The Office of the Assessor
MECKLENBURG COUNTY
Real Property Appraisal Division

UNIFORM SCHEDULES OF VALUES, STANDARDS AND RULES FOR 2011 REAPPRAISAL

MECKLENBURG COUNTY
PEOPLE □ PRIDE □ PROGRESS

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INTRODUCTION

The primary purpose of real property assessment is to arrive at a fair and just valuation (market value) of all real property for use in deriving property taxes that will be as equitable as is feasible given the time, staff and money available to the assessor.

Market value as defined by "Machinery Act of North Carolina" under G.S. 105.283 Uniform Appraisal Standards 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".

To accomplish the goal of determining just and equitable values the assessor must turn to mass appraisal methods and techniques based on solid appraisal principles. In mass appraising, as in any kind of appraising, the realities of the local market along with state and local laws must be considered. Also, fundamental to any mass appraisal system are knowledge, judgment and the ability to adapt a standardized system to the local market. A standardized system and method of handling both data and the application of the three basic approaches to value is necessary to achieve equalization and uniformity in the valuation process.

The three basic approaches that may be used to arrive at a fair market value are summarized as follows:

COST APPROACH	This approach consists of estimating the land value and the depreciated cost of the improvements to arrive at a value. Theoretically, the substitution principle is the basis for determining the maximum value of the property by this approach. The substitution principle assumes the value is equal to the cost of acquiring a substitution of equal utility assuming no cost delay is encountered.
MARKET APPROACH	This approach utilizes the application of prior sales data from the market and is also referred to as the sales or comparison approach. Use of this approach requires that the sales used should be analyzed to determine that the conditions of fair market value have been satisfied.
INCOME APPROACH	The two most common applications of this approach in mass appraising are the capitalized net income and the gross rent multiplier.

The use of any of the three approaches requires careful consideration to be given to:

1. The relevancy of the approach applied to the property under consideration.
2. The inherent strengths and weaknesses of the approach used.
3. The amount and reliability of the data collected.
4. The affect of the local market on the data collected.

Finally, it must be remembered, the true test of a mass appraisal system rests upon its acceptance by the assessor, the taxpayers and administrative review bodies such as the Department of Revenue and the courts.

The material contained in the manual is provided to enable the user to apply standard procedures to the mass appraisal of property. In certain cases, the procedures are manually implemented and controlled; in others, the highly sophisticated data processing and appraisal systems are available to assure standard methods are employed. The principle to be recognized is that of standardization of data and operations as a vehicle to achieving the goals of the appraisal system.

Machinery Act

ARTICLE 13.
Standards for Appraisal and Assessment.

Sec.
§ 105-283. Uniform appraisal standards.
§ 105-284. Uniform assessment standard.

§ 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 within 30 days after the mailing of the Department's decision. (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.)

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

(a) Octennial Plan.--Unless the date shall be advanced as provided in subdivision (a)(2), below, each county of the State, as of January 1 of the year prescribed in the schedule set out in subdivision (a)(1), below, and every eighth year thereafter, shall reappraise all real property in accordance with the provisions of G.S. 105-283 and 105-317.M

(1) 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.

(2) Advancing Scheduled Octennial Reappraisal.--Any county desiring to conduct a reappraisal of real property earlier than required by this subsection (a) may do so upon adoption by the board of county commissioners of a resolution so providing. A copy of any such resolution shall be forwarded promptly to the Department of Revenue. If the scheduled date for reappraisal for any county is advanced as provided herein, real property in that county shall thereafter be reappraised every eighth year following the advanced date unless, in accordance with the provisions of this subdivision (a)(2), an earlier date shall be adopted by resolution of the board of county commissioners, in which event a new schedule of octennial reappraisals shall thereby be established for that county.

(b) Fourth-Year Horizontal Adjustments.--As of January 1 of the fourth year following a reappraisal of real property conducted under the provisions of subsection (a), above, each county shall review the appraised values of all real property and determine whether changes should be made to bring those values into line with then current true value. If it is determined that the appraised value of all real property or of defined types or categories of real property require such adjustment, the assessor shall revise the values accordingly by horizontal adjustments rather than by actual appraisal of individual properties: That is, by uniform application of percentages of increase or reduction to the appraised values of properties within defined types or categories or within defined geographic areas of the county.

(c) Value to Be Assigned Real Property When Not Subject to Appraisal.--In years in which real property within a county is not subject to appraisal or reappraisal under subsections (a) or (b), above, or under G.S. 105-287, it shall be listed at the value assigned when last appraised under this section or under G.S. 105-287. (1939, c. 310, s. 300; 1941, c. 282, ss. 1, 11/2; 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.)

§ 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; 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 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.)

SALES UTILIZATION AND FAIR MARKET VALUE

PREFACE

Sales Collection and verification is the single most important activity in the appraiser's office. There is no other activity necessary to the appraisal process as the meticulous and regimented collection of sales data.

Ultimately, all valuation approaches, regression, cost/market, or income rely upon the analysis of VALID, QUALIFIED SALES in order to properly value a subject property.

MEETING LEGISLATIVE REQUIREMENTS

Decisions by legislators in recent years have mandated the assessment of real property at 100% of the "fair market value." This criterion has made it imperative for the property appraiser to have an accurate and supportable sales file from which the market approach can be properly implemented.

Regardless of how well or how accurate the data about a property may be the data is useless without sales data against which the data may be compared.

The entire premise of the computerized appraisal system is that regardless of the appraisal approach used, the analysis of sales parcels is necessary in order to do the following:

a. develop regression equations
b. set cost/market base rates
c. determine depreciation schedules
d. determine income capitalization or discount rates

Without sales, the appraiser has to depend on the Cost and Income Approach to base his decisions. Therefore you need sales to support the Cost Approach. Sales also help to determine depreciation and obsolescence in the Cost Approach and cap rates in the Income Approach.

The basic sales information is available at the Registrar of Deeds. However, before a proper analysis can be made between the sales for the tax year and those of similar properties that did not sell, the sales must be checked or qualified to verify that an "arm's length" transaction has taken place and that the source of information is correct. The transaction must then be further checked to determine if all rights and benefits of property ownership were transferred and if any personal property was involved. This procedure is known as SALES QUALIFICATION.

STEPS IN SALES QUALIFICATION

Sales of some residential, but primarily agricultural, industrial and commercial properties often include personal property. There are also a number of inter-company or intra-family transfers "distress" sales, etc., many of which have limiting terms and conditions which affect the sales price. For these reasons and others, further qualification of sales of this type through conversations with one or more of the parties involved may be necessary to determine if the sales price should be adjusted for terms, personal property, etc., or, disqualified entirely.

For this purpose, we have designed a SALES QUALIFICATION FORM that will help standardize the procedure and also build a source of useful sales data. Since recent sales are the BEST indication of MARKET VALUE and because of their affect on the entire mass appraisal process, their careful handling and qualification cannot be overemphasized.

COUNTY PARCEL FORMAT
[ ]

SALE NUMBER

DEED BOOK: PAGE: DATE:

GRANTOR:

GRANTEE:

LOCATION:

FINANCING:

STAMPS:

CONDITIONS OF SALE:

CONFIRMED BY:

DATE OF CONFIRMATION:

ACCESS AND FRONTAGE:

DATE OF INSPECTION:

SIZE: SHAPE: TOPOGRAPHY:

DRAINAGE: TIMBER CONTRIBUTION:

UTILITIES:

ZONING:

IMPROVEMENTS (DESCRIBE IF ANY):

PRESENT USE: INTENDED USE:

HIGHEST AND BEST USE:

OTHER FEATURES:

ANALYSIS OF SALE

	BOOK	PAGE	MO	YR	INST	Q	U	VAC	IMP	SALES PRICE
1	[ ]	[ ]	[ ]	[ ]	[ ]	[]	[]	[ ]	[ ]	[ ]
2	[ ]	[ ]	[ ]	[ ]	[ ]	[]	[]	[ ]	[ ]	[ ]

COMPARABLE LAND SALE REPORT

TAX ID# 1:	SECTION:	ZONING:
ID# 2:		
ID# 3:		PROPOSED USE:

LOCATION/ADDRESS

CITY:	COUNTY:	STATE:
BUYER:	SELLER:	
ENTERED BY:	VERIFIED BY:	
DATE OF SALE:	DEED BOOK REF:	STAMPS:
SALES PRICE: $		

SITE DATA

SIZE ACS:	SF:	FF:
STREET FRONTAGES:		CORNER:
ZONING:	TOPOGRAPHY:	FLOOD PLAIN:
WATER:	SEWER: RAIL:	
OTHER:		
IMPROVEMENTS:		
DEMOLITION COST:		

VALUE INDICATIONS

FINANCING:	PER ACRE:
LEASING DATA:	PER SQ FT:

SPECIAL UNIT VALUE (PROPOSED): $ PER

NEW TAX ID #:

COMMENTS:

COMPARABLE IMPROVED SALES REPORT

TAX ID# 1: AREA: IMPROVEMENT TYPE:
ID# 2:
ID# 3: PURCHASE PRICE:

COMPLEX NAME:

LOCATION/ADDRESS

CITY: COUNTY: STATE:
BUYER: SELLER:
ENTERED BY: VERIFIED BY:
DATE OF SALE: DEED BOOK REF: STAMPS:
SALES PRICE: $

SITE DATA

SIZE ACS: SF: FF:
STREET FRONTAGES: CORNER:
ZONING: TOPOGRAPHY: FLOOD PLAIN:
WATER: SEWER: RAIL:
OTHER:

BUILDING FEATURES:
GROSS BLDG AREA: NRA: # OF UNITS:
GROUND FLR AREA: BSMT: # OF STORIES:
LAND TO BLDG RATIO:
MAJOR TENANT #1: SF:
MAJOR TENANT #2: SF:
MAJOR TENANT #3: SF:

CONSTRUCTION DETAILS:
YEAR BUILT: YR RENOVATED: CONDITION:
OFFICE AREA: MISC:
HEAT: A/C: ELEVATOR: SPRINKLERED:
EXTERIOR WALL ROOF: CEIL HT:
COLUMN SPACING: OTHER DETAILS:

INCOME DATA:	RATE BASIC	1 YR PREV	2 YRS PREV
EFF GRS INC:	$	$	$
EXPENSES:	$	$	$
NET INCOME:	$	$	$

MORTGAGE DATA:	FIRST	SECOND	THIRD
BALANCE:	$	$	$
DEBT SER/YR:	$	$	$
INTEREST RT:			
ORIG. TERM REM:			

VALUE INDICATIONS:
GRM: OAR: $/UT: $ $/SF IMP:
COMMENTS:

The Sales Qualification Form

Sales Qualification forms are a record of the sales research performed to establish the quality of a specific sale. Qualified sales are of inestimable value in establishing unit land values, base rates, depreciation schedules, and for checking the quality and degree of equalization of all work performed.

The first step in any sales qualification procedure is the deed qualification of ALL sales parcels. The sales should then be further qualified as necessary with the use of a sales qualification form.

STEP 1: DEED QUALIFICATION OF ALL SALES. This step entails examining deeds for any conditions or statements which might indicate the sale was not an "arm's length" transaction. For single-family residences, this is usually all that is necessary to obtain accurate sales data.

Those deeds having ANY of the following conditions should be entered on the maintenance document as "U" or an unqualified sale:

1. Quitclaim, corrective or tax deeds
2. State documentary stamps, $.50
3. Same family name as to grantee and grantor
4. Deeds from or to banks or loan companies
5. Deeds indicating a trade or exchange or conveying less than whole interest, i.e. life estates, etc.
6. Deeds including live stock or personal property, i.e. trucks, equipment, cattle, etc.
7. Multi-parcel sales unless the amount paid for each parcel is specified
8. Deeds including exchanges of real or personal property
9. Deeds to or from any of the following

Administrators	Clerks of Court
Executors	County Commissioners
Guardians	Counties
Receivers	Trustees of Internal Imp. Fund
Sheriffs	Cities and/or municipalities
Masters	United States of America or Federal Agencies
Churches	Utility Companies
Lodges	Educational Institutions
Fraternal Institutions	
Benevolent Institutions	

All sales that are deemed to be "not arms length" transactions should be identified as such using the Sales Validity Code (NAL) of the following page.

SALES VALIDITY CODES (N.A.L. – Not Arms Length)

Code	Description (Reason for Rejection)
A.	The transaction involves the conveyance of two or more parcels of real estate.
B.	Improvements were not included in the sales price.
C.	Deed shows $6.00* or less in excise (revenue) stamps. *Transaction is for $3,000 or less.
D.	The date the deed was made, entered or notarized is outside the dates of the study period.
E.	The transaction is between parties of the same family name, relatives or where consideration states "for love and affection".
F.	The deed conveys an unspecified, undivided, or fractional interest in property.
G.	The deed reserves unto the grantor a life estate or some other interest.
H.	The deed reserves unto the grantor the possession of or lease of, the property for a specified period following the sale.
I.	One or both of the parties involved in the transaction is governmental, a public utility, or a lending institution.
J.	The deed conveys a cemetery lot or other tax-exempt property.
K.	One or both of the parties involved in the transaction is a church, school, lodge, or some other benevolent, educational, or fraternal organization.
L.	A deed of trust indicates a sale price greater than the excise tax stamps.
M.	The deed indicates that the property conveyed is situated in more than one county.
N.	The transaction is for minerals, timber, etc. or the rights to mine or cut same.
O.	The transaction includes the conveyance of personal property, and the value of such is not specified separate from the real property value in the deed.
P.	The transaction is the result of a forced sale or auction.
PB.	The sale involved a probate.
Q.	Transaction made by the use of a “contract for sale” the agreement for which is executed and sale actually made prior to the study period.
R.	The transaction involved the trade or exchange of real property or a loan assumption.
S.	The transaction is for real property that cannot be clearly identified on the county tax records.
TEMP.	The sale is temporarily disqualified pending verification of the conditions of the sale or the property.
U.	A deed of trust contains sales information not reflected by the excise stamps.
UC.	The property is under construction or has incomplete remodeling/additions.

UR. The property is under review with final value pending the results.

X. Some other condition affected the sale that requires explanation.

Y. The sale involved the demolition of improvements to the property.

Z. The sale was made to a builder and does not represent typical market conditions.

STEP 2: SALES RESEARCH. By completing the sales qualification form, an orderly check of the sale can be performed relatively easily. The form should be completed as follows:

1. The individual qualifying the sale signs their name and dates the form in the upper right hand corner.
2. Then the parcel number of the sale and the sales data portion of the form, i.e. Deed Book and Page, month and year, instrument type, whether it is qualified or unqualified, vacant or improved, and the indicated sales price taken from the deed.
3. From a copy of the recording instrument obtain the name, address and telephone number of the Grantor, the Grantee, or some other interested party such as the real estate broker, the builder, the developer, the lending institution, or other informed person.
4. A check is placed in the box next to the person contacted. (Experience has shown the best source of information is the Grantor.)
5. Complete the QUALIFICATION DATA portion of the form by conversations with one or more of the principles, confirming the sale date, whether it sold vacant or improved, the actual sales price and any other property (real, tangible or intangible) which may have been included in the sale as well as an estimate of the value of the other property included in the sale. If there was a mortgage involved in the sale, confirm the amount, the interest, and the term and repayment schedule. Make any pertinent notes or comments in the comments portion of the form.
6. Also determine the type of mortgage loan; whether or not it was conventional, participating, government backed, variable interest rate, or other. THE SALES DATA CHANGE portion of the form is to be completed if any portion of the sales data is found to be in error or if there was an adjustment of the information gathered during the sales research. If an adjustment is made to the indicated sales price, the reason MUST be entered in the comments for future reference. The importance of documenting the reasons and support of any sale adjustment cannot be overemphasized.

USING THE SALES DATA QUALIFICATION FORM

The Sales Qualification Form should be completed by departments most familiar with the type of property or area being researched; i.e. income producing properties by the income department, vacant parcels by the land department, and improved properties by the building department.

Changes in sales prices can and should be made to compensate for personal property included in the sales. Having done this, a sale can be treated as qualified and used as a guide for establishing values for similar properties. The qualification process enables the property appraiser to gather the information necessary to adjust sales prices so they will reflect "fair market" sales.

During the investigation of sales, other factors may come to light indicating that an adjustment is necessary to the sales price for what appears to be an otherwise qualified sale. These include market and economic factors. For example, if a property has to remain on the market for an excessive period of time prior to selling, an adjustment may be appropriate. The property appraiser can find himself in a most advantageous position in determining the type of adjustments required because of his familiarity with the local market conditions. Adjustments SHOULD be made for any VALID reason in order to supply qualified comparables for valuing similar properties.

It is most important to remember that the sales qualification form should be PROPERLY filled out and filed for FUTURE REFERENCE.

BENCHMARK SALES

In large counties, sales are relatively numerous for single-family properties and usually available for some commercial type properties. However, the necessity of determining "market value" for all properties complicates the task of appraising certain types of property uses with few or, more often, no "qualified" sales. In these instances AssessPro is designed to utilize BENCHMARK (surrogate) SALES.

The term benchmark refers to properties that have been appraised using conventional fee appraisal techniques. When sufficient sales data is unavailable, fee appraisers have relied on the cost and income approaches to value for indications of market value. For the property appraiser faced with the wide variety of property types, the utilization of the income and cost techniques can provide supportable evidence for appraisal purposes when no "qualified" sales are available which would be applicable.

When faced with a valuation problem dealing with a property type for that there are no qualified sales, the appraiser's first step is to choose a few parcels representative of the particular type or, if there is just one property, the subject can be used. The next step, collecting pertinent data about the properties, is similar to that of the fee appraiser. Depending on available information, either the cost approach or income approach may be employed to give good value indications.

COST BENCHMARKS

If the improvements under investigation are relatively new, local contractors can be consulted for estimates of the cost to replace. Also, the property appraiser can utilize such cost services as R. S. MEANS BUILDING COST SERVICE or MARSHALL & SWIFT to give good cost estimates for a wide variety of building types. After a cost per square foot, unit and/or total building cost new has been estimated, it is necessary for the appraiser to review the property to determine depreciation in the case of less than new structures.

After the appropriate amount of depreciation is calculated, it is subtracted from the replacement cost new. The resulting figure is the depreciated replacement cost new to which is added the market land value. With accurate figures, this value can be utilized and entered as a benchmark sale as described on the following pages under PROCEDURE FOR ENTERING BENCHMARK SALES.

INCOME BENCHMARKS

Another useful method of deriving benchmark sales involves the income approach to value. AssessPro makes available seven methods that are discussed in greater detail in a later chapter but for the purposes of benchmarking a few other comments are necessary.

The basic income data regarding income and expenses is critical and care should be taken to verify information gathered. When this is done and entered into the system using one of the seven approaches, the resultant value can be entered in the sales portion of the appraisal card. The justification for the use of the income approach in the valuation process rests with the reason the income property is used. Income property is used to generate an income stream of revenues in the form of money. It is one of the basic economic building blocks and the property can be valued in terms of its ability to generate income. Income property is held, developed and sold for the income producing potential it possesses.

The exact procedure for entering a change can be found in the chapter on procedures for completing the field data instrument.

USE OF SALES ANALYSIS REPORTS IN THE QUALIFICATION PROCESS

For counties with a large volume of sales activity, AssessPro enables the property appraiser to limit his sales qualification activities to those sales, which show the most extreme assessed value ratios.

Reports can be generated based on location, improvement type, model number, etc. The sales with extreme ratios can be subjected to the sales qualification procedure. The parameters for those to be analyzed can be set by the property appraiser (i.e.

all ratios greater than 100 and less than 75, etc.) based on his requirements, available staff, etc.

AssessPro is designed so that the property appraiser does not have to manually research his own files for various property types but can generate reports detailing only those parcels he wishes to research based on the parameters he has selected (location, age, building type, land use, etc.).

SEE THE LAND RECORDS DIVISION OF MECKLENBURG COUNTY'S GEOSPATIAL INFORMATION SERVICES FOR MAPPING PROCEDURES

LAND APPRAISAL PROCEDURES

PREFACE

Land values are derived primarily by the sales comparison method. It is, therefore, important that certain factors be accurately shown and considered. These factors include location, size, topography, present use, highest and best use, etc. The following chapter describes procedures for recording these important elements and determining land values.

LAND APPRAISAL
PROCEDURES

INTRODUCTION

The market or sales comparison approach is the most applicable method for the valuation of land. The income approach should also be considered for properties for which sufficient sale data are not available for vacant parcels. As often happens in the downtown area and the older subdivisions where no vacant parcels remain, value may be estimated using a land residual approach as detailed in the Income Property Valuation Chapter.

Land value is generally estimated by comparing the subject property to similar properties that have recently sold, making adjustments to the comparable for the different factors affecting land value.

Some of the factors which must be considered include: location, size, shape, topography, accessibility, present use, highest and best use, zoning, utilities, income to the land, supply and demand for the particular type land, improvements to the land and improvements on the land. Irrigation, drainage, sea walls, sidewalks, curbs, gutter, etc. are examples of improvements to the land and are included in the value of the land. Building structures are improvements on the land and with few exceptions, (some condominium or cooperative buildings), are valued apart from the land.

LAND APPRAISAL PROCEDURES

Step #1: Verifying neighborhood boundaries

This is accomplished by examining existing neighborhood boundaries in order to determine whether existing they encompass properties affected by the same economic factors. Neighborhood boundaries consist of a) physical boundaries, such as thoroughfares, streams, railroad right-of-ways, etc., b) uniform land-use controls, such as zoning districts, or c) relatively homogenous types of properties. Generally speaking, appraisers identify and delineate those populations of properties that share similar geographic, economic, legal and physical attributes.

Step #2: Establishing a base lot value

Appraisers begin by analyzing homogenous subdivision neighborhoods. These areas usually have more current sales data to rely on, making this process relatively quick and easy. By choosing to work these first, appraisers familiarize themselves with both this process, which allows them the opportunity to attain helpful ideas that will assist in working more difficult neighborhoods later.

Appraisers use *three separate methods* to arrive at base site rates by neighborhood:

1: Direct sales comparison approach. This is the preferred method of estimating base lot rates when there are sufficient market sales of existing lots available for analysis. Appraisers search for arms-length sales of typical lots within a neighborhood to determine the base lot value. This approach is premised on the building lot theory, where buyers will normally pay a going rate for a site regardless of minor differences in size, topography, etc.

2: Abstraction (land residual) method. This methodology is used in neighborhoods where there not a sufficient number of vacant sales to utilize a direct sales comparison approach. Appraisers examine newer construction sales in these neighborhoods and subtract the depreciated cost value of the improvements to arrive at a residual land value. The Cost Residual Report in AssessPro has been developed specifically to assist staff appraisers in this process.

3: Allocation method**.** In neighborhoods that have neither sufficient vacant sales nor newer construction sales, the allocation method is available for determining the base lot rate. Sales data can be obtained from other, similar neighborhoods that are nearby the subject neighborhood. These neighborhoods should contain similar styles, ages and price ranges of homes. The understanding is that these neighborhoods are competing with the subject neighborhood for the same pool of buyers in the marketplace. Relying on current sales data from the comparable neighborhood(s), appraisers establish typical land/building ratios, which are then be applied to the subject neighborhood to help arrive at new base lot rate.

For the vast majority of residential neighborhoods the only land unit type will be a *lot*, and most parcels in the neighborhood are appraised on a per lot basis. For some of the neighborhoods, particularly the rural areas, an *acreage* unit type may be needed as well. In those cases size adjustment curves are applied automatically on a neighborhood basis. If enough vacant sales data of these acreage tracts is gathered, the sales price/acre of these can be plotted in order to develop an AssessPro size-adjustment curve that replicates what is observable in the local market.

Step #3: Reviewing LUC's (Land Use Codes) and Influence Codes

Appraisers run the "Land Line Detail by NBHD" report in order to review all the data related to this step. This report is useful because it contains Land Use Codes (LUC), Neighborhood Codes, base pricing rates, percentage influence codes, current vs. previous land value calculation, and the percentage change in site values. These reports are edited manually and used to update Assesspro when completed.

Step #4: Quality control measures

A "Current vs. Previous by NBHD" report is run for all neighborhoods, focusing on "Land" when the report asks for a previous value to refer to. This report is used to search for "outliers", i.e. those parcels that decreased in land value or those parcels that increased by an amount other than what would be considered normal for that particular neighborhood.

ROAD CLASSIFICATIONS:

Nonexistent ..... NX

Private Drive .....PD

Dirt

Rural Dirt ..... RD

Paved

Rural Paved…….RP

Rural Gravel..... RG

Rural Dirt Road
not state maintained.....RT

Paved with water.....PW
Public or Community

Paved with water & sewer..... PS

PUBLIC IMPROVEMENT CLASSIFICATIONS

Water.....W

Sewer..... S

Qualified, recent sales data should be posted to the property ownership maps. This data should include whether the sale was vacant or improved, the month and the year of the sale, the amount of the sale and the units and unit price of the sale if it was a vacant sale as follows:

V-6/93 / 250,000 (50,000 Ac) or I-5/93 / 24,500

The maps are then taken into the field by the appraiser to field check, study and analyze the sales and their characteristics.

The appraiser can then use the sales to compare to other parcels with similar characteristics in the immediate area. Notes should be placed on vacant parcels to indicate the condition of the land if fill is required as follows:

LAND CONDITION	NOTATION	CONDITION FACTOR
Vacant no fill required	VOK	100
Vacant minimum fill	VF	75-95
Vacant major fill	VJF	50-75
Vacant not usable	VNU	30-50

The appraiser should also note the characteristics of the area appraised for similarities that may be encountered in other areas that have insufficient sales.

The appropriate unit values can then be posted to the property ownership map using the same format for each type of property.

Generally, Residential property is valued using the following Land Unit Codes: Lot (LT), Acres (AC) or such location-oriented units as Golf Course (GC), Waterfront (WF), Waterview (WV), Point Lot (PT) or SWIM Buffer (SWIM). Commercial and Industrial properties are typically valued using the Square Foot (SF) or Acre (AC) units. Agricultural property is valued by acreage (AC).

Note: Some may require the use of two or more different land units.

RURAL RESIDENTIAL

Acreage in Rural Residential neighborhoods has been valued using a size curve (see table below) that emulates the Somers curve results. This methodology is employed for rural acreage tracts greater than 5 acres in size.

	Range	Std Size	Std $/Unit	Curve Percent	MinFactor	MaxFactor
Int.1	40	26	$/AC for Nbhd	4	.986	4
Int.2	999999	20	$/AC for Nbhd	42		0.988

Rural acreage tracts of 5 acres or less utilize the following size curve associated with a special land unit type, the SMAC (small acreage).

	Range	Std Size	Std $/Unit	Curve Percent	MinFactor	MaxFactor
Int.1	1	1	$/SMAC for Nbhd	33	1.000	2.000
Int.2	5	.8	$/SMAC for Nbhd	68		1.000

Utilizing the following formula, one can calculate the size adjustment for any acreage tract:

$$\text{Size Adjustment} = [\text{ Standard Size / Actual Size X } (\text{ Curve \% / 100}) + (\text{ 1 – (Curve \% / 100)})]$$

THE BASE PRICE METHOD

The Base Price Method is a sound methodology when utilizing the neighborhood concept for different locations within the jurisdiction being appraised. The market indicates that land values change when properties have different amenities such as road frontage, public utilities, road types and the size of tract.

The following is a description of how these factors affect each parcel of land:

A. Location:

Location is the key factor in the determination of market value in the County. Depending on market demand and sales prices, location areas (Base Price Areas) were established throughout the County. Within each base price area other location factors may be applied to a given parcel. The concept of neighborhood homogeneity may tend to fluctuate values as the parcel comes more under the influence of the neighborhood and less under the influence of the total base area. The market demands higher prices for property in or near active market areas. Desirable subdivisions, availability of water and sewer, proximity to shopping areas, higher base price areas and the existence of amenities are factors which tend to increase market demand. The inverse may be true for parcels near a declining subdivision or undesirable industrial or commercial use area. These influences must be determined and adjusted on an individual bases by the appraiser.

B. Size:

The size of a parcel plays a major role in determining the per acre price at which a parcel of land will sell. Because of diminishing marginal utility, the total price asked for a parcel of land has an indirect correlation with the number of potential buyers in the market. This situation stimulates more price negotiation and longer turnover periods for large tracts. Consequently, the actual cash value per acre decreases as the size of the parcel increases.

The value of small lots containing less than one acre depends greatly on zoning and health department restrictions, therefore, these lots must be valued on a per lot basis. Tracts one acre or greater are to be priced using the base price in conjunction with size factor chart shown at the top of this page.

*Note - Parcels that front on intersections or corners will be adjusted so that usable frontage will be considered only once.

D. Access:

1. Paved - This is considered to be the norm and no adjustment is needed.
2. Dirt - Parcels located on dirt roads are to be minused 15% for access.
3. Gravel - Dirt roads that have been improved with the addition of loose gravel are minused 10% for access.
4. Rural Dirt Road Not State Maintained - These roads are usually maintained by a group of property owners and minused 25% for access.
5. No State Maintained Access - Parcels having no access are useful mainly as add on property for adjoining owners which have access. Residential use is limited on these parcels; therefore, small tracts do not show the dramatic increase in per acre price. The following factors are to be applied to parcels having no access in order to reduce both the base price and the size factor influence.
6. No Public Access - Private Drive. Parcels have established access drive to property but no state maintained frontage.

Code	Type Access Factor	
RP	+00	Rural paved is considered normal
PW	+05	Paved road with public or community water
PS	+25	Paved road with public water and sewer
RG	-10	Rural gravel state maintained road.
PD		Private drive or easement (no public access); see following chart
NX		No legal access to property - see following chart

No Legal Access (NX)	No Public Access (PD)
0.01 - 1.5 Acres = -40%	0.01 - 1.5 Acres = -20%
1.51 - 3.0 Acres = -37%	1.51 - 3.0 Acres = -17%
3.01 - 4.0 Acres = -34%	3.01 - 4.0 Acres = -15%
4.01 - 5.0 Acres = -32%	4.01 - 5.0 Acres = -14%
5.01 - 6.0 Acres = -31%	5.01 - 6.0 Acres = -13%
6.01 - 7.0 Acres = -30%	6.01 - 7.0 Acres = -13%
7.01 - 8.0 Acres = -29%	7.01 - 8.0 Acres = -12%
8.01 - 9.0 Acres = -28%	8.01 - 9.0 Acres = -12%
9.01 - 10.0 Acres = -27%	9.01 - 10.0 Acres = -11%
10.01 - 15.0 Acres = -26%	10.01 - 15.0 Acres = -11%
15.01 - 30.0 Acres = -25%	15.01 - 30.0 Acres = -11%
30.01 - 50.0 Acres = -24%	30.01 - 50.0 Acres = -11%
50.01 - 70.0 Acres = -23%	50.01 - 70.0 Acres = -10%
70.01 - 100.0 Acres = -22%	70.01 - 100.0 Acres = -10%
100.01 - 150.0 Acres = -21%	100.01 - 150.0 Acres = -10%
150.01 - Up Acres = -20%	150.01 - Up Acres = -10%

E. Topography:

Land considered to be usable but suffering from rough topography may need further adjustment in order to achieve market value. Rough topography increases the development and building cost required to gain the optimum use from a parcel of land. The usable land on each parcel must be looked at as a whole and adjustments applied as indicated by comparable sales.

Certain tracts of land in Mecklenburg County have problems with percolation. Adjustments to the land value will be made only when the property owner's request is accompanied by evidence, such as a rejection certificate from the Environmental Health Department. Such parcels should be assigned the land use code (LUC) 9699 (Unsuitable for Septic), and an influence code NP (No Perc) should be used to identify the cause of adjustment. The following factors are to be applied in order to reduce appraised values proportionate to market value analysis.

.01 - 5.00	Acres = -50%
5.01 - 10.00	Acres = -40%
10.01 - 50.00	Acres = -30%
50.01 - 100.00	Acres = -25%
100.01 - Up	Acres = -20%

F. Shape:

Its shape might affect the utility of a specific parcel. The appraiser determines what is unusable and to what extent it affects the value of the subject parcel.

G. Rights of Way:

Land falling within a state road right of way should be assigned the land use code of 9401 (Right of Way). This code will suppress 80% of the neighborhood land unit price assigned.

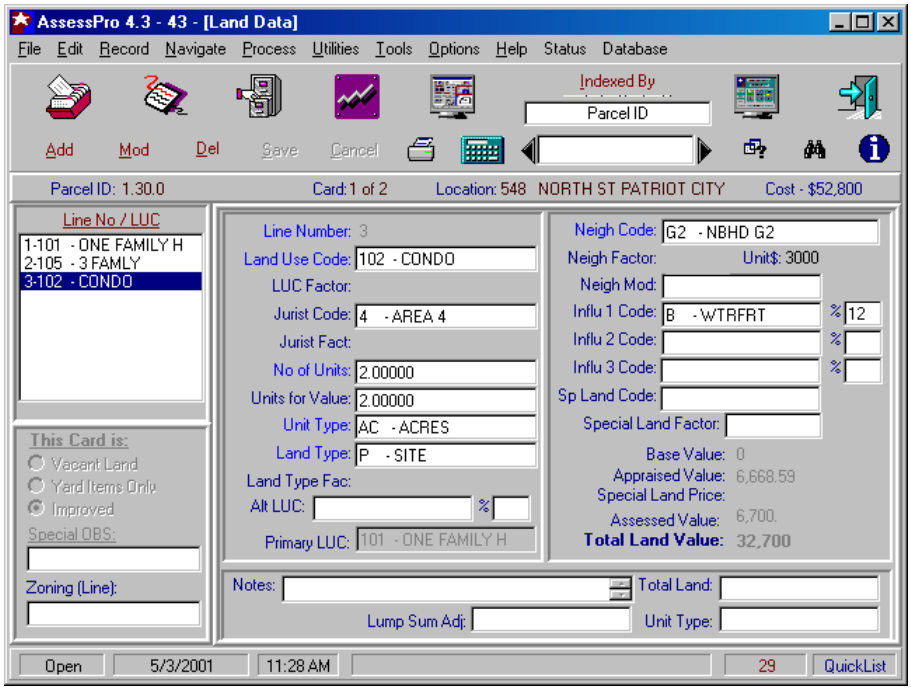
Surface easements governing power, natural gas and petroleum rights of way may have varying affects on each parcel. If the actual amount of acreage within the easement is known, the appraiser will assign a land use code of 9402 (Utility Easement) to that area, which will suppress 90% of the value of that acreage. In cases where the acreage amount is unknown, the appraiser may apply the UE (utility easement) influence code to factor the base unit price according to market-extracted data. The extent of the liability and the impact on value is based mainly on the easement's location within the parcel.

LAND DATA ENTRY ON ASSESSPRO

This screen is where Land information is entered. These items include the size, the neighborhood, any modifiers, the land use code, and whether or not a parcel is vacant. An unlimited number of landlines may be entered per parcel. There are also a variety of influences and modifiers available.

When adding a new Parcel Record Card, the data for this section should be entered immediately after creating the Parcel or card. Certain information, such as whether or not the land is vacant, determines the availability of other fields. Every card MUST have a landline since Neighborhood Code and Land Use Code are utilized in the valuation process. Though a landline is required for every parcel, one does not have to assign any land area to that landline.

There are three options in a box on the left side of this screen that are very important – Vacant Land, Yard Items Only, and Improved. If there is any building on the land, the Improved option MUST be clicked. Marking land as improved is the only way to gain access to the various screens where building information is entered, and to the SketchPro sketching application. If not marked as improved then many of the screens will not appear in the parcel data entry list when working on this parcel.



LINE NO / LUC:

This area displays a list with the line number, land use code, and land use code description for every landline associated with this parcel. Highlight a line from this list to view details for that landline on the rest of the screen.

LINE NUMBER:

The Line Number is displayed in the screen area. This and the Land Use Code from the following field to can be used to verify that the correct landline is being viewed. Line numbers are added sequentially as landlines are added to the parcel. If a landline is deleted, the line numbers will be reassigned to subsequent landlines so there will never be a gap in the numbering. For example, if line 3 of 5 lines then lines 4 and 5 will be reassigned numbers 3 and 4.

LAND USE CODE:

Select the primary Land Use Code on the first card on the first line. The Land Use Code is abbreviated to LUC throughout the application.

Related Table: Land Use Code Descriptive Table
Required Field: Yes

LUC FACTOR:

Displays a factor to be assigned on this landline if there is a Land Use Code factor assigned in the Land Use Code Descriptive Table for the Land Use Code you selected.

Related Table: Land Use Code Descriptive Table

JURIST CODE:

Select the jurisdiction code from the list. This code is used with the neighborhood code to further define the factors applied to land based on location.

Related Table: Jurisdictional Factors Descriptive Table

JURIST FACT:

Displays a factor to be assigned on this landline if there is a Jurisdictional factor assigned in the Jurisdictional Factors Descriptive Table for the jurisdiction selected.

Related Table: Jurisdictional Factors Descriptive Table

NO OF UNITS:

Enter the number of land units, such as square feet or acres in this field. This field and the Unit Type field are closely related. Frequently all of land measurements will be entered on the first landline. Subsequent landlines may only be used to track building information. In these cases enter a zero as the number of units.

Text Type: Number
Text Length: 12
Required Field: Yes

UNITS FOR VALUE:

Enter the number of land units to be used for the size adjustment basis. Only needed if different size basis is desired. This field is also used for depth if depth factor tables are used.

Text Type: Number
Text Length: 12

UNIT TYPE:

Select the measurement type that will be assigned to the number of units. The Unit Type determines the unit price based on the Neighborhood code.

Related Table: Land Unit Codes Descriptive Table
Text Type: Text
Text Length: 4
Required Field: Yes

LAND TYPE:

Select the type of land, such as site or recreational that is associated with this landline.

Related Table: Land Type Descriptive Table
Text Type: Text
Text Length: 4
Required Field: Yes

LAND TYPE FAC:

Displays a factor to be assigned on this landline if there is a Land Type factor assigned in the Land Type Descriptive Table for the jurisdiction selected.

ALT LUC:

Enter the secondary Land Use Code for mixed-use. A prompt will appear to automatically post the code and % to the building information if desired.

TableLandUse
Text Type: Text
Text Length: 4

%:

Enter the percentage of your land that belongs to the Alternate LUC. The value must be less than 51.

Text Type: Number
Text Length: 2

PRIMARY LUC:

Displays the Land Use Code from Line 1 or a system generated code if this is a mixed-use parcel. Mixed-use codes are generated by using 0 as the first digit, and adding the class code (first digit of the LUC) from the first two land lines assigned to this parcel. The option to calculate primary LUCs in your system is set in the Jurisdictional options screen on the Valuation Options tab.

NEIGH CODE:

Select the Neighborhood Code from the list. This code determines the price schedule and is very important for other factors.

Related Table: Neighborhood Codes Descriptive Table
Required Field: Yes

NEIGH FACTOR:

Display of the standard price per unit based on the neighborhood code as defined in the Price Data Calculation Table.

NEIGH MOD:

Select a modifier for the neighborhood. This may be used to adjust the weight of the neighborhood factor to account for influences like property that is assigned to a wealthy neighborhood but borders on a poor neighborhood. The Neighborhood modifier has associated factors for land, building, and SFYI.

Related Table: Neighborhood Modifiers Descriptive

INFLU 1 CODE:

Select a category to give a positive or negative adjustment for the land based on an influence that is not represented elsewhere on this screen. For example, there may have waterfront or view influence codes.

Related Table: Land Influence Types Descriptive

% 1:

Enter the percent adjustment. Enter a negative number for a deduction. Works multiplicatively, i.e. -20 in Influence 1 and -30 in Influence 2 is 46% off not 50%.

Text Type: Number
Text Length: 4

INFLU 2 CODE:

Select a code for the type of land influence.

Related Table: Land Influence Types Descriptive

% 2:

Enter the percent adjustment. Use "-" for deduction. Works multiplicatively.

Text Type: Number
Text Length: 4

INFLU 3 CODE:

Select a code for the type of land influence.

Related Table: Land Influence Types Descriptive

% 3:

Enter the percent adjustment. Use "-" for deduction. Works multiplicatively.

Text Type: Number
Text Length: 4

SPECIAL LAND CODE:

Select a code for special land. Special Land like farmland, recreational land, or forest can be adjusted either by applying a factor to the value of the land or by setting a price for a given land area (ex. $800 per acre). If there is a Special Land Factor assigned in this table it will be displayed in the space on the right side of this field.

Related Table: Special Land Factors Descriptive Table

SPECIAL LAND FACTOR:

Adjustment to scheduled Special Land Price.

Text Type: Number
Text Length: 10

BASE VALUE:

Displays the land price data from the Land Price Data Calculation table for the neighborhood that was selected. This display is for information only. It does not drive the land value.

Related Table: Land Price Data Calculation Table

APPRAISED VALUE:

Displays the value of the land before any adjustments made for special circumstances.

SPECIAL LAND PRICE:

Displays the value calculated based on the Special Land Prices Table for Land Use Code.

Related Table: Special Land Prices Descriptive Table

ASSESSED VALUE:

Displays the calculated assessed value for the landline you are viewing. This is the actual assessment.

Text Type: Number

TOTAL LAND VALUE:

Displays the sum of the value from all landlines for this parcel.

NOTES:

Area for notes, if any.

Text Type: Text
50

THIS CARD IS RADIO BUTTONS:

These radio buttons determine what valuations are going to be made for this parcel. Different screens will be disabled throughout the system when viewing this parcel if they will not be needed. For example, if Vacant land is selected, none of the building screens will be available.

Vacant Land – select this radio button if there are no buildings on this parcel.

Yard Items Only – select this radio button if this parcel contains only yard items to value.

Improved – select this radio button if there are buildings on this parcel.

SPECIAL OBSOLES:

Select the special obsolescence when not accessible through Depreciation. This field is not available when the Improved radio button is selected.

Related Table: Special Obsolescence Descriptive Table

ZONING (LINE):

Select a Zoning code to apply to a specific landline in this parcel. Zoning must be added to the Owner / ID / Tax Info screen before it will be available in this field.

Related Table: Zoning Codes Descriptive Table

TOTAL LAND:

Enter Total land units for the parcel. This field is not specific to a particular landline. This can be used to display the total land for the parcel on the record card if the process used to determine value does not include land size. For example, front feet might have been used to derive value but the size of the parcel is still recorded.

Text Type: Number
Text Length: 20

LUMP SUM ADJ:

Enter an adjustment to be applied to the final land value as a lump sum. This value is not specific to a particular landline.

Text Type: Number
Text Length: 12

UNIT TYPE:

Select a type of measuring units that the total land field above this is based on. For example to enter 12 acres as total land one would enter 12 in the Total Land field and Acres in this field. This field is not specific to a particular landline.

Related Table: Land Unit Type Descriptive Table

NORTH CAROLINA
DEFINITIONS OF CLASSIFICATIONS

105-277.2., Agricultural, horticultural and forestland - Definitions

For the purposes of G.S. 105-277.3 through 105.277.7 the following definitions shall apply:

(1) "Agricultural land" means land that is part of a farm unit that is actively engaged in the commercial production or growing of crops, plants, or animals under a sound management program. Agricultural land includes woodland and wasteland that is part of the farm unit, but the woodland and wasteland included in the unit shall be appraised under the use-value schedules as woodland or wasteland. A farm unit may consist of more than one tract of agricultural land, but at least one of the tracts must meet the requirements in G.S. 105-277.3(a)(1), and each tract must be under a sound management program.

(2) "Forestland" means land that is part of a forest unit that is actively engaged in the commercial growing of trees under a sound management program. Forestland includes wasteland that is part of the forest unit, but the wasteland included in the unit shall be appraised under the use-value schedules as wasteland. A forest unit may consist of more than one tract of forestland, but at least one of the tracts must meet the requirements in G.S. 105-277.3(a)(3), and each tract must be under a sound management program.

(3) "Horticultural land" means land that is part of a horticultural unit that is actively engaged in the commercial production or growing of fruits or vegetables or nursery or floral products under a sound management program. Horticultural land includes woodland and wasteland that is part of the horticultural unit, but the woodland and wasteland included in the unit shall be appraised under the use-value schedules as woodland or wasteland. A horticultural unit may consist of more than one tract of horticultural land, but at least one of the tracts must meet the requirements in G.S. 105-277.3(a)(2), and each tract must be under a sound management program.

DATA COLLECTION PROCEDURES IN THE FIELD

PREFACE

The application of standardized method in the appraisal of a structure requires work to be performed in three areas: fieldwork, calculation and valuation. The purpose of this chapter is to supply basic definitions and depict common situations that must be contended with in the field. It contains material taken directly from the Appraisers' Field Manual.

DATA COLLECTION PROCEDURES IN THE FIELD

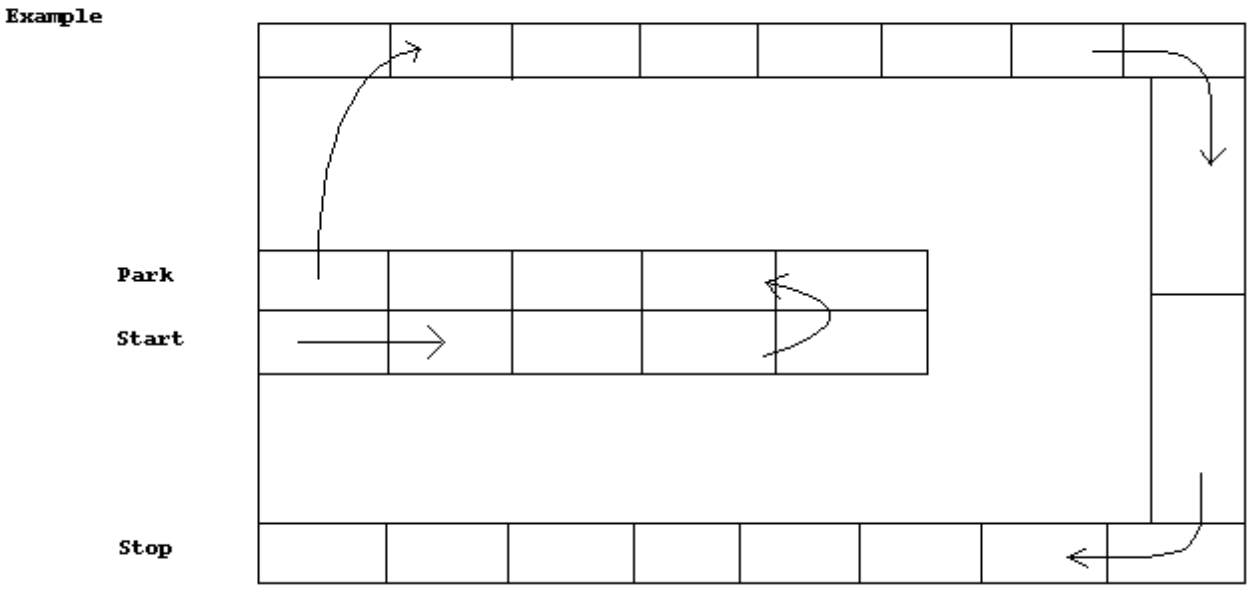
INTRODUCTION

Fieldwork should be approached with three basic components in mind: Collection or verification of measurements of any improvements including correction of any such measurements and recording information correctly on the field data collection instrument. The first two topics are discussed in this chapter; the third in the next chapter.

COLLECTION OR VERIFICATION OF CONSTRUCTION DATA

This involves two basic techniques. The majority of the data is confirmed by a visual inspection and can be done while walking up to the front door. It is helpful to give the area you are covering a "windshield" preview while looking for a parking spot. This gives a good indication of the typical exterior components such as roofs and exterior walls and helps develop a "feel" for the neighborhood.

In order to work at maximum efficiency, plan your route ahead of time. Check your map and arrange cards in the order you will want to walk; ideally stopping and starting at the same point.



As you approach each house, check your exterior walls, roof structure, roof cover; look for indications of heating type - fireplace, compressors, oil drums, etc.

COLLECTION OR VERIFICATION OF CONSTRUCTION DATA, cont.

Identify yourself and your purpose, remembering at all times to be polite and respectful. One approach is as follows:

"Good morning. My name is John Doe and I am with the Mecklenburg County Real Estate Appraisal office, (show your identification card) verifying data for the Property Tax Record. I need to ask you a few questions and walk around the outside of the house."

Usually, most people are cooperative. Remember, your job is solely to collect or verify data; not to come up with the assessment value. While you are introducing yourself, glance inside to check for interior wall construction, flooring, and indications of heating and cooling systems.

Your three questions can be asked as follows:

"What sort of floors do you have?" (Don't confuse rugs with carpet. The latter is physically secured to the floor; rugs are not.) "How do you heat and cool your house?" (If they don't know, and that happens, you can almost always see physical indications from the outside such as a chimney or an oil drum. "How many bathrooms and bedrooms do you have?" Then, "Thank you very much. Now all I need to do is take a quick look around the outside, okay?"

Sometimes, you will have to take measurements to appraise improvements. If you have to measure the whole house, just explain to the owner you are collecting and verifying building measurements.

There are a few aids to measuring that make it a little quicker and easier. A screwdriver or long nail serves as a good anchor for the tape end when you cannot get to the wall because of fences or shrubs. Despite logic, sometimes measurements will not produce a square or even sided house. Be sure to check for this before turning in the appraisal card.

It is also essential that the measurements produce an even sided structure. A simple method of checking for closure is to add all the front measurements (bottom horizontal) and add all the back measurements (top horizontal) to see if the two are equal. The same should be done for the sides of the house (left and right verticals). This is known as checking for closure. Another way to insure the proper length is to measure the length without any offsets to get the overall length. The same can be done for the width.

There are three basic steps to this process:

1. Measure each side of the structure accurately.

2. Make a diagram placing dimensions (rounded to the nearest foot) beside each line they represent.

3. Label structural variations with appropriate abbreviations (FEP, FSP, FCP, etc.). Lettering and numbers are to be neatly made with measurements written so as to read from the bottom of the card looking up.

TO CHECK FOR CLOSURE:

The basic rule is the sums of the lengths of the opposite sides must be equal to each other as follows:

The sum of the top horizontal lines (the back of the house) should equal the sum of the bottom horizontal lines, (the front of the house). The sum of the left vertical lines, (the left side of the house) should equal the sum of the right vertical lines, (the right side of the house), in the same manner.

The following are examples depicting various types of improvements and how they should be drawn, labeled and checked for closure.

STANDARDIZED METHOD OF DRAWING STRUCTURES

A uniform method of drawing and labeling structures must be adopted. The following method is to be employed in preparing documents for use by the system.

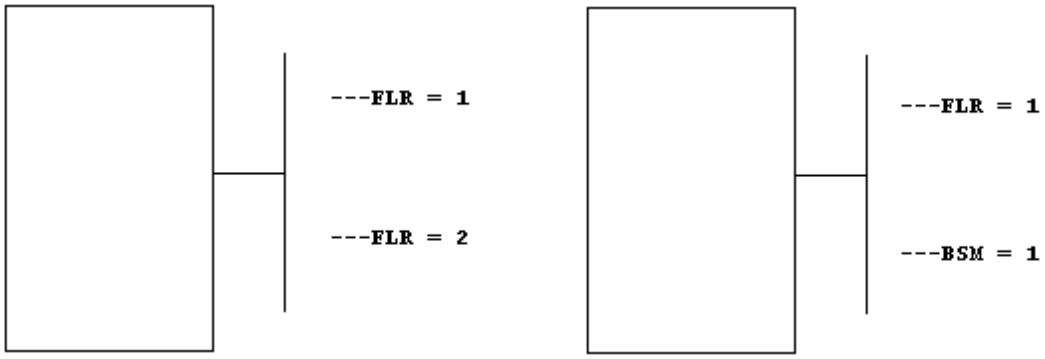
Orient the drawing so that the front of the structure is towards the bottom of the card. All labeling should be oriented in this same direction.

It is essential in drawing the structures to delineate the auxiliary areas properly in order that they can easily be distinguished from the base area.

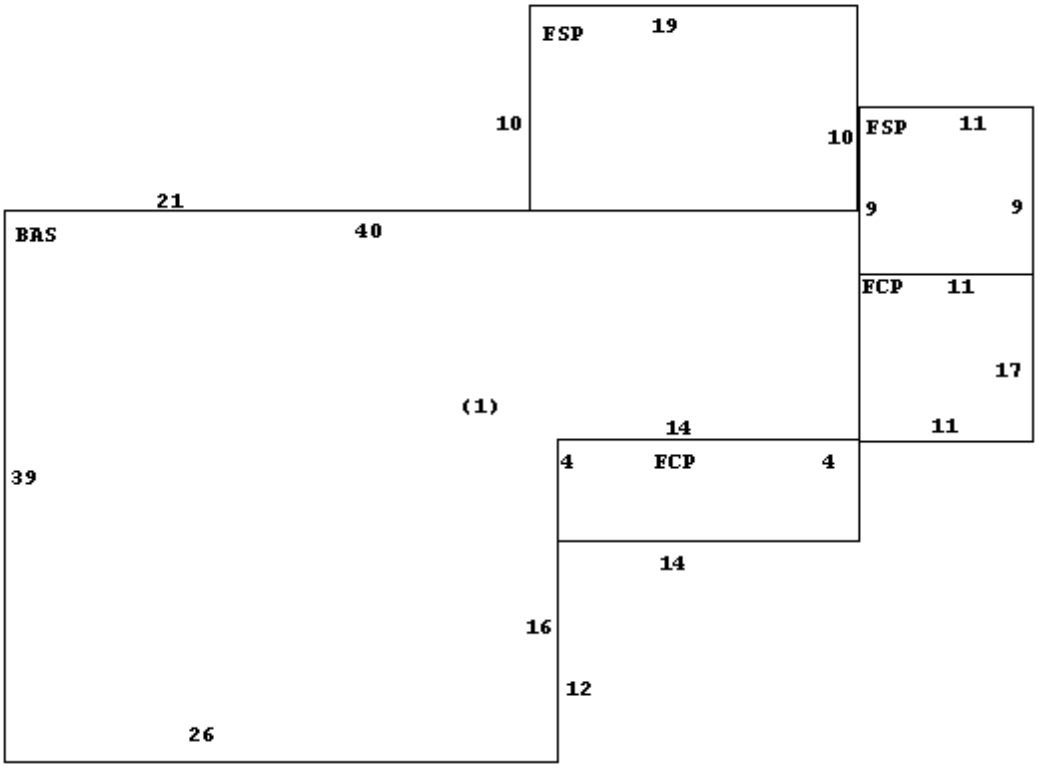
Familiarity with auxiliary area abbreviations is essential along with an understanding of the visual indications of these areas. For example: an enclosed porch which may have windows different from the base, a lower foundation than the base, or different roof cover.

If you are confronted with an exceptionally large property with many sides, a piece of graph paper used in drawing the sketch can be invaluable in preventing errors.

Special attention needs to be given multi-story buildings. A notation to denote upper stories and/or basements should be as follows



Further refinements of this situation are necessary to contend with many older, odd shaped homes often with 2 or more stories. Careful attention must be paid to auxiliary areas and whether or not they extend to all floors.



TOP HORIZONTAL LINES
(left to right)
WEST
11 + 19 + 21 = 51

BOTTOM HORIZONTAL LINES
EAST
26 + 14 + 11 = 51

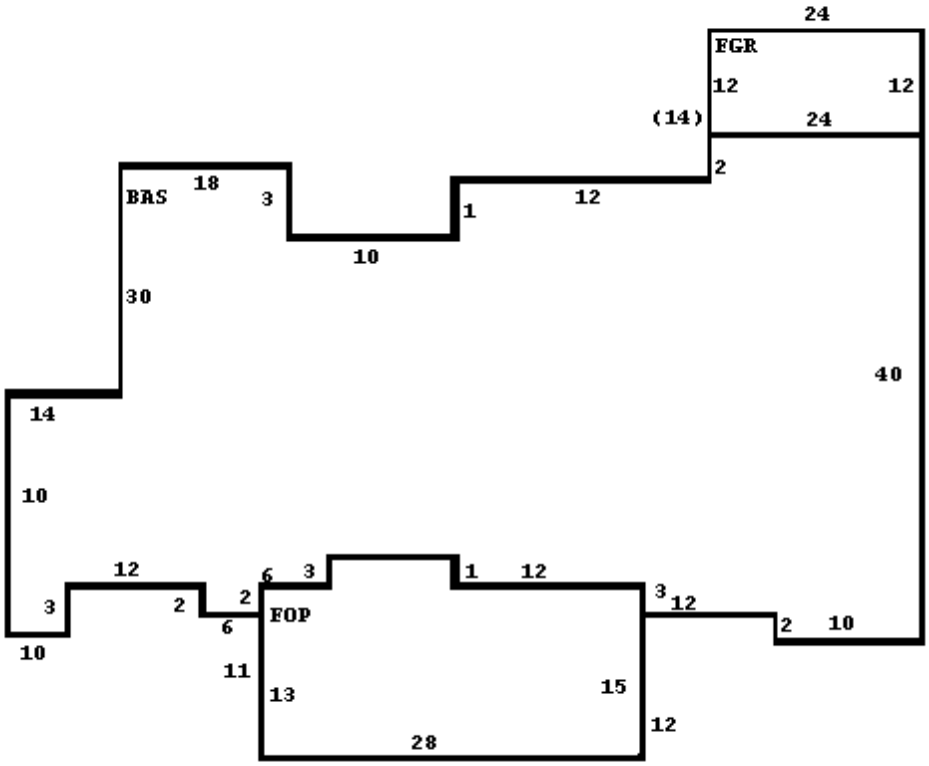
11 + 19 + 21 = 51
26 + 14 + 11 = 51

LEFT VERTICAL LINES
(top to bottom)
SOUTH
10 + 39 = 49

RIGHT VERTICAL LINES
NORTH
7 + 9 + 17 + 4 + 12 = 49

	7
10	9
39	17
49	4
	12
	49

In the above example the auxiliary areas, such as the screened porch (FSP) will prevent actual measurement of some of the walls of the base. This is overcome by recording the actual measurements of the perimeter then deriving some of the base wall measurements from them. In this example, the length of the rear wall of the base is determined by adding the length of the rear wall of the screen porch (19) to that of the accessible rear wall of the base (21).

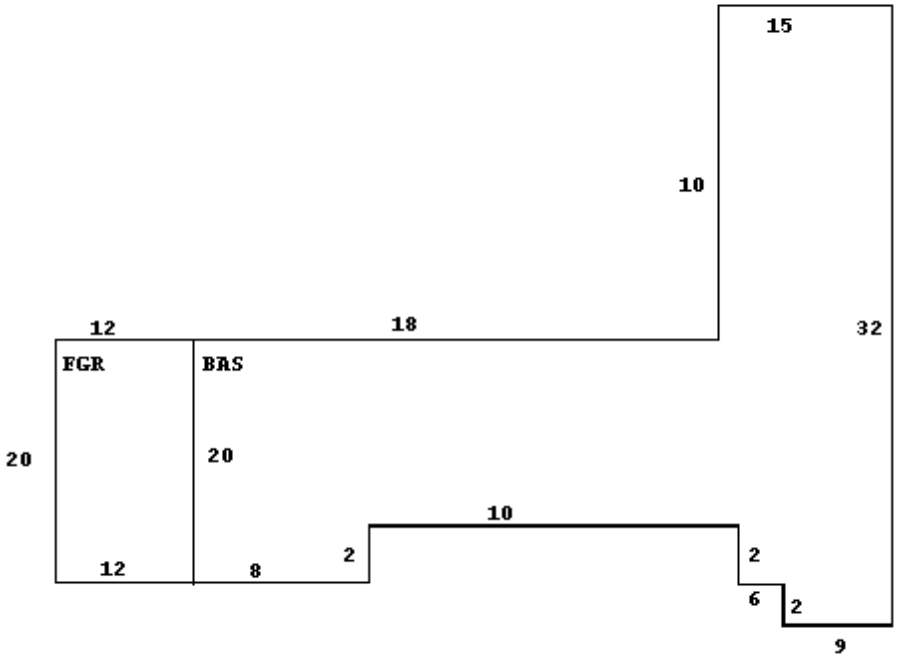


BE SURE TO GET ALL SMALL MEASUREMENTS

24 + 12 + 10 + 18 + 14 = 78

10 + 12 + 6 + 6 + 10 + 12 + 12 + 10 = 78

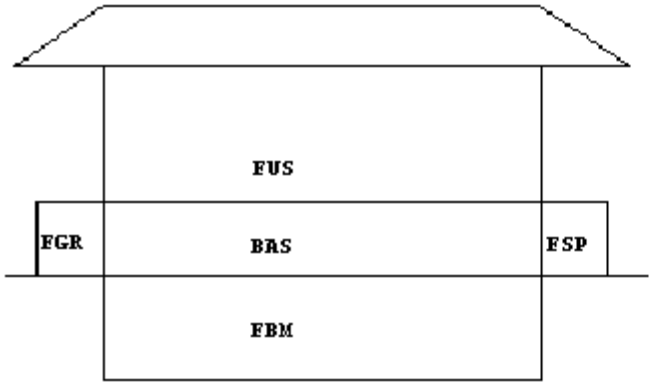
12	12
2	40
1	52
-3	
30	
10	
52	

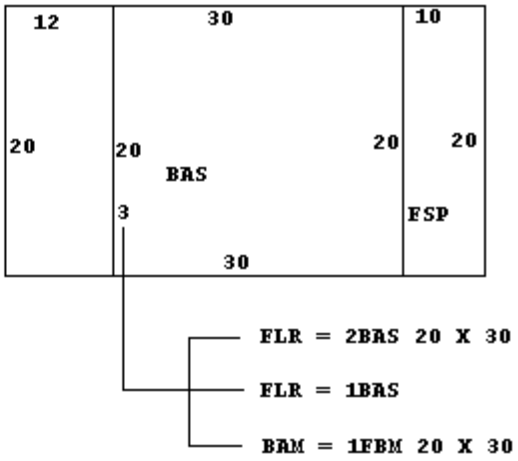


15 + 18 + 12 = 45

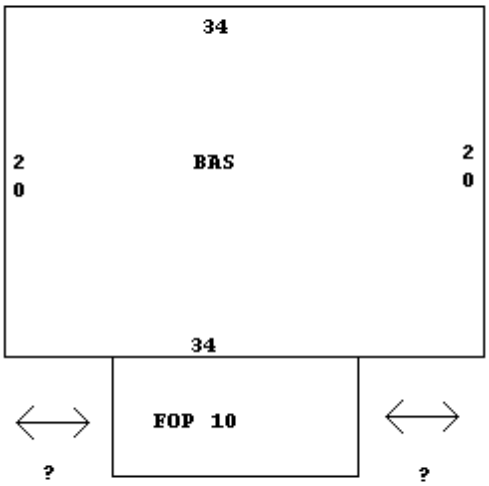
12 + 8 + 10 + 6 + 9 = 45

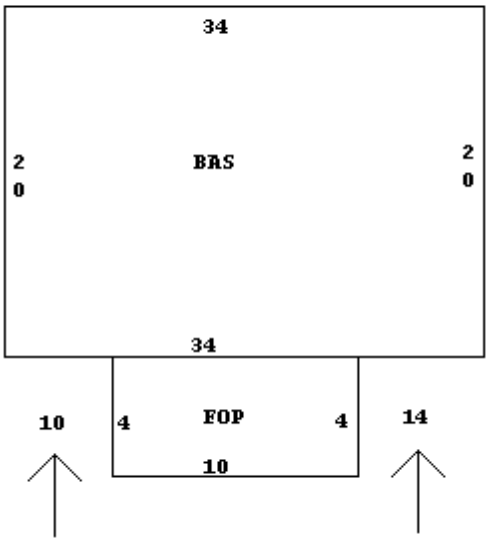
10
20 32
+2 32
32

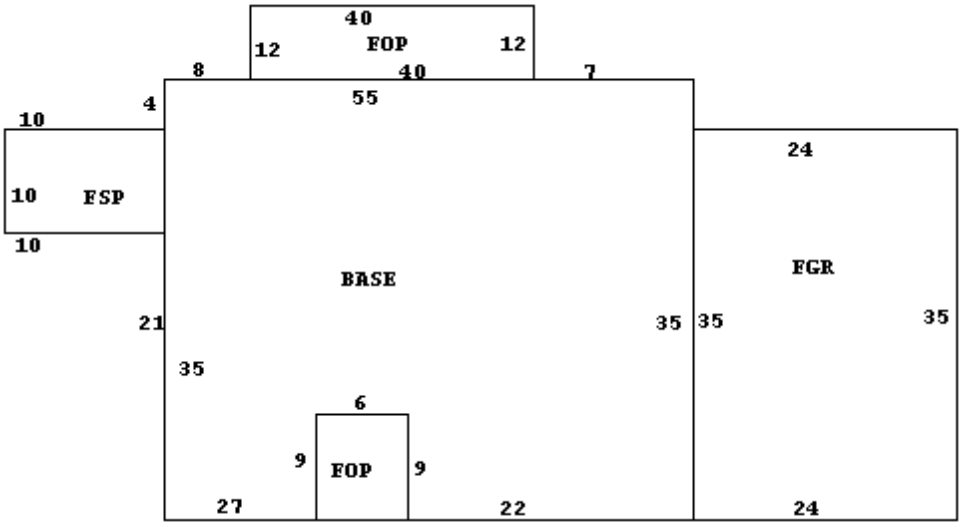




Be sure to label each side of the property, placing these dimensions to the inside, which show ACTUAL length. Whereas those measurements used to determine the position of auxiliary areas along the perimeter of the base should be placed on the outside of the sketch if they are not included within an auxiliary area. This is illustrated as follows:







It is critical to the proper coding of structures to supply adequate measurements of the perimeter and auxiliary areas in order to determine the correct location of the auxiliary areas with respect to the base.

BUILDINGS OVER ONE STORY

GARAGE APARTMENT

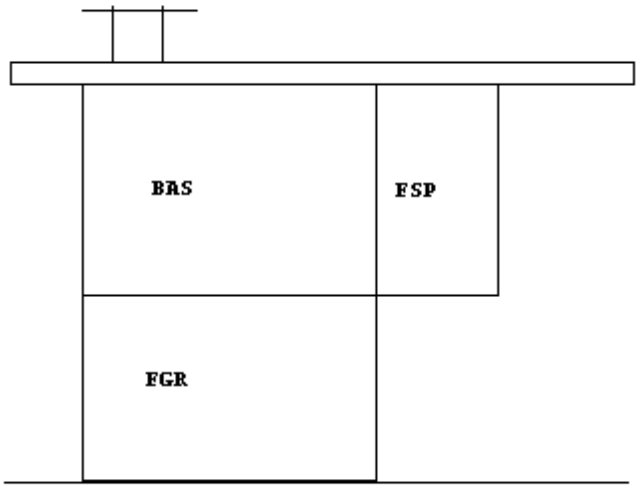
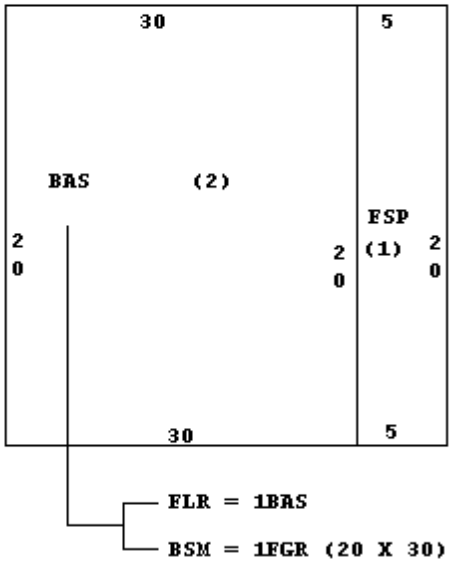


DIAGRAM AS FOLLOWS



TWO STORY RESIDENCE

TWO STORY RESIDENCE

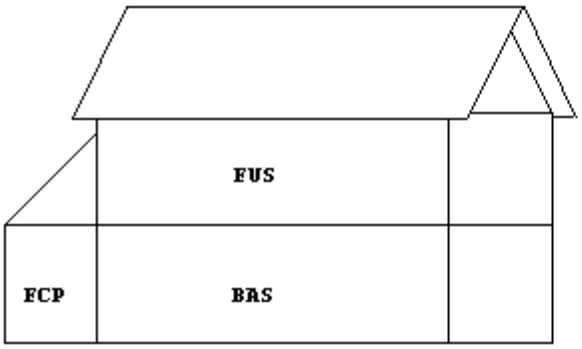
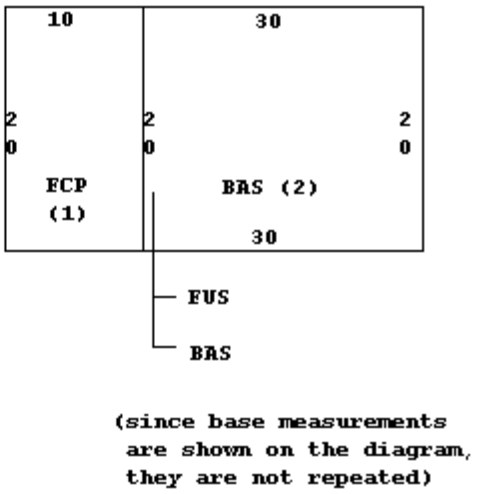
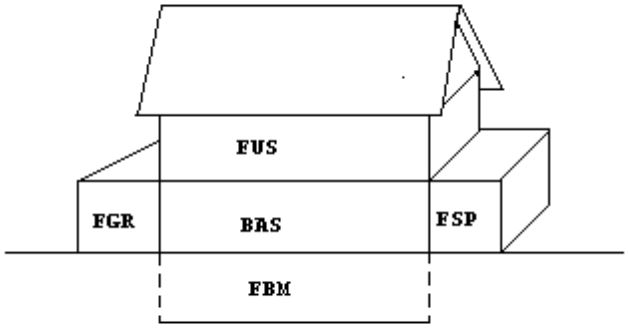


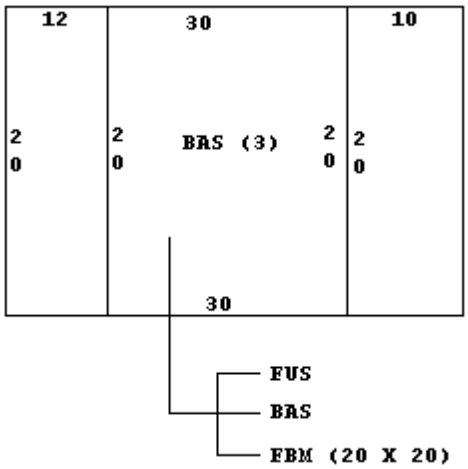
DIAGRAM AS FOLLOWS

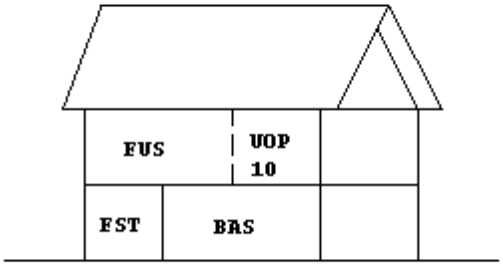


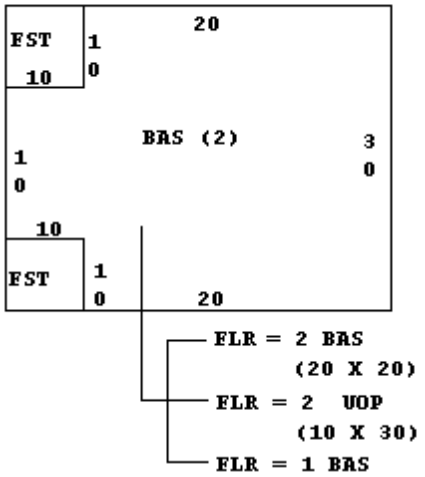
Draw 1st level plan and denote upper story dimensions as shown.

2 story continued









UNIFORM SCHEDULES OF VALUES, STANDARDS AND RULES FOR 2011 REAPPRAISAL

FIELD DATA COLLECTION FORM – INSTRUMENT COMPLETION

INTRODUCTION

The proper use of the Field Data Collection requires attention to conformity and standardization of recording results.

The field data collection instrument may be thought of as an interview form much as you see such notable research firms as Gallup, Harris and others use when they interview a person regarding some issue.

The difference is that in our case we are "interviewing" a structure instead of a person. Because a building cannot express any opinion of its own value we have developed a form which will allow us to identify those physical characteristics which, when properly evaluated, will predict the fair market value of that parcel.

Consistency and uniformity are two concepts that must be memorized. Without these it is impossible to evaluate a parcel. That is, be consistent in how you mark like parcels for, even if you do not identify an element exactly correctly, if you mark it consistently, it can still give results that can be valid when adjusted for a consistent error.

It should be noted that the form is also designed to facilitate data entry operations. Therefore, it is doubly essential that consistency and uniformity are maintained and data is correctly entered.

We have divided the form into basic groupings of data that can be most readily collected. A discussion of how to complete the form follows:

TRAINING

Paramount in the effective and efficient use of the form is the degree of training given the field appraisers regarding the proper methods and judgements to be made in completing the form.

The proper training will include, as a minimum, the following procedures, which the project director is responsible for presenting to all field appraisers:

SELECTION OF SAMPLE PARCELS

The supervisor should select a cross section of parcels in the county, preferably ones that are recently sold, and select approximately 20 to 30 that cover the spectrum of housing types in the county. He should prepare a field form for each parcel for testing purposes, noting how well each parcel fits the mathematical model and noting any adjustments to the data collection that would be required to find more accurate results.

CLASSROOM INSTRUCTION

The field appraisers and all office personnel should attend this class that is designed to give each person a definition of the various elements on the card and how the physical card should be completed. Utilizing the definitions of the various elements and a slide projector, if available, various features should be shown as they appear on the card using local buildings as examples.

After covering the various definitions a short test should be given to test the grasp of the material. This will help indicate the degree of instruction necessary for the instructor to achieve an acceptable level of performance.

Using the instructions on the following pages, the supervisor should present, in order, the steps for completing the form.

Upon completion, the supervisor should review any questions from the students regarding any phase covered so far.

At this point, the supervisor should assign each field appraiser a group of about five parcels from the previously selected sample parcels to field interview.

A half-day should be sufficient for this activity. Upon returning, the supervisor should review each appraiser 's work with the individual explaining any errors.

A general class with the field appraisers should suffice to correct any errors that were made in common. All the sample parcels should be assigned to each field man and a day or two allowed for the collection of the data.

Upon returning the forms, the supervisor should review the work done and decide to continue training, to begin fieldwork, or to dismiss any appraiser not capable of performing to acceptable levels.

FIELD DATA COLLECTION FORM

Legal
PID
Card #
Address

Land
LUC
Juris. Code
# of Units
Unit Type
NBC
Influ 1 %
Influ 2 %
Influ 3 %

Bldg - Ext 1
Type
Sty Hgt
Liv (Units)
Foundation
Frame
Prime Wall
Sec Wall
Sec Wall %
Roof Structure
Roof Cover

Bldg - Ext 2
Grade
Year Blt
Eff Year Built
Alt LUC
Alt LUC %
Jurisdiction
Building Name
Income Class

Bldg - Int 1
Avg Hgt / Fl
Prime Int Wall
Sec Int Wall
Sec Int Wall %
Prime Floor
Sec Floor
Sec Floor %
Insulation *
* = commercial listing

Bldg - Int 2
Heat Fuel
Heat Type
% Heated
Air Conditioning
% Cooled
% Common Wall
% Sprinklered

Baths / FP
Full Baths
Half Baths
1/2 Baths
Other Fixtures *
* = commercial listing
Kitchens
Fireplaces

Depr / Remod
Physical AV
Economic
Special
Override

Remodeling Data (year)
Exterior
Bathroom
Electrical
General

Condo
Location
Floors in Building
% of Ownership
Total Units
Floor
Complex / Bldg Name

PERMIT INFORMATION

Number	Status Code	Closed Date	% Complet	Inspection Date

Appr. #
Date
Parcel Status

Bedrooms/Unit

Rating
Rating
Rating

Rating
Rating

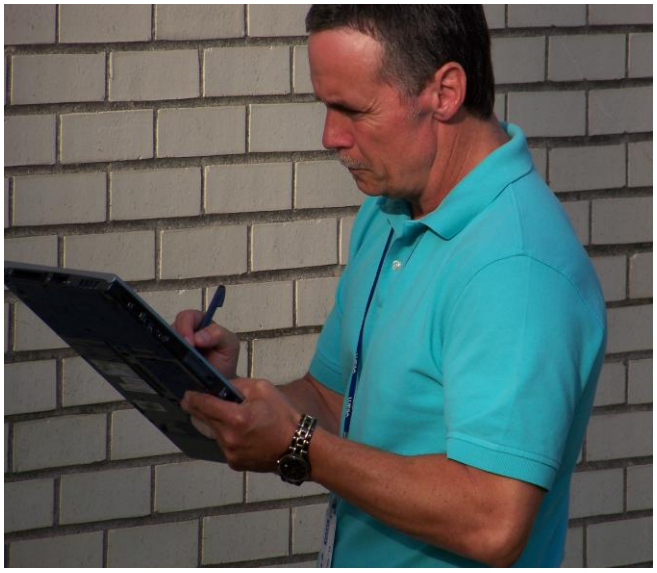
Interior
Kitchen
Plumbing
Heating

%
%
%

FIELD DATA COLLECTION USING WIRELESS TABLET PC's

Appraisers on staff have been equipped with Fujitsu *Stylistic ST* series wireless personal computers (called "Tablets"), which can collect all of the parcel property attributes (including building sketches), depicted on the Field Data Collection Form.

The Tablet communicates with a County central computer server via Sprint wireless access. The field appraiser logs on to AssessPro and enters parcel data in real time according to the Instructions below. Sketching of new buildings, additions, special features and yard items is accomplished using a stylus on the touch screen, or by entering numeric values on a touch keyboard for an improvement's dimensions.



The chief advantage of the wireless Tablet PC is that it allows the field appraiser to electronically list physical attributes and compute an instantaneous value estimate for the property being appraised. This eliminates the need for clerical data entry from paper records, the potential loss or misinterpretation of such records, and time-consuming review of the data entry process. The Tablet is also utilized in working informal reviews during the appeals process to acquire speedier results.

Due to the necessity of merging production files from different appraisal years, there are periods of time during the new construction listing cycle when staff cannot enter "live" data into the Tablet and must resort to the hardcopy data collection form. However, information collected on paper can also quickly and easily be transferred by the appraiser on the Tablet.

INSTRUCTIONS FOR COMPLETING THE FIELD DATA COLLECTION INSTRUMENT

PID (Parcel Identification number)

MAP	BLOCK	LOT	INT
[ ]	[ ]	[ ]	[ ]

The PID, or parcel identification number, is the control level of the appraisal system. All properties are identified and computer files matched based upon this control. It is of critical importance that this be filled in very carefully and in a specific manner. A specification sheet unique to Mecklenburg County contains the details on how to complete the PID number field. This is found in chapter 11 of this manual. The space for the parcel number appears at the top of the field data collection

instrument

CARD #

Also included with the parcel number is the CARD NUMBER. This field is REQUIRED and must always be completed. Each appraisal card must be sequentially numbered within each parcel. That is, if a single parcel (ownership) has, let us say, three buildings, it would require three appraisal cards to be completed - one card per building. They would all have the same PARCEL NUMBER but would have card number 1, 2 and 3.

ADDRESS

The address of the building, as identified on the Building Permit, should be entered here. The street type is a two-character field that is based on the street file table for consistency. The appropriate codes can be found at the end of this chapter.

LAND

Completion of the land coding is not difficult. It does, however, present more possibilities for combinations than do other sections of the form due to the OTHER ADJUSTMENTS which may be free form coded for each land use.

LUC (LAND USE CODE)

A four-digit numeric or alphanumeric land use code is always required. See Chapter 11 for Land Use Codes.

JURIS CODE (JURISDICTION CODE)

The Jurisdiction Code is factor that may be applied at the neighborhood level to make adjustments – "plus" or "minus" - to the base land price in that neighborhood. This adjustment to the base price occurs *prior* to any adjustment(s) resulting from Influence Codes (see below) that may be applied to the property.

 # OF UNITS

The number of land units should be entered, such as the number of lots, square feet, acres, and so forth.

UNIT TYPE

The type of land unit should be entered on this line. Generally, Residential property is valued using the following Land Unit Codes: Lot (LT), Acres (AC) or such location-oriented units as Golf Course (GC), Waterfront (WF), Water view (WV), or Point Lot (PT). Commercial and Industrial properties are typically valued using the Square Foot (SF) or Acre (AC) units. Agricultural property is valued by acreage (AC).

NBC (NEIGHBORHOOD CODE)

This four-character alphanumeric code identifies the neighborhood affiliation of the parcel in question.

INFLU 1
INFLU 2
INFLU 3

These codes refer to any influences - positive or negative - the appraiser judges to have an effect of the property's value and for which adjustments need to be made. These Land Influence Types may be found in the AssessPro table of the same name and include access (AC), shape (SH), size (SZ), topography (TO) and many others. They are expressed as percentages.

STRUCTURAL ELEMENTS

This section covers the structural characteristics which the appraiser records. For all buildings other than those covered by "Special Features and Yard Items (SFYI)," the indicated portion of the form must be filled out. The exact items that must be input are referenced in the appendix of this manual.

BLDG – EXT 1

TYPE

This two-digit code is one of the most important fields on the entire card as it both identifies the TYPE of the improvement on the land. It is a REQUIRED ENTRY and must match a set of validated entries for acceptance. Valid building type codes can be found at the end of this chapter.

STORY HEIGHT

This section refers to the style of the building, including 1 Story, 1.5 story, 2 Story, >= 2.5 Story, Ranch w/ Basement, A-Frame, Split Level, Bi-Level and Cape Cod.

LIV (UNITS)

Contains the number of units in buildings such as apartments, hotels, etc.

FOUNDATION

Foundation codes describe the foundation and sub-floor structure of a building. Some codes are generally associated with residential type construction, while others describe commercial properties, typically involving a heavier type of construction. Generally wall height and type roof determine the thickness of the foundation.

FRAME

Describes the wall system supporting the roof of a building. The nature of this item may be determined from an analysis of the characteristics of the building. See the appendix for specifics regarding the definition of this element.

PRIME WALL

Exterior walls certainly represent the greatest portion of a structure visible from the exterior. Much of the quality and construction technique is reflected in the exterior wall type. ONE or TWO exterior wall types may be marked and entered in the appropriate spaces. Whenever possible mark only one exterior wall; however, when the structure does have relatively large areas of two distinct types of exterior walls, then mark as appropriate (see SEC WALL below).

SEC WALL
SEC WALL %

Same as PRIME WALL described above. The Secondary Wall covering should be identified and an estimate made of the percentage of the building having the secondary wall type.

ROOF STRUCTURE

One roof structure must be picked which best corresponds to the observed roof structure.

ROOF COVER

One roof cover must be picked which is the predominant roof cover. The cover should be evident and its condition should be

of no concern. If it is badly damaged by fire or wind, additional depreciation should be applied to the building in the Depreciation section.

BLDG – EXT 2

GRADE

Here the appraiser identifies the overall quality of construction, including such things as architectural design and market appeal that may positively or negatively influence the market value of a property. See Chapter 11 for a detailed listing of these grades.

YEAR BLT

The Actual Year Built is entered and must reflect the original year of construction.

EFF YEAR BUILT

Effective Year Built indicates the appraiser's judgment concerning the observed condition of the property and should reflect any modernization or refurbishing done to extend the useful life of the original structure beyond its normal life span. The normal depreciation applied to a building is derived from the EFF YEAR BUILT (see Depreciation section below).

JURISDICTION

The Jurisdiction Code is factor that may be applied at the neighborhood level to make adjustments – "plus" or "minus" - to the building value. It operates similarly to the Juris Code described in the land section above. This adjustment to the base rate occurs *prior* to any adjustment(s) resulting from depreciation or obsolescence that may be applied to the property.

BUILDING NAME

This is a free form field to be used for the BUILDING NAME or Identification. This is an optional field.

INCOME CLASS

This classification is applied to an income producing property (such as an industrial, retail or office building) in order direct the property towards the proper "income model" by commercial neighborhood to create a value by income approach. See Chapter 8 "Income Property Valuation" for more details.

BLDG – INT 1

AVG HGT / FLOOR

The height of the first floor wall should be entered to the closest foot. The AssessPro program will determine if it is non-standard and make appropriate adjustments. If the field is not entered, the standard height for the particular model will be assumed.

The following are considered to be the standard wall heights applicable to the system models:

Building Group 04 Office	10 feet
Building Group 06 Warehouse	24 feet
Building Group 06b Warehouse-Lg	30 feet
Building Group 07 Commercial	14 feet
Building Group 08 Hotel / Motel	10 feet
Building Group 09 Stadium / Arena	16 feet
Building Group 10 Gov't-Inst.	10 feet

PRIME INT WALL

One or two items may be marked. If the interior of the structure has a large proportion of two distinct wall types (this commonly would occur when you have a paneled wall and drywall), both would be marked (see SEC INT WALL below).

SEC INT WALL
SEC INT WALL %

Same as PRIME INT WALL described above. The Secondary Interior Wall covering should be identified and an estimate made of the percentage of the building having the secondary interior wall covering.

PRIME FLOOR

The appraiser records the predominant floor type of the structure. One or two items may be marked. If the interior flooring of the structure has a large proportion of two flooring types (e.g. vinyl and hardwood), then both would be marked (see SEC FLOOR below). When carpet is over hardwood, the appraiser would select code 12 (Hardwood). If carpet is over plywood, the appraiser records code 14 (Carpet).

SEC FLOOR
SEC FLOOR %

Same as PRIME FLOOR described above. The Secondary Floor Covering should be identified and an estimate made of the percentage of the building having that secondary interior floor covering.

INSULATION

This section is part of the listing for commercial properties and is not recorded for residences. The appraiser marks an entry which best describes the ceiling insulation type, such as Suspended Ceiling Insulated and so forth

BLDG – INT 2

HEAT FUEL

This element is to be marked to indicate fuel used to heat a structure. Only one element may be marked but one must be marked.

Observation and a few simple questions will enable you to be very accurate in obtaining this data.

HEAT TYPE

This element is to be marked to indicate the method used to heat a structure. Only one element may be marked but one must be marked.

% HEATED

This item is self-explanatory.

AIR CONDITIONING

This element is to be marked to indicate the method cool a structure. Only one element may be marked but one must be marked.

% COOLED

This item is self-explanatory.

% COMMON WALL

% SPRINKLERED

This data element identifies a area within a building which has fire protection and is expressed as a percentage.

BATHS / FP Note: Baths, fireplaces and kitchens are to receive a rating, which allows the appraiser to indicate a level of quality that may be less than, equal to, or greater than that of the structure in general.

FULL BATHS

For a single family residential, the total number of full baths should be entered.

HALF BATHS

For a single family residential, the total number half baths should be entered.

OTHER FIXTURES (commercial listing)

For non-residential properties, the appraiser should enter the total number of fixtures per building.

KITCHENS
FIREPLACES

Enter the appropriate code for the number of fireplaces for single-family properties. Massive generally refers to those fireplaces with components such as extra large hearths, extra large fireplaces, decorative stone, ornamentation, and trim, etc. Fireplaces in apartments or commercials are placed in SFYI.

DEPR / REMOD (DEPRECIATION / REMODELING)

This entry is one of the most important to the skilled data gatherer in that there are four items on which much of the ability of the system to depreciate and analyze properties exists.

PHYSICAL

Refers the normal aging of building components and the resultant loss of value. As stated above, the listing of the Effective Year Built governs the amount of normal physical depreciation as indicated in the appropriate depreciation table for the building group associated with the particular building type being appraised. For more details, please see the section on depreciation in Chapter 11 of this document.

ECONOMIC

Economic Obsolescence: If it exists it should be entered as a percentage amount to be added to normal physical depreciation.

SPECIAL

Special Obsolescence refers to any Additional Physical Depreciation (AP) beyond the normal physical depreciation that results from a building's effective age. For example, this listing would be used to account for the wear and tear on a home as a result of deferred maintenance. AP should be added to normal depreciation and any economic obsolescence that may be present.

OVERRIDE

This listing is used to create a residual value due to unusual circumstances, such as the need to Override (O/R) the system to create a value estimate, to reflect Physical Damage (PD), create a Residual Value (RV) for a "non-conforming use" property, reflect Temporary Economic Obsolescence (TE) due to excessive vacancy in a commercial property, or to assign a partial value to a property that is Under Construction (UC). Care must be taken in the use of these codes as they will override the depreciation developed from the normal depreciation, economic obsolescence and functional obsolescence.

REMODELING DATA (YEAR)

All the categories below have a four-character year field and are used to capture information concerning various types of renovation work that may occur in a building. These field are for information purposes and do not directly influence value.

EXTERIOR
BATHROOM
ELECTRICAL
GENERAL
INTERIOR KITCHEN
PLUMBING
HEATING

CONDO (CONDOMINIUM)

LOCATION (Condominiums)

Captures information about the location of a particular unit within a particular condominium building.

FLOORS IN BUILDING

Contains the number of floors in a condominium building.

NUMBER OF UNITS

This is the total number of units in the building.

% OF OWNERSHIP

What percent of ownership is associated with a particular unit. This information is a feature of the Declaration of the Common Element for the condominium complex.

FLOOR

The entry captures the floor number on which the condo unit is located.

COMPLEX / BLDG NAME

Like the Building Name field described earlier. This is where the condominium name information is to be entered.

PERMIT INFORMATION

This grid may be used to post permit information for the purpose of tracking the status of various building permits which may have been issued for the structure and which reside within the system. This will allow the clerical staff to identify those properties whose permit work has been completed by the appraisal staff.

APPR. # (APPRAISER NUMBER)

This is the code for the appraiser that visited the property. This is a required two digit numeric field.

DATE

The appraisal date is a required field. If it is filled in to indicate the day the property was actually visited.

PARCEL STATUS

Previously know as the "New Notice" codes, these four-character codes are used by the appraiser to explain a change in the assessed value of a particular parcel of property. Parcel Status Codes may be found at the end of this chapter.

BEDROOMS/UNIT

The appraiser uses this field to capture data concerning the number of bedrooms per unit, i.e. a single-family residence with 3 bedrooms.

COMMENTS

The appraiser uses this field to make any notes related to the property. Only highly relevant data is to be entered here, and may include such information as review dates and results, property history, usual characteristics, etc. Entry is freeform.

SKETCHPRO SUMMARY

*Sketch*Pro is a sketching application designed to work with Patriot Properties' Real Property Application, *Assess*Pro as well as with the Personal Property Application. Using the mouse, keyboard and numeric keypad, an appraiser can create and edit exterior dimensions for all types of properties. *Sketch*Pro will automatically calculate the square feet or meters and perimeter for each assigned area. It also has the ability to store undisplayed areas. Units for size may be set to any decimal place and sketched areas may be displayed in a multitude of colors. An angle, angles-on-angles, arcs, and polygons are all easily drawn. Dimensions and angles are displayed interactively while drawing.

IMPORTANT: *In order to start using SketchPro on a new parcel in Real Estate, the parcel MUST BE marked "Improved" in the Land Data screen. For instructions on how to change this information, see the Land Data section in the Real Estate Manual.*

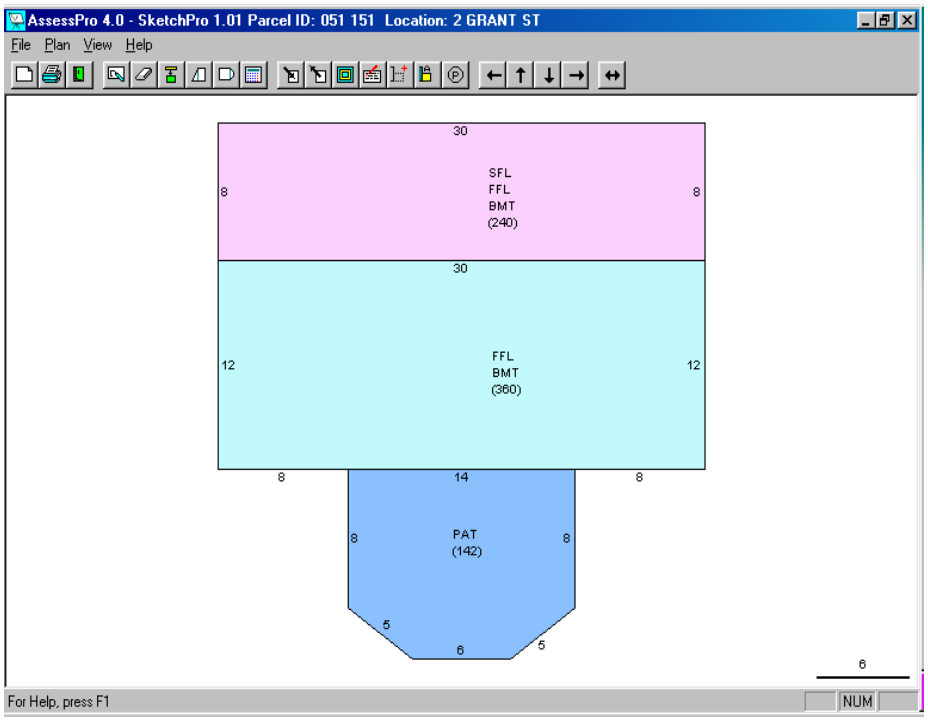
SKETCH EXAMPLES

Whether using the mouse or the numeric keypad to draw a sketch it is recommend that the largest enclosed area be drawn first, then any separating walls or additions.

The recommended order of the sketching process is:

1. Sketch the lines and enclose areas,
2. Label the enclosed areas,
3. Calculate the sketch,
4. Exit.

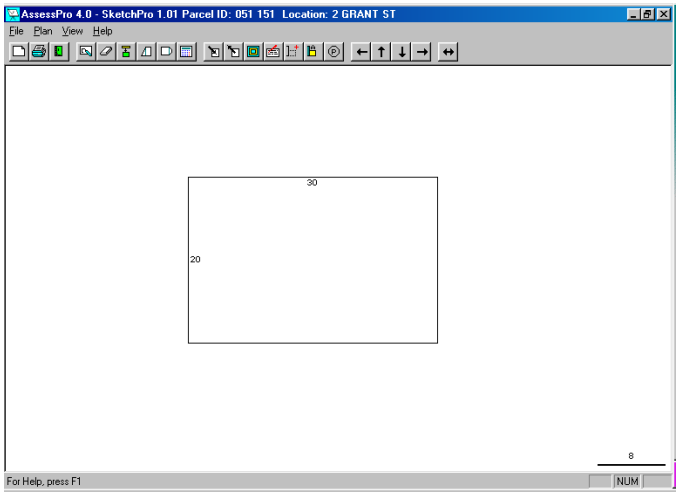
For this example, the finished area should look like this:



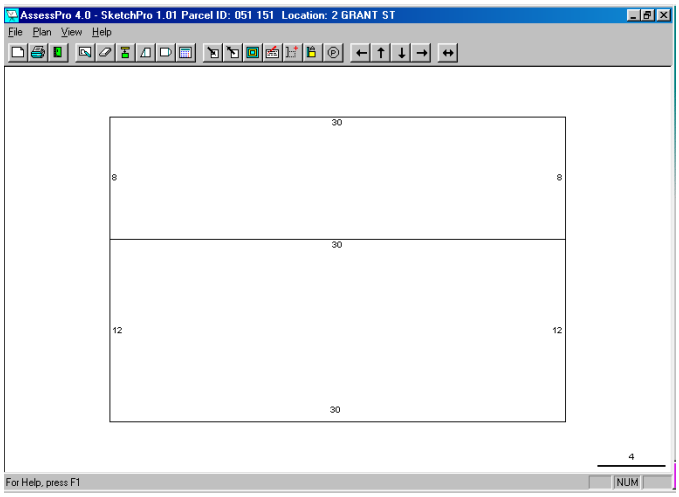
Start by making the 30’ x 20’ area first.

- To start a sketch using the mouse, select the *Pencil* button and left-click anywhere on the left side of the screen. Now move the mouse to the right, but DO NOT HOLD THE MOUSE BUTTON DOWN.
- Move the line 30’ to the right (the dimensions will display on the screen as the mouse is moved), then left-click.
- To make the next line, simply move the mouse down (but don’t hold the mouse button) and the new line drags with the pointer. Move down 20’ and left-click again.
- Move to the left 30’. Since this is the second-to-last point, instead of left clicking this time, use the right-click button of the mouse and the area will close automatically. One may also left-click at this point and then move up 20’ and connect back to the point of origin.
- Click on the *Modify/Stop Action* button to stop drawing.

The finished product should look like this:

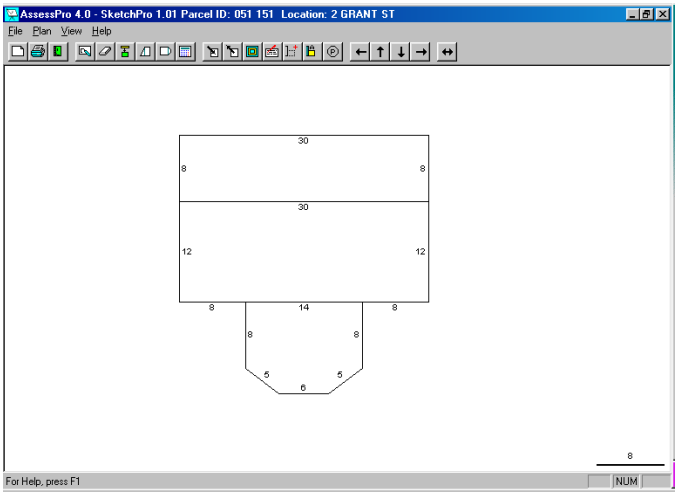


Next, make the horizontal line that splits the 30 x 20’ area into two sections with dimensions 8 x 30’ and 12 x 30’. Select the *Pencil* button (DON’T CLICK!) and move the mouse pointer along the right-hand line until it says “8”, then left-click once. Move the pointer to the other side of the box to connect the two lines and left-click once on the existing line. The line created will automatically cut the large area in two and divided the line into the appropriate dimensions. The drawing should now look like this:



SketchPro will draw at any angle desired by using the mouse. While drawing, information about the length and angle of the line being drawn will appear on the status bar at the bottom of the screen. Next, sketch the Patio (PAT):

- Start by clicking the *Pencil* button.
- Move along the bottom wall 8' from the left-hand corner and left-click once.
- Move downward 8', left-click once.
- Move down at an angle 5', left-click once.
- Move to the right 6', left-click once.
- Move back up at an angle 5', left-click once.
- Move upward 8', left-click once to connect to the existing wall. The result should look like this:



The sketch has been completed using the mouse. From here, the next step will be to assign labels to the different areas created. See the "Assign Area" section on page 20 for instructions.

While drawing, one might notice the dotted lines connected to the pointer as the mouse moved. These are called Snap Lines and are used to keep the lines horizontal and vertical. The Snap Lines automatically align with the other existing lines and vertices and are useful when lining up connecting lines. If Snap Lines are not preferable, they may be turned off in the View Menu of the Menu Bar under the option "Snap On." Click once on or near this option to turn it off (the checkmark will disappear).

It is recommended spending as much time as possible practicing sketching techniques to learn what is best for each situation.

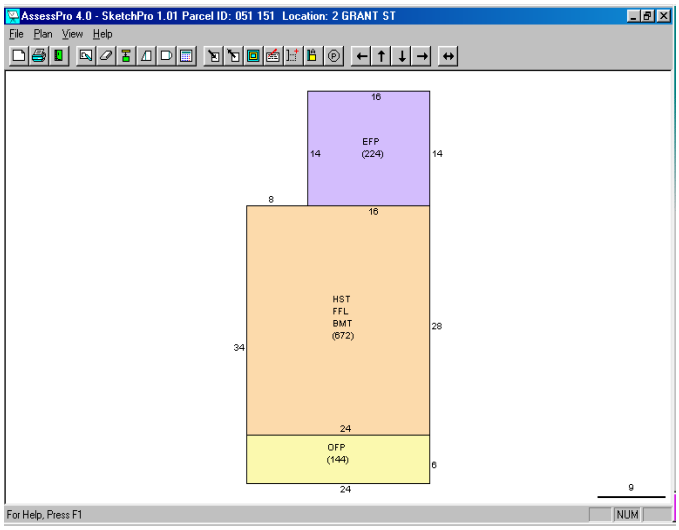
CREATE A SKETCH USING THE NUMERIC KEY PAD

Because many buildings are large in scale, it is sometimes very hard to use the mouse to sketch tiny areas because the mouse jumps around so quickly. Using the numeric keypad (on the right side of the keyboard) should help solve those large-scale problems, but it may also be used to draw the entire sketch. Make sure the Number Lock is turned on.

IMPORTANT: *In order to start using SketchPro on a new parcel in Real Estate, the parcel MUST BE marked "Improved" in the Land Data screen. For instructions on how to change this information, see the Land Data section in the Real Estate Manual.*

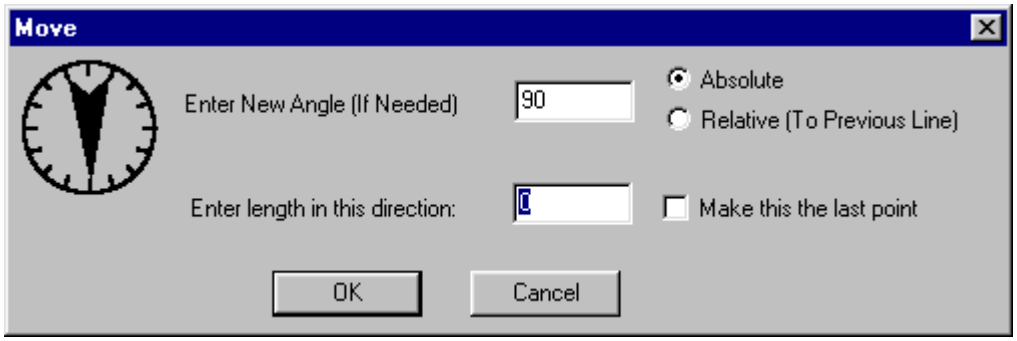
To use the keyboard only, start a sketch with the letter **D** on your keyboard. This performs the same function as selecting the *Pencil* button when using the mouse to start the sketch. To use a combination of mouse and keyboard, the mouse may still be used to select the *Pencil* button. Click once with the left mouse button on the starting point to revert to the keyboard. By using the letter **D**, the sketch will always start a sketch in the upper left-hand corner of the page.

For this example, the finished sketch should look like this:



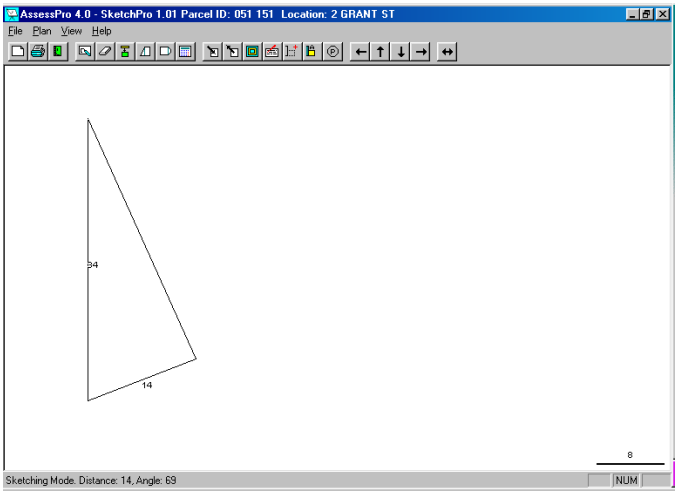
First, draw the 34' x 24' area. To use the keyboard only, start by hitting the letter **D**. The starting point will exist even though it is not displayed on the screen.

Next, press the number **2** on the numeric keypad to sketch the 34' line down. The following box will appear on the screen:



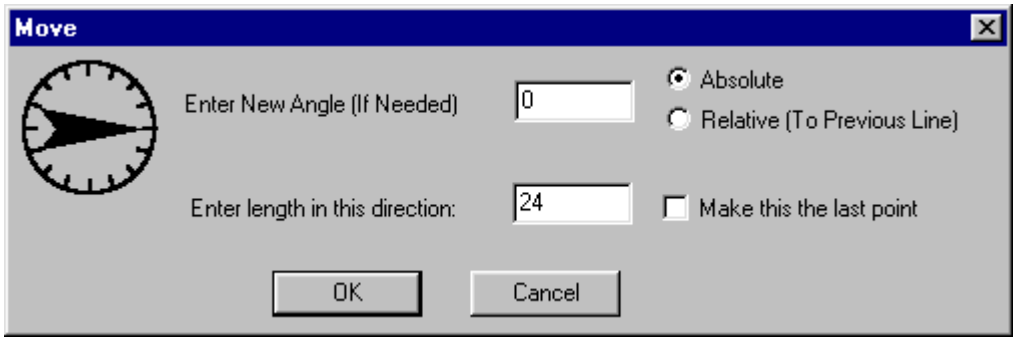
Notice that the arrow on the left is pointing downward showing the direction the line is going to be drawn. Enter the number "34" for the distance of the line and press **ENTER** (on the keyboard).

The sketch should now look like this:

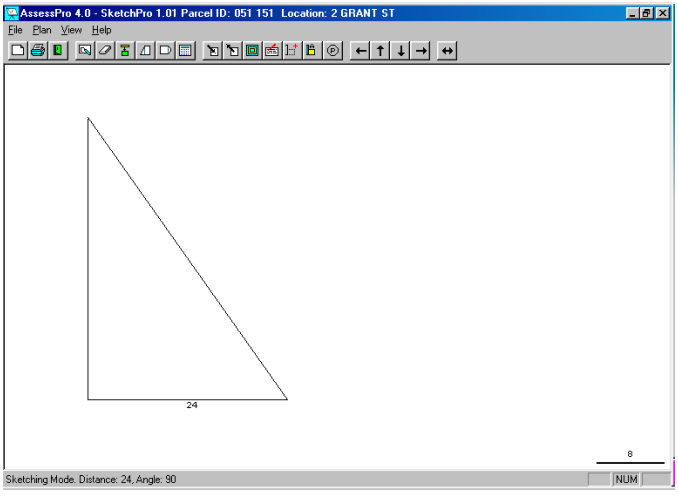


Extra lines may be noticed on the sketch. These lines appear because they are connected to the mouse pointer, which still appears on the screen. They will not go away until the area has been closed. Simply proceed to the next step.

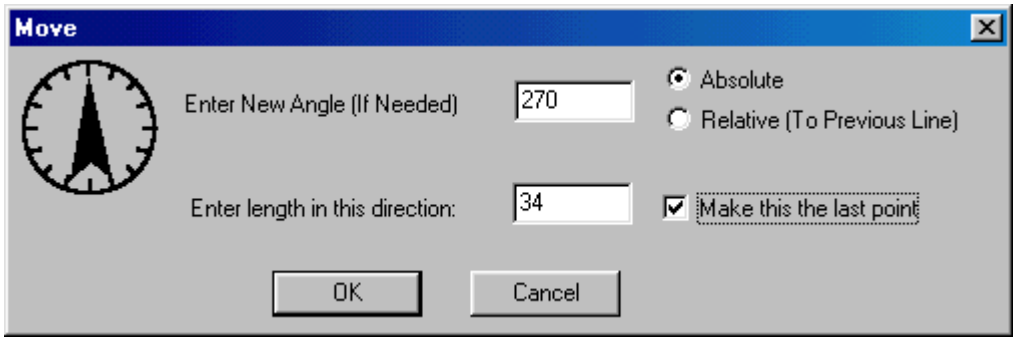
The next line to make is a 24' line going to the right. Press the **6** button on the numeric keypad and the following box will appear:



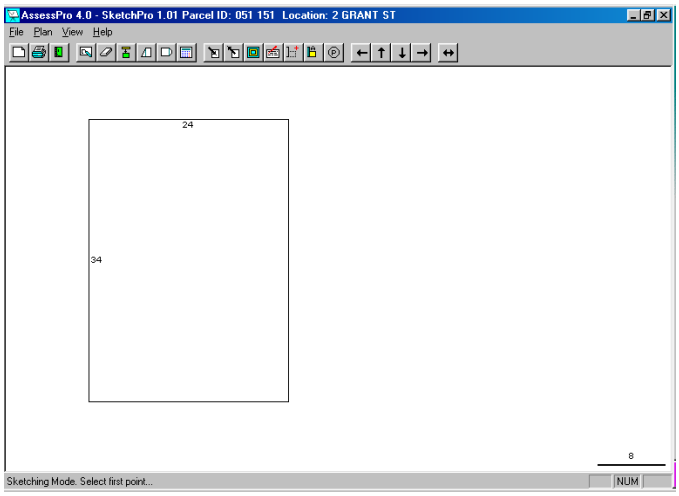
Type in the number 24 and press **ENTER**. Now the screen should look like this:



Next, make the 34' line going upward. Press the **8** button on the numeric keypad. Because this is the second-to-last point in the area, it is also necessary to make this the last point by checking off the option in the following box:



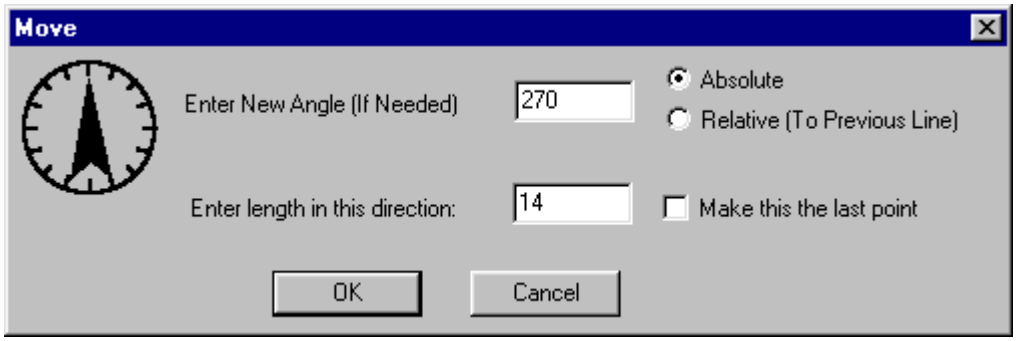
Enter the number 34 then press the **TAB** key to move to the checkbox titled "Make this the last point." To make a check in the box, simply press the **SPACE BAR** once and a check will appear. Press the **ENTER** key. The sketched area should look like this when complete:



The sketched area is now complete.

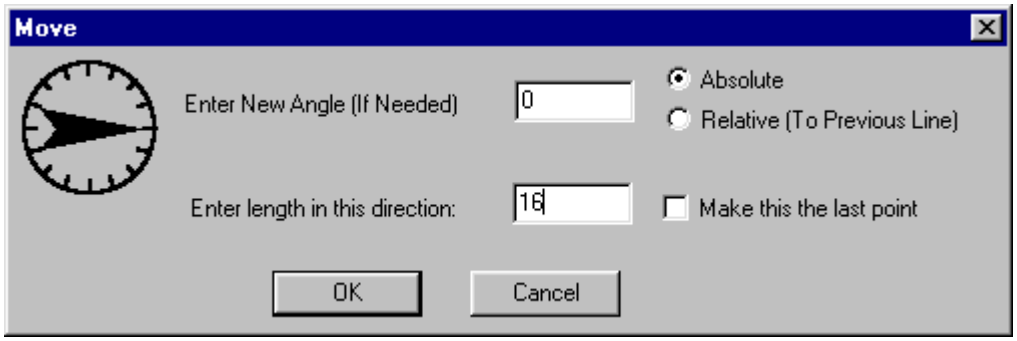
To make the addition of the 14 x 16 Enclosed Frame Porch (EFP) at the top of the sketch, revert back to using the mouse to make the starting point on the existing line. The screen may have to be adjusted using the *Zoom Out* button or *Arrow* buttons so that the entire drawing will be visible. Start drawing the porch 8' in from the left-hand corner of the base enclosed area. Select the *Pencil* button and move the mouse pointer (DON'T CLICK) along the top line until it says "8," then left-click once. Now the numeric keypad may be used to draw the remaining lines.

Pressing the **8** button on the keypad, the following box will appear:



Press **ENTER** to accept that line.

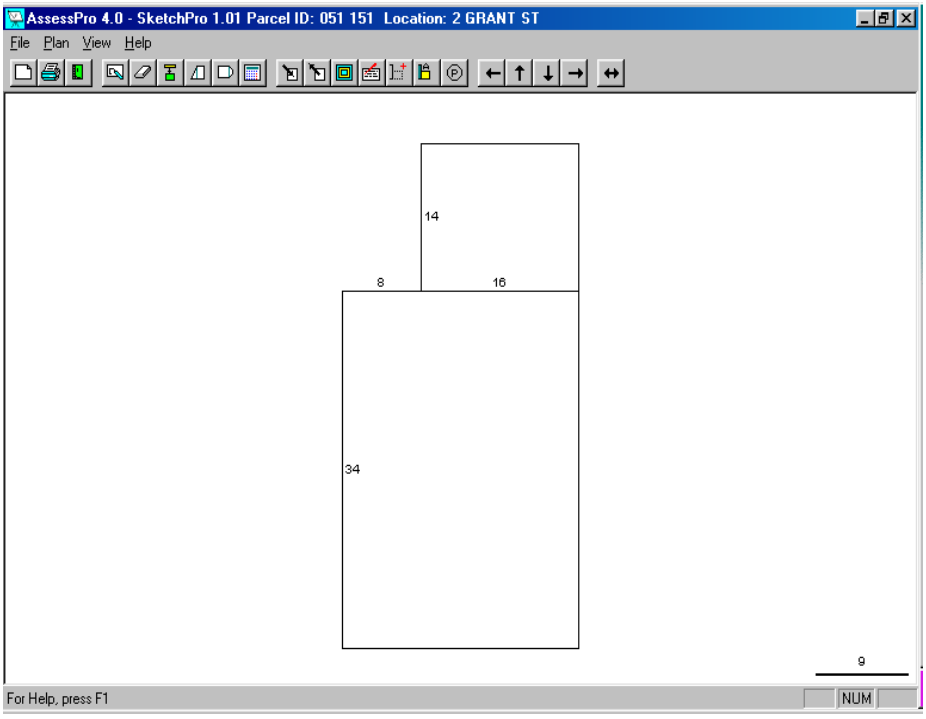
Then press the **6** button on the numeric keypad and the direction box will appear:



Enter 16 in the length area and press the **ENTER** key.

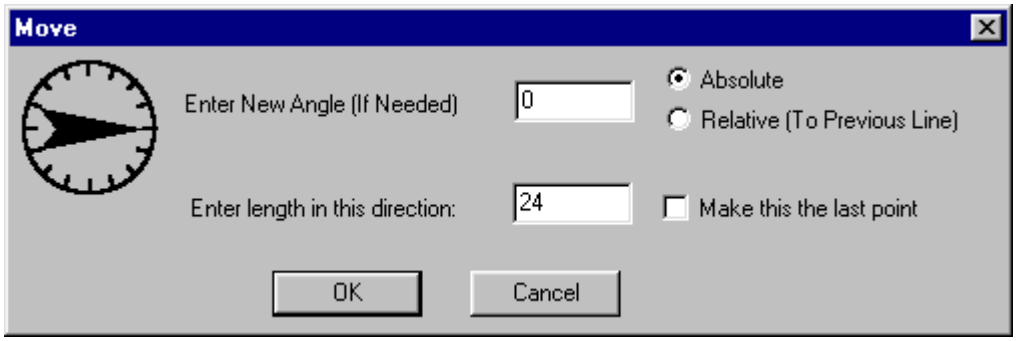
Now press the **2** button on the keypad. The direction box will appear. Type the number 14. It is not necessary to make this the last point because the program understands that the existing line is being reconnected and will automatically adjust the dimensions.

Pressing **ENTER** the finished product will look like this:

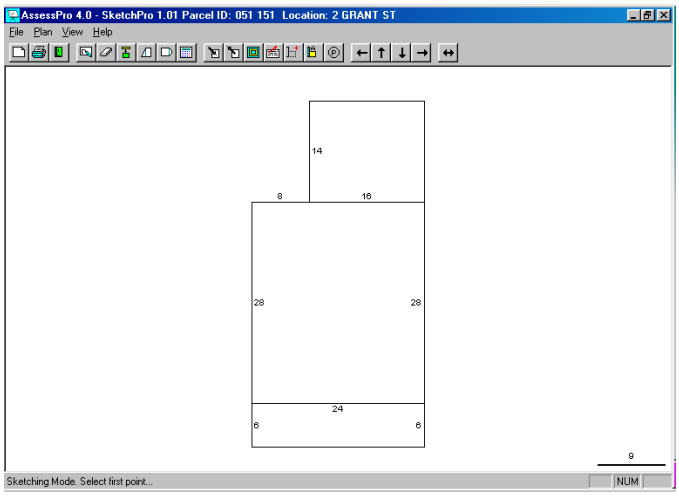


Now make the line the divides the 34 x 24' area into a 6 x 24' area and a 28 x 24' area. Again, the mouse must be used to select the *Pencil* button then move up the left-hand wall until 6' is reached up from the bottom left-hand corner. Left-click once to begin the line.

Press the **6** button on the numeric keypad to move the line to the right. The direction box will appear:



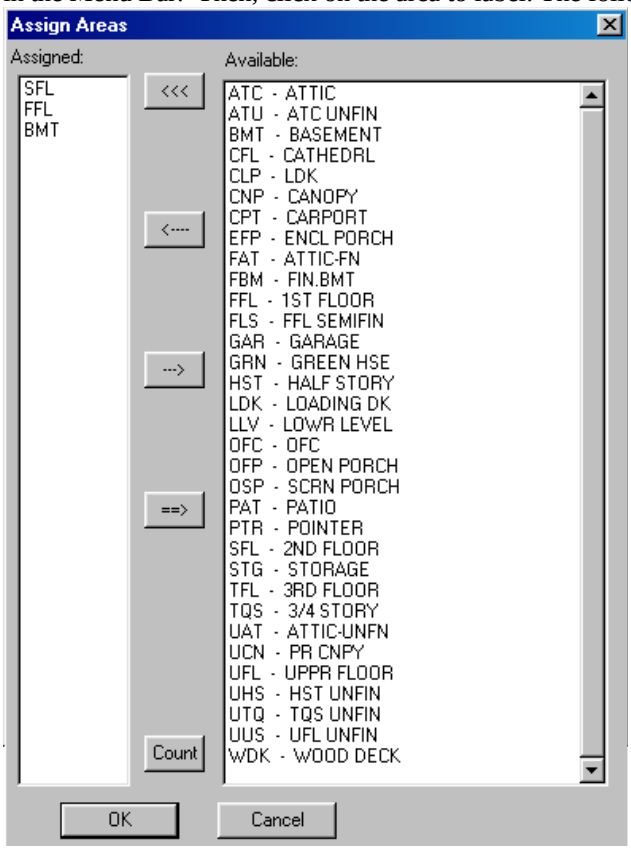
Type 24 in the box and press **ENTER**. The line created automatically cut the large area in two and divided the line into the appropriate dimensions. The drawing should now look like this:



The sketch has been created using the numeric keypad. From here, the next step will be to assign labels to the different areas created. See the "Assign Area" section on the next page for instructions.

ASSIGN AREA

To start assigning areas, either select the *Assign Area* icon on the toolbar or select the Assign Areas option from the Plan Menu in the Menu Bar. Then, click on the area to label. The following list box will appear:



The right side of this box will list all available labels. This is called the Available List.

The left side of this box lists the labels selected from the Available List and moved over. This is called the Assigned List. The labels moved in to this side will be the labels assigned to the area that have been selected.

The buttons in the middle represent the following actions:

	Move a label to the top of the Assigned list above a selected label.
	Move your selection from the Available side into the Assigned side.
	Take the selected label out of the Assigned side and move it back to the Available side.
	Take all of the labels out of the Assigned side and move them back to the Available side.
	For buildings with multiple stories, select the label, then select this button and enter the number of levels that have the same label.

Example: A building has an area with a Second Floor, First Floor and a Basement. When the Assign Areas list box comes up:

- Select the code "SFL" from the Available side and move it to the Assigned side using the left-pointing arrow.
- Select the code "FFL" from the Available side and move it to the Assigned side. The FFL code should appear in the Assigned side directly beneath the SFL code.
- Select the code "BMT" from the Available side and move it to the Assigned side. The BMT code should appear in the Assigned side directly beneath the FFL code.

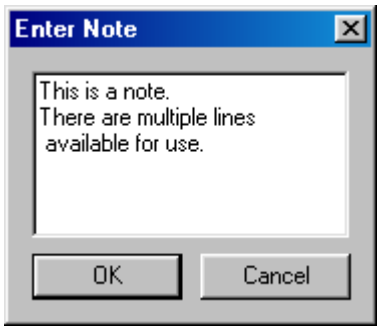
Once all of the labels for that area have been selected, click the *OK* button. The label will appear in the assigned area and the area will change color (if colors have been assigned). To label the next area, it is not necessary to click the Assign Areas button again, but rather click on the next unassigned area. This opens the "Assigning" mode until another tool is selected from the Toolbar.

HELPFUL HINTS:

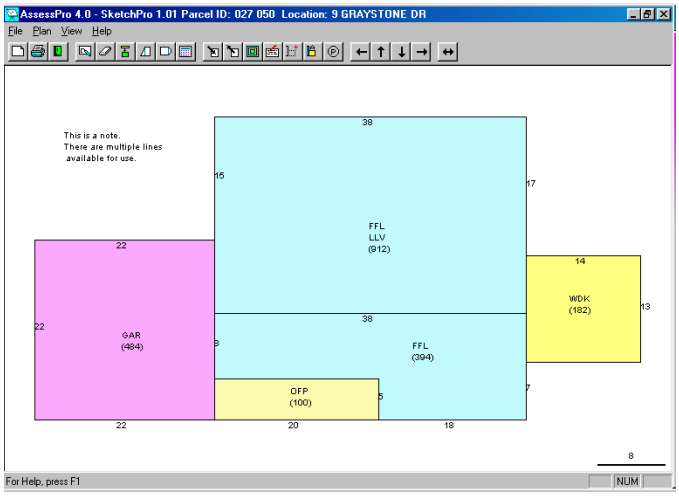
- Double-clicking on a label from the Available side moves it to the Assigned side. Double-clicking on a label from the Assigned side moves it back in to the Available side.
- Labeling of sketched areas should always be done from the top down.
- To enter the Count of multiple stories, select the label that have been moved over to Assigned, select the Count button from the Assign Areas list box, then type in the number of stories of this type and click on the OK button.

ASSIGN NOTES

To assign notes to an area of the sketch, select either the *Notes Box* button from the Toolbar or the "Make Notes" option from the Plan Menu on the Menu Bar. Click on the position in the sketch where the notes should appear and the following box will appear:



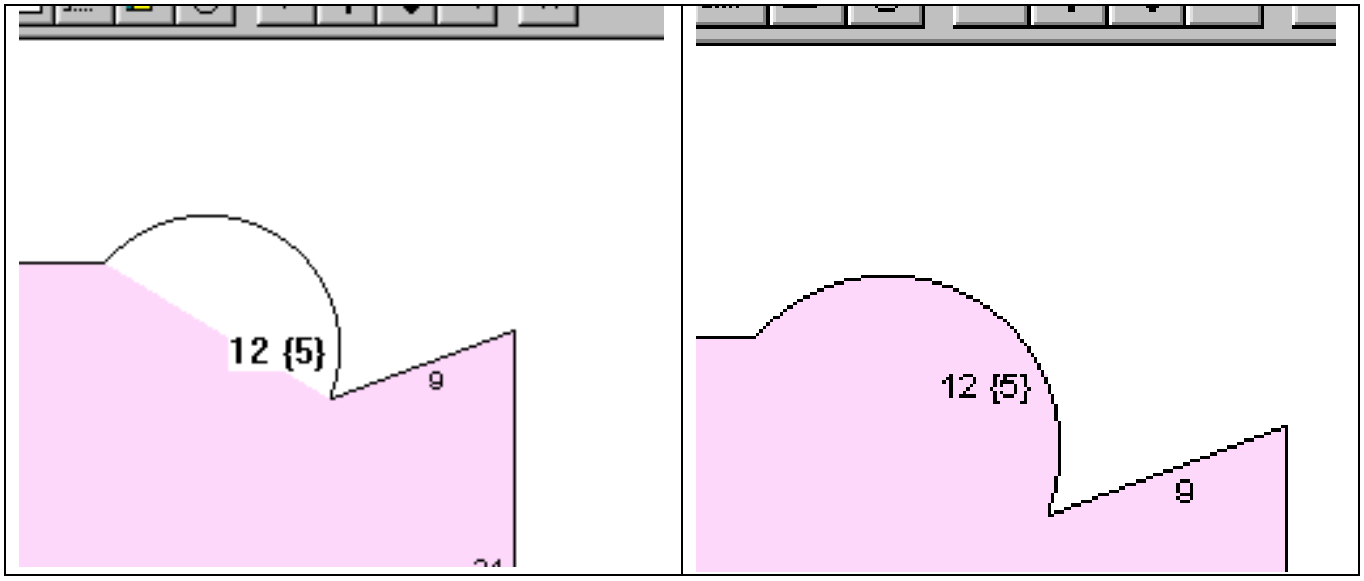
Type a note into the white entry box, then click the *OK* button to accept the note. The note should appear on the sketch like this:



If the notes need to be moved to a different area, first select the *Modify/Stop Action* button on the Toolbar. Then, left click once on the notes (on the words themselves), move to the desired area and left click again to set.

CREATE AN ARC

To create an arc on any given line, either select the *Make an Arc* button from the Toolbar or select the "Make Arcs" option from the Plan Menu. Then click once on the line to be a curve and drag the line to the desired distance.



The {5} in this example represents the distance of five feet from the chord (the original straight line) and the 12 is the 12-foot chord length.

DELETE A LINE, NOTE, OR DIMENSION

To delete a line, note or dimension, first select the *Eraser* button from the Toolbar or select the "Delete" option from the Plan Menu. Click on the line or note to be deleted.

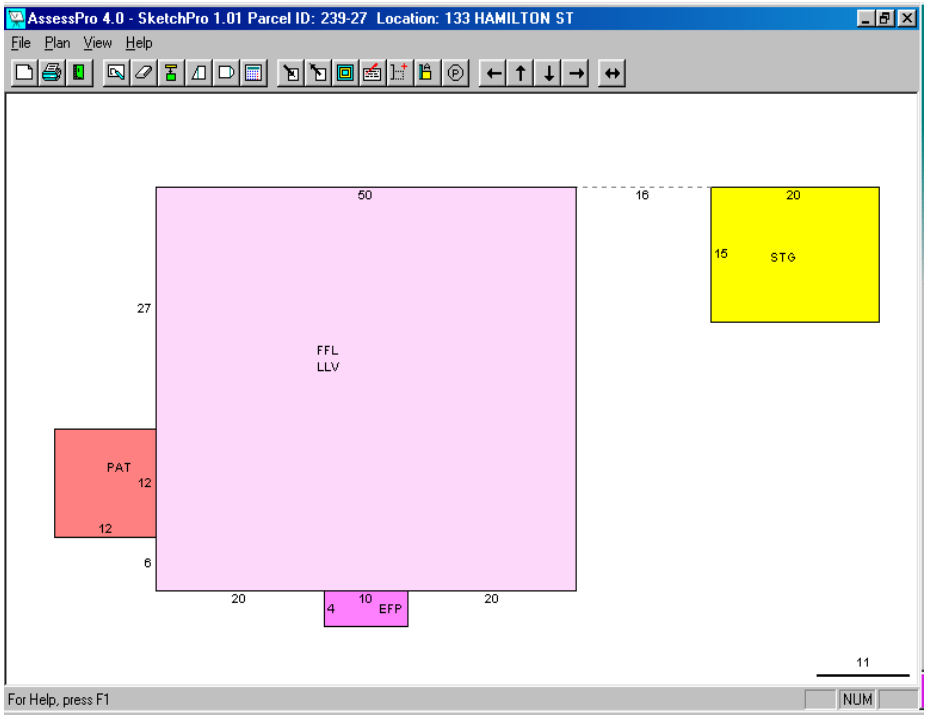
The only time a dimension, or number, may be erased is if a dimension between two vertices has been calculated using the *Line Dimension* button at the end of the tool bar (see page **Error! Bookmark not defined.**). All other dimensions that are attached to lines must either be displayed or hidden. For instructions on how to hide a dimension, see page **Error! Bookmark not defined.**.

NOTE: *Lines may be deleted while drawing by using the **BACKSPACE** key on the keyboard to undo the last line drawn. Use the **ESC** key to erase any unclosed area.*

DISTANCE LINES

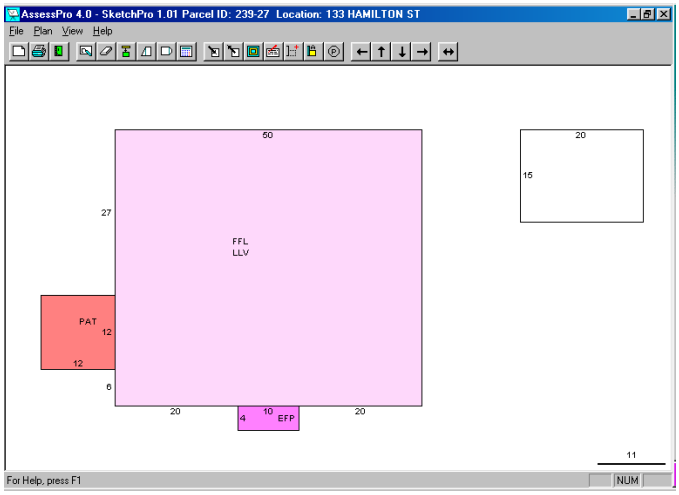
In the SketchPro program, all sketched areas must be attached in some way. If it is necessary to draw an unattached area, a distance line must be used. Distance lines are invisible lines used to connect unattached areas to the base area. Before assigning any distance lines, make sure to turn on the option in the View Menu titled "Show Distance Lines." If the option has a check next to it, it has already been turned on. If not, click once on or next to the option and a check will appear. When turned on, this option shows distance lines as a dotted line. When turned off, the distance line will disappear.

For this example, the finished product should look like this:

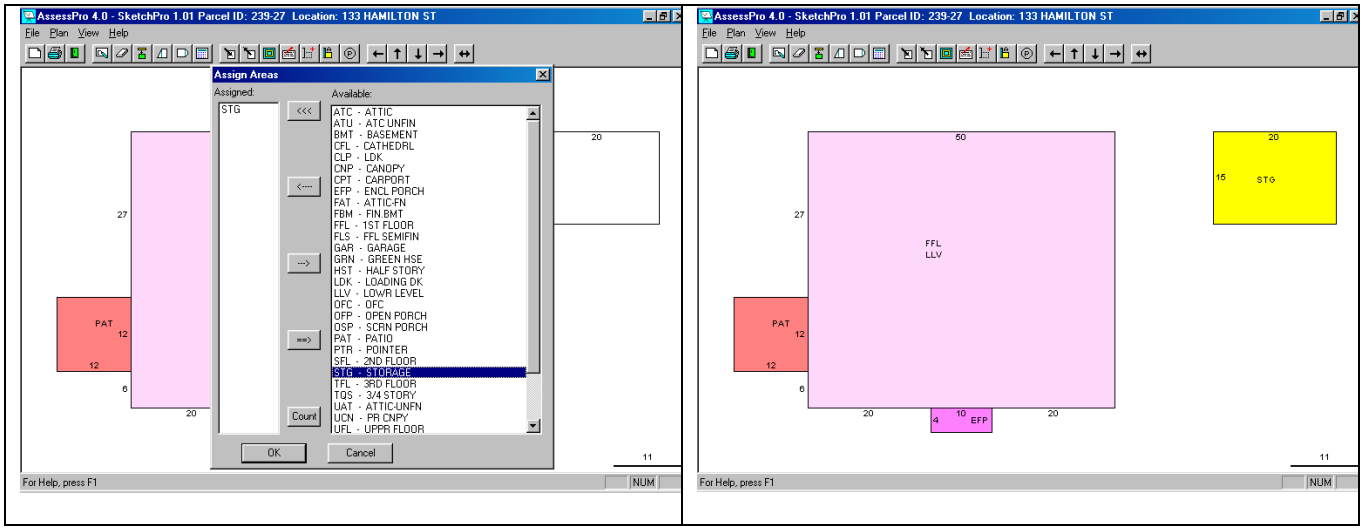


Once drawing the main, or base area is complete, the next step will be to draw the Storage Area (STG).

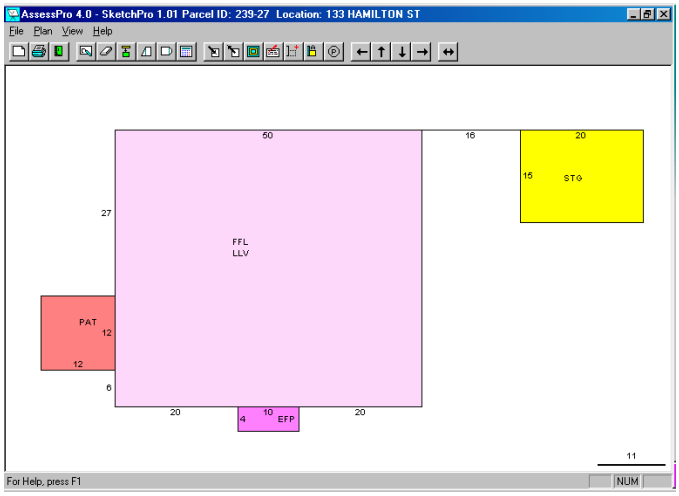
Draw the storage area by selecting the *Pencil* button and use the mouse or keyboard to draw a 15' x 20' area. The picture should now look like this:



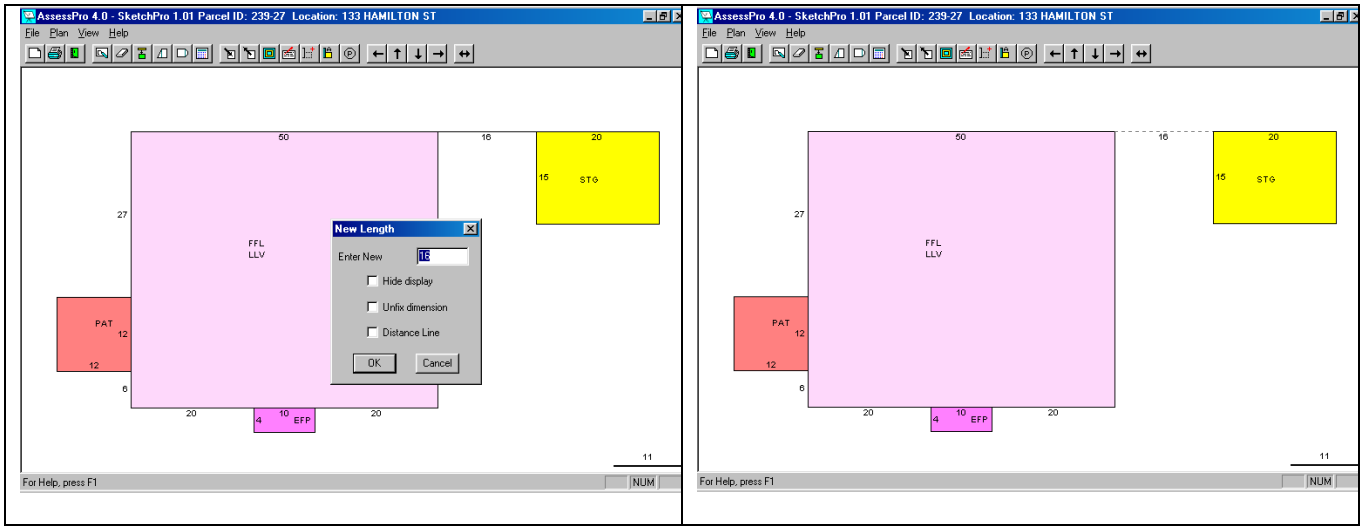
Next, assign a label to the shape by selecting the *Assign Area* button and selecting the label "STG" for Storage Area. The sketch should now look like this:



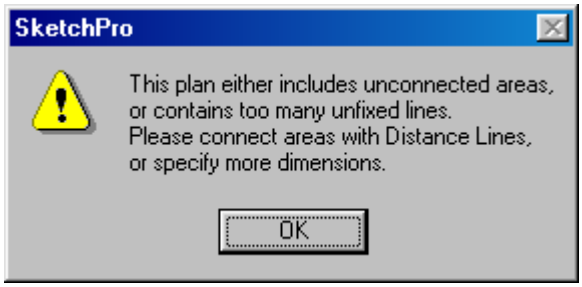
Now select the *Pencil* button again and draw a line from the closest CORNER point (vertex) of the main area to the Storage Area. If a line is not drawn from corner to corner, the existing lines will be split.



Next, select the *Modify/Stop Action* button. Click on the distance line and the New Length dialog box will appear. Check off the box next to "Distance Line" and click *OK*. The distance line should now appear as a dotted line. Click the *Calculate* button to calculate the square-footage of all of the areas.



If the *Calculate* button was clicked before the distance lines were made, the following error message would appear:

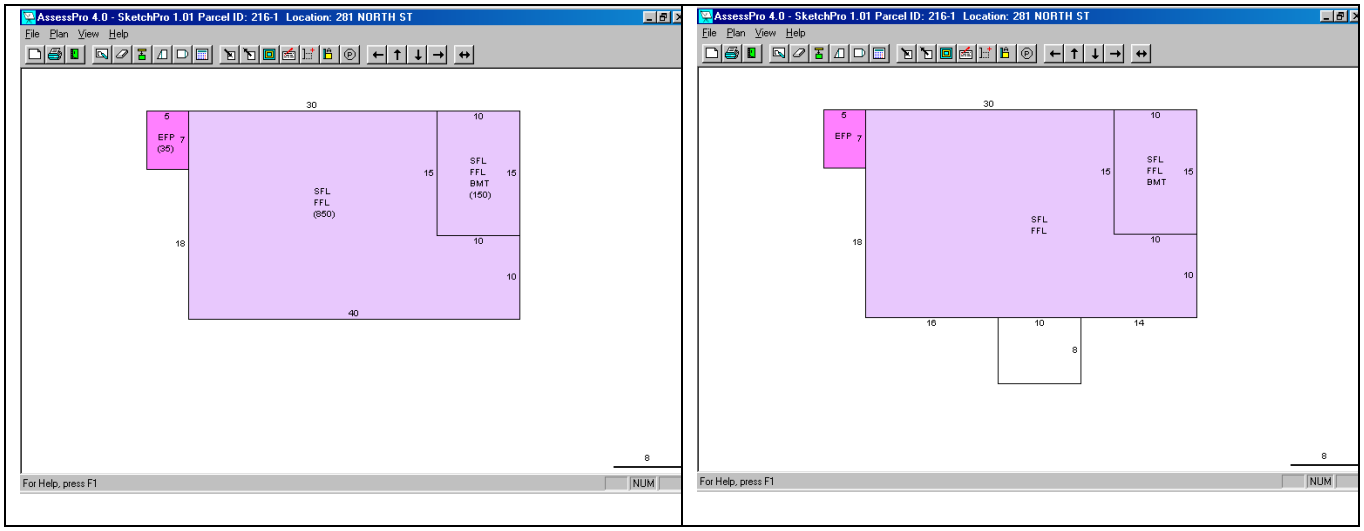


This is a safety feature built in to SketchPro. Until the two areas with have been connected with a distance line the correct area of the sketch cannot be calculated.

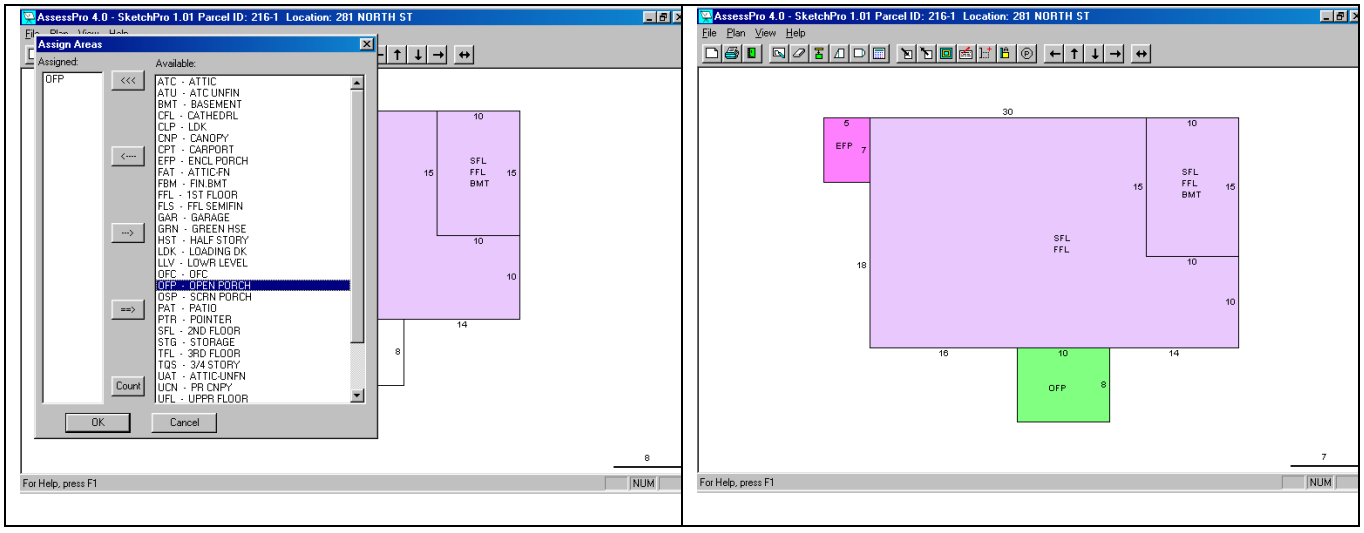
EDIT EXISTING AREAS

Here is the situation: on the sketch a porch needs to be added on to an existing area 14' from the bottom right-hand corner. If the sketch was completed and the porch was supposed to be 4 feet from the corner instead of 14 feet, how would this corrected?

First, sketch the porch 14' from the bottom right hand corner. Select the *Pencil* button and move the pointer along the bottom 40' line until the cursor is 14' from the right-hand corner. Draw an 8 x 10 porch off of this line. The picture should look like this:

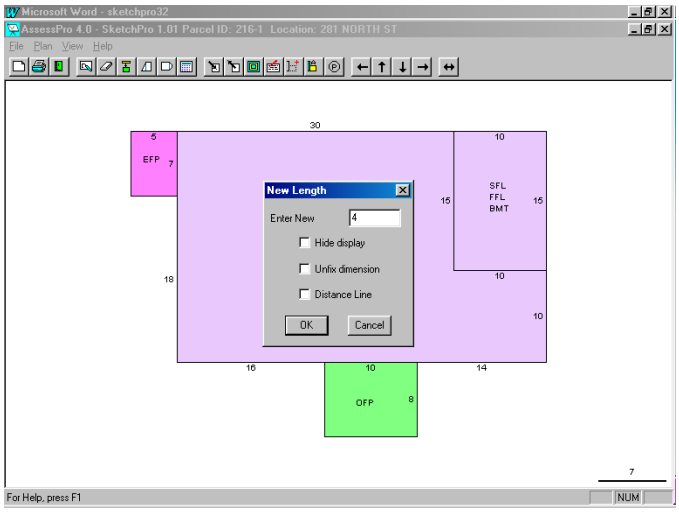


Now select the *Assign Area* button and select the "OFP" (or any other) label. Click *OK*. The area is now labeled as an Open Front Porch (or whatever label is chosen):

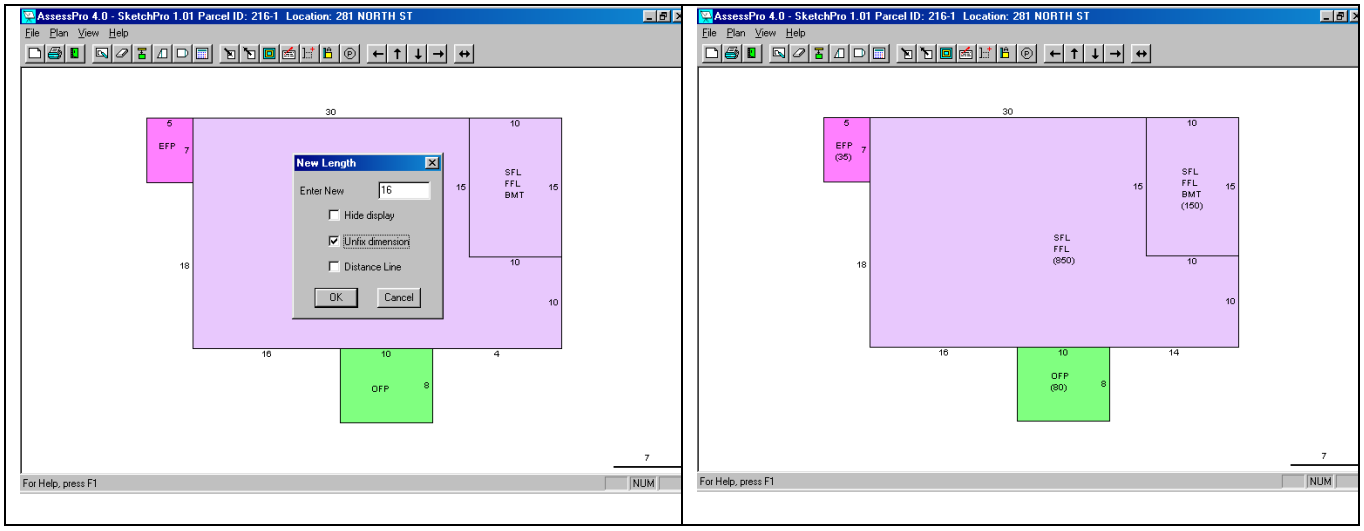


At this point the mistake should be apparent In order to move the porch over, the easiest way is to change the length of the 14' line. Start by selecting the *Modify/Stop Action* button. Now click once on the 14' line.

The New Length dialog box will appear:

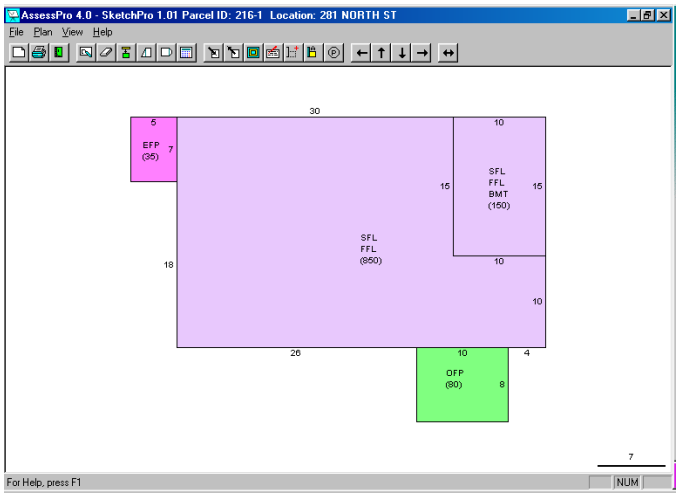


Change the number in the "Enter New" field to 4 and click the *OK* button. Notice that the 14' foot line has changed to a 4' line. However, if the sketch were calculated at this point, an error message would appear saying that the lines were unbalanced. There is still one more step to perform. Click on the 16' line to the left of the porch. The New Length dialog will appear again. Check off the box labeled "Unfix Dimension." This allows the length of the 16' line to be changed automatically when the sketch is re-calculated.



Click on the *Calculate* button to calculate square-footage.

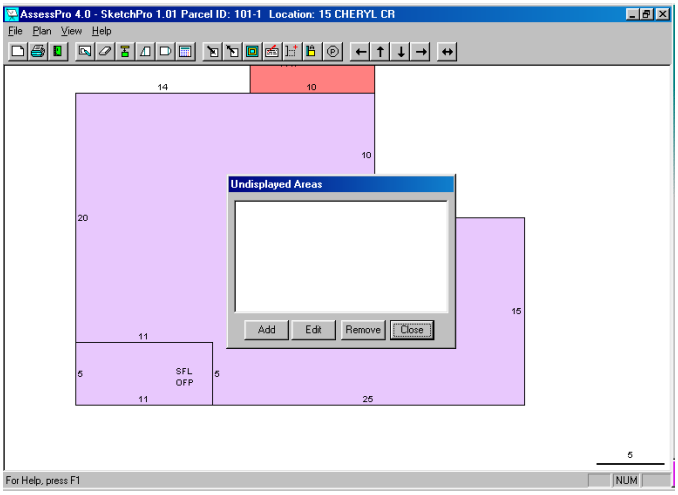
The drawing should look like this:



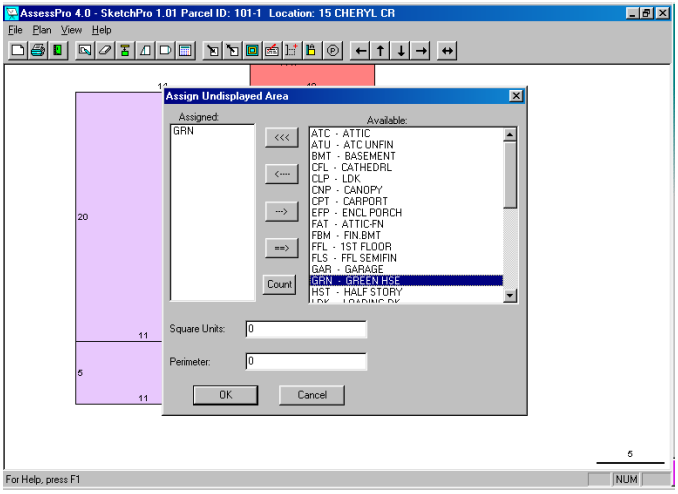
It is a good habit to now go back and make that Unfixed Line fixed again. To do this, click on the *Modify/Stop Action* button again then select the 26' line. Notice that the Unfixed Line box is still checked. Click once in the box to remove the checkmark, then click *OK*. This will prevent having too many unfixed dimensions for future modifications.

UNDISPLAYED AREAS

If there is a sketch that is impossible to draw, or an area that lacks dimensions - but to be included in the building calculations, the Un-displayed Area function may be utilized. First, select the *Undisplayed Areas* button on the Toolbar or select the "Undisplayed Areas" option from the Plan Menu on the Menu bar. The Undisplayed Areas dialog box will appear.



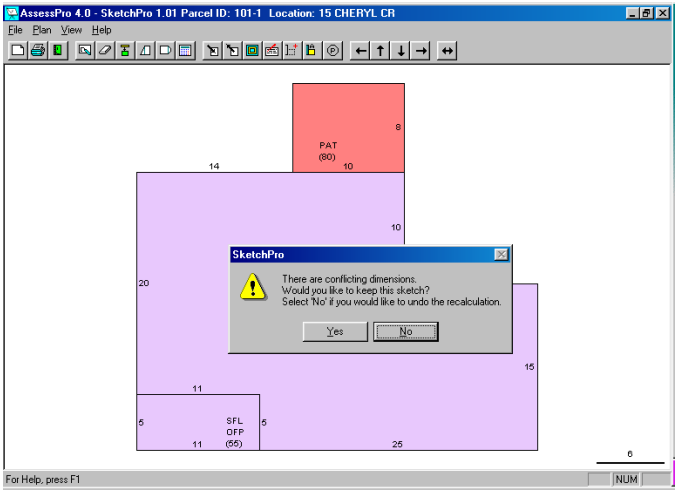
From this box, items may be Add, Edit, or Remove from the un-displayed areas. To start, select the *Add* button and the Assign Undisplayed Areas dialog box will appear.



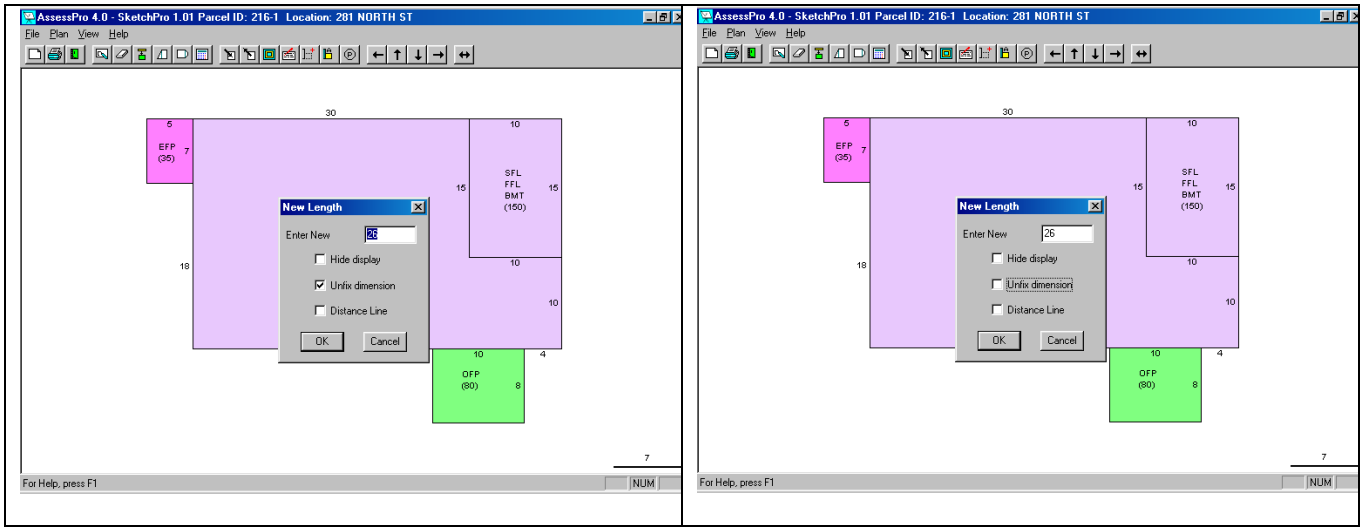
Select the desired label from the Available side and move it to the Assigned Side. Then enter the square units, perimeter and the count (optional). Click the *OK* button when finished and the Un-displayed Areas will be displayed in the upper right corner of the screen. This information will be transferred to the Sub-Area Detail screen in the Real Estate module (after the sketch is exited and saved) for valuation.

UNFIXED DIMENSIONS

In some drawings there may be a conflicting dimension of a line, or it may be desirable to have SketchPro determine a dimension. If the sketch is calculated with unbalanced dimensions, an error message such as the one shown below will appear.



In order to correct the sketch, click on *NO* to return to the sketch. To correct this example, first select the *Modify / Stop Action* button on the Toolbar then select the line that needs to be corrected. The New Length dialog box will appear. Click on the box next to "Unfix Dimension" and press OK. SketchPro will automatically determine the actual length of the line set as "unfixed." In the picture below, the line in question is the 17' wall on the right. The wall should actually be 15' long.



Drawing Areas Within Areas (Courtyards)

When drawing an area enclosed within another area, it is necessary to draw the two areas and connect them with a Distance line. This is similar to drawing a distance line between a base area and an attached area, like the example on page 24. Again, try to use the existing vertices to connect the areas to avoid dividing a line unnecessarily.

IMPORTANT: *If the inner shape is drawn first, there will be no problem labeling the areas. SketchPro labels in the sequence that shapes were drawn. If the outer shape first is drawn first, the labeling logic always assumes that the outer shape is trying to be labeled. To solve this problem, choose "Assign Areas (Auto)" from the plan menu. This will sequentially select the areas to be labeled and will allow one to choose or edit the labels associated with the area. If the labels are correct simply select* OK.

SPECIAL FEATURES / YARD ITEMS (SFYI)

This section is used to indicate any Special Features about the building or any Yard Items located on the parcel. (Note: another commonly used term for Yard Items is "Outbuildings.") This section generally contains the quantity and size of a Special Feature or Yard Item using an SFYI code, a Quality code and the Condition of the item, the Year the item or feature was built or acquired, and an automatic size-adjusted unit price or user-optional override price. The depreciation source may be taken from a defined table, manually entered, or automatically tied to the building depreciation.

Additional factors that can affect the valuation are the Land Use Code, the Jurisdictional Factor, or the Neighborhood Code.

Within the AssessPro system, the appraiser may indicate whether the item is Attached to the main building, Detached, or Attached to an adjacent item.

One word of caution in the use of this item: DO NOT PICK UP TRIVIA. It is better to spend time accurately determining the data elements called for in the system. On the other hand, such items as boat houses, docks, pools, garages and other items of major value must be recorded to properly value the parcel. The appraiser has a clear idea of what is to be recorded in Mecklenburg County and what is not before beginning with this item. Items commonly handled in this manner include:

SPECIAL FEATURES:

Bank Vault	Dock Levelers	Loading Dock
Boat Docks	Escalators	Passenger Elevators
Dock Boards	Freight Elevators	Sprinkler Systems (fire protection)

YARD ITEMS:

Barns	Paving	Swimming Pools
Carports	Storage Buildings	Poultry Houses
Garages	Golf Greens	Hot Houses

ALL FIELDS MUST BE ENTERED

CODE: The appraiser inputs the appropriate code in this field and the computer will automatically fill in the description, unit price and depreciation. See chapter 11 of this manual for SFYI codes.

QUANTITY: The appraiser inputs the appropriate number of a particular Special Feature or Yard Item.

UNITS: The total units by which the extra feature is valued must be entered here.

QUALITY: The vast majority of entries should be of an average quality, although this field allows the appraiser to identify features or items that are either above or below the quality associated with the rest of the structure.

CONDITION: Like the Quality above, the vast majority of entries should be of an average condition, although this field allows the appraiser to identify Special Features or Yard Items that are either above or below the condition associated with the rest of the structure.

YEAR: The appraiser uses this field to identify the year built for the particular Special Feature or Yard Item.

TAX EXEMPT CODES

Code 1 - Religious exemption
Code 2 - County exemption
Code 3 - State exemption
Code 4 - Federal exemption
Code 5 - Other municipal
Code 6 - Educational
Code 7 - Charitable
Code 8 - Railroads & Utilities
Code 9 - Other exempt

PARCEL STATUS CODES

LR00 - Reserved
NT01 - New Improvement
NT02 - Building Completed Tax Year
NT03 - Remodeling or Addition to Improvements
NT04 - Air Conditioning Added
NT05 - Building Demolished
NT06 - Combining Real Estate
NT07 - Correction of Acreage
NT08 - Division of Real Estate
NT09 - Change in Zoning or Use
NT10 - Equalization of Value
NT11 - Clerical Correction in Assessment
NT12 - Board of Equalization Adjustment in Value
NT13 - Exempt to Taxable Status
NT14 - Right of Way Acquisition
NT15 - Part of Improvements Demolished
NT16 - Building Removed
NT17 - Building Moved onto Site
NT18 - Building Partially Completed
NT19 - Value Reduced Temporarily (Damaged by Vandalism, etc.)
NT20 - Discovered Property
NT21 - Revised Notice
NT22 - Agriculture Use Valuation
NT23 - Forest Use Valuation
NT24 - Horticulture Use Valuation
NT25 - County-Wide Revaluation
NT26 - Change of Ownership
NT27 - Reviewed - No Change in Value
NT28 - Mobile Home Site Added
NT29 - Historic
NT30 - Road Paved
NT31 - Use Value Denied
NT32 - R/W Taking - No Value Change
NT33 - Appraisal Pending
NT34 - Road Corridor
NT35 - Taxable to Exempt
NT37 - Site Prep
NT50 - Wildlife Appraisal
NT51 - Waterfront Appraisal
NT94 - N C Court
NT96 - State Appeal
NT97 - BER Appeal

NT98 - Property Under Appeal to Tax Office
NT99 - No Notice

Although the Tax Exempt statues is nor captured on the Field Data Collection form, the system codes are enumerated here:

TAX EXEMPT CODES

Code 1 - Religious exemption
Code 2 - County exemption
. Code 3 - State exemption
Code 4 - Federal exemption
Code 5 - Other municipal
Code 6 - Educational
Code 7 - Charitable
Code 8 - Railroads & Utilities
Code 9 - Other exempt

	LUC
Code 1 (Religious)	
Churches and Parsonages	7100
Assemblies, Retreats, etc.	7101
Promotional Offices & Headquarters	7102
Code 2 (County)	
Governmental	8600
Educational	8601
Code 3 (State)	
Governmental	8700
Educational	8701
Code 4 (Federal)	
Governmental	8800
Code 5 (Municipal)	
Governmental	8900
Educational	8901
Airport Authority	8902
Housing Authority	8903
Code 6 (Private Educational)	
Schools	8300
Code 7 (Charitable)	
YMCA	7401
Homes For the Aged, etc.	7400
Orphanages	7500
Veteran, Patriotic and Benevolent Organizations	7700
Civic or Community Organizations	7701
Hospital Owned Property	7300
Code 8 (Utilities and Railroads)	
Code 9 (Other)	
Disabled Veterans Housing	7402
Low Income Housing	7403
Non-Profit Water & Sewer Company, Waste Disposal, Water & Air Pollution	8601
Recycling & Resource Recovery Facilities	8603

Cemeteries	7600
Owner Unknown	9800

STREET TYPES (part of the Address field)

AV - Avenue
BV - Boulevard
CR - Circle
CT - Court
DR - Drive
LP - Loop
LN - Lane
PK - Park
PL - Place
PT - Point
PW - Parkway
RD - Road
ST - Street
SQ - Square
TE - Terrace
TR - Trace
TL - Trail
WY - Way

CALCULATION OF SYSTEM VALUES

AssessPro CALCULATIONS

PATRIOT PROPERTIES

PREFACE

Simple compilation of data is only one part of the system's function. The determination of values associated with the varied structural components of each improvement type is the function of any computer-assisted-mass-appraisal (CAMA) system. The following chapter details how the AssessPro system makes its calculations in the derivation of property values.

LAND CALCULATION:

The land calculation is based primarily upon values entered in the Land Data screen, and the Land Price Data Calculation Table, as well as on factors in the descriptive tables.

The land calculation is complex. Here it is broken down step by step. In the next section there is an example with screenshots from AssessPro that will walk the user through the entire calculation.

A. NOTE THE CHARACTERISTICS OF YOUR PARCEL FROM THE LAND DATA SCREEN.

1. Go to the Land Data Screen.
2. Note the Neighborhood code for the parcel to be calculated.

   Neighborhood code: _____
3. Note the Unit Type being used to measure the parcel.

   Unit Type: _____
4. Note the Number of Units for the parcel.

   Number of Units: _____

B. CALCULATE YOUR LAND INTERVAL SIZES:

1. Open the Land Price Data Calculation Table.
2. Select the Neighborhood code for the parcel to be calculated in the Neighborhoods list box on the left.
3. Select the Unit Type from the Unit Types Priced list in the Land Price Data Calculation Table.
4. Interval 1: The first interval Range field is the top range listed in the bottom of the Land Price Data table. If the Number of Units is greater than or equal to this number, then the interval 1 actual size is equal to the Range number. If the range given is less, then use the Number of Units as the interval 1 actual size. There will be no interval 2 or 3, so skip to section C.

   Interval 1 Actual size: _____
5. Interval 2: Interval 2 is calculated by first taking the total Number of Units and subtracting the number of units previously applied in Interval 1 (step 4). The second interval is the middle range listed. If the remaining Number of Units is greater than or equal to this number, then the interval 2 actual size is equal to the Range number. If less then the range given, then use the remaining Number of Units as the interval 2 actual size. There will not be an interval 3, so skip to section C.

   Interval 2 Actual size: _____
6. Interval 3: Interval 3 is first calculated by taking the total Number of Units and subtracting the number of units previously applied in Interval 1 and Interval 2 (steps 4 and 5). If there is more land than the range for interval 2 use the Number of Units as the interval 3 actual size.

   Interval 3 Actual size: _____

C. APPLY THE SA TO EACH LAND INTERVAL:

1. The Standard Size Adjustment Formula (SA) is:

(Standard Size / Actual Size X (Curve % / 100) + (1 - (Curve % / 100)) = CalculatedSA

2. Apply this formula to each of the Intervals. Replace the Actual size with the Interval Actual Sizes listed above. The Curve % and Standard Size will be taken from the interval line on the Land Price Data Calculation Table.
3. Verify that the SA for each interval falls within the allowed range.

If the Calculated SA for an interval is less then the value in the Min Factor field for that interval line, then the Min Factor will be the SA.
If the Calculated SA for an interval is greater than the Max Factor field for that interval line, then note the Max Factor as the SA for that interval in the next step.
If the Calculated SA is between the minimum allowed and the maximum allowed then the Calculated SA is the SA to be applied.

4. Note the SA for each interval.

   Interval 1 SA: _____

   Interval 2 SA: _____

   Interval 3 SA: _____

D. FIND THE INTERVAL LAND VALUES:

1. The Interval Value Formula is:

(Interval SA) X (Amount Per Unit) X (Units in Range) = Interval Land Value

2. Apply this formula to each of the Intervals. The Amount Per unit comes from the Land Price Data Calculation Table, Std $ / Unit field. Use the Interval SA from step C and the Interval Actual Size from step A. The Units in Range are the units that are specifically assigned to a range. For example, for interval 2 the Units in Range would be the number of units that are not accounted by in Interval 1 or 3. So, if the range for interval 2 starts at 5 acres and the range for interval 3 starts at 20 acres and there are more than 20 acres in this parcel, the Units in Range would be 15.

3. Note the Interval Land Value for each interval

   Interval 1 Land Value: _____

   Interval 2 Land Value: _____

   Interval 3 Land Value: _____

E. CALCULATE LAND VALUE:

1. The Total Land Value Formula is:

Interval 1 Land Value+ Interval 2 Land Value + Interval 3 Land Value + Base Value = Land Value

2. Use the Interval Land Values as noted above, and the Base Value that is in the Land Price Data Calculation Table.

F. APPLY FACTORS:

Land Value X Neighborhood Factor X LUC Factor X Neighborhood Modifier X Land Type Factor = Factored Land Value

1. Multiply the Land Value times the Land Factor on the Land Price Data Calculation Table. (This factor is displayed on the Land Data screen. It is labeled Neigh Factor)
2. Multiply the resulting Land Value times the Land Use Factor from the Land Factor Column of the Land Use Codes Descriptive table. (This factor is displayed on the Land Data screen. It is labeled LUC Factor)
3. Multiply the resulting Land Value times the Land Factor from the Neighborhood Modifiers Descriptive table. (This value is displayed on the Land Data screen next to the Neigh Mod field)
4. Multiply the resulting Land Value times the Index Value in the Land Types Descriptive table. (This value is displayed on the Land Data screen. It is labeled Land Type Fac.)

G. FACTOR IN INFLUENCE CODES:

1. Note Influence codes on the Land Data screen (if any).
2. For Negative influence codes, subtract the percentage from one to get the factor. For example if the influence code is -20 then subtract .2 from 1 and the factor will be .8.
3. For Positive influence codes, add the percentage to 1 to get the factor. For example if the influence code is 10 then add .1 to 1 and the factor will be 1.1.
4. If there are multiple influence codes defined, add the influence factors to have one total influence factor to apply.
5. Total Influence Factor = (1 +- Influence1) + (1 +- Influence2) + (1 +- Influence3)

H. CALCULATE TOTAL LAND VALUE:

(Factored Land Value X Total Influence Factor) + Lump Sum Adjustment = Total Land Value

1. Multiply the Factored Land Value times the Total Influence Factor.
2. Add the Lump Sum Adjustment that is listed on the bottom of the Land Data Screen.
3. Multiply the resulting value times the Jurisdictional Factor from the Jurisdictional Factors Descriptive Table. (This value is displayed on the Land Data screen. It is labeled Jurist Fact.)

I. CALCULATE ASSESSED VALUE:

Total Land Value X Jurisdictional Factor = Assessed Value

Multiply Total Land Value times the Jurisdictional Factor from the Jurisdictional Factors Descriptive Table. (This value is displayed on the Land Data screen. It is labeled Jurist Fact.)

SPECIAL LAND CALCULATION:

Special land calculations generally involve both the calculation of appraised value and the calculation of a use value such as agricultural, forestry or recreational uses. Use value is typically lower than appraised value. The use value may then be multiplied times an assessment factor to derive the assessed value. There are two methods of calculation: overriding the appraised land schedules (Land Price Data calculation table) to set a new land price per unit schedule or multiplying the appraised land value by a factor.

A. CALCULATING SPECIAL LAND VALUES

OVERRIDING THE APPRAISED VALUE LAND SCHEDULE

Special Land Price (Price) X Special Land Code X Special Land Factor X No. Of Units = Special Land Value

1. Go to the Special Land Price descriptive table and note the value in the Price column for the Code (LUC) and Unit Type.
2. Go to the Special Land Factors descriptive table and note the Factor for the Special Land Code.
3. Multiply the Special Land Price (Price) X the Special Land Code factor X Special Land Factor X the No. Of Units to calculate the Special Land Value.

FACTORING THE APPRAISED VALUE

Special Land Price (Factor) X Appraised Value X Special Land Code X Special Land Factor = Special Land Value

1. Go to the Special Land Price descriptive table and note the value in the Factor column for the Code (LUC) and Unit Type.
2. Go to the Special Land Factors descriptive table and note the Factor for the Special Land Code.
3. Multiply the Special Land Price (Factor) X the Appraised Value X the Special Land Code factor X Special Land Factor to calculate the Special Land Value.

BUILDING CALCULATION

A. NOTE BUILDING PRICING INFORMATION:

1. Go to the Building Pricing Calculation Table.
2. Select the building type from the building type list.
3. Note the Price Per Unit:

   Price Per Unit: _____

4. While in the Building Pricing Calculation Table note the Building Group for this Building type:

   Building Group: _____

B. CALCULATE THE SIZE ADJUSTMENT:

1. Note the actual size that will be used for calculations on the building. The actual size is the sum of the sub areas that have the Use in Total Size Adj Area Calc checkbox selected in the Size Adjustments Calculation Table for the Building Group. The actual size and the finished size are usually the same number. It may be easier to use the finished size because it appears at the bottom of the Sub Area Detail Screen under the table column for finished area. The actual size appears on the Record Card screen and is labeled Size Ad.

   Actual Size: _____

2. The Size Adjustment Formula is:

Size Adjustment = [(Standard Size/Actual Size) X (1-Curve %)] + Curve percent

3. Use the Size Adjustment Formula. Use the Actual Size noted above; all of the other values are listed for the Building Group in the Size Adjustment Calculation Table.
4. Make sure the Size Adjustment falls between the Min Factor and the Max Factor. Otherwise replace the Size Adjustment with either the Min Factor or Max Factor listed.

C. CALCULATE THE CONSTRUCTION ADJUSTMENT:

1. Construction Adjustment = the Indexes from the building descriptive tables multiplied together.
2. Enter the code used for each building attribute from the Building Description screen into the table below.
3. Go to the Descriptive table for each of these attributes. Enter the index value for the code used on the building in the table below. If the index is blank, use a 1 for that value. If the field allows for 2 entries use the following formula to calculate the Index for the field.

(Primary Field Index X (1 - Secondary%)) + (Secondary Field Index X Secondary%) = Index for Field

4. Verify whether or not a value has been overridden in the Building Group Factors Calculation table. Select the Building Group, Building Attribute, and Code value used and note any override from the Factor field on the far right.

Building Attribute	Code	Index	Index Override
Story Height			
Foundation Type			
Frame Type			
Exterior Wall Type	Prime: Sec: %:		
Roof Structure			
Roof Material			
View Codes			
Interior Wall Types	Prime: Sec: %:		
Partition Index			
Floor Types	Prime: Sec: %:		
Basement Floor Types Use the Floor Types Descriptive table			
Electric Types			
Insulation Types			
Plumbing Types			
Heating Fuel Types			
Heating System Types	Prime: Sec: %:		
Common Wall	SEE CALCULATION IN STEP 6		
Wall Height	SEE CALCULATION IN STEP 7		

5. Multiply each of the index values together to get the construction adjustment. Any overrides are noted instead of the index they are replacing.

6. Common Wall = 1-(% Common Wall / 100 X Percent off / 100)
   % Common Wall is from the Building Description Screen.
   The Percent off is from the Common Wall % Off field in the Other Features Pricing Calculation Table.

7. Wall Height = 1+ (Avg. Ht per Fl - Height per Floor) X % Unit)
   Avg. Ht per Fl is from the Building Description Screen.
   The Height per Floor is from the Other Features Pricing Calculation Table.

8. Note the Construction Adjustment:

   Construction Adjustment: _____

D. CALCULATE THE ADJUSTED SF RATE:

1. The Adjusted SF Rate Formula is:

Adjusted SF Rate = (Rate per Building Type) X (Construction Adjustment) X (Size Adjustment)

2. Use the values noted in the sections above to calculate the Adjusted SF Rate.

E. CALCULATE THE SUBAREA RATE:

1. The SubArea Rate Formula will be used for every sub-area in the building. The formula is:

SubArea Rate = Adjusted SF Rate X Units$ for Bldg Type Factor X Alt Type Factor

2. Use the Adjusted SF Rate calculated above.

3. Use the Unit$ for Bldg Type from the SubArea Calculations table for the sub-area.

4. Use the Alternate Type factor from the Index Value column in the Alternate Types descriptive table. If the sub-area does not have an alternate type use 1.00 as the factor.
5. Note the Rate for every SubArea in the building:

SubArea: _____ Rate: _____

SubArea: _____ Rate: _____

SubArea: _____ Rate: _____

SubArea: _____ Rate: _____

SubArea: _____ Rate: _____

F. CALCULATE THE SUBAREA AREA:

1. The SubArea Area Formula will be used for every sub-area in the building. The formula is:

SubArea Area = SubArea SF X Adjusted Sketched Area Factor X % Alternate Type

1. Use the SubArea Square Footage (SubAreaSF) from the Sketched Area column on the SubArea Detail Screen.
2. Use the Adjusted Sketched Area Factor from the SubArea Calculations Table. If there is no factor use 1.00 as the factor.
3. Use the % Alternate Type from the SubArea Detail Screen. If there is no Alternate Type use 1.00 as the percentage.
4. Note the Area for each SubArea in your building:

SubArea: _____ Area: _____

SubArea: _____ Area: _____

SubArea: _____ Area: _____

SubArea: _____ Area: _____

SubArea: _____ Area: _____

G. CALCULATE THE RCN (REPLACEMENT COST NEW):

1. The SubArea Area Formula will be used for every sub-area in the building. The formula is:

RCN = SubArea Rate X SubArea Area

2. Note the RCN for ever SubArea in the building:

SubArea: _____ RCN: _____

SubArea: _____ RCN: _____

SubArea: _____ RCN: _____

SubArea: _____ RCN: _____

SubArea: _____ RCN: _____

3. Sum all of the SubArea RCN values. Note the Total RCN.

Total RCN: _____

H. CALCULATE THE OTHER FEATURES:

1. Note the Number of Units and the Ratings from the following fields on the Building Description Screen.

Feature	# of Units	Rating	Value
Full Baths			
Addl Baths			
3/4 Baths			
Addl 3/4 Baths			
Half Baths			
Adl Half Baths			
Other Features			
Kitchens			
Fireplaces			
W.S. Flues			
Bsmnt Garages			

2. The formula to Calculate the Value for each of these features is:

Feature Value = [First Value + (Extra Units X Additional Value)] X Feature Rating + (Lump Sum X Num of Units)

3. First Value is the amount listed in the Other Features Pricing Calculation Table in the First field for this feature. This is the lump sum that will be assigned to the first Feature. For example, the first bathroom may be worth $5,500, additional bathrooms may be worth less.
4. The Extra Units equals the # of Units - 1, or the additional units. Enter 0 if there is only one unit.
5. The Additional Value is the amount listed in the Other Features Pricing Calculation Table in the Additional field for this feature.
6. Feature Rating is the rating or index value found in the descriptive table for this feature.
7. Lump Sum is the Lump sum found in the descriptive table for this feature. If there is no Lump Sum, use 0.

8. Num of Units is the # of units entered in the table above, taken from the Building Description screen.
9. Calculate the value of each of the features listed above and enter them into the Value column of the table.

I. CALCULATE MORE OTHER FEATURES:

1. The rest of the other features are calculated using a combination of base value and or a value per finished square foot for the building. Enter the values for each of the fields listed below from the Building Information Screen. If the screen has a checkbox that is selected enter a value of 1.

Feature	Entry	Value
% Heated		
% A/C		
Solar Hot Water		
% Sprinkler		
Central Vacuum		

2. The formula to calculate these other features is:

Feature Value = Base Value + (Unit Price X Finished Area)

3. The Base Value is from the Other Features Pricing Calculation Table in the Base Value field for this feature.
4. The Unit Price is from the Other Features Pricing Calculation Table in the Unit Price field for this feature.
5. The Finished Area is from the Sub Area Detail Screen. The total finished area appears at the bottom of the screen under the column for Finished Area.

J. TOTAL THE OTHER FEATURE VALUES:

1. Add the Value column for both tables of Other Features. Note the Other Features Value here:

   Other Features Value: _____

K. CALCULATE THE APPRAISED VALUE:

1. The Appraised Value calculation is:

Appraised Value = Total RCN + Other Features Value X (Grade Factor X NBHD Factor X NBHD Modifier) - Depreciation + Special Features

2. Use the Total RCN that was calculated earlier in this process.
3. The Other Features Value is the total of the other features that was calculated above.
4. The Grade Factor comes from the Index column of the Grade Types Descriptive table for the Grade type that is entered on the Building Information Screen.
5. The NBHD Factor is the Building Factor in the Land Price Table.
6. The NBHD Modifier comes from the BuildFactor column of the Neighborhood Modifiers Descriptive table for the Neighborhood code entered on the Land Data Screen.
7. Depreciation comes from the Depreciation Creation Calculation Table. Find the Factor by selecting the Building Group from the Existing Tables list. Scroll down until the age of the building is found in the table at the bottom and then read across to the number under the Physical condition rating that was entered on the Depreciation and Remodeling Screen.
8. See the Special Features Calculation for details. The user can enter the Special Features value from the Calculation

Ladder Tab on the Valuation Information Screen into this calculation.

L. CALCULATE THE VALUE ADJUSTED FOR THE JURISDICTION:

1. The Value Adjusted for the Jurisdiction calculation is:

Value Adjusted for the Jurisdiction = Appraised Value X Jurisdiction Factor

2. The Jurisdiction Factor is in the Build Factor Column of the Jurisdictional Factors Descriptive Table for the Jurisdiction selected in the Jurisdiction field of the Building Description Screen.

SPECIAL FEATURES AND YARD ITEMS (SFYI) CALCULATION

The SFYI calculation is based primarily upon values entered in the Special Features/Yard Items screen, and the SFYI Pricing Calculation Table.
The SFYI calculation is broken down step by step. In the next section there is an example with screenshots from AssessPro that will walk the user through the entire calculation.

A. NOTE THE CHARACTERISTICS OF YOUR PARCEL FROM THE LAND DATA SCREEN.

5. Go to the Special Features/Yard Items screen.
6. Note the SFYI code for the item to be calculated.

   SFYI code: _____

7. Note the Quantity and Units (Size) being used to measure the item.

   Quantity: _____Units (Size): _____

8. Note the Quality, Condition, Year and Unit Price for the item.

   Quality: _____Condition: _____Year: _____ Unit Price: _____

9. Note the Override Price, Depreciation Source, Depreciation%, Completed %, or Income box check.

   Override Price: _____Depreciation Source: _____

   Completed %: _____ Income Box Check: _____

10. Note the LUC, LUC Factor, Jurisdiction Code, Jurisdiction Factor, Neighborhood Factor and Neighborhood Modifier.

    LUC: _____LUC Factor: _____

    Jurisdiction Code: _____ Jurisdiction Factor: _____

    Neighborhood Factor: _____ Neighborhood Modifier: _____

B. CALCULATE SIZE ADJUSTMENT

1. The Size Adjustment Calculation is:

Sized Adjustment = ((Standard Size / Actual Size) X Curve %) - (1 - Curve %)

2. The Actual Size is calculated from the Units (Size) field on the Special Features / Yard Items screen.
3. The Standard size and Curve % are from the SFYI Pricing Calculation Table.
4. Make sure the Size Adjustment falls between the Minimum Adjustment and the Maximum Adjustment. Otherwise replace the Size Adjustment with either the Minimum or Maximum Adjustment listed.
5. Note the Size Adjustment here:

   Size Adjustment: _____

C. CALCULATE THE SFYI ITEM.

(Quantity X Units)

X

(Unit Price X Size Adjustment X Quality X LUC Factor X Neighborhood Factor X Neighborhood Modifier)

X

[(1- Depr) X % Complete] X Jurisdictional Factor

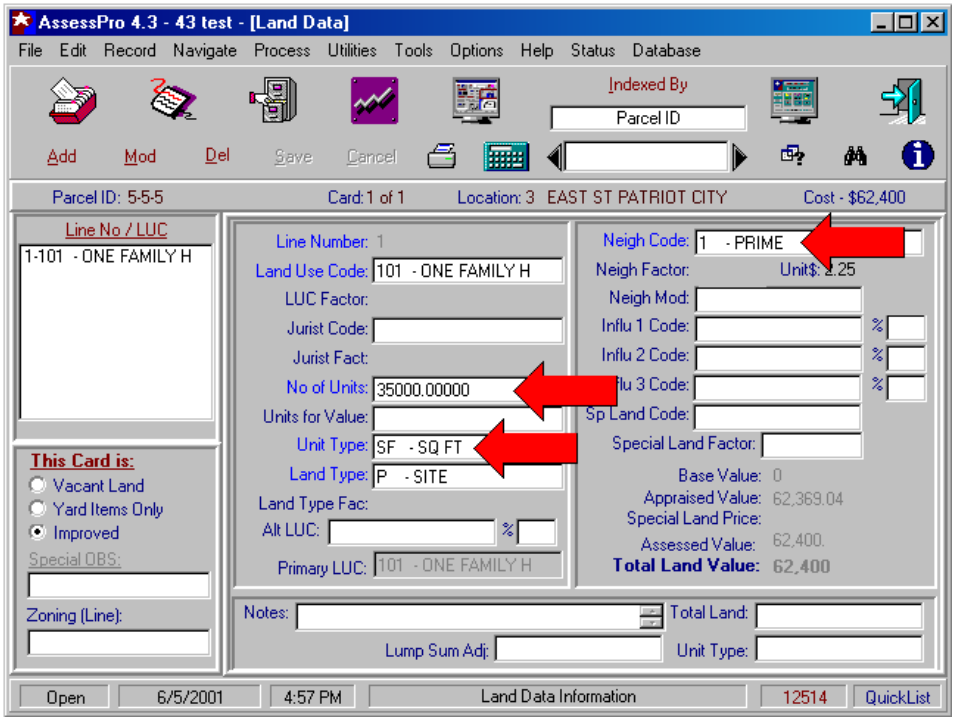
1. Go to the SFYI Pricing calculation table.
2. Select the SFYI Code for the item.
3. Multiply the Item Quantity X the Number of Units X the Size Adjustment (calculated above).
4. Multiply Unit Price per item found in the SFYI Pricing calculation table X the Quality factor found in the SFYI Quality Codes descriptive table ****see note 1****
5. Multiply Step 4 X the LUC factor found in the Land Use Codes descriptive table column labeled SFYIFactor.
6. Multiply Step 5 X Neighborhood Factor found in the Land Price Data calculation table for the parcel's neighborhood in the General Pricing Info field labeled Special Feature and Yard Item Factor.
7. Multiply Step 6 X the Neighborhood Modifier found in the Neighborhood Modifiers descriptive table.
8. Multiply Step 7 X Step 3.
9. Multiply Step 8 X (1 – Depr %) ****see note 2 ****
10. Multiply Step 9 X Completed %
11. Multiply Step 10 X Jurisdictional Factor

Notes

1. The user may choose to override the Unit Price per schedule by entering a value in the Override Price field.
2. The user may select a specific depreciation table constructed for SFYI items in the Depreciation Creation calculation table then default to the same depreciation used by the main building or set a manual amount. The manual amount is entered after the box marked Manual is selected.

APPENDIX 1: EXAMPLE OF LAND CALCULATION

A. NOTE THE CHARACTERISTICS OF THE PARCEL FROM THE LAND DATA SCREEN.

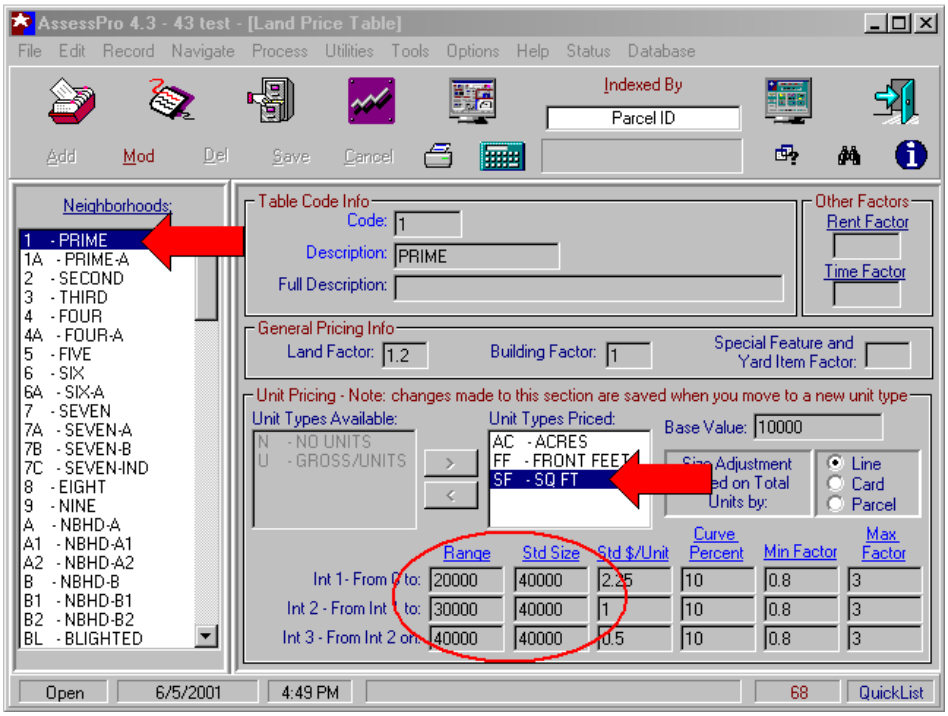


Neighborhood code: 1 - Prime

Unit Type: SF - SQ FT

Number of Units: 35000

B. CALCULATE THE LAND INTERVALS:



Interval 1 Actual size: 20000

Interval 2 Actual size: 30000

Interval 3 Actual size: 35000

C. Apply the SA to each Land Interval:

	Range	Std Size	Std $/Unit	Curve Percent	Min Factor	Max Factor
Int 1 - From 0 to:	20000	40000	2.25	10	0.8	3
Int 2 - From Int 1 to:	30000	40000	1	10	0.8	3
Int 3 - From Int 2 on:	40000	40000	0.5	10	0.8	3

(Standard Size / Actual Size X (Curve % / 100) + (1 - (Curve % / 100)) = CalculatedSA

Interval 1 SA: (40,000 / 20,000) X (10 / 100) + (1- (10 / 100)) = 1.10

Interval 2 SA: (40,000 / 30,000) X (10 / 100) + (1- (10 / 100)) = 1.03

Interval 3 SA: (40,000 / 35,000) X (10 / 100) + (1- (10 / 100)) = 1.01

Note that all of the calculated SAs are within the range set by the Min Factor and Max Factor. Therefore the CalculatedSAs are the appropriate SAs.

D. FIND THE INTERVAL LAND VALUES:

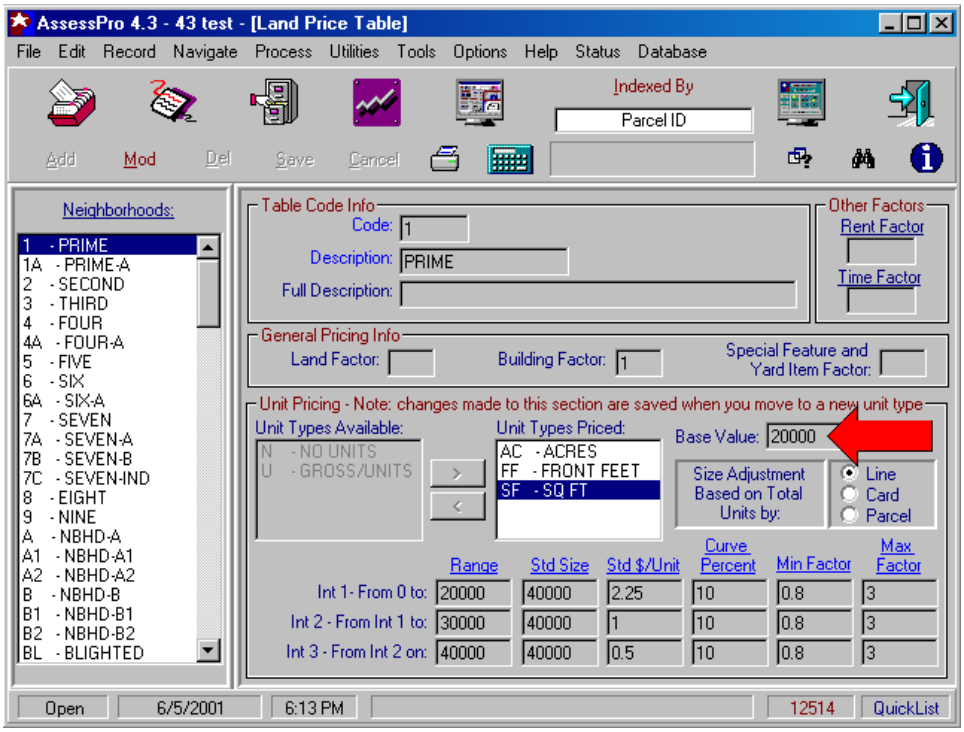
(Interval SA) X (Amount Per Unit) X (Units in Range) = Interval Land Value

Interval 1 Land Value: 1.10 X 2.25 X 20,000 = 49,500

Interval 2 Land Value: 1.03 X 1.00 X 10,000 = 10,300

Interval 3 Land Value: 1.01 X .5 X 5,000 = 2,600

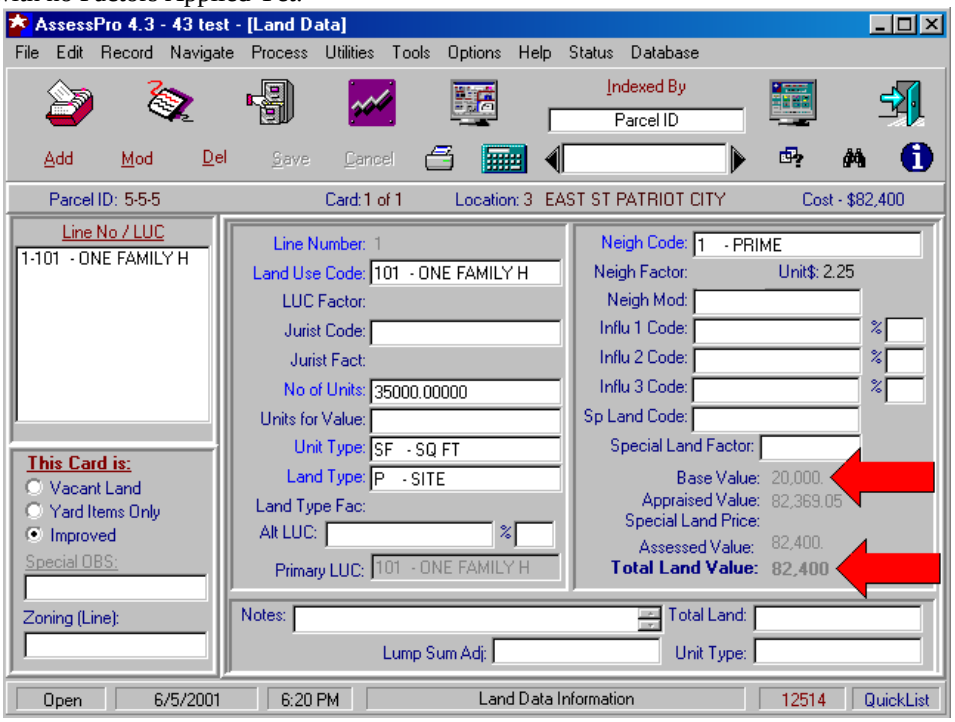
E. CALCULATE LAND VALUE:



Interval 1 Land Value+ Interval 2 Land Value + Interval 3 Land Value + Base Value = Land Value

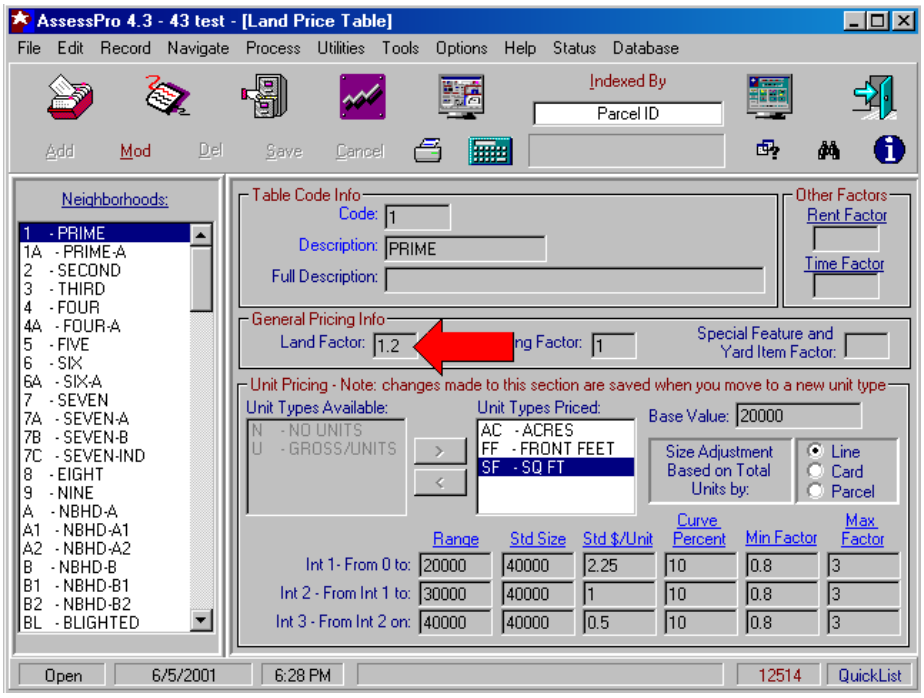
Land Value: 49,500 + 10,300 + 2,600 + 20,000 = 82,400

Land Data Screen with no Factors Applied Yet:

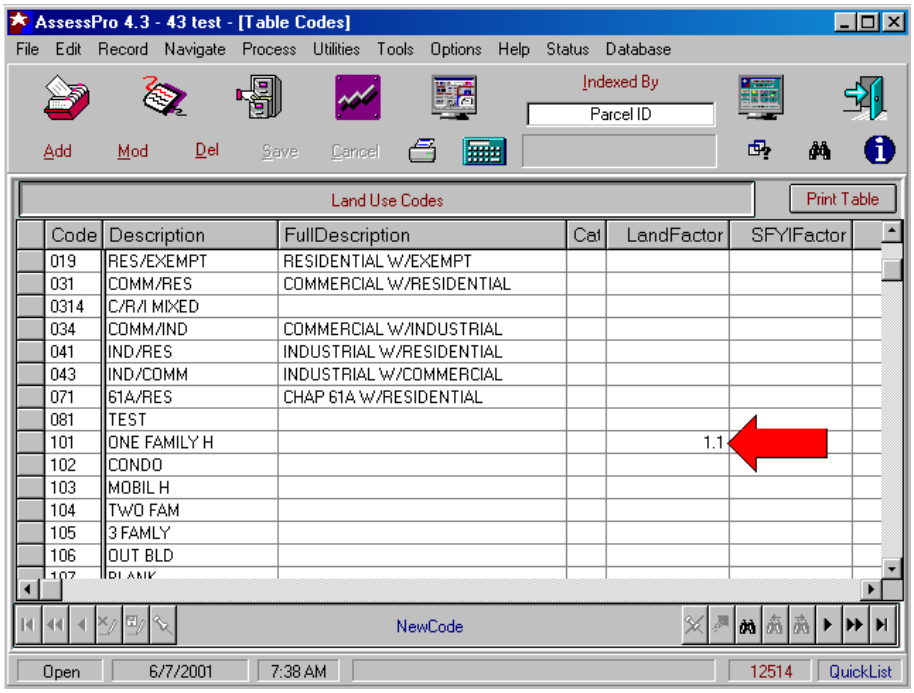


F. APPLY FACTORS:

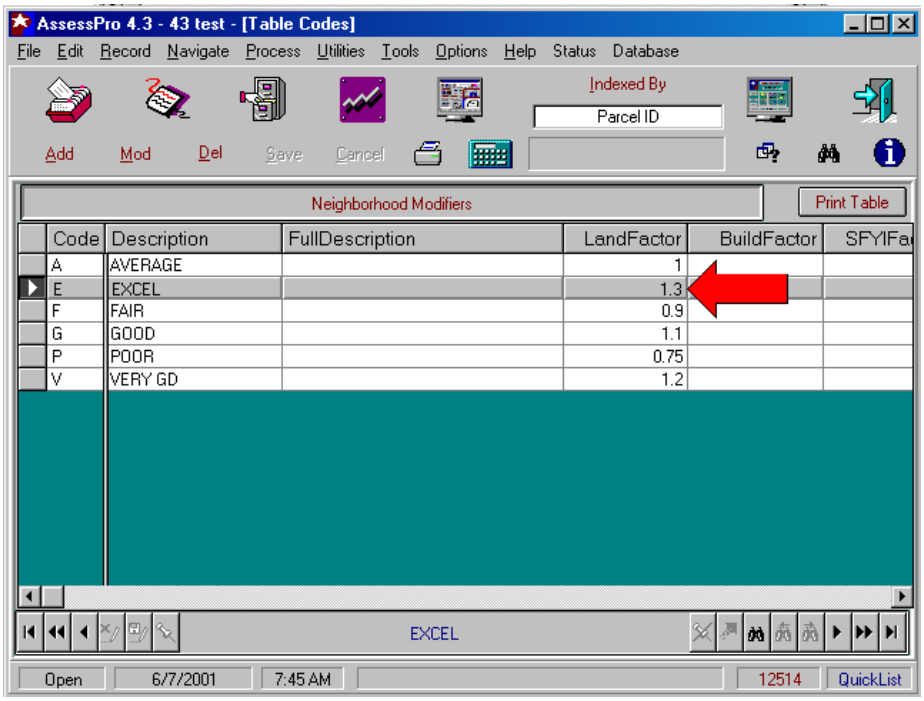
Apply Neighborhood Factor from the Land Price Table. (This factor is displayed on the Land Data screen. It is labeled Neigh Factor)



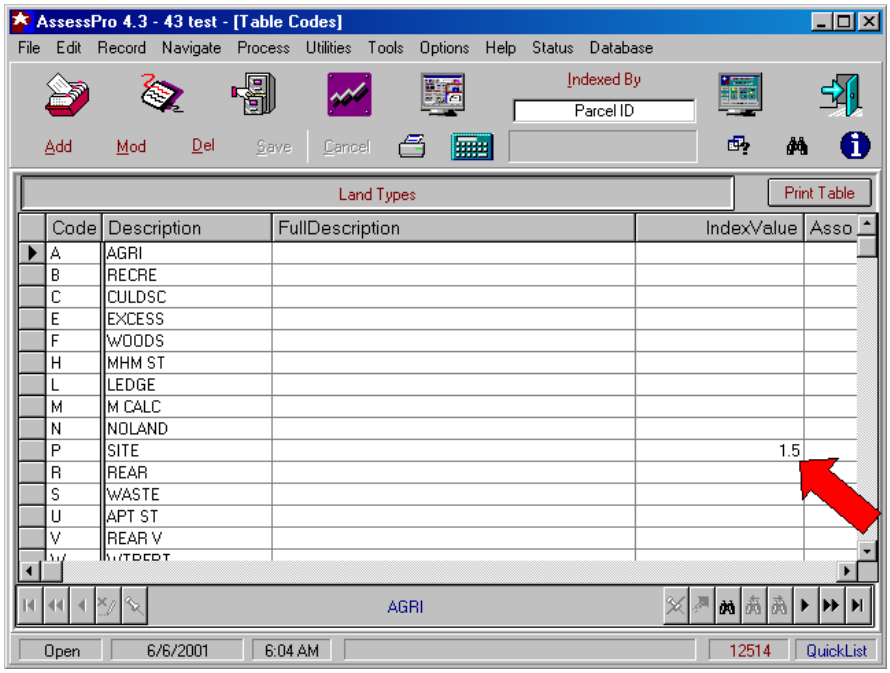
Apply Land Use Factor from the Land Use Codes Descriptive Table. (This factor is displayed on the Land Data screen. It is labeled LUC Factor)



Apply Neighborhood Modifier from the Neighborhood Modifier Descriptive table. (This value is displayed on the Land Data screen next to the Neigh Mod field)

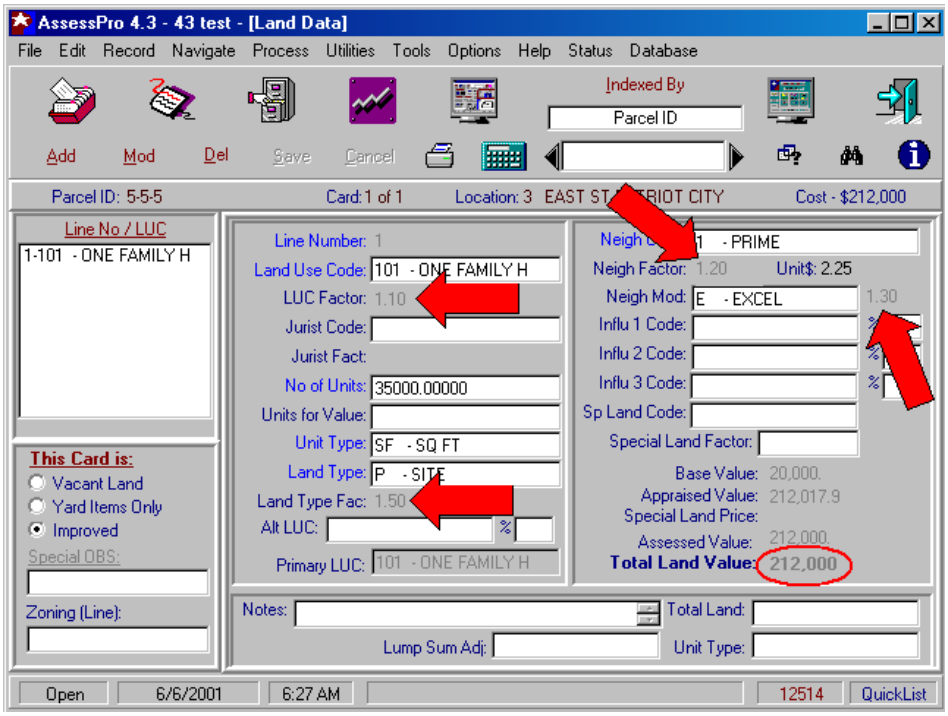


Apply Land Type Factor from the Land Types Descriptive Table. (This value is displayed on the Land Data screen. It is labeled Land Type Fac.)

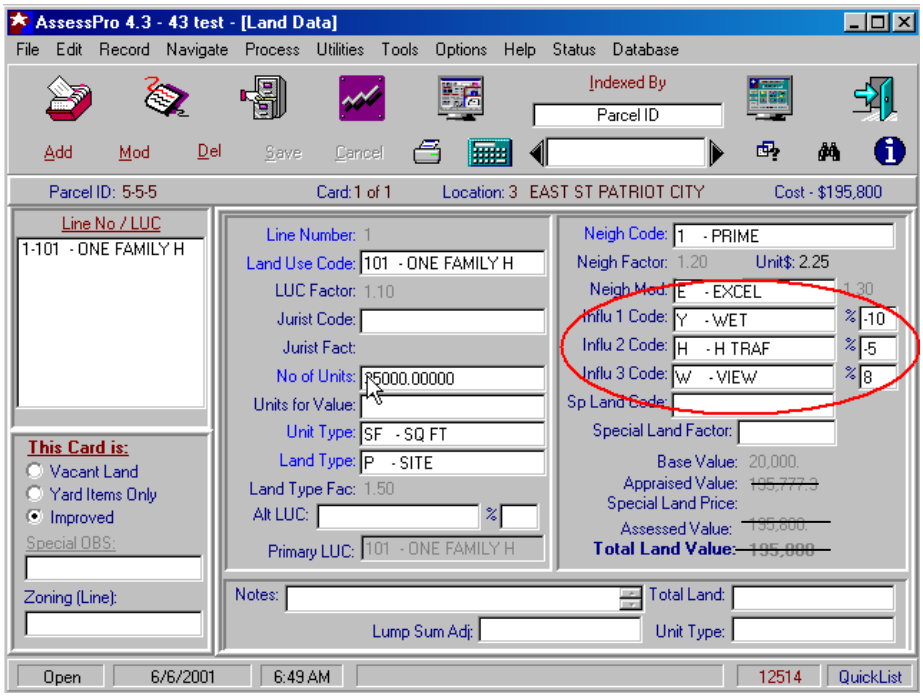


Land Value X Neighborhood Factor X LUC Factor X Neighborhood Modifier X Land Type Factor = Factored Land Value

Calculate the Factored Land Value.
82,400 X 1.2 X 1.1 X 1.3 X 1.5 = 212,097.6
Round this down to get total Land Value = 212,000



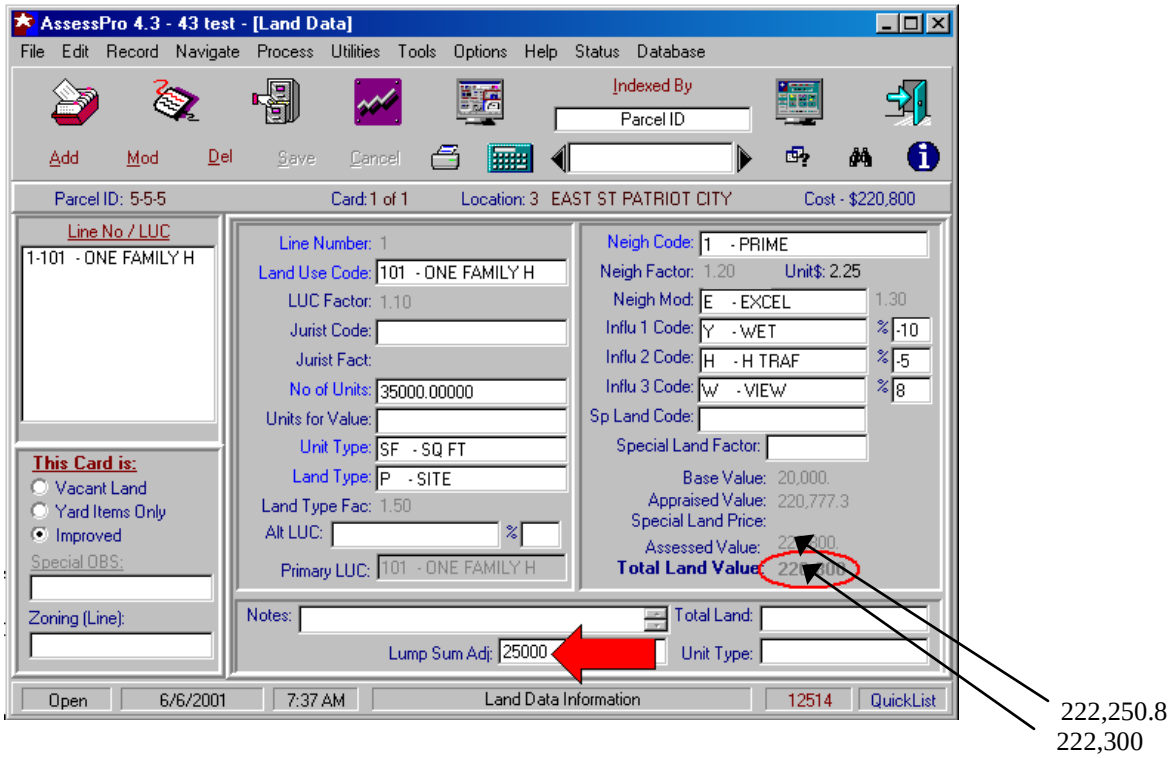
G. FACTOR IN INFLUENCE CODES:



(Influence1) + (Influence2) + (Influence3) = Total Influence Factor

(-.1) + (-.05) + (+. 08) = .93
Total Influence Factor = .93

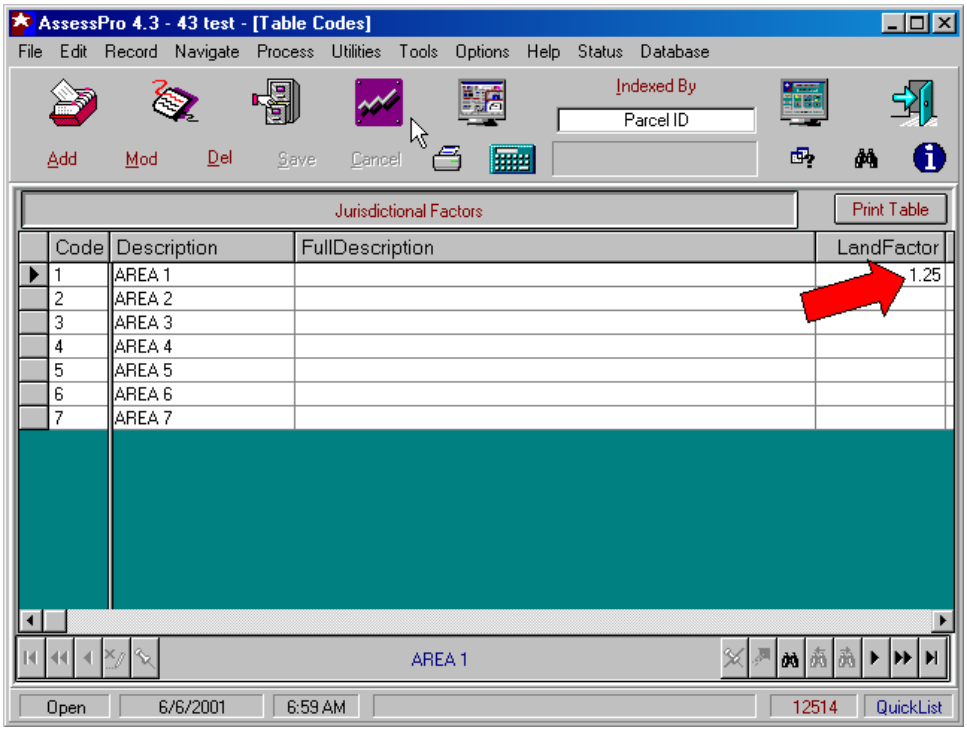
H. CALCULATE TOTAL LAND VALUE:



(Factored Land Value X Total Influence Factor) + Lump Sum Adjustment = Total Land Value

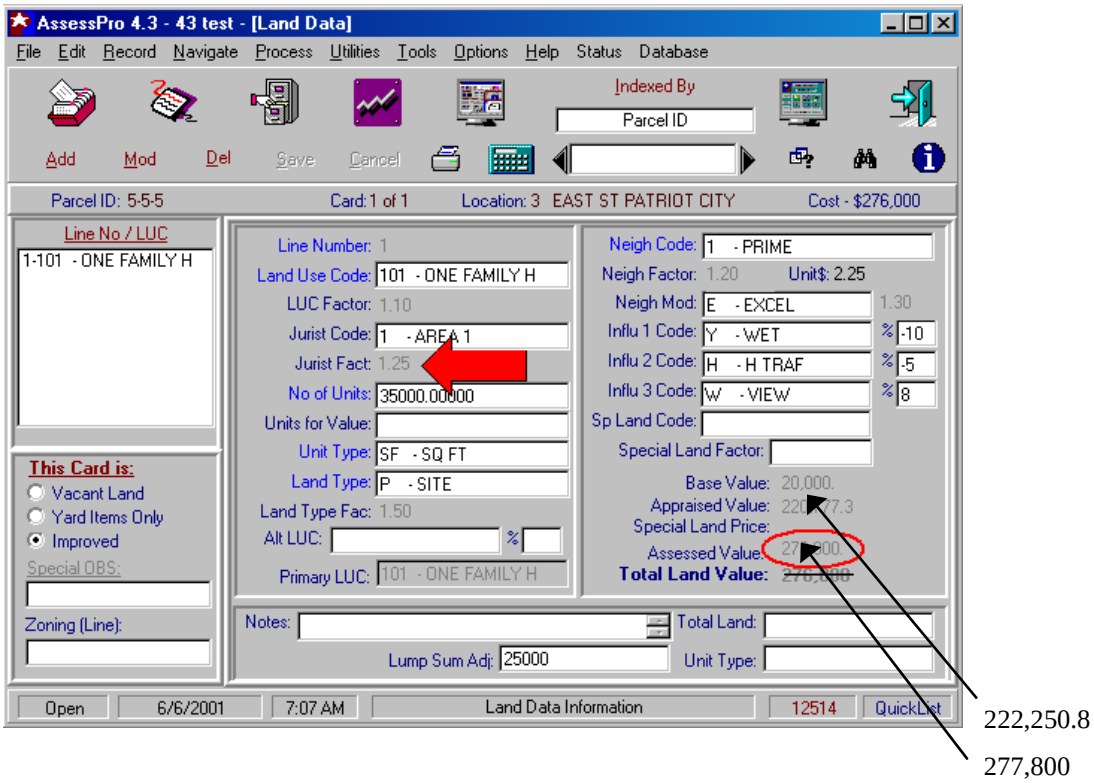
(212,097.6 X .93) + 25000 = 222,250.8 (rounded down to 222,300)

I. CALCULATE ASSESSED VALUE:



Total Land Value X Jurisdictional Factor = Assessed Value

222,250.8 X 1.25 = 277,813.5



INCOME PROPERTY VALUATION

PREFACE

This chapter is not designed to be a comprehensive text on income properties but rather a summary and outline of the Income Approach to value that can be applied in the AssessPro CAMA System, as well as in individual pro forma analysis spreadsheets utilized outside the mass appraisal system. AssessPro's "Income by Neighborhood" (or submarket) capability enables ad valorem appraisers to apply methods that heretofore proved too complex or time-consuming for mass appraisal.

As part of Mecklenburg County's preparation for the 2011 Countywide Revaluation, the Real Property Appraisal Division of the Assessor's Office contracted the services of T. B. Harris, Jr. and Associates (a local appraisal firm) to conduct a review of market conditions pertaining to certain types of income-producing properties. The firm had produced a similar document on the eve of both the 1998 and the 2003 Countywide Revaluations, and the County appraisal staff found that document to be very helpful in preparing and defending valuations. The resulting **Commercial Data Consulting Study** is a general narrative report of the regional market conditions on apartments, offices, retail facilities, industrial (warehouse) properties, motels, and miscellaneous property types. The data from this report will be utilized in the Income Classification of properties within the AssessPro system, the implementation of the "Income Approach by Neighborhood" (see this section later in the chapter), and in creating individual, off-line Pro Forma analysis of properties using Direct Capitalization, Discounted Cash Flow Analysis, and, where desired or possible, value estimates using the PGIM and EGIM (see definitions in later sections of this chapter).

Recommended reading for further study on the Income Approach should include *Property Assessment Valuation – Second Edition* (published by the International Association of Assessing Officers), as well as such texts as Dr. William N. Kinnard's *Income Property Valuation.* These sources will help familiarize the reader with some of the more subtle but important points of income property appraising.

INCOME PROPERTY VALUATION

BASIC STEPS IN INCOME APPRAISING

In order to simplify the understanding of the basic steps of income appraising, a brief outline if given here before taking a more in depth look at each step.

STEP I Estimate Gross Annual Income

A. Determine type of rental unit (i.e. per apt., per square foot. etc.)
B. Calculate other income (i.e. parking fees, concessions, laundry, etc.)
C. Identify vacancy and collection loss

STEP II Identify Operating Expenses

A. Fixed Expenses (Taxes and Insurance)
B. Variable Expenses
C. Repairs and Replacements
D. Sources of Operating Expense Data

STEP III Net Operating Income

STEP IV Determine the Overall Capitalization Rate
A. Band of Investment
B. Built-Up

STEP V Identify Method of Capitalization to use

A. Direct Capitalization
B. Discounted Cash Flow analysis
C. Gross Income Multiplier
    1) Potential Gross Income Multiplier (PGIM)
    2) Effective Gross Income Multiplier (EGIM
    3) Gross Annual Rent Multiplier (GARM)

ESTIMATE GROSS ANNUAL INCOME

The primary measure of a commercial property's worth is the amount of income that a property can earn or command in the local market. Therefore, it is important to derive a good understanding of the rental income that the space would command on the open market.

The basic question needing to be answered is, "What is the current market rent of the subject properties." The gross income is what the property will produce over a period of one year or a term of a lease. It includes the total amount of revenue a property is capable of producing prior to the deduction for vacancy and expenses.

DETERMINE TYPE OF RENTAL UNIT
ESTIMATE GROSS ANNUAL MARKET RENTS

Apartments

Generally, the market rent for apartment complexes is determined by their monthly rent per unit. The total square feet of a unit included into the monthly rent gives you a monthly square foot rate. To determine the annual rent of the entire complex the monthly rents of each unit type are summed together and multiplied by 12 months.

Low-Income Housing

There are multifamily and apartment properties throughout the County that qualify for low-income subsidy. The amount of income that is capitalized in order to derive a value estimate is based upon the actual contract rent (x12 months) paid by the lessee under the low-income housing program.

Commercial, Office and Industrial Buildings

Building Types 10 and 11 - Generally commercial, retail outlets will rent from $6.00 to $40.00 per square foot depending on the location, age and use of the retail outlet. These rates will be developed further throughout the revaluation project and established for the County. The commercial rates are also for shopping centers.

Building Types 17, 18 and 19 are office buildings and vary from less than $8.00 to $28.00 or more per square foot per year. Generally high-rise office buildings demand a higher rent per square foot, due to the higher annual expenses.

Building Types 40 - 49 include industrial and manufacturing. The market rent for buildings of this nature run from $2.00 to more than $8.00 per square foot for typical good warehouse construction; however, the range can vary from $2.00 or less for mostly storage up to more than $7.00 for a warehouse that has more than 50% office space in a good location.

IDENTIFY VACANCY AND COLLECTION LOSS

The amount of income that can be produced is determined not only by the size of the property but also the degree to which the property is utilized. Commonly, most properties experience some vacancies throughout the year along with collection losses. This amount is usually expressed as a percentage of the possible gross.

These measures of losses from vacancies and collections are particularly applicable to multi-tenant properties. There are basically three sources of such information; past experience of the subject, market experience of similar properties, and other published studies and reports, such as The Karnes Report, the Carolinas Real Data online database, The Korpacz Real Estate Investor Survey, the Building Owners and Managers Association (BOMA) publications, and the Charlotte Apartment Report.

IDENTIFY OPERATING EXPENSES

In order to estimate a net annual income it is necessary to calculate the amount that goes to the purchaser-investor after deductions for the actual operation of the property are made. These deductions are called operating expenses, however, these deductions DO NOT include mortgage payments and depreciation. There are three basic categories of operating expenses.

FIXED EXPENSES

These are expenses that vary very little, if at all, with occupancy from year to year and have to be paid whether the property is occupied or vacant. Taxes and Property Insurance are the two major items in this category. It must be remembered that these expenses need be deducted only insofar as they are an expense incurred by the property.

VARIABLE EXPENSES

Included in this category are such expenditures as management fees, payroll and personnel, supplies and materials, utilities, grounds care, etc. These tend to vary, at least in part, with the percentage of occupancy. Much depends on the type of property, the climate and the landlord-tenant relationship as to expenses incurred.

REPAIRS AND REPLACEMENTS

These items vary from year to year and tend to be concentrated in some years. For valuation purposes it is necessary to spread the cost of certain major repairs and/or replacements over their useful life. Dividing the replacement cost for each category by the forecast useful life yields an annual payment to cover replacement. Some typical items would be air conditioners, heating systems and roof covers. It should be noted that actual participants in market sales apparently do not fund reserve accounts. Expenses reported at the sale date typically do not include reserves for replacement, so overall capitalization rates derived from most market transactions do not consider reserves.

SOURCES OF OPERATING EXPENSE DATA

There are basically three sources for providing information on operating expenses of properties. Sources are past experience of the subject, market experience of similar properties and published studies and reports on local, regional and national fronts, such as The Karnes Report, The Korpacz Real Estate Investor Survey, the Building Owners and Managers Association (BOMA) publications, and the Charlotte Apartment Report.

NET OPERATING INCOME

Net operating income (NOI) is the annual dollar amount that a property is capable of producing under typical conditions and is equal to the gross income less vacancy and collection losses and operating expenses.

Example:	Gross Income (20 apt. @ $1200/year)	$24,000
	Less 5% Vacancy & Collection	1,200
		$22,800
	Less 35% Operating Expenses	7,980
	Net Operating Income (NOI)	$14,820

The net operating income usually takes into consideration the lease agreement presently in force to determine the dollar amount (income) to the investor and/or owner.

The County also analyzes the leases of competitive properties to estimate contract rent, market rent, and other forms of income.

Under General Statute 105-317 (a) (2) which states in part that it shall be the duty of the persons making appraisals to determine the true value to consider in part: past income, probable future income and any other factors that may affect its value. Lease analysis is important and all characteristics of leases must be fully understood.

DETERMINE THE OVERALL CAPITALIZATION RATE

The preferred method of developing Overall Capitalization Rates is by direct market extraction from sales of income-producing properties. When comparable sales data is in short supply, a Capitalization Rate can be derived arithmetically by adding together the Discount rate and the Capital Recovery rate. Although a shortage of sales is not the case in Mecklenburg County, the following discussion covers several alternate methods of determining the Discount Rate component of the Overall Rate in the absence of reliable sales data.

DISCOUNT RATE: METHODS OF RATE ESTIMATION

The Discount Rate, the basic building block in the income approach, is also called a RATE OF RETURN ON INVESTMENT. The forces of supply and demand for investment funds determine this. A rate of return on an investment or "discount rate" is paid or offered in order to attract investment capital. The Discount Rate is generally estimated from one of two methods: Band of Investment or Build-up and the rate must compensate the investor for:

1) Overcoming time preference
2) Giving up liquidity
3) Assuming investment management burdens
4) Assuming the risks of investment and ownership

Band of Investment

The Band of Investment method recognizes the Discount Rate as the weighted average of mortgage interest rate(s) based on typical financing; and the equity yield rate, derived from market data. It is based on the premise that investments in income-producing properties are usually financed with a mortgage at the best available terms. The weighting factor is the percentage of the total investment represented by each component contributing thereto. The procedure involved in the Band of Investment method is illustrated as follows:

Assume a property is financed with an 80% mortgage at 8.5% interest. Equity investors are seeking a 13% return on this type of investment. The indicated Discount Rate would be developed as follows:

BAND OF INVESTMENT
METHOD FOR DISCOUNT RATE

	RATE		WEIGHT		WEIGHTED RATE
First Mortgage:	.1300	x	.80	=	.1040
Equity Investment:	.1500	x	.20	=	.0300
Indicated Discount Rate					.1340

Built-Up Method

The Built-Up Method involves the "building" of a discount. The discount rate is “built” by taking the current “safe rate” or non-risk of ownership, the illiquidity of the investment, and the burden of management.

The SAFE RATE is that rate of return that can be earned annually on a risk free, highly liquid investment requiring virtually no rate that can be earned on a savings account or negotiable 1-year certificate of deposit to the prime-lending rate corresponding to the size of the investment.

RISK arises from the possibility that the net income forecast would not be realized and refers to the investments continued ability to earn income caused by uncertainties and instabilities in the market place.

The allowance for ILLIQUIDITY refers to the marketability or ease with which the investment can be converted to cash. This allowance can be considerable in large or valuable parcels because substantial negotiations may be required and the number of potential local investors may be significantly reduced.

The MANAGEMENT allowance refers to the time and effort required to manage THE INVESTMENT, not the property itself. The cost of managing THE PROPERTY is an operating expense that is reflected in the net income statement.

Example of Built-Up Method

Safe Rate	6.5%
Risk	2.0%
Illiquidity	1.5%
Management	0.5%
Ad Valorem Taxes	1.5%
Total Discount Rate	12.0%

The idea of the built-up method is to load the safe rate with rates that reflect the quality of the income stream. The higher the quality of the income stream, the lower the rate necessary to attract investors. Conversely, the poorer the quality, the higher the rate would be. In essence, the proper interest rate is that rate necessary to attract capital to the investment.

The preceding discussion has detailed how the net operating income is derived and also the various components of the Capitalization Rate.

IDENTIFY METHOD OF CAPITALIZATION TO USE

Capitalization is a process whereby an income stream of future payments is discounted to a figure that represents the present worth of the right to receive the income. The basic relationship between the income and value is expressed as follows:

Value = Net Operating Income/Capitalization Rate

METHODS OF CAPITALIZATION

DIRECT CAPITALIZATION

Direct Capitalization refers to the method used to convert net income from a property into an indication of value, using an Overall Rate extracted from the market. Direct Capitalization is a property residual technique, which is to say it does not consider the land separate from the building (as in the land and building residual techniques). This method capitalizes either the first year's income or the stabilized (averaged) income from several years, and the overall capitalization rate is derived directly from comparable properties that have sold and which represent similar investor expectations. Direct Capitalization is the most applicable method to use in Revaluation Projects. The Overall Rate is the ratio of NOI to present worth of the property. Overall rates are expressed as an annual percentage rate and are most effective when derived directly from market sales.

GIVEN -	Gross Annual Income	=	$30,000
	Vacancy/Rent Loss	=	5%
	Expenses	=	30%
	OVERALL RATE FROM MARKET	=	10%

Gross Annual Income	$30,000
Less Vacancy/Rent Loss	- $1,500
Less Expenses	- $8,550
Net Annual Income	$19,950
Divided by Overall Rate	.10
Total Present Value	$199,500

The AssessPro system utilizes the Direct Capitalization method to derive a value by Income Approach for certain properties.

The appraisal staff will also make use of Pro forma spreadsheets based on data from the **Commercial Data Consulting Report,** which use both the Direct Capitalization method and the Discounted Cash Flow Analysis, a discussion of which follows.

DISCOUNTED CASH FLOW ANALYSIS

Discounted Cash Flow Analysis is a form of yield capitalization and uses a year-by-year breakdown of a property's expected future net benefits deriving from the investment. These benefits are converted into an estimate of present value by discounting each future benefit at an appropriate yield rate. Several years' incomes and a reversion (the proceeds of a sale) are discounted at a discount rate taken from the expectations of typical investors regarding return *on* and return *of* invested capital from alternative investment types having similar risk.

GROSS INCOME MULTIPLIER

The gross income multiplier has been developed into an effective mass appraisal income tool. There are three types of Gross Income Multipliers that may be used by the appraisal staff:

Potential Gross Income Multiplier (PGIM, typically used in the analysis of Income-producing real estate)

Effective Gross Income Multiplier (EGIM, typically used in the analysis of Income-producing real estate, after consideration of vacancy and collection loss)

Gross Annual Rent Multiplier (GARM, used primarily with single family and condominium properties)

Since sales data is required to develop a gross income multiplier, care must be taken to use only qualified sales of COMPARABLE property types. The key to good values using gross income multiplier is the same as any other appraisal technique, and that is good data. Time spent qualifying the sales and determining the details of a commercial transaction is time well spent. The transaction may produce not only a useful income multiplier but also a useful sale comparable and data to derive a useful capitalization rate. Recent qualified, comparable sales and income data will be analyzed to determine the price at which properties comparable properties sell and the relationship between the typical sale price by the typical income, to obtain the gross income multiplier. This multiplier can then be applied to the rent being received or reasonably expected from the subject property to produce an estimate of the property value. Two examples follow:

Monthly Gross Income Multiplier example

Typical sale price for properties comparable to the subject property	$150,000
Typical gross monthly income for properties comparable to the subject parcel	$200
Gross Income Multiplier (GIM) (Sale/Income)	750
Subject parcel gross monthly income	$225
Estimated Value (GIM x Income)	$168,750

Annual Gross Income Multiplier example

Typical comparable sale price	$150,000
Typical comparable gross annual income	$2,400
Gross Income Multiplier (GIM)	62.5
Subject parcel gross annual income	$2,700
Estimated Value	$168,750

Care must be exercised in the use of the gross income multiplier. This method is only relevant where there is a high degree of comparability of properties sold in the market to the property being appraised. When there must a sufficient number of qualified sales of comparable rental properties in the subject neighborhood; a defensible multiplier can be determined.

COMMERCIAL DATA CONSULTING STUDY

As mentioned earlier in this chapter, the Real Property Appraisal Division of the Assessor's Office contracted the services of T. B. Harris, Jr. and Associates (a local appraisal firm) to conduct a review of market conditions pertaining to certain types of income-producing properties. The resulting **Commercial Data Consulting Study** provides a useful overview of various sectors of the non-residential real estate market, suggests classification of those properties based on age, amenities and location, and provides market-derived estimates for rent ranges, expense ratios and capitalization rates.

A summary page excerpted from the **Commercial Data Consulting Study (for 2011)** follows:

APARTMENTS:

Vacancies: 8-12%		Class A	Class B	Class C	Class D
Rental Ranges	1BR	$650-$850	$600-$750	$500-$650	$400-$500
	2BR	$750-$950	$700-$850	$600-$700	$450-$600
Operating Expense Ratios:		35-45%	40-50%	45-55%	50-60%
Overall Rate w/o reserves		7-8%	8-9%	8.5-10%	9-12%
Overall Rate with reserves		9.25%	9.25%	9.7%	10.5%
EGIM		8-9	7-8	5-7	4-6

OFFICES UNDER 75,000 SF:

Vacancies: 3-14%	Class A	Class B	Class C	Class D
Rental Ranges:	$17.00-$28.00	$10.00-$24.00	$10.00-$18.00	$8.00 - $15.00
Expense Ratios	20-32%	25-35%	25-35%	25-35%
Overall Rate w/o Reserves	8-9%	8.5-10.5%	8.5-11%	8.5-11%
Overall Rate with Reserves	7.5%	7.5%	8%	8.5%
EGIM	8.7	8.8	10	N/A

OFFICES OVER 75,000 SF:

Vacancies: 3-14%	Class A	Class B	Class C	Class D
Rental Ranges:	$12.00-$20.00	$12.00-$20.00	$10.00-$15.00	$10.00 - $12.00
Expense Ratios	35%	35%	35%	35%
Overall Rate w/o Reserves	7.5-10%	7.5-10%	7.5-10%	8-11%
Overall Rate with Reserves	7%	7%	7.5%	7.5%
EGIM	7.6	7	7	N/A

RETAIL	**Sales Price $/Sq. Ft.**	**Expense Ratio**	**OAR w/o Reserves**	**OAR with Reserves**	**Vacancies**
Department Store	$18-$50	N/A	N/A	N/A	5-15%
Regional Malls	$24-$341	15%	8.5%	7.75-8.75%	
Power Center N/A	$73-$245	5%	5.7-7.5%	8-9.5%	
Community Centers	$50-$333	15-30%	7%	8-9.5%	
Neighborhood Centers	$130-$160	15-30%	7.5%	8-9.5%	
Specialty Centers	$135-$395	15-30%	7.75%	8-10%	
Drug Stores	$188-$354	2%	8.5%	8.25%	
Convenience Stores	$25-$105	7.5-10%	7.5%	7.5-10%	
Auto Service Facilities	$173-$388	2%	8%	7-8%	
Auto Dealerships	$120-245	N/A	8%	7-8%	
Restaurants	$231-$425	5%	10%	8.5-10%	
Fast Food	$156-$420	5%	7.5%	7-9%	

INDUSTRIAL – WAREHOUSES UNDER 75,000 Sq. Ft.

Vacancies: 11-27%	Class A	Class B	Class C	Class D
Range in Sale Prices	$24-112	$24-112	$24-112	$24-112
Rental Range*	$3.50-5.00	$3.50-5.00	$3.50-5.00	$3.50-5.00
Expense Ratio	20-25%	20-25%	20-25%	20-25%
Overall Rate w/o reserves	7.2-15%	7.2-15%	7.2-15%	7.2-15%
Overall Rate with reserves	7.5%	7.5%	7.5%	7.5%
EGIM	N/A	N/A	N/A	N/A

*- Leases are assumed to be net.

INDUSTRIAL – WAREHOUSES OVER 75,000 Sq. Ft.

Vacancies: 10-25%	Class A	Class B	Class C	Class D
Range in Sale Prices	$13-57	$13-57	$13-57	$13-57
Rental Range*	$3.50-7.00	$3.50-7.00	$3.50-7.00	$3.50-7.00
Expense Ratio	15-20%	15-20%	15-20%	15-20%
Overall Rate w/o reserves	9-12%	9-12%	9-12%	9-12%
Overall Rate with reserves	9.5%	9.5%	9.5%	9.5%
EGIM	N/A	N/A	N/A	N/A

*- Leases are assumed to be net.

COLD STORAGE FACILITIES (All Classes)

Range in Sale Prices	$30-$80
Rental Range*	$3.50-$7.00
Expense Ratio	20-35%
Overall Rate w/o reserves	8.5 – 10.5%
Overall Rate with reserves	8-10%
EGIM	N/A

*- Leases are assumed to be net

SELF STORAGE FACILITIES (All Classes)

Range in Sale Prices	$35-$50
Rental Range*	$3.50-$5.00
Expense Ratio	25-35%
Overall Rate w/o reserves	8-10%
Overall Rate with reserves	7.5%
EGIM	N/A

*- Leases are assumed to be net

HOTELS AND MOTELS

Vacancies: 8-15%	Full Service	Limited Service	Economy
Overall Rates (with reserves as an expense)	6.5 - 14%	9 - 12%	8-12%
Gross Room Income Multiplier	N/A	1.88-3.14	N/A
Expense Ratio (includes reserves)	65 - 67%	58 - 67%	N/A
Replacement Reserves	5%	4%	4%

An example of a Pro forma spreadsheet based on data from the **Commercial Data Consulting Report,** using the Direct Capitalization and Discounted Cash Flow Analysis methods as well as the EGIM, is shown on the following page.

MECKLENBURG COUNTY ASSESSOR'S OFFICE
REAL PROPERTY APPRAISAL DIVISION

OFFICE VALUATION TEMPLATE

TAX MAP NO. **12345678**
PROJECT: **Tall Tower**
ADDRESS: **123 Prime St**

MENU			
CLASS OF PROJECT	A	DEFERRED MAINTENANCE	$0
VACANCY	7.0%	DCF? (Y=1 or N=0)	1
EXPENSE RATIO W/O RESERVES	26.0%	INCOME GROWTH RATE:	3%
CONSIDER RESERVES? (Y=1 or N=0)	0	EXPENSE GROWTH RATE:	3%
EXPENSE RATIO WITH RESERVES	27.1%	ADJUSTMENT FOR TERMINAL RATE:	0.30%
OVERALL RATE W/O RESERVES	9.10%	DISCOUNT RATE:	10.10%
RESERVES ADJUSTMENT	0.90%	EXPENSE OF RESALE:	3%
OVERALL RATE WITH RESERVES	8.20%	PGIM:	0
		EGIM:	8

INCOME:

AREA	QUALITY	LOCATION	TENANTS	SF	ANN. RENT /SF	ANNUAL RENT
				65,000	$18.00	$1,170,000
						$0
TOTALS/AVERAGES				65,000	$18.00	$1,170,000

MAKE NO ENTRIES BELOW THIS LINE

DIRECT CAPITALIZATION

POTENTIAL GROSS INCOME	$1,170,000	
VACANCY	81,900	
EFFECTIVE GROSS INCOME	$1,088,100	
EXPENSES	282,906	
NET OPERATING INCOME	$805,194	
OVERALL RATE	0.091	
INDICATED VALUE BEFORE DEDUCTS	$8,848,286	
LESS: DEFERRED MAINTENANCE	$0	
INDICATED VALUE	$8,848,286	
ADD: EXCESS LAND (IF APPLICABLE)		
TOTAL VALUE	$8,848,286	
SAY	**$8,850,000**	

MARKET DATA MULTIPLIER

PGIM: **$0**

EGIM: **$8,704,800**

TERMINAL CAP RATE:

Going In Rate:	9.10%
Adj. for Terminal Rate:	0.30%
Adjusted Terminal Rate:	9.40%

DISCOUNTED CASH FLOW ANALYSIS

YEAR	1	2	3	4	5	6
POTENTIAL GROSS INCOME	$1,170,000	$1,205,100	$1,241,253	$1,278,491	$1,316,845	$1,356,351
VACANCY	81,900	84,357	86,888	89,494	92,179	94,945
EFFECTIVE GROSS INCOME	$1,088,100	$1,120,743	$1,154,365	$1,188,996	$1,224,666	$1,261,406
EXPENSES	282,906	300,135	309,139	318,413	327,966	337,805
NET OPERATING INCOME	$805,194	$820,608	$845,226	$870,583	$896,701	$923,602
PW FACTOR:	0.90827	0.82495	0.74927	0.68054	0.61811	
PW OF CASH FLOW:	$731,330	$676,957	$633,302	$592,463	$554,257	

TOTAL PW CASH FLOWS:	$3,188,308	REVERSION:	$9,825,549
PRESENT WORTH OF REVERSION:	5,891,040	LESS: RESALE EXPENSE	294,766
INDICATED VALUE BY DCF:	$9,079,348	NET REVERSION:	$9,530,782
LESS: DEFERRED MAINTENANCE	0		
INDICATED VALUE:	$9,079,348	**NOTES:**	
ADD: EXCESS LAND (IF APPLICABLE)	0		
TOTAL VALUE	$9,079,348		
SAY	**$9,080,000**		

THE INCOME APPROACH IN ASSESSPRO

What follows is a description of the mechanics of the mass appraisal methodology for the Income Approach in the AssessPro CAMA system.

INCOME APPROACH

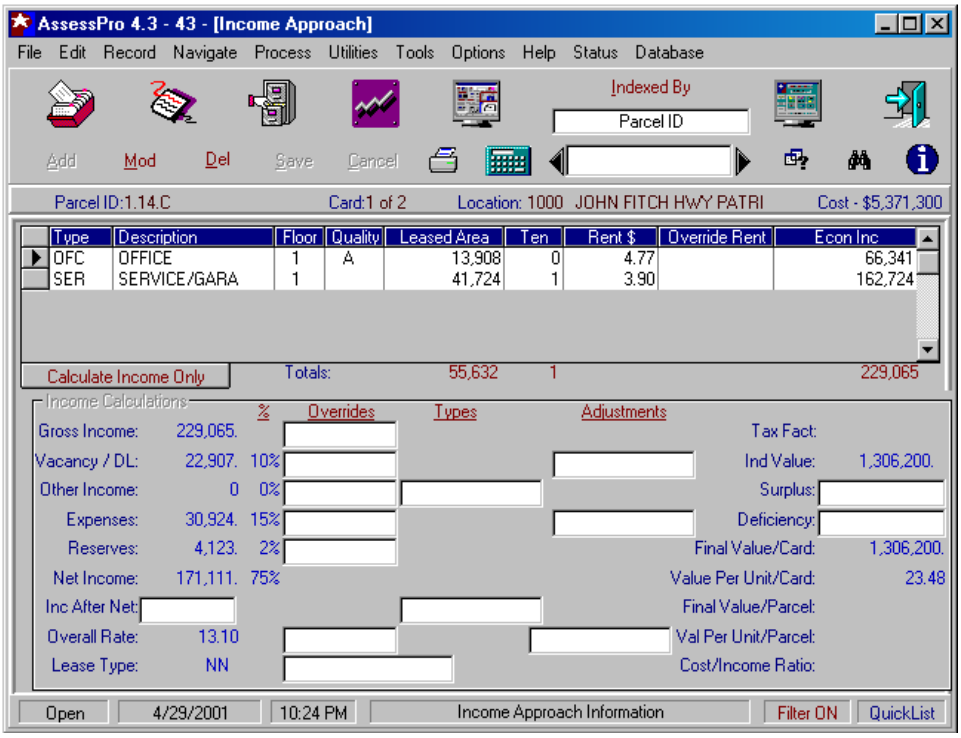
The Income Approach data entry screen is selected as one of the Parcel Data Entry list box options. The Income Approach is table-driven from the Appraisal System through user-defined parameters UNLESS the user overrides them. The system utilizes a direct capitalization process to determine an indicated value by the Income Approach.

Since it is table-driven, individual data entry is not required to generate values by the Income Approach. Making changes to the property record card in an individual parcel will modify the values indicated by the generation of the Income Approach. The value indicated by the Income Approach is also affected by other changes that may be made to the property record. Consequently, it is essential that a parcel be calculated in the Appraisal System before the Calculate Income function is used in the Income Approach. To generate the Income Approach for a large group of properties, calculate the Municipality first. At the initial generation of the Income Approach, the system will check if the Building Type has been associated to a default Alternate Type and/or a default Lease Type, which are set in the Building Pricing calculation table. If it has been associated, an Income Approach will be generated.

The number of units of finished area based upon the sketch and/or the room and bedroom counts from the Residential Breakdown in the Rooms/Breakdown screen and the information from the Sub Area Detail screen are transferred to the Income Approach section of the property record card. Separate income lines are created for the different sub area types, floor levels, alternate types, and/or room counts. The income is then calculated using the Income - Economic Rent calculation tables. A gross annual income is generated and a vacancy/credit loss percentage, expense percentage and reserve for replacement percentage is deducted based upon the Lease Type for the record card's building code. This will derive a net operating income that is capitalized into an indicated value by the overall rate assigned to the lease type for the building code. Entry in the Quality field is not required, but may be entered in the Sub Area Detail screen if necessary. There are no adjustment factors assumed for vacancy, expenses, or overall rate.

The following steps should be followed when utilizing the Income Approach:

- When a new sketch is entered or new sub-area detail information is recorded the user must first recalculate the entire card THEN recalculate the Income Approach.
- If changes are made to the sketch, sub-area detail or building type, and the card is not calculated using the calculator button on the record card, then the Income Approach will not change even if calculated.
- The user must match up the tenant allocation. Tenants not specifically assigned in the Sub Area Detail or the Rooms/Breakdown are assumed to be in the remaining, finished building area determined by the (LIV) units in the Building Description.



GROSS INCOME:

Total income derived from leased area(s) of building – calculated. This is the sum of the "Econ Inc column.

Text Type: Number
Text Length: 12

VACANCY / DL:

Taken from table "lease type": vacancy % times gross income.

Text Type: Number
Text Length: 12

OTHER INCOME:

Displays the revenue made from other types of income such as laundry, parking, or vending. The list for the types of revenue is from the Other Income descriptive table.

EXPENSES:

Taken from table "lease type": expenses % x (gross income - vacancy).

Text Type: Number
Text Length: 12

RESERVES:

Taken from table "lease type": reserve % x (gross income – vacancy).

Text Type: Number
Text Length: 12

NET INCOME:

Final total of gross income - vacancy - expenses – reserves.

Text Type: Number
Text Length: 12

INC AFTER NET

This allows the user to enter an income amount to add after the final net income.

OVERALL RATE:

Comes from the lease type.

Text Type: Number
Text Length: 8

LEASE TYPE:

Select the type of lease from the list.

Related Table: Lease Types Descriptive Table

IND VALUE:

Assessed Value derived from the income approach.

SURPLUS:

Entered by user - will be added to Indicated value.

Text Type: Number
Text Length: 12

DEFICIENCY:

Entered by user - will be subtracted from indicated value.

Text Type: Number
Text Length: 12

FINAL VALUE/CARD:

Calculated (indicated value - deficiency + surplus).

Text Type: Number
Text Length: 12

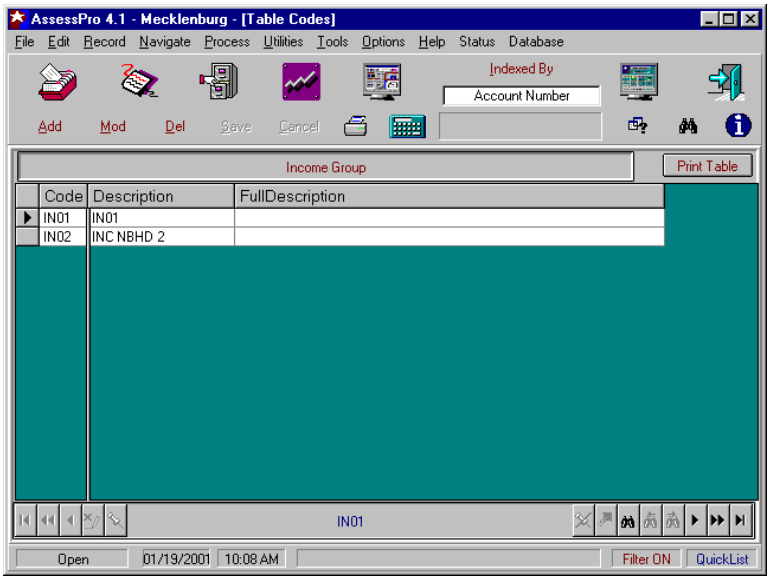
VALUE PER UNIT/CARD:

Calculated (final indicated value / total finished area).

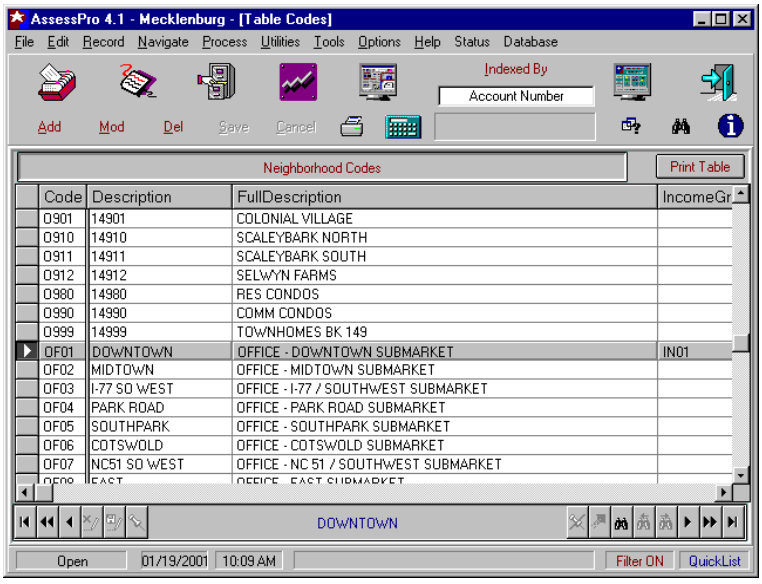
Text Type: Number

INCOME BY NEIGHBORHOOD

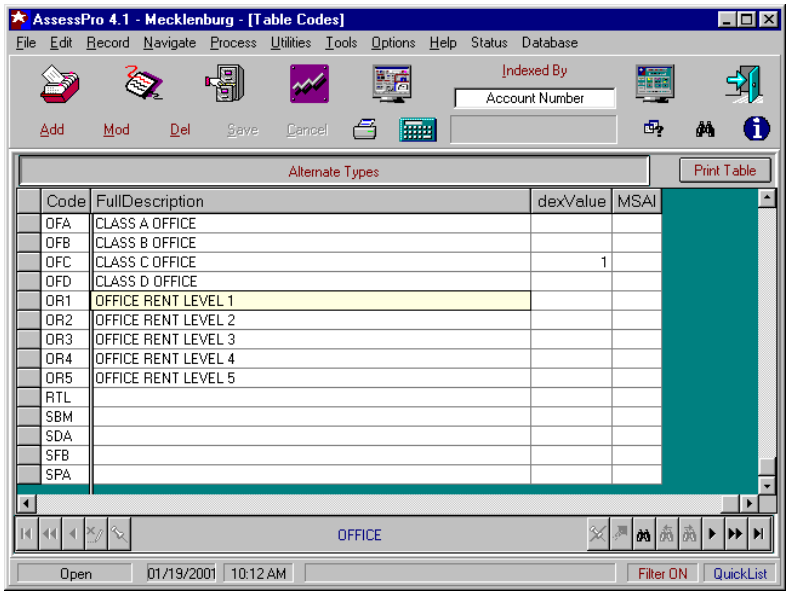
1. Create the income groups needed in Descriptive Tables – Income Group. These groups can be thought of as income neighborhoods and should not be initially confused with land neighborhoods.



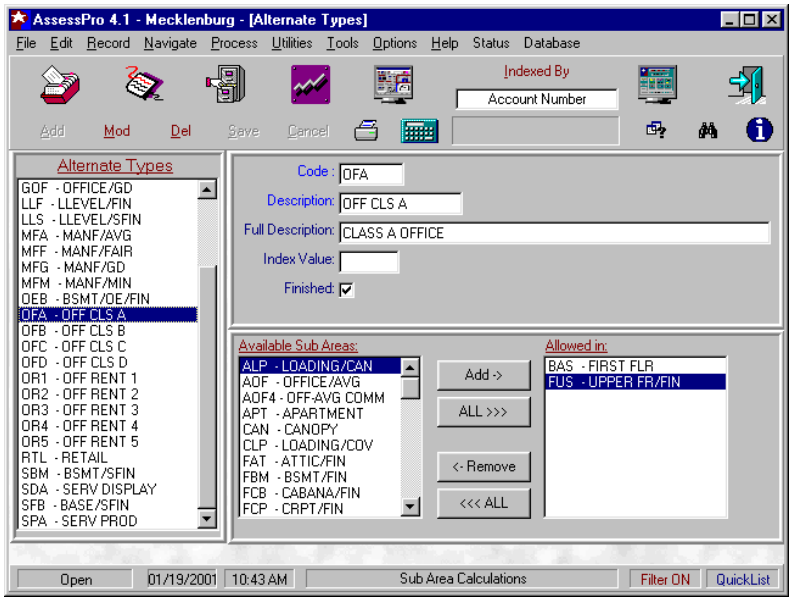
2. Go to Descriptive Tables – Neighborhood Codes and enter the Income Group associated with Neighborhood Code into the column labeled IncomeGroup. This is a process involving modifying an existing Neighborhood Code row.



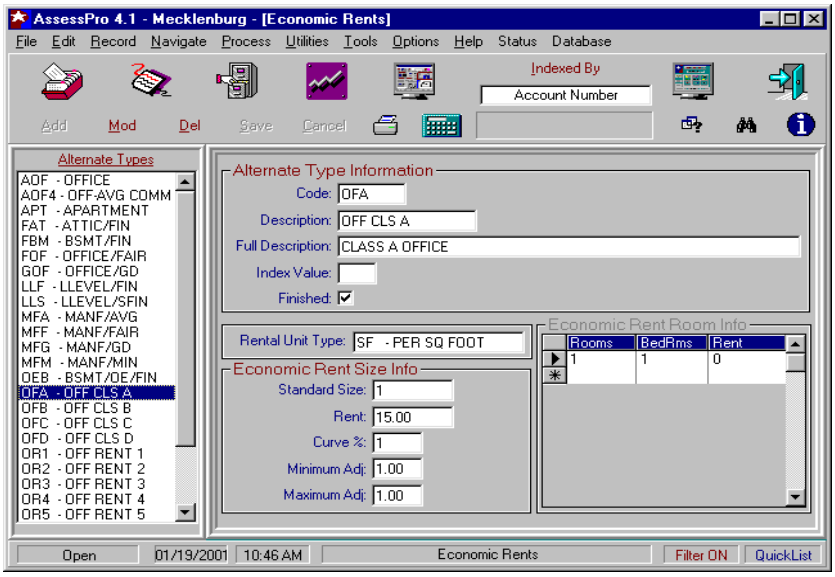
3. Go to Descriptive Tables – Alternate Types and create the new income space and rental types. As an example, the user might want to create an alternate space type for class A-D office space. The codes might be OFA, OFB, OFC and OFD. The second step is to create the potential office rent range seen in analysis. As an example, suppose office rents range from a low of $10 to a high of $40 with a desired interval of $5. A total of 7 intervals are needed in order to create office alternate types of OR1 – OR5.

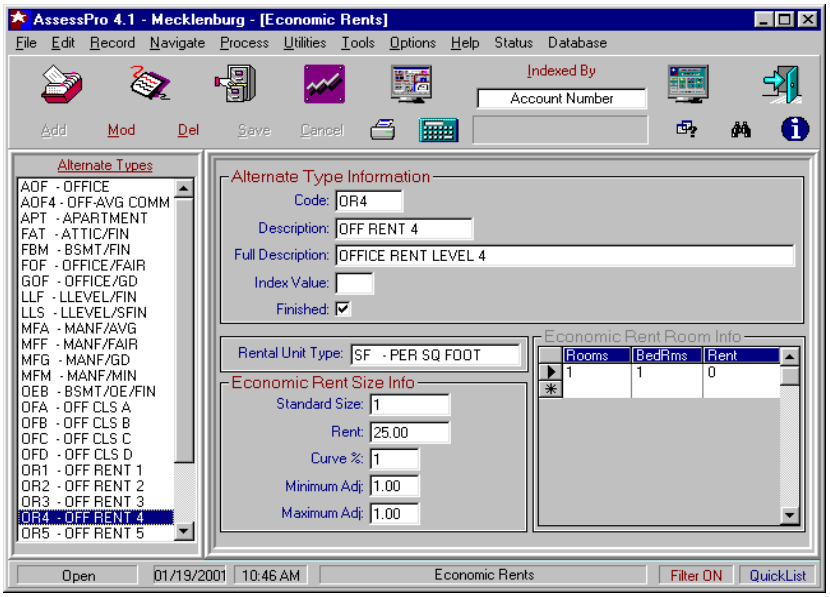


4. Go to Calculation Tables – Alternate Types and associate the alternate **space** types created with a sub area. As an example, OFA-D was created. Each needs to be associated with finished sketched floor areas (FFL, BAS, SFL, etc.).

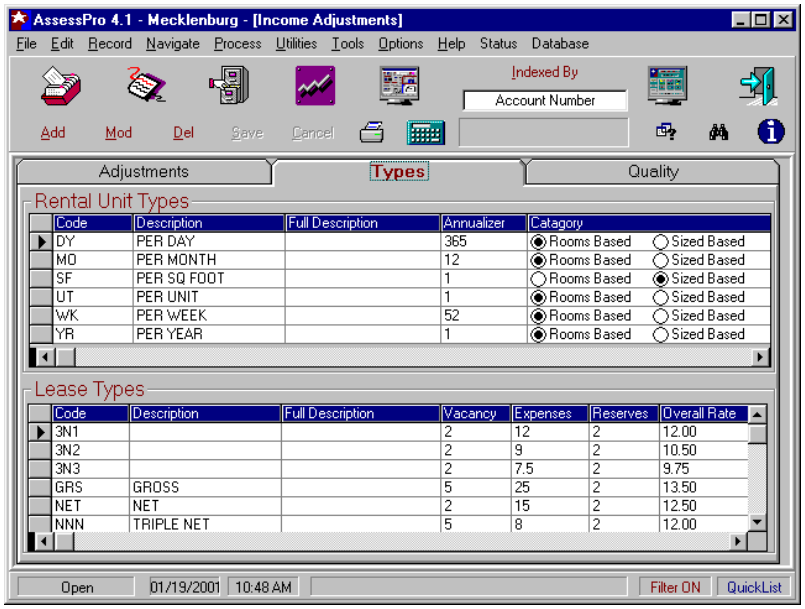


5. Go to Calculation Tables Income – Economic Rents and build economic rent schedules for each space and rental type. The space type rent is built as a default if no income neighborhood is chosen. Building space rent schedules will still allow the appraiser rent range flexibility in general. Make sure each type is checked as finished.

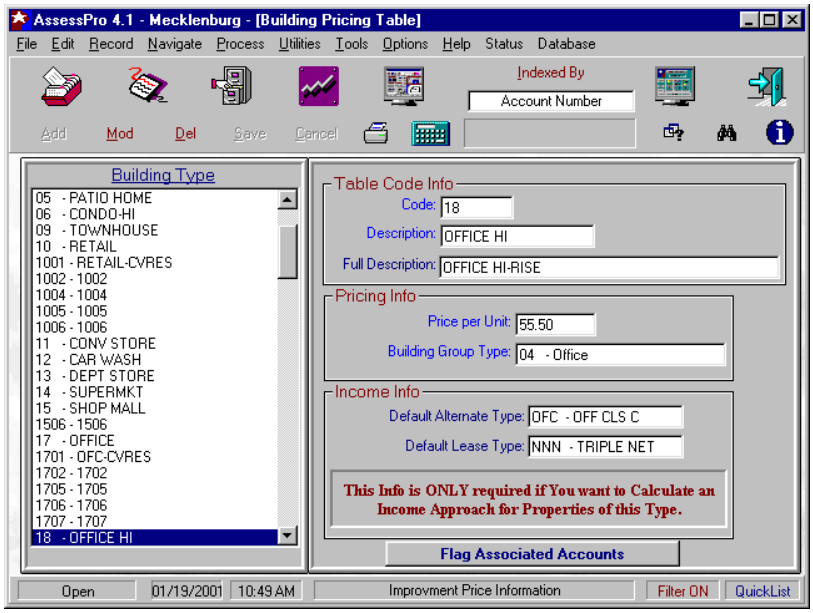




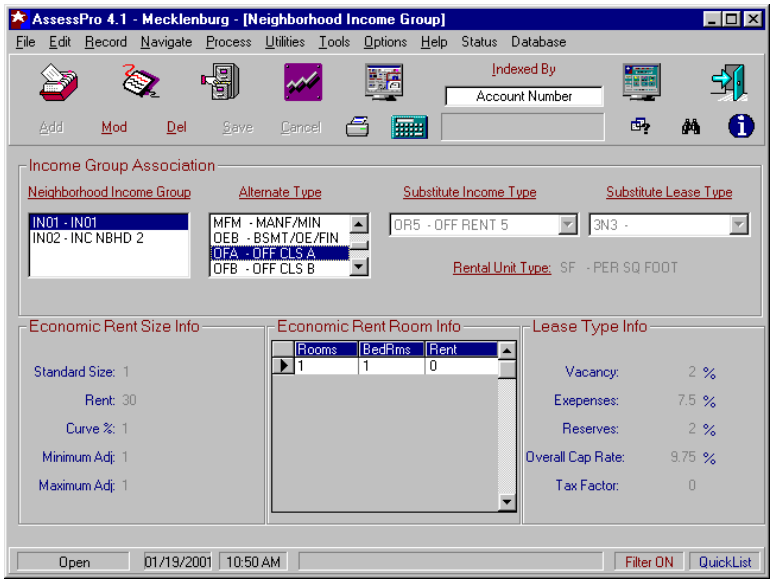
6. Go to Calculation Tables Income – Types/Adjustments and to the Types tab to build as many lease situations as required. Carefully code them so as to easily ID the structure when associating the lease to the rental type.



7. Go to the Calculation Tables – Building Pricing Table and make sure that each building to be associated with the income approach has a Default Alternate Type and Default Lease Type. If no income group is associated with the parcel's neighborhood code, the defaults will be used in the income calculation.



8. Go to the Calculation Tables Income – Neighborhood Income Group and associate an income group with an alternate **space** type and then put the alternate rental type in the Substitute Income Type field. Lastly, select Substitute Lease Type.



The valuation process is as follows:

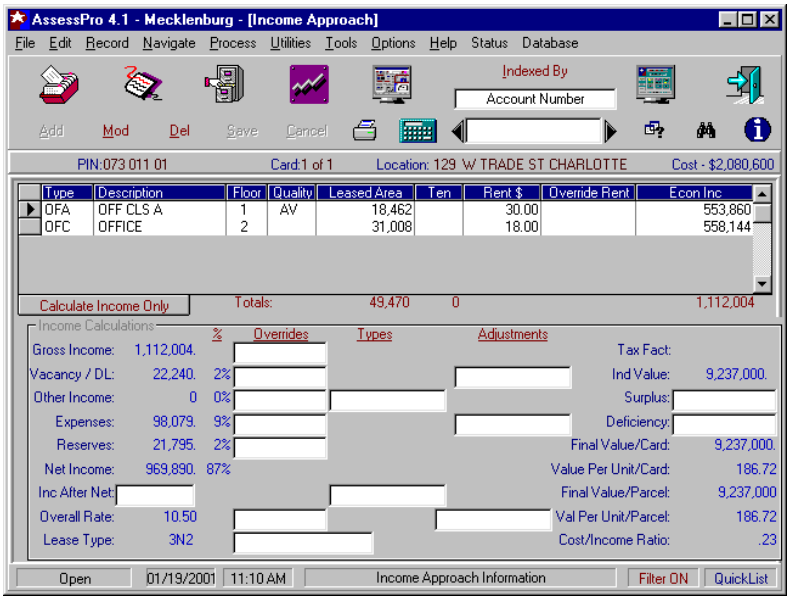
If no income group has been assigned to the land neighborhood the parcel is located in, the default income schedule assigned to the **building type** will prevail. The user can go to the Sub Area Detail of the parcel and select one of the alternate space areas to adjust income if desired. In the example used above, the rent associated with Sub Area Codes OFA, OFB or OFC will be the substituted rent.

If an income group has been assigned to the neighborhood the parcel is located in, the rental determination is set in the Income Neighborhood Group. OFA-D categories are redirected to OR1-5 categories rather than to defaults.

It is important to remember that the default alternate area is always set in the Building Pricing table. To redirect the pricing and/or rent to OFA, B or D, the user must go to the Sub Area Detail screen and set the sketched sub area to the desired alternate type.

Further adjustments can be made to the income calculation by building adjustment-factoring entries in the Income-Adjustment/Types table (good, poor, etc.) to affect the vacancy, expense, or cap rate; by adding other income add the vacancy adjustment or after the NOI calculation; by overriding any of the fields with an entry under the override column; or by adding lump sum value surpluses and deficiencies to the final answer.

The user can also adjust each income line individually. The quality of the rent is used to factor the selected economic rent per unit and the override allows the user to place an override rent per unit selected.



VALUATION OF SPECIAL PROPERTIES

MOBILE HOME PARKS

Mobile home parks lend themselves well to classification by inside access roads, density, facilities and general appearance as follows:

BELOW AVERAGE	Narrow, unpaved roads or broken pavement High density (Older Park) No or Deteriorated recreation hall and/or laundry No curbing, no street lights Many mobile homes without skirts Little effort to maintain attractive appearance
AVERAGE	Average location and design Medium density (10-15 sites per acre) Adequate laundry and recreation hall Lawns trimmed, good general appearance
GOOD	Good location and design Streets wide enough for cars to pass Curbing and sidewalks Streets with streetlights and street signs Good recreation hall, shuffleboard, swimming pool Attractive entrance and good general appearance (Lawns cut and edged, bushes trimmed) Density around 8 sites per acre
VERY GOOD	Very Good location and design Attractive entrance Wide paved and curbed streets Street lights and street signs Very Good recreation hall facilities Swimming pool, shuffle board, and other leisure time equipment Management sponsored activities Manicured lawns and trees Maximum density of 8 sites per acre

Average rental rate, vacancy rates and operating expenses also correlate highly within these classifications. Therefore, income data need only be gathered from a few mobile home parks to arrive at a reliable income value per space as follows:

INCOME VALUATION OF A MOBILE HOME PARK

In the following example, assume the Mobile Home Park in question to be of Average quality.

Gross Monthly rent	Gross Potential Income
$100/space x 12	$1,200.00 / space
Less:	
Vacancy rate as a % of gross @ 10%	120.00
Adjusted Gross Income / Space	$1,080.00 / space
Less:	
Operating Expenses as a % of AGI @ 25%	270.00
Net Operating Income / Space	$810.00 / space
Capitalized at the Overall Rate (12%)	$6,750.00 / space

CONTRIBUTORY VALUE OF MOBILE HOME PARK FACILITIES

The methodology outlined above capitalizes the net operating income (NOI) from space rent (after deducting vacancy and expenses from the Gross Potential Income) into an estimate of the Mobile Home Park Value per space. However, since some portion of the monthly rent is attributable to the land, a reasonable estimate of the contributory value of the Mobile Home Park Land is then deducted from the capitalized value, resulting in a Contributory Value of the Mobile Home Park Facilities per space. A similar methodology was utilized in the 1998 and 2003 Mecklenburg County Revaluations. An example of this approach follows:

Capitalized at the Overall Rate (12%)	$6,750.00 / space
Less:	
Estimated Contribution of Land @ 25%	$1,687.50
Net Estimate of Value of Mobile Home Park Facilities	$5,062.50 / space
Value of Mobile Home Park Facilities (rounded)	$5,000.00 / space

The final step in the process would be to multiply the number of spaces in the MH park times the value per space:

12 spaces X $5,000 / space = $60,000 - Contributory Value of the Mobile Home Park Facilities

Valuation models for each MH park classification have been entered in AssessPro and will be utilized to estimate values in the manner illustrated above. In general, as classification quality increases there is also an increase in the rent per space, along with a decreasing overall capitalization rate.

MOBILE HOMES AS PERSONAL PROPERTY

In its "Definitions" section (§105-273), the Machinery Act of North Carolina describes the distinction between classifying a mobile home (manufactured home) as real property and as tangible personal property.

"(13) Real property, real estate, or land . . .

d. A manufactured home as defined in G.S. 143-143.9(6), unless it is considered tangible personal property for failure to meet all of the following requirements:

1. It is a residential structure.
2. It has the moving hitch, wheels, and axles removed.
3. It is placed upon a permanent foundation either on land owned by the owner of the manufactured home or on land in which the owner of the manufactured home has a leasehold interest pursuant to a lease with a primary term of at least 20 years and the lease expressly provides for disposition of the manufactured home upon termination of the lease."

In other words, a manufactured home must meet all the requirements above in order to be classified as real property. If it does not, it must be classified as tangible personal property.

A complete Schedule of Values for single-wide and double-wide mobile homes used as personal property (wheel, axle and trailer tongue still attached) is available in the Mecklenburg County Personal Property Division. The valuation information is contained in the North Carolina Vehicle Valuation Manual (1993-2010 Model Years) compiled by TEC Data Systems, Inc.

For valuation purposes, some personal property mobile homes are situated on leased land.

A standard-sized model of single-wide manufactured construction consists of 576 square feet (12' x 48'), valued at $31.50 per square foot. The straight-line depreciation rate on these models is 9% per year. The chart below from the TEC Manual shows the cost new for the most typical-sized manufactured mobile home models:

SIZE (sf)	COST/Square Foot	Depreciation (all models)
576	$31.50	9% per year
600	$31.20	
624	$31.20	
696	$30.77	
720	$30.58	
840	$29.81	
864	$29.73	

Source: *North Carolina Vehicle Valuation Manual (1993-2010 Model Years)*

GOLF COURSES

Price includes both Hard and Soft costs. Market data from the analysis of golf courses that have experienced multiple sales suggests that there has been an approximately 30% loss of value since 1998, the high point of the golf course market. For this reason, replacement cost estimates have been adjusted to an approximate 70% net value, with values rounded.

GOLF GREENS (SFYI Code 32) (0% DEPRECIATION)

Class I – Championship:

Hard costs - $ 420,800 per hole
Soft costs - $ 148,000 per hole
Total costs - $ 568,800 per hole

Market adjusted costs (70%) - $ 398,160 per hole $ 398,000 (rounded)

Typical Features: 160 to 200 acres
Bunkered greens and fairways
Large trees, greens and fairways
Driving range
Name architect
Automatic sprinklers for greens and fairways
Paved cart paths

Class II – Semi Private Club:

Hard costs - $ 226,300 per hole
Soft costs - $ 80,000 per hole
Total costs - $ 306,300 per hole

Market adjusted costs (70%) - $ 214,410 per hole $ 214,000 (rounded)

Typical Features: 120 to 160 acres
6,400 yards to 6,700 yards
Bunkered at most greens
Some trees
Driving range
Sprinklers manual or automatic
Paved cart paths

Class III – Semi – Private and Municipal Clubs:

Hard costs - $ 123,800 per hole
Soft costs - $ 35,000 per hole
Total costs - $ 158,800 per hole

Market adjusted costs (70%) - $ 111,160 $ 111,000 (rounded)

Typical Features: 6,000 to 6,400 yards
Few bunkers
Few trees
Greens sprinkled
Paved cart paths

Class IV – Minimum Quality:

Hard costs -	$ 83,500 per hole
Soft costs -	$ 19,000 per hole
Total costs -	$ 102,500 per hole

Market adjusted costs (70%) - $ 71,750 per hole $ 72,000 (rounded)

Source: *Marshall & Swift Valuation Service*

The following schedule includes other types of golf-related improvements and represents market adjusted replacement costs.

Mini Golf (SFYI Code 85) - $5,600 per hole

Typical features: 18 holes, 400 - 10,000 square feet, ¼ to ½ acre excluding booth, snack bars and parking lot but including course plumbing and lighting. Professionally designed and installed.

Driving Range (SFYI Code A7) - $5,800 per station

Typical features: Lighted, separate stations, fenced, irrigated. Not including separate putting or pitching greens, buildings or equipment.

Par 3 (SFYI Code GCP3) - $ 41,300 per hole

Typical features: 9 holes; 15 – 20 acres; 1,400 yards long

Pitch & Putt (SFYI Code GCPP) - $32,500 per hole

Typical features: 9 holes; 10 to 15 acres; 1000 yards long

Source: *Marshall & Swift Valuation Service*

PRESENT USE VALUE

The appraisal of Present Use Value properties is explained in the *2011Present Use Value Schedules*, which is submitted and adopted as a separate document.

APPRAISAL OF CEMETERIES FOR TAX PURPOSES

In appraising cemeteries the first concern is determining the total number of acres in the ownership. This total should appear in the legal description and in the total acreage of the landlines. In other words just because lots are sold off and become exempt, you still need to account for all the acreage within that tract.

Cemeteries are generally divided into four categories:

1. Developed acreage
2. Undeveloped acreage (future gravesites)
3. Waste land acreage (roads, gullies, etc.)
4. Deeded acreage (Exempt occupied lots)

These four categories should always total to the original acreage in the ownership or legal description.

Definitions:

DEVELOPED ACREAGE - Land prepared for immediate use of cemetery plots. This is generally two to five acres depending on the sale record of the cemetery. The acreage would generally remain the same because as soon as lots are sold they prepare the undeveloped acreage. The cost to prepare the land increases the market value of the developed acreage, generally from $4,000 to $10,000 per acre.

UNDEVELOPED ACREAGE - That land in its natural state and appraised comparable to surrounding land with the same zoning. When making your annual adjustments for deeded lots, adjust this acreage down and the deeded acreage up. By doing this you are assuming that developed acreage will remain the same simply because they have to keep developed acreage available for immediate use.

WASTE LAND ACREAGE - That land not plotted or surveyed for graves due to it being a road, gully or building site. The waste land should be appraised comparable to surrounding waste lands and remain the same size and acreage unless a new survey is made adding roads or they have filled gullies and areas that can be utilized at a later date.

DEEDED ACREAGE - That acreage sold off into plots to individuals and recorded in the Registrar of Deeds. Plots sold on contract are not exempt until paid and recorded. Generally a well-designed cemetery will get 900 to 1,100 graves per acre.

The owner of the cemetery should verify the number of gravesites planned for the cemetery. Take the total graves and divide by the total usable acreage to determine the average graves per acre. If the information is not available, use approximately 1,000 graves per acre. Put this in the note lines of the appraisal card. Each year you can make your adjustments when the owner sends the number of graves sold and recorded. Example: Sold 625 graves reduces the number of undeveloped acreage by .625 acres or .63 acres and increases the deeded acres by .625 or .63 acres.

Private cemeteries are income producing with a profit. To establish market value the appraiser must consider those factors that are involved in purchasing this type of property:

(Developed) 1. How many grave sites are available for sale.
2. How many grave sites sell per year (absorption rate).
(Undeveloped) 3. How much usable land is available that has not been surveyed and landscaped.

Once these facts have been obtained the appraiser can estimate market value and the assessor can determine how much of the cemetery is exempt. Typical ratios would be 900 to 1,000 sites per acre with 2 to 5 acres surveyed and landscaped for sale. The developed acreage should be appraised higher per acre due to the cost of surveying, landscaping and permits. The absorption rate can be determined by the age of the development divided into the number of deeded lots. Cemeteries with more graves per acre are worth more, therefore an added value per gravesite is accounted for in the extra feature column. The gravesites that are undeveloped would not have the same value as the prepared and available, therefore the value is reduced

based upon the absorption rate. The deeded gravesites are exempt; therefore for every 1,000 graves deeded, one acre of land is exempt. When the owners of the cemetery report the deeded lots each year, the assessed value is adjusted. Make sure the total acreage stays the same only adjusted by use.

STATISTICS AND THE APPRAISAL PROCESS

PREFACE

Like many of the technical aspects of appraising, such as income valuation, an appraiser must work with and use statistics to gain an understanding of the property data. The point is that just because one is not familiar with these tools, there should be no hesitation in trying a few simple ones as the thereof will result in seeking out new and better tools. In Chapter 13 there will be a discussion of statistical analysis at its most sophisticated application to mass appraisal in the form of Multiple Regression Analysis (MRA).

STATISTICS AND THE APPRAISAL PROCESS

INTRODUCTION

Statistics offer a way for the appraiser to qualify many of the heretofore qualitative decisions which he has been forced to use in assigning values. In the process, he can learn more about how the data he uses behaves as well as how it relates to the property valuation at fair market.

A statistical measure or "statistic" is a tool that help the appraiser better describe the characteristics of a set of data, such as the relationship of sale price to appraised value.

While useful, a far more technical and comprehensive definition is appropriate rather than the more simplistic one given above, namely, “statistics is the theory and method of analyzing quantitative data obtained from samples of observations in order to study and compare sources of variance of phenomena, to help make decisions to accept or reject hypothesized relations between the phenomena, and to aid in making reliable inferences from empirical observation.” The preceding, from FOUNDATIONS OF BEHAVIORAL RESEARCH by Fred N. Kerlinger, states very well what statistics are, their usefulness, and implications for our work. His book is highly recommended to all who wish to gain an understanding of many statistical tools and the requisite knowledge of the "scientific method" of constructing cases for analysis. A somewhat less advanced text for the beginner is AN INTRODUCTION TO BUSINESS AND ECONOMIC STATISTICS by John R. Stockton.

It is not the intent here to try and present a programmed text to teach statistics but to indicate which measures are useful and where and what they tell the property appraiser about his values.

STATISTICS AND THE APPRAISAL PROCESS

Sales offer the only real set of data that can be established as indicating market value for properties. Appraisals that are done to supplement sales as parcels to which one may relate for purposes of comparison are merely attempts to predict what the sales price would be should that parcel actually sell. It is our belief that surrogates for actual sales are needed only when parcels (for a class) show a statistically insignificant number of sales.

Particularly for single-family residential properties sales are usually always available and are in most cases legitimate arm's length transactions.

The most frequently asked question is usually "Where am I in relation to market?" There are ways of describing this relationship; each of which will help you understand "where" you are in relation to the market.

Level of assessment in relation to market is one part of the answer. It is usually expressed as a ratio of appraised values to sale values. Common measures of this ratio, overall, for a county are called "MEANS", "MEASURES OF CENTRAL TENDENCY", or "AVERAGE".

SIMPLE OR UNWEIGHTED MEAN

This measure is found by dividing the sum of all individual sales by the number of sales. That is, given the following hypothetical list of sales, compute the means:

OBSERVATION NUMBER	SALEPRICE	APPRAISED VALUE	SALES RATIO
1	$22,600.	$21,500.	95 %
2	31,000.	28,600.	92
3	37,800.	34,000.	90
4	38,400.	33,000.	86
5	34,300.	29,500.	86
6	20,000.	16,000.	80
7	13,000.	9,800.	75
8	18,700.	13,500.	72
9	26,900.	17,200.	64
10	40,800.	24,500.	60
	$283,500.	$227,600.	800 %

Mean Sale Ratio = 800/10 = 80%.

Mean Appraised Value = $227600/10 = $22,760.

Mean Sales Price = $283500/10 = $28,350.

As you can see, there are several "MEANS" which may be computed; each of which is an expression of central tendency.

There is another type of mean called a WEIGHTED MEAN, which reflects the impact of the dollar magnitude of the values in the calculation of the mean. It is obtained by dividing the total of all appraised (or assessed) values by the total of all sales prices. For example:

$227,600/$283,500 = 8.3%

or in the previous example:

TOTAL ASSESSED VALUE/TOTAL SALES PRICE = weighted mean

This measure is affected by large values that have a proportionately greater impact on the ratio than smaller values. As a general rule, this measure is, therefore, somewhat less useful for sales ratio work than the unweighted mean.

A highly useful statistic is the MEDIAN. It is a measure that is least influenced by extreme values as it is based upon position rather than on level. That is, it is the value halfway from either end of a list of values when the list is arrayed in ascending (or descending) order. If the list contains an odd number of sales then the median is the middle value in the list. However, if there are even numbers of sales in the list then it is the average of the two values on either side of the theoretical mid point in the list. Using our example it is:

MEDIAN = (TOTAL NUMBER OF SALES + 1) / 2 = (10 + 1) / 2 = 5.5th item in the list

That is in our list:	Sales	Sales Ratio
	1	95%
	2	92
	3	90
	4	86
	5	86
Median 5.5 Sales---------->		
	6	80
	7	75
	8	72
	9	64
	10	60

The median is, therefore, halfway between the ratio 86 and 80 or:

MEDIAN = (86 + 80) / 2 = 166 / 2 = 83%

This statistic is generally not usable in more advanced mathematical manipulations; however, it is useful because it does enter into the total concept of data and is useful in judging uniformity and level of assessment. (Note: you may also calculate a median sales value as well as a median appraised value.)

MODE

The mode is a measure of central tendency that is easy to understand. It is the value in the set of observations that occurs most frequently. In our example, the mode of sales ratios would be 86% (occurs 2 times).

MEASURES OF VARIABILITY

A classic example of reliance on the use of the mean only as a method of description may be rather graphically illustrated by the following:

If you were fired upon one time and were missed by 100 yards and were fired upon a second time and were hit, you could conclude that you were missed by an average of 50 yards.

The point is, the mean does not tell the whole story about the data. Other tools are needed to better describe the data. These tools are measures of how much you miss the mean (in general) or in more technical terms, measures of dispersion.

RANGE

The range is simply the lowest and highest value in your set of observations subtracted from one another; although it may be reported as the minimum and maximum values themselves. In our example, you could say the range (for the sales ratios) is:

35% or from 60% to 95%

As a general statement it is not too useful in analysis due to its obvious dependence on extreme values.

MEAN DEVIATION & MEDIAN DEVIATION

This measure is the average of the difference between the mean (or median) and the individual observations.

MD = [d] / N or [x] / N

That is, the mean or median deviation is the sum of the absolute value of the differences between the mean (or median) and each observation divided by the number of observations. (Absolute value means the signs are ignored, that is assumed to be positive, when accumulating [x] or [d].)

For our example:

SALES RATIO	-	MEAN	=	[x] ([d] is used for the median)
95	-	80	=	15
92	-	80	=	12
90	-	80	=	10
86	-	80	=	6
86	-	80	=	6
80	-	80	=	0
75	-	80	=	5
72	-	80	=	8
64	-	80	=	16
60	-	80	=	20

Hence: MD = 98 / 10 = 9.8%

This ratio expresses the average amount by which the data varies from the mean (or median) in a particular set of data. It is influenced by extremes as is the mean and even when computed about the median, it is likewise influenced. It also is not useful in making further statistical analysis of the data.

STANDARD DEVIATION

To overcome the handicaps of the mean deviation, the standard deviation is used. It is a numerical measure of the degree of dispersion, variability, or non-homogeneity of the data to which it is applied.

In calculation, it is similar to the average deviation but differs in its method of averaging differences from the mean. It does this by squaring each difference and eventually summing all squared differences averaging them and taking the square root thereof giving an "average deviation" from the mean.

In practice it is quite easy to compute using a handy "working formula" to make the task easier. First the formal formula:

STANDARD DEVIATION = $\sqrt{\frac{\sum(X-U)^2}{N-1}}$

$$\sqrt{\frac{\text{Sum of the individual differences squared}}{\text{number of observations minus 1}}}$$

In our example, using sales ratios it would be:

Observation	X	(X-u)	$(X-u)^2$
1	95%	15	225
2	92	12	144
3	90	10	100
4	86	6	36
5	86	6	36
6	80	0	0
7	75	5	25
8	72	8	64
9	64	16	256
10	60	20	400

X = 800% $(X-u)^2 = 1286$

Arithmetic Mean (u) Sales Ratio = 800 / 10 = 80%

Hence: SD = $\sqrt{\frac{\sum(X-u)^2}{N-1}}$

= $\sqrt{\frac{1286}{10-1}}$

= $\sqrt{142.89}$

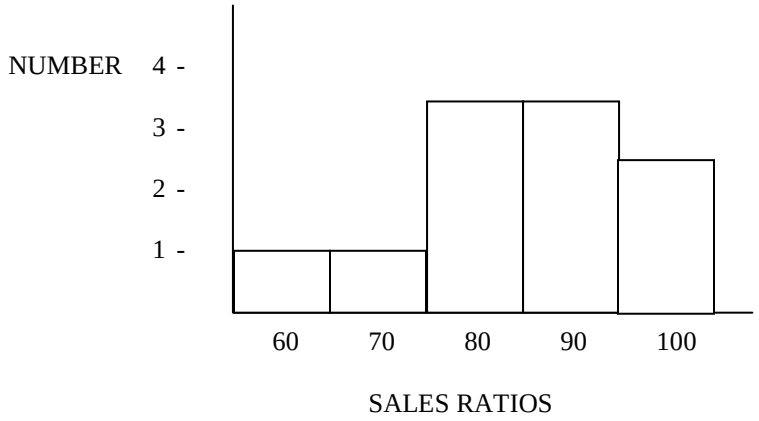
= 11.95

The standard deviation is useful in that it is logical mathematically and may hence be used satisfactorily in further calculations. This is its outstanding superiority over the other measures of dispersion.

FREQUENCY DISTRIBUTIONS

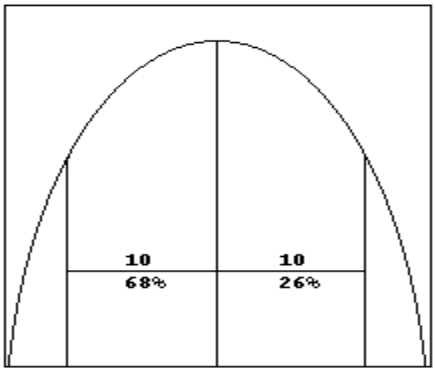
All frequency distributions are an arrangement of numerical data according to size or magnitude. Distributions are normally presented as tables or graphs. The following table and graph is taken from our example:

SALES RATIO CLASS INTERVAL	NUMBER OF OCCURENCES
91 - 100	2
81 - 90	3
71 - 80	3
61 - 70	1
51 - 60	1
	10



When describing our observations, we really are trying to use numbers [mean, median, mode, standard deviation, average deviation, etc.] to give a mental picture of what our frequency distribution would look like if we drew it on a graph.

A particularly shaped distribution is the one from which we depart when trying to visualize the shape of a distribution when given such statistics as the mean, median and mode for information. The reference point is what is called the "NORMAL DISTRIBUTION". It has some particular features by which it is characterized and referred to. This is what it looks like:



"Normal" Distribution Showing the Percentage of the Area Included Within One Standard Deviation Measured Both Plus and Minus About the Arithmetic Mean.

The MEAN, MEDIAN, and MODE are all equal. It also possesses some traits that make it statistically useful in making

decisions about differences in distributions.

One of these properties is that one may determine what percent of the observations lie within; one, two, or three times the calculated standard deviation by using pre-computed tables. (In fact, any fractional part of the standard deviation may also be used.)

The way it would likely be useful is in making a statement about the uniformity of values, that is, in part what it measures. For instance, if one had a set of sales with a mean of 87% and a Standard Deviation of 10%, one could conclude that 95.46% of all sales would fall between the limits of 75.46% and 115.46%. Extrapolating that sales represent the rest of the parcels in the county (the validity of this assumption up to the appraiser), one could then have some mental picture of how the county roll values would distribute themselves in relation to the market values of the parcels.

For all the statistically astute, we do include two things: (1) remember that the distribution must be normal or approximately so for this to be true and (2) if there is ever a source of disagreement, sales ratio studies are surely prime material. However, we will let the relative merits of the case go untouched in this text.

One final word on the description of a distribution: when you first begin to work with these tools, please get a simple straight forward text such as one of the "cram course" texts on statistics available in any college bookstore with an appealing title such as STATISTICS MADE SIMPLE, etc. You will find it most useful in attacking problems. One we recommend is available from Barnes & Noble in their college outline series titled "STATISTICAL METHODS".

RELATIVE MEASURE OF VARIATION

Handy statistical tools are the relative measures. They are ways of relating back to the mean or median in discussing the degree of variance in a set of observations. Three common ones are:

$$\frac{\text{AVERAGE DEVIATION ABOUT THE MEAN}}{\text{MEAN}} \times 100 = \text{Coefficient of dispersion of the average deviation}$$

$$\frac{\text{STANDARD DEVIATION}}{\text{MEAN}} \times 100 = \text{Coefficient of dispersion of the standard deviation}$$

$$\frac{\text{STANDARD DEVIATION ABOUT THE MEDIAN}}{} \times 100 = \text{Coefficient of dispersion of the median deviation}$$

The last two yield the most useful statistic in that the standard deviation is significant in appraising in relationship to the level as there are few who would want a ratio to go consistently over 100% (which is one use of the standard deviation) or whom would want a mean of 70% with a relative error of 35% on 68% of all parcels.

COEFFICIENT OF DISPERSION (COD)

The Coefficient of Dispersion is a useful measure of assessment variability. The median is determined by arraying the ratios. If the odd number of ratios is odd, add 1 to the number of ratios and divide by 2. This will directly indicate the median. If there is an even number of ratios, dividing the two middle numbers by 2 will result in the median.

Determine the absolute difference between the median and each ratio. Sum the differences and divide by the number of ratios. The result will be the average deviation. Divide the average deviation by the median and multiply by 100. This result will be the Coefficient of Dispersion.

The following is a example based upon the prior sale data.

OBSERVATION NUMBER	SALE PRICE	APPRAISED VALUE	SALES RATIO	ABSOLUTE DEVIATION
1	$2,000	$21,500	95%	12
2	$31,000	$28,600	92%	9
3	$37,800	$34,000	90%	7
4	$38,400	$33,000	86%	3
5	$34,300	$29,500	86%	3
6	$20,000	$16,000	80%	3
7	$13,000	$9,800	75%	8
8	$18,700	$13,500	72%	11
9	$26,900	$17,200	64%	19
10	$40,800	$24,500	60%	23

MEDIAN = (N + ½ = 5.5: RATIO 5 + RATION 6/2 = 83)

AVERAGE DEVIATION = 9.8 (98/10)

COD = 11.807 (9.8 / 83 X 100)

UNIFORM SCHEDULES OF VALUES, STANDARDS AND RULES FOR 2011 REAPPRAISAL

INTRODUCTION

This chapter contains the specific information that pertains directly to the County. Data contained in this chapter includes:

Parcel Number Conventions
Valuation Models for the Building Groups
Improvement Base Rate Schedules
Improvement Depreciation Schedules
Auxiliary Area Codes
Land Use Codes
Urban and Rural Land Schedules

PARCEL NUMBER CONVENTIONS

The following is the format of the County parcel number as required for coding all input data.

This number is edited to help prevent incorrect data from reaching the Master Appraisal File. In addition, proper use of this format on the Tax Roll File will enable the Master Appraisal File and Tax Roll Files to be matched for automated transfer of data between these two computer files.

MECKLENBURG COUNTY PARCEL NUMBER CONVENTIONS
INTERNAL REPRESENTATION

	LIMITATIONS
Map	3 characters Alpha/Numeric
Page	3 characters Alpha/Numeric
Parcel	2 characters Alpha/Numeric
Interest	1 Alpha character
City/County Split	1 Alpha character

BUILDING GROUPS

The AssessPro CAMA system organizes Building Types of similar construction into models, or Building Groups. A list of these Building Groups follows:

Code	Description
01	Single Family Residential
02	Manufactured Home
03	Single-family Attached
04	Office
05	Warehouse
06	Warehouse – Large (>75,000)
07	Commercial
08	Hotel / Motel
09	Stadium / Arena
10	Government / Institutional

The following structural element valuation models – presented by Building Group - are expressions of value used by AssessPro in determining the estimated Market Adjusted Cost value of a property.

STRUCTURAL ELEMENT DATA – BUILDING GROUP 01

FOUNDATION TYPES	Index
01 PIER	0.92
02 SLAB-RES	0.98
03 SLAB-COM	0.98
04 SLAB-ABV GRD	0.98
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1.03
07 SLAB-STRUCT	1.03
08 SLAB-HEAVY	1.03
09 HIGH RISE	1.07
10 SPRD FTG-RAW	0.95

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.71
02 CORR MTL LGT	0.75
03 COMP OR WLBD	0.8
04 SIDG NO SHTG	0.96
05 ASB SHNG/SDG	0.94
06 BOARD&BATTEN	1
07 HARDIPLANK	1.03
08 MASONITE	0.98
09 WOOD ON SHTG	1
10 ALUM, VINYL	1
11 CONC BLOCK	0.94
12 STUCCO HRDCT	1.05
13 STUCCO SYNTH	1.01
14 EXT PLYWOOD	0.94
15 LOG	1.01
16 WOOD SHINGLE	1.03
17 CEDAR,RDWD	1.03
19 CEM BR/SPL B	1.03
20 JUMBO/COM BR	1.03
21 FACE BRICK	1.03
22 STONE	1.04
23 CORR MTL HVY	0.75
24 MODULAR MTL	0.89
25 RNFR CONC	1.1
26 PRECAST PANEL	1.2
27 PREFIN MET	1.2
28 GLASS/THRML	1.1

ROOF STRUCTURE	
01 FLAT	0.95
02 SHED	0.95
03 GABLE	1
04 HIP	1.02
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.05

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	1.05
10 STL FRM/TRS	1.05
11 BWSTR TRS	1.05
12 REINFRC CONC	1.05
13 PRESTRS CONC	1.05

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.03
08 CEDAR SHAKE	1.03
09 CPPR, ENAML	1.05
10 WOOD/ARCH SHG	1.01
11 SLATE	1.05
12 METAL	1.03

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.89
02 WALLBRD/WOOD	0.89
03 PLASTER	1
04 PLYWOOD PANL	0.98
05 SHEETROCK	1
06 CUSTOM	1.1

FLOOR TYPES	
01 NONE	0.91
02 PLYWOOD/LINO	0.95
03 CONC FIN	0.95
04 CONC TAPERED	0.95
05 ASPHALT TILE	0.95
06 VINYL TL/SHT	0.95
09 PINE/SOFT WD	1
10 TRRZ MONO	1.02
11 CERAMIC TILE	1.02
12 HARDWOOD	1.02
13 PARQUET	1.02
14 CARPET	1
15 QRY/HARDTIL	1.02
16 TRRZO STRP	1.02
17 STAINED CONC	1.02
18 SLATE	1.15
19 MARBLE	1.25

HEATING FUEL TYPES	Index
01 NONE	0.97
02 OIL/WD/COAL	0.99
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.97
02 BASEBOARD	0.98
03 AIR-NO-DUCT	0.98
04 AIR-DUCTED	1
05 RADIANT CEIL	1
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	1
09 RADIANT WTR	1
10 HEAT PUMP	1
11 AC-NONE	0.97
12 AC-WALL UNIT	0.98
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	1

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 01 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.788
12	BELOW AVG 02	0.805
13	BELOW AVG 03	0.82
14	BELOW AVG 04	0.839
15	BELOW AVG 05	0.856
16	BELOW AVG 06	0.873
21	AVERAGE 01	0.899
22	AVERAGE 02	0.95
23	AVERAGE 03	1
24	AVERAGE 04	1.05
25	AVERAGE 05	1.1
26	AVERAGE 06	1.15
31	GOOD 01	1.2
32	GOOD 02	1.25
33	GOOD 03	1.312
34	GOOD 04	1.374
35	GOOD 05	1.43
36	GOOD 06	1.498
41	VERY GOOD 01	1.56
42	VERY GOOD 02	1.638
43	VERY GOOD 03	1.716
44	VERY GOOD 04	1.794
45	VERY GOOD 05	1.872
46	VERY GOOD 06	1.95
51	EXCELLENT 01	2.048
52	EXCELLENT 02	2.146
53	EXCELLENT 03	2.244
54	EXCELLENT 04	2.342
55	EXCELLENT 05	2.44
56	EXCELLENT 06	2.542
61	CUSTOM 01	2.634
62	CUSTOM 02	2.754
63	CUSTOM 03	2.847
64	CUSTOM 04	2.948
65	CUSTOM 05	3.05
66	CUSTOM 06	3.25

FRAME TYPES		Index
01	NONE	1
02	WOODFRAME	1
03	PRE FAB	1
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1
07	FRPRF STEEL	1
08	SPECIAL	1

INSULATION TYPES		Index
01	SUS CEIL INS	1
02	SUS WALL INS	1
03	SUS CL+WL IN	1
04	SUS NO INS	1
05	NOT SUS CEIL	1
06	NOT SUS WALL	1
07	NT SUS CL+WL	1
08	NT SUS NO IN	1
09	ROOF INSUL	1
10	WALL INSUL	1
11	RF+WL INS	1
12	NO CEIL INS	1

BATH PRICING

FIRST FULL BATH	$5,900
ADD'L FULL BATHS (EACH)	$3,900
HALF BATHS (EACH)	$2,400
ADDITIONAL FIXTURES (EACH)	$750

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 1,800
Actual Size = Actual s.f. finished area in the building
Curve% = 23
Minimum = 0.85
Maximum = 1.15

STRUCTURAL ELEMENT DATA – BUILDING GROUP 02

FOUNDATION TYPES	Index
01 PIER	0.91
02 SLAB-RES	0.98
03 SLAB-COM	1.03
04 SLAB-ABV GRD	1.06
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1.07
07 SLAB-STRUCT	1.09
08 SLAB-HEAVY	1.05
09 HIGH RISE	1.12
10 SPRD FTG-RAW	0.95

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.76
02 CORR MTL LGT	0.77
03 COMP OR WLBD	0.83
04 SIDG NO SHTG	0.89
05 ASB SHNG/SDG	0.94
06 BOARD&BATTEN	0.94
07 HARDIPLANK	0.95
08 MASONITE	0.98
09 WOOD ON SHTG	1.02
10 ALUM, VINYL	1.00
11 CONC BLOCK	0.99
12 STUCCO HRDCT	1.04
13 STUCCO SYNTH	1.06
14 EXT PLYWOOD	0.96
15 LOG	1.02
16 WOOD SHINGLE	1.03
17 CEDAR,RDWD	1.07
19 CEM BR/SPL B	1.06
20 JUMBO/COM BR	1.12
21 FACE BRICK	1.15
22 STONE	1.26
23 CORR MTL HVY	0.81
24 MODULAR MTL	0.95
25 RNFR CONC	1.13
26 PRECAST PANEL	1.1
27 PREFIN MET	1.23
28 GLASS/THRML	1.18

ROOF STRUCTURE	
01 FLAT	0.96
02 SHED	0.98
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1.04
06 IRR/CATHDRL	1.06

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	1.04
10 STL FRM/TRS	1.06
11 BWSTR TRS	1.02
12 REINFRC CONC	1.10
13 PRESTRS CONC	1.12

ROOFING MATERIALS	
01 MINIMUM ROOF	0.97
02 ROLL COMP	0.97
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.03
08 CEDAR SHAKE	1.03
09 CPPR, ENAML	1.03
10 WOOD/ARCH SHG	1.01
11 SLATE	1.25
12 METAL	0.98

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.84
02 WALLBRD/WOOD	0.88
03 PLASTER	1
04 PLYWOOD PANL	1
05 SHEETROCK	1.04
06 CUSTOM	1.11

FLOOR TYPES	
01 NONE	0.92
02 PLYWOOD/LINO	0.94
03 CONC FIN	0.95
04 CONC TAPERED	0.95
05 ASPHALT TILE	0.95
06 VINYL TL/SHT	0.95
09 PINE/SOFT WD	0.98
10 TRRZ MONO	1.02
11 CERAMIC TILE	1.02
12 HARDWOOD	1.02
13 PARQUET	1.05
14 CARPET	1
15 QRY/HARDTIL	1.02
16 TRRZO STRP	1.02
17 PRCST CONC	1.02
18 SLATE	1.15
19 MARBLE	1.25

HEATING FUEL TYPES	Index
01 NONE	0.99
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.93
02 BASEBOARD	0.96
03 AIR-NO-DUCT	0.98
04 AIR-DUCTED	1
05 RADIANT CEIL	1
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	0.98
09 RADIANT WTR	1.02
10 HEAT PUMP	1
11 AC-NONE	0.95
12 AC-WALL UNIT	0.98
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	1

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 02 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.95
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	1
02	WOODFRAME	1
03	PRE FAB	1
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1
07	FRPRF STEEL	1
08	SPECIAL	1

INSULATION TYPES		Index
01	SUS CEIL INS	1
02	SUS WALL INS	1
03	SUS CL+WL IN	1
04	SUS NO INS	1
05	NOT SUS CEIL	1
06	NOT SUS WALL	1
07	NT SUS CL+WL	1
08	NT SUS NO IN	1
09	ROOF INSUL	1
10	WALL INSUL	1
11	RF+WL INS	1
12	NO CEIL INS	1

BATH PRICING

FIRST FULL BATH	$2,100
ADD'L FULL BATHS (EACH)	$1,500
HALF BATHS (EACH)	$1,000
ADDITIONAL HALF BATHS (EACH)	$750
ADDITIONAL FIXTURES (EACH)	$500

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 1,150
Actual Size = Actual s.f. of finished area in the building
Curve% = 33
Minimum = 0.85
Maximum = 1.3

STRUCTURAL ELEMENT DATA – BUILDING GROUP 03

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1.01
04 SLAB-ABV GRD	1.06
05 CRAWL SPACE	1.05
06 SLAB-PLFM HT	1.07
07 SLAB-STRUCT	1.11
08 SLAB-HEAVY	1.06
09 HIGH RISE	1.16
10 SPRD FTG-RAW	1.01

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.81
02 CORR MTL LGT	0.81
03 COMP OR WLBD	0.84
04 SIDG NO SHTG	0.89
05 ASB SHNG/SDG	0.99
06 BOARD&BATTEN	1
07 HARDIPLANK	1.03
08 MASONITE	0.99
09 WOOD ON SHTG	1.01
10 ALUM, VINYL	1
11 CONC BLOCK	0.95
12 STUCCO HRDCT	1.04
13 STUCCO SYNTH	0.96
14 EXT PLYWOOD	1
15 LOG	1.01
16 WOOD SHINGLE	1.02
17 CEDAR,RDWD	1.03
19 CEM BR/SPL B	1
20 JUMBO/COM BR	1.03
21 FACE BRICK	1.05
22 STONE	1.1
23 CORR MTL HVY	0.85
24 MODULAR MTL	0.95
25 RNFR CONC	1.15
26 PRECAST PANEL	1.15
27 PREFIN MET	1.25
28 GLASS/THRML	1.35

ROOF STRUCTURE	
01 FLAT	0.96
02 SHED	0.98
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1.04
06 IRR/CATHDRL	1.06

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	1.04
10 STL FRM/TRS	1.06
11 BWSTR TRS	1.02
12 REINFRC CONC	1.1
13 PRESTRS CONC	1.12

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1.03
07 CONC TILE/CL	1..07
08 CEDAR SHAKE	1.06
09 CPPR, ENAML	1.16
10 WOOD/ARCH SHG	1.02
11 SLATE	1.1
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.84
02 WALLBRD/WOOD	0.88
03 PLASTER	1.01
04 PLYWOOD PANL	0.96
05 SHEETROCK	1
06 CUSTOM	1.08

FLOOR TYPES	
01 NONE	0.95
02 PLYWOOD/LINO	0.97
03 CONC FIN	0.96
04 CONC TAPERED	0.97
05 ASPHALT TILE	0.97
06 VINYL TL/SHT	0.98
09 PINE/SOFT WD	0.98
10 TRRZ MONO	1.04
11 CERAMIC TILE	1.09
12 HARDWOOD	1.04
13 PARQUET	1.03
14 CARPET	1
15 QRY/HARDTIL	1.09
16 TRRZO STRP	1.04
17 PRCST CONC	0.96
18 SLATE	1.15
19 MARBLE	1.35

HEATING FUEL TYPES	Index
01 NONE	0.99
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.96
02 BASEBOARD	0.98
03 AIR-NO-DUCT	0.98
04 AIR-DUCTED	1
05 RADIANT CEIL	0.99
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	0.98
09 RADIANT WTR	1.02
10 HEAT PUMP	1
11 AC-NONE	0.95
12 AC-WALL UNIT	0.96
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	0.99

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 03 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.79
12	BELOW AVG 02	0.81
13	BELOW AVG 03	0.82
14	BELOW AVG 04	0.84
15	BELOW AVG 05	0.86
16	BELOW AVG 06	0.87
21	AVERAGE 01	0.9
22	AVERAGE 02	0.95
23	AVERAGE 03	1
24	AVERAGE 04	1.045
25	AVERAGE 05	1.09
26	AVERAGE 06	1.135
31	GOOD 01	1.18
32	GOOD 02	1.225
33	GOOD 03	1.27
34	GOOD 04	1.315
35	GOOD 05	1.36
36	GOOD 06	1.405
41	VERY GOOD 01	1.45
42	VERY GOOD 02	1.495
43	VERY GOOD 03	1.54
44	VERY GOOD 04	1.585
45	VERY GOOD 05	1.63
46	VERY GOOD 06	1.675
51	EXCELLENT 01	1.72
52	EXCELLENT 02	1.765
53	EXCELLENT 03	1.81
54	EXCELLENT 04	1.855
55	EXCELLENT 05	1.9
56	EXCELLENT 06	1.945
61	CUSTOM 01	1.99
62	CUSTOM 02	2.035
63	CUSTOM 03	2.08
64	CUSTOM 04	2.125
65	CUSTOM 05	2.17
66	CUSTOM 06	2.215

FRAME TYPES		Index
01	NONE	0.97
02	WOODFRAME	1
03	PRE FAB	0.98
04	MASONRY	1.01
05	RNFRD CONC	1.05
06	STEEL	1.02
07	FRPRF STEEL	1.07
08	SPECIAL	1.11

INSULATION TYPES		Index
01	SUS CEIL INS	1
02	SUS WALL INS	1
03	SUS CL+WL IN	1.01
04	SUS NO INS	0.99
05	NOT SUS CEIL	0.99
06	NOT SUS WALL	0.99
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.98
09	ROOF INSUL	0.97
10	WALL INSUL	0.97
11	RF+WL INS	0.98
12	NO CEIL INS	0.96

BATH PRICING

FIRST FULL BATH	$4,000
ADD'L FULL BATHS (EACH)	$3,000
HALF BATHS (EACH)	$2,000
ADDITIONAL HALF BATHS (EACH)	$1,500

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 1,125
Actual Size = Actual s.f. of finished area in the building
Curve% = 29
Minimum = 0.9
Maximum = 1.25

STRUCTURAL ELEMENT DATA – BUILDING GROUP 04

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.01
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1.01
08 SLAB-HEAVY	1.03
09 HIGH RISE	1.05
10 SPRD FTG-RAW	0.95

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.91
02 CORR MTL LGT	0.91
03 COMP OR WLBD	0.91
04 SIDG NO SHTG	0.91
05 ASB SHNG/SDG	0.93
06 BOARD&BATTEN	0.93
07 HARDIPLANK	0.93
08 MASONITE	0.93
09 WOOD ON SHTG	0.93
10 ALUM, VINYL	0.93
11 CONC BLOCK	0.93
12 STUCCO HRDCT	0.97
13 STUCCO SYNTH	0.94
14 EXT PLYWOOD	0.93
15 LOG	0.93
16 WOOD SHINGLE	0.93
17 CEDAR,RDWD	0.93
19 CEM BR/SPL B	0.95
20 JUMBO/COM BR	0.98
21 FACE BRICK	1
22 STONE	1.08
23 CORR MTL HVY	0.91
24 MODULAR MTL	0.91
25 RNFR CONC	1
26 PRECAST PANEL	0.96
27 PREFIN MET	1
28 GLASS/THRML	1.14

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.04

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.95
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1.14
13 PRESTRS CONC	1.14

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.06
08 CEDAR SHAKE	1.04
09 CPPR, ENAML	1.08
10 WOOD/ARCH SHG	1.01
11 SLATE	1.08
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.93
02 WALLBRD/WOOD	0.95
03 PLASTER	0.93
04 PLYWOOD PANL	1.02
05 SHEETROCK	1
06 CUSTOM	1.05

FLOOR TYPES	
01 NONE	0.93
02 PLYWOOD/LINO	0.95
03 CONC FIN	0.93
04 CONC TAPERED	0.93
05 ASPHALT TILE	0.96
06 VINYL TL/SHT	0.96
09 PINE/SOFT WD	1.03
10 TRRZ MONO	1.04
11 CERAMIC TILE	1.03
12 HARDWOOD	1.03
13 PARQUET	1.04
14 CARPET	1
15 QRY/HARDTIL	1.03
16 TRRZO STRP	1.04
17 PRCST CONC	0.93
18 SLATE	1.1
19 MARBLE	1.13

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.91
02 BASEBOARD	0.95
03 AIR-NO-DUCT	0.97
04 AIR-DUCTED	1
05 RADIANT CEIL	0.95
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	0.95
09 RADIANT WTR	0.95
10 HEAT PUMP	1.03
11 AC-NONE	0.97
12 AC-WALL UNIT	0.98
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	0.99

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 04 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	1
02	WOODFRAME	1
03	PRE FAB	0.97
04	MASONRY	1
05	RNFRD CONC	1.05
06	STEEL	1.1
07	FRPRF STEEL	1.15
08	SPECIAL	1.1

INSULATION TYPES		Index
01	SUS CEIL INS	0.98
02	SUS WALL INS	0.98
03	SUS CL+WL IN	1
04	SUS NO INS	0.96
05	NOT SUS CEIL	0.98
06	NOT SUS WALL	0.98
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.96
09	ROOF INSUL	0.94
10	WALL INSUL	0.94
11	RF+WL INS	0.96
12	NO CEIL INS	0.92

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 7,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 6
Minimum = 0.94
Maximum = 1.23

STRUCTURAL ELEMENT DATA – BUILDING GROUP 05

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1.01
04 SLAB-ABV GRD	1.06
05 CRAWL SPACE	1.05
06 SLAB-PLFM HT	1.07
07 SLAB-STRUCT	1.11
08 SLAB-HEAVY	1.06
09 HIGH RISE	1.16
10 SPRD FTG-RAW	1.05

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.8
02 CORR MTL LGT	0.8
03 COMP OR WLBD	0.83
04 SIDG NO SHTG	0.88
05 ASB SHNG/SDG	0.98
06 BOARD&BATTEN	0.98
07 HARDIPLANK	0.95
08 MASONITE	0.98
09 WOOD ON SHTG	1
10 ALUM, VINYL	0.99
11 CONC BLOCK	0.94
12 STUCCO HRDCT	0.95
13 STUCCO SYNTH	1.03
14 EXT PLYWOOD	0.99
15 LOG	1
16 WOOD SHINGLE	1.01
17 CEDAR,RDWD	1.02
19 CEM BR/SPL B	0.99
20 JUMBO/COM BR	1.02
21 FACE BRICK	1.04
22 STONE	1.09
23 CORR MTL HVY	0.84
24 MODULAR MTL	0.94
25 RNFR CONC	1.04
26 PRECAST PANEL	0.99
27 PREFIN MET	1.09
28 GLASS/THRML	1.00

ROOF STRUCTURE	
01 FLAT	0.96
02 SHED	0.98
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1.04
06 IRR/CATHDRL	1.06

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	1.04
10 STL FRM/TRS	1.06
11 BWSTR TRS	1.02
12 REINFRC CONC	1.1
13 PRESTRS CONC	1.1

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1.03
07 CONC TILE/CL	1.07
08 CEDAR SHAKE	1.06
09 CPPR, ENAML	1.16
10 WOOD/ARCH SHG	1.02
11 SLATE	1.1
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.84
02 WALLBRD/WOOD	0.89
03 PLASTER	1
04 PLYWOOD PANL	0.96
05 SHEETROCK	1
06 CUSTOM	1.10

FLOOR TYPES	
01 NONE	0.95
02 PLYWOOD/LINO	0.97
03 CONC FIN	0.95
04 CONC TAPERED	0.97
05 ASPHALT TILE	0.97
06 VINYL TL/SHT	0.98
09 PINE/SOFT WD	0.98
10 TRRZ MONO	1.04
11 CERAMIC TILE	1.09
12 HARDWOOD	1.04
13 PARQUET	1.03
14 CARPET	1
15 QRY/HARDTIL	1.09
16 TRRZO STRP	1.04
17 PRCST CONC	1.12
18 SLATE	1.15
19 MARBLE	1.35

HEATING FUEL TYPES	Index
01 NONE	0.99
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.96
02 BASEBOARD	0.98
03 AIR-NO-DUCT	0.98
04 AIR-DUCTED	1
05 RADIANT CEIL	0.99
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	1
09 RADIANT WTR	1
10 HEAT PUMP	1
11 AC-NONE	0.94
12 AC-WALL UNIT	0.95
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	1

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 05 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.79
12	BELOW AVG 02	0.81
13	BELOW AVG 03	0.82
14	BELOW AVG 04	0.84
15	BELOW AVG 05	0.86
16	BELOW AVG 06	0.87
21	AVERAGE 01	0.9
22	AVERAGE 02	0.95
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	0.97
02	WOODFRAME	1
03	PRE FAB	0.98
04	MASONRY	1.01
05	RNFRD CONC	1.05
06	STEEL	1.02
07	FRPRF STEEL	1.07
08	SPECIAL	1.11

INSULATION TYPES		Index
01	SUS CEIL INS	1
02	SUS WALL INS	1
03	SUS CL+WL IN	1.01
04	SUS NO INS	0.99
05	NOT SUS CEIL	0.99
06	NOT SUS WALL	0.99
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.98
09	ROOF INSUL	0.97
10	WALL INSUL	0.97
11	RF+WL INS	0.98
12	NO CEIL INS	0.96

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$1,300

KITCHEN PRICING

KITCHENS (EACH)	$5,000

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 8,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 9
Minimum = 0.9
Maximum = 1.25

STRUCTURAL ELEMENT DATA – BUILDING GROUP 06

FOUNDATION TYPES	Index
01 PIER	0.91
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.02
05 CRAWL SPACE	0.95
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1
08 SLAB-HEAVY	1.06
09 HIGH RISE	1.1
10 SPRD FTG-RAW	1

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.9
02 CORR MTL LGT	0.9
03 COMP OR WLBD	0.9
04 SIDG NO SHTG	0.9
05 ASB SHNG/SDG	0.94
06 BOARD&BATTEN	0.94
07 HARDIPLANK	0.94
08 MASONITE	0.94
09 WOOD ON SHTG	0.94
10 ALUM, VINYL	0.94
11 CONC BLOCK	1
12 STUCCO HRDCT	1.06
13 STUCCO SYNTH	1.1
14 EXT PLYWOOD	0.94
15 LOG	0.94
16 WOOD SHINGLE	0.94
17 CEDAR,RDWD	0.95
19 CEM BR/SPL B	1.09
20 JUMBO/COM BR	1.18
21 FACE BRICK	1.21
22 STONE	1.28
23 CORR MTL HVY	0.96
24 MODULAR MTL	0.9
25 RNFR CONC	1
26 PRECAST PANEL	1
27 PREFIN MET	0.94
28 GLASS/THRML	1

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.03

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.9
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1
13 PRESTRS CONC	1

ROOFING MATERIALS	
01 MINIMUM ROOF	0.96
02 ROLL COMP	0.96
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1.02
07 CONC TILE/CL	1.17
08 CEDAR SHAKE	1.06
09 CPPR, ENAML	1.06
10 WOOD/ARCH SHG	1.01
11 SLATE	1.2
12 METAL	1.04

INTERIOR WALL TYPES	
01 MASONRY/MIN	1
02 WALLBRD/WOOD	1
03 PLASTER	1.03
04 PLYWOOD PANL	1.05
05 SHEETROCK	1.03
06 CUSTOM	1.1

FLOOR TYPES	
01 NONE	1
02 PLYWOOD/LINO	1.03
03 CONC FIN	1.1
04 CONC TAPERED	1
05 ASPHALT TILE	1.05
06 VINYL TL/SHT	1.05
09 PINE/SOFT WD	1.17
10 TRRZ MONO	1.2
11 CERAMIC TILE	1.2
12 HARDWOOD	1.17
13 PARQUET	1.18
14 CARPET	1.13
15 QRY/HARDTIL	1.17
16 TRRZO STRP	1.2
17 PRCST CONC	1.12
18 SLATE	1.17
19 MARBLE	1.46

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	1
02 BASEBOARD	1.05
03 AIR-NO-DUCT	1.12
04 AIR-DUCTED	1.17
05 RADIANT CEIL	1.06
06 HOT WATER	1.05
07 STEAM	1.05
08 RADIANT FLR	1.06
09 RADIANT WTR	1.05
10 HEAT PUMP	1.23
11 AC-NONE	1
12 AC-WALL UNIT	1
13 AC-CENTRAL	1.06
14 AC-PKGD ROOF	1.06
15 AC-CHLD WAT	1.04

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 06 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	0.95
02	WOODFRAME	0.95
03	PRE FAB	0.95
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1.1
07	FRPRF STEEL	1.15
08	SPECIAL	1.1

INSULATION TYPES		Index
01	SUS CEIL INS	1.09
02	SUS WALL INS	1.09
03	SUS CL+WL IN	1.11
04	SUS NO INS	1.07
05	NOT SUS CEIL	1.07
06	NOT SUS WALL	1.07
07	NT SUS CL+WL	1.09
08	NT SUS NO IN	1.05
09	ROOF INSUL	1
10	WALL INSUL	1
11	RF+WL INS	1.02
12	NO CEIL INS	0.98

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 75,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 8
Minimum = 1.00
Maximum = 1.50

STRUCTURAL ELEMENT DATA – BUILDING GROUP 06B

FOUNDATION TYPES	Index
01 PIER	0.91
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.02
05 CRAWL SPACE	0.95
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1
08 SLAB-HEAVY	1.06
09 HIGH RISE	1.1
10 SPRD FTG-RAW	1

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.9
02 CORR MTL LGT	0.9
03 COMP OR WLBD	0.9
04 SIDG NO SHTG	0.9
05 ASB SHNG/SDG	0.94
06 BOARD&BATTEN	0.94
07 HARDIPLANK	0.94
08 MASONITE	0.94
09 WOOD ON SHTG	0.94
10 ALUM, VINYL	0.94
11 CONC BLOCK	1
12 STUCCO HRDCT	1.06
13 STUCCO SYNTH	1.1
14 EXT PLYWOOD	0.94
15 LOG	0.94
16 WOOD SHINGLE	0.94
17 CEDAR,RDWD	0.95
19 CEM BR/SPL B	1.09
20 JUMBO/COM BR	1.18
21 FACE BRICK	1.21
22 STONE	1.28
23 CORR MTL HVY	0.96
24 MODULAR MTL	0.9
25 RNFR CONC	1
26 PRECAST PANEL	1
27 PREFIN MET	0.94
28 GLASS/THRML	1

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.03

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.9
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1
13 PRESTRS CONC	1

ROOFING MATERIALS	
01 MINIMUM ROOF	0.96
02 ROLL COMP	0.96
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1.02
07 CONC TILE/CL	1.17
08 CEDAR SHAKE	1.06
09 CPPR, ENAML	1.06
10 WOOD/ARCH SHG	1.01
11 SLATE	1.2
12 METAL	1.04

INTERIOR WALL TYPES	
01 MASONRY/MIN	1
02 WALLBRD/WOOD	1
03 PLASTER	1.03
04 PLYWOOD PANL	1.05
05 SHEETROCK	1.03
06 CUSTOM	1.10

FLOOR TYPES	
01 NONE	1
02 PLYWOOD/LINO	1.03
03 CONC FIN	1.1
04 CONC TAPERED	1
05 ASPHALT TILE	1.05
06 VINYL TL/SHT	1.05
09 PINE/SOFT WD	1.17
10 TRRZ MONO	1.2
11 CERAMIC TILE	1.2
12 HARDWOOD	1.17
13 PARQUET	1.18
14 CARPET	1.13
15 QRY/HARDTIL	1.17
16 TRRZO STRP	1.2
17 PRCST CONC	1
18 SLATE	1.17
19 MARBLE	1.46

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	1
02 BASEBOARD	1.05
03 AIR-NO-DUCT	1.12
04 AIR-DUCTED	1.17
05 RADIANT CEIL	1.06
06 HOT WATER	1.05
07 STEAM	1.05
08 RADIANT FLR	1.06
09 RADIANT WTR	1.05
10 HEAT PUMP	1.23
11 AC-NONE	1
12 AC-WALL UNIT	1
13 AC-CENTRAL	1.06
14 AC-PKGD ROOF	1.06
15 AC-CHLD WAT	1.04

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 06B (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	0.95
02	WOODFRAME	0.95
03	PRE FAB	0.95
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1.12
07	FRPRF STEEL	1.16
08	SPECIAL	1.16

INSULATION TYPES		Index
01	SUS CEIL INS	1.09
02	SUS WALL INS	1.09
03	SUS CL+WL IN	1.11
04	SUS NO INS	1.07
05	NOT SUS CEIL	1.07
06	NOT SUS WALL	1.07
07	NT SUS CL+WL	1.09
08	NT SUS NO IN	1.05
09	ROOF INSUL	1
10	WALL INSUL	1
11	RF+WL INS	1.02
12	NO CEIL INS	0.98

BATH PRICING

ADDITIONAL FIXTURES	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 200,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 22
Minimum = 0.97
Maximum = 1.33

STRUCTURAL ELEMENT DATA – BUILDING GROUP 07

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.01
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1.01
08 SLAB-HEAVY	1.03
09 HIGH RISE	1.05
10 SPRD FTG-RAW	1

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.85
02 CORR MTL LGT	0.85
03 COMP OR WLBD	0.85
04 SIDG NO SHTG	0.85
05 ASB SHNG/SDG	0.85
06 BOARD&BATTEN	0.85
07 HARDIPLANK	0.85
08 MASONITE	0.85
09 WOOD ON SHTG	0.85
10 ALUM, VINYL	0.85
11 CONC BLOCK	0.85
12 STUCCO HRDCT	0.97
13 STUCCO SYNTH	0.85
14 EXT PLYWOOD	0.85
15 LOG	0.85
16 WOOD SHINGLE	0.85
17 CEDAR,RDWD	0.85
19 CEM BR/SPL B	0.9
20 JUMBO/COM BR	0.97
21 FACE BRICK	1
22 STONE	1.13
23 CORR MTL HVY	0.85
24 MODULAR MTL	0.85
25 RNFR CONC	1
26 PRECAST PANEL	0.85
27 PREFIN MET	1
28 GLASS/THRML	1.10

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.05

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.91
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1.10
13 PRESTRS CONC	1.10

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.1
08 CEDAR SHAKE	1.03
09 CPPR, ENAML	1.15
10 WOOD/ARCH SHG	1.01
11 SLATE	1.15
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.93
02 WALLBRD/WOOD	1
03 PLASTER	1
04 PLYWOOD PANL	1.05
05 SHEETROCK	1
06 CUSTOM	1.10

FLOOR TYPES	
01 NONE	0.94
02 PLYWOOD/LINO	0.98
03 CONC FIN	0.94
04 CONC TAPERED	0.94
05 ASPHALT TILE	1
06 VINYL TL/SHT	1
09 PINE/SOFT WD	1.12
10 TRRZ MONO	1.15
11 CERAMIC TILE	1.11
12 HARDWOOD	1.12
13 PARQUET	1.15
14 CARPET	1.08
15 QRY/HARDTIL	1.12
16 TRRZO STRP	1.15
17 PRCST CONC	1
18 SLATE	1.17
19 MARBLE	1.36

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.85
02 BASEBOARD	0.95
03 AIR-NO-DUCT	0.95
04 AIR-DUCTED	1
05 RADIANT CEIL	1
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	1
09 RADIANT WTR	1
10 HEAT PUMP	1.06
11 AC-NONE	0.94
12 AC-WALL UNIT	0.97
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	1

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 07 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	0.9
02	WOODFRAME	1
03	PRE FAB	0.95
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1.12
07	FRPRF STEEL	1.16
08	SPECIAL	1.16

INSULATION TYPES		Index
01	SUS CEIL INS	0.99
02	SUS WALL INS	0.99
03	SUS CL+WL IN	1
04	SUS NO INS	0.98
05	NOT SUS CEIL	0.99
06	NOT SUS WALL	0.99
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.98
09	ROOF INSUL	0.96
10	WALL INSUL	0.96
11	RF+WL INS	0.97
12	NO CEIL INS	0.95

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 6,500
Actual Size = Actual s.f. of finished area in the building
Curve% = 11
Minimum = 0.85
Maximum = 1.13

STRUCTURAL ELEMENT DATA – BUILDING GROUP 08

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.01
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1.01
08 SLAB-HEAVY	1.03
09 HIGH RISE	1.05
10 SPRD FTG-RAW	.95

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.91
02 CORR MTL LGT	0.91
03 COMP OR WLBD	0.91
04 SIDG NO SHTG	0.91
05 ASB SHNG/SDG	0.93
06 BOARD&BATTEN	0.93
07 HARDIPLANK	1.03
08 MASONITE	0.93
09 WOOD ON SHTG	0.93
10 ALUM, VINYL	0.93
11 CONC BLOCK	0.93
12 STUCCO HRDCT	0.97
13 STUCCO SYNTH	0.94
14 EXT PLYWOOD	0.93
15 LOG	0.93
16 WOOD SHINGLE	0.93
17 CEDAR,RDWD	0.93
19 CEM BR/SPL B	0.95
20 JUMBO/COM BR	0.98
21 FACE BRICK	1
22 STONE	1.08
23 CORR MTL HVY	0.91
24 MODULAR MTL	0.91
25 RNFR CONC	1
26 PRECAST PANEL	0.96
27 PREFIN MET	1
28 GLASS/THRML	1

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.04

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.95
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1
13 PRESTRS CONC	1

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.06
08 CEDAR SHAKE	1.04
09 CPPR, ENAML	1.08
10 WOOD/ARCH SHG	1.01
11 SLATE	1.08
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	1
02 WALLBRD/WOOD	1
03 PLASTER	1
04 PLYWOOD PANL	0.98
05 SHEETROCK	1
06 CUSTOM	1.1

FLOOR TYPES	
01 NONE	0.93
02 PLYWOOD/LINO	0.95
03 CONC FIN	0.93
04 CONC TAPERED	0.93
05 ASPHALT TILE	0.96
06 VINYL TL/SHT	0.96
09 PINE/SOFT WD	1.03
10 TRRZ MONO	1.04
11 CERAMIC TILE	1.03
12 HARDWOOD	1.03
13 PARQUET	1.04
14 CARPET	1
15 QRY/HARDTIL	1.03
16 TRRZO STRP	1.04
17 PRCST CONC	0.93
18 SLATE	1.1
19 MARBLE	1.13

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.97
02 BASEBOARD	0.99
03 AIR-NO-DUCT	1
04 AIR-DUCTED	1.05
05 RADIANT CEIL	1
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	1
09 RADIANT WTR	1
10 HEAT PUMP	1.08
11 AC-NONE	0.98
12 AC-WALL UNIT	1
13 AC-CENTRAL	1.03
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	1

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 08 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	1
02	WOODFRAME	1
03	PRE FAB	0.95
04	MASONRY	1
05	RNFRD CONC	1.05
06	STEEL	1.1
07	FRPRF STEEL	1.15
08	SPECIAL	1.1

INSULATION TYPES		Index
01	SUS CEIL INS	0.98
02	SUS WALL INS	0.98
03	SUS CL+WL IN	1
04	SUS NO INS	0.96
05	NOT SUS CEIL	0.98
06	NOT SUS WALL	0.98
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.96
09	ROOF INSUL	0.95
10	WALL INSUL	0.95
11	RF+WL INS	0.97
12	NO CEIL INS	0.93

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 7,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 10
Minimum = 0.9
Maximum = 1.15

STRUCTURAL ELEMENT DATA – BUILDING GROUP 09

FOUNDATION TYPES	Index
01 PIER	0.91
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1.02
05 CRAWL SPACE	0.95
06 SLAB-PLFM HT	1.02
07 SLAB-STRUCT	1
08 SLAB-HEAVY	1.06
09 HIGH RISE	1.1
10 SPRD FTG-RAW	1

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.9
02 CORR MTL LGT	0.9
03 COMP OR WLBD	0.9
04 SIDG NO SHTG	0.9
05 ASB SHNG/SDG	0.94
06 BOARD&BATTEN	0.94
07 HARDIPLANK	0.94
08 MASONITE	0.94
09 WOOD ON SHTG	0.94
10 ALUM, VINYL	0.94
11 CONC BLOCK	1
12 STUCCO HRDCT	1.06
13 STUCCO SYNTH	1.1
14 EXT PLYWOOD	0.94
15 LOG	0.94
16 WOOD SHINGLE	0.94
17 CEDAR,RDWD	0.95
19 CEM BR/SPL B	1.09
20 JUMBO/COM BR	1.1
21 FACE BRICK	1.12
22 STONE	1.14
23 CORR MTL HVY	0.96
24 MODULAR MTL	0.9
25 RNFR CONC	1
26 PRECAST PANEL	1
27 PREFIN MET	0.95
28 GLASS/THRML	1

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.03

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.9
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1
13 PRESTRS CONC	1

ROOFING MATERIALS	
01 MINIMUM ROOF	0.96
02 ROLL COMP	0.96
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1.02
07 CONC TILE/CL	1.17
08 CEDAR SHAKE	1.06
09 CPPR, ENAML	1.06
10 WOOD/ARCH SHG	1.01
11 SLATE	1.2
12 METAL	1.04

INTERIOR WALL TYPES	
01 MASONRY/MIN	1
02 WALLBRD/WOOD	1
03 PLASTER	1.03
04 PLYWOOD PANL	1.05
05 SHEETROCK	1.03
06 CUSTOM	1.10

FLOOR TYPES	
01 NONE	1
02 PLYWOOD/LINO	1.03
03 CONC FIN	1.1
04 CONC TAPERED	1
05 ASPHALT TILE	1.05
06 VINYL TL/SHT	1.05
09 PINE/SOFT WD	1.17
10 TRRZ MONO	1.2
11 CERAMIC TILE	1.2
12 HARDWOOD	1.17
13 PARQUET	1.18
14 CARPET	1.13
15 QRY/HARDTIL	1.17
16 TRRZO STRP	1.2
17 PRCST CONC	1
18 SLATE	1.17
19 MARBLE	1.46

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	1
02 BASEBOARD	1.05
03 AIR-NO-DUCT	1.12
04 AIR-DUCTED	1.17
05 RADIANT CEIL	1.06
06 HOT WATER	1.05
07 STEAM	1.05
08 RADIANT FLR	1.06
09 RADIANT WTR	1.05
10 HEAT PUMP	1.23
11 AC-NONE	1
12 AC-WALL UNIT	1
13 AC-CENTRAL	1.06
14 AC-PKGD ROOF	1.06
15 AC-CHLD WAT	1.04

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 09 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	0.95
02	WOODFRAME	0.95
03	PRE FAB	0.95
04	MASONRY	1
05	RNFRD CONC	1
06	STEEL	1.1
07	FRPRF STEEL	1.15
08	SPECIAL	1.1

INSULATION TYPES		Index
01	SUS CEIL INS	1.09
02	SUS WALL INS	1.09
03	SUS CL+WL IN	1.11
04	SUS NO INS	1.07
05	NOT SUS CEIL	1.07
06	NOT SUS WALL	1.07
07	NT SUS CL+WL	1.09
08	NT SUS NO IN	1.05
09	ROOF INSUL	1
10	WALL INSUL	1
11	RF+WL INS	1.02
12	NO CEIL INS	0.98

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 400,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 1
Minimum = 1.00
Maximum = 1.00

STRUCTURAL ELEMENT DATA – BUILDING GROUP 10

FOUNDATION TYPES	Index
01 PIER	0.93
02 SLAB-RES	1
03 SLAB-COM	1
04 SLAB-ABV GRD	1
05 CRAWL SPACE	1
06 SLAB-PLFM HT	1
07 SLAB-STRUCT	1
08 SLAB-HEAVY	1
09 HIGH RISE	1
10 SPRD FTG-RAW	1

EXTERIOR WALL TYPES	
01 SDG MIN/NONE	0.91
02 CORR MTL LGT	0.91
03 COMP OR WLBD	0.91
04 SIDG NO SHTG	0.91
05 ASB SHNG/SDG	0.93
06 BOARD&BATTEN	0.93
07 HARDIPLANK	0.93
08 MASONITE	0.93
09 WOOD ON SHTG	0.93
10 ALUM, VINYL	0.93
11 CONC BLOCK	0.96
12 STUCCO HRDCT	0.97
13 STUCCO SYNTH	0.94
14 EXT PLYWOOD	0.93
15 LOG	0.93
16 WOOD SHINGLE	0.93
17 CEDAR,RDWD	0.93
19 CEM BR/SPL B	0.92
20 JUMBO/COM BR	0.98
21 FACE BRICK	1
22 STONE	1.08
23 CORR MTL HVY	0.91
24 MODULAR MTL	0.91
25 RNFR CONC	1
26 PRECAST PANEL	0.96
27 PREFIN MET	1
28 GLASS/THRML	1

ROOF STRUCTURE	
01 FLAT	1
02 SHED	1
03 GABLE	1
04 HIP	1
05 GAMBRL/MANS	1
06 IRR/CATHDRL	1.04

ROOF STRUCTURE	Index
07 WOOD TRUSS	1
09 BAR JOIST/RF	0.95
10 STL FRM/TRS	1
11 BWSTR TRS	1
12 REINFRC CONC	1.14
13 PRESTRS CONC	1.14

ROOFING MATERIALS	
01 MINIMUM ROOF	0.98
02 ROLL COMP	0.98
03 ASP, COMP SHG	1
04 T&G/RUBBER	1
06 ASBTS SHG	1
07 CONC TILE/CL	1.06
08 CEDAR SHAKE	1.04
09 CPPR, ENAML	1.08
10 WOOD/ARCH SHG	1.01
11 SLATE	1.08
12 METAL	1.01

INTERIOR WALL TYPES	
01 MASONRY/MIN	0.93
02 WALLBRD/WOOD	0.95
03 PLASTER	0.93
04 PLYWOOD PANL	1.02
05 SHEETROCK	1
06 CUSTOM	1.1

FLOOR TYPES	
01 NONE	0.93
02 PLYWOOD/LINO	0.95
03 CONC FIN	0.93
04 CONC TAPERED	0.93
05 ASPHALT TILE	0.96
06 VINYL TL/SHT	0.96
09 PINE/SOFT WD	1.03
10 TRRZ MONO	1.04
11 CERAMIC TILE	1.03
12 HARDWOOD	1.03
13 PARQUET	1.04
14 CARPET	1
15 QRY/HARDTIL	1.03
16 TRRZO STRP	1.04
17 PRCST CONC	0.99
18 SLATE	1.1
19 MARBLE	1.13

HEATING FUEL TYPES	Index
01 NONE	1
02 OIL/WD/COAL	1
03 GAS	1
04 ELECTRIC	1
05 SOLAR	1

HEATING SYSTEM TYPES	
01 HEAT- NONE	0.91
02 BASEBOARD	0.95
03 AIR-NO-DUCT	0.97
04 AIR-DUCTED	1
05 RADIANT CEIL	0.95
06 HOT WATER	1
07 STEAM	1
08 RADIANT FLR	0.95
09 RADIANT WTR	0.95
10 HEAT PUMP	1.03
11 AC-NONE	0.97
12 AC-WALL UNIT	0.98
13 AC-CENTRAL	1
14 AC-PKGD ROOF	1
15 AC-CHLD WAT	0.99

FIREPLACES	Lump Sum
14 FIREPLACE	3000
FP2 PREFAB	2000
FP3 1 STY SNGL	3000
FP4 2 STY SNGL/1 DBL	4000
FP5 2 OR MORE	6000
FP6 MASSIVE	6500
FP7 >2 MASSIVE	13000

STRUCTURAL ELEMENT DATA – BUILDING GROUP 10 (Cont'd)

GRADE TYPES		Index
11	BELOW AVG 01	0.80
12	BELOW AVG 02	0.85
13	BELOW AVG 03	0.9
14	BELOW AVG 04	0.908
15	BELOW AVG 05	0.944
16	BELOW AVG 06	0.98
21	AVERAGE 01	0.928
22	AVERAGE 02	0.964
23	AVERAGE 03	1
24	AVERAGE 04	1.036
25	AVERAGE 05	1.072
26	AVERAGE 06	1.108
31	GOOD 01	1.144
32	GOOD 02	1.18
33	GOOD 03	1.216
34	GOOD 04	1.252
35	GOOD 05	1.288
36	GOOD 06	1.324
41	VERY GOOD 01	1.36
42	VERY GOOD 02	1.396
43	VERY GOOD 03	1.432
44	VERY GOOD 04	1.468
45	VERY GOOD 05	1.504
46	VERY GOOD 06	1.54
51	EXCELLENT 01	1.576
52	EXCELLENT 02	1.612
53	EXCELLENT 03	1.648
54	EXCELLENT 04	1.684
55	EXCELLENT 05	1.72
56	EXCELLENT 06	1.756
61	CUSTOM 01	1.792
62	CUSTOM 02	1.828
63	CUSTOM 03	1.864
64	CUSTOM 04	1.9
65	CUSTOM 05	1.936
66	CUSTOM 06	1.972

FRAME TYPES		Index
01	NONE	1
02	WOODFRAME	1
03	PRE FAB	0.97
04	MASONRY	1
05	RNFRD CONC	1.05
06	STEEL	1.1
07	FRPRF STEEL	1.15
08	SPECIAL	1.1

INSULATION TYPES		Index
01	SUS CEIL INS	0.98
02	SUS WALL INS	0.98
03	SUS CL+WL IN	1
04	SUS NO INS	0.96
05	NOT SUS CEIL	0.96
06	NOT SUS WALL	0.98
07	NT SUS CL+WL	1
08	NT SUS NO IN	0.96
09	ROOF INSUL	0.94
10	WALL INSUL	0.94
11	RF+WL INS	0.96
12	NO CEIL INS	0.92

BATH PRICING

ADDITIONAL FIXTURES (EACH)	$850

SIZE ADJUSTMENT CALCULATION:

Size Adjustment = [(Standard Size/ActualSize) X (Curve%/100)] + (1-Curve%/100)
(subject to both min. and max. values)

Where:
StandardSize = 7,000
Actual Size = Actual s.f. of finished area in the building
Curve% = 6
Minimum = 0.94
Maximum = 1.23

MECKLENBURG COUNTY IMPROVEMENT USE CODES AND BASE RATES

MECKLENBURG COUNTY BUILDING TYPE CODES AND BASE RATES

Base rates for the various building groups were derived through comparison and analysis of data from R.S. Means and Marshall & Swift cost services, as well as surveys of local builders and contractors' estimates:

DEPRECIATION EXPECTED LIFE	Bldg Type	Bldg Group	2011 Base Rate	DESCRIPTION
65	01	01	69.00	Single Family Residential
40	02	02	36.00	Manufactured Home (DW)
25	03	02	32.00	Manufactured Home (SW)
65	04	03	65.00	Condominium< 7 Stories
65	05	01	67.00	Patio Home
65	06	03	70.00	Condominium Hi-Rise > 6 Stories
65	09	03	67.00	Townhouse
40	10	07	85.00	Retail
40	11	07	80.00	Convenience Store
40	12	06	45.00	Car Wash Self-Service Type
40	12b	06	45.00	Car Wash Drive-Thru Type
40	12c	06	60.00	Car Wash Full –Service Type
40	13	07	85.00	Department Store
40	14	07	85.00	Supermarket
40	15	07	95.00	Shopping Mall
40	16	07	80.00	Strip Shopping Center
40	17	04	80.00	Office < 7 Stories
55	18	04	90.00	Office Hi-Rise > 6 Stories
40	19	04	90.00	Medical Office
40	20	04	80.00	Medical Condominium
40	21	07	90.00	Restaurant
40	22	07	110.00	Fast Food
55	23	04	110.00	Bank
40	24	04	80.00	Office Condominium
40	25	07	40.00	Commercial/Service
40	26	07	50.00	Service Station
40	27	06	50.00	Auto Dealer
40	27b	06	46.00	Auto Dealer > 75,000 SF
40	28	06	32.00	Parking Garage
40	28b	06	28.00	Parking Garage > 75,000 SF
40	29	06	30.00	Mini-Warehouse
40	29	06	28.00	Mini-Warehouse > 75,000 SF
40	30	04	130.00	Lab-Research
40	31	04	75.00	Day Care Center
40	32	07	80.00	Theater
40	33	07	70.00	Nightclub
40	34	07	65.00	Bowling Alleys/Skating Rinks
40	35	07	70.00	Commercial Condominium
40	37	08	75.00	Motel/Hotel Lodging High-Rise > 6 Stories
40	38	07	50.00	Furniture Showroom
40	39	08	65.00	Motel/Hotel Lodging High-Rise < 7 Stories
40	40	06	36.00	Industrial
40	40b	06	30.00	Industrial > 75,000 SF
40	41	06	40.00	Light Manufacturing
40	41b	06	38.00	Light Manufacturing > 75,000 SF
40	42	06	50.00	Heavy Manufacturing
40	42b	06	45.00	Heavy Manufacturing > 75,000 SF

MECKLENBURG COUNTY BUILDING TYPE CODES AND BASE RATES

DEPRECIATION EXPECTED LIFE	Bldg Type	Bldg Group	2011 Base Rate	DESCRIPTION
40	43	06	19.00	Lumber Yard
40	44	06	43.00	Food Packing
40	44b	06	41.00	Food Packing > 75,000 SF
40	46	06	60.00	Bottler/Brewery
40	46b	06	56.00	Bottler/Brewery > 75,000 SF
40	47	06	25.00	Warehouse Condo
40	48	06	28.00	Warehouse
40	48b	06	28.00	Warehouse > 75,000
40	49	06	25.00	Prefab Warehouse
40	49b	06	22.00	Prefab Warehouse > 75,000
40	51	06	46.00	Cold Storage/Freezer
40	51b	06	37.00	Cold Storage/Freezer > 75,000
40	52	06	38.00	Truck Terminal
40	52b	06	30.00	Truck Terminal > 75,000
40	53	06	38.00	Service Garage
40	53b	06	32.00	Service Garage > 75,000
40	54	06	35.00	Office/Warehouse
40	54b	06	32.00	Office/Warehouse > 75,000
30	55	09	65.00	Stadium
30	56	09	60.00	Arena
40	60	05	55.00	Garden Apartment
40	61	05	55.00	Townhouse Apartment
65	62	01	65.00	Duplex/Triplex
40	63	05	80.00	High-Rise Apartment
40	63a	05	100.00	Dormitory
40	64	05	90.00	Nursing Home
65	69	01	68.00	Group Home
70	70	10	85.00	Institutional
70	71	10	105.00	Church
70	72	10	105.00	School - Private
40	73	04	110.00	Hospital - Private
40	74	05	80.00	Assisted Living
40	76	04	80.00	Funeral Home
40	77	07	100.00	Club - Lodge
40	78	04	100.00	Country Club
70	83	10	110.00	School - Public
70	84	10	112.00	College - Public
70	86	10	85.00	County
70	87	10	85.00	State
70	88	10	85.00	Federal
70	89	10	85.00	Municipal
70	91	10	70.00	Utility/Mechanical Equipment Building
	98		N/A	No Value Improvement

70 YEAR LIFE - DEPRECIATION SCHEDULE for:

BUILDING GROUP 10 - GOVERNMENT - INSTITUTIONAL

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	0	100		36	17	83
2	0	100		37	18	82
3	0	100		38	19	81
4	1	99		39	20	80
5	1	99		40	21	79
6	1	99		41	23	77
7	1	99		42	25	75
8	1	99		43	26	74
9	2	98		44	28	72
10	2	98		45	29	71
11	2	98		46	31	69
12	2	98		47	32	68
13	2	98		48	34	66
14	3	97		49	36	64
15	3	97		50	38	62
16	3	97		51	40	60
17	4	96		52	42	58
18	4	96		53	44	56
19	4	96		54	46	54
20	5	95		55	48	52
21	5	95		56	50	50
22	6	94		57	52	48
23	6	94		58	54	46
24	7	93		59	56	44
25	7	93		60	58	42
26	8	92		61	59	41
27	9	91		62	60	40
28	9	91		63	61	39
29	10	90		64	63	37
30	11	89		65	65	35
31	12	88		66	66	34
32	13	87		67	67	33
33	14	86		68	68	32
34	15	85		69	69	31
35	16	84		70	70	30

65 YEAR LIFE - DEPRECIATION SCHEDULE for:

BUILDING GROUP 01 - SINGLE FAMILY
BUILDING GROUP 03 - CONDOMINIUM

This schedule is used for improvement types 01, 04, 05, 06, 07, 09, 50, and 69 for dwellings.

YEAR	EFF AGE	TOTAL DEPR	PCT GOOD	YEAR	EFF AGE	TOTAL DEPR	PCT GOOD
2011	0	1	99	1971	40	40	60
2010	1	1	99	1970	41	41	59
2009	2	2	98	1969	42	42	58
2008	3	3	97	1968	43	43	57
2007	4	4	96	1967	44	44	56
2006	5	5	95	1966	45	45	55
2005	6	6	94	1965	46	46	54
2004	7	7	93	1964	47	47	53
2003	8	8	92	1963	48	48	52
2002	9	9	91	1962	49	49	51
2001	10	10	90	1961	50	50	50
2000	11	11	89	1960	51	51	49
1999	12	12	88	1959	52	52	48
1998	13	13	87	1958	53	53	47
1997	14	14	86	1957	54	54	46
1996	15	15	85	1956	55	55	45
1995	16	16	84	1955	56	56	44
1994	17	17	83	1954	57	57	43
1993	18	18	82	1953	58	58	42
1992	19	19	81	1952	59	59	41
1991	20	20	80	1951	60	60	40
1990	21	21	79	1950	61	61	39
1989	22	22	78	1949	62	62	38
1988	23	23	77	1948	63	63	37
1987	24	24	76	1947	64	64	36
1986	25	25	75	1946	65	65	35
1985	26	26	74				
1984	27	27	73				
1983	28	28	72				
1982	29	29	71				
1981	30	30	70				
1980	31	31	69				
1979	32	32	68				
1978	33	33	67				
1977	34	34	66				
1976	35	35	65				
1975	36	36	64				
1974	37	37	63				
1973	38	38	62				
1972	39	39	61				

55 YEAR LIFE - DEPRECIATION SCHEDULE for:

BUILDING GROUP 04 - OFFICE: Building Type 18 (Office - Hi-Rise)
Building Type 23 (Bank)

These Building Types will utilize the VG (Very Good) Physical Condition Code schedule, which replicates a 55 Year Life Expectancy within the 40 Year Life table.

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	1	99		31	31	69
2	2	98		32	32	68
3	3	97		33	33	67
4	4	96		34	34	66
5	5	95		35	36	64
6	6	94		36	38	62
7	7	93		37	40	60
8	8	92		38	42	58
9	9	91		39	44	56
10	10	90		40	46	54
11	11	89		41	48	52
12	12	88		42	51	49
13	13	87		43	53	47
14	14	86		44	56	44
15	15	85		45	58	42
16	16	84		46	60	40
17	17	83		47	62	38
18	18	82		48	64	36
19	19	81		49	66	34
20	20	80		50	68	32
21	21	79		51	68	32
22	22	78		52	68	32
23	23	77		53	69	31
24	24	76		54	69	31
25	25	75		55	70	30
26	26	74				
27	27	73				
28	28	72				
29	29	71				
30	30	70				

40 YEAR LIFE - DEPRECIATION SCHEDULE FOR THE FOLLOWING:

BUILDING GROUP 02 - MANUFACTURED HOME (Double Wide) - Building Type 02
BUILDING GROUP 04 - OFFICE: all associated Building Types <u>except</u> 18 (Office - Hi-Rise) and 23 (Bank)
BUILDING GROUP 05 - MULTI-FAMILY RESIDENTIAL
BUILDING GROUP 06 - WAREHOUSE
BUILDING GROUP 06b - WAREHOUSE - LARGE
BUILDING GROUP 07 - COMMERCIAL
BUILDING GROUP 08 - HOTEL /MOTEL

All Building Types (except those noted above) will utilize the AV (Average) Physical Condition Code schedule.

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	1	99		21	37	63
2	2	98		22	39	61
3	3	97		23	41	59
4	4	96		24	43	57
5	5	95		25	45	55
6	7	93		26	47	53
7	9	91		27	49	51
8	11	89		28	51	49
9	13	87		29	53	47
10	15	85		30	55	45
11	17	83		31	57	43
12	19	81		32	59	41
13	21	79		33	61	39
14	23	77		34	63	37
15	25	75		35	65	35
16	27	73		36	66	34
17	29	71		37	67	33
18	31	69		38	68	32
19	33	67		39	69	31
20	35	65		40	70	30

25 YEAR LIFE - DEPRECIATION SCHEDULE FOR THE FOLLOWING:

BUILDING GROUP 02 - MANUFACTURED HOME (Single Wide)

Building Type 03 will utilize the FA (Fair) Physical Condition Code schedule, which replicates a 25 Year Life Expectancy within the 40 Year Life table.

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	2	98		21	62	38
2	5	95		22	64	36
3	7	93		23	66	34
4	10	90		24	68	32
5	13	87		25	70	30
6	16	84		26	70	30
7	19	81		27	70	30
8	22	78		28	70	30
9	25	75		29	70	30
10	29	71		30	70	30
11	32	68		31	70	30
12	36	64		32	70	30
13	40	60		33	70	30
14	44	56		34	70	30
15	48	52		35	70	30
16	52	48		36	70	30
17	54	46		37	70	30
18	56	44		38	70	30
19	58	42		39	70	30
20	60	40		40	70	30

30 YEAR LIFE - DEPRECIATION SCHEDULE for:

BUILDING GROUP 09 - STADIUM/ARENA

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	2	98		16	39	61
2	3	97		17	42	58
3	4	96		18	46	54
4	7	93		19	49	51
5	9	91		20	50	50
6	11	89		21	52	48
7	14	86		22	54	46
8	16	84		23	56	44
9	18	82		24	58	42
10	21	79		25	60	40
11	24	76		26	62	38
12	26	74		27	64	36
13	29	71		28	66	34
14	32	68		29	68	32
15	35	65		30	70	30

SUB AREA FACTORS

DESCRIPTION	CODE	BUILDING GROUP							
		01	**02**	**03**	**04**	**05**	**06**	**06B**	**07**
Apartment	APT*	.85	.85	.85	.80	1.0	2.0	2.0	1.2
Attic, Unfin.	UAT	.25	.25	.25	.10	.10	.10	.10	.10
Attic, Fin.	FAT*	.60	.50	.60	.50	.50	.50	.50	.50
Base	BAS*	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Base, Semi-Fin.	SFB*	.80	.80	.80	.80	.80	.85	.85	.85
Basement, Fin.	FBM*	.50	.50	.50	.70	.70	.60	.60	.70
Basement, Open-End,Fin.	OEB*	.70	.70	.70	.70	.70	.70	.70	.70
Basement, Semi-Fin.	SBM	.35	.35	.35	.50	.50	.60	.60	.50
Basement, Unfin.	UBM	.20	.20	.20	.35	.35	.50	.50	.40
Cabana, Encl., Fin.	FCB	.90	.90	.90	.90	.90	.90	.90	.90
Canopy	CAN@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Canopy, Detached	CDN@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carport, Fin.	FCP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carport, Fin., Det.	FDC@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carport, Unfin.	UCP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carport, Unfin., Det.	UDC@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garage, Fin.	FGR@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garage, Fin. with Door	FGD@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garage, Unfin.	UGR@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garage, Unfin. with Door	UGD@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garage, Unfin., Bsmt	UGB	.25	.25	.25	.35	.35	.50	.50	.40
Laboratory	LAB*	1.5	1.5	1.5	1.5	1.5	3.0	3.0	1.75
Loading Platform, Cover.	CLP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loading Platform with CAN	ALP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loading Platform, Uncov.	ULP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lower Level, Unfin.	LLU	.20	.20	.20	.30	.30	.30	.30	.30
Lower Level, Semi-Fin.	LLS*	.45	.45	.45	.50	.70	.70	.70	.70
Lower Level, Fin.	LLF*	.65	.65	.65	.90	.90	.90	.90	.90
Manufacturing-Min.	MFM*	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Manufacturing-Fair	MFF*	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Manufacturing-Avg.	MFA*	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Manufacturing-Good	MFG*	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
Mezzanine	MEZ*	.90	.90	.90	.90	.50	.50	.50	.60
Office, Fair	FOF*	1.2	1.2	1.0	1.1	1.7	.50	.50	1.15
Office, Average	AOF*	1.1	1.1	1.1	1.2	1.2	1.75	1.75	1.3
Office, Good	GOF*	1.2	1.2	1.2	1.3	1.3	2.25	2.25	1.4
Patio	PTO@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch,Enclosed,Fin.,Heat	FEP*	.90	.90	.90	.80	.80	.80	.80	.80
Porch,Enc.,Unfin.,No Heat	UEP	.75	.75	.75	.60	.60	.60	.60	.60
Porch, Open, Fin.	FOP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch, Open, Unfin.	UOP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch, Screen, Fin.	FSP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch, Screen, Unfin.	USP@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch, Screen, Fin., Det.	FDS@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Porch, Screen, Unfin., Det.	UDS@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SUB AREA FACTORS (cont'd)

DESCRIPTION	CODE	BUILDING GROUP							
		01	**02**	**03**	**04**	**05**	**06**	**06B**	**07**
Service Production Area	SPA*	1.0	1.0	1.0	.75	.75	1.0	1.0	.65
Storage, Fin.	FST	.45	.45	.45	.50	.50	.70	.70	.60
Storage, Unfin.	UST	.25	.25	.25	.40	.40	.60	.60	.50
Store Display Area	SDA*	1.0	1.0	1.0	1.0	1.0	1.6	1.6	1.0
Upper Story, Fin.	FUS*	.85	.85	.85	1.0	1.0	1.0	1.0	1.0
Upper Story, Unfin.	UUS	.30	.30	.30	.50	.50	.50	.50	.50
Utility, Fin.	FUT	.50	.50	.50	.50	.50	.70	.70	.60
Utility, Fin., Det.	FDU	.45	.45	.45	.60	.60	.80	.80	.70
Utility, Unfin.	UUT	.40	.40	.40	.45	.45	.65	.65	.55
Utility, Unfin., Det.	UDU	.25	.25	.25	.50	.50	.70	.70	.60
Wood Deck	WDD@	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

* - Included in Size AdjustmentCalculation

@ - THESE SUB AREAS ARE NOT VALUED AS A PERCENTAGE OF THE BAS RATE, BUT RATHER ARE VALUED AT A FLAT RATE PER SQUARE FOOT, REGARDLESS OF BUILDING GROUP. THE FOLLOWING LIST DISPLAYS THE RELATED SQUARE FOOT PRICING FOR THESE SUB AREAS:

ALP = $12.00
CAN = $ 4.00
CDN = $ 50.00
CLP = $ 12.00
FCP = $ 18.00
FDC = $ 18.00
FDS = $ 26.00
FGD = $ 25.00
FGR = $ 25.00
FOP = $ 24.00
FSP = $ 25.00
PTO = $ 4.00
UCP = $ 14.00
UDC = $ 16.00
UDS = $ 26.00
UGD = $ 20.00
UGR = $ 20.00
ULP = $ 8.00
UOP = $ 16.00
USP = $ 18.00
WDD = $ 15.00

SUB AREA FACTORS (cont'd)

DESCRIPTION	CODE	BUILDING GROUP		
		08	**09**	**10**
Apartment	APT*	1.0	2.0	.80
Attic, Unfin.	UAT	.10	.10	.10
Attic, Fin.	FAT*	.50	.50	.50
Base	BAS*	1.0	1.0	1.0
Base, Semi-Fin.	SFB*	.80	.85	.80
Basement, Fin.	FBM*	.70	.60	.70
Basement, Open-End,Fin.	OEB*	.70	.70	.70
Basement, Semi-Fin.	SBM	.50	.60	.50
Basement, Unfin.	UBM	.35	.50	.35
Cabana, Encl., Fin.	FCB	.90	.90	.90
Canopy	CAN@	N/A	N/A	N/A
Canopy, Detached	CDN@	N/A	N/A	N/A
Carport, Fin.	FCP@	N/A	N/A	N/A
Carport, Fin., Det.	FDC@	N/A	N/A	N/A
Carport, Unfin.	UCP@	N/A	N/A	N/A
Carport, Unfin., Det.	UDC@	N/A	N/A	N/A
Garage, Fin.	FGR@	N/A	N/A	N/A
Garage, Fin. with Door	FGD@	N/A	N/A	N/A
Garage, Unfin.	UGR@	N/A	N/A	N/A
Garage, Unfin. with Door	UGD@	N/A	N/A	N/A
Garage, Unfin., Bsmt	UGB	.35	.50	.35
Laboratory	LAB*	1.5	3.0	1.5
Loading Platform, Cover.	CLP@	N/A	N/A	N/A
Loading Platform with CAN	ALP@	N/A	N/A	N/A
Loading Platform, Uncov.	ULP@	N/A	N/A	N/A
Lower Level, Unfin.	LLU	.30	.30	.30
Lower Level, Semi-Fin.	LLS*	.70	.70	.50
Lower Level, Fin.	LLF*	.90	.90	.90
Manufacturing-Min.	MFM*	1.25	1.25	1.25
Manufacturing-Fair	MFF*	1.5	1.5	1.5
Manufacturing-Avg.	MFA*	1.75	1.75	1.75
Manufacturing-Good	MFG*	2.25	2.25	2.25
Mezzanine	MEZ*	.50	.50	.90
Office, Fair	FOF*	1.7	.50	1.1
Office, Average	AOF*	1.2	1.75	1.2
Office, Good	GOF*	1.3	2.25	1.3
Patio	PTO@	N/A	N/A	N/A
Porch,Enclosed,Fin.,Heat	FEP*	.80	.80	.80
Porch,Enc.,Unfin.,No Heat	UEP	.60	.60	.60
Porch, Open, Fin.	FOP@	N/A	N/A	N/A
Porch, Open, Unfin.	UOP@	N/A	N/A	N/A
Porch, Screen, Fin.	FSP@	N/A	N/A	N/A
Porch, Screen, Unfin.	USP@	N/A	N/A	N/A
Porch, Screen, Fin., Det.	FDS@	N/A	N/A	N/A
Porch, Screen, Unfin., Det.	UDS@	N/A	N/A	N/A

SUB AREA FACTORS (cont'd)

DESCRIPTION	CODE	BUILDING GROUP		
		08	**09**	**10**
Service Production Area	SPA*	.75	1.0	.75
Storage, Fin.	FST	.50	.70	.50
Storage, Unfin.	UST	.40	.60	.40
Store Display Area	SDA*	1.0	1.6	1.0
Upper Story, Fin.	FUS*	1.0	1.0	1.0
Upper Story, Unfin.	UUS	.50	.50	.50
Utility, Fin.	FUT	.50	.70	.50
Utility, Fin., Det.	FDU	.60	.80	.60
Utility, Unfin.	UUT	.45	.65	.45
Utility, Unfin., Det.	UDU	.50	.70	.50
Wood Deck	WDD@	N/A	N/A	N/A

* - Included in Size AdjustmentCalculation

@ - THESE SUB AREAS ARE NOT VALUED AS A PERCENTAGE OF THE BAS RATE, BUT RATHER ARE VALUED AT A FLAT RATE PER SQUARE FOOT, REGARDLESS OF BUILDING GROUP. THE FOLLOWING LIST DISPLAYS THE RELATED SQUARE FOOT PRICING FOR THESE SUB AREAS:

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FGD = $ 25.00
FGR = $ 25.00
FOP = $ 24.00
FSP = $ 25.00
PTO = $ 4.00
UCP = $ 14.00
UDC = $ 16.00
UDS = $ 26.00
UGD = $ 20.00
UGR = $ 20.00
ULP = $ 8.00
UOP = $ 16.00
USP = $ 18.00
WDD = $ 15.00

LAND USE CODES
RESIDENTIAL

CODE	DESCRIPTION
R100	SINGLE FAMILY RESIDENTIAL
R111	SINGLE FAMILY RESIDENTIAL - COMMON
R113	SINGLE FAMILY RESIDENTIAL - RIVER
R120	SINGLE FAMILY RESIDENTIAL - RURAL
R122	SINGLE FAMILY RESIDENTIAL - WATERFRONT
R123	SINGLE FAMILY RESIDENTIAL - GOLF
R124	SINGLE FAMILY RESIDENTIAL - WATER VIEW
R150	PATIO HOME
R151	PATIO HOME - COMMON
R153	PATIO HOME - RIVER
R160	PATIO HOME - RURAL ACREAGE
R162	PATIO HOMES - WATERFRONT
R163	PATIO HOMES - GOLF
R164	PATIO HOME - WATER VIEW
R200	MOBILE HOME SUBDIVISION
R201	MOBILE HOME HS
R210	MOBILE HOME PARK
R220	RECREATIONAL VEHICLE PARK

LAND USE CODES
CONDOMINIUM

CODE	DESCRIPTION
R300	CONDOMINIUM
R306	CONDOMINIUM HIGH RISE
R309	TOWN HOUSE SFR
R311	CONDOMINIUM COMMON AREA
R313	CONDOMINIUM RIVER
R320	CONDOMINIUM RURAL ACREAGE
R322	CONDOMINIUM WATER FRONTAGE
R323	CONDOMINIUM GOLF COURSE FRONTAGE
R324	CONDOMINIUM WATER VIEW

LAND USE CODES
TOWNHOUSE

CODE	DESCRIPTION
R371	TOWN HOUSE COMMON AREA
R373	TOWN HOUSE RIVER
R382	TOWN HOUSE WATER FRONTAGE
R383	TOWN HOUSE GOLF COURSE FRONTAGE
R384	TOWN HOUSE WATER ACCESS

LAND USE CODES
MULTI - FAMILY

CODE	DESCRIPTION
A500	MULTI FAMILY
A501	MULTI FAMILY COMMON AREA
A503	MULTI FAMILY RIVER
A510	MULTI FAMILY RURAL ACREAGE
A512	MULTI FAMILY WATER FRONTAGE
A513	MULTI FAMILY GOLF COURSE FRONTAGE
A514	MULTI FAMILY WATER ACCESS
A560	MULTI FAMILY GARDEN
A561	MULTI FAMILY TOWN HOUSE
A562	MULTI FAMILY DUPLEX/TRIPLEX
A563	MULTI FAMILY HIGH RISE

LAND USE CODES
COMMERCIAL

CODE	DESCRIPTION
C700	COMMERCIAL
C701	COMMERCIAL WATER FRONTAGE
C711	CONVENIENCE STORES
C712	CAR WASH
C713	DEPARTMENT STORE
C714	SUPERMARKET
C715	SHOPPING CENTER (MALL)
C716	SHOPPING CENTER (STRIP)
C721	RESTAURANTS
C722	FAST FOODS
C723	BANKS
C725	COMMERCIAL,
C726	SERVICE STATION
C727	AUTO SALES & SERVICE
C728	PARKING
C731	COMMERCIAL CONDOMINIUM COMMON AREA
C732	THEATERS
C733	LOUNGES, NIGHT CLUBS, BARS
C734	BOWLING ALLEYS, SKATING RINKS
C735	COMMERCIAL CONDOMINIUM
C736	BUSINESS PARK
C737	HOTELS, MOTELS - > 6 FLOORS
C738	FURNITURE STORES
C739	MOTELS, HOTELS - < 7 FLOORS
C780	MARINA LAND

LAND USE CODES

INDUSTRIAL

CODE	DESCRIPTION
I600	INDUSTRIAL
I601	FERTILIZER PLANTS
I602	SEAFOOD PROCESSING
I628	MINI - WAREHOUSE
I630	LABORATORY/RESEARCH
I640	WAREHOUSE CONDOMINIUM COMMON AREA
I641	LIGHT MANUFACTURING
I642	HEAVY MANUFACTURING
I643	LUMBER YARDS
I644	PACKING PLANTS
I645	CIGARETTE MANUFACTURERS
I646	BREWERIES, BOTTLERS, CANNERY, WINERY
I647	WAREHOUSE CONDOMINIUM
I648	WAREHOUSING
I649	STEEL FRAME WAREHOUSE
I651	COLD STORAGE/FREEZER
I652	TRUCK TERMINAL
I653	SERVICE GARAGE
I655	STADIUM/ARENA

LAND USE CODES

OFFICE

CODE	DESCRIPTION
O400	OFFICE
O418	OFFICE > 6 STORIES
O419	MEDICAL OFFICE
O420	MEDICAL CONDOMINIUM
O421	MEDICAL CONDOMINIUM COMMON AREA
O424	OFFICE CONDOMINIUM
O425	OFFICE CONDOMINIUM COMMON AREA
O431	DAY CARE CENTERS

LAND USE CODES
PRESENT USE VALUE

CODE	DESCRIPTION	PRICE
1000	RURAL HOMESITE	Mkt Value / Nbhd
4314	CONSERVATION – WILDLIFE	$390/AC
5000	USE VALUE HOMESITE	Mkt Value / Nbhd
5310	AGRICULTURAL - COMMERCIAL PRODUCTION	$430/AC
6100	FOREST - COMMERCIAL PRODUCTION	$240/AC
6210	WOODLAND - EXCESS ON AG PCL	$240/AC
6711	HORTICULTURAL - COMMERCIAL PRODUCTION	$1,120/AC
6800	WATERFRONT – PRESENT USE VALUE	$390/AC

LAND USE CODES
OTHER

CODE	DESCRIPTION
7000	INSTITUTIONAL
7100	CHURCHES
7200	SCHOOLS, COLLEGES, PRIVATE
7300	HOSPITALS, PRIVATE
7400	HOMES FOR THE AGED
7401	NURSING HOMES
7500	ORPHANAGES
7600	FUNERAL (MORTUARY, CEMETERY)
7700	CLUBS, LODGES, UNION HALLS, SWIM CLUBS
7710	YACHT CLUBS
7720	RETREATS
7800	COUNTRY CLUBS
7801	PAR “3” GOLF COURSES
7802	MINIATURE GOLF COURSES
7803	PUBLIC GOLF COURSES - REGULATION
7900	AIRPORTS
8000	MARINAS

LAND USE CODES
GOVERNMENT OWNED

CODE	DESCRIPTION
8100	MILITARY
8200	REC AREA
8300	SCHOOLS (PUBLIC)
8400	COLLEGES (PUBLIC)
8500	HOSPITALS (PUBLIC)
8600	OTHER COUNTY PROPERTY
8601	WATER PLANTS
8602	FIRE DEPARTMENTS
8603	RECYCLING
8604	DISPOSAL
8700	OTHER STATE (MARSHLAND)
8701	STATE PORTS
8800	OTHER FEDERAL
8900	OTHER MUNICIPAL
8901	MUNICIPAL EDUCATION
8902	MUNICIPAL AIRPORT
8903	MUNICIPAL HOUSING AUTHORITY

LAND USE CODES
MISCELLANEOUS

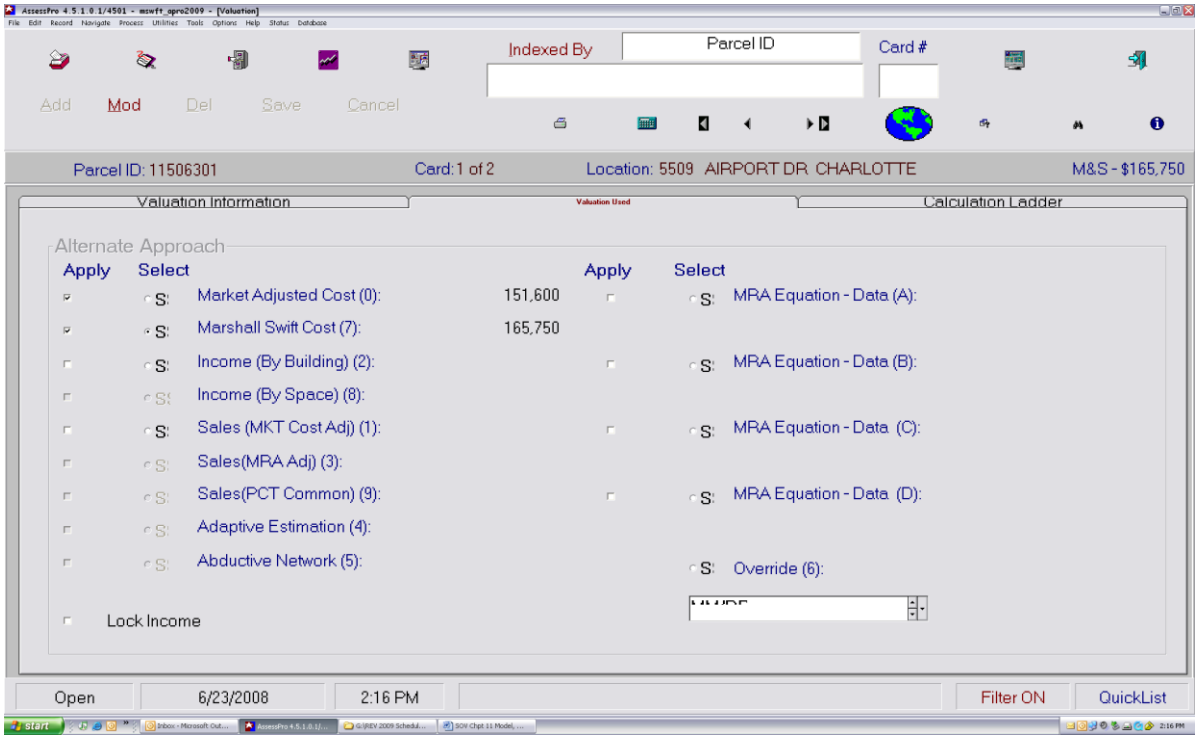
CODES	DESCRIPTION
9000	LEASEHOLD INTEREST
9010	NO LAND INTEREST
9100	UTILITY (GAS, ELECTRIC, TELEPHONE)
9101	UTILITY/P
9200	MINING
9300	PETROLEUM AND GAS
9400	RIGHT OF WAY
9401	ROADWAY CORRIDOR
9500	SUBMERGED LAND, RIVERS AND LAKES
9501	ISLAND
9600	WASTELAND, GULLIES, ROCK OUTCROP
9610	BUFFER STRIP
9611	WETLAND
9612	FLOOD PLAIN – AC
9613	FLOOD PLAN - LT
9699	UNSUITABLE FOR SEPTIC
9700	MINERAL RIGHTS
9710	LESS MINERAL RIGHTS (TAXED ELSEWHERE)
9800	OWNER UNKNOWN
9900	NEW PARCEL
9901	TRANSFER, CORRECTIONS
9902	AC CHANGE ONLY
9904	COMBINATION
9905	SPLIT
9910	DELETED PARCEL

MARSHALL & SWIFT COST TABLES IN ASSESSPRO

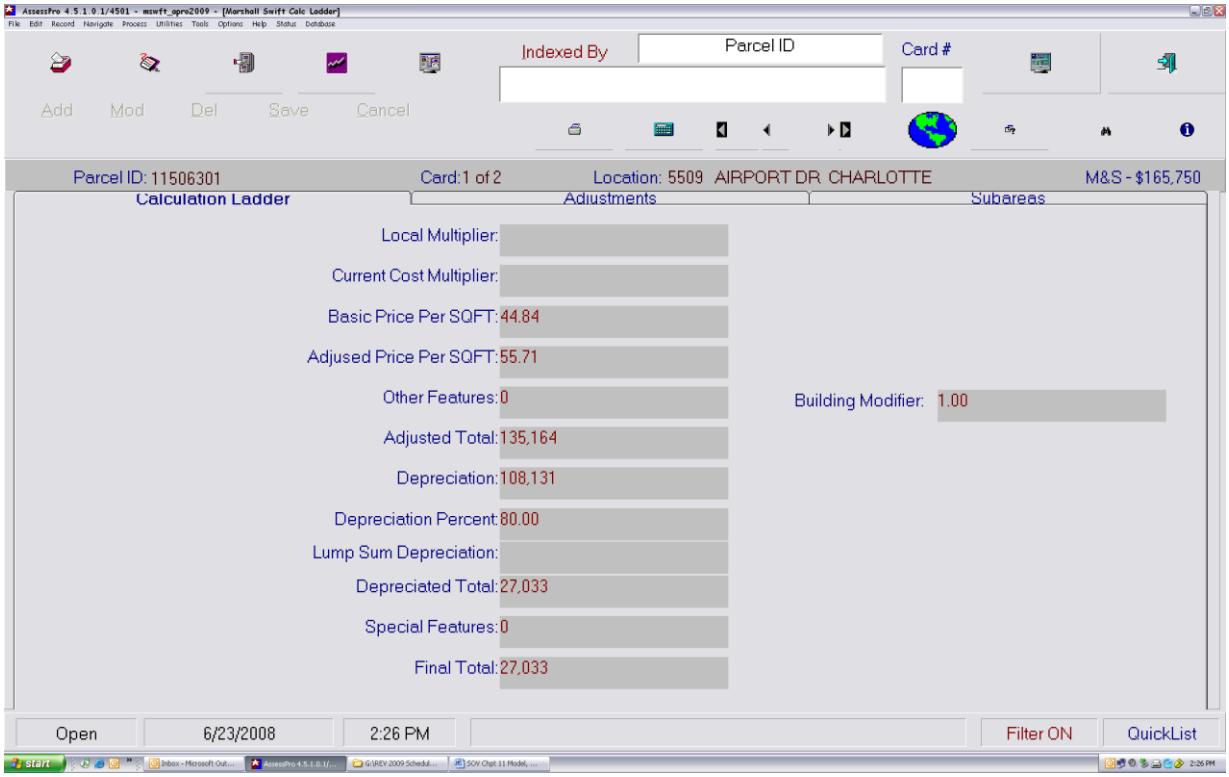
Mecklenburg County has contracted with Patriot Properties, Inc. to obtain and electronic version Marshall & Swift Cost data for commercial and agricultural properties types that interfaces directly with the AssessPro CAMA software. The estimated reproduction costs for each building group are located in a table on a local server. Because the data is proprietary information, the County appraisal staff does not have direct access to the cost tables; however, the cost can be applied to specific commercial properties based on building type in order to obtain another Cost Approach estimate of value for the property as a means of comparison.

The Table is updated quarterly. The final quarter of 2010 Marshall & Swift data will be "frozen" to capture the most current cost estimates leading into the 2011 Revaluation.

In order to apply a Marshall & Swift cost estimate to a particular commercial building, the appraiser goes to the Valuation Description screen under Parcel Data, and selects the "Valuation Used" tab. The appraiser then selects the Alternate Approach labeled "Marshall & Swift (7)," as shown below:



In order to see the actual costs and building modifiers that were applied from the Marshall & Swift cost table, the appraiser can then select the "Marshall Swift Calc Ladder" option under Parcel Data, and the following summary will display:



This tool is utilized to compare the County's local commercial builder survey against current national cost estimates. The Marshall & Swift Table will not be applied to residential building types.

UNIFORM SCHEDULES OF VALUES, STANDARDS AND RULES FOR 2011 REAPPRAISAL

SPECIAL FEATURES / YARD ITEMS

The Special Features and Yard Items (SFYI) section of the AssessPro CAMA (computer assisted mass appraisal) system is used to indicate any Special Features about the building or any Yard Items located on the parcel. (Note: another commonly used term for Yard Items is "Outbuildings"). This section can be used for a variety of functions. It generally contains the quantity and size of a Special Feature or Yard Item using a user defined SFYI code, a Quality code and the Condition of the item, the Year the item or feature was built or acquired, and an automatic size-adjusted unit price or user-optional override price. The depreciation source may be taken from a defined table, manually entered, or automatically tied to the building depreciation.

Additional factors that can affect the valuation are the Land Use Code, the Jurisdictional Factor, or the Neighborhood Code. Also, there is a section for attachments, where the user may indicate whether the item is attached to the main building, Detached, or Attached to an adjacent item.

Listed below are general definitions of some buildings listed as Yard Items to be used as appraisal guidelines:

BARN - Used for dairy and/or livestock housing with loft feed storage. The cubic foot area would be a minimum of 50 percent of the first level.

BOAT HOUSE - Both dry and wet used for boat storage.

CARPORT - Used for parking of automobiles or storage of other items, open on three or four sides.

GARAGE - Used for parking of automobile(s) or storage of other items, may be open on one or two ends.

GREEN HOUSE (Commercial) - Used for the growing of plants and flowers, for profit.

GREEN HOUSE (Residential) - Used for growing of plants and flowers, not for profit.

POULTRY HOUSE Buildings - Used for laying chickens or brooder production.

SHED - Used as protection from the elements for the seasonal storage of equipment.

STABLE - Used for the housing and storage of horses.

As indicated in the above narrative, the appraisal staff may adjust the Unit Price as needed to reflect a particular SFYI item's Quality and Condition. Base unit prices for SFYI items were derived by comparing lump sum or per unit costs from the Marshall & Swift Cost Service and local building contractors.

On the following three pages is a list of SFYI Codes in alphabetic order, with the associated Full Descriptions, Annual Depreciation used and the Unit Prices for use in the Mecklenburg County 2009 Revaluation. This is followed by a list of SFYI Codes in numeric order.

FULL DESCRIPTION	SFYI CODE	ANNUAL DEPR.	STANDARD UNIT PRICE
ADDITION	16	3%	$60.00/unit
AIR COND	62	5%	$12.00/unit
APRON	89	5%	$2.00/unit
ASPHALT PAVING	09	5%	$2.50/unit
BACKSTOP	A1	5%	$11.60/unit
BALL COURT	A2	5%	$2.00/unit
BANK	A3	2%	$110.00/unit
BARBEQUE	C9	5%	$10.00/unit
BARN	25	3%	$15.00/unit
BATH HOUSE	60	5%	$28.00/unit
BLOCK WALL	58	5%	$8.00/unit
BOAT RAMP	81	5%	$5.00/unit
BOAT SLIP	94	5%	$17.00/unit
BOAT SLIP/COVERED	95	5%	$17.00/unit
BOATHOUSE	77	5%	$20.00/unit
BOILER ROOM	79	3%	$13.50/unit
BOOTH	A4	3%	$50.00/unit
BRICK BUILDING	A5	2%	$42.00/unit
BRICK STACK	63	3%	$7.00/unit
BRICK WALL	57	5%	$18.00/unit
BULK BARN	22	5%	$17.00/unit
BULK HEAD	83	5%	$11.00/unit
CAMPSITES	86	0%	$17.00/unit
CANOPY	39	3%	$65.00/unit
CAR WASH	75	5%	$60.00/unit
CARPORT	03	3%	$18.00/unit
CEMETERY LOT	59	0%	$0.00* = see Chapter 9, VALUATION OF SPECIAL PROPERTIES, Appraisal of Cemeteries for Tax Purposes
CHAIN LINK FENCE	06	5%	$12.00/unit
CLASSROOM	A6	3%	$30.00/unit
CLUB HOUSE	51	2%	$25.00/unit
COMMON AREA	31	0%	$40.00/unit
CONCRETE PAVING	10	5%	$2.25/unit
CONVEYER	48	3%	$3.50/unit
COOLER	73	5%	$70.00/unit
CRANEWAY	76	2%	$60.00/unit
CRIB	92	3%	$4.00/unit
CRYPT	64	0%	$1,000.00
DECK	88	5%	$15.00/unit
DEPOSIT BOX/CHUTE	C6	3%	$7,000.00
DOCK	68	5%	$20.00/unit
DOCK BOARD	93	3%	$1,900.00
DOCK LEVEL	41	3%	$6,000.00
DRIVE-UP WINDOW	C7	3%	$10.00/unit
DRIVING RANGE	A7	0%	$5,000.00
DUGOUT	A8	5%	$9.50/unit
DWELLING	66	5%	$16.00/unit

FULL DESCRIPTION	SFYI CODE	ANNUAL DEPR.	STANDARD UNIT PRICE
ELEV TANK	37	3%	$20.00/unit
ESCALATOR	53	2%	$125,000.00
EST VALUE	EV	0%	$0.00
EXEMPT	EX	0%	$0.00
FIRE ESCAPE	70	2%	$3,000.00
FRAME BUILDING	A9	3%	$16.00/unit
FREEZER	74	5%	$100.00/unit
FREIGHT ELEV	45	2%	$20,500.00
GARAGE	02	2%	$25.00/unit
GAZEBO	55	3%	$25.00/unit
GOLF COURSE – PAR 3	GCP3	0%	$41,300.00
GOLF COURSE – PITCH & PUTT	GCPP	0%	$32,500.00
GOLF GREEN	32	0%	$120,000.00
GRAIN BIN	21	5%	$3.00/unit
GREEN HOUSE	13	5%	$4600.00
GUARD HOUSE	65	3%	$50.00/unit
HANGAR	84	3%	$13.00/unit
HOG PARLOR	27	5%	$18.00/unit
INDUSTRIAL SINK	61	2%	$25.00/unit
KENNEL	B1	5%	$9.00/unit
KILN	80	5%	$20.00/unit
KITCH ELEVATOR	B2	3%	$7,500.00
LAUNDRY	50	2%	$30.00/unit
LEASEHOLD	72	2%	$0.00
LOADING DOCK	40	3%	$10.00/unit
MARQUEE	C8	5%	$0.00
METAL BLDG	69	5%	$5.00/unit
MEZZANINE	98	2%	$28.00/unit
MILK BARN	82	3%	$25.00/unit
MINIATURE GOLF	85	0%	$4,500.00
MISCELLANEOUS - 1 PCT DEPRECIATION PER YEAR	M1	1%	$0.00
MISCELLANEOUS - 2 PCT DEPRECIATION PER YEAR	M2	2%	$0.00
MISCELLANEOUS - 3 PCT DEPRECIATION PER YEAR	M3	3%	$0.00
MISCELLANEOUS - 4 PCT DEPRECIATION PER YEAR	M4	4%	$0.00
MISCELLANEOUS - 5 PCT DEPRECIATION PER YEAR	M5	5%	$0.00
MISCELLANEOUS - NO DEPRECIATION	M0	0%	$0.00
MOBILE HOME SPACE	15	0%	$5,000.00
NICHE	71	0%	$400.00
OFFICE	17	3%	$60.00/unit
OVERHEAD DOOR	49	3%	$1,200.00
PACK BARN	23	3%	$18.00/unit
PARKING DECK	52	2%	$27.00/unit
PASSENGER ELEV	46	2%	$25,000.00
PATIO	04	3%	$4.00/unit
PATIO/COVERED	91	5%	$5.00/unit
PENTHOUSE	18	3%	$30.00/unit
PETRO TANK	36	3%	$2.95/unit (or Override Price*)

FULL DESCRIPTION	SFYI CODE	ANNUAL DEPR	STANDARD UNIT PRICE
PHOTOMAT	54	3%	$67.50
PIER	67	5%	$15.00/unit
PIER/COVERED	96	5%	$22.00/unit
POOL-CONCRETE	07	5%	$35.00/unit
POOL-VINYL	08	5%	$21.00/unit
POULTRY/DARK	26	4%	$14.00/unit
PUMP HOUSE	90	3%	$6.00/unit
QUONSET	47	3%	$14.00/unit
RAIL SIDE	43	0%	$80.00
RECREATION BLDG	B3	3%	$28.00/unit
RESTROOM	B4	3%	$60.00/unit
RUNWAY	B5	2%	$7.00/unit
SCALE	38	5%	$6.00/unit
SHED	24	5%	$8.00/unit
SHELTER	97	3%	$28.00/unit
SHOP BUILDING	B6	3%	$20.00/unit
SILO	28	5%	$5,000.00
SLAT HOUSE	B7	5%	$0.50/unit
SPA/TUB	19	5%	$50.00/unit
SPRINKLER	42	3%	$1.00/unit
STABLE	99	3%	$5.00/unit
STAND	B8	5%	$15.00/unit
STORAGE	01	3%	$14.00/unit
STORAGE BIN	B9	3%	$8.00/unit
TANK BULK	56	3%	$4.90/unit
TENNIS COURT	12	5%	$4.00/unit
TERRACE	87	2%	$14.00/unit
TOBACCO BARN	20	5%	$20.00/unit
TRUCK WELL	78	5%	$875.00
TUNNEL	30	2%	$40.00/unit
UNDER CONST	UC	0%	$0.00 (use Override Price*)
VAPOR RECOVERY	C1	0%	$3,200.00 (or Override Price*)
VAULT DOOR	C5	2%	$0.00
VAULT-MONEY	33	2%	$8.00/unit
VAULT-RECORD	34	2%	$70.00
WALKWAY	C2	3%	$10.00 - $400/unit
WASTE BIN	C3	3%	$10.00/unit
WASTE TREATMENT	C4	3%	$2.50/unit
WATER TANK	35	3%	$58,000.00 - $273,000.00
WOOD FENCE	05	5%	$15.00/unit
YARD LIGHTS	44	3%	$110.00

*Override price: For these particular units, the specifications can be customized and require material and construction over a range of costs. In most instances where overrides are used the Assessor's office has contacted local contractors to obtain cost estimates based on the year of revaluation. In the case of PETRO TANKS and VAPOR RECOVERY, a valuation process external to AssessPro is used to estimate the contributory value of these items.

SFYI CODES – IN NUMERIC ORDER

CODE	DESCRIPTION
01	STORAGE
02	GARAGE
03	CARPORT
04	PATIO
05	WOOD FENCE
06	CL FENCE
07	POOL/CON
08	POOL/VINYL
09	ASPAVING
10	CON PAVING
11	PORCH
12	TENNIS CRT
13	GREEN HOUSE
14	FIRE PLACE
15	MH SPACE
16	ADDITION
17	OFFICE
18	PENTHOUSE
19	SPA/TUB
20	TOB BARN
21	GRAIN BIN
22	BULK BARN
23	PACK BARN
24	SHED
25	BARN
26	POULTRY/DARK
27	HOG PARLOR
28	SILO
29	POULTRY HOUSE
30	TUNNEL
31	COMM AREA
32	GOLF GREEN
33	VAULTS-MNY
34	VAULTS-R
35	WATER TANK
36	FUEL TANK
37	ELEV TANK
38	SCALE
39	CANOPY
40	LOAD DOCK
41	DOCK LEVEL
42	SPRINKLER
43	RAIL SIDE
44	YARD LTS
45	FREIGHT ELEV
46	PASSENGER ELEV
47	QUONSET
48	CONVEYER
49	OVERHEAD DOOR
52	PARK DECK
53	ESCALATOR
54	PHOTOMAT
55	GAZEBO
56	TANK BULK
57	BRICK WALL
58	BLOCK WALL
59	CEMET LOT
60	BATH HOUSE
61	INDUSTRIAL SINK
62	AIR COND
63	BRICK STACK
64	CRYPT
65	GUARD HSE
66	DWELLING
67	PIER
68	DOCK
69	METAL BLDG
70	FIRE ESCAP
71	NICHE
72	LEASEHOLD
73	COOLER
74	FREEZER
75	CAR WASH
76	CRAINWY
77	BOATHOUSE
78	TRK WELL
79	BOILER RM
80	KILN
81	BOAT RAMP
82	MILK BARN
83	BULK HEAD
84	HANGER
85	MINIATURE GOLF
86	CAMPSITES
87	TERRACE
88	DECK
89	APRON
90	PUMP HOUSE
91	PATIO/COVERED
92	CRIB
93	DOCK BOARD
94	BOAT SLIP
95	BOAT SLIP/COVERED
96	PIER/COVERED
97	SHELTER
98	MEZZANINE
99	STABLE
A1	BACKSTOP
A4	BOOTH
A5	BRICK BUILDING
A6	CLASSROOM
A7	DRIVING RANGE
A8	DUGOUT
A9	FRAME BUILDING
B1	KENNEL
B2	KITCHEN ELEVATOR
B3	RECREATION BUILDING
B4	REST ROOM
B5	RUNWAY
B6	SHOP BUILDING
B7	SLAT HOUSE
B8	STAND
B9	STORAGE BIN
C1	VAPOR RECOVERY
C2	WALKWAY
C3	WASTE BIN
C4	WASTE TREATMENT
C5	VAULT DOOR
C6	DEPOSIT BOX/CHUTE
C7	DRIVE UP WINDOW
C8	MARQUEE
C9	BARBEQUE
EV	ESTIMATED VALUE
EX	EXEMPT
GCP3	GOLF COURSE – PAR 3
GCPP	PITCH & PUTT
UC	UNDER CONSTRUCTION

50	LAUNDRY	A2	BALL COURT
51	CLUB HOUSE	A3	BANK

MULTIVARIATE REGRESSION MODELING (Using SPATIALEST Software)

For the 2011 Revaluation Mecklenburg County will employ Multivariate Regression Analysis (MRA), utilizing a geographically spatial-oriented modeling program (Spatialest) developed by Causeway Data Consultants of Northern Ireland (UK), for the valuation of residential property types (regression modeling is not typically used in valuing commercial properties). This valuation approach is essentially a direct sales comparison technique suited to the mass appraisal environment by analyzing all qualified sales within market sub-regions of the County. Every sold property has unique characteristics, and MRA modeling allows the aggregate sales to be compared to one another and the contributory value of each characteristic measured. What follows is an explanation of MRA modeling and its application to mass appraisal, written by Causeway Data Consultants.

MRA Theory & Background

13.1 Overview

Regression analysis is a procedure which examines the correlation between variables - in the context of regression analysis property attributes are often called "variables" - and constructs a model for predicting the value of one variable (the dependent variable, in this case market value) from one or more other variables (the independent variables). If there is more than one independent variable it is called Multiple Regression Analysis (MRA). Multiple Regression Analysis (MRA), then, is a statistical technique used to analyze data records in order to predict the value of one variable -- the dependent variable is the variable of primary importance, such as *market value*, which can be predicted from known values of other independent variables, e.g, size, location, room count, quality, style, etc.

13.2 How MRA works

MRA analysis attempts to construct a formula for calculating an estimate for the dependent variable from a weighted combination of the independent variables. In real estate appraisal, these independent variables are property characteristics found in a neighborhood or group of neighborhoods. For a simplified example, suppose the dependent variable is Market_Price (MP) and the independent variables are Living_Area (LA), Parcel_Size (PS) and Basement_Size (BS). Each of these characteristics has a contributory impact on predicted market price, measured as a coefficient. MRA analysis will statistically calculate the coefficients B_0, B_1, B_2 and B_3 for each of these property attributes, so that the formula

$$\textit{Estimate MP} = B_0 + B_1 LA + B_2 PS + B_3 BS$$

generates the best possible estimates for Market_Price. Actual MRA models used by the County include a far greater array of variables in estimating market value, including such factors as location, bathroom count, and quality grade.

An MRA analysis can only be based on data records which contain a value (dollar amount or other unit of comparison) for the dependent variable and all the independent variables. The model statistically generates the impact or weight that each variable has on market value. There are options available for automatically replacing missing values in records so that those records can be included in the analysis.

13.3 Terminology for MRA Model

The formula is called the *MRA model*. The coefficient B_0 is called the *constant* of the model and B_1, B_2 and B_3 are the *regression coefficients* (or just *coefficients*), that is, the relative weight or impact of the characteristics, and there is one for each of the independent variables. When an MRA model is used to calculate an estimated value for a data record (e.g. a single property record) this estimate is called the *MRA estimate*.

13.4 Interpretation of Coefficients

MRA coefficients can be interpreted as the value that an additional unit in an independent variable contributes to the overall value. For example, suppose B_0=22,174.66, B_1=97.14, B_2=48.93 and B_3=5.44. Then, from the formula above it is clear that increasing the value of LA by 1 increases the overall estimate by 97.14. Thus, we can interpret this coefficient value as saying that each square foot of living area increases the value of a property by $97.14.

13.5 Additive and Multiplicative Models

The form of the MRA model formula given above is the normal MRA model and is referred to as an *additive* model because the influence each independent variable has on the overall estimate is to add a certain amount irrespective of the value of the other independent variables.

A multiplicative MRA model uses a formula that multiplies together values calculated from each independent variable. For example, using the same variables as above, the formula would be as follows.

$$\textit{Estimate MP} = B_0 + LA^{B1} + PS^{B2} + BS^{B3}$$

In order to calculate the best coefficients, the variables are all converted into a form which allows the same mathematical procedure to be used as for an additive model. This conversion involves taking the logarithm of the values of the variables. As a consequence, the values of variables cannot be zero or negative.

There are advantages and disadvantages to both models and choosing between an additive model and a multiplicative model depends on the relationship between the dependent variable and each independent and between the independent variables as well.

13.6 MRA Method Types

MRA analysis in the Spatialest EDA tool (Exploratory Data Analysis) can be carried out using either of two methods:

- Include All - all the selected independent variables are entered into the model
- Forward - the selected independent variables are added to the model one at a time and any that cause tolerance problems or which are not significant enough are excluded from the model

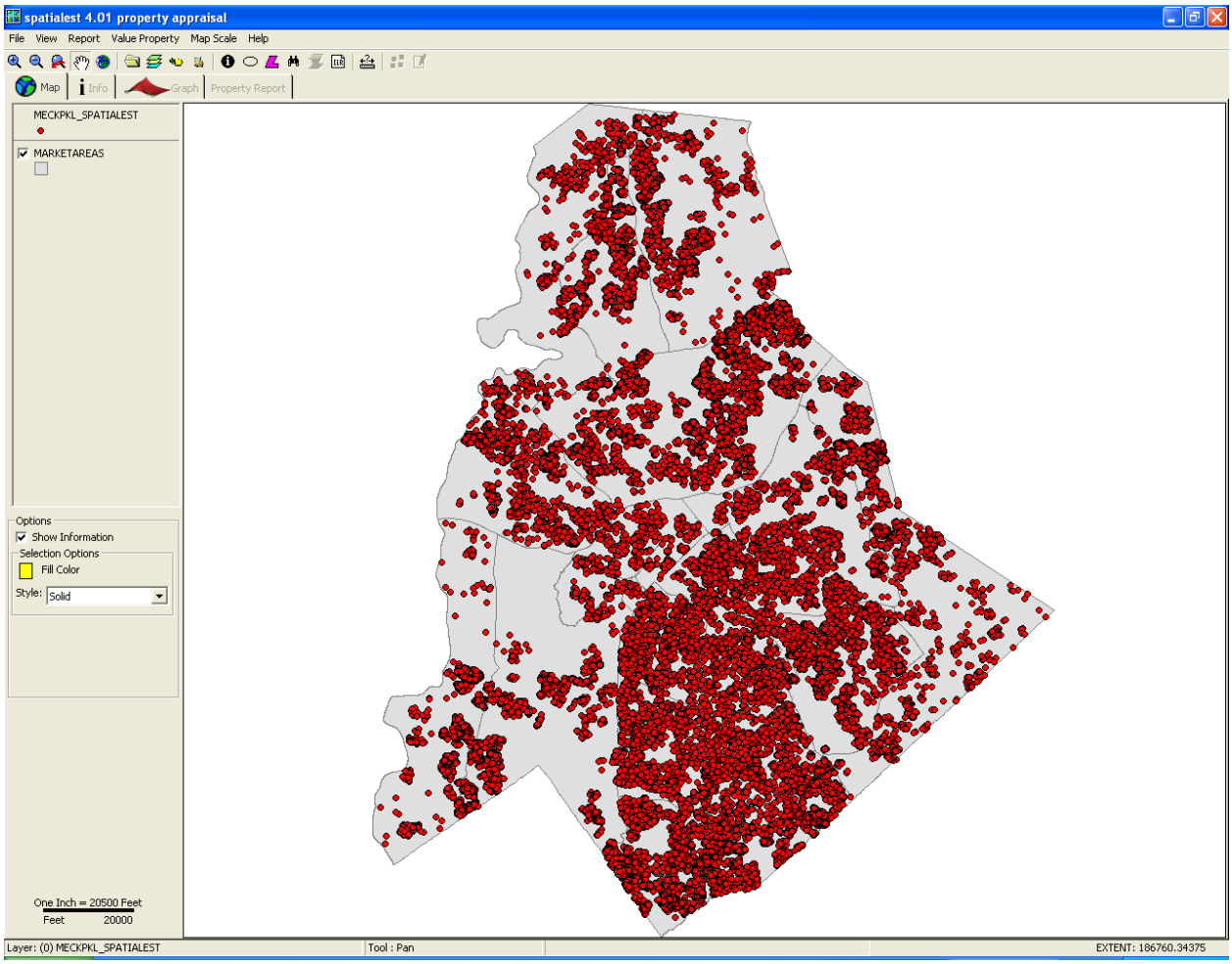
Spatialest® Overview

Spatialest® is a tool that brings geographic information to the appraiser's desktop. It is the next generation of appraisal toolsets and the first Geographic Information System GIS (*A computer system capable of capturing, storing, analyzing and displaying geographically referenced information; that is data identified according to a location*) based appraisal solution.

In recent years Computer Assisted Mass Appraisal (CAMA) modeling has employed GIS as a support tool to graphically portray predicted values, normally created through a pure mathematical model such as Multiple Regression Analysis (MRA) or to assist in the spatial element of Comparable Sales Analysis (A technique employing recently sold properties, which are similar in terms of characteristics to the property being appraised, to achieve an estimate of value). Without GIS an accurate measurement of the impact of location in real estate models was difficult. The ability of GIS to discern location, and thus proximity, is invaluable within computer based predictive analysis and furthermore is unique to GIS. By using GIS as the hub of the analytical process Spatialest® will identify Highly Similar, Locally Proximate comparables. Using a map output and a list of the pertinent property characteristics creates an easily explainable output.

Highly Similar + Locally Proximate = Easily Explainable

This level of integration makes Spatialest unique.

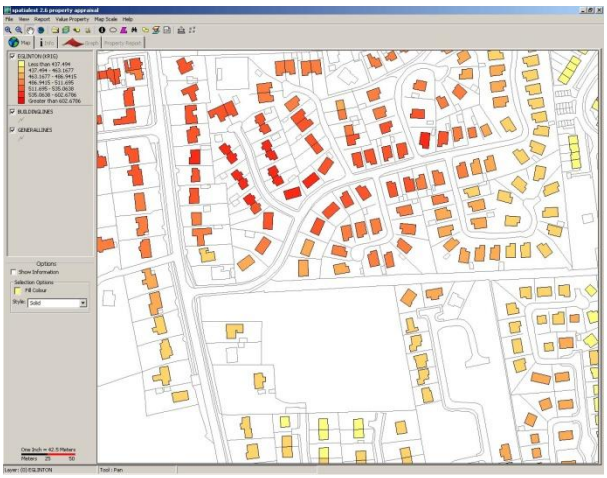


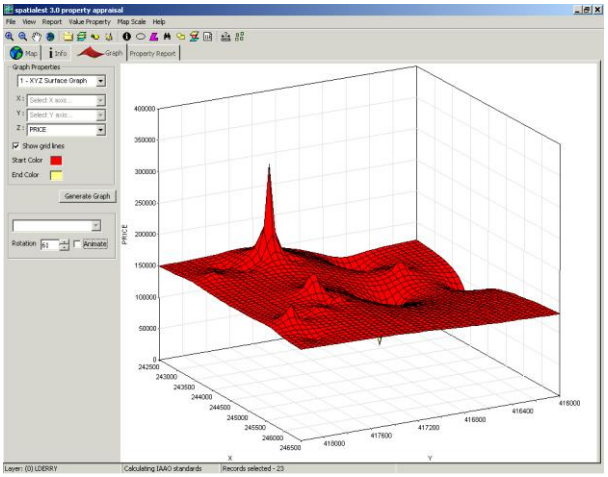
Spatialest® appraisal software has been developed to utilize GIS to model location as part of the CAMA modeling process. Location is fully incorporated as an integral part of the modeling process.

Using Geography

Working spatially offers unique benefits. Users can interact with map based information more easily than tabular data. Consequently the users can interpret sophisticated spatial information and recognize patterns and trends which might not have been apparent within a purely non-spatial environment.

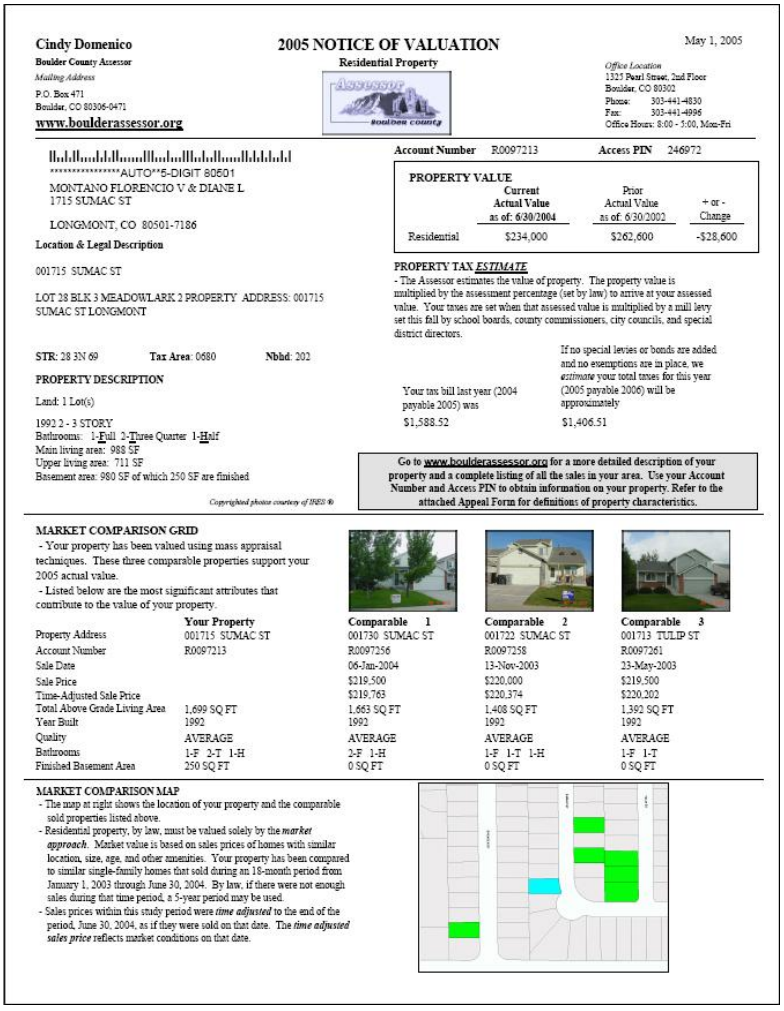
With Spatialest® software users can see how models have worked quickly and easily within a map based system. 'Hot spots' of property value or the influence of geographic features such as water frontage or proximity to highways can be immediately recognized and accounted for.





Users may review a comparison between historical estimates and current estimates to assess the relative impact, both statistically and geographically, of the new assessments. For example, is there a particular region, neighborhood or property type which has been under or overvalued. Is there a particular reason for this?

Due to its geographic core Spatialest® can assist within the general process of appeals. The provision of a map containing the appellants' property, the comparables used to determine the assessed value and a summary of property attributes and model parameters can be used to address inquiries of most residential property owners. The report will also allow appraisers to quickly familiarize themselves with the area, the comparables used and the model parameters.



Cindy Domenico
Boulder County Assessor
Mailing Address
P.O. Box 471
Boulder, CO 80306-0471
www.boulderassessor.org

2005 NOTICE OF VALUATION
Residential Property

May 1, 2005

Office Location
1325 Pearl Street, 2nd Floor
Boulder, CO 80302
Phone: 303-441-4830
Fax: 303-441-4996
Office Hours: 8:00 - 5:00, Mon-Fri

**********AUTO**5-DIGIT 80501
MONTANO FLORENCIO V & DIANE L
1715 SUMAC ST

LONGMONT, CO 80501-7186

Account Number R0097213 **Access PIN** 246972

Location & Legal Description

001715 SUMAC ST

LOT 28 BLK 3 MEADOWLARK 2 PROPERTY ADDRESS: 001715 SUMAC ST LONGMONT

STR: 28 3N 69 **Tax Area:** 0680 **Nbhd:** 202

PROPERTY DESCRIPTION

Land: 1 Lot(s)

1992 2 - 3 STORY
Bathrooms: 1-Full 2-Three Quarter 1-Half
Main living area: 988 SF
Upper living area: 711 SF
Basement area: 980 SF of which 250 SF are finished

Copyrighted photos courtesy of HBH ®

PROPERTY VALUE

	Current Actual Value as of: 6/30/2004	Prior Actual Value as of: 6/30/2002	+ or - Change
Residential	$234,000	$262,600	-$28,600

PROPERTY TAX *ESTIMATE*

- The Assessor estimates the value of property. The property value is multiplied by the assessment percentage (set by law) to arrive at your assessed value. Your taxes are set when that assessed value is multiplied by a mill levy set this fall by school boards, county commissioners, city councils, and special district directors.

Your tax bill last year (2004 payable 2005) was	If no special levies or bonds are added and no exemptions are in place, we *estimate* your total taxes for this year (2005 payable 2006) will be approximately
$1,588.52	$1,406.51

Go to www.boulderassessor.org for a more detailed description of your property and a complete listing of all the sales in your area. Use your Account Number and Access PIN to obtain information on your property. Refer to the attached Appeal Form for definitions of property characteristics.

MARKET COMPARISON GRID

- Your property has been valued using mass appraisal techniques. These three comparable properties support your 2005 actual value.
- Listed below are the most significant attributes that contribute to the value of your property.

	Your Property	Comparable 1	Comparable 2	Comparable 3
Property Address	001715 SUMAC ST	001730 SUMAC ST	001722 SUMAC ST	001713 TULIP ST
Account Number	R0097213	R0097256	R0097258	R0097261
Sale Date		06-Jan-2004	13-Nov-2003	23-May-2003
Sale Price		$219,500	$220,000	$219,500
Time-Adjusted Sale Price		$219,763	$220,374	$220,202
Total Above Grade Living Area	1,699 SQ FT	1,663 SQ FT	1,408 SQ FT	1,392 SQ FT
Year Built	1992	1992	1992	1992
Quality	AVERAGE	AVERAGE	AVERAGE	AVERAGE
Bathrooms	1-F 2-T 1-H	2-F 1-H	1-F 1-T 1-H	1-F 1-T
Finished Basement Area	250 SQ FT	0 SQ FT	0 SQ FT	0 SQ FT

MARKET COMPARISON MAP

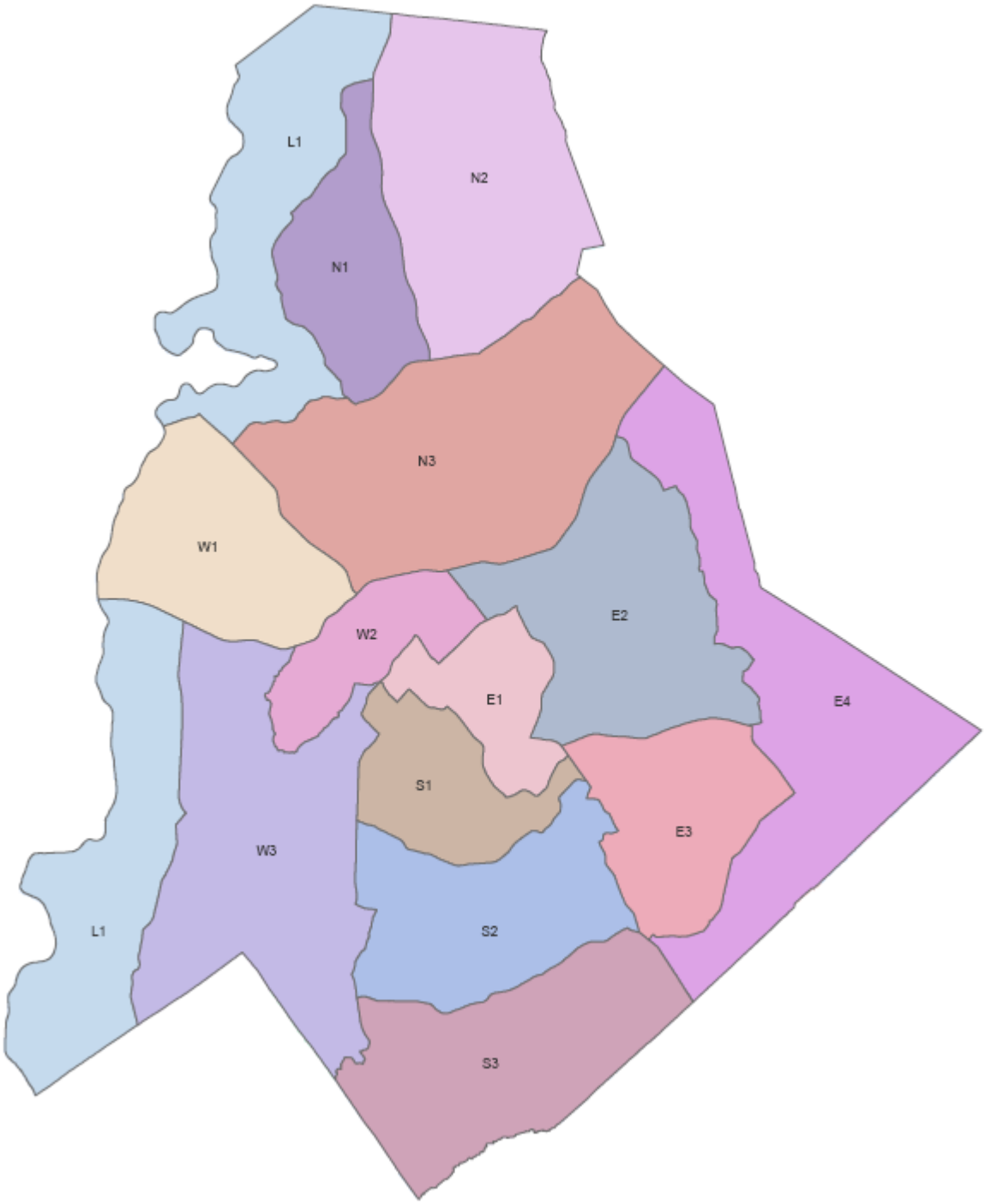
- The map at right shows the location of your property and the comparable sold properties listed above.
- Residential property, by law, must be valued solely by the ***market approach***. Market value is based on sales prices of homes with similar location, size, age, and other amenities. Your property has been compared to similar single-family homes that sold during an 18-month period from January 1, 2003 through June 30, 2004. By law, if there were not enough sales during that time period, a 5-year period may be used.
- Sales prices within this study period were ***time adjusted*** to the end of the period, June 30, 2004, as if they were sold on that date. The ***time adjusted sales price*** reflects market conditions on that date.

Spatialest® allows the user to:

- Appraise properties using a location sensitive model
- Calibrate the model, stratify or remove outliers (Values that differ markedly from the average value. Some will be legitimate whilst others will be caused by erroneous data)
- Review location and characteristics of comparables (Property records which exhibit similar characteristics such as property type, number of bedrooms etc)
- Understand patterns and trends
- Create Property Reports
- Seamlessly integrate with existing databases or other back office solutions

APPLICATION OF SPATIALEST MRA MODELING TO MECKLENBURG COUNTY

The County appraisal staff evaluated the single-family residential marketing areas of the County based on shared spheres of influence and divided the County geographically into 15 Market Sub-Regions:



An MRA model is developed for each of the Market Sub-Regions. Below is an example of the development of a regression analysis for Market Area E3, located in the southeast section of the County:

TXT_INFLU1CODE (qual)	True	NA	97.124%	Percentage Missing exceeds the maximum limit 50%

Regression

Dependent	NUM_SALEPRICE
Std Error for Estimate	18,101.495
Constant:	-388,042.736

Attribute	Coeff	Std. Error	bWeight	t value
MRA_PRED_E3	0.7746	0.0373	0.76	20.764
NUM_FINISHEDAREA	9.3489	2.2884	0.1005	4.085
TXT_EYB	196.4532	62.8815	0.0307	3.124
TXT_GRADE				
42	24,708.6312		0.0275	
43	52,320.4141		0.0261	
16	-11,606.8331		-0.0041	
41	35,099.8614		0.0124	
33	41,444.3995		0.0357	
32	42,254.696		0.0493	
35	51,494.3167		0.0181	
22	1,690.3119		0.0116	
23	2,608.2017		0.0164	
24	5,771.9974		0.0261	
25	7,696.025		0.0308	
26	9,792.1298		0.0338	
31	22,437.5152		0.0305	
21	0		0	
NUM_FULLBATH	3,959.0566	1,196.4377	0.0261	3.309
TXT_ROOFCOVER				
10	11,046.2238		0.0439	
04	50,031.4203		0.0176	
03	0		0	
NUM_UBM_AREA	30.8097	5.013	0.0397	6.146
NUM_FBM_AREA	-17.0734	4.6351	-0.0242	-3.683

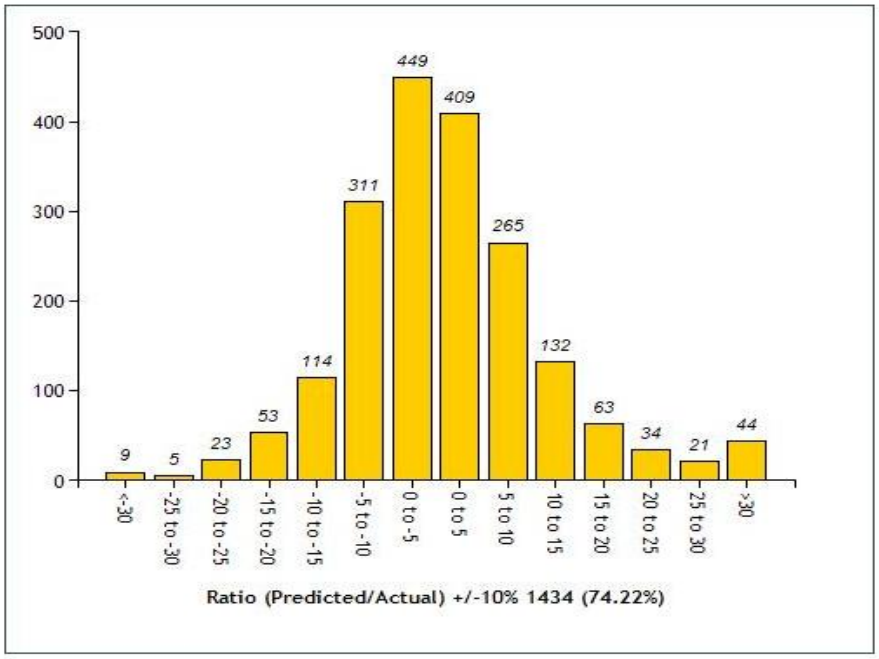
Total Valued	1932
R squared	0.922
Adjusted R squared	0.921
COD	8.06
COV Median	11.769
COV Mean	11.583
Median	1
Mean	1.011
Weighted Mean Ratio	1

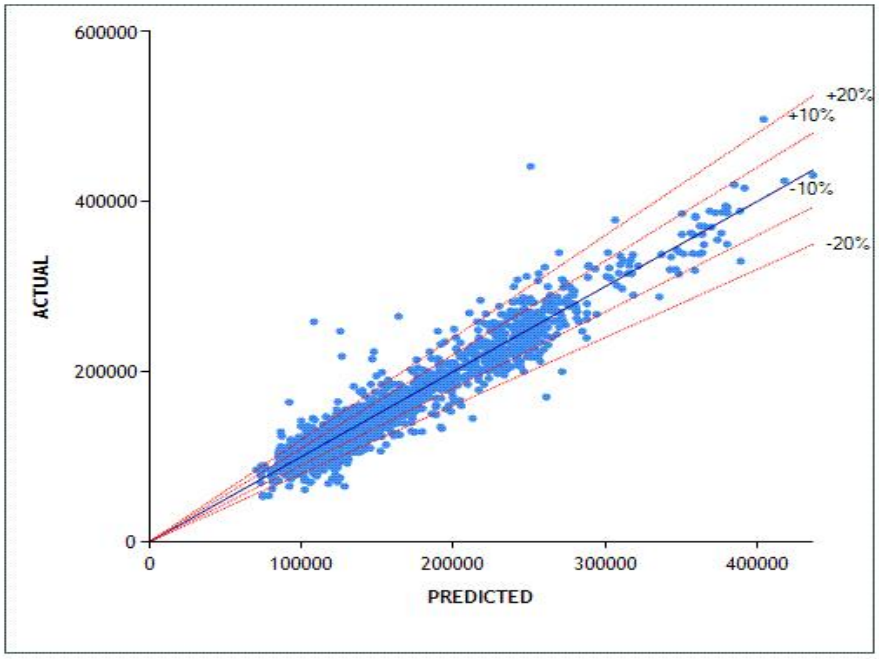
In this example, a staff appraiser used the Spatialest Exploratory Data Analysis (EDA) Tool to develop a model for Market Area E3. The model analyzed 1,902 sales that occurred within the sub-region over an 18 month period. By comparing all the independent variables (property attributes) against the dependent variable (sale price) the model extracted coefficients and correspondent weights for the characteristics that most heavily influenced sale price in the area (listed under "Attribute" above): Finished Area, Effective Age (EYB), Quality Grade, Number of Full Baths, and Basement Area.

The "R squared" statistic measures the percentage of major value drivers captured through the sales. A statistic greater than or equal to 90% is desirable; in this example, the R squared statistic is 92.2%, meaning the appraiser captured better than 92% of the significant features that affect the predicted value for residential property.

The International Association of Assessing Officers (IAAO) has set industry standards for the quality of assessments. For a heterogeneous residential market area like the one appraised above, the maximum Coefficient of Dispersion (COD) should be no greater than 15. The MRA model above generated a dispersion of 8.06. The median Assessment to Sales Ratio (ASR) for this area is 100%, which meets North Carolina's statutory guidelines for property assessment.

The Spatialest EDA tool also generates graphic displays in the form of bar graphs and scatter diagrams to give the appraiser a visual representation of the distribution and dispersion of model-generated appraised values versus actual sales prices in the sub-region:





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 regardless of the purpose or use of such appraisals. STANDARD 6 is directed toward the substantive aspects of developing and communicating competent analyses, opinions, and conclusions in the mass appraisal of properties, whether real property or personal property. Mass appraisals can be prepared with or without computer assistance. The reporting and jurisdictional exceptions applicable to public mass appraisals prepared for purposes of 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 the property(ies) being appraised
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.

Standards Rule 6-1 (This Standards Rule contains binding requirements from which departure is not permitted.)

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: In performing appraisal services, an appraiser must be certain that the gathering of factual information is conducted in a manner that is sufficiently diligent, given the scope of work as identified according to Standards Rule 6-2(c), to ensure that the data that would have a material or significant effect

on the resulting opinions or conclusions are identified and, where necessary, analyzed. Further, an appraiser must use sufficient care in analyzing such data to avoid errors that would significantly affect his or her opinions and conclusions.

(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 Rule requires an appraiser to use due diligence and due care.

Standards Rule 6-2 (This Standards Rule contains specific requirements from which departure is permitted. See the DEPARTURE RULE.)

In developing a mass appraisal, an appraiser must observe the following specific appraisal requirements:

(a) identify the client and other intended users;

(b) identify the purpose and intended use of the appraisal;[1]

(c) identify the scope of work necessary to complete the assignment, including any special limiting conditions;

Comment: Constraints on the mass appraisal process must not limit the scope of work to such a degree that the mass appraisal results are not credible.
The scope of work is acceptable when it is consistent with:

- the expectations of participants in the market for the same or similar appraisal services; and
- what the appraiser's peers' actions would be in performing the same or a similar assignment in compliance with USPAP.

An appraiser must have sound reasons in support of the scope-of-work decision and must be prepared to support the decision to exclude any information or procedure that would appear to be relevant to the client, an intended user, or the appraiser's peers in the same or a similar assignment.

An appraiser must not allow assignment conditions or other factors to limit the extent of research or analysis to such a degree that the resulting opinions and conclusions developed in an assignment are not credible in the context of the intended use of the appraisal.

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

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 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.

(e) identify the effective date of the appraisal;

(f) define the value being developed; 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 JURISDICTIONAL EXCEPTION RULE may apply.

(g) identify the characteristics of the properties that are relevant to the purpose and intended use of the mass appraisal, 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.

(h) 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.

(i) in appraising real property or personal property:

(i) identify and analyze whether an appraised physical segment contributes pro rata to the value of the whole; 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.

(j) 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.

(k) recognize that land is appraised as though vacant and available for development to its highest and best use and that the appraisal of improvements is based on their actual contribution to the site;

Comment: This requirement may be modified to reflect the fact that, in various market situations, a site may have a contributory value that differs from the value as if vacant.

(l) 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, identify the effect of highest and best use by measuring and analyzing the current use and alternative uses to encompass what is profitable, legal, and physically possible, as relevant to the purpose and intended use of the appraisal. Personal property has several measurable marketplaces; therefore, the appraiser must define and analyze the appropriate market consistent with the purpose of the appraisal;

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 property within the correct market context.

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

Standards Rule 6-3 (This Standards Rule contains binding requirements from which departure is not permitted.)

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 apply 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 6-4 (This Standards Rule contains specific requirements from which departure is permitted. See DEPARTURE RULE.)

In developing a mass appraisal, an appraiser must observe the following specific requirements, when applicable:

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

(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—i.e., rentals, expenses, interest rates, capitalization rates, and vacancy data;

Comment: This Standards 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, 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 6-5(This Standards Rule contains specific requirements from which departure is permitted. See DEPARTURE RULE.)

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, as applicable;

(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, as applicable, 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) analyze the effect on value, if any, of anticipated public or private improvements, located on or off the site, to the extent that market actions reflect such anticipated improvements as of the effective appraisal date; appraise proposed improvements only after examining and having available for future examination:

(i) plans, specifications, or other documentation sufficient to identify the scope and character of the proposed improvements;

(ii) evidence indicating the probable time of completion of the proposed improvements; and

(iii) reasonably clear and appropriate evidence supporting development costs, anticipated earnings, occupancy projections, and the anticipated competition at the time of completion.

Comment: Ordinarily, proposed improvements are not appraised for ad valorem tax purposes. 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 unbuilt community property, the pro rata value of which, if any, must be considered in the analysis of sales data.
Development of a value opinion for a subject property with proposed improvements as of a current date involves the use of the hypothetical condition that the described improvements have been completed as of the date of value when, in fact, they have not.

The evidence required to be examined and maintained may include such items as contractors' estimates relating to cost and the time required to complete construction, market and feasibility studies; operating cost data, and the history of recently completed similar developments. The appraisal may require a complete feasibility analysis.

Standards Rule 6-6 (This Standards Rule contains binding requirements from which departure is not permitted.)

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 or suitability of the approaches 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 estimates 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 6-7 (This Standards Rule contains binding requirements from which departure is not permitted.)

A written report of amass 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 any extraordinary assumptions, hypothetical conditions, or limiting conditions that directly affect the appraisal and indicate its impact on value;

Comment: Examples of extraordinary assumptions or hypothetical conditions might include items such as the execution of a pending lease agreement, atypical financing, a known but not yet quantified environmental issue, or completion of onsite or offsite improvements. In a written report the disclosure is required in conjunction with statements of each opinion or conclusion that is affected.

(d) state the identity of the client and any intended users, by name and type;

(e) state the purpose and intended use of the appraisal;[2]

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

Comment: One limiting condition that must be disclosed is whether or not any physical inspection was made.

(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 use conditions as of the effective date of the appraisal was prospective, current, or retrospective.

Reiteration of the date of the report and the effective date of the appraisal at various stages of the report in tandem is important for the clear understanding of the reader whenever market or property use conditions on the date of the report are different from such conditions on the effective date of the appraisal.

(h) define the value, including the type and definition and its source;

(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 sufficient information to disclose to the client and any intended users of the appraisal the scope of work used to develop the appraisal;

Comment: This requirement is to ensure that the client and intended users whose expected reliance on an appraisal may be affected by the extent of the appraiser's investigation are properly informed and are not misled as to the scope of work. The appraiser has the burden of proof to support the scope of work decision and the level of information included in a report.

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 SR 6-8.

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

Comment: The user and affected parties must have confidence that the process and procedures used conform to accepted methods and result in credible value estimates. 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 estimates;

(n) in the case of real property, discuss how highest and best use 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) provide any additional information necessary to explain the appraisal more fully, including departures permitted by the DEPARTURE RULE; and

(q) include a signed certification in accordance with Standards Rule 6-8.

Standards Rule 6-8 (This Standards Rule contains binding requirements from which departure is not permitted.)

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 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.)** [3]
- **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 assessor's 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.

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.

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 and that their work 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 6-7(j).

[1] See Statement on Appraisal Standards No. 9 (SMT-9).
[2] See Statement on Appraisal Standards No. 9 (SMT-9).
[3] See Advisory Opinion AO-2. References to the Advisory Opinions are for guidance only and do not incorporate Advisory Opinions into the Standards Rules.