Cumberland County
2017 Revaluation

Schedules, Standards and Rules

Cumberland County

SCHEDULES, STANDARDS, AND RULES

DRAFT

APPLICATION EFFECTIVE

JANUARY 1, 2017

Table of Contents

I. REVALUATION OVERVIEW *9*

1. Revaluation Purpose **11**

2. Data Collection and Recording **14**

3. Analyzing and Processing the Data **16**

II. GENERAL INFORMATION *19*

Board of County Commissioner's Adoption Statement **21**

1. Statute for Adoption of Schedule **23**

2. Revaluation Schedule **25**

3. North Carolina Revaluation Statutes **27**

4. Appraisal Software **32**

5. Manuals and Publications **32**

6. Governmental Resources **33**

7. Cost Analysis and Local Studies **33**

III. STANDARDS FOR PROFESSIONAL PRACTICE AND ETHICS *35*

1. International Association of Assessing Officers (IAAO) **37**

A. Code of Ethics 37

B. Standards on Mass Appraisal of Real Property 40

2. Uniform Standards of Professional Appraisal Practice (USPAP) **44**

V. DEMOGRAPHIC INFORMATION ON STATE AND COUNTY *56*

1. State Information- North Carolina **58**

A. Brief History of North Carolina 58

B. Climate 60

C. Population Growth 61

D. Growth Projections 61

E. Population Comparisons of surrounding states (2010) 62

F. Household Statistics (2010-2015) 62

G. General Income and Housing Statistics 63

H. Labor and Pay (2012-2015) 64

2. County Information - Cumberland County **65**

A. History of Cumberland County 65

B. Location and Transportation 65

C. Education 66

D. Workforce and Employment 66

E. Major Employers 67

F. Population and Growth 68

G. Major Health Care Facilities in Cumberland County 69
H. Tourism and Visitation to the Region (2013) 69
I. Housing Sales Statistics from the Fayetteville MLS 69
J. Residential Sales Statistics from the Cumberland County Qualified Sales Database 75

V. LAND VALUATION PROCESS..... 79

1. Land Valuation Methods 81
A. Sales Comparison 81
B. Abstraction 82
C. Allocation 82
D. Anticipated Use or Cost of Development Method 82
E. Capitalization of Ground Rents 83
F. Land Residual Capitalization 83

2. Computer Assisted Land Pricing Process..... 85
A. Data that covers a Jurisdictional area..... 85
B. Data that covers a Neighborhood area. 88
C. Data that applies to a Specific parcel..... 91

3. Computer Calculation of Land Values..... 93

VI. SCHEDULE OF LAND VALUES 99

1. Land Use Descriptions 101

2. Residential 103
A. Road Tables Associated with Residential Neighborhoods 106
B. Value Ranges for Residential Property 106

3. Commercial / Industrial..... 107
A.Demonstration of Zoned Tables for Commercial Properties..... 108
B. Demonstration of Road Adjustment Tables for Commercial Properties 112
C. Size Adjustment Tables for Commercial Properties..... 113
D. Value Ranges for Commercial Properties 120
E. Cell Tower Sites and Solar Farm Acreage 121

4. Acreage 122
A. Zone Adjustment Tables for Rural Properties 130
B. Size Adjustment Tables for Rural Properties. 133
C. Road Tables Associated with Rural/District Neighborhoods. 136
D. Values or Value Ranges for Acreage..... 137

5. Master Residential Land Tables 138

6. Unique Situations in Land Appraisal..... 155

VII. APPROACHES TO VALUE 157

1. Cost Approach 159

2. Market Approach..... 161

3. Income Approach..... 163

VIII. RESIDENTIAL / MANUFACTURED HOME COST CALCULATION AND TABLES 165

1. Residential Cost Calculation Process 167
A. The Valuation of Residential Land 167
B. The Valuation of Buildings - Residential 168

2. Master Tables for Residential 190

IX. COMMERICAL / INDUSTRIAL COST CALCULATIONS AND COST TABLES 213

1. Commercial/Industrial Cost Calculation Process 215

2. Commercial Office Condo Valuation 237

3. Master Tables For Commercial 238

X. MISCELLANEOUS IMPROVEMENT COST CALCULATION AND COST TABLES 256

1. Miscellaneous Improvements Cost Calculation Process 259
A. Standard Miscellaneous Improvements 261
B. Non-Standard Miscellaneous Improvements 263
C. 2017 Miscellaneous Improvement Types 265
D. Miscellaneous Improvements Depreciation Tables (M10 through M60) 317

XI. MARKET APPROACH CALCULATION PROCESS 323
A. Residential Neighborhood Grouping 343
B. An Example of a Residential Property Valued at Market 345
C. Example of a Sample Comparable Worksheet 346

XII. INCOME APPROACH CALCULATION PROCESS 347

1. Analysis of Data 350

2. Updating of Income Models (MASP246) Program 351

3. Generation of Income Estimates (MASP260C) Program 352
A. Example of an Apartment Property 353
B. Example of a Hotel / Motel Property 357
C. Example of a Shopping Center Property 363
D. Example of a Mobile Home Park Property 369

4. Value Review and Use of Value Overrides 373

5. Value Summary Information 373

XIII COST STUDIES 379

1. Cost Research 381

2. Sources of Data Acquired and Considered 381

3. Materials Pricing Lists 381

XIV. APPEAL PROCESS 389

1. General Overview Appeal Process 391

2. Local Board of Equalization and Review Appeal Process 392

3. Appeals to Property Tax Commission 396

4. Appeals to Supreme Court 400

XV. APPENDIX..... 401

Classification of Real vs Personal Property 403

A. REAL PROPERTY 403
B. PERSONAL PROPERTY 403
C. LEASEHOLD IMPROVEMENTS 403
D. General Classification Of Real And Tangible Personal Property..... 405

I. REVALUATION OVERVIEW

1. REVALUATION PURPOSE 11
2. DATA COLLECTION AND RECORDING..... 14
3. ANALYZING AND PROCESSING THE DATA 16

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I. REVALUATION OVERVIEW

1. Revaluation Purpose

Each county within the state of North Carolina must conduct a reappraisal of all real property (land, buildings and other improvements to land) at least every eight years. The reappraisals will be as of January 1 of the year prescribed. Any county may conduct a reappraisal of real property earlier than the required octennial plan if the board of county commissioners adopts a resolution so providing and a copy of the resolution is forwarded to the Department of Revenue. (G.S. 105-286).

All real property must be reappraised in accordance with the provisions of G.S. 105-283 and 105-317.

G.S. 105-283 states that all real and personal property shall as far as practicable be appraised or valued at its true value in money. True value is interpreted as market value. Market value is defined as "the price estimated in terms of money at which the property would change hands between a willing and financially able buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of all the uses to which the property is adapted and for which it is capable of being used. Market value is not necessarily the price for which a realtor may list the property, nor is it the price for which a father may sell his son a piece of land. Market value is generally determined from sales between unrelated and unbiased parties. This is known as an "arms length" transaction.

The primary goal of a general reappraisal is to be equitable. This means to fairly, equally and uniformly appraise property at its true value in money (market value). It is not the purpose of a reappraisal to increase revenues or to provide tax breaks. Since ad valorem taxes (property taxes) are based on value, it is important that all property be valued periodically on a uniform bases. Since market value appraisals are the foundation for assessments, equalized values create equalized and uniform taxes.

The job of the appraiser is to arrive at a reasonable estimate of that justified price. To accomplish this, the coordination of approaches to the valuation of the various classes of property must be made so that they are related one to another in such a way as to reflect the motives of the prospective purchasers of each type of property.

The residential appraiser must rely heavily upon the market data approach to value, analyzing the selling prices of comparable properties and considering the very same factors of location, size, quality, design, age, condition, desirability, and usefulness, which were considered by the buyer.

The commercial appraiser will find that since commercial property is not bought and sold as frequently as is residential property, the sales market will then be hard to establish. Two other options for valuing commercial property are the cost approach and the income approach.

The fact that there are different approaches to value, some of which are more applicable to one class of property than to another, does not, by any means, preclude equalization between classes. Remember that the objective in each approach is to arrive at a price which an informed and intelligent person, fully aware of the existence of competing properties and not being compelled to act, is justified in paying for any one particular property. Underlying and fundamental to each of the approaches is the comparison process. Regardless of whether the principal criteria are actual selling prices, income-producing capabilities, or functional usefulness, like properties must be treated alike. The primary objective is equalization. The various approaches to value, although valid in themselves, must nevertheless be coordinated one to the other in such a way as to produce values, which are not only valid and accurate, but are also equitable. The same yardstick of values must be applied to all properties, and must be applied by systematic and uniform procedures.

According to the IAAO in giving guidance on the issues considering Standard 6 of the Uniform Standards of Professional Appraisal Practices:

Revaluation is an in depth, systematic process using a Computer Assisted Mass Appraisal System (CAMA) to reappraise all real property in the county. This is accomplished by Mass Appraisal techniques. As defined in USPAP (Uniform Standard of Professional Appraisal Practices) a mass appraisal is: "The process of valuing a universe of properties as of a given date using standard methodology, employing common data, and allowing for statistical testing." It can also be described as the appraisal of multiple properties, as of a given date (Revaluation date), by a systematic and uniform application of appraisal methods and techniques that allow statistical review and analysis of results. A mass appraisal establishes an individual property value for each property in a group of properties as of a certain date. This is accomplished by use of mass appraisal models. These models are defined in USPAP as: "…a mathematical expression of how supply and demand factors interact in the market." Mass appraisal applies a model in a standard method using common data for each property. Standards Rule 6-4 states the appraiser's obligations in developing mass appraisal and requires the appraiser to:

(a) Identify the appropriate procedures and market information required to perform the appraisal, including physical, functional, and external market factors as they may affect the appraisal.

(b) Use recognized techniques for specifying (model specification property valuation models; and

(c) Employ recognized techniques for calibrating (model calibration) mass appraisal models.

The model may be specified using the cost, sales comparison or income approaches to value. The specification is a process of identification of a statement or mathematical equation that represents the key factors that affect value in that market. The format for the specification can be tabular, mathematical, linear, nonlinear or any other suitable structure that represents property characteristics that affect value, i.e. square foot, age, condition, land size, quality. The next step is calibration of the mass appraisal model. This is the process of analyzing sets of property and market data to develop the specific parameters as well as the coefficients (rate or factor values) that will be used in the specified model. Table entries in a cost table, land table or depreciation table are rates or values used in model calibration. Models can also be calibrated by use of multiple linear regression, nonlinear regression and adaptive estimation feedback. When the model is complete it is applied to value all similar properties in the universe of properties being valued.

Cumberland County utilizes the Sales Comparison Approach to value most residential properties. Properties are divided into models. These models are calibrated utilizing multiple regression analysis incorporating valuation tables established. Statistical testing is used to judge performance of the results of the valuation of benchmark comparable sale properties. Tyler Technologies (previously Cole, Layer and Trumble (CLT)) manage the calibration and testing of models since our CAMA system cannot directly complete this analysis. Tyler completes this off line and works with county staff to review the results and make changes or set parameters, etc. The data is then set up in the CAMA system for use in the Sales Comparison models.

The intended use of an ad valorem mass appraisal is principally for the equitable distribution of the property tax burden among property owners within a political jurisdiction.

Not only must the value of one residential property be equalized with another, but it must also be equalized with each agricultural, commercial, and industrial property within the political unit.

In ad valorem mass appraisal, the client is the government or taxing authority that employs the mass appraiser (assessor) and the intended users are the governmental entities using the results of the mass appraisal for tax purposes. The individual property owner is not an intended user of the appraisal, just as an individual property owner is not the intended user of a mortgage appraisal in a lender/client assignment.

In North Carolina real property is required to be assessed at 100% of its appraised value. The real estate market is constantly changing. This can create an inequitable situation in the level of assessment among property owners and can create inequity among differing types of property. The longer this situation exist, the more unjust it becomes and results in unfair tax

burden on those properties which have an assessed value close to their market value as compared to those properties whose assessed value is well below the market value. This is measured with a sales/assessment ratio. The current market sales are compared with the assessed value. When this ratio reflects that the assessments are a measurable distance above or below the current market, a general revaluation is in order.

2. Data Collection and Recording

The first step in any revaluation is data collection.

General Supporting Data that is needed in every revaluation - The appraisal staff will be primarily concerned with cost, sales and income data, but they will also find it necessary to research and compile general social/economic information pertaining to the entire political unit under appraisement. The information will serve to assist the staff during the analytical phase of the operation and should include, but not necessarily be limited to: population trends, prevailing geographical factors, primary transportation facilities, primary income sources, unemployment and income levels, institutional influences, the annual volume of new construction and ownership transfers, construction labor and material costs.

Cost data - must be sufficient enough to develop or select and validate the pricing schedules and cost tables required to compute the replacement cost new of improvements needed to apply the cost approach to value. The cost data is collected from cost resource manuals and local building cost surveys.

Sales data - must be sufficient enough to provide a representative sampling of comparable sales needed to apply the market data approach, to derive unit land values and depreciation indicators needed to apply the cost approach, and to derive gross rent multipliers and elements of the capitalization rate needed to apply the income approach. The primary source for obtaining sales data is the County Register of Deeds Office and the associated real estate transfers. These transfers are reviewed by the personnel in the tax office to determine if the transfer represents a qualified market sale.

Income and expense data - Income and expense informational data must be sufficient enough to derive capitalization rates and accurate estimates of net income needed to apply the income approach. The income data and information is obtained from individual property owners or tenants through a survey or during listing review (**this individual information is confidential**).

Specific property data that is collected on each parcel must be reviewed each revaluation - It must be comprehensive enough to provide the database needed to process each parcel of property to an indication of value, to generate the tax roll and related tax roll requirements, to generate other specified output, and to provide the assessing officials with a permanent record to facilitate maintenance functions and to administer taxpayer assistance and grievance

proceedings.

The property record card should include the parcel identification number, ownership and mailing address, legal description, property address, property classification code, local zoning code, neighborhood identification code, site characteristics, land information, any miscellaneous improvement information and structural improvement characteristics.

The specific data collected should represent all value components of a properties market value. The data must be comprehensive enough to allow for the adequate consideration of all factors, which significantly affect property values. In keeping with economics of a mass appraisal program, it is costly and impractical to collect, maintain, and process data of no or marginal contribution to the desired objectives. The axiom —too much data is better than insufficient data does not apply. What does apply is the proper amount of data, no more or no less, which is necessary to provide the database required to generate the desired output.

If there are any codes that would need to be revised, deleted or added for land, building or miscellaneous structures this must be decided prior to data collection. This will involve analyzing current sales data to determine if there are any value components that need to be listed or changed.

For example: The sales indicate that more value is given to a detached garage with an apartment above than a detached garage with just storage above. Our codes did not differentiate enough in the description or value of the area above the garage; therefore, a change in code was needed and all properties with detached garages with areas above were reviewed to determine the correct codes to use.

With any revaluation an analysis of the current programming and methods of valuation should be analyzed. Tyler (CLT) is the managing programming company that would have to implement required changes in the actual programs.

Neighborhood Data - A general look at the neighborhood stratification is completed prior to data collection or at the earliest feasible time during the data collection phase but after thorough consideration of the living environment and economic characteristics of the overall county, or any political sub-division thereof is completed. Reviewing how the neighborhoods are stratified includes reviewing the consistency of structure types, quality grades, and age, etc. and the sales in the neighborhood. This assists in determining if there are any properties which would require a neighborhood change (combining neighborhoods or separating neighborhoods). It is advantageous to decide this prior to data collection.

The county has been divided into general districts. The initial delineation of these districts in the 2009 revaluation was based on school districts and then further divided or changed after reviewing other location factors. There are many individual neighborhoods within the districts. The similar or comparable neighborhoods are grouped together by use of the neighborhood group number that is assigned on the NBHD table in the OASIS system. This

group number is used to assign similar neighborhoods in the same or comparable market areas to a valuation model. The same general districts remain in place for the 2017 revaluation.

After the review of data codes and general neighborhood stratification is complete any changes that are required can be made to each individual property that would be affected.

The level of data collection that was performed for the 2017 revaluation consisted of an in office review of all neighborhood listings, characteristics and sales, followed by any necessary field review. If in the initial analysis any data codes require correction; than any properties that would be affected would need to be pinpointed and be reviewed either in office (if possible) or in the field if required. Also in the general neighborhood review if it is determined there are corrections needed in the descriptions of the homes for a particular neighborhood or a combination or separation of the home in a neighborhood, a field review may be necessary. In completing an in office review first; there is a great amount of sales analysis that must be done. This helps to determine what type of corrections and reviews are necessary. Even when this level of data collection is completed there is a great amount of field review necessary.

The neighborhood data must be comprehensive enough to permit the adequate consideration of value-influencing factors to determine the variations in selling prices that may be attributable to benefits arising from the location of one specific property as compared to another. The general data should include the taxing district, the neighborhood identification code, a description of the general boundaries and location.

3. Analyzing and Processing the Data

This phase of the operation involves the analysis of data compiled during the data collection phase and the processing of the data to an indication of value through the use of the cost, market, and income approaches to value.

During the analytical phase, it will be necessary to analyze cost, market, and income data in order to provide a basis for validating the appropriate cost schedules and tables required to compute the replacement cost new of all buildings and structures; for establishing comparative unit land values for each class of property; for establishing the appropriate depreciation tables and guidelines for each class of property; and for developing gross rent multipliers, economic rent and operating expense norms, capitalization rate tables and other related standards and norms required to effect the mass appraisal of all the property within an entire political unit on an equitable basis.

After establishing the appropriate standards and norms, it remains to analyze the specific data compiled for each property by giving due consideration to the factors influencing the value of that particular property as compared to another, and then to process the data into an indication of value by employing the techniques described in the section of the manual dealing with the

application of the traditional approaches to value.

Any one, or all three of the approaches, if applied properly, should lead to an indication of market value; of primary concern is applying the approaches on an equitable basis. This will require the coordinated effort of a number of individual appraisers, each appraiser acting as a member of a team, with the team effort directed toward a valid, accurate and equitable appraisal of each property within the political unit. The following procedures must be adhered to when each property is physically reviewed:

- Verification of the accuracy of each of the characteristics recorded on the property record card.
- Certification that the proper schedules and cost tables was used in computing the replacement cost of each building and structure.
- Determination of the proper quality grade and design factor to be applied to each building to account for variations from the base specifications.
- Making a judgment of the overall condition, desirability and usefulness of each improvement in order to arrive at a sound allowance for depreciation.
- Capitalization of net income capabilities into an indication of value in order to determine the loss of value attributable to functional and economic obsolescence.
- Addition of the depreciated value of all improvements to the land value, and reviewing the total property value in relation to the value of comparable properties.
- Determination that the total property value established can be correlated to actual sales of comparable properties.

At the completion of the review phase, the property record cards must be once again, submitted to clerical personnel for final mathematical calculations and extensions, and a final check for completeness and accuracy.

Once the final values have been established for each property, the entire program should be evaluated in terms of its primary objective; do the values approximate a satisfactory level of market value, and what‘s more important, are the values equitable? Satisfactory answers to these questions can best be obtained through a statistical analysis of recent sales in an appraisal-to-sale ratio study, if sufficient sales are available.

To perform the study, it is necessary to take a representative sampling of recent valid sales and compute the appraisal-to-sale ratio for each of the sales. If the sample is representative, the computed median appraisal-to-sale ratio will give an indication of how close the appraisals within each district approximate the market value. This is providing, of course, that the sales included represent true market transactions. It is then necessary to determine the deviation of each individual appraisal-to-sale ratio from the median ratio, and to compute either the average or the standard deviation, which will give an indication of the degree of equity within each individual district. What remains then is to compare the statistical

measures across property classes in order to determine those areas, if any, which need to be further investigated, revising the appraisal, if necessary, to attain a satisfactory level of value and equity throughout the entire jurisdiction.

The techniques and procedures set forth herein, if applied skillfully, should yield highly accurate and equitable property valuations, and should provide a sound property tax base. It should be noted, however, that no program, regardless of how skillfully administered, can ever be expected to be error free. The appraisal must be fine-tuned and this can best be done by giving the taxpayer an opportunity to question the value placed upon his property and to produce evidence that the value is inaccurate or inequitable. During this time, the significant errors will be brought to light, and taking the proper corrective action will serve to further the objective of the program. What‘s important in the final analysis is to use all these measures as well as any other resources available to affect the highest degree of accuracy and equity possible.

II. GENERAL INFORMATION

Board of Commissioner's Adoption Statement…….. 21
1. Statute for Adoption of Schedule……..23
2. Revaluation Schedule……25
3. North Carolina Revaluation Statutes……..... 27
4. Appraisal Software……32
5. Manuals and Publications…… 32
6. Governmental Resources…….. 33
7. Cost Analysis and Local Studies……...33

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II. GENERAL INFORMATION

Board of County Commissioner's Adoption Statement

In accordance with section 105–317(c) of the Machinery Act of North Carolina, the Tax Administrator's Office, County of Cumberland, does hereby request that the Schedules, Standards and Rules submitted to the Board be adopted for the 2017 Revaluation of all real property.

COMMISSIONER NAME	SIGNATURE	DATE
W. Marshall Faircloth, Chairman		
Glenn B. Adams, Vice Chairman		
Dr. Jeannette M. Council		
Kenneth S. Edge		
Charles Evans		
Jimmy Keefe		
Larry L. Lancaster		

ACKNOWLEDGEMENT: _____

Candice White, Clerk to the Board

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1. Statute for Adoption of Schedule

Article 19

Administration of Real and Personal Property Appraisal

§ 105-317. Appraisal of real property; adoption of schedules, standards, and rules

(c) The values, standards, and rules required by subdivision (b)(1) shall be reviewed and approved by the board of county commissioners before January 1 of the year they are applied. The board of county commissioners may approve the schedules of values, standards, and rules to be used in appraising real property at its true value and at its present-use value either separately or simultaneously. Notice of the receipt and adoption by the board of county commissioners of either or both the true value and present-use value schedules, standards, and rules, and notice of a property owner's right to comment on and contest the schedules, standards, and rules shall be given as follows:

(1) The assessor shall submit the proposed schedules, standards, and rules to the board of county commissioners not less than 21 days before the meeting at which they will be considered by the board. On the same day that they are submitted to the board for its consideration, the assessor shall file a copy of the proposed schedules, standards, and rules in his office where they shall remain available for public inspection.

(2) Upon receipt of the proposed schedules, standards, and rules, the board of commissioners shall publish a statement in a newspaper having general circulation in the county stating:

a. That the proposed schedules, standards, and rules to be used in appraising real property in the county have been submitted to the board of county commissioners and are available for public inspection in the assessor's office; and

b. The time and place of a public hearing on the proposed schedules, standards, and rules that shall be held by the board of county commissioners at least seven days before adopting the final schedules, standards, and rules.

(3) When the board of county commissioners approves the final schedules, standards, and rules, it shall issue an order adopting them. Notice of this order shall be published once a week for four successive weeks in a newspaper having general circulation in the county, with the last publication being not less than seven days before the last day for challenging the validity of the schedules, standards, and rules by appeal to the Property Tax Commission. The notice shall state:

a. That the schedules, standards, and rules to be used in the next scheduled reappraisal of real property in the county have been adopted and are open to examination in the office of the assessor; and

b. That a property owner who asserts that the schedules, standards, and rules are invalid may except to the order and appeal therefrom to the Property Tax Commission within 30 days of the date when the notice of the order adopting the schedules, standards, and rules was first published.

(d) Before the board of county commissioners adopts the schedules of values, standards, and rules, the assessor may collect data needed to apply the schedules, standards, and rules to each parcel in the county. (1939, c. 310, s. 501; 1959, c. 704, s. 4; 1967, c. 944; 1971, c. 806, s. 1; 1973, c. 476, s. 193; c. 695, s. 5; 1981, c. 224; c. 678, s. 1; 1985, c. 216, s. 2; c. 628, s. 4; 1987, c. 45, s. 1; c. 295, s. 1; 1997-226, s. 5.)

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2. Revaluation Schedule

§ 105-286. Time for general reappraisal of real property

(a) Octennial Cycle. – Each county must reappraise all real property in accordance with the provisions of G.S. 105-283 and G.S. 105-317 as of January 1 of the year set out in the following schedule and every eighth year thereafter, unless the county is required to advance the date under subdivision (2) of this section or chooses to advance the date under subdivision (3) of this section.

Schedule of Initial Reappraisals

Division One – 1972: Avery, Camden, Cherokee, Cleveland, Cumberland, Guilford, Harnett, Haywood, Lee, Montgomery, Northampton, and Robeson.

Division Two – 1973: Caldwell, Carteret, Columbus, Currituck, Davidson, Gaston, Greene, Hyde, Lenoir, Madison, Orange, Pamlico, Pitt, Richmond, Swain, Transylvania, and Washington.

Division Three – 1974: Ashe, Buncombe, Chowan, Franklin, Henderson, Hoke, Jones, Pasquotank, Rowan, and Stokes.

Division Four – 1975: Alleghany, Bladen, Brunswick, Cabarrus, Catawba, Dare, Halifax, Macon, New Hanover, Surry, Tyrrell, and Yadkin.

Division Five – 1976: Bertie, Caswell, Forsyth, Iredell, Jackson, Lincoln, Onslow, Person, Perquimans, Rutherford, Union, Vance, Wake, Wilson, and Yancey.

Division Six – 1977: Alamance, Durham, Edgecombe, Gates, Martin, Mitchell, Nash, Polk, Randolph, Stanly, Warren, and Wilkes.

Division Seven – 1978: Alexander, Anson, Beaufort, Clay, Craven, Davie, Duplin, and Granville.

Division Eight – 1979: Burke, Chatham, Graham, Hertford, Johnston, McDowell, Mecklenburg, Moore, Pender, Rockingham, Sampson, Scotland, Watauga, and Wayne.

Mandatory Advancement – A county whose population is 75,000 or greater according to the most recent annual population estimates certified to the Secretary by the State Budget Officer must conduct a reappraisal of real property when the county's sales assessment ratio determined under G.S.105-289(h) is less than .85 or greater than 1.15, as indicated on the notice the county receives under G.S. 105-284. A reappraisal required under this subdivision must become effective no later than January 1 of the earlier of the following years:

a. The third year following the year the county received the notice.
b. The eighth year following the year of the county's last reappraisal.

(3) Optional Advancement. – A county may conduct a reappraisal of real property earlier than required by subdivision (1) or (2) of this subsection if the board of county commissioners adopts a resolution providing for advancement of the reappraisal. The resolution must designate the effective date of the advanced reappraisal and may designate a new reappraisal cycle that is more frequent than the octennial cycle set in subdivision (1) of this subsection. The board of county commissioners must promptly forward a copy of the resolution adopted under this subdivision to the Department of Revenue. A more frequent reappraisal cycle designated in a resolution adopted under this subdivision continues in effect after a mandatory reappraisal required under subdivision (2) of this subsection unless the board of county commissioners adopts another resolution that designates a different date for the county's next reappraisal.

(b),(c) Repealed by Session Laws 2008-146, s. 1.1, effective July **1,** 2009. (1939, c. 310, s. 300; 1941, c. 282, ss. **1,** 1112; 1943, c. 634, s. **1;** 1945, c. 5; 1947, c. 50; 1949, c. 109; 1951, c. 847; 1953, c. 395; 1955, c. 1273; 1957, c. 1453, s. **1;** 1959, c. 704, s. **1;** 1971, c. 806, s. **1;** 1973, c. 476, s. 193; 1987, c. 45, s. **1;** 2008-146, s. 1.1.)

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3. North Carolina Revaluation Statutes[1]

Machinery Act - Article 13

Standards for Appraisal and Assessment

§ 105-283. Uniform appraisal standards

All property, real and personal, shall as far as practicable be appraised or valued at its true value in money. When used in this Subchapter, the words "true value" shall be interpreted as meaning market value, that is, the price estimated in terms of money at which the property would change hands between a willing and financially able buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of all the uses to which the property is adapted and for which it is capable of being used. For the purposes of this section, the acquisition of an interest in land by an entity having the power of eminent domain with respect to the interest acquired shall not be considered competent evidence of the true value in money of comparable land. (1939, c. 310, s. 500; 1953, c. 970, s.5; 1955, c. 1100, s. 2; 1959, c. 682; 1967, c. 892, s. 7; 1969, c. 945, s. 1; 1971, c. 806, s. 1;1973, c. 695, s. 11; 1977, 2nd Sess., c. 1297.)

§ 105-284. Uniform assessment standard.

(a) Except as otherwise provided in this section, all property, real and personal, shall be assessed for taxation at its true value or use value as determined under G.S. 105-283 or G.S. 105-277.6, and taxes levied by all counties and municipalities shall be levied uniformly on assessments determined in accordance with this section.

(b) The assessed value of public service company system property subject to appraisal by the Department of Revenue under G.S. 105-335(b)(1) shall be determined by applying to the allocation of such value to each county a percentage to be established by the Department of Revenue. The percentage to be applied shall be either:

(1) The median ratio established in sales assessment ratio studies of real property conducted by the Department of Revenue in the county in the year the county conducts a reappraisal of real property and in the fourth and seventh years thereafter; or

(2) A weighted average percentage based on the median ratio for real property established by the Department of Revenue as provided in subdivision (1) and a one hundred percent (100%) ratio for personal property. No percentage shall be applied in a year in which the median ratio for real property is ninety percent (90%) or greater.

If the median ratio for real property in any county is below ninety percent (90%) and if the county assessor has provided information satisfactory to the Department of Revenue that the county follows accepted guidelines and practices in the assessment of business personal property, the weighted average percentage shall be applied to public service company property. In calculating the weighted average

percentage, the Department shall use the assessed value figures for real and personal property reported by the county to the Local Government Commission for the preceding year. In any county which fails to demonstrate that it follows accepted guidelines and practices, the percentage to be applied shall be the median ratio for real property. The percentage established in a year in which a sales assessment ratio study is conducted shall continue to be applied until another study is conducted by the Department of Revenue.

(c) Notice of the median ratio and the percentage to be applied for each county shall be given by the Department of Revenue to the chairman of the board of commissioners not later than April 15 of the year for which it is to be effective. Notice shall also be given at the same time to the public service companies whose property values are subject to adjustment under this section. Either the county or an affected public service company may challenge the real property ratio or the percentage established by the Department of Revenue by giving notice of exception within 30 days after the mailing of the Department's notice. Upon receipt of such notice of exception, the Department shall arrange a conference with the challenging party or parties to review the matter. Following the conference, the Department shall notify the challenging party or parties of its final determination in the matter. Either party may appeal the Department's determination to the Property Tax Commission by giving notice of appeal within30 days after the mailing of the Department's decision.

(d) Property that is in a development financing district and that is subject to an agreement entered into pursuant to G.S. 159-108 shall be assessed at its true value or at the minimum value set out in the agreement, whichever is greater.(1939, c. 310, s. 500; 1953, c. 970, s. 5; 1955, c. 1100, s. 2; 1959, c. 682; 1967, c. 892, s. 7; 1969, c. 945, s. 1; 1971, c. 806, s. 1; 1973, c. 695, s. 12; 1985, c. 601, s. 1; 1987 (Reg. Sess., 1988), c. 1052, s. 1; 2003-403, s. 20.)

Article 14

Time for Listing and Appraising Property for Taxation

§ 105-285. Date as of which property is to be listed and appraised.

(a) Annual Listing Required. – All property subject to ad valorem taxation shall be listed annually.

(b) Personal Property; General Rule. – Except as otherwise provided in this Chapter, the value, ownership, and place of taxation of personal property, both tangible and intangible, shall be determined annually as of January 1.

(c) Repealed by Session Laws 1987, c. 813, s. 12.

(d) Real Property. – The value of real property shall be determined as of January 1 of the years prescribed by G.S. 105-286 and G.S. 105-287. The ownership of real property shall be determined annually as of January 1, except in the

following situation: When any real property is acquired after January 1, but prior to July 1, and the property was not subject to taxation on January 1 on account of its exempt status, it shall be listed for taxation by the transferee as of the date of acquisition and shall be appraised in accordance with its true value as of January 1 preceding the date of acquisition; and the property shall be taxed for the fiscal year of the taxing unit beginning on July 1 of the year in which it is acquired. The person in whose name such property is listed shall have the right to appeal the listing, appraisal, and assessment of the property in the same manner as that provided for listings made as of January 1.

In the event real property exempt as of January 1 is, prior to July 1, acquired from a governmental unit that by contract is making payments in lieu of taxes to the taxing unit for the fiscal period beginning July 1 of the year in which the property is acquired, the tax on such property for the fiscal period beginning on July 1 immediately following acquisition shall be one half of the amount of the tax that would have been imposed if the property had been listed for taxation as of January 1. (1939, c. 310, s. 302; 1945, c. 973; 1971, c. 806, s. 1; 1973, c. 735; 1985, c. 656, s. 21; 1987, c. 813, s. 12; 1993, c. 485, s. 17.)

Article 19

Administration of Real and Personal Property Appraisal

§ 105-317. Appraisal of real property; adoption of schedules, standards, and rules

(a) Whenever any real property is appraised it shall be the duty of the persons making appraisals:

(1) In determining the true value of land, to consider as to each tract, parcel, or lot separately listed at least its advantages and disadvantages as to location; zoning; quality of soil; waterpower; water privileges; dedication as a nature preserve; conservation or preservation agreements; mineral, quarry, or other valuable deposits; fertility; adaptability for agricultural, timber-producing, commercial, industrial, or other uses; past income; probable future income; and any other factors that may affect its value except growing crops of a seasonal or annual nature.

(2) In determining the true value of a building or other improvement, to consider at least its location; type of construction; age; replacement cost; cost; adaptability for residence, commercial, industrial, or other uses; past income; probable future income; and any other factors that may affect its value.

(3) To appraise partially completed buildings in accordance with the degree of completion on January 1.

(b) In preparation for each revaluation of real property required by G.S. 105-286, it shall be the duty of the assessor to see that:

(1) Uniform schedules of values, standards, and rules to be used in appraising real property at its true value and at its present-use value are

prepared and are sufficiently detailed to enable those making appraisals to adhere to them in appraising real property.

(2) Repealed by Session Laws 1981, c. 678, s. 1.

(3) A separate property record be prepared for each tract, parcel, lot, or group of contiguous lots, which record shall show the information required for compliance with the provisions of G.S. 105-309 insofar as they deal with real property, as well as that required by this section. (The purpose of this subdivision is to require that individual property records be maintained in sufficient detail to enable property owners to ascertain the method, rules, and standards of value by which property is appraised.)

(4) The property characteristics considered in appraising each lot, parcel, tract, building, structure and improvement, in accordance with the schedules of values, standards, and rules, be accurately recorded on the appropriate property record.

(5) Upon the request of the owner, the board of equalization and review, or the board of county commissioners, any particular lot, parcel, tract, building, structure or improvement be actually visited and observed to verify the accuracy of property characteristics on record for that property.

(6) Each lot, parcel, tract, building, structure and improvement be separately appraised by a competent appraiser, either one appointed under the provisions of G.S. 105-296 or one employed under the provisions of G.S.105-299.

(7) Notice is given in writing to the owner that he is entitled to have an actual visitation and observation of his property to verify the accuracy of property characteristics on record for that property.

(c) The values, standards, and rules required by subdivision (b)(1) shall be reviewed and approved by the board of county commissioners before January 1 of the year they are applied. The board of county commissioners may approve the schedules of values, standards, and rules to be used in appraising real property at its true value and at its present - use value either separately or simultaneously. Notice of the receipt and adoption by the board of county commissioners of either or both the true value and present - use value schedules, standards, and rules, and notice of a property owner's right to comment on and contest the schedules, standards, and rules shall be given as follows:

(1) The assessor shall submit the proposed schedules, standards, and rules to the board of county commissioners not less than 21 days before the meeting at which they will be considered by the board. On the same day that they are submitted to the board for its consideration, the assessor shall file a copy of the proposed schedules, standards, and rules in his office where they shall remain available for public inspection.

(2) Upon receipt of the proposed schedules, standards, and rules, the board of commissioners shall publish a statement in a newspaper having general circulation in the county stating:

a. That the proposed schedules, standards, and rules to be used in appraising real property in the county have been submitted to the board of county commissioners and are available for public inspection in the assessor's office; and

b. The time and place of a public hearing on the proposed schedules, standards, and rules that shall be held by the board of county commissioners at least seven days before adopting the final schedules, standards, and rules.

(3) When the board of county commissioners approves the final schedules, standards, and rules, it shall issue an order adopting them. Notice of this order shall be published once a week for four successive weeks in a newspaper having general circulation in the county, with the last publication being not less than seven days before the last day for challenging the validity of the schedules, standards, and rules by appeal to the Property Tax Commission. The notice shall state:

a. That the schedules, standards, and rules to be used in the next scheduled reappraisal of real property in the county have been adopted and are open to examination in the office of the assessor; and

b. That a property owner who asserts that the schedules, standards, and rules are invalid may except to the order and appeal there from to the Property Tax Commission within 30 days of the date when the notice of the order adopting the schedules, standards, and rules was first published.

(d) Before the board of county commissioners adopts the schedules of values, standards, and rules, the assessor may collect data needed to apply the schedules, standards, and rules to each parcel in the county. (1939, c. 310, s. 501; 1959, c. 704, s. 4; 1967, c. 944; 1971, c. 806, s. 1; 1973, c. 476, s. 193; c. 695, s. 5; 1981, c. 224; c. 678, s. 1; 1985, c. 216, s. 2; c. 628, s. 4; 1987, c. 45, s. 1; c. 295, s. 1; 1997-226, s. 5.)

1. Source: North Carolina General Assembly, Statutes Machinery Act, Article 13,14,19. http://www.ncga.state.nc.us/statutes/generalstatutes/html/bychapter/chapter

4. Appraisal Software

Cumberland County uses a software package called Oasis. Oasis is described as a property appraisal, tax administration, and tax collection system specifically designed to support the functions of state and local government and consists of five subsystems. They are:

1. Administrative and Tax Roll Subsystem (ATR)
2. Computer Assisted Mass Appraisal Subsystem (CAMA)
3. Personal Property Subsystem (PP)
4. Soils and Maps Subsystem (SM)
5. Tax Accounting Subsystem (TA)

For this document we are mainly concerned with the Computer Assisted Mass Appraisal Subsystem (CAMA). The CAMA subsystem is used to appraise real estate properties. It will generate values using all three of the standard accepted appraisal methods, cost, market, and income, and will generate various statistical analyses on appraisal data. It accepts parcel identification and sales data from the ATR subsystem and returns appraised values and value subtotals to the ATR subsystem.

The procedures manuals for the Computer Assisted Mass Appraisal (CAMA) subsystem provides detailed information on all CAMA screens, data base elements and processing options, as well as explanations of all error messages. It also includes detailed information on all of the standard reports that are available. These manuals are essential to the use and understanding of the software and the mass appraisal valuation process and are considered a part of the Schedule of Values.

5. Manuals and Publications

To develop, support, and supplement the valuation of real property, nationally recognized cost manuals and publications have been used in the development of the Schedule of Values. The most recognizable cost manuals that have been referred to are published by CoreLogic, Inc. and are the Marshall Valuation Service or Commercial Cost Handbook and the Marshall and Swift Residential Cost Handbook.

Publications that are considered industry standards, such as PwC Real Estate Investor Survey; IREM – Institute of Real Estate Management publications and on-line information from a web site publication –Realty Rates.com have been used to develop and support the income approach to value and are also a part of the Schedule of Values.

All of these resources referred to above were used in the research and development of this Schedule of Values. As stated above, many are nationally recognized manuals or publications and are considered industry standards. Appraisers use these resources, both locally and nationally, for accurate and reliable information.

2017 Commercial and Residential Revaluation Manuals plus a Miscellaneous Improvement Reference Booklet were developed to promote equity and uniformity

in the data collection process. These field reference manuals and booklet(s) are considered a part of this Schedule of Values.

6. Governmental Resources

The Use-Value Advisory Board (UVAB) submits a Use Value Procedures Manual annually to the Department of Revenue. The creation of the UVAB, as well as guidelines for the development of the manual, are authorized and set forth in the General Statutes of North Carolina. The contents of the manual reflect the combined judgment and effort of many professionals in the North Carolina Cooperative Extension Service and cooperating Federal and State agencies. This manual is provided to each County for inclusion in their statutorily required octennial revaluation. Although considered a part of the Schedule of Values, the Present Use Value Manual will be submitted for approval under a separate cover.

In some instances, Personnel at the Property Tax Division, Department of Revenue, and Institute of Government may have been consulted concerning a variety of questions. Their involvement was solicited based on their knowledge and expertise in the revaluation process.

7. Cost Analysis and Local Studies

During the reappraisal process, a determination of actual costs of building construction was conducted for all types and classes of real property. This analysis included:

a. Comparison of actual building costs for Residential and Commercial property to calculate replacement values from the Computer Assisted Mass Appraisal (CAMA) system.

b. Calibration or indexing of CAMA system building replacement cost tables to reflect actual building costs as of January 1, 2017.

c. Determination of material and labor costs common in Cumberland County.

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III. STANDARDS FOR PROFESSIONAL PRACTICE AND ETHICS

1. INTERNATIONAL ASSOCIATION OF ASSESSING OFFICERS (IAAO)[(1)]
A. Code of Ethics 37
B. Standards on Mass Appraisal of Real Property 40
2. UNIFORM STANDARDS OF PROFESSIONAL APPRAISAL PRACTICE (USPAP)[1] 44

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III. STANDARDS FOR PROFESSIONAL PRACTICE AND ETHICS

1. International Association of Assessing Officers (IAAO)[1]

The International Association of Assessing Officers (IAAO) is an educational and research association of individuals in the assessment profession and others with an interest in property taxation. Membership is open to anyone, and includes individuals working in government, private industry, academia and members of the general public. This section covers Code of Ethics and Standards of Mass appraisal.

A. Code of Ethics

Canon1: Professional Duties

Members shall conduct their professional duties and activities in a manner that reflects credit upon themselves, their profession, and the organization.

Ethical Rules

E.R. 1-1 It is unethical for members to conduct their professional duties in a manner that could reasonably be expected to create the appearance of impropriety.

E.R. 1- 2 It is unethical for members to accept an appraisal or assessment-related assignment, which they are not qualified to perform.

E.R. 1-3 It is unethical for members knowingly violate applicable laws and regulations in the performance of their duties or to apply such laws and regulations in an inequitable manner.

E.R. 1-4 It is unethical for members to refuse (by intent or omission) to make available all public records in their custody for public review, unless access to such records is specifically limited or prohibited by law, or the information has been obtained on a confidential basis and the law permits such information to be treated confidentially. Assessing officers must make every reasonable effort to inform the public about their rights and responsibilities under the law and the property tax system.

E.R. 1-5 It is unethical for members to refuse to cooperate with public officials to improve the efficiency and effectiveness of the property tax in particular and public administration in general.

E.R. 1-6 It is unethical to engage in misconduct of any kind that leads to a conviction for a crime involving fraud, dishonesty, false statements, or moral turpitude.

E.R. 1-7 It is unethical to perform any appraisal, assessment, or consulting service that is not in compliance with the IAAO governing documents or the Uniform Standards of Professional Appraisal Practice.

Canon 2: Truthfulness

Members shall not make public statements (written or oral) that are untrue or tend to mislead or deceive the public in the course of performing their professional duties.

Ethical Rules

E.R. 2-1 It is unethical to provide inaccurate, untruthful or misleading information to solicit assessment-related assignments or to use misleading claims or promises of relief that could lead to loss of confidence in appraisal or assessment professionals by the public.

E.R. 2-2 It is unethical to claim an IAAO professional designation unless authorized, whether the claim is verbal or written, or to claim qualifications that are not factual or may be misleading.

E.R. 2-3 It is unethical to fail to recognize the source(s) of any materials quoted or cited in writings or speeches.

Canon 3: Conflict of Interest

Members shall not engage any activities in which they have, or may reasonably be considered by the public as having, a conflict of interest.

Ethical Rules

E.R. 3-1 It is unethical for members to accept an appraisal or assessment-related assignment that can reasonably be construed as being in conflict with their responsibility to their jurisdiction, employer, or client, or in which they have an unrevealed personal interest or bias.

E.R. 3-2 It is unethical to accept an assignment or responsibility in which there is a personal interest without full disclosure of that interest.

E.R. 3-3 It is unethical to accept an assignment or participate in an activity where a conflict of interest exists and could be perceived as a bias, or impair objectivity.

Canon 4: Support of IAAO

Members shall abide by and support the provisions of the IAAO Constitution, Bylaws, and Procedural Rules.

Ethical Rules

E.R. 4-1 It is unethical for an IAAO member:
(a) Knowingly make false statements or submit misleading information when completing a membership application, or to refrain from promptly submitting any significant information in the possession of such member when requested to do so as part of an IAAO membership application.

(b) Knowingly submit misleading information to the duly authorized Ethics Committee or subcommittee; to refrain from promptly submitting any significant information in the

possession of the member as requested by the committee or subcommittee; to refuse to appear for a personal interview or participate in an interview conducted by telephone as scheduled by the committee or subcommittee; or to refuse to answer promptly all relevant questions concerning an appraisal or assessment-related assignment or related testimony being investigated by the committee or subcommittee.

(c) Fail or refuse to submit promptly to an authorized IAAO committee a written appraisal report or file memorandum containing data, reasoning, and conclusions, or to fail or refuse to permit an authorized committee to review an appraisal report, assessment-related assignment, or file memorandum when requested to do so by a person or persons authorized to review such material.

(d) Fail or refuse to submit promptly any significant information in the possession of a member concerning the status of litigation related to an ethics matter when requested to do so by the chair of the Ethics Committee; or knowingly to submit misleading information to the chair of the Ethics Committee concerning the status of litigation.

E.R. 4-2 It is unethical to fail to comply with the terms of a summons issued by the Ethics Committee.

E.R. 4-3 It is unethical to refuse to cooperate fully with the IAAO Executive Board, Ethics Committee
and the staff of IAAO in all matters related to the enforcement of this Code, as set forth in the Ethics Committee's Rules and Procedures, as amended from time to time.

E.R. 4-4 It is unethical to violate the IAAO Constitution, Bylaws, or Procedural Rules.

E.R. 4-5 Any member who has submitted misleading information to the Ethics Committee or does not comply with the terms of these Canons may be subject to ethical charges by the Committee.

Canon 5: Professional Duties

Members shall comply with the requirements of the Uniform Standards of Professional Appraisal Practice.

Ethical Rules

E.R. 5-1 It is unethical to knowingly fail to observe the requirements of the Uniform Standards of Professional Appraisal Practice.

Source: (1) IAAO Revised Code of Ethics/Standards of Practice, Adopted November 2015.
IAAO Website. http://www.iaao.org

B. Standards on Mass Appraisal of Real Property

Approved April 2013

International Association of Assessing Officers

This standard replaces the January 2012 *Standard on Mass Appraisal of Real Property* and is a complete revision. The 2012 *Standard on Mass Appraisal of Real Property* was a partial revision that replaced the 2002 standard. The 2002 standard combined and replaced the 1983 *Standard on the Application of the Three Approaches to Value in Mass Appraisal*, the 1984 *Standard on Mass Appraisal*, and the 1988 *Standard on Urban Land Valuation*. IAAO assessment standards represent a consensus in the assessing profession and have been adopted by the Executive Board of the International Association of Assessing Officers (IAAO). The objective of the IAAO standards is to provide a systematic means for assessing officers to improve and standardize the operation of their offices. IAAO standards are advisory in nature and the use of, or compliance with, such standards is voluntary. If any portion of these standards is found to be in conflict with national, state, or provincial laws, such laws shall govern. Requirements found in the *Uniform Standards of Professional Appraisal Practice* (*USPAP)* also have precedence over technical standards.

Acknowledgments

At the time of the 2012 revision (approved April 2013) the Technical Standards Committee was composed of Alan Dornfest, AAS, chair; Doug Warr, AAS; Robert Gloudemans; Michael Prestridge, Mary Reavey; Dennis Deegear, associate member; and Chris Bennett, staff liaison. Bill Marchand also participated in revising the standard while serving as committee chair in 2013. The standard benefited from comments by Pete Davis.

Scope

This standard defines requirements for the mass appraisal of real property. The primary focus is on mass appraisal for ad valorem tax purposes. However, the principles defined here should also be relevant to CAMAs (or automated valuation models) used for other purposes, such as mortgage portfolio management. The standard primarily addresses the needs of the assessor, assessment oversight agencies, and taxpayers.

This standard addresses mass appraisal procedures by which the fee simple interest in property can be appraised at market value, including mass appraisal application of three traditional approaches to value (cost, sales comparison, and income). Single property appraisals partial interest appraisals, and appraisals made on an other-than-market-value basis are outside the scope of this standard. Nor does this standard provide guidance on determining assessed values that differ from market value because of statutory constraints such as use value, classification, or assessment increase limitations.

Mass appraisal requires complete and accurate data, effective valuation models, and proper management of resources. Section 2 provides an introduction to mass appraisal. Section 3 focuses on the collection and maintenance of property data. Section 4 summarizes the primary considerations in valuation methods, including the role of the three approaches to value in the mass appraisal of various types of property. Section 5 addresses model testing and quality assurance. Section 6 discusses certain managerial considerations: staff levels, data processing support, contracting for reappraisals, and benefit-cost issues.

INTRODUCTION

Market value for assessment purposes is generally determined through the application of mass appraisal techniques. Mass appraisal is the process of valuing a group of properties as of a given date and using common data, standardized methods, and statistical testing. To determine a parcel's value, assessing officers must rely upon valuation equations, tables, and schedules developed through mathematical analysis of market data. Values for individual parcels should not be based solely on the sale price of a property; rather, valuation schedules and models should be consistently applied to property data that are correct, complete, and up-to-date.

Properly administered, the development, construction and use of CAMA system results in a valuation system characterized by accuracy, uniformity, equity, reliability, and low per-parcel costs. Except for unique properties, individual analyses and appraisals of properties are not practical for ad valorem tax purposes.

COLLECTING AND MAINTAINING PROPERTY DATA

The accuracy of values depends first and foremost on the completeness and accuracy of property characteristics and market data. Assessors will want to ensure that their CAMA systems provide for the collection and maintenance of relevant land, improvement, and location features. These data must also be accurately and consistently collected. The CAMA system must also provide for the storage and processing of relevant sales, costs, and income and expenses data.

VALUATION

Mass appraisal analysis begins with assigning properties to use classes or strata based on highest and best use, which normally equates to current use. Some statutes require that property be valued for ad valorem tax purposes at current use regardless of highest and best use. Zoning and other land use controls normally dictate highest and best us of vacant land. In the absence of such restrictions, the assessor must determine the highest and best use of land by analyzing the four components-legally, permissible, physically possible, appropriately supported, and financially feasible-there by resulting in the highest value. Special attention may be required for properties in transition, interim or nonconforming uses, multiple uses, and excess land.

Any appraisal, whether single-property appraisal or mass appraisal, uses a model, that is, a representation in words or an equation of the relationship between value and variables representing factors of supply and demand. Mass appraisal models attempt to represent the market for a specific type of property in a specified area. Mass appraisers must first specify the model, that is, identify the

supply and demand factors and property features that influence vale, for example, square feet of living area. Then, they must calibrate the model, that is, determine the adjustments or coefficients that best represent the value contribution of the variables chosen, for example, the dollar amount the market places on each square foot of living area. Careful and extensive market analysis is required for both specification and calibration of a model that estimates values accurately. Mass appraisal models apply to all three approaches to value: the cost approach, the sales comparison approach, and the income approach.

Valuation models are developed for defined property groups. For residential properties, geographic stratification is appropriate when the value of property attributes varies significantly among areas and each area is large enough to provide adequate sales. It is particularly effective when housing types and styles are relatively uniform within areas. Separate models are developed for each market area (also known as economic or model areas). Subareas or neighborhoods can serve as variables in the models and can also be used in land value tables and selection of comparable sales. (see *Mass Appraisal of Real Property* [Gloudemans 1999, 118-120] or *Fundamentals of Mass Appraisal* [Gloudemans and Almy 2011, 139-143] for guidelines on stratification). Smaller jurisdictions may find it sufficient to develop a single residential model.

Commercial and income-producing properties should be stratified by property type. In general, separate models should be developed for apartment, warehouse/industrial, office, and retail properties. Large jurisdictions may be able to stratify apartment properties further, by type or area or to develop multiple models for other income properties with adequate data.

MODEL TESTING, QUALITY ASSURANCE, AND INCOME DEFENSE

Mass appraisal allows for model testing and quality assurance measures that provide feedback on the reliability of valuation models and the overall accuracy of estimated values. Modelers and assessors must be familiar with these diagnostics so they can evaluate valuation performance properly and make improvements where needed.

MANAGERIAL CONSIDERATIONS

A successful in-house appraisal program requires a sufficiently large staff comprising persons skilled in general administration and supervision, appraisal, mapping and drafting, data processing, and secretarial and clerical functions. Typical staffing sizes and patterns for jurisdictions of various sizes are illustrated in *Property Appraisal and Assessment Administration* (Eckert et al. 1990, Chapter 16) and in *Fundamentals of Mass Appraisal* (Gloudemans and Almy, 2011, 22-25).

Unless efficiency or practical concerns dictate otherwise, persons performing the various mass appraisal functions should be employees of the assessor. When these functions are not performed by assessment staff, it is imperative that they be adequately provided by other departments, as oversight agency, a service bureau, a qualified contractor, or another source. Strong lines of communication must be established between the assessment staff and the designated support groups.

CAMAs require considerable data processing support. (See the *Standard on Facilities, Equipment, Computers, and Supplies* [IAAO 2003b].

Hardware - The hardware should be powerful enough to support applications of the cost, sales comparison, and income approaches, as well as data maintenance and other routine operations. Data

downloading, mass calculations, GIS applications, and We support tend to be the most computer-intensive operations. Processing speed and efficiency requirements should be established before hardware acquisition. Computer equipment can be purchased, leased, rented or shared with other jurisdictions. If the purchase option is choses, the equipment should be easy to upgrade to take advantage of technological developments without purchasing an entirely new system.
Software

CAMA software can be developed internally, adapted from software developed by other public agencies, or purchased (in whole or in part) from private vendors. (Inevitably there will be some tailoring needed to adapt externally developed software to the requirements of the user's environment.) each alternative has advantages and disadvantages. The software should be designed so that it can be easily modified; it should also be will documented, at both the appraiser/user and programmer levels.

CMIA software works in conjunction with various general-purpose software, typically word processing, spreadsheet, statistical and GIS programs. These programs and applications must be able to share data and work together cohesively.

Security measures should exist to prevent unauthorized use and to provide backup in the event of accidental loss or destruction of data.

SOURCE: *Standard on Mass Appraisal of Real Property* (excerpts), published by International Association of Assessing Officer; Approved April 2013

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2. Uniform Standards of Professional Appraisal Practice (USPAP)[1]

STANDARD 6: MASS APPRAISAL, DEVELOPMENT AND REPORTING

In developing a mass appraisal, an appraiser must be aware of, understand, and correctly employ those recognized methods and techniques necessary to produce and communicate credible mass appraisals.

Comment: STANDARD 6 applies to all mass appraisals of real or personal property regardless of the purpose or use of such appraisals. Standard 6 is directed toward the substantive aspects of developing and communicating credible analyses, opinions, and conclusions in the mass appraisal of properties. Mass appraisals can be prepared with or without computer assistance. The reporting and jurisdictional exceptions applicable to public mass appraisals prepared for ad valorem taxation do not apply to mass appraisals prepared for other purposes.

A mass appraisal includes:

1) Identifying properties to be appraised;
2) Defining market area of consistent behavior that applies to properties;
3) Identifying characteristics (supply and demand) that affect the creation of value in that market area;
4) Developing a model structure that reflects the relationship among the characteristics affecting value in the market area;
5) Calibrating the model structure to determine the contribution of the individual characteristics affecting value;
6) Applying the conclusions reflected in the model to the characteristics of property(ies) being appraised; and
7) Reviewing the mass appraisal results.

The JURISDICTIONAL EXCEPTION RULE may apply to several sections of STANDARD 6 because ad valorem tax administration is subject to various state, county, and municipal laws.

<u>Standards Rule 6-1</u>

In developing a mass appraisal, an appraiser must:

(a) Be aware of, understand, and correctly employ those recognized methods and techniques necessary to produce a credible mass appraisal;

Comment: Mass appraisal provides for a systematic approach and uniform application of appraisal methods and techniques to obtain estimates of value that allow for statistical review and analysis of results.

This requirement recognizes that the principle of change continues to affect the manner in which appraisers perform mass appraisals. Changes and developments in the real property and personal property fields have a substantial impact on the appraisal profession.

To keep abreast of these changes and developments, the appraisal profession is constantly reviewing and revising appraisal methods and techniques and devising new methods and techniques

to meet new circumstances. For this reason it is not sufficient for appraisers to simply maintain the skills and the knowledge they possess when they become appraisers. Each appraiser must continuously improve his or her skills to remain proficient in mass appraisal.

(b) not commit a substantial error of omission or commission that significantly affects a mass appraisal; and

Comment: An appraiser must use sufficient care to avoid errors that would significantly affect his or her opinions and conclusions. Diligence is required to identify and analyze the factors, conditions, data, and other information that would have a significant effect on the credibility of the assignment results.

(c) not render a mass appraisal in a careless or negligent manner.

Comment: Perfection is impossible to attain, and competence does not require perfection. However, an appraiser must not render appraisal services in a careless or negligent manner. This Standards Rule requires an appraiser to use due diligence and due care.

<u>Standards Rule 6-2</u>

In developing a mass appraisal, an appraiser must:

(a) Identify the client and other intended users;

(b) Identify the intended use of the appraisal;

Comment: An appraiser must not allow the intended use of an assignment or a client's objectives to cause the assignment results to be biased.

(c) Identify the type and definition of value, and, if the value opinion to be developed is market value, ascertain whether the value is to be the most probable price:

(i) In terms of cash; or

(ii) In terms of financial arrangements equivalent to cash; or

(iii) In such other terms as may be precisely defined; and

(iv) If the opinion of value is based on non-market financing or financing with unusual conditions or incentives, the terms of such financing must be clearly identified and the appraiser's opinion of their contributions to or negative influence on value must be developed by analysis of relevant market data;

Comment: For certain types of appraisal assignments in which a legal definition of market value has been established and takes precedence, the JURISDICTION EXCEPTION RULE may apply.

(d) Identify the effective date of the appraisal;

(e) Identify the characteristics of the properties that are relevant to the type and definition of value and intended use, including:

(i) the group with which a property is identified according to similar market influence;

(ii) the appropriate market area and time frame relative to the property being valued; and

(iii) their location and physical, legal, and economic characteristics;

Comment: The properties must be identified in general terms, and each individual property in the universe must be identified, with the information on its identity stored or referenced in its property record.

When appraising proposed improvements, and appraiser must examine and have available for future examination, plans, specifications, or other documentation sufficient to identify the extent and character of the proposed improvements.

Ordinarily, proposed improvements are not appraised for ad valorem tax. Appraisers, however, are sometimes asked to provide opinions of value of proposed improvements so that developers can estimate future property tax burdens. Sometimes units in condominiums and planned unit developments are sold with an interest in un-built community property, the pro rata value of which, if any, must be considered in the analysis of sales data.

(f) Identify the characteristics of the market that are relevant to the purpose and intended use of the mass appraisal, including:

(i) location of the market area;

(ii) physical, legal, and economic attributes;

(iii) time frame of market activity; and

(iv) property interests reflected in the market;

(g) In appraising real property or personal property:

(i) identify the appropriate market area and time frame relative to the property being valued;

(ii) when the subject is real property, identify and consider any personal property, trade fixtures, or intangibles that are not real property but are included in the appraisal;

(iii) when the subject is personal property, identify and consider any real property or intangibles that are not personal property but are included in the appraisal;

(iv) identify known easements, restrictions, encumbrances, leases, reservations, covenants, contracts, declarations, special assessments, ordinances, or other items of similar nature; and

(v) identify and analyze whether an appraised fractional interest, physical segment or partial holding contributes pro rata to the value of the whole;

Comment: The above requirements do not obligate the appraiser to value the whole when the subject of the appraisal is a fractional interest, physical segment, or a partial holding. However, if the value of the whole is not identified, the appraisal must clearly reflect that the value of the property being appraised cannot be used to develop the value opinion of the whole by mathematical extension.

(h) analyze the relevant economic conditions at the time of the valuation, including market acceptability of the property and supply, demand, scarcity, or rarity;

(i) identify any extraordinary assumptions and any hypothetical conditions necessary in the assignment; and site;

Comment: An extraordinary assumption may be used in an assignment only if:

- it is required to properly develop credible opinions and conclusions;
- the appraiser has a reasonable basis for the extraordinary assumption;
- use of the extraordinary assumption results in a credible analysis; and
- the appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions.

A hypothetical condition may be used in an assignment only if:

- use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for the purposes of comparison;
- use of the hypothetical condition results in a credible analysis; and
- the appraiser complies with the disclosure requirements set forth in USPAP for hypothetical conditions.

(j) determine the scope of work necessary to produce credible assignment results in accordance with the SCOPE OF WORK RULE.

<u>Standards Rule 6-3</u>

When necessary for credible assignment results, an appraiser must:

(a) in appraising real property, identify and analyze the effect on use and value of the following factors: existing land use regulations, reasonably probable modifications of such regulations, economic supply and demand, the physical adaptability of the real estate, neighborhood trends, and highest and best use of the real estate; and

Comment: This requirement sets forth a list of factors that affect use and value. In considering neighborhood trends, an appraiser must avoid stereotyped or biased assumptions relating to race, age, color, gender, or national origin or an assumption that race, ethnic, or religious homogeneity is necessary to maximize value in a neighborhood. Further, an appraiser must avoid making an unsupported assumption or premise about neighborhood

decline, effective age, and remaining life. In considering highest and best use, an appraiser must develop the concept to the extent required for a proper solution to the appraisal problem.

(b) In appraising personal property: identify and analyze the effects on use and value of industry trends, value-in-use, and trade level of personal property. Where applicable, analyze the current use and alternative uses to encompass what is profitable, legal, and physically possible, as relevant to the type and definition of value and intended use of the appraisal. Personal property has several measurable marketplaces; therefore, the appraiser must define and analyze the appropriated market consistent with the type and definition of value.

Comment: the appraiser must recognize that there are distinct levels of trade and each may generate its own data. For example, a property may have a different value at a wholesale level of trade, a retail level of trade, or under various auction conditions. Therefore, the appraiser must analyze the subject within the correct market context.

<u>Standards Rule 6-4</u>

In developing a mass appraisal, an appraiser must:

(a) Identify the appropriate procedures and market information required to perform the appraisal, including all physical, functional, and external market factors as they may affect the appraisal;

Comment: Such efforts customarily include the development of standardized data collection forms, procedures, and training materials that are used uniformly on the universe of properties under consideration.

(b) Employ recognized techniques for specifying property valuation models; and

Comment: The formal development of a model in a statement or equation is called model specification. Mass appraisers must develop mathematical models that, with reasonable accuracy, represent the relationship between property value and supply and demand factors, as represented by quantitative and qualitative property characteristics. The models may be specified using the cost, sales comparison, or income approaches to value. The specification format may be tabular, mathematical, linear, nonlinear, or any other structure suitable for representing the observable property characteristics. Appropriate approaches must be used in appraising a class of properties. The concept of recognized techniques applies to both real and personal property valuation models.

(c) Employ recognized techniques for calibrating mass appraisal models.

Comment: Calibration refers to the process of analyzing sets of property and market data to determine the specific parameters of a model. The table entries in a cost manual are examples of calibrated parameters, as well as the coefficients in a linear or nonlinear model. Models must be calibrated using recognized techniques, including, but not limited to, multiple linear regression, nonlinear regression, and adaptive estimation.

Standards Rule 6-5

In developing a mass appraisal, when necessary for credible assignment results, an appraiser must:

(a) Collect, verify, and analyze such data as are necessary and appropriate to develop:

(i) the cost new of the improvements;

(ii) accrued depreciation;

(iii) value of the land by sales of comparable properties

(iv) value of the property by sales of comparable properties;

(v) value by capitalization of income or potential earnings - i.e., rentals, expenses, interest rates, capitalization rates, and vacancy data;

Comment: This Standard Rule requires appraisers engaged in mass appraisal to take reasonable steps to ensure that the quantity and quality of the factual data that are collected are sufficient to produce credible appraisals. For example, in real property, where applicable and feasible, systems for routinely collecting and maintaining ownership, geographic, sales, income and expense, cost, and property characteristics data must be established. Geographic data must be contained in as complete a set of cadastral maps as possible, compiled according to current standards of detail and accuracy. Sales data must be collected, confirmed, screened, adjusted, and filed according to current standards of practice. The sales file must contain, for each sale, property characteristics data that are contemporaneous with the date of sale. Property characteristics data must be appropriate and relevant to the mass appraisal models being used. The property characteristics data file must contain data contemporaneous with the date of appraisal including historical data on sales, where appropriate and available. The data collection program must incorporate a quality control program, including checks and audits of the data to ensure current and consistent records.

(b) Base estimates of capitalization rates and projections of future rental rates and/or potential earnings capacity, expenses, interest rates, and vacancy rates on reasonable and appropriate evidence;

Comment: This requirement calls for an appraiser, in developing income and expense statements and cash flow projections, to weigh historical information and trends, current market factors affecting such trends, and reasonably anticipated events, such as competition from developments either planned or under construction.

(c) Identify and, as applicable, analyze terms and conditions of any available leases; and

(d) Identify the need for and extent of any physical inspection.

Standards Rule 6-6

When necessary for credible assignment results in applying a calibrated mass appraisal model an appraiser must:

(a) Value improved parcels by recognized methods or techniques based on the cost

approach, the sales comparison approach, and income approach;

(b) Value sites by recognized methods or techniques; such techniques include but are not limited to the sales comparison approach, allocation method, abstraction method, capitalization of ground rent, and land residual technique;

(c) When developing the value of a leased fee estate or a leasehold estate, analyze the effect on value, if any, of the terms and conditions of the lease;

Comment: In ad valorem taxation the appraiser may be required by rules or law to appraise the property as if in fee simple, as though unencumbered by existing leases. In such cases, market rent would be used in the appraisal, ignoring the effect of the individual, actual contract rents.

(d) Analyze the effect on value, if any, of the assemblage of the various parcels, divided interests, or component parts of a property; the value of the whole must not be developed by adding together the individual values of the various parcels, divided interests, or component parts; and

Comment: When the value of the whole has been established and the appraiser seeks to value a part, the value of any such part must be tested by reference to appropriate market data and supported by an appropriate analysis of such data.

(e) When analyzing anticipated public or private improvements, located on or off the site, analyze the effect on value, if any, of such anticipated improvements to the extent they are reflected in market actions.

<u>Standards Rule 6-7</u>

In reconciling a mass appraisal an appraiser must:

(a) Reconcile the quality and quantity of data available and analyzed within the approaches used and the applicability and relevance of the approaches, methods, and techniques used; and

(b) Employ recognized mass appraisal testing procedures and techniques to ensure that standards of accuracy are maintained.

Comment: It is implicit in mass appraisal that, even when properly specified and calibrated mass appraisal models are used, some individual value estimates will not meet standards of reasonableness, consistency, and accuracy. However, appraisers engaged in mass appraisal have a professional responsibility to ensure that, on an overall basis, models produce value conclusions that meet attainable standards of accuracy. This responsibility requires appraisers to evaluate the performance of models, using techniques that may include but are not limited to, goodness-of-fit statistics, and model performance statistics such as appraisal-to-sale ratio studies, evaluation of hold-out samples, or analysis of residuals.

Standards Rule 6-8

A written report of a mass appraisal must clearly communicate the elements, results, opinions, and value conclusions of the appraisal.

Each written report of a mass appraisal must:

(a) Clearly and accurately set forth the appraisal in a manner that will not be misleading;

(b) Contain sufficient information to enable the intended users of the appraisal to understand the report properly;

Comment: Documentation for a mass appraisal for ad valorem taxation may be in the form of (1) property records, (2) sales ratios and other statistical studies, (3) appraisal manuals and documentation, (4) market studies, (5) model building documentation, (6) regulations, (7) statutes, and (8) other acceptable forms.

(c) Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment;

Comment: The report must clearly and conspicuously:

- state all extraordinary assumptions and hypothetical conditions; and
- state that their use might have affected the assignment results.

(d) State the identity of the client, unless the client has specifically requested otherwise; state the identity of any intended users by name or type;

Comment: An appraiser must use care when identifying the client to avoid violations of the Confidentiality section of the ETHICS RULE. If a client requests that their identity be withheld from the report, the appraiser may comply with this request. In these instances, the appraiser must document the identity of the client in the work file and must state in the report that the identity of the client has been withheld at the client's request.

(e) State the intended use of the appraisal

(f) Disclose any assumptions or limiting conditions that result in deviation from recognized methods and techniques or that affect analyses, opinions, and conclusions;

(g) Set forth the effective date of the appraisal and the date of the report;

Comment: In ad valorem taxation the effective date of the appraisal may be prescribed by law. If no effective date is prescribed by law, the effective date of the appraisal, if not stated, is presumed to be contemporaneous with the data and appraisal conclusions.

The effective date of the appraisal establishes the context for the value opinion, while the date of the report indicates whether the perspective of the appraiser on the market or property as of the effective date of the appraisal was prospective, current, or retrospective.

(h) State the type and definition of value and cite the source of the definition;

Comment: Stating the type and definition of value also requires any comments needed to clearly indicate to intended users how the definition is being applied.

When reporting an opinion of market value, state whether the opinion of value is:

- in terms of cash or of financing terms equivalent to cash; or
- based on non-market financing with unusual conditions or incentives.

When an opinion of market value is not in terms of cash or based on financing terms equivalent to cash, summarize the terms of such financing and explain their contributions to or negative influence on value.

(i) Identify the properties appraised including the property rights;

Comment: The report documents the sources for location, describing and listing the property. When applicable, include references to legal descriptions, addresses, parcel identifiers, photos, and building sketches. In mass appraisal this information is often included in property records. When the property rights to be appraised are specified in a statute or court ruling, the law must be referenced.

(j) Describe the scope of work used to develop the appraisal; exclusion of the sales comparison approach, cost approach, or income approach must be explained;

Comment: Because intended users' reliance on an appraisal may be affected by the scope of work, the report must enable them to be properly informed and not misled. Sufficient information includes disclosure of research and analyses performed and might also include disclosure of research and analysis not performed.

When any portion of the work involves significant mass appraisal assistance, the appraiser must describe the extent of that assistance. The signing appraiser must also state the name(s) of those providing the significant mass appraisal assistance in the certification, in accordance with Standards Rule 6-9.

(k) Describe and justify the model specification(s) considered, data requirements, and the model(s) chosen;

Comment: The appraiser must provide sufficient information to enable the client and intended users to have confidence that the process and procedures used conform to accepted methods and result in credible value conclusions. In the case of mass appraisal for ad valorem taxation, stability and accuracy are important to the credibility of value opinions. The report must include a discussion of the rationale for each model, the calibration techniques to be used, and the performance measures to be used.

(l) Describe the procedure for collecting, validating, and reporting data;

Comment: The report must describe the sources of data and the data collection and validation processes. Reference to detailed data collection manuals must be made, as appropriate, including where they may be found for inspection.

(m) Describe calibration methods considered and chosen, including the mathematical form of the final model(s); describe how value estimates were reviewed; and, if necessary,

describe the availability of individual value conclusions;

(n) When an opinion of highest and best use, or the appropriate market or market level was developed, discuss how that opinion was determined;

Comment: The mass appraisal report must reference case law, statute, or public policy that describes highest and best use requirements. When actual use is the requirement, the report must discuss how use-value opinions were developed. The appraiser's reasoning in support of the highest and best use opinion must be provided in the depth and detail required by its significance to the appraisal.

(o) Identify the appraisal performance tests used and set forth the performance measures attained;

(p) Describe the reconciliation performed, in accordance with Standards Rule 6-7; and

(q) Include a signed certification in accordance with Standards Rule 6-9.

<u>Standards Rule 6-9</u>

Each written mass appraisal report must contain a signed certification that is similar in content to the following form:

I certify that, to the best of my knowledge and belief,

- **The statements of fact contained in this report are true and correct.**
- **The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.**
- **I have no (or the specified) present or prospective interest in the property that is the subject of this report, and I have no (or the specified) personal interest with respect to the parties involved.**
- **I have performed no (or the specified) services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.**
- **I have no bias with respect to any property that is the subject of this report or to the parties involved with this assignment.**
- **My engagement in this assignment was not contingent upon developing or reporting predetermined results.**
- **My compensation for completing this assignment is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.**

- **My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.**

- **I have (or have not) made a personal inspection of the properties that are the subject of this report. (If more than one person signs the report, this certification must clearly specify which individuals did and which individuals did not make a personal inspection of the appraised property.)**

- **No one provided significant mass appraisal assistance to the person signing this certification. (If there are exceptions, the name of each individual providing significant mass appraisal assistance must be stated.)**

Comment: The above certification is not intended to disturb an elected or appointed assessors work plans or oaths of office. A signed certification is an integral part of the appraisal report. An appraiser, who signs any part of the mass appraisal report, including a letter of transmittal, must also sign this certification.

In an assignment that includes only assignment results developed by the real property appraiser(s), any appraiser(s) who signs a certification accepts full responsibility for all elements of the certification, for the assignment results, and for the contents of the appraisal report. In an assignment that includes personal property assignment results not developed by the real property appraiser(s), any real property appraiser(s) who signs a certification accepts full responsibility for the real property elements of the certification, for the real property assignment results, and for the real property contents of the appraisal report.

In an assignment that includes only assignment results developed by the personal property appraiser(s), and appraiser(s) who signs a certification accepts full responsibility for all elements of the certification, for the assignment results, and for the contents of the appraisal report. In an assignment that includes real property assignment results not developed by the personal property appraiser(s), any personal property appraiser(s) who signs a certification accepts full responsibility for the personal property elements of the certification, for the personal property assignment results, and for the personal property contents of the appraisal report.

When a signing appraiser(s) has relied on work done by others who do not sign the certification, the signing appraiser is responsible for the decision to rely on their work. The signing appraiser(s) is required to have a reasonable basis for believing that those individuals performing the work are competent. The signing appraiser(s) also must have no reason to doubt that the work of those individuals is credible.

The names of individuals providing significant mass appraisal assistance who do not sign a certification must be stated in the certification. It is not required that the description of their assistance be contained in the certification, but disclosure of their assistance is required in accordance with SR 6-8(j).

(1) Source: The Appraisal Foundation, USPAP 2016-2017 Edition
Standard 6. Mass Appraisal Of Real Property http://www.appraisalfoundation.org

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V. DEMOGRAPHIC INFORMATION ON STATE AND COUNTY

1. STATE INFORMATION- NORTH CAROLINA 58
A. Brief History of North Carolina…… 58
B. Climate…….…….. 60
C. Population Growth……..... 61
D. Growth Projections…… 61
E. Population Comparisons of Surrounding States (2010)……. 62
F. Household Statistics (2010 – 2015)…… 62
G. General Income and Housing Statistics……. 63
H. Labor and Pay (2012 – 2015)…… 64
2. COUNTY INFORMATION - CUMBERLAND COUNTY..... 65
A. History of Cumberland County…….…… 65
B. Location and Transportation……..……65
C. Education…….……..... 66
D. Workforce and Employment……..... 66
E. Major Employers……..... 67
F. Population and Growth……68
G. Major Health Care Facilities in Cumberland County…… 69
H. Tourism and Visitation to the Region…… 69
I. Housing Sales Statistics for the Fayetteville MLS……. 69
J. Residential Sales Statistics from the Cumberland County Qualified Sales Database….75

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IV. DEMOGRAPHIC AND INFORMATION - STATE AND COUNTY

1. State Information- North Carolina

A. Brief History of North Carolina [1]

North Carolina's beginnings were tied closely to the earliest attempts at English colonization of North America. Roanoke Island in the northeast, a part of the heavily indented and island-fringed coast, was the site of the famous "lost colony" that vanished sometime after the original landing in 1587. This eastern region retains some of the flavor of colonial life, while the Piedmont region, centered at Charlotte and Raleigh, has become the state's hub of industry and population. The mountains of the west remain the focus of a lively rural culture, including that of an indigenous Cherokee community that has lived in the region for centuries.

Beginning in the mid-20th century, North Carolina experienced population growth at a much higher rate than the national average. This was largely attributable to its vibrant economy, which featured one of the strongest manufacturing sectors in the country—and the strongest in the South. At the same time, the state's service sector also expanded, keeping pace with the trend of the national economy. North Carolina's prosperity, natural beauty, and reputation for stable government have given it an image of progress and opportunity, even as it maintains its strong Southern identity.

Economy

North Carolina's economy was based mainly on the growing of tobacco in the 1700s and 1800s and on the manufacture of tobacco products and textiles in the early 1900s. While these activities remain important segments of the state's economy, they have largely been overshadowed by other industries and services. In the late 20th and early 21st centuries North Carolina's economy generated jobs at a higher rate than the national average in many areas.

Agriculture and forestry

Agriculture remains a small but important component of the state's economy, although the number of people it employs continues to decline. There are nearly 50,000 farms in the state; the great majority are relatively small—about 180 acres (75 hectares) or less—and most are operated by people who earn much of their income from farming. North Carolina is a national leader in the production of sweet potatoes, dry beans, tobacco, pigs, broilers (chickens), and turkeys. Other principal agricultural products include eggs, soybeans, and cotton. Farm income tends to be greatest in the central and southern counties of the Coastal Plain. With its abundance of forests, North Carolina has long been a leader in the production of lumber, wood for furniture, Christmas trees, pulp for paper, and other wood products. The principal trees are pines, largely harvested in the Coastal Plain and the Piedmont region. Hardwoods such as oak, hickory, ash, and poplar are drawn primarily from the Appalachian Mountains and parts of the Piedmont. Several active reforestation and forest sustainability programs have resulted in a growth of forest reserves, for both commercial and private or otherwise nonindustrial use. In addition to its forest resources, North Carolina has large reserves of nonmetallic rocks and minerals. The state is a leader in the production of phosphate rock, lithium minerals, feldspar, olivine, mica, and pyrophillite. Many of these resources are used in the construction industry, along with dimension and building stone, crushed granite, common clay (for bricks), gravel, and sand. Various gemstones are also found in the state. North Carolina's electric power is generated mainly by coal-fired thermal plants, with several nuclear stations supplying nearly one-third of the total. Most of the remainder is produced

by the state's numerous hydroelectric dams.

Manufacturing

For nearly a century North Carolina has remained the most successful manufacturing state in the South and one of the top manufacturing states in the country. Aside from developing solid tobacco and textile industries in the 20th century, the state also emerged as a major center for furniture making. Throughout the first half of the century, nearly half of the state's nonfarm workforce was employed in those three industries, but since the 1970s the state has steadily lost textile jobs. By the early 21st century, manufacturing accounted for less than one-fifth of all employment and for roughly one-fifth of the gross domestic product (GDP). The industrial base had become more diversified, with especially strong growth in computers, electronic communications equipment, chemicals, and machinery. Production of processed foods, particularly for domestic consumption, also has commanded a significant share of the sector.

Services

Since 1950, North Carolina's service activities have expanded rapidly. Major military installations, as well as a diverse tourism sector, have become important contributors to the state's economy. In the 1980s and '90s Charlotte became both a regional and national center for banking operations. In addition, the Raleigh–Durham–Chapel Hill area (dubbed the Research Triangle) has grown to encompass a wide variety of research and development activities and has spurred much new job growth, mainly in technology-based manufacturing and services. The service sector, including hospitality (restaurants and accommodations) as well as professional, scientific, technical, health care, and social services, constitutes a major portion of the state's GDP.

Transportation

Geographically, North Carolina is one day's trucking time both north to New York City and south to the rapidly expanding Florida market. The vast majority of freight is transported by road using the state's highway system; most of the remainder is carried by rail. The state has several commercial airports, although only two—at Raleigh-Durham and Charlotte—offer international passenger service. Those two facilities serve as hubs for national airlines, providing direct flights to many domestic destinations. A number of regional airports offer short flights to larger connecting cities. Deepwater ports at Wilmington and Morehead City are North Carolina's two Atlantic gateways to world markets and are equipped to handle any type of cargo. The Intracoastal Waterway threads its way between the Outer Banks and the mainland from New Jersey to the Gulf of Mexico.

Government

North Carolina is divided into 100 counties. County governments act for the state in providing education, health care, and welfare services. Locally elected officials for each county include county commissioners, a sheriff, a registrar of deeds, a clerk of the superior court, and members of the school board. Compared with those of many other states, North Carolina's local government is fairly uncomplicated. In general, counties provide services that apply to all citizens of the state, while municipalities provide the additional services appropriate for urban areas. As urban development has continued, counties have been authorized to offer services that are similar to those provided by municipalities, such as water supply and garbage collection. Because North Carolina's constitution

discourages the incorporation of municipalities near existing ones, North Carolina is relatively free from the proliferation of new municipal governments in urban areas that is found in many other states.

Education

The public school system, supported by the state since 1933, has improved steadily, though it is still below national levels. Although expenditures for education remain in the bottom quintile nationwide, North Carolina has made significant increases since the late1990s. In higher education, however, North Carolina has a number of institutions of national standing. The University of North Carolina (UNC) opened its doors to students at Chapel Hill in 1795 as the first state university in the United States. Since 1972 all 16 senior public institutions have been part of the UNC system, and all are governed by a single board elected by the General Assembly. In addition to Chapel Hill, its campuses include North Carolina State University (1887) at Raleigh; the North Carolina School of the Arts (1963) at Winston-Salem, which was the first state-supported residential school for the performing arts; and North Carolina Agricultural and Technical State University (1891) at Greensboro, one of the largest historically black institutions in the country. The state's community college system, which comprises more than 50 institutions, is one of the largest in the United States. Most of North Carolina's many private colleges and universities were established by various Protestant denominations. Of these institutions, Duke University (1839) in Durham, Wake Forest University (1834) in Winston-Salem, and Davidson College (1837) in Davidson are among the most prominent.

(1) Source: https://www.britanica.com/place/North-Carolina-state

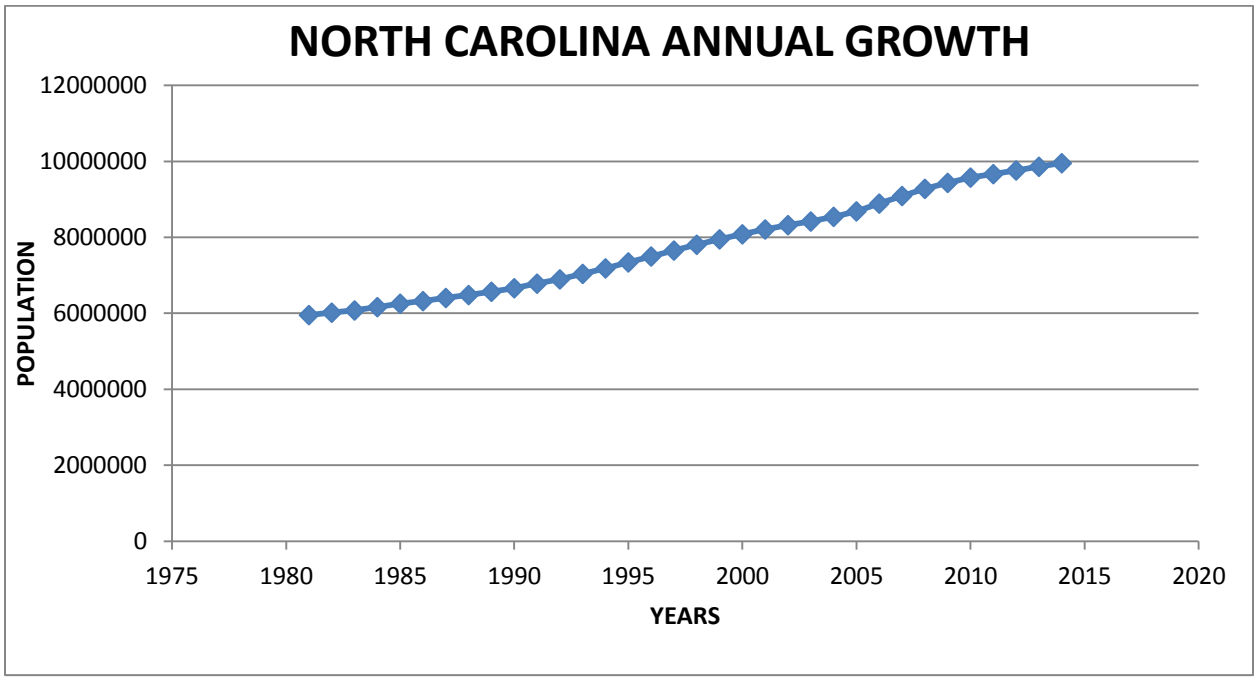
B. Climate

NC Region	Average Temperature	Average Rainfall	Average Snowfall
Mountains	55 degrees	48 inches	16 inches
Piedmont	59 degrees	41 inches	8 inches
Coast	64 degrees	54 inches	2 inches

(2) Source: www.nc.gov/about

C. Population Growth

North Carolina Population Growth



(1) Source: US Census Bureau - http://www.census.gov/2010census/data/apportionment-pop-text.php

D. Growth Projections

Population Overview: 2010-2035

2010	2015	2020	2025	2030	2035
9,574,917	10,054,722	10,574,718	11,095,319	11,609,883	12,122,640

(2) Source: NC Office of State Budget and Management - http://www.osbm.nc.gov/demog/county-projections

E. Population Comparisons of surrounding states (2010) [3]

	2010	
State or Nation	**Population**	Rank
United States	308,745,538	n/a
Georgia	9,687,653	9
North Carolina	9,535,483	10
Tennessee	6,346,105	17
Virginia	8,001,024	12
South Carolina	**4,625,364**	24

(3)Source: North Carolina State Demographics – http://demog.state.nc.us

F. Household Statistics (2010-2015) [4]

	North Carolina	USA
Housing units, 2015	4,490,948	**134,789,944**
Building permits, 2015	54,757	**1,183,582**
Median household income, 2014	$46,963	**$53,482**
Population, 2015 estimate	10,042,802	**321,418,820**
Population, percent change, April 1, 2010 to July 1, 2015	5.30%	**4.10%**
Population, 2010	**9,535,483**	**308,745,538**

(4) Source: U.S. Census Bureau: State and County *QuickFacts*
http://quickfacts.census.gov/qdf/states/

G. General Income and Housing Statistics

1. Personal Income Comparisons [5]

Statistic	North Carolina	Georgia	South Carolina	Tennessee	Virginia
Per capita personal income 2005	24,095	26,533	22,757	22,955	**30,810**
Per capita personal income 2010	**28,641**	**33,740**	**27,818**	**27,309**	**39,485**

2. Median Family Income [5]

Statistic	North Carolina	Georgia	South Carolina	Tennessee	Virginia
Median household income, 2005	44,845	51,646	43,121	41,934	**57,350**
Median household income, 2010	51,350	62,385	50,129	47,955	**70,328**
Median household income, 2012	**46,450**	**49,604**	**44,623**	**44,140**	**63,636**

3. General Information on Housing, Median Home Values. [5]

Statistic	North Carolina	Georgia	South Carolina	Tennessee	Virginia
2012 Housing Units Built 1939 or earlier	250,963	194,933	108,662	188,011	**271,461**
2012 Housing Units Built 1940-1979	1,583,296	1,179,140	790,766	1,195,033	**1,456,637**
2012 Housing Units Built 1980-1990	716,334	729,906	362,929	428,875	**582,219**
20012 Housing Units Built 1990-2000	899,664	866,532	435,631	526,321	**541,045**
Median Home Value 2005	119,818	132,850	105,539	108,860	**201,863**
Median Home Value 2010	146,650	169,915	128,806	129,840	**275,387**
Median Home Value 2012	**153,600**	**156,400**	**137,400**	**138,700**	**249,700**

(5) Source: https://edis.commerce.state.nc.us Economic Development Intelligence System, North Carolina Department of Commerce

H. Labor and Pay (2012-2015) [6]

Area Name	Year	Avg Ann Pay	Civilian Lab Force (000)	Unemp Rate (pct)	Hhsld Money Inc Med	Fam Inc Median
Georgia	2015	No data	4,746	5.8	No data	No data
Georgia	2014	48,134	4,735	7.2	$49,321	No data
Georgia	2013	46,765	4,744	8.2	$47,829	$57,458
Georgia	2012	46,267	4,819	9.1	$47,209	$56,684
North Carolina	**2015**	**No data**	**4,788**	**5.9**	**No data**	**No data**
North Carolina	**2014**	**44,969**	**4,648**	**6.2**	**$46,556**	**No data**
North Carolina	**2013**	**43,789**	**4,663**	**7.9**	**$45,906**	**$56,111**
North Carolina	**2012**	**43,110**	**4,698**	**9.2**	**$45,150**	**$54,995**
South Carolina	2015	No data	2,287	5.9	No data	No data
South Carolina	2014	40,798	2,212	6.4	$45,238	No data
South Carolina	2013	39,800	2,181	7.6	$44,163	$54,686
South Carolina	2012	39,286	2,168	9.4	$43,107	$52,763
Tennessee	2015	No data	3,088	5.7	No data	No data
Tennessee	2014	45,188	3,025	6.6	$44,361	No data
Tennessee	2013	44,077	3,068	8.0	$44,297	$54,691
Tennessee	2012	43,961	3,096	7.8	$42,764	$53,342
Virginia	2015	No data	4,218	4.5	No data	No data
Virginia	2014	52,936	4,276	5.2	$64,902	No data
Virginia	2013	51,923	4,230	5.6	$62,666	$75,524

(6) http://data.osbm.state.nc.us/pls/linc/dyn_linc_main.show?p_arg_names=module&p_arg_values=states

2. County Information - Cumberland County

A. History of Cumberland County [1] [2] [3] [4] [5]

Cumberland County began as a settlement in the upper Cape Fear River valley between 1729 and 1736 by European migrants known as Highland Scots. The area became a vital transportation link to other major settlements. A receiving and distribution center was established in 1730 on the Cape Fear River. This settlement was known as Campbellton.

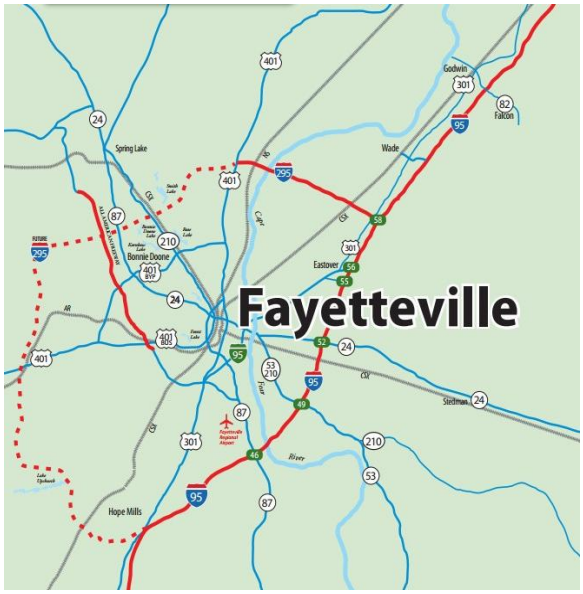
The colonial General Assembly passed an Act in 1754 which resulted in the political division of Bladen County, thus forming Cumberland County. It was named after the Duke of Cumberland (William Augustus) who commanded the English Army. Campbellton was named the County Seat during 1778. In 1783, Campbellton was renamed to Fayetteville in honor of Marquis De LaFayette, a French general that served in the American Revolutionary Army under General George Washington.

Fayetteville's growth was set back by a devastating fire in 1831 and by the invasion of General William T. Sherman in 1865. One of the principal factors that boosted the slow recovery of the area was the opening of Camp Bragg as an artillery and temporary training facility in 1918. The base was closed in 1921 and later reopened as a permanent army post and renamed Fort Bragg in honor of Confederate General Braxton Bragg, a North Carolina native.

Presently, Cumberland County has a population close to 320,000 and encompasses approximately 661 square miles. The area is known as the "Sandhills." Cumberland County has progressed from its beginnings as a riverfront distribution center to a highly commercialized area offering a variety of services to its citizens.

(1) Source: NC Home, http://www.carolana.com/NC/Counties/cumberland_county_nc.html

B. Location and Transportation



The I-95 Corridor is the Main Street of the East Coast, and Fayetteville and Cumberland County are right in the middle. That places our region's businesses within an eight-hour drive of two-thirds of the nation's population and consumers – including Philadelphia, Baltimore, Washington D.C., Charleston, Atlanta and New Orleans – and close to the East Coast's largest ports. In fact, the Ports of Wilmington, Morehead City, and Charleston are just hours away by truck.

Closer to home, we're a quick drive from all the educational and innovation resources of Raleigh and the Research Triangle.

You'll also find abundant Class I rail from Norfolk Southern and CSX, as well as regional rail service from Aberdeen, Carolina & Western. Fayetteville Regional Airport provides daily flights to Washington, D.C, Charlotte, and Atlanta, putting you one connecting flight to just about anywhere.

Amtrak's Meteor and Palmetto trains have daily scheduled services to the Fayetteville Train Station in route between New York and Miami.

Fayetteville Area System of Transit (FAST) improves quality of life by connecting people and places with

safe, efficient, reliable, courteous and innovative transportation. The City of Fayetteville was awarded a Federal Transit Administration (FTA) grant for $8 million in July 2012 to construct a downtown Multimodal Transit Center, which will be utilized by the Fayetteville Area System of Transit (FAST).
Source: www.TheNCAlliance.com

C. Education

2014 Educational Attainment	Fayetteville	Sandhills Region
Population Age 25+	238,727	578,031
High School Graduate	52,928	141,885
Some College-No Degree	69,257	141,201
Associate's Degree	26,341	56,869
Bachelor's Degree	34,315	71,464
Grad/Professional Degree	17,622	35,948

Source: www.TheNCAlliance.com

The North Carolina Community College system offers customized industrial training to new and existing companies. The 59-campus system is the third-largest community college system in the county and is nationally renowned for its training programs. FTCC's Industry Training department offers a multitude of courses, customized to suit the needs of the Company, and structured by the Company and FTCC to enhance the skills and qualifications of the Company's labor force. FTCC's customized training program includes re-employment assistance, qualified instruction and training, facilities and equipment, and supplies and customized materials.

Methodist University is an independent four-year institution of higher education with over 2,300 students from 41 states and 53 countries offering an engaging curriculum encompassing over 80 majors and concentration. The university offers the following degree programs: Master of Business Administration, Master of Justice Administration, and Master of Medical Science.

Fayetteville State University was founded in 1867 as the Howard School and remains one of the oldest teacher education institutions in the south. In the past decade, student enrollment at FSU has increased to more than 6,000 students. In the past decade, FSU has also added new degree programs, bringing the total number of undergraduate programs to 43 and the total number of master's degree programs to 23 offered through its College of Arts and Sciences, School of Business and Economics, and School of Education. New cutting edge programs in Intelligence Studies, Biotechnology, Fire Science, Forensic, Four-year Nursing, and others have been developed. In 1994, FSU began its first doctoral program in Educational Leadership. The School of Business and Economics has been ranked among the top 150 Business Schools in the United States by the prestigious Social Science Research Network.

Source: www.TheNCAlliance.com

D. Workforce and Employment

2015 Civilian Labor Force		
	Fayetteville MSA	Sandhills Region
Labor Force	146,138	342,871
Employed	136,040	319,030
Unemployed	10,098	23,841
Rate	6.9	7.0

Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)

E. Major Employers

2014 Sandhills Region Prosperity Zone Census of Employment and Wages			
Industry Sector (NAICS Title)	**Establishments**	**Average Employment**	**Average Weekly Wage**
Agriculture, Forestry, Fishing & Hunting	502	4,923	$592
Utilities	50	911	$1,351
Construction	1,404	9,776	$770
Manufacturing	542	34,416	$826
Wholesale Trade	611	5,741	$892
Retail Trade	2,735	35,306	$457
Transportation & Warehousing	533	8,015	$825
Information	166	2,453	$868
Finance & Insurance	824	5,115	$875
Real Estate & Rental & Leasing	687	2,737	$647
Professional & Technical Services	1,359	1,359	$1,026
Management of Companies & Enterprises	63	63	$827
Administrative & Waste Services	440	440	$505
Educational Services	440	440	$680
Health Care & Social Assistance	2,076	2,076	$796
Arts, Entertainment, & Recreation	194	194	$349
Accommodation & Food Services	1,435	1,435	$265
Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)			

Top 10 Private Employers – Sandhills Region Prosperity Zone			
Company	**Industry**	**County**	**Employed**
Smithfield Foods, Inc.	Manufacturing (meats)	Bladen	1,000+
Wal-Mart Associates, Inc.	**Trade, Transportation, Utilities**	**Cumberland**	**1,000+**
Goodyear Tire & Rubber, Inc.	**Manufacturing (tires)**	**Cumberland**	**1,000+**
Mountaire Farms of NC, Inc.	Manufacturing (pet food)	Robeson	1,000+
Wal-Mart Associates, Inc.	Trade, Transportation, Utilities	Roberson	1,000+
Smithfield Foods, Inc.	Manufacturing (meats)	Sampson	1,000+
International Paper Co., Inc.	Manufacturing (paper mill)	Columbus	500-999
Century Employer Organization, LLC	Professional & Business Serv	Columbus	500-999
US Postal Service	**Trade, Transportation, Utilities**	**Cumberland**	**500-999**
Food Lion	**Trade, Transportation, Utilities**	**Cumberland**	**500-99**
Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)			

Top 10 Private Employers – CUMBERLAND COUNTY			
Wal-Mart Associates, Inc.	Trade, Transportation, Utilities	Cumberland	1,000+
Goodyear Tire & Rubber, Inc.	Manufacturing (tires)	Cumberland	1,000+
US Postal Service	Trade, Transportation, Utilities	Cumberland	500-999
Food Lion	Trade, Transportation, Utilities	Cumberland	500-99
Purolator Filters, Na, LLC	Manufacturing (auto filters)	Cumberland	500-99
Eaton Corporation	Manufacturing (electrical)	Cumberland	500-99
Priva-Trends of North Carolina	Education & Health Services	Cumberland	500-99
Vertex Aerospace, LLC	Trade, Transportation, Utilities	Cumberland	500-99
Lowes Home Centers, Inc.	Trade, Transportation, Utilities	Cumberland	250-499
Source: NC Department of Commerce, Division of Employment Security		(www.TheNCAlliance.com)	

F. Population and Growth

Population and Growth				
	Fayetteville MSA	***AGR***	***Sandhills Region***	***AGR***
2019 Population Projection	403,943	1.1%	915,835	0.7%
2014 Population Estimate	382,279	1.4%	883,721	1.2%
2010 Census Population	366,383	0.9%	856,111	0.8%

Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)

2014 Estimated Population by Age Fayetteville MSA		
Age 0-19	111,890	29.3%
Age 20-29	65,587	17.2%
Age 30-39	55,117	14.4%
Age 40-49	46,325	12.1%
Age 50-59	45,941	12.0%
Age 60 and Over	57,419	15.0%

Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)

2012 Estimated Veteran Population Fayetteville MSA	
Est. Veteran Population Age 18+	47,203
Est. Veteran Population Age 18+ (Male)	36,883
Est. Veteran Population Age 18+ (Female)	10,320

Source: NC Department of Commerce, Division of Employment Security (www.TheNCAlliance.com)

G. Major Health Care Facilities in Cumberland County

Cape Fear Valley Medical Center, Part of Cape Fear Valley Health System (Fayetteville)	General Acute Care	504	Yes
Highsmith-Rainey Specialty Hospital, Part of Cape Fear Valley Health System (Fayetteville)	General Acute Care	112	Yes
Behavioral Healthcare, Part of Cape Fear Valley Health System (Fayetteville)	Psychiatric	139	No
Veterans Medical Center (Fayetteville)	Federal Medical & Surgery	219	69 Beds
Womack Army Medical Center (Fort Bragg)	Federal Facility	500	No

Source: North Carolina Hospital Association Membership Organizations, Telephone Survey & Internet Search, Regional Center for Economic, Community & Professional Development at UNC-Pembroke, March 2012. (www.TheNCAlliance.com)

H. Tourism and Visitation to the Region (2013)

COUNTY	Expenditures ($Million)	Payrolls ($ Million)	Employment (Thousands)	State Tax Revenues ($Millions)	Local Tax Revenues ($Millions)
CUMBERLAND	$472	$85	4.2	$24.81	$9.73
NC Southeast	$1,983	$348	18.5	$96.84	$74.79
Fayetteville MSA	$483	$86	4.3	$25.39	$9.89
Wilmington MSA	$1,032	$205	11.2	$48.16	$53.06

Source: NC Department of Commerce EDIS Demographics (www.TheNCAlliance.com)

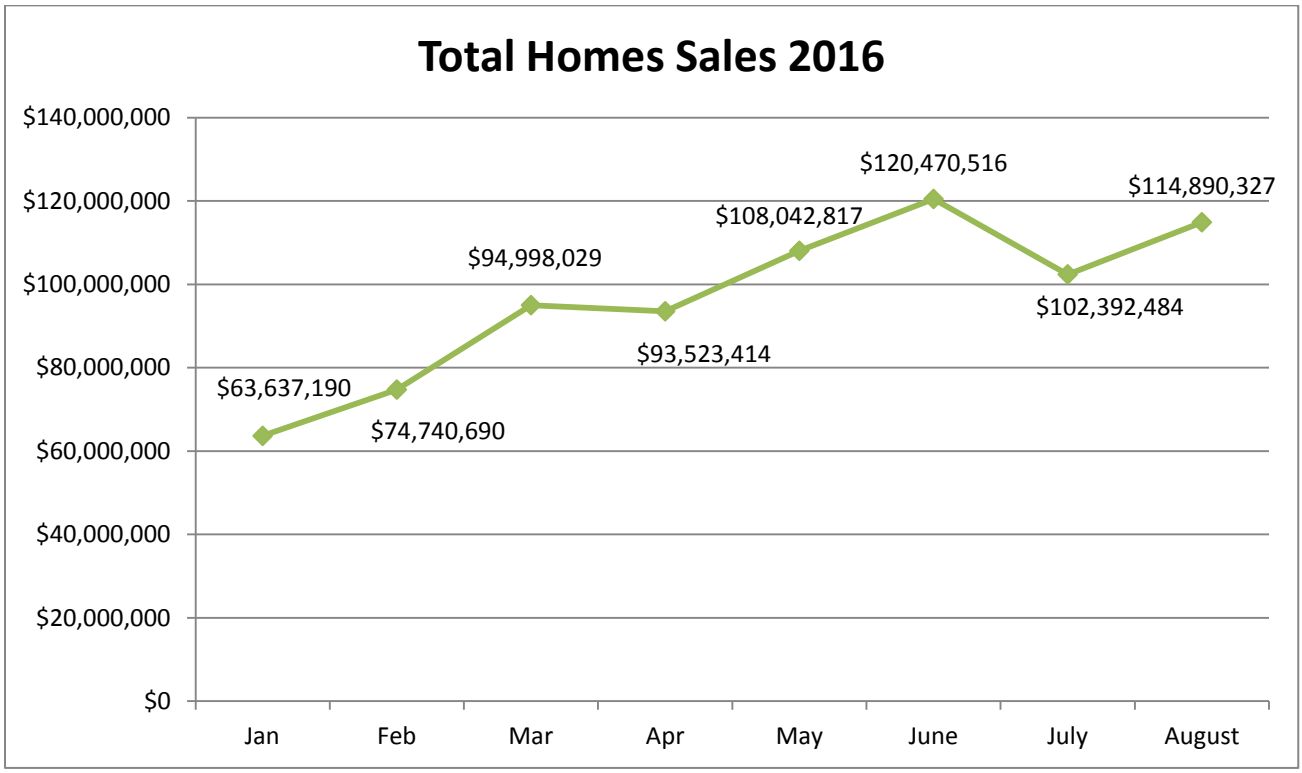
I. Housing Sales Statistics from the Fayetteville MLS [14]

1. Total Home Sales*, 2012-Aug 2016[14]

2012	2013	2014	2015	Jan-Aug 2016
5153	5674	6018	6285	4827

2. 2016 MLS Statistics (Cumberland and surrounding counties) [14]

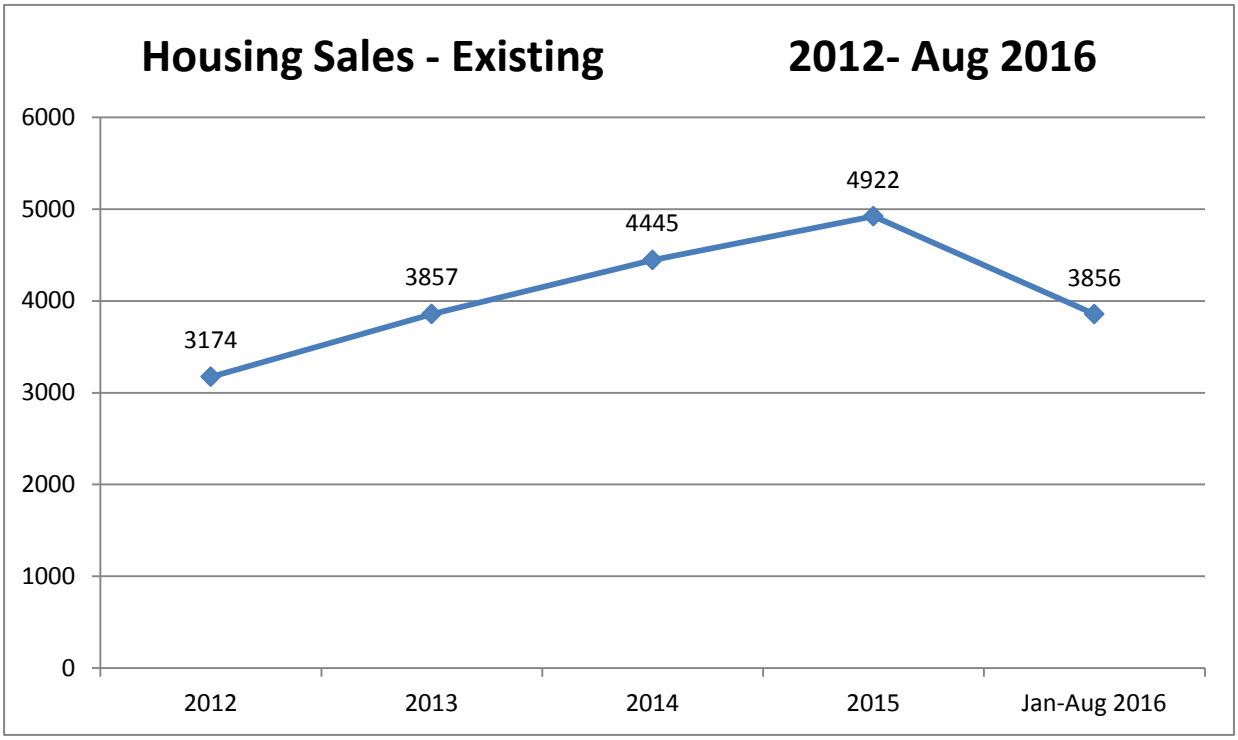
2016 Year Sales (Month)	Total Value Closed
Jan	$63,637,190
Feb	$74,740,690
Mar	$94,998,029
April	$93,523,414
May	$108,042,817
June	$120,470,516
July	$102,392,484
Aug	$114,890,327



(14) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

3. Existing Homes Sales (Years 2012- Aug 2016)[15]

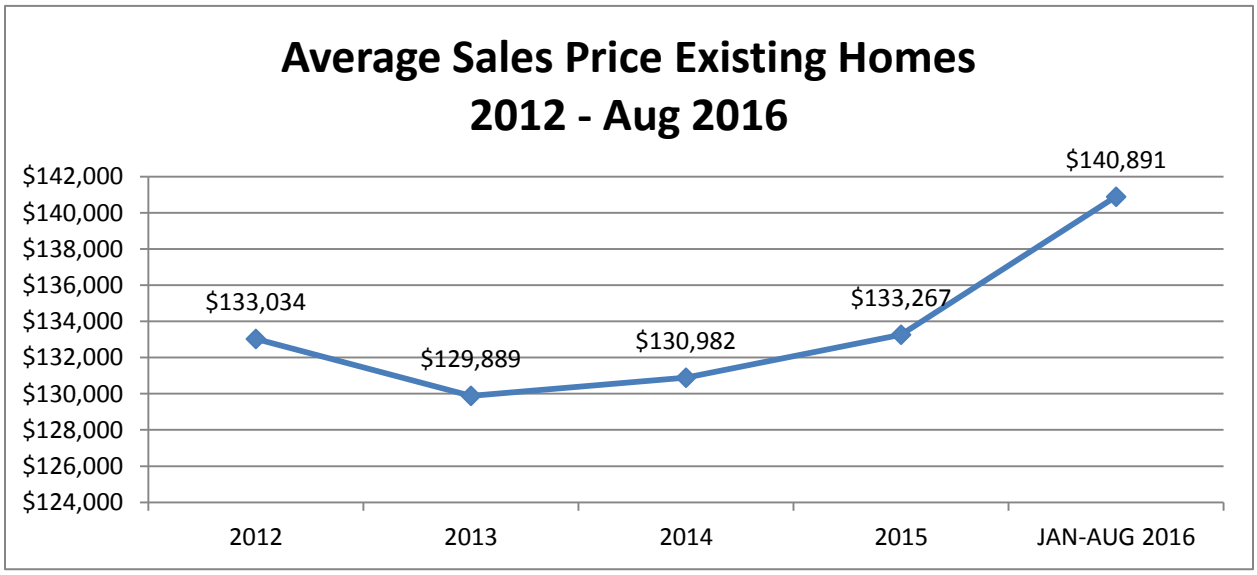
Year	Total closed - Existing
2012	3174
2013	3857
2014	4445
2015	4922
Jan-Aug 2016	3856



(15) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

4. Average Price of Existing Home Sales (2012-2016) [16]

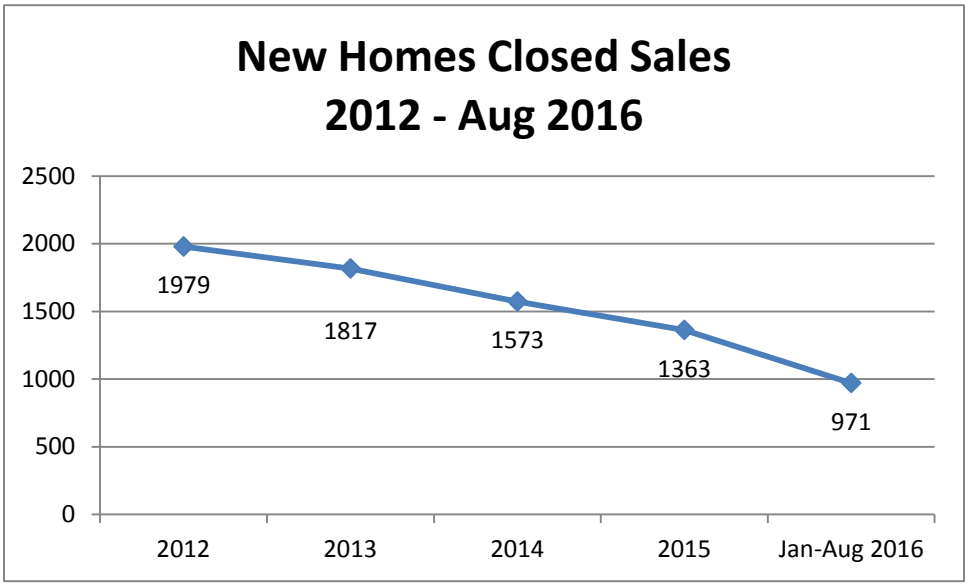
Average Price-Existing	Year
$133,034	2012
$129,889	2013
$130,982	2014
$133,267	2015
$140,891	Jan-Aug 2016



(16) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

5. New Home Sales (2012-2016) [17]

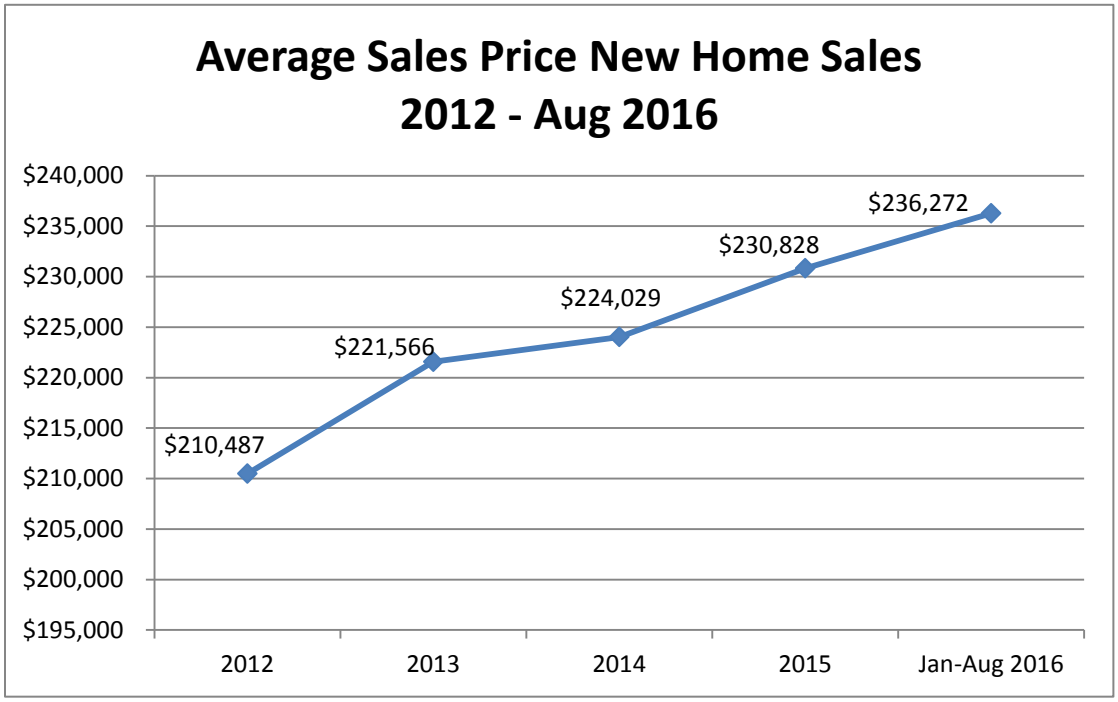
Total Closed-New	Year
1979	2012
1817	2013
1573	2014
1363	2015
971	Jan-Aug 2016



(17) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

6. Average Price of New Home Sales [18]

Average Price New Home Sales	Year
$210,487	2012
$221,566	2013
$224,029	2014
$230,828	2015
$236,272	Jan-Aug 2016



(18) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

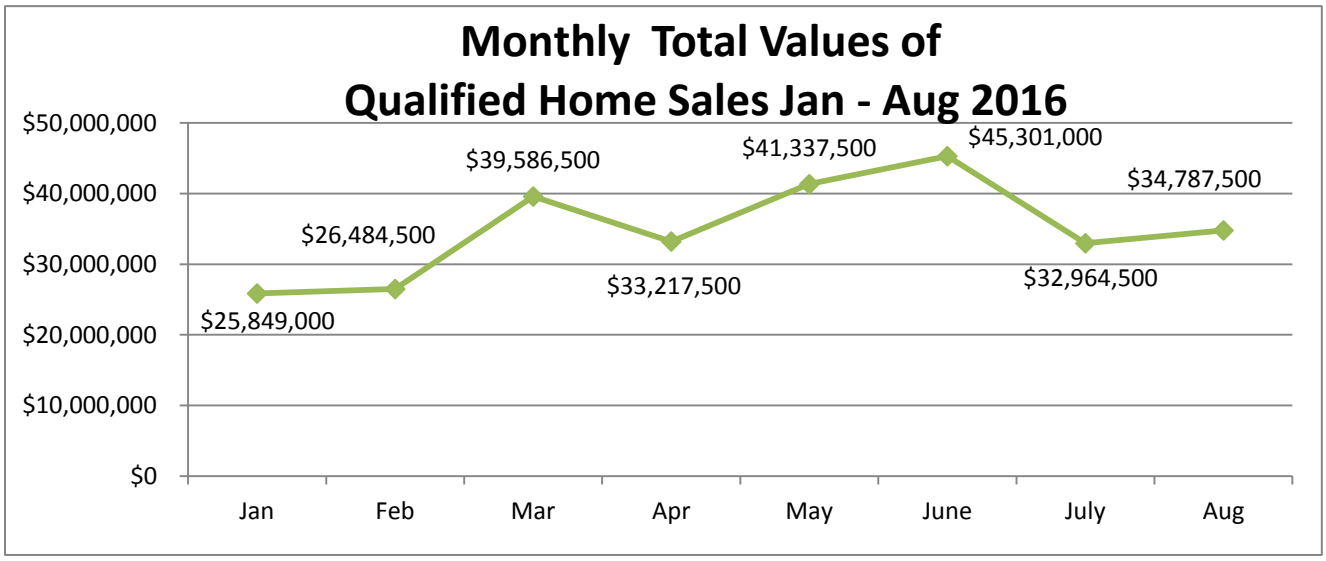
J. Residential Sales Statistics from the Cumberland County Qualified Sales Database[19]

1. Total Home Sales*, 2012-Aug 2016[19]

2012	2013	2014	2015	Jan-Aug 2016
2269	2354	2314	2537	1565

2. 2016 Qualified Sales Statistics (Cumberland) [19]

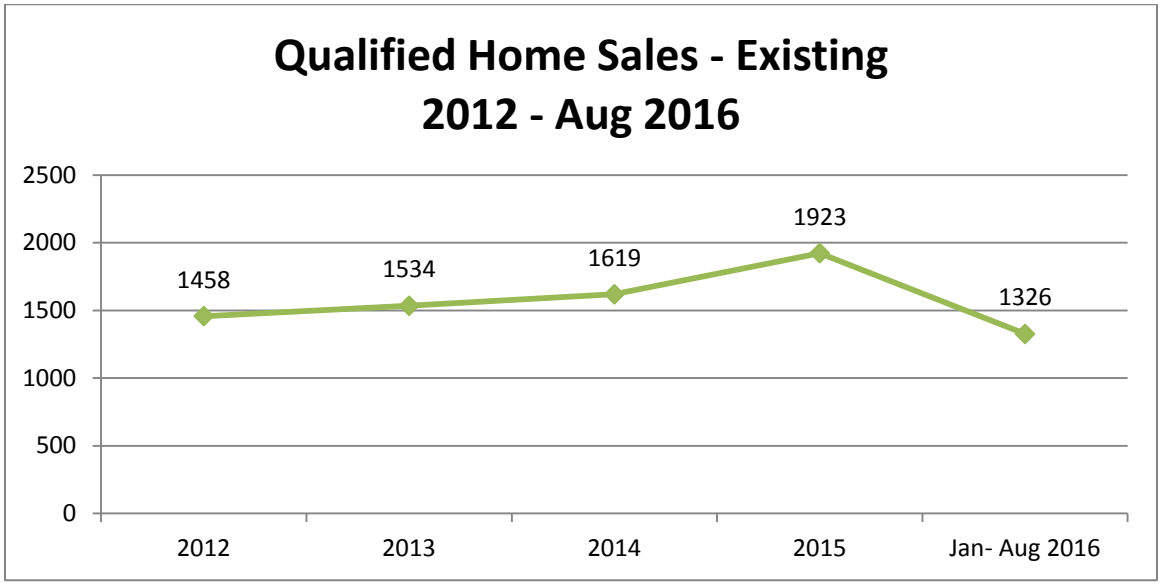
2016 Year Sales (Month)	Total Value Closed
Jan	$25,849,000
Feb	$26,484,500
Mar	$39,586,500
April	$33,217,500
May	$41,337,500
June	$45,301,000
July	$32,964,500
Aug	$34,787,500



(19) Source: Qualified Residential Sales Database
Cumberland County Tax Administration, Appraisal Department

3. Qualified Existing Homes Sales (Years 2012- Aug 2016)[20]

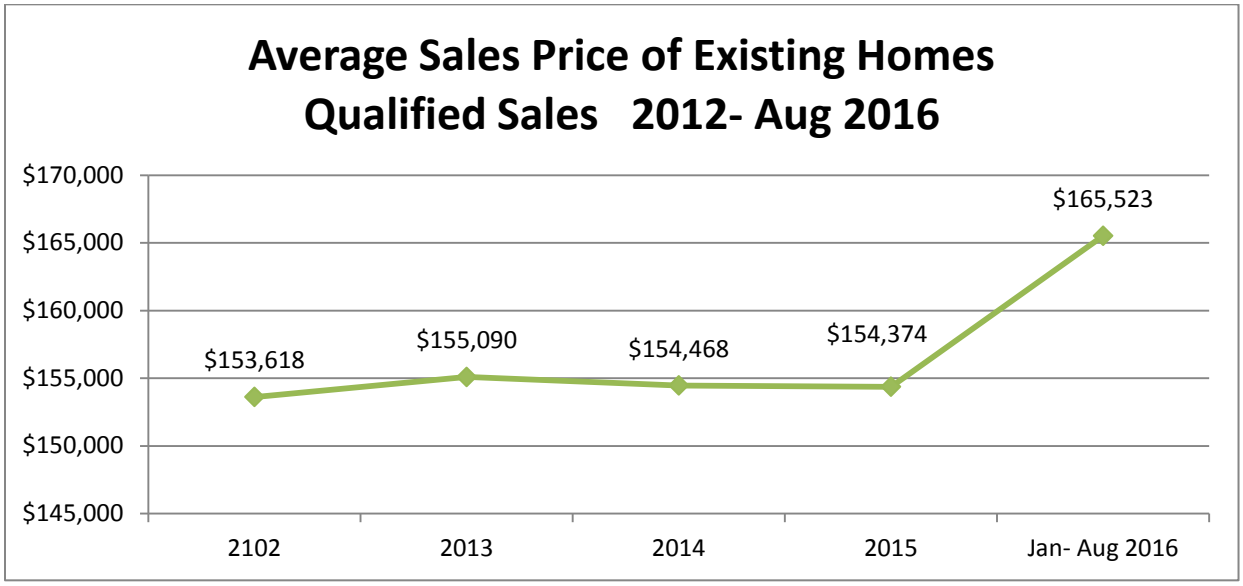
Year	Total closed - Existing
2012	1458
2013	1534
2014	1619
2015	1923
Jan-Aug 2016	1326



(20) Source: Qualified Residential Sales Database
Cumberland County Tax Administration, Appraisal Department

4. Qualified Sales - Average Price of Existing Home Sales (2012-2016)[21]

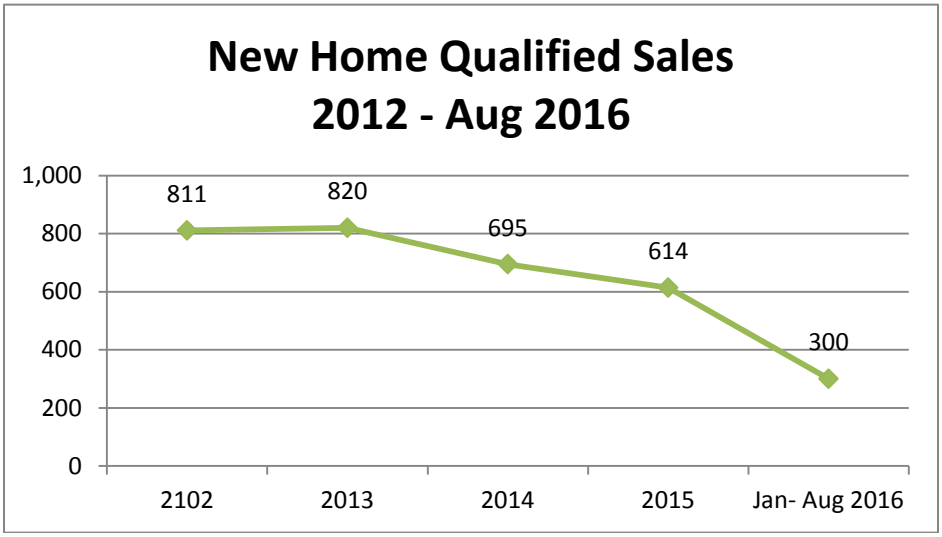
Average Price-Existing	Year
$153,618	2012
$155,090	2013
$154,468	2014
$154,374	2015
$165,523	Jan-Aug 2016



(21) Source: Qualified Residential Sales Database
Cumberland County Tax Administration, Appraisal Department

5. New Home Qualified Sales (2012-2016)[21]

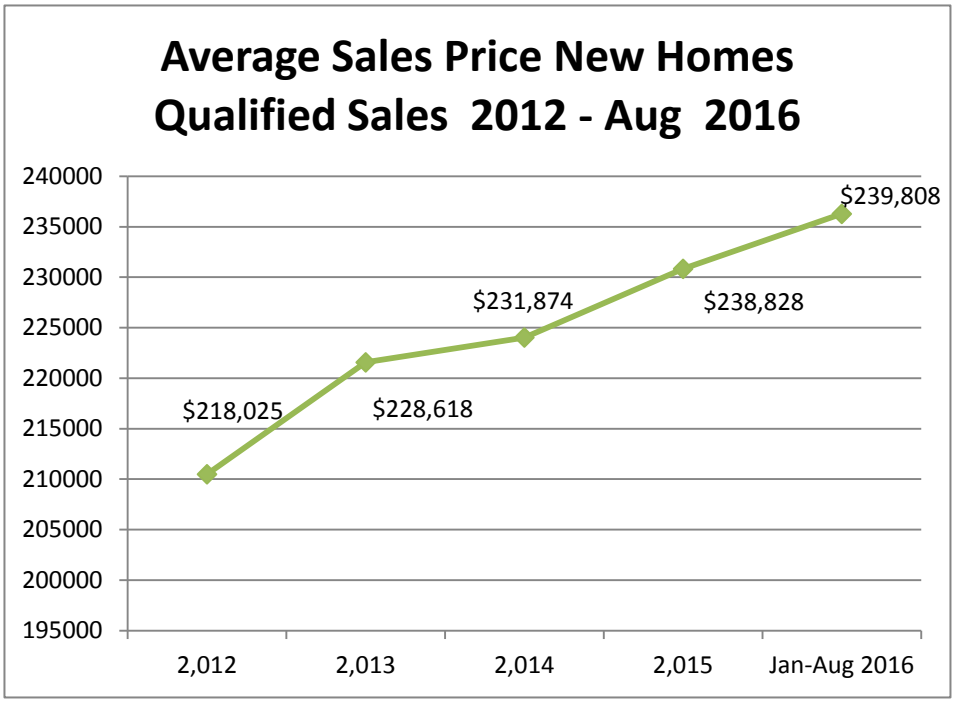
Total Closed-New	Year
811	**2012**
820	**2013**
695	**2014**
614	**2015**
300	**Jan-Aug 2016**



(22) Source: Qualified Residential Sales Database
Cumberland County Tax Administration, Appraisal Department

6. Average Price of New Home Qualified Sales[23]

Average Price New Home Sales	Year
$218,025	2012
$228,618	2013
$231,874	2014
$238,828	2015
$239,808	Jan-Aug 2016



(23) Source: https://www.fayettevillencmls.com/fay/main.php
Fayetteville Association of Realtors, Inc.

V. LAND VALUATION PROCESS

1. LAND VALUATION METHODS [1] 81
A. Sales Comparison 81
B. Abstraction 82
C. Allocation 82
D. Anticipated Use or Cost of Development Method 82
E. Capitalization of Ground Rents 83
F. Land Residual Capitalization 83
2. COMPUTER ASSISTED LAND PRICING PROCESS 85
A. Data that covers a Jurisdictional area. 85
B. Data that covers a Neighborhood area 88
C. Data that applies to a Specific parcel 91
3. COMPUTER CALCULATION OF LAND VALUES 93

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V. LAND VALUATION PROCESS

1. Land Valuation Methods [1]

Accurate land values are crucial to an effective assessment system. They contribute to the accuracy of appraisals of improved parcels and ensure that landowners pay their fair share of taxes. Accurate land values promote well-informed land use decisions by both the public and private sectors. A procedure manual was in place prior to data collection of land characteristics. This manual helped promote equity and uniformity to any adjustments that was needed to base land values.

Physically, land may be defined as the surface of the earth together with everything beneath and above. The shape of a parcel is like a three dimensional pyramid, with its apex at the center of the earth, extending upward through the surface into space. Legally, land is the right to enjoy, use, and dispose of this physical space, subject to the limitations imposed by government. The assessor first identifies, lists, and values all land and improvements thereto. This task requires the use of digital mapping showing boundaries and other features. Second an accurate inventory of land data, including location, ownership, classification and use, size, shape, and physical characteristics. The assessor analyzes the local market and estimates the assessment value. There are several methods that can be used to extract and arrive at an assessment. These are:

a. Sales Comparison
b. Abstraction
c. Allocation
d. Anticipated Use
e. Capitalization of Ground Rents
f. Land Residual Capitalization

A. Sales Comparison

The sales comparison approach uses analysis of recent comparable sales to value subject properties. The sales comparison approach is used to estimate property at its "fair market value". Ergo, the best technique for the valuation of property is abstracting data from actual sales and applying the results to unsold properties. The general formula for the market is:

$$\mathbf{MV = S +/- A.}$$

Where MV is market value, S is the sales of comparable property, and A is the amount of adjustments.

The sales comparison approach models the behavior of the market by comparing the properties being appraised (subjects) with similar properties that have recently sold (comparable properties) and are selected for similarity to the subject property. The sales are then adjusted for their differences from the subject. Finally, a market value for the subject is estimated from the adjusted sales prices of the comparable properties.

Subjective elements, intuition, and personal judgment are to be minimized as much as possible. A scientific methodology should be the objective of every appraiser. Personal judgment, no matter how well formed by experience, does not meet the criteria of the scientific process, which requires that every result be verifiable; verifiable independently of the peculiarities and personal idiosyncrasies of an individual.

There are two principle applications of the sales comparison approach in land valuation. The first is the comparative unit method and secondly the base lot method.

1. The appraiser uses the comparative unit method after a determination of the average or typical unit value. The average value is found by calculating the median or mean sale price per unit.

2. The appraiser uses the base lot method after a base parcel is selected to represent the stratum from a neighborhood sales file. Once the base lot is selected it is used as a benchmark to establish values for individual parcels for that neighborhood.

B. Abstraction

In the next method described we use the ability to subtract the depreciated replacement cost new of the improvement value from the sales price to arrive at the residual land value estimate. These calculated land values supplement the land value database. Sales with newer improvement make it easier to estimate depreciation, which in turn gives a better land value estimate. When using the abstraction method ensure that the correct comparative unit is used. Taking the time to convert the land value estimates to a comparative unit value will enhance uniformity and consistency among parcels in the market.

A question arises, what if there are not a significant number of vacant sales to make a market value assessment. Then there are other established methods an appraiser can choose and with careful research and good judgment a value can be achieved.

C. Allocation

Another method is the Allocation method. The allocation method is also known as the land ratio method. In theory for a given type of property there tends to be a consistent overall relationship between land and improvement values. With this relationship an appraiser can seek comparable areas with sufficient land sales, determine the typical ratio to sales of improved parcels in the subject area. The abstraction method is useful primarily in older established neighborhoods with few vacant land sales. This method can be useful if applied with care and validated to ensure that calculated land and improvement value estimates are consistent with available sale price data.

D. Anticipated Use or Cost of Development Method

Again in the absence of sufficient sales, there is another method that can be used to develop a land value for a property. This method is not the preferred method but can project a value based on the principle that the projected improvement must represent the highest and best use of the land. The results based on the principle of surplus productivity, indicates that the price a developer will pay for land in its present undeveloped state and by subtracting the total development cost from the projected sales price of the lots as if developed. The appraiser can calculate the residual land value after the satisfaction of labor, capital, and management has been met.

When studying Income property, or the ability for a parcel to generate income, all properties have one common appraisal characteristic: the capitalization of income generated by land is an important indication of value. Their value is based on the quantity, quality, and durability of their estimated net income before debt and after expenses is deducted. To arrive at a value for a property based on income some methods can be used.

E. Capitalization of Ground Rents

Capitalization of ground rents is used best when land rented or leased independently of improvements. This method can be used with farmland or commercial land that is leased on a net basis, where lessee is responsible for property taxes and all other expenses. This is best achieved if the lease is new are current for market conditions.

F. Land Residual Capitalization

When you apply this method it is important to understand several things. One that this method assumes that the parcel of land has an improvement on it and that the improvement is relatively new and that it represents the highest and best use of the property. Plus the improvement has no depreciation. This method also requires some other information.

1. A net operating income
2. A building value
3. A proper discount rate
4. A recapture rate
5. And an effective tax rate

When valuing land a standard unit of comparison is needed to establish an average or typical value for an area or neighborhood. The use of market analysis is used to arrive at a standard by calculating the median or mean of an area or neighborhood. There are several different units of comparison. Each different type of comparison can be used for different property classes. There are typically five different unit types.

a. Lot or Site
b. Site / Units Buildable
c. Acre
d. Square foot
e. Front foot

A. Lot or Site

Lot or site value is used when the market does not indicate a general difference in land size. This is typically used in residential subdivisions that are planned or developed in such a way that there is some degree of uniformity to the neighborhood.

B. Site or Units Buildable

When a parcel of land sells on a unit basis, for example an apartment complex, this method of comparison can be used. Apartment property is typically sold as a unit and such the unit of comparison would be units buildable.

C. Acre

In general when the market analysis shows that tracts of land sells for a per acre rate then this unit of comparison is used. Typically rural tracts of land, and industrial property use this type of comparison since they are sold commonly in larger portions.

D. Square Foot

This type of comparison is used mostly for commercial property. Since this type of property sells on a square foot basis.

E. Front Foot

The front foot unit of comparison is used when a property value indicates that the amount of exposure significantly contributes to value. This type of comparison is used typically when a parcel is more desirable and value based on how much frontal exposure there maybe. Some examples are commercial and even water front residential properties.

Plottage

For land valuation the term "plottage" refers to the assembling of small, adjoining parcels of land into a larger, more useful tract. Cumberland County refrains from valuing parcels under the plottage term. It is difficult in establishing the exact amount that plottage enhances the value of a property because it is considered as an intangible item. Cumberland County values all parcels either as platted or deeded.

(1) Source: Property Assessment Valuation, second edition International Association of Assessing Officers, Copyright 1996 130 East Randolph St. Suite 850, Chicago, Illinois 60601. Pages 69-125

2. Computer Assisted Land Pricing Process

This chapter explains the use of screens in the CAMA subsystem that are used for the purpose of land valuation. The land valuation methodology provides an on line capability for automated appraisal of all types of land (vacant, residential, commercial, industrial agricultural, green-belt, etc.) User defined codes drive this automated methodology.

There are three levels of data that are required in order to use the land valuation. One level is the need for data that applies to a jurisdiction and consists of several master tables. Second is the data that applies to a specific neighborhood, and third is the data that applies to specific parcel.

A. Data that covers a Jurisdictional area

Data that applies across the jurisdiction consists of several master tables that the user must define. These tables are listed below.

The **Appraisal Options (AOPT)** table defines several control options that the system provides the user of CAMA.

Data Values contained in the table are for demonstration purposes only.

```
ACTION: R  SCREEN: AOPT  A P P R A I S A LO P T I O N S
JURI= 20 YEAR= 2017 ROLL= RR      NEW CONSTRUCTION YEAR BLDGS: 2016

CREATE ASMO RECORDS (Y/N): N
NEW CONSTRUCTION YEAR MISC IMPR: 2016                    LAND RATE DISPLAY
(A/B/C): A DEPRECIATION YEAR BLDGS AND MISC IMPR: 2016  DUPLICATE OLD AA VALUES
(Y/N): Y

 RESIDENTIAL BASE CALCULATION METHOD (A/C): A COMMERCIAL
                        BASE CALCULATION METHOD (A/C): A
 USE CONDITION CODE OR CDU IN DEPR CALCULATIONS (C/D): C
   EFF/AGE OR EFF/AGE GROUP OR REMODELED YEAR (A/G/R): A
            DEPTH ADJUSTMENT CALCULATION METHOD (A/P): P
  DEPRECIATION, PERCENT GOOD, MIXED IN TABLES (D/P/M): D
     CALCULATE MARKET ADJ ON MIXED BLDG PARCELS (Y/N): N
         CALCULATE MARKET ADJ ON VACANT PARCELS (Y/N): N
    ALLOW LIFE AND DEPR/PCT-GD OVERRIDE ON MIMP (Y/N): Y
    ALWAYS CALCULATE COMR STD REFINEMENT TOTALS (Y/N): Y
      USE ALTERNATE RES AND MISC MARKET FACTORS (Y/N): N
```

The **Land Use Codes (LUSE)** table defines the valid land uses within the jurisdiction.

Data values contained in the tables are for demonstration purposes only.

```
 ACTION: R  SCREEN: LUSE
H-  ---------------------  L A N D   U S E   C O D E S  ---------------------
    JURI= 20 YEAR= 2017 ROLL= RR
                           ATR   AGRICULTURE  AG-USE      MINIMUM      MAXIMUM
    CODE  DESCRIPTIONS  SUBTOT#  ACRE RATE   SUBTOT#       RATE         RATE
    ====  ------------    --    -----------   --       -----------  -----------
01- R100  RES             01          0.00       AC:         0.00    99,999.99
          RES VACANT                          02  SF:         0.00    99,999.99
                                                  FF:         0.00    99,999.99
                                                  LT:         0.00    99,999.99
                                                  UB:         0.00    99,999.99
02- R101  RES             01          0.00       AC:         0.00   100,000.00
          1 FAMILY                            02  SF:         0.00    99,999.99
                                                  FF:         0.00    99,999.99
                                                  LT:         0.00   150,000.00
                                                  UB:         0.00    99,999.99
03- R102  RES             01          0.00       AC:         0.00    99,999.99
          2 FAMILY DUPLEX                     02  SF:         0.00    99,999.99
                                                  FF:         0.00    99,999.99
                                                  LT:         0.00    99,999.99
                                                  UB:         0.00    99,999.99
```

The Depth Adjustment Factors (DPTH) table defines the factors that will be used to calculate a depth adjustment multiplier when "front foot" valuation is performed.

Data values contained in these tables are for demonstration purpose only

```
ACTION: R  SCREEN: DPTH USERID:

H-  -L A N D   D E P T H   A D J U S T M E N T   F A C T O R S

JURI= 20   YEAR= 2017  ROLL= RR

     STANDARD DEPTH= 00000

     DEPTH                  DEPTH

     RANGE    CONSTANT    MULTIPLIER

     =====     -----       -------

 01- 00060     0.000       0.71000

 02- 00065     0.000       0.76000

 03- 00070     0.000       0.81000

 04- 00075     0.000       0.86000

 05- 00080     0.000       0.90000

 06- 00085     0.000       0.95000

 07- 00090     0.000       1.00000

 08- 00095     0.000       1.01000
```

The **Zoning Codes (ZONE)** table defines the valid zoning codes.

Data values contained in these tables are for demonstration purposes only

```
ACTION: R  SCREEN: ZONE USERID:
H-  ------------------------  Z O N I N G   C O D E S  ------------------------
    JURI= 20     YEAR= 2017

    ZONING      DESCRIPTION
    =====   ---------------------
01- AIR     AIRPORT
02- APO     AIRPORT OVERLAY
03- AR      AGRICULTURAL/RESIDEN
04- ARCZ    AGRI RES/COND ZONE
05- ARMH    AGRI/MH OVERLAY
06- ARMHO   AGRI RES/MH OL
07- A1      AGRI DIST
08- A1A     AGRI AVESBORO BTL GD
09- A1CD    AGRI/CONSERVANCY
10- A1CU    AGRI/COND USE
11- A1CUD   AGR/COND. USE DIST.
```

The Additional Land Fields (LANT) - allow the user to define up to 12 additional fields that can be entered on the parcel.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: R SCREEN: LANT USERID:                              CHANGE-REASON:
 ---  A D D I T I O N A L   L A N D   F I E L D S   D E F I N I T I O N  ---
 JURI= 20

            FIELD NAME      REQ'D  TYPE  CODE     MINIMUM      MAXIMUM
            --------------    -     -     -     ----------   ----------
 FIELD  01: NOTICE CODE       Y     C     Y              0            0
 FIELD  02: WATER             N     C     N              0            0
 FIELD  03: SEWER             N     C     N              0            0
 FIELD  04: ROAD TYPE         Y     C     Y              0            0
 FIELD  05: CORNER            N     C     N              0            0
 FIELD  06: CONTACT           N     C     N              0            0
 FIELD  07: YEAR USE REV      N     C     N              0            0
 FIELD  08: INCOME OVRD       N     N     N              1           20
 FIELD  09: RESID LAND        N     N     N              0   10,000,000
 FIELD  10: PROP RATING       N     C     N              0            0
 FIELD  11: ADJ INC VL +/-    N     C     N              0            0
 FIELD  12: ADJ INCOME VAL    N     N     N              0   10,000,000

 ZONE ADJUSTMENT: 13 LAND ADJUSTMENT 1: 04 LAND ADJUSTMENT 2:
```

The Additional Land Codes (LANC) table defines valid codes that can be entered in the additional land fields and used for adjustments.

```
ACTION: R  SCREEN: LANC USERID:
 H-  ---------------  A D D I T I O N A L   L A N D   C O D E S  ---------------
     JURI= 20
     ADDL LAND FIELD NUMBER= 04    TABLE ID= RDL

     ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   0.7500
 02-   1              ABUTS BUSY RD    0.9500
 03-   2              2 LANE BUSY RD   0.9000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

B. Data that covers a Neighborhood area.

Data which applies only to land parcels within a specific neighborhood, is defined in five tables. These tables are described in this section.

The **Neighborhood Characteristics (NBHD)** table defines the neighborhood/neighborhood model and various factors that control the processing of parcels within the neighborhood.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: R  SCREEN: NBHD USERID:
----------  N E I G H B O R H O O D   C H A R A C T E R I S T I C S  ----------

JU= 20 YR= 2017 RO= RR NEIGHBORHOOD= 0002  DESC: ARRAN PARK
                                           DOCUMENT ID:

    KNOWN AS: (2017) LOCATED JUST OFF STRICKLAND BRIDGE RD - KILMORY,
              BOSTIAN, ELKINS. TYPICAL LOT IS .48 AC.

                VALUATION MODEL: 16
      NEIGHBORHOOD MODEL NUMBER: 0002                NEIGHBORHOOD GROUP: 248
   RESIDENTIAL ADJUSTMENT RATIO: 1.000      COMMERCIAL ADJUSTMENT RATIO: 1.000
         LAND ADJUSTMENT FACTOR: 1.00          LAND RATE OVERRIDE (Y/N): N
                  DEFAULT DEPTH:     0                 PERIMETER METHOD: O

 ------------ RESIDENTIAL ------------   ------------ COMMERCIAL ------------
          DEFAULT QUALITY GRADE:                  DEFAULT QUALITY GRADE:
    DEFAULT EFFECTIVE AGE GROUP: 1          DEFAULT EFFECTIVE AGE GROUP: 1
          DEFAULT CDU/CONDITION:                    DEFAULT CONDITION:
 DEFAULT VALUE SELECTION METHOD: M       DEFAULT VALUE SELECTION METHOD: M
       VALU RECORD ROLL FORWARD: Y             VALU RECORD ROLL FORWARD: Y
```

The **Neighborhood Land Lines (NBHL)** tables define the land rates as assigned to the land use codes that will be used to calculate the land value for each neighborhood/neighborhood model.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: S  SCREEN: NBHL USERID:
   H-  --------------  N E I G H B O R H O O D   L A N D   L I N E   -----------
-
    JU= 20  YR= 2017  RO= RR  NBHD MODEL #= 0002        DOCUMENT ID:
                                                                      SIZE  BASE
    LAND USE      BASE RATE    BASE SIZE   INCR RATE  DEPTH  ADJ  SCHED DECR
      ====        ----------- ----------- ----------- ----- ----- -----  -
 01-   R750    AC:      000.00        1.00      000.00       0.000
         RES   SF:        0.00        0.00        0.00
               FF:        0.00        0.00        0.00     0
               LT:        0.00             ALL LAND UNIT TYPES
               UB:        0.00 ZONE TABLE:       LAND TABLE 1:       2:
 02-   0100    AC:        0.00        0.00        0.00       0.000
         RES   SF:        0.00        0.00        0.00
               FF:        0.00        0.00        0.00     0
               LT:   15,000.00             ALL LAND UNIT TYPES
```

The **Neighborhood Codes Cross Reference (NBCX)** screen contains a list of the neighborhood codes and the short description of the neighborhood.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: R  SCREEN: NBCX USERID:
H-  ---------------  N E I G H B O R H O O D   C O D E   X R E F  -----------
--
JURI= 20       YEAR= 2017   ROLL= RR          NBHD
NBHD                 DESCRIPTION            MODEL#
=====       ------------------------------    -----
1310        FOREST LKS/WESTSHORE/BROWNLEA     1310
1311        BROWNLEA ESTATES                  1311
1312        WEST AREA HEIGHTS                 1312
1313        VILLAGE PLACE CONDOMINIUMS        1313
1335        WESTCHESTER/TEAKWOOD ACRES        1335
1338        WESTWOOD I                        1338
1344        WOODLAND WEST                     1344
1345        WOODLAND VILLAGE                  1345
1346        WOODLAND VILLAGE CONDOS           1346
1353        WOODCLIFT                         1353
1354        WARRENWOOD ESTS                   1354
1355        WOODLEA I                         1355
1356        WOODLEA II (L. CARTER)            1356
1357        EVANWOODS                         1357
1358        LONGVIEW HILLS                    1358
```

The **Neighborhood Model Numbers Cross Reference (NBMX)** screen contains a list of the neighborhood model numbers and the neighborhood codes that reference these models.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: R  SCREEN: NBMX
 N E I G H B O R H O O D   M O D E L   N U M B E R S   X R E F  ----
     JURI= 20   YEAR= 2017  ROLL= RR

                                       NEIGHBORHOOD
     NBHD MODEL #   NEIGHBORHOOD          GROUP
        =====          =====           -----------
 01-    1310           1310               400
 02-    1311           1311
 03-    1312           1312               659
 04-    1313           1313               475
 05-    1320           1320               400
 06-    1335           1335               148
 07-    1338           1338               445
 08-    1344           1344               748
 09-    1345           1345               222
 10-    1346           1346               276
 11-    1353           1353               747
 12-    1354           1354               647
 13-    1355           1355               348
 14-    1356           1356               347
```

The **Size Adjustment Land Tables (SADJ)** screen shows the factors that are used for those parcels located in specified district neighborhoods where larger parcels valued as acreage required size adjustment.

Data values contained in these tables are for demonstration purposes only.

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
     JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE= SZ01

     UPPER SIZE LIMIT    FACTOR
       ===========       -------
 01-   00000000.00        1.0000
 02-   00000000.05        1.0000
 03-   00000000.10        1.0000
 04-   00000000.40        1.0000
 05-   00000000.50        1.0000
 06-   00000001.00        1.0000
 07-   00000002.00        0.7773
 08-   00000003.00        0.7340
 09-   00000005.00        0.6906
 10-   00000007.00        0.6392
 11-   00000010.00        0.6225
 12-   00000015.00        0.6058
 13-   00000020.00        0.5891
 14-   00000025.00        0.5364
 15-   00000030.00        0.4718
```

C. Data that applies to a Specific parcel

For data that applies only to a specific parcel, an example of these screens is described in this chapter.

The **Land Characteristics (LAND)** table is the initial data entry screen for defining a parcel to the CAMA subsystem. It defines the neighborhood and contains various land characteristics. It also defines the variables that determine whether a parcel is complete or not.

Data values contained in the tables are for demonstration purposes only.

```
ACTION: R SCREEN: LAND USERID:                          CHANGE-REASON:
 ---------------  L A N D   C H A R A C T E R I S T I C S  ---------------
 JU= 20  RO= RR  PARC= -                  YR= 2017 ALTKEY= 0806609
                                                    DYR= 2017 STATUS: ACTIVE

 SITUS ADDRESS: 000     DEVANE               ST               N/A
 ADD'L NUMBERS:

  NEIGHBORHOOD: 4413       PARCEL LAND USE: R101        LAND LINE CNT:    1
       ACREAGE:     0.000     LIVING UNITS: 000          BUILDING CNT:    1
  ADJUST (Y/N): N     %    BLDG ONLY (Y/N): N            VACANT (Y/N): N

 ---------------------  A D D I T I O N A L   D A T A  ---------------------
 NOTICE CODE     05        WATER           Y         SEWER           Y
 ROAD TYPE       3         CORNER          N         CONTACT         N
 YEAR USE REV              INCOME OVRD               RESID LAND              0
 PROP RATING               ADJ INC VL +/-            ADJ INCOME VAL          0

         MARKET VALUE:   120,000          AG USE VALUE:         0
    APPRAISED BY:                                      APPRAISED ON:
```

The **Land Lines (LANL)** screen defines the land valuation factors for the parcel.

Data values contained in these tables are for Demonstration purposes only.

```
ACTION: ? SCREEN: LANL USERID:                                CHANGE-REASON: --
 H-  --------------------------  L A N D   L I N E S  --------------------------
     JU= 20 RO= RR PARC=                                YR= 2017 ALTKEY= TIVE
                                                        DYR= 2017 STAT: ACTIVE

     LN#    LUSE   TYPE  FRONT   DEPTH        LAND UNITS    LOC%    MARKET VALUE
     DESC   -       -    -       D FACT    OV LAND RATE     SHP%    AG USE VALUE
     ZONING NOTES   -                       -  BASE RATE     PHYS%   -
     ==     -----   --   -----   -----     -  -----------   ---       ---------
 01- 01     0100    LT     183     200               1.00   100 %        50,000
     RES                        1.00000        50,000.00   100 %             0
     SF15                                      50,000.00   100 %
 02-                                                        %
```

Understanding the interaction of the software to data at these three levels is important to gaining the most efficient use of the CAMA land appraisal methodology.

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3. Computer Calculation of Land Values

The CAMA subsystem calculates a land value for each line that is entered on the landlines (LANL) screen. The total land value for the property is the sum of these values. The calculation of land value for a single Land line is as follows (factors and adjustments are used if applicable):

Land Value = ((Base Size * Base Rate) + (Land Units - Base Size) * Incremental Rate)) * Size Adjustment * Zone Adjustment (zone table, zone code) * Land Adjustment 1 (factor from LANC, based upon LANT.adj1.field#, Nbhl.land_adj_1.table, land.refinement for lant.adj1.field#) * Land Adjustment 2 (factor from LANC, based upon lant.adj2.field#, nbhl.land_adj_2.table, land.refinement for lant.adj2.field#) * Depth Factor * Location Factor * Shape Factor * Physical Factor * Land Adjustment

Where:

Base Size is:	Base land size defined in NBHL
Base Rate is:	Base land rate defined in NBHL
Land Units is:	Number of units entered on LANL
Incremental Rate is:	Incremental land rate defined in NBHL
Size Adjustment is:	Calculated from SADJ tables
Zone Adjustment is:	Calculated from tables specified in LANT
Land Adjustment 1 is:	Calculated from tables specified in LANT
Land Adjustment 2 is:	Calculated from tables specified in LANT
Depth Factor	Calculated[1]
Location Fact	Location adjustment percent entered on LANL divided by 100
Shape Factor	Shape adjustment percent entered on LANL divided by 100
Physical Factor	Physical adjustment percent entered on LANL divided by 100
Land Adjustment	Calculated

If the land rate has been overridden on the LANL screen, the following formula is used to calculate land value.

Land Value = Land Units *

---

[1]Depth factor will be 1.0 for all land types other than front foot (FF). This will have the affect of no change to the value.

[2]The land adjustment factor will be 1.0 if the land adjustment flag from the LAND screen is ―N. This will have the affect of no change in the value. If the land adjustment flag is ―Y, the land adjustment factor is retrieved from the NBHD table.

Overridden Rate Size Adjustment[1] * Zone Adjustment * Land Adjustment 1 * Land Adjustment 2 * Depth Factor * Location Adjustment Factor * Shape Adjustment Factor * Physical Adjustment Factor * Land Adjustment Factor Where: Overridden Rate Overridden land rate entered on LANL 1 - Size Adjustment Calculations - The size adjustment is calculated by using the acreage or square foot size from the Land Line (LANL) screen to obtain the factors that are used in the calculation of

the size adjustment. The system looks for a match of the size in the size adjustment field in the Size Adjustment Table (SADJ). The size adjustment field contains the maximum size that uses the size multiplier entered in the table. When an exact match of size is not found, the system prorates or interpolates the retrieved size multiplier with the previous entry in the table.

Depth Adjustment Calculations

There are two methods of calculating depth adjustment factors. The method that is used by the system depends on the depth adjustment calculation method that is in the **Appraisal Options (AOPT)** table. This method defines not only how the calculation is performed but also how the depth factor data is loaded in the **Depth Adjustment Factors (DPTH)** table.

Actual Method

This method uses the actual depth that is specified on the Land Lines (LANL) screen and the standard depth that has been entered in the Neighborhood Land lines (NBHL) table to obtain the factors that are used in the calculation of the depth adjustment factor. The system looks for an exact match of standard depth in the Depth Adjustment Factors (DPTH) table and then searches for the depth range that is greater than or equal to the actual depth.

For example, let‘s say that the **DPTH** table contains the following:

```
ACTION: R SCREEN: DPTH USERID: H
LAND DEPTH ADJUSTMENT FACTORS
JURI 20            YEAR= 2017

                   ROLL RR

STANDARD DEPTH = 100

RANGE                      CONSTANT   MULTIPLIER
             01-  00010   0.010    0.02300
             02-  00020   0.050    0.01900
             03-  00030   0.190    0.01200
             04-  00040   0.250    0.01000
             05-  00050   0.330    1.00800
             06-  00060   0.380    1.00700
             07-  00070   0.440    1.00600
             08-  00090   0.510    1.00500
             09-  00100   0.600    1.00400
             10-  00140   0.700    1.00300
             11-  00170   0.840    1.00200
             12-  00200   1.010    1.00100
```

If the standard depth in NBHL is 100 feet and the actual depth on the LANL screen is 150 feet, the system will retrieve the record containing a depth range of 170 feet. The calculation of the depth adjustment factor is then:

DAF = CON + (DM *AD)

Where:

DAF	depth adjustment factor
CON	depth constant from the DPTH table
DM	depth multiplier from the DPTH table
AD	actual depth from the LANL screen

In the above example, if the depth constant is 1.08 and the depth multiplier is 1.5, then the calculation would be:

DAF = .84 + (.002 * 150) DAF = .84
+ .3
DAF = 1.14

Percent Method

This method uses the depth percent that is calculated by dividing the actual depth specified on the Land Lines (LANL) screen by the standard depth entered on the Neighborhood Land Lines (NBHL) screen to obtain the factors that are used in the calculation of the depth adjustment factor. The standard depth field on the Depth Adjustment Factors (DPTH) table is always zero. The depth range field contains the maximum depth percent that uses the depth multiplier entered in the table. When an exact match of depth percent is not found, the system prorates the retrieved depth multiplier with the previous entry in the table.

As an example, let us assume the following entries in the DPTH table.

```
ACTION: R SCREEN: DEPTH USERID:
H     LAND DEPTH ADJUSTMENT FACTORS
JURI 20           YEAR= 17    ROLL RR

STANDARD DEPTH = 00000

                RANGE  CONSTANT  MULTIPLIER
             01-00000  0.000     0.00000
             02-00025  0.000     0.40000
             03-00050  0.000     0.70000
             04-00075  0.000     0.90000
             05-00100  0.000     1.00000
             06-00125  0.000     1.09000
             07-00150  0.000     1.17000
             08-00175  0.000     1.24000
             09-00200  0.000     1.30000
             10-00225  0.000     1.35000
             11-00250  0.000     1.39000
             12-00275  0.000     1.42000
```

If the actual depth on the LANL screen is 150 feet and the standard depth from the NBHL table is 200 feet, the depth percent would be 75%. In this case, the depth adjustment factor as determined by the system would be 0.90 since an exact match is found in the DPTH table.

If however, the actual depth was 180 feet, the depth percent would be 90% and the system would retrieve two entries from the DPTH table. First, it would retrieve the entry that is greater than the calculated depth percent. This would be the 100% entry this is referred to as the "original entry". Next, it would retrieve the previous entry on the table, or the 75% entry.

DAF = DM-P + ((DM-O - DM-P) * ((DEPTH% - PCT-P) / (PCT-O - CT-P)))

Where:

DAF	Depth adjustment factor
DM-P	Depth multiplier found in DPTH -- the preceding entry
DM-O	Depth multiplier found in DPTH -- the original entry
DEPTH%	Calculated depth percent
PCT-P	Depth percent key found in DPTH -- the preceding entry
PCT-O	Depth percent key found in DPTH -- the original entry

Following this example the system would calculate the depth adjustment factor as:

DAF = .90 + ((1.00.90) * ((.90 - .75) 1(1.00 - .75)))
DAF = .90 + (.1 * (.151.25)) DAF = .90 + (.1 * .6)
DAF = .90 + 06
DAF = .96

Computer Assisted Land Pricing is a very effective tool. Data that is collected and input into the Oasis system can be calculated and recalculated to adjust for various parcel changes. Parcel size and use change frequently for example and the computer will recalculate the value after the new information has been entered. Computer assisted land pricing ultimately speeds up the process of arriving at a value, plus with the added benefit of the computer calculated figures. With the aid of the computer the potential of human mathematical error is virtually eliminated.

Land pricing is calculated for all types of property from Residential, Commercial and Industrial to Agricultural property.

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VI. SCHEDULE OF LAND VALUES

1. LAND USE DESCRIPTIONS 101
2. RESIDENTIAL 103
A. Road Tables Associated with Residential Neighborhoods 106
B. Value Ranges for Residential Property 106
3. COMMERCIAL / INDUSTRIAL / 107
A. Zone Tables for Commercial Properties 108
B. Road Adjustment Tables for Commercial Properties. 112
C. Size Adjustment Tables for Commercial Properties 113
D. Value Ranges for Commercial Properties 120
E. Special Commercial Uses of Land 121
4. ACREAGE 122
A. Zone Adjustment Tables for Rural Properties 130
B. Size Adjustment Tables for Rural Properties 133
C. Road Tables Associated with Rural Neighborhoods 136
D. Values or Value Ranges for Acreage 137
5. Master Residential Land Tables 138
6. UNIQUE SITUATIONS IN LAND APPRAISAL 155

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VI. SCHEDULE OF LAND VALUES

Overview of Land

1. Land Use Descriptions

0100 RESIDENTIAL LOT – A lot in a homogeneous residential neighborhood.
0150 SECONDARY RESIDENTIAL LOT – A second home site found on the same parcel along with the primary home site.
0175 YARD LOT - A non-conforming, non-buildable lot in a neighborhood.
0200 RESIDENTIAL WATER LOT - A residential lot that adjoins a body of water.
0300 VACANT RURAL LOT – A lot in the rural district neighborhood that is vacant.
0400 RURAL HOME LOT – A lot that is improved by a home site located in the district neighborhood.
0450 SECONDARY HOME LOT – An additional home site along with a primary home site located within a district neighborhood.
0500 MULITFAMILY – Used primarily for Duplexes, Triplexes, Quadruple home sites located within any neighborhood.
0550 SECONDARY MULTI FAMILY - A lot with more than 1 Duplex, Triplex, or Quadruple home site located within any neighborhood.
0600 RESORT LOT – Residential lot on a Golf Course.
0900 APARTMENTS – Used for Income Producing apartment Neighborhoods listed as Units Buildable.
1096 COMMERCIAL LAND – Land that is zoned commercial and primarily listed in square feet.
1300 SOLAR FARM – Land that is utilized for the collection of solar energy
1700 MINERAL RIGHTS – Subsurface right only
1800 CELL TOWER SITE - Land containing cell tower and accessories
2096 RURAL ACREAGE – Rural land in designated district neighborhoods with more than 2.00 acres.
2250 CD ZONING – Land that is in the conservation district.
2300 SWAMP WASTE – For swamp soil types. There are several soil types that fall into this category. Refer to the 2017 Commercial or Residential Revaluation manual for additional information on soil type.
2350 LIMITED USE – For parcels with less desirable soil class but not classified as swamp. There are several types of this soil that fall into this category. Refer to 2017 Commercial or Residential Revaluation Manual for various soil types.
2400 GOLF COURSE ACREAGE – Land used for a Golf Course.
2600 CEMETERY ACREAGE –Land used for burial purposes.
3333 COMMON AREA – areas not owned by an individual owner of the condominium or cooperative residence, but shared by all owners, either by percentage interest or owned by the management organization.
4300 TOBACCO ALLOTMENTS – Poundage of Tobacco that an owner is allowed to grow.
5000 HIGHWAY CORRIDOR - Land that is platted and eventually will become a highway. (Highway Corridor adjustments repealed in 2016 Session law.)
7000 EXEMPT – Property that is excluded for taxes.
8888 BUILDINGS WITHOUT LAND – Property such as leasehold improvements that are set up to create a tax bill separate from land.
9500 RESIDENTIAL CONDOMINIUM INTEREST- Land and / or common elements value divided among all the owners of a condominium complex representing each owner's interest in the common elements.

Land codes for Submerged Land (Land under water, Ponds, Lakes etc.)

A750 Apartment- Water in an Apartment NBHD

C750 Commercial- water in a Commercial NBHD **E750** Exempt- Water on an Exempt Property

F750 Rural- Water in a Rural NBHD

H750 Hotel- Water on a Hotel Property

I750 Industrial- Water on an Industrial Property

M750 Mobile Home Park- Water in a MHP NBHD

R750 Residential- Water in a Regular Subdivision NBHD

2. Residential

Land pricing is based on market data. Market data is gathered from sales. Sales information has been gathered and analyzed since the beginning of 2009. When deeds are recorded in the register of deeds office, the Real Estate Excise Tax stamp is recorded which indicates the selling price of the property. The recorded deeds are assigned parcel identification numbers (PIN‘s) by the mapping section of the Tax Administrators’ Office. Some are newly assigned parcel identification numbers which are then entered into OASIS, the county’s computer system. Staff appraisers review the sales to determine if they qualify as arms-length transactions. An arms-length transaction is when both the buyer and seller act completely independent and in their own self-interest, there is no relationship between the parties involved in the transaction, the parties are not subject to any pressure or duress from the other parties, and the property was adequately exposed to the open market. The data from the sales that qualify are then entered into a residential sales database that is maintained by the appraisal department. Within this file various characteristics are coded to describe the uniqueness of the property. Such codes record road type, zoning, acres, sale price and sale date just to name a few.

Because of the high number of variables influencing the value of land, this section is tendered only as a general guideline. The individual appraiser must evaluate location, shape, size, topography, highest and best use, zoning, soil type, and any other factor or market condition before making a final determination of the parcel’s land value. The basic units of measurement are the lot or site, square foot, front foot, and acre. Lot values are used for the vast majority of residential properties. Square foot and front foot are units of measurement for commercial property, while acreage can be applicable to both. Adjustments for size, shape, zoning, topography, easements, ingress and egress, location, and other market conditions can still be used in adjusting the land rates.

The sales comparison approach models the behavior of the market by comparing the properties being appraised (subjects) with similar properties that have recently sold (comparable properties). Comparable properties are selected based on their similarity or comparability to the subject property. Any differences between the subject and the sale properties are then considered and appropriate adjustments made in order to derive an indicated market value for the subject. See an attached example of a portion of a sales file for vacant lots on the next page.

The OASIS/CAMA system utilized by Cumberland County maintains records of land rates for each neighborhood (NBHD) number that has been assigned to an individual property record sheet. Along with maintaining a land rate, the land tables are also associated with each land type. An example has been displayed for demonstration purposes only of a residential/rural land neighborhood table (NBHL). A complete record is found within the OASIS/CAMA system for all land tables used for the 2017 land valuation, any omission was not intentional.

Section A provides examples of the road tables commonly associated with some of the residential neighborhoods. Within each neighborhood various additional land tables may be associated with numerous land use types.

Section B indicates residential land value ranges associated with various residential types of properties.

Example of Residential Vacant Lot Sales							
PIN	Nbhd	Acreage	Sale-date1	Price-1	Deed-1	LUSE1	Road
0530.05-09-5504-	3175	0.26	20-Nov-15	52500	976000421	0100	3
0530.05-09-6640-	3175	0.22	20-Nov-15	52500	976000418	0100	3
0530.05-09-6659-	3175	0.25	13-Feb-15	50000	959400005	0100	3
0530.05-09-7650-	3175	0.25	20-Nov-15	52500	976000415	0100	3
0530.05-09-7760-	3175	0.26	11-Jan-16	52500	978600174	0100	3
0530.05-09-7858-	3175	0.27	25-Nov-14	50000	955000001	0100	3
0530.05-09-9309-	3175	0.29	18-Sep-14	50000	951000001	0100	3
0530.05-09-9628-	3175	0.25	20-Nov-15	52500	976000423	0100	3
0530.05-19-0694-	3175	0.21	27-Aug-15	53000	971200777	0100	3
0530.05-19-1439-	3175	0.2	22-Feb-16	50500	980800044	0100	3
0530.05-19-1812-	3175	0.22	01-Mar-16	53000	981400087	0100	3
0530.05-19-2630-	3175	0.27	17-Nov-14	50000	954400478	0100	3
0530.05-19-3281-	3175	0.22	07-Jan-15	50000	957300630	0100	3
0530.05-19-3552-	3175	0.25	27-May-14	50000	943700619	0100	3
0530.05-19-4600-	3175	0.25	23-Sep-15	53000	972700240	0100	3
0530.05-19-4777-	3175	0.24	18-Dec-15	52500	977400652	0100	3
0530.05-19-5569-	3175	0.26	15-Oct-14	51000	952600357	0100	3
0530.05-19-6784-	3175	0.23	14-Dec-15	53000	977100812	0100	3
0530.05-19-7256-	3175	0.26	22-Feb-16	51000	980800034	0100	3
0530.05-19-8223-	3175	0.2	17-Oct-13	50000	931300529	0100	3
0530.05-19-8305-	3175	0.26	15-Oct-13	50000	931200389	0100	3
0530.05-19-8444-	3175	0.28	15-Oct-13	50000	931200409	0100	3
0530.05-19-8554-	3175	0.27	03-Nov-15	52500	975100518	0100	3
0530.05-19-8793-	3175	0.23	11-Jan-16	52500	978600203	0100	3
0530.05-19-9320-	3175	0.2	17-Oct-13	50000	931300549	0100	3
0530.05-19-9762-	3175	0.23	29-Oct-15	53000	974800801	0100	3
0530.05-28-2858-	3175	0.27	25-Mar-14	50000	940000272	0100	3
0530.05-29-0732-	3175	0.23	13-Oct-15	53000	973800856	0100	3
0530.05-29-1103-	3175	0.2	29-Aug-14	50000	949900184	0100	3
0530.05-29-1576-	3175	0.31	08-Nov-13	50000	932700726	0100	3
0530.05-29-1702-	3175	0.23	21-Oct-15	53000	974400301	0100	3
0530.05-29-1772-	3175	0.23	22-Apr-15	50000	963400103	0100	3
0530.05-29-2743-	3175	0.23	22-Apr-15	50000	963400124	0100	3
0530.05-29-3713-	3175	0.23	08-May-15	50000	964500124	0100	3
0530.05-29-4588-	3175	0.25	05-May-15	50000	964500144	0100	3

Demonstration of NBHL display from OASIS.

```
ACTION: ?  SCREEN: NBHL USERID:
 H-  --------------  N E I G H B O R H O O D   L A N D   L I N E   ------------
     JU= 20  YR= 2017  RO= RR  NBHD MODEL #= xxxx    DOCUMENT ID:
                                                                   SIZE  BASE
     LAND USE      BASE RATE    BASE SIZE   INCR RATE  DEPTH  ADJ  SCHED DECR
       ====        ----------- ----------- ----------- ----- ----- -----  -
      R750    AC:      700.00        1.00      700.00       0.000
        RES   SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1:       2:
      0100    AC:        0.00        0.00        0.00       0.000
        RES   SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:   50,000.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1: RRL   2:
      0150    AC:        0.00        0.00        0.00       0.000
        RES   SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:   50,000.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1: RRL   2:
      0175    AC:        0.00        0.00        0.00       0.000
        YARD  SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:   12,500.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1: RRL
      2096    AC:   50,000.00        1.00   50,000.00       0.000
       ACREA  SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1: RRA
      2250    AC:      700.00        1.00      700.00       0.000
        CD-ZO SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1:
      2300    AC:      300.00        1.00      300.00       0.000
        SWP W SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1:
      2350    AC:      300.00        1.00      300.00       0.000
        LTD U SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1:
      3333    AC:   50,000.00        1.00   50,000.00       0.000
        COMN  SF:        0.00        0.00        0.00
              FF:        0.00        0.00        0.00     0
              LT:        0.00             ALL LAND UNIT TYPES
              UB:        0.00 ZONE TABLE:       LAND TABLE 1: RRA
```

A. Road Tables Associated with Residential Neighborhoods

Demonstration of Road Table - RRA

```
ACTION: R  SCREEN: LANC USERID:
------------      A D D I T I O N A L   L A N D   C O D E S  --------
------- JURI= 20
ADDL LAND FIELD NUMBER= 04         TABLE ID= RRA

ROAD LAND CODE          DESCRIPTION    FACTOR
 ==========           ---------------   ------
    0                 4 LANE BUSY RD    1.0000
    1                 ABUTS BUSY RD     1.0000
    2                 2 LANE BUSY RD    1.0000
    3                 PAVED             1.0000
    4                 UNPAVED DIRT      0.7500
    5                 ESMT LTD AC FLG   0.8000
    6                 LANDLOCKED        0.5000
    7                 PAPER STREET      0.5000
    8                 GRAVEL            0.7500
```

Demonstration of Road Table - RRL

```
ACTION: R  SCREEN: LANC USERID:
-   -----------  A D D I T I O N A L   L A N D   C O D E S  ---------------
JURI= 20
ADDL LAND FIELD NUMBER= 04         TABLE ID= RRL

ROAD LAND CODE          DESCRIPTION    FACTOR
 ==========           ---------------   ------
          0           4 LANE BUSY RD    0.7500
          1           ABUTS BUSY RD     0.9500
          2           2 LANE BUSY RD    0.9000
          3           PAVED             1.0000
          4           UNPAVED DIRT      0.7500
          5           ESMT LTD AC FLG   0.8000
          6           LANDLOCKED        0.5000
          7           PAPER STREET      0.5000
          8           GRAVEL            0.7500
```

(Road Tables listed in Master Residential Land Table)

B. Value Ranges for Residential Property

Residential (Urban and Suburban) Lot Value Ranges

Low Density		**Value Ranges**	
Residential Lot	$1,000		$500,000
Golf Courses	$10,000		$500,000
Waterfront	$10,000		$500,000
Acreage (per Acre)	$300		$450,000

High Density		**Value Ranges**	
Residential Lot	$1,000		$750,000
Acreage (per Acre)	$1,000		$200,000

3. Commercial / Industrial

Commercial and industrial land sales information is collected by the Tax Administrator's Office through the recording of deeds in the Register of Deeds Office. The recorded deeds are assigned parcel identification numbers (PIN's) by the mapping section of the Tax Administrator's Office. The newly assigned parcel identification numbers are then entered into OASIS, the county's computer system. Staff appraisers review the sales to determine if they qualify as arms-length transactions. An arms-length transaction is when both the buyer and seller act completely independent and in their own self-interest, there is no relationship between the parties involved in the transaction, the parties are not subject to any pressure or duress from the other parties, and the property was adequately exposed to the open market.

The data from the sales that qualify are then entered into the Commercial Sales data base file. The county is currently divided into commercial neighborhoods based on their geographical location. The sales in each group are arrayed by size and then adjusted for time of sale, location within the neighborhood, zoning, shape and physical characteristics to arrive at a base rate. The predicted rates are then adjusted for size using land size adjustment tables that were determined from the sales and applied to the proper commercial neighborhoods. These rates along with the size adjustment tables are then loaded into the OASIS system to value the commercial and industrial land.
A complete record is found within the OASIS/CAMA system for all land tables used for the 2017 land valuation part, any omission was not intentional. Examples of land tables are shown and references listed for all other tables used for 2017 in the OASIS/CAMA system. Any omission of reference is not intentional.

Section A - covers the various zoning land tables that were created and could be associated with numerous commercially designated neighborhoods.

Section B - is the various road land tables that was created and could be associated with numerous commercially designated neighborhoods.

Section C - is the size adjustment land tables that was created and could be associated with the various commercially designated neighborhoods.

Section D - describes a range of land values associated with the many different types of commercially designated land found in Cumberland County.

Section E – describes special commercial uses of land, methods for development of values and value ranges.

A. Demonstration of Zoned Tables for Commercial Properties

Zone Table – MT1 for demonstration purposes only

```
ADDL LAND FIELD NUMBER= 13    TABLE ID= MT1

ADDL LAND CODE     DESCRIPTION        FACTOR
 ==========     ---------------       ------
   HI             HEAVY IND.          0.0700
   LI             LIGHT IND.          0.0700
   MP             PLANNED IND.DST     0.0700
   M1             LIGHT IND. DIST     0.0700
   M1P            LIGHT IND. DIST     0.0700
   M1PCU          INDUST/PLAN/CU      0.0700
   M2             HEAVY IND. DIST     0.0700
   M2C            HEAVY IND. COND     0.0700
   M2CU           IND DIS CONDUSE     0.0700
```

Zone Table – MT2 for demonstration purposes only

```
ADDL LAND FIELD NUMBER= 13    TABLE ID= MT2

ADDL LAND CODE   DESCRIPTION             FACTOR
==========     ------------              ------
 HI            HEAVY IND.                 0.2500
 LI            LIGHT IND.                 0.2500
 MP            PLANNED IND.DST            0.2500
 M1            LIGHT IND. DIST            0.2500
 M2            HEAVY IND. DIST            0.2500
 M2C           HEAVY IND. COND            0.2500
 M2CU          IND. DIS CONDUSE           0.2500
```

Zone Table – MT3 for demonstration purposes only

```
ADDL LAND FIELD NUMBER= 13    TABLE ID= MT3

ADDL LAND CODE   DESCRIPTION              FACTOR
==========     ---------------            ------
 HI            HEAVY IND.                  0.4000
 LI            LIGHT IND.                  0.4000
 M             INDUSTRIAL                  0.4000
 MP            PLANNED IND.DST             0.4000
 M1            LIGHT IND. DIST             0.4000
 M2            HEAVY IND. DIST             0.4000
 M2C           HEAVY IND. COND             0.4000
 M2CU          IND. DIS CONDUSE            0.4000
```

Zone Table – MT4 for demonstration purposes only

```
            ADDL LAND FIELD NUMBER= 13    TABLE ID= MT4

 ADDL LAND CODE      DESCRIPTION      FACTOR
==========          ---------------  -
-----
 HI                  HEAVY IND.
0.4500
 LI                  LIGHT IND.
0.4500
 MP                  PLANNED IND.DST
                    0.4500
 M1                  LIGHT IND. DIST  0.4500
 M2                  HEAVY IND. DIST  0.4500
 M2C                 HEAVY IND. COND  0.4500
 M2CU                IND. DIS CONUSE  0.4500
```

Zone Table – MT5 for demonstration purposes only

```
        ADDL LAND FIELD NUMBER= 13        TABLE ID= MT5

ADDL LAND CODE       DESCRIPTION      FACTOR
  ==========        ---------------  -
      -----
  HI                HEAVY IND.
      0.6000
  LI                LIGHT IND.
                    0.6000
  MP                PLANNED IND.DST
                    0.6000
  M1                LIGHT IND. DIST   0.6000
  M2                HEAVY IND. DIST   0.6000
  M2C               HEAVY IND. COND   0.6000
  M2CU              IND DIS CONUSE    0.6000
```

Zone Table – MT6 for demonstration purposes only

```
        ADDL LAND FIELD NUMBER= 13    TABLE ID= MT6

ADDL LAND CODE    DESCRIPTION             FACTOR
  ==========     ---------------  ------
   HI             HEAVY IND.              0.7000
   LI             LIGHT IND.              0.7000
   MP             PLANNED IND.DST         0.7000
   M1             LIGHT IND. DIST         0.7000
   M2             HEAVY IND. DIST         0.7000
   M2C            HEAVY IND. COND         0.7000
   M2CU           IND DIS CONUSE          0.7000
```

Zone Table – MT7 for demonstration purposes only

```
ADDL LAND FIELD NUMBER= 13     TABLE ID= MT7
ADDL LAND CODE    DESCRIPTION         FACTOR
========== ---------------  ------
 HI         HEAVY IND.           0.8000
 HICZ       HVY IND CONUSE       0.8000
 LI         LIGHT IND.           0.8000
 MP         PLANNED IND.DST      0.8000
M1          LIGHT IND. DIST      0.8000
M1P         LIGHT IND. DIST      0.8000
M2          HEAVY IND. DIST      0.8000
M2C         HEAVY IND. COND      0.8000
M2CU        IND DIS CONUSE       0.8000
```

Zone Table – MT8 for demonstration purposes only

```
ADDL LAND FIELD NUMBER= 13     TABLE ID= MT8

ADDL LAND CODE    DESCRIPTION      FACTOR
========== ---------------  ------
HI          HEAVY IND.               1.0000
LI          LIGHT IND.               1.0000
MP          PLANNED IND.DST          1.0000
MPCU        PLAN IND/CONUSE          1.0000
MU          MIXED USE                1.0000
M1          LIGHT IND. DIST          1.0000
M1P         LIGHT IND. DIST          1.0000
M2          HEAVY IND. DIST          1.0000
M2C         HEAVY IND. COND          1.0000
M2CU        IND DIS CONUSE           1.0000
TOD         TOWER OVLY DIST          1.0000
```

Zone Table – PT1 for demonstration purposes only

```
ACTION: R  SCREEN: LANC USERID:

--------------  A D D I T I O N A L   L A N D   C O D E S  ----------

 JURI= 20

  ADDL LAND FIELD NUMBER= 13    TABLE ID= PT1

    ADDL LAND CODE     DESCRIPTION    FACTOR

      ==========     ---------------  ------

      OI             OFC & INSTITUTI  0.4000

      OIC            OFC & INSTIT/CD  0.4000

      OICZ           OFC&INSTIT/CDZN  0.4000

      OISUP          OFF/INST. SPUSE  0.4000

      PDEC           PLND DEV EMPCTR  0.4000

      P1             PLANNED IND.DST  0.4000
```

Zone Table – PT2 for demonstration purposes only

```
ACTION: R  SCREEN: LANC USERID:

--------------  A D D I T I O N A L   L A N D   C O D E S  ----------

 JURI= 20

  ADDL LAND FIELD NUMBER= 13    TABLE ID= PT2

    ADDL LAND CODE     DESCRIPTION    FACTOR

      ==========     ---------------  ------

      OI             OFC & INSTITUTI  0.6500

      OIC            OFC & INSTIT/CD  0.6500

      OICZ           OFC&INSTIT/CDZN  0.6500

      OISUP          OFF/INST. SPUSE  0.6500

      PDEC           PLND DEV EMPCTR  0.6500

      P1             PLANNED IND.DST  0.6500
```

B. Demonstration of Road Adjustment Tables for Commercial Properties

Road Adjustment Table – CR1 for demonstration purposes only

```
ACTION: R  SCREEN: LANC USERID:
 H-  ---------------  A D D I T I O N A L   L A N D   C O D E S
--
     ADDL LAND FIELD NUMBER= 04    TABLE ID= CR1
       ==========     ---------------  ------
     0              RES 4 LANE BUSY  1.0000
     10             MAJ CORNER PARC  1.2500
     11             MAJ CORNER OUTP  1.5000
     12             OUT PARCEL       1.2500
     13             SECONDARY ROAD   0.9000
     14             SIDE STREET      0.7500
     2              RES 2 LANE BUSY  1.0000
     3              DEFAULT MAIN RD  1.0000
     4              UNPAVED/GRAVEL   0.5000
     5              ESMT/LIMIT ACES  0.5000
     6              LANDLOCKED       0.4000
     9              MAIN RATE RD     1.0000
```

Road Adjustment Table – CR2 for demonstration purposes only

```
ACTION: R  SCREEN: LANC USERID:
H-  ---------------  A D D I T I O N A L   L A N D   C O D E
    ADDL LAND FIELD NUMBER= 04    TABLE ID= CR2
    ADDL LAND CODE     DESCRIPTION    FACTOR
      ==========     ---------------  ------
     10             MAJ CORNER PARC  1.5000
     11             MAJ CORNER OUTP  1.5000
     12             OUT PARCEL       1.2500
     13             SECONDARY ROAD   0.9000
     14             SIDE STREET      0.7500
     3              DEFAULT MAIN RD  1.0000
     4              UNPAVED/GRAVEL   0.5000
     5              ESMT/LIMIT ACES  0.5000
     6              LANDLOCKED       0.4000
     9              MAIN RATE RD     1.0000
```

Road Adjustment Table – CR3 for demonstration purposes only

```
ACTION: R  SCREEN: LANC     JURI= 20
ADDL LAND FIELD NUMBER= 04    TABLE ID= CR3

    ADDL LAND CODE     DESCRIPTION    FACTOR
      ==========     ---------------  ------
01-   10             MAJ CORNER PARC  1.5000
02-   11             MAJ CORNER OUTP  1.7500
03-   12             OUT PARCEL       1.5000
04-   13             SECONDARY ROAD   0.9000
05-   14             SIDE STREET      0.7500
06-   3              DEFAULT MAIN RD  1.0000
07-   4              UNPAVED/GRAVEL   0.5000
08-   5              ESMT/LIMIT ACES  0.5000
09-   6              LANDLOCKED       0.4000
10-   9              MAIN RATE RD     1.0000
```

C. Size Adjustment Tables for Commercial Properties

The following are size adjustment tables based on square foot rates. Each table has a coordinating size adjustment table for acreage rates. The acreage rate table schedules are: SATA1, SATA2, SATA3, SATA4, SATA5, SATA6, SATA7, SATA8, SATA9, SAA10, SAA11, SAA12, SAA13.

Size Adjustment Table - SAT1 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT1

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00010454.40        0.6600
02-   00013939.20        0.7300
03-   00028749.60        0.9100
04-   00039204.00        0.9700
05-   00043560.00        1.0000
06-   00047916.00        1.0200
07-   00052272.00        1.0500
08-   00056628.00        1.1000
09-   00065340.00        1.2600
10-   00130680.00        1.3300
11-   00174240.00        1.4900
12-   00217800.00        1.6500
13-   00261360.00        1.8100
14-   99999999.99        1.8100
```

Size Adjustment Table – SAT2 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT2

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00017424.00        1.1100
02-   00030492.00        1.0600
03-   00040946.40        1.0100
04-   00043560.00        1.0000
05-   00047916.00        0.9800
06-   00052272.00        0.9600
07-   00056628.00        0.9500
08-   00060984.00        0.9300
09-   00065340.00        0.9000
10-   00069696.00        0.8900
11-   00074052.00        0.8800
12-   00078408.00        0.8500
13-   00087120.00        0.8100
14-   00091476.00        0.7800
15-   00098010.00        0.7600
01-   00108900.00        0.7400
02-   00143748.00        0.5900
03-   99999999.99        0.5900
```

Size Adjustment Table – SAT3 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE= SAT3

     UPPER SIZE LIMIT    FACTOR
       ===========       -------
 01-   00004356.00        1.0500
 02-   00008712.00        1.0400
 03-   00030492.00        1.0200
 04-   00039204.00        1.0100
 05-   00043560.00        1.0000
 06-   00052272.00        0.9900
 07-   00065340.00        0.9700
 08-   00074052.00        0.9600
 09-   00082764.00        0.9500
 10-   00087120.00        0.9400
 11-   00108900.00        0.9200
 12-   00130680.00        0.8900
 13-   00152460.00        0.8400
 14-   00304920.00        0.7700
 15-   00457380.00        0.6500
 01-   00609840.00        0.5200
 02-   00762300.00        0.4000
 03-   00914760.00        0.2700
 04-   01089000.00        0.1400
 05-   99999999.99        0.1400
```

Size Adjustment Table – SAT4 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20 YEAR= 2017   ROLL= RR   SCHEDULE= SAT4
    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00007840.80        1.0600
02-   00008712.00        1.0600
03-   00017424.00        1.0400
04-   00021780.00        1.0300
05-   00026136.00        1.0200
06-   00039204.00        1.0100
07-   00043560.00        1.0000
08-   00052272.00        0.9900
09-   00060984.00        0.9800
10-   00069696.00        0.9700
11-   00078408.00        0.9600
12-   00082764.00        0.9500
13-   00087120.00        0.9300
14-   00130680.00        0.8900
15-   00196020.00        0.7900
01-   00261360.00        0.7000
02-   00326700.00        0.6100
03-   00392040.00        0.5200
04-   00457380.00        0.4300
05-   00522720.00        0.2400
06-   99999999.99        0.2400
```

Size Adjustment Table – SAT5 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI= 20 YEAR= 2017   ROLL= RR   SCHEDULE= SAT5
      UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00016117.20        1.3000
02-   00017414.00        1.2900
03-   00021780.00        1.2400
04-   00026136.00        1.1900
05-   00030056.40        1.1400
06-   00030492.00        1.1300
07-   00034848.00        1.0900
08-   00039204.00        1.0500
09-   00043560.00        1.0000
10-   00047916.00        0.9200
11-   00052272.00        0.8500
12-   00054450.00        0.8200
13-   00056628.00        0.7900
14-   00060984.00        0.7400
15-   00065340.00        0.7000
01-   00066646.80        0.6900
02-   00068824.80        0.6700
03-   00076230.00        0.6100
04-   00081892.80        0.5700
05-   99999999.99        0.5700
```

Size Adjustment Table – SAT6 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ USERID:
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI= 20       YEAR= 2017   ROLL= RR   SCHEDULE= SAT6
                   UPPER SIZE LIMIT    FACTOR
      ===========       -------
      00003484.80        1.5900
      00004356.00        1.5800
      00011325.60        1.5500
      00013068.00        1.5100
      00017424.00        1.4400
      00021780.00        1.3700
      00026136.00        1.3000
      00030492.00        1.2200
      00034848.00        1.1500
      00039204.00        1.0700
      00043560.00        1.0000
      00047916.00        0.9300
      00052272.00        0.8700
      00065340.00        0.6900
      00078408.00        0.6200
      00087120.00        0.5600
      00130680.00        0.5200
      00217800.00        0.4400
      00304920.00        0.4100
      00435600.00        0.3400
      00653400.00        0.2200
      00871200.00        0.1900
      01089000.00        0.1700
      09999999.99        0.1700
```

Size Adjustment Table – SAT7 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI= 20  YEAR= 2017   ROLL= RR   SCHEDULE= SAT7

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00029185.20        1.8400
02-   00039204.00        1.3300
03-   00043560.00        1.0000
04-   00052272.00        0.8500
05-   00054450.00        0.8400
06-   00060984.00        0.7700
07-   00065340.00        0.7200
08-   00087120.00        0.6800
09-   00217800.00        0.6200
10-   00304920.00        0.5300
11-   00392040.00        0.5000
12-   00435600.00        0.4800
13-   00871200.00        0.4400
14-   01045440.00        0.4200
15-   01306800.00        0.3500
01-   99999999.99        0.3500
```

Size Adjustment Table – SAT8 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20 YEAR= 2017  ROLL= RR  SCHEDULE= SAT8

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00039204.00        1.0200
02-   00043560.00        1.0000
03-   00054450.00        0.9100
04-   00056628.00        0.8800
05-   00065340.00        0.7800
06-   00087120.00        0.7500
07-   00174240.00        0.7200
08-   00217800.00        0.6600
09-   00304920.00        0.6000
10-   00392040.00        0.5600
11-   00435600.00        0.5400
12-   00653400.00        0.4800
13-   99999999.99        0.4800
```

Size Adjustment Table – SAT9 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT9

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00039204.00        1.0400
02-   00043560.00        1.0000
03-   00052272.00        0.8500
04-   00054450.00        0.8400
05-   00060984.00        0.7700
06-   00065340.00        0.7200
07-   00087120.00        0.6800
08-   00217800.00        0.6200
09-   00304920.00        0.5300
10-   00392040.00        0.5000
11-   00435600.00        0.4800
12-   00871200.00        0.4400
13-   01045440.00        0.4200
14-   01306800.00        0.3500
15-   99999999.99        0.3500
```

Size Adjustment Table – SAT10 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT10

     UPPER SIZE LIMIT    FACTOR
       ===========       -------
 01-   00039204.00        1.0600
 02-   00043560.00        1.0000
 03-   00054450.00        0.8800
 04-   00065340.00        0.8000
 05-   00087120.00        0.6900
 06-   00217800.00        0.4300
 07-   00304920.00        0.3700
 08-   00392040.00        0.3300
 09-   00435600.00        0.3200
 10-   00653400.00        0.2600
 11-   99999999.99        0.2600
```

Size Adjustment Table – SAT11 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT11

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00039204.00        1.0300
02-   00043560.00        1.0000
03-   00052272.00        0.8500
04-   00054450.00        0.8400
05-   00065340.00        0.7200
06-   00078408.00        0.6200
07-   00087120.00        0.5600
08-   00130680.00        0.5200
09-   00217800.00        0.4400
10-   00304920.00        0.4100
11-   00435600.00        0.3000
12-   00653400.00        0.2200
13-   00871200.00        0.1900
14-   01089000.00        0.1700
15-   99999999.99        0.1700
```

Size Adjustment Table – SAT12 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD   LAND   LINE   SIZE   ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT12

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00008712.00        1.2400
02-   00013068.00        1.2000
03-   00015246.00        1.1300
04-   00017424.00        1.1100
05-   00021780.00        1.0700
06-   00026136.00        1.0500
07-   00030492.00        1.0300
08-   00039204.00        1.0200
09-   00043560.00        1.0000
10-   00050094.00        0.9500
11-   00065340.00        0.8600
12-   00076230.00        0.8100
13-   00087120.00        0.7600
14-   00130680.00        0.6200
15-   00174240.00        0.5300
01-   99999999.99        0.5300
```

Size Adjustment Table – SAT13 for Demonstration Purposes

```
ACTION: R  SCREEN: SADJ
NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
SCHEDULES
JURI= 20   YEAR= 2017   ROLL= RR   SCHEDULE=
SAT13

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00000000.01        1.0000
02-   99999999.00        1.0000
```

D. Value Ranges for Commercial Properties

BASE RATE RANGES FOR COMMERCIAL PROPERTY

COMMERCIAL (Includes PROFESSIONAL & INDUSTRIAL) / APARTMENTS / MOBILE HOME PARKS

		RATE VALUE RANGES	
COMMERCIAL		LOW	HIGH
	ACRE	25,000	1,400,000
	SQUARE FOOT	0.10	40.00
	FRONT FOOT	200	5,000
INDUSTRIAL			
	ACRE	6,000	1,400,000
	SQUARE FOOT	0.10	30.00
APARTMENT			
	ACRE	1,000	450,000
	SQUARE FOOT	0.10	12.00
	UNIT	1,500	20,000
MOBILE HOME PARK	ACRE	1,000	450,000
	SQUARE FOOT	0.03	11.00

Individual property land values may be adjusted for factors not reflected in the base rate. Factors include but are not limited to: size, shape, zoning, topography, easements, corner influence, ingress & egress, location, and any other factor.

Apartment land can be valued at per unit cost, with any residual / undeveloped land valued as such or as excess acreage.

E. Cell Tower Sites and Solar Farm Acreage

Cell Towers

Over the past years, companies have been leasing portions of land for cell towers; this includes but is not limited to urban sites, suburban sites and rural sites. Uses on these leased spaces are limited to the use of the lessee and would change all present land uses to commercial. Per the North Carolina General Statutes as of July 1, 2015 (NCGS 105-333(17a, b)) all cell towers, equipment and site improvements (fencing, shelters, etc.) will be assessed by the North Carolina Department of Revenue. It is up to the county, however, to assess the cell tower site (land only). Research has found that these cell tower sites are normally leased and thus provides a source of income to the site or land. It is required that this source of income be recognized and how it contributes to the market value of the land or site. Data has been collected from a number of sources: companies that lease the space and several land owners that benefit from the lease. Lease information has been considered in the development of a "per site" value. Cell tower sites typically take up approximately .25 acre or 10,890 square feet. The actual site size can range from .03 acre to approximately 1 acre thus for the purpose of valuation and to remain equitable, cell tower sites have been valued at a per site value (as a lot value). The location of the site has also been considered. An adjustment has been made to those sites that are in more rural or remote areas versus those that are in higher densely populated areas.

Cell Tower Sites value range from $50,000 to $150,000 per lot or site.

Solar Farms

Over the past years, companies have been leasing portion of land or selling land for solar farms. A solar farm is also considered a commercial land use. Research has found that solar companies often lease the land from the land owner which then equates to additional income for the land and thus contributes to the market value of the land. Data was collected from landowners/the lessor and this has been used to develop a per acre value for acreage that is used as a solar farm. The value determined is considered an average value.

Solar Farm values range from $8,000 to 25,000 per acre.

4. Acreage

Because of the high number of variables influencing the value of land, this section is tendered only as a general guideline. The individual appraiser must evaluate location, shape, size, topography, highest and best use, zoning, soil type, and any other factor or market conditions before making a final determination of the parcel's land value. The parcels of land are valued for the amount of acreage they contain.

In residential neighborhoods or subdivisions a lot or site value is derived and used to value individual lots. Parcels that are larger or are excess acreage or rural tracts of land are valued by applying an acreage rate. Generally for the rural acreage parcels, the land rate and prices were established using multiple regression analysis based on market sales. The different market and geographic areas of the county were analyzed and stratified to create district neighborhoods. The regression analysis was performed on the sales of vacant land within these district neighborhoods, grouping similar districts where indicated. Coefficients and factors are derived from this regression analysis and this assists in establishing standard adjustments for zoning, road access, location and size. The sales in each district area are reviewed and analyzed to determine a base acreage rate also.

The following page shows two maps which provide an overview of the geographical breakdown of the county. The first map was used for a cluster number reassignment process. The second map was for the reassignment of the rural neighborhood property numbers as well as for clustering or grouping. For those rural areas where individual properties were assigned a district neighborhood number, careful review of sales within those districts generated the land tables used to adjust for zoning, size and road adjustments tables. A sample is provided (for demonstration purposes only) on subsequent pages following the maps. There are many different size, road and zone adjustment tables used throughout the (NBHL) neighborhood land valuation process. All land tables created and used may not be listed or displayed in this Schedule of Values. A complete record is found within the OASIS/CAMA system for all land tables used for the 2017 land valuation part. Examples of land tables are shown and references listed for all other tables used for 2017 in the OASIS/CAMA system. Any omission of reference is not intentional.

Again an example of a land table is included just for demonstration purposes, along with a regression summary and a chart. At the time of this printing the final tables and charts may not have been finalized. The significance levels and complete explanations of said are beyond the scope of this document but are readily available in basic statistics textbooks at both the high school and college level.

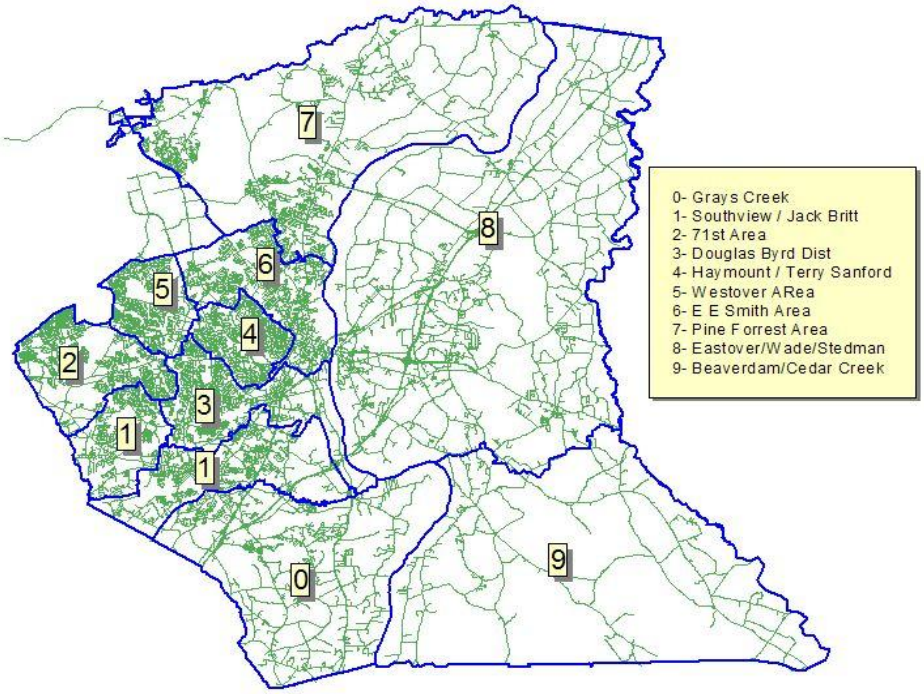
Individual property land values may be adjusted for factors not reflected in the base rate. Factors include but are not limited to size, shape, zoning, topography, easements, external influence, ingress & egress, location, and any other factor.

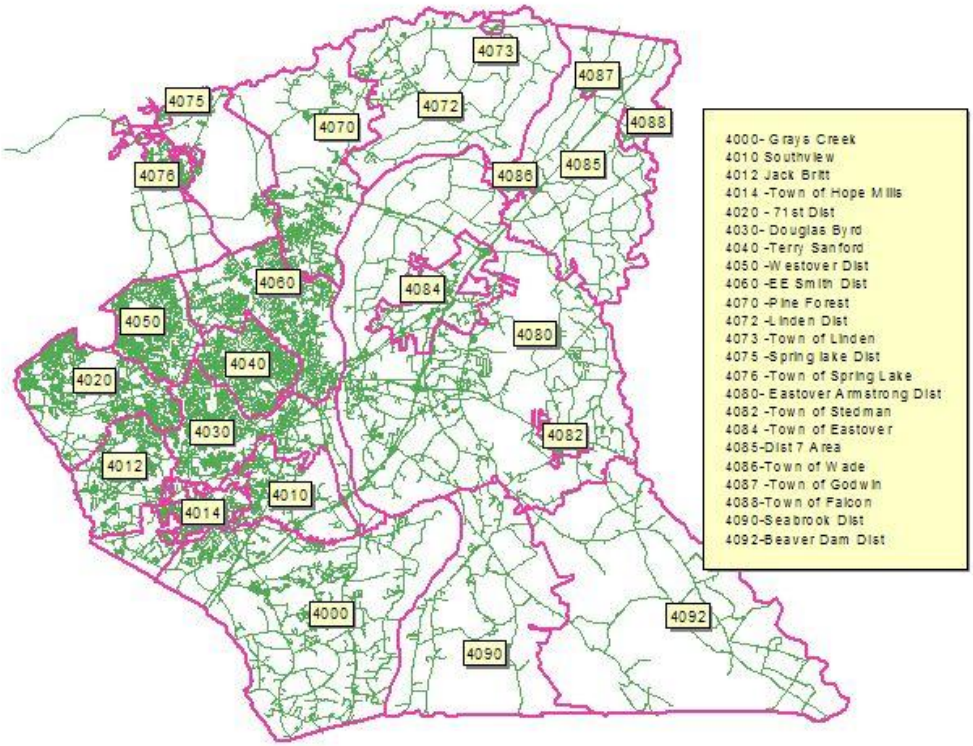
Section A - is a demonstration of zone adjustment land tables associated with rural/district designated neighborhoods.

Section B - is a demonstration of size adjustment land tables associated with designated rural/district neighborhoods.

Section C – is a demonstration of various road land tables associated rural/district designated neighborhoods.

Section D – are some typical land value ranges for rural/district neigborhoods.


7
8
6
5
4
2
3
1
1
0
9
0- Grays Creek
1- Southview / Jack Britt
2- 71st Area
3- Douglas Byrd Dist
4- Haymount / Terry Sanford
5- Westover ARea
6- E E Smith Area
7- Pine Forrest Area
8- Eastover/Wade/Stedman
9- Beaverdam/Cedar Creek


4073
4087
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4084
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4080
4040
4020
4030
4082
4012
4010
4014
4000
4092
4090
4000- Grays Creek
4010 Southview
4012 Jack Britt
4014 -Town of Hope Mills
4020 - 71st Dist
4030- Douglas Byrd
4040 -Terry Sanford
4050 -Westover Dist
4060 -EE Smith Dist
4070 -Pine Forest
4072 -Linden Dist
4073 -Town of Linden
4075 -Spring lake Dist
4076 -Town of Spring Lake
4080- Eastover Armstrong Dist
4082 -Town of Stedman
4084 -Town of Eastover
4085-Dist 7 Area
4086-Town of Wade
4087 -Town of Godwin
4088-Town of Falcon
4090-Seabrook Dist
4092-Beaver Dam Dist

Pin	Nbhd	acreage	sale-date1	Price-1	ppacre-1	luse1	zone1	Road
0442.01-09-6836-	4000	0.28	08-Oct-12	4500	16071	0300	A1	6
0412.01-37-5567-	4000	0.46	01-May-12	15000	32608	0400	RR	3
0413.07-57-5838-	4000	0.51	01-Jun-11	13500	26470	0300	R6A	4
0442-43-4015-	4000	0.93	18-Dec-12	14000	15053	0300	R40	3
0431-79-7795-	4000	1	30-Aug-11	17500	17500	0400	A1	3
0442-19-7456-	4000	1	11-Oct-11	15000	15000	0400	R6A	4
0431.02-99-7216-	4000	1	26-Mar-14	20000	20000	0300	A1	3
0453.04-62-0065-	4000	1.64	02-May-13	19000	11585	0400	R40	3
0453-62-0893-	4000	1.69	24-Jul-09	14000	8284	0300	R40A	3
0421.03-33-7486-	4000	1.9	14-Oct-13	30000	15789	0300	A1	3
0431.02-79-2315-	4000	1.92	08-Aug-13	31000	16145	0300	A1	3
0451.03-23-5854-	4000	2	11-Feb-13	25500	12750	0300	A1	3
0453.04-60-2159-	4000	2.01	03-Apr-09	20500	10199	0400	R40A	3
0421.02-88-1770-	4000	2.03	05-Aug-11	24000	11822	2096	A1	3
0431.03-24-1712-	4000	2.41	25-Sep-09	24000	9958	2096	A1	3
0442.03-34-7944-	4000	2.53	02-Feb-09	21500	8498	2096	A1	5
0464.03-00-6849-	4000	3	20-Nov-13	46500	15500	2096	A1	3
0421-33-7987-	4000	4.02	24-Feb-14	55000	13681	0300	A1	3
0421-34-4486-	4000	4.04	27-May-15	55000	13613	0300	A1	3
0421-34-6372-	4000	4.32	24-Mar-14	55000	12731	0400	A1	3
0422.04-73-2807-	4000	4.94	16-Dec-11	39000	7894	2096	A1	3
0421.03-44-3239-	4000	5	27-Mar-14	60000	12000	0400	A1	3
0421.01-43-3704-	4000	5	23-Dec-14	60000	12000	0300	A1	3
0421.03-44-3547-	4000	5.06	05-Dec-14	62500	12351	0300	A1	3
0453.04-50-7555-	4000	5.1	24-Jun-10	40000	7843	2096	A1	3
0432.14-23-9175-	4000	5.55	02-Oct-12	53000	9549	2300	A1	4
0432.14-33-4305-	4000	5.55	18-Sep-13	53500	9639	2300	A1	5
0432.14-33-1296-	4000	5.55	07-Nov-13	55000	9909	2300	A1	5
0441.03-40-7276-	4000	5.89	04-Apr-11	40000	6791	2096	A1	0
0431.04-73-1349-	4000	6.72	17-Nov-10	64500	9598	2096	A1	3
0422.01-18-9267-	4000	7.05	11-Jun-09	63000	8936	2300	A1	3
0452.02-68-3129-	4000	8.27	06-Jul-15	85000	10278	2096	A1	3
0454.03-21-8901-	4000	10	18-May-10	80000	8000	2096	A1	5
0421.01-07-5528-	4000	10.77	23-Jun-10	82500	7660	2350	A1	3
0422.01-27-1101-	4000	12	04-Nov-10	92000	7666	2096	A1	3
0402.02-78-8367-	4000	12.24	07-Jan-13	89000	7271	0300	RR	3
0421.03-34-0020-	4000	13.4	05-Dec-12	120000	8955	2096	A1	3
0451.03-43-3948-	4000	15.09	14-Jun-11	106500	7057	2096	A1	4
0443.01-27-4294-	4000	25.86	12-Jun-14	400000	15467	2096	R15CD	3
0451.01-14-2898-	4000	26.86	22-Dec-09	131000	4877	2096	A1	3
0443.01-48-6073-	4000	37	31-Aug-10	481000	13000	2096	R15	3
0451.01-35-2269-	4000	77.2	31-Jan-14	300000	3886	2096	A1	3
0452.04-63-5671-	4000	134.8	14-Jun-10	404500	3000	2096	A1	5
0440.01-17-0016-	4000	225.55	25-Apr-14	390000	1729	2096	A1	3
0442.02-06-0416-	4000	1.67	07-Oct-11	25500	15269	0300	RR	5
0453-62-1609-	4000	1.72	19-Nov-10	13500	7848	0300	R40A	3
0443-63-2434-	4000	2	05-Nov-09	13500	6750	0300	A1	0
0421.01-27-1178-	4000	2	28-Oct-11	40000	20000	0300	A1	3
0412.01-35-9544-	4000	2	18-May-12	22500	11250	0400	RR	2
0433.03-20-3744-	4000	2.11	16-Jul-12	20000	9478	2096	A1	3
0443.03-20-5678-	4000	2.17	11-Mar-14	18000	8294	2300	A1	5
0430.04-73-8820-	4000	2.49	15-Jul-10	32500	13052	2096	A1	4
0453.02-75-0018-	4000	2.53	04-Jun-10	17000	6719	2096	A1	3
0431.02-99-3271-	4000	2.56	19-Nov-13	53000	20703	2096	R40A	3
0403.04-60-0786-	4000	2.9	04-May-11	17000	5862	0400	RR	5
0431.01-37-8560-	4000	3.02	22-Jul-09	58000	19205	0400	A1	3
0421.01-06-9349-	4000	3.64	19-Mar-10	25000	6868	2096	A1	3
0421.01-34-1568-	4000	3.83	30-Apr-14	62500	16318	0300	A1	3
0339.01-49-5882-	4000	5.46	07-Jan-15	90000	16483	2096	A1	3
0421.01-16-0123-	4000	9.47	21-Apr-15	60000	6335	2096	A1	3
0402.02-79-3548-	4000	14.79	30-Jun-15	62000	4192	2300	RR	5
0431.03-03-6300-	4000	62.41	23-Apr-09	408000	6537	2096	A1	3

SUMMARY
OUTPUT

Regression Statistics	
Multiple R	0.980475766
R Square	0.961332728
Adjusted R Square	0.916790853
Standard Error	0.119077669
Observations	44

NBHD 4000
Base Road 3
Base Zone A1

ANOVA

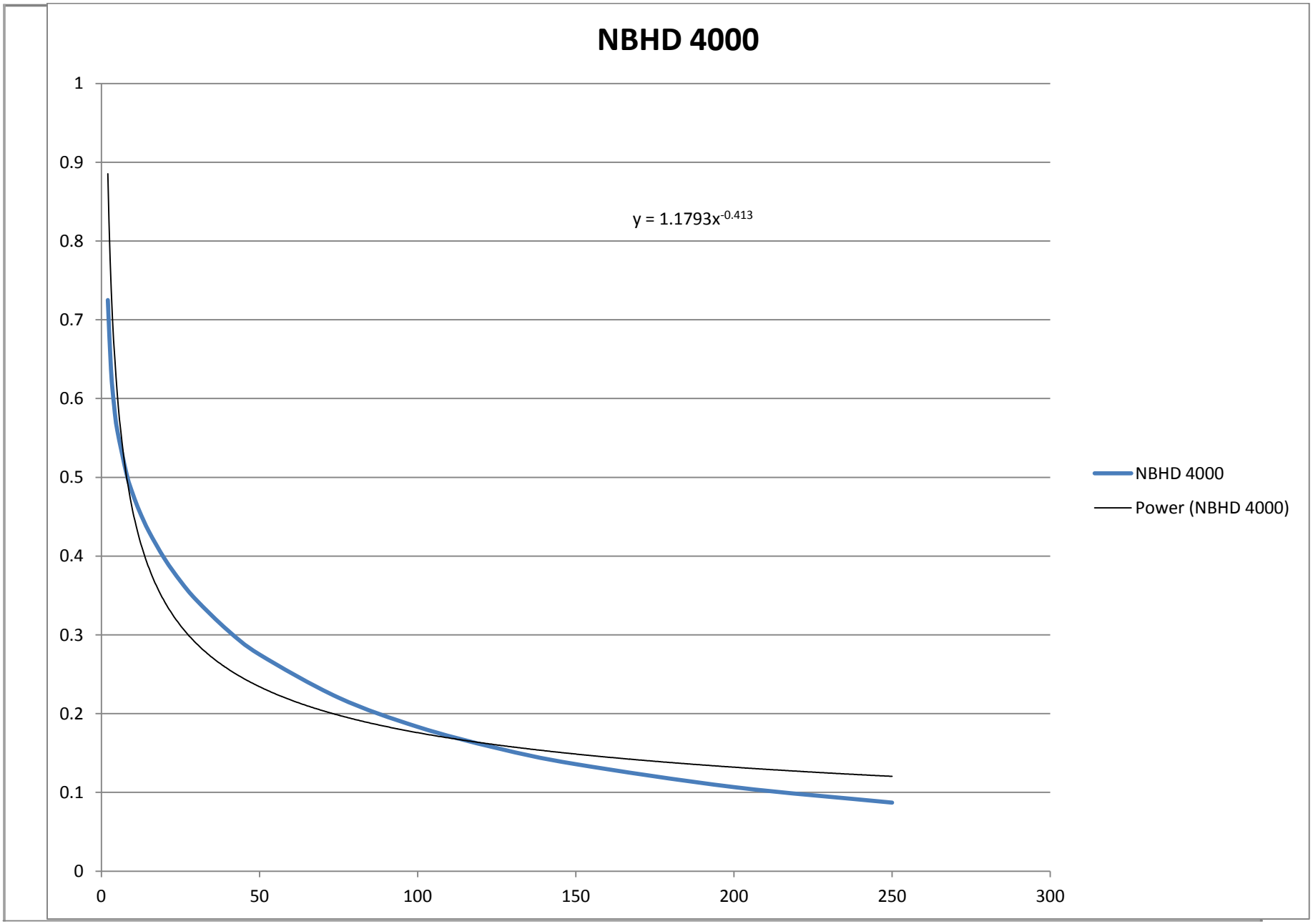
	df	*SS*	*MS*	*F*	*Significance F*
Regression	12	11.28082401	0.940068667	72.32484086	3.25387E-19
Residual	32	0.453743723	0.014179491		
Total	44	11.73456773			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	10.08695357	0.065317336	154.4299601	1.51328E-47	9.953906507	10.22000062	9.953907	10.22
YOS	-0.059758489	0.010733247	-5.567605703	3.80853E-06	-0.081621398	-0.03789558	-0.08162	-0.0379
Zone Type RR	-0.091027174	0.107058075	-0.850259768	0.401497927	-0.309097334	0.127042987	-0.3091	0.127043
Zone R7.5	0	0	65535	#NUM!	0	0	0	0
Zone R40/R40A	-0.242588669	0.073665216	-3.293123713	0.00242303	-0.392639802	-0.092537535	-0.39264	-0.09254
Zone R15/R15CD	0.819963097	0.105516134	7.77097365	7.3167E-09	0.605033766	1.034892427	0.605034	1.034892
Road 0,1,2	-0.302228326	0.123869807	-2.439886953	0.020412979	-0.554542865	-0.049913787	-0.55454	-0.04991
Road 4,5,8	-0.050551672	0.049282803	-1.025746675	0.312702832	-0.150937457	0.049834113	-0.15094	0.049834
Road 6,7	-1.316087677	0.277744623	-4.738481204	4.2431E-05	-1.881834958	-0.750340395	-1.88183	-0.75034
LN(Acre)	-0.584516333	0.067601671	-8.646477539	7.0111E-10	-0.722216431	-0.446816235	-0.72222	-0.44682
lnAc^2	0.202977648	0.076318804	2.659602064	0.012119801	0.047521333	0.358433964	0.047521	0.358434
lnAc^3	-0.04294083	0.028081117	-1.52917102	0.13604815	-0.100140193	0.014258533	-0.10014	0.014259
lnAc^4	0.001964269	0.003093721	0.634921105	0.529993811	-0.004337435	0.008265973	-0.00434	0.008266

Base Rate	24000

Acres	1	2	3	4	5	8	10	12	15
	0	0.693147181	1.098612289	1.386294361	1.609437912	2.079441542	2.302585093	2.48490665	2.708050201
	0	0.480453014	1.206948961	1.921812056	2.590290394	4.324077125	5.30189811	6.17476106	7.333535892
	0	0.333024652	1.32596896	2.664197216	4.168911564	8.991665604	12.20807155	15.3437048	19.85958335
	0	0.230835099	1.456725794	3.693361577	6.709604325	18.69764299	28.11012357	38.1276741	53.78074867
Adj Factor	1	0.725074002	0.636831633	0.590152153	0.559445732	0.503003112	0.477715139	0.45698329	0.431062218
Ind PPAcre	24,000	17,402	15,284	14,164	13,427	12,072	11,465	10,968	10,345
Ind Value	24,000	34,804	45,852	56,655	67,133	96,577	114,652	131,611	155,182

Acres	20	25	50	75	100	125	150	200	250
	2.995732274	3.218875825	3.912023005	4.3174881	4.6051702	4.8283137	5.0106353	5.2983174	5.5214609
	8.974411855	10.36116158	15.30392399	18.6407036	21.2075924	23.3126135	25.1064661	28.0721669	30.4865307
	26.88493523	33.35129251	59.86930274	80.4810163	97.6645724	112.5606122	125.7993449	148.7352495	168.3301876
	80.54006814	107.3536692	234.2100896	347.4758311	449.7619772	543.4779503	630.3346375	788.0465554	929.4285521
Adj Factor	0.396250573	0.368003811	0.274975636	0.220164169	0.183145518	0.156265622	0.135805949	0.106691873	0.086996264
Ind PPAcre	9,510	8,832	6,599	5,284	4,395	3,750	3,259	2,561	2,088
Ind Value	190,200	220,802	329,971	396,296	439,549	468,797	488,901	512,121	521,978


NBHD 4000
y = 1.1793x^-0.413
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
50
100
150
200
250
300
NBHD 4000
Power (NBHD 4000)

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Demonstration of a size adjustment chart from District Sales.

Base Rate $24,000

NBHD 4000

y=1.1793x^-0.413

Acre	Power Formula	Adjustment	Indicated Value	Suggested PP Acre
1.00	1.17930	1.17930	28,303	28,303
1.05	1.15577	1.15577	29,126	27,739
1.10	1.13378	1.13378	29,932	27,211
1.15	1.11316	1.11316	30,723	26,716
1.20	1.09376	1.09376	31,500	26,250
1.25	1.07548	1.07548	32,264	25,811
1.50	0.99747	0.99747	35,909	23,939
2.00	0.88573	0.88573	42,515	21,257
2.50	0.80775	0.80775	48,465	19,386
3.00	0.74916	0.74916	53,939	17,980
5.00	0.60667	0.60667	72,800	14,560
7.00	0.52796	0.52796	88,697	12,671
10.00	0.45564	0.45564	109,354	10,935
15.00	0.38539	0.38539	138,740	9,249
20.00	0.34221	0.34221	164,263	8,213
25.00	0.31209	0.31209	187,252	7,490
30.00	0.28945	0.28945	208,404	6,947
40.00	0.25702	0.25702	246,743	6,169
50.00	0.23440	0.23440	281,275	5,625
75.00	0.19825	0.19825	356,859	4,758
100.00	0.17605	0.17605	422,509	4,225
125.00	0.16055	0.16055	481,639	3,853
150.00	0.14890	0.14890	536,045	3,574
175.00	0.13972	0.13972	586,812	3,353
200.00	0.13222	0.13222	634,659	3,173
250.00	0.12058	0.12058	723,480	2,894
300.00	0.11183	0.11183	805,204	2,684
400.00	0.09931	0.09931	953,333	2,383
999.00	0.06805	0.06805	1,631,475	1,633

A. Zone Adjustment Tables for Rural Properties

Example of a Zone Adjustment Land Table for demonstration purposes only.

```
ACTION: R  SCREEN: LANC    ADDL LAND FIELD NUMBER= 13    TABLE ID= Z00

     ADDL LAND CODE     DESCRIPTION           FACTOR
       ==========     ---------------         ------
 01-   AR             AGRI RES                1.3000
 02-   ARMH           AGRI/MH OVERLAY         1.3000
 03-   ARMHO          AGRI RES/MHOVLA         1.3000
 04-   A1             AGRI DIST               1.0000
 05-   A1A            AGRI DIST               1.0000
 06-   C1P            SHOPPING CT USE         1.0000
 07-   MH             MANUFACTURED HM         2.2000
 08-   MHO            MANUFHM OVERLAY         2.2000
 09-   MR5            MIXED RESI 5            2.2000
 10-   MR5A           MIX RES 5/APTOL         2.2000
 11-   MR5C           MIX RES 5 COND          2.2000
 12-   MR5M           MIX RES 5/MH OL         2.2000
 13-   MU             MIXED USE               1.8000
 14-   MUC            MIXED USE/COND          1.8000
 01-   MUD            MIXED USE DEV.          1.8000
 02-   MXD            MIXED DEVLOPMT          1.8000
 03-   NZ             NO ZONING               1.0000
 04-   PDR            PLANNED DEV RES         1.8000
 05-   PDTN           P DEV TRAD NBHD         1.8000
 06-   PND            PLANNED NBHD            1.8000
 07-   PNDM           PLAN NBHD MH DT         1.8000
 08-   RR             RURAL RES               1.3000
 09-   RRDCU          RUR RES DEN CU          1.3000
 10-   R10            RES DIST 10SF           1.6000
 11-   R10CU          SLGFAM RESID/CU         1.6000
 12-   R10M           RES DIST 10SF           1.6000
 13-   R15            RES DIST 15SF           1.6000
 14-   R15A           RES/AGRI 15SF           1.6000
 01-   R15CD          SGLFAM RES15/CD         1.6000
 02-   R20            RES DIST 20SF           1.3000
 03-   R20A           RES/AGRI 20SF           1.3000
 04-   R30            RES DIST 30SF           1.3000
 05-   R30A           RES DIST 30SF           1.3000
 06-   R30DC          RES R30 DD CON          1.3000
 07-   R40            RES DIST 40SF           1.0000
 08-   R40A           RES/AGRI 40SF           1.0000
 09-   R40DC          RES 40SF DD CON         1.0000
 10-   R5             RES DIST MULTI          2.2000
 11-   R5A            RES/AGRI MULTI          2.2000
 12-   R5C            SF RES 5 CONDIT         2.2000
 13-   R6             RES DIST MULTI          2.2000
 14-   R6A            RES/AGRI MULTI          2.2000
 01-   R6C            SF RES 6 CONDIT         2.2000
 02-   R6MH           RES/MH OVERLAY          2.2000
 03-   R7.5           RES DIST 7.5 SF         2.2000
 04-   SF10           SGL FAM RES 10          1.6000
 05-   SF10A          S FAM R 10AIRPT         1.6000
 06-   SF10M          S FAM R 10MHOL          1.6000
 07-   SF15           SGL FAM RES 15          1.6000
 08-   SF15A          SFRES 15/ARPTOL         1.6000
 09-   SF15M          SFRES 15/MH OVL         1.6000
 10-   SF6            SGL FAM RES 6           2.2000
 11-   SF6A           SFRES 6 AIRPTOL         2.2000
 12-   SF6M           SFRES 6 MH OVLA         2.2000
 13-   UK             UNKNOWN                 1.0000
```

Example of a Zone Adjustment Land Table for demonstration purposes only.

```
ACTION: R  SCREEN: LANC  ADDL LAND FIELD NUMBER= 13 TABLE ID= Z01

    ADDL LAND CODE     DESCRIPTION         FACTOR
      ==========     ---------------       ------
 01-   AR             AGRI RES              1.0000
 02-   ARMH           AGRI/MH OVERLAY       1.0000
 03-   ARMHO          AGRI RES/MH OL        1.0000
 04-   A1             AGRI DIST             0.8500
 05-   A1A            AGRI DIST             0.8500
 06-   A1CZ           AGRI DIST COND        0.8500
 07-   CD             CONS. DISTRICT        1.0000
 08-   MA             MILITARY/AIRPT        1.0000
 09-   MH             MANUFACTURED HM       2.5000
 10-   MHO            MANUFHM OVERLAY       2.5000
 11-   MHPD           MH PARK DIST          2.5000
 12-   MR5            MIXED RES 5           2.5000
 13-   MR5A           MIX RES 5/APTOL       2.5000
 14-   MR5C           MIX RES 5 COND        2.5000
 01-   MR5M           MIX RES 5/MH OL       2.5000
 02-   MU             MIXED USE             3.2500
 03-   MUC            MIXED USE/COND        3.2500
 04-   MUCZ           MH PARK DIST          2.5000
 05-   MUD            MIXED USE DEV.        3.2500
 06-   MXD            MIXED DEVLOPMT        3.2500
 07-   MXDCU          MIX DEV CONDUSE       3.2500
 08-   MXDCZ          MIX DEV COND ZN       3.2500
 09-   NZ             NO ZONING             0.8500
 10-   PDR            PLANNED DEV RES       2.1000
 11-   PDTN           PL DV TRAD NBHD       2.1000
 12-   PND            PLANNED NBHD          2.1000
 13-   RR             RURAL RES             1.0000
 14-   R10            RES DIST 10SF         1.5000
 01-   R10M           RES MDIST 10SF        1.5000
 02-   R15            RES DIST 15SF         1.5000
 03-   R15A           RES/AGRI 15SF         1.5000
 04-   R15CD          SGLFAM RES15/CD       1.5000
 05-   R15M           RES MDIST 15 SF       1.5000
 06-   R20            RES DIST 20SF         1.0000
 07-   R20A           RES/AGRI 20SF         1.0000
 08-   R30            RES DIST 30SF         1.0000
 09-   R40            RES DIST 40SF         0.8500
 10-   R40A           RES/AGRI 40SF         0.8500
 11-   R5             RES DIST MULTI        2.5000
 12-   R5A            RES/AGRI MULTI        2.5000
 13-   R5C            SF RES 5/COND         2.5000
 14-   R6             RES DIST MULTI        2.5000
 01-   R6A            RES/AGRI MULTI        2.5000
 02-   R6C            SF RES 6/COND         2.5000
 03-   R6MH           RES/MH OVERLAY        2.5000
 04-   R7.5           RES DIST 7.5 SF       2.0000
 05-   R7.5C          RES DIST 7.5 CU       2.0000
 06-   SF10           SF RES 10             1.5000
 07-   SF10A          SF RES 10/APTOL       1.5000
 08-   SF10M          SF RES 10/MH OL       1.5000
 09-   SF15           SF RES 15             1.5000
 10-   SF15A          SF RES 15/APTOL       1.5000
 11-   SF15M          SF RES 15/MH OL       1.5000
 12-   SF6            SF RES 6              2.5000
```

Zone Adjustment Tables for Rural Properties continued.

Example of a Zone Adjustment Land Table for demonstration purposes only.

```
ACTION: R  SCREEN: LANC USERID:
  -  ---------------  A D D I T I O N A L   L A N D   C O D E S  --------
     ------- JURI= 20
     ADDL LAND FIELD NUMBER= 13    TABLE ID= Z02

     ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     --------------- ------
 01-   AR             AGRI RES        1.0000
 02-   ARMH           AGRI/MH OVERLAY 1.0000
 03-   A1             AGRI DIST       0.8500
 04-   A1A            AGRI DIST       0.8500
 05-   MXD            MIXED DEVLOPMT  3.0000
 05-   MUD            MIXED USE       3.0000
 06-   NZ             NO ZONING       0.8500
 07-   PND            PLANNED NBHD    2.1000
 08-   PNDM           PLAN NBHD MH DT 2.1000
 09-   RR             RURAL RES       1.0000
 10-   R10            RES DIST 10SF   1.5000
 11-   R15            RES DIST 15SF   1.5000
 12-   R15A           RES/AGRI 15SF   1.5000
 13-   R20            RES DIST 20SF   1.0000
 14-   R20A           RES/AGRI 20SF   1.0000
 01-   R30            RES DIST 30SF   1.0000
 02-   R40            RES DIST 40SF   0.8500
 03-   R40A           RES/AGRI 40SF   0.8500
 04-   R5             RES DIST MULTI  2.5000
 05-   R5A            RES/AGRI MULTI  2.5000
 06-   R5AM           RES MH OVERLAY  2.5000
 07-   R6             RES DIST MULTI  2.5000
 08-   R6A            RES/AGRI MULTI  2.5000
 09-   R6MH           RES/MH OVERLAY  2.5000
 10-   R7.5           RES DIST 7.5 SF 2.0000
 11-   UK             UNKNOWN         0.8500
```

Zone Tables listed in Residential Land Master List

B. Size Adjustment Tables for Rural Properties.

Example of a Size Adjustment Land Table for demonstration purposes only.

```
ACTION: R  SCREEN: SADJ  NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI = 20   YEAR = 2017  ROLL=RR SCHEDULE= SZ00

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00000000.00        1.0000
02-   00000000.05        1.0000
03-   00000000.10        1.0000
04-   00000000.40        1.0000
05-   00000000.50        1.0000
06-   00000001.00        1.0000
07-   00000002.00        0.8351
08-   00000003.00        0.7515
09-   00000005.00        0.6581
10-   00000007.00        0.6029
11-   00000010.00        0.5495
12-   00000015.00        0.4946
13-   00000020.00        0.4589
14-   00000025.00        0.4330
15-   00000030.00        0.4130
01-   00000035.00        0.3968
02-   00000040.00        0.3832
03-   00000045.00        0.3717
04-   00000050.00        0.3427
05-   00000055.00        0.3302
06-   00000060.00        0.3186
07-   00000065.00        0.3079
08-   00000070.00        0.2978
09-   00000075.00        0.2883
10-   00000080.00        0.2793
11-   00000085.00        0.2708
12-   00000090.00        0.2627
13-   00000095.00        0.2548
14-   00000100.00        0.2495
15-   00000105.00        0.2437
01-   00000110.00        0.2381
02-   00000115.00        0.2335
03-   00000120.00        0.2290
04-   00000125.00        0.2241
05-   00000130.00        0.2192
06-   00000135.00        0.2152
07-   00000140.00        0.2107
08-   00000145.00        0.2069
09-   00000150.00        0.2026
10-   00000155.00        0.1991
11-   00000160.00        0.1971
12-   00000165.00        0.1952
13-   00000170.00        0.1933
14-   00000175.00        0.1915
15-   00000180.00        0.1898
01-   00000185.00        0.1882
02-   00000190.00        0.1866
03-   00000195.00        0.1850
04-   00000200.00        0.1835
05-   00000225.00        0.1767
06-   00000250.00        0.1709
07-   00000300.00        0.1612
08-   00000350.00        0.1534
09-   00000400.00        0.1470
10-   00000450.00        0.1416
11-   00000500.00        0.1369
12-   00000750.00        0.1202
13-   00000800.00        0.1178
14-   00000850.00        0.1155
15-   00000900.00        0.1134
01-   00001000.00        0.1096
02-   00009999.00        0.0525
```

Example of a Size Adjustment Land Table for demonstration purposes only.

```
  ACTION: R  SCREEN: SADJ  NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT
JURI=20   YEAR = 2017    ROLL = RR  SCHEDULE= SZ01

     UPPER SIZE LIMIT    FACTOR
       ===========       -------
 01-   00000000.00        1.0000
 02-   00000000.05        1.0000
 03-   00000000.10        1.0000
 04-   00000000.40        1.0000
 05-   00000000.50        1.0000
 06-   00000001.00        1.0000
 07-   00000002.00        0.7773
 08-   00000003.00        0.7340
 09-   00000005.00        0.6906
 10-   00000007.00        0.6392
 11-   00000010.00        0.6225
 12-   00000015.00        0.6058
 13-   00000020.00        0.5891
 14-   00000025.00        0.5364
 15-   00000030.00        0.4718
 01-   00000035.00        0.4547
 02-   00000040.00        0.4281
 03-   00000045.00        0.4166
 04-   00000050.00        0.3911
 05-   00000055.00        0.3822
 06-   00000060.00        0.3743
 07-   00000065.00        0.3672
 08-   00000070.00        0.3607
 09-   00000075.00        0.3398
 10-   00000080.00        0.3344
 11-   00000085.00        0.3293
 12-   00000090.00        0.3247
 13-   00000095.00        0.3203
 14-   00000100.00        0.3162
 15-   00000105.00        0.2982
 01-   00000110.00        0.2946
 02-   00000115.00        0.2912
 03-   00000120.00        0.2880
 04-   00000125.00        0.2715
 05-   00000130.00        0.2687
 06-   00000135.00        0.2660
 07-   00000140.00        0.2634
 08-   00000145.00        0.2609
 09-   00000150.00        0.2585
 10-   00000155.00        0.2562
 11-   00000160.00        0.2540
 12-   00000165.00        0.2519
 13-   00000170.00        0.2499
 14-   00000175.00        0.2480
 15-   00000180.00        0.2461
 01-   00000185.00        0.2443
 02-   00000190.00        0.2425
 03-   00000195.00        0.2408
 04-   00000200.00        0.2392
 05-   00000250.00        0.2252
 06-   00000300.00        0.2224
 07-   00000350.00        0.2116
 08-   00000400.00        0.2028
 09-   00000450.00        0.1956
 10-   00000500.00        0.1868
 11-   00000750.00        0.1674
 12-   00009999.00        0.0832
```

Example of a Size Adjustment Land Table for demonstration purposes only.

```
ACTION: R  SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES
JURI=20   YEAR=2017   ROLL RR   SCHEDULE= SZ02
     UPPER SIZE LIMIT    FACTOR
       ===========       -------
 01-   00000000.00        1.0000
 02-   00000000.05        1.0000
 03-   00000000.10        1.0000
 04-   00000000.40        1.0000
 05-   00000000.50        1.0000
 06-   00000001.00        1.0000
 07-   00000002.00        0.8526
 08-   00000003.00        0.7767
 09-   00000005.00        0.6906
 10-   00000007.00        0.6392
 11-   00000010.00        0.5888
 12-   00000015.00        0.5364
 13-   00000020.00        0.5021
 14-   00000025.00        0.4770
 15-   00000030.00        0.4574
 01-   00000035.00        0.4414
 02-   00000040.00        0.4281
 03-   00000045.00        0.4166
 04-   00000050.00        0.3911
 05-   00000055.00        0.3822
 06-   00000060.00        0.3743
 07-   00000065.00        0.3672
 08-   00000070.00        0.3607
 09-   00000075.00        0.3398
 10-   00000080.00        0.3344
 11-   00000085.00        0.3293
 12-   00000090.00        0.3247
 13-   00000095.00        0.3203
 14-   00000100.00        0.3162
 15-   00000105.00        0.2982
 01-   00000110.00        0.2946
 02-   00000115.00        0.2912
 03-   00000120.00        0.2880
 04-   00000125.00        0.2715
 05-   00000130.00        0.2687
 06-   00000135.00        0.2660
 07-   00000140.00        0.2634
 08-   00000145.00        0.2609
 09-   00000150.00        0.2585
 10-   00000155.00        0.2562
 11-   00000160.00        0.2540
 12-   00000165.00        0.2519
 13-   00000170.00        0.2499
 14-   00000175.00        0.2480
 15-   00000180.00        0.2461
 01-   00000185.00        0.2443
 02-   00000190.00        0.2425
 03-   00000195.00        0.2408
 04-   00000200.00        0.2392
 05-   00000250.00        0.2252
 06-   00000300.00        0.2144
 07-   00000350.00        0.2056
 08-   00000400.00        0.1984
 09-   00000450.00        0.1921
 10-   00000500.00        0.1868
 11-   00000750.00        0.1674
 12-   00009999.00        0.0832
```

Size Adjustment Tables listed in Master Residential Land Table

C. Road Tables Associated with Rural/District Neighborhoods.

Demonstration of Road Adjustment Land Table

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDA
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   1.2000
 02-   1              ABUTS BUSY RD    1.2000
 03-   2              2 LANE BUSY RD   1.2000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDL
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   0.7500
 02-   1              ABUTS BUSY RD    0.9500
 03-   2              2 LANE BUSY RD   0.9000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDR
        ADDL LAND CODE     DESCRIPTION    FACTOR
      ==========     ---------------  ------
01-   0              4 LANE BUSY RD   1.0000
02-   1              ABUTS BUSY RD    1.0000
03-   2              2 LANE BUSY RD   1.0000
04-   3              PAVED            1.0000
05-   4              UNPAVED DIRT     0.7500
06-   5              ESMT LTD AC FLG  0.8000
07-   6              LANDLOCKED       0.5000
08-   7              PAPER STREET     0.5000
09-   8              GRAVEL           0.7500
```

Road Adjustment Tables listed in Master Residential Land Table

D. Values or Value Ranges for Acreage

For Rural Property

Some of the Acreage Land Types	Values or Value Ranges
2096 LL	No less than $300 to $200,000 per Acre
2250 LL	$700 per Acre
2300 LL	$300 per Acre
2350 LL	$300 per Acre
All Types of Submerged Land from A750 to R750 LL	$700 per Acre

Zoning Tables

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z00

	ADDL LAND CODE	DESCRIPTION	FACTOR
01-	AR	AGRI RES	1.3000
02-	ARMH	AGRI/MH OVERLAY	1.3000
03-	ARMHO	AGRI RES/MHOVLA	1.3000
04-	A1	AGRI DIST	1.0000
05-	A1A	AGRI DIST	1.0000
06-	C1P	SHOPPING CT USE	1.0000
07-	MH	MANUFACTURED HM	2.2000
08-	MHO	MANUFHM OVERLAY	2.2000
09-	MR5	MIXED RESI 5	2.2000
10-	MR5A	MIX RES 5/APTOL	2.2000
11-	MR5C	MIX RES 5 COND	2.2000
12-	MR5M	MIX RES 5/MH OL	2.2000
13-	MU	MIXED USE	1.8000
14-	MUC	MIXED USE/COND	1.8000
01-	MUD	MIXED USE DEV.	1.8000
02-	MXD	MIXED DEVLOPMT	1.8000
03-	NZ	NO ZONING	1.0000
04-	PDR	PLANNED DEV RES	1.8000
05-	PDTN	P DEV TRAD NBHD	1.8000
06-	PND	PLANNED NBHD	1.8000
07-	PNDM	PLAN NBHD MH DT	1.8000
08-	RR	RURAL RES	1.3000
09-	RRDCU	RUR RES DEN CU	1.3000
10-	R10	RES DIST 10SF	1.6000
11-	R10CU	SLGFAM RESID/CU	1.6000
12-	R10M	RES DIST 10SF	1.6000
13-	R15	RES DIST 15SF	1.6000
14-	R15A	RES/AGRI 15SF	1.6000
01-	R15CD	SGLFAM RES15/CD	1.6000
02-	R20	RES DIST 20SF	1.3000
03-	R20A	RES/AGRI 20SF	1.3000
04-	R30	RES DIST 30SF	1.3000
05-	R30A	RES DIST 30SF	1.3000
06-	R30DC	RES R30 DD CON	1.3000
07-	R40	RES DIST 40SF	1.0000
08-	R40A	RES/AGRI 40SF	1.0000
09-	R40DC	RES 40SF DD CON	1.0000
10-	R5	RES DIST MULTI	2.2000
11-	R5A	RES/AGRI MULTI	2.2000
12-	R5C	SF RES 5 CONDIT	2.2000
13-	R6	RES DIST MULTI	2.2000
14-	R6A	RES/AGRI MULTI	2.2000
01-	R6C	SF RES 6 CONDIT	2.2000
02-	R6MH	RES/MH OVERLAY	2.2000
03-	R7.5	RES DIST 7.5 SF	2.2000
04-	SF10	SGL FAM RES 10	1.6000
05-	SF10A	S FAM R 10AIRPT	1.6000
06-	SF10M	S FAM R 10MHOL	1.6000
07-	SF15	SGL FAM RES 15	1.6000
08-	SF15A	SFRES 15/ARPTOL	1.6000
09-	SF15M	SFRES 15/MH OVL	1.6000
10-	SF6	SGL FAM RES 6	2.2000
11-	SF6A	SFRES 6 AIRPTOL	2.2000
12-	SF6M	SFRES 6 MH OVLA	2.2000
13-	UK	UNKNOWN	1.0000

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z01

	ADDL LAND CODE	DESCRIPTION	FACTOR
	==========	---	---
01-	AR	AGRI RES	1.0000
02-	ARMH	AGRI/MH OVERLAY	1.0000
03-	ARMHO	AGRI RES/MH OL	1.0000
04-	A1	AGRI DIST	0.8500
05-	A1A	AGRI DIST	0.8500
06-	A1CZ	AGRI DIST COND	0.8500
07-	CD	CONS. DISTRICT	1.0000
08-	MA	MILITARY/AIRPT	1.0000
09-	MH	MANUFACTURED HM	2.5000
10-	MHO	MANUFHM OVERLAY	2.5000
11-	MHPD	MH PARK DIST	2.5000
12-	MR5	MIXED RES 5	2.5000
13-	MR5A	MIX RES 5/APTOL	2.5000
14-	MR5C	MIX RES 5 COND	2.5000
01-	MR5M	MIX RES 5/MH OL	2.5000
02-	MU	MIXED USE	3.2500
03-	MUC	MIXED USE/COND	3.2500
04-	MUCZ	MH PARK DIST	2.5000
05-	MUD	MIXED USE DEV.	3.2500
06-	MXD	MIXED DEVLOPMT	3.2500
07-	MXDCU	MIX DEV CONDUSE	3.2500
08-	MXDCZ	MIX DEV COND ZN	3.2500
09-	NZ	NO ZONING	0.8500
10-	PDR	PLANNED DEV RES	2.1000
11-	PDTN	PL DV TRAD NBHD	2.1000
12-	PND	PLANNED NBHD	2.1000
13-	RR	RURAL RES	1.0000
14-	R10	RES DIST 10SF	1.5000
01-	R10M	RES MDIST 10SF	1.5000
02-	R15	RES DIST 15SF	1.5000
03-	R15A	RES/AGRI 15SF	1.5000
04-	R15CD	SGLFAM RES15/CD	1.5000
05-	R15M	RES MDIST 15 SF	1.5000
06-	R20	RES DIST 20SF	1.0000
07-	R20A	RES/AGRI 20SF	1.0000
08-	R30	RES DIST 30SF	1.0000
09-	R40	RES DIST 40SF	0.8500
10-	R40A	RES/AGRI 40SF	0.8500
11-	R5	RES DIST MULTI	2.5000
12-	R5A	RES/AGRI MULTI	2.5000
13-	R5C	SF RES 5/COND	2.5000
14-	R6	RES DIST MULTI	2.5000
01-	R6A	RES/AGRI MULTI	2.5000
02-	R6C	SF RES 6/COND	2.5000
03-	R6MH	RES/MH OVERLAY	2.5000
04-	R7.5	RES DIST 7.5 SF	2.0000
05-	R7.5C	RES DIST 7.5 CU	2.0000
06-	SF10	SF RES 10	1.5000
07-	SF10A	SF RES 10/APTOL	1.5000
08-	SF10M	SF RES 10/MH OL	1.5000
09-	SF15	SF RES 15	1.5000
10-	SF15A	SF RES 15/APTOL	1.5000
11-	SF15M	SF RES 15/MH OL	1.5000
12-	SF6	SF RES 6	2.5000
13-	SF6A	SF RES 6/APTOL	2.5000
14-	SF6M	SF RES 6/MH OL	2.5000
01-	UK	UNKNOWN	0.8500

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z02

	ADDL LAND CODE	DESCRIPTION	FACTOR
	==========	----------	------
01-	AR	AGRI RES	1.0000
02-	ARCZ	AGRI RES CD ZN	1.0000
03-	ARMH	AGRI/MH OVERLAY	1.0000
04-	ARMHO	AGRI RES/MH OL	1.0000
05-	A1	AGRI DIST	0.8500
06-	A1A	AGRI DIST	0.8500
07-	CD	CONS. DISTRICT	1.0000
08-	MA	MILITARY/AIRPT	1.0000
09-	MH	MANUFACTURED HM	2.5000
10-	MHO	MANUFHM OVERLAY	2.5000
11-	MR5	MIXED RES 5	2.5000
12-	MR5A	MIX RES 5/APTOL	2.5000
13-	MR5C	MIX RES 5 COND	2.5000
14-	MR5CZ	MIXED RES 5/CON	2.5000
01-	MR5M	MIX RES 5/MH OL	2.5000
02-	MU	MIXED USE	3.0000
03-	MUC	MIXED USE/COND	3.0000
04-	MUD	MIXED USE DEV.	3.0000
05-	MXD	MIXED DEVLOPMT	3.0000
06-	NZ	NO ZONING	0.8500
07-	PDR	PLANNED DEV RES	2.1000
08-	PDTN	PL DV TRAD NBHD	2.1000
09-	PND	PLANNED NBHD	2.1000
10-	PNDM	PLAN NBHD MH DT	2.1000
11-	RR	RURAL RES	1.0000
12-	R10	RES DIST 10SF	1.5000
13-	R15	RES DIST 15SF	1.5000
14-	R15A	RES/AGRI 15SF	1.5000
01-	R15CD	SGLFAM RES15/CD	1.5000
02-	R20	RES DIST 20SF	1.0000
03-	R20A	RES/AGRI 20SF	1.0000
04-	R30	RES DIST 30SF	1.0000
05-	R40	RES DIST 40SF	0.8500
06-	R40A	RES/AGRI 40SF	0.8500
07-	R5	RES DIST MULTI	2.5000
08-	R5A	RES/AGRI MULTI	2.5000
09-	R5AM	RES MH OVERLAY	2.5000
10-	R5C	SF RES 5/COND	2.5000
11-	R6	RES DIST MULTI	2.5000
12-	R6A	RES/AGRI MULTI	2.5000
13-	R6C	SF RES 6/COND	2.5000
14-	R6MH	RES/MH OVERLAY	2.5000
01-	R7.5	RES DIST 7.5 SF	2.0000
02-	SF10	SF RES 10	1.5000
03-	SF10A	SF RES 10/APTOL	1.5000
04-	SF10M	SF RES 10/MH OL	1.5000
05-	SF15	SF RES 15	1.5000
06-	SF15A	SF RES 15/APTOL	1.5000
07-	SF15M	SF RES 15/MH OL	1.5000
08-	SF6	SF RES 6	2.5000
09-	SF6A	SF RES 6/APTOL	2.5000
10-	SF6M	SF RES 6/MH OL	2.5000
11-	UK	UNKNOWN	0.8500

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z05

	ADDL LAND CODE	DESCRIPTION	FACTOR
01-	AR	AGRI RES	1.0000
02-	ARMH	AGRI/MH OVERLAY	1.0000
03-	ARMHO	AGRI RES/MH OL	1.0000
04-	A1	AGRI DIST	0.8500
05-	A1A	AGRI DIST	0.8500
06-	MH	MANUFACTURED HM	3.2500
07-	MHO	MANUFHM OVERLAY	3.2500
08-	MR5	MIXED RES 5	3.2500
09-	MR5A	MIX RES 5/APTOL	3.2500
10-	MR5C	MIX RES 5 COND	3.2500
11-	MR5M	MIX RES 5/MH OL	3.2500
12-	MU	MIXED USE	3.7500
13-	MUC	MIXED USE/COND	3.7500
14-	MUD	MIXED USE DEV.	3.7500
01-	MXD	MIXED DEVLOPMT	3.7500
02-	NZ	NO ZONING	0.8500
03-	PDR	PLANNED DEV RES	2.8500
04-	PDTN	PL DV TRAD NBHD	2.8500
05-	PND	PLANNED NBHD	2.8500
06-	PNDM	PLAN NBHD MH DT	2.8500
07-	RR	RURAL RES	1.0000
08-	R10	RES DIST 10SF	1.5000
09-	R15	RES DIST 15SF	1.5000
10-	R15A	RES/AGRI 15SF	1.5000
11-	R15CD	SGLFAM RES15/CD	1.5000
12-	R20	RES DIST 20SF	1.0000
13-	R20A	RES/AGRI 20SF	1.0000
14-	R30	RES DIST 30SF	1.0000
01-	R40	RES DIST 40SF	0.8500
02-	R40A	RES/AGRI 40SF	0.8500
03-	R5	RES DIST MULTI	3.2500
04-	R5A	RES/AGRI MULTI	3.2500
05-	R5AM	RES MH OVERLAY	3.2500
06-	R5C	SF RES 5/COND	3.2500
07-	R6	RES DIST MULTI	3.2500
08-	R6A	RES/AGRI MULTI	3.2500
09-	R6C	SF RES 6/COND	3.2500
10-	R6MH	RES/MH OVERLAY	3.2500
11-	R7.5	RES DIST 7.5 SF	2.7500
12-	SF10	SF RES 10	1.5000
13-	SF10A	SF RES 10/APTOL	1.5000
14-	SF10M	SF RES 10/MH OL	1.5000
01-	SF15	SF RES 15	1.5000
02-	SF15A	SF RES 15/APTOL	1.5000
03-	SF15M	SF RES 15/MH OL	1.5000
04-	SF6	SF RES 6	3.2500
05-	SF6A	SF RES 6/APTOL	3.2500
06-	SF6M	SF RES 6/MH OL	3.2500
07-	UK	UNKNOWN	0.8500

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z07

	ADDL LAND CODE	DESCRIPTION	FACTOR
	==========	----------	------
01-	AR	AGRI RES	1.4000
02-	ARMH	AGRI/MH OVERLAY	1.4000
03-	ARMHO	AGRI RES/MH OL	1.4000
04-	A1	AGRI DIST	1.0000
05-	A1A	AGRI DIST	1.0000
06-	A1CZ	AGRI DIST COND	1.0000
07-	MH	MANUFACTURED HM	2.0000
08-	MHO	MANUFHM OVERLAY	2.0000
09-	MR5	MIXED RES 5	2.0000
10-	MR5A	MIX RES 5/APTOL	2.0000
11-	MR5C	MIX RES 5 COND	2.0000
12-	MR5M	MIX RES 5/MH OL	2.0000
13-	MU	MIXED USE	2.0000
14-	MUC	MIXED USE/COND	2.0000
01-	MUCZ	MIXED USE ZONE	2.0000
02-	MUD	MIXED USE DEV.	2.0000
03-	MXD	MIXED DEVLOPMT	2.0000
04-	MXDCZ	MIX DEV COND ZN	2.0000
05-	NZ	NO ZONING	1.0000
06-	PDR	PLANNED DEV RES	1.8000
07-	PDTN	PL DV TRAD NBHD	1.8000
08-	PND	PLANNED NBHD	1.8000
09-	PNDM	PLAN NBHD MH DT	1.8000
10-	RR	RURAL RES	1.4000
11-	R10	RES DIST 10SF	1.5000
12-	R15	RES DIST 15SF	1.5000
13-	R15A	RES/AGRI 15SF	1.4000
14-	R15CD	SGLFAM RES15/CD	1.5000
01-	R20	RES DIST 20SF	1.4000
02-	R20A	RES/AGRI 20SF	1.4000
03-	R30	RES DIST 30SF	1.4000
04-	R40	RES DIST 40SF	1.0000
05-	R40A	RES/AGRI 40SF	1.0000
06-	R5	RES DIST MULTI	2.0000
07-	R5A	RES/AGRI MULTI	2.0000
08-	R5AM	RES MH OVERLAY	2.0000
09-	R5C	SF RES 5/COND	2.0000
10-	R6	RES DIST MULTI	2.0000
11-	R6A	RES/AGRI MULTI	2.0000
12-	R6C	SF RES 6/COND	2.0000
13-	R6MH	RES/MH OVERLAY	2.0000
14-	R7.5	RES DIST 7.5 SF	1.9000
01-	SF10	SF RES 10	1.5000
02-	SF10A	SF RES 10/APTOL	1.5000
03-	SF10M	SF RES 10/MH OL	1.5000
04-	SF15	SF RES 15	1.5000
05-	SF15A	SF RES 15/APTOL	1.5000
06-	SF15M	SF RES 15/MH OL	1.4000
07-	SF6	SF RES 6	2.0000
08-	SF6A	SF RES 6/APTOL	2.0000
09-	SF6M	SF RES 6/MH OL	2.0000
10-	UK	UNKNOWN	1.0000

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z08

	ADDL LAND CODE	DESCRIPTION	FACTOR
	==========	----------	------
01-	AR	AGRI RES	1.2000
02-	ARMH	AGRI/MH OVERLAY	1.2000
03-	ARMHO	AGRI RES/MH OL	1.2000
04-	A1	AGRI DIST	1.0000
05-	A1A	AGRI DIST	1.0000
06-	A1CUD	AGRI/COND USE	1.0000
07-	A1CZ	AGRI DIST COND	1.0000
08-	CD	CONSERVANC DIST	1.0000
09-	MH	MANUFACTURED HM	2.2000
10-	MHO	MANUFHM OVERLAY	2.2000
11-	MR5	MIXED RES 5	2.2000
12-	MR5A	MIX RES 5/APTOL	2.2000
13-	MR5C	MIX RES 5 COND	2.2000
14-	MR5M	MIX RES 5/MH OL	2.2000
01-	MU	MIXED USE	2.2000
02-	MUC	MIXED USE/COND	2.2000
03-	MUCZ	MIXED USE CON	2.2000
04-	MUD	MIXED USE DEV.	2.2000
05-	MUDCZ	MIXED USE DEV.	2.2000
06-	MXD	MIXED DEVLOPMT	2.2000
07-	NZ	NO ZONING	1.0000
08-	PDR	PLANNED DEV RES	1.8000
09-	PDTN	PL DV TRAD NBHD	1.8000
10-	PND	PLANNED NBHD	1.8000
11-	PNDM	PLAN NBHD MH DT	1.8000
12-	RR	RURAL RES	1.2000
13-	RRCUD	RURAL RES COND	1.2000
14-	RRDDC	RURALRESDENSICZ	1.2000
01-	R10	RES DIST 10SF	1.3000
02-	R15	RES DIST 15SF	1.3000
03-	R15A	RES DIST 15SF	1.3000
04-	R15CD	SGLFAM RES15/CD	1.3000
05-	R20	RES DIST 20SF	1.2000
06-	R20A	RES DIST 20 SF	1.2000
07-	R20CZ	RESDIST 20 COND	1.2000
08-	R20DC	RES20DD CO USE	1.2000
09-	R30	RES DIST 30SF	1.2000
10-	R30A	RESI DIST 30SF	1.2000
11-	R40	RES DIST 40SF	1.0000
12-	R40A	RES DIST 40SF	1.0000
13-	R5	RES DIST MULTI	2.2000
14-	R5A	RES DIST MULTI	2.2000
01-	R5AM	RES MH OVERLAY	2.2000
02-	R5C	SF RES 5/COND	2.2000
03-	R6	RES DIST MULTI	2.2000
04-	R6A	RES DIST MULTI	2.2000
05-	R6C	SF RES 6/COND	2.2000
06-	R6MH	RES/MH OVERLAY	2.2000
07-	R7.5	RES DIST 7.5 SF	2.2000
08-	SF10	SF RES 10	1.3000
09-	SF10A	SF RES 10/APTOL	1.3000
10-	SF10M	SF RES 10/MH OL	1.3000
11-	SF15	SF RES 15	1.3000
12-	SF15A	SF RES 15/APTOL	1.3000
13-	SF15M	SF RES 15/MH OL	1.3000
14-	SF6	SF RES 6	2.2000
01-	SF6A	SF RES 6/APTOL	2.2000
02-	SF6M	SF RES 6/MH OL	2.2000
03-	UK	UNKNOWN	1.0000

ACTION: R SCREEN: LANC ADDL LAND FIELD NUMBER= 13 TABLE ID= Z09

	ADDL LAND CODE	DESCRIPTION	FACTOR
01-	AR	AGRI RES	1.2000
02-	ARMH	AGRI/MH OVERLAY	1.2000
03-	ARMHO	AGRI RES/MH OL	1.2000
04-	A1	AGRI DIST	1.0000
05-	A1A	AGRI DIST	1.0000
06-	A1CUD	AGRI/COND USE	1.0000
07-	MH	MANUFACTURED HM	2.2000
08-	MHO	MANUFHM OVERLAY	2.2000
09-	MR5	MIXED RES 5	2.2000
10-	MR5A	MIX RES 5/APTOL	2.2000
11-	MR5C	MIX RES 5 COND	2.2000
12-	MR5M	MIX RES 5/MH OL	2.2000
13-	MU	MIXED USE	2.2000
14-	MUC	MIXED USE/COND	2.2000
01-	MUD	MIXED USE DEV.	2.2000
02-	MXD	MIXED DEVLOPMT	2.2000
03-	NZ	NO ZONING	1.0000
04-	PDR	PLANNED DEV RES	1.8000
05-	PDTN	PL DV TRAD NBHD	1.8000
06-	PND	PLANNED NBHD	1.8000
07-	PNDM	PLAN NBHD MH DT	1.8000
08-	RR	RURAL RES	1.2000
09-	R10	RES DIST 10SF	1.3000
10-	R15	RES DIST 15SF	1.3000
11-	R15A	RES/AGRI 15SF	1.3000
12-	R15CD	SGLFAM RES15/CD	1.3000
13-	R20	RES DIST 20SF	1.2000
14-	R20A	RES/AGRI 20 SF	1.2000
01-	R30	RES DIST 30SF	1.2000
02-	R40	RES DIST 40SF	1.0000
03-	R40A	RES/AGRI 40SF	1.0000
04-	R5	RES DIST MULTI	2.2000
05-	R5A	RES/AGRI MULTI	2.2000
06-	R5AM	RES MH OVERLAY	2.2000
07-	R5C	SF RES 5/COND	2.2000
08-	R6	RES DIST MULTI	2.2000
09-	R6A	RES DIST MULTI	2.2000
10-	R6C	SF RES 6/COND	2.2000
11-	R6MH	RES/MH OVERLAY	2.2000
12-	R7.5	RES DIST 7.5 SF	2.2000
13-	SF10	SF RES 10	1.3000
14-	SF10A	SF RES 10/APTOL	1.3000
01-	SF10M	SF RES 10/MH OL	1.3000
02-	SF15	SF RES 15	1.3000
03-	SF15A	SF RES 15/APTOL	1.3000
04-	SF15M	SF RES 15/MH OL	1.3000
05-	SF6	SF RES 6	2.2000
06-	SF6A	SF RES 6/APTOL	2.2000
07-	SF6M	SF RES 6/MH OL	2.2000
08-	UK	UNKNOWN	1.0000

Road Tables

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDA
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   1.2000
 02-   1              ABUTS BUSY RD    1.2000
 03-   2              2 LANE BUSY RD   1.2000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDL
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   0.7500
 02-   1              ABUTS BUSY RD    0.9500
 03-   2              2 LANE BUSY RD   0.9000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

```
ACTION: R SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RDR
        ADDL LAND CODE     DESCRIPTION    FACTOR
      ==========     ---------------  ------
01-   0              4 LANE BUSY RD   1.0000
02-   1              ABUTS BUSY RD    1.0000
03-   2              2 LANE BUSY RD   1.0000
04-   3              PAVED            1.0000
05-   4              UNPAVED DIRT     0.7500
06-   5              ESMT LTD AC FLG  0.8000
07-   6              LANDLOCKED       0.5000
08-   7              PAPER STREET     0.5000
09-   8              GRAVEL           0.7500
```

```
ACTION: R  SCREEN: LANC   ADDL LAND FIELD NUMBER= 04 TABLE ID= RRA
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   1.0000
 02-   1              ABUTS BUSY RD    1.0000
 03-   2              2 LANE BUSY RD   1.0000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

```
ACTION: R  SCREEN: LANC  ADDL LAND FIELD NUMBER= 04  TABLE ID= RRC

    ADDL LAND CODE     DESCRIPTION    FACTOR
      ==========     ---------------  ------
01-   0              4 LANE BUSY RD   0.7500
02-   1              ABUTS BUSY RD    0.9000
03-   2              2 LANE BUSY RD   0.9000
04-   3              PAVED            1.0000
05-   4              UNPAVED DIRT     0.7500
06-   5              ESMT LTD AC FLG  0.8000
07-   6              LANDLOCKED       0.5000
08-   7              PAPER STREET     0.5000
09-   8              GRAVEL           0.7500
```

```
ACTION: R  SCREEN:    ADDL LAND FIELD NUMBER= 04    TABLE ID= RRL
         ADDL LAND CODE     DESCRIPTION    FACTOR
       ==========     ---------------  ------
 01-   0              4 LANE BUSY RD   0.7500
 02-   1              ABUTS BUSY RD    0.9500
 03-   2              2 LANE BUSY RD   0.9000
 04-   3              PAVED            1.0000
 05-   4              UNPAVED DIRT     0.7500
 06-   5              ESMT LTD AC FLG  0.8000
 07-   6              LANDLOCKED       0.5000
 08-   7              PAPER STREET     0.5000
 09-   8              GRAVEL           0.7500
```

Size Adjustment Tables

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ00

	UPPER SIZE LIMIT	FACTOR
	==========	-------
01-	00000000.00	1.0000
02-	00000000.05	1.0000
03-	00000000.10	1.0000
04-	00000000.40	1.0000
05-	00000000.50	1.0000
06-	00000001.00	1.0000
07-	00000002.00	0.8351
08-	00000003.00	0.7515
09-	00000005.00	0.6581
10-	00000007.00	0.6029
11-	00000010.00	0.5495
12-	00000015.00	0.4946
13-	00000020.00	0.4589
14-	00000025.00	0.4330
15-	00000030.00	0.4130
01-	00000035.00	0.3968
02-	00000040.00	0.3832
03-	00000045.00	0.3717
04-	00000050.00	0.3427
05-	00000055.00	0.3302
06-	00000060.00	0.3186
07-	00000065.00	0.3079
08-	00000070.00	0.2978
09-	00000075.00	0.2883
10-	00000080.00	0.2793
11-	00000085.00	0.2708
12-	00000090.00	0.2627
13-	00000095.00	0.2548
14-	00000100.00	0.2495
15-	00000105.00	0.2437
01-	00000110.00	0.2381
02-	00000115.00	0.2335
03-	00000120.00	0.2290
04-	00000125.00	0.2241
05-	00000130.00	0.2192
06-	00000135.00	0.2152
07-	00000140.00	0.2107
08-	00000145.00	0.2069
09-	00000150.00	0.2026
10-	00000155.00	0.1991
11-	00000160.00	0.1971
12-	00000165.00	0.1952
13-	00000170.00	0.1933
14-	00000175.00	0.1915
15-	00000180.00	0.1898
01-	00000185.00	0.1882
02-	00000190.00	0.1866
03-	00000195.00	0.1850
04-	00000200.00	0.1835
05-	00000225.00	0.1767
06-	00000250.00	0.1709
07-	00000300.00	0.1612
08-	00000350.00	0.1534
09-	00000400.00	0.1470
10-	00000450.00	0.1416
11-	00000500.00	0.1369
12-	00000750.00	0.1202
13-	00000800.00	0.1178
14-	00000850.00	0.1155
15-	00000900.00	0.1134
01-	00001000.00	0.1096
02-	00009999.00	0.0525

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULE= SZ01

	UPPER SIZE LIMIT	FACTOR
01-	00000000.00	1.0000
02-	00000000.05	1.0000
03-	00000000.10	1.0000
04-	00000000.40	1.0000
05-	00000000.50	1.0000
06-	00000001.00	1.0000
07-	00000002.00	0.7773
08-	00000003.00	0.7340
09-	00000005.00	0.6906
10-	00000007.00	0.6392
11-	00000010.00	0.6225
12-	00000015.00	0.6058
13-	00000020.00	0.5891
14-	00000025.00	0.5364
15-	00000030.00	0.4718
01-	00000035.00	0.4547
02-	00000040.00	0.4281
03-	00000045.00	0.4166
04-	00000050.00	0.3911
05-	00000055.00	0.3822
06-	00000060.00	0.3743
07-	00000065.00	0.3672
08-	00000070.00	0.3607
09-	00000075.00	0.3398
10-	00000080.00	0.3344
11-	00000085.00	0.3293
12-	00000090.00	0.3247
13-	00000095.00	0.3203
14-	00000100.00	0.3162
15-	00000105.00	0.2982
01-	00000110.00	0.2946
02-	00000115.00	0.2912
03-	00000120.00	0.2880
04-	00000125.00	0.2715
05-	00000130.00	0.2687
06-	00000135.00	0.2660
07-	00000140.00	0.2634
08-	00000145.00	0.2609
09-	00000150.00	0.2585
10-	00000155.00	0.2562
11-	00000160.00	0.2540
12-	00000165.00	0.2519
13-	00000170.00	0.2499
14-	00000175.00	0.2480
15-	00000180.00	0.2461
01-	00000185.00	0.2443
02-	00000190.00	0.2425
03-	00000195.00	0.2408
04-	00000200.00	0.2392
05-	00000250.00	0.2252
06-	00000300.00	0.2224
07-	00000350.00	0.2116
08-	00000400.00	0.2028
09-	00000450.00	0.1956
10-	00000500.00	0.1868
11-	00000750.00	0.1674
12-	00009999.00	0.0832

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ02

	UPPER SIZE LIMIT	FACTOR
	==========	-------
01-	00000000.00	1.0000
02-	00000000.05	1.0000
03-	00000000.10	1.0000
04-	00000000.40	1.0000
05-	00000000.50	1.0000
06-	00000001.00	1.0000
07-	00000002.00	0.8526
08-	00000003.00	0.7767
09-	00000005.00	0.6906
10-	00000007.00	0.6392
11-	00000010.00	0.5888
12-	00000015.00	0.5364
13-	00000020.00	0.5021
14-	00000025.00	0.4770
15-	00000030.00	0.4574
01-	00000035.00	0.4414
02-	00000040.00	0.4281
03-	00000045.00	0.4166
04-	00000050.00	0.3911
05-	00000055.00	0.3822
06-	00000060.00	0.3743
07-	00000065.00	0.3672
08-	00000070.00	0.3607
09-	00000075.00	0.3398
10-	00000080.00	0.3344
11-	00000085.00	0.3293
12-	00000090.00	0.3247
13-	00000095.00	0.3203
14-	00000100.00	0.3162
15-	00000105.00	0.2982
01-	00000110.00	0.2946
02-	00000115.00	0.2912
03-	00000120.00	0.2880
04-	00000125.00	0.2715
05-	00000130.00	0.2687
06-	00000135.00	0.2660
07-	00000140.00	0.2634
08-	00000145.00	0.2609
09-	00000150.00	0.2585
10-	00000155.00	0.2562
11-	00000160.00	0.2540
12-	00000165.00	0.2519
13-	00000170.00	0.2499
14-	00000175.00	0.2480
15-	00000180.00	0.2461
01-	00000185.00	0.2443
02-	00000190.00	0.2425
03-	00000195.00	0.2408
04-	00000200.00	0.2392
05-	00000250.00	0.2252
06-	00000300.00	0.2144
07-	00000350.00	0.2056
08-	00000400.00	0.1984
09-	00000450.00	0.1921
10-	00000500.00	0.1868
11-	00000750.00	0.1674
12-	00009999.00	0.0832

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ70

	UPPER SIZE LIMIT	FACTOR
01-	00000000.00	1.0000
02-	00000000.01	1.0000
03-	00000000.05	1.0000
04-	00000000.10	1.0000
05-	00000000.25	1.0000
06-	00000000.26	1.0000
07-	00000000.50	1.0000
08-	00000000.51	1.0000
09-	00000000.75	1.0000
10-	00000000.76	1.0000
11-	00000001.00	1.0000
12-	00000001.05	0.9850
13-	00000001.10	0.9709
14-	00000001.15	0.9576
15-	00000001.20	0.9450
01-	00000001.25	0.9332
02-	00000001.50	0.8819
03-	00000002.00	0.8066
04-	00000002.50	0.7527
05-	00000003.00	0.7114
06-	00000005.00	0.6072
07-	00000007.00	0.5470
08-	00000010.00	0.4898
09-	00000015.00	0.4319
10-	00000019.00	0.4014
11-	00000025.00	0.3687
12-	00000030.00	0.3484
13-	00000035.00	0.3322
14-	00000040.00	0.3187
15-	00000050.00	0.2974
01-	00000055.00	0.2887
02-	00000060.00	0.2810
03-	00000065.00	0.2742
04-	00000070.00	0.2679
05-	00000075.00	0.2623
06-	00000080.00	0.2571
07-	00000095.00	0.2437
08-	00000100.00	0.2399
09-	00000125.00	0.2239
10-	00000150.00	0.2115
11-	00000175.00	0.2017
12-	00000200.00	0.1935
13-	00000250.00	0.1806
14-	00000300.00	0.1706
15-	00000400.00	0.1561
01-	00009999.00	0.0575

```
 ACTION: R  SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES  SCHEDULE= SZ75

    UPPER SIZE LIMIT    FACTOR
      ===========       -------
01-   00000000.00        1.0000
02-   00000000.01        1.0000
03-   00000000.05        1.0000
04-   00000000.25        1.0000
05-   00000000.50        1.0000
06-   00000001.00        1.0000
07-   00000002.00        0.7900
08-   00000002.50        0.7323
09-   00000003.00        0.6883
10-   00000003.50        0.6532
11-   00000004.00        0.6242
12-   00000004.50        0.5997
13-   00000005.00        0.5786
14-   00000006.00        0.5438
15-   00000007.00        0.5160
01-   00000008.00        0.4931
02-   00000009.00        0.4738
03-   00000010.00        0.4571
04-   00000011.00        0.4425
05-   00000012.00        0.4296
06-   00000015.00        0.3982
07-   00000020.00        0.3611
08-   00000025.00        0.3347
09-   00000030.00        0.3146
10-   00000035.00        0.2985
11-   00000040.00        0.2853
12-   00000045.00        0.2741
13-   00000050.00        0.2645
14-   00000060.00        0.2486
15-   00000070.00        0.2359
01-   00000080.00        0.2254
02-   00000090.00        0.2165
03-   00000100.00        0.2089
04-   00000125.00        0.1937
05-   00000150.00        0.1820
06-   00000175.00        0.1727
07-   00000200.00        0.1651
08-   00000225.00        0.1586
09-   00000250.00        0.1530
10-   00000275.00        0.1481
11-   00000300.00        0.1438
12-   00000350.00        0.1365
13-   00000400.00        0.1304
14-   00009999.00        0.0437
```

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ80

	UPPER SIZE LIMIT	FACTOR
	==========	-------
01-	00000000.00	1.0000
02-	00000000.40	1.0000
03-	00000000.50	1.0000
04-	00000000.60	1.0000
05-	00000000.70	1.0000
06-	00000000.80	1.0000
07-	00000000.90	1.0000
08-	00000001.00	1.0000
09-	00000001.10	0.9700
10-	00000001.25	0.9311
11-	00000001.50	0.8783
12-	00000001.75	0.8360
13-	00000002.00	0.8011
14-	00000003.00	0.7036
15-	00000004.00	0.6417
01-	00000005.00	0.5975
02-	00000006.00	0.5636
03-	00000007.00	0.5365
04-	00000008.00	0.5141
05-	00000009.00	0.4950
06-	00000010.00	0.4786
07-	00000012.00	0.4515
08-	00000015.00	0.4204
09-	00000018.00	0.3966
10-	00000020.00	0.3834
11-	00000022.00	0.3719
12-	00000025.00	0.3570
13-	00000030.00	0.3368
14-	00000035.00	0.3206
15-	00000040.00	0.3071
01-	00000050.00	0.2860
02-	00000060.00	0.2698
03-	00000070.00	0.2568
04-	00000080.00	0.2460
05-	00000090.00	0.2369
06-	00000100.00	0.2291
07-	00000115.00	0.2191
08-	00000125.00	0.2133
09-	00000130.00	0.2106
10-	00000150.00	0.2012
11-	00000160.00	0.1971
12-	00000175.00	0.1915
13-	00000185.00	0.1882
14-	00000190.00	0.1866
15-	00000200.00	0.1835
01-	00000250.00	0.1709
02-	00000275.00	0.1657
03-	00000300.00	0.1612
04-	00000350.00	0.1534
05-	00000400.00	0.1470
06-	00009999.00	0.0525

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ90

	UPPER SIZE LIMIT	FACTOR
01-	00000000.00	1.0000
02-	00000000.01	1.0000
03-	00000000.05	1.0000
04-	00000000.20	1.0000
05-	00000000.40	1.0000
06-	00000000.50	1.0000
07-	00000000.60	1.0000
08-	00000000.70	1.0000
09-	00000000.80	1.0000
10-	00000000.90	1.0000
11-	00000001.00	1.0000
12-	00000001.10	0.9598
13-	00000001.25	0.9085
14-	00000001.50	0.8400
15-	00000001.75	0.7861
01-	00000002.00	0.7423
02-	00000003.00	0.6235
03-	00000004.00	0.5510
04-	00000005.00	0.5005
05-	00000006.00	0.4628
06-	00000007.00	0.4331
07-	00000008.00	0.4090
08-	00000009.00	0.3888
09-	00000010.00	0.3715
10-	00000012.00	0.3435
11-	00000015.00	0.3121
12-	00000018.00	0.2886
13-	00000020.00	0.2758
14-	00000022.00	0.2647
15-	00000025.00	0.2505
01-	00000030.00	0.2317
02-	00000035.00	0.2168
03-	00000040.00	0.2047
04-	00000050.00	0.1860
05-	00000060.00	0.1719
06-	00000070.00	0.1609
07-	00000080.00	0.1519
08-	00000090.00	0.1444
09-	00000100.00	0.1380
10-	00000115.00	0.1300
11-	00000125.00	0.1254
12-	00000130.00	0.1233
13-	00000150.00	0.1160
14-	00000160.00	0.1128
15-	00000175.00	0.1085
01-	00000185.00	0.1060
02-	00000190.00	0.1047
03-	00000200.00	0.1025
04-	00000220.00	0.0983
05-	00000250.00	0.0931
06-	00000275.00	0.0893
07-	00000300.00	0.0861
08-	00000350.00	0.0805
09-	00000400.00	0.0761
10-	00009999.00	0.0400

ACTION: R SCREEN: SADJ NEIGHBORHOOD LAND LINE SIZE ADJUSTMENT SCHEDULES SCHEDULE= SZ92

	UPPER SIZE LIMIT	FACTOR
	==========	-------
01-	00000000.00	1.0000
02-	00000000.01	1.0000
03-	00000000.05	1.0000
04-	00000000.20	1.0000
05-	00000000.40	1.0000
06-	00000000.50	1.0000
07-	00000000.60	1.0000
08-	00000000.70	1.0000
09-	00000000.80	1.0000
10-	00000000.90	1.0000
11-	00000001.00	1.0000
12-	00000001.10	0.9598
13-	00000001.25	0.9085
14-	00000001.50	0.8400
15-	00000001.75	0.7861
01-	00000002.00	0.7423
02-	00000003.00	0.6235
03-	00000004.00	0.5510
04-	00000005.00	0.5005
05-	00000006.00	0.4628
06-	00000007.00	0.4331
07-	00000008.00	0.4090
08-	00000009.00	0.3888
09-	00000010.00	0.3715
10-	00000012.00	0.3435
11-	00000015.00	0.3121
12-	00000018.00	0.2886
13-	00000020.00	0.2758
14-	00000022.00	0.2647
15-	00000025.00	0.2505
01-	00000030.00	0.2317
02-	00000035.00	0.2168
03-	00000040.00	0.2047
04-	00000050.00	0.1860
05-	00000060.00	0.1719
06-	00000070.00	0.1609
07-	00000080.00	0.1519
08-	00000090.00	0.1444
09-	00000100.00	0.1380
10-	00000115.00	0.1300
11-	00000125.00	0.1254
12-	00000130.00	0.1233
13-	00000150.00	0.1160
14-	00000160.00	0.1128
15-	00000175.00	0.1085
01-	00000185.00	0.1060
02-	00000190.00	0.1047
03-	00000200.00	0.1025
04-	00000220.00	0.0983
05-	00000250.00	0.0931
06-	00000275.00	0.0893
07-	00000300.00	0.0861
08-	00000350.00	0.0805
09-	00000400.00	0.0761
10-	00009999.00	0.0600

6. Unique Situations in Land Appraisal

For some properties a unique situation may arise where additional information may be needed to help appraise these parcels of land. Please review the 2017 Residential Revaluation Manual for those unique situations to value these type properties. Some examples of these but not limited to are: Borrow Pits, Power line or Utility Easements, parcels used as a road or tracts of land with contamination issues, or any other factor that may not be listed here.

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VII. APPROACHES TO VALUE[1]

1. COST APPROACH 159
2. MARKET APPROACH 161
3. INCOME APPROACH 163

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VII. APPROACHES TO VALUE

1. Cost Approach

The cost method of valuation follows the general formula, MV = LV + (RCN – D). Where MV is Market Value) LV is Land Value, RCN is replacement cost new, and D is depreciation. Cost tries to replicate market value by adding an estimate of land value to the difference between the cost of the improvements and total depreciation. The cost approach is most applicable to industrial and special use properties for which market and/or income data is scarce or nonexistent.

The land value is established through market research of actual land sales, the consideration of the allocation method or the extraction method of subtracting a known improvement cost from the sale price leaving the land as the residual value. (Example: Sale Price = $65,000; Cost of Building = $45,000; Land = $65,000 -$45,000 or $20,000).

The value of the improvements are developed through the use of cost manuals from such firms as Marshall and Swift and then indexed for local economic conditions. Local construction firms and contractors are also a source for cost information and verification for the indexing of data from manuals.

Depreciation is the loss, from all causes, in value of the replacement cost new. The simplest form is that caused by aging. Newer homes will sell at a higher price than similar homes built at an earlier date. This is because normal wear and tear, neglect and physical decay begin to affect the structure and therefore its marketability.

The method used for normal depreciation will be the economic age-life method whereby a lump sum is deducted from the RCN. This sum is a function of actual age and effective age (effective age is the age indicated by condition and utility and may be less or greater than chronological age) and perceptions by the market. The figure is developed into a percentage adjustment. The RCN is multiplied by this adjustment. Functional and economic depreciation are then deducted if applicable.

Two other forms of depreciation exist. They are functional and economic obsolescence.

Functional obsolescence is the inability of the structure to adequately fulfill its purpose given current market demand and the state of construction technology. A rather common example of this is being over built. An owner of a home with 3000 square feet of living area in a neighborhood of
1000 square foot homes will not be able to realize the same per square foot sale price as the smaller homes. The owner of the 3000 square foot home has a superadequacy. Buyers will perceive a loss of utility for the extra space and therefore only offer the owner a marginal return on the extra space. The measurement of curable functional obsolescence is done by calculating the cost to cure the inadequacy. If a superadequacy exists, the simplest way to calculate the obsolescence is the subtraction of the reproduction cost from the replacement cost. If sales are available the sales comparison method is the most preferable.

Economic obsolescence is incurable. The total loss must be allocated to improvements. The appraiser must compare sales sharing the same negative influence to those that are not. The estimated loss is then applied. If the property is income producing then the loss in net operating income can be capitalized if appropriate rates for building and land are available. Economic obsolescence is caused by factors external to the property and totally out of control of the owner. Examples of this might be a retail store with inadequate parking or heavy traffic through a residential neighborhood.

The method must also account for other indirect costs such as entrepreneurial profit, accounting, legal fees, administration etc., all of which must be verified by market data.

For mass appraisal using the Cost Approach, the Assessor's Office uses the –On-Line Appraisal and Statistical Information System (OASIS) by Cole Layer-Trumble (CLT) now Tyler Technologies. The system calculates the appraised value from tables set up by the Assessor according to an OASIS algorithm. More detail about the Cost Approach programming in the CAMA/OASIS system is contained in the Cost Approach to Valuation described in a later chapter.

2. Market Approach

The market approach (also called the sales comparison approach) uses analysis of recent comparable sales to value subject properties. The Market Approach is used to estimate property at its "fair market value". Ergo, the best technique for the valuation of property is abstracting data from actual sales and applying the results to unsold properties. The general formula for the market is:

MV= S +/- A.

Where MV is market value, S is the sales of comparable property, and A is the amount of adjustments.

The sales comparison approach models the behavior of the market by comparing the properties being appraised (subjects) with similar properties that have recently sold (comparable properties). Comparable properties are selected for similarity to the subject property. The sales are then adjusted for their differences from the subject. Finally, a market value for the subject is estimated from the adjusted sales prices of the comparable properties.

Typically adjustments originate from one of the following.

Paired data set analysis
Statistical analysis
Graphic analysis
Cost-related analysis
Secondary data analysis

Comparable properties are selected and adjusted to the subject property. Typically three to five sales of properties that have recently sold are used in this process. The sales comparison approach requires adjustments for differences, such as time, attribute differences, competitiveness in the same market, and other factors.

Conventionally in the sales comparison approach, appraisers estimate a price per unit. The unit of comparison may be the property as a whole or some smaller measure of the size of the property. Converting the sale price to a unit of measure makes it easier to compare and adjust properties that compete in the same market. The price per unit of comparison is the dependent variable – what is being estimated- in the valuation model. The value of the dependent variable is predicted by the values of the other variables, such as property attributes. The unit of comparison should never be the grounds for selecting comparables. Property attributes should be used instead.

Once the attributes have been selected and the adjustments determined, the appraiser can apply the sales comparison model. The appraiser first describes subject and comparables in a comparative attribute display, then selects an adjustment method and adjusts each comparable to the subject. After adjustments have been made an estimate of value can be determined about the subject property.

Source: The International Association of Assessing Officers, Joseph K.

Eckert editor, Property Appraisal and Assessment Administration.1990, Chicago, International Association of Assessing Officers, p.153

This method and logic for completing the Market or Sales Comparison Approach in the CAMA/ OASIS system is basically the same. The method to process this is done through computer programming. For mass appraisal using the Market Approach, the Assessor's Office uses the –On-Line Appraisal and Statistical Information System (OASIS) by Cole Layer-Trumble (CLT) now Tyler Technologies. The system calculates the appraised value from use of the Market Valuation module which contains several integrated computer programs using input from the user/appraiser and from other programs. More detail about the Market Valuation Module and computer programs is contained in the Market Approach Calculation Process described in a later chapter.

3. Income Approach

Without sufficient market data for reliable predictive purposes the stream of income that they produce may reflect certain properties values. Examples of these property types are apartments, mobile home parks, shopping centers, hotels and motels.

The general model is **MV= I/R**.

Where MV = market value, I = net income, and R = capitalization rate. The underlying assumption of this approach is that the value of the property as perceived by the buyer lies in its ability to generate income. The consumer is anticipating a future benefit (the income stream and or future sale of the property). It is the anticipated future benefits that the Assessor is appraising and discounting to their present worth.

The process begins with an estimation of potential gross income (PGI). This is the maximum possible revenue that the owner may realize in an annual period. Example: An apartment complex has 10 units for which the market rent is $350 per month. The PGI is the 12 months X 350 X 10 units = $42,000. It is important to note that the rent is market rent. This is often different from contract rent. Market rent is the prevailing current rate that would maximize the owners return on his investment. Contract rent is that which is denoted in the lease or rental agreement between lessor and lessee. The importance of this difference will be explained below.

Next is the calculation of vacancy and collections losses. Since most properties are rarely 100% occupied, the owner suffers a loss from his potential gross income (PGI). The Tax Administrators‘ Office referenced either primary or secondary sources and or market surveys which helped establish this percentage of vacancy and collection loss after subtracting that amount of loss then miscellaneous income is added to the difference.

Miscellaneous income may come from various sources: common area charges, overage agreements, utility charges, unrented deposits, laundry room charges, etc. After this addition, the sum is the effective gross income (EGI).

From the EGI allowable expenses are deducted. These include but possibly not limited to maintenance, administration, utilities, insurance and replacement for reserves. Owner-related expenses such as loan or interest payments, income taxes, and depreciation deductions are not allowed. This leaves net operating income (NOI).

Net operating income is then divided by the capitalization rate to equal market value. Two important concepts to understand are the use of market versus contract rent and allowable expenses. Market rent is that which would currently maximize the investors return for a given type of property given current (January 1, 2017) conditions. This means that in some cases the market rent used for the appraisal is in excess of the actual contract rent. The reason for this is that an injudicious lessor may not be maximizing his return. This lowers his net income and therefore lowers the final estimate of value. His neighbor who is charging market on an exact same type of property will have a higher net and therefore be assessed at a higher level. Deducting more than allowable expenses have the same effect since it lowers the net operating income. Some sources such as the Institute for Real Estate Management (IREM), Realty Rates, and Smith Travel Research provide secondary sources of expense ratios and are frequently consulted to gauge the properties claimed expenses against industry standards. Other sources for determining market rent, vacancy and collection, and expenses may have been consulted but not listed.

To prevent any inequities arising from either non-market rents or claims of excessive expenses, economic rents and standard industry expense ratios will be applied.

The courts have recognized this potential problem and addressed it. In Re Greensboro Office Partnership, 72 NC APP. 635, 325 S.E. 2D 24, Cert Denied, 313 NC 602, 330 S.E.2D 610 (1985) the North Carolina Appellate Court stated: –Section 105-317(A) in fixing the guide which assessors must use in valuing property for taxes, includes as a factor the past income there from, and its probable future income. But the income referred to is not necessarily actual income. The language is sufficient to include the income which could be obtained by the proper and efficient use of the property. To hold otherwise would penalize the competent and diligent and to reward the incompetent or indolent." thus, the rationale for using market rents and a certain level of allowable expenses.

The last step is the choice of a capitalization rate. Direct capitalization rates may be used from data collected from the market. Care must be used so that if the rate is market extracted it is applied to similar properties. A list of overall rates derived from valid sales will if not directly applied be used as benchmarks to check the reasonableness of rates developed through other techniques. Yield capitalization and discounted cash flow (DCF) are based on expectations of changes in the income stream, appreciation depreciation of the property, and expenses. Income capitalization rates will not be limited to any particular method since with proper application they will yield similar results. All elements of build-up methods (e.g. band-of-investment) must be supported by market data. Proper documentation of income and expenses must include three years of income tax returns for the subject or audited statements by a CPA using the Generally Accepted Accounting Principles (GAAP). Other forms such as income statements, leases, etc. are acceptable if enough supporting documentation is presented as a supplement to a single years return. All information gathered and utilized is held confidential unless the subject property is appealed.

For mass appraisal using the Income Approach, the Assessor‘s Office uses the –On-Line Appraisal and Statistical Information System (OASIS) by Cole Layer-Trumble (CLT) now Tyler Technologies. The system calculates the appraised value from income modules or models using data input by the Assessor according to an OASIS algorithm. More detail about the Income Approach programming in the CAMA/OASIS system is contained in the Income Approach to Valuation described in a later chapter.

VIII. RESIDENTIAL / MANUFACTURED HOME COST CALCULATION AND TABLES

1. RESIDENTIAL COST CALCULATION PROCESS 167
A. The Valuation of Residential Land 167
B. The Valuation of Buildings – Residential 168
MASTER TABLES FOR RESIDENTIAL 190
Residential Appraisal Options (AOPT). 191
Condition Codes for Residential Buildings (RCON) 191
Exterior Wall Rates (Residential / Manufactured Homes) (RWAL / RWAR) 192
Building Section Rates (Residential / Manufactured Homes) (SECT) 193
Improvement Type Rates (IMPT) 194
Residential Quality Grades and Depreciation Model Numbers (RQAL) 195
Manufactured Homes Architectural Code and Depreciation Model Numbers (RARC) 195
Residential Building Refinements (RAR1 / RAR2) 196
Residential Depreciation Table for Model 001 (Quality Grade E) (RDEP). 198
Residential Depreciation Table for Model 002 (Quality Grade D) (RDEP). 200
Residential Depreciation Table for Model 003 (Quality Grade C) (RDEP). 202
Residential Depreciation Table for Model 004 (Quality Grade B) (RDEP). 204
Residential Depreciation Table for Model 005 (Quality Grade A) (RDEP). 206
Residential Depreciation Table for Model 006 (Quality Grade AA) (RDEP). 208
(Singlewide Homes) Depreciation Model MH1 Special Arch Code S1,S2,S3 (RDEP). 210
(Doublewide Homes) Depreciation Model MH4 Special Arch Code D2 (RDEP). 211
(Doublewide Homes) Depreciation Model MH5 Special Arch Code D3, D4 (RDEP). 212

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VIII. RESIDENTIAL / MANUFACTURED HOME COST CALCULATION AND COST TABLES

1. Residential Cost Calculation Process

INTRODUCTION

The OASIS Cost Approach to Valuation provides a means of estimating the value of any improved property, including manufactured homes as well as common stick built homes, through the application of user-defined cost tables. Traditionally, this has meant an estimate of either the reproduction or replacement cost new less depreciation (RCNLD) using construction cost data. The methodology employed in OASIS allows the users to determine the extent to which they wish to market-orient the cost tables, and therefore, their resulting cost estimates of value. This places, in the hands of the appraiser, the decision as to which costs are to be used and how they will be used in terms of market-orientation. This section explains the use of the screens in the CAMA subsystem that are used for the cost approach to valuation or building valuation. Not all OASIS tables were reproduced in this manual because of the massive size and quantity of data, examples of the tables are shown. The CICS2 mainframe OASIS program contains all of the tables and rates that are being used in the 2017 revaluation.

The CAMA subsystem also provides both an on-line and off-line method to simulate value results when planning for a revaluation. The on-line method is a sales ratio/statistical document (SR) that interactively recalculates values using current cost master tables, compares these to sales prices and provides statistics to indicate the value level and equity resulting from those tables. This on-line function is used by neighborhood. The off-line program (AA301) allows recalculation for several neighborhoods or the entire jurisdiction, providing totals and percentage of change on each parcel over the last official appraisal values. This program may be run in simulation many times before running in update mode.

A. The Valuation of Residential Land

The CAMA Subsystem contains a very flexible methodology for valuing all types of land. Two types of land values are possible, a market value and an agriculture value (or Use Value). Land codes may be defined in the system at the jurisdiction, neighborhood and parcel level.

The Landlines (LANL) screen calculates the value of a landline. When a change, or delete action is entered on LANL the system will calculate or re-calculate a land value for only the lines that are displayed on the screen.

A more detailed explanation of land valuation is explained in section
5 and 6.

Example of a Landline Screen from OASIS shown for demonstration purposes only.

```
ACTION: R SCREEN: LANL USERID:                                  CHANGE-REASON:
 H-  --------------------------  L A N D   L I N E S  -------------------
     ------- JU= 20 RO= RR PARC=                       YR= 2017  ALTKEY=
     0906310
                                                       DYR= 2017 STAT: ACTIVE

     LN#  LUSE     TYPE  FRONT   DEPTH        LAND UNITS    LOC%    MARKET VALUE
     -    DESC      -    -      D FACT    OV LAND RATE     SHP%    AG USE VALUE
     -    ZONING    -    NOTES            -  -             PHYS%   -
     ==   -----     --   -----   -----    -  -----------   ---       ---------
 01- 01   2096      AC                                5.00   100 %        24,012
          ACREAGE                1.00000         4,802.40   100 %             0
          R10                                               100 %
 02- 02   2300      AC                                1.36   100 %           408
          SWP/WST                1.00000           300.00   100 %             0
          A1                                                100 %
 03- 03   2096      AC                                3.63   100 %        19,059
          ACREAGE                1.00000         5,250.41   100 %             0
          A1                                                100 %
 04- 04   0400      LT                                1.00   100 %        11,500
          RUR HM                 1.00000        11,500.00   100 %             0
          A1                                                100 %
```

B. The Valuation of Buildings - Residential

The CAMA Cost Approach to Valuation automates the valuation of residential buildings. This method is flexible and any building of any type may be described and valued. Residential properties are valued within the CAMA subsystem. Different algorithms are used for residential and commercial/industrial. In both instances, however, the system allows coding of all available types of structures, walls, and many components. These are described and priced in master tables so that every type of existing construction in a jurisdiction has a code and an associated code. The parcel level data entry screen allows an individual description of each building. This will allow the cost routine to be applied to those specific descriptions and priced with costs locally determined. The end result is a system, which will allow coding, description and valuation of any type of property. If a new type of construction or construction material is introduced into the real estate market, the user simply defines a code, inputs the appropriate cost and the system will handle it from that point forward. Again different screens are used to aid in the valuation process.

The Residential Building Characteristics (RESC) and Residential Building Sections (RESS) - screens calculate the value of a single building. When an add, change, or delete action is entered on either RESC or RESS, the system will calculate or re-calculate a building value for only the building. Building calculations are only performed if the building is complete. The Residential Building Characteristics screen defines the general characteristics of a residential building, the variables that contribute to depreciation, building refinements, and built-ins.

Example of a RESC Screen from OASIS shown for demonstration purposes only.

```
ACTION: R SCREEN: RESC USERID:
R E S I D E N T I A L  B U I L D I N G  C H A R A C T E R I S T I C S
JU= 20  RO= RR  YR= 2017  ALTKEY= 0906310  DYR: 2017 STATUS: ACTIVE
BUILDING ID= 01 OF 01            LAND LINE: 01
  IMPROVEMENT TYPE: R3        SP ARCH CODE: D4              CONDO DATA:
     QUALITY GRADE: 450                CDU:                 CONDITION: A
 ACTUAL YEAR BUILT: 1994        EFF YR/AGE:             REMODELED YEAR: 0000
    FUNCTIONAL OBS: 000 %     ECONOMIC OBS: 000 %     PERCENT COMPLETE: 000 %
----------------------------- R E F I N E M E N T S ---------------------------
 4-FIX BATHS:  1      3-FIX BATHS:  0      2-FIX BATHS:  0   EXTRA FIX:       0
 BEDROOMS: 3    FIREPLACES: 1     AIR COND: Y  FOUNDATION       : G HEAT
METHOD1: 07    HEAT METHOD2:        HEAT SOURCE1: 01           HEAT
SOURCE2: ROOF TYPE   : 02        ROOF COVER   : 03             INT
FLOORS1 : 11   INT WALLS2        : 12
5-FIX-BATHS :      1 JAC         :      0 STYLE       :      2
------------------------------    B U I L T - I N S    -------------------------
RANGE/OVEN:  1  G DISPOSAL:  0  COMPACTOR :  0  SECURITY  :  1  DISHWASHER:  1
INTERCOM  :  0  VACCUUM   :  0
APPR BY: SWM   TAMI BOTELLO                    ON: 08 20 2016 NEXT
REV: INSP BY: WKG                              WAYNE KEITH GEORGE
              ON: 01 23 1998 INSP CODES:
```

RESS -The Residential Building Sections screen defines the refinements that are associated with each section of the building. The Residential Building Sections (RESS) screen is used, in conjunction with the Residential Building Characteristic (RESC) screen to enter and modify the characteristic information for a residential building. These two screens, combined with the data entered on the Building Dimensions (DIME) screen is used by the system to calculate an indication of value by the Cost Approach to Valuation.

Example of a Landline Screen from OASIS shown for demonstration purposes only

```
ACTION: R SCREEN: RESS USERID:
 H-  -------  R E S I D E N T I A L   B U I L D I N G   S E C T I O N S  -
     ------ JU= 20 RO= RR PARC= -                      YR= 2017 ALTKEY=
     0906310
                                                       DYR: 2017 STAT: ACTIVE
     BUILDING ID= 01       ------- ADDL REFINEMENTS  -------
     SECT  TYPES     GROUND     NBR   WALL
      ID   1ST UPR   FL AREA   STORY  TYPE   ATTC  AREA  BSMT
      ==   --- ---   -------   ----    --    ---   ---   ---   ---   ---   ---
01-    01   BAS         2,052   1.00    04    N       0     0
02-    02   WDK           240   1.00          N       0     0
03-    03   OPU           152   1.00          N       0     0
```

DIME - The Building Dimensions screen is used to create a building. It specifies whether the building is residential or commercial, the number of stories in each section of the building, the exterior wall types for each section of the building, and provides a means for the user to "draw" a sketch of the building.

The Building Dimensions (DIME) screen is used to enter the dimensions for a building sketch that is displayed on the Building Sketch (SKET) screen. It is used for both residential and commercial buildings.

Example of a DIME screen from OASIS is shown for demonstration purposes only.

```
 ACTION: R SCREEN: DIME USERID:                                CHANGE-REASON:
 H-  ----------------  B U I L D I N G   D I M E N S I O N S  -----------
            ------ JU= 20 RO= RR PARC=      -    YR= 2017 ALTKEY= 0906310
 BUILDING ID= 01  BUILDING TYPE: R  DYR: 2017 STAT: ACTIVE
    PERIMTR SECT              TYPE                                # OF
          GFA                 ADL-#ST ID 1ST UPR        DIMENSIONS
          STRY O WALL TY ADL-PRM
== --- --- ---------------------------------------- ---- - ------- -------
    01-  01 BAS     CL76D27R76U27                  1.00      2,052    206
                                                              04      0.00
                                                                         0
   02-  02 WDK     L12 CU12L20D12R20               1.00     240        64
                                                                      0.00
                                                                         0
   03-  03 OPU     R12D27L37 CD8L19U8R19           1.00     152        54
                                                                      0.00
                                                                         0
```

The dimension area of the Building Dimensions (DIME) screen is used to specify the sketch parameters that are used to display a diagram of the building. These sketch parameters consist of a series of commands that will draw the building. The valid commands are:

C commence the drawing of the sketch
Unn directional symbol that defines upward movement
Dnn directional symbol that defines downward movement
Lnn directional symbol that defines movement to the left
Rnn directional symbol that defines movement to the right

The "nn" within each directional symbol specifies the number of feet of movement. When entering these commands, the directional symbols that are entered before the commence command allows the user to move around the diagram without actually drawing a line. The directional symbols that are specified after the commence command indicate a line on the drawing.
The commence command is required for each section. The user must end the drawing at the exact same point that it was begun. This will ensure that each section is "closed."

Important: the repositioning for each building section that is sketched is begun from the point where the previous building section ended.

Example

To illustrate, let us sketch a residential building where the main structure dwelling is a rectangular shape of 76 feet by 27 feet. There is a wood deck on the back of the house that is 12 feet by 20 feet and it abuts the rear of the house.

We will begin the sketch with the main structure of the building. The drawing will begin in the lower left- hand corner of this structure. It is sketched as follows: CU27 R76 D27 L76
Before beginning to draw the wood deck section, the user must first move the "pen." By moving up 27 feet and right 40 we position the "pen" in the lower left-hand corner of the wood deck. This section is sketched as follows:

U27 R40 C U12 R20 D12 L20
When this sketch is entered on the Building Dimensions (DIME) screen and displayed on the building Sketch (SKET) screen it will look as follows. The OPU is then also added and positioned following similar steps. The final result is shown in the below diagram.

Example of a SKET Screen from OASIS is shown for demonstration purposes only.

```
 ACTION:   ?    SCREEN:
 SKET USERID:
 -----------------------  B U I L D I N G   S K E T C H  -------------
 ---------- JU= 20 RO= RR PARC=             -            YR= 2017
 ALTKEY= 0906310
 BUILDING ID= 01      DISPLAY CODES:                      DYR: 2017
 STATUS: ACTIVE

                                                          | 01     2,052
                                                          | 02       240
                             +------20-----+               03       152
                             1WDK02        1              |TOT  --------
                             2             2              |  3     2,444
+--------- -----------------76--+------20-----+--------+   |
|BAS01                                          |      |   |
|                                               |      |   |
2                                              2      |   |
7                                              7      |   |
|                                               |      |   |
|                                               |      |   |
|                                               |      |   |
+--------- ----+------19----76-------------------------+   |
               8OPU03        8                            |
               +------19-----+                            |
                                                          |    1"  = 11'
```

SKET- Building Sketch is an inquiry screen that will display a diagram of the building from the sketch parameters entered on DIME.

Building Sketching and Perimeter Calculations

Building sketches are created by entered sketch commands (also called building dimensions) on the Building Dimensions (DIME) screen. These sketches are then viewed on the Building Sketch (SKET) screen. The sketch commands have an additional purpose: to calculate the ground floor area and perimeter of the building section.

The methods that the system employs to perform these two functions depends upon value of the residential and commercial base calculations methods found in the Appraisal Options (AOPT) table, and the perimeter method found in the Neighborhood Characteristics (NBHD) table.

The SKET screen has similar limitations with respect to displaying sketches with many sections. There is a limit to the number of angled sides that can be processed and displayed as well as the total number of sections, which can be displayed to the screen. Ten sections can be displayed on the screen.

Whenever the entry for a building is complete, or a change is made on the DIME, RESC or RESS screen, the building cost calculations are performed. There are two basic cost calculation methods. The residential base cost calculation method on the AOPT table defines which of these two types is used: method "A" (a.k.a. the AMS method) and method "C" (a.k.a. the CLT method). This office uses the –"A" method for residential cost calculations.

The calculations performed for residential buildings consist of, essentially, three values:

Replacement cost new (RCN)
Replacement cost new less depreciation (RCNLD)
Market adjusted value (shown on the BLDG screen as the FINAL COST APPROACH VALUE)

Detailed Explanation of Cost Calculation Steps

a. Calculate the horizontal or area cost for each base area section of the building.
b. Calculate the vertical or perimeter cost for each base area section of the building.
c. Calculate the value of all non-base area sections of the building.
d. Determine the flat cost that represents the standard building refinements.
e. Calculate the value of the 21 building and the 6 section refinements.
f. Calculate the value of the 7 built-ins.
g. Sum the values from steps a through f.
h. Multiply the result of step g by the quality grade factor.
i. If a special architect code is entered, multiply the result of step h by the design factor.
j. Percent Complete, after this the final result is the replacement cost new or the RCN for the building.
k. Calculation of RCNLD
l. Functional and Economic Obsolescence
m. Calculation of the Market Adjusted Value n. Final Cost Approach Value

a. <u>Calculate the horizontal or area cost for each base area section of the building</u>

Each building section that is entered on the DIME screen has a building type. The entry in the SECT table for the building section type defines whether the building section is a base area section (base calculation flag is "Y") or not.

Below is an example of a DIME screen showing a section type that can be used to value a residential building. The calculation of horizontal cost uses the following variables:

ground floor area from the DIME screen number of stories from the DIME screen square foot rate from the IMPT table

An example of a DIME screen from OASIS is shown for demonstration purposes only.

```
 ACTION: R SCREEN: DIME USERID:                                  CHANGE-
 REASON:
  H-  -----------------  B U I L D I N G   D I M E N S I O N S  ----------------
  -
      JU= 20 RO= RR PARC=                                YR= 2017 ALTKEY= 0906310
      BUILDING ID= 01     BUILDING TYPE: R              DYR: 2017 STAT: ACTIVE

                                                                            P
         ERIMTR SECT               TYPE                                # OF
                   GFA                 ADL-#ST ID 1ST UPR        DIMENSIONS
                                                        STRY O WALL TY ADL-PRM
  == --- --- ---------------------------------------- ---- - ------- -------
01-  01 BAS     CL76D27R76U27                            1.00     2,052     206
                                                                 04      0.00
                                                                            0
02-  02 WDK     L12 CU12L20D12R20                        1.00       240      64
                                                                         0.00
                                                                            0
03-  03 OPU     R12D27L37 CD8L19U8R19                    1.00       152      54
                                                                         0.00
                                                                            0
```

The number of stories determines which of the square foot rates in the IMPT table will be used. The IMPT code is used to represent the type of residential improvement. R1 represents a single family residential property. The R1 IMPT rates represent only the base cost and ranges from 40.00 a square foot to 60.00 dollars a square foot.

The calculation is:

Ground floor area X square foot rate.

Example of an IMPT table from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: IMPT USERID:
 ---------  R E S I D E N T I A L   I M P R O V E M E N T   T Y P E S  --------
-
 JURI= 20   YEAR= 2017   ROLL= RR   IMPR TYPE= R3
    SHORT DESC: R3                                ATR SUBTOTAL NUMBER: 03
   DESCRIPTION: MANUFACTURED HOUSING              LUMP SUM CONSTANT:    8,740
 ------------------------------------------------------------+------------------
 SQUARE FOOT RATES                                            COST COEFFICIENTS
 1.00:    23.00 1.25:    23.00 1.50:    23.00 1.75:    23.00  C1:     0.00
 2.00:    23.00 2.25:    23.00 2.50:    23.00 2.75:    23.00  C2:     0.00
 3.00:    23.00 3.25:    23.00 3.50:    23.00 3.75:    23.00  C3:     0.00
 4.00:    23.00 4.25:    23.00
 ------------------------------------------------------------+------------------
                        VALUES FOR BUILDING REFINEMENTS
  4-FIX BATHS:  0      3-FIX BATHS:  1      2-FIX BATHS:  0        EXTRA FIX:
0
     BEDROOMS:  0       FIREPLACES:  0         AIR COND: N      FOUNDATION  : G
 HEAT METHOD1:        HEAT METHOD2:        HEAT SOURCE1:        HEAT SOURCE2:
 ROOF TYPE   :        ROOF COVER  :        INT FLOORS1 :        INT WALLS2  :
 5-FIX-BATHS :      0 JAC         :      0 STYLE       :      0
                              VALUES FOR BUILT-INS
 RANGE/OVEN:  1  G DISPOSAL:  0  COMPACTOR :  0  SECURITY  :  0  DISHWASHER:  0
 INTERCOM  :  0  VACCUUM   :  0
```

b. <u>Calculate the vertical or perimeter cost for each base area section of the building</u>

The vertical cost calculations are also, only performed for base area sections. It uses the following variables:

number of stories from the DIME screen
perimeter from the DIME screen
additional number of stories from the DIME screen
additional perimeter from the DIME screen
exterior wall type from the RESS screen
exterior wall rate table number from the
RWAL table exterior wall rate from the
RWAR table

The system used the exterior wall type, entered on the RESS screen to determine the exterior wall rate. This is retrieved by first getting the correct entry in the RWAL table. RWAL provides the necessary key for the RWAR table. The number of stories then determines which of the 20 rates in the RWAR table will be used.
The calculation is:

Perimeter X RWAR rate.

If the additional number of stories and the additional perimeter exist for the building section, an additional calculation is performed to price this portion of the building. The additional number of stories is used to retrieve a second exterior wall rate from the RWAR table. The calculation is:

Additional perimeter X (RWAR rate - additional RWAR rate).

The standard and the additional vertical costs are added. Below are the RESS, RWAL screen examples:

Example of a RESS screen from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: RESS USERID:          CHANGE-REASON:
H-  -------  R E S I D E N T I A L   B U I L D I N G   S E C T I O N S  -------
    JU= 20 RO= RR PARC= YR= 2017 ALTKEY= 0045373
                                                      DYR: 2017 STAT: ACTIVE
    BUILDING ID= 01
                                          -------  ADDL REFINEMENTS  -------
    SECT    TYPES   GROUND     NBR   WALL         BSMT  FIN
     ID   1ST UPR   FL AREA   STORY  TYPE   ATTC  AREA  BSMT
     ==   --- ---   -------   ----    --    ---   ---   ---   ---   ---   ---
01-  01   BAS         3,039   1.00    11    N       0     0
02-  02   WDK           100   1.00          N       0     0
03-  03   OPF           187   1.00          N       0     0
04-  04   OPF           330   1.00          N       0     0
```

Example of a RWAL screen and RWAR is shown together for demonstration purposes.

```
ACTION: R  SCREEN: RWAL USERID
  - -----  R E S I D E N T I A L   E X T E R I O R   W A L L   C O D E S  -
     ---- JURI= 20           YEAR= 2017              ROLL= RR

   EXTERIOR                                RATE
   WALL CODE         DESCRIPTION           TABLE#
            RATE
   S1        BRICKVENEER SIDING SW MFG HM   S1
             166.32
   S2       ALUMINUM      SW MFG HM       S2         119.44
   S3       MASONITE      SW MFG HM       S3         124.56
   S4       VINYL SDING   MFG HM          S4         112.64
   S5       WOOD SDING SW    HM           S5         131.20
   00       NO EXTERIOR WALL              00          000.00
   01       MINIMAL SIDING                01         107.12
   02       ALUMINUM SIDING               02         119.44
   03       MASONITE         SIDING       03         124.56
   04       VINYL SIDING                  04         112.64
   05       DELUXE WOOD SIDING            05         131.20
   06       STUCCO/FRAME                  06         148.24
   07       CONCRETE BLOCK                07         157.68
   08       * *CBL/WD                     08         137.70
   09       CONCRETE BLK/STUCCO           09         164.00
   11       BRICK VENEER                  11         166.32
   12       BRICK/WOOD                    12         141.92
   13       STONE VENEER / FRAME          13         234.00
   14       CEMENT BRICK                  14         154.08
   21       LOGS                          21         219.44
   22       CONCRETE SIDING               22         124.40
```

c. Calculate the value of all non-base area sections of the building

When the building section is a non-base area section (base calculation flag in SECT is "N"), only an area cost is calculated. This calculation uses the following variables:

ground floor area from the DIME screen

miscellaneous area amount from the SECT table

The calculation is:

Ground floor area X Miscellaneous area amount.

An example of the SECT screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: SECT USERID:
 H-  ---------------------------------------------------------------------------
     BUILDING SECTION TYPE TABLE
     ---------------------------------------------------------------------------
     JURI= 20   YEAR= 2017   ROLL= RR

     BLDG                BASE                            EXT                 RES
     SECT    SECTION     CALC    MISC AREA AMOUNTS       WALL   CAR   FLOOR LIVIN
     TYPE  DESCRIPTION   FLAG  1ST FLOOR  UPPER FLOOR    REQD STORAGE LEVEL  FLAG
     ===  --------------  -   ----------- -----------    -      -      -     -
 03- ATS  ATTIC STORAGE   N          6.61        0.00    Y      N
 06- BMF  BASEMENT FIN    N         38.51        0.00    N      N
 07- BMU  BASEMENT UNFIN  N         16.75        0.00    N      N
 08- BRF  BONUS RM FINIS  N         48.15        0.00    N      N
 09- BRU  BONUS RM UNFIN  N         28.39        0.00    N      N
 10- BSF  BASE SEMI FIN   N         58.03        0.00    Y      N
 07- CPF  CARPORT FINISH  N         14.43        0.00    N      Y
 08- CPU  CARPORT UNFIN   N         11.08        0.00    N      Y
 01- EAC  ENCL AREA AVER  N         48.31        0.00    Y      N
 02- EAD  GRF/CPF CONVER  N         38.30        0.00    N      N
 03- EPF  ENCL PORCH FIN  N         38.15        0.00    Y      N
 04- EPU  ENCL PORCH UF   N         32.68        0.00    Y      N
 05- FLR  FLORIDA ROOM    N         63.60        0.00    Y      N
 06- GRF  GARAGE FINISH   N         24.77        0.00    Y      Y
 07- GRU  GARAGE UNFIN    N         20.14        0.00    Y      Y
 02- LSF  LOWER STY FIN   N         56.75        0.00    N      N
 04- OPF  OPEN PORCH FIN  N         21.80        0.00    N      N
 05- OPU  OPEN POR UNFIN  N         18.24        0.00    N      N
 03- SPF  SCREEN PORCH F  N         28.58        0.00    N      N
 05- SPU  SCREEN PORCH U  N         25.02        0.00    N      N
 11- USF  UPPER STY FIN   N         48.15        0.00    Y      N
 01- USU  UPPER STY UNFI  N         31.28        0.00    Y      N
 02- UTF  UTILITY FIN     N         19.53        0.00    Y      N
 03- UTU  UTILITY UNFIN   N         14.78        0.00    Y      N
 04- WDK  WOOD DECK       N         15.26        0.00    N      N
```

d. <u>Determine the flat cost that represents the standard building refinements.</u>

The IMPT table contains a field called lump sum constant. The dollar amount is a flat amount that is is the RCN calculation. The lump sum constant represents costs of typical fixtures required and cost for hook up to utilities.

e. <u>Calculate the value of the 19 building and the 6 section refinements</u>

Refinements

The Residential Building Characteristics (RESC) screen contains up to 19 building refinements. The first 7 of these refinements are fixed by the system, but the last 12 refinements can be defined by the user. The Residential Building Sections (RESS) screen contains up to 6 section refinements.

The first 3 of these refinements are fixed by the system, but the user can define the last 3 refinements.

On the RESC screen, the refinements are displayed as follows. The X's represent the labels that are defined in the RAR1/2 table.

```
----------------------------- R E F I N E M E N T S ---------------------------
  4-FIX BATHS:  1      3-FIX BATHS:  1      2-FIX BATHS:  1        EXTRA FIX:
0
     BEDROOMS:  3       FIREPLACES:  1         AIR COND: Y      FOUNDATION  : G
 HEAT METHOD1: 07     HEAT METHOD2:        HEAT SOURCE1: 01     HEAT SOURCE2:
 ROOF TYPE   : 02     ROOF COVER  : 03     INT FLOORS1 : XX     INT WALLS2  :
XX
 5-FIX-BATHS :      0 JAC         :      0 STYLE       :      2
```

On the RESS screen, the refinements are displayed as follows. The X's represent the labels that are defined in the RAR1 or RAR2 table.

```
  -------  ADDL REFINEMENTS
-------
        BSMT  FIN
  ATTC  AREA  BSMT
  ---   ---   ---   ---   ---
---
  X       0     0
  X       0     0
  X       0     0
  X       0     0
  X       0     0
```

An example of a RAR1 Screen for demonstration purposes only.

```
ACTION: R  SCREEN: RAR1
 ----  R E S I D E N T I A L   R E F I N E M E N T S   D E F I N I T I O N -----
 JURI= 20   YEAR= 2017   ROLL= RR
                                          C-USE RCOD TABLE
 REFINE                ENTRY   MAX  +/-   N-VALUE PER COUNT
 NUMBER DESCRIPTION    C/N/F  COUNT N/A  L/G  F-RATE PER SF OF L/G
  ----  ------------    -      --   -    -   ----------------------------------
  RB01   4-FIX BATHS    N      99   A        4,992.00
  RB02   3-FIX BATHS    N      99   A        3,745.00
  RB03   2-FIX BATHS    N      99   A        2,496.00
  RB04     EXTRA FIX    N      99   A        1,248.00
  RB05      BEDROOMS    N      99   N            0.00
  RB06    FIREPLACES    N      99   A        2,000.00
  RB07      AIR COND    F           +    G       2.72     2.72     2.72     2.72
                                                 2.72     2.72     2.72     2.72
                                                 2.72     2.72     2.72     2.72
                                                 2.72     2.72
  RB08  FOUNDATION      C
  RB09  HEAT METHOD1    C
  RB10  HEAT METHOD2    C
  RB11  HEAT SOURCE1    C
  RB12  HEAT SOURCE2    C
```

An example of a RAR2 screen for demonstration purposes only.

```
----  R E S I D E N T I A L   R E F I N E M E N T S   D E F I N I T I O N
JURI= 20   YEAR= 2017   ROLL= RR            C-USE RCOD TABLE
                                            N-VALUE PER COUNT
REFINE                ENTRY   MAX   +/-     F-RATE PER SF OF L/G
NUMBER DESCRIPTION  C/N/F/P COUNT  A/N L/G  P-RATE PER % OF L/G
 ----  ------------    -    ------  -   -   -------------------------
 RB13  ROOF TYPE       C
 RB14  ROOF COVER      C
 RB15  INT FLOORS1     C
 RB16  INT WALLS2      C
 RB17  5-FIX-BATHS     N        99  A       6,240.00
 RB18  JAC             N        99  A       3,052.00
 RB19  STYLE           N        99  A           0.00

 RS01       ATTC       F            +   G       6.24
 RS02  BSMT AREA       P       100  +   G      17.77
 RS03  FIN  BSMT       P       100  +   G      40.86
 RS04
```

Please remember screens are shown for demonstration purposes only. There are four types of refinements defined by entry type on the screen.

Code entries (C) -- The value for the refinement that is entered on the RESC or RESS screen is a code. The user defines the valid codes in the RCOD table.

Count entries (N) -- The value for the refinement that is entered on the RESC or RESS Screen is a count, such as those entered for built-ins.

Flag entries (F) -- The value for the refinement are a yes/no flag. A "Y" indicates the refinement exists in the building and an "N" indicates that the refinement does not exist in the building.

Percent entries (P)-- The value for the refinement is a percent. Values from 0 to 100 Percent are allowed.

For each of the possible 25 refinements, the user defines whether or not the refinement effects the cost of the building. The cost type flag (shown as +/-/N/A on the RAR1/2 screens) specifies how the cost effects the building value.

Positive (+) -- The value for the refinement has a positive effect on the value of the building. It is added to the RCN value.

Negative (-) -- The value for the refinement has a negative effect on the value of the building. It is subtracted from the RCN value.

No effect (N) -- The refinement has no effect on the value of the building.

Adjust (A) -- The value for the refinement is the net difference between the value for that is entered on the RESC or RESS screen and the value that is entered in the IMPT table.

The code, flag, and percent types use area in the calculation. For these calculations, the user has the options of using either ground floor area or living area. Living area is:

Ground floor area X number of stories.

The variables used and the calculation formulas are as follows:

Code entries (C) -- For coded entries, the cost type, area type, and rates are entered in the RCOD table instead of the RAR1/2 table. The variables used are:

-- refinement code from the RESC or RESS screen
-- ground floor area from DIME
-- calculated living area
-- lump sum constant from RCOD
-- square foot rate from RCOD

The calculation is:

Refinement cost = lump sum constant + (area X SF rate)

Below are two sample RCOD screens from OASIS that are shown for demonstration purposes Example one:

```
ACTION: R  SCREEN: RCOD USERID
------------    R E F I N E M E N T S   C O D E S          --------------
YEAR= 2017      ROLL= RRREFINEMENT NUMBER= RB09 HEAT METHOD1
                          $$$                       SQ FT
CODE       DESCRIPTION    +/-/N  LUMP SUM   L/G    RATE     ADJ#
======     -------------- -      --------   -      -------- -
01          UNIT HEATER     -      0          G      2.61
02         WALL FLOOR FUR -      0          G      2.29
03         RADIANT        N      0          G      0.00
04         STEAM HEAT     N      0          G      0.00
05         HEAT  W/ DUCT  N      0          G      0.00
07         HEAT  & COOL SP N     0          G      0.00
08         HEAT  & COOL PK N     0          G      0.00
09         FLOOR OR CEIL  N      0          G      0.00
10         NONE/COOLWDUCT -      0          G      3.31
```

Second example of a RCOD Screen from OASIS that is shown for demonstration purposes only.

```
ACTION: R  SCREEN: RCOD USERID:
H-  -----------------  R E F I N E
 M E N T S             C O D E S              -------------------
-
    JURI= 20   YEAR= 2017   ROLL= RR   REFINEMENT NUMBER= RB08 FOUNDATION

                            $$$                          SQ FT
    CODE      DESCRIPTION   +/-/N   LUMP SUM     L/G      RATE      ADJ#
    ======   --------------   -     --------      -     --------     -


    C        COMBO/SLAB/CSP   N           0      G         0.00
    D        CNTFTG-SLBONGD   N           0      G         0.00
    E        CNTFTG-SLBABGD   N           0      G         0.00
    F        CNTFTG-W/OSBFL   N           0      G         0.00
    G        PIERS-W/CNTFWL   N           0      G         0.00
    H        CNTFTG-SLBPLHT   N           0      G         0.00
    I        CNTFTG-STRLSLB   N           0      G         0.00
    J        SPDFTG-SLBONGD   N           0      G         0.00
    K        SPDFTG-SLBABGD   N           0      G         0.00
    L        SPDFTG-SLBPLHT   N           0      G         0.00
    M        SPDFTG-STRLSLB   N           0      G         0.00
    N        SPCFTG-SLBONGD   N           0      G         0.00
    O        SPCFTG-SLBABGD   N           0      G         0.00
    P        PIERS - NOWALL   -           0      G         3.50
    Q        SPCFTG-STRLSLB   N           0      G         0.00
    S        SLAB             -           0      G         2.75
    X        UNKNOWN          N           0      G         0.00
```

Count entries (N) -- For count entries all data is entered in the RAR1/2 tables. The variables used are:

-- refinement count from the RESC, RESS, or IMPT screen
-- refinement rate from RAR1 or RAR2

The calculation is:

Refinement cost = refinement count X refinement rate

Flag entries (F) -- For flag entries all data is entered in the RAR1/2 tables. The variables used are:

-- refinement flag from the RESC, RESS, or IMPT screen
-- ground floor area from DIME
-- calculated living area

-- square foot rate from RAR1/2

The calculation is made only if the flag is "Y":

Refinement cost = area X SF rate

Percent entries (P) -- For percent entries all data is entered in the RAR1/2 tables. The variables used are:

-- refinement percent from the RESC, RESS, or IMPT screen
-- ground floor area from DIME
-- calculated living area
-- square foot rate from RAR1/2

The calculation is:

Refinement cost = area X SF rate X refinement percent / 100

When the cost type is positive, these calculations are added to the RCN value. When the cost type is negative, these calculations are subtracted from the RCN value. When the cost type is adjusted, two separate refinement costs are calculated; one using the value in RESC and one using the value in IMPT. The refinement cost is:

Refinement cost = RESC refinement cost - IMPT refinement cost.

There are three exceptions to the calculations that have been described above.

If the refinement number is "RB07" (air conditioning) and the type is "flag," the RAR1/2 table contains 14 square foot rates corresponding to the number of stories in a building section, instead of a single rate.

Because the rate can be different for each building section, the calculation is performed at the building section level and the calculated value are summed for all base area sections to obtain the refinement cost.

If the user defines air conditioning to be a "code" type, the standard calculations are performed. Only "flag" and "code" types are allowed for air conditioning.

If the refinement number is "RS01" (attic) and the type is "flag" and the refinement flag is "Y" on the RESS screen, the calculation is:

Refinement cost = area X .25 X SF rate

If the refinement number is "RS03" (finished basement) and the type is "percent" and the type for "RB02" (basement) is also "percent," the calculation for RB03 is:

Refinement cost = area X SF rate X RB03 refinement percent
100 X RB02 refinement percent 100

f. Calculate the value of the built-ins.

The built-in cost calculations are performed for each of the built-ins that can be defined in the RBIN table and displayed on the RESC and IMPT screens. The RBIN table can be used to define the labels for each of the built-ins and can define the rate that would be used in the calculation. *

An example of a RBIN screen for demonstration.

```
ACTION:  R   SCREEN:  RBIN
USERID
 R E S I D E N T I A L  B U I L T - I N S  D E F I N I T I O N
 JURI= 20 YEAR= 2017 ROLL= RR

                            BUILT-IN    MAX
              DESCRIPTION    VALUE      CNT
              ----------   --------     --
          1:  RANGE/OVEN       0.00      1
          2:  G DISPOSAL       0.00      1
          3:  COMPACTOR        0.00      1
          4:  SECURITY         0.00      1
          5:  DISHWASHER       0.00      1
          6:  INTERCOM         0.00      1
          7:  VACCUUM          0.00      1
```

The calculation of value for a single built-in uses the following variables:

built-in count from the RESC
screen built-in count from the
IMPT screen value per built-in
from the RBIN screen

The calculation is:

(RESC built-in count - IMPT built-in count) X value per built-in

* While the CAMA system has this step within its programming, Cumberland County adds no additional value for built-ins for the 2017 revaluation.

g. Sum the values from steps a through f.

The horizontal cost, vertical cost, non-base area cost, other flat amount, total refinement cost, and total built-in cost are now summed. This sum is displayed on the BLDG screen as SUBTOTAL.

h. Multiply the result of step g by the quality grade factor

The quality grade defines a percentage multiplier that is applied to the sum of values. The quality grade entered on the RESC screen is used to determine the percentage grade modifier. It is not necessary that an exact match of quality grade exists in the RQAL table. The quality grades that are entered in RQAL are maximum grades. If there were two entries in RQAL for grades 350 and 370, any value entered on RESC from 351 to 370 would retrieve the 370 entry in RQAL.

The variables used in this calculation are:

calculated sum of values
quality grade on the RESC
screen percentage grade
modifier from RQAL

The calculation is:

Sum of values X percentage grade modified 100

i. If a special architect code is entered, multiply the result of step h by the design factor.

This section will apply only if there is a special architect code listed for the improvement and a design modifier listed in the RARC table. Various Grades are used for the different improvement types and a special architect codes may be applied. The special architect code is used to either apply a design modifier to a particular structure type and grade or to designate a different depreciation model to that structure. A copy of the screens is shown for Special Architect Codes and Depreciation Table

An example of RARC screen from OASIS for demonstration purposes only.

```
ACTION: R  SCREEN: RARC USERID:
 H-  R E S I D E N T I A L   S P E C I A L   A R C H I T E C T U R E   C O D E S
     JURI= 20   YEAR= 2017   ROLL= RR

    ARCHITECT                          DESIGN     DEPRECIATION
    DESIGN CD      DESCRIPTION        MODIFIER%      MODEL#
       --       --------------------    ---           ---
       A        A                       000
       B        B                       000
       C        C                       000
       D        D                       000
       D2       MANUF HOME DW 250       105           MH4
       D3       MANUF HOME DW 350       097           MH5
       D4       MANUF HOME DW 450       091           MH5
       E        E                       000
       F        F                       000
       G        G                       000
       H        H                       000
       I        I                       000
```

An example of a RQAL screen from OASIS for demonstration purposes only.

```
ACTION: R  SCREEN: RQAL USERID:
H-  ----  R E S I D E N T I A L   Q U A L I T Y   G R A D E   C O D E S  ----
    JURI= 20   YEAR= 2017   ROLL= RR

    QUALITY                          GRADE     DEPRECIATION   MAXIMUM
     GRADE       DESCRIPTION        MODIFIER%     MODEL#    DEPRECIATION%
      ===    --------------------    ---          ---          ---
      150    **E**                   050          001           99
      235    **D-**                  070          002           99
      250    **D**                   078          002           99
      265    **D+**                  085          002           99
      335    **C-**                  092          003           99
      350    **C**                   100          003           99
      370    **C+**                  108          003           99
      435    **B-**                  117          004           99
      450    **B**                   126          004           99
      470    **B+**                  135          004           99
      535    **A-**                  145          005           99
      550    **A**                   155          005           99
      570    **A+**                  167          005           99
      630    **AA--*                 185          006           99
      640    **AA-**                 200          006           99
      650    **AA**                  210          006           99
      670    **AA+**                 230          006           99
      695    **AA++**                250          006           99
```

j. Percent Complete

Taxes are assessed as of the first day of each year, January 1. If a building is not finished by January 1st then the percentage of the building that is finished will get applied to the value. If a percent complete is entered, multiply the result of step i, if there is a special architect code or step h, multiply by the percent complete factor. This adjustment is found on the RESC table in the Percent Complete Field. Once this has been applied the next calculation is for the Replacement Cost New Less Depreciation or RCNLD. In the 2017 Residential Revaluation Manual there is a guide in the appendix section that can be used to help determine a buildings percent complete.

k. Calculation of RCNLD

The replacement cost new less depreciation (RCNLD) for a residential building is calculated by applying three types of depreciation: physical, functional, and economic. Physical depreciation is calculated by the system from the characteristics that are entered on the RESC screen.

The variables used in the RCNLD calculation are as follows:

· calculated RCN
· calculated physical depreciation percent
· functional depreciation percent from RESC
· economic depreciation percent

from RESC The calculation is[1]:

result #1 = RCN - (RCN X physical depreciation percent 100)
result #2 = result #1 - (result #1 X functional depreciation percent 100) RCNLD = result #2 - (result #2 X economic depreciation percent 100)

The calculation of the physical depreciation percent is more complex. The variables used in this calculation are as follows:

quality grade from RESC
special architect code from RESC
condition code / condition option from AOPT
condition code or condition from RESC
effective year / age or (actual year built and effective year) from RESC
building depreciation year from AOPT depreciation model number for RQAL or RARC
depreciation or percent good option from AOPT

(1) The following calculation is used when the duplicate old AA values flag in the AOPT table is "N." When this flag is "Y," the system calculates result #1 as shown, but calculates RCNLD by adding the functional and economic percents, multiplies this sum by result #1.

The steps for calculating physical depreciation percent are as follows:

First, determine the depreciation model number. If a special architect code on the RESC screen has been entered and the depreciation model number in the RARC table has also been entered, the system uses this depreciation model number for the calculations. Otherwise, it will use the depreciation model number from the RQAL table (quality grade). In our example a special architect code is used.

Next, determine whether the condition code should be used. The RESC screen shows which condition code was placed on the structure.

Next, determine whether the effective year / age should be used. There is a *flag in the AOPT table that defines the field.*

If the effective year / age is used, the system must calculate this value. If an effective year was entered on the RESC screen, the system uses this field. If an effective year was not entered (or has a value of zero), the system uses the actual year built.

The calculation is:

effective age = current year – (year built) or (effective year / age if structure was remodeled)

The calculated value is adjusted to zero if the result is less than zero.

Now, look up the depreciation percent in the RDEP table. The key to this table is jurisdiction, valuation year, roll type, depreciation model number, and finally, effective year /age.

--The system will retrieve the RDEP record with an effective age greater than or equal to the calculated value.

--If the system is using effective age group, an exact match must be found in the RDEP table.

Once the RDEP record has been found, the physical depreciation percent is obtained from the condition code / condition "position" that was previously determined.

There is one other flag in the AOPT table that can affect the calculation. This flag specifies whether the values entered in the RDEP table are depreciation or percent good. Whatever the value that is in the table, the system calculates the other.

The calculations are:

depreciation percent = 100 - percent good

percent good = 100 - depreciation percent

An example of the RDEP screen for demonstration purposes only.

```
ACTION: R  SCREEN: RDEP -  R E S I D E N T I A L   D E P R E C I A T I O N  --
     JURI= 20   YEAR= 2017   ROLL= RR    MODEL#= MH5

                      ** VALUES ARE DEPRECIATION **
                  BEST  ---------------  CONDITION  ---------------  WORST
     EFFECTIVE     01   02   03   04   05   06   07   08   09   10   11   12
        AGE        E    G    A    F    P    U    S         V
       ====       ---  ---  ---  ---  ---  ---  ---  ---  ---  ---  ---  ---
 01-   0012        22   22   26   36   46   95   99        22
 02-   0013        23   23   27   37   47   95   99        23
 03-   0014        24   24   28   38   48   95   99        24
 04-   0015        25   25   29   39   49   95   99        25
 05-   0016        26   26   30   40   50   95   99        26
 06-   0017        27   27   31   41   51   95   99        27
 07-   0018        28   28   32   42   52   95   99        28
 08-   0019        29   29   33   43   53   95   99        29
 09-   0020        30   30   34   44   54   95   99        30
 10-   0021        31   31   35   45   55   95   99        31
 11-   0022        32   32   36   46   56   95   99        32
 12-   0023        33   33   37   47   57   95   99        33
```

l. <u>Functional obsolescence and economic obsolescence depreciation</u>

Functional and economic obsolescence percents are entered by the user on the RESC screen. These are subjective percentages based on various factors.

Functional obsolescence is the inability of the structure to adequately fulfill its purpose given current market demand and the state of construction technology. Economic obsolescence is caused by factors external to the property and totally out of control of the owner. If no percentages appear then calculation continues and totals up all depreciation and multiplies that times RCN and arrives at the RCNLD.

m. <u>Calculation of the Market Adjusted Value</u>

The last step in the building calculation is to apply the market adjustment to the building. The market adjustment if there is one is applied on a neighborhood basis and is found on the NBHD screen and is shown as the Residential Adjustment Ratio or the Commercial Adjustment Ratio.

Example of the NBHD screen for demonstration purposes only.

```
----------  N E I G H B O R H O O D   C H A R A C T E R I S T I C S
 JU= 20 YR= 2017 RO= RR NEIGHBORHOOD= 0000  DESC: CUMBERLAND ATR
                                            DOCUMENT ID:

     KNOWN AS: (2017)LONG DESCRIPTION FROM CAMA CONVERSION

                  VALUATION MODEL:
       NEIGHBORHOOD MODEL NUMBER: 0000                NEIGHBORHOOD GROUP: 000
    RESIDENTIAL  ADJUSTMENT  RATIO:  1.000         COMMERCIAL  ADJUSTMENT  RATIO:
1.000
          LAND ADJUSTMENT FACTOR: 1.00          LAND RATE OVERRIDE (Y/N): Y
                   DEFAULT DEPTH:     0                 PERIMETER METHOD: O

  ------------ RESIDENTIAL ------------   ------------ COMMERCIAL ------------
           DEFAULT QUALITY GRADE:                   DEFAULT QUALITY GRADE:
     DEFAULT EFFECTIVE AGE GROUP: 1          DEFAULT EFFECTIVE AGE GROUP: 1
           DEFAULT CDU/CONDITION:                      DEFAULT CONDITION:
  DEFAULT VALUE SELECTION METHOD: C       DEFAULT VALUE SELECTION METHOD: C
        VALU RECORD ROLL FORWARD: Y             VALU RECORD ROLL FORWARD: Y
```

The market adjusted building value, shown on the BLDG screen as the final cost approach value, is calculated as follows:

market adjusted value = RCNLD X market adjustment ratio

An example of a BLDG screen for demonstration purposes only.

```
  ACTION: R SCREEN: BLDG USERID:           VERIFY DELETE (D):   CHANGE-REASON:
  --------------  B U I L D I N G   C O S T   S U M M A R Y ----------------
  JU= 20 RO= RR PARC=  YR= 2017 ALTKEY= 0906310 BUILDING ID= 01 OF 01 BLDG TYPE: R
 START-SECT:      DYR: 2017 STATUS: ACTIVE
 HORIZONTAL (AREA) COST         47,196    REPLACEMENT COST NEW (RCN)    115,396
  VERTICAL (PERIMETER) COST      23,204
  OTHER FLAT AMOUNT               8,740    PHYSICAL DEPRECIATION %            36
  TOTAL NON-BASE SECTIONS         6,434    FUNCTIONAL OBS %                    0
  TOTAL REFINEMENTS              15,068    ECONOMIC OBS %                      0
  TOTAL BUILT-INS                     0    TOTAL DEPRECIATION %               36
  SUBTOTAL                      100,642    TOTAL DEPRECIATION             41,543

  QUALITY GRADE FACTOR             1.26    RCNLD                          73,853
  SPECIAL ARCHITECT FACTOR         0.91
  PERCENT COMPLETE %                  0    MARKET ADJUSTMENT RATIO          1.00
  REPLACEMENT COST NEW (RCN)    115,396    MARKET ADJUSTMENT                   0

                      FINAL COST APPROACH VALUE =    73,853
```

The Final screen shown is the (BLDG) Screen where the final building value is displayed as the final cost approach value for the particular building. Just add the value of the Land, Building and any miscellaneous values associated with the property and you will arrive at the Residential Cost Approach Value.

This is a list of some of the majority of tables used to value residential property using the cost approach. The master tables that are used in the processing of residential buildings are listed below.

2. Master Tables for Residential

Appraisal Options (AOPT)
Building Section Types (SECT)
Residential Improvement Types (IMPT)
Residential Exterior Wall Codes
(RWAL) Residential Exterior Wall
Rates (RWAR) Residential Quality
Grades (RQAL)
Residential Special Architect Codes (RARC) used by Manufactured Homes
Residential "A" Refinements Definition
(RAR1/2) Refinement Codes (RCOD)
Residential built-ins Definition (RBIN)
Residential Condition Codes (RCON)
Residential Depreciation (RDEP)
Residential Building Characteristics
(RESC) Residential Building Sections
(RESS) Building Dimensions (DIME)
Building Sketch (SKET)
Neighborhood Characteristics (NBHD)

Residential Appraisal Options

```
ACTION: R  SCREEN: AOPT
 --------------------  A P P R A I S A L   O P T I O N S  -------------------

JURISDICTION= 20 YEAR= 2017 ROLL= RR

NEW CONSTRUCTION YEAR BLDGS: 2016                CREATE ASMO RECORDS (Y/N): N
NEW CONSTRUCTION YEAR MISC IMPR: 2016            LAND RATE DISPLAY (A/B/C): A
DEPRECIATION YEAR BLDGS AND MISC IMPR: 2016   DUPLICATE OLD AA VALUES (Y/N): Y

            RESIDENTIAL BASE CALCULATION METHOD (A/C): A
             COMMERCIAL BASE CALCULATION METHOD (A/C): A
 USE CONDITION CODE OR CDU IN DEPR CALCULATIONS (C/D): C
   EFF/AGE OR EFF/AGE GROUP OR REMODELED YEAR (A/G/R): A
            DEPTH ADJUSTMENT CALCULATION METHOD (A/P): P
  DEPRECIATION, PERCENT GOOD, MIXED IN TABLES (D/P/M): D
     CALCULATE MARKET ADJ ON MIXED BLDG PARCELS (Y/N): N
         CALCULATE MARKET ADJ ON VACANT PARCELS (Y/N): N
    ALLOW LIFE AND DEPR/PCT-GD OVERRIDE ON MIMP (Y/N): Y
    ALWAYS CALCULATE COMR STD REFINEMENT TOTALS (Y/N): Y
      USE ALTERNATE RES AND MISC MARKET FACTORS (Y/N): N
```

Condition Codes for Residential Buildings (RCON) for demonstration only.

```
 COND
 CODE    DESCR
  --    ------
  E     EXCELLENT  BEST
  G     GOOD
  A     AVERAGE
  F     FAIR
  P     POOR
  U     UTILITY
  S     UNSOUND
  V     VERY GOOD
```

ACTION: R SCREEN: RWAL USERID

- ----- R E S I D E N T I A L E X T E R I O R W A L L C O D E S

----- JURI= 20 YEAR= 2017 ROLL= RR

EXTERIOR WALL CODE	RATE DESCRIPTION	TABLE#	RATE
S1	BRICKVENEER SIDING SW MFG HM	S1	166.32
S2	ALUMINUM SDING SW MFG HM	S2	119.44
S3	MASONITE SDING SW MFG HM	S3	124.56
S4	VINYL SDING SW MFG HM	S4	112.64
S5	WOOD SDING SW MFG HM	S5	131.20
00	NO EXTERIOR WALL	00	000.00
01	MINIMAL SIDING	01	107.12
02	ALUMINUM SIDING	02	119.44
03	MASONITE ASBESTOS Siding	03	124.56
04	VINYL SIDING	04	112.64
05	DELUXE WOOD SIDING	05	131.20
06	STUCCO/FRAME	06	148.24
07	CONCRETE BLOCK	07	157.68
08	* *CBL/WD	08	137.70
09	CONCRETE BLK/STUCCO	09	164.00
11	BRICK VENEER	11	166.32
12	BRICK/WOOD	12	141.92
13	STONE VENEER / FRAME	13	234.00
14	CEMENT BRICK	14	154.08
21	LOGS	21	219.44
22	CONCRETE SIDING	22	124.40

Residential SECT Table

```
ACTION: R  SCREEN: SECT USERID:
 H-  ---------------------------------------------------------------------
--
     BUILDING SECTION TYPE TABLE
     ---------------------------------------------------------------------
--
     JURI= 20   YEAR= 2017   ROLL= RR

     BLDG                BASE                          EXT
RES
     SECT    SECTION     CALC    MISC AREA AMOUNTS     WALL   CAR   FLOOR
LIVIN
     TYPE  DESCRIPTION   FLAG  1ST FLOOR  UPPER FLOOR  REQD STORAGE LEVEL
FLAG
     ===  --------------  -   ----------- -----------   -      -      -     -
 03- ATS  ATTIC STORAGE   N          6.61        0.00   Y      N
 06- BMF  BASEMENT FIN    N         38.51        0.00   N      N
 07- BMU  BASEMENT UNFIN  N         16.75        0.00   N      N
 08- BRF  BONUS RM FINIS  N         48.15        0.00   N      N
 09- BRU  BONUS RM UNFIN  N         28.39        0.00   N      N
 10- BSF  BASE SEMI FIN   N         58.03        0.00   Y      N
 07- CPF  CARPORT FINISH  N         14.43        0.00   N      Y
 08- CPU  CARPORT UNFIN   N         11.08        0.00   N      Y
 01- EAC  ENCL AREA AVER  N         48.31        0.00   Y      N
 02- EAD  GRF/CPF CONVER  N         38.30        0.00   N      N
 03- EPF  ENCL PORCH FIN  N         38.15        0.00   Y      N
 04- EPU  ENCL PORCH UF   N         32.68        0.00   Y      N
 05- FLR  FLORIDA ROOM    N         63.60        0.00   Y      N
 06- GRF  GARAGE FINISH   N         24.77        0.00   Y      Y
 07- GRU  GARAGE UNFIN    N         20.14        0.00   Y      Y
 02- LSF  LOWER STY FIN   N         56.75        0.00   N      N
 04- OPF  OPEN PORCH FIN  N         21.80        0.00   N      N
 05- OPU  OPEN POR UNFIN  N         18.24        0.00   N      N
 03- SPF  SCREEN PORCH F  N         28.58        0.00   N      N
 05- SPU  SCREEN PORCH U  N         25.02        0.00   N      N
 11- USF  UPPER STY FIN   N         48.15        0.00   Y      N
 01- USU  UPPER STY UNFI  N         31.28        0.00   Y      N
 02- UTF  UTILITY FIN     N         19.53        0.00   Y      N
 03- UTU  UTILITY UNFIN   N         14.78        0.00   Y      N
 04- WDK  WOOD DECK       N         15.26        0.00   N      N
```

Improvement Type Codes (IMPT)

RESIDENTIAL IMPROVEMENT TYPES (IMPT)

DESCRIPTION	SHORT DESC.
RESIDENTIAL SINGLE FAMILY	R1
RESDIENTIAL DUPLEX	R2
RESIDENTIAL MANUFACTURED	R3
RESIDENTIAL CONDOMINIUM	R4
RESDIENTIAL TOWNHOUSE	R5
RESIDENTIAL APARTMENT	R6
HALF DUPLEX ON PARCEL	RH
RESIDENTIAL LOG HOME	RL
RESIDENTIAL MODULAR	RM
RESIDENTIAL QUADPLEX	RQ
RESIDENTIAL SINGLE WIDE	RS
RESIDENTIAL TRIPLEX	RT

Residential Quality Grade and Depreciation Model Numbers

```
   ACTION:  SCREEN: RQAL USERID:
JURI=20     Year=2017              Roll=RR


  Quality                                Grade      Depreciation    Maximum
   Grade          Description          Modifier       Model #    Depriciation

          =   ------------------       ---            ---            ---
==          --
    150            **E**               50             1            99
    235           **D-**               70             2            99
    250            **D**               78             2            99
    265           **D+**               85             2            99
    335           **C-**               92             3            99
    350            **C**              100             3            99
    370           **C+**              108             3            99
    435           **B-**              117             4            99
    450            **B**              126             4            99
    470           **B+**              135             4            99
    535           **A-**              145             5            99
    550            **A**              155             5            99
    570           **A+**              167             5            99
    630          **AA--*              185             6            99
    640          **AA-**              200             6            99
    650           **AA**              210             6            99
    670          **AA+**              230             6            99
    695         **AA++**              250             6            99
```

Special Arch Codes for Manufactured Homes – table for demonstration purpose only.

```
    ACTION: RSCREEN: RARC USERID:
    H- R E S I D E N T I A L   S P E C I A L   A R C H I T E C T
    U JURI= 20    YEAR= 2017   ROLL= RR
    ARCHITECT                          DESIGN
                     DEPRECIATION DESIGN CD
                     DESCRIPTION       MODIFIER%
                     MODEL#
    --             --------------------    ---           ---
    D2           MANUF HOME DW 250        105            MH4
    D3           MANUF HOME DW 350        097            MH5
    D4           MANUF HOME DW 450        091            MH5
    S1           MANUF HOME SW 150        085            MH1
    S2           MANUF HOME SW 250        080            MH1
    S3           MANUF HOME SW 350        077            MH1
```

Residential Depreciation Tables for demonstration purposes only.

RAR1 Table

```
ACTION: R  SCREEN:  RAR1
                 RESIDENTIAL REFINEMENTS DEFINITION
JURI= 20   YEAR=    ROLL=R
2017                R
                                                C-USE RCOD TABLE
REFINE                ENTRY    MAX   +/-        N-VALUE PER COUNT
                              COUN         L/
NUMBER DESCRIPTION    C/N/F     T    N/A    G   F-RATE PER SF OF L/G
                                                ---------------------   -----          -----
----  ------------     -      --     -    -   -                         -      --      -
RB01   4-FIX BATHS     N      99     A              4,992.00
RB02   3-FIX BATHS     N      99     A              3,745.00
RB03   2-FIX BATHS     N      99     A              2,496.00
RB04     EXTRA FIX     N      99     A              1,248.00
RB05      BEDROOMS     N      99     N                  0
RB06    FIREPLACES     N      99     A              2,000.00
                                                                          2.7
RB07      AIR COND     F             +    G           2.72            2.72     2    2.72
                                                                          2.7
                                                      2.72            2.72     2    2.72
                                                                          2.7
                                                      2.72            2.72     2    2.72
                                                      2.72
RB08  FOUNDATION       C
RB09  HEAT METHOD1     C
RB10  HEAT METHOD2     C
RB11  HEAT SOURCE1     C
RB12  HEAT SOURCE2     C
```

RAR2 Table

```
ACTION: R  SCREEN:  RAR2
                 RESIDENTIAL REFINEMENTS DEFINITION
JURI= 20   YEAR=    17
20                  ROL      L= RR             C-USE RCOD TABLE
                                               N-VALUE PER COUNT
REFINE              ENTRY    MAX     +/-       F-RATE PER SF OF L/G
NUMBER DESCRIPTION  C/N/F/P  COUNT   A/N  L/G  P-RATE PER % OF L/G
----  ------------  -       ------  -    -    ---------------------
RB13  ROOF TYPE        C
RB14  ROOF COVER       C
RB15  INT FLOORS1      C
RB16  INT WALLS2       C
RB17  5-FIX-BATHS      N       99     A              6,240.00
RB18  JAC              N       99     A              3,052.00
RB19  STYLE            N       99     A                  0

RS01       ATTC        F              +    G           6.24
RS02  BSMT AREA        P      100     +    G          17.77
RS03  FIN  BSMT        P      100     +    G          40.86
RS04
RS05
RS06
```

RDDEP Residential Depreciaiton Tables for 2017

Model # 001

AGE	E	G	A	F	P	U	S	V
0	0	1	3	20	40	95	99	1
1	1	2	4	22	41	95	99	2
2	1	3	5	23	43	95	99	2
3	2	4	6	24	44	95	99	3
4	2	5	8	25	45	95	99	3
5	3	6	9	26	46	95	99	4
6	4	7	10	28	48	95	99	5
7	5	8	12	30	49	95	99	6
8	6	9	14	32	50	95	99	7
9	7	10	16	34	51	95	99	8
10	8	11	18	36	52	95	99	9
11	9	12	19	37	53	95	99	10
12	10	13	20	38	55	95	99	11
13	11	14	22	40	57	95	99	12
14	12	16	24	41	58	95	99	13
15	13	17	26	42	59	95	99	15
16	14	18	27	43	60	95	99	16
17	15	19	28	44	61	95	99	17
18	16	20	30	46	62	95	99	18
19	17	21	32	48	63	95	99	19
20	18	22	33	49	64	95	99	20
21	19	23	35	50	65	95	99	21
22	20	24	36	51	66	95	99	22
23	20	25	37	52	67	95	99	23
24	21	26	38	53	68	95	99	24
25	21	27	39	54	69	95	99	24
26	22	28	40	55	70	95	99	25
27	22	29	40	55	70	95	99	25
28	23	30	41	56	71	95	99	26
29	23	31	41	56	71	95	99	26
30	24	32	42	57	72	95	99	27
31	24	32	42	57	72	95	99	27
32	25	33	43	58	73	95	99	28
33	25	33	43	58	73	95	99	28
34	26	34	44	59	74	95	99	29
35	26	34	44	59	74	95	99	29
36	26	34	44	59	74	95	99	29
37	27	35	45	60	75	95	99	30
38	27	35	45	60	75	95	99	30
39	28	36	46	61	76	95	99	31
40	28	36	46	61	76	95	99	31
41	29	37	47	62	77	95	99	32
42	29	37	47	62	77	95	99	32
43	30	38	48	63	78	95	99	33
44	30	38	48	63	78	95	99	33
45	30	38	49	64	79	95	99	33
46	31	39	49	64	79	95	99	34
47	31	40	50	65	80	95	99	34
48	**32**	40	50	65	80	95	99	35

Continuation of Model 001

49	32	41	51	66	81	95	99	35
50	33	41	52	67	81	95	99	36
51	33	42	52	67	81	95	99	36
52	33	43	53	68	82	95	99	36
53	34	43	54	69	82	95	99	37
54	34	44	54	70	83	95	99	37
55	35	44	55	70	83	95	99	37
56	35	45	56	71	83	95	99	38
57	36	46	56	71	84	95	99	38
58	36	46	57	72	84	95	99	39
59	37	47	57	72	85	95	99	40
60	37	47	58	73	85	95	99	40
61	38	48	58	73	85	95	99	41
62	38	48	59	74	86	95	99	41
63	39	49	59	74	86	95	99	42
64	39	49	60	75	86	95	99	42
65	40	50	60	75	87	95	99	43
66	40	50	61	76	87	95	99	43
67	41	51	61	76	87	95	99	43
68	41	52	62	77	87	95	99	44
69	42	52	62	77	88	95	99	44
70	42	53	63	78	88	95	99	45
71	43	53	63	78	88	95	99	45
72	43	54	64	79	89	95	99	46
73	44	54	64	79	89	95	99	47
74	44	54	64	79	89	95	99	47
75	46	55	65	80	90	95	99	48
99	46	55	65	80	90	95	99	48

Model # 002

AGE	E	G	A	F	P	U	S	V
0	0	1	2	20	35	95	99	1
1	1	2	3	21	36	95	99	2
2	1	3	4	23	38	95	99	2
3	2	4	5	24	39	95	99	3
4	2	4	6	25	41	95	99	3
5	3	5	7	26	42	95	99	4
6	4	6	8	27	43	95	99	5
7	5	8	10	28	44	95	99	7
8	6	9	11	29	45	95	99	8
9	7	10	12	30	46	95	99	9
10	8	10	13	31	47	95	99	9
11	8	11	14	32	48	95	99	10
12	9	12	16	33	49	95	99	11
13	10	14	17	34	50	95	99	12
14	12	16	19	35	51	95	99	14
15	13	17	20	36	52	95	99	15
16	14	18	21	37	53	95	99	16
17	15	19	22	38	54	95	99	17
18	16	20	23	39	55	95	99	18
19	17	21	24	40	56	95	99	19
20	18	22	25	41	57	95	99	20
21	19	23	26	42	58	95	99	21
22	20	24	27	43	59	95	99	22
23	20	25	28	44	60	95	99	23
24	21	26	29	45	61	95	99	24
25	21	27	30	46	62	95	99	24
26	22	28	31	47	63	95	99	25
27	22	29	32	48	64	95	99	25
28	23	30	33	49	65	95	99	26
29	23	31	34	49	65	95	99	26
30	24	32	35	50	66	95	99	27
31	24	32	36	51	67	95	99	27
32	25	33	37	51	67	95	99	28
33	25	33	38	52	68	95	99	28
34	26	34	39	53	69	95	99	29
35	26	34	40	54	70	95	99	29
36	26	34	40	54	70	95	99	29
37	27	35	41	55	71	95	99	30
38	27	35	41	55	71	95	99	30
39	28	36	42	56	72	95	99	31
40	28	36	42	56	72	95	99	31
41	29	37	43	57	73	95	99	32
42	29	37	43	58	74	95	99	32
43	30	38	44	59	75	95	99	33
44	30	38	45	60	76	95	99	33
45	30	38	45	60	76	95	99	33
46	31	39	46	61	77	95	99	34
47	31	39	46	61	77	95	99	34
48	32	40	47	62	78	95	99	35

Continuation of Model 002

49	32	40	47	62	78	95	99	35
50	33	41	48	63	79	95	99	36
51	33	41	48	63	79	95	99	36
52	33	41	48	63	79	95	99	36
53	34	42	49	64	80	95	99	37
54	34	42	49	64	80	95	99	37
55	34	42	49	64	80	95	99	37
56	35	43	50	65	81	95	99	38
57	35	43	50	65	81	95	99	38
58	35	43	50	65	81	95	99	38
59	36	44	51	66	82	95	99	39
60	36	44	51	66	82	95	99	39
61	36	44	51	66	82	95	99	39
62	37	45	52	67	83	95	99	40
63	37	45	52	67	83	95	99	40
64	38	46	53	68	84	95	99	41
65	38	46	53	68	84	95	99	41
66	38	46	53	68	84	95	99	41
67	39	47	54	69	85	95	99	42
68	39	47	54	69	85	95	99	42
69	39	47	54	69	85	95	99	42
70	40	48	55	70	86	95	99	43
71	40	48	55	70	86	95	99	43
72	40	48	55	70	86	95	99	43
73	41	49	56	71	87	95	99	44
74	41	49	56	71	87	95	99	44
75	42	50	57	72	88	95	99	45
99	42	50	57	72	88	95	99	45

Model # 003

AGE	E	G	A	F	P	U	S	V
0	0	1	2	20	30	95	99	1
1	1	2	3	21	31	95	99	2
2	1	3	4	21	31	95	99	2
3	2	4	5	22	32	95	99	3
4	2	4	6	23	33	95	99	3
5	3	5	7	24	35	95	99	4
6	4	6	8	25	36	95	99	5
7	5	8	10	25	36	95	99	6
8	6	9	11	26	37	95	99	7
9	7	10	12	27	38	95	99	8
10	8	10	13	28	39	95	99	9
11	8	11	14	29	40	95	99	9
12	9	11	15	30	40	95	99	10
13	9	12	16	31	41	95	99	10
14	10	12	16	31	41	95	99	11
15	10	13	17	32	42	95	99	11
16	11	13	17	32	43	95	99	12
17	11	14	18	33	44	95	99	12
18	11	14	18	33	45	95	99	12
19	12	15	19	34	46	95	99	13
20	12	15	19	34	47	95	99	13
21	13	16	20	35	48	95	99	14
22	13	16	20	35	48	95	99	14
23	13	17	21	36	49	95	99	14
24	14	17	21	36	50	95	99	15
25	14	17	22	37	50	95	99	15
26	15	18	22	37	51	95	99	16
27	15	18	23	38	52	95	99	16
28	15	19	23	38	52	95	99	17
29	16	19	24	39	53	95	99	17
30	16	20	24	39	54	95	99	18
31	17	20	24	39	54	95	99	18
32	17	20	25	40	55	95	99	18
33	17	21	25	40	55	95	99	18
34	18	21	25	40	55	95	99	19
35	18	21	26	41	56	95	99	19
36	19	22	26	41	56	95	99	20
37	19	22	27	42	57	95	99	20
38	20	22	27	42	57	95	99	21
39	20	23	28	43	58	95	99	21
40	20	23	28	43	58	95	99	21
41	21	24	29	43	58	95	99	22
42	21	24	29	44	59	95	99	22
43	22	25	30	44	59	95	99	23
44	22	25	30	45	60	95	99	23
45	23	26	31	46	61	95	99	24
46	23	26	31	47	62	95	99	24
47	24	27	32	48	63	95	99	25
48	24	27	32	48	63	95	99	25

Continuation of Model 003

49	25	28	33	49	64	95	99	26
50	25	28	33	50	65	95	99	26
51	25	28	33	51	66	95	99	26
52	26	29	34	52	67	95	99	27
53	26	29	34	53	68	95	99	27
54	27	30	35	54	69	95	99	28
55	27	30	35	55	70	95	99	28
56	27	30	35	55	70	95	99	28
57	28	31	36	56	71	95	99	29
58	28	31	36	56	71	95	99	29
59	29	32	37	57	72	95	99	30
60	29	32	37	57	72	95	99	30
61	30	33	38	58	73	95	99	31
62	30	33	38	58	73	95	99	31
63	31	34	39	59	74	95	99	32
64	31	34	39	59	74	95	99	32
65	32	35	40	59	74	95	99	33
66	32	35	40	60	75	95	99	33
67	33	36	41	60	75	95	99	34
68	33	36	41	61	76	95	99	34
69	34	37	42	61	76	95	99	35
70	34	37	42	62	77	95	99	35
71	35	38	43	62	77	95	99	36
72	35	39	44	63	78	95	99	36
73	36	40	45	63	78	95	99	37
74	36	41	46	64	79	95	99	37
75	36	42	48	65	80	95	99	38
99	36	42	48	65	80	95	99	38

Model #
004

AGE	E	G	A	F	P	U	S	V
0	0	1	2	18	33	95	99	1
1	0	2	3	19	34	95	99	1
2	1	3	4	20	35	95	99	2
3	1	3	4	20	35	95	99	2
4	2	4	5	21	36	95	99	3
5	2	4	5	21	36	95	99	3
6	3	5	6	22	37	95	99	4
7	3	5	7	23	38	95	99	4
8	4	6	8	24	39	95	99	5
9	4	6	9	25	40	95	99	5
10	5	7	10	26	41	95	99	6
11	5	7	10	26	41	95	99	6
12	6	8	11	27	42	95	99	7
13	7	9	12	28	43	95	99	8
14	7	9	12	28	43	95	99	8
15	8	10	13	29	44	95	99	9
16	8	10	13	29	44	95	99	9
17	9	11	14	29	45	95	99	10
18	9	11	14	30	45	95	99	10
19	10	12	15	30	46	95	99	11
20	10	12	15	31	46	95	99	11
21	11	13	16	31	47	95	99	12
22	11	13	16	32	47	95	99	12
23	12	14	17	32	48	95	99	13
24	12	14	17	33	48	95	99	13
25	13	15	18	33	49	95	99	14
26	13	15	18	34	49	95	99	14
27	14	16	19	35	50	95	99	15
28	14	16	19	35	50	95	99	15
29	15	17	20	36	51	95	99	16
30	15	17	20	36	51	95	99	16
31	15	17	20	36	51	95	99	16
32	16	18	21	36	52	95	99	17
33	16	18	21	37	52	95	99	17
34	16	18	21	37	52	95	99	17
35	17	19	22	38	53	95	99	18
36	17	19	22	38	53	95	99	18
37	18	20	23	39	54	95	99	19
38	18	20	23	39	54	95	99	19
39	19	21	24	40	55	95	99	20
40	19	21	24	40	55	95	99	20
41	19	21	25	41	55	95	99	20
42	20	23	26	42	56	95	99	21
43	20	23	27	42	57	95	99	21
44	21	24	28	43	58	95	99	22
45	21	24	29	44	59	95	99	22
46	21	24	29	44	59	95	99	22
47	22	25	30	45	60	95	99	23
48	22	25	30	46	61	95	99	23
49	23	26	31	47	62	95	99	24
50	23	26	31	48	63	95	99	24

Continuation of
Model 004

51	23	26	31	49	64	95	99	24
52	24	27	32	50	65	95	99	25
53	24	27	32	51	66	95	99	25
54	25	28	33	52	67	95	99	26
55	25	28	33	53	68	95	99	26
56	25	28	33	53	68	95	99	26
57	26	29	34	54	69	95	99	27
58	26	29	34	54	69	95	99	27
59	27	30	35	55	70	95	99	28
60	27	30	35	55	70	95	99	28
61	28	31	36	56	71	95	99	29
62	28	31	36	56	71	95	99	29
63	29	32	37	57	72	95	99	30
64	29	32	37	57	72	95	99	30
65	29	32	37	57	72	95	99	30
66	30	33	38	58	73	95	99	31
67	30	33	38	58	73	95	99	31
68	31	34	39	59	74	95	99	32
69	31	34	39	59	74	95	99	32
70	32	35	40	60	75	95	99	33
71	32	36	42	60	75	95	99	33
72	33	37	43	61	76	95	99	34
73	33	38	44	62	77	95	99	34
74	33	39	45	63	77	95	99	34
75	34	40	46	63	78	95	99	35
99	34	40	46	63	78	95	99	35

MODEL # 005

AGE	E	G	A	F	P	U	S	V
0	0	1	2	15	30	95	99	1
1	0	2	3	16	31	95	99	1
2	1	3	4	17	32	95	99	2
3	1	3	4	18	33	95	99	2
4	2	4	5	19	34	95	99	3
5	2	4	5	20	35	95	99	3
6	2	4	5	21	36	95	99	3
7	3	5	6	22	37	95	99	4
8	4	6	7	23	38	95	99	5
9	4	6	8	24	39	95	99	5
10	5	7	9	25	40	95	99	6
11	5	7	9	25	40	95	99	6
12	6	8	10	26	41	95	99	7
13	7	9	11	27	42	95	99	8
14	7	9	11	27	42	95	99	8
15	8	10	12	28	43	95	99	9
16	8	10	12	28	43	95	99	9
17	9	11	13	28	44	95	99	10
18	9	11	13	29	44	95	99	10
19	10	12	14	29	45	95	99	11
20	10	12	14	30	45	95	99	11
21	11	13	15	30	46	95	99	12
22	11	13	15	31	46	95	99	12
23	12	14	16	31	47	95	99	13
24	12	14	16	32	47	95	99	13
25	13	15	17	32	48	95	99	14
26	13	15	17	33	48	95	99	14
27	14	16	18	34	49	95	99	15
28	14	16	18	34	49	95	99	15
29	15	17	19	35	50	95	99	16
30	15	17	19	35	50	95	99	16
31	15	17	19	35	50	95	99	16
32	16	18	20	35	51	95	99	17
33	16	18	20	36	51	95	99	17
34	16	18	20	36	51	95	99	17
35	17	19	21	37	52	95	99	18
36	17	19	21	37	52	95	99	18
37	18	20	22	38	53	95	99	19
38	18	20	22	38	53	95	99	19
39	19	21	23	39	54	95	99	20
40	19	21	23	39	54	95	99	20
41	19	22	24	40	54	95	99	20
42	20	22	25	41	55	95	99	21
43	20	22	26	41	56	95	99	21
44	21	23	27	42	57	95	99	22
45	21	23	28	43	58	95	99	22
46	21	23	28	43	58	95	99	22
47	22	24	29	44	59	95	99	23
48	22	24	29	45	60	95	99	23
49	23	25	30	46	61	95	99	24
50	23	25	30	47	62	95	99	24
51	23	25	30	48	63	95	99	24
52	24	26	31	49	64	95	99	25
53	24	26	31	50	65	95	99	25
54	25	27	32	51	66	95	99	26

Continuation of Mod

55	25	27	32	52	67	95	99	26
56	25	27	32	52	67	95	99	26
57	26	28	33	53	68	95	99	27
58	26	28	33	53	68	95	99	27
59	27	29	34	54	69	95	99	28
60	27	29	34	54	69	95	99	28
61	28	30	35	55	70	95	99	29
62	28	30	35	55	70	95	99	29
63	28	31	36	56	71	95	99	29
64	29	31	36	56	71	95	99	30
65	29	31	36	56	71	95	99	30
66	29	31	37	57	72	95	99	30
67	30	32	37	57	72	95	99	31
68	30	33	38	58	73	95	99	31
69	30	33	38	58	73	95	99	32
70	31	34	39	59	74	95	99	32
71	31	34	40	59	74	95	99	32
72	31	35	40	60	75	95	99	33
73	31	35	41	60	76	95	99	33
74	32	36	41	61	76	95	99	34
75	32	36	42	62	77	95	99	34
99	32	36	42	62	77	95	99	34

MODEL # 006

AGE	E	G	A	F	P	U	S	V
0	0	0	1	14	29	95	99	0
1	0	0	1	14	29	95	99	0
2	0	1	2	15	30	95	99	0
3	1	1	2	15	30	95	99	1
4	1	2	3	16	31	95	99	1
5	1	2	3	16	31	95	99	2
6	2	3	4	17	32	95	99	2
7	2	3	4	17	32	95	99	3
8	2	4	5	18	33	95	99	3
9	3	4	5	18	33	95	99	4
10	3	5	6	19	34	95	99	4
11	3	5	6	19	34	95	99	4
12	4	6	7	20	35	95	99	5
13	4	6	7	20	35	95	99	5
14	4	7	8	21	36	95	99	5
15	5	7	8	22	37	95	99	6
16	5	7	8	23	38	95	99	6
17	6	8	9	24	39	95	99	7
18	6	8	9	25	40	95	99	7
19	7	9	10	26	41	95	99	8
20	7	9	10	27	42	95	99	8
21	8	10	11	28	43	95	99	9
22	8	10	12	28	43	95	99	9
23	9	11	13	29	44	95	99	10
24	9	11	13	29	44	95	99	10
25	10	12	14	30	45	95	99	11
26	10	12	14	30	45	95	99	11
27	11	13	15	31	46	95	99	12
28	11	13	15	31	46	95	99	12
29	12	14	16	32	47	95	99	13
30	12	14	16	32	47	95	99	13
31	13	15	16	33	48	95	99	14
32	13	15	17	33	48	95	99	14
33	14	16	17	34	49	95	99	15
34	14	16	18	34	49	95	99	15
35	15	17	18	35	50	95	99	16
36	15	17	19	36	51	95	99	16
37	16	18	19	36	51	95	99	17
38	16	18	20	37	52	95	99	17
39	17	19	20	37	52	95	99	18
40	17	19	21	38	53	95	99	18
41	17	20	21	38	53	95	99	18
42	18	20	22	39	54	95	99	19
43	18	20	22	40	55	95	99	19
44	18	21	23	41	56	95	99	19
45	19	21	24	42	57	95	99	20
46	19	22	25	43	58	95	99	20
47	19	22	26	44	59	95	99	20
48	20	23	26	45	60	95	99	21
49	20	23	27	46	61	95	99	21
50	20	24	27	47	62	95	99	21
51	21	24	28	48	63	95	99	22
52	21	25	28	48	63	95	99	22
53	21	25	29	49	64	95	99	22
54	22	26	29	49	64	95	99	23

Continuation of
Model 006

55	22	26	30	50	65	95	99	23
56	22	27	30	50	65	95	99	23
57	23	27	31	51	66	95	99	24
58	23	28	31	51	66	95	99	24
59	23	28	32	52	67	95	99	24
60	24	29	32	52	67	95	99	25
61	24	29	33	53	68	95	99	25
62	24	29	33	53	68	95	99	26
63	25	30	34	54	69	95	99	26
64	25	30	34	54	69	95	99	27
65	25	30	35	55	70	95	99	27
66	26	31	35	55	70	95	99	28
67	26	31	36	56	71	95	99	28
68	26	31	36	56	71	95	99	29
69	27	32	37	57	72	95	99	29
70	27	32	37	57	72	95	99	30
71	28	32	38	58	73	95	99	30
72	28	33	38	58	73	95	99	31
73	29	33	39	59	74	95	99	31
74	29	33	39	59	74	95	99	31
75	30	34	40	60	75	95	99	32
99	30	34	40	60	75	95	99	32

MODEL#= MH1

EFFECTIVE AGE	BEST 01 E	02 G	03 A	04 F	05 P	CONDITION 06 U	07 S	08	WORST 09 V
0000	2	2	4	25	33	95	99		2
0001	3	3	6	27	35	95	99		3
0002	5	5	7	29	37	95	99		5
0003	7	7	9	31	39	95	99		7
0004	9	9	14	33	41	95	99		9
0005	11	11	16	34	42	95	99		11
0006	12	12	18	35	43	95	99		12
0007	14	14	20	36	44	95	99		14
0008	16	16	22	37	45	95	99		16
0009	18	18	24	40	49	95	99		18
0010	20	20	26	43	51	95	99		20
0011	22	22	28	44	52	95	99		22
0012	24	24	30	46	54	95	99		24
0013	26	26	32	48	56	95	99		26
0014	28	28	34	50	58	95	99		28
0015	30	30	36	51	59	95	99		30
0016	32	32	38	53	61	95	99		32
0017	34	34	40	55	62	95	99		34
0018	36	36	42	57	64	95	99		36
0019	38	38	44	59	66	95	99		38
0020	40	40	46	61	67	95	99		40
0021	42	42	48	62	68	95	99		42
0022	44	44	50	63	69	95	99		44
0023	46	46	52	64	70	95	99		46
0024	48	48	54	65	71	95	99		48
0025	50	50	56	66	72	95	99		50
0026	52	52	58	67	73	95	99		52
0027	54	54	60	68	74	95	99		54
0028	56	56	62	69	75	95	99		56
0029	58	58	63	71	77	95	99		58
0030	59	59	65	73	78	95	99		59
0031	60	60	67	74	79	95	99		60
0032	61	61	68	75	80	95	99		61
0033	62	62	69	76	81	95	99		62
0034	63	63	70	77	82	95	99		63
0035	64	64	71	78	83	95	99		64
0036	65	65	72	79	84	95	99		65
0037	66	66	73	81	85	95	99		66
0038	67	67	74	82	86	95	99		67
0039	68	68	75	82	86	95	99		68
0040	69	69	76	83	87	95	99		69
0041	70	70	77	84	87	95	99		70
0042	72	72	78	85	88	95	99		72
0043	73	73	79	85	88	95	99		73
0044	74	74	80	86	89	95	99		74
0045	75	75	81	87	89	95	99		75
0046	76	76	82	88	90	95	99		76
0047	76	76	83	88	90	95	99		76
0048	77	77	84	89	91	95	99		77
0049	78	78	85	90	92	95	99		78
0050	78	78	86	91	93	95	99		78
0999	78	78	86	91	93	95	99		78

MODEL#= MH4

EFFECTIVE AGE	BEST CONDITION 01 E	02 G	03 A	04 F	05 P	06 U	07 S	08	09 V
0000	2	2	3	14	22	95	99		2
0001	3	3	5	16	24	95	99		3
0002	4	4	6	20	28	95	99		4
0003	5	5	8	24	32	95	99		5
0004	6	6	10	26	34	95	99		6
0005	7	7	12	28	36	95	99		7
0006	8	8	14	29	38	95	99		8
0007	10	10	16	30	40	95	99		10
0008	12	12	18	31	41	95	99		12
0009	14	14	20	32	42	95	99		14
0010	16	16	22	33	43	95	99		16
0011	18	18	24	34	44	95	99		18
0012	19	19	26	35	45	95	99		19
0013	20	20	28	36	46	95	99		20
0014	21	21	29	37	47	95	99		21
0015	22	22	30	38	48	95	99		22
0016	23	23	31	39	49	95	99		23
0017	24	24	32	40	50	95	99		24
0018	25	25	33	41	51	95	99		25
0019	26	26	34	42	52	95	99		26
0020	27	27	35	43	53	95	99		27
0021	28	28	36	44	54	95	99		28
0022	30	30	38	46	56	95	99		30
0023	32	32	40	48	58	95	99		32
0024	34	34	42	50	60	95	99		34
0025	36	36	44	52	62	95	99		36
0026	38	38	46	54	64	95	99		38
0027	40	40	48	56	66	95	99		40
0028	42	42	50	58	68	95	99		42
0029	44	44	52	60	70	95	99		44
0030	46	46	54	62	72	95	99		46
0031	48	48	56	64	74	95	99		48
0032	50	50	58	66	76	95	99		50
0033	52	52	60	68	78	95	99		52
0034	54	54	62	70	80	95	99		54
0035	56	56	64	72	82	95	99		56
0036	58	58	66	74	83	95	99		58
0037	60	60	68	76	84	95	99		60
0038	62	62	70	78	86	95	99		62
0039	64	64	72	80	88	95	99		64
0040	66	66	74	82	90	95	99		66
9999	66	66	74	82	90	95	99		66

MODEL#= MH5

EFFECTIVE AGE	BEST 01 E	02 G	03 A	04 F	05 P	CONDITION 06 U	07 S	08	09 V
0000	2	2	3	20	30	95	99		2
0001	3	3	4	21	31	95	99		3
0002	4	4	5	22	32	95	99		4
0003	5	5	7	23	33	95	99		5
0004	7	7	10	24	34	95	99		7
0005	9	9	12	25	35	95	99		9
0006	11	11	14	26	36	95	99		11
0007	13	13	16	27	37	95	99		13
0008	15	15	18	28	38	95	99		15
0009	17	17	20	30	40	95	99		17
0010	18	18	22	32	42	95	99		18
0011	21	21	25	35	45	95	99		21
0012	22	22	26	36	46	95	99		22
0013	23	23	27	37	47	95	99		23
0014	24	24	28	38	48	95	99		24
0015	25	25	29	39	49	95	99		25
0016	26	26	30	40	50	95	99		26
0017	27	27	31	41	51	95	99		27
0018	28	28	32	42	52	95	99		28
0019	29	29	33	43	53	95	99		29
0020	30	30	34	44	54	95	99		30
0021	31	31	35	45	55	95	99		31
0022	32	32	36	46	56	95	99		32
0023	33	33	37	47	57	95	99		33
0024	34	34	38	48	58	95	99		34
0025	36	36	40	50	60	95	99		36
0026	38	38	42	52	62	95	99		38
0027	39	39	44	54	64	95	99		39
0028	40	40	46	56	66	95	99		40
0029	42	42	48	58	68	95	99		42
0030	44	44	50	60	70	95	99		44
0031	46	46	52	62	72	95	99		46
0032	48	48	54	64	74	95	99		48
0033	50	50	56	66	76	95	99		50
0034	52	52	58	68	78	95	99		52
0035	54	54	60	70	80	95	99		54
0036	56	56	62	72	82	95	99		56
0037	58	58	64	74	84	95	99		58
0038	60	60	66	76	86	95	99		60
0039	62	62	68	78	88	95	99		62
0040	64	64	70	80	90	95	99		64
0999	64	64	70	80	90	95	99		64

IX. COMMERCIAL / INDUSTRIAL COST CALCULATIONS AND COST TABLES

1. COMMERCIAL/INDUSTRIAL COST CALCULATION PROCESS 215
A. The Valuation of Commercial Land.....215
B. The Valuation of Buildings – Commercial 216
2. Commercial Office Condo Valuation 237
MASTER TABLES FOR COMMERCIAL.....238
Commercial Appraisal Options (AOPT) 239
Commercial / Industrial Building Section Types (SECT) 239
Commercial / Industrial Interior Finish Rates (CAIN). 241
Commercial / Industrial Exterior Wall Rates (CWAL / CWAR) 243
Commercial / Industrial Structure Codes and Rates (STRC) 244
Commercial / Industrial Condition Codes (CCON).....245
Commercial / Industrial Quality Grades and Modifiers (CQAL) 245
Commercial Refinements (CAR1 / CAR2) 246
Commercial / Industrial Miscellaneous Building Refinements (CMIS / COMR).....247
Commercial / Industrial Depreciation Model 001 (Structure Type A and B) (CDEP) 251
Commercial / Industrial Depreciation Model 002 (Structure Type C) (CDEP) 252
Commercial / Industrial Depreciation Model 003 (Structure Type D) (CDEP).....253
Commercial / Industrial Depreciation Model 004 (Structure Type S) (CDEP).....254
Commercial / Industrial Depreciation Model 005 (Structure Type P) (CDEP).....255

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IX. COMMERICAL / INDUSTRIAL COST CALCULATIONS AND COST TABLES

1. Commercial/Industrial Cost Calculation Process

INTRODUCTION

The OASIS Cost Approach to Valuation provides a means of estimating the value of any improved property through the application of user-defined cost tables. Traditionally, this has meant an estimate of either the Reproduction or Replacement Cost New Less Depreciation (RCNLD) using construction cost data which may or may not closely resemble what a property is actually worth. The methodology employed in OASIS allows the users to determine the extent to which they wish to market-orient the cost tables, and therefore, their resulting cost estimates of value. This places, in the hands of the appraiser, the decision as to which costs are to be used and how they will be used in terms of market-orientation. This section explains the use of the screens in the CAMA subsystem that are used for the cost approach to valuation or building valuation.

The CAMA subsystem also provides both an on-line and off-line method to simulate value results when planning for a revaluation. The on-line method is a sales ratio/statistical document (SR) that interactively recalculates values using current cost master tables, compares these to sales prices and provides statistics to indicate the value level and equity resulting from those tables. This on-line function is used by neighborhood. The off-line program (AA301) allows recalculation for several neighborhoods or the entire jurisdiction, providing totals and percentage of change on each parcel over the last official appraisal values. This program may be run in simulation many times before running in update mode. Master tables are not detailed in this schedule.

A. The Valuation of Commercial Land.

To value commercial land Oasis screens are used from the CAMA system as examples. The (LANL) screen for example calculates the value of the land. When a change, or delete action is entered on LANL the system will calculate or re-calculate a land value for only the lines that are displayed on the screen. There is other information needed to calculate commercial land and they were discussed in section 5 and 6.

Example of a Landline Screen from OASIS is shown for demonstration purposes only.

```
 ACTION: R SCREEN: LANL USERID:                                CHANGE-REASON:
H-  --------------------------  L A N D   L I N E S  -------------------
    ------- JU= 20 RO= RR PARC=       -                    YR= 2017
    ALTKEY= 8635762
                                                       DYR= 2017 STAT: ACTIVE

    LN#  LUSE     TYPE  FRONT   DEPTH        LAND UNITS    LOC%    MARKET VALUE
    -    DESC      -    -       D FACT    OV LAND RATE     SHP%    AG USE VALUE
    -    ZONING    -    NOTES             -  -             PHYS%   -
    ==   -----     --   -----   -----     -  -----------   ---       ---------
01-  01   1096      SF     104      57          12,632.40  100 %         62,273
      COMM LD                1.00000                4.93  100 %             0
      C1             12                                   100 %
```

B. The Valuation of Buildings – Commercial

To value commercial buildings some of the Oasis screens from the CAMA system used are but not limited to COMC, COMR, COMS, DIME to name a few screens.

The cost approach provides an estimate of value based on a listing of the various building components and the current construction cost of a replacement building, less accrued depreciation plus the value of the land. The replacement cost new is referred to as RCN and the depreciated RCN is called RCNLD (LD = less depreciation). The land is valued either from comparable sales of similar land or through abstraction in the absence of sales. OASIS requires a land unit value, regardless of the source.

The CAMA Cost Approach to Valuation uses the computer to value commercial buildings. This method is flexible and any building of any type may be described and valued. Commercial properties are valued within the CAMA subsystem. Different algorithms are used for residential and commercial/industrial. In both instances, however, the system allows coding of all available types of structures, walls, and many components. These are described and priced in master tables so that every type of existing construction in a jurisdiction has a code and an associated code. The parcel level data entry screens allow an individual description of each building so that every building is figured according to its specific description and priced with costs, locally determined and input. The end result is a system, which will allow coding, description and valuation of any type of property. If a new type of construction or construction material is introduced into the real estate market, the user simply defines a code, inputs the appropriate cost and the system will handle it from that point forward. Again different screens are used to aid in the valuation process. Creating a commercial building on a parcel requires entries on several screens.

The following pages contain the COMC, COMR, COMS, and DIME screens for a sample commercial building.

The Commercial Building Characteristic (COMC) screen is used to enter building characteristic information and refinements for commercial structures.

The top portion of the screen contains building information codes. Data entry fields affecting valuation are Structure Type, Construction Class, Quality Grade, Exterior Wall Types and Percentages, Refinements and Built-ins. Data entry fields affecting depreciation are Condition, Effective Year/Age, Remodeled year, Functional Obsolescence and Economic Obsolescence. All other fields are not related to value calculation.

The middle portion of the screen is used to enter refinement information. The last two lines of the COMC screen are used to enter appraisal and inspection schedule information. The first line is for entering appraisal review information and includes appraiser's id (displays appraiser's name from the APRA table), last appraisal date (MM/DD/CCYY) and next review date (MM/CCYY). The second line is for entering inspection review information and includes the inspector's id (displays inspectors name from the APRA table), last inspection date (MM/DD/CCYY) and three inspection codes.
The Commercial Building Characteristics (COMC) screen contains the data items that pertain to the building.

Example of a COMC Screen from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: COMC USERID:                                CHANGE-REASON:
C O M M E R C I A L        B U I L D I N G   C H A R A C T E R I S T I C S  --
JU= 20 RO= RR PARC=  YR= 2017 ALTKEY: 8635762 BUSINESS/BLD NAME:   DYR= 2017
STATUS: ACTIVE BUILDING ID= 01                LAND LINE: 01
STRUCTURE TYPE: D               CONST CLASS:            NUM IDENT UNITS:  1
QUALITY GRADE: 370   CONDITION: EPERCENT COMPLETE:     0 % ACTUAL YEAR
BUILT: 1981                      EFF YR/AGE: 2000        REMODELED YEAR:
2003
FUNCTIONAL OBS:        0 %     ECONOMIC OBS:   0 %
EXTERIOR WALL TYPE: 11    60 %   03   40 %           %           %

 --------------------------  R E F I N E M E N T S  -------------------------
 -
-
 4-FIX BATHS :    0  3-FIX BATHS :    1  2-FIX BATHS :    6  EXTRA-FIX   :    2
 ELEVATORS   :    0  ELV LANDINGS:    0  RES UNITS   :    0  ESCALATORS  :    0
 KITCHENS    :    0  FIREPLACES  :    0  5-FIX BATHS :    0  HTL XTR CRDS:
 INC ADJUST  :    0  EXP ADJUST  :    0  CAP ADJUST  :    0  OCCUP OVRD  :    0
 SELECT MTHD :       OVRD INC YR :    0

 NUM OF UNITS:       0

 APPR BY:                                      ON:            NEXT REV:
 INSP BY:                                      ON:           INSP  CODES:
```

The Next Screen (COMR) screen permits the entry of parcel level data to identify commercial refinements and to provide the edit controls and automated calculation of values for these items.

The data is keyed with the usual parcel identification keys and within each parcel the detailed data is keyed by building identification and line number within building ID.

The top half of each line has a field for type which is edited by the (CMIS) Commercial Miscellaneous Refinement Code table and a description field. Fields are also included for unit type, and 3 measurement fields to define the units, and a unit value. The bottom half of the line has fields for number of identical units, the building section ID that the line is associated with, and the total calculated value of the refinement.

The Commercial Miscellaneous Refinements screen defines additional refinements that will be added to the value of a commercial building. This screen is optional.

Example of a COMR Screen from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: COMR USERID:                                    CHANGE-REASON:
C O M M E R C I A L         M I S C E L L A N E O U S      R E F I N E M E N T S    --
JU= 20 RO= RR PARC=  -     YR= 2017 ALTKEY: 4179012
DYR= 2017 STAT: ACTIVE   BUILDING ID= 01
    LINE    TYPE     DESCRIPTION    UNIT TYPE INCL #UNITS/M1            UNIT VALUE
                   # IDENT UNIT   SECT ID    SF    #MEAS#2    MEAS#3 TOTAL VALUE
     ==    ---     --------------  --    - --------- ------ ----------
01-  01    E01     ELEVATOR        UT                   1              33,079.00
                                   1          0         0              33,079
02-
```

The Commercial Building Sections (COMS) screen contains the data items that pertain to the section. The list of building sections on this screen must match the list of building sections entered on the DIME screen. If they do not match, the building is considered incomplete and cost calculations will not occur. COMS The Commercial Building Sections screen defines the interior finish types and refinements that are associated with each section of the building.

Example of a COMS screen from OASIS is shown for demonstration purposes only

```
ACTION: R SCREEN: COMS USERID:                                    CHANGE-
REASON:
H-  --------  C O M M E R C I A L   B U I L D I N G    S E C T I O N S  ---
    ---- JU= 20 RO= RR PARC=            -             YR= 2017 ALTKEY:
    8635762
                                                     DYR= 2017 STAT: ACTIVE
    BUILDING ID= 01

    SECT   TYPES    WALL        BSMT                   INTERIOR           PH FN
     ID  1ST  UPR   HGT         PCT                    TYP PCT  A/C  SPRK CN UT
     ==  ---  ---   ----        ---  ---  ---  ---     --- ---  ---  ---  -  -
01-  01  BAS         9.0         0                     MDC 100  Y    N
         BASE BLDG AREA    GFA:   6,425
                           PER:     386
                           #ST:       1
02-  02  CCC         9.0         0                     CCC 100  N    N
         CNPY COMM AVG     GFA:     160
                           PER:      74
                           #ST:       1
03-  03  CCC         9.0         0                     CCC 100  N    N
         CNPY COMM AVG     GFA:      50
                           PER:      30
                           #ST:       1
01-  04  CCC         9.0         0                     CCC 100  N    N
         CNPY COMM AVG     GFA:      96
                           PER:      40
                           #ST:       1
```

The (COMS) Commercial Building Sections table is used for the entry of the valuation data for each commercial building section within each building. The table is keyed so that there can be many building sections within a single building ID.

There are a number of data elements for each section ID. The section ID and type fields for first floor and upper stories, come from the Building Dimensions (DIME) table. The ground floor area and the number of stories will also be displayed for each section.

The Interior Type and Percent fields are edited by either the Commercial "A" Interior Finish Codes (CAIN) table.

The sectional refinements fields are defined in the Commercial Refinements Definition (CAR1/CAR2)
table for the AMS method of valuation. The other additional refinements fields are user defined.

Review- The Commercial Building Characteristics (COMC), Commercial Building Refinements (COMR), and Commercial Building Sections (COMS) screen calculates the value of a single building. When an add, change, or delete action is entered on either COMC, COMR, or COMS, the system will calculate or re-calculate a building value for only the building. Building calculations are only performed if the building is complete. The Commercial Building Characteristics screen defines the general characteristics of a commercial building and the building refinements.

DIME the Building Dimensions screen is used to create a building. It specifies whether the building is residential or commercial, the number of stories in each section of the building, the exterior wall type for each section of the building, and provides a means for the user to "draw" a sketch of the building.

Example of a DIME Screen shown from OASIS is shown for demonstration purposes only

```
ACTION: R SCREEN: DIME USERID:                      CHANGE-REASON:
              ----------------- B U I L D I N G D I M E N S I O N S   -----
         JU= 20 RO= RR PARC=         YR= 2017 ALTKEY= 8635762
        BUILDING ID= 01  BUILDING TYPE: C  DYR: 2017 STAT: ACTIVE
                                                                   PERIMTR
SECT       TYPE                                   # OF GFA        ADL-#ST
ID 1ST UPR DIMENSIONS                              STRY O WALL TY ADL-PRM
  == --- --- ---------------------------------------- ---- - ------- -------
01-  01 BAS CL43D11L24D12L10D12L16D27R35D21R15D2R16     1     6,425     386
            U8R32U20R10U35L15U22                                         0
                                                                         0
02-  02 CCC     CR5D17R10D5L15U22                        1       160      74
                                                                         0
                                                                         0
03-  03 CCC     D22R15D35 CL10D5R10U5                    1        50      30
                                                                         0
                                                                         0
04-  04 CCC     L10D20L32 CD8R12U8L12                    1        96      40
                                                                         0
                                                                         0
```

Building sketches are created by entered sketch commands (also called building dimensions) on the Building Dimensions (DIME) screen. These sketches are then viewed on the Building Sketch (SKET) screen. The sketch commands have an additional purpose: to calculate the ground floor area and perimeter of the building section.

The methods that the system employs to perform these two functions depends upon value of the residential and commercial base calculations methods found in the Appraisal Options (AOPT) table, and the perimeter method found in the Neighborhood Characteristics (NBHD) table.

The dimensions area of the Building Dimensions (DIME) screen is used to specify the sketch parameters that are used to display a diagram of the building. These sketch parameters consist of a series of commands that will draw the building. The valid commands are:

C commence the drawing of the sketch
Unn directional symbol that defines upward
movement Dnn directional symbol that defines
downward movement Lnn directional symbol that
defines movement to the left Rnn directional
symbol that defines movement to the right

The "nn" within each directional symbol specifies the number of feet of movement. When entering these commands, the directional symbols that are entered before the commence command allows the user to move around the diagram without actually drawing a line. The directional symbols that are specified after the commence command indicate a line on the drawing.

The commence command is required for each section. The user must end the drawing at the exact same point that it was begun. This will ensure that each section is "closed."

SKET -Building Sketch screen is an inquiry screen that will display a diagram of the building from the sketch parameters entered on DIME. See example on next page.

Example of a SKET screen from OASIS is shown for demonstration purposes only.

```
ACTION:  R   SCREEN:  SKET
USERID:
----------------------  B U I L D I N G   S K E T C H  ----------------
------- JU= 20 RO= RR PARC=                          YR= 2017 ALTKEY=
8635762
BUILDING ID= 01     DISPLAY CODES:                   DYR: 2017 STATUS:
ACTIVE

                        +---------43--------+5+          | 01     6,425
                       |BAS01               1CCC02        | 02       16
             +-----24----+                2 7             | 03        5
             |                            | +-10-+        | 04        9
         +-10+                           +--15--+        |TOT  -------
         1                                      |        |  4     6,731
         2                                      |        |
 +---16--+                                      3        |
 |                                              5        |
 2                                              |        |
 7                                              |        |
 |                                            +-10-+      |
 +-------35------+                            2-10-+      |
                2                             0           |
                1             +--12-+32------+            |
                |             8     8                     |
                +---15--+--6--+--12-+                     |    1"  = 17'
```

Whenever the entry for a building is complete, or a change is made on either the DIME, COMC, COMR, or COMS screen, the building cost calculations are performed. There are two basic cost calculation methods. The commercial base cost calculation method on the AOPT table defines which of these two types is used: method "A" (a.k.a. the AMS method) and method "C" (a.k.a. the CLT method). This office uses the – "A" method for commercial cost calculations.

The calculations performed for commercial buildings consist of, essentially, three values:

1. the replacement cost new (RCN)
2. the replacement cost new less depreciation (RCNLD)
3. the market adjusted value (shown on the BLDG screen as the FINAL COST APPROACH VALUE)

a. Calculation of RCN

The replacement cost new for a commercial building, using cost method "A" is calculated as follows:

a. Calculate the building structure cost.
b. Calculate the building wall cost.
c. Calculate the interior finish cost.
d. Calculate the total building refinements.
e. Calculate the total miscellaneous refinements.
f. Subtotal the values from steps a through e and multiply by the number of identical units.
g. Multiply the result of step "f" by the quality grade factor.

The final result is the replacement cost new or the RCN for the building. Below is a more detailed explanation of each of those calculations.

a. Calculate the building structure cost

Each building section that is entered on the DIME screen has a building type The method "A" cost calculation routine only uses the 1st floor building type, the upper floor building type is ignored. The entry in the SECT table for the building section type defines whether the building section is a base area section (base calculation flag is "Y") or not.

Example of a DIME screen from OASIS shown is for demonstration purposes only.

```
ACTION: R SCREEN: DIME
 H-  ----------------  B U I L D I N G   D I M E N S I O N S  ----------------
     JU= 20 RO= RR PARC=                              YR= 2017 ALTKEY= 8635762
     BUILDING ID= 01     BUILDING TYPE: C             DYR: 2017 STAT: ACTIVE

                                                                      PERIMTR
     SECT  TYPE                                        # OF     GFA   ADL-#ST
      ID 1ST UPR                DIMENSIONS             STRY O WALL TY ADL-PRM
      == --- --- ---------------------------------------- ---- - ------- -------
 01-  01 BAS     CL43D11L24D12L10D12L16D27R35D21R15D2R16     1     6,425     386
                 U8R32U20R10U35L15U22                                        0
                                                                             0
 02-  02 CCC     CR5D17R10D5L15U22                           1       160      74
                                                                             0
                                                                             0
 03-  03 CCC     D22R15D35 CL10D5R10U5                       1        50      30
                                                                             0
                                                                             0
 04-  04 CCC     L10D20L32 CD8R12U8L12                       1        96      40
                                                                             0
                                                                             0
```

Example of a COMC screen from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: COMC                                        CHANGE-REASON:
 ---  C O M M E R C I A L   B U I L D I N G   C H A R A C T E R I S T I C S  ---
 JU= 20 RO= RR PARC=                              YR= 2017 ALTKEY: 8635762
 BUSINESS/BLD NAME:                               DYR= 2017 STATUS: ACTIVE
        BUILDING ID= 01          LAND LINE: 01
     STRUCTURE TYPE: D          CONST CLASS:           NUM IDENT UNITS:  1
      QUALITY GRADE: 370          CONDITION: A        PERCENT COMPLETE:   0 %
  ACTUAL YEAR BUILT: 1981        EFF YR/AGE: 2000        REMODELED YEAR: 2003
     FUNCTIONAL OBS:   0 %     ECONOMIC OBS:   0 %
 EXTERIOR WALL TYPE: 11   60 %   03   40 %           %           %

 ---------------------------  R E F I N E M E N T S  ---------------------------
 4-FIX BATHS :    0  3-FIX BATHS :    1  2-FIX BATHS :    6  EXTRA-FIX   :    2
 ELEVATORS   :    0  ELV LANDING :    0  RES UNITS   :    0  ESCALATORS  :    0
 KITCHENS    :    0  FIREPLACES  :    0  5-FIX BATHS :    0  HTL XTR CRD :
 INC ADJUST  :    0  EXP ADJUST  :    0  CAP ADJUST  :    0  OCCUP OVRD  :    0
 SELECT MTHD :       OVRD INC YR :    0

 NUM OF UNITS:       0

 APPR BY: LJM   LEE MILLER                     ON: 09 12 2016 NEXT REV:
 INSP BY: KRJ   KEVIN JONES                    ON: 01 07 2005 INSP CODES:
```

Example of a STRC screen from OASIS is shown for demonstration purposes

```
ACTION: R  SCREEN: STRC USERID:
H-  ----------  C O M M E R C I A L   S T R U C T U R E   T Y P E S  ----------
    JURI= 20   YEAR= 2017   ROLL= RR
      STRUCTURE                              MAX    FOR SQ.       MAX    FOR SQ.
      TYPE      DESCRIPTIONS             # STY  FOOT RATE      # STY  FOOT RATE
      ===   --------------------          ---    --------       ---    --------
      A     FIREPRF STRCT STEEL       01:   3       27.69   02:   6       28.24
            FPSTEEL                   03:   9       28.81   04:  12       29.34
     MAXIMUM DEPR %:  99              05:  15       29.91   06: 999       29.91
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 001   11:                   12:
      B     REINFORCED CONCRETE       01:   3       26.30   02:   6       26.83
            REINCON                   03:   9       27.35   04:  12       27.86
     MAXIMUM DEPR %:  99              05:  15       28.39   06: 999       28.39
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 001   11:                   12:
      C     CONCRETE/MASONRY WLS      01:   3       20.64   02:   6       21.07
            CON/MAS                   03:   9       21.48   04:  12       21.89
     MAXIMUM DEPR %:  99              05:  15       22.31   06: 999       22.31
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 002   11:                   12:
      D     WOOD/LIGHT STEEL          01:   3       18.86   02:   6       19.23
            WD/LTST                   03:   9       19.61   04:  12       20.02
     MAXIMUM DEPR %:  99              05:  15       20.42   06: 999       20.42
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 003   11:                   12:
      P     POLE FRAMING              01:   3       10.76   02:   6       10.99
            POLEFRM                   03:   9       11.19   04:  12       11.40
     MAXIMUM DEPR %:  99              05:  15       11.64   06: 999       11.64
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 005   11:                   12:
      S     PRE-ENG STEEL FRAME       01:   3       15.08   02:   6       15.37
            PESTFRM                   03:   9       15.67   04:  12       15.99
     MAXIMUM DEPR %:  99              05:  15       16.31   06: 999       16.31
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 004   11:                   12:
```

The calculation of building structure cost is derived by using this calculation:

using the structure type from COMC
get the square foot rate from STRC
multiply the square foot rate by the number of stories from DIME or if you have the total square foot of all the stories, then just multiply the square foot rate time the total square foot from the DIME screen

b. Calculate the Building Wall Cost

Building Wall Cost

The calculation of building wall cost is derived by using this calculation:

- need the wall type(s) from COMC
- need the wall rate(s) table from CWAR
  If there are more than one then a weighted wall rate must be calculated using the percent of wall types listed on the COMC for the exterior wall type.
- section living area (which is calculated at (GFA for the BAS * #stories)
  is sf area from DIME
  multiplied by the number of stories from DIME
- section weighted wall height
  is section living area
  multiplied by the wall height from COMS
- building wall area
  is section weighted wall height
  divided by sf area from DIME
- building wall cost
  is perimeter from DIME
  multiplied by building wall area
  multiplied by building rate

Example of a CWAL screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: CWAL USERID:
 ------ C O M M E R C I A L  E X T E R I O R W A L L C O D E S ------
     JURI= 20   YEAR= 2017   ROLL= RR

  EXTERIOR                                RATE
  WALL CODE        DESCRIPTION          TABLE#
     ==      -------------------------    --
     01      MINMAL SIDING                01
     02      ALUMINUM SIDING              02
     03      MASONITE/ASBESTOS SIDING     03
     04      VINYL SIDING                 04
     05      WOOD SIDING PINE/CEDAR/CY    05
     06      STUCCO/FRAME                 06
     07      CONCRETE BLOCK               07
     09      CONCRETE BLOCK/STUCCO        09
     10      BRICK VENEER/CON BLOCK       10
     11      BRICK VENEER/FRAME           11
     12      BRICK/WOOD COMBINATION       12
     13      STONE VENEER FRAME           13
     14      CEMENT BRICK                 14
     15      PREFINISHED METAL "S" STR    15
     16      PRECAST PANEL (TILT UP)      16
     17      METAL AND GLASS PANELS       17
     18      UNFINISHED/PARTY WALL        18
     19      INDUST RIBBED METAL SIDIN    19
     20      CONCRETE BLOCK 12"           20
     21      LOGS                         21
     22      CONCRETE SIDING CON BOARD    22
     23      BRICK (REG BRICK OLD IND)    23
     27      STONE MASONARY               27
     32      BUILDING FRONT ABV AVG       32
     33      BUILDING FRONT AVERAGE       33
     34      BUILDING FRONT LOW COST      34
     35      SOLARIUM                     35
     36      0VERHEAD DOORS               36
     37      RIBBED CB/SPLIT STONE        37
     38      TILT UP PANELS               38
     39      PRE-ENGINEERED PANEL "S"     39
     42      STA STEEL OR BRONZE/GLASS    42
     99      UNKNOWN                      99
```

Example of a CWAR screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: CWAR USERID:
H-  -----  C O M M E R C I A L  E X T E R I O R  W A L L  R A T E S  -----
    JURI= 20   YEAR= 2017   ROLL= RR
```

RATE TAB#	BSC	SHORT DESC.	SQ FT RATE
==	==	-------	--------
01		01	13.39
02		02	14.93
03		03	15.57
04		04	14.08
05		05	16.40
06		06	18.53
07		07	19.91
09		09	20.50
10		10	23.87
11		11	20.79
12		12	17.74
13		13	29.25
14		14	19.26
15		15	8.37
16		16	18.97
17		17	31.91
18		18	0.00
19		19	7.54
20		20	22.66
21		21	27.43
22		22	15.55
23		23	17.77
27		27	35.01
32		32	34.60
33		33	28.82
34		34	23.38
35		35	58.51
36		36	17.50
37		37	17.90
38		38	18.97
39		39	19.43
42		42	49.66
99		99	0.00

c. Calculate the Interior Finish Cost

The calculation of interior finish cost is derived by using this calculation:

- using the interior finish code from COMS get the square foot rate from CAIN
- multiply the square foot rate by the number of stories from DIME
- if there is A/C or Sprinkler flagged with Y then you need to Calculate and add cost to the interior finish rate (rate found on CAR2)
- multiply that by the ground floor area from DIME screen
- multiply it by the interior finish pct from COMS

There are also three other non-base areas called CCC or Canopy averages that is calculated using their corresponding rates from the SECT screen from OASIS .

Example of a COMS screen from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: COMS USERID:                                  CHANGE-REASON:
H-  --------  C O M M E R C I A L   B U I L D I N G    S E C T I O N S  --
    ----- JU= 20 RO= RR PARC=                          YR= 2017 ALTKEY:
    8635762
                                                     DYR= 2017 STAT: ACTIVE
    BUILDING ID= 01

    SECT   TYPES    WALL        BSMT                   INTERIOR           PH FN
     ID  1ST  UPR   HGT         PCT                    TYP PCT  A/C  SPRK CN UT
     ==  ---  ---   ----        ---  ---  ---  ---     --- ---  ---  ---  -  -
01-  01  BAS         9.0          0                   MDC 100  Y    N
         BASE BLDG AREA    GFA:   6,425
                           PER:     386
                           #ST:       1
02-  02  CCC         9.0          0                   CCC 100  N    N
         CNPY COMM AVG     GFA:     160
                           PER:      74
                           #ST:       1
03-  03  CCC         9.0          0                   CCC 100  N    N
         CNPY COMM AVG     GFA:      50
                           PER:      30
                           #ST:       1
01-  04  CCC         9.0          0                   CCC 100  N    N
       CNPY COMM AVG     GFA:     96
                         PER:     40
                         #ST:      1
```

Example of SECT screen from OASIS for demonstration purposes only.

```
ACTION: R  SCREEN: SECT USERID:
 H-  ---------------------------------------------------------------------
     ----- BUILDING SECTION TYPE TABLE ----------------------------------
     JURI= 20   YEAR= 2017   ROLL= RR

     BLDG                BASE                          EXT          RES
     SECT    SECTION     CALC    MISC AREA AMOUNTS     WALL   CAR   FLOOR
     LIVING TYPE         DESCRIPTION      FLAG         1ST FLOOR    UPPER
     FLOOR REQD STORAGE LEVEL  FLAG
 CCC  CNPY COMM AVG   N         00.00        0.00   Y      N
```

Example of a CAIN screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: CAIN
H-  ----  C O M M E R C I A L   I N T E R I O R
    JURI= 20   YEAR= 2017   ROLL= RR

    INT FIN                              SQ FT
     CODES         DESCRIPTION           RATE
      ===      --------------------   --------
01-   ADB      AUDITORIUM ABV AV X        0.00
02-   ADC      AUDITORIUM                41.41
03-   ADD      AUDITORIUM BELOW  X        0.00
04-   ADS      AUTO DEALERSHIP           33.18
05-   AMC      AUTOMOTIVE REPAIR SR      15.91
06-   APT      APARTMENT                 37.52
07-   ARM      ARMORIES                  26.58
08-   ASR      AUTOMOTIVE SHOW RM X       0.00
09-   BAR      BAR/LOUNGE                28.40
10-   BKB      BANKS,A&B FRAME   X        0.00
11-   BKC      BANK                      86.46
12-   BKD      BANKS BELOW AVG   X        0.00
13-   BOL      BOWLING ALLEY             38.50
14-   BQH      BANQUET HALL              42.22
01-   CCB      COUNTRY CLB GOLF/TEN      49.94
02-   CFC      CHURCH FELLOWSHIP         40.98
03-   CHA      CLUB HOUSE APARTMENT      42.08
04-   CHB      CHURCH ABV ABG    X        0.00
05-   CHC      CHURCH                    49.22
06-   CHD      CHURCH BLW AVG    X        0.00
07-   CLA      CLUB EXCELLENT    X        0.00
08-   CLB      CLUB                      34.54
09-   CLC      CLUB AVERAGE      X        0.00
10-   CLD      CLUB BLW AVG      X        0.00
11-   CLM      CLUB IN MOTEL             25.91
12-   COF      CONDO OFFICE              55.28
13-   CSB      COMM SHOPCNTR AVB X        0.00
14-   CSC      COMM SHPG CENTER          29.32
```

So in summary the calculation of interior finish cost is derived as follows:

MDC rate times Sq Ft of interior
A/C rate times Sq ft of interior
First CCC Sq ft times rate for CCC
Second CCC is Sq ft times rate for CCC
Third CCC is Sq ft times rate for CCC

Which gives us a subtotal for the interior calculation rate – but is rounded

d. Calculate the Total Building Refinements.

The calculation of total building refinements is derived by using this calculation:

total miscellaneous refinements are added to the following calculations
need to get the refinement count from COMR
need to multiply the refinement count by the rate from CAR1 or CAR2, if applicable

Example of a COMR screen from OASIS is shown for demonstration purpose only.

This example shows that there are no refinements for this particular building.

```
ACTION: S SCREEN: COMR USERID:                                CHANGE-REASON:
H-  C O M M E R C I A L   M I S C E L L A N E O U S   R E F I N E M E N T S
-- JU= 20 RO= RR PARC=                                 YR= 2017 ALTKEY:
                                                       DYR=      STAT:
    BUILDING ID= 01

  LINE  TYPE   DESCRIPTION     UNIT TYPE INCL   #UNITS/M1         UNIT VALUE
               # IDENT UNITS    SECT ID   SF     #MEAS#2  MEAS#3   TOTAL VALUE
==    ---    --------------      --      -   --------- ------   ----------
01-
```

Example of a CAR1 screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: CAR1 USERID:
-----  C O M M E R C I A L   R E F I N E M E N T S   D E F I N I T I O N -
---- JURI= 20           YEAR= 2017                   ROLL= RR         C-
USE RCOD TABLE
                                                     N-VALUE PER COUNT
REFINE                 ENTRY    MIN    MAX    $$$        F-RATE PER SF OF L/G
NUMBER  DESCRIPTION   C/N/F/P  COUNT  COUNT  +/-/N  L/G  P-RATE PER % OF L/G
 ----   ------------    -     ----   ----    -     -   ---------------------
 CB01   4-FIX BATHS     N       0    300     +     L   5,935.00
 CB02   3-FIX BATHS     N       0    200     +     L   4,450.00
 CB03   2-FIX BATHS     N       0    170     +     L   2,965.00
 CB04   EXTRA-FIX       N       0    999     +     L   1,485.00
 CB05   ELEVATORS       N       0     70     +     L     70


 CB06   ELV LANDINGS    N       0     70     +     L     70


 CB07   RES UNITS       N       0   9999     +     L   7,430.00
 CB08   ESCALATORS      N       0     99     +     L       0.00
 CB09   KITCHENS        N       0   9999     +     L   1,832.00
 CB10   FIREPLACES      N       0   9999     +     L   3,075.00
```

Example of a CAR2 screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: CAR2 USERID:
-----  C O M M E R C I A L   R E F I N E M E N T S   D E F I N I T I O N
----- JURI= 20          YEAR= 2017                   ROLL= RR
       C-USE RCOD TABLE
                                                   N-VALUE PER COUNT
REFINE                 ENTRY    MIN    MAX    $$$        F-RATE PER SF OF L/G
NUMBER  DESCRIPTION   C/N/F/P  COUNT  COUNT  +/-/N  L/G  P-RATE PER % OF L/G
 ----   ------------     -     ----   ----     -     -   ---------------------
 CB11   5-FIX BATHS      N        0    200     +     L   7,414.00
 CB12   HTL XTR CRDS     C
 CB13   INC ADJUST       N        0    200     N     L       0.00
 CB14   EXP ADJUST       N        0    200     N     L       0.00
 CB15   CAP ADJUST       N        0   2500     N     L       0.00
 CB16   OCCUP OVRD       N        0    100     N     L       0.00
 CB17   SELECT MTHD      C
 CB18   OVRD INC YR      N        0   2017     N     L       0.00

 CS01   BSMT PCT         P                     +     G      15.46
 CS02
 CS03
 CS04
 CS05        A/C         F                     +     L       7.62
 CS06        SPRK        F                     +     L       3.19
```

e. <u>Calculate the total miscellaneous refinements</u>

The calculation of total miscellaneous refinements is derived by using this calculation:

need the measurement from COMR
need the unit value from COMR
need the number of identical units from COMR

f. <u>Subtotal the values from a to e</u>

The building structure cost, building wall cost, interior finish cost, total building refinements, total section cost will all be added together.

Building Structure Cost
Building Wall Cost
Interior Finish Cost
Total Building Refinements (includes both the building refinements on COMC Total Section Refinements and the miscellaneous refinements on COMR).

This subtotal is then used for further calculations.

g. Multiply Quality Grade Factor by subtotal

Next, the quality grade defines a percentage multiplier that is applied to the sum of values. The quality grade entered on the COMC screen is used to determine the percentage grade modifier. It is not necessary that an exact match of quality grade exists in the CQAL table. The quality grades that are entered in CQAL are maximum grades. If there were two entries in CQAL for grades 400 and 450, any value entered on COMC from 401 to 450 would retrieve the 450 entry in CQAL. The variables used in this calculation are:

- calculated sum of values
- quality grade on the COMC screen percentage grade modifier from CQAL

Example of CQAL screen from OASIS

```
ACTION:  R   SCREEN:  CQAL
USERID:
H-  -----------C O M M E R C I A L     Q U A L I T Y   G R A D E S  ------
    ----- JURI= 20          YEAR= 2017 ROLL= RR
```

QUALITY GRADE	DESCRIPTION	GRADE MODIFIER%
150	GRADE E	75
235	GRADE D-	79
250	GRADE D	85
265	GRADE D+	91
335	GRADE C-	91
350	GRADE C	100
370	GRADE C+	111
435	GRADE B-	111
450	GRADE B	120
470	GRADE B+	133
535	GRADE A-	133
550	GRADE A	145
570	GRADE A+	160
630	GRADE AA-	160
640	GRADE AA-10	180
650	GRADE AA	200
670	GRADE AA+20	240
695	GRADE AA+	290

The calculation is:

sum of values (subtotal) X percentage grade modified (in our example is 1.11)

Percent Complete

Taxes are assessed as of the first day of each year, January 1. If a building is not finished by January 1st then the percentage of the building that is finished will get applied to the value. Once this has been applied the next calculation is for the Replacement Cost New Less Depreciation or RCNLD. In the 2017 Commercial Revaluation Manual there is a guide on page 40 in the Building Section that can be used to help determine a buildings percent complete.

Calculation of RCNLD

The replacement cost new less depreciation (RCNLD) for a commercial building is calculated by applying three types of depreciation: physical, functional, and economic. The system checks the COMC screen for physical, functional and economic depreciation percents that are entered by the user.

The variables used in the RCNLD calculation are as follows:

calculated RCN
calculated physical depreciation percent
functional depreciation percent from COMC
economic depreciation percent from COMC

The calculation is[1]:

result #1 = RCN - (RCN X physical depreciation percent 100)
result #2 = result #1 - (result #1 X functional depreciation percent 100)
RCNLD = result #2 - (result #2 X economic depreciation percent 100)

The calculation of the physical depreciation percent is more complex. The variables used in this calculation are as follows:

quality grade from COMC
condition code / condition option from AOPT
condition code or condition from COMC
effective age / effective age group option from AOPT
effective age or (actual year built and effective year) from COMC
building depreciation year from AOPT
depreciation model number from STRC
depreciation or percent good option from AOPT

The steps for calculating physical depreciation percent are as follows:

First, determine the depreciation model number. It will use the depreciation model number from the STRC table.

Next, determine whether the condition or the condition code should be used. There is a flag in the AOPT table that defines the field. In either case, the system determines the "position" of this field in the CCON table (shown below).

[1]The following calculation is used when the duplicate old AA values flag in the AOPT table is "N." When this flag is "Y," the system calculates result #1 as shown, but calculates RCNLD by adding the functional and economic percents, multiplies this sum by result #1.

```
ACTION: R  SCREEN: CCON USERID:
 ---------- C O M M E R C I A L   C O N D I T I O N   C O D E S ------

 ---- JURI= 20                    YEAR= 2017      ROLL= RR

   COND CODE
     / CONDITION   DESCR
       --   -------
  1:   1    COND/1E            BEST
  2:   2    COND/2G
  3:   3    COND/3A
  4:   4    COND/4F
  5:   5    COND/5P
  6:   E    EXCELLENT
  7:   G    GOOD
  8:   A    AVERAGE
  9:   F    FAIR
 10:   P    POOR
 11:   U    UTILITY
 12:   S    SALVAGE            WORST
```

In the sample building, the AOPT flag indicates that condition code is used in the calculation of depreciation. The condition code on the COMC screen is "E" which is in the position #06 in the CCON table.

Next the STRC determines which model the computer uses to find the depreciation amount. For our example the structure type is D so we use model 003. Now, look up the depreciation percent in the CDEP table. The key to this table is Structure type, effective year, and condition found on the COMC screen.

Below is an example of the STRC screen from OASIS for our example.

```
ACTION: R  SCREEN: STRC
H-  ----------  C O M M E R C I A L   S T R U C T U R E   T Y P E S  ----------
    JURI= 20   YEAR= 2017   ROLL= RR

    STRUCTURE                                MAX    FOR SQ.        MAX    FOR SQ.
      TYPE      DESCRIPTIONS               # STY  FOOT RATE      # STY  FOOT RATE
      ===   --------------------           ---    --------       ---    --------
01-   C     CONCRETE/MASONRY WLS      01:   3       20.64   02:   6       21.07
            CON/MAS                   03:   9       21.48   04:  12       21.89
     MAXIMUM DEPR %:  99              05:  15       22.31   06: 999       22.31
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 002   11:                   12:
                                                                            -
02-   D     WOOD/LIGHT STEEL          01:   3       18.86   02:   6       19.23
            WD/LTST                   03:   9       19.61   04:  12       20.02
     MAXIMUM DEPR %:  99              05:  15       20.42   06: 999       20.42
     SUBTOTAL#: 03   1   2   3   4    07:                   08:
     EXPECTED LIFE:                   09:                   10:
     BSC:       DEPR MODEL NUM: 003   11:                   12:
```

An example of a CDEP screen from OASIS is shown for our example.

```
ACTION: R  SCREEN: CDEP
 H-  ------------  C O M M E R C I A L   D E P R E C I A T I O N  ------------
--
     JURI= 20   YEAR= 2017   ROLL= RR
     MODEL#= 003
                                ** VALUES ARE DEPRECIATION **
                  BEST ------------------ CONDITION ----------------- WORST
     EFFECTIVE    01   02   03   04   05   06   07   08   09   10   11   12
        AGE       1    2    3    4    5    E    G    A    F    P    U    S
       ====      ---  ---  ---  ---  ---  ---  ---  ---  ---  ---  ---  ---
 01-   0001                                 1    2    3    6    7   95   99
 02-   0002                                 2    3    4    8    9   95   99
 03-   0003                                 3    4    5   10   11   95   99
 04-   0004                                 4    5    6   12   13   95   99
 05-   0005                                 5    6    8   15   16   95   99
 06-   0006                                 6    7    9   17   19   95   99
 07-   0007                                 7    8   10   19   21   95   99
 08-   0008                                 8   10   12   21   24   95   99
 09-   0009                                 9   11   14   23   27   95   99
 10-   0010                                10   13   16   25   30   95   99
 11-   0011                                11   15   18   27   32   95   99
 12-   0012                                12   16   19   29   34   95   99
```

Once the CDEP record has been found, the physical depreciation percent is obtained from the condition code / condition "position" that was previously determined. Again in our example it was taken from column –06. The computer retrieves an amount of 8.

There is one other flag in the AOPT table that can affect the calculation. This flag specifies whether the values entered in the CDEP table are depreciation or percent good. Whatever the value that is in the table, the system calculates the other. The calculations are:

depreciation percent = 100 - percent
good percent good = 100 -
depreciation percent

As you can see on the CDEP screen, the physical depreciation percent for model 003, and condition code E in the 06 position, is .If there were a functional or economic depreciation in our example then that amount would be applied also.

The BLDG screen gives you an overview of those detailed steps explained above with a RCNLD value shown. If there was a Market adjustment ratio to be applied then that also would be calculated from the RCNLD. In our example no adjustments are calculated.

```
ACTION: R SCREEN: BLDG USERID:            VERIFY DELETE (D):   CHANGE-
REASON:
-----------------  B U I L D I N G   C O S T   S U M M A R Y -------------
---- JU= 20 RO= RR PARC=                            YR= 2017 ALTKEY=
8635762
BUILDING ID= 01 OF 01 BLDG TYPE: C START-SECT:       DYR: 2017 STATUS:
ACTIVE


BUILDING STRUCTURE COST       121,175    REPLACEMENT COST NEW (RCN)    708,060
BUILDING WALL COST             64,970
INTERIOR FINISH COST          426,535    PHYSICAL DEPRECIATION %            24
TOTAL BUILDING REFINEMENTS     25,210    FUNCTIONAL OBS %                    0
TOTAL SECTION REFINEMENTS           0    ECONOMIC OBS %                      0
TOTAL MISC REFINEMENTS              0    TOTAL DEPRECIATION %               24
SUBTOTAL                      637,892    TOTAL DEPRECIATION            -169,934

QUALITY GRADE FACTOR             1.11    RCNLD                          538,126

PERCENT COMPLETE %                  0    MARKET ADJUSTMENT RATIO          1.00
REPLACEMENT COST NEW (RCN)    708,060    MARKET ADJUSTMENT                   0

                    FINAL COST APPROACH VALUE =   538,126
```

Whenever the entry for a building is complete, or a change is made on either the DIME, COMC, COMR, or COMS screen, the building cost calculations are performed.

2. Commercial Office Condo Valuation

For the 2017 Revaluation, commercial condominiums are valued using the cost approach with consideration for the market sales. The common area parcel is valued by adding the total land value, building replacement cost new value less depreciation and the miscellaneous improvement value less depreciation for a total parcel value. This value then represents the total value of all land and improvements within the condominium complex (the common elements).

Each individual unit is then sketched on individual parcels for individual and appropriate valuation. The percent ownership each individual parcel has in the common elements is determined by the condominium declarations which are normally recorded at the register of deeds.

In some instances, the condominium declarations are not definitive as to the percent ownership. In these cases, the percent ownership is arrived by dividing the heated area of the individual unit by the total heated area of the building on the common area parcel. Once the percent ownership is finalized, the land value on the common area card is then distributed to each individual card based on their percent ownership calculated. All interior and exterior common areas values on the common area parcel are totaled and then distributed to each individual parcel using the determined percent ownership. This value appears in the miscellaneous improvement section under the code CCI, Common Area Interest.

The land value and common area value (CCI) are then added to the building value to arrive at the individual parcel value for each unit.

3. Master Tables For Commercial

These tables are just some of the master tables needed to value a commercial property.
Some of the master tables that are used in the processing of commercial buildings are listed below.

Appraisal Options (AOPT)
Building Section Types (SECT)
Commercial Interior Finish Codes (CAIN)
Commercial Exterior Wall Codes (CWAL)
Commercial Exterior Wall Rates (CWAR)
Commercial Quality Grades (CQAL)
Commercial "A" Refinements Definition (CAR1/2) Commercial "C" Refinements Definition (CCR1/2) Commercial Condition Codes (CCON)
Commercial Depreciation (CDEP)
Commercial Building Characteristics (COMC)
Commercial Miscellaneous Refinements (COMR) Commercial Building Sections (COMS) Commercial Building Dimensions (DIME) Commercial Structure Types (STRC)
Commercial Miscellaneous Building Sections (CMIS) Value Summary (VALU)

The Value summary screen refers to the final overall value that is place on a commercial property after the cost calculation is complete. Below are additional cost tables referenced in the cost approach.

Commercial Appraisal Options (AOPT)

```
 ACTION: R  SCREEN: AOPT USERID:
 --------------------- A P P R A I S A L   O P T I O N S -----------------
        --- JURISDICTION= 20 YEAR= 2017 ROLL= RR
                 NEW CONSTRUCTION YEAR BLDGS: 2016       CREATE ASMO RECORDS
  (Y/N): N NEW CONSTRUCTION YEAR MISC IMPR: 2016 LAND RATE DISPLAY (A/B/C): A
       DEPRECIATION YEAR BLDGS AND MISC IMPR: 2016   DUPLICATE OLD AA VALUES
                                                                   (Y/N): Y
                  RESIDENTIAL BASE CALCULATION METHOD
                 (A/C): A COMMERCIAL BASE CALCULATION
                                   METHOD (A/C): A
 USE CONDITION CODE OR CDU IN DEPR CALCULATIONS (C/D):  C
EFF/AGE OR EFF/AGE GROUP OR REMODELED YEAR (A/G/R): A
                  DEPTH ADJUSTMENT CALCULATION METHOD
        (A/P): P DEPRECIATION, PERCENT GOOD, MIXED IN
      TABLES (D/P/M): D CALCULATE MARKET ADJ ON MIXED
        BLDG PARCELS (Y/N): N CALCULATE MARKET ADJ ON
                              VACANT PARCELS (Y/N): N
 ALLOW LIFE AND DEPR/PCT-GD OVERRIDE ON MIMP (Y/N): Y
          ALWAYS CALCULATE COMR STD REFINEMENT TOTALS
           (Y/N): Y USE ALTERNATE RES AND MISC MARKET
                                  FACTORS (Y/N): N
```

Commercial / Industrial Building Section Types (SECT)

(SECT) screens in OASIS

```
ACTION: R  SCREEN: SECT USERID: RICH                    10/28/16   03:08:08 PM
H-  ---------------------------------------------------------------------------
    BUILDING SECTION TYPE TABLE
    ---------------------------------------------------------------------------
    JURI= 20   YEAR= 2017   ROLL= RR

    BLDG                BASE                          EXT                 RES
    SECT    SECTION     CALC    MISC AREA AMOUNTS     WALL   CAR   FLOOR LIVING
    TYPE  DESCRIPTION   FLAG  1ST FLOOR  UPPER FLOOR  REQD STORAGE LEVEL  FLAG
    ===  --------------  -   ----------- -----------   -      -      -     -
  01- APC  APARTMENT TEST  Y          0.00        0.00   Y      N
  02- ATF  ATTIC FINIS XX  N          0.00        0.00   Y      N
  03- ATS  ATTIC STORAGE   N          6.61        0.00   Y      N
  04- ATU  ATTIC UNFIN XX  N          0.00        0.00   Y      N
  05- BAS  BASE BLDG AREA  Y          0.00        0.00   Y      N
  06- BMF  BASEMENT FIN    N         38.51        0.00   N      N
  07- BMU  BASEMENT UNFIN  N         16.75        0.00   N      N
  08- BRF  BONUS RM FINIS  N         48.15        0.00   N      N
  09- BRU  BONUS RM UNFIN  N         28.39        0.00   N      N
  10- BSF  BASE SEMI FIN   N         58.03        0.00   Y      N
  11- CAN  CANOPY TEST XX  N          0.00        0.00   N      N
  01- CAW  CAN COMM T  XX  N          0.00        0.00   N      N
  02- CCA  CNPY COMM EXCL  N         25.60        0.00   N      N
  03- CCB  CNPY COMM GOOD  N         23.50        0.00   Y      N
  04- CCC  CNPY COMM AVG   N         21.35        0.00   Y      N
  05- CCD  CNPY COMM FAIR  N         17.10        0.00   N      N
  06- CCE  CNPY COMM POOR  N         12.80        0.00   N      N
  07- CPF  CARPORT FINISH  N         14.43        0.00   N      Y
  08- CPU  CARPORT UNFIN   N         11.08        0.00   N      Y
  09- CUB  COM UTIL AB AV  N         53.50        0.00   Y      N
  10- CUC  COM UTIL AVG    N         48.15        0.00   Y      N
  11- CUD  COM UTIL BL AV  N         42.80        0.00   Y      N
```

(SECT) screens continued…

01- CWM	CAR WASH	N	0.00	0.00	Y	N
02- DCF	DET CP F TE XX	N	0.00	0.00	N	N
03- DCP	DETACHED CARPT	N	22.70	0.00	N	Y
04- DCU	DET CP UN T XX	N	0.00	0.00	N	N
05- DGF	DET GR F TE XX	N	0.00	0.00	N	N
06- DGR	DET-GARAGE XX	N	0.00	0.00	Y	Y
07- DGU	DET GR UN T XX	N	0.00	0.00	N	N
08- DSF	DET STO F T XX	N	0.00	0.00	N	N
09- DSU	DET STO U T XX	N	0.00	0.00	N	N
10- DUF	DETATCHED T XX	N	0.00	0.00	N	N
11- DUU	DET UT UN T XX	N	0.00	0.00	N	N
01- EAC	ENCL AREA AVER	N	48.31	0.00	Y	N
02- EAD	GRF/CPF CONVER	N	38.30	0.00	N	N
03- EPF	ENCL PORCH FIN	N	38.15	0.00	Y	N
04- EPU	ENCL PORCH UF	N	32.68	0.00	Y	N
05- FLR	FLORIDA ROOM	N	63.60	0.00	Y	N
06- GRF	GARAGE FINISH	N	24.77	0.00	Y	Y
07- GRU	GARAGE UNFIN	N	20.14	0.00	Y	Y
08- LPB	LOADG PLAT BLC	N	22.55	0.00	N	N
09- LPC	LOADG PLAT CON	N	22.55	0.00	N	N
10- LPF	LO PL IND TEST	N	0.00	0.00	N	N
11- LPM	LOADG PLAT OPN	N	25.50	0.00	N	N
01- LPW	LO PL C I T XX	N	0.00	0.00	N	N
02- LSF	LOWER STY FIN	N	56.75	0.00	N	N
03- OFG	OFFICE G TE XX	N	0.00	0.00	N	N
04- OPF	OPEN PORCH FIN	N	21.80	0.00	N	N
05- OPU	OPEN POR UNFIN	N	18.24	0.00	N	N
06- RAG	ROOM OVER G XX	N	0.00	0.00	N	N
07- ROG	ROOM OVER G XX	N	0.00	0.00	N	N
08- SFA	SQ FT ADDED XX	N	0.00	0.00	N	N
09- SHA	SHELTER	N	11.75	0.00	N	N
10- SHB	SHELTER	N	11.20	0.00	N	N
11- SHC	SHELTER	N	10.70	0.00	N	N
01- SHD	SHELTER	N	10.15	0.00	N	N
02- SHE	SHELTER	N	8.55	0.00	N	N
03- SPF	SCREEN PORCH F	N	28.58	0.00	N	N
04- SPN	SALES PRO T XX	N	0.00	0.00	N	N
05- SPU	SCREEN PORCH U	N	25.02	0.00	N	N
06- SSA	STOR SALE T XX	N	0.00	0.00	N	N
07- SSB	SELF SERV ABAV	N	129.55	0.00	Y	N
08- SSC	SELF SERV AVG	N	117.75	0.00	Y	N
09- SSD	SELF SERV BLAV	N	106.00	0.00	Y	N
10- USB	UPPER STY B XX	N	0.00	0.00	Y	N
11- USF	UPPER STY FIN	N	48.15	0.00	Y	N
01- USU	UPPER STY UNFI	N	31.28	0.00	Y	N
02- UTF	UTILITY FIN	N	19.53	0.00	Y	N
03- UTU	UTILITY UNFIN	N	14.78	0.00	Y	N
04- WDK	WOOD DECK	N	15.26	0.00	N	N

Commercial / Industrial Interior Finish Rates (CAIN).

INT FIN CODES	DESCRIPTION	SQ FT RATE
ADC	AUDITORIUM	41.41
ADS	AUTO DEALERSHIP	33.18
AMC	AUTOMOTIVE REPAIR SR	15.91
APT	APARTMENT	37.52
ARM	ARMORIES	26.58
BAR	BAR/LOUNGE	28.40
BKC	BANK	86.46
BOL	BOWLING ALLEY	38.50
BQH	BANQUET HALL	42.22
CCB	COUNTRY CLB GOLF/TEN	49.94
CFC	CHURCH FELLOWSHIP	40.98
CHA	CLUB HOUSE APARTMENT	42.08
CHC	CHURCH	49.22
CLB	CLUB	34.54
CLM	CLUB IN MOTEL	25.91
COF	CONDO OFFICE	55.28
CSC	COMM SHPG CENTER	29.32
CVC	CONVENIENCE STORE	33.55
CWA	CAR WASH AUTOMATIC	17.39
CWM	CAR WASH DRIVE-THRU	11.88
DAY	DAY CARE	48.79
DCC	DISCOUNT STORES	23.61
DOR	DORMITORY	45.75
DSC	DEPARTMENT STORE	37.08
EVC	EVENT CENTER	51.43
FFC	FAST FOOD REST	62.48
FHC	FUNERAL HOME	42.48
FIC	FITNESS CENTER	27.78
FRA	FRATERNITY HOUSE	38.94
FSF	FIRE STAT FULL STAFF	53.02
FSV	FIRE STAT VOLUNTEER	22.98
GYM	GYMNASIUM	40.65
HIC	HOME IMPROVEMENT CNT	8.80
HOT	HOTEL	45.16
HPC	HOSPITAL	87.56
IDE	INDUSTRIAL ENGINEER	20.84
KEN	KENNELS	38.57
LDR	LAUNDRY/DRY/CLEANERS	21.18
LIB	LIBRARY	62.32
LND	LAUNDROMAT	27.50
MAU	MAUSOLEUMS (CRYPT)	122.93
MDC	MEDICAL OFFICE	57.75
MHV	HEAVY MANUFACTURING	35.04
MIL	TEXTILE MILL	18.26
MKC	SUPER MARKET	28.55
MLT	LIGHT MANUFACTURING	9.46
MOC	MEDICAL OFFICE CONDO	61.30
MOH	MAINT & STOR HANGAR	3.69
MOT	T-HANGER	3.26

Commercial / Industrial Interior Finish Rates (CAIN) continued.

INT FIN CODES	DESCRIPTION	SQ FT RATE
MTC	MOTEL	36.52
NHC	NURSING HOME	55.17
NSC	NEIGH SHOP CENTER	27.34
OFC	OFFICE	53.13
OFH	OFFICE SPACE HOTEL	39.82
OFM	OFFICE MULTI PURPOSE	39.82
OPC	OUTPATIENT CENTER	92.29
OWH	OLD WAREHSE W/OTHER	18.26
PDS	POST OFF DIST & SORT	29.03
POC	POST OFFICE BRANCH	66.00
PSC	PERSONAL SERVICE	21.50
RPC	REPAIR SERVICE	21.41
RSC	REGIONAL MALL	40.46
RTC	RETAIL STORE AVG	25.43
RTM	RETAIL MULTI PURPOSE	24.86
SCH	SCHOOL EDUCATIONAL	60.94
SDS	SUPER DISCOUNT STORE	21.77
SGC	SERVICE GARAGE	10.89
SKT	SKATING RINK	38.12
SRC	SHOWROOM	28.41
SSB	SELF SERVICE BOOTH	20.96
SSC	STRIP SHOPPING CENTR	27.65
STC	STORAGE GARAGE	5.70
THC	THEATER	40.65
TRC	TABLE RESTAURANT	44.00
TRM	TABLE REST MOTEL	44.00
UFN	UTILITY FINISHED	3.56
UUN	UTILITY UNFINISHED	3.43
VHC	VET ANIMAL HOSPITAL	58.96
WDS	WAREHOUSE DISTRBTN	7.10
WMI	WAREHOUSE INDOOR MINI	6.24
WMN	WAREHOUSE MINI	5.78
WST	WAREHOUSE STORAGE	3.43

Commercial / Industrial Exterior Wall Rates (CWAL / CWAR)

EXTERIOR WALL RATES (BASE

AREA) COMMERCIAL

CODE	WALL TYPE	RATE
01	Minimal Siding (Plywood, Corrugated Metal)	$13.39
02	Aluminum Siding	$14.93
03	Masonite / Asbestos Siding/Old Wood Siding	$15.57
04	Vinyl Siding	$14.08
05	Wood Siding Deluxe (Pine, Cedar, Cypress, Wood Shingle)	$16.40
06	Stucco / Frame	$18.53
07	Concrete Block	$19.91
09	Concrete Block / Stucco	$20.50
10	Brick Veneer / Concrete Block	$23.87
11	Brick Veneer / Frame	$20.79
12	Brick / Wood Combination	$17.74
13	Stone Veneer / Frame	$29.25
14	Cement Brick	$19.26
15	Prefinished Metal ("S" Structures)	$8.37
16	Precast Panel (same as Tilt-Up Panels)	$18.97
17	Metal and Glass Panels	$31.91
18	Unfinished / Party Wall	$0.00
19	Industrial Ribbed Metal Siding (Use Code 15)	$7.54
20	Concrete Block 12"	$22.66
21	Logs	$27.43
22	Concrete Siding (Concrete Boards)	$15.55
23	Brick (Regular Brick - Old Industrial Buildings)	$17.77
27	Stone Masonry (Probably Not Any)	$35.01
32	Building Front Above Average	$34.60
33	Building Front Average	$28.82
34	Building Front Below Average	$23.38
35	Solarium	$58.51
36	Overhead Doors	$17.50
37	Ribbed Concrete Block / Split Stone	$17.90
38	Tilt - Up Panels (Use Code 16)	$18.97
39	Pre-Engineered Panels "S" (Enamel Walls - Old SVC Stations)	$19.43
40	Superior Siding	$19.00
42	Stainless Steel or Bronze / Glass	$49.66
99	Unknown	$0.00

Commercial / Industrial Structure Codes and Rates (STRC)

STRUCTURE TYPE	DESCRIPTION	MAX IMUM STORIES	SQ.FT.RATE
A	FIRE PROOF STEEL STRUCTURE	3	$27.69
	DEPRECIATION MODEL 001	6	$28.24
		9	$28.81
		12	$29.34
		15	$29.91
B	REINFORCED CONCRETE	3	$26.30
	DEPRECIATION MODEL 001	6	$26.83
		9	$27.35
		12	$27.86
		15	$28.39
C	CONCRETE MASONRY	3	$20.64
	DEPRECIATION MODEL 002	6	$21.07
		9	$21.48
		12	$21.89
		15	$22.31
D	WOOD / LIGHT STEEL	3	$18.86
	DEPRECIATION MODEL 003	6	$19.23
		9	$19.61
		12	$20.02
		15	$20.42
S	PRE-ENGINEERED STEEL FRAME	3	$15.08
	DEPRECIATION MODEL 004	6	$15.37
		9	$15.67
		12	$15.99
		15	$16.31
P	POLE FRAME CONSTRUCTION	3	$10.76
	DEPRECIATION MODEL 005	6	$10.99
		9	$11.19
		12	$11.40
		15	$11.64

Commercial / Industrial Condition Codes (CCON)

COMMERCIAL CONDITION CODES	DESCRIPTION
E	EXCELLENT
G	GOOD
A	AVERAGE
F	FAIR
P	POOR
U	UTILITY
S	SALVAGE

Commercial / Industrial Quality Grades and Modifiers (CQAL)

```
ACTION: R  SCREEN: CQAL USERID:
-----------  C O M M E R C I A L   Q U A L I T Y   G R A D E S  -------
     ---- JURI= 20          YEAR= 2017            ROLL= RR

     QUALITY                           GRADE
      GRADE       DESCRIPTION        MODIFIER%
       ===    --------------------      ---
       150    GRADE E                    75
       235    GRADE D-                   79
       250    GRADE D                    85
       265    GRADE D+                   91
       335    GRADE C-                   91
       350    GRADE C                   100
       370    GRADE C+                  111
       435    GRADE B-                  111
       450    GRADE B                   120
       470    GRADE B+                  133
       535    GRADE A-                  133
       550    GRADE A                   145
       570    GRADE A+                  160
       630    GRADE AA-                 160
       650    GRADE AA                  200
       670    GRADE AA+20               240
       695    GRADE AA+                 290
```

Commercial Refinements (CAR1 / CAR2)

```
ACTION: R  SCREEN: CAR1 USERID:
-----  C O M M E R C I A L   R E F I N E M E N T S   D E F I N I T I O N -
---- JURI= 20           YEAR= 2017                   ROLL= RR         C-
USE RCOD TABLE
                                                     N-VALUE PER COUNT
REFINE                 ENTRY    MIN    MAX    $$$        F-RATE PER SF OF L/G
NUMBER  DESCRIPTION   C/N/F/P  COUNT  COUNT  +/-/N  L/G  P-RATE PER % OF L/G
 ----   ------------    -     ----   ----     -     -   ---------------------
 CB01   4-FIX BATHS      N        0    300     +     L   5,935.00
 CB02   3-FIX BATHS      N        0    200     +     L   4,450.00
 CB03   2-FIX BATHS      N        0    170     +     L   2,965.00
 CB04   EXTRA-FIX        N        0    999     +     L   1,485.00
 CB05   ELEVATORS        N        0     70     +     L     70


 CB06   ELV LANDINGS     N        0     70     +     L     70


 CB07   RES UNITS        N        0   9999     +     L   7,430.00
 CB08   ESCALATORS       N        0     99     +     L       0.00
 CB09   KITCHENS         N        0   9999     +     L   1,832.00
 CB10   FIREPLACES       N        0   9999     +     L   3,075.00
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ACTION: R  SCREEN: CAR2 USERID:
-----  C O M M E R C I A L   R E F I N E M E N T S   D E F I N I T I O N
----- JURI= 20          YEAR= 2017                   ROLL= RR
       C-USE RCOD TABLE
                                                   N-VALUE PER COUNT
REFINE                 ENTRY    MIN    MAX    $$$        F-RATE PER SF OF L/G
NUMBER  DESCRIPTION   C/N/F/P  COUNT  COUNT  +/-/N  L/G  P-RATE PER % OF L/G
 ----   ------------    -     ----   ----     -     -   ---------------------
 CB11   5-FIX BATHS      N        0    200     +     L   7,414.00
 CB12   HTL XTR CRDS     C
 CB13   INC ADJUST       N        0    200     N     L       0.00
 CB14   EXP ADJUST       N        0    200     N     L       0.00
 CB15   CAP ADJUST       N        0   2500     N     L       0.00
 CB16   OCCUP OVRD       N        0    100     N     L       0.00
 CB17   SELECT MTHD      C
 CB18   OVRD INC YR      N        0   2017     N     L       0.00

 CS01   BSMT PCT         P                     +     G      15.46
 CS02
 CS03
 CS04
 CS05        A/C         F                     +     L       7.62
 CS06        SPRK        F                     +     L       3.19
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Commercial / Industrial Miscellaneous Building Refinements (CMIS / COMR)

Other Miscellaneous Refinement Sections and Rates.

CODE	DESCRIPTION	UNIT	RATE
BMB	BASEMENT FINISHED ABOVE AVERAGE	SF	$53.12
BMC	BASEMENT FINISHED AVERAGE	SF	$48.29
BMD	BASEMENT FINISHED BELOW AVERAGE	SF	$43.45
BME	BASEMENT FINISH POOR	SF	$38.61
BMS	BASEMENT UNFINISHED AVERAGE	SF	$19.23
ES1	ESCALATOR	UT	$142,058
ES2	ESCALATOR	UT	$146,312
ES3	ESCALATOR	UT	$150,751
ES4	ESCALATOR	UT	$158,704
ES5	ESCALATOR	UT	$159,940
ES6	ESCALATOR	UT	$164,230
ES7	ESCALATOR	UT	$164,439
ES8	ESCALATOR	UT	$175,353
EXS	EXTERIOR STAIR	SF	$214
E01	ELEVATOR	UT	$33,079
E02	ELEVATOR	UT	$39,012
E03	ELEVATOR	UT	$44,945
E04	ELEVATOR	UT	$50,878
E05	ELEVATOR	UT	$56,811
E06	ELEVATOR	UT	$62,744
E07	ELEVATOR	UT	$68,677
E08	ELEVATOR	UT	$74,610
E09	ELEVATOR	UT	$80,371
E10	ELEVATOR	UT	$86,774
E11	ELEVATOR	UT	$97,652
E12	ELEVATOR	UT	$104,055
E13	ELEVATOR	UT	$111,583
E14	ELEVATOR	UT	$123,104
E15	ELEVATOR	UT	$130,746
E16	ELEVATOR	UT	$138,618
E17	ELEVATOR	UT	$146,146
E18	ELEVATOR	UT	$151,906
E19	ELEVATOR	UT	$160,994
E20	ELEVATOR	UT	$172,515
E21	ELEVATOR	UT	$178,276
E22	ELEVATOR	UT	$184,036
E23	ELEVATOR	UT	$189,797
E24	ELEVATOR	UT	$195,729
E25	ELEVATOR	UT	$201,662
E26	ELEVATOR	UT	$207,594
E27	ELEVATOR	UT	$213,527
E28	ELEVATOR	UT	$219,459
E29	ELEVATOR	UT	$225,392

Other Miscellaneous Refinement Sections and Rates continued.

CODE	DESCRIPTION	UNIT	RATE
E30	ELEVATOR	UT	$231,325
E31	ELEVATOR	UT	$237,257
E32	ELEVATOR	UT	$243,190
E33	ELEVATOR	UT	$249,122
E34	ELEVATOR	UT	$255,055
E35	ELEVATOR	UT	$260,987
E36	ELEVATOR	UT	$266,920
E37	ELEVATOR	UT	$272,853
E38	ELEVATOR	UT	$278,785
FEA	FIRE ESCAPE ADDITIONAL FLOORS	UT	$3,052
FES	FIRE ESCAPE 2 STORY	UT	$5,456
LFB	LOFT ABOVE AVERAGE	SF	$5.94
LFC	LOFT AVERAGE	SF	$5.23
LFD	LOFT BELOW AVERAGE	SF	$4.46
LRI	LOCKER ROOM INDUSTRIAL	SF	$30.31
MZD	MEZZANINE DISPLAY	SF	$27.72
MZI	MEZZANINE INDUSTRIAL	SF	$20.85
MZO	MEZZANINE OFFICE	SF	$35.53
MZR	MEZZANINE RETAIL	SF	$35.53
MZS	MEZZANINE STORAGE	SF	$19.91
MZU	MEZZANINE UNFINISHED	SF	$12.27
POOL	POOL INDOOR	SF	$35.59
SPA	INDOOR SPA	SF	$34.54
VTM	VAULT MONEY	SF	$144.27
VTR	VAULT RECORD	SF	$27.72

Passenger Elevators

ELECTRIC

POUNDS	1500	2000	2500	3000	4000	5000
STOP						
2	E08	E10	E11	E12	E14	E15
3	E09	E10	E12	E13	E14	E16
4	E10	E11	E12	E13	E15	E17
5	E10	E12	E13	E14	E16	E18
6	E11	E13	E14	E15	E17	E19
7	E12	E13	E15	E16	E18	E19
8	E13	E14	E15	E16	E18	E20
9	E13	E15	E16	E17	E19	E21
1	E14	E16	E17	E18	E20	E22
1	E15	E16	E18	E19	E21	E23

Freight Elevators

ELECTRIC

POUNDS	2500	4000	5000	6000	8000	10000
STOPS						
2	E10	E11	E11	E12	E12	E13
3	E11	E12	E12	E13	E13	E14
4	E12	E13	E14	E14	E15	E16
5	E13	E14	E15	E15	E16	E17
6	E14	E15	E16	E16	E17	E18
7	E15	E16	E17	E17	E18	E20
8	E16	E17	E18	E19	E20	E21
9	E17	E18	E19	E20	E21	E22
10	E18	E19	E20	E21	E22	E24
11	E19	E20	E21	E23	E23	E25

Passenger Elevators

HYDRAULIC

POUNDS	1500	2000	2500	3000	4000	5000
STOPS						
2	E05	E06	E07	E08	E10	E11
3	E07	E08	E09	E10	E11	E13
4	E08	E09	E11	E12	E13	E15
5	E10	E11	E12	E13	E15	E16
6	E11	E12	E14	E15	E16	E18
7	E12	E14	E15	E16	E18	E20
8	E14	E15	E17	E18	E20	E22
9	E15	E16	E18	E19	E21	E23
10	E16	E18	E20	E21	E23	E25
11	E18	E19	E21	E23	E24	E27

Freight Elevators

HYDRAULIC

POUNDS	2000	3000	4000	5000	6000	8000
STOPS						
2	E04	E05	E05	E06	E06	E06
3	E05	E06	E06	E07	E07	E08
4	E06	E07	E07	E08	E08	E09
5	E07	E08	E08	E09	E10	E10
6	E08	E09	E09	E10	E11	E11
7	E09	E10	E11	E11	E12	E13
8	E10	E11	E12	E12	E13	E14
9	E11	E12	E13	E13	E14	E15
10	E12	E13	E14	E14	E15	E16
11	E13	E14	E15	E15	E16	E17

Six stops or less use Hydraulic unless you know for a fact that the elevator is Electric.

Elevator Charts

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Commercial / Industrial Depreciation Model 001 (Structure Type A and B) (CDEP)

EFFECTIVE AGE	CONDITION E	G	A	F	P	U	S
1	0	0	1	2	3	95	99
2	0	1	2	3	5	95	99
3	1	1	2	5	6	95	99
4	1	2	3	6	8	95	99
5	1	3	4	8	10	95	99
6	2	3	5	10	12	95	99
7	2	4	6	12	14	95	99
8	3	5	7	14	16	95	99
9	3	6	8	15	18	95	99
10	4	7	9	17	19	95	99
11	4	8	10	19	21	95	99
12	5	9	11	20	23	95	99
13	5	11	12	21	24	95	99
14	6	12	13	21	25	95	99
15	7	13	14	22	26	95	99
16	7	14	15	23	27	95	99
17	8	15	15	24	28	95	99
18	9	15	16	25	29	95	99
19	9	16	17	26	30	95	99
20	10	17	18	27	31	95	99
21	11	18	20	27	32	95	99
22	12	18	21	28	33	95	99
23	13	19	22	29	33	95	99
24	13	20	23	30	34	95	99
25	14	21	24	31	35	95	99
26	15	21	25	32	36	95	99
27	15	22	26	33	37	95	99
28	16	23	27	34	37	95	99
29	17	24	28	36	38	95	99
30	18	25	30	37	39	95	99
31	19	26	32	38	41	95	99
32	20	27	34	39	43	95	99
33	21	29	36	41	45	95	99
34	22	30	37	42	46	95	99
35	23	31	38	43	47	95	99
36	24	32	39	44	48	95	99
37	25	33	40	45	49	95	99
38	26	34	41	46	51	95	99
39	26	35	42	47	51	95	99
40	27	36	43	48	52	95	99
41	28	37	44	49	53	95	99
42	29	38	45	50	54	95	99
43	30	39	46	51	54	95	99
44	30	40	47	52	55	95	99
45	31	41	48	53	56	95	99
46	32	42	49	54	57	95	99
47	33	43	50	55	58	95	99
48	34	44	51	56	59	95	99
49	35	45	52	57	60	95	99
50	36	46	53	58	61	95	99
51 +	36	46	53	58	61	95	99

Commercial / Industrial Depreciation Model 002 (Structure Type C) (CDEP)

EFFECTIVE AGE	CONDITION E	G	A	F	P	U	S
1	1	2	3	6	7	95	99
2	2	3	4	8	9	95	99
3	3	4	5	10	11	95	99
4	4	5	6	12	13	95	99
5	5	6	8	15	16	95	99
6	6	7	9	17	19	95	99
7	7	8	10	19	21	95	99
8	8	10	12	21	24	95	99
9	9	11	14	23	27	95	99
10	10	13	16	25	30	95	99
11	11	15	18	27	32	95	99
12	12	16	19	29	34	95	99
13	14	18	21	30	36	95	99
14	15	19	22	31	37	95	99
15	15	20	23	33	38	95	99
16	16	21	24	34	39	95	99
17	17	22	25	35	40	95	99
18	18	23	26	36	41	95	99
19	18	24	27	37	42	95	99
20	19	25	28	38	43	95	99
21	20	26	30	39	44	95	99
22	21	27	31	40	45	95	99
23	22	28	33	41	46	95	99
24	24	29	34	43	47	95	99
25	25	31	36	44	49	95	99
26	26	33	38	45	50	95	99
27	27	34	40	46	51	95	99
28	28	36	42	48	53	95	99
29	29	37	43	49	54	95	99
30	29	38	44	51	55	95	99
31	30	39	45	52	56	95	99
32	31	40	47	53	57	95	99
33	32	41	48	54	58	95	99
34	33	42	49	55	59	95	99
35	34	43	50	57	60	95	99
36	34	44	51	58	61	95	99
37	35	45	52	59	62	95	99
38	36	46	53	60	63	95	99
39	37	47	54	61	64	95	99
40	38	48	55	62	65	95	99
41	38	49	56	63	66	95	99
42	39	50	57	64	67	95	99
43	40	51	58	65	68	95	99
44	41	52	59	66	69	95	99
45	42	53	60	67	70	95	99
46	42	54	61	68	71	95	99
47	43	55	62	69	72	95	99
48	44	56	63	70	73	95	99
49	45	57	64	71	74	95	99
50	46	58	65	72	75	95	99
51 +	46	58	65	72	75	95	99

Commercial / Industrial Depreciation Model 003 (Structure Type D) (CDEP)

EFFECTIVE AGE	CONDITION E	G	A	F	P	U	S
1	1	2	3	6	7	95	99
2	2	3	4	8	9	95	99
3	3	4	5	10	11	95	99
4	4	5	6	12	13	95	99
5	5	6	8	15	16	95	99
6	6	7	9	17	19	95	99
7	7	8	10	19	21	95	99
8	8	10	12	21	24	95	99
9	9	11	14	23	27	95	99
10	10	13	16	25	30	95	99
11	11	15	18	27	32	95	99
12	12	16	19	29	34	95	99
13	14	18	21	30	36	95	99
14	15	19	22	31	37	95	99
15	15	20	23	33	38	95	99
16	16	21	24	34	39	95	99
17	17	22	25	35	40	95	99
18	18	23	26	36	41	95	99
19	18	24	27	37	42	95	99
20	19	25	28	38	43	95	99
21	20	26	30	39	44	95	99
22	21	27	31	40	45	95	99
23	22	28	33	41	46	95	99
24	24	29	34	43	47	95	99
25	25	31	36	44	49	95	99
26	26	33	38	45	50	95	99
27	27	34	40	46	51	95	99
28	28	36	42	48	53	95	99
29	29	37	43	49	54	95	99
30	29	38	44	51	55	95	99
31	30	39	45	52	56	95	99
32	31	40	47	53	57	95	99
33	32	41	48	54	58	95	99
34	33	42	49	55	59	95	99
35	34	43	50	57	60	95	99
36	34	44	51	58	61	95	99
37	35	45	52	59	62	95	99
38	36	46	53	60	63	95	99
39	37	47	54	61	64	95	99
40	38	48	55	62	65	95	99
41	38	49	56	63	66	95	99
42	39	50	57	64	67	95	99
43	40	51	58	65	68	95	99
44	41	52	59	66	69	95	99
45	42	53	60	67	70	95	99
46	42	54	61	68	71	95	99
47	43	55	62	69	72	95	99
48	44	56	63	70	73	95	99
49	45	57	64	71	74	95	99
50	46	58	65	72	75	95	99
51 +	46	58	65	72	75	95	99

Commercial / Industrial Depreciation Model 004 (Structure Type S) (CDEP)

EFFECTIVE AGE	CONDITION E	G	A	F	P	U	S
1	0	1	2	3	4	95	99
2	1	2	3	5	7	95	99
3	2	3	5	7	10	95	99
4	4	5	6	10	12	95	99
5	5	6	8	12	14	95	99
6	6	7	9	15	17	95	99
7	7	8	10	18	20	95	99
8	8	10	12	20	23	95	99
9	9	11	13	23	25	95	99
10	11	13	15	25	27	95	99
11	12	15	16	27	29	95	99
12	13	16	18	29	32	95	99
13	14	17	20	30	35	95	99
14	15	18	21	31	36	95	99
15	16	19	22	32	37	95	99
16	17	20	23	33	38	95	99
17	18	21	24	34	39	95	99
18	18	22	25	35	40	95	99
19	19	23	26	36	41	95	99
20	20	24	28	37	42	95	99
21	21	25	30	38	43	95	99
22	21	26	31	39	44	95	99
23	22	27	33	40	45	95	99
24	24	29	35	42	46	95	99
25	25	30	36	43	47	95	99
26	26	32	38	44	48	95	99
27	28	34	40	45	49	95	99
28	29	35	41	46	50	95	99
29	29	36	42	47	51	95	99
30	30	37	43	48	52	95	99
31	31	38	44	49	53	95	99
32	32	39	45	50	54	95	99
33	33	40	46	51	55	95	99
34	34	41	47	52	56	95	99
35	35	42	48	53	57	95	99
36	35	43	49	54	58	95	99
37	36	44	50	55	59	95	99
38	37	45	51	56	60	95	99
39	38	46	52	57	61	95	99
40	39	47	53	58	62	95	99
41	39	48	54	59	63	95	99
42	40	49	55	60	64	95	99
43	41	50	56	61	65	95	99
44	42	51	57	62	66	95	99
45	43	52	58	63	67	95	99
46	43	53	59	64	68	95	99
47	44	54	60	65	69	95	99
48	45	55	61	66	70	95	99
49	46	56	62	67	71	95	99
50	47	57	63	68	72	95	99
51 +	47	57	63	68	72	95	99

Commercial / Industrial Depreciation Model 005 (Structure Type P) (CDEP)

EFFECTIVE AGE	CONDITION E	G	A	F	P	U	S
1	0	1	2	3	4	95	99
2	1	2	3	5	7	95	99
3	2	3	5	7	10	95	99
4	4	5	6	10	12	95	99
5	5	6	8	12	14	95	99
6	6	7	9	15	17	95	99
7	7	8	10	18	20	95	99
8	8	10	12	20	23	95	99
9	9	11	13	23	25	95	99
10	11	13	15	25	27	95	99
11	12	15	16	27	29	95	99
12	13	16	18	29	32	95	99
13	14	17	20	30	35	95	99
14	15	18	21	31	36	95	99
15	16	19	22	32	37	95	99
16	17	20	23	33	38	95	99
17	18	21	24	34	39	95	99
18	18	22	25	35	40	95	99
19	19	23	26	36	41	95	99
20	20	24	28	37	42	95	99
21	21	25	30	38	43	95	99
22	21	26	31	39	44	95	99
23	22	27	33	40	45	95	99
24	24	29	35	42	46	95	99
25	25	30	36	43	47	95	99
26	26	32	38	44	48	95	99
27	28	34	40	45	49	95	99
28	29	35	41	46	50	95	99
29	29	36	42	47	51	95	99
30	30	37	43	48	52	95	99
31	31	38	44	49	53	95	99
32	32	39	45	50	54	95	99
33	33	40	46	51	55	95	99
34	34	41	47	52	56	95	99
35	35	42	48	53	57	95	99
36	35	43	49	54	58	95	99
37	36	44	50	55	59	95	99
38	37	45	51	56	60	95	99
39	38	46	52	57	61	95	99
40	39	47	53	58	62	95	99
41	39	48	54	59	63	95	99
42	40	49	55	60	64	95	99
43	41	50	56	61	65	95	99
44	42	51	57	62	66	95	99
45	43	52	58	63	67	95	99
46	43	53	59	64	68	95	99
47	44	54	60	65	69	95	99
48	45	55	61	66	70	95	99
49	46	56	62	67	71	95	99
50	47	57	63	68	72	95	99
51 +	47	57	63	68	72	95	99

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X. MISCELLANEOUS IMPROVEMENT COST CALCULATION AND COST TABLES

1. MISCELLANEOUS IMPROVEMENTS COST CALCULATION PROCESS 259
A. Standard Miscellaneous Improvements 261
B. Non-Standard Miscellaneous Improvements 263
C. 2017 Miscellaneous Improvement Types 265
D. Miscellaneous Improvements Depreciation Tables (M10 Thru M60)..... 317

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X. MISCELLANEOUS IMPROVEMENT COST CALCULATION AND COST TABLES.

1. Miscellaneous Improvements Cost Calculation Process

INTRODUCTION

Miscellaneous improvements refer to any non-sketched improvement to the land. Miscellaneous improvements are user defined in a master table (MITY). Parcel-level data entry is performed with transaction MIMP. Miscellaneous improvements may be anything, such as pavement, fences, detached garages (which may optionally be non-base sketched sections), utility sheds, farm out- buildings, silos, swimming pools, canopies, loading docks, etc. The miscellaneous improvements capability provides a place to define, code, and price anything which is either not handled by the residential or commercial characteristics screens or is not handled by them to the user's satisfaction. Miscellaneous improvements use straight-line or table generated depreciation. Users may also determine the value unit type, minimum percent good, economic life of each item, and enter up to five different rates and up to 6 different cost calculation formulas. This generic type of functionality creates many uses for the miscellaneous improvements feature. There are screens to do the following functions in this section:

The Miscellaneous Improvements (MIMP) screen calculates the value of a miscellaneous improvement. When a change, or delete action is entered on the MIMP screen the system will calculate or re-calculate a miscellaneous improvement value for all the miscellaneous improvements that are on the parcel. The Miscellaneous Improvements screen is used to define improvements to a property that are not directly related to a building.

Example of a MIMP screen from OASIS is shown.

```
ACTION: R SCREEN: MIMP USERID:                                  CHANGE-REASON:
 H-  ----------  M I S C E L L A N E O U S   I M P R O V E M E N T S  -----
     ----- JU= 20 RO= RR PARC=                          YR= 2017 ALTKEY=
     0906310
                                                      DYR= 2017 STAT: ACTIVE

     ID    TYPE   LAND  UT   NUMBER UNIT    LN/DI  WD/HT   GRD   LIFE        RCN
     -     -      -     -    MOD CODES      YRIN   COND    DEPR  OV        RCNLD
     -     NOTES  -     -  -              -      -       -     %COMPLT  MMAF
     IDX#
     ==    ---    --    --   -----------    ----   ----    --    --    ---------
 01- 01    UTM    01    SF         60.00      10      6    3     99          229
                                            1997   A        65                 80
                                                                               80

 02- 02    SHL    01    SF        144.00      12     12    2     99          723
                                            1997   F        75                181
                                                                              181

 03- 03    QUB    01    SF      1,224.00      34     36    3     99       28,902
                            3             2000   A        43            16,474
```

The Miscellaneous Improvement Types (MITY) table defines the calculation parameters for each type of miscellaneous improvement that can be entered.

Example of a MITY screen from OASIS is shown for demonstration purposes

```
only. ACTION: R SCREEN: MITY USERID:
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= UTF

               DESCRIPTION: UTILITY FRAME            CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
            MIN PERCENT GOOD:  15                     ECONOMIC
                          LIFE:              0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       16.150        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS
                                    ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +        0    4.04    2    +        0    2.55    3    +        0    3.23
 4             0    0.00                 0    0.00                 0    0.00
```

Miscellaneous Improvement Condition Codes (MCON) is an optional table that defines the valid condition codes for entry on the MIMP screen.

Example of a MCON screen from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: MCON USERID:
--------------------  MISCELLANEOUS IMPROVEMENT CONDITION CODES  --------
    ----- JURI= 20    ROLL= RR
         COND
         CODE     DESCR
          --     --
            -----
     1:   G      GOOD     BEST
     2:   A      AVG
     3:   F      FAIR
     4:   P      POOR
     5:
     6:
     7:
     8:
     9:
    10:
    11:
    12:                  WORST
```

Miscellaneous Improvement Depreciation (MDEP) is an optional table that defines the depreciation percent or the percent good that should be applied to the improvement.

Example of a MDEP screen from OASIS is shown for demonstration purposes only:

```
ACTION: R   SCREEN: MDEP USERID:
H-  ---------------    MISCELLANEOUS IMPROVEMENT DEPRECIATION       -------------
    -- JURI= 20  YEAR= 2017    ROLL= RR
    MODEL#= M10                                    ** VALUES ARE DEPRECIATION **

                   BEST  ----------------     CONDITION  ----------------WORST
    EFFECTIVE       01    02    03    04   05   06    07  08     09   10    11  12
      AGE           G     A     F     P
      ===          ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---   ---
      000           10   11    31    52
      001           12   13    35    55
      002           15   20    39    58
      003           20   25    43    61
      004           25   30    47    64
      005           30   35    51    70
      006           35   40    55    70
      007           40   45    59    73
      008           45   50    63    76
      009           50   55    65    77
      010           55   60    69    80
      999           60   65    75    85
```

There are basically, two types of miscellaneous improvements:

Standard Improvements

The Miscellaneous Improvement Type (MITY) table can be set up to contain a list of the most common miscellaneous improvements. The user can enter one of these improvements on a parcel by specifying the type and other pertinent data. The data elements that are required to calculate the depreciated value of the improvement are stored in the MITY table.

Non-standard Improvements

For non-standard miscellaneous improvements (those that do not exist in MITY), the user can enter a description and the depreciated cost of the improvement.

A. Standard Miscellaneous Improvements

The standard miscellaneous improvements provides the user with a great deal of flexibility in the calculation of both the replacement cost new (RCN) and the replacement cost new less depreciation (RCNLD) of the improvement. Market adjustment is also applied to miscellaneous improvements.

In the calculation of RCN, the user has the option of specifying up to 7 different calculation formulas. They are shown in a table on the next page. The user also has the ability to identify if an improvement is not finished for the next upcoming tax year by indicating a percent

complete. If entered and valid, the percent complete will be applied to the Miscellaneous Improvement replacement cost new value.

If the formula type is blank, the system calculates the RCN as the number of units (the system can optionally calculate the number of units as the length times the width) times the unit rate. The unit rate is found in the grade factors field in the Miscellaneous Improvement Types (MITY) table as indicated by the quality grade entered on the Miscellaneous Improvements (MIMP) screen.

If the formula type is 01 through 07, the system calculates the RCN according to the formula shown in the table using the three coefficients in the MITY table and then multiplies the result by the grade factor (as determined by the quality grade on MIMP).

In addition the system provides the ability to "modify" the calculated RCN value. These modifications can be a fixed dollar amount and/or a multiplication factor and are applied to the RCN before the grade factor is applied.

First, the user can define up to six modifications that can be applied to a miscellaneous improvement in the MITY table. Each of these modifications is assigned a 1-character code, a flat amount, and or a multiplication factor. For example, for an outside utility building, we can define 3 modifications:

---modification code "1" can define a concrete floor
---modification code "2" can define a dirt floor
---modification code "3" can define electricity

When the miscellaneous improvement is entered on a parcel, the user can apply up to four of these modifications to the parcel by entering the 1-character code on the MIMP screen. In our example, to apply the concrete floor to the utility framed building, we need to only enter the character "1" in one of the three modification code fields on MIMP.

Miscellaneous Improvement Calculation Formulas:

FT	Description	Formula
1	Total Value	# of units * unit rate
01	Area Formula[2]	C1 + (C2 * SQRT (Area)) + (C3 * Area)
02	Linear Foot	C1 * Length
03	Cylinder Area	C1 + C2 * (Height*Diameter)+C3* Diameter)^2
04	Quantity	C1
05	Linear Foot by Height / Depth	C1 * Length * Width + (C2 * length)
06	Cylinder Volume	C1 + C2 * Height * (Diameter)^2+ (C3 * (Diameter)^2
07	Elevator[3]	C1 + (C2 * Capacity) + (C3 * Speed) + (C4 * Capacity*Speed) + (C5 * Number of Stops)

1 - Formula type is blank.
2 -Area is entered in the number of unit‘s field or can be calculated as length times width.
3 -Capacity is entered in the number of units field. Speed is entered in the length/diameter field. Number of stops is entered in the width/height field.

In the calculation of RCNLD, the user has the option of calculating depreciated value using one of two methods.

The straight line method calculates the percent good by dividing the calculated age of the improvement by its economic life and then adjusting this value, if needed, by the minimum percent good that is entered in the MITY table. If there is no minimum percent good in MITY (a value of zero), the system assumes this value to be 20%. The age of the improvement is calculated as the miscellaneous improvement depreciation year from the Appraisal Options (AOPT) table minus the year installed (adjusted this value to zero if there is a negative result).

The model method uses the Miscellaneous Improvements Depreciation (MDEP) table to determine the percent good (if depreciation percent's are entered in MDEP, the system calculates the percent good as 100% minus depreciation percent). Using this method, the user must enter a valid condition code from the Miscellaneous Improvements Condition Code (MCON) table and the age of the improvement is calculated in the same manner as the straight line method. These two factors, along with the model number from the MITY table, are used to determine the percent good from MDEP.

B. Non-Standard Miscellaneous Improvements

If an improvement exists on a property that is not defined in the Miscellaneous Improvement Types (MITY) table, the user can still enter the improvements on the Miscellaneous Improvements (MIMP) screen.

The miscellaneous improvement type field is left blank. A description of the improvement is entered in the notes field. The user is required to enter the number of units, the economic life, the year installed, a "Y" in the override field, and the RCNLD for the improvement.

The system then calculates the RCN for the improvement. This value is calculated by determining the amount of depreciation that has already been applied to the improvement using the straight line method of depreciation.

In subsequent years, the value of the improvement will continue to depreciate from this calculated RCN base.

For example, let us define a non-standard miscellaneous improvement, 3-hole golf course, as having 50,000 square feet and an economic life of 20 years. It was built in 2011 and its value is estimated at $15,000. The valuation year is 2017 and the depreciation year (from AOPT) is 2016.

Determine the percent good that has already been applied to the value. The age is calculated as 2016 minus 2011 or 5 years old. The age (5) divided by the economic life tells us that the depreciation is 25% or the improvement is 75 percent good.

The RCN is calculated by dividing the $15,000 by 75%. The result is $20,000. In the next valuation year, assuming that the depreciation year also changes, a new RCNLD is calculated using the $20,000 as the base. In this case, the age becomes 6 years, the percent good is then calculated as 70% and the RCNLD becomes $14,000.

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C. 2017 Miscellaneous Improvement Types

Tabular List of Miscellaneous Improvements and Depreciation table.

MISCELLANEOUS IMPROVEMENTS LIST						
MIMP CODE	IMP	UNIT OF MEASURE	PROPERTY CLASS RESIDENTIAL	AGRICULTURAL	COMMERCIAL	LIFE TABLE
APH	AIRPLANE HANGER	SQUARE FOOT	X	X	X	M20
ASP	ASPHALT PAVING	SQUARE FOOT			X	M20
AXB	AUXILIARY BUILDING/GUEST HOUSE	SQUARE FOOT	X	X		M50
BBB	BULK BARN (BOX TYPE)	SQUARE FOOT	X	X		M25
BCH	BLEACHERS	SQUARE FOOT			X	M10
BFT	BAPTISMAL FONT	UNIT			X	M20
BGL	GRAIN BIN (LARGE)	UNIT	X	X	X	M20
BGM	GRAIN BIN (MEDIUM)	UNIT	X	X	X	M20
BGS	GRAIN BIN (SMALL)	UNIT	X	X	X	M20
BGX	GRAIN BIN (EXTRA LARGE)	UNIT	X	X	X	M20
BHS	BATH HOUSE	SQUARE FOOT	X	X	X	M30
BNB	BULK BARN (PORTABLE TYPE)	SQUARE FOOT	X	X		M20
BNC	BARN (CONCRETE)	SQUARE FOOT	X	X	X	M35
BNF	BARN (FRAME)	SQUARE FOOT	X	X	X	M30
BNP	POLE BARN (4 SIDES ENCLOSED)	SQUARE FOOT	X	X	X	M20
BNT	TOBACCO BARN (OLD STYLE)	SQUARE FOOT	X	X		M25
BOH	BOAT HOUSE	SQUARE FOOT	X	X		M15
BRS	RIGID STEEL BUILDING	SQUARE FOOT	X	X	X	M30
BRW	BRICK WALK	SQUARE FOOT			X	M15
BUL	BULKHEAD	LINEAL FOOT			X	M25
CAN	CANOPY	SQUARE FOOT	X	X		M15
CCI	COMMERCIAL CONDO INTEREST	UNIT		X		N/A
CLF	CHAIN LINK FENCE	LINEAL FOOT	X	X	X	M15
COP	CONCRETE PAVING	SQUARE FOOT			X	M15
CPF	CARPORT (FINISHED)	SQUARE FOOT	X	X		M20
CPU	CARPORT (UNFINISHED)	SQUARE FOOT	X	X		M20
CRB	GRANARY (OLD STYLE)	SQUARE FOOT	X	X		M30

MISCELLANEOUS IMPROVEMENT LIST CONTINUED						
MIMP	IMPROVEMENT TYPE	UNIT OF MEASURE MEASURE	RESIDENTIAL	AGRICULTURAL	COMMERCIAL	LIFE TABLE
CSW	CONCRETE SIDEWALK	SQUARE FOOT			X	M15
ELR	ELEVATOR (RESIDENTIAL TYPE)	UNIT	X	X		M20
EPF	PORCH (ENCLOSED FINISHED)	SQUARE FOOT	X	X		M25
FML	FENCE (METAL)	LINEAL FOOT			X	M20
FPP	FIREPLACES	UNIT	X	X	X	M20
FWD	FENCE (WOOD OR VINYL)	LINEAL FOOT			X	M20
GAZ	GAZEBO	SQUARE FOOT	X	X	X	M20
GC1	GOLF COURSE (CLASS 1)	UNIT			X	M40
GC2	GOLF COURSE (CLASS 2)	UNIT			X	M45
GC3	GOLF COURSE (CLASS 3)	UNIT			X	M50
GC4	GOLF COURSE (CLASS 4)	UNIT			X	M60
GCP	GOLF COURSE (PUTTING GREEN)	UNIT			X	M45
GHC	GREEN HOUSE (COMMERCIAL)	SQUARE FOOT			X	M20
GRA	GARAGE APARTMENT	SQUARE FOOT	X	X		M40
GRB	GARAGE (BRICK)	SQUARE FOOT	X	X		M40
GRC	GARAGE (CONCRETE BLOCK)	SQUARE FOOT	X	X		M40
GRF	GARAGE (FRAME)	SQUARE FOOT	X	X		M35
GRH	GREENHOUSE (RESIDENTIAL TYPE)	SQUARE FOOT	X	X	X	M15
GRM	GARAGE (METAL)	SQUARE FOOT	X	X		M35
GRS	GARAGE SPACE	SQUARE FOOT	X	X	X	M35
HSC	CHICKEN HOUSE	SQUARE FOOT	X	X	X	M25
HSH	SWINE / GESTATION HOUSE	SQUARE FOOT	X	X	X	M25
HST	TURKEY HOUSE	SQUARE FOOT	X	X	X	M25
IMP	IMPERVIOUS AREA	SQUARE FOOT			X	
JWP	WHIRLPOOL (JETTED)	SQUARE FOOT	X	X	X	M20
KEN	KENNEL (BOARDING)	SQUARE FOOT			X	M15
KSK	KIOSK (GUARD HOUSE TYPE)	SQUARE FOOT			X	M35
LAF	ATHLETIC FIELD LIGHTS	UNIT			X	M15
LLV	LOAD LEVELER	UNIT			X	M20
LPM	LOADING PLATFORM	SQUARE FOOT			X	M35
MHA	MOBILE HOME ADDITION	SQUARE FOOT	X	X		M35
MHP	MOBILE HOME PARK (SPACE)	UNIT			X	M35

MISCELLANEOUS IMPROVEMENT LIST CONTINUED

MIMP CODE	IMPROVEMENT TYPE	UNIT OF MEASURE	PROPERTY CLASS RESIDENTIAL	AGRICULTURAL	COMMERCIAL	LIFE TABLE
MHS	MOBILE HOME SPACE	UNIT	X	X	X	M30
MHV	MOBILE HOME SPACE (VACANT)	UNIT	X	X		M30
MIS	MISCELLANEOUS IMPROVEMENT	UNIT	X	X	X	M60
ODF	OUTDOOR FIREPLACE	UNIT	X	X		M15
ODK	OUTDOOR KITCHEN	LINEAR FOOT	X	X	X	M15
OPF	OPEN PORCH (FINISHED)	SQUARE FOOT	X	X		M25
OPU	OPEN PORCH (UNFINISHED)	SQUARE FOOT	X	X		M25
OSB	OLD STORE USED FOR STORAGE	SQUARE FOOT	X	X	X	M25
PIR	PIER / BOAT DOCK	SQUARE FOOT	X	X		M20
POH	POOL HOUSE	SQUARE FOOT	X	X		M25
POL	POOL (RESIDENTIAL)	UNIT	X	X		M20
PPV	PERVIOUS	SQUARE FOOT			X	M20
PTB	PATIO (BRICK)	SQUARE FOOT	X	X		M15
PTC	PATIO (CONCRETE)	SQUARE FOOT	X	X		M15
PTS	PATIO (STONE)	SQUARE FOOT	X	X		M15
PTT	PATIO (TILE)	SQUARE FOOT	X	X		M15
QUB	QUONSET BUILDING	SQUARE FOOT	X	X	X	M25
RRS	RAILROAD SPUR	LINEAL FOOT			X	M15
SCT	TRUCK SCALES	SQUARE FOOT			X	M15
SHI	POLE SHED (OPEN)	SQUARE FOOT	X	X	X	M20
SHL	SHELTER	SQUARE FOOT	X	X	X	M15
SIL	SILO (CONCRETE STAVE / PRECAST)	UNIT	X	X	X	M25
SPC	SWIMMING POOL (CONCRETE)	SQUARE FOOT	X	X	X	M20
SPG	SWIMMING POOL (COMMERCIAL)	SQUARE FOOT			X	M25
SPS	SILO (PORCELAIN TYPE)	UNIT	X	X	X	M15
STP	STOOP	SQUARE FOOT	X	X		M15
TCT	TENNIS COURT	UNIT	X	X	X	M20
TTS	TRAVEL TRAILER SPACE	UNIT			X	M20
UTB	UTILITY BUILDING (BRICK)	SQUARE FOOT	X	X	X	M25
UTF	UTILITY BUILDING (FRAME)	SQUARE FOOT	X	X	X	M20
UTM	UTILITY BUILDING (METAL)	SQUARE FOOT	X	X	X	M15
WAP	WADING POOL	SQUARE FOOT			X	M20
WDK	WOOD DECK	SQUARE FOOT	X	X		M10
WKS	WORKSHOP	SQUARE FOOT	X	X		M35
WLB	WALL (BRICK / BLOCK / CONCRETE)	LINEAL FOOT	X	X	X	M25

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2017 Miscellaneous Improvement Types from Airplane Hanger (APH) to Wall Block (WLB).

Below is the alphabetical list of the miscellaneous improvement types with; applicable formulae; coefficients; quality grade modification factors and / or rates; associated modification codes; dollar amount adjustments or rates:

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
--
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= APH

                DESCRIPTION: AIRPLANE HANG            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:
1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                  DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD: 15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
---
  COEFFICIENTS:        0.000        0.000       23.790        0.000
0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26
1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
--
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT
RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
--
  1    +        0    0.00    2    +        0    0.00    3    +        0
0.00
                0    0.00                 0    0.00                 0
0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S ------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= ASP

               DESCRIPTION: ASPHALT PAVING           CAR STORAGE?: N
       MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:
1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04
FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ---
-
 COEFFICIENTS:    0.000        0.000        2.220        0.000        0.000
GRADE FACTORS:     0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ---
-
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  -----
1    +        0    0.63    2    +        0    0.54                 0    0.00
              0    0.00                 0    0.00                 0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= AXB

                DESCRIPTION: AXB BLDG/GSTHS           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: Y
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M50
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000        0.000       50.480        0.000        0.000
 GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT
RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
  1    +    5,000    0.00    2    +      0    2.72    3    +    3,745    0.00
  4    +        0   25.24    5    +      0   10.10                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BBB

               DESCRIPTION: BX BULK BARN            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:
1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                  DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                    ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000      349.650        6.300        0.000        0.000
 GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT
RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
              0    0.00                  0    0.00                  0    0.00
              0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S ------
-
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BCH

               DESCRIPTION: BLEACHERS               CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:
1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                  DEPR MODEL NUMBER: M10
          MIN PERCENT GOOD:  15                    ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 --
--
 COEFFICIENTS:        0.000        0.000       19.910        0.000
0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26
1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ---
-
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  -----
-
 1    +        0   22.16    2    +        0   88.70    3    +        0
0.00
              0    0.00                  0    0.00                  0
0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
--
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BFT

                DESCRIPTION: BAPTISMAL FONT           CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:
1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
---
  COEFFICIENTS:     0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:  2,919.00     2,919.00     3,742.00     4,714.00     4,714.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT
RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
--
            0    0.00                  0    0.00                  0    0.00
            0    0.00                  0    0.00                  0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BGL

                DESCRIPTION: BIN GRAIN LARG           CAR STORAGE?: N
        MAX NUMBER OF UNITS:       30.00     MIN NUMBER OF UNITS:  1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:  3,859.00     5,953.00     7,717.00     9,723.00    11,961.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT
RATE
-    -   ------  ------    -    -   ------  ------    -    -   ------  ------
1    +    1,309    0.00                  0    0.00                  0    0.00
              0    0.00                  0    0.00                  0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BGM

                DESCRIPTION: BIN GRAIN MED            CAR STORAGE?: N
        MAX NUMBER OF UNITS:       30.00       MIN NUMBER OF UNITS:  1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:  2,626.00     4,096.00     5,252.00     6,617.00     8,140.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
  1    +    908    0.00                  0    0.00                  0    0.00
              0    0.00                  0    0.00                  0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BGS

                DESCRIPTION: BIN GRAIN SMAL           CAR STORAGE?: N
        MAX NUMBER OF UNITS:       30.00       MIN NUMBER OF UNITS: 1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:  1,482.00     2,310.00     2,963.00     3,733.00     4,592.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS --
  CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ----
  1    +   403    0.00                  0    0.00                  0    0.00
             0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S ------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BGX

                DESCRIPTION: BIN GRAIN X-LG           CAR STORAGE?: N
        MAX NUMBER OF UNITS:       30.00       MIN NUMBER OF UNITS: 1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 --
 COEFFICIENTS:     0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:  6,402.00     9,986.00    12,804.00    16,132.00    19,846.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ---
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    + 2,325    0.00                  0    0.00                  0    0.00
            0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S ------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BHS

               DESCRIPTION: BATH HOUSE              CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M30
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 --
COEFFICIENTS:     0.000        0.000       34.100        0.000        0.000
GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ---
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  -----
            0    0.00                  0    0.00                  0    0.00
            0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BNB

               DESCRIPTION: BULK BARN               CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01 ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:     0.000      350.000        6.300        0.000        0.000
GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE   CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------   -    -   ------  ------   -    -   ------  ------
            0    0.00                  0    0.00                  0    0.00
            0    0.00                  0    0.00                  0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BNC

                DESCRIPTION: CB BARN                  CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 -
  COEFFICIENTS:     0.000      233.145        8.731        0.000        0.000
 GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ---- ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------ ------   -    -   ------  ------    -    -   ------  ------
  1    +     0    3.87    2    +        0    0.80    3    +        0    4.03
  4    +     0    0.84    5    +        0    6.98                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S ------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BNF

                DESCRIPTION: FRAME BARN               CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M30
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01 ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:   0.000      233.145        8.720        0.000        0.000
 GRADE FACTORS:    0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE   CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------   -    -   ------  ------   -    -   ------  ------
  1    +     0    4.25    2    +        0    0.88    3    +        0    4.43
  4    +     0    0.92    5    +        0    7.67                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BNP

               DESCRIPTION: POLE BARN4SIDE           CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS: 50.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01 ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS: 2,556.400      110.390        4.841        0.000        0.000
GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----  ---- MODIFICATIONS ----  ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE   CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE
 -    -   ------  ------  -    -   ------  ------  -    -   ------  ------
 1    +     0    4.04    2    +        0    0.80                 0    0.00
            0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= BNT

               DESCRIPTION: TOBACCO BARN             CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01  ---- 1 ----  ---- 2 ---- ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:     0.000        0.000        5.020        0.000        0.000
GRADE FACTORS:      0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----   ---- MODIFICATIONS ----    ---- MODIFICATIONS --
 CD  +/-  AMOUNT  RATE    CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------  -    -   ------  ------   -    -   ------  ------
            0    0.00                 0    0.00                 0    0.00
            0    0.00                 0    0.00                 0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -----
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BOH

                DESCRIPTION: BOATHOUSE                CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:
1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: Y
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01 ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    0.000        0.000       15.730        0.000        0.000
 GRADE FACTORS:     0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----  ---- MODIFICATIONS ----   ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE
  -    -   ------  ------   -    -   ------ ------   -    -   ------  -----
  1    +     0    0.00    2    +        0    0.00    3    +        0    0.00
  4    +     0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S  I M P R O V E M E N T  T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BRS

                DESCRIPTION: BARN,RDG ST FR           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.99       MIN NUMBER OF UNITS: 50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M30
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01 ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:  779.982      408.682        3.402        0.000        0.000
 GRADE FACTORS:     0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----  ---- MODIFICATIONS ----  ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE    CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------   -    -   ------  ------   -    -   ------  ------
  1    +    1,570    0.00   2    +      0    0.80    3    +       0    0.53
  4    -        0    4.03   5    +  1,151    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BRW

                DESCRIPTION: BRICK WALK                CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       13.230        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= BUL

                DESCRIPTION: BULKHEAD                  CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 02    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:       47.520        0.000        0.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.59    2    +        0   20.64    3    +        0   24.65
                0    0.00                   0    0.00                   0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= CAN

                DESCRIPTION: CANOPY                   CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       20.470        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0   11.80    2    -        0    3.94    3    -        0   14.77
  4    +        0    8.34                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= CCI

                DESCRIPTION: CONDO COMMAREA           CAR STORAGE?: N
        MAX NUMBER OF UNITS: 99999999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: S                   DEPR MODEL NUMBER:
           MIN PERCENT GOOD: 100                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:         1.00         1.00         1.00         1.00         1.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                 0    0.00                 0    0.00                 0    0.00
                 0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= CLF

               DESCRIPTION: CL FENCE                CAR STORAGE?: N
       MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 02    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        8.610        8.610        8.610        8.610        8.610
GRADE FACTORS:         0.60         1.00         1.92         3.76         4.90

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +        0    2.39    2    +        0    9.14    3    +        0    0.85
 4    +        0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= COP

               DESCRIPTION: CONCRETE PAV            CAR STORAGE?: N
       MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        4.040        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +        0    0.63    2    +        0    0.54                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= CPF

               DESCRIPTION: CARPORT FIN              CAR STORAGE?: Y
       MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       14.430        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    -        0    4.04    2    +        0    3.08    3    +        0    4.62
              0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= CPU

               DESCRIPTION: CARPORT UNFIN            CAR STORAGE?: Y
       MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       11.740        0.000        0.000
GRADE FACTORS:         0.45         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    -        0    4.04    2    +        0    3.08    3    +        0    4.62
              0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= CRB

                DESCRIPTION: GRANARY WOOD            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M30
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        5.420        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= CSW

                DESCRIPTION: SIDEWALK                CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        4.040        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= ELR

               DESCRIPTION: RESID ELEVATOR           CAR STORAGE?: N
       MAX NUMBER OF UNITS:        2.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 04    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:   20,827.000        0.000        0.000        0.000        0.000
GRADE FACTORS:         0.66         0.83         1.00         1.17         2.91

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +   13,643    0.00    2    +   27,286    0.00    3    +   40,929    0.00
 4    +   54,572    0.00    5    +   68,215    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= EPF

               DESCRIPTION: ENCL PORCH FIN           CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        4.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       39.150        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    -        0    0.00                 0    0.00                 0    0.00
              0    0.00                 0    0.00                 0    0.00
```

```
ACTION: s  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= FML

               DESCRIPTION: FENCE METAL/IN           CAR STORAGE?: N
       MAX NUMBER OF UNITS: 99999999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 02    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:       33.300       33.300       33.300       33.300       33.300
GRADE FACTORS:         0.86         0.93         1.00         1.16         1.31

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +        0    0.00    2    +        0    0.00    3    +        0    0.00
 4    +        0    0.00    5    +        0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= FPP

               DESCRIPTION: PREFAB/WDSTOVE           CAR STORAGE?: N
       MAX NUMBER OF UNITS:      150.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:       636.00       991.00     1,271.00     1,602.00     1,970.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                  0    0.00
                0    0.00                   0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= FWD

               DESCRIPTION: WOOD VINYL FEN           CAR STORAGE?: N
       MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 02    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:       16.000       16.000       16.000       16.000       16.000
GRADE FACTORS:         0.76         0.88         1.00         1.12         1.24

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    -        0    8.32    2    +        0    0.00    3    -        0    2.83
 4    +        0    8.47                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GAZ

               DESCRIPTION: GAZEBO                   CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       28.910        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                 0    0.00                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GC1

               DESCRIPTION: GOLF COURSE I            CAR STORAGE?: N
       MAX NUMBER OF UNITS:       18.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M40
          MIN PERCENT GOOD:  40                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:         0.00         0.00    42,000.00         0.00         0.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                  0    0.00                  0    0.00
               0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GC2

               DESCRIPTION: GOLF COURSE II           CAR STORAGE?: N
       MAX NUMBER OF UNITS:       18.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M45
          MIN PERCENT GOOD:  40                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:         0.00         0.00    58,800.00         0.00         0.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                  0    0.00                  0    0.00
               0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GC3

               DESCRIPTION: GOLFCOURSE III           CAR STORAGE?: N
       MAX NUMBER OF UNITS:       18.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M50
          MIN PERCENT GOOD:  40                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:         0.00         0.00    84,000.00         0.00         0.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                  0    0.00                  0    0.00
               0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GC4

               DESCRIPTION: GOLF COURSE IV           CAR STORAGE?: N
       MAX NUMBER OF UNITS:       18.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M60
          MIN PERCENT GOOD:  40                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
GRADE FACTORS:         0.00         0.00   100,800.00         0.00         0.00

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                  0    0.00                  0    0.00
               0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GCP

                DESCRIPTION: GOLF COURSE P            CAR STORAGE?: N
        MAX NUMBER OF UNITS:       18.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M45
           MIN PERCENT GOOD:  40                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000   40,500.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GHC

                DESCRIPTION: GREENHOUSE COM           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       10.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       10.010        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.83    2    +        0    4.00    3    -    4,246    0.00
  4    -    3,346    0.00    5    +        0    0.17                   0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GRA

               DESCRIPTION: GARAGE APT              CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: Y
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M40
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       25.240        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +    5,000    0.00    2    +        0    2.72                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= GRB

               DESCRIPTION: GARAGE BRICK            CAR STORAGE?: Y
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: Y
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M40
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:    1,253.980      376.300       11.470        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    -        0    5.24    2    +        0    3.89    3    +        0   11.07
 4    +        0   16.82    5    +        0   18.69    6    +        0   24.44
```

```
ACTION: S  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GRC

                DESCRIPTION: CONC BLK GAR            CAR STORAGE?: Y
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M40
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    1,052.580      285.140       11.930        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0    5.25    2    +        0    3.89    3    +        0    9.91
  4    +        0   16.05    5    +        0   16.84    6    +        0   22.57
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GRF

                DESCRIPTION: FRAME GARAGE            CAR STORAGE?: Y
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    1,032.440      279.840       11.700        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0    5.24    2    +        0    3.89    3    +        0    9.81
  4    +        0   15.55    5    +        0   16.33    6    +        0   22.06
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GRH

                DESCRIPTION: GREENHOUSE              CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       10.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        6.070        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GRM

                DESCRIPTION: GARAGE METAL            CAR STORAGE?: Y
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:      100.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:      990.040      268.180       11.100        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0    5.24    2    +        0    3.89    3    +        0    8.67
  4    +        0   14.40    5    +        0   15.18    6    +        0   20.92
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= GRS

                DESCRIPTION: GARAGE SPACE            CAR STORAGE?: Y
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000    4,683.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= HSC

                DESCRIPTION: CHICK HSE               CAR STORAGE?: N
        MAX NUMBER OF UNITS: 99999999.99       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000      214.940        5.180        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.04                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= HSH

                DESCRIPTION: SWINE HOUSE              CAR STORAGE?: N
        MAX NUMBER OF UNITS:   99,999.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000      214.940        5.180        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= HST

                DESCRIPTION: TURKEY HOUSE             CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000      214.880        5.180        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.01                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= IMP

                DESCRIPTION: IMPERVIOUS ARE           CAR STORAGE?: N
        MAX NUMBER OF UNITS: 99999999.99       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: S                   DEPR MODEL NUMBER:
           MIN PERCENT GOOD:  99                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.001        0.001        0.001        0.001        0.001
 GRADE FACTORS:         0.01         0.01         0.01         0.01         0.01

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= JWP

                DESCRIPTION: JETTED W/POOL            CAR STORAGE?: N
        MAX NUMBER OF UNITS:      200.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       92.490        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= KEN

                DESCRIPTION: KENNEL                   CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    2,177.170       26.680        3.927        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= KSK

                DESCRIPTION: KIOSK GUARD/HS           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       64.820        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    2.86    2    +    2,182    0.00    3    +    3,273    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= LAF

                DESCRIPTION: LIGHTS ATH FLD           CAR STORAGE?: N
        MAX NUMBER OF UNITS:      199.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:    14,850.00    23,166.00    29,700.00    37,422.00    46,035.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= LLV

                DESCRIPTION: LOAD LEVELER             CAR STORAGE?: N
        MAX NUMBER OF UNITS:       50.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:     2,274.00     2,274.00     4,093.00     3,770.00     3,770.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= LPM

                DESCRIPTION: LDG PLATFORM            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       13.040        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                   0    0.00                   0    0.00
               0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= MHA

                DESCRIPTION: MOBIL HM ADD            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       43.190        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         0.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                   0    0.00                   0    0.00
               0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= MHP

                DESCRIPTION: MH PARK SPACE            CAR STORAGE?: N
        MAX NUMBER OF UNITS:      500.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: S                   DEPR MODEL NUMBER:
           MIN PERCENT GOOD: 100                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:     2,500.00     4,000.00     6,000.00     9,000.00    12,000.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                  0    0.00                  0    0.00
                0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= MHS

                DESCRIPTION: MOBILE HOME SP           CAR STORAGE?: N
        MAX NUMBER OF UNITS:      300.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: S                   DEPR MODEL NUMBER:
           MIN PERCENT GOOD: 100                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:     2,500.00     2,500.00     2,500.00     2,500.00     2,500.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                  0    0.00                  0    0.00
                0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= MHV

                DESCRIPTION: MOBILE HM SP V           CAR STORAGE?: N
        MAX NUMBER OF UNITS:      300.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M30
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:         0.01         0.01         0.01         0.01         0.01

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= MIS

                DESCRIPTION: MISCELLANEOUS            CAR STORAGE?: N
        MAX NUMBER OF UNITS:        1.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M60
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 04    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:         0.00         0.00         0.00         0.00         0.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= ODF

                DESCRIPTION: OUTDOOR FIREPL           CAR STORAGE?: N
        MAX NUMBER OF UNITS:      100.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000    2,750.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +      250    0.00    2    +      500    0.00                 0    0.00
                0    0.00                  0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= ODK

                DESCRIPTION: OUTDOOR KITCHE           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       70.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +      200    0.00    2    +      200    0.00    3    +        0    0.00
  4    +        0    0.00    5    +        0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= OPF

                DESCRIPTION: OPEN POR FIN            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       10.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       23.130        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0   11.80    2    -        0    3.94    3    -        0   14.77
  4    +        0    8.34                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= OPU

                DESCRIPTION: OPEN POR UNFIN          CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       18.790        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -        0   11.80    2    -        0    3.94    3    -        0   14.77
  4    +        0    8.34                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= OSB

                DESCRIPTION: OLD STORE-STG            CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.99       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        6.880        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PIR

                DESCRIPTION: PIER/BOAT DOCK           CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       10.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       13.220        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= POH

                DESCRIPTION: POOL HOUSE              CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       29.700        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +    1,163    0.00    2    -    1,163    0.00    3    +        0    1.38
  4    +        0    1.38    5    +    2,891    0.00    6    +        0    2.47
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= POL

                DESCRIPTION: SWIMMING POOL           CAR STORAGE?: N
        MAX NUMBER OF UNITS:        3.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000   14,850.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +    4,125    0.00    2    -    2,750    0.00    3    +    4,125    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PPV

                DESCRIPTION: PERVIOUS PAVIN           CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:       10.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        2.220        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.63    2    +        0    0.54                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PTB

                DESCRIPTION: BRICK PATIO              CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       13.230        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                 0    0.00                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PTC

                DESCRIPTION: CONCRETE PATIO           CAR STORAGE?: N
        MAX NUMBER OF UNITS:   99,999.00       MIN NUMBER OF UNITS:        0.10
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        4.040        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                   0    0.00                   0    0.00
               0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PTS

                DESCRIPTION: STONE PATIO              CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       15.860        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
               0    0.00                   0    0.00                   0    0.00
               0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= PTT

                DESCRIPTION: PATIO TILE               CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       12.380        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= QUB

                DESCRIPTION: QUONSET BLDG             CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    1,679.160      406.900        7.914        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.03    2    +    1,650    0.00    3    +    3,300    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= RRS

                DESCRIPTION: RAILROAD SPUR            CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 02    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:       66.090        0.000        0.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SCT

                DESCRIPTION: TRUCK SCALES             CAR STORAGE?: N
        MAX NUMBER OF UNITS:   99,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       96.150        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SHI

                DESCRIPTION: IMP-POLE SHED            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000      397.605        1.209        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    0.34    2    +        0    0.68    3    +        0    1.02
  4    +        0    4.04                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SHL

                DESCRIPTION: SHELTER                  CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        6.440        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.04                 0    0.00                 0    0.00
                0    0.00                 0    0.00                 0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SIL

                DESCRIPTION: SILO CONC                CAR STORAGE?: N
        MAX NUMBER OF UNITS:       10.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:    12,490.00    19,486.00    24,982.00    31,477.00    38,721.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SPC

                DESCRIPTION: SWIM POOL CONC           CAR STORAGE?: N
        MAX NUMBER OF UNITS:   20,000.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:    4,069.290    1,627.710        7.348        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SPG

                DESCRIPTION: SWM POOL COMM            CAR STORAGE?: N
        MAX NUMBER OF UNITS:   20,000.00       MIN NUMBER OF UNITS:       50.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:        58.77        55.81        53.95        53.21        51.36

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= SPS

                DESCRIPTION: SILO PORCELAIN           CAR STORAGE?: N
        MAX NUMBER OF UNITS:       10.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 04    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:   68,829.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= STP

                DESCRIPTION: STOOP                    CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       11.900        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= TCT

                DESCRIPTION: TENNIS COURT             CAR STORAGE?: N
        MAX NUMBER OF UNITS:       20.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000   15,950.000        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    -    7,722    0.00    2    +    4,048    0.00    3    -    1,386    0.00
  4    +    2,547    0.00    5    -        0    0.00    6    +    4,650    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= TTS

                DESCRIPTION: TRVL TRL SPACE           CAR STORAGE?: N
        MAX NUMBER OF UNITS:      500.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: UT              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: S                   DEPR MODEL NUMBER:
           MIN PERCENT GOOD: 100                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:     2,000.00     2,900.00     6,500.00         0.00         0.00

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0  450.00                  0    0.00                  0    0.00
                0    0.00                  0    0.00                  0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= UTB

                DESCRIPTION: MASONRY UTIL             CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        8.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       16.230        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.04    2    +        0    2.80    3    +        0    3.25
  4    +        0    0.00    5    +        0    0.00    6    +        0    0.00
```

```
ACTION: R  SCREEN: MITY
-------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
JURI= 20   YEAR= 2017   ROLL= RR
     MISC IMPROVEMENT TYPE= UTF

               DESCRIPTION: UTILITY FRAME            CAR STORAGE?: N
       MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
             TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
       DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
          MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
           SUBTOTAL NUMBER: 04

 FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
 COEFFICIENTS:        0.000        0.000       16.150        0.000        0.000
GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

 ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
 CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
 -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
 1    +        0    4.04    2    +        0    2.55    3    +        0    3.23
 4    +        0    0.00    5    +        0    0.00    6    +        0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= UTM

                DESCRIPTION: UTILITY METAL            CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M15
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        3.810        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +        0    4.04    2    -        0    2.80    3    +        0    0.98
  4    +        0    0.00    5    +        0    0.00    6    +        0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= WAP

                DESCRIPTION: WADING POOL              CAR STORAGE?: N
        MAX NUMBER OF UNITS:    5,000.00       MIN NUMBER OF UNITS:       20.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M20
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       56.090        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= WDK

                DESCRIPTION: DECK WOOD                CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M10
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       15.840        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                0    0.00                   0    0.00                   0    0.00
                0    0.00                   0    0.00                   0    0.00
```

```
ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= WKS

                DESCRIPTION: WORK SHOP                CAR STORAGE?: N
        MAX NUMBER OF UNITS:    9,999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: SF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M35
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA: 01    ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000       15.020        0.000        0.000
 GRADE FACTORS:         0.50         0.78         1.00         1.26         1.55

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
  1    +      291    0.00    2    +    1,151    0.00    3    +        0    3.30
  4    +        0    4.31    5    +        0    5.44    6    -        0    1.23
```

```
 ACTION: R  SCREEN: MITY
 -------  M I S C E L L A N E O U S   I M P R O V E M E N T   T Y P E S -------
 JURI= 20   YEAR= 2017   ROLL= RR
      MISC IMPROVEMENT TYPE= WLB

                DESCRIPTION: WALL BRK/CB              CAR STORAGE?: N
        MAX NUMBER OF UNITS:  9999999.00       MIN NUMBER OF UNITS:        1.00
              TYPE OF UNITS: LF              LENGTH/WIDTH REQUIRED: N
        DEPRECIATION METHOD: M                   DEPR MODEL NUMBER: M25
           MIN PERCENT GOOD:  15                     ECONOMIC LIFE:  0
            SUBTOTAL NUMBER: 04

  FORMULA:       ---- 1 ----  ---- 2 ----  ---- 3 ----  ---- 4 ----  ---- 5 ----
  COEFFICIENTS:        0.000        0.000        0.000        0.000        0.000
 GRADE FACTORS:        21.38        26.73        32.08        42.77        53.46

  ---- MODIFICATIONS ----    ---- MODIFICATIONS ----    ---- MODIFICATIONS ----
  CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE     CD  +/-  AMOUNT   RATE
  -    -   ------  ------    -    -   ------  ------    -    -   ------  ------
                 0    0.00                   0    0.00                   0    0.00
                 0    0.00                   0    0.00                   0    0.00
```

D. Miscellaneous Improvements Depreciation Tables (M10 through M60)

DEPRECIATION MODEL
SCHEDULES

M-10

AGE	GOOD	AVG	FAIR	POOR
0	10	11	31	52
1	12	13	35	55
2	15	20	39	58
3	20	25	43	61
4	25	30	47	64
5	30	35	51	67
6	35	40	55	70
7	40	45	59	73
8	45	50	63	76
9	50	55	65	77
10	55	60	69	80
999	60	65	75	85

M-15

AGE	GOOD	AVG	FAIR	POOR
0	10	11	31	50
1	11	13	33	52
2	12	17	35	54
3	15	20	38	56
4	19	23	41	58
5	22	27	43	60
6	26	30	46	62
7	29	33	49	64
8	33	37	51	66
9	36	40	54	68
10	40	43	57	70
11	43	47	59	72
12	47	50	62	74
13	50	53	65	76
14	54	57	67	78
15	57	60	70	80
999	60	65	75	85

M-20

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	11	12	32	51
2	12	15	34	52
3	13	17	36	53
4	15	20	38	54
5	18	22	40	57
6	21	25	42	59
7	23	27	44	60
8	26	30	46	62
9	29	32	48	63
10	31	35	50	65
11	34	37	52	66
12	36	40	54	68
13	39	42	56	69
14	42	45	58	71
15	44	47	60	72
16	47	50	62	74
17	50	52	64	75
18	52	55	66	77
19	55	57	68	78
20	57	60	70	80
999	60	65	75	85

M-25

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	11	12	32	51
2	12	14	34	53
3	13	16	35	54
4	15	18	37	55
5	17	20	39	56
6	18	22	40	58
7	19	24	42	59
8	22	26	44	60
9	25	28	45	61
10	27	30	47	63
11	29	32	49	64
12	31	35	50	65
13	33	37	52	66
14	35	39	54	68
15	37	41	55	69
16	40	43	57	70
17	42	45	59	71
18	44	47	60	73
19	46	49	62	74
20	48	51	64	75
21	50	53	66	76
22	52	55	67	77
23	54	57	68	78
24	56	59	69	79
25	57	60	70	80
999	60	65	75	85

M-30

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	11	12	31	51
2	12	13	33	52
3	13	15	34	53
4	14	17	35	54
5	15	18	37	55
6	16	20	38	56
7	17	22	39	57
8	19	23	41	58
9	21	25	42	59
10	22	27	43	60
11	24	28	45	61
12	26	30	46	62
13	28	32	47	63
14	29	33	49	64
15	31	35	50	65
16	33	37	51	66
17	35	38	53	67
18	36	40	54	68
19	38	42	55	69
20	40	43	57	70
21	42	45	58	71
22	43	47	59	72
23	45	48	61	73
24	47	50	62	74
25	49	51	63	75
26	50	53	65	76
27	52	55	66	77
28	54	56	67	78
29	56	58	69	79
30	57	60	70	80
999	60	65	75	85

M-35

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	11	12	31	51
2	12	13	33	52
3	13	15	34	53
4	14	16	35	54
5	15	17	36	55
6	16	19	37	55
7	17	21	38	56
8	18	22	40	57
9	19	23	41	58
10	20	25	42	59
11	22	26	43	60
12	24	28	44	61
13	25	29	45	62
14	26	30	47	62
15	28	32	48	63
16	30	34	49	64
17	31	35	50	65
18	33	36	51	66
19	34	38	52	67
20	36	39	54	67
21	38	41	55	68
22	39	42	56	69
23	40	44	57	70
24	42	45	58	71
25	44	46	59	72
26	45	48	61	72
27	46	50	62	73
28	48	51	63	74
29	50	52	64	75
30	52	54	65	76
31	53	56	66	77
32	54	57	67	78
33	55	58	68	78
34	56	59	69	79
35	57	60	70	80
999	60	65	75	85

M-40

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	11	12	31	51
2	12	13	32	51
3	13	14	33	52
4	14	15	34	53
5	15	16	35	54
6	16	17	36	54
7	17	19	37	55
8	18	20	38	56
9	19	21	39	57
10	20	22	40	57
11	21	24	41	58
12	22	25	42	59
13	23	26	43	60
14	24	27	44	60
15	25	29	45	61
16	26	30	46	62
17	27	31	47	63
18	29	32	48	63
19	30	34	49	64
20	31	35	50	65
21	33	36	51	66
22	34	37	52	66
23	35	39	53	67
24	36	40	54	68
25	38	41	55	69
26	39	42	56	69
27	40	44	57	70
28	42	45	58	71
29	43	46	59	72
30	44	47	60	72
31	46	49	61	73
32	47	50	62	74
33	48	51	63	75
34	50	52	64	75
35	51	54	65	76
36	52	55	66	77
37	54	56	67	78
38	55	57	68	78
39	56	59	69	79
40	57	60	70	80
999	60	65	75	85

M-45

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	10	11	31	51
2	11	12	32	51
3	11	13	33	52
4	12	14	34	53
5	12	15	35	54
6	12	16	36	54
7	13	18	37	55
8	14	19	37	56
9	15	20	38	57
10	16	21	39	57
11	18	23	40	58
12	19	24	41	58
13	20	25	42	59
14	21	26	43	59
15	23	27	44	60
16	24	28	45	61
17	25	29	46	62
18	28	30	46	63
19	29	31	47	63
20	30	32	48	64
21	30	33	49	65
22	32	34	50	65
23	33	36	51	66
24	34	37	52	66
25	35	38	53	67
26	36	39	54	68
27	37	40	55	68
28	38	41	55	69
29	39	42	56	69
30	40	43	57	70
31	42	45	58	70
32	43	46	59	71
33	44	47	60	72
34	45	48	61	73
35	46	49	62	73
36	47	50	63	74
37	49	51	64	75
38	50	52	64	76
39	51	54	65	76
40	52	55	66	77
41	54	56	66	77
42	56	57	67	78
43	57	58	68	78
44	58	59	69	79
45	59	60	70	80
999	60	65	70	85

M-50

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	10	11	31	51
2	10	12	32	51
3	11	13	32	52
4	11	14	33	52
5	11	15	34	53
6	12	16	35	54
7	12	17	36	54
8	13	18	36	55
9	14	19	37	55
10	15	20	38	56
11	17	21	39	57
12	18	22	40	57
13	19	23	40	58
14	20	24	41	58
15	21	25	42	59
16	22	26	43	60
17	23	27	44	60
18	24	28	44	61
19	25	29	45	61
20	26	30	46	62
21	27	31	47	63
22	28	32	48	63
23	29	33	48	64
24	30	34	49	64
25	31	35	50	65
26	32	36	51	66
27	33	37	52	66
28	34	38	52	67
29	35	39	53	67
30	36	40	54	68
31	38	41	55	69
32	39	42	56	69
33	40	43	56	70
34	41	44	57	70
35	42	45	58	71
36	43	46	59	72
37	44	47	60	72
38	45	48	60	73
39	45	49	61	73
40	47	50	62	74
41	48	51	63	75
42	49	52	64	75
43	50	53	64	76
44	51	54	65	76
45	52	55	66	77
46	53	56	67	78
47	54	57	68	78
48	55	58	68	79
49	56	59	69	79
50	57	60	70	80
999	60	65	75	85

M-60

AGE	GOOD	AVG	FAIR	POOR
0	10	11	30	50
1	10	11	31	50
2	10	12	31	51
3	11	12	32	51
4	11	13	33	52
5	11	14	33	52
6	12	15	34	53
7	12	16	35	53
8	12	17	35	54
9	13	17	36	54
10	14	18	37	55
11	15	19	37	55
12	15	20	38	56
13	16	21	39	56
14	17	22	39	57
15	18	22	40	57
16	19	23	41	58
17	20	24	41	58
18	21	25	42	59
19	22	26	43	59
20	22	27	43	60
21	23	27	44	60
22	24	28	45	61
23	25	29	45	61
24	26	30	46	62
25	27	31	47	62
26	28	32	47	63
27	29	32	48	63
28	29	33	49	64
29	30	34	49	64
30	31	35	50	65
31	32	36	51	65
32	33	37	51	66
33	34	37	52	66
34	35	38	53	67
35	36	39	53	67
36	36	40	54	68
37	37	41	55	68
38	38	42	55	69
39	39	42	56	69
40	40	43	57	70
41	41	44	57	70
42	42	45	58	71
43	43	46	59	71
44	43	47	59	72
45	44	47	60	72
46	45	48	61	73
47	46	49	61	73
48	47	50	62	74
49	48	51	63	74
50	49	52	63	75
51	50	52	64	75
52	50	53	65	76

M-60 continued

AGE	GOOD	AVG	FAIR	POOR
53	51	54	65	76
54	52	55	66	77
55	53	56	67	77
56	54	57	67	78
57	55	57	68	78
58	56	58	69	79
59	57	59	69	79
60	57	60	70	80
999	60	65	75	85

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XI. MARKET APPROACH CALCULATION PROCESS

GENERAL OVERVIEW OF THE MARKET VALUATION MODULE 325
The 'Market Extract' (MASP410) Program 326
The 'Edit and Expansion' (MASP420) Program 327
The 'Market Modeling' (MASP430) Program 328
The 'Market Valuation Preparation' (MASP440) Program.....337
The 'Market Valuation' (MASP450) Program 337
The 'Statistics and Graphics' (MASP470) Program.....341
The 'Market Valuation Posting' (MASP480) Program 341
The 'Copy Market Models' (MASP490) Program 342
A. Residential Neighborhood Grouping…… 343
B. Example of a Residential Property Valued at Market……..345

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XI. MARKET APPROACH CALCULATION PROCESS

This section is an overview section that covers the Market Valuation module of the CAMA subsystem. This module is one of the most useful features of the subsystem. The following documentation explains the process of "Market Modeling and Valuation[1]", which involves a considerable amount of interaction between the appraiser or assessor, the data, and the computer system. Both residential and commercial properties can be valued within the market parameters in this section, however, the market approach calculation process is only used on residential properties. An example is provided for demonstration purposes only.

A. An example of a Residential property valued at market.

General Overview of the Market Valuation Module

The purpose of this Section is to describe the functions of the Market Valuation module as a whole, outlining the detail steps involved in the valuation process. The Market Valuation module gives you the capability to value Residential or Commercial properties using the market approach. When a sufficient number of qualified sales are available, the sales database can be used to develop market models; when sales are not available, current CAMA characteristics can be used. Market models are applied, in conjunction with comparable sales analysis, to provide an estimate of the market value of each property. A Comparable Sales Analysis report is produced for each property valued. The appraiser or assessor can review the computer-generated estimate of value and can explain and support market appraisals from this report.

Functions within the Market Valuation module are performed by several interlocking programs, which have been grouped together in single batch jobs in the OASIS system. Each program produces printed reports and output. The output is used in conjunction with user-defined parameters as input, and then used next in the series of interlocking programs.

The Market Valuation module contains the following programs:

General Market Extract (GMX) Preparation (used for creating or changing your market extract template)
Market Extract
Edit and Expansion
Market Modeling
Market Valuation Preparation
Market Valuation
Print Comparable Sales Reports
Statistics and
Graphics Market
Valuation Posting
Copy Market
Models

The General Market Extract (GMX) Preparation (MASP400) Program

Data is extracted from the OASIS database to an external file for use by the market valuation module. Data elements to be extracted and their location in the external file are variable based upon a user- defined market extract template. The extract template is defined by a set of parameters, which the user maintains with On-Line Parameter Maintenance (OLPM).

The OLPM (Load) function, which executes program MASP400, edits the set of parameters maintained with OLPM. If no edit errors are incurred, the template is formatted and stored on the OASIS database for use by the Market Extract (MASP410) program.

Sample OLPM market extract templates for residential properties are delivered with the system. Parameter changes are required (1) to conform the aggregation of building section and miscellaneous improvement areas to match the codes which the jurisdiction is using, and (2) to add the Categorical Name (CATN) code assignments which match those in use by the jurisdiction. In the sample market extract template provided CATN code assignments are used for the assignment of parcels to neighborhood groups.

The 'Market Extract' (MASP410) Program

Before the actual development and calculation of a model, you will need to review the mass of data collected to-date to:

Verify the validity of existing neighborhoods.

Combine comparable neighborhoods into groups, and groups of neighborhoods into larger groups, called clusters.

For each model to be developed (which there may be several: such as one-family residential, condominiums, townhouses, etc.), estimate the terms or factors likely to affect value for the subject model.

Estimate the reasonable range of value for the coefficients of each term included in the market model.

Determine the terms or factors which will be used to select comparables from the sales base and the relative importance or "weighting" of each term.

The first step in developing or applying Market Models is to produce an extract of pertinent parcel characteristics which will be used and manipulated by other market valuation programs. The Market Extract (MASP410) program is used to produce this extract file. The selectability module is used as a means to identify the parcels to be extracted. The list of parcels generated by the selectability module is passed to the Market Extract program. This program performs two data extract functions. When developing market models, a Sales Extract function is performed where parcel data is extracted from either the Sales History or current CAMA database. This extract file is used to develop market models and furnish comparable sales. When applying market models, a Subject Extract function is performed where data is extracted from the current CAMA database. This extract file is used to produce valuations for the records on that file. The data elements extracted and the general market extract template stored on the OASIS database by the MASP400 program dictates the format of the extract file. The Market Extract program produces one report, which shows extract statistics.

The 'Edit and Expansion' (MASP420) Program

Data element conversions and neighborhood assignments, which are applied to the extracted data, are based on a set of parameters, which the user maintains with On-Line Parameter Maintenance (OLPM).

Once the Sales Extract file has been produced, the Edit and Expansion program checks the values of the data elements (variables, characteristics, factors, values), in a process called conditioning; and then produces the Expanded Sales Extract file. A similar process can be used for the Subject Extract file to produce an Expanded Subject Extract file.

For each parcel, the value of any given variable may be compared to a user-specified range of values. Reports are issued on parcels whose values are above or below the range and, if you so specify, such parcels may be excluded from the Expanded Extract file produced by this program.

The other major capability of the Edit and Expansion program is the transgeneration feature. If the data in the extract file are not in a form compatible with the modeling process, new variables may be created (transgenerated) which are more useful or meaningful in the analysis. For instance, CDU, grade factor, or age can generally be more meaningfully modeled when multiplied by living area (CDU * living area). As an example of the expansion type of transgeneration, any variable coded with arbitrary values, such as designating basement types as 1 = none, 2 = crawlspace, 3 = partial, 4 = full, may be expanded into a series of four binary variables (each having a value of 0 or 1) for the modeling process. Edits may also be specified for transgenerated values.

To this program, the user specifies report headers; variable names, transgenerations, and edits. The total number of variables allowed (original + transgenerated) is two hundred; the Market Modeling program can use up to 59 of these in any one model. The Edit and Expansion program is used primarily in conjunction with market modeling, to assist with the following tasks:

Preliminary statistical analysis of data: Ranges, means, and variances for each data element using the Statistical Analysis of Variables report, which will be discussed later.

Sales screening: Records containing data elements with extreme or exceptional values may be excluded from modeling or checked for data errors. You can also selectively delete certain sales from the Expanded Extract file.

Creating new variables to be used in modeling: The market data elements, as extracted do not provide the Market Modeling program with the set of factors required for linear modeling.

The 'Market Modeling' (MASP430) Program

Overview

Once the conditioning steps have been completed with the Edit and Expansion program, the *Market Modeling program may be used to develop models for different sales clusters.*

The neighborhood groups created through the market extract process are further grouped to create clusters of sales against which models will be developed.

Each model is composed of a set of factors and constraints. Consequently, for each cluster to be modeled, you must specify which factors in the Expanded Extract file are to be used for the Market Regression Analysis (MRA) and whether the derived coefficients are to be constrained within certain limits. The resulting set of factors and constraints is known as a model. You may specify more than one model to be developed for each cluster

For each model, the program selects the candidate factors in order of significance and calculates the regression coefficients. Factors are removed from the regression equation as they either fail certain tests of statistical significance or fall outside your specified constraints. Those that fall outside a constraint are forced into the model at the appropriate constrained value.

The program prints a report showing the final coefficients. The coefficients are also output to the OASIS database for subsequent use by the valuation programs.

Using the calculated regression coefficients and the data for each parcel from the Expanded Extract file, the program calculates a model estimate for each property. These values and the residual from the sale price are printed in the Model Plot back report. A plot of the residuals against any desired variable may also be obtained.

The Market Modeling program (MASP430) uses the Expanded Sales Extract file produced by the Edit and Expansion program (MASP420) as input data to calculate market models for the various clusters which you have defined. The models are then used by the Market Valuation Preparation program (MASP440) and the Market Valuation program (MASP450) to produce the final market value estimates and comparable sales reports.

The most important idea to understand concerning the Market Modeling program is that the modeling is computer assisted but not automated. Many of the judgments to be made, however, can be avoided by careful management of the database. If all property descriptions are valid, correct and up-to-date, and all the sales are properly screened to eliminate land-only or building-only sales and sales made between related parties or under duress, the modeling process can be much more straightforward.

In this overview, we point out the steps necessary to achieve good models. For the purposes of most users, it is not necessary nor even possible nor desirable to describe the mathematical basis of the Market Modeling program. The terminology we introduce is only that which may already be familiar or that which is necessary for you to complete this process.

In the following paragraphs we will discuss the basic ideas behind multiple regression analysis, why and how constraints may be applied, and the analysis of the model itself.

Basic Ideas

The Market Modeling program (430) uses a technique known as Multiple Regression Analysis (MRA) to derive or calculate the coefficients in a linear equation which gives one observable (usually sales price) as a function of any number of other criteria (usually market factors such as size, age, condition and quality). In the market valuation application, we use recent sales of properties and the associated property descriptions as input data. The Market Modeling program derives coefficients which are then used to help value subject properties.

The technique which has been developed for use in the Market Modeling program is called constrained MRA. The advantage here is that you can specify to the program that the coefficients which it produces must be within certain ranges; e.g., the value of an attached garage must fall between 8 and 20 dollars per square foot. In this way, the final results are intuitively appealing in an appraisal sense and are also more easily defended. Note that this process is not totally arbitrary and that, in practice, constraints are usually applied only in cases where the sales provide inadequate or ambivalent information about the value of certain factors.

A linear model takes the form:

Estimated value = B0 + B1 * X1 + B2 * X2 + ... + Bn * Xn

where the values Bi (B0, B1, B2, ... Bn) are constant values called coefficients and the values Xi (X1, X2, ... Xn) are characteristics of the property for which the value is to be estimated. The coefficients are calculated through the multiple regression analysis process, using actual sales data, with the sale price being the assumed "market" value. The coefficients Bi which are calculated by MRA minimize the error sum of squares for the sale properties used as data by MRA.

Error sum of squares = SUMM ((Estimated value (K) - Sale price (K)) 2) K

where SUMM indicates the summation over K and K = 1, 2, ... N sales ranges over the sales in the sale set.

Perhaps the best way to discuss the selection of variables or factors is to illustrate with a sample set and point out the reasons for the inclusion of the various terms. (A variable as used here is any element of the X-Array in the extract produced by the General Market Extract program (MASP410) or generated by you with the Edit and Expansion program (MASP420).

In order to say that we have achieved a useful model, we would want to include all those factors which have a significant impact on the selling prices of properties in our community.

The factors may vary from one cluster to another, but have certain elements in common. Among these significant factors are but not limited to:

Size - expressed as living area measured in square feet.

Land value - as determined by a cost analysis, this value should be available.

Number of bathrooms - within a given market stratum, there is a certain value attached to the addition of a full or half bath.

Fireplaces - as with bathrooms, a certain value (corresponding roughly to the actual cost) is associated with the presence of one or more fireplaces. Metal fireplaces or stoves can be included separately as their value (and cost) is usually lower.

Recreation room and finished basement area - the buyer makes adjustments for the presence of these factors. If, however, these areas are already included in the total living area of the property, the actual adjustment may be negative. (Basement area is less desirable than ground floor or other living area).

Garages - usually separate categories should be maintained for attached garages and carports as the market value (per square foot) generally reflects the different costs of these additions.

Other factors which may necessitate significant adjustments from one property to another include:

Deck areas - on a per-square-foot basis

Open and enclosed porches - on a per-square-foot basis

Other building and yard improvements - on a cost basis

Type of basement - as a gross adjustment to differentiate between none, crawlspace, partial, and full Heating - as a gross adjustment, negative for no permanent heat system, positive for central air. This correction might also be made on a per-square-foot basis.

Number of living units - an adjustment to the value that an otherwise equivalent property would have because multiple living units exist within the same property.

We have not yet considered two important factors: grade or quality of construction and CDU (condition, desirability, and usefulness). These certainly have an impact upon the selling price of a property and should be included. A little thought, however, reveals to us that a gross dollar value adjustment for differences in these factors can lead to certain inconsistencies. Cumberland County does not subscribe to the CDU part for our market analysis.

Consider the three properties below, of the indicated sizes

and CDU's: No. 1: 1,200 sq.ft.; Average CDU
No. 2: 1,200 sq.ft.; Good CDU
No. 3: 1,900 sq.ft.; Good CDU

If we adjust the market value of properties No. 2 and No. 3 by the same amount with respect to No. 1, based on the difference in CDU and then make a separate adjustment to No. 3 with respect to No. 1, based on size, we probably underestimate the value of No. 3 since each added square foot of living area should really be at a different level.
To address this situation, we generally include both CDU and grade in the model as CDU or grade multiplied by the square feet of living area. Since grade factors have been established, based on the multipliers in the cost model, the term grade factor times living area eliminates the need to include living area as a separate term.

Age, included and multiplied by living area, is essentially a depreciation term. If neighborhoods are included where extensive remodeling has taken place, an effective age term (based on the year remodeled) may be more appropriate.

To reflect the fact that property values change as a function of time due to economic conditions (e.g., inflation), it is wise to include a term to "correct" the sales price to a given base date. The difference of the date of sale (in months) from the base date can be used as a variable. Once again, however, we can see that the net adjustment is more appropriate if we model the term date of sale (in months) multiplied by living area (in square feet). This term can have quite different values during different economic conditions.

We have mentioned the concept of Constrained Regression Modeling (CRM). Here we would like to explain why we find this modification of MRA useful, and how it is implemented in the OASIS Plus CAMA system.

The possibility of a lack of sufficient information within the sales database to allow for the computation of coefficients which are both meaningful and reasonable has been mentioned before. If we designate the coefficient of a factor in the model by Bi (e.g., dollars per square foot of garage area), we might expect and want that coefficient to fall within certain bounds:

$$Bil <= Bi <= Biu$$

where Bil is the lower bound or constraint for the ith coefficient and Biu is the upper bound. The values from Bil to Biu will be referred to as the range.

The type of action which the program should take when the value calculated for a given Bi falls outside these limits must be specified. This action may depend upon whether the value calculated in the partial F- test is above or below the level of significance. For implementation, the constraints are divided into four types which (except for type 0) differ only in their action when the variable fails to meet the chosen level of significance. These types may be described as follows:

Type	Action if Variable is Insignificant	Significant
0	Set Bi to 0.	No constraint, if significant.
1	Constrain to nearest limit if outside range.	Constrain to nearest limit if outside range.
2	Constrain to mid-range if outside range.	Constrain to nearest limit if outside range.
3	Constrain to mid-range whether inside or outside range.	Constrain to nearest limit if outside range

Except for Type 0, if the factor is significant and the calculated Bi is outside the constraint range, Bi is to be set equal to the bound (Bil or Biu) which is closer to the calculated Bi. If the value falls inside the range, that value will be used.

Constraint Types 1, 2, and 3 provide for the logical possibilities that may be contemplated by an analyst using constrained regression. The assignment of constraints to variables is a judgmental process left to the discretion of the model developer. In general, model developers will make the first few modeling runs with no constraints to observe the results obtained from the more standard techniques. The results are reviewed to see if there are any variables missing which are deemed important, or if variables are in the model with unacceptable coefficients. The ranges applied to the constraints are based on an appraiser's judgment of realistic value adjustments which apply to the particular class of properties for which the model is being developed. In practice, model developers have opted for either Type 1 or Type 3 exclusively. Neither choice has demonstrated clear-cut superiority.

While it is desirable to avoid imposing constraints, frequently specification of constraints insures that a variable which has a reasonable coefficient but an insufficient F value to be statistically significant, if unconstrained, is included in the final model. This may be of particular importance when the sales sample is small and the factor affecting value represents less than 5% of the total property value.

It is necessary to have an appreciation for several terms which are used in the reports. An understanding of what these terms mean will be of great value in being able to assess the adequacy of a calculated model. An attempt will be made to avoid mathematical complications, where possible. Referring to the Regression Action, Analysis of Variance, and Variable Coefficients reports, we see that a number of terms are used. We would like to discuss the terms R squared, partial F-test and F-test, standard error (STD ERR), t-statistic, and partial correlation.

a. R squared. The R squared statistic is a ratio related to how well the data (sales prices) fits the regression equation. It is equal to the complement of the residual sum of squares divided by the total sum of squares corrected for the mean, where the total sum of squares is the sum of the squares of the sales prices minus their mean value, and the residual sum of squares is the sum of the squares of the differences between the actual sales prices and those predicted by the regression equation. It is apparent that the closer R squared is to 1, the better we have fit the data. We should be aware, however, that while we can move R squared arbitrarily close to 1 by adding more and more factors to our equation, we gain very little in predictive value – as measured by the entry in the column labeled mean square in the residual line in the Analysis of Variance report. R squared may be thought of as the percentage of the variation present in data accounted for by the regression equation. If we accept that there is a basic variation in sales prices of about 5% to 15% (depending on the neighborhood or price range), we might expect that we should have a good model if R squared is somewhere near 0.90. This is not, however, our only criterion.

b. Standard Error. We spoke above of the mean square residual. The square root of this number gives us the standard error of the estimate. In this application, this number gives us an idea of the average amount by which the regression equation "misses" the actual sales prices. In a somewhat more precise statistical sense, we expect that roughly 2/3 of the regression estimates should be within one standard error (either high or low) of the actual sales price. In general, the smaller this number is the better. As we noted, this not only takes account of how well the data fits, but also of how efficiently (using the smallest number of factors) we have performed the fit.

c. F-test. The F-test may be considered a measure of what we are referring to when we speak of the "statistical significance" of the coefficient for a factor. The F- statistic is a ratio of that part of the sum of the squares accounted for by the regression equation to the residual (that part of the sum of the squares not accounted for by the regression equation). The number of factors also is included in the calculation. We can consider our fit to be better as the F-statistic increases. We make use of the F-statistic rather than the value R squared since the science of statistics can tell us exactly what the F-statistic means. As an example, if our degrees of freedom (roughly equal to the number of sales less the number of factors in our regression equation) is at least 20, then we can be 95% certain that a derived coefficient is something other than zero if the F-statistic has a value of 4.0. (The level of certainty is a concept we shall accept as a "given," although it does have a precise statistical definition). This level of certainty increases to 98% as the F-statistic increases to
7.0.

d. Partial F-test. The partial F-test has essentially the same significance as the F-test, except that in this case we are trying to assess the significance of a single term in the model rather than all the terms taken together. The critical factor here is the difference or increase in the sum of the squares accounted for by the regression as a consequence of adding one term to the regression equation.

e. Partial correlation. The partial correlation is a measure of how closely the value of the independent variable or factor (such as number of full baths) is related to the dependent variable (usually the sales price). The dependent variable is adjusted so that all of the other factors in the model are "taken out" of the values in order for us to have a measure of how closely this particular variable is related to the remaining dependent variable. Mathematically, its maximum absolute value is one. In this example, if every house with two full baths sold at one price and every house with one full bath sold at another (lower) price, the partial correlation would be exactly one. In practice, we take account of the other differences (factors) in our model so that the partial correlation can be large, even though a direct plot is not linear.

f. The t-statistic. The t-statistic is a ratio of the standard error of a coefficient to the value of that coefficient. Comparison with a table of t-statistic values would tell us the probability that the given coefficient is indeed statistically different from zero. This should give us the same answer as the F-statistic analysis. We can also use the t-statistic to give us an interval within which we would expect to find the given coefficient at a specified level of confidence.

   On the Variable Coefficients report, we show a conservative 95% interval, i.e., we would expect to find the derived coefficient within this interval 95% of the time even if we were to select our sales all over again from scratch.

The OASIS CAMA Market Valuation Subsystem has the capability to produce a multiplicative model where the dependent variable is a function of the product of the independent factors in the model; e.g.

SP = C1 x Grade Factor x SFLA x Sty hgt x Age factor x...

by taking logarithms, we have:

log SP = log C1 + log (Grade Factor) + log (SFLA) + log (Sty hgt) + log (Age factor) +...

The variables in the equation can be produced with transformation type 13 in the Edit and Expansion program. The coefficients in the second equation are then exponents for the terms in the first equation.

The Market Modeling program produces the following reports:

Variables to be considered for Regression - a list of the variables in the X-Array.

Neighborhood Group Cluster Assignments - showing exactly which cluster every neighborhood group has been assigned to as specified by your input.

Model Assignment Tables - showing how many sales have been assigned to each cluster. It also includes the number of sales which were not assigned to a cluster because they were not assigned to a neighborhood group or because the group that they were assigned to was not assigned to a model.

Constrained MRA Parameters - showing the variables and the constraints for the model. This should be examined for possible parameter errors.

Statistical Data for the Cluster (optional) -This report can be useful in your modeling efforts since you can examine the values of the factors you are trying to include in the model. Among other things, you can check to see that all your parcels have non-zero sale prices, land values, CDU's, living areas, etc. You can also check the average sale price and the spread in sale price to see if you'd like to break this cluster down further. The range of construction year and the variation in other variables which you might want to model can be easily checked. If there is very little variation or a low occurrence of certain factors, it is very likely that the derived coefficients will not be statistically significant and should be constrained if they are to be meaningful and useful.

Correlation Matrix (optional) - This report shows the upper (triangular) half of the correlation matrix. Its major use is to help you confirm that certain factors do correlate well with sale price. Remember that the maximum absolute value of the correlation is 1.0. A negative correlation with sale price means that a higher value for the independent variable results in a lower sale price (e.g., age). Note also that a strong correlation of other variables with each other (multi-co linearity) will be resolved by eliminating one of the variables. This step is taken if any entry is larger than 0.995.

Regression Action Report -This report shows the action of the computer as it adds each variable into the model, and then eliminates those which are not statistically significant at the level you chose with the F value parameters on the model parameter card, or which do not meet your specified constraints.

Analysis of Variance - We have referred to this report previously. To summarize, this report is used to analyze how well the model fits. The basic measures are the R squared and standard error statistics.

Variable Coefficients -This report summarizes the final values of the model coefficients along with relevant statistics. These final values are not the same as those printed in the Regression Action Report since the final values take account of all the factors in the model plus those that are constrained.

We have discussed the significance of the statistics. The most meaningful coefficients should have small standard errors, large t-values, small range for the confidence interval, a partial correlation as close to one as possible (in practice seldom above 0.5) and a large value for the F-test statistic. These statistics cannot be calculated for the constrained variables and thus are left blank. You can refer back to the regression action report to determine the significance of the factor prior to its being constrained (partial F). Often the constrained and unconstrained values may be very close and you may elect to redo the model, loosening the constraint.

Model Plot back or MPBR (optional; can also be limited by using the error percentage option) -This report lists each parcel in ID sequence order, its sale price, the MRA estimate from the model which has just been calculated, and the difference of these two numbers and the percentage of this error with respect to the sale price.

Plot of Residuals (optional) - The errors or deviations of the MRA estimates from the actual sale prices may be plotted against any variable you choose. Generally, the most useful coordinate for the X-axis is the sale price. Outliers can be found rather quickly by using this plot and can usually be identified quite rapidly by referring to the Model Plot back Report.The following two reports are produced at the end of the modeling run and pull together information from across the clusters and their models:

1. Model Summary Report and 2. Model Coefficients Comparison Report.

1. Model Summary Report

This report provides an overview of modeling results, one line per model. A summary line provides a quick overview of the variable results for the modeling run.

This example is for demonstration purposes only and does not represent current results

```
 MAS430A   PROCESS COUNTY  (99)                    PAGE NO. 41
MODELING SUMMARY
STATISTICS MARKET
MODELING FOR COUNTY
```

MOD	DESCRIPTION	NO. Sales	AVG price	AVG SF	AVG YR	GRADE	#VAR	R Squared	ST Error	COV
1	HIGHER VALUED	89	93,233	2,090	980.4	3.04	13	0.87520	6,936.9	7.4404
2	MEDIUM VALUED PROPERTIES	186	58,618	1,517	964.6	2.90	12	0.82770	5,962.9	10.1726
3	LOWER VALUED PROPERTIES	176	37,188	1,292	941.6	2.60	10	0.80190	5,767.9	15.5102
1	0	451	57,086	1,542	958.7	2.81	35	0.00000	6,076.5	10.6446

0

Model Summary Report

MOD DESCRIPTION	Cluster number (or 100 for overall summary) followed by the model description from model action card, if entered.
NO. SALES	Number of sales assigned to cluster. Total for all modules (summary).
AVG PRICE	Average Sale Price for sales in model.
AVG SF	Average Square feet of living area.
AVG YR	Average year built or effective year, if override.
GRADE	Average quality grade factor, (CLASS rating for WYS counties).
# VAR	Number of unconstrained variables in the model.
R-SQUARE	R-squared for the model, based on unconstrained variables.
STD ERROR	Standard error of the estimate. Model standard error. Weighted by number of sales for summary.
COV	Coefficient of variation (percent of average sale price represented by standard error).

In evaluating the results of model changes it is often helpful to evaluate the modeling results on the basis of the change in the overall summary statistics from the prior modeling run.

2. Model of Coefficient Comparison Report

Often it is helpful to a modeler to compare the coefficient of similar model terms across clusters. This can lend credibility to the modeling results or, when inconsistencies are spotted, cause further examination of the results to determine the reason for the inconsistency. This report provides a columnar display of model terms for up to ten (10) models per page. Models are displayed in user specified sequence. The program automatically adjusts the models to line up horizontally by variable so the variables listed represent the superset of all variables included in the models listed on a given page.

The below is an example only of Model Coefficient Comparison Report for demonstration only and does not represent current data.

```
MASP430                          ANY COUNTY, U.S.A.                                          PAGE 143
MASP430-01                      MODEL COEFFICIENT COMPARISON REPORT COMPAR 01 02 03 04 35 05   FIRST
MODEL SET
MODEL # 02 NOT FOUND - CANNOT PROCESS MODEL # 35 NOT FOUND - CANNOT PROCESS
MODEL #                     1                     3                     4                     5
# SALES                     0                  1760                   795                   608
AV SALE$                0.0000             176530.5409         109915.8591
                        555241.9868
STD ERR                 0.0000              10515.5351           8271.6201
                        58961.6093
COV %                   0.0000                   5.9567               7.5254
                        10.6190
004 SFLA                                        46.8520              57.7238
                                                93.0632
007 BATHS                                                          7500.0000
                                                                   4207.5830
010 GARCAP                                    6383.2113           10000.0000
011 CPTCAP                                    7031.6014            7500.0000
                                              12389.5102
012 POOL                                      6495.9334           10000.0000
                                              16854.5316
013 VIEW                                      8828.7920            3209.4854
014 USBLSF                                        0.3299
023 B.LAND        -10000.0000                     0.4636               0.2882
                  0.9280
028 AGE*SF                                      -0.8033              -0.8487                -
2.4658
030 DS*SF                                                             1.0669                -
2.3861
033 USAB=0
                                                                                          16615.030
4
037 R994SF                                      -0.2305              -0.7463
                                                1.5884
040 NUSFLA                                      -1.4592              -0.9614
                                                13.6261
043 RG25SF           500.0000
044 RG26SF           800.0000
048 RG33SF            10.0000
052 117*SF          4000.0000
053 JUNK             200.0000
056 MMYY              20.0000
057                   10.0000
058 GRDADJ             2.0000
059 ADGDSF             5.0000                    4.6817               1.7703
                      11.6304
060 R394SF             1.0000                                        -0.5511
061 R993SF                                      0.7328               0.6501
                                                1.3290
062 >10*SF             8.0000
                       1.9292
064 >30*SF
                                                                                                1.02
46
065 >50*SF             1.0000                                                                  -
1.2234
075                    1.0000
084                    8.9310
126                   -1.0000
127                    1.0000
C.TERM            51618.8414             64803.8225           12976.7384
                  12469.0579
```

The 'Market Valuation Preparation' (MASP440) Program

Once market models have been calculated, the Market Valuation Preparation program is executed. This program provides for:

Loading of Comparable Sales and Value Summary Report formats to the OASIS database. These formats are user-defined and maintained with On-Line Parameter Maintenance (OLPM).

Loading of comparable selection criteria and optional model adjustments to the OASIS data base. Comparable Selection criteria and optional model adjustments parameters are used by the Market Valuation program to do comparable sales analysis. These parameters are user- defined and maintained with On-Line Parameter Maintenance (OLPM).

Set up of two direct access files containing information about the sales which are to be used as comparables. These files speed up the selection of comparable sales and the calculation of adjusted sales prices when the market valuation program is executed. These files are generated using data maintained in the Expanded Sales Extract file with cluster assignments.

The 'Market Valuation' (MASP450) Program

The Market Valuation program (MASP450) performs comparable sales analysis and produces comparable sales reports for each subject property. It also produces a file which you can use to update the appraised values on the CAMA files with the market values derived here.

The key to understanding the function of the Market Valuation program lies in understanding the process and the terminology of comparable sales analysis and how they are used in computer application. The process of comparable sales analysis should be familiar to the appraiser/user. In order to derive the market value of a subject property, several other properties are chosen as comparables which satisfy the following criteria:

They are geographically close to the subject property, i.e., they are in the same neighborhood.

They are similar in size, style, and quality of construction. Other significant factors such as age are similar.

They have recently been sold with sufficient exposure to the open market that the sale prices can be considered valid.

The sale prices of the comparable properties are then adjusted to the subject property for differences in market factors including additions such as garages, decks, patios, and fireplaces.

In order to make these concepts quantitative so that the computer can make these judgments for us, we need to discuss the following concepts:

comparability distance,
comparable selection criteria and weights,
market adjustments, and finally, the derivation of a weighted market estimate (to be used as the appraised value).

Comparability Distance

Comparability from an appraisal standpoint cannot be well defined in terms of observables. Neither can it be well defined from a mathematical standpoint. In the market valuation program a model of comparability has been implemented which does not depend on specific property features but allows the user to define within the constraints of the model the location and physical characteristics and relative contribution of each to be considered in the select on process.

The general measure of comparability takes the form of a Euclidean (root of sum of squared differences) metric; the comparability measure is computed as follows:

$$\text{SQRT}\left(\underset{i}{\text{summ}}\ Wi\ (Xi - Xi(s))1^{**}2 \quad + \quad \underset{J}{\text{summ}}\ [Wj\ d(Xj, Xj(s))]^{**}2\right)$$

In this formula, variables with a subscript 'i' range over property characteristics considered as continuous variables while those with a subscript if range over those treated as classification variables.

Note: The asterisk (*) in the equations stands for a multiplication sign and the double asterisk (**) stands for exponentiation to the power of the number that follows the "**."

The variables in this formula are:

Wi	=	weight associated with ith continuous characteristic
Xi		= value of ith characteristic in sale property
Xi(s)	=	value of ith characteristic in subject property
$\underset{i}{\text{Summ}}$		= summation of terms over i characteristics
Wj	=	weight associated with jth continuous characteristic
Xj	=	value of jth characteristic in sale property
Xj(s)	=	value of jth characteristic in subject property
$\underset{j}{\text{summ}}$	=	summation of terms over j characteristics
d(a,b)	=	inverse delta function
	=	O If a = b
	=	1 if a does not = b

Variables such as age, square feet of living area and story height are considered continuous in this comparability measure and variables such as style (ranch, cape cod, colonial, etc.) are considered classification variables. General guidelines for selection of variables and weights in the comparability distance are discussed below.

Market Adjustment of Comparable Sales

The appropriate market model is applied to the subject and each of the comparable sales to obtain regression estimates of subject and sale market values. Adjusted sales estimates are then obtained on each sale by computing:

Adj. Sale Price = Comp. Sale Price + (Regression Est. of subject - Reg. Est. of Comp.)

Model adjustments are applied in computing the regression estimates, i.e., they are treated as additional terms in the MRA Formula.

For each model the user may specify up to *25* variables and weights to be considered in adjusting comparable sales to the subject property. This feature permits the user to account for characteristics which were poorly represented in the sales base for the cluster on which the model was built. For example, none of the sales in a particular cluster have in-ground pools yet the model will be used to value subjects that do. The appraiser may be able to specify to the analyst the dollar-per-square-foot figure to include as a market adjustment for pools in the cluster in question.

Computation of Weighted Estimate

A weighted estimate is computed from the adjusted sales by computing the following; weight for each sale; or normalizing the weights so that they total I and then totaling the adjusted sales weighted by the adjusted weights.

The weighted estimate is computed as follows:

Wi = 1 / (M/2)**2 + Di**2 + (2M x Pi)**2

where:

Wi is the weight for the ith sale
M is the maximum (acceptable) "comparability distance"
Di is the actual "comparability distance" between the ith sale and subject, and
Pi is The fractional percentage adjustment to the ith sale (e.g. if 20,000 adjustment is made to a 50,000 sale, Pi 20,00015Q000 = 0.40).

If we view this as an inverse weighting by the expected error in the estimate (each adjusted sale is an estimate of the market value of the subject property) we see that this measure assumes an inherent error in the estimate in the [M/2] squared term, The other terms represent the error due to non-comparability (Di squared), and excessive adjustments (2MPi squared). Based on these factors, a 50% adjustment carries the same penalty weight as a comparability distance of M (the maximum comparability distance).

Computation of the Ranked Estimate

In order to deal with the bias problems arising from outliers (pulling the market estimate either down or up), the program computes a median estimate by sorting the adjusted sale, the MRA estimate, and the ranked estimate and averaging the middle 2 or 3 values. That is, if five comparables have been selected, and therefore 7 value estimates are available, the two highest estimates and the two lowest estimates are eliminated and the remaining three are averaged.

In the example, if the MRA estimate had been 46,000, the estimates would have been ranked as follows:

Estimates	Eliminating highs and lows
30,000	
40,000	
43,900	43,900
45,000	45,000
46,000	46,000
50,000	
50,000	

134,900 divided by 3 = 44,967

The market estimate is computed as 45,000, rounding the result to the nearest $100.

User-specified Market Valuation parameters which are maintained with On-Line Parameter Maintenance control (a) the number of parcels contained in the expanded subject extract file that will be valued, (b) printing of a value summary report and/or comparable sales report for the valued parcels. These parameters provide the user with a means to limit processing and print output when performing sample runs for checking market valuation results.

Once the models have been calculated, the actual process of market valuation takes place.

The 'Print Comparable Sales Reports' (MASP460) Program

The Print Comparable Sales Reports program prints the comparable sales reports for the file created by the Market Valuation program. It uses user-specified start and end parameters and value maintenance headers and produces an one-line value maintenance listing for each property, within the range of property records specified. The user-specified parameters are maintained with On-Line Parameter Maintenance (OLPM).

The 'Statistics and Graphics' (MASP470) Program

The Statistics and Graphics is a market valuation support program which provides the user with a means of generating various statistical information about the OASIS CAMA database file; (a) mean value, (b) minimum value, (c) maximum value, (d) median value, (e) standard deviation, (f) cross plots, (g) cross-tabulation, and (h) histograms. The data to be analyzed can be selected through various parameter cards.

User-specified parameters

- include: Parcel
- Selection Criteria
- Statistics
- Mean Standard Deviation
- Cross Plot
- Histogram

The 'Market Valuation Posting' (MASP480) Program

Having reviewed the values produced by the Market Valuation program, the values must be posted to the OASIS database. This is the final step in the Market Valuation process. The Market Valuation Posting program posts the parcel values maintained in the sequential file produced by the Market Valuation program to the OASIS VALU record. This market value will be retrieved from the CAMA subsystem into the Administrative and Tax Roll ASMT record, where the current selection method on the CAMA VALU record has been set to Market. See an example of a MRKT screen where when posted the market value will be displayed on the VALU screen.

```
ACTION: S SCREEN: MRKT USERID:                              CHANGE-REASON:
 --------------------   M A R K E T   V A L U A T I O N   --------------
JU= 20  RO= RR  PARC=                        YR= 2017  ALTKEY= 0906310
                                              DYR= 2017  STATUS: ACTIVE

BLDG   LAND  TOT COST  MARKET PREV VALU  RSN FCC MDL   MRA EST   WTD EST
   == --------- --------- --------- ---------   -   -  --- --------- ---
 01  42,262 137,033   131,400   125,100   M   2  026   126,255   131,099

F-------SELECTED COMPS------- BOOK PAGE  DIST COMPARE  MRA EST  ADJ SALE
N 0442-09-4078-             09420 00313    71    0      90,876   117,379
N 0443-42-9849-             09904 00109   101    0      83,981   142,274
N 0403-71-8427-             09178 00206   115    2      67,992   131,263
N 0413-43-3568-             09685 00731   160    2      79,382   131,873
N 9493-56-9803-             09814 00001   161    2      77,487   136,768

 N = KEEP EXISTING COMPARABLE SALE  S = COMPARABLE SALE SEARCH
 Y = USE SALE HISTORY               X = EXCLUDE COMPARABLE SALE

   POST MARKET VALUE ? N   (REQUIRES CHANGE ACTION)
   DISPLAY COMPSHEET ? N    PRINTER: SCRN   ( SCRN =SCREEN )
                                            (                =PRINTER   )
```

This Example of a MRKT screen is for demonstration purposes only.

The 'Copy Market Models' (MASP490) Program

The Copy Market Models program will copy all market modeling and market valuation parameters for a given user-specified jurisdiction, year, roll, and property type (residential or commercial) to that of another jurisdiction, year, roll, and property type. This feature is used when established market models do not change from one year to the next or when established market models are effective for more than one jurisdiction. The copy feature insures that the same valuation results will be achieved from year to year and/or from jurisdiction to jurisdiction.

It must be noted that the above section is an abridged version or broad overview of the Market Approach Calculation Process. The above mentioned programs or batch files are much more involved and a CAMA Manuel is required to facilitate the final process.

1. Source: OASIS CAMA Manuel, by Cole-Layer and Trumble, CLT, ON Line Manuel. Release 10, 2007.

A. Residential Neighborhood Grouping

Cumberland County groups similar neighborhoods into neighborhood groups. Neighborhood groups are three numeric values each representing a unique characteristic to help group similar or comparable neighborhoods for valuation purposes. The 2nd and 3rd numbers in the group represent a guideline only and are not definitive.

1st Number (General Location)

0 - Grays Creek
1 - South View / Jack Britt
2 - 71st Area
3 - Douglas Bryd Area
4 - Terry Sanford / Haymount Area
5 - Westover Area
6 - E E Smith Area
7 - Pine Forest Area
8 - Eastover / Falcon / Wade / Godwin / Stedman
9 - Beaverdam / Cedar Creek / Sunnyside

2nd Number (Quality Grade Ranges in NBHD)

0 - Upper Class / High End (Average Grade 550 >=)
1 - Mid - High Class (Average Grade 470-535)
2 - Mid Class (Average Grade 435 to 450)
3 - Above Average (Average Grade 370)
4 - Average Homes (Average 350)
5 - Below Average (335 or below)
6 - Townhouse
7 - Condo
8 - Multi Family, (R2, RT, RQ)
9 - Typically Manufactured Home NBHD

3rd Number (Sales Price Ranges and Average for NBHD)

0 - Upper Class > $450,000
1 - $300,000 to $450,000 , (Average $350,000)
2 - $200,000 to $299,000, (Average $250,000)
3 - $175,000 to $225,000 , (Average $200,000)
4 - $150,000 to $199,000, (Average $175,000)
5 - $120,000 to $175,000, (Average $150,000)
6 - $100,000 to $150,000, (Average $125,000)
7 - $80,000 TO $120,000, (Average $100,000)
8 - $50,000 to $100,000, (Average $75,000)
9 - < $60,000 (Average $30,000)

Thus each residential neighborhood is assigned a unique three digit code as described from the previous page. From those numbers a market model is created by assigning similar neighborhood codes to a model and running multiple regression analysis against those sales from those neighborhood groups.

From these sales, adjustments, and or coefficients are produced through the regression analysis. With defined variable information and weighting of these variables, computer selected comparables are chosen from the sales database. Using the coefficients arrived from the regression; a multiple regression analysis (MRA) estimate is calculated for the subject property and each of the comparable sale properties. The subject MRA estimate is then compared to each of the comparables MRA estimates in order to derive an adjusted sale price

The market program also arrives at a weighted estimate for the subject property. These MRA estimates for the subject and comparables along with the weighted estimate for the subject are considered when arriving at the subject‘s value.

The program will eliminate the highest and lowest outliers from the MRA and weighted estimates derived. The mean is taken of the remaining estimates in order to establish a market value for the subject property.

Listed below are some of the variables used in the market model approach and they are listed in no particular order. There may be others variables not listed below and their omission does not exclude them from their importance.

NBHD Number
NBHD Group Number
Quality Grade
Size or Square Foot Living Area
Condition
Story Height
Improvement Type
Land Value
Building Age

B. Example of a Residential Property Valued at Market

Note: Market rates, adjustments, and sales information used in valuing this example property may not be representative of the actual figures used and therefore the value shown may not be accurate at the time of this printing. This section is intended as an example of what the computer system is capable of performing when the market valuation module as described above is applied

The subject is a 1994 Manufactured Home with 2052 Square feet, with a Quality grade of 450 and a condition factor of Average that has been assigned to a market model of number 26.

There are five comparables chosen. Comparable one is the subject‘s sale and the other four are located
within the subject‘s neighborhood number as well as the three digit neighborhood group number.
The computer can generate seven estimates of value, an MRA, weighted estimate, and if available five comparable adjusted sale prices if applicable. Some properties might only generate three adjusted sale price comparables.

In our example the computer arrived at the

following: MRA

estimate - $126,255

Weighted estimate - $131,099

And five adjusted sale prices from the

comparables:

Comparable 1 -

$117,379

Comparable 2 - $142,274

Comparable 3 - $131,263

Comparable 4 - $131,873

Comparable 5 - $136,768

For residential properties with seven estimates the computer will eliminate the two highest of the seven and the two lowest estimates leaving three estimates of value. The computer will then take the mean of the three remaining and round to the nearest hundred to determine the market value for the subject. So in our example, the ending value that would be posted is $131,400.

The next page is an example of a Residential Comparable worksheet.

C. Example of a Sample Comparable Worksheet

	Subject	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5
Parcel Identification	xxxx-xx-xxxx	xxxx-xx-xxxx	xxxx-xx-xxxx	xxxx-xx-xxxx	xxxx-xx-xxxx	xxxx-xx-xxxx
Street Number	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
NBHD/GRP	HERMAN BONDS 4000/045	PORT RICHEY 4000/045	SWALLOWTAIL 4000/045	BRISSON 4000/045	PALINDROME 9472/045	BELINDA 1960/198
MODEL #		26	26	26	26	26
LAND DESCRIPTION						
ROAD TYPE	UNPAVED ROAD	UNPAVED ROAD	UNPAVED ROAD	PAVED ROAD	PAVED ROAD	PAVED ROAD
ZONING	A1	A1	A1	RR	RR	RR
NUMBER LOTS	1	1	1	1	1	2
TOTAL ACRES	8.16	0	0	0.47	0.46	1.65
DWELLING DESCRIPTION						
NUM STORIES	1.0	1.0	1.0	1.0	1.0	1.0
IMPR TYPE	MANUFAC HOME	MANUFAC HOME	MANUFAC HOME	MANUFAC HOME	MANUFAC HOME	MANUFAC HOME
STYLE	NEW	NEW	NEW	NEW	NEW	NEW
CONDO TYPE						
EXTERIOR WALL	VINYL SIDING	VINYL SIDING	VINYL SIDING	VINYL SIDING	VINYL SIDING	VINYL SIDING
YR BLT/EFF YR	1994/0000	1996/0000	2001/0000	1995/0000	2000/0000	2000/0000
BEDROOMS	3	3	4	4	3	4
BATHS	01/01/00/00 /00	01/01/00/00 /00	00/00/02/00 /00	00/01/01/00 /00	00/00/03/00 /00	00/00/02/00 /00
HEAT	HEAT & COOL SP	HEAT & COOL SP	HEAT & COOL SP	HEAT & COOL SP	HEAT & COOL SP	HEAT & COOL SP
AIR CONDITIONING	A/C - YES	A/C - YES	A/C - YES	A/C - YES	A/C - YES	A/C - YES
FIREPLACES	1	1	1	1	1	1
GRADE COND	450 A	450 A	350 A	350 A	450 A	450 A
FUNC/ECON	000/000	000/000	000/000	000/000	000/000	000/000
BMST AREA	0	0	0	0	0	0
FIN BMST	0	0	0	0	0	0
ATTIC SF	0	0	0	0	0	0
OTHER AREA	0	0	0	0	0	0
UTILITY RM	0	0	0	0	0	0
MGFA	2,052	1,809	2,052	2,128	2,079	2,128
SFLA	2,052	1,809	2,052	2,128	2,079	2,128
AREAS						
ATT GARAGE	0	0	0	0	0	0
CARPORT	0	0	0	0	0	0
DET GARAGE	0	0	0	0	0	0
OPEN PORCH	152	0	0	72	0	112
CLOSED PORCH	0	0	0	0	0	0
DECK AREA	240	0	0	0	64	168
PRICING DATA						
RCN	$115, 396	$95,666	$90,172	$91,140	$105,901	$111,966
DEPRECIATION	-41,543	-32,526	-26,150	-31,899	-31,770	-33,590
NBHD FACTOR	102	102	102	102	103	102
MKT ADJ COST	$73,853	$63,140	$64,022	$59,241	$74,131	$78,376
TOTAL MIMPADJ	$20,918	$1,960	$7,606	$807	$0	$0
LAND VALUE	$42,262	$32,993	$13,167	$8,500	$15,000	$10,000
TOTAL VALUE	$137,033	$98,093	$84,795	$68,548	$89,131	$88,876
VALUATION						
SALE DATE		4/14	7/16	5/13	7/15	3/16
SALE PRICE		$82,000	$100,000	$73,000	$85,000	$88,000
MRA ESTIMATE	$126,255	$90,876	$83,981	$67,992	$79,382	$77,487
ADJUSTED SALE		$117,379	$142,274	$131,263	$131,873	$136,768
DISTANCE		71	101	115	160	161
WTD ESTIMATE	$131,099					
FN/EC/PCTCOMP	1.00					
MARKET VALUE	$131,400					
FLD CNTRL CD	2					
INDICATOR				***ADJ***	***ADJ***	***ADJ***

XII. INCOME APPROACH CALCULATION PROCESS

OVERVIEW……..……..349
1. ANALYSIS OF DATA 350
2. UPDATING OF INCOME MODELS (MASP246) PROGRAM..... 351
3. GENERATION OF INCOME ESTIMATES (MASP260C) PROGRAM.....352
INCOME VALUATION REPORT 353
A. Example of an Apartment Property 353
B. Example of a Hotel / Motel Property 357
C. Example of a Shopping Center Property.....363
D. Example of a Mobile Home Park Property.....369
4. VALUE REVIEW AND USE OF VALUE OVERRIDES.....373
5. VALUE SUMMARY INFORMATION.....373

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XII. INCOME APPROACH CALCULATION PROCESS

Overview

This section addresses the application of the Cole-Layer-Trumble, (now Tyler Technologies) Company Income Model Approach to valuation of commercial and industrial (hereafter referred to as commercial) properties. Commercial properties in the OASIS CAMA subsystem are automatically valued by the Cost Approach, and optionally by the Income Model Approach, to value.

This section also summarizes the capabilities of the Income Model Valuation procedures and provides a high level overview of the functions of each batch program included with the module. This section is intended as a quick reference guide to the OLPM parameters and programs used by the Income Model Valuation function.

This section also describes the structure of income and expense models used in the Income Model Valuation process. This part also describes data analysis which needs to take place to develop income models. Later portion of this section also discuss in detail the functions and operations of each of the programs within the module.

Each section provides:

A Functions and Purpose paragraph to briefly summarize the capabilities of the program that's being described.

An Overview paragraph which discusses the concepts underlying the program as well as any aspects of the operations being performed that you should be aware of. You should have a good understanding of these concepts before actually executing the program being described. You should also decide whether you need to alter any of the parameters supplied with the system to suit your particular application.

A Parameters and Controls paragraph explaining what options are available to you, as well as the content and format in which you must supply information about your choices of the program.

A Reports and Outputs paragraph explaining the format and content of the output from the program which is either printed out or written to one or more data files. The Reports paragraph is most useful when you are reviewing the output from your runs. With a report in your hand and the Reports paragraph in front of you, you should be able to decide whether you are achieving the results you had hoped for.

The Commercial Income Valuation program can value all parcels with Commercial improvements maintained as the first or primary building. This approach deals with the income-producing areas in the main buildings. Other support areas of the main building yard improvements and secondary buildings on the property are included to the extent that they are typical of what normally supports the income use of the property. Their contributory value must be reflected in the rents assigned to the income-producing areas of the main buildings. When properly applied, the Commercial Income Model Approach produces a reasonable and defensible estimate of market value for most properties.

There are four separate phases of income valuation:

1. Data analysis to develop income parameters
2. Updating of income models
3. Generation of income estimates
4. Value Review and Use of Value Overrides

1. Analysis of Data

Before you can adjust or update the income model tables, you should analyze the existing data as it relates to current real-world conditions. This includes establishing the income models for your jurisdiction by analyzing your available market and/or economic (income and expense) data to estimate the typical income, expenses and capitalization rates for the various income uses and markets in your jurisdiction. This analysis would be performed manually utilizing income and expense data which you have reviewed and adjusted. Selectability can be used to extract summary statistics for your income and expense data. Models derived from this data need to be tested against other indicators of value and fine-tuned to permit correlation.

The income approach assumes that the source data for the income approach is the site and improvement characteristic information collected on the Data Collection Card. This information includes:

parcel identification property class
property location (street address and neighborhood ID)
property features
main building section data by horizontal line (this includes a use code as well as component description)
other features
yard improvements and secondary buildings

This information forms the basis for the income approach and also provides almost all of the source data for the income model approach.

2. Updating of Income Models (MASP246) Program

When you are finished with the income table parameter updates, for MASP246 version INCM, you may submit these to the edit and load procedure. The edit and load procedure is handled through the OLPM L(oad) function which executes program MASP246. The system will edit the changes you make to the income table parameters, and will inform you of any errors returning you to the OLPM entry in error.

If there are errors you must correct them, and again use the OLPM L(oad) function to resubmit the changes for additional editing. When no errors are found by the editing procedure, the system will accept the new parameters and will load the new commercial income table.

Income Model Parameters

The income model parameters include the following nine tables.

1. First Income Model Refinement Table
2. Second Income Model Refinement Table (optional)
3. Structure Type/Use Group Assignment Table
4. Use Type/Use Group Assignment Table
5. Land Use Group/Use Group Reassignment Table
6. COMR Use Group Assignment Table (optional)
7. Neighborhood Model Assignment Table
8. Model Table
9. Tax Rate Table

After updating and running tests on the 9 tables, reports can be generated. You will be using the income model report to verify the models that you've built. This report lists the values of the parameters that will be applied in assigning neighborhoods to the income models which will be used to calculate income values. If all edits passed, the income and expense models are written to the income model table for use by the CLT Income Valuation procedure.

3. Generation of Income Estimates (MASP260C) Program

If there is income generating data in the parcel records the batch income valuation program produces an estimate of value according to the Income Approach, which is the sum of the estimates for all buildings on the parcel. The program reads the OLPM parameters for program MASP260C, version 260C to determine what year to use in reading the Income Model file. The valuation year stored on the income model file will be used in calculating age for expense adjustments. The posting flag on the parameters controls whether or not the newly generated income estimates are to be posted to the VALU table. The process year on the parameters is used in establishing the VALU table year in reading and rewriting VALU records with the newly generated income estimate.

The Batch Income Valuation program (MASP260C) provides for the generation of income estimates for Commercial properties, and the optional update of these estimates to the OASIS Value Summary (VALU) table.

Valuation detail reports are used to review the value computations for the property. Then to determine that the description (characteristics) of the property as recorded in the computer are correct and complete, and to verify the cost and income model computations as applied to the subject property are correct and reasonable for the property. In order to effectively review the parcel information a commercial valuation review document is required that displays the detailed property characteristics and commercial cost calculations against that data. The Inventory Contents Sheet for Commercial Properties, generated using the General Report Writer module, can be used for this purpose. The income model approach computations are displayed on the Income Valuation Report.

Commercial Valuation Reports include a value summary showing the cost and income estimates, the percentage difference in the two estimates, and the final conclusion of value based upon the value method selected for the parcel. It also shows any existing overrides that were taken into account in determining the cost and income value estimates. The Commercial Valuation Report also provides totals showing how many records were successfully processed in the run.

Income Valuation Report

The CAMA system has the ability to value designated income producing properties by applying an income model against the characteristics of the income producing property. Market income and expense data is collected from surveys, resource guides and talking to business owners about local market conditions. Modeling takes place when this data is segregated into income models based on various factors that relate to a particular group of properties. Each income producing property is then pointed to the appropriate model within the CAMA program and an Income Valuation Report is produced. The Income Valuation Report shows a complete breakdown of the valuation process along with the value arrived at. There are 4 income producing property types that an Income Valuation Report can be produced:

A. Apartments
B. Hotels/Motels
C. Shopping Centers
D. Mobile Home Parks.

Explanations and examples of these are shown in the following paragraphs.

A. Example of an Apartment Property

The following Income Valuation Report is an example of an apartment property and is for demonstration purposes only. The income, vacancy, expense and capitalization rates used in this example may not represent actual rates used to value this property for the revaluation. This is shown as an example of what the computer system is capable of performing when the appropriate factors are applied. This example shows how an income model is applied to a 6 unit complex built in 1977 (2 units – 1 bedroom/1 bath; 4 units – 2 bedroom/1 bath).

Each apartment complex is assigned a specific neighborhood number. The apartment neighborhood number is the critical factor pointing the subject property to the appropriate income model and subsequently to the income model parameters that results in the valuation of the property. In the case of our subject property the apartment neighborhood number will point to apartment model 03. Depending of the particular circumstances of an individual property, further model adjustments can be made to adjust the monthly rentals, per square foot expenses and capitalization rate.

The left hand side of the report shows the income computations. Income is determined by applying the adjusted monthly rents ($450 for 1 bedrooms units and $575 for 2 bedroom units) to the number of units of each size (2 1-bedroom and 4 2-bedroom units). These are summed to provide a total monthly income which is multiplied by 12 generating the total income for the apartments at $38,400. This potential gross income is then adjusted by the occupancy factor to the expected gross income for the property. In this example, the model occupancy factor is 90%. The resulting expected gross income is shown to be $34,560.

The right hand side shows the expense computations. An "income year built" of 1977 had been entered for the property resulting in an effective age of 40 years (applied to 2017). Properties 26-50 years old use the third age adjustment factor (1.10) in the model. The standard expense ratio for model 3 is 35%, which is then adjusted upward by 10% to arrive at an adjusted expense ratio of 39%. The adjusted expense ratio is then brought back over to the left hand side of the page and applied to the effective gross income.

The expense ratio of 39% is applied against the expected gross income, which results in overall expenses of $13,478. This expense amount is then deducted from the expected gross income to produce a net income of $21,082. The income is capitalized using an overall rate. The income model has a rate of 9.0% (.0900). To this rate, the 2017 effective tax rate of 1.239% (0.01239) is added to generate a total cap rate including taxes of 10.239% (0.10239).

The cap rate is divided into the net income to produce the income estimate of $205,900. Any residual land not required to support the income use of the property is then added in with the income estimate to produce the adjusted income value for this property.

Any parcel specific adjustments are summarized at the bottom of the report.

This value will be posted to the income value field on the VALU table. Typically, the default method on the NBHD table is set to cost for commercial properties; therefore, the value will be marked as income value as the selected final value for the property on the VALU record.

Apartment Complex Model Ranges for Income Approach:

	Average Monthly Rents	Average Occupancy	Average Operating Expenses	Direct Capitalization Rate
Range	$250 - $1,400	50% -100%	20% - 80%	0.065 – 0.13
Typical	$350 - $1,200	85% - 98%	30% - 50%	0.075 – 0.10

An Example of the Apartment Income Valuation Report:

Apartment Example

```
                                        INCOME APPROACH


**   01-APARTMENT MODELS            ** MODEL 03 ** FOR USE TYPE GROUP  01

   0  EFFICIENCIES  AT               425.00   =            0
   2  1--BEDROOM    AT               450.00   =          900
   4  2--BEDROOM    AT               575.00   =         2300
   0  3--BEDROOM    AT               695.00   =            0
   0  4--BEDROOM    AT               725.00   =            0
COVERED PARKING        0     X       0        =            0
PARKING                0     X       0        =            0

                          TOTAL               =        3,200

TWELVE MONTHS                                 X           12
                           TOTAL               =      38,400              AGE FACTOR (    40 YEARS =    1.10
POTENTIAL GROSS INCOME                        =      38,400              EXPENSES 35% X   1.10 = 39%
PERCENT OCCUPANCY                             X          90%
INCOME AFTER OCCUPANCY                        =      34,560              $34560  EGI X 39%     =     $13,478

EFFECTIVE GROSS INCOME (PARCEL EXCLUDE HOTEL) =      34,560
TOTAL EXPENSES         39.00%                 =      13,478
                       TOTAL                  =     $13,478
NET INCOME                                    =     $21,082
INCOME CAPITALIZATION
EQUITY RATIO      1.00    X   CASH ON CASH     0.0900   =  0.09000
EFFECTIVE TAX RATE                                         0.01239
TOTAL CAPITALIZATION RATE                                  0.10239
NET INCOME       21,082   @   0.10239 = 205,899
VALUE, INCOME APPROACH                                    205,900 ROUNDED
OTHER INCOME ADJUSTMENT       0
ADJUSTED VALUE, INCOME APPROACH                           205,900 ROUNDED
RESIDUAL LAND                                                   0
FINAL VALUE FOR PARCEL =     $205,900   (INCOME VALUE)
PREVIOUS REVIEWS HAVE RESULTED IN THE FOLLOWING INFORMATION BEING ON FILE FOR THIS
PARCEL: REFINE-MODEL ADJUSTMENTS ENTERED = INC:0
REFINE-VALUATION METHOD SELECTED = 0
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B. Example of a Hotel / Motel Property

The following Income Valuation Report is an example of a motel/hotel property and is for demonstration purposes only. The income, occupancy, expense and capitalization rates used in this example may not represent the actual rates used to value this property for the revaluation. This is shown only as an example of what the computer system is capable of performing when the appropriate factors are applied. This example shows how an income model is applied to a 100 unit, exterior corridor hotel/motel property.

Grouping like Properties

The initial step was to group like properties based on a combination of factors to include: type of hotel/motel, location, condition and the appraiser's knowledge of the market. There are several types of hotel/motel properties in the Cumberland County market. These include, but are not limited to: full service hotel/motels with owner operated restaurant; full service hotel/motels with leased restaurant; limited service hotel/motels; and extended stay hotel/motels.

Some of the key geographical groupings include, but are not limited to: Exit 49, Interstate 95 along Cedar Creek Road; the Cross Creek Mall/McPherson Church Road Area; Spring Lake; and Downtown/Eastern Blvd.

A combination of condition, quality grade, age and the appraiser's knowledge of the properties was used as the final criteria for the grouping of hotel/motel properties into models for the CAMA system.

OASIS Screens

In order for the hotel/motel models in the CAMA system to work correctly, certain information has to be keyed in the proper OASIS Screens.

a. The Commercial Sections (COMS) screen has to reflect the correct interior finish code of HOT (Hotel) or MTC (Motel).
b. The Commercial Characteristics (COMC) screen has to reflect the number of rooms in the –NUM OF UNITS bucket. Additionally, a –2 representing the Income Method needs to be keyed in the –SELECT METHOD bucket. This screen also has an income adjustment bucket (INC ADJUST) where additional income can be reflected in a percentage amount. Additional income is typically the result of a restaurant lease or it may reflect a percentage increase based on food and beverage income received; however, it can be used to show decreases in income for various reasons. Additionally, on this screen there is a bucket that reflects whether the hotel/motel has exterior or interior corridors.
c. The Land (LAND) screen will need to reflect the correct neighborhood, the correct property rating, and whether there will be an income adjustment (plus or minus) with the adjusted income value. This is normally where the Furniture, Fixtures and Equipment (FFE) are subtracted out from. Additionally, the –RESID LAND bucket can be used to account for additional value related to the cost of other, non-hotel/motel structures on the property.

Example of a Hotel/Motel Property

The example property is a 2-story, 100 room, limited service, mid-price motel. This motel is located in an above average location and is in good condition. It is typical, in that it has a lobby and office on the ground level. This motel has exterior corridors and an outdoor seasonal pool. There are no other sources of income for the property, as the continental breakfast is provided at no cost to the guest.

Assigning a Use Group, Model and Neighborhood

As stated above, the type of motel, location, condition and the appraiser‘s knowledge of the hotel/motel market was considered with the example property. Since the example property has an interior finish code of MTC (Motel) it is assigned by the CAMA system to income use group 02 – Hotel/Motel Properties. It is further assigned to Model 1, which includes limited service, mid-price hotel/motel properties. Our example also has FFE valued at $300,000, which has been entered as a negative income value adjustment. FFE is considered Business Personal Property; therefore, it is subtracted from the total property value to arrive at the true real property value.

Establishing Income Parameters

An Average Daily Rate (ADR) or base rate has been established for each model. The ADR is the revenue generated daily from room rentals, excluding discounts, taxes and other allowances, divided by the total number of rooms rented. The ADR for the example property is $65.00.

An adjustment factor for amenities is provided to account for the presence or absence of a pool on the hotel/motel property. The presence of a pool is determined by checking the commercial building refinements and the miscellaneous improvements for a pool code. A hotel/motel property with a pool receives no adjustment to the ADR, while a property without a pool receives a 0.95 adjustment to the ADR. Our example property has a pool.

An adjustment factor is also made to account for whether or not the hotel/motel has exterior corridors as its primary means of room access. The presence or absence of exterior corridors is determined by checking the –HTL XTR CRD bucket on the Commercial Characteristics (COMC) screen. The –HTL XTR CRD bucket will have a –Y if the rooms are accessed by exterior corridors and a –N if the rooms are access by interior corridors. A hotel/motel property with interior corridors receives no adjustment to the ADR, while a property with exterior corridors receives a 0.95 adjustment to the ADR. Our example property has exterior corridors.

Occupancy Percentage

For Hotels/Motels in Model 1, the occupancy percent rate is 60%.

Expense Factors

Expense rates: Due to the higher variability in occupancies and hence per room expenses, it is more customary to express expenses as a percentage of the income for hotel/motel properties. To this end there is a separate percentage operating expense factor that can be applied, instead of the per room expenses. In this example the operating expenses are 65%.

Income Capitalization

For Model 1, a hotel/motel capitalization rate of 0.1130 was added to the effective tax rate, as determined by the tax district. In this example, an effective tax rate of 0.01239 was added to the capitalization rate; thereby, arriving at the overall rate of 0.12539 or 12.539%.

Summary

The ADR of our example property is multiplied by the amenities adjustment factor for a pool and the adjustment factor for exterior corridors, to arrive at the final adjusted ADR. This, in turn, is multiplied by the number of rental units and by 365 days in the year, to produce a potential gross income (PGI).

$65.00 ADR x 1.00 Amenities Factor (Pool) x 0.95 Adjustment Factor (Ext Corridors) x 100 Units x 365 Days = $2,253,875 (PGI)

This is further adjusted by the occupancy percentage to determine the effective gross income (EGI).

$2,253,875 PGI x .60 Occupancy Percentage = $1,352,325(EGI)

Hotel expenses (calculated on a percentage of effective gross income) are applied and deducted leaving the net operating income (NOI) from the hotel operation.

$1,352,325 EGI x .65 Expense Ratio = $879,011 (Expenses)

$1,352,325 EGI - $879,011 (Expenses) = $473,314 (NOI)

The capitalization rate is the sum of the overall rate from the model and the effective tax rate taken from the tax rate table for the tax district. The total cap rate of 12.539% (0.12539) is divided into the net operating income (NOI) producing the income estimate of value.

$473,314 / 0.12539= $3,774,735 or $3,774,700 (R) (Total Property Value)

From the income estimate of value, Furniture, Fixtures and Equipment (FFE) is subtracted out to arrive at the true real property value.

$3,774,700 - $300,000 = $3,474,700 (R) (Final Real Property Value)

Motel/Hotel Complex Model Ranges for Income Approach:

a. Limited Service Motels

	Average Daily Rate	Average	Average Operating Occupancy	Direct Expenses
Capitalization Rate				
Range	$10.00 - $150.00	15% - 95%	45% - 80%	0.085 – 0.23
Typical	$20.00 - $100.00	30% - 70%	60% - 70%	0.105 – 0.13

b. Full Service Motels

	Average Daily Rate	Average Occupancy	Average Operating Expenses	Direct Capitalization Rate
Range	$55.00 - $200.00	30% - 90%	65% - 90%	0.075 – 0.14
Typical	$65.00 - $150.00	60% - 80%	75% - 85%	0.085 – 0.11

c. Extended Stay Motels

	Average Daily Rate	Average Occupancy	Average Operating Expenses	Direct Capitalization Rate
Range	$15.00 - $110.00	35% - 95%	40% - 75%	0.075 – 0.15
Typical	$25.00 - $95.00	60% - 80%	50% - 60%	0.09 – 0.12

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Example of the Hotel/Motel Income Valuation Report:

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                                INCOME APPROACH
                                ***************
                            ASSIGNED TO STR TYPE GROUP 02
 INCOME PORTION :
 **   02-HOTEL / MOTEL MODELS        ** MODEL 01 ** FOR USE TYPE GROUP  02
   BASE RATE                                =        $65.00

   MARKET TYPE       (CONVER)
   INCOME ADJUSTMENT                        X          1.00
   QUALITY TYPE      (AVERAG)               X          1.00
   AMENITIES         POOL                   X          1.00
   EXTERIOR CORRIDORS ADJUSTMENT            X           .95
   ROOM SIZE FACTOR                         X          1.00
   ROOM UNIT ADJ                            X          1.00

 ADJUSTED                                =        $61.75
   BASE                                  X           100
   RATE X                                X           365
   NUMBER
   UNIT
   X NUMBER DAYS

 POTENTIAL GROSS INCOME                     =    $2,253,875
   OCCUPANCY PREDICTED                      X            60%
 EFFECTIVE GROSS INCOME                     =    $1,352,325
                                            -
   EXPENSE 65% OF EFFECTIVE GROSS INCOME    =      $879,011

 NET INCOME                                 =      $473,314

 NET INCOME                                 = $    $473,314
 INCOME CAPITALIZATION
 EQUITY RATIO      1.00    X   CASH ON CASH   0.1130        =  0.11300
 EFFECTIVE TAX RATE                                            0.01239
 TOTAL CAPITALIZATION RATE                                     0.12539
NET INCOME      473,314   @   0.12539
VALUE, INCOME APPROACH(ROUNDED)                          $3,774,700
OTHER INCOME ADJUSTMENT                                    -300,000
ADJUSTED VALUE, INCOME APPROACH                          $3,474,700  AVG  34747.00 PER HTL UNIT(SF 34,747
EXCLD PARKNG)
RESIDUAL LAND                                            0
FINAL VALUE FOR PARCEL =   $3,474,700   (INCOME VALUE)
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C. Example of a Shopping Center Property

The following Income Valuation Report is an example of a shopping center property and is for demonstration purposes only. The income, vacancy, expense and capitalization rates used in this example may not represent the actual rates used to value this property for the revaluation. This is shown only as an example of what the computer system is capable of performing when the appropriate factors are applied. This example shows how an income model is applied to an 11,200 square foot retail strip center property.

Grouping Like Properties

The initial step was to group the shopping center properties based on the type of property. There are several types of shopping center properties in the Cumberland County market. These include, but are not limited to: Strip Centers, Neighborhood Centers, Community Centers, Discount Centers and Super Regional/Regional Malls. While the type of property was the critical factor in determining the major grouping of shopping center properties; it was the age, condition and location that determined the groupings inside each property type. All of these factors, combined with the appraiser‘s knowledge of the various properties, were what was used to establish models for the shopping centers in the CAMA system.

OASIS Screens

In order for the shopping center models in the CAMA system to work correctly, certain information has to be keyed in the proper OASIS Screens.

a. The Commercial Sections (COMS) screen has to reflect the correct interior finish code for the type of shopping center, ie: SSC (Strip Shopping Center), NSC (Neighborhood Shopping Center), CSC (Community Shopping Center), DCC (Discount Shopping Center) or RSC (Regional Shopping Mall).
b. The Land (LAND) screen will need to reflect 4 specific things: 1) the correct neighborhood number 2) the correct number in the –INCOME OVRD that corresponds to the type of shopping center, ie: SSC=11, NSC=12, CSC=13, DCC=13, RSC=14 3) if applicable, the correct property rating in the –PROP RATING bucket and 4) if applicable, a plus or minus income adjustment that will be annotated in the –ADJ INC VL +/-– and –ADJ INCOME VAL buckets. Additionally, the –RESID LAND bucket can be used to account for additional value related to the cost of other, non-shopping center structures or excess land on the parcel.
c. The Commercial Characteristics (COMC) screen has several buckets where adjustments to the model rates can be reflected in a percentage amount. Adjustments to established rates typically result because of a very unique feature on the property that can‘t be accounted for in any other manner.

Example of a Shopping Center Property

The example retail property is an 11,200 square foot strip shopping center. This strip shopping center is located in an above average location and is in excellent condition. It is typical strip shopping center constructed of concrete masonry with block wall exterior on three sides and a mix of store front glass and brick along the front. This structure was built to allow 7 units, but currently consists of 5 tenants, with one tenant occupying 3 units. As typical with most strip shopping centers, there isn‘t a management office located on site.

Assigning a Use Group, Model and Neighborhood

The type of shopping center, age, condition, location and the appraiser's knowledge of the retail market was considered with the example property. Since the example property has an interior finish code of SSC (Strip Shopping Center) it is assigned by the CAMA system to income use group 11 – Shopping Centers. It is further assigned to Model 1, which includes new or relatively new strip retail centers built at major intersections and/or major built up areas throughout the county.

Establishing Income Parameters

An Annual Square Foot rate or base rate has been established for each model. The annual square foot rate is the revenue generated for the subject property is $15.00 per square foot.

Occupancy Percentage

For Strip Shopping Centers in Model 1, the vacancy and collection loss percent rate is 10%.

Expense Factors

For Strip Shopping Centers in Model 1, the operating expense ratio is 20%.

Income Capitalization

For Model 1, a Strip Shopping Center capitalization rate of 0.1000 was added to the effective tax rate, as determined by the tax district. In this example, an effective tax rate of 0.01239 was added to the capitalization rate; thereby, arriving at the overall rate of 0.11239 or 11.239%.

Summary

The square footage of the property is multiplied by the annual square foot rate to arrive at the potential gross income (PGI) of the property.

$15.00 annual square foot rate x 11,200 square feet = $168,000 (PGI)

This is further adjusted by the occupancy percentage to determine the effective gross income (EGI).

$168,000 PGI x 0.10 Vacancy & Collection Loss Percentage = $16,800
$168,000 - $16,800= $151,200 (EGI)

Strip Shopping Center expenses (calculated on a percentage of effective gross income) are applied and deducted leaving the net operating income (NOI) from the strip center operation.

$151,200 EGI x .20 Expense Ratio = $30,240 (Expenses)
$151,200 EGI - $30,240 (Expenses) = $120,960 (NOI)

The capitalization rate is the sum of the overall rate from the model and the effective tax rate taken from the tax rate table for the tax district. The total cap rate of 11.239% (0.11239) is divided into the net operating income (NOI) producing the income estimate of value.

$120,960 /0.11239 = $1,076,252 or $1,076,300 (R) (Total Property Value)

Shopping Center Model Ranges for Income Approach:

a. Strip Shopping Centers

	Annual Income Per Square Foot	Average Vacancy	Average Operating Expenses	Direct Capitalization Rate
Range	$4.00 - $30.00	3% - 35%	5% - 40%	0.080 – 0.170
Typical	$5.50 - $17.00	8% - 15%	15% - 30%	0.090 – 0.125

b. Neighborhood Shopping Centers

	Annual Income Per Square Foot	Average Vacancy	Average Operating Expenses	Direct Capitalization Rate
Range	$3.00 - $25.00	3% - 25%	10% - 40%	0.080 – 0.150
Typical	$5.00 - $17.00	5% - 15%	15% - 30%	0.090 – 0.115

c. Community Shopping Centers

	Annual Income Per Square Foot	Average Vacancy	Average Operating Expenses	Direct Capitalization Rate
Range	$3.00 - $30.00	3% - 35%	10% - 50%	0.070 – 0.150
Typical	$5.00 - $18.00	5% - 25%	20% - 35%	0.080 – 0.115

d. Discount Community Centers

	Annual Income Per Square Foot	Average Vacancy	Average Operating Expenses	Direct Capitalization Rate
Range	$1.50 - $18.00	1% - 15%	1% - 15%	0.080 – 0.150
Typical	$3.00 - $10.00	5% - 10%	3% - 10%	0.085 – 0.115

e. Super Regional/Regional Malls & Anchor Department Stores

	Annual Income Per Square Foot	Average Vacancy	Average Operating Expenses	Direct Capitalization Rate
Range	$4.00 - $100.00	1% - 25%	1% - 50%	0.060 – 0.150
Typical	$5.00 - $70.00	2% - 15%	5% - 40%	0.070 – 0.120

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An Example of the Shopping Center Income Valuation Report:

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                                INCOME APPROACH
                                ***************
                        ASSIGNED TO STR TYPE GROUP 11
INCOME PORTION :

**   11-STRIP SHOPPING CENTER       ** MODEL 01 ** FOR USE TYPE GROUP  11
GROSS/NET LEASEABLE      11,200  X 15.00      =       168,000
COVERED PARKING        0     X       0        =             0
PARKING                0     X       0        =             0
                           TOTAL          =           168,000             AGE FACTOR (1 YEARS =
POTENTIAL GROSS INCOME                         =      168,000            EXPENSES  20% X 1.00 =
90.0% PERCENT OCCUPANCY                              X            90%
INCOME AFTER OCCUPANCY                         =      151,200             151,200 EGI X  20.0%    =   30,240

EFFECTIVE GROSS INCOME                         =      151,200
TOTAL EXPENSES         20.00%                  -      (30,240)

NET INCOME                                     = $    120,960
INCOME CAPITALIZATION
EQUITY RATIO      1.00   X   CASH ON CASH     0.1000   = 0.10000
EFFECTIVE TAX RATE                                       0.01239
TOTAL CAPITALIZATION RATE                                0.11239
NET INCOME       120,960   @   0.11239
VALUE, INCOME APPROACH                                  1,076,300
OTHER INCOME ADJUSTMENT                                         0
ADJUSTED VALUE, INCOME APPROACH                         1,076,300 (Rounded) AVG 96.10 PER MAIN BLDG SF (11,200 EXCLD
PARKING)
RESIDUAL LAND                                                        0
FINAL VALUE FOR PARCEL =   1,076,300 (INCOME VALUE)

PREVIOUS REVIEWS HAVE RESULTED IN THE FOLLOWING INFORMATION BEING ON FILE FOR
THIS PARCEL: REFINE-VALUATION METHOD SELECTED =
```

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D. Example of a Mobile Home Park Property

The following Income Valuation Report is an example of a mobile home park property and is for demonstration purposes only. The income, occupancy, expense and capitalization rates used in this example may not represent the actual rates used to value this property for the revaluation. This is shown only as an example of what the computer system is capable of performing when the appropriate factors are applied. This example shows how an income model is applied to a 15 space mobile home park property.

Establishing Income Parameters

The Mobile Home Parks are valued by the income approach using the apartment unit model (income use group 01). In this example the 13th model defined in the income model parameters was applied. This model was selected using the neighborhood assignment table and the income override field at the parcel level.

The left hand side of the report shows the income computations. Income is determined by applying the monthly rents to the number of mobile home spaces. The system allows for 5 different rents combinations depending on the types of mobile home spaces (SW – single wide, DW – double wide) and the mobile home parks conditions (PR – poor, FR – fair, AV – average, GD – good, EX – excellent). These are summed to provide a total monthly income, which is multiplied by 12 generating the total income for the Mobile Home Park.

Occupancy Percentage

The potential gross income is then reduced by the occupancy factor to the expected gross income for the property. In this example the occupancy factor is 95%. Adjustments can be made to the income and occupancy at the parcel level.

Expense Factors

The right side shows the expense computations. Overall expenses of 45% in the model were multiplied by the effective gross income to produce the total expense for the mobile home park. These expenses are brought back over to the left hand side of the page. Expenses are deducted from the expected gross income to produce a net income of $11,756.

Income Capitalization

The net income is capitalized using an overall rate. The income model has a cap rate of 10% (.10) to which the effective tax rate of 1.25% (.0125) was added to generate an overall rate including taxes of 11.125% (0.1125). The cap rate is divided into the net income to generate the income estimate of $104,500.

Any residual land or any buildings (commercial or residential) not required to support the income use of the property are then totaled in with the income estimate to produce the adjusted total value of the property. In this example 2 residential improvements ($36,717), the corresponding land value ($12,070), some excess commercial land ($53,302) and additional miscellaneous improvements ($6,052) were added for a final total value of $212,641.

This value will be posted to the income value field on the VALU table. If the default method on the NBHD table is set to Income for commercial properties, this value will be marked as the selected final value for the property on the VALU record, unless a value selection method is specified for this individual property (as it is in this example –VALUATION METHOD SELECTED = 2 (USE INCOME METHOD)

Any parcel specific adjustments are summarized at the bottom of the report. Here we see the model adjustments that have been entered for income, expenses and cap rate; the valuation method selected, reason for override and occupancy override.

Summary

The number of mobile home spaces in our example property is multiplied by the lot rate per space times 12 months to produce the annual potential gross income (PGI).

$125.00 lot rate x 15.00 lots = $1,875 x 12 months = $22,500 (PGI)

This is further adjusted by the occupancy percentage to determine the effective gross income (EGI).

$22,500 PGI x 0.95 Occupancy Percentage = $21,375 (EGI)

Mobile Home Park expenses (calculated on a percentage of effective gross income) are applied and deducted leaving the net operating income (NOI) from the hotel operation.

$21,375 EGI x 0.45 Expense Ratio = $9,619 (Expenses)
$21,375 EGI - $9,619 (Expenses) = $11,756 (NOI)

The capitalization rate is the sum of the overall rate from the model and the effective tax rate of 0.0125. The total cap rate of 11.25% (0.1125) is divided into the net operating income (NOI) producing the income estimate of value.

$11,756 /0.1125 = $104,498 or $104,500 (R) (Total Mobile Home Park Value)

Any residual land or any buildings (commercial or residential) not required to support the income use of the property are then totaled in with the income estimate to produce the adjusted total value of the property.

The 2 residential improvements equal $36,717; the residential improvement land value equals $12,070; the excess commercial land value equals $53,302; and the additional miscellaneous improvement value equals $6,052.

Final Property Value

$104,500 (Mobile Home Park) + $36,717 (Residential Buildings) + $12,070 (Residential Land) + $53,302 (Commercial Land) + $6,052 (Miscellaneous Value) = $212,641

Mobile Home Park Model Ranges for Income Approach:

	Average Monthly Rents	Average Occupancy	Average Operating Expenses	Direct
Capitalization Rate				
Range	$40 - $310	50% - 100%	15% - 75%	0.070 – 0.18
Typical	$75 - $235	70% - 85%	20% - 60%	0.085 – 0.13

Example of the Mobile Home Park Income Valuation Report:

```
INCOME APPROACH
***************
BLDG1 AREA OF          0 ASSIGNED
  TO STR TYPE GROUP 01 APART                        UNIT MODEL ADJUSTMENTS NO
   INCOME ADJUSTMENT
INCOME PORTION :                                                    EXPENSES PORTION:
** MANUFACTURE HOME PARK MODEL         ** MODEL 13 ** FOR USE TYPE GROUP  01
   0  SW - PR TO FR AT                   100.00  =             0
  15  SW - AVERAGE  AT                   125.00  =         1,875
   0  SW - GD TO EX AT                   150.00  =             0
   0  DW - FR TO AV AT                   135.00  =             0
   0  DW - GD TO EX AT                   165.00  =             0
  COVERED PARKING       0     X       0         =             0
  PARKING               0     X       0         =             0

           TOTAL                          =         1,875

TWELVE MONTHS                                  X 12
                 TOTAL                           =       22,500
POTENTIAL GROSS INCOME                           =       22,500
PERCENT OCCUPANCY                              X             95%
INCOME AFTER OCCUPANCY                           =        21,375

EFFECTIVE GROSS INCOME                           =       21,375
TOTAL EXPENSES     45.00%                        =        9,619     21,375 EGI X 45.0  = 9,619
TOTAL                                            =      ( 9,619)
NET INCOME                                       = $     11,756

INCOME CAPITALIZATION
EQUITY RATIO        1.00    X   CASH ON CASH  0.1000  = 0.10000
EFFECTIVE TAX RATE                                     0.01250   (DEFAULT) TOTAL
   CAPITALIZATION RATE                                 0.11015
NET INCOME         11,756   @   0.1125
VALUE, INCOME APPROACH(ROUNDED)                                  104,500
OTHER INCOME ADJUSTMENT                                                0
RESIDENTIAL IMPROVEMENTS VALUE                                    36,717
LAND VALUE                                                        65,372
MISCELLANEOUS IMPROVEMENTS VALUES                                  6,052
  JUSTED VALUE,   COME   PROACH                                  212,641     A AVG 14,176.07 PER M.HOME          D
  SIDUAL LAND                                                          0
FINAL VALUE FOR PARCEL =       $212,641   (INCOME VALUE)

PREVIOUS REVIEWS HAVE RESULTED IN THE FOLLOWING INFORMATION BEING ON FILE FOR THIS PARCEL:
   REFINE-MODEL ADJUSTMENTS ENTERED =
REFINE-VALUATION METHOD SELECTED =
```

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4. Value Review and Use of Value Overrides

Use of the Commercial Valuation Module of the system requires careful review of individual parcel data and values by a commercial appraiser. The cost and income approaches to value need to be correlated within the property and with respect to other properties of similar use, location, and desirability. Critical subjective factors for the cost approach include quality grade for each main structure and the physical condition and functional utility ratings for each interior/exterior line and yard improvements and secondary buildings. Often some of the physical data needs to be verified and corrected (construction type, use code, and associated ratings of interior components). A final adjustment may need to be applied in the form of an economic adjustment factor.

A number of adjustments may be required to adjust the base income models to the particulars of the subject property. Factors are available for adjusting income, occupancy, expenses, effective age used in estimating expenses, and capitalization rate. Finally, in reviewing the values, the appraiser has to draw a final value conclusion. This is done by accepting the computer-selected estimate (based on posting flag parameter option) having specified the valuation method to be used for the parcel. The Income Valuation (IVAL) screen, which produces an income value estimate on demand, can be used to store the following override values: total expenses by percentage; equity ratio; and effective tax rate.

5. Value Summary Information

INTRODUCTION
This section explains the use of the three value summary screens, which show the value information for each parcel.

They are:

A. VALU screen
B. SUMC screen
C. BLDG screen

a. Value Summary Information Screen (VALU)
This screen allows the user to view the results of all of the available methods of valuation within OASIS and then allows the choice of which value to use for taxation purposes. The Summary of Values (VALU) screen displays the summary information for all of the valuation methods in OASIS. It provides a display of the values using the OASIS cost, market, and income approaches. The user uses this screen to select one of the four values or enter a special value for the parcel. A default selection method (cost, market, or income) can be entered on the Neighborhood Characteristics (NBHD) screen. The user need only enter a value selection if it differs from the neighborhood default.

Example of a VALU Screen for a residential property is shown for demonstration purposes only.

```
ACTION: R SCREEN: VALU USERID:                          CHANGE-REASON:
--------------------  S U M M A R Y   O F   V A L U E S  --------------------
JU= 20  RO= RR  PARC=                              YR= 2017 ALTKEY= 0370291
                                                   DYR= 2017 STATUS: ACTIVE
---------------  C O S T   A P P R O A C H  ----------------+----------------
                                                           ¦ SELECT VALUE:
                     OASIS     AS OF                         ¦
                   --------- ----------                      ¦      OASIS COST
  REPLACE COST NEW:    79,104 10 17 2016                    ¦   X     71,685
      DEPRECIATION:    27,686                               ¦
MISCELLANEOUS IMPR:       267 10 17 2016                    ¦
 MARKET ADJUSTMENT:         0                               ¦
    BUILDING VALUE:    51,418                               ¦
   MISC IMPR VALUE:       267                               ¦
        LAND VALUE:    20,000 10 17 2016                    ¦        MARKET
  NEW CONSTRUCTION:         0                               ¦ *       73,000
                                                            ¦        INCOME
----------------------  S P E C I A L  ----------------------+             0
APPRAISED BY:                                               ¦
APPRAISED ON:                                               ¦        SPECIAL
      REASON:                                               ¦             0
```

Example of a VALU Screen for a commercial property is shown for demonstration purposes only.

```
ACTION: R SCREEN: VALU USERID: TAMI                          CHANGE-REASON:
--------------------  S U M M A R Y   O F   V A L U E S  --------------------
JU= 20  RO= RR  PARC=                              YR= 2017 ALTKEY= 0786136
                                                   DYR= 2017 STATUS: ACTIVE
---------------  C O S T   A P P R O A C H  ----------------+----------------
                                                           ¦ SELECT VALUE:
                     OASIS     AS OF                         ¦
                   --------- ----------                      ¦      OASIS COST
  REPLACE COST NEW:   428,159 10 17 2016                     ¦ *      168,993
      DEPRECIATION:   295,430                                ¦
MISCELLANEOUS IMPR:     6,264 10 17 2016                     ¦
 MARKET ADJUSTMENT:         0                               ¦
    BUILDING VALUE:   132,729                                ¦
   MISC IMPR VALUE:     6,264                               ¦
        LAND VALUE:    30,000 10 17 2016                     ¦        MARKET
  NEW CONSTRUCTION:         0                               ¦             0
                                                            ¦   X    INCOME
----------------------  S P E C I A L  ----------------------+       164,700
APPRAISED BY:                                               ¦
APPRAISED ON:                                               ¦        SPECIAL
      REASON:                                               ¦             0
```

b. Building Summary Information Screen (SUMC)
This screen shows the valuation breakdown of each building by the OASIS Cost Approach when multiple building parcels are entered.

The Summary of Values Using the Cost Approach (SUMC) screen is an inquiry screen that displays the cost approach values for a parcel in a single valuation year. This data includes:

1. Building identification number
2. Building type whether it is residential (indicated by an R) or commercial (indicated by a C)
3. Percent complete to identify if a building is not being assessed at full completed cost value
4. The total replacement cost new (RCN) of all buildings and a separate count of residential and commercial buildings on the parcel
5. The total depreciation calculated for all buildings and the overall percentage of depreciation
6. The total replacement cost new less depreciation (RCNLD) for all buildings
7. The total depreciated value of all miscellaneous improvements on the parcel and a count of all miscellaneous improvements on the parcel
8. The total land value for the parcel
9. The total market adjustment applied to all buildings and miscellaneous improvements on the parcel
10. The total value for the parcel using the OASIS cost approach to valuation

Example of a SUMC Screen for a residential property from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: SUMC USERID:
H-  ------------  SUMMARY OF COST VALUES USING THE COST APPROACH  ---------
    --- JU= 20 RO= RR PARC=                              YR= 2017 ALTKEY=
    0370291
                                                       DYR= 2017 STAT: ACTIVE

    TOTAL REPLACEMENT COST NEW (    1 RES      0 COM BLDGS) .. +      79,104
    TOTAL DEPRECIATION ........................................ -      27,686
    TOTAL REPLACEMENT COST NEW LESS DEPRECIATION ............. =      51,418
    TOTAL MISCELLANEOUS IMPROVEMENTS (    1 ITEMS) ........... +         267
    TOTAL LAND ................................................ +      20,000
    MARKET ADJUSTMENT ......................................... -           0
    TOTAL VALUE OF PARCEL USING THE OASIS COST METHOD ........ =      71,685
    BLDG   BLDG  PCT  BUILDING     DEPRECIATION PCT   DEPRECIATION     BUILDING
          ID    TYPE  COMP    RCN      PHYS FUNC ECON TOTAL    AMOUNT
                                          RCNLD
     ==     -          -------   --   --   --   --    -----------   -------
                                        ----
01-  01     R           79,104   35    0    0   35         27,686        51,418
02-
03-
04-
05-
06-
```

Example of a SUMC Screen for a commercial property from OASIS is shown for demonstration purposes only.

```
ACTION: R  SCREEN: SUMC USERID:
H-  ------------  SUMMARY OF COST VALUES USING THE COST APPROACH  ---------
    --- JU= 20 RO= RR PARC=                          YR= 2017 ALTKEY=
    0786136
                                                   DYR= 2017 STAT: ACTIVE

    TOTAL REPLACEMENT COST NEW (    0 RES      1 COM BLDGS)  ... +   428,159
    TOTAL DEPRECIATION ..................................... -     295,430
    TOTAL REPLACEMENT COST NEW LESS DEPRECIATION ............ =     132,729
    TOTAL MISCELLANEOUS IMPROVEMENTS (    4 ITEMS)........... +       6,264
    TOTAL LAND............................................... +      30,000
    MARKET ADJUSTMENT ...................................... -           0
    TOTAL VALUE OF PARCEL USING THE OASIS COST METHOD........ =     168,993
    BLDG   BLDG    BUILDING     DEPRECIATION PCT   DEPRECIATION     BUILDING
          ID    TYPE      RCN       PHYS FUNC ECON TOTAL    AMOUNT
                                        RCNLD
     ==     -    -----------   --   --   --   --    -----------   -----------
01-  01     C        428,159   69    0    0   69        295,430       132,729
02-
03-
```

c. Building Cost Summary (BLDG)

This screen shows the valuation breakdown for the components of a building value. There are four different screen formats depending on the building type and the cost calculation method that was used. This screen is also used to delete all characteristics and valuation dates for a building associated with a given parcel.

Example of a BLDG Screen for a residential property from OASIS is shown for demonstration purposes only.

```
ACTION: R SCREEN: BLDG USERID:            VERIFY DELETE (D):   CHANGE-
REASON:
----------------- B U I L D I N G   C O S T   S U M M A R Y -------------
----
JU= 20 RO= RR PARC=                                   YR= 2017 ALTKEY=
0370291
BUILDING ID= 01 OF 01 BLDG TYPE: R START-SECT:       DYR: 2017 STATUS:
ACTIVE

HORIZONTAL (AREA) COST         52,800    REPLACEMENT COST NEW (RCN)     79,104
VERTICAL (PERIMETER) COST      15,319
OTHER FLAT AMOUNT               8,740    PHYSICAL DEPRECIATION %            35
TOTAL NON-BASE SECTIONS         2,507    FUNCTIONAL OBS %                    0
TOTAL REFINEMENTS               6,617    ECONOMIC OBS %                      0
TOTAL BUILT-INS                     0    TOTAL DEPRECIATION %               35
SUBTO AL                       85,983    TOTAL DEPRECIATION             27,686
      T

 QUALITY GRADE FACTOR             0.92    RCNLD                          51,418
 SPECIAL ARCHITECT FACTOR
 PERCENT COMPLETE %                  0    MARKET ADJUSTMENT RATIO          1.00
 REPLACEMENT COST NEW (RCN)     79,104    MARKET ADJUSTMENT                   0

                              FINAL COST APPROACH VALUE =    51,418
```

Example of a commercial property BLDG Screen from OASIS is shown for demonstration purposes only.

```
 ACTION: R SCREEN: BLDG USERID:          VERIFY DELETE (D):   CHANGE-REASON:
 -----------------  B U I L D I N G   C O S T   S U M M A R Y --------------
 --- JU= 20 RO= RR PARC=                              YR= 2017 ALTKEY=
 0786136
 BUILDING ID= 01 OF 01 BLDG TYPE: C START-SECT:      DYR: 2017 STATUS: ACTIVE


BUILDING STRUCTURE COST        90,452    REPLACEMENT COST NEW (RCN)    428,159
BUILDING WALL COST             81,958
INTERIOR FINISH COST          229,048    PHYSICAL DEPRECIATION %            69
TOTAL BUILDING REFINEMENTS     26,700    FUNCTIONAL OBS %                    0
TOTAL SECTION REFINEMENTS           0    ECONOMIC OBS %                      0
TOTAL MISC REFINEMENTS              0    TOTAL DEPRECIATION %               69
SUBTOTAL                      428,159    TOTAL DEPRECIATION           -295,430

 QUALITY GRADE FACTOR             1.00    RCNLD                         132,729

 PERCENT COMPLETE %                  0    MARKET ADJUSTMENT RATIO          1.00
 REPLACEMENT COST NEW (RCN)    428,159    MARKET ADJUSTMENT                   0

                     FINAL COST APPROACH VALUE =   132,429
```

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XIII COST STUDIES

1. Cost Research 381
2. Sources of Data Acquired and Considered..... 381
3. Materials Pricing List.....381

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XIII COST STUDIES

1. Cost Research

This research should begin approximately 12 to 18 months prior to the date of the general revaluation. It should be completed and approved prior to land pricing.

2. Sources of Data Acquired and Considered

A. Verified land and building sales.

B. Use of permits which provides cost from contractors and owners.

C. Costs obtained during normal listing periods.

D. Marshall and Swift – Residential and Commercial Cost Manuals.

E. Survey of Local Builder Suppliers

3. Materials Pricing Lists

The next few pages will give some general information associated with the gathering of the local cost rates pertaining to all basic building materials. The material's price lists were gathered locally and from generally acceptable building companies in Cumberland County. The next few pages cover some of basic building materials used in general construction of residential, commercial and miscellaneous improvements but not all. To keep the sources anonymous they have been listed as just Company and an Alphabetical character.

FRAMING LUMBER		Date:	5/27/2016		
	COMPANY A	COMPANY B	COMPANY C	COMPANY D	MEDIAN PRICE
2 X 2 X 8'	$1.92	$1.92	N/A	N/A	**$1.92**
2 X 4 X 8'	$2.53	$2.53	$2.28	$2.65	**$2.53**
2 X 4 X 10'	$3.92	$3.92	$3.54	$3.35	**$3.73**
2 X 4 X 12'	$4.69	$4.69	$3.73	$3.99	**$4.34**
2 X 4 X 14'	$5.49	$5.49	N/A	$4.95	**$5.49**
2 X 4 X 16'	N/A	$6.25	$5.69	$6.09	**$6.09**
2 X 6 X 8'	$4.43	$4.43	$2.53	$4.25	**$4.34**
2 X 6 X 10'	$5.93	$5.93	$4.56	$5.85	**$5.89**
2 X 6 X 12'	$7.12	$7.12	$25.11	$6.75	**$7.12**
2 X 6 X 14'	$8.32	$8.32	$5.55	$7.25	**$7.79**
2 X 6 X 16'	$9.52	$9.52	$7.04	$9.25	**$9.39**
2 X 8 X 8'	$7.47	$5.29	$3.64	$3.75	**$4.52**
2 X 8 X 10'	$8.77	$6.44	$5.26	$5.60	**$6.02**
2 X 8 X 12'	$10.87	$7.80	$6.53	$6.99	**$7.40**
2 X 8 X 14'	$8.75	N/A	$8.89	$7.95	**$8.75**
2 X 8 X 16'	$14.87	$10.58	$9.15	$9.65	**$10.12**
2 X 10 X 8'	$9.57	$6.75	$4.35	$5.25	**$6.00**
2 X 10 X 10'	$11.57	$8.16	$7.53	$8.98	**$8.57**
2 X 10 X 12'	$14.57	$10.17	$9.28	$11.75	**$10.96**
2 X 10 X 14'	$12.16	N/A	$10.83	$13.79	**$12.16**
2 X 10 X 16'	$0.00	$13.24	$12.14	$15.10	**$12.69**
2 X 12 X 8'	$8.82	$8.82	N/A	N/A	**$8.82**
2 X 12 X 10'	$11.50	$10.98	$10.73	$14.25	**$11.24**
2 X 12 X 12'	$11.50	$13.68	$14.56	$16.90	**$14.12**
2 X 12 X 14'	N/A	N/A	$14.49	$18.30	**$16.40**
2 X 12 X 16'	$19.62	$19.62	$19.84	N/A	**$19.62**

SIDING, WINDOWS, DOORS		Date:	5/27/2016		
	COMPANY A	COMPANY B	COMPANY C	COMPANY D	MEDIAN PRICE
SIDING					
1 x 8 x 12 Pine	$20.15	$24.97	N/A	N/A	**$22.56**
1 X 8 X 12' Hardi-Plank	$26.22	N/A	$19.95	$19.15	**$19.95**
1 X 8 X 12' Cedar	$32.58	$30.05	N/A	$23.40	**$30.05**
Vinyl 12' Long	$8.70	$7.77	N/A	N/A	**$8.24**
4 X 8 X 15/32''	N/A	N/A	N/A	$28.79	**$28.79**
7/16 X 8 X 16' Hardboard	$13.62	N/A	N/A	$8.35	**$10.99**
4 X 8 X 7/16'' Hardi-Plank	N/A	$29.98	$35.58	$35.65	**$35.58**
4 X 8 X 5/8" T1-11 Pine	N/A	$26.22	$39.95	$41.69	**$39.95**
4 X 8 X 1/4'' Hardi-Plank	N/A	$30.95	$35.58	$36.65	**$35.58**
WINDOWS					
2' X 2' Vinyl	$47.36	$91.20	N/A	N/A	**$69.28**
2 X 2 X 3' 2'' Vinyl	N/A	N/A	$134.10	$134.90	**$134.50**
2 X 2 X 3' 5'' Vinyl	N/A	N/A	N/A	$111.30	**$111.30**
2' 4" X 3' 2" Vinyl	$98.00	$134.29	$134.10	$134.90	**$134.20**
2' 4" X 4' 6" Vinyl	$151.00	$153.96	$146.50	$147.50	**$149.25**
2' 6" X 3' 5" Wood	$211.88	$180.60	N/A	N/A	**$196.24**
2' 8" X 3' 2" Vinyl	$127.00	$132.71	$127.55	$134.90	**$130.13**
2' 8" X 3' 10" Vinyl	$147.00	$144.85	$132.50	$134.90	**$139.88**
2' 8" X 4' 6" Vinyl	$167.00	$159.94	$145.20	$147.50	**$153.72**
2' 8" X 4' 6" Wood	N/A	$220.89	N/A	N/A	**$220.89**
2' 8" X 5' 2" Wood	N/A	N/A	N/A	N/A	**$0.00**
2' 8" X 5' 2" Vinyl	$190.94	$178.38	$153.50	$159.90	**$169.14**
2' 10" X 3' 5" Wood	N/A	N/A	N/A	N/A	**$0.00**
2' 10" X 4' 1" Wood	$299.92	N/A	N/A	N/A	**$299.92**
2' 10" X 5' 5" Wood	N/A	$263.99	N/A	N/A	**$263.99**
3' X 3' 2" Vinyl	$147.00	$170.86	$131.20	$134.90	**$140.95**
3' X 3' 10" Vinyl	$166.00	$163.45	N/A	$147.41	**$163.45**
3' X 4' 6" Vinyl	$147.00	$148.00	N/A	$158.37	**$148.00**
DOORS - INTERIOR					
36" WOOD	$205.00	$185.27	N/A	$102.50	**$185.27**
32" LAUAN	$99.00	$78.00	$49.50	$46.75	**$63.75**
36" LAUAN	$91.15	$80.00	$52.50	$49.50	**$66.25**
36" MASONITE	$107.10	$119.72	$52.50	$49.50	**$79.80**
DOORS - EXTERIOR					
36" METAL	$96.00	N/A	$145.00	N/A	**$0.00**

PRESURE TREATED LUMBER		Date:	5/27/2016		
	COMPANY A	COMPANY B	COMPANY C	COMPANY D	MEDIAN PRICE
2 X 2 X 8'	$3.27	$3.27	$2.56	$3.39	**$3.27**
2 X 4 X 8'	$3.47	$3.47	$3.47	$3.59	**$3.47**
2 X 4 X 10'	$5.77	$4.67	$4.62	$4.78	**$4.73**
2 X 4 X 12'	$5.67	$5.67	$5.76	$5.65	**$5.67**
2 X 4 X 14'	N/A	N/A	$6.74	$6.89	**$6.82**
2 X 4 X 16'	$8.57	$8.57	$8.27	$8.75	**$8.57**
2 X 6 X 8'	$4.97	N/A	$4.61	$4.75	**$4.75**
2 X 6 X 10'	$5.97	$5.91	$5.94	$5.70	**$5.93**
2 X 6 X 12'	$7.17	$7.17	$7.74	$7.29	**$7.23**
2 X 6 X 14'	N/A	N/A	$8.18	$8.75	**$8.47**
2 X 6 X 16'	$9.97	$19.94	$10.18	$9.99	**$10.09**
2 X 8 X 8'	$8.27	$7.47	$6.05	$6.75	**$7.11**
2 X 8 X 10'	$10.87	$8.77	$7.99	$9.55	**$9.16**
2 X 8 X 12'	$11.97	$10.87	$9.81	$10.85	**$10.86**
2 X 8 X 14'	N/A	N/A	$10.84	$12.69	**$11.77**
2 X 8 X 16'	$16.67	$14.87	$12.89	$14.40	**$14.64**
2 X 10 X 8'	$12.17	$9.57	N/A	N/A	**$10.87**
2 X 10 X 10'	$14.57	$11.57	$10.12	$12.30	**$11.94**
2 X 10 X 12'	$18.51	$14.57	$13.84	$14.55	**$14.56**
2 X 10 X 14'	N/A	N/A	$15.32	$17.85	**$16.59**
2 X 10 X 16'	$24.27	$19.17	$17.35	$19.95	**$19.56**
2 X 12 X 8'	$17.57	N/A	N/A	N/A	**$17.57**
2 X 12 X 10'	$20.97	N/A	N/A	N/A	**$20.97**
2 X 12 X 12'	$25.57	$19.47	$18.20	$20.85	**$20.16**
2 X 12 X 14'	N/A	N/A	N/A	N/A	**$0.00**
2 X 12 X 16'	N/A	$27.37	$28.73	$30.35	**$28.73**
5/4 X 6 X 8'	$4.62	$4.47	N/A	N/A	**$4.55**
5/4 X 6 X 10'	$7.47	$5.87	N/A	$9.45	**$7.47**
5/4 X 6 X 12'	$6.97	$5.77	$9.10	$11.25	**$8.04**
5/4 X 6 X 14'	N/A	N/A	$9.83	$11.79	**$10.81**
5/4 X 6 X 16'	$15.27	$7.67	$15.25	$18.55	**$15.26**
4 X 4 X 8'	$7.97	N/A	$9.12	$8.89	**$8.89**
4 X 4 X 10'	$12.27	$11.27	$10.52	$11.40	**$11.34**

4 X 4 X 12'	$14.47	$13.27	$11.99	$13.25	**$13.26**
4 X 4 X 14'	N/A	N/A	N/A	N/A	**$0.00**
4 X 4 X 16'	N/A	$18.97	$22.46	N/A	**$20.72**
4 X 6 X 8'	$13.47	$13.17	N/A	N/A	**$13.32**
4 X 6 X 10'	$16.17	N/A	N/A	N/A	**$16.17**
4 X 6 X 12'	$20.57	$20.57	$21.36	$21.25	**$20.91**
4 X 6 X 14'	N/A	N/A	N/A	N/A	**$0.00**
4 X 6 X 16'	$27.97	N/A	N/A	N/A	**$27.97**
6 X 6 X 8'	$19.97	$19.97	N/A	$21.05	**$19.97**
6 X 6 X 10'	$25.57	N/A	$23.78	N/A	**$24.68**
6 X 6 X 12'	$31.57	$31.57	$29.33	$31.15	**$31.36**
6 X 6 X 14'	N/A	N/A	N/A	N/A	**$0.00**
6 X 6 X 16'	$40.97	N/A	$39.60	$41.75	**$40.97**
5/4 Decking 6x8	$6.27	$3.77	N/A	N/A	**$5.02**
5/4 Decking 6x10	$5.87	$4.87	N/A	$9.45	**$5.87**
5/4 Decking 6x12	$9.27	$5.77	N/A	$11.25	**$9.27**
5/4 Decking 6x14	N/A	N/A	N/A	$11.79	**$11.79**
5/4 Decking 6x16	N/A	$7.67	N/A	$18.55	**$13.11**

SHEATHING		Date:	5/27/2016		
	COMPANY A	COMPANY B	COMPANY C	COMPANY D	MEDIAN PRICE
PLYWOOD SHEATHING					
4 X 8 X 1/4''	$20.92	$18.72	N/A	$25.65	**$20.92**
4 X 8 X 3/8''	$18.83	$13.63	$16.91	$25.29	**$17.87**
4 X 8 X 7/16''	N/A	$10.35	N/A	$17.40	**$13.88**
4 X 8 X 15/32''	$17.55	$24.05	N/A	$17.40	**$17.55**
4 X 8 X 1/2''	$39.95	N/A	$23.41	$30.65	**$30.65**
4 X 8 X 19/32''	$18.35	$16.27	N/A	$19.05	**$18.35**
4 X 8 X 5/8"	N/A	N/A	$22.10	$33.09	**$27.60**
4 X 8 X 23/32''	$22.48	$21.38	N/A	N/A	**$21.93**
4 X 8 X 3/4''	$39.98	N/A	$28.64	$41.65	**$39.98**
ORIENTED STRAND BOARD (OSB)					
4 X 8 X 1/4''	N/A	$6.49	N/A	N/A	**$6.49**
4 X 8 X 3/8''	N/A	N/A	N/A	N/A	**$0.00**
4 X 8 X 7/16''	$9.15	$8.95	N/A	$9.09	**$9.09**
4 X 8 X 15/32''	$10.05	N/A	N/A	$9.65	**$9.85**
4 X 8 X 1/2''	N/A	N/A	N/A	N/A	**$0.00**
4 X 8 X 19/32''	$13.77	$13.57	N/A	N/A	**$13.67**
4 X 8 X 5/8"	N/A	N/A	N/A	$15.50	**$15.50**
4 X 8 X 23/32''	N/A	$16.98	N/A	$24.29	**$20.64**
ORIENTED STRAND BOARD (OSB) - TONGUE & GROVE					
4 X 8 X 23/32''	$15.48	$16.98	N/A	$17.29	**$16.98**
4 X 8 X 3/4''	N/A	N/A	N/A	$24.29	**$24.29**
DRYWALL					
4 X 8 X 1/4''	$11.48	N/A	N/A	N/A	**$11.48**
4 X 8 X 3/8''	$10.48	$10.48	N/A	$9.75	**$10.48**
4 X 8 X 7/16''	N/A	N/A	N/A	N/A	**$0.00**
4 X 8 X 1/2''	$13.98	$9.98	$11.35	$9.15	**$10.67**
4 X 8 X 1/2'' WR	N/A	N/A	N/A	$8.99	**$8.99**
4 X 12 X 1/2''	N/A	$15.78	$14.61	$12.55	**$14.61**
4 X 8 X 5/8''	$11.76	$11.76	N/A	$10.22	**$11.76**
4 X 12 X 5/8''	N/A	N/A	$17.61	$14.25	**$15.93**
61LB COMPOUND	N/A	N/A	$16.95	$16.25	**$16.60**

Company A	Date: 05-27-16		
CONCRETE	**UNIT PRICE PER CUBIC YARD**	COMPANY Z	COMPANY X
2500 PSI	$108.00		
3000 PSI	$115.00		
3500 PSI	$118.00		
4000 PSI	$120.00		
4500 PSI	$124.00		
5000 PSI	$126.00		
3000 PSI	$115.00		
4000 PSI	$120.00		
4000 PSI	$120.00		
Flowable Fill Excavatable	$85.00		
Flowable Fill Non-Excavatable	$90.00		
3000 Light Weight	$135.00		
4000 Light Weight	$150.00		
PRODUCTS AVG			
BLOCK	**UNIT PRICE**	**UNIT PRICE**	**UNIT PRICE**
4'' X 8'' X 16''	$1.43	$1.43	$1.38
6'' X 8'' X 16''	$1.85	$1.85	$1.68
8'' X 8'' X 16''	$208.00	$2.08	$1.75
12'' X 8'' X 16''	$3.03	$3.03	$2.73
4'' X 8'' X 16'' SOLID	$2.09	$2.09	$1.85
8'' X 8'' X 16'' SPLIT FACED	$2.86	$2.89	$3.46
BRICK	**UNIT PRICE PER THOUSAND**	UNIT PRICE PER THOUSAND	
COMMON BRICK	$2.73	$270.00	$350.00
BRICK PAVERS	$650.00	$650.00	$720.00
OVERSIZED BRICK	$399.00	$2,630.00	$410.00

FLOORING		Date:	5/27/2016		
	COMPANY E	COMPANY F	COMPANY G	COMPANY H	MEDIAN PRICE
BASE/BUILDER GRADECARPET WITH PAD					
PER SQ.FT.	N/A	1.30	1.15	1.42	**1.30**
MID-GRADE CARPET					
PER SQ.FT.	N/A	2.50	1.89	1.56	**1.89**
PLUMBING					
KITCHEN SINK					
8" SS	$95.00	$219.00	$135.80	$109.00	**$122.40**
FIBERGLASS TUB					
32 X 60	$397.00	$387.00	$300.00	$215.00	**$343.50**
WHIRLPOOL TUB					
42 X 60	$617.00	$600.00	$1,031.00	$1,350.00	**$824.00**
TOILET					
	$120.00	$159.00	$110.00	$120.00	**$120.00**

XIV. APPEAL PROCESS

1. GENERAL OVERVIEW APPEAL PROCESS[1] 391
2. LOCAL BOARD OF EQUALIZATION AND REVIEW APPEAL PROCESS 392
3. APPEALS TO PROPERTY TAX COMMISSION 396
4. APPEALS TO SUPREME COURT[2] 400

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XIV. APPEAL PROCESS

1. General Overview Appeal Process[1]

General Overview Appeal Process

During the year of the reappraisal or any year of the reappraisal cycle, a taxpayer may appeal the appraised value of his property. The taxpayer may appeal any property valuation in the county, so long as the taxpayer owns property in the county.

In many cases, the first step is to mail in the informal review form attached to the assessment notice. If the appeal cannot be settled informally, the taxpayer may appeal to the local Board of Equalization and Review, which begins its deliberations around the first week in April. The board of county commissioners may comprise the Board of Equalization and Review or the county commissioners may appoint a special board to handle the appeals. This level of the appeal process is more formal, with the taxpayer being allotted a specific amount of time to present his case and the county also having time to present its side. The Board of Equalization and Review may choose to decide the appeal immediately or choose to delay its decision and deliberate further. The taxpayer should receive a copy of this decision in writing.

If the taxpayer is not satisfied with the decision of the local board, he may appeal to the State Board of Equalization and Review, known as the Property Tax Commission. The Commission meets monthly in Raleigh to decide questions on valuation and exemption. The Commission is a trial court. Like any trial court, it is required to follow the North Carolina Rules of Evidence. When the taxpayer appeals, the taxpayer has the burden of proof. Individual taxpayers may present their own cases, but are encouraged to hire an attorney. Corporate taxpayers are required to have an attorney that is licensed to practice law in North Carolina. The Commission will render its decision within a short time, based upon the greater weight of the evidence. Evidence is usually presented as sworn testimony and/or documents. The county has the opportunity to cross-examine any witnesses. The taxpayer may appeal a decision of the Property Tax Commission to the state Court of Appeals and state Supreme Court, but those bodies may choose to not hear the case as the grounds for appeal are more limited.

(1) Source: North Carolina Dept of Revenue, Property Tax System
www.dor.state.nc.us/practioner/property/appeal.html

2. Local Board of Equalization and Review Appeal Process

Local appeals are made to the Cumberland County Board of Equalization and Review. Following are excerpts from the General Statutes concerning the local appeal process.[1]

105-322. County board of equalization and review.

(a) Personnel. - Except as otherwise provided herein, the board of equalization and review of each county shall be composed of the members of the board of county commissioners. Upon the adoption of a resolution so providing, the board of commissioners is authorized to appoint a special board of equalization and review to carry out the duties imposed under this section. The resolution shall provide for the membership, qualifications, terms of office and the filling of vacancies on the board. The board of commissioners shall also designate the chairman of the special board. The resolution may also authorize a taxpayer to appeal a decision of the special board with respect to the listing or appraisal of his property or the property of others to the board of county commissioners. The resolution shall be adopted not later than the first Monday in March of the year for which it is to be effective and shall continue in effect until revised or rescinded. It shall be entered in the minutes of the meeting of the board of commissioners and a copy thereof shall be forwarded to the Department of Revenue within 15 days after its adoption. Nothing in this subsection (a) shall be construed as repealing any law creating a special board of equalization and review or creating any board charged with the duties of a board of equalization and review in any county.

(b) Compensation. - The board of county commissioners shall fix the compensation and allowances to be paid members of the board of equalization and review for their services and expenses.

(c) Oath. - Each member of the board of equalization and review shall take the oath required by Article VI, § 7 of the North Carolina Constitution with the following phrase added to it: "that I will not allow my actions as a member of the board of equalization and review to be influenced by personal or political friendships or obligations,". The oath must be filed with the clerk of the board of county commissioners.

(d) Clerk and Minutes. - The assessor shall serve as clerk to the board of equalization and review, shall be present at all meetings, shall maintain accurate minutes of the actions of the board, and shall give to the board such information as he may have or can obtain with respect to the listing and valuation of taxable property in the county.

(e) Time of Meeting. - Each year the board of equalization and review shall hold its first meeting not earlier than the first Monday in April and not later than the first Monday in May. In years in which a county does not conduct a real property revaluation, the board shall complete its duties on or before the third Monday following its first meeting unless, in its opinion, a longer period of time is necessary or expedient to a proper execution of its responsibilities. In no event shall the board sit later than July 1 except to hear and determine requests made under the provisions of subdivision (g)(2), below, when such requests are made within the time prescribed by law. In the year in which a county conducts a real property revaluation, the board shall complete its duties on or before December 1, except that it may sit after that date to hear and determine requests made under the provisions of subdivision (g)(2), below, when such requests are made within the time prescribed by law. From the time of its first meeting until its adjournment, the board shall meet at such times as it deems reasonably necessary to perform its statutory duties and to receive requests and hear the appeals of taxpayers under the provisions of subdivision (g)(2), below.

(f) Notice of Meetings and Adjournment. - A notice of the date, hours, place, and purpose of the first meeting of the board of equalization and review shall be published at least three times in some newspaper having general circulation in the county, the first publication to be at least 10 days prior to the first meeting. The notice shall also state the dates and hours on which the board will meet following its first meeting and the date on which it expects to adjourn; it shall also carry a statement that in the event of earlier or later adjournment, notice to that effect will be published in the same newspaper. Should a notice be required on account of earlier adjournment, it shall be published at least once in the newspaper in which the first notice was published, such publication to be at least five days prior to the date fixed for adjournment. Should a notice be required on account of later adjournment, it shall be published at least once in the newspaper in which the first notice was published, such publication to be prior to the date first announced for adjournment.

(g) Powers and Duties. – The board of equalization and review has the following powers and duties:

(1) Duty to Review Tax Lists.- The board shall examine and review the tax lists of the county for the current year to the end that all taxable property shall be listed on the abstracts and tax records of the county and appraised according to the standard required by G.S. 105-283, and the board shall correct the abstracts and tax records to conform to the provisions of this Subchapter. In carrying out its responsibilities under this subdivision (g)(1), the board, on its own motion or on sufficient cause shown by any person, shall:

a. List, appraise, and assess any taxable real or personal property that has been omitted from the tax lists.

b. Correct all errors in the names of persons and in the description of properties subject to taxation.

c. Increase or reduce the appraised value of any property that, in the board's opinion, has been listed and appraised at a figure that is below or above the appraisal required by G.S. 105-283; however, the board shall not change the appraised value of any real property from that at which it was appraised for the preceding year except in accordance with the terms of G.S. 105-286 and 105-287.

d. Cause to be done whatever else shall be necessary to make the lists and tax records comply with the provisions of this Subchapter.

e. Embody actions taken under the provisions of subdivisions (g)(1)a through (g)(1)d, above, in appropriate orders and have the orders entered in the minutes of the board.

f. Give written notice to the taxpayer at the taxpayer's last known address in the event the board, by appropriate order, increases the appraisal of any property or lists for taxation any property omitted from the tax lists under the provisions of this subdivision (g)(1).

(2) Duty to Hear Tax Payers Appeals.- On request, the board of equalization and review shall hear any taxpayer who owns or controls property taxable in the county with respect to the listing or appraisal of the taxpayer's property or the property of others.

a. A request for a hearing under this subdivision (g)(2) shall be made in writing to or by personal appearance before the board prior to its adjournment. However, if the taxpayer requests review of a decision made by the board under the provisions of subdivision (g)(1), above, notice of which was mailed fewer than 15 days prior to the board's adjournment, the request for a hearing thereon may be made within 15 days after the notice of the board's decision was mailed.

b. Taxpayers may file separate or joint requests for hearings under the provisions of this subdivision (g)(2) at their election.

c. At a hearing under provisions of this subdivision (g)(2), the board, in addition to the powers it may exercise under the provisions of subdivision (g)(3), below, shall hear any evidence offered by the appellant, the assessor, and other county officials that is pertinent to the decision of the appeal. Upon the request of an appellant, the board shall subpoena witnesses or documents if there is a reasonable basis for believing that the witnesses have or the documents contain information pertinent to the decision of the appeal.

d. On the basis of its decision after any hearing conducted under this subdivision (g)(2), the board shall adopt and have entered in its minutes an order reducing, increasing, or confirming the appraisal appealed or listing or removing from the tax lists the property whose omission or listing has been appealed. The board shall notify the appellant by mail as to the action taken on the taxpayer's appeal not later than 30 days after the board's adjournment.

(3) Powers in Carrying Out Duties.- In the performance of its duties under subdivisions (g)(1) and (g)(2), above, the board of equalization and review may exercise the following powers:

a. It may appoint committees composed of its own members or other persons to assist it in making investigations necessary to its work. It may also employ expert appraisers in its discretion. The expense of the employment of committees or appraisers shall be borne by the county. The board may, in its discretion, require the taxpayer to reimburse the county for the cost of any appraisal by experts demanded by the taxpayer if the appraisal does not result in material reduction of the valuation of the property appraised and if the appraisal is not subsequently reduced materially by the board or by the Department of Revenue.

b. The board, in its discretion, may examine any witnesses and documents. It may place any witnesses under oath administered by any member of the board. It may subpoena witnesses or documents on its own motion, and it must do so when a request is made under the provisions of subdivision (g)(2)c, above. A subpoena issued by the board shall be signed by the chair of the board, directed to the witness or to the person having custody of the document, and served by an officer authorized to serve subpoenas. Any person who willfully fails to appear or to produce documents in response to a subpoena or to testify when appearing in response to a subpoena shall be guilty of a Class 1 misdemeanor.

(4) Power to Submit Reports.- Upon the completion of its other duties, the board may submit to the Department of Revenue a report outlining the quality of the reappraisal, any problems it encountered in the reappraisal process, the number of appeals submitted to the board and

to the Property Tax Commission, the success rate of the appeals submitted, and the name of the firm that conducted the reappraisal. A copy of the report should be sent by the board to the firm that conducted the reappraisal.

(5) Duty to Change Abstracts and Records After Adjournment.- Following adjournment upon completion of its duties under supervisions and (g)(1) and (g)(2) of this subsection, the board may continue to meet to carry out the following duties:

a. To hear and decide all appeals relating to discovered property under G.S. 105-
312(d) and (k).

b. To hear and decide all appeals relating to the appraisal, situs, and taxability of classified motor vehicles under G.S. 105-330.2(b).

c. To hear and decide all appeals relating to audits conducted under G.S. 105-296(j) and relating to audits conducted under G.S. 105-296(j) and (l) of property classified at present-use value and property exempted or excluded from taxation.

d. To hear and decide all appeals relating to personal property under G.S.105-317.1(c).

(1939, c. 310, s. 1105; 1965, c. 191; 1967, c. 1196, s. 6; 1971, c. 806, s. 1; 1973, c. 476, s. 193; 1977, c. 863; 1987, c. 45, s. 1; 1989, c. 79, s. 3, c. 176, s. 1, c. 196; 1991, c. 110, s. 5; 1991 (Reg. Sess., 1992), c. 1007, s. 22; 1993, c. 539, s. 720; 1994, Ex. Sess., c. 24, s. 14(c); 2001-139, ss. 6,7; 2002-156, s.3.)

3. Appeals to Property Tax Commission[1]

State appeals are made to the State Board of Equalization and Review, also known as, The North Carolina Property Tax Commission. Following are excerpts from the General Statutes concerning the state appeal process.

105-290. Appeals to Property Tax Commission.

(a) Duty to Hear Appeals. - In its capacity as the State board of equalization and review, the Property Tax Commission shall hear and adjudicate appeals from boards of county commissioners and from county boards of equalization and review as provided in this section.

(b) Appeals from Appraisal and Listing Decisions. – The Property Tax Commission shall hear and decide appeals from decisions concerning the listing, appraisal, or assessment of property made by county boards of equalization and review and boards of county commissioners. Any property owner of the county may except to an order of the county board of equalization and review or the board of county commissioners concerning the listing, appraisal, or assessment of property and appeal the order to the Property Tax Commission.

(1) In these cases, taxpayers and persons having ownership interests in the property subject to taxation may file separate appeals or joint appeals at the election of one or more of the taxpayers. It is the intent of this provision that all owners of a single item of personal property or tract or parcel of real property be allowed to join in one appeal and also that any taxpayer be allowed to include in one appeal all objections timely presented regardless of the fact that the listing or valuation of more than one item of personal property or tract or parcel of real property is the subject of the appeal.

(2) When an appeal is filed, the Property Tax Commission shall provide a hearing before representatives of the Commission or the full Commission as specified in this subdivision.

a. Hearing by Commission Representatives. – The Commission may authorize one or more members of the Commission or employees of the Department of Revenue to hear an appeal, to make examinations and investigations, to have made from stenographic notes a full and complete record of the evidence offered at the hearing, and to make recommended findings of fact and conclusions of law. Should the Commission elect to follow this procedure, it shall fix the time and place at which its representatives will hear the appeal and, at least 10 days before the hearing, give written notice of the hearing to the appellant and to the clerk of the board of commissioners of the county from which the appeal is taken. At the hearing the Commission's representatives shall hear all evidence and affidavits offered by the appellant and appellee county and may exercise the authority granted by subsection (d), below, to obtain information pertinent to decision of the appeal. The representatives conducting the hearing shall submit to the Commission and to the appellant and appellee their recommended findings of fact and conclusions of law. Upon the request of any party, the representatives conducting the hearing shall also submit to the Commission and to the appellant and appellee a full record of the proceeding. The cost of providing the full record of the proceeding shall be borne by the party requesting it, unless the Commission determines for good cause that the cost should be borne by the Commission. The Commission shall review the record, the recommended findings of fact and conclusions of law, and any written arguments that may be submitted to the

Commission by the appellant or appellee within 15 days following the date on which the findings and conclusions were submitted to the parties and shall take one of the following actions:

1. Accept the recommended findings of fact and conclusions of law and issue an appropriate order as provided in subdivision (b)(3), below.

2. Make new findings of fact or conclusions of law based upon the materials submitted by the Commission's representatives and issue an appropriate order as provided in subdivision (b)(3), below.

3. Rehear the appeal under the procedure provided in subdivision (b)(2)b, below, with respect to any portion of the record or recommended findings of fact or conclusions of law.

b. Hearing by Full Commission. - Should the Commission elect not to employ the procedure
provided in subdivision (b)(2)a, above, it shall fix a time and place at which the Commission shall hear the appeal and, at least 10 days before the hearing, give written notice of the hearing to the appellant and to the clerk of the board of commissioners of the county from which the appeal is taken. At the hearing the Commission shall hear all evidence and affidavits offered by the appellant and appellee county and may exercise the authority granted by subsection (d), below, to obtain information pertinent to decision of the appeal. The Commission shall make findings of fact and conclusions of law and issue an appropriate order as provided in subsection (b) (3), below.

(3) On the basis of the findings of fact and conclusions of law made after any hearing provided for by this subsection (b), the Property Tax Commission shall enter an order (incorporating the findings and conclusions) reducing, increasing, or confirming the valuation or valuations appealed or listing or removing from the tax lists the property whose listing has been appealed. A certified copy of the order shall be delivered to the appellant and to the clerk of the board of commissioners of the county from which the appeal was taken, and the abstracts and tax records of the county shall be corrected to reflect the Commission's order.

(4) Interest on Overpayments. - When an order of the Property Tax Commission reduces the valuation of property or removes the property from the tax lists and, based on the order, the taxpayer has paid more tax than is due on the property, the taxpayer is entitled to receive interest on the overpayment in accordance with this subdivision. An overpayment of tax bears interest at the rate set under G.S. 105-241.21 from the date the interest begins to accrue until a refund is paid. Interest accrues from the later of the date the tax was paid and the date the tax would have been considered delinquent under G.S. 105-360. A refund is considered paid on a date determined by the governing body of the taxing unit that is no sooner than five days after a refund check is mailed.

(c) Appeals from Adoption of Schedules, Standards, and Rules.- It shall be the duty of the Property Tax Commission to hear and to adjudicate appeals from orders of boards of county commissioners adopting schedules of values, standards, and rules under the provisions of G.S. 105-317 as prescribed in this subsection (c), and the adoption of such schedules, standards, and rules shall not be subject to appeal under any other provision of this Subchapter.

(1) A property owner of the county who, either separately or in conjunction with other property owners of the county, asserts that the schedules of values, standards, and rules adopted by
order of the board of county commissioners do not meet the true value or present-use

value appraisal standards established by G.S. 105-283 and G.S. 105-277.2(5), respectively, may
appeal the order to the Property Tax Commission within 30 days of the date when the order adopting the schedules, standards, and rules was first published, as required by G.S. 105-317(c).

(2) Upon such an appeal the Property Tax Commission shall proceed to hear the appeal in accordance with the procedures provided in subdivisions (b)(1) and (b)(2), above, and in scheduling the hearing upon such an appeal, the Commission shall give it priority over appeals that may be pending before the Commission under the provisions of subsection (b), above. The decision of the Commission upon such an appeal shall be embodied in an order as provided in subdivision (c)(3), below.

(3) On the basis of the findings of fact and conclusions of law made after any hearing provided for by this subsection (c), the Property Tax Commission shall enter an order (incorporating the findings and conclusions):

a. Modifying or confirming the order adopting the schedules, standards, and rules challenged,

b. Requiring the board of county commissioners to revise or modify its order of adoption in accordance with the instructions of the Commission and to present the order as thus revised or modified for approval by the Commission under rules and regulations prescribed by the Commission.

(d) Witnesses and Documents. - Upon its own motion or upon the request of any party to an appeal, the Property Tax Commission, or any member of the Commission, or any employee of the Department of Revenue so authorized by the Commission shall examine witnesses under oath administered by any member of the Commission or any employee of the Department so authorized by the Commission, and examine the documents of any person if there is ground for believing that information contained in such documents is pertinent to the decision of any appeal pending before the Commission, regardless of whether such person is a party to the proceeding before the Commission. Witnesses and documents examined under the authority of this subsection (d) shall be examined only after service of a subpoena as provided in subdivision (d)(1), below. The travel expenses of any witness subpoenaed and the cost of serving any subpoena shall be borne by the party that requested the subpoena.

(1) The Property Tax Commission, a member of the Commission, or any employee of the Department of Revenue authorized by the Commission, is authorized and empowered to subpoena witnesses and to subpoena documents upon a subpoena to be signed by the chairman of the Commission directed to the witness or witnesses or to the person or persons having custody of the documents sought. Subpoenas issued under this subdivision may be served by any officer authorized to serve subpoenas.
(2) Any person who shall willfully fail or refuse to appear, to produce subpoenaed documents in response to a subpoena, or to testify as provided in this subsection (d) shall be guilty of a Class 1 misdemeanor.
(3) Upon a motion, the Property Tax Commission, or a member of the Commission may quash a subpoena if, after a hearing, the Commission finds any of the following:
a. The subpoena requires the production of evidence that does not relate to a matter in issue.
b. The subpoena fails to describe with sufficient particularity the evidence required to be produced.
c. The subpoena is subject to being quashed for any other reason sufficient in law.

(d1) Hearing on Motion to Quash Subpoena; Appeal. - A hearing on a motion to quash a subpoena pursuant to subdivision (d)(3) of this section shall be heard at least 10 days prior to the hearing for which the subpoena was issued. The denial of a motion to quash a subpoena is subject to immediate judicial review in the Superior Court of Wake County or in the superior court of the county where the person subject to the subpoena resides.

(d2) Business Entity Representation. - If a property owner is a business entity, the business entity may represent itself using a non-attorney representative who is one or more of the following of the business entity: (i) officer, (ii) manager or member-manager, if the business entity is a limited liability company, (iii) employee whose income is reported on IRS Form W-2, if the business entity authorizes the representation in writing, or (iv) owner of the business entity, if the business entity authorizes the representation in writing and if the owner's interest in the business entity is at least twenty-five percent (25%). Authority for and prior notice of nonattorney representation shall be made in writing, under penalty of perjury, to the Commission on a form provided by the Commission.

(e) Time Limits for Appeals. - A notice of appeal from an order of a board of county commissioners, other than an order adopting a uniform schedule of values, or from a board of equalization and review shall
be filed with the Property Tax Commission within 30 days after the date the board mailed a notice of its decision to the property owner. A notice of appeal from an order adopting a schedule of values shall be filed within the time set in subsection (c).

(f) Notice of Appeal. - A notice of appeal filed with the Property Tax Commission shall be in writing and shall
state the grounds for the appeal. A property owner who files a notice of appeal shall send a copy of the notice
to the appropriate county assessor.

(g) What Constitutes Filing. - A notice of appeal submitted to the Property Tax Commission by a means other than United States mail is considered to be filed on the date it is received in the office of the Commission. A notice of appeal submitted to the Property Tax Commission by United States mail is considered to be filed on the date shown on the postmark stamped by the United States Postal Service. If an appeal submitted by United States mail is not postmarked or the postmark does not show the date of mailing, the appeal is considered to be filed on the date it is received in the office of the Commission. A property owner who files an appeal with the Commission has the burden of proving that the appeal is timely. (1939, c. 310, ss. 202, 1107, 1109; 1955, c. 1350, s. 10; 1967, c. 1196, s. 3; 1969, c. 7, ss. 1, 2; 1971, c. 806, s. 1; 1973, c. 476, s. 193; 1987, c. 295, ss. 3, 9; c. 680, ss. 4, 5; 1989 (Reg. Sess., 1990), c. 1005, ss. 1, 2; 1991 (Reg. Sess., 1992), c. 1016, s. 1; 1993, c. 539, s. 713; 1994, Ex. Sess., c. 24, s. 14(c); 1997-205, s. 1; 2007-251, ss. 3, 4; 2007-491, s. 44(1)a; 2014-120, s. 7(b).)

1. Source: Machinery Act of North Carolina, Issued by The North Carolina Department of Revenue, 2015 Edition, G.S. 105-290 LexisNexis, Matthew Bender & Company, Inc. Editorial offices P O Box 7587, Charlottesville, Va 22906-7507

4. Appeals to Supreme Court[2]

§ 105-345.4. Appeal to Supreme Court.

In all appeals heard in the Court of Appeals, any party may file a motion for review in the Supreme Court of the decision of the Court of Appeals under G.S. 7A-31, and in cases entitled to be appealed as a matter of right under G.S. 7A-30(3) any party may appeal to the Supreme Court from the decision of the Court of Appeals under the same rules and regulations as are prescribed by law for appeals, and such court may advance the cause on its docket. (1979, c. 584, s. 3.)

2. Source: Machinery Act of North Carolina, Issued by The North Carolina Department of Revenue, 2015 Edition, G.S. 105-354.4 LexisNexis, Matthew Bender & Company, Inc. Editorial office s P O Box 7587, Charlottesville, Va 22906-7507

XV. APPENDIX

1. CLASSIFICATION OF REAL VS PERSONAL.....403
A. Real Property…….. 403
B. Personal Property……. 403
C. Leasehold Improvements……. 403
D. General Classification of Real and Tangible Personal Property…… 405

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XV. APPENDIX

Classification of Real vs Personal Property

A. REAL PROPERTY

The Machinery Act in G.S. 105-273(13) defines real property, real estate, or land as any of the following:

a. The land itself.
b. Buildings, structures, improvements, or permanent fixtures on the land.
c. All rights and privileges belonging, or in any way appertaining, to the property.

The NCDOR further states that real estate is defined as the land and appurtenances, including all things not movable in nature and more or less permanently affixed to the land.

The real estate valuation would include such things as floor coverings, wall coverings, ceilings, normal lighting, standard HVAC, sprinkler systems, paving, and exterior fencing.

B. PERSONAL PROPERTY

The Machinery Act in G.S. 105-273(14) defines tangible personal property as all personal property that is not intangible, and that is not permanently affixed to real property.

The NCDOR defines personal property as all tangible property other than real estate. Further, it generally includes movable items, that is, those not permanently attached or affixed to the real estate. In determining whether an item is personal or real, there can be considered the manner in which it is affixed to the real property, as well as the intention of the owner with regard to the removal of the asset at the end of a lease period. If the item can be removed without serious injury to the building, or to the item itself, then it could safely be termed as tangible personal property.

C. LEASEHOLD IMPROVEMENTS

The NCDOR defines leasehold improvements as real estate improvements to leased property contracted for, installed, and paid for by the lessee; and which may well remain with the real estate, thereby becoming an integral part of the leased fee real estate upon expiration or termination of the current lease, but which are the property of, and should be charged to, the current lessee who installs same.

Examples of items that may appear to be real estate but could be considered personal property or leasehold improvements in certain situations:

1. Wiring (Beyond the basic wiring of a commercial building)
2. Venting
3. Flooring (Designed for a particular process or equipment; not basic floor covering)
4. Special Climate Control (HVAC systems associated with a particular equipment or product)
5. Conveyors
6. Boilers and Furnaces
7. Shelving and Displays
8. Security Systems
9. Telephone Systems
10. Alarm Systems
11. Built-in Coolers
12. Customized Light Fixtures (Beyond standard fixtures; designed for a particular process or display)
13. Built-in Cabinets (Specific design to the type of business)
14. Leasehold Improvements (Owned by lessee)
15. Interior Fencing (Outside fencing should be considered real property)
16. Generators

The following are guidelines to determine if property is considered real or personal:

1. Property used in the process, or is in place for the equipment, is generally considered personal property. Examples are special wiring, equipment foundations, and the process piping.

2. Property used for the building, or for the comfort of the employees, is generally considered real property.

3. The owner's/tenant's intent is important to consider. If the owner/tenant intends it to be permanently attached to the real estate and the item would be destroyed and inflict damage to the building structure if it were removed, it should be considered real. Examples of items that may be paid for by the tenant, but would be considered real property, are: asphalt, paving, floor coverings, and built-in bank vaults.

It is important to remember that there are no absolutes in making the determination of whether assets should be classified as real or personal. The appraiser will need to determine if the property is already part of the real estate assessment by being built into the cost of the building interior finish code. An example would be a building valued as an office. The real estate value includes the floor covering, a minimal amount of built-in cabinets, interior walls, and ceilings. The appraiser may have to determine how the property is affixed to the real estate, and also, whether the property is there for the benefit of the process, which would be personal property, or for the benefit of the employees or the building, which is generally considered real property. A key factor to remember when assessing property is all taxable property can be assessed only once, as either real or personal.

D. General Classification Of Real And Tangible Personal Property

DESCRIPTION	REAL	PERSONAL
ACOUSTICAL FIRE RESISTANT DRAPES & CURTAINS		XX
AEROBIC FLOORS		XX
AIR CONDITIONING - BUILDING AIR CONDITIONING, INCLUDING REFRIGERATION EQUIPMENT, FOR COMFORT OF OCCUPANTS, BUILT-IN, CENTRAL & WALL UNITS	XX	
AIR CONDITIONING - WINDOW UNITS, PACKAGE UNITS, INCLUDING, E.G., THAT USED IN DATA PROCESSING ROOM AND IN MANUFACTURING PROCESSING		XX
AIRPLANES		XX
ALARM SYSTEMS (SECURITY OR FIRE) & WIRING		XX
APARTMENTS - CARPETING INSTALLED & ATTACHED		XX
APARTMENTS - BUILT-IN RANGES, DISHWASHER, DISPOSAL, UNLESS INCOME APPROACH IS USED		XX
ASPHALT PLANTS - BATCH, MIX, ETC. – MOVABLE		XX
ATM - ALL EQUIP. & SELF STANDING BOOTHS		XX
AUTOMATIC EXHAUST SYSTEMS FOR BUILDING	XX	
AUTOMATIC EXHAUST SYSTEMS FOR EQUIPMENT		XX
AWNINGS		XX

DESCRIPTION	REAL	PERSONAL
BALERS (PAPER, CARDBOARD, ETC.)		XX
BANKS - CANOPY, DRIVE-IN	XX	
BANKS - DRIVE-IN WINDOWS		XX
BANK TELLER COUNTERS - SERVICE AREA & RELATED		XX
BANKS - NIGHT DEPOSIT CHUTES		XX
BANKS - PNEUMATIC CHUTES		XX
BANKS - TELLER LOCKERS - MOVABLE OR BUILT-IN		XX
BANKS - SAFE DEPOSIT BOXES		XX
BANKS – SAFES (FREE STANDING)		XX
BANKS - SURVEILLANCE SYSTEMS		XX
BANKS - VAULT DOORS		XX
BANKS – VAULTS (BUILT INS)	XX	
BAR AND BAR EQUIPMENT (MOVEABLE OR BUILT-IN)		XX
BAR SINKS (USED IN CONJUNCTION WITH OPERATION)		XX
BARBER & BEAUTY SHOPS - BASINS & SINKS USED IN CONJUNCTION WITH BUSINESS		XX
BARBER & BEAUTY SHOPS - TOILET ROOM FACILITIES	XX	
BARNS	XX	
BILLBOARDS		XX
BOATS AND MOTORS - ALL		XX

DESCRIPTION	REAL	PERSONAL
BOILER - FOR SERVICE OF BUILDING	XX	
BOILER - PRIMARILY FOR PROCESS		XX
BOWLING ALLEY LANES, RETURNS, & PIN SPOTTERS		XX
BROADCASTING EQUIPMENT		XX
BULK BARNS	XX	
BURGLAR ALARMS		XX
C-I-P (CONSTRUCTION IN PROGRESS) EQUIPMENT		XX
CABINETS		XX
CABLE TV DISTRIBUTION SYSTEMS		XX
CABLE TV EQUIPMENT AND WIRING		XX
CABLE TV SUBSCRIBER CONNECTIONS		XX
CAMERA EQUIPMENT		XX
CANOPIES - FABRIC, VINYL, PLASTIC		XX
CANOPIES SERVICE STATION	XX	
CANOPY LIGHTING		XX
CAR WASH - EQUIPMENT, FILTERS, TANKS, TEMPORARY PARTITIONS, PLUMBING, PIPING, WIRING FOR EQUIPMENT		XX
CARPET - INSTALLED	XX	
CATWALKS FOR M & E		XX
CEMENT PLANTS (SEE CONCRETE PLANTS)		XX
CHAIRS - ALL TYPES		XX
CLOSED CIRCUIT TV		XX

DESCRIPTION	REAL	PERSONAL
COLD STORAGE - EQUIPMENT/ROOMS/PARTITIONS		XX
COLD STORAGE - BUILT IN COLD STORAGE ROOMS		XX
COLD STORAGE - REFRIGERATION EQUIPMENT		XX
COMPRESSED AIR OR GAS SYSTEMS (OTHER THAN BLDG. HEAT)		XX
COMPRESSED AIR SYSTEMS		XX
COMPUTERS - ALL		XX
COMPUTER ROOM A/C		XX
COMPUTER ROOM RAISED FLOOR		XX
COMPUTER ROOM - FIRE SUPPRESSION EQUIPMENT		XX
COMPUTERIZED SCANNING EQUIP.		XX
COMPUTERS AND DATA LINES		XX
CONCRETE PLANTS (ELECTRONIC, MIXING, CONVEYERS, TANKS, ETC.)		XX
CONSTRUCTION AND GRADING EQUIPMENT (NON-LICENSED VEHICLES, ETC.)		XX
CONTROL SYSTEMS - ELECTRONIC		XX
CONTROL SYSTEMS - BUILDING AND EQUIPMENT		XX
CONVEYOR & MATERIAL HANDLING SYSTEMS		XX
COOKING EQUIPMENT (RESTAURANT, ETC.)		XX
COOLERS - (WALK-IN) - PREFAB, PORTABLE, DISPLAY, SELF-STANDING, KNOCK DOWN	XX	
COOLERS - (WALK-IN) PERMANENT	XX	

DECRIPTION	REAL	PERSONAL
COOLING TOWERS - PRIMARY USE FOR BUILDING	XX	
COOLING TOWERS - PRIMARY USE IN MANUFACTURE		XX
COUNTERS/RECEPTION DESKS - MOVEABLE OR BUILT-IN		XX
CRANEWAYS		XX
DAIRY PROCESSING PLANTS - ALL PROCESS ITEMS, BINS, TANKS		XX
DANCE FLOORS		XX
DATA PROCESSING EQUIPMENT - ALL ITEMS		XX
DELI EQUIPMENT		XX
DESK - ALL		XX
DIAGNOSTIC CENTER EQUIPMENT - MOVEABLE OR BUILT-IN		XX
DISPLAY CASES - MOVEABLE OR BUILT-IN		XX
DOCK LEVELERS		XX
DOORS	XX	
DOORS - AUTOMATIC OPENERS		XX
DRAPES AND CURTAINS, BLINDS, ETC.		XX
DRAWINGS		XX
DRINKING FOUNTAINS		XX
DRIVE-THRU WINDOWS - ALL (EXCEPT BANKS)		XX
DRYING SYSTEMS - PROCESS OR PRODUCT		XX

DESCRIPTION	REAL	PERSONAL
DRYING SYSTEMS - SPECIAL HEATING IN PROCESS SYSTEM		XX
DUMB WAITERS		XX
DUMPSTERS		XX
DUST CATCHERS, CONTROL SYSTEMS, ETC.		XX
ELECTRONIC CONTROL SYSTEMS		XX
ELEVATORS	XX	
ESCALATORS	XX	
EXHAUST SYSTEMS VEHICLE EMMISSIONS		XX
EXTERIOR STRUCTURES FOR KILNS	XX	
FANS - FREESTANDING		XX
FARM EQUIPMENT - ALL		XX
FENCING - INSIDE		XX
FENCING - OUTSIDE	XX	
FIRE ALARM SYSTEMS		XX
FITNESS CENTER EQUIPMENT - (ALL)		XX
FLAGPOLE		XX
FOUNDATIONS FOR MACHINERY AND EQUIP.		XX
FREIGHT CHARGES		XX
FUELS - NOT FOR SALE (LIST AS SUPPLIES)		XX
FURNACES - STEEL MILL PROCESS, ETC, FOUNDRIES		XX
FURNITURE AND FIXTURES		XX
GAZEBOS	XX	

DESCRIPTION	REAL	PERSONAL
GENERATORS		XX
GOLF COURSE AND IMPROVEMENTS (DRAINAGE/ IRRIGATION)	XX	
GRAIN BINS - NOT PERMANENTLY ATTACHED		XX
GRAIN ELEVATORS		XX
GREENHOUSE BENCHES, HEATING SYSTEM, ETC., IRRIGATION, VENTILATION		XX
GREENHOUSES - MOVABLE		XX
GREENHOUSE - STRUCTURE IF PER. AFFIXED	XX	
HEATING SYSTEMS, PROCESS		XX
HOPPERS - METAL BIN TYPE		XX
HOSPITAL SYSTEMS - OXYGEN, PUBLIC ADDRESS, EMERGENCY ELECTRIC, CLOSED T.V. CALL SYSTEM, AUTOCLAVE, ETC.		XX
HOTEL/MOTEL TELEVISIONS & WIRING, FURNITURE, ETC.		XX
HUMIDIFIERS - PROCESS		XX
INCINERATORS - EQUIPMENT AND/OR MOVEABLE		XX
INDUSTRIAL PIPING - PROCESS		XX
INSTALLATION COST		XX
INVENTORIES (EXEMPT)		XX
IRRIGATION EQUIPMENT		XX
KILN HEATING SYSTEM		XX

DESCRIPTION	REAL	PERSONAL
KILNS - METAL TUNNEL OR MOVEABLE		XX
LABORATORY EQUIPMENT		XX
LAGOONS/SETTLING PONDS	XX	
LAUNDRY BINS		XX
LAW AND PROFESSIONAL LIBRARIES		XX
LEASED EQUIPMENT - LESSOR OR LESSEE POSSESSION		XX
LEASEHOLD IMPROVEMENTS (LIST IN DETAIL YEARLY)		XX
LIFTS - OTHER THAN ELEVATOR		XX
LIGHTING - PORTABLE/MOVEABLE/SPECIAL		XX
LIGHTING - YARD LIGHTING, POLE		XX
LIVESTOCK (EXEMPT)		
LP STORAGE TANKS		XX
MACHINERY AND EQUIPMENT		XX
MEDICAL EQUIPMENT		XX
MILK HANDLING - MILKING, COOLING, PIPING, STORAGE EQUIPMENT		XX
MINERAL RIGHTS	XX	
MIRRORS (OTHER THAN BATHROOM)		XX
MOBILE HOME PARKS - POLES & LIGHTING		XX
MOBILE HOME PARKS - LAUNDRY BLDG., BATH HOUSES, SWIMMING POOLS, SEWER SYSTEMS, WATER PIPING, WALKS, DRIVEWAYS AND PARK AREAS	XX	

DESCRIPTION	REAL	PERSONAL
MOBILE HOMES-ALL SINGLE WIDE & DOUBLE WIDES ON LAND NOT OWNED BY MOBILE HOME OWNER See General Statute G.S. 105-273(13)		XX
MOBILE HOMES-ALL SINGLE WIDE AND DOUBLEWIDES ON LAND OWNED BY MOBILE HOME OWNER See General Statute G.S. 105-273(13)	XX	
MONITORING SYSTEMS BUILDING OR EQUIPMENT		XX
NEWSPAPER STANDS		XX
NIGHT DEPOSITORY		XX
OFFICE EQUIPMENT - ALL		XX
OFFICE SUPPLIES (LIST AS SUPPLIES)		XX
OIL COMPANY EQUIPMENT - PUMPS, SUPPLIES, ETC.		XX
OIL STORAGE AND TANKS		XX
OVENS - PROCESSING/MANUFACTURING		XX
OVERHEAD CONVEYOR SYSTEM		XX
OVERHEAD DOORS	XX	
OVERHEAD WALKWAYS	XX	
PACKAGE AND LABELING EQUIPMENT		XX
PAGING SYSTEMS		XX
PAINT SPRAY BOOTHS		XX
PARKING LOT LIGHTING		XX
PARTITIONS		XX
PAVING	XX	

DESCRIPTION	REAL	PERSONAL
PHOTO BOOTHS		XX
PIPING SYSTEMS - PROCESS PIPING		XX
PLAYGROUND EQUIPMENT - ALL		XX
PNEUMATIC TUBE SYSTEMS		XX
PORTABLE BUILDINGS		XX
POULTRY HOUSE EQUIPMENT - WATER & FEEDING EQUIPMENT, CURTAINS, ETC.		XX
POWER GENERATOR SYSTEMS (AUXILIARY, EMERGENCY, ETC.)		XX
POWER TRANSFORMERS - EQUIPMENT		XX
PROCESSING SILOS		XX
PUBLIC ADDRESS SYSTEMS (INTERCOM, MUSIC, ETC.)		XX
PUMPS - GASOLINE, ETC.		XX
RAILROAD SIDING (OTHER THEN RAILROAD OWNED)		XX
REFRIGERATION SYSTEMS - COMPRESSORS, ETC.		XX
REPAIRS - BUILDING	XX	
REPAIRS - EQUIPMENT		XX
RESTAURANT FURNITURE (INCL. ATTACHED TO FLOOR OR BLDG.)		XX
RESTAURANT/KITCHEN EQUIP. VENT HOODS, SINKS, ETC. (COMMERCIAL)		XX
RETURNABLE CONTAINERS		XX
ROCK CRUSHERS		XX
ROLL - UP DOORS (INSIDE WALL)		XX

DESCRIPTION	REAL	PERSONAL
ROLL - UP DOORS (OUTSIDE WALL)	XX	
ROOFING	XX	
ROOM DIVIDERS/PARTITIONS - MOVEABLE OR BUILT-IN		XX
ROOMS SELF-CONTAINED OR SPECIAL PURPOSE (WALL/CEILING/FLOOR)		XX
SAFES (WALL OR SELF-STANDING)		XX
SALES/USE TAX		XX
SATELLITE DISHES (ALL WIRING & INSTALLATION TO TV AND EQUIPMENT)		XX
SCALE HOUSE (UNLESS MOVEABLE)	XX	
SCALES (Other than truck scales)		XX
SEATS-THEATER		XX
SECURITY SYSTEMS		XX
SERVICE STATION EQUIPMENT - PUMPS, TANKS, LIFTS & RELATED		XX
SEWER SYSTEMS	XX	
SHELVING		XX
SIGNS ALL TYPES INCLUDING ATTACHED TO BUILDING		XX
SILOS - FARM ONLY	XX	
SINKS - BATHROOM	XX	
SINKS - KITCHEN AREA (COMMERCIAL)		XX
SKATING RINKS - ROLLER	XX	
SOFTWARE - CAPITALIZED		XX

DESCRIPTION	REAL	PERSONAL
SOUND SYSTEMS & PROJECTION EQUIPMENT		XX
SPARE PARTS - LIST AS SUPPLIES (FOR EQUIPMENT)		XX
SPEAKERS - BUILT-IN OR FREESTANDING		XX
SPRAY BOOTHS		XX
SPRINKLER SYSTEM - ATTACHED TO PRODUCT STORAGE RACKS		XX
SPRINKLER SYSTEM - BUILDING	XX	
STORE FRONTS (not wall type)		XX
SUPPLIES (OFFICE & OTHER)		XX
SWIMMING POOLS (IN GROUND, INDOOR)	XX	
SWIMMING POOLS - ABOVE GROUND, PRE-FABRICATED		XX
SWITCHBOARD (MOTEL, ETC. - WHEN NOT OWNED BY UTILITY)		XX
TANKS (ALL-ABOVE AND BELOW GROUND)		XX
TELEPHONE SYSTEMS & WIRING		XX
THEATER SCREENS - INDOOR, MOVIE SCREENS, SEATS & EQUIPMENT		XX
THEATER SCREENS - OUTDOOR, MOVIE SCREENS	XX	
THEATERS OUTDOOR - DRIVE IN - SPEAKERS, POSTS & U.G. WIRING		XX
THEATER SEATS		XX
THEATER, OUTDOOR - CONCESSION STANDS AND OTHER PERMANENT BUILDINGS	XX	
TOOLING, DIES, MOLDS		XX

DESCRIPTION	REAL	PERSONAL
TOWERS - MICROWAVE, EQUIPMENT, WIRING & FOUNDATION		XX
TOWERS - TV, RADIO, CATV, TWO-WAY RADIO, WIRING AND FOUNDATION		XX
TRACKAGE		XX
TRANSFORMER BANKS		XX
TRANSPORTATION COST - ALL		XX
TRUCK SCALES	XX	
TUNNELS- UNLESS PART OF PROCESSING SYSTEM	XX	
UPGRADE EQUIPMENT		XX
VACUUM SYSTEM, PROCESS		XX
VAULT- ALL		XX
VAULT DOOR INNER GATES, VENTS & EQUIPMENT		XX
VENDING MACHINES		XX
VENT FANS		XX
VENTILATION SYSTEMS - GENERAL BUILDING (BUILDING IMPROVEMENTS)	XX	
VENTILATION SYSTEMS - NEEDED FOR MANUFACTURING, PROCESS		XX
VIDEO TAPES/MOVIES/REEL MOVIES		XX
UTILITY SYSTEM BUILDINGS FOR PRIVATE SYSTEMS	XX	
UTILITY SYSTEMS - OTHER THAN IN STATE ASSESSED UTILITIES, OTHER THAN CENTRAL HEATING AND COOLING FOR BUILDINGS, ETC. (E.G.: MOTEL OWNED TELEPHONE SWITCHBOARD SYSTEMS, PRIVATE RAILROAD SIDINGS, PRIVATE WATER SYSTEMS, EMERGENCY POWER GENERATING EQUIPMENT, ETC.)		XX

DESCRIPTION	REAL	PERSONAL
WALL COVERING	XX	
WALLS - INSIDE MALL, BETWEEN TENANTS	XX	
WALLS - PARTITIONS, MOVEABLE AND ROOM DIVIDERS		XX
WATER COOLERS - ALL		XX
WATER LINES - FOR PROCESS ABOVE OR BELOW GROUND		XX
WATER SYSTEM - RESIDENTIAL OR GENERAL BUILDING	XX	
WATER TANKS & SYSTEM - FOR PROCESS EQUIPMENT		XX
WELLS - PUMPS, MOTORS, EQUIPMENT		XX
WHIRLPOOL/JACUZZI/HOT TUBS - PORTABLE		XX
WHIRLPOOL/JACUZZI/HOT TUBS - BUILT IN	XX	
WIRING - POWER WIRING FOR MACHINERY AND EQUIPMENT		XX

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