PD-AAI-836
ISN 27649

National Government of Chile
Internal Tax Service

PROPOSAL AND WORK PLANS
for
ADVICE AND ASSISTANCE
on the
REORGANIZATION OF THE PROPERTY TAX DIVISION
and
MODERNIZATION OF PROPERTY TAX ADMINISTRATION

J. L. JACOBS & COMPANY

ESTABLISHED 1915

53 WEST JACKSON BOULEVARD

CHICAGO 4, ILLINOIS

TELEPHONE: Area Code 312
HArrison 7-8162

CABLE ADDRESS:
JACOBSCO

J. L. JACOBS & COMPANY
CONSULTANTS IN PUBLIC ADMINISTRATION AND FINANCE
SINCE 1915
53 WEST JACKSON BOULEVARD
CHICAGO 4, ILLINOIS

February 19, 1963

Department of State
Agency for International Development
Washington 25, D.C.

Attention: Mr. J. F. Owens
Latin America Contract Service Staff
Room 3720 NS

Subject: Proposal, Chile Cadastral Survey

Gentlemen:

In response to your request of February 12, 1963, we are pleased to submit our proposal for advising and assisting the Internal Tax Service of the National Government of Chile, in the reorganization of its Property Tax Division and in the modernization of the systems and procedures for property tax administration and enforcement.

This letter summarizes the definite interest we have in this project, the technical approach and staffing of the project in Chile, the technical back-stopping of the project by our Chicago staff, the qualifications of our company and staff to successfully carry out the project, and the estimated dollar cost for our services and expenses. The attachments to this letter detail each of the elements of our proposal, and furnish the supplemental information that has been requested.

Interest of J. L. Jacobs and Company

By the nature of our business we have a unique interest in this particular project. We have had long and extensive experience in the broad field of public administration and finance. We have had equally extensive and related experience in the field of property valuation for tax assessment purposes and in all aspects of property tax administration and enforcement. Thus, we are well aware of the importance of the property tax as a major source of government revenues, of the importance of equity and fairness in the valuation of property and its assessment to facilitate tax enforcement, and the importance of good administration and competent staffing of the agencies of government concerned with the actions of valuation, assessment, and collection. As a result of our extensive experience in the field of property valuation and assessment and property tax administration, we feel that we understand the project and the needs of the Internal Tax Service.

Since the objectives and scope of this project are directly in line with the types of services we regularly furnish, and particularly in view of our recent experiences in serving Central American countries, we consider this assignment with the highest priority and interest. We have just completed a management study of the Registro Publico of Costa Rica, under an AID mission contract. We are currently engaged in a study in Guatemala to prepare a coordinated plan for property ownership identification mapping and real property appraisal, under an AID mission contract. The prospect of participating in similar type work in South America heightens our interest in this project.

Summary of Work Plan

The statements of duties for the tax and appraisal specialists set forth in your proposal request establish an effective scope of work to be done -- in specific areas where tangible accomplishments can be made.

We have not studied the existing conditions and recent improvements in Chile, but we do anticipate a definite course of work to accomplish the end products for which assistance is requested. This is determined in part by our regular work here on matters of property appraisal and tax administration and by our recent experiences in Costa Rica and in Guatemala. The specific approach we anticipate is outlined in Attachment A of this proposal.

In broad summary, the manner in which we would approach this undertaking would include the following:

(1) Establishing methods for property ownership identification under a modern cadastral system utilizing aerial photography for property location purposes.

(2) Determine and develop a plan for utilizing and coordinating the services and facilities of the respective governmental agencies involved in aerial photography and mapping, registry of deeds and other property transactions, and appraisal of property for tax purposes.

(3) Establishment of standards and procedures for rural land appraisal.

(4) Establishment of standards and procedures for urban land appraisal.

(5) Establishment of standards and procedures for appraisal of buildings.

(6) Review and development of modern procedures for property tax administration, to apply the above and to provide for administrative services of maintaining property rolls, billing and collection of property taxes, etc.

(7) Development of manuals of operations and training of personnel.

Staffing

The staff we plan to assign on this project will be regular staff members of our company who are experienced and qualified in rural and urban property appraisal for tax purposes.

We plan to assign two men as you have requested -- Edward J. McCampbell to serve for approximately twelve (12) months and carry out the duties as Tax Administration and Appraisal Specialist and James Teeter or Roberto Rubalcava to serve for approximately six (6) months as Agricultural Economics (rural appraiser) Specialist.

In addition, in accordance with our company policy and in order to provide the broadest and most complete of our company experiences and abilities, we plan that Martin D. Miller will have over-all direction of our services and will furnish partner-level participation in the work. Mr. Miller is our supervising partner in charge of our appraisal and property tax services. It is our thought that he would devote about nine (9) weeks in Chile during the course of the work (beginning, middle and end of the period). He would also furnish back-stopping assistance from our Chicago office.

Attachment B of this proposal contains brief biographic and experience statements on the staff of our company who would be available for this assignment.

Experience of J. L. Jacobs & Company

Our company has been in existence since 1915 and has been furnishing technical assistance to public agencies during that entire period. We have served all levels of government and have provided a wide range of technical and consulting services. These have included organization, financial management, methods and procedures, personnel administration, revenue and tax administration, and property appraisal for tax assessment purposes.

As Attachment C we are enclosing our company brochure, a statement of typical projects, and a detailed listing of clients served on various projects connected with property valuation and taxation. Among the many projects identified in these materials, the following are indicative of the experience which is directly applicable to the Chile project:

1. Government of Costa Rica -- survey and development of improvements in organization, internal operations, methods and procedures, and intergovernmental relationships among the offices of the national government involved in the maintenance of property records, cadastral mapping, and tax assessment and collection.

2. Government of Guatemala -- development of plan for property ownership identification (pre-cadastral with aerial photographs) and property appraisal for tax purposes.

3. Government of Guam -- appraisal, and subsequently the reappraisal, for tax assessment purposes of all assessable real estate on Guam. The work involved the collection and analysis of local real property data, the revision of unit land value maps of each municipality, the supervision and application of new unit land values and new building appraisal standards, and the preparation of the Guam real property assessment manual.

4. State of Alaska -- survey and development of appraisal standards for real and tangible personal property, and the preparation of an appraisal manual for use by the state in providing uniform appraisal standards and procedures to all state and local assessing officials.

5. Province of New Brunswick, Canada -- Continuing consultant service and assistance in the survey and development of appraisal standards for rural and urban real property and tangible personal property, and preparation of a detailed appraisal manual for use throughout the Province. The assistance also included the training of provincial officials in all methods and procedures necessary for developing and applying appraisal standards.

In addition to the above and along with our regular property appraisal services for local governments, we have developed property appraisal of assessment manuals for the States of Illinois, Kentucky, New Jersey and Iowa. A typical section of such manuals is included as Attachment D.

The typical section describes the approaches and procedures used in the appraisal of residential, commercial and industrial buildings and illustrates the various schedules, tables and forms which we developed. This section is taken from the manual which we prepared for the State of New Jersey. Each manual differs according to the needs of the particular client.

We wish also to stress our experience and qualifications with respect to the training of client personnel. This is of prime importance to the success of projects such as that proposed for the Internal Tax Service. We regularly furnish such training by a variety of methods, and are particularly proud and gratified with the results we have obtained. There are two cases in point. We conducted intensive training of the personnel of the Province of New Brunswick, and periodically are still requested to participate in special lectures and continuing training seminars sponsored by the Province. Also, many of the personnel technicians we trained in the course of our personnel project in Venezuela are now serving in responsible positions as personnel officers in the several ministries or autonomous agencies of the government.

Estimated Costs for Services and Expenses

On the basis of the plan of staffing outlined above, we estimate that the total cost for our services and expenses would total about $61,710.00. Attachment E of this proposal presents the cost breakdown in the form you requested.

Time for Furnishing Services

We are prepared as you request to have our staff associates available for assignment to Chile within fifteen (15) calendar days after a contract is signed, as you have called for. It is our plan that Mr. Miller and Mr. McCampbell would be in Chile at the start of the work and that Mr. Teeter or Mr. Rubalcava would be sent to Chile a couple of weeks thereafter. In this way, we would have the best overlapping of initial time without duplication.

Supplemental Information

Attachment F of this proposal contains supplemented information requested about our company in your request for proposal.

* * * *

We appreciate this opportunity to submit our proposal to furnish qualified staff and assistance on the property tax improvements for the Government of Chile. We will be pleased to furnish additional information you may desire about our services, experience and staff on work of this kind, and look forward to hearing from you about decisions to proceed with this undertaking.

Sincerely,

J. L. JACOBS & COMPANY

Thomas L. Jacobs

Thomas L. Jacobs
Managing Partner

TLJ/dkb-c

ATTACHMENT A

OUTLINE OF WORK PLAN

for

CHILE INTERNAL TAX SERVICE PROJECT

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Tax Administration and Appraisal Specialist

In following through on the duties set forth for the Tax Administration and Appraisal Specialist, the main phases of work and technical approach would include the following:

(1) Study present methods and records for identifying properties to show property line and ownership identification -- as available and used for tax assessments, registry of deeds, recording of mortgages or transfers, etc.-- and determine the validity and usefulness of such methods and records. This phase of work will aid in determining the extent and character of operations necessary to establish property ownership identifications by field methods using aerial photography, by recorded plats or by other recordings -- as applicable in rural or urban areas.

(2) Study the available aerial photography and mapping as to its suitability for use in property identification mapping, and devise methods to develop the modern cadastral system (property ownership identification) with aerial photography for tax purposes. This in effect would be a pre-cadastral with property lines sufficiently accurate for tax purposes and utilizing aerial photography and ground inspection to establish such property lines and land classes for appraisal purposes.

(3) With respect to continuous value research activities, study existing procedures and standards used in appraising rural and urban real estate, and develop methods for making current market analyses. These would include a continuous system of property sales reports, collection of information on rents and capitalization approach to value, system of determining new construction costs, all together with a uniform system of periodic trending of property values.

(4) In maintaining property rolls, emphasis would be placed on (a) establishing an effective system of numbering all property for ease of identification, (b) establishing procedure to furnish the Internal Tax Service with changes in ownerships from other government agencies which have cognizance or record of such changes, and (c) establishing a plan of referencing or cross-referencing property rolls with the property identifications in the cadastral system.

(5) In integrating the billing and collection processes into an automatic data processing system, the detail required for billing purposes would be incorporated into tabulating cards -- including property identification (from the property numbering system), ownership, valuation, tax rate, amount of tax. A standard tax bill form would be developed to be prepared by machine process. The collection procedure would be studied and necessary means for improvement developed and accepted collection practices applied.

(6) In assisting the Internal Tax Service in review and equalization procedures, emphasis would be placed on the uniform application of valuation standards and effective cross-comparison of property values. Also, the statutory requirements and authority and the organization for review and equalization would be reviewed and necessary improvements developed.

(7) In assisting in the development of a manual of operations in the area of property taxation, we would prepare the outline of such manual, would supervise the actual preparation of material to be included in the manual, and would advise on its utilization for training purposes -- including the setting up of appropriate training courses and on-the-job instruction of the several categories of personnel involved.

Agricultural Economics Specialist

In following through on the duties set forth for the Agricultural Economics Specialist (rural appraiser), there would be close coordination with the above phases of tax administration, particularly as they both relate to property identification and utilization of aerial photography. The elements involved in rural land appraisal you have listed cover the main factors to be considered. Our approach to this work would include the following:

(1) Study present methods of establishing farm land values with a view to advising, supplementing or establishing uniform standards for recognized approaches to market values on farm properties for use in equitable assessing procedures. Develop a plan for and conduct analyses of sales for use in comparability or market data approaches. Plan and conduct studies of earning capacity of given areas by compiling and analyzing long-term production records, prices received from sales of crops, and the costs of production. From these studies develop valuation formulae based on recognized rates of capitalization for farm land investments in order to reflect value. Set up procedures for using these studies to establish base hectare values on various types or classes of farm lands, for appraisal purposes.

(2) The base hectare values as established by methods as outlined above will be utilized and/or modified in accordance with standard adjustment factors. Establishing these factors involves the following:

Study and determine adequacy of available soil type maps and develop a plan for integrating this information with a cadastral system of mapping using aerial photography as a base. Where and if soil survey information is not available in Chile, develop a plan for instituting this type of study in areas where needed or on a nationwide basis if none at all exists in the country. In the absence of soil type maps, or any present information as to soils, in a usable form for such a program as this, develop a plan to classify farms under general land use classes pending the time such maps or information as to area soils may become available. This secondary plan would be the establishment of numerical grades of general land use classes with sub-grades if necessary. An example is pictured in Exhibit A. In connection with the establishment of land class methods needed in Chilean agricultural appraising, the development and outlining of a plan based on the following points will be carried out.

(a) Office methods and or field procedures will be detailed for placement of farm property lines on aerial photos. This will be done in conjunction with the parallel operation of cadastral systematizing in the Tax Administration project.

(b) Field inspection methods will be planned and established for the outlining by trained Internal Tax Service personnel or others, of above-mentioned land use class boundaries directly on to the aeiral photographs. See Exhibit B.

(c) Develop means and methods of determining measured areas of each land class, for unit valuation, within individual property ownership tracts as indicated. See Exhibit C.

(d) Develop and plan layout of a record card for entry of necessary information to enable Internal Tax Service personnel to compute values of individual farms as based on unit hectare values together with local adjustment factors. See Exhibit D.

Develop factors to be used to modify total value of farm as arrived at by unit hectare value methods based on land classification and productivity considerations. These factors will represent influences as to value of farm property based on such items as location of property to markets, type of roads, social and educational facilities, and proximity to industrial and suburban developments.

Methodology for Appraisal of Urban Property

The methodology for appraisal of urban property will include the valuation of both land and buildings. Initial work will include study of existing practices, conditions and needs. The following outlines main approaches to be used, and the detail of final plans will be developed to fit the requirements in Chile.

The main approaches to urban land valuation will include:

(1) Setting up tax and unit value maps.

(2) Gathering and recording land value information from sales and opinions and comparisons by districts.

(3) Setting out residual land valuation methods by capitalization of rents, primarily for commercial property.

(4) Establishing adjustment factors for special influences such as lot depths, location, etc.

(5) Determining unit land values for industrial properties and unsubdivided land, in distinction from developed residential and commercial areas.

The main approaches to building valuation will include:

(1) The classification of buildings according to residential, commercial, industrial or farm use, and the grading within each class according to construction and quality, and establishing definitions for each class and grade.

(2) The development of unit reproduction costs for each class and grade of buildings and appropriate depreciation and obsolescence allowances to be applied to arrive at reasonable current value -- based on survey of actual construction costs.

(3) Development of procedures and forms to record the information about each building and to calculate its value from the standard costs and allowances.

EXHIBIT A

BASIC LAND CLASS SYSTEMIZATION

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

Oblique Photo Showing a Typical System of Land Classification

Outline of Typical System of Land Class Breakdown.

Modifying influences for specific productivity for various soil types (if information was available or set up as proposed) of land classes would be outlined.

Class I - Very good land that is easy to work and can be cultivated safely with ordinary good farming methods. 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. Gentle slopes need contouring. Bottom land needs improved drainage.

Class III - Moderately good land; can be cultivated safely with intensive treatments. Slopes are from 4 to 14 percent. It has moderate to severe erosion.

Class IV - Fairly good land that can be cultivated only occasionally. Slopes are from 12 to 18 percent and erosion is moderate to severe.

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.

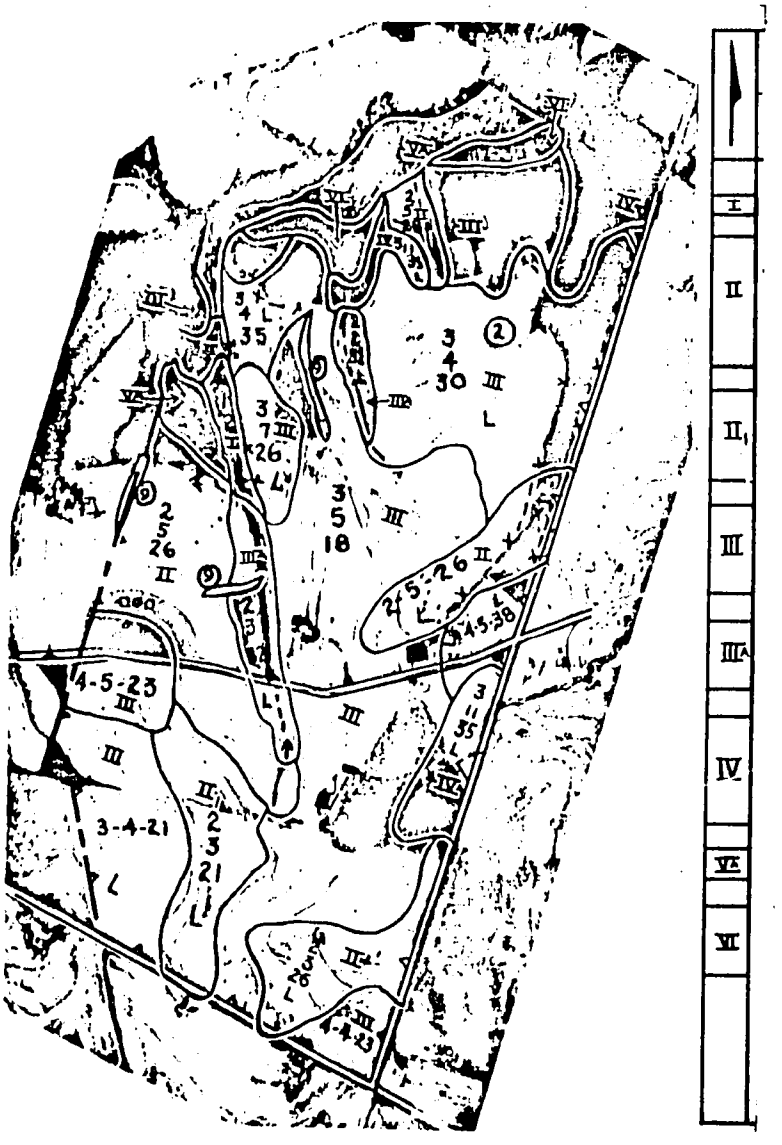
Class VI - Land not suited for cultivation but should make good pasture.

Class VII - Land not suited for cultivation but suited for grass or trees with very careful management.

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

EXHIBIT B

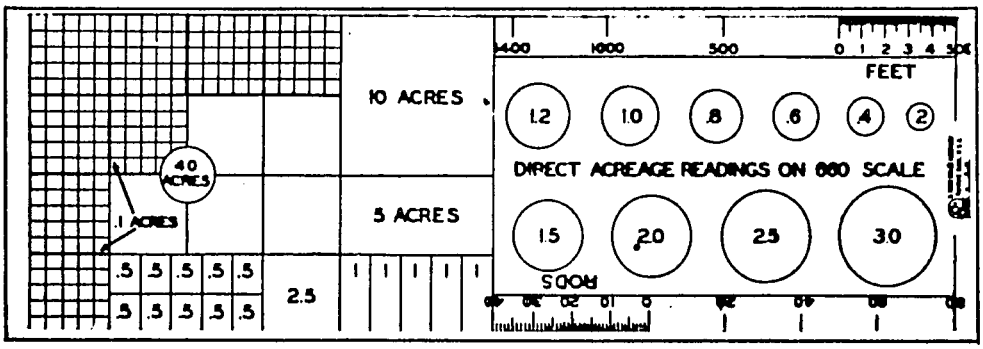
Typical Plan of Outlining Land Classes on Suitable Vertical Photography



For breakdown of typical Land Class System.
See Exhibit A

EXHIBIT C

Plastic Grid for Measuring Areas on Aerial Photographs



(Will be adapted to hectare measurements)

EXHIBIT D

Typical Farm Land Record Card

ACREAGE RECORD

TOPOGRAPHY		TRADING CENTER		ACRES	
Level		Distance to Trading Center	6	Cultivatible	48
Rolling	✓			Pasture	20
Low		WATER		Forest Trees	15
ROAD		City		Waste	
Paved Road		Well	✓	Roads, Streams	
All weather rd.		Spring		Total Acres	83
Dirt Road	✓	Stream		MINERAL LANDS	
No Road Outlet		DRAINAGE		Type	
Distance to All-weather Rd		Natural	✓	Total Acres	
		Artificial			

ON MAJOR ALTERATIONS TO PRINCIPAL BUILDING - OTHER SPECIAL NOTES

LAND VALUE CALCULATION

Size of Lot or Number of Acres	Soil Class	Base Unit Value	Depth, Corner, or Other Influence: Table	Factor	Table	Factor	Adjusted Unit Value	Total Value
13	I	$ —					$ —	$3,705
35	II	—					—	7,350
20	III	—					—	3,000
15	VI	—					—	450
Total Acres 83							Total Base Land Value	$14,505

ADJUSTMENT FOR RURAL LAND			
Type of Road	— 10	Location Adjustment Factor	-3,046
Distance to all-weather road	— 8	Adjusted Value	
Distance to local trading center	— 3	Mineral Value	
Total	— 21 %	Total Lot or Land Value	$11,459

Shows unit values with modifying influences

ATTACHMENT B

QUALIFICATIONS AND EXPERIENCE STATEMENTS
of
J. L. JACOBS AND COMPANY STAFF

AVAILABLE FOR ASSIGNMENT
to
CHILE INTERNAL TAX SERVICE PROJECT

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QUALIFICATIONS AND EXPERIENCE STATEMENTS
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J. L. JACOBS AND COMPANY STAFF

AVAILABLE FOR ASSIGNMENT
to
CHILE INTERNAL TAX SERVICE PROJECT

Martin D. Miller is supervising partner in charge of the appraisal services division of the Company. He has extensive knowledge and experience in various phases of public administration, and has been engaged in property valuation and tax work since 1945.

Mr. Miller has broad experience in developing land and building appraisal standards for all types of real property, in the preparation of appraisal operations manuals, and in deed registration, cadastral mapping, and data processing operations.

Mr. Miller will initiate the work in Chile, and will give general direction to the work during the entire project period.

Edward J. McCampbell is a general tax administration and appraisal specialist. He has had over 15 years experience in real estate title search, property identification methods and records, methods of aerial photography and mapping, value research, and real property appraisal supervising office and field operations on urban and rural property appraisal, and in developing property appraisal standards, procedures, and manuals.

Mr. McCampbell will be assigned full time in Chile for the entire twelve month period. He will provide the general advisory and assistance services on the project and will be responsible for the training of the staff of the Property Tax Division in all aspects of the Division's operations.

Roberto Rublacava has had over 9 years experience in the tax department of the City of El Paso, Texas. He is familiar with all phases of property tax administration, and has served as consultant to the Governor of the State of Chihuahua, Mexico on problems of urban and rural property values, identification and appraisal.

James I. Teeter has had over 9 years experience as deputy assessor of the City of Rapid City, South Dakota, and as a supervisor of Company projects on urban and rural property appraisal. He has had specialized experience in the appraisal of agricultural land and properties in the State of New Jersey and in other localities in the United States.

Paul E. Smith has had over 14 years experience as an assessor and appraiser in all phases of property valuation, including the development and preparation of building classification, replacement unit cost schedules, building value standards, and unit rehabilitation cost schedules. Mr. Smith has prepared appraisal operating manuals for the States of Iowa, New Jersey, and Alaska, and the Province of New Brunswick, Canada.

Mr. Smith will be available at our home office to provide backstopping assistance to the field staff in Chile, as needed.

ATTACHMENT C

BROCHURES AND STATEMENTS
of
J. L. JACOBS AND COMPANY

QUALIFICATIONS, EXPERIENCE, AND CLIENTS SERVED

C -

J. L. JACOBS & COMPANY

[illegible] PUBLIC ADMINISTRATION
AND FINANCE

53 West Jackson Boulevard
Chicago 4, Illinois

TYPES OF SERVICE RENDERED
AND
CLIENTS SERVED

[illegible] REPORTS [illegible] INSTALLATIONS
[illegible]

- Administrative Organization • Charter
- Budgeting • Finance • Revenues
- Data Processing • Mechanization
- Office Procedures and Systems
- Performance Budgeting and Reporting
- Personnel Administration
- Position Classification and Pay Plans
- Program Planning and Implementation
- Property Appraisals and Assessment Equalization
- Community Planning • Urban Renewal
- Purchasing Administration and Inventory Control
- Records Management and Forms Control

[illegible] YEARS OF SERVICE

CONSULTING and TECHNICAL SERVICES...

The organization of J. L. Jacobs and Company furnishes advisory and technical services to federal agencies, states, metropolitan areas, counties, cities, townships, school districts, and to special commissions and citizen advisory groups.

The organization was established in 1915 and is regularly serving government and private establishments under the continuing direction of partners and principals who have broad professional and successful consulting and operating experience in the different fields outlined in the following pages.

Based upon such extensive background and experience, the firm of J. L. Jacobs and Company is prepared to make and carry through independent surveys, evaluations and installations which are based on successful practices and are suitable to the needs of each organization.

In such survey and installation work, the consultant and technical staff work closely with the administrative and operating employees of the client. Desired follow-up, review and supplementary advisory service is furnished when requested after the adoption and installation of approved plans.

PROGRAM PLANNING... MANAGEMENT DEVELOPMENT... ADMINISTRATIVE CONTROLS... PUBLIC RELATIONS...

- Integrated program planning with respect to organization, personnel, material, equipment, facilities, and related management problems.
- Management development and standards for scheduling and reporting on administrative, operating and fiscal accomplishments, and on revenues, expenditures and services.
- Codification of charter, statutory and ordinance provisions defining powers, duties, and responsibilities of legislative, executive and operating officials.
- Metropolitan area or intergovernmental services and fiscal agreements for coordination of similar and interrelated activities and services.
- Program for sound public relations and reporting on public services for understanding and support by citizens and taxpayer groups.

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ORGANIZATION... PROCEDURES... FACILITIES...

- Administrative organization and co-ordination of services, departments and offices, including definition of activities and functions and establishment of lines of authority and responsibility.
- Utilization of modern labor-saving office devices and field equipment for increased services at reduced unit costs.
- Work simplification and determination of manpower requirements for staff, operating and supervisory personnel.
- Administrative and operating procedures and work methods, records management, standardization of forms, records preparation and distribution, filing, microfilming, and disposal of records.
- Review of space, facilities and equipment suitable for different office and field activities and services.
- Electronic data processing and reporting.

PERSONNEL SERVICES... POSITION CLASSIFICATION... SALARY ADMINISTRATION...

- Position analysis and classification with standard class titles, descriptions of duties, responsibilities and qualifications for respective classes of positions.
- Evaluation and allocation of individual positions by ranking or point evaluation methods to assure an integrated classification and salary plan, and like pay for like work.
- Analysis of comparable prevailing salaries and wages and working conditions for equitable wage and salary schedules for use in wage negotiation and salary administration.
- Organization of recruitment, testing, selection, assignment, performance rating, promotion and up-grading, grievance procedures, and other programs directed toward sound employer-employee relationships.
- Training programs, personnel inventories, personnel record forms and procedures, position control plans and other measures for effective personnel administration.
- Pension and insurance plan formulation.

PERFORMANCE BUDGETING... FINANCIAL MANAGEMENT... TAXATION and REVENUE SOURCES...

- Program and activity budgeting and reporting in terms of results for funds expended.
- Budgeting of revenues and expenditures and provision of budgetary controls.
- Purchasing administration, including standardization and control over receipt, issue and inventory of materials, supplies and equipment.
- Financial and cost accounting, with current operating and financial records and reports.
- System for tax collections, records and reports and control of tax billing and collections.
- Fiscal policies and revenue requirements with integrated tax structure and revenue sources.

PROPERTY APPRAISALS... ASSESSMENT EQUALIZATION...

- Development of local property appraisal standards and records including local building cost schedules, depreciation allowances, unit land value maps, rural land classifications on aerial photographs, and appraisal manuals.
- Tax maps for property ownership delineation and identification.
- Real property appraisals and revaluation for assessment equalization in urban and rural areas, including residential, farm, commercial and industrial properties.
- Personal property appraisals and revaluation of tanglible commercial, utility and industrial personal properties.
- Analysis of property assessment ratios for comparative equalized assessments and equitable distribution of property taxes.
- System of property assessment and tax records for assessment and tax controls.
- Training and supervising assessing deputies on real and personal property appraisals and on use of assessment records and procedures.

CITY AND COMMUNITY PLANNING...

- City and community planning and zoning.
- Urban renewal planning, including cost and feasibility of structure rehabilitation.

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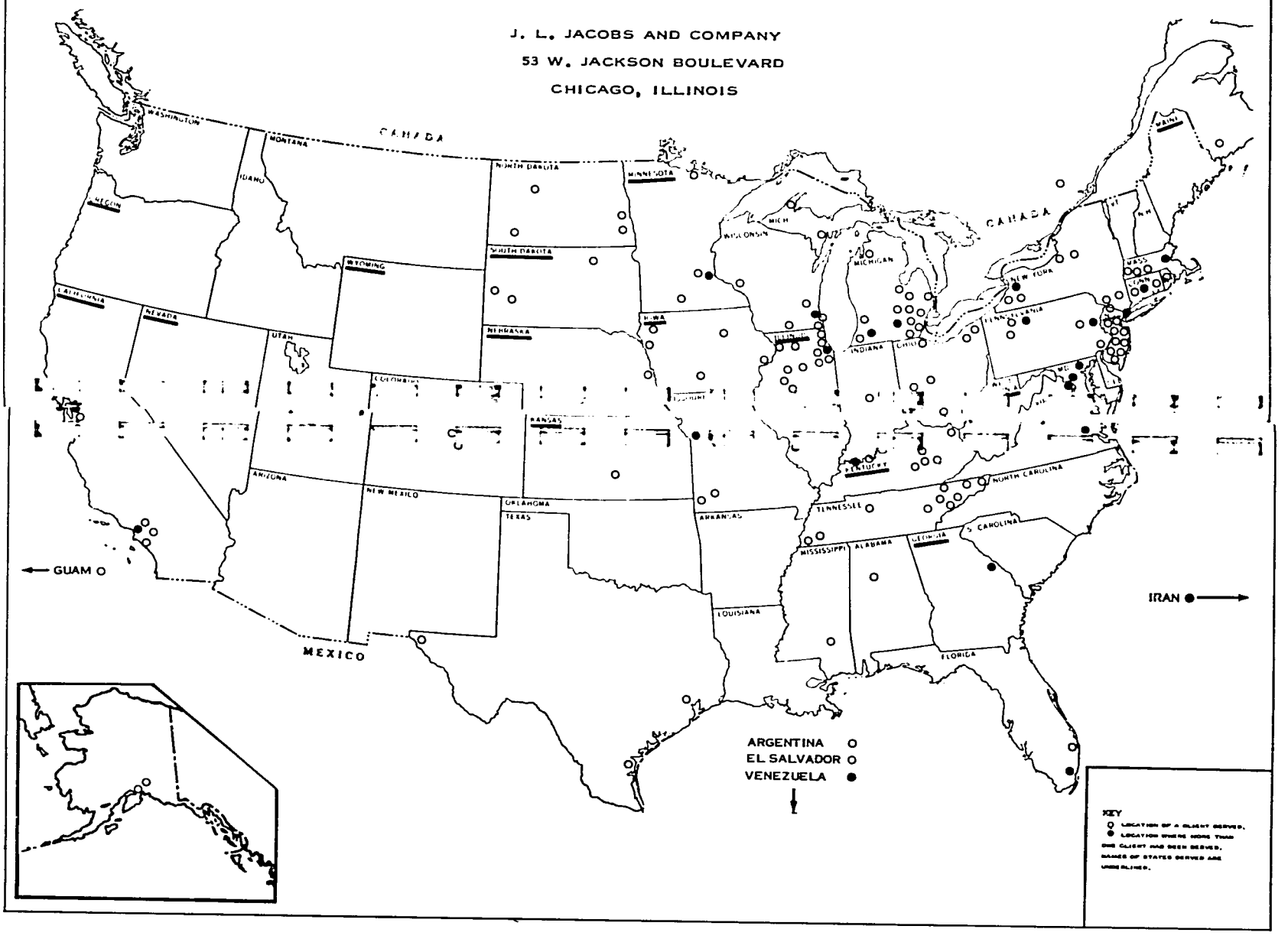
GEOGRAPHICAL LOCATIONS WHERE CLIENTS HAVE BEEN SERVED

J. L. JACOBS AND COMPANY
53 W. JACKSON BOULEVARD
CHICAGO, ILLINOIS



CONSULTING and TECHNICAL SERVICES to GOVERNMENT CLIENTS in the UNITED STATES...

J. L. Jacobs and Company have furnished consulting and technical services in the following cities, counties, states, school districts and other government agencies on one or more of the activities listed below in major fields indicated by A, B and C. The year shown is the latest year the agency was served.

A – Program Planning, Management Development, Administrative Controls, Public Relations, Organization, Procedures, Facilities, Performance Budgeting and Reporting, Financial Management, Taxation and Revenue Sources, Automatic Data Processing Systems.

B – Recruitment and Selection Programs, Employee Evaluation, Rules and Regulations, Position Classification, Job Evaluation, Salary Surveys and Pay Administration, Training Programs, Personnel Record Systems.

C – Real and Tangible Personal Property Appraisals, Appraisal Standards and Manuals, Urban Renewal, Zoning, Community Planning.

CITIES and TOWNSHIPS SERVED:

1960 and in Process (*)	A	B	C
Anchorage, Alaska		x	
Bradford, Pennsylvania	x	x	
Camden, New Jersey			x
Capitol Township, Illinois			x
Chicago, Illinois*	x	x	x
Crossville, Tennessee			x
Davenport, Iowa		x	
East Hartford, Connecticut*		x	
Fairbanks, Alaska	x		
Frankford Township, New Jersey			x
Green Bay, Wisconsin		x	
Hopatcong, New Jersey*			x
Houghton, Michigan	x		
Jackson, Michigan		x	
Kenosha, Wisconsin*			x
New Brunswick, New Jersey*			x
Newark, New Jersey			x
Oswego, New York*			x
Palmer, Alaska		x	
Paris Township, Michigan			x
San Francisco, California*	x	x	
San Leandro, California		x	
Sioux City, Iowa		x	
Traverse City, Michigan*		x	
Washington, D. C.*	x		x
Waverly, Iowa	x	x	x
9 Smaller New Jersey Cities and Towns			x

CITIES and TOWNSHIPS SERVED: (Continued)

1959	A	B	C
Bedford, Ohio	x	x	
New Britain, Connecticut		x	
Niagara Falls, New York		x	
Ogdensburg, New Jersey			x
Pensacola, Florida		x	
Saginaw, Michigan			x
Stroud Township, Pennsylvania			x
Wantage Township, New Jersey			x
1958			
Haddonfield, New Jersey			x
Jamestown, New York	x	x	
Netcong, New Jersey			x
Omaha, Nebraska		x	
Waukegan, Illinois		x	
1957			
Ashland, Kentucky		x	
Benton Harbor, Michigan		x	
Des Plaines, Illinois	x	x	
El Paso, Texas		x	x
Mankato, Minnesota			x
Morristown, New Jersey			x
Norwich, Connecticut	x	x	
Painesville, Ohio		x	
Westfield, Massachusetts	x	x	
1956			
Ann Arbor, Michigan		x	
Augusta, Georgia			x
Englewood, New Jersey		x	
Erie, Pennsylvania	x	x	
Phillipsburg, New Jersey			x
Rome, New York			x
Spring Valley, New York			x
Springfield, Illinois		x	
1955			
Aberdeen, South Dakota			x
Azusa, California	x	x	
Bensinger Township, Pennsylvania			x
Bremen Township, Illinois			x
Danville, Kentucky			x
Escanaba, Michigan	x	x	
Newport Beach, California	x	x	
Norwood, Ohio		x	
Pittsfield, Massachusetts	x	x	
St. Mary's, Pennsylvania			x
South Milwaukee, Wisconsin		x	

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CITIES and TOWNSHIPS SERVED: (Continued)

1954	A	B	C
Baltimore, Maryland		x	
Clarkstown, New York			x
Corpus Christi, Texas	x	x	
Eau Claire, Wisconsin	x		x
Fond du Lac, Wisconsin		x	
Miami, Florida		x	
New Albion, New York			x
Richmond, Kentucky			x
Rochester, Michigan	x		
Woonsocket, Rhode Island		x	x
1953			
Colorado Springs, Colorado		x	
Pontiac, Michigan	x		
Port Huron, Michigan			x
Williamston, Michigan			x
Ypsilanti, Michigan		x	
1952			
Dickinson, North Dakota			x
Flint, Michigan		x	
Houston, Texas		x	
Joplin, Missouri		x	
Pueblo, Colorado		x	
Riverside, California	x	x	
Wahpeton, North Dakota			x
1951			
Boston, Massachusetts		x	
Highland Park, Illinois	x	x	
Rapid City, South Dakota			x
Prior to 1951			
Cincinnati, Ohio	x	x	
Columbus, Ohio		x	
Deadwood, South Dakota			x
Fargo, North Dakota			x
Indianapolis, Indiana	x	x	
Kalamazoo, Michigan	x	x	
Kansas City, Missouri		x	
Lexington, Kentucky		x	
Los Angeles, California	x	x	
Madison, Wisconsin			x
Memphis, Tennessee		x	
Milwaukee, Wisconsin		x	
Minneapolis, Minnesota		x	
Minot, North Dakota			x
Oak Ridge, Tennessee	x		x
Oakland, California		x	
Philadelphia, Pennsylvania		x	
Richmond, Virginia		x	x
Springfield, Massachusetts	x	x	
Springfield, Missouri		x	
West Palm Beach, Florida		x	
Wichita, Kansas	x	x	

COUNTIES SERVED:

1960 and in Process (*)	A	B	C
Arlington, County, Virginia*		x	
Blount County, Tennessee			x
Cook County, Illinois	x	x	x
Lee County, Illinois*			x
Plymouth County, Iowa			x
San Francisco County, California*	x	x	
Sevier County, Tennessee*			x
Wayne County, Indiana			x
1959			
Carter County, Tennessee			x
Escambia County, Florida		x	
Hawkins County, Tennessee			x
Sangamon County, Illinois		x	
1958			
Campbell County, Tennessee			x
Carroll County, Illinois			x
Monroe County, Pennsylvania			x
St. Clair County, Illinois	x		
Tazewell County, Illinois			x
1957			
Carbon County, Pennsylvania			x
Stephenson County, Illinois			x
1956			
La Salle County, Illinois			x
Richmond County, Georgia			x
Washtenaw County, Michigan		x	
1955			
Elk County, Pennsylvania			x
Jackson County, Michigan		x	
1951			
Jefferson County, Kentucky			x
Suffolk County, Massachusetts		x	
Prior to 1951			
Garrard County, Kentucky			x
Hamilton County, Ohio	x	x	
Jackson County, Missouri	x		x
Los Angeles County, California		x	
Lucas County, Ohio	x		x
Madison County, Tennessee			x
Milwaukee County, Wisconsin	x	x	
Montgomery County, Ohio			x
Ohio County, Kentucky			x
Ramsey County, Minnesota		x	

STATES SERVED:

1960 and in Process (*)	A	B	C
State of Maine*	x	x	
State of Oregon*			x
State of South Dakota			x
1958 - 1959			
State of Georgia	x		
State of Iowa			x
State of Kentucky	x	x	x
State of Nevada		x	x
State of New Jersey		x	x
State of West Virginia	x		x
1951 - 1957			
State of California	x	x	
State of Illinois	x	x	x
State of Kansas	x		x
State of Wyoming	x		
Prior to 1951			
State of Minnesota	x		
State of Nebraska	x	x	

U. S. FEDERAL AGENCIES SERVED:

1960 and in Process (*)			
District of Columbia*	x		x
1951 - 1959			
Commission on Intergovernmental Relations	x		
Department of the Army, Office of the Comptroller	x	x	
Technical Services	x	x	
Prior to 1951			
Atomic Energy Commission, Oak Ridge Tennessee	x		x
Bureau of the Budget	x		
Department of the Army, Army Air Force	x	x	
Department of the Navy, Bureau of Aeronautics	x	x	
Emergency Fleet Corporation	x	x	
Emergency Relief Administration	x	x	
Public Housing Authority	x		
Public Works Administration	x	x	
Railroad Labor Board		x	
War Production Board		x	
Works Progress Administration		x	x

SCHOOL SYSTEMS and OTHER GOVERNMENT AGENCIES SERVED:

1960 and in Process (*)	A	B	C
Arlington County (Virginia) Schools*		x	
Chicago Municipal Courts	x	x	
East Hartford (Connecticut) Schools*		x	
Jackson (Michigan) Schools		x	
Milwaukee Housing Authority			x
San Francisco (California) Schools		x	
1958 - 1959			
Chicago Park District	x	x	
Chicago Schools	x	x	
Escambia County (Florida) Schools		x	
Niagara Falls (New York) Schools		x	
Philadelphia Redevelopment Authority		x	
1955 - 1957			
Boston (Massachusetts) Schools	x	x	
Chicago Public Library	x	x	
Kalamazoo County (Michigan) Hospital	x	x	
Middletown (Ohio) Schools	x	x	
1951 - 1954			
Baltimore (Maryland) Schools		x	
Chicago Housing Authority			x
Dade County (Florida) Schools		x	
Los Angeles Water and Power Department		x	
Prior to 1951			
Chicago and Independent Illinois School Districts		x	
Chicago Pension Boards	x	x	
Forest Preserve District of Cook County	x	x	
Illinois Emergency Relief Commission	x	x	
Illinois Tax Study Commission	x		
Los Angeles (California) Schools		x	
Oakland (California) Schools	x	x	
Proviso Township (Illinois) Schools		x	
Richmond (Virginia) Schools		x	
Sanitary District of Chicago	x	x	

CONSULTING and TECHNICAL SERVICES to BUSINESS and INDUSTRIAL CLIENTS in the UNITED STATES . . .

J. L. Jacobs and Company also furnish consulting and technical services to business and industrial establishments in the fields of management, finance, personnel, inventory and cost control, and related fields.

Our experience in business and government has provided broad background on advanced management practices and procedures and on the application thereof to the needs of individual agencies.

Consulting and technical services dealing with one or more of the above fields have been rendered to the business and industrial organizations listed below. The year shown is the latest year the client was served.

1960 and in Process (*)

Charles W. Wrigley Company*
Remington Rand Univac

1957 - 1959

Development & Resources Corporation
Masonite Corporation
Standard Oil Company of New Jersey, Overseas Personnel Department
Zonta International

1951 - 1956

Alabama Power Company
Florsheim Shoe Company
Hill, Sherman, Meroni, Gross & Simpson
Iowa Power & Light Company
Lord, Bissell & Brook
Peter Kiewit Sons

Prior to 1951

Acme Visible Records, Inc.
American Association of Railroads
Atlantic Coast Shipbuilders Association
Chicago, Aurora & Elgin Railroad
Chicago, Burlington & Quincy Railroad
Chicago & North Western Railroad
Chicago, St. Paul, Minneapolis & Omaha Railway Company
East St. Louis Railway Company
Foote Gear Works
General Shoe Corporation
Great Northern Manufacturing Corporation
Great Northern Railway Company

CONSULTING and TECHNICAL SERVICES to BUSINESS and INDUSTRIAL CLIENTS in the UNITED STATES (Cont'd) . . .

Hartwell Handle Company
Illinois Central Railroad
Illinois State Nurserymen's Association
International Lumber Company
Kansas City Railway Company
Ken-Rad Tube & Lamp Company
Link-Belt Company
Michael Reese Hospital
Montgomery Ward & Company
Murphy Chair Company
Peoria Railway Company
Phillips Petroleum Company
Pullman Company
Pure Oil Company
Quality Hardware Company
Signode Steel Strapping Company
Western Association of Railway Executives
Western Dairy Company

CONSULTING and TECHNICAL SERVICES to CLIENTS in OTHER COUNTRIES . . .

In addition to the extensive background of service to government and business in the United States, J. L. Jacobs and Company provide consulting and technical services to clients in other countries. Such services have been provided to the following clients abroad:

1960 and in Process (*)

The National Government of Venezuela*
The Provincial Government of New Brunswick, Canada*
KLM, Royal Dutch Airlines, Venezuela Division*
Ra-Cord Mechanized Accounting Company of Rafaela, Argentina*

1956 - 1959

Khuzestan (Iran) Development Service
National Iranian Oil Company
Iranian Oil Exploration and Producing Company
Iranian Oil Refining Company

Prior to 1956

The Territorial Government of Guam (Mariana Islands)
The National Government of El Salvador
Civil Service Association of Ottawa, Canada

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Advice and Assistance in

- Planning and Effecting Organization and Staffing Adjustments
- Installing a Personnel Program and Pay Plan
- Improving Administrative Policies and Procedures
- Providing Sound Budgeting and Financial Management
- Providing Appraisals for Property Tax Equalization
- Developing Urban Renewal Programs and Administering Community Planning and Zoning Activities

At Your Service

AT YOUR REQUEST you will be provided with additional information about our services, methods, experience of our staff, and our service charges.

One of the partners or principals will confer with you to discuss your management needs, the scope and character of consulting services to be provided, and arrangements to carry out any of the kinds of work described in this brochure.

J. L. JACOBS & COMPANY

J. L. JACOBS & COMPANY

Consultants in Public Administration and Finance

Since 1915

53 WEST JACKSON BOULEVARD
CHICAGO 4, ILLINOIS

TYPICAL PROJECTS INDICATING THE SCOPE OF SERVICES

The following are typical examples of the advisory and technical services furnished by J. L. Jacobs and Company to larger governmental and business establishments -- The range of services represented by the examples include organization, budgeting and financial management, methods and procedures, personnel administration, urban renewal, property appraisal and valuation, and revenue and tax administration -- The examples are believed especially relevant to the needs of foreign governments for technical assistance in the field of public administration.

U. S. Department of the Army -- surveys and technical assistance to the Army Comptroller and the Deputy Chiefs of Staff in developing and applying an integrated program management system at all levels of the organization, including tie-in with the budget and accounting system and with program and financial reporting.

Washington, D.C. -- survey and report with recommendations on the distribution of administrative and operating services and activities between the Federal and District governments, and the equitable fiscal relations and financing of government services for the District of Columbia.

Federal Commission on Intergovernmental Relations -- surveys and reports on the fiscal and administrative impact of federal grant-in-aid programs on state and local governments.

Government of El Salvador -- survey and reports on organization and on the administrative and fiscal services of all agencies of the national government -- detailed surveys and reports on central and field organization and procedures for tax administration in the internal revenue department, the customs department and the treasury department -- survey and report on the distribution and financing of public services between the national and the municipal levels of government.

Government of Venezuela -- survey, development and installation of a comprehensive program of personnel administration to cover all employees of the national government. The work encompassed all phases of a modern system of personnel administration, including drafting a basic career service law, the development of classification and compensation plans, and the development of standards, systems and procedures for examination and selection, employee performance ratings, inventory of employee qualifications, personnel records and the processing of personnel actions.

City of Chicago -- survey, development and installation of the performance budget, with identification and definition of programs and activities, and performance reporting on an activity basis -- development and installation of uniform systems for position classification and compensation, timekeeping and payroll operations, and inventory control -- organization and management surveys of the budget office, office of the comptroller, office of the city collector, and the departments of health, streets and sanitation, buildings, water and sewers, and public works -- conduct of appraisals and cost studies to determine the economic feasibility of rehabilitating properties in designated major urban renewal areas -- organization and management surveys of the Metropolitan Sanitary District of Greater Chicago, the Chicago Park District and the Chicago Board of Education.

City of Oak Ridge, Tennessee -- survey and development of a charter for the incorporation of the city and recommendations on organization, procedures, revenues, budgetary control over operating expenditures and capital improvements, and payments in lieu of taxes by the federal government.

Iranian Oil Industry -- survey, development and installation of classification and compensation plans covering all employees of the National Iranian Oil Company, the Iranian Oil Exploration and Producing Company, and Iranian Oil Refining Company -- comprehensive survey of salaries, wages and employment practices throughout Iran and among other oil companies operating in the Middle East -- survey and report on the organization of the National Iranian Oil Company, including exploration, production, refining and marketing activities.

Khuzestan (Iran) Development Service -- advisory and technical assistance in the establishment of this regional economic and industrial development agency, including organization, development and installation of a classification and compensation plan, systems and procedures for the recruitment, selection and training of employees, and administrative procedures and practices -- advisory and technical assistance in the administrative planning and organization of public gas, power, and plastics companies.

Government of Guam -- appraisal, and subsequently the reappraisal, for tax assessment purposes of all assessable real estate in Guam. The work involved the collection and analysis of local real property data, the revision of the unit land value maps of each municipality, the supervision and application of new unit land values and new building appraisal standards, and the preparation of the Guam real property assessment manual.

State of Alaska -- survey and development of appraisal standards for real and tangible personal property, and the preparation of an appraisal manual for use by the state in providing uniform appraisal standards and procedures to all state and local assessing officials -- survey and development of a program for the integration of accounting and engineering activities of the municipal utilities system and the general government of the city of Fairbanks, Alaska -- survey, development and installation of a classification and compensation plan for the city of Anchorage, Alaska.

State of Maine -- survey of school finances and needs throughout the state, including specific recommendations for strengthening the school financing system, the local organizations for school administration, and the performance of the teachers colleges -- survey and development of a revised and up-to-date compensation plan, including a special survey of professional salaries in thirty states.

Government of Costa Rica -- survey and development of improvements in organization, internal operation, methods and procedures, and intergovernmental relationships among the offices of the national government involved in the maintenance of property records, cadastral mapping, and tax assessment and collection.

Other larger clients served in projects similar to the above include -- the cities of Boston, Los Angeles, New York, Philadelphia, and San Francisco -- the states of California, Hawaii, Illinois, Kentucky, Minnesota, Nevada and New Jersey -- the KLM Royal Dutch Airlines of Venezuela -- and many other governmental and business establishments, as listed in our company brochure.

J. L. JACOBS & COMPANY
APPRAISERS AND ENGINEERS
SINCE 1915
53 WEST JACKSON BOULEVARD
CHICAGO 4, ILLINOIS

PROPERTY VALUATION & ASSESSMENT EQUALIZATION SERVICE

LIST OF CLIENTS
and
DESCRIPTION OF SERVICES

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SUMMARY OF PROPERTY VALUATIONS
and
ASSESSMENT EQUALIZATION SERVICE

The organization of J. L. Jacobs & Company furnishes regular consultant technical assistance to local, state and federal agencies on complete real and tangible personal property valuation, and the preparation of manuals and tax and land value maps for use as guides by the assessing offices in making uniform equalized assessments.

The following is a list of the governmental agencies for whom the Company has furnished specified services on the above and on related management and fiscal matters:

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	DISTRICT OF COLUMBIA	
	District Assessor:	
1957	Analyses and report of status of reassessment program being conducted by district assessor's staff for the District Assessor, Washington, D. C.	
1959	Development of appraisal Standards for Exempt Buildings, including Federal Buildings, for the District Assessor.	
1960	Review and Report on assessment levels and assessment maintenance program; training district assessor's staff in assessment maintenance techniques, for the District Assessor.	
	STATE OF GEORGIA	
1961 in process	Liberty County, Georgia: Valuation of all real properties, including the preparation of property assessment manual and tax maps, for the County Assessor.	4,100 real properties.
1961 in process	Murray County, Georgia: Valuation of all real properties and tangible industrial personal properties, including the preparation of property assessment manuals and tax maps, for the County Assessor.	4,400 real properties and 30 tangible personal properties.
1961 in process	Paulding County, Georgia: Valuation of all real properties, including the preparation of property assessment manual and tax maps, for the County Assessor.	4,500 real properties.
1955 - 1956	Richmond County and City of Augusta, Georgia: Valuation of all real properties and tangible commercial and industrial personal properties, including the preparation of property assessment manuals and tax and land value maps, for the Board of County Assessors and the City Assessor.	37,000 real properties and 3,500 tangible personal properties.
1961	City of Savannah, Georgia: Preparation of tax maps of annexed areas; development of assessment/sales ratios and conversion of county valuations of annexed properties to level of existing city assessed valuations.	5,600 real properties.

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DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF ILLINOIS	
1942 and 1951	State Department of Revenue: Preparation of 1942 and 1951 of State Real Property Assessment Manuals for use by local assessing officials for the Illinois Tax Commission and the State Department of Revenue.	Valuation of typical classes of properties in the state for use in manual.
1955	Bremen Township, Cook County, Illinois: Analyses and report on real property assessment conditions and location of missing improved properties among 30,000 parcels, for the Bremen Township School Districts.	
1959 - 1960	Capital Township, Sangamon County, Illinois: Preparation of real property valuation standards, detailed operating procedures and consultant services to Township Assessor during the revaluation program.	
1958	Carroll County, Illinois: Valuation of all real properties, including the updating of tax maps for Township Assessors and County Assessment officials.	9,569 real properties.
1932 - 1934	Cook County (including City of Chicago), Illinois: Valuation and assessment equalization of all urban, rurban and farm properties, including the preparation of tax and land value maps and preparation of property assessment manual for the County Assessor. Mr. Jacobs, as County Assessor of Cook County through appointment by the Governor and the Board of County Commissioners, was responsible for the reorganization and establishment of systematic property assessment and tax administration in Cook County.	1,114,000 real properties and 400,000 tangible personal properties.
1958 - 1959	Preparation of Detailed Personal Property Assessment Manual and training of deputy assessors, for the County Assessor.	
1955 - 1956	La Salle County, Illinois: Valuation of all commercial and industrial real properties for the Township Assessors and County Assessment officials.	3,100 real properties.
1961 in process	Lee County, Illinois: Valuation of all real properties, including up-dating of tax maps, valuation of specified industrial and utility tangible personal property, for Township Assessors and County Assessment officials.	16,850 real properties.
1956 - 1957	Stephenson County, Illinois: Valuation of all real properties in the City of Freeport and valuation of all commercial and industrial properties in other townships and villages in the county, for Township Assessors and County Assessment officials.	9,100 real properties.
1957	Determination of assessment ratios for all classes of real property and development of township multipliers for the County Board of Review.	802 real properties.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF ILLINOIS (continued)	
1958	Tazewell County, Illinois: Valuation of specified industrial real and tangible business personal properties including utilities throughout the county, for the Township Assessors and the County Assessment officials.	100 industrial real and tangible personal properties.
	STATE OF INDIANA	
1961 in process	Wayne County, Indiana: Valuation of all real properties, including up-dating of tax maps for the Township Assessors and County Assessor.	28,300 real properties.
	STATE OF IOWA	
1957 - 1958	Iowa State Tax Commission: Preparation of State Real Property Appraisal Manual for use by local assessing officials, for the Iowa State Tax Commission and Iowa Association of Assessors.	Valuation of typical classes of properties in the state for use in manual.
1959 - 1960	Plymouth County, Iowa: Valuation of specified commercial and industrial real properties throughout the County, for the County Assessor.	200 commercial and industrial real properties.
	STATE OF KANSAS	
1939	Tax Commission: Preparation of State Manual on Real Property Valuations and Assessments for use by local assessing officials, for the State Tax Commission.	Valuation of typical classes of properties in the state for use in manual.
	STATE OF KENTUCKY	
1948 - 1949	State Department of Revenue: Preparation of State Real and Personal Property Manuals and training of department staff on revaluation and assessment equalization of real personal properties in different counties of Kentucky for the State Department of Revenue.	Valuation of typical classes of properties in the state for use in manual.
1950	Garrard County, Kentucky: Valuation of real and tangible business personal properties, including preparation of tax maps, for County Tax Commissioner and State Department of Revenue.	4,500 real properties and 2,500 tangible personal properties.
1950 - 1951	Jefferson County (including City of Louisville), Kentucky: Valuation of all urban and rural real properties, including the preparation of land value maps, for the County Tax Commissioner.	120,000 taxable real properties and 10,000 tax exempt properties.
1950	Ohio County, Kentucky: Valuation of all real properties, including preparation of tax maps, for the County Tax Commissioner.	9,500 real properties.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF KENTUCKY (continued)	
1955	City of Danville, Kentucky: Valuation of real properties and tangible commercial and industrial personal properties, including the preparation of property assessment manual and tax maps for the City Assessor.	2,550 real properties and 350 tangible personal properties.
1954	City of Richmond, Kentucky: Valuation and assessment equalization of real properties, including preparation of property assessment manual for the City Assessor.	3,350 real properties.
	STATE OF MICHIGAN	
1960	Paris Township, Kent County, Michigan: Valuation of all real properties, including preparation of property assessment manual, for the Township Assessor.	7,400 real properties.
1953	City of Port Huron, Michigan: Valuation of specified commercial tangible personal properties for the City Manager and Board of Review.	50 business tangible personal properties.
1958 - 1959	City of Saginaw, Michigan: Valuation of specified real and business tangible personal properties in the central business district, for the City Assessor.	350 real properties and 100 business tangible personal properties.
1953	City of Williamston, Michigan: Valuation of all real properties and tangible commercial and industrial personal properties, including the preparation of property assessment manual and tax maps, for the City Assessor.	800 real properties and 400 tangible personal properties.
	STATE OF MINNESOTA	
1956 - 1957	City of Mankato, Minnesota: Valuation of all real properties and tangible commercial and industrial personal properties, including preparation of property assessment manual, for the City Assessor.	6,365 real properties and 800 business tangible personal properties.
	STATE OF MISSOURI	
1941 - 1942	Jackson County (including City of Kansas City), Missouri: Valuation and assessment equalization of real properties including the preparation of property assessment manual and tax and land value maps for the County and City officials.	280,000 real properties.
	STATE OF NEVADA	
1955 - 1956	Nevada Tax Commission: Analysis and report with recommendations on existing assessment practices and proposals for immediate and long range implementation of State equalization program, including the valuation of all utilities and the determination of assessment ratios for different classes of property in the state for the Nevada Tax Commission.	65 major railroad and other transportation utilities, telephone, gas and electric and water utilities in the state.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF NEVADA (continued)	
1961 in process	Clark County, Nevada: Valuation of specified industrial real and tangible personal properties, for the County Assessor.	50 industrial real and tangible personal properties.
	STATE OF NEW JERSEY	
1955 - 1957	State Division of Taxation: Preparation of State Real Property Appraisal Manual for use by local assessing officials for the Local Property Tax Bureau, Department of Treasury.	Valuation of typical classes of properties in the state for use in manual.
1957 - 1958	Valuation of specific properties in six counties for use as additional samples in computation of assignment ratios for the Local Property Tax Bureau, Department of Treasury.	
1961	Borough of Andover, Sussex County, New Jersey: Valuation of all real properties for the Borough Assessor.	229 real properties.
1961	Township of Andover, Sussex County, New Jersey: Valuation of all real properties for the Township Assessor.	996 real properties.
1960 - 1961	Borough of Branchville, New Jersey: Valuation of all real properties, including preparation of tax maps, for the Borough Assessor.	290 real properties
1958 - 1959	City of Camden, New Jersey: Valuation of all locally assessable and exempt real properties, for the Board of Assessors.	38,400 real properties.
1958	Township of Ewing, Mercer County, New Jersey: Valuation of all real and tangible business personal properties, for the Township Assessor. Performed valuation maintenance in subsequent years.	9,700 real properties and 282 business tangible personal properties.
1959 - 1960	Township of Frankford, Sussex County, New Jersey: Valuation of all real properties and business tangible personal properties, including preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	1,800 real properties and 200 business tangible personal properties.
1961	Township of Fredon, Sussex County, New Jersey: Preparation of tax maps for the Township Assessor.	
1961 in process	Township of Frelinghuysen, Warren County, New Jersey: Valuation of all real properties, including preparation of tax maps, for the Township Assessor.	350 real properties.
1961	Town of Hackettstown, New Jersey: Valuation of all real properties for the Town Assessor.	1,561 real properties.
1958	Borough of Haddonfield, New Jersey: Valuation of all real properties for the Borough Assessor.	3,922 real properties.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF NEW JERSEY (continued)	
1960 - 1961	Township of Hampton, Sussex County, New Jersey: Valuation of all real properties, including preparation of tax maps, for the Township Assessor.	620 real properties.
1959 - 1960	Township of Hardyston, Sussex County, New Jersey: Valuation of all real properties and business tangible personal properties, including preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	1,580 real properties and 150 business tangible personal properties.
1961 in process	Township of Hardwick, Warren County, New Jersey: Valuation of real properties, including preparation of tax maps, for the Township Assessor.	259 real properties.
1956	Borough of Hopatcong, New Jersey: Valuation of all real properties for the Borough Assessor. Performed valuation maintenance in subsequent years.	6,000 real properties.
1961	Township of Kingwood, Hunterdon County, New Jersey: Valuation of all real properties for the Township Assessor.	794 real properties.
1956 - 1957	Town of Morristown, New Jersey: Valuation of all real properties for the Town Assessor.	4,000 real properties.
1958	Borough of Netcong, New Jersey: Valuation of all real properties, including preparation of tax maps, for the Borough Assessor.	780 real properties
1957 - 1958	City of Newark, New Jersey: Valuation of all real properties for the Director of Revenue.	60,000 real properties.
1958 - 1959	City of New Brunswick, New Jersey: Valuation of all real properties for the Board of Assessors. Performed valuation maintenance in subsequent years.	8,700 real properties.
1958 - 1959	Borough of Ogdensburg, New Jersey: Valuation of all real and tangible business personal properties, including the preparation of tax maps, for the Borough Assessor.	351 real properties and 18 business tangible personal properties.
1956	Township of Phillipsburg, New Jersey: Valuation of all real properties for the Town Assessor.	5,600 real properties.
1959 - 1960	Township of Sandyston, Sussex County, New Jersey: Valuation of all real properties and business tangible personal properties, including preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	1,060 real properties and 45 business tangible personal properties.
1956	Township of Sparta, Sussex County, New Jersey: Valuation of all real properties, including the preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	5,000 real properties.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF NEW JERSEY (continued)	
1957	Borough of Stanhope, New Jersey: Valuation of all real and tangible business personal properties, including the preparation of tax maps, for the Borough Assessor. Performed valuation and tax map maintenance in subsequent years.	3,700 real properties and 100 tangible personal properties.
1961 in process	Township of Stillwater, Sussex County, New Jersey: Valuation of real properties, including preparation of tax maps, for the Township Assessor.	1,700 real properties.
1959 - 1960	Township of Walpack, Sussex County, New Jersey: Valuation of all real properties, including preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	1,090 real properties.
1959 - 1960	Township of Wantage, Sussex County, New Jersey: Valuation of all real properties, including the preparation of tax maps, for the Township Assessor. Performed valuation and tax map maintenance in subsequent years.	
	STATE OF NEW YORK	
1954	Town of Clarkstown, Rockland County, New York: Valuation of all real properties, including utilities, and the preparation of property assessment manual and tax maps, for the Town Assessor.	10,200 real properties.
1954	Town of New Albion, Cattaraugus County, New York: Valuation of all real properties, including utilities and the preparation of property assessment manual and tax maps, for the Board of Assessors.	750 real properties.
1959 - 1960	City of Oswego, New York: Valuation of all real properties, including utilities, and preparation of appraisal standards, for the City Assessor.	6,580 real properties.
1956	City of Rome, New York: Valuation of all real properties, including utilities, and the preparation of property assessment manual and tax maps, for the City Assessor.	12,630 real properties.
1955 - 1956	Village of Spring Valley, New York: Valuation of all real property, including utilties, and the preparation of assessment manual, for the Village Assessor.	1,660 real properties.
	STATE OF NORTH DAKOTA	
1952	City of Dickinson, North Dakota: Valuation of all real properties and tangible commercial and industrial personal properties, including preparation of property assessment manuals, for the City Assessor.	2,500 real properties and 290 tangible personal properties.
1950	City of Fargo, North Dakota: Valuation of all commercial and industrial real properties in and outside of Fargo, including the preparation of property assessment manual, for the City Assessor.	1,000 real properties.

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DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF NORTH DAKOTA (continued)	
1950	City of Minot, North Dakota: Valuation of all commercial and industrial real properties, including preparation of property assessment manual, for the City Assessor.	450 real properties.
1952	City of Wahpeton, North Dakota: Valuation of all commercial and industrial real and tangible personal properties, including the preparation of property assessment manual, for the City Assessor.	220 real properties and 240 tangible personal properties.
	STATE OF OHIO	
1936 - 1937	Lucas County (including City of Toledo), Ohio: Valuation of all taxable and tax exempt real properties, including preparation of property assessment manual, tax and land value maps, for the County Auditor and Assessor.	152,000 real properties.
1948	Montgomery County, Ohio: Valuation of typical residential properties, including the preparation of unit land value maps and preparation of property assessment manual, for the Citizens' Advisory Committee.	Valuation of typical residential buildings for use in manual.
	STATE OF PENNSYLVANIA	
1956 - 1957	Carbon County, Pennsylvania: Valuation of all real properties, including the preparation of property assessment manual and tax maps, for the Board of County Commissioners and Chief Assessor.	17,500 real properties.
1954	Elk County, Pennsylvania: Valuation of all taxable real properties in the county, including the preparation of property assessment manual and tax maps, for the Board of County Commissioners and Chief Assessor.	18,000 real properties.
1957 - 1958	Monroe County, Pennsylvania: Valuation of all taxable real properties in the county, including the preparation of property assessment manual and tax maps, for the Board of County Commissioners and Chief Assessor.	24,000 real properties.
	STATE OF RHODE ISLAND	
1952	City of Woonsocket, Rhode Island: Valuation of all real properties, utilities and tangible business personal properties including the preparation of property assessment manuals, for the City Assessor.	12,175 real properties and 1,000 tangible personal properties.
	STATE OF SOUTH DAKOTA	
1960	South Dakota Department of Revenue: Assistance in development of valuation guide and cost conversion index factors, for the Commissioner of Revenue.	

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DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	STATE OF SOUTH DAKOTA (continued)	
1955	City of Aberdeen, South Dakota: Valuation of all commercial and industrial tangible personal properties, including the preparation of business tangible personal property assessment manual, for the City Assessor.	850 tangible personal properties.
1949	City of Deadwood, South Dakota: Valuation of all real properties, including the preparation of property assessment manual, for the City Assessor.	1,200 real properties.
1951	City of Rapid City, South Dakota: Valuation of all commercial and industrial real and personal properties, including the preparation of property assessment manuals for all properties, for the City Assessor.	1,450 real properties.
	STATE OF TENNESSEE	
1959 - 1960	Blount County, Tennessee: Valuation of all real properties and business tangible personal properties, including preparation of property assessment manual and tax maps, for the County Court and County Assessor.	20,500 real properties and 645 business tangible personal properties.
1957 - 1958	Campbell County, Tennessee: Valuation of all real properties, including the preparation of property assessment manual and ownership identification maps, for the County Court and County Assessor.	10,700 real properties.
1958 - 1959	Carter County, Tennessee: Valuation of all real and tangible business personal properties, including the preparation of property assessment manuals and ownership identification maps, for the County Court and County Assessor.	13,600 real properties and 538 business tangible personal properties.
1959 - 1960	City of Crossville, Tennessee: Valuation of all real properties, including preparation of property assessment manual and tax maps, for the City Commission and City Assessor.	1,650 real properties.
1958 - 1959	Hawkins County, Tennessee: Valuation of all real properties, including preparation of property assessment manual and ownership identification maps, for the County Court and County Assessor.	12,320 real properties.
1949	Madison County, Tennessee: Valuation of all real properties, including preparation of property assessment manual, for the County Court and the City of Jackson.	21,300 taxable real properties and 300 tax exempt properties.
1948	Oak Ridge, Tennessee: Valuation of real and personal properties for the City Management and the Atomic Energy Commission to establish an estimated assessment base.	7,200 real properties.

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DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBE. OF APPRAISALS
	STATE OF TENNESSEE (continued)	
1961	Sevier County, Tennessee: Valuation of all real properties and business tangible personal properties, including preparation of property assessment manual and ownership identification maps, for the County Court and County Assessor.	9,150 real properties and 439 business tangible personal properties.
	STATE OF TEXAS	
1956 - 1957	City of El Paso, Texas: Preparation of unit land value maps and real property assessment manual, for the City Assessor.	Valuation of typical classes of properties for use in manual.
	STATE OF WISCONSIN	
1951	City of Eau Claire, Wisconsin: Valuation of all real properties and tangible business personal property, including preparation of assessment manuals, for the City Assessor.	13,125 real properties and 1,450 business tangibl personal properties.
1950	City of Madison, Wisconsin: Valuation of all commercial and industrial real properties and supervision of valuation of residential properties, including the preparation of property assessment manual and land value maps, for the City Assessor.	1,900 real properties and supervision of 10,000 residential real properties
	TERRITORY OF GUAM, MARIANAS ISLANDS	
1952	Department of Finance: Valuation of all real properties in Guam, including preparation of property assessment manual and tax maps and installation of tax billing and collection procedures, for the Director of Finance.	11,650 real properties.
	PROVINCE OF NEW BRUNSWICK, CANADA	
1959 - 1960	Department of Municipal Affairs: Preparation of real property appraisal manual, including instruction for Municipal Assessors, for the Minister of Municipal Affairs.	
	MISCELLANEOUS	
1960 - 1961	City of Chicago Community Conservation Board: Development of costs to rehabilitate structures in various Urban Renewal Areas and appraisal of the feasibility to rehabilitate each structure.	850 residential and commercial properties.
1954	Chicago Housing Authority: Valuation of residential, commercial and industrial properties on West Side redevelopment projects, for the Chicago Housing Authority.	250 real properties.

DATE	NAME OF ASSESSMENT JURISDICTION AND TYPE OF SERVICE RENDERED	APPROXIMATE NUMBER OF APPRAISALS
	MISCELLANEOUS (continued)	
1935 - 1936	Federal Public Works Administration: Valuation of residential, commercial and industrial properties in connection with large scale public housing projects in Chicago and Cook County, for the Public Works Administration.	800 real properties.
1956	Iowa Power & Light Company - Des Moines, Iowa: Assessment ratio study and report for 17 counties in Iowa based on sales and appraisals of various classes of real property for court presentation.	Valuation of typical classes of properties.
1960	Milwaukee Housing Authority: Valuation of residential and commercial properties for acquisition purposes, for the Housing Authority of the City of Milwaukee.	150 residential and commercial properties.
1960	Remington Rand Univac: Preparation of brochure on mechanization of property assessment and tax administration operations, for the State and Local Government Industry Marketing Department.	
1960	Waverly, Iowa: Appraisal of all municipal properties, including utilities and school district real properties and contents for insurance purposes, for the City government and School District.	
1936 - 1937	18 Large American Cities: Baltimore, Md. / Boston, Mass. / Buffalo, N. Y. / Cincinnati, Ohio / Cleveland, Ohio / District of Columbia / Indianapolis, Ind. / Jersey City, N. J. / Kansas City, Mo. / Milwaukee, Wis. / Minneapolis, Minn. / Newark, N. J. / New Orleans, La. / Pittsburgh, Pa. / Rochester, N. Y. / St. Louis, Mo. / San Francisco, Calif. / Seattle, Wash. Valuation of typical residential, apartment and commercial properties and comparative property assessment ratios in the above 18 American cities, in connection with report for the President and the Congress of the United States.	8,000 typical real properties for use in assessment ratio studies.
1934 - 1935	Illinois Legislative Committees: Analyses and reports on Cook County equitable real and personal property valuations and assessment equalization, for the Illinois Legislative Tax Committees.	

ATTACHMENT D

SAMPLE SECTION
of
REAL PROPERTY APPRAISAL MANUAL
prepared by
J. L. JACOBS & COMPANY
for
THE STATE OF NEW JERSEY

(3) Small Tract Additional Value Factors:

Acres	Multiplication Factor
5	2.5
10	2.0
15	1.75
20	1.5
30	1.2
40	1.0

(4) Example of Adjustments to Base Rurban Homesite Values:

(a) Add $200 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 cases, 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.

Examples of Rurban Land Valuation

(1) A rurban site is 200 feet x 200 feet in size. It is located on a paved road and has piped water available. The homesite is appraised at $500 for the 100 feet x 200 feet portion. The remaining 100 feet of frontage is appraised at $250, or pro rata one-half the value of the standard site. The total appraised value of the site is $750.

(2) 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 @ $210 / acre.....	$2,100	
Class III	- 9 1/2 acres @ $150 / acre.....	$1,425	
	Base Land Value	$3,525	
Multiplied by 1.5 Small Tract Additional Value Factor.....			$5,287
Rurban homesite value (1/2 acre)			300
	Total value of land		$5,587

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

Examples of Areas Where Rurban Land Value Rules Do Not Apply

The rurban rules do not apply to thickly settled unincorporated communities or outlying subdivisions. Unit front foot land values are developed by the appraiser for such areas.

PROCEDURE FOR BUILDING APPRAISAL

Approaches Used in Building Appraisal

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

The initial approach to building appraisal is to determine the cost of replacement (new) less accrued depreciation and obsolescence. In other words, the cost to build a similar building of identical utility is determined 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 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 establish the 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 some sixteen groups of 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 Part II of this manual.

Main Groups of Classes of Buildings	Class Numbers
Residential	
One Family Dwellings	10.1 to 10.10
One Family Semi-Detached or Duplex Dwellings	11.1 to 11.3
Attached or Row Houses	12.1 to 12.3
Tenement or Apartment Buildings	13.1 to 13.3; 14.1 to 14.6
Tourist Courts and Motels	15.1 to 15.3
Accessory Garages	16.1 to 16.3
Commercial and Industrial Buildings	
Store Buildings	20.1 to 20.5; 21.1 & 21.2
Combination Stores, Apartments and Office Buildings	22.1 to 22.5
Hotel Buildings	24.1 to 24.5
Office Buildings	25.1 to 25.4
Bank Buildings	26.1 to 26.4
Theatres	27.1 to 27.7
Gasoline and Service Stations	28.1 to 28.3
Commercial Garages	29.1 to 29.4
Clubs and Lodge Buildings	30.1 to 30.3
Race Track and Athletic Stadiums	30.4
Private Hospitals and Sanitariums	31.1 to 31.2
Storage Warehouses	40.1 to 40.3
Industrial Buildings	41.1 to 41.6; 42.1 to 42.3
Greenhouses	45.1

Farm Buildings

Farm Barns	50.1 to 50.2
Other Farm Buildings and Structures	51.1 to 51.4

Other Items Classed as Real Property

Definitions and Unit Costs of Different Building Classes

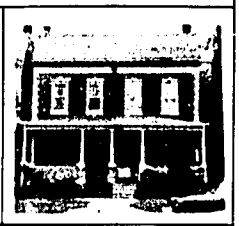
For each building class, there have been developed base specifications including specific definitions and distinctions between the building classes. On the basis of the costs of labor and bills of material provided in the building class specifications, the base unit replacement cost and variations according 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 ground area. For some types of commercial and industrial buildings, the unit replacement cost is calculated on a cubic foot basis. Important variations in an individual building from the base specifications are accounted for by additions to or deductions from the base replacement cost.

Example of Building Replacement Cost Schedule

CLASS 11.2

ONE-FAMILY SEMI-DETACHED OR DUPLEX DWELLINGS - AVERAGE GRADE



BASE SPECIFICATIONS OF CLASS

1 FOUNDATION - Masonry walls.

2 EXTERIOR WALL CONSTRUCTION-
A - Frame with wood, asphalt, asbestos or stucco siding; concrete block, glazed tile or stucco on tile or block; or permastone.
D - Brick or stone, solid or veneer.

3 ROOF - Wood frame, medium pitch, average framing, average grade shingles or equivalent.

4 PORCHES - None

5 FLOORS - Wood joists, subfloor, hardwood flooring; composition flooring in kitchens, tile flooring in baths.

6 INTERIOR FINISH - Plastered walls and ceilings, papered or painted walls, hardwood or painted softwood doors and trim; ceramic tile wainscoting in baths.

7 PLUMBING - Two sets of plumbing, each including one three-fixture bath, kitchen sink, laundry tub, and automatic water heater.

8 LIGHTING - Electric lighting, average number of outlets.

9 HEATING - Steam system; coal, oil gas fired furnace.

10 BASEMENT - Full basement with concrete floor and masonry walls, no interior finish.

11 HALF STORY OR ATTIC - Half story finished; attic unfinished.

12 OTHER ITEMS - None

BASE UNIT REPLACEMENT COST IN DOLLARS PER SQUARE FOOT GROUND AREA

Ground Area in Sq. Ft.	EXTERIOR WALL TYPE - A Number of Stories 1	1 1/2	2	2 1/2	3	EXTERIOR WALL TYPE - D Number of Stories 1	1 1/2	2	2 1/2	3
500 and under	$10.55	$13.95	$15.40	$17.60	$19.00	$11.65	$15.40	$17.00	$19.40	$20.95
550	10.25	13.55	14.95	17.10	18.45	11.30	14.95	16.50	18.85	20.35
600	10.00	13.20	14.60	16.70	18.00	11.05	14.55	16.10	18.40	19.85
650	9.75	12.85	14.25	16.30	17.55	10.75	14.20	15.70	18.00	19.35
700	9.50	12.55	13.85	15.85	17.10	10.50	13.85	15.30	17.50	18.85
750	9.40	12.40	13.70	15.70	16.90	10.35	13.70	15.10	17.30	18.65
800	9.25	12.20	13.50	15.45	16.65	10.20	13.45	14.90	17.05	18.35
850	9.10	12.00	13.30	15.20	16.40	10.05	13.25	14.65	16.75	18.10
900	9.00	11.90	13.15	15.05	16.20	9.95	13.15	14.50	16.60	17.85
950	8.90	11.75	13.00	14.85	16.00	9.80	12.95	14.35	16.40	17.65
1000	8.80	11.60	12.85	14.70	15.85	9.70	12.80	14.20	16.20	17.50
1100	8.65	11.40	12.65	14.45	15.60	9.55	12.60	13.95	15.95	17.20
1200 and over	8.55	11.30	12.50	14.30	15.40	9.45	12.45	13.80	15.75	17.00

Notes: 1) For additions and deductions from base specifications see page
2) For depreciation schedules see page :
For exterior wall type A use Table D-IV; D use Table D-V.
3) For obsolescence allowances, when applicable, see page .

RESIDENTIAL BUILDINGS AND ACCESSORY GARAGES
ADDITIONS TO AND DEDUCTIONS FROM BASE COSTS

(Note: Figures shown with a "minus" sign indicate deductions. All other figures are additions to base costs).

1. Foundation (descriptive item for purposes of building classification only)

2. Exterior Wall Construction (Add or deduct for lineal feet of wall other than type considered in Base Cost)

Variation of Exterior Wall (per lin. ft.)	Type of Exterior Wall Considered in Base Unit Cost								
	Wood, Shingle or Concrete Block			Brick			Stone		
Story Height:	1	1 1/2	2	1	1 1/2	2	1	1 1/2	2
2a. Wood, Shingle or Concrete Block				- 5.25	- 6.93	- 9.76	-10.50	-13.86	-19.53
2b. Brick	+ 5.25	+ 6.93	+ 9.76	-	-	-	- 5.25	- 6.93	- 9.76
2c. Stone	+10.50	+13.86	+19.53	+5.25	+6.93	+9.76	-	-	-
2d. Missing Wall-Deduct	-13.65	-18.90	-23.10	-17.96	-24.57	-31.13	-21.42	-29.14	-37.54

3. Roof (descriptive item for purposes of building classification only)

4. Porches (add for type of Porch per sq. ft. of porch ground area)

Line or Item	Grade of Building	Type of Porch	1 Story Base Porch Cost Ground Area of Porch in Sq. Ft. 20	40	60	80	100	120	140	160	180	200	225	Unit Cost 250 Sq. Ft & Over
4a.	Cabin	Open	20	35	55	65	90	110	120	145	155	175	200	.90
4b.	&	Glazed	35	55	90	115	145	175	205	235	260	290	330	1.45
4c.	Shacks	Encl.	45	80	120	165	200	240	285	330	365	410	460	2.05
4d.	Low	Open	35	65	100	130	165	200	240	275	310	340	385	1.70
4e.	Cost	Glazed	55	110	170	225	280	335	395	455	510	565	640	2.80
4f.	Grade	Encl.	75	155	240	320	395	475	550	640	715	790	890	3.95
4g.	Fair &	Open	45	100	145	200	240	285	340	385	440	485	540	2.40
4h.	Bel Aveg	Glazed	75	165	240	325	400	485	565	645	730	810	910	4.00
4i.	Grade	Encl.	110	230	340	450	560	680	790	900	1025	1135	1275	5.65
4j.	Aver-	Open	55	120	175	240	295	365	420	485	540	605	680	3.00
4k.	age	Glazed	100	205	300	405	505	610	710	815	915	1015	1145	5.05
4l.	Grade	Encl.	145	285	430	570	715	860	1000	1145	1285	1430	1605	7.15
4m.	Above	Open	75	145	220	285	365	440	505	585	650	725	815	3.65
4n.	Aveg.	Glazed	120	240	375	485	605	730	845	975	1090	1215	1365	6.05
4o.	Grade	Encl.	165	340	505	680	845	1025	1190	1365	1530	1705	1915	8.50
4p.	Good	Open	90	185	275	375	460	550	650	735	835	925	1035	4.60
4q.	Grade	Glazed	155	310	460	675	770	925	1085	1235	1390	1545	1740	7.70
4r.		Encl.	220	430	650	870	1080	1300	1520	1740	1945	2165	2440	10.85
4s.	High &	Open	120	230	350	475	585	705	825	945	1055	1175	1320	5.90
4t.	Mansion	Glazed	200	445	590	785	975	1170	1360	1565	1760	1960	2200	9.80
4u.	Grade	Encl.	275	550	825	1100	1365	1640	1915	2190	2465	2740	3080	13.70

For multi-story porches multiply the above costs by the following factors: 2 story, 1.4; 3 story, 1.8; 4 story, 2.1; 5 story, 2.3.

The building descriptions and their base specifications furnish the basis for recording the building classification 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 in the larger metropolitan areas of the state, as of November 1, 1954. The base cost prices for various classes of buildings can be revised at any time by the Bureau, 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 (a) entering on the respective property cards the required descriptive information about each parcel of land, (b) measuring each principal building and garage or other accessory buildings and entering the dimensions, (c) making out 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 and use, construction, walls, finish, plumbing, heating, physical condition, and actual age, if obtainable, or estimated age.

The appraiser, when inspecting the interior of the building, requests 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 alone on the procedures and standards applicable to the respective properties but on the accuracy and thoroughness of the inspection and recording of each individual property.

Individual Property Cards and Block or Designated Area Folders

Each property record card in a block or designated area has entries of the owner's name, the legal description and 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. A single mounted copy of the Sanborn insurance map of the block or area is also helpful during field operations as this shows the general outlines and descriptions of all buildings in the block or area.

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 spaces provided.

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 around each building in clockwise direction to the place of beginning. Measurements, either by pole or by tape, 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 "Building Area or Cube Calculations." Irregular shaped buildings are divided into parts with dimensions

shown for each part. The building parts are labeled A, B, C, etc., both on the ground plan sketch and in the "Building Area or Cube Calculation" section of the card.

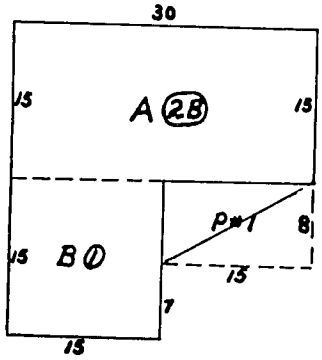
Story heights are checked on the map or sketch and corrected if necessary, and indicated by a circle, as 1, 1B, 1 1/2, 2, 2B, etc. The "B" means basement in the abbreviation.

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

Open or enclosed unfinished porches under the main roof of a building are designatec on the sketch of the ground plan by one diagonal line. Closed and finished proches under the main roof are indicated by one double diagonal line. Open or enclosed unfinished porches built as extensions or additions to the main buildings are indicated by two diagonal lines. Where finished, the porches are designated by two double diagonal lines.

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

The following examples show 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, P#1.

The dimensions of this building are recorded as follows on the property record card:

BUILDING AREA CALCULATION			
GROUND AREA - SQUARE FEET			
FLOOR OR PART	WIDTH	LENGTH	AREA
A 2B	30	15	
B 1	15	15	
P#1	15	8	

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

Buildings in the 11 series, One Family Semi-Detached or Duplex Dwellings and in the 12 series 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 ground area basis. It is necessary, therefore, for the appraiser to indicate the existance of party walls on the ground plan sketch for individually owned units which are part of the complete building.

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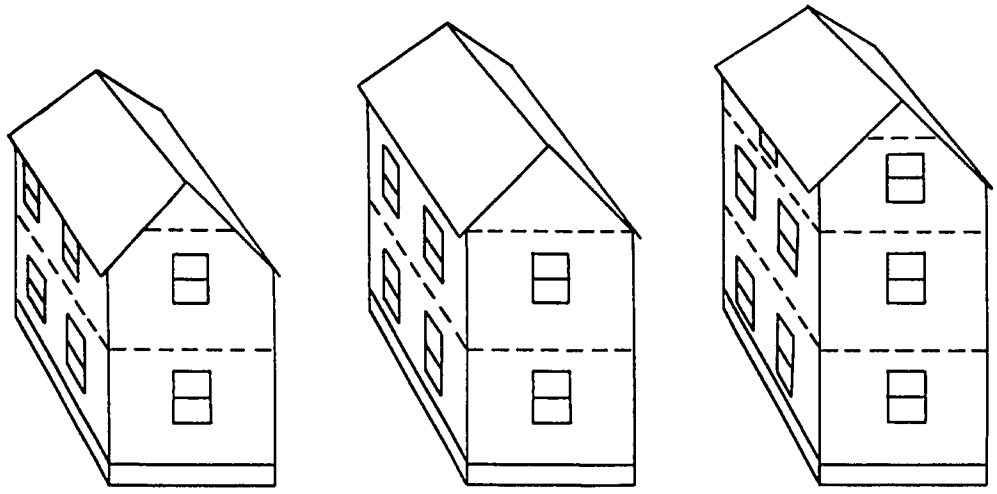


2 Story 2 Story 2 1/2 Story

FLOORS - Indicate the type of flooring in the building and if the type of flooring varies, indicate the approximate percentage of flooring in each type. Under "Bath and Kitchen" indicate by a check whether ceramic tile is used. Columns are provided on the card to indicate different types of flooring on different story floors.

INTERIOR FINISH - Check the type of wall finish used, such as wallboard or plaster. Unfinished walls are also checked. Plasterboard or dry wall finish is checked as plaster but the word "board" is written in after the word plaster on the card. "Doors and Trim" are checked for soft or hard wood. If the trim varies, the approximate percentage of each type in the building is indicated. If ceramic tile walls are in the bath or kitchen, the appropriate spaces are so checked. Indicate the number of Natural and/or Artificial fireplaces. Natural fireplaces are the woodburning type. Artificial fireplaces are of sufficient size to accomodate a unit heater, usually gas.

PLUMBING - Indicate the number of bathrooms, toilet rooms, and whether a septic tank is used. No plumbing at all or water connection only are also checked in the space provided. The presence of a hot water heater should be indicated.

LIGHTING - Electricity or no electricity should be checked as applicable.

HEATING - "Stove" refers to a building equipped with chimney or flue in which a stove may be used. "Unit Heaters" are individual room or space heaters. "Hot Air-Pipeless" refers to a pipeless furnace usually set in the floor, wall or basement and delivering warm air through a floor or wall register, "Hot Air Piped (Gravity)" means that the air is circulated through sheet metal pipes to various rooms by gravity flow. "Hot Air-Forced Circulation" means that the furnace is equipped with a circulating fan to force the air through the house and back to the furnace. Forced Air systems are sometimes equipped with cooling devices employing water as a cooling agent. "Steam Heating" may be of the one or two pipe type. In the two pipe type, the return pipe is smaller in diameter. "Hot Water or Vapor" heating can be distinguished from steam in that there are always two pipes to each radiator, the pipes being of equal size. "Concealed Radiant Heating" is a hot water system with pipes built into the floor or walls of the building. Check whether the heating system uses coal, gas or oil for fuel and whether a stoker or oil burner is present.

BASEMENT - Check whether, "full," "none," or "partial." If "partial," indicate the dimensions on the ground plan or the approximate percentage of the partial basement to the building ground area, either 25%, 50%, or 75%. Indicate also the type of floor covering in basement. Indicate the percentage of the basement with finished rooms with permanent type plaster or wallboard interior walls, either 25%, 50%, 75% or 100% in space labeled

"Recreation" or "Apartment" as applicable.

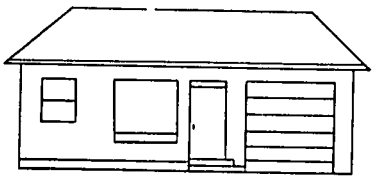
HALF STORY OR ATTIC - The half story is considered to apply only to 1 1/2, 2 1/2, and 3 1/2 story buildings. The attic is considered to apply only to 1, 2, 3, 4 and 5 story buildings. Buildings with half stories are considered in the base specifications of each building class to have completely finished half stories. Buildings with full stories are considered to have unfinished attics in the base specifications. Therefore, circle on the property record card the words "Half Story" or "Attic" after the item number "11" to indicate which is being referred to as finished or unfinished.

Next check whether half story or attic area is unfinished or finished for living area purposes. If finished, indicate the percentage, either 25%, 50%, 75% or 100% of usable floor area, in the half story or attic which is complete with permanent type walls, usually plastered, and heated. Useable floor area refers to that part of the "Half Story" or "Attic" which has sufficient height to allow the average person to stand erect, with a minimum of five feet side wall height.

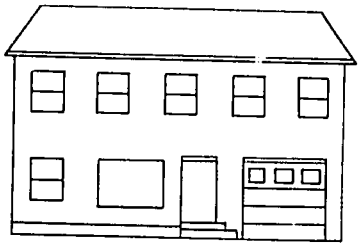
OTHER ITEMS - Under this heading indicate the area of canopies and also the type and area of terraces. Also indicate whether a built-in garage and/or porch is present and the square feet of the total building ground area taken up by the garage or porch. In case of a built-in porch, strike out garage and write in the word "porch".

An attached garage is defined as a garage with one or two walls common with the principal building and with its own roof. An attached garage is considered as an accessary building but is entered on the ground plan sketch showing the length of the common wall or walls.

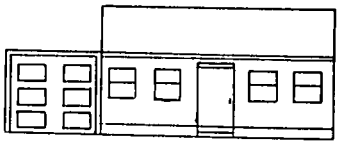
A built-in garage is defined as a garage area built into the principal building and covered by the roof of the principal building. The area used for a built-in garage is indicated along with the principal building in the spaces provided under Item 12, Other Items.



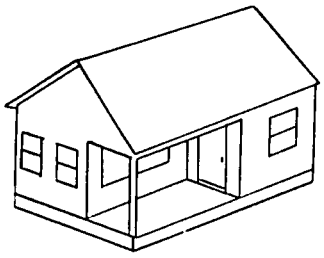
Built-in Garage



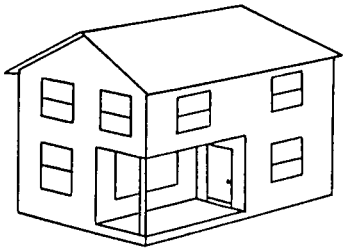
Built-in Garage



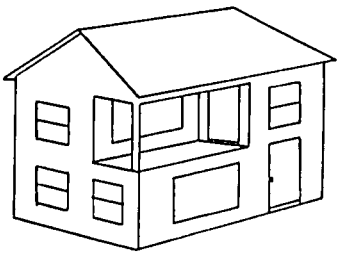
Attached Garage



Main Roof Porch



Built-in Porch



Built-in Porch

Indicate miscellaneous items not included above in the section labeled "Other Items and Notes." If more space is needed, use section labeled "Additional Information" on the reverse side of the property record card.

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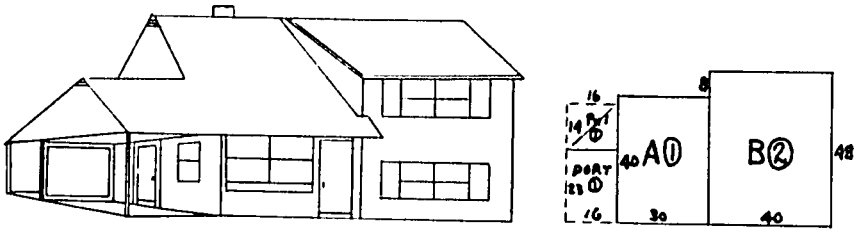
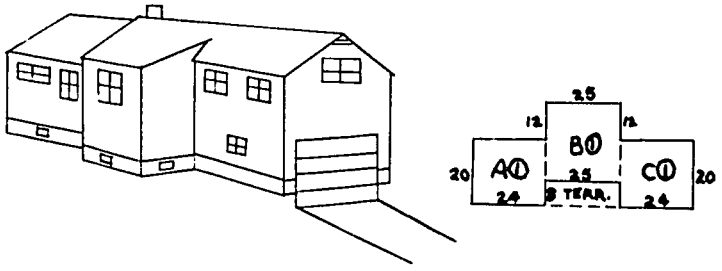
Examples of Recording Measurements and Story Heights of Split Level Residential Buildings



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.

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, the percentage indicated under Item 10-Basement of the property record card is 75%, since the garage occupies 25% of the total ground area. All other considerations are identical to a standard single family residence.



This building is considered as a one story building with a full basement. The garage is considered as basement, thus eliminating the necessity of deducting for a built-in garage. By lowering the floor level of both the garage and first floor slightly, the result is a one story house with full basement all on the same level. The cost for excavating the basement of section C to the same level as sections A & B is offset by the additional cost incurred as a result of constructing the floor on two levels.

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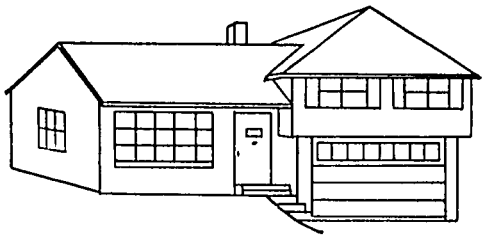
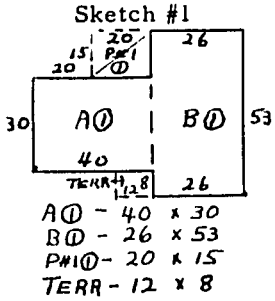
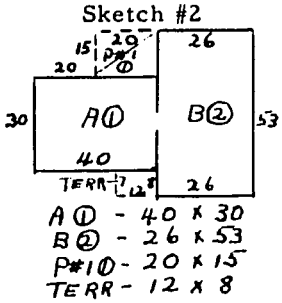


Sketch #1



Sketch #2



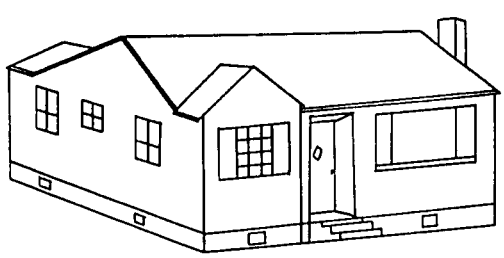
There are two alternatives for recording measurements and story height to this building, depending upon the presence or absence of a basement in the portion of the building where the floor is at ground level.

(1) With basement - the higher section would be lowered until its first floor is even with the first floor of the lower section. The garage floor is then relatively even with the basement floor. The minor cost in additional basement excavation is offset by extra labor cost incurred as a result of constructing the floor on two levels. The appraiser indicates building part, story height and dimensions as shown on sketch (1) above. There is no adjustment necessary for the built-in garage, since it becomes a part of the basement.

(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 12, 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 building description notes. The classification and application of replacement cost schedules is identical to other buildings of the same classification.

Example of Recording Field Data for a Single Family Residence



Exterior inspection of the above building reveals exterior descriptive items as follows: Frame exterior walls, gable roof covered with composition shingle roofing, and an open porch whose roof is within the framework of the house proper.

Interior inspection reveals that the house has two bedrooms, living room, dining room, kitchen, one bathroom consisting of a tub, sink and toilet and an additional toilet room with a sink and toilet. All main rooms have plastered walls and the bath has plastic tile walls. All floors are oak except the bathroom and kitchen which are asphalt tile. There is one wood burning fireplace. The heating plant is a steam system and fired by gas. A basement, with cement floor, is under the house proper but not under the porch. One half of the basement area is partitioned off and finished as a play room. The attic has a rough wood floor, walls and ceilings are unfinished.

The structure was completed in 1946 and has had no structural changes or repairs since that time, except that it was repainted in 1950 and again in 1954. The foundation is brick.

In back of the house is a garage that has wood walls, composition shingle roof, concrete floor and a two fixture toilet.

After examination of the building and comparison of the physical description with the class specifications, a classification of 10.6A is determined for the principal building and Class 16.2A for the garage. The dimensions, building sketch, descriptive entries, classification and effective age are shown on the property record card on the following page.

Occupant and Property Address: JOHN H. BROWN
414 HENRY ST.

PARCEL NUMBER _____ Card __ of __ Cards

BUILDING DESCRIPTION AND VALUE CALCULATION

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 10.6A

OBSERVED PHYSICAL CONDITION: Good ✓ Normal ___ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1955 YEARS 9

TYPE AND USE
- 1 Family Dwelling ✓
- 2 Family Dwelling
- 3-6 Family Apartment
- Multi-Family Apartment
- Tourist Court
- Farm House
- Farm Barn

1) FOUNDATION
- Masonry Walls ✓
- Wood or Block Piers

2) EXT. WALL CONSTR.
- Stories
- Frame with Wood, Shingle or Stucco Siding ✓
- Concrete Block or Tile
- Stucco on Block or Tile
- Brick Solid
- Brick, Veneer
- Stone Solid
- Stone Veneer
- Other

ROOF
- Type: Flat ___ Gable ✓
- Hip ___ Gambrel
- Mansard
- Roofing: Prepared Roll
- Built-up Asphalt or T & G
- Wood or Comp. Shingle ✓
- Metal
- Commercial Slate or Tile

4) PORCHES

Porch #	1	2	3
Own Roof			
Main Roof	✓		
Open Porch	✓		
Glazed			
Enclosed & Finished			

STORIES AND ROOMS
- Stories: (1) 1½ 2 2½ 3 4 5
- Number Apts. or Tenements
- Number Rooms 5

5) FLOORS
- Stories
- Softwood
- Hardwood ✓
- Concrete
- Tile Floors: Bath ___ Kitchen ___

6) INTERIOR FINISH
- Walls Unfinished
- Wallboard
- Plaster ✓
- Doors and Trim:
- Softwood ___ Hardwood ✓
- Tile Walls: Bath ___ Kitchen ___
- Fireplace:
- Natural (1) Artificial ___

7) PLUMBING
- None ___ Water Only ___
- Number Bathrooms (3 Fix't) 1
- Number Toilet Rooms (2 Fix't) 1
- Number Single Fixtures
- Septic Tank

8) LIGHTING
- Electricity ✓ No Electricity ___

9) HEATING
- Stove or Unit Heaters
- Hot Air: Pipeless
- Piped (Gravity)
- Forced Circulation
- Steam ✓
- Hot Water or Vapor
- Radiant, Concealed
- Fuel: Coal ___ Gas ✓ Oil
- Oil Burner ___ Coal Stoker

10) BASEMENT
- None ___ Full ✓
- Part %
- Finished:
- Recreation % 50
- Apartment %
- Floor: Dirt ___ Wood
- Cement ✓

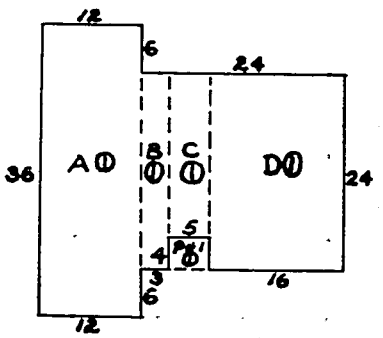
11) HALF STORY OR (ATTIC)
- Unfinished ✓
- Finished %

12) OTHER ITEMS
- Canopy
- Terraces: Type
- Area
- Built-in Garage or Porch: Sq. Ft. Ground Area

SPECIAL BUILDING NOTES (computations made and entered at the office)

GROUND PLAN SKETCH

1 Square = Feet



FRONT

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base			

ADDITIONS AND DEDUCTIONS

TOTAL REPLACEMENT COST $

Cost Conversion Factor

Regional Replacement Cost

BUILDING AREA CALCULATION

GROUND AREA - SQUARE FEET

FLOOR OR PART	WIDTH	LENGTH	AREA
A (1)	12	36	
B (1)	3	24	
C (1)	5	20	
D (1)	16	24	
Ph 1 (1)	5	4	

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION
- a. Effective Age Depreciation ___ %
- b. Observed Physical Condition ___ %
- c. Total Depreciation (a+b) ___ %
- d. Net Condition (100-c) ___ %

OBSOLESCENCE
- e. Overimprovement ___ %
- f. Underimprovement ___ %
- g. Other ___ %
- h. Net Condition (100-e+f+g) ___ %

FINAL NET CONDITION (d x h) ___ %

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1946	9	OWNER

MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

DATE	AGE	EXTENT AND COST	SOURCE
		NONE	

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF FARM BARNS AND ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL
G	16.2 A	18	20			CON.	SHG.	A		NONE	✓	2 FIX.	G 9						

SUMMARY OF APPRAISED VALUE

- Principal Building Appraisal
- Other Principal Buildings Appraisal
- Accessory Buildings Appraisal
- Total Building Appraisal
- Total Land Appraisal
- TOTAL APPRAISED VALUE $

Measured by J. F. Powers Date 6/8/55 Classified by M. R. Jackson Date 6/12/55 Extended by _____ Date _____ Checked by _____ Date _____

RESIDENTIAL AND FARM PROPERTY RECORD CARD

Example of Residential Building Field Entries

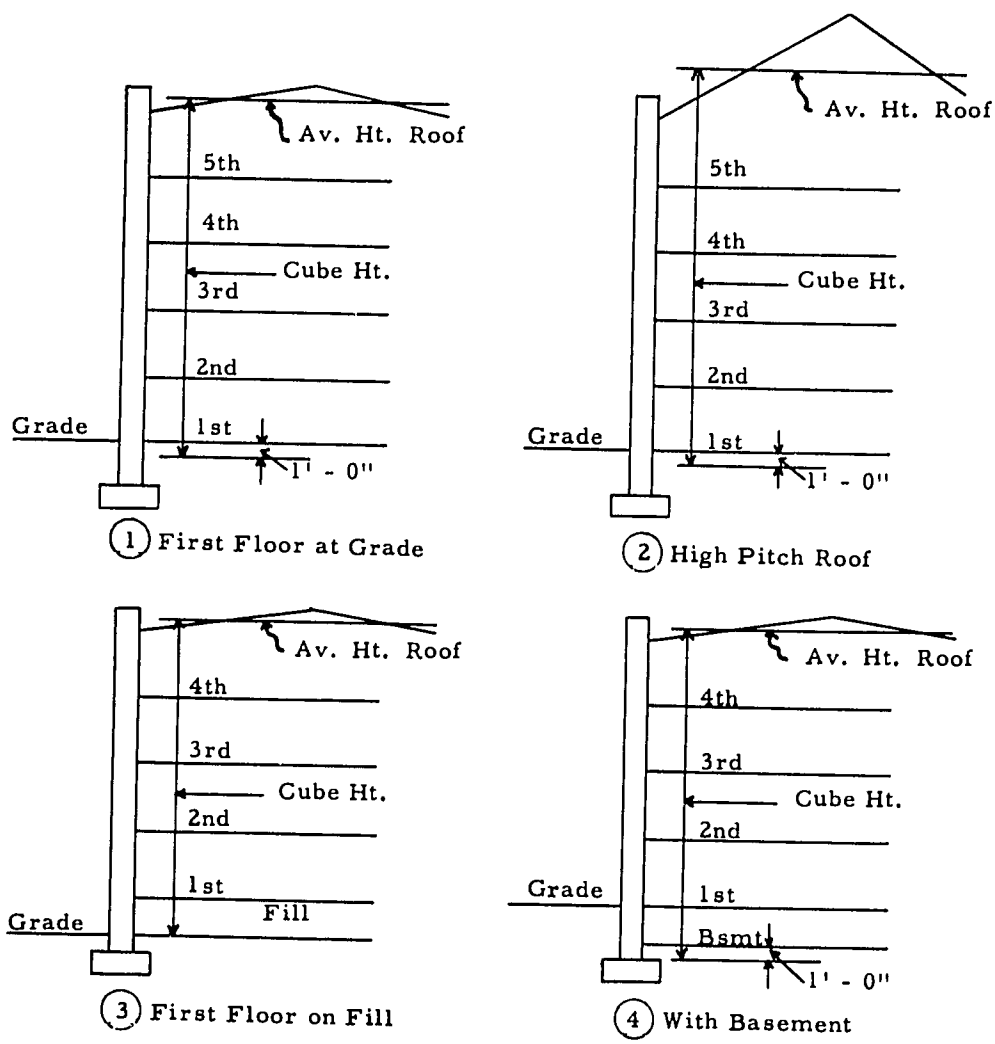
Building Description on Commercial and Industrial Property Record Card

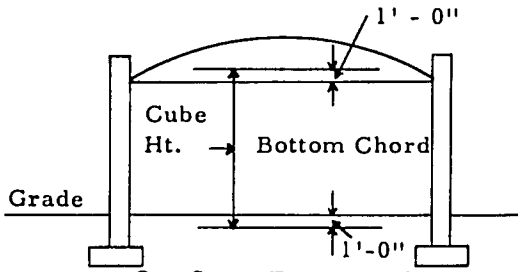
The following items and information are checked or written in by the appraiser under each part of the "Principal Building Description" section on the Commercial and Industrial property record card. The definitions and instructions under each item provide the appraiser with a uniform method of recording descriptive information of commercial and industrial buildings.

TYPE AND USE - Indicate with a check mark "✓" whether the structure is combination store and apartment, hotel, office, loft or other type of commercial or industrial structure. If none of the different structural types listed fits the building, write in the type on the blank line at the bottom of the "Type and Use" section of the card.

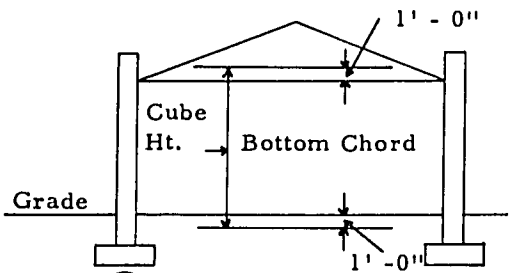
STRUCTURAL FRAME - Check the general framing of the building as to whether wood, steel, concrete, or other, and combinations of these. In the case of trusses, indicate the maximum span of such trusses. Indicate the height in stories of buildings on the blank line at the bottom of this portion of the card.

Diagrams Showing Method of Obtaining Height Dimensions for Calculation of Cubical Content for Commercial and Industrial Buildings

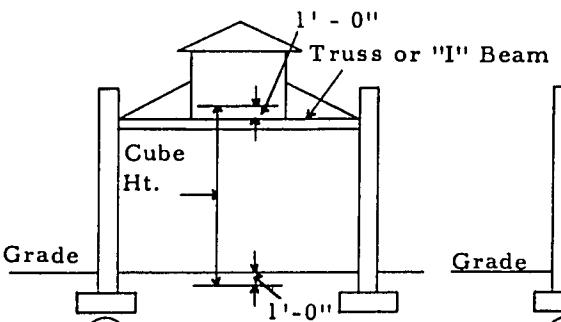




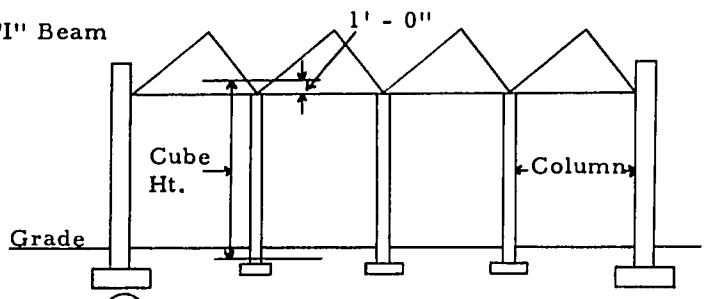
(5) One Story Truss Roof
Bow String Truss



(6) One Story Truss Roof
Pitched

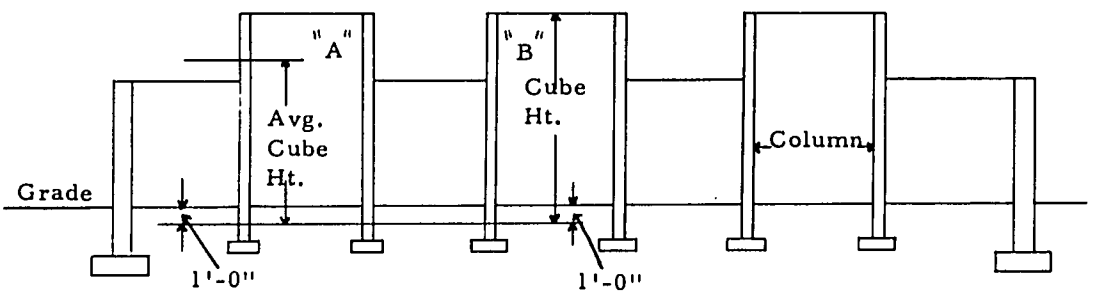


(7) Monitor Type Roof
Ventilation and Light



(8) Saw Tooth Roof

(9) High and Low Sections in Series



"A" - Cube figured at half height above low section when high section used only for ventilation and light.
"B" - Cube figured at full height when high section used for crane runway.

The building height indicated in the "Building Area and Cube Calculations" section of the property record card includes the height of the basement. The basement height is also indicated in the "Basement" section of the property record card. This height is determined by measuring from the lower side of the floor joists to the basement floor and adding one foot, to account for the floor.

Building heights are indicated on Sanborn insurance maps for Commercial and Industrial buildings. The height consideration on these maps is from ground level to the top of parapet. Adjustments are made when determining heights in this manner to include the basement or portion thereof, that is below ground level.

FOUNDATION - Check type of underpinning or under-structure of the building. Indicate whether masonry walls and footing or posts or piers are used for foundation.

EXTERIOR WALL CONSTRUCTION - Indicate the type of exterior facing or siding. "Wood" refers to any board type siding, such as beveled siding, clapboard, and board and batten. The other types of walls are easily recognized, except "Veneer," in which case it may be necessary to inspect the walls in the basement or unfinished attic. The absence of "header" courses is usually, but not always, an indication of brick veneer. The Sanborn map sketch of the building may also indicate the type of exterior wall by the color code. Indicate the exterior wall facing by checking the appropriate items for the front of the building and for the sides and rear.

In the case of glass, glass tile or vitrolite wall facing, write in the total wall area in square feet for such walls in the space for "Other Items and Notes."

Store fronts are indicated on the basis of lineal feet of such store front and by type, such as wood or low cost metal set, average grade metal set, or good grade metal set. The height of the store front in terms of number of stories is indicated in a circle directly after number of lineal feet.

ROOF - The type of roofing material is indicated by checking the appropriate space for roofing. "Prepared Roll" refers to roofing furnished in rolls whether or not coated with grit or slate flakes. "Built-up" roofing refers to those roofs built up with layers of tar felt and asphalt with or without a gravel coating. In case of shingle roof, indicate the type of shingle. Write in any other special type of roofing not shown on the card.

UNITS AND ROOMS - Indicate the total number of apartment units and rooms on all floors above the first in the appropriate spaces. A unit is defined as a complete office, apartment or store regardless of the number of rooms in such unit. The rooms include the main living or working rooms. The total of units and rooms is entered, for example as "6 apartments - 18 rooms."

FLOORS - Check in the proper space the type of floor construction. Show the number of floors for each type of construction.

Under finish flooring indicate the finish of the floors by writing in the number of square feet of each type. Indicate hardwood, softwood, asphalt tile, rubber tile, and inlaid linoleum as "Wood or Equiv."

For finish flooring, indicate the finish of the floors by writing in the number of square feet of each type.

INTERIOR FINISH AND PARTITIONS - Indicate the applicable interior finish and partitions for the four distinct groups of building items namely (1) developed area, (2) units and rooms, (3) partitions, and (4) firewalls. Developed area is particularly important in combination store, apartment, hotel, office and theatre buildings, and it should be used wherever possible instead of partition measurements in other types of buildings. The total floor area developed for such uses (except for store use) should be recorded after the word "area" in terms of total square feet of floor area involved.

Description of partitions included in "developed areas" or separating developed areas from other areas are not indicated since the partition cost is included in the developed area cost. Partition information is necessary for all other areas in the Commercial and Industrial building classes where the partitions are used merely to divide the building into sections.

Partition information should be recorded in lineal feet, and in average height of such partitions. Brick or glazed tile, or steel partitions should be written in the appropriate space. (The word "masonry" means gypsum, brick, hollow tile or masonry block.) If all partitions are plastered or finished on both sides, the word "all" should be written opposite "plaster". If all partitions are not plastered or finished, the lineal feet and height of those partitions which are plastered or finished should be indicated. If additional space is needed for partitions use the section labeled "Other Items and Notes."

Firewalls, other than the exterior walls, should be indicated by writing in the number of lineal feet of such walls and the height in number of stories or feet. (Height in feet should always be used in one-story industrial buildings.) The presence of a firewall is usually shown on the building diagram on the Sanborn map.

PLUMBING - Indicate presence of sewer and water connections in the spaces provided on the property record card. Also indicate the number of bathrooms (3 fixture), of lavatories and toilets (2 fixture), and of single plumbing fixtures (showers, etc.). Plumbing in "developed areas" is to be included in the inventory of plumbing.

ELECTRIC WIRING - Indicate whether the majority of the wiring is in conduits or pipes. Indicate open knob and tube wiring under "Other Items and Notes". In the case of industrial buildings, indicate the presence of power wiring.

HEATING - Check first the method of heating such as "Steam or Hot Water", then the items pertaining to the heating system, such as "Stoker". If the building buys steam from an outside source, the item "No Boiler" should be checked. If more than one type of heating is used, indicate the relationship under "Other Items and Notes".

BASEMENT - First check whether a full or nc basement is present. Indicate the height of the basement in feet. If the basement covers only part of the ground area, indicate the square foot area that it does cover in the "Partial" space. If the basement is finished for Commercial "Com" or Service "Serv" space, indicate these abbreviations and the number of square feet area. Indicate the type of basement floor.

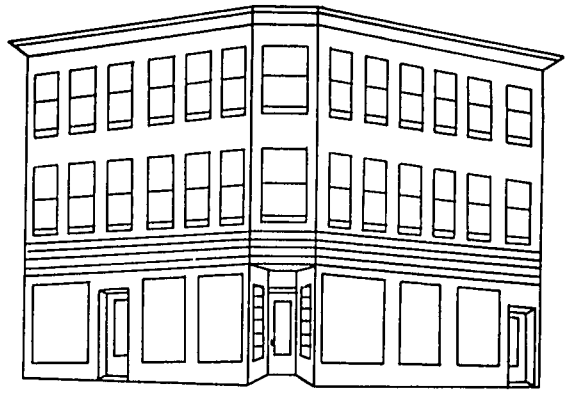
AIR CONDITIONING - Indicate the type of air-conditioning present either washed or refrigerated, (1) the total square feet of floor area for buildings with only a portion of some floors air conditioned, (2) 100% for buildings air conditioned throughout, (3) 100% and number of floors for buildings with only a part of the floors completely air conditioned. Portable air-conditioning systems are not included in the real property inventory.

FIRE PROTECTION - Indicate the total floor area covered by a sprinkler system and the number and size of fire hose stations; fire pumps and stand-pipes should be indicated.

BUILDING ELEVATORS - Indicate the number, capacity, and floors served by passenger and/or freight elevators. Man-lifts and escalators are indicated separately under "Other Items and Notes". The basement is considered a floor in determining the number of floors served by elevators.

OTHER ITEMS - Indicate miscellaneous building items not in the above. If additional space is needed, use the space "Other Items and Notes" for items such as driveways for industrial building and gasoline stations, private railroad tracks, storage tanks both over and underground in gasoline and bulk stations. The square feet of paving, lineal feet of track and size or capacity and material of tanks should be shown. Canopies, revolving doors, greasing pits, and loading docks should also be recorded in this space.

Example of Recording Field Data for a Commercial Building



Inspection of the above building reveals descriptive items as follows: a combination store, apartment and office building, wood beams, wood joists, brick foundation, brick exterior walls with 50 lineal feet of low cost store front, 980 square feet of carrara glass and 5 square feet of glass block facing, wood sheathing between roof joists and the top surface of tar and gravel, subfloor of 1" x 8" plank and covered with a very close grain wood.

The first floor divided into two stores by a wood partition that is plastered on both sides, second floor is finished into 12 offices of equal size, 4 apartments of 4 rooms and bath each on the third floor, a total of six 2 fixture toilets, hot water heating system, and a full basement that is 9 feet in height.

The building was constructed in 1905 and remodeled in 1951. The remodeling included new facing and store front, new floors and all new plaster on the first floor, replaced floors in 4 offices and replastered 2 apartments at a total cost of $20,000.

The building is classified as 22.3C after inspection and comparison with class specifications.

The dimensions, building sketch, descriptive entries, classification and effective age are shown on the property record card on the following page.

Occupant and Property Address: REXALL DRUGS
846 MAIN ST.

BUILDING DESCRIPTION AND VALUE CALCULATION

Parcel Number _____ Card ___ of ___ Cards

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 22.30

OBSERVED PHYSICAL CONDITION: Good ✓ Normal ___ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1955 YEARS 40

TYPE AND USE
Combination Stores and Apt. ✓ Offices ✓ Loft ___
Hotel ___ Store ___
Office ___ Bank ___
Theatre ___ Garage ___
Gas Stat. ___ Indust. ___
Warehouse ___ Greenhouse ___
Hospital ___
Other ___

STRUCTURAL FRAME

	Wood	Steel	Conc
Columns			
Main Beams	✓		
Joists	✓		
Trusses			
Girder			

Height in Stories ___

1) FOUNDATION
Masonry ✓
Wood or Block Piers ___

2) EXT. WALL CONSTR.

	Frt.	Side	Rear
Wood:			
Lined			
Unlined			
Brick	✓	2	✓
Concrete Block			
Stone			
Concrete			
Corr. Iron			
Other			

Store Fronts: (Lin. feet)
Wood or Low Cost metal set 50
Ave. grade metal set
Good grade metal set

3) ROOF
Roof Construction:
Wood ✓ Steel Deck ___
Reinforced Concrete ___
Roofing:
Prepared Roll ___ Shingle ___
Built-up ✓ Corr. Metal ___
Other ___

4) FLOORS
Floor Construction: Floors ✓
Wood ___
Concrete on Grade ___
Reinforced Concrete ___
Finish Flooring: 1st ✓ 2nd ✓ Above ✓
Wood or Equiv. ✓
Other ___

5) INTERIOR FINISH
Developed Area: (sq. ft.)
Apt. Floor Area 3348 Type ___
No. Units 4 No. Rms. 16
Office Floor Area 598 Type 3M
Other Area ___ Type ___
Partitions: Lin. ft. ___ Hgt. ___
Wood stud 64 12
Plas. 2 side ALL
Masonry ___
Plas. side ___
Firewalls: Lin. ft. ___ Hgt. ___

6) PLUMBING
Utility Connections:
Sewer ___ Water ✓
Fixtures: Single ___
2 Fix't 6
3 Fix't 4

7) ELECTRIC WIRING
Conduit ✓ Power Wiring ___

8) HEATING
None ___ Stove ___
Hot Air:
Pipeless ___ Grav. ___ Forced ___
Fan Units ___
Steam or Hot Water ✓
Stoker ___ No Boiler ___

9) BASEMENT
None ___ Full ✓ Height 9
Partial: ___ Sq. Ft.
Finished ___ Sq. Ft.
Floor: Dirt ___ Wd. ___ Conc. ✓

10) AIR CONDITIONING
Washed ___
Refrigerated ___
Full floor area NONE
No. of floors ___
Partial: Floor area ___

11) FIRE PROTECTION
Sprinkler (Flr. area) NONE
Fire Hose Stat: No. ___ Size ___
Fire Pumps ___

12) BUILDING ELEVATORS

Type	Number	Cap.	Floors
Passenger	NONE		
Freight			

OTHER ITEMS AND NOTES: 2 - CARRARA GLASS - 980 ¢
2 - GLASS BLOCK - 5 ¢

WALL RATIO CALCULATION

Ground Area	Perimeter	Wall Ratio

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1905	50	OWNER

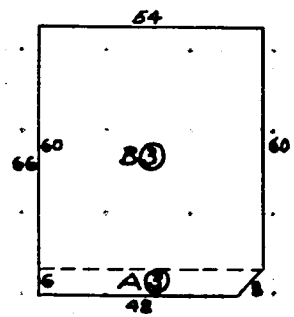
MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

DATE	AGE	EXTENT AND COST	SOURCE
1951	4	MAJOR REMOD. - 1ST FLR.; MINOR REMOD. 2ND AND 3RD FL $20,000	OWNER

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL

GROUND PLAN SKETCH 1 Sq = 4'



FRONT

BUILDING AREA AND CUBE CALCULATIONS

GROUND AREA - SQUARE FEET

Floor or Part	Width	Length	Area	Height	Cubic Feet
A③	51 AV.	6			
B③	54	60			
		Total Area		Total Cube	

(computations made and entered at the office)

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base			

ADDITIONS AND DEDUCTIONS

TOTAL REPLACEMENT COST $

Cost Conversion Factor

Regional Replacement Cost

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION
a. Effective Age Depreciation ___ %
b. Observed Physical Condition ___ %
c. Total Depreciation (a+b) ___ %
d. Net Condition (100 - c) ___ %

OBSOLESCENCE
e. Overimprovement ___ %
f. Underimprovement ___ %
g. Other ___ %
h. Net Condition (100-e+f-g) ___ %
i. FINAL NET CONDITION (d×h) ___ %

SUMMARY OF APPRAISED VALUE

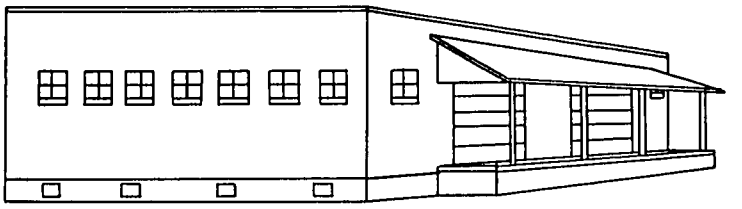
Principal Building Appraisal
Other Principal Buildings Appraisal
Accessory Buildings Appraisal
Total Building Appraisal
Total Land Appraisal
TOTAL APPRAISED VALUE $

Measured by L.M. Johnson Date 9/14/55 Classified by M.A. Bates Date 9/20/55 Extended by _____ Date _____ Checked by _____ Date _____

COMMERCIAL AND INDUSTRIAL PROPERTY RECORD CARD

Example of Commercial Building Field Entries

Example of Recording Field Data for an Industrial Building



Inspection of the above building reveals descriptive items as follows: an industrial building, wood beams, wood joists, brick foundation and exterior walls, roof liner is wood and the roofing consists of alternate layers of roll roofing material and tar, floor is concrete on grade except over the basement where it is rough, heavy, wood planks.

The interior is unfinished except two rooms with a total ground area of 600 square feet developed for office space, 80 feet of unplastered brick partition over and above the partitions enclosing and within the office area, sewer and water connection plus two toilets consisting of (1) shower stall and water, and (2) wash basin and water closet, 440 volt wiring, hot water heat from boiler located in another building, 100' x 40' basement with cement floor and 10' deep.

The building has a sprinkler system covering the entire building except the basement, an industrial canopy and concrete loading dock, each 80 feet by 12 feet. The building is 14 feet high. (See sketch above)

After examination of the building and comparison of the physical description with class specifications, the classification 41.3D is selected.

The dimensions, building sketch, descriptive entries, classification and effective age are shown on the property record card on the following page.

Additional Principal Building Description Items for Residential and Commercial and Industrial Cards

Under the heading DATE OF CONSTRUCTION, the appraiser inquires of the owner or occupant of the building, the age of the building, and notes the same in the space provided on the card. In case the occupant or owner does not have this information, the appraiser estimates the age and notes under SOURCE the word "Estimate." Building permit data, if available, is checked to verify the age of the building.

Under MAJOR ALTERATIONS AND ADDITIONS, details and description are entered from building permit records where available. The appraiser enters any additional information available, checks the items of alteration or modernization, and endeavors to obtain information on the cost and date of such major alterations.

Occupant and Property Address: SEABOARD MACHINE WORKS
918 LOCUST ST.

BUILDING DESCRIPTION AND VALUE CALCULATION

Parcel Number _____ Card ___ of ___ Cards

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 41.3D

OBSERVED PHYSICAL CONDITION: Good ___ Normal ✓ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1955 YEARS 8

TYPE AND USE

Combination Stores and Apt. ___ Offices ___ Loft ___
Hotel ___ Store ___
Office ___ Bank ___
Theatre ___ Garage ___
Gas Stat. ___ Indust. ✓
Warehouse ___ Greenhouse ___
Hospital ___
Other ___

STRUCTURAL FRAME

	Wood	Steel	Conc
Columns			
Main Beams	✓		
Joists	✓		
Trusses			
Girder			

Height in Stories: 1

1) FOUNDATION

Masonry ✓
Wood or Block Piers ___

2) EXT. WALL CONSTR.

	Frt.	Side	Rear
Wood: Lined			
Unlined			
Brick	✓	2	✓
Concrete Block			
Stone			
Concrete			
Corr. Iron			
Other			

Store Fronts: (Lin. feet)
Wood or Low Cost metal set ___
Ave. grade metal set ___
Good grade metal set ___

3) ROOF

Roof Construction: Wood ✓ Steel Deck ___ Reinforced Concrete ___
Roofing: Prepared Roll ___ Shingle ___ Built-up ✓ Corr. Metal ___
Other ___

4) FLOORS

Floor Construction: Floors
Wood ___
Concrete on Grade 4000
Reinforced Concrete 10000
Finish Flooring: 1st 2nd Above
Wood or Equiv. ___
Other UNFIN

5) INTERIOR FINISH

Developed Area: (sq. ft.)
Apt. Floor Area ___ Type ___
No. Units ___ No. Rms. ___
Office Floor Area 80 Type STD.
Other Area ___ Type ___
Partitions: Lin. ft. ___ Hgt. ___
Wood stud ___
Plas. ___ side ___
Masonry 80 12
Plas. ___ side ___
Firewalls: Lin. ft. ___ Hgt. ___

6) PLUMBING

Utility Connections: Sewer ✓ Water ✓
Fixtures: Single ___
2 Fix't 2
3 Fix't ___

7) ELECTRIC WIRING

Conduit ___ Power Wiring ✓

8) HEATING

None ___ Stove ___
Hot Air: Pipeless ___ Grav. ___ Forced ___
Fan Units ___
Steam or Hot Water ✓
Stoker ___ No Boiler ✓

9) BASEMENT

None ___ Full ___ Height 10
Partial: 4000 Sq. Ft.
Finished ___ Sq. Ft.
Floor: Dirt ___ Wd. ___ Conc. ✓

10) AIR CONDITIONING

Washed ___
Refrigerated ___
Full floor area ___
No. of floors ___
Partial: Floor area ___

11) FIRE PROTECTION

Sprinkler (Flr. area) 10000 #
Fire Hose Stat: No. ___ Size ___
Fire Pumps ___

12) BUILDING ELEVATORS

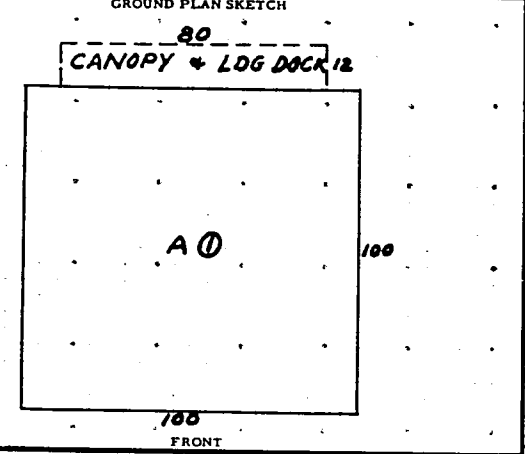
Type	Number	Cap.	Floors
Passenger			
Freight			

OTHER ITEMS AND NOTES: 13f - CANOPY - 960 #
13g - CON. LOADING DOCK - 960 #

WALL RATIO CALCULATION

Ground Area	Perimeter	Wall Ratio

GROUND PLAN SKETCH



BUILDING AREA AND CUBE CALCULATIONS

GROUND AREA - SQUARE FEET

Floor or Part	Width	Length	Area	Height	Cubic Feet
A ①	100	100		14	
			Total Area		Total Cube

(computations made and entered at the office)

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base			

ADDITIONS AND DEDUCTIONS

TOTAL REPLACEMENT COST $

Cost Conversion Factor

Regional Replacement Cost

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION
a. Effective Age Depreciation ___ %
b. Observed Physical Condition ___ %
c. Total Depreciation (a+b) ___ %
d. Net Condition (100 - c) ___ %

OBSOLESCENCE
e. Overimprovement ___ %
f. Underimprovement ___ %
g. Other ___ %
h. Net Condition (100-e,f+g) ___ %
i. FINAL NET CONDITION (d+h) ___ %

SUMMARY OF APPRAISED VALUE

Principal Building Appraisal
Other Principal Buildings Appraisal
Accessory Buildings Appraisal
Total Building Appraisal
Total Land Appraisal
TOTAL APPRAISED VALUE $

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1947	8	OWNER

MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

DATE	AGE	EXTENT AND COST	SOURCE
		NONE	

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL

Measured by L. M. Johnson Date 9/14/55 Classified by M. A. Betts Date 9/20/55 Extended by _____ Date _____ Checked by _____ Date _____

COMMERCIAL AND INDUSTRIAL PROPERTY RECORD CARD

Example of Industrial Building Field Entries

Under OBSERVED PHYSICAL CONDITION, "Good", "Normal", "Fair", or "Poor" physical condition pertains to the state of structural repair or maintenance of the building both in the interior and exterior. "Good" condition indicates that no maintenance is presently needed; "Normal" condition indicates that only minor maintenance is needed to bring the structure up to good condition; "Fair" condition indicates maintenance has been deferred to the extent some loss in value may have resulted; "Poor" condition indicates extensive deferred maintenance for a number of years which has resulted in considerable loss in value to the structure. A notation is placed in the space "Other Items and Notes" if a building is dilapidated to the extent that it is no longer useable. If the building is under construction, it is so noted in the space "Other Items and Notes". However, if the building is well along in construction as much information as possible is recorded in the Building Description Section.

Accessory Building Description

The necessary spaces are filled in for accessory buildings such as garages, barns and sheds. Description of building components indicating type of construction are written in the space provided for each item, such as "Foundation", "Floor", "Roof", "Walls".

Because of the limited space for recording the physical description, it is advisable to use abbreviations in recording the building description in the accessory building spaces on the property record card. These abbreviations are used in the spaces provided for Floors, Roof, Exterior Walls, Heating and Plumbing.

FLOORS

Wood - WD
Cinders - CIN
Concrete - CON
Dirt - DT

ROOF

Prepared Roll - PR
Composition or Wood Shingle - SHG
Corrugated Metal - MTL
Tile - TL

EXTERIOR WALLS

Frame with Wood or Stucco Siding - A
Concrete Block or Stucco on Tile or Block - B
Brick or Stone, Solid or Veneer - D
Galvanized Iron or Aluminum on Steel Frame - E

HEATING

No Heating - None
Stove - STV
Hot Air - Pipeless - HAP
Hot Air - Gravity - HAG
Hot Air - Forced - HAF
Steam - 1 Pipe - ST 1
Steam - 2 Pipe - ST 2
Hot Water - HW

PLUMBING

No Plumbing - None
1 Fixture (such as a toilet) - 1 FX
2 Fixture Toilet Room - 2 FX
3 Fixture Bathroom - 3 FX

The effective age of accessory buildings is indicated in the "Age" space. For example, 20 indicates 20 years effective age.

If the accessory building is in such dilapidated condition that its utility no longer exists, the appraiser records the presence of the building on the card and also writes in "no value" after the description.

Example of Appraisal of a Farm Barn

Exterior wall description of the barn shown below reveals exterior descriptive items as follows: wood post foundation, composition shingle roof and wood walls.

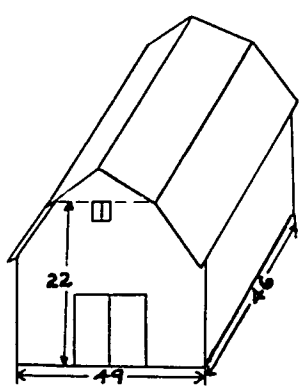
Interior inspection reveals that the barn has a second floor which is wood and the first floor is dirt, one hay fork and track and an electric lighting system with two outlets.

The barn was constructed in 1890 and has not been remodeled. The building is in good repair due to superior maintenance, continuous replacing of deteriorated construction components.

After examination of the building and the comparison of the physical description with the class specifications, a classification of 50.1C is determined. The effective age is reduced to 50 years to compensate for the newer material used in maintenance.

Comparison of the above information to the class specifications of Class 50.1C indicates conformity except for electric lighting. An adjustment is made for the two outlets.

The complete appraisal is shown on the applicable section of the property record card below.

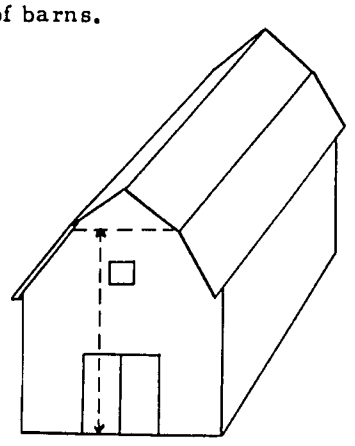


DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF FARM BARNS AND ACCESSORY BUILDINGS

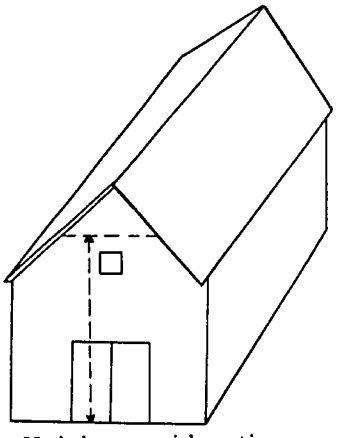
BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL
BARN	50.1 C	49	46	22	WD POSTS	1ST-DT 2ND WD	SHG	A			2		N 50	49,588	.10 4959	9a(2×5.20)+10	4969	DI 30	1491
	(1) HAYFORK & TRACK																		

Determining Cube Content of a Farm Barn

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 roof from ground level to a point 1/2 of the distance from the eaves to the peak.

Lots and Tracts with Several Principal Buildings

The property record card accommodates data for one principal building, a barn, garage or other accessory buildings and improvements. The record and measurement of any additional principal buildings are placed on supplementary property record cards, one card for each additional principal building. On such supplementary property cards, enter the parcel index number of principal buildings and the number of separate cards in the upper right hand corner.

For example: A parcel may have on it two principal buildings -- a house, a cottage and two private garages. On the original card is placed the house and the private garages and labeled "Card No. 1 of 2 cards"; on the second card is placed the cottage and labeled "Card No. 2 of 2 cards".

Neat Legible Entries on Property Card

When the complete descriptive information is entered on the property record card, the appraiser enters his initials with the date when each operation is completed.

All entries are made neatly and legibly in pencil.

Procedure for Determining Building Classification

Building classification is one of the most inportant tasks in the mass appraisal process. Comparison of the building class specifications in the manual with building items checked or indicated on the property record card, coupled with an exterior inspection of the property furnishes the basis for proper classification. Sound judgment must be exercised, however, because there are many variations in building specifications which are not covered in every detail in the class specifications.

One-family residences which represent the major number of buildings are the most difficult to classify. Commercial and Industrial buildings tend to be easier to classify because their types and construction are more standardized.

The following descriptive guide, in more detail than the base specifications of each

one-family residential class, explains the common characteristics which tend to differentiate one residential class from another.

Description of One-family Residential Building Classes or Grades

The following types of residences are classified according to construction quality, rather than cost. In the case of the medium or average class, most appraisers have a preconceived idea of the cost range of the average grade residence. In this system of appraising, the grand total cost alone does not determine classification. A small house and a large one with the same quality of materials, fixtures and workmanship, are classed together -- although one may be below average and the other above average in total cost. The unit cost of these two houses -- that is, the square foot unit cost -- will, of course, be comparable. These classes are price groups. Houses which are alike in quality, and therefore, approximately alike in unit cost per cubic foot are classified similarly regardless of their size or total cost.

Class 10.1 - Cabins and Shacks (For typical photographs see page 124)

In this class belong the low-cost buildings used as year-round houses in the poorer sections of the community. They are built on posts or cheap masonry piers; have 2 x 4 stud walls covered with drop siding, rough boards or other low-cost material, and have no lining. Their construction in general is as cheap as possible to afford the necessary protection against the weather. They have no permanent heating or plumbing, but occasionally have electric light. These buildings are usually referred to as shacks.

Class 10.1 buildings may be more than one-family dwellings. Shacks built for two or more families are classified into tnis class rather than in the low-cost grade of two to six family dwellings.

Class 10.2 - Basement Dwellings (For typical photographs see page 126)

This class covers the basement dwellings in partially completed houses. Such dwellings are generally temporary living quarters until the owners can build or finance the superstructure of the buildings. These buildings consist of basement walls, with wallboard or plaster finished ceilings and partitions. One three-fixture bathroom is usually found in such temporary dwellings.

Class 10.3 - One-family Dwellings, Low-Cost Grade (For typical photographs see page 128)

This class comprises the cheapest kind of buildings that can be classed as residences. Many of them are home-made. The materials and workmanship are low grade. They have cheap wallboard or dry wall partitions, pine floors, and trim, usually no basement, stove heat and in the older buildings, usually no plumbing except possibly a kitchen sink. Most of these buildings have electric light where such service is available. Newer or remodeled homes in this classification occasionally have additional plumbing to include a three-fixture bathroom and kitchen sink of the cheapest grade. The majority of these houses are in the rural and rurban areas, but will be found in urban areas normally on rear lots and in the least desirable residential sections. Usually houses with this material description having a bathroom and central heating plant will be properly classified as 10.4, these features are closely associated with a better grade of workmanship.

Class 10.4 - One-family Dwellings, Fair Grade (For typical photographs see page 130)

This class of residences falls between the low-cost grade and the below average grade. Usually the material has some defects (seconds) or is improperly seasoned, workmanship is of the semi-skilled caliber. Foundation and other masonry work is done

by un-skilled masons. Occasionally these residences are built by contractors on a mass low-cost basis. They have dry wall, pine floor and trim with possibly low grade hardwood floors in main living rooms, usually a full or partial basement, a low-cost 3-fixture bathroom with a linoleum floor. This classification embraces the majority of the low-cost urban dwellings.

Class 10.5 - One-family Dwellings, Below Average Grade (For typical photographs see page 134)

This class of residences falls between the fair grade and the average grade. These residences have electricity, heat and plumbing, but the fixtures are of average grade or poorer. This class of house will have inferior quality hardwood floors or hardwood floors in one or two rooms and pine in the other rooms. 2 x 6 floor joists are occasionally found in this class building. They have full basements with a cement floor, sub-standard roof framing, dry wall or low cost plaster partitions, usually composition walls in the bathroom, and a steam heating system. In general, they have the essential conveniences, but are of a slightly inferior quality. Many older homes in this classification are without the specified bathroom or heating facilities, but the frame of the building, including foundation, walls, joists, floors, rafters and roof are sufficient to justify this classification.

Class 10.6 - One-family Dwellings, Average Grade (For typical photographs see page 138)

The houses in this class have materials, fixtures and workmanship of average grade. They are well framed, with rafters and floor joists of proper size, at least 2 x 8's, and spacing. They have BX or conduit wiring and have fairly good light fixtures. Plumbing fixtures and fittings, usually including a 3-fixture bathroom, kitchen sink and laundry tub are of standard grade. There is usually a full basement, well drained with a water heater and an average grade steam or hot water heating plant. Many of these homes may have extra plumbing, possibly a shower, toilet and lavatory in the second bathroom. The main bath usually has a composition tile floor and plastic or metal tile walls. Floors are usually hardwood on the first floor and softwood above the first floor. The kitchen has a medium grade sink and medium quality built-in cabinets.

Class 10.7 - One-family Dwellings, Above Average Grade (For typical photographs see page 142)

The houses in this class have materials and fixtures of above average quality, good workmanship. They are well framed, with rafters and floor joists of proper size, spacing, plumbing fixtures and fittings, usually including a 3-fixture bath, two-fixture toilet, kitchen sink and laundry tub are of the best standard grade. The main bath usually has ceramic tile walls and floor. These houses usually have full basements, well drained, and with water proofed basement walls. They normally have a steam or hot water heating system, with baseboard heat in the newer homes, and automatic hot water heater. Trim and floors are hardwood with composition flooring in the kitchen. The kitchen has ample built-in cabinets, above average in quality and appearance. They are built to individual specifications with considerable emphasis on architecture.

Class 10.8 - One-family Dwellings, Good Grade (For typical photographs see page 146)

The houses in this class are intermediate between the above average and the high grades, having the more expensive appointments that are better than average but are not of the highest quality. They have more expensive plumbing fixtures and heating equipment, vitreous tubs and lavatories, tile walls in baths, concealed radiators, parquet floors, textured or canvassed plaster walls, some wood paneled rooms, better woods in floors and trim and better workmanship, probably double-strength glass in the windows, perhaps metal casements with copper screens, expensive lighting fixtures, one full bath with an extra lavatory and possibly more.

Class 10.9 - One-family Dwellings, High Cost Grade (For typical photographs see page 148)

This class includes houses of the highest grade, excluding those designed as "mansions" which are classified under Class 10.10. They have the best grade of construction of the type employed, the finest grade of plumbing, including two or more full bathrooms and possibly more fittings such as brass piping, vitreous fixtures, and other expensive bathroom appointments. All sheet metal work is of heavy copper; roofs of high grade slate, tile or equal. Trim is cabinet work of the finer woods. There are separate quarters, with baths, for servants. The newer houses in this class have air conditioning, and all have high grade heating equipment.

Class 10.10 - One-family Dwellings, Mansion Type (For typical photographs see page 150)

This class includes the large mansion type residences. These buildings have the very highest grade of construction, materials and appointments. Buildings in this class usually have over 5000 square feet of floor area. Included in this class are those houses having such unusual features as built-in pipe organs, imported tiles, bronze and wrought iron features, hand carvings, rare woods, marbles and mosaics and all items requiring exceptionally skilled craftsmanship. Such unusual fixtures as require appraisal by persons skilled in the arts are deemed to be characteristic of the mansion type home.

As the building classification is determined, the appraiser enters the class number on the property record card. The space in the upper left hand corner of the Principal Building Description section of the card is used for this purpose. The space is labeled "Building Class".

The appraiser also enters his initials and date in the space at the bottom of the back side of the card labeled "Classified by". The date is the date that the building is classified.

Summary Procedure for Building Classification

Following are specific steps and procedure for checking and determining the classification and effective age of buildings during field inspection of such buildings by the appraiser:

(1) After viewing each property, check the land and building descriptive information on the property record card and make necessary corrections.

(2) On the basis of such view and the information on the property record card, determine the building class which most nearly describes the building being classified. Enter such building classification numbers in the spaces provided for same on the card for both principal and accessory buildings.

(3) Where building permit date is not available, check the stated or estimated age and enter estimated actual age.

(4) Where the building has undergone major alterations or modernization, enter estimated effective age in the space provided for same, based upon judgment and information on the cost and date of such modernization and based upon the formulas and methods described in the following section on building description.

(5) In cases where there have been no major alterations or modernization, enter the actual age in the "Effective Building Age" space. In this case the actual age is used for effective age depreciation purposes.

(6) Where the age of a garage or other accessory building is not stated or does not appear on the building permit, make entry of the estimated age under "Other Items and Notes". Indicate also the effective age of the accessory building in the appropriate space.

Office Procedure for Building Valuation

After completion of the field inspection and the classification of the principal and accessory buildings on each property record card, such record cards in the block folders are taken to the office for calculation of the land and building valuation. The office procedure for calculating land valuation has been described in detail in a preceding section of this manual.

Calculation of Ground Area or Cubic Content of Buildings

After noting the building classification on each property record card, reference is made to the replacement cost schedules for the particular building class. Where the replacement cost schedules are priced per square foot, the appraiser calculates the ground area of each building in square feet. Where the cost schedules are priced per cubic foot, the appraiser calculates the cubical content of each building. The dimensions of the building are taken from those recorded during field operations by the appraiser on the property record card.

Calculation of Wall Ratio for Commercial and Industrial Buildings

The base unit cost applicable to any commercial or industrial building is influenced by the relationship of the walls to the ground area or cubical content of the building. The base unit cost changes as the quantity of walls used to provide a fixed ground area or building cube is varied. 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 always computed by dividing the perimeter (distance around the building, that is, the sum of the length of its sides, rear, and front) into the ground area of the building. For example, the wall ratio of a 3-story building 80 feet by 20 feet is 8, computed as follows: 80 x 20 = 1600 sq. ft. 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; 1600 divided by 200 = 8 (wall ratio).

In all commercial and industrial buildings deductions are necessary for party walls in order to avoid including the cost of such party walls with more than one building. The Sanborn map usually indicates the presence of party walls, and the notes made by the appraiser supplement the map.

The correction of existing party walls is made by using half the length of the party wall in adding up the perimeter of a building for the wall ratio calculation. Since the party walls are jointly owned by the two adjoining property owners this procedure is sound and equitable.

For example, a building 50 feet wide and 100 feet deep on the sides has a party wall as one of the side walls. The perimeter of this building, for wall ratio calculation purposes, adds up to 250 feet. (50 foot length of front and rear walls equals 100 feet, plus 100 feet of one side wall, plus half of the other side wall (party wall) or 50 feet). The ratio in this case is calculated by dividing the ground area 5000 square feet, by the permiter (less one half the length of the party wall) or 250 feet; 5000 divided by 250 equals 20 wall ratio. The unit cost for wall ratio 20 is less than unit cost for wall ratio 16 which would be the case if the building had no party wall. The difference between these two unit costs allows for the shared value of the party wall.

Determining the Base Replacement Cost of Buildings

The base unit cost applicable to the particular building is determined by reference to the building class replacement cost schedule. The ground area, wall ratio or cubic content of a specific building is used in entering the replacement cost schedule and the unit replacement cost figure or base cost figure in dollars is selected from the appropriate area, wall ratio or cube content column in the cost schedule. In cases where the ground area, wall ratio or cube content of a building falls between two columns on a unit cost schedule, use the larger ground area, wall ratio or cube content column. In cases where the ground area of a building falls between two ground areas on a base cost schedule, use the smaller ground area in selecting the base cost.

When calculating replacement cost of single family residential buildings with varying story heights apply the following procedure: (1) calculate the ground area of each section of the building where a variation in story height occurs and add together to get the total ground area of the building, (2) select the unit cost for each portion of the building in the column for the total ground area of the building and apply against the actual ground area of each portion, (3) add together the replacement cost for each portion of the building to get the total replacement cost of the building.

When calculating the replacement cost of single family residential buildings with uniform story heights, the appraiser refers to the replacement cost schedules which are expressed as replacement cost in dollars.

When calculating the base replacement cost of a building with different exterior wall types for each of two or more stories apply the following procedure: (1) calculate the total ground area of the building, (2) select the proper unit cost or base cost in dollars for each of the different exterior wall types, using the total ground area of the building, (3) average the applicable base unit costs, or the applicable base cost in dollars, for example brick and wood, (4) multiply the total ground area of the building by the average of the different exterior wall type unit costs to get the base replacement cost of the building.

For residential buildings with uniform story heights the base cost in dollars schedule is preferable as unit costs have already been multiplied by ground areas in twenty foot increments. To obtain the base unit cost in dollars of a residential building with a uniform story height and which has a combination of two exterior wall types, average the base cost in dollars of the two exterior wall types.

Where minor variations in exterior walls are indicated, use the unit replacement cost or base cost in dollars schedules for the predominant exterior wall type and use the additions and deductions schedules to modify the exterior wall variations.

Base Replacement Cost Calculation Procedure for Building Class 11 and Class 12 Series

The base replacement cost schedules for the Class 11 series, One Family Semi-Detached or Duplex Dwellings, are developed on a dwelling unit basis. One party wall is considered as a standard specification and the necessary adjustment is included in the base replacement costs.

For combined ownership, both units owned by one individual, divide the total ground area of the building by two and select the base replacement cost from the resulting half ground area. Then multiply the half ground area by double the cost selected to get the total base replacement cost of both sides of the building.

For divided ownership, each unit has a different owner, the replacement cost is selected directly from the schedules based on the actual ground area of the unit.

For example, a Class 11.2A building with a total ground area of 1200 square feet, two units, and two stories high is computed as follows:

(1) For combined ownership - the base replacement cost is 1/2 of the ground area (600 square feet) times twice the unit cost (2 x $14.60) or $29.20 x 600 sq. ft. = $17,520.

(2) For individual dwelling unit ownership - the base replacement cost is the area of the unit (600) times the replacement cost ($14.60) or 600 x $14.60 = $8,760.

Additions to and deductions from the base replacement cost are applied on the same basis as other residential properties, i. e., on an individual dwelling unit basis.

The base replacement cost schedules for the Class 12 series, Attached or Row Houses, are also developed on a dwelling unit basis. Two party walls are considered as a standard specification in this class series. To adjust for the outside dwelling units with only one party wall, 7% is added to the unit costs for such outside units. This addition to base cost accounts for the one wall which is not a party wall.

For example, a Class 12.2A building, a two story row house, with a total ground area of 3000 square feet, has five units in the row. The three inside units each have two party walls and the two outside units each have one party wall and one outside wall. The outside wall is commonly referred to as its own wall.

This building is computed as follows varying between combined and individual dwelling unit ownership:

(1) For combined ownership - the base replacement cost is selected on a dwelling unit ground area basis. Divide the total ground area (3000) by the number of units (5) resulting in 600 square feet ground area per dwelling unit.

The replacement cost for the three inside units is computed by multiplying the ground area per unit (600) by the unit cost for each unit and further multiplying the resultant by the number of units ($12.50 x 3 = $37.50) or 600 x $37.50 = $22,500.

The base replacement cost for the two outside units is computed by multiplying the ground area per unit (600) by the unit cost for the outside units. This result is further multiplied by the number of units plus 7% [($12.50 x 2) + 7%] = [$25.00 + 7%] = $25.00 x $1.07 = $26.75 replacement cost for both outside units. 600 square feet x $26.75 = $16,050 replacement cost for the two outside units.

The total base replacement cost is (22,500 + 16,050) = $38,550 for the entire building.

(2) For individual dwelling unit ownership - the base replacement cost of an individual inside dwelling unit is computed as 600 square feet x $12.50 = $7,500.

The base replacement cost of an individual outside dwelling unit is computed as 600 square feet x $12.50 unit cost plus 7%, or $12.50 x $1.07 x 600. This results in a base replacement cost of $8,022 for the outside unit.

Additions to and deductions from base replacement cost are applied as described above.

Determining Additions and Deductions to Base Replacement Cost

Additions to or deductions from the base replacement cost are made when there are significant variations in the particular building from the base specifications of the applicable building class.

Reference is made to the specifications for the particular building classification. The individual items in the specifications are compared with the building description as checked or written on the property record card. The building description items on the card which are different from the class specifications are indicated on the property record card by placing a plus or minus sign by the building item. Additions to or deductions from the base replacement cost are then made for each of the plus or minus items by reference to the tables of additions or deductions, and are totaled with the base replacement cost to arrive at the total replacement cost.

In order to give the property owner the benefit of any additions and deductions to the base replacement cost between specified ground area brackets, as shown on the additions and deductions pages of this manual, it is necessary in case of additions to use the column next lower in price than that of the ground area and in case of deductions the column next higher in price than that of the ground area of the building. This procedure assures that the property owner gets the minimum additions and maximum deductions applied to the base replacement cost of a building when the ground area falls between the specified area brackets.

Example of Replacement Cost Calculation for Residential Building

Assume that a one story frame Class 10.3 house with ground area of 800 square feet has an open porch of 120 square feet in area and has a basement equal to 50% of the ground area of the house. The house meets the standard specifications in all other respects. The base replacement cost and the additions and deductions calculations are as follows:

Item Number	Area or Quantity	Unit Cost	Total
10.3A (1)	800	---	$ 4,120
	Additions and Deductions		
4d	120	---	+ 200
10b	50%	---	+ 440
		Total Replacement Cost	$ 4,760

Description of Replacement Cost Calculation Procedure for Residential and Farm Buildings

The following replacement cost calculation procedure outlines many of the interpretations of the manual which aid the appraiser in arriving at base replacement costs for residential and farm buildings and also for adjusting the base replacement cost for significant variations from class specifications.

The items shown on the property record card and numbered from 1 to 12 correspond to the numbers shown on the Class Specifications and on the additions and deductions schedules. Such numbering aids the appraiser to easily locate the cost of a particular building item which varies from the base specifications.

(1) FOUNDATION - This is a descriptive item for classification purposes, and no additions or deductions are made for variations in foundation walls from base specifications.

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(2) EXTERIOR WALL CONSTRUCTION - The most common exterior wall types for residential buildings and accessory garages are wood, shingle or concrete block, brick, native stone, either solid or veneer. However, it may be found on some buildings that only a portion of the exterior wall is built with specified type of wall construction. In such cases, the variations in construction of the exterior wall, for example, a frame residence with a face brick front, are calculated by the use of the cost items shown for Item 2 on the residential building additions and deductions schedules. For example, one story building with predominently frame exterior walls has a brick front. The cost of $5.25 is added per lineal foot of wall which has brick instead of frame.

(3) ROOF - This is a descriptive item for classification purposes, and no additions or deductions are made for variations in roof or roofing from base specifications.

(4) PORCHES - Porches are indicated on the property record cards by checks indicating whether the porch is open, glazed or enclosed and finished. The dimensions of each porch are shown in the space for calculation of the ground area of the building. The base porch cost is determined by the class of building of which the porch is a part, and also the type of porch. For example, a fair grade building with an open porch area of 120 sq. ft. would take the base cost of $285. If the porch is two stories high the $285 would be multiplied by the factor of 1.4 or $399 which would be the total cost of a two story porch. For multi-story porches use the factor indicated in the additions and deductions schedules.

(5) FLOORS - This is a descriptive item for classification purposes, and no additions or deductions are made for variations in floors from base specifications.

(6) INTERIOR FINISH - The variations finish of interior walls, ceilings and partitions as specified in Item 6a through 6s are expressed in dollars based on story height and the number of square foot ground area of the building. In the case of tile walls in bathrooms or kitchens the cost is for each bathroom or kitchen indicated on the property record card, varying on the number of square foot ground area of the building as shown on Items 6g and 6h.

(7) PLUMBING - Any additions and deductions for variations in plumbing are made on the basis of the type of plumbing fixture, such as three-fixture bathroom, two-fixture toilet room or single plumbing fixture and also the grade of building. For example, for building Class 10.4 (fair grade), the specifications call for one three-fixture bath. If, in a building classified into Class 10.4, a two-fixture toilet room is also present, the add is $155 for such two-fixture toilet room.

(8) LIGHTING - This is a descriptive item for classification purposes and no additions or deductions are made for variations in lighting from base specifications.

(9) HEATING - The heating conversion table is shown under Item 9 for use in making additions and deductions based on the differences in cost between the type of heating specified for the particular building class and the type of heating actually in the building. For example, a Class 10.6 building specifies a steam heating system. If, in a specific Class 10.6, 1 story, 800 square foot ground area building, the heating system is actually a forced circulation system, the deduct is $520. This is found by, (1) locating on the left hand side of the table the type of heating actually in the building, (2) noting the square foot ground area in the building and (3) by extending to the right opposite the type of

heating in the building and the square foot ground area, to a position directly under the type of heating specified for the class and the number of stories in the building. Minus signs indicate deductions. Plus signs indicate additions. For variations in heating in residential buildings above three stories, use factors indicated in the additions and deductions schedules.

(10) BASEMENT - Most building class specifications call for a full basement. Exceptions to this are Classes 10.1, 10.3 and accessory garages. However, many buildings in other classes have either no basement or partial basement and occasionally basements finished off into living quarters. The addition and deduction items under "Basement" cover these variations for individual buildings. In the case of "no basement" in a building which is specified to have a full basement, the deduction is expressed in dollars for the number of square feet of ground area of the building. For example, a building in a class calling for a full basement, has a ground area of 1000 square feet and has no basement. The deduction for this variation is $1400. In the case of a partial basement, the amount to add or deduct, depending upon the base specifications of the particular building class, is expressed in dollars for each 25% of ground area of the building. For example, a building with 1000 square feet ground area, in a class specifying a basement, has only a 50% basement, the deduction if $500.

(11) HALF STORY OR ATTIC - The base specifications for 1 1/2 and 2 1/2 story buildings call for a finished half-story. For example, in case 100% of the half-story of an expandable bungalow type building is not finished for a Class 10.3 (Low Cost Grade) 600 square foot ground area building, the deduction is $1385, as shown by Item 11b. If only half of the half-story is finished then half or 50% is used in entering the table, or a deduction of $695.

Second story living quarters in accessory garages are obtained by using Item 11d, shown in the residential additions and deductions schedules.

The base specifications for all one, two and three story buildings call for an unfinished attic. An addition is therefore necessary where an attic is finished off into rooms. The addition for this variation is expressed in dollars for each 25% of attic area finished off into rooms. For example, if the appraiser indicates that 50% of the usable attic area is finished for a Class 10.6 or average grade, one family dwelling, the addition for a 1000 square foot ground area building would be $630 (Item 11a).

(12) OTHER ITEMS - Miscellaneous items such as corrections for built-in garages and for missing walls in accessory garages, terraces, and elevators are covered under this item. A built-in garage is defined as a garage built into the principal building and covered by the roof of the principal building. In calculating the ground area of the principal building include the built-in garage area in such calculations, then deduct the amount shown in Item 12c as so many dollars for built-in garage area, depending on the grade of the principal building. This compensates for the fact that most built-in garages are not finished in the same manner as the major portion of the principal building.

An attached garage is defined as a garage with one or two walls common with the principal building and with its own garage roof. To determine the replacement cost of the garage, calculate as a detached garage and then deduct the amount shown on Item 12b for the number of lineal feet of missing walls. The variables for this deduction are the wall type of the garage, the grade of the garage, and the number of lineal feet of missing wall in the attached garage.

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A built-in porch is defined as a porch built into the principal building and covered by the roof of the principal building. In calculating the ground area of the principal building include the built-in porch area in such calculations, then deduct the amount shown in Item 12e as so many dollars for square foot of porch area, depending on the grade of the principal building type of porch, and the number of stories of built-in porch.

Terraces are priced according to type of terraces and also the area in square feet of the terrace.

Passenger and freight elevators are found primarily in good grade multi-story apartment buildings. The cost is shown by the number of stories and whether the elevator is primarily designed for passengers or freight service. The cost is expressed in so many thousands of dollars for complete elevator installations (Class 101E).

Example of Replacement Cost Calculation of a Single Family Residence

The following illustrates the application of appraisal standards to the residential buildings (residence and garage) shown on the property record card on the opposite page.

Extending the dimensions of the building, indicated in the ground area section, results in the total ground area of 988 square feet for the house proper and 20 square feet for the porch.

Referring to the base replacement cost schedule for a Class 10.6A dwelling, enter the table at 980 square feet, or the next lower ground area than 988 square feet. The base replacement cost of $11,530 is obtained.

Comparison of the information on the property record card to the base specifications of Class 10.6A indicates that "Additions and Deductions" are required as follows:

Description	Specifications	Property Record Card	Additions and Deductions
Porches	None	20 sq. ft. open	4j + 55
Plumbing	One 3 fix. bathroom	one 3 fix. bathroom one 2 fix. toilet room	7b + 280
Basement	Full - unfinished	full - 50% finished recr.	10c + 540

The total replacement cost is derived from addition of the base replacement cost and the "Additions and Deductions" or $11,530 + 55 + 280 + 540 = $12,405.

The total replacement cost is depreciated according to its effective age (9 yrs.) and the schedule indicated for Class 10.6A, Depreciation Table D-IV, to arrive at the principal building appraisal.

Table D-IV at 9 years indicates the depreciation to be 9%, leaving a net condition of 100 - 9 or 91%. There is no evidence of obsolescence, therefore, the final net condition is also 91%. The "Final Net Condition" is applied against the "Total Replacement Cost" to find the "Principal Building Appraisal" or $12,405 x 91% = $11,289.

To this is added the "Net Appraisal" of the accessory buildings, computed by use of the procedure described above, to find the "Total Building Appraisal" or $11,289 + 923 = $12,212.

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Occupant and Property Address: JOHN H. BROWN
414 HENRY ST.

PARCEL NUMBER _____ Card __ of __ Cards

BUILDING DESCRIPTION AND VALUE CALCULATION

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 10.6A

OBSERVED PHYSICAL CONDITION: Good ✓ Normal ___ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1955 YEARS 9

TYPE AND USE
- 1 Family Dwelling ✓
- 2 Family Dwelling
- 3-6 Family Apartment
- Multi-Family Apartment
- Tourist Court
- Farm House
- Farm Barn

1) FOUNDATION
- Masonry Walls ✓
- Wood or Block Piers

2) EXT. WALL CONSTR.
- Stories
- Frame with Wood, Shingle or Stucco Siding ✓
- Concrete Block or Tile
- Stucco on Block or Tile
- Brick Solid
- Brick, Veneer
- Stone Solid
- Stone Veneer
- Other

ROOF
- Type: Flat ___ Gable ✓
- Hip ___ Gambrel
- Mansard
- Roofing: Prepared Roll
- Built-up Asphalt or T & G
- Wood or Comp. Shingle ✓
- Metal
- Commercial Slate or Tile

4) PORCHES

Porch #	1	2	3
Own Roof			
Main Roof	✓		
Open Porch	✓		
Glazed			
Enclosed & Finished			

STORIES AND ROOMS
- Stories: (1) 1½ 2 2½ 3 4 5
- Number Apts. or Tenements
- Number Rooms 5

5) FLOORS
- Stories
- Softwood
- Hardwood ✓
- Concrete
- Tile Floors: Bath ___ Kitchen ___

6) INTERIOR FINISH
- Walls Unfinished
- Wallboard
- Plaster ✓
- Doors and Trim:
- Softwood ___ Hardwood ✓
- Tile Walls: Bath ___ Kitchen
- Fireplace:
- Natural ✓ Artificial

7) PLUMBING
- None ___ Water Only
- Number Bathrooms (3 Fix't) 1
- Number Toilet Rooms (2 Fix't)
- Number Single Fixtures
- Septic Tank

8) LIGHTING
- Electricity ✓ No Electricity

9) HEATING
- Stove or Unit Heaters
- Hot Air: Pipeless
- Piped (Gravity)
- Forced Circulation
- Steam ✓
- Hot Water or Vapor
- Radiant, Concealed
- Fuel: Coal ___ Gas ✓ Oil
- Oil Burner ___ Coal Stoker

10) BASEMENT
- None ___ Full ✓
- Part %
- Finished:
- Recreation % 50
- Apartment %
- Floor: Dirt ___ Wood
- Cement ✓

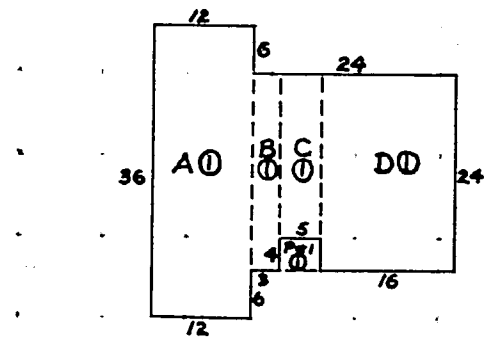
11) HALF STORY OR (ATTIC)
- Unfinished ✓
- Finished %

12) OTHER ITEMS
- Canopy
- Terraces: Type
- Area
- Built-in Garage or Porch:
- Sq. Ft. Ground Area

SPECIAL BUILDING NOTES

GROUND PLAN SKETCH

1 Square = 2 Feet



FRONT

BUILDING AREA CALCULATION

GROUND AREA - SQUARE FEET

FLOOR OR PART	WIDTH	LENGTH	AREA
A ①	12	36	432
B ①	3	24	72
C ①	5	20	100
D ①	16	24	384
Porch ①	5	4	20

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base	988		11530
ADDITIONS AND DEDUCTIONS			
4i	20		+ 55
7k	1		+280
10c	988	50%	+540
TOTAL REPLACEMENT COST			$12405

Cost Conversion Factor
Regional Replacement Cost

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION D-II

a. Effective Age Depreciation 9 %
b. Observed Physical Condition ___ %
c. Total Depreciation (a+b) 9 %
d. Net Condition (100-c) 91 %

OBSOLESCENCE

e. Overimprovement ___ %
f. Underimprovement ___ %
g. Other ___ %
h. Net Condition (100-e+f+g) ___ %

FINAL NET CONDITION (d x h) 91 %

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1946	9	OWNER

MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

DATE	AGE	EXTENT AND COST	SOURCE
		NONE	

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF FARM BARNS AND ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL
G	16.2 A	18	20			CON.	SHG	A		NONE	✓	2 FIX.	G 9	360	775	(1) 7k - (+280)	1055	D-II 87.5	923

SUMMARY OF APPRAISED VALUE

Principal Building Appraisal	11289
Other Principal Buildings Appraisal	
Accessory Buildings Appraisal	923
Total Building Appraisal	12212
Total Land Appraisal	
TOTAL APPRAISED VALUE	$

Measured by J. H. Rivera Date 6/8/55 Classified by L. M. Barnes Date 6/12/55 Extended by M. A. Stone Date 6/14/55 Checked by H. Brown Date 6/12/55

RESIDENTIAL AND FARM PROPERTY RECORD CARD

Example of Residential Building Computations and Entries

Description of Replacement Cost Calculation Procedure for Commercial and Industrial Buildings

The following summary of replacement cost calculation procedures defines many of the interpretations of the manual which aid the appraiser in arriving at base replacement costs for commercial and industrial buildings and also for adjusting the base replacement costs for variations from class specifications.

The items shown in the principal building description section of the commercial and industrial property record card, namely, "Type and Use" and "Structural Frame", are indicated by the appraiser. The number of stories indicated for a particular building is necessary for the proper selection of the base unit cost by the appraiser. The number of units and rooms, under "Interior Finish", assists in classifying the building and also assists the appraiser in arriving at the average number of rooms per apartment, particularly for buildings classified into combination store and apartments, and in multi-family apartment building classes. The total number of rooms, divided by the number of units, gives to the appraiser the average number of rooms per apartment.

The items shown on the property record card and numbered from 1 to 12 correspond to numbers shown on the additions and deductions schedules. Such numbering aids the appraiser to locate the cost of a particular variation from base specifications. The exact item number, such as Item 1c, is shown in the replacement cost calculation section of the property record card so that the appraiser may easily check the source of the addition and deduction variation.

The additions and deductions schedules for commercial and industrial buildings represent costs of complete items or systems indicated, unless otherwise mentioned. For variations from the base specifications, deduct the specified item or system and add the cost of the existing item or system. To save space on a property record card, the difference between the existing system and that specified is shown on the property record card. However, in such case, the appraiser indicates the method of arriving at the difference between the specified item and the item actually existing. This is done by showing, for example, Item 1c minus (-) 1a. The difference in this case is 60 cents, and is posted to the replacement cost section of the card in the column labeled "Unit Cost".

(1) FOUNDATION - Few variations are found in foundation walls, except possibly in the low cost grade industrial buildings and sheds. These variations are mainly in the nature of posts or piers instead of a wall type foundation. Additions and deductions for this item are shown in the commercial and industrial additions and deductions schedules under Item 1.

(2) EXTERIOR WALL CONSTRUCTION - Under this item, three major variations are included: variations in existing wall materials, store fronts and structural frame of buildings. For variations in exterior wall material, the cost is shown as the difference between the wall material displaced by the existing wall materials. For example, the base specifications for a low cost one-story store, Class 20.1, calls for wood frame walls. However, the front of the building may be partly brick. By looking down the items on the left hand side of the cost schedules of existing wall material to Item 2j, brick, then reading across to the type of wall material displaced, wood, the price of 64 cents is readily obtained. This cost of 64 cents is expressed as the cost per square foot of wall area. The number of square feet of brick area is posted to the replacement cost calculation section of the card for multiplication by the unit cost of 64 cents. Similar wall differences on a lineal foot basis are worked out in Items 2x, 2y and 2z. Store fronts Items 2bb - 2dd are also expressed as the difference between the store front type specified and the store front existing on the building. The cost for store fronts is expressed in dollars per lineal foot of store front one story heights. When more than one

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story high, the store front cost is multiplied by the number of stories. Differences in structural frame, Items 2ee - 2kk, are expressed in so many cents per cubic foot of the building. This applies primarily to industrial type buildings where the base unit costs are also expressed in dollars per cubic foot.

(3) ROOF - The roof item on the property record cards is divided into roof construction and the type of roofing on the building. Similarly, the additions and deductions costs, Items 3a - 31, are divided into these two categories.

It is necessary for the appraiser to watch closely for each item on additions and deductions schedules to see exactly in what unit the cost correction is expressed. For example, most corrections are expressed in dollars per square foot of ground area. However, cost per lineal foot, cost per cubic foot, and cost each for a complete unit of some building items are also used. Therefore, care should be used when selecting the proper addition and deduction cost, that the proper unit is also used and posted to the property record card in the column provided for area or quantity.

(4) FLOORS - Under this item on the property record card, two main divisions are considered; floor construction, and the type of finish flooring material. A similar division between floor construction and finish flooring is shown on the additions and deductions schedules, Items 4a - 4o. For variations from flooring specified for a particular class, it is necessary to deduct the specified type of system and add the cost of the existing type of floor construction or finished flooring.

(5) INTERIOR FINISH - This item on the property record card is divided primarily into "Developed Area" and "Partitions". By "Developed Area" is meant the area between plain walls of the building developed into space suitable for apartments, hotels, offices, lodge, theatre or finished loft space. This includes the cost of partitioning, finishing walls and ceilings, but does not include plumbing or heating. The total square feet of floor area developed into the various types of interior finish are indicated on the card. The prices for such developed area are shown in Item 5a - 5i and, as mentioned above, are expressed as the cost per square foot of floor area developed.

For example, in a Class 22.1, three-story combination store and apartment, with the upper two floors of the building developed into an average of three room apartments, the unit developed area cost is $2.50 per square foot floor area (Item 5a). This unit cost is multiplied by twice the ground area of the building, or the floor area of the second and third floor, resulting in the total addition for the apartment developed area. In some cases, the floor area may be developed partially into apartment space and partially into office space. In this case, the total floor area for each development shown on the card is used to provide for the correction to the base specification. Under "Partitions", the cost is shown on a per lineal foot basis for the length of partitions. This addition or deduction is used primarily on buildings where the "Developed Area" addition is not used. The variations included are the type of partition, such as masonry or wood stud, as well as the type of finish on the partition, such as without plaster, and plastered on one side or two sides.

(6) PLUMBING - The specifications of most commercial and industrial buildings do not include plumbing in the base costs because of the wide variations in plumbing in individual buildings. Therefore, in most commercial building classes, plumbing must be added to the base replacement cost. The plumbing items are divided first, by the grade of building and second, by the type of plumbing fixture. The costs are all expressed in a unit cost of so many

dollars, Items 6a to 6i, to be added or deducted depending on class specifications, for three fixture bathrooms, two-fixture toilet rooms, single plumbing fixtures, public toilet fixtures or water or sewer connections.

(7) ELECTRIC WIRING - This item is a classification item and no additions or deductions are made for variations in electric wiring from the base specifications.

(8) HEATING - The base heating cost is added on a square foot basis or a cube foot basis, whichever is more convenient. In using the square foot basis for heating costs, an additional percentage factor is added for story heights above one story. The square foot ground area heating unit cost for a one-story building includes the heating plant and the first floor distribution system; consequently, the addition for heating more stories is not in direct proportion to additional stories. The percentage factor increase of the unit cost for such additional stories is shown under Item 8f in the schedule of additions and deductions. For example, Item 8d, ground area square feet 4000, the base cost is 85 cents for the one-pipe steam system.

However, if the building had three stories, the addition is 85 cents multiplied by 2 or $1.70. For commercial classes which have heating specified, corrections are made, plus or minus, for the differences between the heating system specified and the heating system actually existing in the building. For heating on cube foot basis, no correction is necessary for story height as the cube takes this into consideration.

(9) BASEMENT - The unit cost for variations in basement specifications are expressed as so much per square foot of ground area of the building. The wall ratio of the building, which is an indication of its size, is also considered in arriving at the proper basement variation cost. For example, a Class 20.1 one story store building calls for no basement in the base specifications. The first floor specifications for this building call for wood construction. Therefore, Item 9b is the proper item number. If the wall ratio of the building is 12, the proper unit cost to add for the basement is $2.00 multiplied by the number of square feet of ground area in the building.

(10) AIR CONDITIONING - Costs for the two types of air-conditioning, Items 10 and 10b, washed air-conditions and refrigerated air-conditioning, aré shown both on a square foot floor area basis and on the building cube basis. The costs are expressed in both ways since, in many buildings, the portion of the building which is air-conditioned may be limited to only certain floors or to portions of floors.

The air-conditioning referred to above is concerned with built-in air-conditioning and not individual conditioning units which may be the property of tenants in commercial and industrial buildings.

(11) FIRE PROTECTION - Costs for sprinkler systems, fire hose connections, and fire pumps are included under Items 11a - 11c. All are expressed as so many dollars each, with the exception of the sprinkler system which is expressed per square foot of floor area.

(12) BUILDING ELEVATORS - Building elevators are expressed in so many dollars each, depending upon whether the elevator is freight, passenger or hand elevator, and the number of stories actually served. The basement is considered a floor, i. e., two story and basement is indicated as three floors when arriving at the number of floors served.

(13) OTHER ITEMS - Items 13a - 131, which will be entered in the "Other Items and Notes" section of the property record card, covers miscellaneous building items, such as hotel, store or theatre marquees, canopies, paving, loading docks and other items. Class 101, which includes many items of miscellaneous building equipment, may be referred to.

The appraiser indicates each special building item and describes it in the space provided on the card for special building notes; very large complicated buildings may require the use of supplemental sheets. The appraiser then locates the cost of the specific item, either in the additions or deductions sheets, or by reference to Class 101 "Other Items Classed as Real Property". Care is necessary to assure that the proper unit (area, cube or quantity) is used in extending the cost of such miscellaneous items.

Summary Steps on use of Building Replacement Cost Schedule

Follow these simple summary steps to review the use of the manual in determining the replacement cost for any building in any class.

Look for the building class noted on the property record card and turn to the corresponding building class in the manual to find the replacement cost schedule for the building being valued.

For example, assume a commercial and industrial property record card describes a building as follows:

(a) The building is common brick with face brick front; combination store and apartment; three stories in height and 30 feet by 70 feet in size.

(b) The property record card shows that the building is of the type and construction that is properly classified as Class 22.3.

(c) The ground area of the building is 2,100 square feet. The perimeter (70 + 30 + 70 + 30) adds up to 200 feet. The wall ratio therefore is 2,100 divided by 200 equals 10 1/2. Use the next higher wall ratio figure shown in the cost schedule, or 12 wall ratio.

Step 1. Turn to the page with the building specifications for Class 22.3, Combination Stores, Apartments, Offices, etc., 2 to 4 stories - Average Grade.

Step 2. Locate proper exterior wall construction, type C, and read across to the column having the indicated wall ratio of 12 for this building.

Step 3. Read down the wall ratio 12 column until in line with unit replacement cost for the three story building, namely $21.56 per square foot ground area.

Step 4. Multiply the 2,100 square feet ground area by $21.56 and obtain the present base replacement cost (new) of the building, namely 2,100 multiplied by $21.56 equals $45,276.

Step 5. Compare the building description items checked on the property record card against the base specifications of building Class 22.3. Indicate on the property record card which varies from the base specifications by designating an addition (+) or a deduction (-).

Inspection of the property record card shows that the building differs from the base specifications for the class in that it has on the first floor a wood stud partition plastered on two sides across the store (30') and a two-fixture toilet

room. The second and third floors contain six apartments with an average of four rooms in each apartment. Each apartment contains a three-fixture bath and a kitchen sink.

As there is no heating in the base specifications for building Class 22.3, it is necessary to add for the steam heat indicated on the card.

Step 6. Refer to the additions and deductions schedules for commercial and industrial buildings to determine the cost for items in the building which vary from the base specifications.

By reference to the base unit costs for Class 22.3, and the additions and deductions schedules, the replacement cost is calculated as follows:

Base Replacement Cost

Item Number	Area or Quantity	Unit Cost	Total
Base Cost	2100	$21.56	$45,276
	Additions and Deductions		
(5a) add apartment developed area (2100 x 2)	4200 sq. ft.	2.86	+ 12,012
(5n) add stud partition plastered	30 lin. ft.	8.06	+ 242
(6a) add three-fixture bath	6	630.00	+ 3,780
(6b) add two-fixture toilet	1	370.00	+ 370
(6c) add one-fixture sink	6	220.00	+ 1,320
(8e) add heat (8f) (1.00 x 2)	2100 sq. ft.	2.00	+ 4,200
	Total Replacement Cost		$67,200

These additional steps, described in detail in later sections of this manual, complete the appraisal of the property.

Step 7. Obtain the depreciation percentage based upon the type and effective age of the building. Multiply the replacement cost by the net depreciation percentage to obtain the depreciated appraisal value of the building.

Step 8. Follow the same steps in determining the net depreciated value of other principal and any accessory buildings on this parcel of land.

Step 9. Add the land appraisal value to the depreciated building value to obtain the total land and building appraisal value.

Applying Depreciation and Obsolescence Percentage to Arrive at Appraisal Value

The total replacement cost shown in the preceding example is the total replacement cost (new) of the particular building. Depreciation and obsolescence percentage allowances are determined on the basis of the indicated effective age and the building location.

The age or physical depreciation, and in some cases economic obsolescence percentage allowances, are determined from the recorded information on the property record card as well as standards developed to meet local conditions. The total replacement cost multiplied by the final net condition percentage gives the net depreciated value of the building. The standards and procedures for applying physical depreciation and economic or location obsolescence are described in detail in the following section.

The net depreciated principal building value is entered in the space on the property record card for the "Summary of Appraisal Value". The appraisals of any additional principal buildings or accessory buildings on the lot or tract, are also entered in this section of the card. The sum of all the building appraisals gives the total appraisal of all buildings on the lot or tract of land. The sum of the total building appraisal and the total land appraisal gives the total appraisal value of the parcel.

Example of Replacement Cost Calculation of a Commercial Building

The following illustrates the application of appraisal standards to the commercial building shown on the property record card on the opposite page.

In order to select the applicable base unit replacement cost, it is first necessary to calculate the "Wall Ratio" of the building. This is done by dividing the perimeter (lineal feet of outside wall) into the ground area of the building or 3546 square feet ground area divided by (48 + 66 + 54 + 60 + 8) or 236 lineal feet of perimeter. This calculation results in a wall ratio of 15.

To select the proper base unit replacement cost refer to Class 22.3C, "Base Cost in Dollars Per Square Foot Ground Area". There is no wall ratio of 15; therefore, it is necessary to use the next higher wall ratio of 16 or the unit cost of $18.75. This method of wall ratio selection insures the use of the next lower unit cost in all cases where the wall ratio falls between cost schedules. Multiply the ground area by the unit cost, or 3546 x $18.75 = $66,487 base replacement cost.

Comparison of the information on the property record card to the base specifications of Class 22.3C indicates that "Additions and Deductions" are required as follows:

Description	Specifications	Property Record Card	Additions and Deductions
Exterior walls	Brick or Stone Average Grade Store Front	Brick with 980 sq. ft. carrara glass	2b + 8,114
		5 sq. ft. glass block	2k + 27
		Low cost store front	2bb - 1,427
Interior Finish	Plastered Walls and Ceilings, no Partitions	3546 sq. ft. apartment area	5a +10,142
		3546 sq. ft. small office area	5c + 8,333
		64' wd. part., plastered 2 sides	5n + 516
Plumbing	Sewer and Water Connections only	Sewer and water	
		4-3 fix. baths	6a + 2,520
		6-2 fix. toilets	6b + 2,220
Basement	None	Full	9b + 8,114
			$38,559

The total replacement cost is derived from addition of the base replacement cost and the "Additions and Deductions". The total of the additions and deductions is then added to the base replacement cost resulting in a total replacement cost for the building of $105,046.

The total replacement cost is depreciated according to the effective age of the building (40 years) and the depreciation table D-V which is indicated for Class 22.3C. The depreciation percentage is 37%. The "Depreciation Net Condition" is 100 -37 or 63%.

Since the building is three stories high and has no elevator, obsolescence is applied as described in the "Procedures and Guides Governing Building Obsolescence" section of this manual. The obsolescence due in this case is 20%. The "Obsolescence Net Condition" is 100 - 20 or 80%.

The "Final Net Condition" is obtained by multiplying the "Depreciation Net Condition" (63%) by the "Obsolescence Net Condition" (80%) or .63 x .80 = 50.4%, or rounded off to the nearest full digit, 50%.

The "Final Net Condition" is applied against the "Total Replacement Cost" to find the "Principal Building Appraisal" or $105,046 x .50 $52,523.

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Occupant and Property Address: REXALL DRUGS
846 MAIN ST.

Parcel Number _____ Card ___ of ___ Cards

BUILDING DESCRIPTION AND VALUE CALCULATION

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 22.30

OBSERVED PHYSICAL CONDITION: Good ✓ Normal ___ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1945 YEARS 40

TYPE AND USE

Combination Stores and Apt. ✓ Offices ✓ Loft ___
Hotel ___ Store ___
Office ___ Bank ___
Theatre ___ Garage ___
Gas Stat. ___ Indust. ___
Warehouse ___ Greenhouse ___
Hospital ___
Other ___

STRUCTURAL FRAME

	Wood	Steel	Conc
Columns			
Main Beams	✓		
Joists	✓		
Trusses			
Girder			

Height in Stories ___

1) FOUNDATION

Masonry ___ ✓
Wood or Block Piers ___

2) EXT. WALL CONSTR.

	Frt.	Side	Rear
Wood:			
Lined			
Unlined			
Brick	✓	2	✓
Concrete Block			
Stone			
Concrete			
Corr. Iron			
Other			

Store Fronts: (Lin. feet)
Wood or Low Cost metal set 50
Ave. grade metal set ___
Good grade metal set ___

3) ROOF

Roof Construction:
Wood ___ ✓ Steel Deck ___
Reinforced Concrete ___

Roofing:
Prepared Roll ___ Shingle ___
Built-up ✓ Corr. Metal ___
Other ___

4) FLOORS

Floor Construction:			Floors
Wood			
Concrete on Grade			✓
Reinforced Concrete			
Finish. Flooring:	1st	2nd	Above
Wood or Equiv.	✓	✓	✓
Other			

5) INTERIOR FINISH

Developed Area: (sq. ft.)
Apt. Floor Area 3546 Type ___
No. Units 4 No. Rms. 16
Office Floor Area 3546 Type SA
Other Area ___ Type ___

Partitions:	Lin. ft.	Hgt.
Wood stud	64	12
Plas. 2 side	ALL	
Masonry		
Plas. side		

Firewalls: Lin. ft. ___ Hgt. ___

6) PLUMBING

Utility Connections:
Sewer ___ ✓ Water ___ ✓
Fixtures: Single ___
2 Fix't 6
3 Fix't 4

7) ELECTRIC WIRING

Conduit ✓ Power Wiring ___

8) HEATING

None ___ Stove ___
Hot Air:
Pipeless ___ Grav. ___ Forced ___
Fan Units ___
Steam or Hot Water ___ ✓
Stoker ___ No Boiler ___

9) BASEMENT

None ___ Full ✓ Height 9
Partial: ___ Sq. Ft.
Finished ___ Sq. Ft.
Floor: Dirt ___ Wd. ___ Conc. ✓

10) AIR CONDITIONING

Washed ___
Refrigerated ___
Full floor area NONE
No. of floors ___
Partial: Floor area ___

11) FIRE PROTECTION

Sprinkler (Flr. area) NONE
Fire Hose Stat: No. ___ Size ___
Fire Pumps ___

12) BUILDING ELEVATORS

Type	Number	Cap.	Floors
Passenger	NONE		
Freight			

OTHER ITEMS AND NOTES: 2b - CARRARA GLASS - 980 ¢
2h - GLASS BLOCK - 5 ¢

WALL RATIO CALCULATION

Ground Area 3546 Perimeter 236 Wall Ratio 15

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1905	50	OWNER

MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

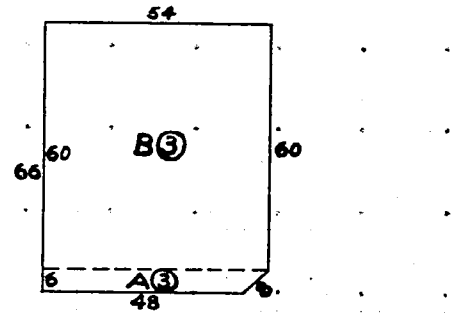
DATE	AGE	EXTENT AND COST	SOURCE
1951	4	MAJOR REMOD. - 1ST FLR.; MINOR REMOD. - 2ND AND 3RD FL. $20,000	OWNER

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL

GROUND PLAN SKETCH

1 Sq = 4'



FRONT

BUILDING AREA AND CUBE CALCULATIONS

GROUND AREA - SQUARE FEET

Floor or Part	Width	Length	Area	Height	Cubic Feet
A③	51 AV.	6	306		
B③	54	60	3240		
		Total Area	3546	Total Cube	

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base	3546	18.75	66487

ADDITIONS AND DEDUCTIONS

2b	980	8.28	+8114
2h	5	5.42	+ 27
2bb	50	28.55	-1427
5a	3546	2.86	+10142
5c	3546	2.35	+8333
5n	64	8.05	+ 516
6a	4	630	+2520
6b	6	370	+2220
9b	3546	1.70	+8114

TOTAL REPLACEMENT COST $105,046

Cost Conversion Factor

Regional Replacement Cost

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION D-X

a. Effective Age Depreciation 37 %
b. Observed Physical Condition ___ %
c. Total Depreciation (a+b) 37 %
d. Net Condition (100 - c) 63 %

OBSOLESCENCE

e. Overimprovement ___ %
f. Underimprovement ___ %
g. Other ELEVATOR 20 %
h. Net Condition (100-e+f+g) 80 %
i. FINAL NET CONDITION (dxh) 50 %

SUMMARY OF APPRAISED VALUE

Principal Building Appraisal	52,523
Other Principal Buildings Appraisal	
Accessory Buildings Appraisal	
Total Building Appraisal	52,523
Total Land Appraisal	
TOTAL APPRAISED VALUE	$

Measured by L.M. Johnson Date 9/14/55 Classified by M.A. Bates Date 9/20/55 Extended by K.A. Brown Date 9/24/55 Checked by _____ Date _____

COMMERCIAL AND INDUSTRIAL PROPERTY RECORD CARD

Example of Commercial Building Office Computations and Entries

Example of Replacement Cost Calculation of an Industrial Building

The following illustrates the application of appraisal standards to the industrial building shown on the property record card on the opposite page.

In order to select the applicable base unit cost, it is necessary to determine the "Wall Ratio" of the building. This is done by dividing the perimeter (line or feet of outside wall) into the ground area of the building or 10,000 ÷ (100 + 100 + 100 + 100) or 400 = 25.

To select the proper unit cost refer to Class 41.3D "Base Cost in Dollars Per Square Foot Ground Area" at the wall ratio of 25 and height of 14 feet. The cost thus selected is multiplied by the ground area to get the base unit cost of the building or 10,000 x $4.37 = $43,700.

Comparison of the information on the property record card to the base specifications of Class 41.3D indicates that additions and deductions are required as follows:

Description	Specifications	Property Record Card	Additions and Deductions
Interior Finish	None	600 sq. ft. small office	5c + 1410
Plumbing	Water & Sewer connections with one water tap	Water and Sewer connections 2-2 fixture toilets	51 + 857 6b + 740
Heating	None	Hot water - no boiler	8e-81 + 7600
Basement	None	4,000 sq. ft.	9b + 6000
Fire Protection	None	10,000 sq. ft. sprinkled	11a + 2200
Other Items	None	960 sq. ft. canopy 960 sq. ft. loading dock	13b + 1325 13g + 2006

The total replacement cost is derived from addition of the base replacement cost and the "Additions and Deductions" or $43,700 + 1,410 + 857 + 740 + 7,600 + 6,000 + 2,200 + 1,325 + 2,006 = $65,838.

The total replacement cost is depreciated according to the effective age of the building (8 years) and the schedule indicated for Class 41.3D (D-V) to arrive at the principal building appraisal.

Table D-V at 8 years indicates the depreciation to be 7%, leaving a net condition of 100 - 7 or 93%. There is no indication of obsolescence, therefore, the "Final Net Condition" is also 93%. The "Final Net Condition" is applied against the "Total Replacement Cost" to find the "Principal Building Appraisal" or $65,838 x .93 = $61,229.

Occupant and Property Address: SEABOARD MACHINE WORKS
918 LOCUST ST.

Parcel Number _____ Card ___ of ___ Cards

BUILDING DESCRIPTION AND VALUE CALCULATION

PRINCIPAL BUILDING DESCRIPTION

BUILDING CLASS: 41.30

OBSERVED PHYSICAL CONDITION: Good ___ Normal ✓ Fair ___ Poor ___

EFFECTIVE AGE: DATE 1955 YEARS 8

TYPE AND USE

Combination Stores and Apt. ☐ Offices ☐ Loft ☐
Hotel ___ Store ___
Office ___ Bank ___
Theatre ___ Garage ___
Gas Stat. ___ Indust. ✓
Warehouse ___ Greenhouse ___
Hospital ___
Other ___

STRUCTURAL FRAME

	Wood	Steel	Conc
Columns			
Main Beams	✓		
Joists	✓		
Trusses			
Girder			

Height in Stories: 1

1) FOUNDATION

Masonry ___
Wood or Block Piers ✓

2) EXT. WALL CONSTR.

	Frt.	Side	Rear
Wood: Lined			
Unlined			
Brick	✓	2	✓
Concrete Block			
Stone			
Concrete			
Corr. Iron			
Other			

Store Fronts: (Lin. feet)
Wood or Low Cost metal set ___
Ave. grade metal set ___
Good grade metal set ___

3) ROOF

Roof Construction: Wood ☐ ✓ Steel Deck ___ Reinforced Concrete ___
Roofing: Prepared Roll ☐ Shingle ___ Built-up ☐ ✓ Corr. Metal ___ Other ___

4) FLOORS

Floor Construction: Floors
Wood ___
Concrete on Grade 4000 ☐
Reinforced Concrete 6000 ☐
Finish Flooring: 1st 2nd Above
Wood or Equiv. ___
Other UNFIN.

5) INTERIOR FINISH

Developed Area: (sq. ft.)
Apt. Floor Area ___ Type ___
No. Units ___ No. Rms. ___
Office Floor Area 600 Type SM.
Other Area ___ Type ___

Partitions: Lin. ft. Hgt.
Wood stud ___
Plas., side ___
Masonry BRK 80 12
Plas., side ___
Firewalls: Lin. ft. ___ Hgt. ___

6) PLUMBING

Utility Connections: Sewer ☐ ✓ Water ☐ ✓
Fixtures: Single ___
2 Fix't 2
3 Fix't ___

7) ELECTRIC WIRING

Conduit ☐ Power Wiring ☐ ✓

8) HEATING

None ___ ☐ Stove ___
Hot Air: Pipeless ☐ Grav. ☐ Forced ☐
Fan Units ___
Steam or Hot Water ___ ✓
Stoker ___ ☐ No Boiler ___ ✓

9) BASEMENT

None ☐ Full ☐ Height 10
Partial: 4000 Sq. Ft.
Finished ___ Sq. Ft.
Floor: Dirt ☐ W.J. ☐ Conc. ☐ ✓

10) AIR CONDITIONING

Washed ___
Refrigerated ___
Full floor area ___
No. of floors ___
Partial: Floor area ___

11) FIRE PROTECTION

Sprinkler (Flr. area) 10000 ☐
Fire Hose Stat: No. ___ Size ___
Fire Pumps ___

12) BUILDING ELEVATORS

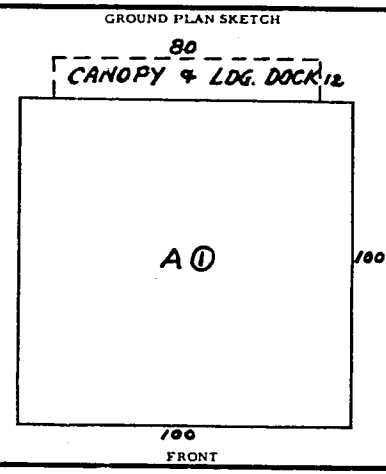
Type	Number	Cap.	Floors
Passenger			
Freight			

OTHER ITEMS AND NOTES: 13b - CANOPY - 960 ☐
13g - CONC. LOADING DOCK - 960 ☐

WALL RATIO CALCULATION

Ground Area	Perimeter	Wall Ratio
10000	400	25

GROUND PLAN SKETCH



BUILDING AREA AND CUBE CALCULATIONS

GROUND AREA - SQUARE FEET

Floor or Part	Width	Length	Area	Height	Cubic Feet
A ①	100	100	10000	14	
		Total Area	10000	Total Cube	

BUILDING VALUE CALCULATION

ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base	10000	4.37	43700

ADDITIONS AND DEDUCTIONS

5c	600	2.35	+1410
5l	80	10.71	+857
6b	2	370	+740
8a+8l	10000	.76	+7600
9b	40	1.50	+6000
11a	10000	.22	+2200
13b	960	1.38	+1325
13g	960	2.09	+2006

TOTAL REPLACEMENT COST $65838

Cost Conversion Factor

Regional Replacement Cost

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION D-V

a. Effective Age Depreciation 7 %
b. Observed Physical Condition ___ %
c. Total Depreciation (a+b) 7 %
d. Net Condition (100 - c) 93 %

OBSOLESCENCE

e. Overimprovement ___ %
f. Underimprovement ___ %
g. Other ___ %
h. Net Condition (100-e+f+g) ___ %
i. FINAL NET CONDITION (dxh) 93 %

SUMMARY OF APPRAISED VALUE

Principal Building Appraisal	61229
Other Principal Buildings Appraisal	
Accessory Buildings Appraisal	
Total Building Appraisal	61229
Total Land Appraisal	
TOTAL APPRAISED VALUE	$

DATE OF CONSTRUCTION

DATE	AGE	SOURCE
1947	8	OWNER

MAJOR ALTERATIONS OR ADDITIONS ON PRINCIPAL BUILDING

DATE	AGE	EXTENT AND COST	SOURCE
		NONE	

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF ACCESSORY BUILDINGS

BLDG. IDENT.	CLASS NO.	DIMENSIONS WIDTH	DEPTH	HEIGHT	FOUNDATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACEMENT COST	NET COND. %	NET APPRAISAL

Measured by L. M. Johnson Date 9/14/55 Classified by M. A. Bates Date 9/20/55 Extended by K. A. Brown Date 9/24/55 Checked by _____ Date _____

COMMERCIAL AND INDUSTRIAL PROPERTY RECORD CARD

Example of Industrial Building Office Computations and Entries

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Procedure for Checking Office Operations

Following are summary steps and procedure 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 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 computation.

(3) Compare the building specifications against the items checked or written on the property record card by appraiser; check for any addition or deduction variations from the base replacement cost.

(4) Refer to the appropriate schedule of additions or deductions 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 and deduction extensions to check the total replacement cost of the building.

(6) Check 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 economic obsolescence allowances in the same manner.

(7) Multiply the total building replacement cost by the final net condition percentage to obtain the net building appraisal.

(8) Check the appraisal calculations of other principal and accessory buildings in the same manner as the principal building on the lot or tract.

(9) Check the entries of the principal building and other principal and accessory building values in the "Summary of Appraised Value"; 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

Procedure for Depreciation and Obsolescence Deductions

As previously indicated, the replacement cost (new), sales, income and other approaches are given appropriate weight in making appraisals of different properties. These factors and opinions of value are given consideration in determining the final property valuations.

The initial step in wholesale building appraisal is the field inspection and classification of individual properties and the determination of the replacement cost as of the assessment date. The replacement cost (new) of any building is considered the maximum limit of value. Allowances for depreciation and obsolescence are made from such replacement cost to cover the estimated losses in value for all causes from the date of construction to the assessment date.

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 through wear and aging and the effects of the elements. Unless a normal, reasonable amount of maintenance is provided, the building and 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."

In addition to physical deterioration, there are other losses in value which are just as real as physical depreciation but which are the result of entirely different causes. These latter are classified under the term "economic obsolescence."

Physical depreciation factors are applied to the replacement cost to arrive at a sound value. Then any factors for special economic obsolescence are applied to the sound value to arrive at the current fair value.

In actual assessment practice, the above process is simplified by working the problem in percentages and arriving at a final net condition percentage which, when applied to the replacement cost, gives the current fair value.

Specific guides and examples for determining the percentage allowance attributable to normal and special physical deterioration or to building enhancement resulting from major alterations and modernization are set out under the following headings:

(1) Normal depreciation due to age.

(2) Enhancement due to major alterations, additions or modernization, determining effective age depreciation.

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.

The following tabulation shows the percentage depreciation for effective age of different classes of buildings. The depreciation table to be used for a specific building class is indicated on the bottom of each building class specification and replacement cost schedule.

As described previously, determination of the actual and effective age of each building is made in the field, and the information with respect to the same is recorded on the individual property record cards for the respective buildings.

Effective Age Depreciation Deduction Tables

The following tabulation shows the 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 Sheds	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%

The maximum depreciation due to effective age will be limited to 70 per cent where the building is in normal condition, considering its age, to a maximum of 80 per cent when the economic value has diminished to the point where the building has a very limited use due to its condition, and to a maximum of 90% where the economic value has diminished to the point where the building is no longer useable. The total accrued depreciation in excess of 70 per cent applies where an abnormal physical or economic condition exists which requires special depreciation allowances or economic obsolescence above normal structural depreciation up to a maximum of 90%.

Enhancement Due to Major Alterations, Additions or Modernization

In any case where major alterations, additions or modernization has been made in a building, the nature and extent of such alteration or modernization is noted on the property record card at the time of the field examination. Such alterations and additions may include major additions or improvements in the way of exterior architectural design, interior partition arrangement, interior trim, heating, plumbing, light 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 alteration 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. Then subtract this amount 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 $4,000. The building replacement cost was calculated as $20,000. The "effective age" of the building is determined as follows:

$$\text{Effective Age} = \frac{\text{Actual Age x Cost of Remodeling}}{\text{Reproduction Cost}}$$

$$\text{Effective Age} = 20 - \frac{(20 \times 4{,}000)}{(\ 20{,}000\ )} \quad 20 - \frac{(80{,}000)}{(20{,}000)} \quad 20 - 4 = 16 \text{ yrs. effective age}$$

(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:

$$\text{Effective Age} = \frac{\text{Actual Age x Replacement Cost Before Remodeling}}{\text{Replacement Cost After Remodeling}}$$

$$\text{Effective Age} = \frac{32 \times 90{,}000}{125{,}000} = \frac{2{,}880{,}000}{125{,}000} = 23 \text{ yrs. effective age}$$

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		
.20% x 10 years	=	2.
.80% x 50 years	=	40.
Total		42 years effective age of building

The following is a uniform guide based on method 3, for estimating the effective age of a building where the approximate percentage of the building alterations or 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 Uniform Guide for Estimating Effective Age

Follow these simple summary steps to use the table on the next page titled, "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.

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 35	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 "Observed Physical 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. "Good" condition indicates good physical condition and no maintenance is currently needed; "Normal" condition indicates that only minor maintenanc 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" 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 of the building must be considered. A very old building must be in conspicuously poor condition to be classified as in poor physical condition.

For buildings in "fair" physical condition, a special depreciation allowance of 5% is made in order to increase the depreciation allowance for the actual or effective age of the building. For buildings in "poor" physical condition, a special depreciation allowance of 10% is made.

The special depreciation percentage deduction is posted to the property record card in the "Depreciation and Obsolescence" section of the card labeled "b", "Observed Physical Condition". The special depreciation deduction is added to the effective age depreciation deduction and the net condition percentage of the building is obtained therefrom. In no case, however, shall the total physical and special depreciation exceed 80%.

As described previously, determination of the effective age and physical condition of each building is made in the field, and the information with respect to the same is recorded on the individual record cards for the respective buildings.

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 10.6D.

(b) Find the depreciation table applicable by reference to the bottom of the page showing specifications and replacement costs for Class 10.6D. 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 "Observed Physical Condition" section of the property record card, particularly buildings checked in fair or poor physical condition.

(e) Enter the depreciation table number and the percentage depreciation from the effective age depreciation table applicable for the building class and wall type and any special depreciation for buildings in fair or poor physical condition in the appropriate spaces in the "Depreciation and Obsolescence" section of the property record card.

When the above 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:

(a) Effective Age Depreciation (D-V)	37%
(b) Observed Physical Condition (poor condition)	10%
(c) Total Depreciation (a & b)	47%
(d) Net Condition (100% - 47%)	53%

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 and the net condition of the barn, garage, shed or other accessory buildings are entered in the proper spaces 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.

Residential Building (Class 10. 3A)
Effective Age 25 yrs.
Poor physical Condition
Table D-III

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION

a. Effective Age Depreciation 31 %
b. Observed Physical Condition 10 %
c. Total Depreciation (a+b) 41 %
d. Net Condition (100-c) 59 %

OBSOLESCENCE

e. Overimprovement ____ %
f. Underimprovement ____ %
g. Other ____ %
h. Net Condition (100-e+f+g) ____ %

FINAL NET CONDITION
(d x h) ____ %

Combination Store & Apartment (Class 22. 3D)
Effective Age 15 yrs.
Good Physical Condition
Table D-V

DEPRECIATION AND OBSOLESCENCE

DEPRECIATION

a. Effective Age Depreciation 13.5 %
b. Observed Physical Condition ____ %
c. Total Depreciation (a+b) 13.5 %
d. Net Condition (100-c) 86.5 %

OBSOLESCENCE

e. Overimprovement ____ %
f. Underimprovement ____ %
g. Other ____ %
h. Net Condition (100-e+f+g) ____ %

FINAL NET CONDITION
(d x h) ____ %

The following example shows the depreciation entries for farm barns and accessory buildings. These entries are made in the section of the card headed "Descriptions, Replacement Cost and Appraisal of Farm Barns and of Accessory Buildings".

The letter "P" for poor physical condition is shown for accessory buildings along with the actual age.

The example below is for a Class 16. 1A accessory garage which is 15 years old and is checked in poor physical condition.

DESCRIPTIONS, REPLACEMENT COST AND APPRAISAL OF FARM BARNS AND ACCESSORY BUILDINGS

FOUN-DATION	FLOOR	ROOF	WALLS	MISSING WALL	HEAT	LIGHT	PLBG.	AGE	AREA	UNIT COST	ADDS AND DEDUCTS	REPLACE-MENT COST	NET COND. %	NET APPRAISAL
								P 15					59	

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PROCEDURE AND GUIDES GOVERNING BUILDING OBSOLESCENCE

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 use classes of commercial buildings caused by oversupply and/or economic conditions.

To give effect to these basic economic factors, it is important to provide uniform guides by which these factors can be applied to the properties affected. The majority of such cases are covered 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 and are determined 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 plus the land value of the lot or tract on which the buildings are located give the value which reflects all important conditions and factors affecting property value.

Because of the varying conditions throughout the state, the following suggested guides for establishing obsolescence may be varied 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 "location obsolescence." Determination of the extent of location 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 location obsolescence, if any, applies, are determined for the individual assessment jurisdiction by the appraiser.

Specific residential, tenement or apartment buildings located near dump yards, near plants or mills where residential buildings are subjected to obnoxious odors, vapors, noise or dust, or located in low, swampy or flood locations, are given a location obsolescence allowance of from 5 to 20 percent.

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			Percentage Obsolescence
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 income taxes, shortage of domestic help, and inability to convert the structure to more economic use because of zoning restrictions or structural design of the building.

Examination of typical cases and conditions of functional 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 following is a suggested guide for establishing obsolescence caused by functional over-development of large mansion-type residential buildings which are used as single family residences, located in single family zoned areas and not broken up into multi-family units.

The tables shown below indicate the obsolescence percentages to be used for building classes 10.8, 10.9 and 10.10, based on the ground area and the number of stories in the building.

Suggested Guide for Over-Improvement Obsolescence Percentage Deduction Allowances for Large Single-Family Residential Buildings

GROUND AREA	NUMBER OF STORIES					
	1	1 1/2	2	2 1/2	3	3 1/2
1200	-	-	-	-	5%	5%
1300	-	-	-	-	5%	10%
1400	-	-	-	5%	10%	15%
1500	-	-	-	5%	15%	20%
1600	-	-	-	10%	15%	20%
1700	-	-	-	10%	20%	25%
1800	-	-	5%	15%	20%	25%
1900	-	-	5%	15%	25%	30%
2000	-	-	10%	20%	30%	35%
2100	-	-	10%	20%	30%	35%
2200	-	-	10%	25%	35%	40%
2300	-	-	15%	25%	35%	40%
2400	-	5%	15%	30%	40%	45%
2500	-	5%	20%	30%	40%	45%
2600	-	5%	20%	35%	40%	50%
2700	-	10%	20%	35%	40%	50%
2800	-	10%	25%	40%	40%	50%
2900	-	10%	25%	40%	40%	50%
3000	-	15%	30%	40%	40%	50%
3100	-	15%	30%	40%	40%	50%
3200	-	15%	30%	40%	40%	50%
3300	-	15%	35%	40%	40%	50%
3400	-	20%	35%	40%	40%	50%
3500 or over	5%	20%	40%	40%	40%	50%

Obsolescence Caused by Under-Improvement of Residential and Tenement or Apartment Buildings (up to 8 units)

Obsolescence caused by under-improvement of residential and tenement or apartment buildings in urban areas arises from shifts in commercial, industrial and residential uses and where these buildings are on lands zoned and used for a higher use and have values substantially higher than average residential, tenement or apartment land values in the city. This condition is the opposite of the condition covered for obsolescence caused by over-improvement of residential buildings.

Examination of typical cases and conditions of under-improvement of residential and tenement or apartment buildings (up to 8 units) indicates that the extent of under-improve-

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ment may best be determined from the relationship between the value of the land and the land use.

In order to determine the percentage of obsolescence caused by such under-improvement, the obsolescence of such buildings is worked out and tested with market data and then uniformly applied to specific instances of under-improved residential apartment or tenement properties.

The following is a guide to be followed in estimating obsolescence caused by under-improvement of residential and tenement or apartment buildings.

The tables shown below indicate the obsolescence percentages to be used based on the type of building and the front foot land value of the lot on which the building is located.

Suggested Guide for Under-Improvement Obsolescence Percentage Deduction Allowances for Residential, Tenement or Apartment Buildings

Table A Single and Double Family Residential Buildings-Classes 10.1 to 12.3

Front Foot Land Value	Depreciated Value of Building or Buildings on Parcel: Up to $3,000	$3,001 to $5,000	$5,001 to $10,000	$10,001 to $20,000	Over $20,000
up to $45	0	0	0	0	0
$46 to 55	10%	8%	7%	0	0
56 to 65	15%	14%	13%	7%	0
66 to 75	25%	23%	20%	13%	11%
76 to 85	35%	35%	30%	20%	17%
86 to 100	60%	50%	43%	28%	24%
101 to 150	85%	70%	65%	43%	38%
151 to 200	85%	85%	85%	65%	56%
over $200	85%	85%	85%	85%	85%

Table B Tenement or Apartment Buildings (up to 8 units) Classes 13.1 to 13.3

Front Foot Land Value	Depreciated Value of Building or Buildings on Parcel: Up to $5,000	$5,001 to $7,500	$7,501 to $15,000	$15,001 to $30,000	Over $30,000
up to $85	0	0	0	0	0
$86 to 95	5%	5%	4%	3%	3%
96 to 105	15%	14%	12%	9%	8%
106 to 120	25%	23%	20%	14%	13%
121 to 150	40%	37%	32%	23%	20%
151 to 200	60%	56%	48%	35%	30%
201 to 300	85%	85%	80%	60%	50%
301 to 400	85%	85%	85%	85%	75%
over $400	85%	85%	85%	85%	85%

Note 1. Table B does not apply to tenement or apartment buildings which have stores or offices on the first or ground floor level.

Note 2. Table B does not apply to tenement or apartment buildings located on parcels which are considered as rear lots off of high unit land value streets.

Obsolescence Caused by Over-Improvement of Specific Classes of Income Type Buildings

Where sufficient information is available on trends of rentals, income, and operating ratios, such income analysis for typical income building classes provides definite measures for determining any economic obsolescence caused by over-improvement or over-development of the specific class of income type properties.

In ascertaining the level of economic obsolescence of specific classes of income properties, the replacement cost of the building plus the value of the land is considered the upper limit of value. Where market data are found which indicates a value less than replacement cost depreciated according to age and condition, such difference is considered as a factor in measuring obsolescence.

Example of Income Analysis Procedure

An example of the income analysis procedure is shown in the following. This is the analysis of typical properties selected for one building class and shows the following.

Example of Income Analysis for a Class 13.3 Tenement or Apartment Building which has an effective age of 25 years and in Normal Physical Condition

Effective Gross Annual Rental	
(Gross rent less collection losses and vacancies)	$13,350
Less:	
Operating Expense, before taxes and depreciation, 50%	- 6,675
Net Operating Profit, before taxes and depreciation	6,675
Less:	
Return on Established Land Value of $10,000	
5% return on Land, and 2 1/2% tax on land	- 750
Net Return applicable to Building	5,925

Capitalization Rate	6% return on building	
	2 1/2% estimated for taxes	
	2 1/2% estimated for depreciation (estimated 40 yrs. life remaining)	
Total Capitalization Rate	11%	
Capitalized Value of Building	($5,925 ÷ 11%)	$53,860

Replacement Cost of Building (new) Class 13.3	95,000
Less:	
Depreciation due to age and condition (Table D-IV, 25 years old, 26.5% or net condition 73.5%)	- 25,175
Building Replacement Cost Depreciated	69,825
Capitalized value of Building (assuming market data, if any, corroborates income value)	- 53,860
Excess of Replacement Cost Depreciated over Capitalized Value	15,965
Difference between Replacement Cost Depreciated and Capitalized Value represents 23% of the Replacement Cost Depreciated (15,965 ÷ 69,825=23%) and is the indicated economic obsolescence percentage	23%

Economic or Functional Obsolescence Applicable to Specific Classes of Income Type Buildings

1. Combination Stores and Apartments, Offices, etc. (Classes 22.1 to 22.5)

The use of the income analysis and sales comparison procedure indicates that buildings in these classes, 22.1 to 22.5 inclusive, 3 stories or over in height, with no elevator service to third story or above have a loss in value where the third story or above cannot be rented economically because of the lack of an elevator.

The following is a suggested guide to be followed in establishing uniform allowances for economic or functional obsolescence based on the number of stories without elevator service.

Number of stories without elevator service	Obsolescence Percentage
3	20%
4	35%
5	50%

2. Theatre Buildings (Classes 27.1 to 27.4)

The use of the income analysis and sales comparison procedure indicates that theatre buildings have a loss in value due to the influence of television and outdoor theatres which have had a marked effect on the admission receipts of theatres.

The following is a suggested guide to be followed in establishing uniform allowances for this form of obsolescence.

Percent Use of Theatre Building	Obsolescence Percentage
Modern Theatre in use	20%
Old Style Theatre in use	30%
Modern Theatre closed	25%
Old Style Theatre closed	35%

Example for Calculating the Final Net Condition of a Building

As previously outlined, each building is subject to age and physical depreciation but may not be subject to loss due to economic obsolescence arising from any one of the other causes as described under the following headings:

(1) Obsolescence resulting from location of residential, tenement or apartment buildings.

(2) Obsolescence caused by over-improvement of single and double family urban residential buildings.

(3) Obsolescence caused by over-development of large mansion-type single family residential buildings.

(4) Obsolescence caused by under-improvement of residential, tenement or apartment buildings.

(5) Economic or functional obsolescence applicable to specific classes of income type buildings.

Assume that a building is properly classified as 10.6A and has a base replacement cost of $16,000, effective age 40 years, the observed physical condition is poor and the land value is $70 per front foot. Obviously, the land is not being utilized to its highest and best use; therefore, under-improvement obsolescence would be applied against the depreciated value of the building as follows: The footnote on Class 10.6A indicates the use of table D-IV for applicable schedule. The depreciation for 40 years is 43%. To this an additional 10% depreciation is added for poor physical condition or a total depreciation of 53%. The net condition is 100 - 53 or 47%. Applying the 47% against the replacement cost of $16,000 determines the depreciated building value to be $7,520.

Applying the depreciated building value ($7,520) to table "A" of the "Under-Improvement Obsolescence Standards," the obsolescence factor is 20%. The net condition of the building due to obsolescence is 100 - 20 or 80%.

The "Final Net Condition" of the building is determined by multiplying the "Depreciation" net condition by the "Obsolescence" net condition (d x h on the property record card) or 47 x 80 = 37% net condition.

The principal building appraisal is determined by multiplying the "Total Replacement Cost" by the "Final Net Condition" or $16,000 x 37% = $5,920.

Shown below is that section of the property record card showing the entries described above.

TOTAL REPLACEMENT COST	$16,000
Cost Conversion Factor	
Regional Replacement Cost	
DEPRECIATION AND OBSOLESCENCE	
DEPRECIATION	
a. Effective Age Depreciation	43 %
b. Observed Physical Condition	10 %
c. Total Depreciation (a+b)	53 %
d. Net Condition (100-c)	47 %
OBSOLESCENCE	
e. Overimprovement	%
f. Underimprovement	20 %
g. Other	%
h. Net Condition (100-e+f+g)	80 %
FINAL NET CONDITION (d x h)	37 %
SUMMARY OF APPRAISED VALUE	
Principal Building Appraisal	5,920

The determination of the final net condition of each building takes into account the application of age and physical depreciation as described in the previous section and any economic obsolescence due to one or more of the causes as above described.

ADJUSTMENT OF REAL PROPERTY APPRAISAL STANDARDS

Maintaining Current Real Property Appraisal Standards

In the appraisal of property for assessment and other purposes, all factors and available evidence of value are given consideration. The cost of building replacement, the market or sales value of the property, the value based on the capitalization of income from property and the other approaches in determining value are given appropriate consideration in determining the fair value of specific properties.

To assist the appraiser and assessing officials in making equitable property assessments, the Local Property Tax Bureau issues from time to time guides and standards for the valuation of different classes of property. Such real property appraisal guides and standards reflect the average property values for a specific year.

The appraisal guides and standards used by each appraiser are adjusted to reflect the average values of different classes of property in his assessment jurisdiction for the current year.

Real property appraisal guides and standards must be kept current by adjusting or changing the appraisal standards for the different classes of property when there are significant changes in prices and value of such property.

Such adjustment in appraisal standards in each assessment jurisdiction is based on adequate information of price changes for the respective property classes rather than by an overall percentage change. The different classes of property values do not change uniformly. For example, from 1940 to 1954 building values in most cities increased over 150% while the urban land value increase, in most cases, was much less for the same period. The adjustment of the value standards for individual classes of property results in continued integrated and realistic appraisals of property.

The adjustments of appraisal standards are made when available official reports show significant price changes for specific properties. The appraisal standards for relatively stable value properties such as lands and buildings do not change as rapidly as do new models of automobiles, trucks and buses or the values of securities.

In order to keep the appraiser currently informed on changes in property values, the Bureau gathers and makes available to each appraiser and assessing official, the summary price information together with recommendations on appraisal standard adjustments for specific classes of property.

When any major changes in prices and values take place, such adjustment in appraisal standards can be made. The staff of the Local Property Tax Bureau will assist the appraiser and assessing official, upon request, in revising such standards.

Procedure for Adjusting Rural Land Value Standards

Value standards for rural lands are generally expressed on the basis of dollars per acre for lands classified according to the main land capability classes or for land classified as to general land use, such as cultivatable, pasture, woodland or waste land.

Such standards for rural land for each assessment jurisdiction are described in a preceding section of this manual. See page 34.

Substantially the same procedure is used in adjusting the rural land value standards when significant changes are reported as to the use and value of such lands.

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The following summarizes the main steps necessary to adjust rural land value standards:

1. Redetermine the average acre value of the average land classification in the assessment jurisdiction.

2. Recheck the relative values of rural land classes upward and downward from the average land class. The assistance by the rural land value advisory committee will be useful in these rechecks.

3. Recompute the value of other land classes using the new value of average land class and the opinions on relative value of other land classes.

4. Recheck the adjustments to total land valuations due to location and proximity to trading centers and roads. The assistance by the rural land value advisory committee will be useful here.

5. Check a cross section sample of farms which are appraised with the revised value standards against recent sales and make necessary adjustment in value standards to obtain realistic land values.

Procedure for Adjusting Urban Land Value Standards

The unit value standards for urban parcels are expressed at so many dollars per front foot, per square foot or per acre.

Such value standards for urban parcels are developed for each city, town, borough or subdivided area and are described in a preceding section of this manual. See page 21.

Substantially the same procedure is used in adjusting the unit front foot values where changes in land use and values have taken place since the last completed appraisal or assessment.

The following summarizes the main steps necessary to adjust such urban unit land value standards:

1. Re-examine the unit land value maps noting the areas where increased building has taken place and where the land uses have changed to higher or lower economic levels.

2. Note on the unit land value maps the front foot values of recent sales of vacant land or residual land values based on the capitalization of net income from such lands.

3. With the assistance of the urban land value advisory committee, obtain cross section opinions for use in developing new unit land values in such areas of the assessment jurisdiction where significant changes in use and value have taken place.

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 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 in the larger metropolitan areas in the State in October, 1954.

The specifications for the typical building classes and the replacement cost schedules for each building class (and for additions to or deductions from 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 procedure 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 Tax Bureau 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 break downs together with the other building construction indexes which are used in adjusting individual building construction costs to current levels.

The Local Property Tax Bureau 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 equipment", "iron and steel products" and "non-metallic minerals - structural." These three main components include sixteen individual items as follows: Six items for materials, seven for labor and three for equipment.

Component Items, Base Units, Prices and Indexes - October, 1954

The Local Property Tax Bureau cost index is based upon average labor and material prices in the larger metropolitan areas of the State in October, 1954. As these are also the basis of the building base unit replacement costs in this manual, the conversion factor for these building base unit replacement costs is 1.00 or 100 percent.

In the following are listed the component items, the base units and the average prevailing prices used in determining the replacement cost schedules of the respective building classes in this manual and in setting up the 100 percent of 1954 base construction cost for building classes of each major type and construction.

Item No.	Item	Base Unit	1954 Base Prices
	Material		
1.	Brick (No. 1 Common)	Cost delivered per M	$ 50.00
2.	Lumber (1" x 6" #2 sheathing and 2" x 4" and 2" x 10" #1 dimension)	Cost delivered per MBM	127.50
3.	Steel-structural shapes	Base price per CWT	7.94
4.	Steel-reinforcing bars	Base price per CWT	11.44
5.	Cement-Portland	Net cost per Bbl.	5.33
6.	Gravel (for concrete)	Cost delivered per cu. yd.	5.57
	Labor		
7.	Common laborer	Rate per hour	2.50
8.	Carpenter	Rate per hour	3.30
9.	Mason (brick or stone)	Rate per hour	3.70
10.	Plasterer	Rate per hour	3.70
11.	Steel worker	Rate per hour	3.75
12.	Plumber) Steamfitter)	Average rate per hour	3.35
13.	Painter) Roofer) Sheet Metal Worker) Electrician)	Average rate per hour	3.19
	Equipment		
	Average Wholesale Price Indexes (1947-49=100), as published in "Wholesale Prices" by the Bureau of Labor Statistics, United States Department of Labor		
14.	Plumbing Equipment	Wholesale Price Index (1947-49 = 100)	118.7
15.	Iron and Steel Products	Wholesale Price Index (1947-49 = 100)	136.0
16.	Non-metallic minerals - structural	Wholesale Price Index (1947-49 = 100)	122.2

Current local prices which vary from the labor and materials costs and wholesale price indexes shown in the above when applied to the cost conversion factors will produce an index related to the 1954 replacement cost base of 100 percent.

Grouping of Building Classes for Construction Cost Conversion

In order to reflect the variations in quantities and costs of building labor and materials used in the construction to buildings classified according to type and construction, such specific building class has been classified and listed under the following nine building cost conversion groups.

Classification of Typical Building Classes
Under Cost Conversion Groups

Building Cost Conversion Group I (Table C-I)

Frame with wood or stucco siding or concrete block:
Classes 10.1 to 10.10; 11.1 to 11.3; 12.1 to 12.3; 13.1 to 13.3; 14.1 & 14.2; 15.1 to 15.3; 16.1 to 16.3; 20.1 & 20.2; 22.1 to 22.3; 24.1

Building Cost Conversion Group II (Table C-II)

Solid brick, brick veneer, stucco on tile or block, or fire resistive types:
Classes 10.4 to 10.10; 11.1 to 11.3; 12.1 to 12.3; 13.1 to 13.3; 15.1 to 15.3; 16.1 to 16.3; 20.2 to 20.5; 22.2 to 22.5

Building Cost Conversion Group III (Table C-III)

Masonry and wood, non-fire resistive:
Classes 14.1, 14.2 & 14.4; 21.1; 24.2; 25.1; 26.1 & 26.2; 27.1 & 27.2; 31.1

Building Cost Conversion Group IV (Table C-IV)

Reinforced concrete:
Classes 14.3, 14.5 & 14.6; 21.2 & 21.3; 24.3 to 24.5; 25.2 to 25.4; 26.3 & 26.4; 31.2

Building Cost Conversion Group V (Table C-V)

Wood frame, non-fire resistive:
Classes 27.5; 28.1; 41.1 & 41.2; 42.1; 43.1; 45.1; 47.1; 50.1 & 50.2; 51.1; 51.4

Building Cost Conversion Group VI (Table C-VI)

Steel frame:
Classes 30.4; 41.4 to 41.6; 42.2 & 42.3; 43.1; 44.1; 45.1; 47.1

Building Cost Conversion Group VII (Table C-VII)

Masonry walls and wood, non-fire resistive:
Classes 28.2 & 28.3; 29.1, 29.2 & 29.4; 30.4; 40.1 & 40.2; 41.3; 42.2; 43.1; 44.1

Building Cost Conversion Group VIII (Table C-VIII)

Steel frame and masonry walls:
Classes 29.3 & 29.4; 30.4; 40.3; 41.4 & 41.5; 42.2 & 42.3; 43.1; 44.1; 47.1

Building Cost Conversion Group IX (Table C-IX)

Reinforced concrete:
Classes 30.4; 40.3; 41.5; 42.3; 44.1; 47.1

To convert or adjust building construction costs 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 Factors

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 item to all such items in each building group.

To obtain the building conversion index on 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:

Item No.	Item	Base Unit	Prevailing Price or Index Date:	Residences: Wood Frame, Table C-I, Factor	Residences: Wood Frame, Table C-I, Exten.	Residences: Brick or Veneer, Table C-II, Factor	Residences: Brick or Veneer, Table C-II, Exten.	Apts., Hotels & Office Bldgs.: Masonry & Wood, Table C-III, Factor	Apts., Hotels & Office Bldgs.: Masonry & Wood, Table C-III, Exten.	Apts., Hotels & Office Bldgs.: Steel Frame or Reinf. Conc., Table C-IV, Factor	Apts., Hotels & Office Bldgs.: Steel Frame or Reinf. Conc., Table C-IV, Exten.	Commercial, Farm & Factory Buildings: Wood Frame, Table C-V, Factor	Commercial: Wood Frame, Table C-V, Exten.	Commercial: Steel Frame, Table C-VI, Factor	Commercial: Steel Frame, Table C-VI, Exten.	Commercial: Masonry & Wood, Table C-VII, Factor	Commercial: Masonry & Wood, Table C-VII, Exten.	Commercial: Steel Frame & Masonry, Table C-VIII, Factor	Commercial: Steel Frame & Masonry, Table C-VIII, Exten.	Commercial: Reinforced Concrete, Table C-IX, Factor	Commercial: Reinforced Concrete, Table C-IX, Exten.
	Material																				
1	Brick (No. 1. Common)	Cost delivered per M		.14		.24		.29		.13		-		-		.47		.17		.14	
2	Lumber (1"x6" #2 Sheathing & 2"x4" & 2"x10" #1 dimension)	Cost delivered per MBM		.31		.25		.23		.08		.36		.04		.17		.06		.03	
3	Steel-Structural Shapes	Base Price per CWT		-		-		-		.74		-		3.85		-		1.86		-	
4	Steel-Reinforcing Bars	Base Price per CWT		-		-		.18		.07		-		.37		.10		.18		.36	
5	Cement-Portland	Net Cost per Bbl		.37		.44		.29		.55		.22		.66		.36		.36		1.51	
6	Gravel (for concrete)	Cost delivered per cu. yd.		.33		.37		.22		.44		.18		.54		.33		.32		1.22	
	Labor																				
7	Common Laborer	Rate per hour		3.43		6.12		5.22		7.26		4.74		7.32		5.47		10.53		12.99	
8	Carpenter	Rate per hour		5.54		3.19		2.67		1.73		6.87		.60		2.48		1.35		.54	
9	Mason (Brick or Stone)	Rate per hour		1.03		2.23		2.26		1.59		.77		1.65		3.87		2.00		5.18	
10	Plasterer	Rate per hour		1.03		.95		.99		1.33		-		-		-		-		-	
11	Steel Worker	Rate per hour		-		-		.51		2.14		-		2.78		.28		2.53		.72	
12	(Plumber ( ) (Steamfitter ( )	Avg. Rate per hour		1.14		1.06		1.10		2.10		1.14		1.28		.98		1.14		1.08	
13	(Painter ( ) (Roofer ( ) (Sheet Metal Worker ( ) (Electrician ( )	Avg. Rate per hour		.74		.66		.73		1.33		.73		.79		.62		.71		.68	
	Equipment																				
	Average Wholesale Price Indexes, 1947-49=100, Bureau of Labor Statistics, United States Dept. of Labor																				
14	Plumbing Equipment			.041		.040		.040		.074		.041		.041		.033		.039		.039	
15	Iron and Steel Products			.019		.016		.019		.032		.019		.019		.016		.018		.015	
16	Non-metallic minerals-structural			.014		.014		.016		.032		.015		.022		.014		.018		.018	
State of New Jersey, Real Property Appraisal Manual Replacement Conversion 10/1/54		Conversion Index																			
		Conversion Factor (Index÷100)																			

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 area as of the current assessment date on the component items listed in the conversion tables.

The usual sources of information for such material and labor prices and building cost breakdowns are from lumber and materials dealers, architects, engineers and contractors and other local establishments which keep records of labor and material prices and building costs.

Indexes on the average changes in the wholesale prices of plumbing equipment, iron and steel products, and non-metallic minerals-structural 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.

Illustration of Building Cost Conversion

The following shows material and labor prices which are assumed for a jurisdiction as of October, 1960 and the extension necessary to determine building replacement cost conversion factors for the hypothetical Borough of Centertown as of October 1960.

It will be noted from the following example that the conversion factor as of October 1960 for building classes falling under Building Conversion Group, Table C-I, is 1.14, and the conversion factor for Group C-II is also 1.14.

The replacement cost of any building in Building Group I is calculated on the basis of the base cost schedules with any additions or deductions for such building within the class. The base replacement cost when multiplied by 1.14 for any building classified under Table C-I gives the current local replacement cost for such specific building.

After the determination of the building replacement cost conversion factors for the ten different building groups as above described, the application of the above procedure for adjusting the base replacement cost for individual buildings shown on the individual property record cards gives uniformly accurate current building replacement costs of the respective buildings in the assessment jurisdiction.

The appropriate building cost conversion factor for each building class as shown on each individual property record card is entered in the space provided on the record card for the conversion factor. Such factor is applied to the base replacement cost of each building for determination of the current local replacement cost of such building.

Computation of Building Replacement Cost Conversion Indexes

Computation for Building Replacement Cost Conversion Indexes				Residences			
Location: Borough of Centertown, N.J.				Wood Frame		Brick or Veneer	
Item No.	Item	Base Unit	Prevailing Price or Index Date: 10/60	Table C-I		Table C-II	
				Factor	Exten.	Factor	Exten.
	Material						
1	Brick (No. 1. Common)	Cost delivered per M	$ 60.00	.14	8.4	.24	14.4
2	Lumber (1"x6" #2 Sheathing & 2"x4" & 2"x10" #1 dimension)	Cost delivered per MBM	140.00	.31	43.4	.25	35.0
3	Steel-Structural Shapes	Base Price per CWT	10.00	-	-	-	-
4	Steel-Reinforcing Bars	Base Price per CWT	14.00	-	-	-	-
5	Cement-Portland	Net Cost per Bbl	6.00	.37	2.2	.44	2.6
6	Gravel (for concrete)	Cost delivered per cu. yd.	6.50	.33	2.1	.37	2.4
	Labor						
7	Common Laborer	Rate per hour	2.75	3.43	9.4	6.12	16.8
8	Carpenter	Rate per hour	3.90	5.54	21.6	3.19	12.4
9	Mason (Brick or Stone)	Rate per hour	4.25	1.03	4.4	2.23	9.5
10	Plasterer	Rate per hour	4.25	1.03	4.4	.95	4.0
11	Steel Worker	Rate per hour	4.30	-	-	-	-
12	(Plumber (4.00) (Steamfitter (3.80)	Avg. Rate per hour	3.90	1.14	4.4	1.06	4.1
13	(Painter (3.60) (Roofer (3.70) (Sheet Metal Worker (3.80) (Electrician (3.90)	Avg. Rate per hour	3.75	.74	2.8	.66	2.5
	Equipment						
	Average Wholesale Price Indexes, 1947-49=100, Bureau of Labor Statistics, United States Dept. of Labor						
14	Plumbing Equipment		136.7	.041	5.6	.040	5.5
15	Iron and Steel Products		150.0	.019	2.8	.016	2.4
16	Non-metallic minerals-structural		142.2	.014	2.0	.014	2.0
State of New Jersey, Real Property Appraisal Manual Replacement Conversion 10/1/54		Conversion Index			113.5		113.6
		Conversion Factor (Index÷100)		1.14		1.14	

Example of Application of Cost Conversion Index on Property Record Card

Assume, for example, a southern rural assessment jurisdiction where the cost conversion factor Table C-I is .87 or 87% of the building replacement costs shown in the manual. This lower cost is due primarily to lower construction labor rates than in the larger metropolitan areas of the State.

The conversion index, expressed as a factor, is applied to the "Total Replacement Cost" (manual replacement cost value) as shown on the property record card in the "Building Value Calculation" section.

The "Total 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 southern rural assessment jurisdiction.

Building Value Calculation

BUILDING VALUE CALCULATION			
ITEM NO.	AREA OR QUANTITY	UNIT COST	TOTAL
Base	988		11530
ADDITIONS AND DEDUCTIONS			
4j	20		+ 55
7b	1		+280
10c	988	50%	+540
TOTAL REPLACEMENT COST			$12,405
CI Cost Conversion Factor			.87
Regional Replacement Cost			10,792

Procedure for Adjusting Building Physical Deterioration and Obsolescence Allowances

Physical deterioration and economic obsolescence allowance standards are expressed as percentage deductions. The replacement cost when multiplied by the total of these percentage deductions results in a realistic and sound building or improvement appraised value.

Physical deterioration or effective age depreciation allowances are adjusted or revised by comparison of the building replacement cost - building sale value ratio to the effective ages of a large sample of buildings in each major class grouping.

Since this analysis procedure is difficult for appraisers in assessment jurisdictions without technical staffs, the Local Property Tax Bureau will periodically conduct such studies and publish findings in Bureau publications.

Adjustments in economic obsolescence percentage deduction allowances are determined primarily on the basis of sales comparison and income analysis procedures similar to those described in the obsolescence section of this manual. These adjustments are determined locally with help of Bureau technicians, when requested.

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ATTACHMENT E

COST BREAKDOWN

for

CHILE INTERNAL TAX SERVICE PROJECT

EXHIBIT E

COST BREAKDOWN
for
CHILE INTERNAL TAX SERVICE PROJECT

(Submitted by J. L. Jacobs and Company, February 21, 1963)

	Items	Percentage	Man-Months	Total Amount
1.	Overseas Salaries		18	$ 18,000
2.	Housing Allowance			5,550
3.	Overhead, Overseas Salaries	60%		10,800
4.	Home Office Salaries		3	4,250
5.	Overhead, Home Office Salaries	60%		2,550
		Sub-total (1 through 5)		$ 41,150
6.	Cost per Man Month			($1,960)
7.	Travel and Per Diem			$ 6,603
8.	Transportation - Baggage			1,000
9.	Transportation - Household			500
10.	Materials (Purchase and Transport)			2,000
11.	Other Direct Costs			----
		Sub-total (6 through 11)		$ 10,103
12.	Grand Total			$ 51,253
13.	Profit or Fee			10,457
14.	Total Price			$ 61,710

NOTE: Overhead computed at 60% and Profit computed at 47% of Direct Salary Costs, in accordance with Company accounting records.

EXHIBIT E

DETAILS OF COST BREAKDOWN
for
CHILE INTERNAL TAX SERVICE PROJECT

(Submitted by J. L. Jacobs and Company, February 21, 1963)

BASE SALARIES (Field Staff)

Tax Administration and Appraisal Specialist	12 Man Months @ $1,000	$12,000
Agricultural Economics (Rural Appraisal) Specialist	6 Man Months @ $1,000	6,000
	Total	$18,000

BASE SALARIES (Home Office)

Supervising Partner, Appraisal Services Division	2 Man Months @ $1,500	$ 3,000
Principal Associate	1 Man Month @ $ 900	900
Clerk Stenographer	1 Man Month @ 350	350
	Total	$ 4,250

INTERNATIONAL TRAVEL AND PER DIEM (See Note)

Travel, Field Personnel	3 Round Trips @ $ 627	$ 1,881
Travel, Field Dependents	3 Round Trips @ $ 627	$ 1,881
Travel, Home Office Staff	3 Round Trips @ $ 627	$ 1,881
Per Diem, Home Office Staff	60 Days @ $ 16	$ 960
	Total	$ 6,603

TRANSPORTATION

Personal Baggage, Field Staff To Chile and Return	$ 1,000
Personal Effects, Field Staff To Chile and Return	500
Materials (Purchase and Transportation)	2,000
Total	$ 3,500

NOTE: It is established Company policy to provide against long separation of a staff consultant from his family, either by providing for regular trips home by the consultant, or to transport the family with the consultant. The frequency of trips home is based on the classification of the consultant and the distance of the project from Chicago. According to our policy, if the cost of such trips is equal to or greater than the cost of transporting the family, the consultant is encouraged to have his family accompany him. In this case, it is contemplated that the consultant on 12 month assignment will be accompanied by his family, and the consultant on 6 month assignment will be allowed to return home for two-weeks after 3 months.

ATTACHMENT F

SUPPLEMENTAL INFORMATION REQUESTED

ATTACHMENT F

SUPPLEMENTAL REQUIREMENTS

Offeror Represents and Acceptance Period

(a) That it is /X/, is not /_/, a small business concern. Generally, a small business concern is a concern that (i) is not dominant in its field of operation and, with its affiliates, employs fewer than 500 employees, or (ii) is certified as a small business concern by the Small Business Administration. (See Code of Federal Regulations, Title 13, Part 103, as amended, which contains the detailed definition and related procedures.)

(b) That it is /X/, is not /_/, a regular dealer in the supplies or services called for in this Request for Quotations.

(c) (i) That it has /_/, has not /X/, employed or retained any company or person (other than a full-time bona fide employee working solely for the supplier) to solicit or secure this contract, and (ii) that it has /_/, has not /X/, paid or agreed to pay to any company or person (other than a full-time bona fide employee working solely for the supplier) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of this contract; and agrees to furnish information relating to (i) and (ii) above as requested by the Contracting Officer. (For interpretation of the representation, including the term "bona fide employee", see Code of Federal Regulations, Title 44, Part 150.)

By submitting a proposal the offeror agrees that is proposal shall be firm for a period of sixty (60) days from the last day for receipt of proposals. Prior to any negotiations the offeror will be requested and must be prepaid to submit for review and analysis detailed cost and financial information for the purpose of establishing reasonableness of costs and financial responsibility.

Thomas J. Jacobs

Offeror's Signature

TITLE Managing Partner

FIRM J. L. Jacobs & Company

ATTACHMENT V

Supplemental Information

Partnership Status

J. L. Jacobs & Company is a partnership with the following partners:

J. L. Jacobs
Thomas L. Jacobs
Martin D. Miller
Carl F. Lutz

System of Accounts

There is no government audit or procurement representative having knowledge of our accounting system.

Priority to be Given this Project

a. This project would not interfere in any way with our present or known future commitments. With the composition of staff we regularly retain, we are able and regularly do assume commitments such as this project along with other present and prospective assignments.

b. Priority on the Chile Internal Tax Service project -- as described in our proposal letter.

c. Overtime work -- There is no overtime included in our proposal and noen is contemplated.