated above. The depreciation percentage due to age and condition is determined on the net condition of the barn, garage, shed, or other accessory buildings is entered in the proper space on the Property Record Card.

Each building, except one just completed, is subject to effective age depreciation but may or may not be subject to loss in value due to other obsolescence causes indicated in the following section.

The following examples show typical entries in the "Depreciation and Obsolescence" section of the Property Record Card for the commercial properties.

Commercial (Shell Type 103)

Effective Age 11 years
Good physical condition
5% Functional Obsolesence (poor layout)
Table D-V

COMMERCIAL BUILDING DATA

Card Code		28
Building Number		30 0.1
Predominant Shell Type		32 1.0.3
Predominant Use Type 1 = Apt. 2 = Comm. 3 = Indus.		35 2
Overall Quality 1 = Low 3 = Average 5 = High		36 3
Year Built		37 1.9.6.1

DEPRECIATION

Condition 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Excel.	41 4
Effective Age in Years	42 1.1
100% - (Eff. Age Dep. 10.% Obser. Phys. Cond. 0%) = Physical Net Condition	45 9.0

OBSOLESCENCE

100% - (Func. Obsol. 5% + Econ. Obsol. 0%) = Obsol. Net Condition	48 9.5
Physical Net Cond. 90.% x Obsol. Net Cond. 95% = Final Net Condition	51 8.5.5

Commercial (Class 134)

Effective Age 5 years
Average physical condition
5% Economic obsolesence (obnoxious odors)
Table D-IV

COMMERCIAL BUILDING DATA

Card Code		28
Building Number		30 0.1
Predominant Shell Type		32 1.3.4
Predominant Use Type 1 = Apt. 2 = Comm. 3 = Indus.		35 2
Overall Quality 1 = Low 3 = Average 5 = High		36 3
Year Built		37 1.9.7.1

DEPRECIATION

Condition 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Excel.	41 3
Effective Age in Years	42 0.5
100% - (Eff. Age Dep. 4.5% Obser. Phys. Cond. 0%) = Physical Net Condition	45 9.5.5

OBSOLESCENCE

100% - (Func. Obsol. 0% + Econ. Obsol. 5%) = Obsol. Net Condition	48 9.5
Physical Net Cond. 95.5% x Obsol. Net Cond. 95% = Final Net Condition	51 9.1.0

Procedure for Special Deductions due to Obsolescence

Obsolescence when applied to building valuation is the loss in property value over and above that caused by physical deterioration. It is a loss in value due to an excess of supply over demand or loss in desirability and use for specific classes of properties. Such loss in desirability may be traced to one or more causes, such as improper location resulting in over- or under-improvement, changed neighborhood conditions arising from changes in use, population, and residential and business shifts, or to lessened demand for certain uses or classes of commercial buildings caused by oversupply and/or economic conditions.

Obsolescence is divided into two classes, namely Functional Obsolescence and Economic Obsolescence. Functional Obsolescence is the loss of value due to conditions which exist within the property itself. It may be curable, i.e., the cause of the obsolescence may be removed by modernization of facilities or equipment, and it may also be incurable, i.e., features of the building which cannot be replaced or changed, such as inadequate or excess size and/or height, poor layout and other features which limit the use and desirability of the building.

Economic obsolescence is the loss of value resulting from conditions existing in the neighborhood, outside the structure. These conditions include, (1) under-improvements and over-improvements, i.e., improvements that adversely affect either the sale value and/or the income of the property due to the fact that their existence does not permit utilization of the land for its highest and best use, (2) over supply, i.e., a greater supply of a given type of property than the market can absorb, (3) location, i.e., an area or neighborhood where inharmonious elements, transition from residential use to commercial use, shifts in desirability and demand within an area, obnoxious odors, noise, dust, etc., adversely affect the market value.

Functional obsolescence is normally caused by improved methods, design, layout and materials which change the requirements of the physical plant. These conditions are usually present in older buildings but also may be found in relatively new structures which were planned for a specialized use or to satisfy the whims of the owner. Buildings which are designed for special uses have an extremely limited market, and functional obsolescence is often applied to relatively new industrial buildings which are not readily adaptable to other uses. If the adaptation requires only the removal of walls or interior partitions, the obsolescence is curable and can be measured in terms of cost. However, if the construction is such that no change, other than demolition, is possible, the obsolescence is incurable and must be estimated in terms of a percentage.

Tables and Guides

Both functional and economic obsolescence are estimated by analyzing the market by use of the income and sales comparison approaches. The estimates of value obtained by these two approaches, when compared to the value obtained by the replacement cost, less age depreciation approach, indicate the degree of obsolescence present. Since the replacement cost, less age depreciation approach will generally produce the upper limit of value, evidence of obsolescence is revealed when the income or market value estimates are less than the value obtained by the depreciated replacement cost approach.

To give effect to the basic factors which tend to identify and measure functional and economic obsolescence, it is important to develop rules and guides which may be applied uniformly to whole groups of properties by type and by location wherever possible. Technically the appraiser should develop tables and factors of his own from local market and income data. The examples, suggested guides, and ranges of factors included in this manual are designed to be used as guides for the important adjustments in depreciation and obsolescence.

The majority of the factors or guides are identified either by building classes, building groups, or location areas. In individual cases, economic obsolescence may occur because of some condition affecting a particular property. Such cases are not considered under the suggested guides since they must be analyzed individually.

In each case where economic obsolescence is established, the percentage obsolescence is applied to the net depreciated building percentage. The resulting percentage gives the net final condition percentage and this percentage is applied to the replacement cost of the building.

The net depreciated value of the buildings, miscellaneous improvements and land improvements plus the land value of the lot or tract on which the buildings are located give the appraised value of the property.

Because of the varying conditions throughout the State, the following guides for establishing obsolescence are included as examples only and all available local data should be analyzed and adjusted by the appraiser to more accurately apply to a specific assessment jurisdiction.

Obsolescence Resulting from Location of Residential and Tenement or Apartment Buildings

Obsolescence of residential buildings in neighborhoods is determined by analysis of the characteristics and comparative property values in the different areas. Neighborhood conditions, physical and economic, bear directly on the value both of the land and the buildings within the confines of each neighborhood. They

constitute the environment that contributes to or detracts from the stability of property values. In some locations certain influences may result in depreciation of the value of residential buildings at a rate greater than normal. The results of such depreciating influences are included under the term "economic obsolescence." Determination of the extent of economic obsolescence involves the following steps: (a) identifying specific neighborhood areas, (b) analyzing their special characteristics and circumstances, (c) appraising the extent of their influences, and (d) establishing the schedule of percentage obsolescence due to varying location conditions.

Areas in the city, borough or town where such economic obsolescence, if any, applies, are determined for the individual assessment jurisdiction by the appraiser.

In analyzing sales for the purpose of determining the considerations pertaining to the desirability of the properties in one location to similar properties in another location, it is necessary to make adjustments for existing variations in both land and structures thereby converting the properties to effectively identical properties in order that the analysis measures only the difference in value resulting from economic conditions prevailing in the different areas.

The term "effective identical properties" is defined as two or more properties adjusted to a common level by compensating for minor differences in characteristics of similar type properties. (See "Market Value" section for method).

It is not essential that there be a perfect match of properties or that all properties in the sample being analyzed have identical components or replacement costs in order to measure the percent difference between properties in different locations or properties with and without certain features.

Location obsolescence (economic) may result when analyzing sales of residential or apartment buildings located near dump yards, near plants where properties are subjected to obnoxious odors, vapors, noise or dust, or located in low, swampy or flood areas.

For example, two properties of similar materials and workmanship with slightly different structural components and land considerations are compared as follows:

EXAMPLE A	EXAMPLE B
Land: Rectangular lot 50 x 100	Land: Rectangular lot 60 x 100
Improvements: Two story frame residence age: 10 years old construction: average grade plumbing: 2-three fixture baths porches: none Building area: 1,000 sq. ft. ground area Other features: same as Example B	Improvements: Two story frame residence age: 10 years old construction: average grade plumbing: 1-three fixture bath porches: open porch 20' x 8' Building area: 1,000 sq. ft. ground area Other features: same as Example A
Sale Price: $55,000	Sale Price: $62,000

Sales analysis of vacant parcels indicate that land in the area where Example A is located sells for $100 per front foot and land in the area where Example B is located sells for $125 per front foot for lots containing a depth of 100 feet.

The obsolescence factor is determined as follows:

	EXAMPLE A	EXAMPLE B
Total sales price	$55,000	$62,000
Less land value	-5,000	-7,500
Depreciated building sale price	50,000	54,500
Plumbing adjustment	-855	----
Porch adjustment	----	-200
Depreciated building value adjusted to effect identical units	$49,145	$54,300

The above analysis indicates the difference in building sale prices after they are adjusted to effect identical units. Therefore, a residential building in the area represented by Example A will sell for only($49,145 ÷ $54,300) 90.5% of what the same building will sell for in the area represented by Example B. The obsolescence factor is 100 - 90.5 = 9.5%.

In establishing economic obsolescence schedules or guides for areas containing properties of varying ages, it is necessary to determine the replacement cost-depreciated value of the buildings prior to considering the economic factor in order that only one unknown factor is represented in the analysis. The most economically stable area or areas included in the study are selected as the base from which comparisons are made, i.e., areas where the replacement cost-depreciated value of all similar buildings in each area is considered in determining the obsolescence factor. Buildings included in this analysis may be of either the same construction class or of different construction classes representing the same use type within a normal range in values. (An abnormal range in values prevails when the presence of the type of structures adversely affects either the desirability or sale price of other types of structures in the area).

Obsolescence Caused by Over-Improvement of Single and Double Family Urban Residential Buildings

In individual instances the actual value of an urban residential property may be affected by economic obsolescence arising from over-improvement. This situation arises where the excess cost of higher improvement over the normal or proper improvement is not justified by the location of the property. The ratio of the depreciated building value to the land value affords a measure of the amount of over-improvement. In properly developed neighborhoods, the ratio of the value of improvements to the land value (of a normal size lot) tends toward a common level for similar use properties. In newly subdivided or outlying sections of the city, any over-improvement is applied on individual cases and not by the following guide.

The following is a suggested guide for establishing uniform allowances for over-improvement of urban residential buildings based upon the ratio of building value to value of land of parcels which have water and sewer utilities available and which are located on at least a graveled street. The land parcel considered should be a normal lot size for the area.

Suggested Guide for Over-Improvement Obsolescence Percentage

Deduction Allowances for Single and Double Family Urban Residential Buildings

Ratio of depreciated building value to land value	Obsolescence Percentage Example Only	To be filled in by appraiser
Building Value 20 times greater than land value	5%	_____%
" 25 "	10	_____%
" 30 "	15	_____%
" 35 "	20	_____%
" 40 "	25	_____%
" 45 "	30	_____%
" 50 or more "	35	_____%

In determining obsolescence arising from over-improvement of such single and double family residential buildings, the cost of replacement of the building is multiplied by the net condition to obtain the depreciated building value. This depreciated building value is divided by the total value of the land. The result gives the ratio of depreciated building value to land value shown in the first column of the above table.

The applicable percentage obsolescence attributable to over-improvement is thus determined on a uniform basis and applied to the depreciated building percentage. The resulting percentage gives the final net condition percent, which percentage is applied to the replacement cost (new) of the building.

Obsolescence Caused by Over-Development of Large Mansion Type Single Family Residential Buildings

Obsolescence caused by over-development of large mansion-type residential buildings arises from lack of demand or market for such buildings due to high taxes, shortage of domestic help, and inability to convert the structure to more economic use because of zoning restrictions or structural design of the buildng.

Examination of typical cases and conditions of economic over-development of this type of building indicates that the extent of over-development may best be determined from the difference between market value and the depreciated replacement cost. It appears that the larger the building the greater the amount of this form of obsolescence.

The presence of such obsolescence is determined through analysis of sales by ascertaining the maximum size structure that can be sold for the replacement cost less physical depreciation. Structures of greater size require obsolescence. The obsolescence factor is determined by comparing the value indicated by the replacement cost-depreciated approach to the sale price thereby measuring the loss in value over and above age depreciation, as the size of the structure increases.

The following example assumes that all lots are of equal value and that all other value influences are similar except that the structures are of different sizes.

The obsolescence factor is determined by analyzing all sales within the category under consideration.

EXAMPLE 1

Story Height	Building Ground Area	Building Sale Price	Building Value Depreciated Replacement Cost
2	1,700	$ 20,000	$ 19,000
2	1,700	18,000	17,000
2	1,700	22,000	23,000
2	1,700	20,000	20,000
2	1,700	21,000	21,500
2	1,700	17,000	17,000
2	1,700	19,000	19,500
2	1,700	24,000	24,000
		$161,000	$161,000

EXAMPLE 2

Story Height	Building Ground Area	Building Sale Price	Building Value Depreciated Replacement Cost
2	1,800	$ 21,000	$ 22,000
2	1,800	18,900	19,800
2	1,800	23,000	24,250
2	1,800	21,000	22,000
2	1,800	22,000	23,300
2	1,800	17,850	18,700
2	1,800	20,000	20,900
2	1,800	25,250	26,400
		$169,000	$177,350

Comparison of the replacement cost-depreciated building value to the building sale price in Example 1, indicates that there is no loss in value except physical depreciation for two story buildings having 1,700 square feet ground area. Comparison of the replacement cost-depreciated building value to the building sale price in Example 2, indicates that there is a loss in value over and above physical depreciation for two story buildings having 1,800 square feet ground area. This loss in value is converted to an obsolescence factor by dividing the total sale price ($169,000) by the total replacement cost-depreciated ($177,350) of all buildings included in the analysis and subtracting the resulting factor from 100%. $169,000 - $177,350 = .9529 or 95%; 100% - 95% = 5%. This obsolescence factor of 5% is applied to the replacement cost-depreciated building value to obtain market value of all similar structures.

The above procedures are repeated in determining obsolescence factors for other story heights and ground areas.

MARKET APPROACH

Synonymous with Comparative Approach and Direct Sales Comparison Method, the Market Approach is regarded by professional appraisers as the most significant and consistently reliable valuation method when properly developed from an adequate sample of market data.

An adequately prepared Market Approach is more readily understood by laymen than the other approaches to value because its logic closely parallels the logic of the typical consumer in the market. In many instances the courts place greater credence upon this valuation method than the cost approach, providing there is sufficient documentation and there has been a proper analysis of the comparable sales.

The Market Approach involves collection of data, analysis, classification and weighting of significant data elements and a final value estimate based on the application of the weights as compared with the subject properties. In actual practice the assessor-appraiser must apply these weights to masses of properties and this is done by tabular comparisons of properties with similar characteristics. However, for purpose of illustration of the technique, the following methodology and illustrations are offered as examples of the steps to be followed in the Market Approach to value.

The analysis of market data first involves an examination of the available sales sample to determine its adequacy in depth and its significance in relation to specific revaluation problems. If the sales sample is too small or is composed of heterogeneous (unlike) properties, the results are likely to be unreliable. Adequate sales samples with homogeneous properties are necessary for proper application of the Market Approach.

Data collection is the accumulation of all types of data, the analysis of the data and the assembly of useful data in suitable form for comparison with other sold properties as well as with similar properties which have not sold. In addition to the data normally collected on properties, it is necessary to accumulate data that relates to the sale itself. Items such as time of sale, location, conditions of sale and of financing, site data and other features pertaining to the property which may have influenced the buyer or the seller. The list of potential items is substantial but is usually unnecessary to collect all of the data items. In fact, it is normal procedure to analyze the sales first before enumeration, to determine what data is most likely to be significant and then collect the same information on all properties whether they have sold or not.

The data items collected are tabulated by groupings in the most logical sequence for homogeneity in order that there will be as sharp a contrast as possible between the unsold properties and those that have sold. This aids the appraiser in making his value judgements for the variations between properties. Value differences between the comparable sales and the subject property are reconciled by making compensating adjustments for each market and property variable. The result of this procedure will be an adjusted value for each property tabulated and, if performed for all properties in the same manner, will represent the market value of the subject properties. Clearly, hand calculation limits the number of comparisons that can be made in the course of reappraisal programs and this procedure is employed for testing purposes or in preparation for defense of an appraisal. When employing automatic data processing equipment for this analysis, more sophisticated statistical processes are used to great advantage.

In order to properly compare the subject property with the similar properties which have sold, it is necessary to establish uniform standards for measurement of the differences. The elements of these standards are subject to the judgement of the appraiser as long as he uses the same judgement factors in all similar comparisons. In this example, the manual has been used to develop replacement costs of each property. These costs, depreciated, take into consideration all of the physical features in each property. Land values and loss of value due to functional and economic obsolescence must be estimated by the appraiser.

A practical example of the method for adjusting and comparing known value properties (sales) to a subject property of unknown value is given below:

Example:

The subject property under appraisement, as of October 1, 1975, is a two-story brick colonial dwelling in an average grade neighborhood. The site location is good and the lot is serviced by all utilities. The 20 year old improvement has been well maintained and remains in good condition. The lot size (40 x 100) is standard for the area and the land reflects a value of $140.00 per front foot.

Comparable #1

This property, sold in 1974 for a consideration of $49,500.00,is also a two-story brick colonial dwelling located in good grade neighborhood. The improvement is slightly larger than the subject and is in good condition for its 15 years of age. The lot size is 60 x 100, with a land value of $180.00 per front foot, and it is serviced by all utilities. The property is further improved with an enclosed front porch 150 square feet in area.

Comparable #2

Sold in 1975 for a consideration of $43,000.00, this two-story brick colonial is slightly larger than the subject. It is located in an average grade neighborhood and is in fair condition for its 20 years. The lot (40 x

100) reflects a front foot value of $140.00 and is serviced by all utilities. There is a frame garage (1-car) situated on the rear of the lot.

Comparable #3

Transferred in 1975 at a consideration of $41,500.00, this two-story brick colonial is slightly smaller than the subject and has a 100 square foot open porch. Located in an average grade neighborhood, it is in fair condition for its 18 years. The 50 x 100 lot is serviced by all utilities. Land values for the area are at $135.00 per front foot. The site location is poor since it adjoins a noisy, dusty railroad siding. The property immediately adjoining the siding and opposite Comparable #3, was previously sold at a consideration $1,500.00 less than other identical properties farther down the street. This penalty was found to be directly attributable to its location next to the siding.

MARKET VALUE CHART

Value Factors	Subject	Adj.	#1 Comparable	Adj.	#2 Comparable	Adj.	#3 Comparable	Adj.
Sales Price			$49,500		$43,000		$41,500	
Financing	Normal		Normal	-	Normal	-	Normal	-
Description	2-S Brick Colonial		2-S Brick Colonial	-	2-S Brick Colonial	-	2-S Brick Colonial	-
Date of Sale	Appraisal as of 10/1/75		+5% 6/15/74	+2475	8/30/75	-	7/3/75	-
Neighborhood Location	Average		Good	In Land Value	Average	-	Average	-
Improvement Size	950 Sq. Ft.		1000 Sq. Ft.	-1935	975 Sq. Ft.	-959	900 Sq. Ft.	+1930
Condition	Good		Good	-	Fair;5% of sale	+2150	Fair;5% of sale	+2075
Site Location	Good		Good	-	Good	-	Poor-see econ.	obsoles.
Age of Improvement	20 years 18.5%		15 years 13.5%(-5%)	-1935	20 years 18.5%	-	18 years 16.5% (-2%)	-695
Lot Size	40 x 100 @ $140=$5600		60 x 100 @ $180=$10,800	-5200	40 x 100 @ $140=$5600	-	50 x 100 @ $135=$6750	-1150
Utilities	Gas, electric sewer, water		Same	-	Same	-	Same	-
Topography	Level		Level	-	Level	-	Level	-
Landscaping	Adequate		Adequate	-	Adequate	-	Adequate	-
Added Improvements			Enclosed porch 150 Sq. Ft. depreciated	-1388	1-car frame garage depreciation	-1790	Open porch 100 Sq. Ft. depreciation	-422
Land Improvements								
Functional Obsolescence								
Economic Obsolescence							(RR siding dust & noise based on sales)	+1500
Total Adjustments				-7983		-599		+3238
Reflected Value			$41,517		$42,401		$44,738	

REMARKS: All comparables adjust very closely to the same value. However, Comparable #2 requires the least adjustment and is given the most weight.

Valuation by Market Approach is $42,400.00

EXPLANATION OF ADJUSTMENTS

Date of Sale

Comparable #1 was conveyed on June 15, 1974, and market data analysis indicates a 5% increase. An adjustment of $2,475.00 is required to make this sale comparable to the subject property under appraisement as of October 1, 1975.

Neighborhood Location

The neighborhoods involved are all comparable and it is felt in the case of Comparable #1 that the increment involved would reflect itself in the added land value.

Improvement Size

Adjustments for improvement size are necessary for all comparables. The improvement value of those larger than the subject is adjusted downward to reflect a comparable value for the subject and vice versa in the case of the smaller comparable. Deduct the land value from the sales price to arrive at the improvement value of the comparable. Divide the improvement value by the total number of square feet to determine actual square foot value. Then multiply this by the square foot difference of the comparable and the subject property.

Condition

Comparable #2 and #3 are in only fair condition in comparison with the good condition of the subject and require adjustment. A factor of 5% is applied to the sale price to elevate the comparables to the condition of the subject. This factor is applied in addition to the normal age adjustment shown below.

Site Location

Adjustment required for Comparable #3 is covered under Economic Obsolescence

Age of Improvement

Adjustments are required in the cases of Comparables #1 and #3, based upon pertinent depreciation schedules.

Lot Size

Adjustments are required in the cases of Comparables #1 and #3, utilizing existing front foot values.

Utilities

All three comparable sales are served by gas, electric, sewer and water. No adjustments needed.

Added Improvements

Comparable #1, with a large enclosed front porch requires adjustment based upon depreciated cost. Comparable #3, with a frame garage likewise requires an allowance based upon depreciated cost. Comparable #3, with an open front porch, also needs adjustment based upon depreciated cost in order to reflect a value for the subject.

Land Improvements

None

Economic Obsolescence

Comparable #3 is affected by obsolescence due to its site location and detrimental effect of the adjoining railroad siding. The degree of obsolescence is shown by other comparables and the penalty is added to reflect a value for the property under appraisement.

Results of Comparison

The comparison of these three properties with a known sale price to the subject property reveal that a closely identical property would sell for about $42,000. The range of market in this instance is from $41,517 to $44,738, but the sale which required the least adjustment to make it closely comparable, is considered in this case as the best indication of the market value.

INCOME APPROACH TO VALUE

Introduction

In the valuation of real property for purposes of taxation it is often difficult and at times impossible for the assessor to obtain all the necessary information to properly apply the income approach. Taxpayers are frequently reluctant to provide the assessor with income and expense statements or any data pertaining to income derived since they regard such information as being of a personal nature.

However, every assessor should be familiar with the processes involved for he will find it useful as a check on other value approaches to income producing properties. Furthermore, the information necessary to properly apply the income approach can be required to be produced when assessed valuations are appealed to the County Board of Taxation or to the Division of Tax Appeals. Therefore, a knowledge of the income approach is necesaary to protect the assessed valuations and equalization within an assessment jurisdiction.

The Income Approach is valuable, not only as an individual approach to value, but in development of unit land values in commercial areas and in development of obsolescence allowances for income producing buildings. These applications are described in more detail in the land valuation and depreciation sections of this Manual.

An understanding of the underlying economic principles involved is a prerequisite to proper use of the Income Approach. The Manual cannot attempt to provide all the necessary background material and advises the use of an authoritative text and tables in conjunction with the material herein presented.

Definitions of Terms Used in the Income Approach

Capitalization	- A method employed to convert net income into capital value through use of a capitalization rate.
Interest	- Money paid for the loan or use of capital.
Future Depreciation	- Estimated future loss in value. The periodic amount reserved to provide for the recapture of a capital investment.
Capitalization Rate	- Percentage used in discounting net income to produce capital value.
Value	- Present worth of future benefits arising from ownership.
Highest and Best Use	- That use of the land which will provide the greatest net return to the land over a reasonable period of time.
Accrued Depreciation	- The difference between the replacement cost new and the present value.
Functional obsolescence	- Loss in value due to factors originating inside of the property itself. Functional inadequacy in design, utility or style.
Economic Obsolescence	- Loss in value due to factors originating outside of the property. Effect of detrimental economic forces.
Safe Rate	- Rate of return reflecting smallest possible risk. Prevailing rate on government bonds, as an example.

Definition of Income Approach

The income approach is an appraisal technique designed to determine the present worth of future net income. The future or anticipated net income is processed to indicate the capital value or amount of the investment which produces the net income. The processing is referred to as capitalization of net income.

Involved in the Income Approach are the following basic steps or processes:

1. Determine future fair gross rental income.
2. Deduct vacancy and rent loss to arrive at effective gross income.
3. Estimate operating expenses and fixed charges which, when subtracted from effective gross income, yields an estimate of future net annual income.
4. Estimate duration of income, usually the economic life of improvements.

5. Determine proper or realistic capitalization rate.

6. Select method of converting income into capital value.

An understanding of each of these basic steps will help to clarify the entire approach.

Future Fair Gross Rental or Income

As indicated above, the first step in the Income Approach is to determine the future gross income which is based upon the present rentals received or which should be received. Where actual income statements are available for the current and past three or four years, the estimate of future gross income becomes easier.

However, present actual rentals received may or may not be indicative of future rentals. Income statements must be analyzed and compared to rentals of other comparable properties. Local and national economic conditions, terms of leases and rental trends in the area should be considered also. The final result is an estimate of typical income for the type, age, and location of property within the assessment jurisdiction. This fair rental or income should approximate the current market income and is projected into the future.

Past experience and analysis of future trends are employed to arrive at a vacancy and bad debt allowance, which, when subtracted from the gross income, produces the effective gross income.

Operating Expenses and Fixed Charges

The operating expenses and fixed charges are subtracted from the effective gross income to arrive at the net income from the property.

Operating expenses include cost of property management, wages of operating personnel, utilities, repairs and maintenance, reserve for maintenance of building accoutrements, and miscellaneous expenses. Fixed charges include casualty and liability insurance and occasionally property taxes, however, it is the general practice to include property taxes in the capitalization rate for reasons which are discussed later.

Actual income and expense statements are carefully scrutinized to be certain all are allowable deductions. Items which often appear but which should be disallowed as operating expenses or fixed charges include interest payments on mortgages or loans, depreciation, corporation officer salaries and income tax payments. Insurance premiums are often paid on a 3-year basis so only 1/3 of this expense should be allowed for each year. Major renovations are often treated as normal maintenance work for the year renovations are made when, actually, they must be apportioned over the anticipated economic life of the renovation.

In general, only expense items pertaining to the actual operation or maintenance of the property are deductible from effective gross income to estimate net income.

Economic Life of Improvements

A building or improvement is a wasting asset in that it wears out or continues to lose its economic value over a period of time. Part of the net income derived from an improved property must be allocated to recover or return to the investor the remaining value of the improvement during the period the property will produce income. The remaining economic life of the improvement determines how long a period in years is available in which to recapture the present value of the improvement.

The appraiser estimates the remaining useful economic life of property improvements based on his experience, knowledge and information obtained from bankers, realtors and others in the building operation field. Once the estimates of future economic life (years in which income can be produced) has been made, a second important decision must follow. This decision involves the method for amortizing the value of the improvement over its remaining useful life.

Three basic methods are available to recapture the value of the improvement during its remaining economic life. The methods are 1) the straight line, 2) the sinking fund, or Hoskold method, and 3) the annuity or Inwood method of amortizing the remaining value of the improvement over its estimated economic life.

For example, assume the estimated remaining economic life of a building to be 40 years. The straight-line method requires an annual recapture of 2 1/2% of the improvement value per year (100% - 40 years = 2 1/2% year). In the sinking or, Hoskold method, the recapture is based on annual reinvestment of the amortization at a safe rate at compound interest. For example, according to sinking fund tables, a yearly recapture of approximately 1.33% of the improvement value per year invested annually for 40 years at 3% compound interest will return the original cost.

In the annuity or Inwood method, the amount of annual recapture is assumed to be reinvested at the same rate as the original investment. For a building with an economic life of 40 years, and the recapture based on annual reinvestment at 6% compound interest, the recapture rate will be 0.65%. Use of the latter two methods at reduced rates of recapture will result in an increased value of the property by the capitalization process because less of the yearly net income is allocated to recapture of building investment. Most appraisers use the term "depreciation" or "allowance for depreciation" describing the percentage of yearly recapture of investment.

The estimate of remaining economic life of the building or improvement is most important regardless of the method chosen to recapture the value of building.

Examples of the three methods of recapture of building investment will be helpful in illustrating the above description:

1. Straight Line Method - this method assumes a yearly amount taken from net income, expressed as a percentage of building value which will equal 100% at the end of the economic life with no reinvestment of the amount taken from the net income as depreciation.

   Example:

   Remaining economic life of property, 25 years
   Percentage for recapture (depreciation)
   100% divided by 25 years equals 4.00%

2. Sinking Fund or Hoskold Method - this method assumes a yearly amount taken from net income expressed as a percentage of building value, which will equal 100% at the end of the economic life with reinvestment, of the amount taken from net income as depreciation at a safe rate of 3% compounded.

   Example:

   Remaining economic life of property, 25 years
   Percentage for recapture (depreciation)
   Sinking fund rate 25 years 3% = 2.74%

   (The Hoskold Sinking Fund Valuation premise produces a Hoskold factor based on interest rate and a safe reinvestment rate of 3%. For example, if 6% is found to be the "going rate" of interest, the Hoskold Factor for a building with 25 years economic life would be 11.438. This factor multiplied by the net income will produce an indicated capital value.)

3. Annuity or Inwood Method - this method assumes a yearly amount taken from net income, expressed as a percentage of building value, which will equal 100% at the end of the economic life with reinvestment of the amount taken from net income as depreciation at the same rate as the original investment compounded.

   Example:

   Remaining economic life of property, 25 years
   Percentage for recapture (depreciation)
   Annuity Tables at 6% for 25 years = 1.82%

   (The Inwood method produces an Inwood factor based on reinvestment of recapture at the going rate of interest. At 6% interest over a period of 25 years, the Inwood factor is 12.783. This factor multiplied by the net income will produce an indicated capital value.)

When to use the Alternate Methods of Recapture of Depreciation

The Straight Line Method is used whenever the investment does not assume any of the characteristics of an annuity such as an apartment or boarding house. In other words, if the future income projection is speculative then this method is preferable.

The Sinking Fund, or Hoskold Method, may also be used in the event that the income from the property bears no resemblance to an annuity. This method can be used when only a little speculation is felt in the projection of future income such as store buildings.

The Annuity, or Inwood Method, is used only when the future income from the property is virtually guaranteed such as long term leases with high credit rating tenants. Typical of such properties might be a centrally located office buildng. If the income assumes the characteristics of an annuity then this method can be successfully used.

Proper Capitalization Rate

The capitalization rate is most often thought of as the rate or percentage used in discounting anticipated net income. Usually it is thought of as the rate of interest which should be received by the owner or investor for investing in real property.

Actually, however, the capitalization rate is composed of two elements, namely, 1) rate of interest or return on investment, 2) rate of recapture of building or improvement value or depreciation. Many appraisers consider as a third element the rate of property taxes. This later element may be considered a "fixed charge" to be deducted from gross income but most ad valorem tax appraisers consider taxes as part of the capitalization rate.

Rate of Investment - the first element of the capitalization rate, return on investment, is probably the most difficult to select. A change of 1% in this element can materially increase or decrease the estimated value of the property. For example, assume a property has a net income of $2,000 and is capitalized at 3%. $2,000 divided by .03 equals an indicated value of $66,667. Or, in other words, an investment of $66,667 at 3% return will yield $2,000. The same $2,000 net income capitalized at the following higher interest rates indicate increasing lower values:

$2,000 net income capitalized at 4% indicates a value of $50,000
$2,000 net income capitalized at 5% indicates a value of $40,000
$2,000 net income capitalized at 6% indicates a value of $33,333
$2,000 net income capitalized at 7% indicates a value of $28,571
$2,000 net income capitalized at 8% indicates a value of $25,000

The rate of interest for return on investment should vary with the risk of investment. For stable property with a long economic life, the rate should be less than older properties. The greater the risk, the higher the rate of return and lower the value. Interest rates fluctuate as do property values in different sections of the state and different sections of the large cities. The assessor assembles and studies the data on the "going interest rates" for mortgages and other types of investments in the community. A prudent investor knows that real estate investments require more personal time and effort, have greater risk and are not as liquid as other types of investments such as bonds or bank savings accounts. Thus only a fair return, commensurate with the effort, liquidation, and risk involved, will encourage an investor to purchase real estate.

There are three methods used to develop, or guides to select, the rate of return on investment or interest rate. The methods will assist the appraiser to keep his judgements within reasonable bounds.

1. Built-up Method - this method is based on building up the rate of interest starting with a safe rate (rate paid on U.S. government bonds or bank savings deposits) and adding for non-liquidity, risk and management effort and time.

   Example:

Safe Rate	5 1/2%
Non-liquidity	1 %
Risk	2 %
Management effort	1/2%
Total built-up interest rate	9 %

   NOTE: Building of the capitalization rate in the manner described here is used less often than the other two methods, however, any appraiser should understand the techniques and be aware of the factors which make up a capitalization rate.

2. Comparison Method - this method is based on analysis of market data to discover interest rates on similar properties of known value.

   Example:

   A comparable property which sold for $50,000 produces a net income of $6,000 per year. The value of the land is $10,000 and the estimated economic life of the improvements is 25 years.

   The land is valued in perpetuity since it exists forever and requires no depreciation. The improvements have only a limited economic life and are subject to depreciation requiring recapture of this value. $50,000 total value less $10,000 land value equals $40,000 improvement value. $40,000 improvement value times 4% depreciation rate (100 - 25 years economic life = 4% per year) equals $1,600 of net income per year attributable to depreciation.

	$6,000 yearly net income
less -	1,600 income to depreciation or return of building investments
	$4,400 income attributable to return on investment

   $4,400 return divided by $50,000 investment equals .088 or 8.8% interest rate.

3. Band of Investment Method - this method requires analysis of actual market practices, utilizing the existing rates for lst mortgages, 2nd mortgages and equity and the percentages each bears of the total investment.

Example:

	Going Interest Rate	x	Percentage of Investment	= Produce
Equity	12%	x	20%	2.4%
lst mortgage	8%	x	60%	4.8%
2nd mortgage	10%	x	20%	2.0%
			Interest Rate.....	9.2%

Rate of Recapture - the second element of the capitalization rate is the rate of recapture or rate for depreciation expressed as a percentage of building value. The discussion of this element is contained in the sub-section of "Economic Life of Improvements".

Rate for Property Taxes - the third element of the capitalization rate is the local property tax rate expressed as a percentage of property value. It is advisable, especially in appraising for tax assessment purposes, to include property taxes in the overall capitalization rate rather that list them as an item of expense under fixed charges. If the taxes are included in the expenses, it is obvious that any change in actual tax dollars would alter the net income and produce a substantial difference in value.

For example, a property whose net income is $5,000 is given a reduction in assessment and consequently in taxes. Net income is increased to $5,500. The $500 increase in net income would produce an immediate increase in value. At a capitalization rate of 10%, the $500 increase in net income would increase the value by $5,000. In effect, the assessment would then require adjustment upward. This could create an endless see-saw of value and assessment. If placed in the capitalization rate as the effective tax rate reflecting the average ratio of assessment in the district, this problem is eliminated.

Converting Net Income Into Capital Value

There are three general methods used in converting income into capital value:

1. Building Residual Technique
2. Land Residual Technique
3. Property Residual Technique

In order to comprehend the residual techniques, it is necessary to realize that land lasts forever while improvements have a limited economic life. It is then evident that land is capitalized in perpetuity while depreciation must be taken into account in the case of improvements. This results in different rates being applied to the land and the buildings involved.

1. Land Residual Techniques - This procedure is utilized when improvements are new and the cost is known or easily estimated and when land values are not evident, due to a shortage of land comparables. Elements of depreciation and/or obsolescence difficult to estimate, should be absent or at a bare minimum when using this technique.

2. Building Residual Technique - This procedure should be utilized when land values are clearly established, comparables being numerous, and where the existing structure is affected by elements of depreciation and/or obsolescence. This method points out the actual degree of penalty the improvement should bear.

3. Property Residual Technique - This technique is used in cases involving a"triple A"tenant and a long-term lease. It is also used where there is a shortage of land information and where the improvement is affected by elements of depreciation and/or obsolescence.

Suggested forms for their application and examples of each are given on the following pages.

LAND RESIDUAL

An office building has been recently constructed in the central business district. The construction cost was $500,000. The land was held vacant by the owner for several years after demolishing an old store and office building which had been held in the family for many years.

The building contains 20 office suites which are leased for $7,000 each. Expenses include management charge of 5% of effective gross income; fuel costs of $8,000; water and sewer, $2,000; repairs and maintenance, $5,000; and $2,000 for "Reserve for Replacements" which includes a reserve for replacing a $25,000 roof and a new $15,000 heating and cooling system every 20 years. Fixed charges include a three year insurance premium of $22,500. Janitorial expenses are $8,000 per year.

The established return on investment is 9%, the building has an expected life of 40 years and the effective tax rate is $2.95 per hundred.

ILLUSTRATION # 10

CAPITALIZED VALUE (Land Residual)

Income

(Itemize for each individual store, apartment, etc.)

20 Office Suites @ $7,000/year each

Reserve for Replacements

(a)	Roof $25,000 ÷ 20 yrs.	$1,250
(b)	Heating and Cooling System $15,000 ÷ 20 yrs	750
		$2,000

Total Gross Income (per month) $_____

Total Gross Income (per year) $140,000

NOTE: Do not include taxes in fixed charges if used below in cap. rate.

Effective Tax Rate 2.95%

Total Tax Levy ÷ Net Valuation = Eff. Tax Rate

Expenses and Fixed Charges

Operating Expenses

(1)	Management 5 % of Effective Gross Income	$ 6,650
(2)	Wages	$ 8,000
(3)	Fuel	$ 8,000
(4)	Electricity and Gas	$ paid by tenant
(5)	Water and Sewer	$ 2,000
(6)	Repairs and Maintenance	$ 5,000
(7)	Reserve for Replacements	$ 2,000
(8)	*Miscellaneous (Explain)	$ ____
	Total Operating Expenses	$ 31,650

Fixed Charges

(9)	Taxes (See Note)	$ ____
(10)	Insurance	$ 7,500

* Explanation of Item (8) _____

Total Gross Income	$140,000
LESS: Allowance for Vacancy and Rent Loss - 5%	$ 7,000
Effective Gross Income	$133,000
LESS: Operating Expenses	$ 31,650
Net Before Fixed Charges	$101,350
LESS: Fixed Charges	$ 7,500
Net Income (Land and Buildings)	$ 93,850
LESS: Income Attributable to Building $500,000 @ 14.45% (Capitalization Rate = 9.0% Return + 2.5% Depreciation + 2.95% for Taxes)	$ 72,250
Income Attributable to Land	$ 21,600
Land Income Capitalized at 11.95% = Land Value (9.0% Return + 2.95% Taxes)	$180,753
Building Value (From Physical Appraisal)	$500,000
Total Value Land and Improvements	$680,753

BUILDING RESIDUAL

An existing garden apartment complex has 100 apartment units which rent for an average of $275 per unit per month. The tenants pay for their gas and electricity and the owner assumes all other expenses. Comparable properties experience a 3% rent loss due to vacancies and bad debts and require a 5% allowance for management.

Operating expenses based on an analysis of a three year history of this and other comparable complexes indicate $9,000 a year for janitorial services, $150 per unit for fuel, $50 per unit for water and sewer and repairs, and maintenance costs of $6,600 per year. Insurance costs are $8,100 per year.

The reserve for replacements includes a new roof with gutters and downspouts estimated to cost $25,000, over 20 years; 5 boiler units at $2,500 each over 20 years; refrigerator units (100 units at $275 per unit) with a 15 year life; 100 kitchen range units at $250 per unit over 15 years, and floor covering for all units at $800 per unit and lasting 10 years.

The effective tax rate is $2.49 per one hunderd dollars of assessed value.

The land value, supported by sales of comparable lots is established at $250,000. The building is estimated to have a 40 year economic life and the return on investment is established at 9%.

ILLUSTRATION # 11

CAPITALIZATION VALUE (Building Residual)

Income
(Itemize for each individual store, apartment, etc.)

$ 275 per month per apartment
x 100 apartment units
$27,500 per month
x 12
$330,000

(a)	Roof $25,000 ÷ 20 yrs	$ 1,250
(b)	5 boilers @ $2,500 ÷ 20 yrs	625
(c)	Refrig. $275 x 100 ÷ 15 yrs	1,833
(d)	Range $250 x 100 ÷ 15 yrs	1,667
(e)	Floor Cover $800 x 100 ÷ 10 yrs.	8,000
		13,375

Total Gross Income (per month) $ 27,500
Total Gross Income (per year) $330,000

NOTE: Do not include taxes in fixed charges if used below in cap. rate.

Effective Tax Rate 2.49%

Total Tax Levy ÷ Net Valuation = Eff. Tax Rate

Expenses and Fixed Charges

Operating Expenses

(1)	Management 5 % of Effective Gross Income	$ 16,005
(2)	Wages	$ 9,000
(3)	Fuel	$ 15,000
(4)	Electricity and Gas	$paid by tenant
(5)	Water and Sewer	$ 5,000
(6)	Repairs and Maintenance	$ 6.600
(7)	Reserve for Replacements	$ 13,375
(8)	*Miscellaneous (Explain)	$ ____
	Total Operating Expenses	$ 64,980

Fixed Charges

(9)	Taxes (See Note)	$ ____
(10)	Insurance	$ 8,100
	Total Fixed Charges	$ 8,100

* Explanation of Item (8) _____

Total Gross Income	$330,000
LESS: Allowance for Vacancy and Rent Loss - 3%	$ 9,900
Effective Gross Income	$320,100
LESS: Operating Expenses	$ 64,980
Net Before Fixed Charges	$255,120
LESS: Fixed Charges	$ 8,100
Net Income (Land and Buildings)	$247,020
Income Attributable to Land $250,000 @ 11.49% (9% Return + 2.49% Taxes)	$ 28,725
Income Attributable to Building (Balance)	$218,295
Building Income Capitalized at 13.99% (Includes Depreciation 2.5%, Return on Investment 9.0%, and 2.49% Taxes)	$1,560,364
Land Value	$250,000
Total Value Land and Improvements	$1,810,364

PROPERTY RESIDUAL

The Inwood Method is used in this example as an illustration of the Annuity Method and, as stated earlier, is not meant to imply that the property residual technique requires its use. The Inwood Method is used for properties where there is a long term lease with a very reliable tenant. The property residual technique involves the total property and is necessary when there is little information on land and building values.

A recently constructed supermarket has a 10 year lease for $40,000 per year with a renewal option. The tenant, a national chain operator, pays all expenses including real estate taxes, insurance, water, sewer, fuel, utilities and necessary maintenance repairs.

The economic life of the improvements is estimated to be 25 years and there are no apparent economic obsolescence factors which may affect the property in the foreseeable future. The reversionary value of the land is estimated as being $100,000 for calculation purposes only.

The present replacement cost of the improvements is calculated at $200,000 and its economic life is estimated to be 25 years.

ILLUSTRATION # 12

CAPITALIZED VALUE (Property Residual)

Income		Expenses and Fixed Charges	
Itemize for each individual store, apartment, etc.		Operating Expenses	
		(1) Management 5 %	$ 2,000
$40,000 per year		(2) Wages	$paid by tenant
		(3) Fuel	$paid by tenant
		(4) Electricity and Gas	$paid by tenant
		(5) Water	$paid by tenant
		(6) Repair and Maintenance	$paid by tenant
		(7) Reserve for Replacements	$ ____
		(8) Miscellaneous (Explain)	$ ____
		Total Operating Expenses	$ ____
Total Gross Income (per month)	$ ____	Fixed Charges	
Total Gross Income (per year)	$ 40,000	(9) Taxes	$paid by tenant
		(10) Insurance	$paid by tenant
		Total Fixed Charges	$ ____

Total Gross Income	$ 40,000
LESS: Allowance for Vacancy and Rent Loss	$ ____
Effective Gross Income	$ 40,000
LESS: Operating Expenses	$ 2,000
Net Before Fixed Charges	$ 38,000
Property Income Capitalized @ 6.710 Inwood Factor (10-year annuity at 8 %	$254,980
PLUS: Reversionary Value of Land $100,000 discounted @ .4632 (10-year 8% discount factor)	$ 46,320
PLUS: Reversionary value of building, $200,000 depreciated by 40% for 10 years out of 25 year life (60% condition = $120,000) x .4632 (10-year, 8% discount factor)	$ 55,584
Total Property Value	$356,884

SUMMARY OF STEPS USED IN DEVELOPMENT OF APPRAISAL STANDARDS

RURAL LAND VALUES (For detail see Rural Land Value section)

1. Study the market (sales) and analyze values by the income approach to develop an opinion of various land values.
2. Estimate the average acre value of the average class of land in the assessment jurisdiction.
3. Develop relative values of rural land classes upward and downward from the value of the average class.
4. Adjust land values of specific areas and parcels for location proximity to trading centers and roads.
5. Compare appraisals with recent sales and adjust values where necessary to obtain sound and realistic land values.

URBAN LAND (For detail see Urban Land Value section)

1. Study the market (sales)and analyze values by the income approach (land residual).
2. Develop unit land values of sales and adjust all unit values to a common base unit such as a unit front foot value for a standard depth lot, unit square foot value or unit acre value.
3. Adjust land values of specific areas or parcels for location, topography, etc.
4. Record unit land values on a land value map.
5. Compare appraisals of land with recent sales and adjust.

BUILDING REPLACEMENT COSTS (For detail see Procedure for Building Appraisal section)

1. Collect cost data on recent new construction of all available classes of buildings.
2. Determine specifications for each known cost building by classification of building.
3. Analyze specifications of the buildings which are nearest alike and establish base specifications which are most representative of the class.
4. Analyze the costs of each building within a class and group the unit costs by area and story height. Establish the relationship of unit cost to building area by plotting the costs graphically to establish the cost curve (unit costs of building construction decrease as the size increases, but at a decreasing rate).
5. Adjust buildings within the same general classification to a uniform basic cost (see method described in "Market Value" section).
6. Complete base unit cost tables and base specifications.
7. Develop adjustment costs (additions and deductions) for variations from base specifications.
8. Analyze the developed replacement costs and adjustment costs by appraising known new building costs and comparing the results of this application of unit replacement costs, plus adjustments, with actual costs of new buildings.

DEPRECIATION AND OBSOLESCENCE STANDARDS (For details see Depreciation and Obsolescence sections)

1. Check recent sales of various classes of buildings.
2. Develop the replacement cost new, as described above.
3. Compare and analyze appraisals with sales (buildings only) (see method described in "Market Value" section).
4. Develop depreciation and obsolescence factors as described under Depreciation and Obsolescence section .
5. Apply income approach when applicable.
6. Apply market approach when applicable.

PROCEDURE FOR MAINTAINING AND ADJUSTING REAL PROPERTY APPRAISAL STANDARDS

Maintaining Current Real Property Appraisal Standards

In the appraisal of property for assessment and other purposes, all factors and available evidences of value are given consideration. The various sections of this manual outline in detail the various procedures to be used in determining value by the cost of building replacement, the market or sales value of the property and the value based on the capitalization of income from property. Each approach is given appropriate consideration in determining the fair value of specific properties.

Real property appraisal guides and standards must be kept current by adjusting or changing the standards to reflect significant changes in costs of property and in depreciation and obsolescence factors.

These adjustments in appraisal standards are based on information collected and verified by the appraiser. In order to properly reflect price changes for each property class, the appraiser analyzes the price changes for the different property classes individually rather than as a total since the values of the different classes do not change uniformly. For instance, in some areas building values have been known to increase rapidly while the increase in land values remained relatively stable over the same period of time. The individual analysis of each type of property will make possible the adjustment of standards for each class of property and will result in the maintenance of sound and realistic appraisals on a uniform basis.

Adjustments of appraisal standards should be made when there is sufficient reliable information indicating significant price changes for specific types of properties. Appraisal standards for relatively stable value properties such as land and buildings usually do not change as rapidly as do new models of automobiles or the values of securities unless there are special factors present in the market.

Real property appraisal guides and standards reflecting the average costs of specific types of classes of property for a specific year are issued by the Local Property and Public Utility Branch from time to time. The Branch also gathers and makes available summary price information for the adjustment of appraisal standards to be used for specific classes of properties. The staff of the Local Property and Public Utility Branch will assist the assessing officials, upon request, in revising such standards.

Procedure for Adjusting Rural and Urban Land Values

The various steps for adjusting land values are basically the same as those outlined for the development of standards. The important difference being that the appraiser should collect and analyze all available information on a continuing basis. Adjustments should be made when there is sufficient reliable information indicating significant price changes in basic land values throughout either a rural or urban area.

Procedure for Adjusting Building Construction Cost Standards

The replacement cost schedules for each of the typical building classes are described in the building replacement cost section of this manual. These costs are based on a detailed analysis of the quantities and the average material and labor prices.

The specifications for the typical building classes and the replacement cost schedules for each building class (and for adjustments to the base costs) serve as the basis for classifying and determining the replacement cost and other essential information on each property record card.

To accomplish the objective of establishing uniform, state-wide procedures and guides in determining and equalizing the assessment of all properties of similar construction type and use, a simplified procedure is provided in this section for adjusting or converting the replacement cost of each typical building class to reflect current construction labor and material prices in any assessment jurisdiction at the present or any subsequent time.

The application of the cost conversion factors for specified building classes furnishes a simpler and more accurate basis for adjusting the replacement cost of specific building classes than through the use of general construction indexes or of building construction indexes which require extensive computations in determining current building replacement costs.

This procedure for converting the base replacement costs of buildings in various classes according to type and construction can be tested through comparisons with actual construction costs of typical buildings as a check against variations in the productivity of construction tradesmen.

Local Property and Public Utility Branch Construction Cost Index

In developing the State building cost conversion index, the basic factors used in other construction indexes have been studied with the view of preparing a simplified procedure for cost conversion of the manual unit replacement costs of any building class in any assessment jurisdiction of the State at the present or any subsequent date.

The cost conversion tables as included herein have been developed on the basis of average quantities and prices of the controlling items of labor and materials in the respective building classes.

The weight or importance of each of these items in the respective building classes is represented by a multiplier which, when multiplied by the current unit cost of the material or labor item, produces the item factor which reflects the weight or influence of that particular item in the total current cost of buildings of the particular class.

The group building classifications and major items in the following tables have been checked with typical building breakdowns together with the other building construction indexes which are used in adjusting individual building construction costs to current levels.

The Local Property and Public Utility Branch building cost conversion index takes into account three major components, namely: (1) average prices of the more important material items; (2) prevailing rates of pay for building construction skilled and unskilled labor; and (3) indexes of wholesale prices of "plumbing fixtures and brass fittings", "iron and steel", "Nonmetallic mineral products", "heating equipment" and "floor coverings". These three components include seventeen individual items as follows: Six items for materials, six for labor and five for equipment.

❖ **Component Items, Base Units, Prices and Indexes – October 1975**

The Real Property Appraisal Manual cost index for commercial buildings is based upon the average labor and prices in 21 counties of the State in October 1975. As these are also the basis of the building class unit replacement costs in this manual, a conversion factor must be applied to adjust the value from the 1975 rate to the last revaluation / reassessment.

❖ **Component Items, Base Units, Prices and Indexes – October 2001 Residential "R" Series**

The Appraisal Manual cost index for the "R" series buildings is based upon the average labor and prices in 21 counties of the State in October 2001. As these are also the basis of the building class unit replacement costs in this manual, the conversion factor for these buildings base unit replacement cost is 1.00 or 100%. Districts that undertake a revaluation or reassessment subsequent to 2001 should use the cost conversion factor published for the revaluation implementation

In the following (1975 example) are listed the component items, the base units and the average prevailing prices used in determining the replacement cost schedules of the representative building classes in the manual and in setting up the 100 percent of 1975 base construction costs for building classes of each major type and construction.

Item No.	Item	Base Unit	1975 Base Price
Materials			
1.	Ready Mix Concrete	Cost delivered per cubic yd.	$ 24.50
2.	½" Plywood Sheathing	Cost delivered per 100 sq. ft.	20.90
3.	Dimenson Lumber (2" x 4" and 2" x 8")	Cost delivered per MBM	266.00
4.	No. 1 Common Brick	Cost delivered per M	125.00
5.	Structural Steel Shapes	Base Cost per CWT	21.67
6.	Reinforcing Steel	Base Cost per CWT	16.25
Price Indexes			
7.	Steel Mill Products	Wholesale Price Index 1967=100	195.2
8.	Non-Metallic Mineral Products	Wholesale Price Index 1967=100	176.1
9.	Plumbing Fixtures and Brass Fittings	Wholesale Price Index 1967=100	161.2
10.	Heating Equipment	Wholesale Price Index 1967=100	150.3
11.	Floor Covering	Wholesale Price Index 1967=100	126.8
Labor			
12.	Common Laborer	Rate per hour	$ 8.40
13.	Carpenter	Rate per hour	11.70
14.	Plumber	Rate per hour	12.76
15.	Electrician	Rate per hour	13.43
16.	Ironworker	Rate per hour	13.35
17.	(Mason (Painter (Roofer (Sheetmetal	Average Rate per hour	11.10

Current local prices which vary from the labor and material costs and wholesale price indexes shown in the above when applied to the cost conversion factors will produce an index related to the 1975 replacement cost base of 100 percent.

Group of Building Classes for Construction Cost Conversion

In order to reflect the variations in quantities and costs of building labor and material used in the construction of buildings classified according to type and construction, each specific building class has been classified and listed under the following building cost conversation groups.

Classification of Typical Building Classes Under Cost Conversion Groups

Class of Building	Type of Building					
	Frame	Brick-Stone	Apt.	Hotel-Motel	Office	Comm-Indus
R-12	RR-1	RR-2	-	-	-	-
R-13	RR-1	RR-2	-	-	-	-
R-14	RR-1	RR-2	-	-	-	-
R-15	RR-1	RR-2	-	-	-	-
R-16	RR-1	RR-1	-	-	-	-
R-17	RR-1	RR-2	-	-	-	-
R-18	RR-1	RR-2	-	-	-	-
R-19	RR-1	RR-2	-	-	-	-
R-20	RR-1	RR-2	-	-	-	-
R-21	RR-1	RR-2	-	-	-	-
R-23	RR-1	RR-2	-	-	-	-
R-27	RR-1	RR-2	-	-	-	-
R-28	RR-1	RR-1	-	-	-	-
R-29	RR-1	RR-2	-	-	-	-
R-30	RR-1	RR-2	-	-	-	-
R-33	RR-1	RR-2	-	-	-	-
R-35	RR-1	RR-2	-	-	-	-
R-37	RR-1	RR-2	-	-	-	-
R-39	RR-1	RR-2	-	-	-	-
R-43	RR-1	RR-2	-	-	-	-
R-45	RR-1	RR-1	-	-	-	-
R-47	RR-1	RR-2	-	-	-	-
R-49	RR-1	RR-2	-	-	-	-
R-50	RR-1	-	-	-	-	-
R-51	RR-1	-	-	-	-	-
R-52	RR-1	-	-	-	-	-
R-53	RR-1	-	-	-	-	-
R-54	RR-1	-	-	-	-	-
101	-	-	C-1	C-1	C-1	C-3
102	-	-	C-1	C-1	C-1	C-3
103	-	-	C-1	C-1	C-1	C-4
104	-	-	C-2	C-2	C-2	C-6

CLASS OF BUILDING	TYPE OF BUILDING FRAME	BRICK / STONE	APARTMENT	HOTEL / MOTEL	OFFICE	COMMERCIAL / INDUSTRIAL
105			C-2	C-2	C-2	C-5
106			C-2	C-2	C-2	C-6
107						C-5
108						C-5
109						C-5
123						C-3
124						C-4
125						C-5
126						C-4
127						C-5
133						C-3
134						C-4
135						C-5
136						C-4
137						C-5
145				C-1		
150	F-1	F-1				
151	F-1	F-1				
152	F-1	F-1				
153	F-1	F-1				
154	F-1	F-1				
155	F-1	F-1				
156	F-1	F-1				
PF157	F-2					
PF158	F-2					
PF159	F-2					
PF160	F-2					
PF161	F-2					
PF162	F-2					
GH164	F-2	F-2				F-2

To convert or adjust building construction cost included in this manual to the current local labor and material prices and costs, the appropriate building cost conversion table is used for each respective building class or sub-class type of construction.

BASE COST CONVERSION ITEM FACTOR

Base cost conversion item factors have been calculated for all typical building classes in each building conversion group on the basis of the relative weight or importance of each component building cost items in each building group.

To obtain the building conversion index in the basis of current or future prevailing prices of labor and material in any assessment jurisdiction, the following conversion factors are used for the respective building cost conversion groups described above.

Computation for Building Replacement Cost Conversion Indexes
Location: Base County
Date: 1975

Item No.	Item	Base Unit	Prevailing Price or Index	Residences: Wood Frame, Table R1 Factor	Residences: Wood Frame, Table R1 Exten.	Residences: Brick or Brick Veneer, Table R2 Factor	Residences: Brick or Brick Veneer, Table R2 Exten.
	MATERIAL						
1	Ready-Mix Concrete	Cost delivered per cubic yard.	24.50	.06	1.470	.08	1.960
2	½" Plywood Sheathing	Cost delivered per 100 sq.ft. in carload lots	20.90	.26	5.434	.24	5.016
3	Dimension Lumber	Average cost of 2"x4" & 2"x8" lengths per 1000 board feet delivered in carload lots.	266.00	.06	15.960	.03	7.980
4	No. 1 Common Brick	Cost per 1000 delivered	125.00	-		.07	8.750
5	Structural Steel	Cost per CWT - Base Warehouse Price - in 10,000 lots	21.67	-		-	
6	Reinforced Steel	Cost per CWT - Base Warehouse Price - in 10,000 lots.	16.25	-		-	
	PRICE INDEXES						
7	Steel Mill Products	Index from Average Wholesale Price. Index - 1967 = 100, Bureau of Labor Statistics, United States Department of Labor	195.2	-		-	
8	Non-Metallic Mineral Products		176.1	.10	17.610	.09	15.849
9	Plumbing Fixtures & Brass Fittings		161.2	.02	3.224	.02	3.224
10	Heating Equipment		150.3	.03	4.509	.025	3.758
11	Floor Coverings		126.8	.03	3.804	.025	3.170
	LABOR						
12	Common Labor	Rate per Hour	8.40	.50	4.200	.37	3.108
13	Carpenter Labor	Rate per Hour	11.70	1.64	19.188	1.27	14.859
14	Plumber Labor	Rate per Hour	12.76	.15	1.914	.14	1.786
15	Electrician Labor	Rate per Hour	13.43	.24	3.223	.23	3.089
16	Ironworker Labor	Rate per Hour	13.35	-		-	
17	Average of: Mason 11.41, Painter 10.40, Roofer 11.10, Sheetmetal 11.47 TOTAL	Average Rate per Hour (÷ 4)	11.095	1.76	19.527	2.47	27.405
	Conversion Index				100.063		99.954
	Conversion Factor (Index ÷ 100)				1.00		1.00

Conversion Tables for Commercial - Industrial Buildings

Computation For Commercial Building Replacement Cost Conversion Indexes Location: BASE COUNTY Date: 1975			Prevailing Price or Index	Apartments, Hotels, Motels and Office Buildings				Commercial - Industrial Buildings							
				Masonry and Wood		Steel and Concrete		Wood Construction		Wood and Masonry		Steel and Masonry		Fire Resistant Construction	
Item No.	Item	Base Unit		101, 102, 103 & 145		104, 105 & 106		101, 102, 123, 133		103, 124, 126 134 & 136		105,107,108,109 125,127,135,137		104, 106	
				Table C-1		Table C-2		Table C-3		Table C-4		Table C-5		Table C-6	
	MATERIAL			Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.
1	Ready-Mix Concrete	Cost delivered per cubic yard.	24.50	.24	5.880	.40	9.800	.25	6.125	.21	5.145	.34	8.330	.56	13.720
2	½" Plywood Sheathing	Cost delivered per 100 square feet in carload lots.	20.90	.32	6.688	.22	4.598	.45	9.405	.35	7.315	.03	.627	.04	.836
3	Dimension Lumber	Average cost of 2" x 4" and 2" x 8" lengths per 1000 board feet delivered in carload lots.	266.00	.05	13.300	.01	2.660	.07	18.620	.05	13.300	.01	2.660	.02	5.320
4	No. 1 Common Brick	Cost per 1000 delivered.	125.00	.02	2.500	.005	.625	-	-	.01	1.250	.02	2.500	.01	1.250
5	Structural Steel Shapes	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	21.67	.08	1.734	.35	7.585	-	-	.12	2.600	.47	10.185	.31	6.718
6	Reinforcing Steel	Cost Per CWT - Base Warehouse Price - in 10,000 lb. lots.	16.25	.09	1.463	.21	3.413	.09	1.463	.13	2.113	.19	3.088	.26	4.225
7	PRICE INDEXES Steel Mill Products	Index from Average Wholesale Price	195.2	.005	.976	.04	7.808	-	-	.01	1.952	.04	7.808	.03	5.856
8	Non-Metallic Mineral Products	Index - 1967 = 100, Bureau of Labor Statistics, United States Department of Labor	176.1	.037	6.516	.04	7.044	.03	5.283	.04	7.044	.06	10.566	.05	8.805
9	Plumbing Fixtures and Brass Fittings		161.2	.03	4.836	.03	4.836	.01	1.612	.01	1.612	.01	1.612	.01	1.612
10	Heating Equipment		150.3	.04	6.012	.05	7.515	.05	7.515	.06	9.018	.06	9.018	.05	7.515
	LABOR														
11	Common Labor	Rate per Hour	8.40	.50	4.200	.65	5.460	.51	4.284	.51	4.284	.60	5.040	.81	6.804
12	Carpenter Labor	Rate per Hour	11.70	1.97	23.049	1.07	12.519	2.49	29.133	1.77	20.709	.64	7.488	.91	10.647
13	Plumber Labor	Rate per Hour	12.76	.27	3.445	.30	3.828	.10	1.276	.11	1.404	.11	1.404	.10	1.276
14	Electrician Labor	Rate per Hour	13.43	.27	3.626	.30	4.029	.34	4.566	.41	5.506	.38	5.103	.35	4.701
15	Ironworker Labor	Rate per Hour	13.35	.10	1.335	.44	5.874	.04	.534	.15	2.003	.57	7.610	.43	5.741
16	Average of: Mason 11.41 Painter 10.40 Roofer 11.10 Sheetmetal Worker) 11.47	Average Rate per Hour	11.095	1.30	14.424	1.12	12.426	.92	10.207	1.33	14.756	1.53	16.975	1.35	14.978
	Conversion Index Conversion Factor (Index ÷ 100)				99.984 1.00		100.020 1.00		100.023 1.00		100.011 1.00		100.014 1.00		100.004 1.00

Conversion Tables for Structural Shells and Basement Components

Computation For Building Component Replacement
Cost Conversion Indexes

Location: BASE COUNTY
Date: 1975

Item No.	Item	Base Unit	Prevailing Price or Index	CLASSES 101, 123 & 133 102 Wood Frame Table C-7		103 CLASSES 105, 124, 126 134 & 136 Masonry Table C-8		CLASSES 107, 108, 109, 104 125, 127, 135 & 137 Steel Table C-9		CLASSES 106 & 104 Fire Resistant Table C-10		Basements Wood Floor Table C-11		Basements Concrete Fl. Table C-12	
				Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.
1	MATERIAL Ready-Mix Concrete	Cost delivered per cubic yard.	24.50	.23	5.635	.56	13.720	.43	10.535	1.04	25.480	.87	21.315	1.04	25.480
2	½" Plywood Sheathing	Cost delivered per 100 square feet in carload lots.	20.90	.61	12.749	.03	.627	.06	1.254	.08	1.672	-		.19	3.971
3	Dimension Lumber	Average cost of 2" x 4" and 2" x 8" lengths per 1000 board feet delivered in carload lots.	266.00	.11	29.260	-	-	-	-	.005	1.330	.06	15.960	-	-
4	No. 1 Common Brick	Cost per 1000 delivered.	125.00	-	-	-	-	-	-	-	-	-	-	-	-
5	Structural Steel Shapes	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	21.67	-	-	1.04	22.537	1.15	24.921	.55	11.919	-		-	
6	Reinforcing Steel	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	16.25	.32	5.200	.44	7.150	.46	7.475	.57	9.263	-	-	.46	7.475
7	PRICE INDEXES Steel Mill Products	Index from Average Wholesale Price.	195.2	-	-	.10	19.520	.11	21.472	.06	11.712	-	-	-	-
8	Non-Metallic Mineral Products	Index - 1967 = 100, Bureau of Labor Statistics, United States Department of Labor	176.1	.01	1.761	.01	1.761	.02	3.522	.01	1.761	-	-	-	-
9	Plumbing Fixtures and Brass Fittings		161.2	-	-	-	-	-	-	-	-	-	-	-	-
10	Heating Equipment		150.3	-	-	-	-	-	-	-	-	-	-	-	-
11	LABOR Common Labor	Rate per Hour	8.40	.53	4.452	1.25	10.500	1.21	10.164	1.65	13.860	1.69	14.196	2.28	19.152
12	Carpenter Labor	Rate per Hour	11.70	2.77	32.409	.08	.936	.16	1.872	.93	10.881	4.15	48.555	3.76	43.992
13	Plumber Labor	Rate per Hour	12.76	-	-	-	-	-	-	-	-	-	-	-	-
14	Electrician Labor	Rate per Hour	13.43	-	-	-	-	-	-	-	-	-	-	-	-
15	Ironworker Labor	Rate per Hour	13.35	.14	1.869	1.06	14.151	1.11	14.819	.61	8.144	-	-	-	-
16	Average of: Mason 11.41 Painter 10.40 Roofer 11.10 Sheetmetal Worker) 11.47	Average Rate per Hour	11.095	.60	6.657	.82	9.098	.36	3.994	.36	3.994	-		-	
	Conversion Index				99.992		100.000		100.028		100.016		100.006		100.070
	Conversion Factor (Index ÷ 100)				1.00		1.00		1.00		1.00		1.00		1.00

Conversion Tables For Exterior, Plumbing, Heating & Electrical Components

Computation For Building Component Replacement
Cost Conversion Indexes

Location: BASE COUNTY
Date: 1975

Item No.	Item	Base Unit	Prevailing Price or Index	Exteriors						Plumbing		Heating		Electrical	
				Wood Table C-17		Masonry Table C-18		Metals Table C-19		Table C-20		Table C-21		Table C-22	
				Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.
	MATERIAL														
1	Ready-Mix Concrete	Cost delivered per cubic yard.	24.50	-		-		-		-		-		-	
2	½" Plywood Sheathing	Cost delivered per 100 square feet in carload lots.	20.90	2.77	57.893	-		-		-		-		-	
3	Dimension Lumber	Average cost of 2" x 4" and 2" x 8" lengths per 1000 board feet delivered in carload lots.	266.00	-		-		-		-		-		-	
4	No. 1 Common Brick	Cost per 1000 delivered.	125.00	-		.29	36.250	-		-		-		-	
5	Structural Steel Shapes	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	21.67	-		-		1.81	39.223	-		-		-	
6	Reinforcing Steel	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	16.25	-		-		-		-		-		-	
	PRICE INDEXES														
7	Steel Mill Products	Index from Average Wholesale Price	195.2	-		-		.185	36.112	-		-		-	
8	Non-Metallic Mineral Products	Index - 1967 = 100, Bureau of Labor Statistics, United States Department of Labor	176.1	-		-		-		-		-		-	
9	Plumbing Fixtures and brass fittings		161.2	-		-		-		.36	58.032	-		-	
10	Heating Equipment		150.3	-		-		-		-		.30	45.090	.36	54.108
	LABOR														
11	Common Labor	Rate per Hour	8.40	-		-		-		-		-		-	
12	Carpenter Labor	Rate per Hour	11.70	3.60	42.120	-		-		-		-		-	
13	Plumber Labor	Rate per Hour	12.76	-		-		-		3.29	41.980	-		-	
14	Electrician Labor	Rate per Hour	13.43	-		-		-		-		-		3.42	45.931
15	Ironworker Labor	Rate per Hour	13.35	-		-		1.85	24.698	-		-		-	
16	Average of: Mason 11.41, Painter 10.40, Roofer 11.10, Sheetmetal Worker) 11.47	Average Rate per Hour	11.095			5.75	63.796	-		-		4.95	54.920	-	
	Conversion Index			100.013		100.046		100.033		100.012		100.010		100.039	
	Conversion Factor (Index ÷ 100)			1.00		1.00		1.00		1.00		1.00		1.00	

Computation For Building Component Replacement Cost Conversion Indexes

Location: BASE COUNTY

Date: 1975

Item No.	Item	Base Unit	Prevailing Price or Index	Interior - Apartments Hotels, Motels & Offices		Interior - Commercial & Industrial Buildings					
				Wood, Masonry, Steel and Concrete Types		Wood & Masonry Types		Steel Types		Steel, Masonry & Concrete Types	
				Table C-13		Table C-14		Table C-15		Table C-16	
				Factor	Exten.	Factor	Exten.	Factor	Exten.	Factor	Exten.
	MATERIAL										
1	Ready-Mix Concrete	Cost delivered per cubic yard.	24.50	-		-		-		-	
2	½" Plywood Sheathing	Cost delivered per 100 square feet in carload lots.	20.90	.70	14.630	.71	14.839	-		-	
3	Dimension Lumber	Average cost of 2" x 4" and 2" x 8" lengths per 1000 board feet delivered in carload lots.	266.00	.05	13.300	.05	13.300	.06	15.960	.06	15.960
4	No. 1 Common Brick	Cost per 1000 delivered.	125.00	-		-		-		-	
5	Structural Steel Shapes	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	21.67	-		-		-		-	
6	Reinforcing Steel	Cost per CWT - Base Warehouse Price - in 10,000 lb. lots.	16.25	-		-		-		-	
	PRICE INDEXES										
7	Steel Mill Products	Index from Average Wholesale Price.	195.2	-		-		-		-	
8	Non-Metallic Mineral Products	Index - 1967 = 100, Bureau of Labor Statistics, United States Department of Labor	176.1	.13	22.893	.13	22.893	.19	33.459	.19	33.459
9	Plumbing Fixtures and Brass Fittings		161.2	-		-		-		-	
10	Heating Equipment		150.3	-		-		-		-	
	LABOR										
11	Common Labor	Rate per Hour	8.40	-		-		-		-	
12	Carpenter Labor	Rate per Hour	11.70	2.22	25.974	2.20	25.740	2.29	26.793	1.25	14.625
13	Plumber Labor	Rate per Hour	12.76	-		-		-		-	
14	Electrician Labor	Rate per Hour	13.43	-		-		-		-	
15	Ironworker Labor	Rate per Hour	13.35	-		-		-		-	
16	Average of: Mason 11.41, Painter 10.40, Roofer 11.10, Sheetmetal Worker) 11.47	Average Rate per Hour	11.095	2.09	23.189	2.10	23.300	2.15	23.854	3.24	35.948
	Conversion Index				99.986		100.072		100.066		99.992
	Conversion Factor (Index ÷ 100)				1.00		1.00		1.00		1.00

Collection of Current Labor and Material Prices

To obtain local, current building replacement costs for typical classes of buildings in any assessment jurisdiction where systematic property assessment is either being established or being brought up-to-date, the appraiser obtains the prevailing material and labor prices in his areas as of the current assessment date on the component items listed in the conversion tables.

Sources of information are material dealers, building supply houses, contractors, builders, and employment agencies. Labor costs and material prices are collected from builders who are reliable and representative of the various classes of buildings built in the area. The collection of this data requires much tact and sound judgement since there are many types of material and various grades of each type. Care must be taken to assure that all costs collected are for the same grade, quality, and quantity of material. Labor rates also vary from high to low depending upon the degree of skill acquired by the tradesman, and the fringe benefits allowed and the availability of the tradesmen in the area.

Prices are collected on individual forms from each source and should be carefully analyzed. Items that appear to be out of line should be verified by rechecking with the source and eliminated from further consideration if it appears that the information is not consistent with that obtained from other sources.

When all cost data has been collected, analyzed, and verified, the various costs for each item are averaged and the average price is entered on the cost conversion form under "Indicated or Prevailing Price or Index."

Indexes on the average changes in the wholesale prices of plumbing fixtures and brass fittings, iron and steel, and non-metallic mineral products are reported by the Division of Wholesale Prices of the United States Bureau of Labor Statistics and published in the monthly issues of the Monthly Labor Review of the U. S. Department of Labor.

Application of Building Replacement Cost Conversion Item Factors

To obtain the total building replacement cost conversion factor for the respective building cost conversion groups, the cost conversion item factors under each group are multiplied by the applicable current local unit price of materials, labor rates, and equipment indexes. The sum of the extensions in each building cost conversion group reflects the conversion index applicable to all buildings classified under such group. This building cost conversion index divided by 100 is used as a direct multiplier or cost conversion factor. The State base factor is 1.00 and any variation from this base represents the percentage variation from 1.00.

Multiplication of the replacement cost of any individual building by the cost conversion factor for the particular building class gives the current local replacement cost of such building.

Example of Application of Cost Conversion Index on Property Record Card

Assume, for example, a rural assessment jurisdiction where the cost conversion factor Table C-I is 1.02 or 102% of the building replacement costs shown in the manual. This lower factor is due primarily to lower construction labor rates than the average labor rates for the State.

The conversion index, expressed as a factor, is applied to the 1975 Building Replacement Cost (manual replacement cost value) as shown on the property record card in the "Building Valuation Summary" section.

The 1975 Building Replacement Cost is multiplied by the cost conversion factor. The resulting value is the regional replacement cost and represents the current building replacement cost of the specified property in the particular rural assessment jurisdiction.

Conversion Factors

Conversion factors beginning with the year 1975 for all counties in the State are given. If these conversion factors are used for assessment purposes, they are to be applied uniformly to all properties in a district and in no case are they to be applied to only one or two properties out of an area. This statement is made because inequalities in line item assessments would occur immediately should the appraised value, or 100% value, of a property be used as of any year other than that in which a revaluation or complete reassessment program took place.

(Example) If a revaluation or reassessment program with 100% values as of 1975 was placed on the books, then all properties appraised after 1975 should have their current values converted back to 1975 values.