Buncombe County Tax Office Gary C. Roberts, Tax Administrator



2017 Reappraisal SCHEDULE OF VALUES, STANDARDS AND RULES

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Introduction

Why and how reappraisal is completed?

North Carolina law, General Statute 105-286 specifically, requires counties to reappraise all real property values once every eight years, at minimum. Real property includes land, buildings, structures, and improvements. Buncombe County attempts to maintain a four-year reappraisal schedule. The previous appraisal date was January 1, 2013. The next reappraisal will be effective January 1, 2017.

General Statute 105-283, requires real property be valued at its true value in money. Properties are appraised at 100% of market value based on the most recent qualified sales that occurred leading up to the reappraisal date. Not all properties will sell, rent or be built in the same time frame, but those properties that do can be used to establish typical market rates for those activities. There are approximately 122,000 parcels in Buncombe County. To accomplish the reappraisal of all parcels a process referred to as "mass appraisal" is employed. Mass appraisal is the process of grouping uniform or similar properties together to ensure fair and equitable property values. Various characteristics of the property are considered during the appraisal process such as, location, type of construction, age, replacement cost, advantages and disadvantages of land and location, commercial, residential, zoning, etc.

Property values can change during a non-reappraisal year due to physical changes that are made to the property. Reappraisal value is the value of the property as of January 1 of the reappraisal year. Buildings or other improvements currently under construction are appraised according to the degree of completion on January 1 of the year the building first becomes taxable.

After properties are appraised at market value the property is then assessed for taxation based on its appraised value. The assessed value of a property may be different from the appraised value because North Carolina State law requires certain special classes of properties to be assessed at a reduced rate such as homestead, veterans, historic if applicable, etc.

2017 Reappraisal Timeline

January 1, 2017 – Appraisal date for the 2017 Reappraisal.

January 30, 2017 – Notice of assessed value is mailed to property owners.

January through April, 2017 – Property owners may appeal their assessed value.

April 2017 – Board of Equalization and Review will convene to hear 2017 appeals.

June 30, 2017 – Tax rate is established for 2017.

August 2017 – 2017 Tax bills will be mailed to property owners.

North Carolina General Statutes 105-286(a) and 105-283.

NCGS 105-286(a). Time for general reappraisal of real property.

"Each county must reappraise all real property in accordance with the provisions of G.S. 105-283 and G.S. 105-317 as of January 1... and every eighth year thereafter, unless the county... chooses to advance the date."

NCGS 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."

Appeals

No matter how thorough and fair a reappraisal may be, there are still instances when only the property owner has all the information necessary for an accurate appraisal. A relatively easy appeal process is in place to rectify such a situation. According to North Carolina General Statutes, the property owner has the burden of proving the property under appeal is incorrectly valued. North Carolina law presumes the County Tax Assessor acted in good faith and that assessments are correct.

The first step in the appeal process is to file an informal appeal. Begin by contacting the Tax Department to request an appeal form or file an appeal online. The property owner's appeal must be completed and returned within the specified timeframe and include information to support the owner's opinion of value. Once the appeal is received it will be reviewed by an appraiser in the Tax Department. The result of the informal review will be mailed to the property owner.

The second step in the appeal process is to file a formal appeal. Begin by contacting the Tax Department to request a formal appeal form, or submit the appeal online. After submission of the formal appeal by the property owner a Tax Department appraiser will meet with the property owner to discuss the value and verify information supplied. Should the owner not agree with the appraiser's opinion of value the formal appeal case will be scheduled and presented to the Board of Equalization and Review. Both property owner and Tax Department staff will present to the Board of Equalization and Review. The Board of Equalization and Review will review the presentations and make a decision at a scheduled public hearing. That decision will be mailed to the property owner within 30 days of the date of the Board meeting.

The third step in the appeal process arises if the property owner does not agree with the decision made by the Board of Equalization and Review. The property owner may, within 30 days of the date on the notice from the Board of Equalization and Review, file an appeal with the North Carolina Property Tax Commission. The majority of these appeal cases will be heard in Raleigh, North Carolina. An appellant must file an appeal with the Board of Equalization and Review before filing an appeal with the North Carolina Property Tax Commission.

The fourth and final step in the appeal process occurs when the appellant is not pleased with the decision from the North Carolina Property Tax Commission. The next step in the process would be an appeal to the North Carolina Court of Appeals and North Carolina Supreme Court.

Please contact the Buncombe County Tax Real Estate Division, (828) 250-4940, if you have any questions or would like to begin the appeal process. You may also begin the online appeal process by visiting the Tax Department at BuncombeCounty.org.

Schedule of Values Purpose

The primary purpose of the Schedule of Values (the "Schedule") is to document the methods and procedures used to develop the assessed values for property during the 2017 reappraisal. The Schedule outlines the methodology, procedures, rules, terms, categories, and classifications used by County Tax Appraisers. This document also serves as a resource to appraisers while in the field and a guide to share with citizens. The methods, procedures, and rules detailed in this Schedule will be used to value property until the next county-wide reappraisal. This valuation Schedule reflects the current market conditions, so it is possible to determine the current market values of the subject properties.

The goal of any reappraisal is to develop the market value for each property in the jurisdiction. Market value is defined as the most probable price a property will bring between a willing buyer and a willing seller, both of which are knowledgeable about the possible uses of the property. Requirements and procedures for property taxation in North Carolina are defined in North Carolina General Statutes Chapter 105. Therefore, all relevant General Statutes are considered as a part of this manual.

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

The first part of the Schedule is an overview of the mass appraisal process. A brief explanation of appraisal methods and how they are used in mass appraisal are included in this section. Also included are definitions of appraisal procedures and schedules for depreciation, land valuation, and building cost calculation. The methods used to insure that a mass appraisal is equitable and accurate are also detailed in this section. These methods include assessment performance measurements such as ratio studies, statistical testing and field reviews.

The remainder of the schedule details the procedures for maintaining the database of information about real estate in Buncombe County, which is the foundation of the mass appraisal process. The Schedule contains separate sections outlining the procedures for listing commercial, residential, manufactured housing, miscellaneous structures, land, and special use properties. Also included in a separate section are the schedules and rules for present use valuation.

In the addendum section of this manual are sections on the property class coding system, a separate list of all rates, and depreciation tables.

Appraisal Principles

Real Property

- Real property includes both tangible and intangible rights to land and improvements. Real estate is land and anything permanently attached to it.
- Land ownership includes the surface land and anything below it or above it, such as air rights, mineral rights or timber rights.
- Ownership includes the right to use, sell, rent, enter or leave, give away or do nothing with the property.

Market Value

In North Carolina property is valued at 100% of its market value.

- 1. Market value is the most probable price the property will bring and not the highest price, lowest price or the average price.
- 2. Purchased for cash or its equivalent.
- 3. The property was exposed to the open market for a reasonable amount of time.
- 4. The buyer and seller are well informed and both recognize the property's potential uses as well as the property's current use.

Types of Value

Market value Salvage value
Lease fee value Leasehold value
Book value Insured value
Depreciated value Assessed value
Condemnation value Mortgage value

Market Value and Market Price¹

Market value is not always the same as market price. Market price is what the property actually sold for. Market value is an estimate of value based on comparable sales and other market information. Market price can differ from market value if any of the above market value criteria are not met. For example, if the buyer is forced to sell, if the parties are related, or if one of the parties was uninformed about the potential use of the property then the market price may not equal the market value.

Market Value and Cost

The cost of a property is not always equal to its market value. Cost may equal market value when the improvements on a property are new and are the highest and best use of the land. The cost to build may exceed the actual market value if special items are added and the market does not provide for a return on the investment. For example, installing a slate roof on low quality construction or paying extra to decrease the time needed to build the structure could drive the cost above market value.

¹ International Association of Assessing Officers, <u>Property Assessment Valuation, Third Ed. (2015)</u>

Appraisal Principles

Value- in-Use and Value- in- Exchange

In some cases, special use or unique characteristics make a property useful to the current owner and not as desirable to other potential buyers. The utility or value of the current use to the current owner may be different than the potential market value to others. The property may not be marketable for use by others in its current condition. For example, the cash flow an asset generates for a specific owner under such a specific use reflects the current value for that specific owner. Value-in-use is the value to one particular user/specific owner, and may be above or below the market value of a property.

Economic Principles

All appraisals, both individual and mass, are based on the three approaches to value. The three approaches to value are: the Sales Comparison or Market Approach, Cost Approach, and Income Approach. These approaches to value are based on the following economic principles of value:

Anticipation – In appraisal, the concept that the value of property today is equal to the value of future income, discounted to present value. Discounting rests on the assumption that the right to receive \$1 in the future is not worth \$1 today, but something less than \$1.

Balance – Value is created and sustained when contrasting, opposing, or interacting elements are in equilibrium, or balance. Proper mix of varying land uses creates value. Imbalance is created by an overimprovement or an under-improvement.

Change – the principle states that market value is never constant because environmental, economic, social, and governmental forces are at work to change the property and its environment.

Competition - Competition is created where substantial profits are being made. If there is a profitable demand for residential construction, competition among builders will become very apparent. This could lead to an increase in supply in relation to the demand, resulting in lower selling prices and unprofitable competition, leading to renewed decline in supply.

Conformity – The value of property depends, to some extent, on its relation to its surroundings. The principle states that maximum value is reached when there is reasonable similarity among improvements in a neighborhood.

Consistent Use – The principle of consistent use states that the property must be valued with a single use for the entire property. It is improper to value property on the basis of one use for the land and another use for the improvements.

Contribution – The principle of contribution states that the value of a component of property depends upon its contribution to the whole. The cost of the component does not necessarily equal the value the component adds to the property.

Increasing and Decreasing Returns – The principle of increasing and decreasing returns states that when successive increments of one agent of production are added to fixed amounts of the other agents, future net benefits will increase up to a certain point after which successive increments will decrease future benefits.

Progression and Regression – The principle of progression states that the value of a lower priced property is increased by association with the better properties of the same type. The principle of regression states the value of better quality property is decreased by association with lower valued property in the same area.

Substitution – The principle states a property's market value tends to be set by the cost of acquiring an equally desirable and valuable substitute property, assuming that no costly delay is encountered in making the substitution.

Supply and Demand – The theory of supply and demand, as applied to property appraisal, holds that the price of property varies directly with the demand and inversely with the supply.

Surplus Productivity – The principle states surplus productivity is the net income remaining after the cost of labor, management, and capital have been satisfied. The surplus productivity is the income earned by the land. The agents of production must be satisfied in the following order: labor, management, capital and land.

Appraisal Principles

Highest and Best Use

Highest and best use is defined as "that use which will generate the highest net return to the property over a reasonable period of time." Property Assessment Valuation, Third Ed. (2015). All three approaches to value must consider highest and best use as the primary factor in appraising property. The highest and best use must be legally permitted, physically possible, economically feasible and the most productive use. In determining the highest and best use for an improved site, the appraiser must determine the highest and best use of the site as if vacant and as if improved.

- 1. **Legally Permitted**: The legal use of a property is the use permitted by the deed restrictions and zoning. For example, where no zoning restrictions are present in a neighborhood, but deed restrictions limit the use of the site to only one single-family residential dwelling of at least 1,300 square feet, then the property is limited to one single-family residence per lot as its highest and best use.
- 2. **Physically Possible**: To be physically possible, the use must fit on the subject lot and meet all size requirements. In the previous example the deed restrictions require the structure to be at least 1,300 square feet on one level, but no more than two stories in height. To be physically possible the lot must be large enough to allow for the construction of a 1,300 square foot dwelling.
- 3. **Economically Feasible**: To be economically feasible, the use must provide the highest net return to the land over a period of time. In the previous example only a single-family residence is allowed due to deed restrictions. No other improvements are allowed and buying a lot for a commercial use would not give a return on the investment. Offering the land for sale as a vacant site would not provide a return on the investment until the time of sale. The only legally permitted, physically possible and economically feasible use in the previous example is a single-family residence.
- 4. **Most Productive Use**: In this example, only single-family residential use is the highest and best use.

Three Approaches to Value

All appraisals are done using one or more of the three approaches to value which are based on the previously listed appraisal principles. The three approaches to value are: the sales comparison, cost, and income. However, these three approaches to value are not equally relevant to every type of property. For example, the income approach is not the best method for valuing single-family residential properties because they are not usually purchased for income production. Buyers primarily purchase single family residences for use as a home. The cost approach is not the best method to use in valuing vacant land or older construction. The cost approach uses replacement cost of new construction minus depreciation to value improvements. Therefore, it is not useful for vacant land valuation. Estimating the amount of depreciation on an older structure can also be difficult when using the cost approach to value. Finally, the sales comparison approach is not the best method for valuing special use property because of the lack of sales data in situations involving properties such as government buildings, schools, churches, or public parks.

The method used for Buncombe County mass appraisal is a combination of all three approaches to value. The data on each improved property is used to develop the replacement cost of new construction of the structure, then depreciated for age and condition (cost), and finally adjusted by neighborhood based on the recent sales in that neighborhood (sales comparison). After those steps in the process Buncombe County arrives at a market adjusted cost valuation. In addition, for commercial properties, or income producing properties, income information is analyzed to consider in the reconciliation of property values. The appraiser must consider all aspects of the property and choose the best approach to value the property. The strengths of each approach to value and the amount and reliability of the data used to value the property are important considerations.

Reconciliation

Each of the three appraisal approaches are used to indicate market value. All three methods of valuation are given consideration and used to support the assessment. Reconciliation of the three approaches to value is not an average of the values produced by the different appraisal methods. An average gives equal weight to all approaches. In the appraisal process, any of the three approaches to value may be most reliable depending on property type and available information. Using the reconciliation process, the appraiser produces a value by considering the type of property being appraised, the positives and negatives of each approach, then evaluating the reliability of each approach and its correlation to value.

The three approaches to value are typically applied in the following order by the type of property being appraised. Buncombe County considers all three approaches for each property type, but the order can be irrelevant. Appraiser judgement is allowed as to the correct approach to use and the order they are applied.

Commercial	Industrial
1. Income	1. Cost
2. Cost	2. Sales Comparison
3. Sales Comparison	3. Income
	2. Cost

The appraiser must consider the following when using the three approaches to value:

- 1. Is the approach being used relevant to the property being appraised?
- 2. What are the expected strengths and weaknesses of the approach being used?
- 3. Is the data being used adequate in quantity and reliability?
- 4. What is the effect of the local market on the data being used?

Sales Comparison Approach

The sales comparison approach to value estimates market value by comparing recently sold properties to the subject property. These comparable sales are adjusted for differences from the subject to estimate market value. The comparable properties must be a possible substitute for the subject property because this appraisal method is based on the principle of substitution that "a prudent buyer will pay no more for a property than for a comparable property with similar utility." Property Assessment Valuation, Third Ed. (2015).

The procedures used for single property appraisal using the sales comparison approach are:

- 1. Research, collect, verify and analyze sales data on comparable properties.
- 2. Select the appropriate units of comparison between the subject and comparables.
- 3. Determine from the market contributory value of differences between the subject and the comparables.
- 4. Make adjustments to the comparables for these differences.
- 5. Correlate the adjusted values of the comparable sales to develop a final estimate of market value.

Because no two properties are completely alike, the sales information must be adjusted for any differences to compare it to the property being assessed. These differences are assigned a percent or dollar amount of value for these differences. The appraiser must make adjustments in the proper sequence: atypical financing, time of sale, location and physical characteristics.

Reasons to adjust the sale price:

- **Date of sale**: The sales price is adjusted for economic changes that have occurred between the date of sale and the appraisal date.
- **Location**: Location is the primary factor when valuing similar property. Similar properties will vary in sales price due to the desirability of location even in the same neighborhood.
- **Physical attributes**: Age, size, quality of construction, condition, square footage, lot size, etc.
- **Financing**: Special financing arrangements may have an effect on the sale price. For example, a buyer may pay more when a seller offers owner financing.

The computer assisted mass appraisal (CAMA) system enables the sales comparison approach to be applied to a larger population of properties. Hundreds of sales are analyzed and used to value thousands of properties. This process begins by stratifying properties by neighborhood and type so similar properties are compared to each other. For example, a rural area with a mixture of house types is not compared to a gated golf community. Sales of commercial and industrial use properties are not used to develop values for residential properties. The sales comparison approach to value is the most reliable way to value residential property and is helpful for other types of property when sales information is available.

Cost Approach

The cost approach to value is based on the principle of substitution. The principle of substitution states that an informed purchaser will pay no more for a property than the cost to obtain an acceptable substitute without a costly delay. The cost approach first calculates the cost of land comparable to the subject property. Then the building cost is calculated producing a value for the structure as if new. The depreciation applicable to the subject is subtracted from the cost of the new building. The costs of land and building are added to produce an estimate of value. The cost approach is especially useful to value new construction where depreciation is not a major factor. In addition, special types of construction such as industrial buildings, government buildings and churches that may not have sales or income information available to use in the appraisal process and buildings such as these can be valued using the cost approach. The cost method of valuing property has several steps:

- 1. Determine the value of the land as vacant and available for its highest and best use.
- 2. Calculate the cost to construct the building and site improvements.
- 3. Estimate the amount of depreciation and subtract it from the building cost.
- 4. Add the depreciated building cost to the land value in order to estimate the value for the entire property.

Site Valuation

The first step in the cost approach, is to value the property as if it is vacant. There are five generally accepted methods of valuing a site as vacant; these methods are:

- 1. **Direct Sales Comparison**: Recent sales of vacant land are gathered, analyzed, and verified for comparison to the subject site. An appropriate unit of comparison is chosen and adjustments are made for differences such as location, physical characteristics, and time of sale. These adjustments are applied to the comparable sites that have sold to produce an indicated value of the land.
- 2. **Abstraction/Allocation or Ratio:** Improved parcels are analyzed for a logical relationship between land value and improvement value. In the abstraction method, the depreciated replacement cost of the improvements is subtracted from the sales price. The difference is an indication of land value for that property. The allocation method uses sales of improved properties to develop a ratio of the land value to the total sales price. Depreciated replacement costs are used to develop the ratio, and then typical ratios are applied to other parcels to develop an indication of value.
- 3. **Development of Anticipated Use:** The estimated costs to fully develop a site to its highest and best use are subtracted from the projected sales prices to develop an indication of the value for the land in its raw or undeveloped state.
- 4. **Capitalization of Ground Rent:** Ground rent refers to regular payments made by a holder of a leasehold property. Gross rent is estimated and expenses are subtracted to give net income. Net income is capitalized into an indication of total value from the ground rents. The income from the improvements is subtracted from the total net income to produce the income attributable to the land. The income from the land is capitalized, and an indication of the value for the land is developed.
- 5. Land Residual Capitalization: A new building, either actual or hypothetical, is projected onto the land. This use represents the most profitable use of the land. The procedure for this method follows the steps of the capitalization method after the cost and income for the new improvements are established.

Units of Comparison Analysis

There are five units of comparison commonly used to value land sites. These five units of comparison are: front foot, square foot, acre, site, and units buildable.

- 1. **Front foot:** The front foot method is primarily used for commercial property. Frontage on a road or highway increases exposure for commercial property.
- 2. **Square foot:** The Square foot method is primarily used for commercial property. The square foot method would be used where commercial lots are small, usually in urban areas, and where the front foot method would not be a factor.
- 3. **Acre**: The acre method is used to value large acreage tracts. This is the method most often used for large industrial, commercial, or farm tracts.
- 4. **Site:** The site method is primarily used to value subdivision lots where no significant differences in value can be contributed to the size of lot.
- 5. **Units buildable:** The units buildable method is used when a site is sold on the basis of the number of units that can be built on the site. The number of units that can be physically built on a site can differ from the number of legally permitted units. When this method is used for land valuation, setbacks, zoning, deed restrictions, topography, and market demand must be considered by the appraiser.

Each of the land valuation methods will produce an accurate value. The appraiser must choose the method to use based on the type of property being appraised.

Building Costs

After the land value is set the next step in the cost approach is the valuing of all improvements based on replacement cost new. This process takes the information on each structure and values the structure based on the current cost of construction. The costs are developed from information gathered by national cost manuals and from local builders, realtors, and developers. Then the accrued depreciation is subtracted from the replacement cost new. This process is done by means of depreciation tables that are developed in the same manner as the cost tables. The depreciation is calculated based on the effective age of the structure. The effective age is based on the condition of the improvement. For example, if a structure was built in 1920 but was renovated in 2002, its effective age is less than a similar structure of the same age that has not been maintained. The final step in the cost approach to value is to add all improvement values to the land value to develop the total cost of the property.

Income Approach

The income approach to value is based on the principles of substitution and anticipation to produce income based on the investment value of the property. When no income data is available using the income approach to value is difficult or of little value. The income approach cannot be relied on as the only method of valuation. It is possible for the sales price to exceed the value supported by market rents. When sales price exceeds market rent other influences are affecting the value of the property, such as the future benefits of the property or speculation. The price paid for an income producing property is no more than the amount of investment required to provide a desirable return on the investment. The rental market is analyzed to determine the return investors expect from various types of property. This process includes estimating income by collecting local rental information and expense data, development of accurate capitalization rates, and the capitalization of net income into an indication of value.

The procedure for the income approach is:

- 1. Estimate the potential gross income based on market rents.
- 2. Deduct for vacancy and collection loss.
- 3. Add miscellaneous income to get the effective gross income.
- 4. Determine operating expenses.
- 5. Deduct operating expenses from effective gross income to determine net operating income before discount, taxes and recapture.
- 6. Select the proper capitalization rate and determine the proper capitalization procedure.
- 7. Capitalize the net operating income to determine the value.

Example:	Potential Gross Income	\$65,500
	Vacancy and Collection Loss	- <u>5,000</u> \$60,500
	Miscellaneous Income	+2,000
	Effective Gross Income	\$62,500
	Operating Expenses	- \$22,000
	Net Operating Income	\$40,500
	Capitalization Rate	(example 10%)
	Estimated Value of Property	\$405,000

Mass appraisal is the process of valuing a large number of properties, usually all properties in the assessing jurisdiction, such as Buncombe County. The general definition of mass appraisal is "the systematic appraisal of groups of properties as of a given date using standardized procedures and statistical testing." <u>Property Assessment Valuation</u>, Third Ed.(2015). This is the process used to assess real estate for tax purposes.

The first step in mass appraisal is to divide the subject properties into neighborhoods or special classes. For example, commercial and special use properties are separated from residential properties. The properties can be further stratified by area, type, age or use. This process allows the appraiser to compare like properties. Commercial hotels are not compared to strip malls or office buildings. Commercial properties are classified by location and use. Residential properties are divided by location, age and condition, and refinements.

The land values for each neighborhood are developed by the appraiser assigned to that area. This is done by analyzing sales data for the last four years in that area. If no data exists for a neighborhood, the appraiser uses data from a comparable neighborhood.

Once the land values are set, the appraiser reviews the value for the improved properties based on cost and depreciation schedules developed from the local market. This portion of the schedule is developed from information gathered from local builders, developers, realtors, contractors, and market transactions. The information gathered locally is compared to cost manuals such as Marshall and Swift costing service to check for reasonableness.

Mass Appraisal, Development and Reporting in Accordance with USPAP Standard 6. 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. Buncombe County real estate appraisals are in compliance with USPAP Standard 6.

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

For complete definition of USPAP Standard 6 refer to the USPAP Manual.

Neighborhood Delineation

The final step for the appraiser is analyzing the sales of improved properties by neighborhood within a defined area. A neighborhood is often delineated base on homogenous properties. These properties will be similar in age, style, size, or other characteristics. Two dwellings that are exactly alike may sell for different amounts based on their location. The appraiser applies a neighborhood adjustment to reflect the sales of properties in that area. The neighborhood adjustment is an adjustment for location. This adjustment is a change from the actual cost of a structure based on the market value. This adjustment can be neutral, plus or minus. The neighborhood factor takes the most time and effort. The appraiser will analyze hundreds of statistical reports to determine the neighborhood factor.

Principles of Uniform Assessment

The prime objective of mass appraisals for tax purposes is to establish equitable assessments for all property. The common denominator, or the basis for equitable assessments, is market value. General Statute 105-283 defines market value as, the price estimated in terms of money at which the property would change hands between a willing and financially able buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of all the uses to which the property is adapted and for which it is capable of being used. The job of the appraiser is to arrive at a reasonable estimate of that justified price. The approaches to the valuation of the various classes of property must be correlated so that they are related one to another in such a way as to reflect the motives of the prospective purchasers of each type of property.

A prospective purchaser of a residential property is primarily interested in its capacity to render service as a place to live. Its location, size, quality, design, age, condition, desirability, and usefulness are the primary factors to be considered in making a selection. One property will eventually stand out to be more appealing than another. So, it is the job of appraisers for tax purposes, to evaluate the relative degree of appeal of one property to another.

The prospective purchaser of agricultural property will be motivated somewhat differently: the buyer will be primarily interested in the productive capabilities of the land. It is reasonable to assume that they will be familiar, at least in a general way, with the productive capacity of the farm they propose to buy. One might expect that the prudent investor will have compared one farm's capabilities against another. Accordingly, the appraiser for local tax equalization purposes must rely heavily upon prices being paid for comparable farmland in the community.

The prospective purchaser of commercial property is primarily interested in the potential net return and tax shelter the property will provide. That price which the buyer is justified in paying for the property is a measure of the prospects for a net return from the investment. Real estate is an investment and must not only compete with other real estate but also with stocks, bonds, annuities, and other similar investment areas. The commercial appraiser must explore the rental market and compare the income producing capabilities of one property to another.

The prospective purchaser of industrial property is primarily interested in the overall utility value of the property for a specific purpose. In evaluating the overall utility, consideration must be given to land and improvements. Industrial buildings are generally of special purpose design and, as such, cannot readily be separated from the operation for which they were built. As long as the operation remains effective, the building will hold its value. If the operation becomes obsolete, the building likewise loses value. The upper limit of its value is its replacement cost new and its present day value is some measure of its present day usefulness, in relation to the purpose for which it was originally designed.

Principles of Uniform Assessment

The commercial appraiser may find comparable sales for commercial property not as readily available because commercial property is not bought and sold as frequently as residential property. The income approach must be used to determine the net economic rent the property is capable of yielding. Then the amount of investment required to produce a net return at a rate commensurate with what is normally expected by investors is developed. This can only be achieved through a comprehensive study of the income producing capabilities of comparable properties and an analysis of present day investment practices.

The industrial appraiser will not be able to rely on the market data approach because of the absence of comparable sales, because each sale generally reflects different circumstances and conditions. The income approach is not reliable due to the absence of comparable investments and the inability to accurately determine the contribution of each unit of production to the overall income produced. The appraiser must use replacement cost new of each improvement and the subsequent loss of value resulting from overall physical, functional, and economic depreciation.

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

Sales on all properties are not required to effectively apply the market data approach. The same is true regarding any other approach. What is needed is a comprehensive record of all significant physical and economic characteristics of each property in order to compare the properties of "unknown" values with the properties of "known" values. All significant differences between properties must in some measure, either positively or negatively, be reflected in the final estimate of value.

Assessment Performance Measurements

The final step in mass appraisal is statistical testing, or assessment performance measurement. Specific mathematical and statistical methods are used to test the final values. These procedures can produce better and more consistent value estimates. These value estimates can be statistically verified and the quality of the mass appraisal results can be statistically evaluated, utilizing the experience of the appraisal staff. Mass appraisal techniques use applied statistics based on the collection and analysis of local statistics. Any large deviation from the norm will generate a more detailed examination of the affected properties and their assessments. For example, if twenty properties out of one hundred in a neighborhood are out of the normal range of value for that neighborhood, the appraiser will perform a more detailed review of those properties in order to find the cause and make adjustments as needed.

One of the primary responsibilities of the Assessor's Office is to estimate the market value of the properties within Buncombe County. The integrity of property values depends on the accuracy and efficiency of these values. Two aspects of the reappraisal must be measured: appraisal level and appraisal uniformity, in addition to accuracy and equity. Assessment performance measurements are used to test the equity and accuracy of all assessed property values.

Ratio Study

One performance measurement that measures appraisal level is the ratio study which is sometimes referred to as the assessment ratio. The assessment ratio expresses the relationship between a property's assessment and its sales price, or market value. Some sales are more useful than others in a ratio study. Qualified sales are sales that have been verified by MLS, the buyer, seller, or their agent. Unqualified sales are sales based on limited information such as revenue stamps or deed information. In addition, some sales that do not meet the guidelines of the Department of Revenue are considered unqualified based on its sales ratio. The sales ratio is developed by dividing the assessed value by the sale price.

Each county assessor's office is required to submit information for a ratio study once each quarter to the North Carolina Department of Revenue. The North Carolina Department of Revenue sends a list of randomly chosen deeds to each tax department. These deed transfers represent sales in the county. Information about these deeds is gathered and sent to the Department of Revenue. This information is used by the Department of Revenue to calculate the sales ratio. The sales ratio is the ratio of sale price to assessment. The perfect sales ratio is 100%.

Ratio Study (Continued)

Assessment accuracy is often shown by the median level. For example, if the ratio in a jurisdiction is 100%, and the median assessment level in the jurisdiction is 64%, the statutory requirement is not being met. The ratio study is a tool for the analysis of assessment accuracy.

The ratio study process is also used between reappraisals to track trends in neighborhoods or specific types of properties. If two years after a reappraisal, for instance, rural land sales indicate an assessment to sales ratio of 70%, the trend demonstrated by the sales ratio is an increase in sales price of 30%. During the reappraisal process sales ratios are used to develop neighborhood adjustments, find problem areas, and identify individual properties that are not in the normal range of value.

Coefficient of Dispersion

Appraisal uniformity relates to the equitable assessment of individual properties within neighborhoods or groups and between different types of properties. For example, if all residential properties are valued at 70% of their market value, but commercial properties are valued at 100% of their market value, the assessments are not uniform and a higher tax burden is being carried by the commercial properties. One method of measuring uniformity is the coefficient of dispersion, or COD. This is a complex statistical process that is calculated based on the average absolute deviation from the median as a percentage. Low CODs (15.0 or less) show excellent appraisal conformity. A high COD indicates less conformity between properties or groups of properties.

The International Association of Assessing Officers Standard on Ratio Studies is considered the standard for jurisdictions in which current market value is the basis for assessment. These standards presuppose a budget sufficient to hire competent personnel and apply sound assessment procedures as well as the availability of certain basic data, such as an adequate sample size. The recommendations made in the IAAO <u>Standard on Ratio Studies</u>, @ 17 (April 2013) are as follows:

- 1. Single-family residential property type COD range should be 5.0 to 10.0
- 2. Income producing property type COD range should be 5.0 to 20.0
- 3. Vacant land COD range should be 5.0 to 25.0

Price - Related Differential

The other method of measuring appraisal conformity used most often is the price-related differential, or PRD. The price-related differential is a measure of assessment level used to determine if the assessment is progressive or regressive. Regressive appraisals have high value properties under-valued in relation to low value properties.

If the highest valued properties are valued at 70% of their market value, but lower valued properties are valued at 90% of their market value, the appraisals are regressive. Progressive appraisals value higher properties at a higher percentage of their market value than lower priced properties. Where the high valued properties valued at 90% of their market value and the lower value properties valued at 70% of their market value is progressive. Both conditions show a lack of conformity between assessments.

The PRD is calculated by dividing the mean for a neighborhood by the weighted mean. As a general rule the PRD should range between 0.98 and 1.03. A lower than the standard PRD (0.98) indicates a regressive assessment, a higher than the standard PRD (1.03) indicates a progressive assessment.

Note: Procedure and methodology follows guidelines established by the International Association of Assessing Officers; Property assessment Valuation, Third Ed. (2015).

To be effective, the mass appraisal process must employ proven and professionally acceptable techniques and procedures which:

- 1. Provide for the compilation and processing of complete and accurate data resulting in an indication of value approximating the prices actually being paid in the market place;
- 2. Provide the necessary standardization measures and quality controls essential to promoting and maintaining uniformity throughout the jurisdiction;
- 3. Provide the appropriate production controls necessary to execute each phase of the operation in accordance with a carefully planned budget and work schedule; and
- 4. Provide techniques especially designed to streamline each phase of the operation, eliminating superfluous functions, and reducing the complexities inherent in the appraisal process to more simplified but equally effective procedures.

The objective of an individual appraisal is to arrive at an opinion of value, the key elements being the validity of the approach and the accuracy of the estimate. The objective of a mass appraisal, for tax purposes, is essentially the same. However, in addition to being valid and accurate, the value of each property must be equitable to each other property. In a mass appraisal, these valid, accurate, and equitable valuations must be generated as economically and efficiently as possible.

The implementation phase of a mass appraisal program involves the valuation of properties in an orderly, timely, and equitable manner. Valuation schedules must accurately reflect current market interactions in order to estimate the current market values of the properties. It is important that care be exercised in validation of these schedules. Valuation schedules may not be changed after they are adopted by a county Board of Commissioners. If the valuation schedules do not accurately reflect the current market, it will not be possible to accurately estimate the current market values of the subject properties. To accomplish this, the assessor needs, at a minimum, schedules and guidelines for use in the various appraisal areas.

Schedules are developed for:

- Land Valuation
- Cost Estimation
- Depreciation Calculation
- Improved Property Valuation
- Income and Expense Ratio Determination
- Capitalization rate determination

Land Valuation

Land is an important aspect of real property. It is important that an easily manageable and accurate method of valuing land be used. The varying types and uses of land within a jurisdiction can make this a complicated and difficult task.

The sales comparison approach is the most appropriate method of land valuation when qualified sales are available. The income approach to value is typically considered when valuing commercial or industrial land. The cost approach is most often used to value land using the methods detailed previously.

The following techniques were employed in developing uniform and equitable land valuation schedules. Size adjustment formulas were developed for land in each neighborhood, based on the market activity present in the neighborhood. The key to development of size adjustment formulas is "market response" and sales data must conform to the following factors:

- (1) Sales price must be qualified as accurate and adjusted for time;
- (2) Land must be of the same use type; and
- (3) Adjustments for location and physical characteristics of the land must be made.

Land - Units of Measure

The unit of measure for land can be front foot, square foot, acre, lot, site, or tract. For example, assume ten commercial parcels in the same commercial neighborhood have recently sold and the only difference among them is their depth. The standard lot for this neighborhood has been determined to be 80' x 125'. A number of these standard lots have sold for \$20,000 and analysis shows the standard price per square foot is \$2.00 and per front foot is \$250.00. Local practice dictates that the price per square foot is the best standard unit of measure.

However, parcels may be valued by any unit of measure convenient for the appraiser's use. It is important that the selected unit of measure be the same as those used in the local market. This enables the appraiser to quickly determine developing valuation patterns and thus make changes in the valuation schedules in order to accurately reflect the market.

Front Foot - The front foot unit of measure is used when the frontage of a parcel is determined by the market to be significant. The frontage is the number of feet along the main part of a parcel and is particularly applicable for use where pedestrian traffic is heavy or where frontage is irregular, as in shoreline property. For these types of parcels, depth is usually not the most important factor. This unit of measure is used primarily in the valuation of residential land and is denoted as dollars per front foot.

Square Foot - The square foot is the most widely used land unit of measure. It considers all of the land in a parcel and can, in varying degrees, be used for all types of land. This unit of measure is used primarily in the valuation of commercial land and is denoted as "dollars per square foot."

Acre - The acre (43,560 square feet) is the primary land unit of measure used in valuing large land areas such as farm land, timber land, mining land, and recreational land. It is denoted as "dollars per acre."

Lot - The lot, regardless of its size or other attributes, is an important unit of measure. Home builders and developers often acquire a tract of land based upon the number of lots (buildable sites) a tract contains.

Site - The site as a unit of measure is closely related to the lot. In using the lot as the unit of measure each parcel is considered a portion of a larger tract. In the use of the site, unequal lots or parcel sizes are considered equal. The site may be used where separate sites are marketable, regardless of their size or other factors, and they are considered comparable.

Tract - The tract may be used as a unit of measure where the parcels are large and similar in size. When a greater section, or a homestead parcel, is considered, the entire area may be used as the unit of measure without any breakdown into acres or square feet.

Land Valuation

The first step in land valuation is the accurate description of the property. The description of the property includes factors such as size, location, topography, and zoning. Zoning is very important in determining the property's highest and best use because zoning controls the allowed uses for the property. The land is classified into neighborhoods based on the highest and best use of the property. Highest and best use considers four factors. The use must be: legally permitted; physically possible; financially feasible; and the most productive use. One base rate for land is not realistic because of the wide range of land values within Buncombe County. Land rates are developed based on the following: Lot, Square Foot, and Acreage. Land rates are developed from recent sales. A base value is determined for all neighborhoods, or land types, and all factors impacting land value are considered including; size, location, zoning, topography, etc.

Land Area Types

Rural

Rural areas are outlying, undeveloped areas of the county consisting primarily of farm land or former farmland areas. Few sales may be available in some sections, but sales from other rural areas can be used to set land values. Most improved properties will have wells and septic systems because public water and sewer may not be available.

Subdivisions and Suburban Areas

Subdivisions and suburban areas are developed areas located outside of a city center. When available, recent sales of vacant lots in new subdivisions can be used to set land values. For improved property, land values can be calculated by using a land to building ratio or allocation developed from market sales. The abstraction method subtracts the improvement's value from the total sale price using the remainder as the land value. When no sales are available in a subdivision, or neighborhood, the appraiser uses sales from comparable neighborhoods and adjusts them for any differences due to location.

Urban

Urban areas are within and near a city center with residential, governmental, commercial and industrial properties. Public water and sewer is usually available. Vacant land is usually sold for development or special purposes.

Land Class

Commercial or Industrial Land

Commercial property is not valued solely by its location in a specific neighborhood. Zoning is a major factor in the value of commercial or industrial land. In addition to zoning, road frontage, traffic count, utilities, size and shape of the parcel, and location near rail or other freight carriers are considered by industrial and commercial buyers. Land value is determined using market sales when available. For commercial and industrial property the sales are stratified not only by neighborhood, but also by property type or potential use. Commercial land can be valued by front foot, square foot, or acre.

The best indication of value is recent market sales of similar property. Market sales are not always available. In addition to market sales, the income approach, using the capitalization of ground rents or land residual methods, is helpful in calculating land value.

Residential

Each residential parcel is assigned a neighborhood. Residential parcel rates are derived from sales within that neighborhood or comparable neighborhoods. The sales comparison approach to value is used to set the base rate by comparing properties that sold in each neighborhood and making adjustments for the different factors affecting the land value.

The following issues are considered in land valuation, others may exist:

- Each parcel can have multiple land lines.
- Land lines are assigned to stratify the land based on criteria for the neighborhood or land type.
- Individual sections of land are valued based on these land lines depending on the code and rate
- Adjustments are added for flood, topography, access, or other characteristics of the land.

Example: Lot* Rate* Size * Influences = Land Value

Non-Mapped Parcels

Condominium, Townhome or Planned Unit Development

Buncombe County has two types of tax parcels, mapped and non-mapped. A **mapped** parcel is a tract of land described in a deed or plat filed with the Register of Deeds Office. A **non-mapped** parcel represents ownership of other than physical land such as a condominium, leasehold interest or mineral rights. Non-mapped parcels will be attached to the land or parent PIN, also known as a "container" parcel.

Example of non-mapped parcels:

Land PIN: XXXX-XXXX-00000

Condo Unit: XXXX-XX-XXXX-C00U1 Condo unit 1 attached to land PIN above

Rights:

Land PIN: XXXX-XXXXX-00000

Other rights: XXXX-XXXXX-R0001 Mineral, air, development rights

Leasehold

Leasehold Owner: XXXX-XX-XXXX-L0001

Non-mapped parcels are created by condominium declarations, lease documents, deeds, or other transfers of non-mapped ownership interest. The land PIN will be listed in the land owner's name. A condominium complex will be listed in the name of complex owners and each unit will be listed in the name of the unit owner. All non-mapped parcels must be retired or moved any time the attached container parcel is retired, due to combination or split, etc.

The deed for a condominium unit does not transfer fee simple ownership of any specific parcel of land. The deed does transfer fractional, undivided ownership of all common area land and improvements. The common area is valued using a method as described below.

Townhomes are multi-story houses in a modern housing development which are attached to one or more similar houses by shared walls. Owners of townhomes own in fee simple. Acreage will vary for units per each plat and deed. This area will be valued as a building lot just as any other types of ownership.

Valuation of Common Area

Townhome and condominium owners also own, as members of the homeowners' association, any additional common area or improvements in their development. Two methods of valuing the common area owned by a homeowners' association or in a condominium complex are:

- 1. Value the common area land and improvements and then allocate that value to each unit owner based on the percentage of common area ownership applicable to the unit.
- 2. Value each unit based on market sales with knowledge the market value for each unit includes the common area interest. A buyer considers both unit amenities and common area amenities. Therefore, the neighborhood factor includes the value of the common area.

North Carolina General Statute 105-277.8

§ 105-277.8. (Effective for taxes imposed for taxable years beginning on or after July 1, 2012) Taxation of property of nonprofit homeowners' association.

- (a) Except as provided in subsection (a1) of this section, the value of real and personal property owned by a nonprofit homeowners' association shall be included in the appraisals of property owned by members of the association and shall not be assessed against the association if each of the following requirements is met:
 - (1) All property owned by the association is held for the use, benefit, and enjoyment of all members of the association equally.
 - (2) Each member of the association has an irrevocable right to use and enjoy, on an equal basis, all property owned by the association, subject to any restrictions imposed by the instruments conveying the right or the rules, regulations, or bylaws of the association.
 - (3) Each irrevocable right to use and enjoy all property owned by the association is appurtenant to taxable real property owned by a member of the association.

The assessor may allocate the value of the association's property among the property of the association's members on any fair and reasonable basis.

- (a1) The value of extraterritorial common property shall be subject to taxation only in the jurisdiction in which it is entirely contained and only in the amount of the local tax of the jurisdiction in which it is entirely contained. The value of any property taxed pursuant to this subsection, as determined by the latest schedule of values, shall not be included in the appraisals of property owned by members of the association that are referenced in subsection (a) of this section or otherwise subject to taxation. The assessor for the jurisdiction that imposes a tax pursuant to this subsection shall provide notice of the property, the value, and any other information to the assessor of any other jurisdiction so that the real properties owned by the members of the association are not subject to taxation for that value. The governing board of a nonprofit homeowners' association with property subject to taxation under this subsection shall provide annually to each member of the association the amount of tax due on the property, the value of the property, and, if applicable, the means by which the association will recover the tax due on the property from the members.
- (b) As used in this section, "nonprofit homeowners' association" means a homeowners' association as defined in § 528(c) of the Internal Revenue Code, and "extraterritorial common property" means real property that is (i) owned by a nonprofit homeowners association that meets the requirements of subdivisions (1) through (3) of subsection (a) of this section and (ii) entirely contained within a taxing jurisdiction that is different from that of the taxable real property owned by members of the association and providing the appurtenant rights to use and enjoy the association property. (1979, c. 686, s. 1; 1987, c. 130; 2012-157, s. 1.)

Land Adjustments

Land values are developed based on normal properties within an area or neighborhood. Some individual parcels have factors that affect their land value and need adjustments to reflect their differences from the average parcel. Examples of factors requiring land value adjustments and applicable codes are described below.

Location

Location is the primary factor to consider when valuing real estate. Because market sales are grouped by neighborhood the impact of location is minimal unless positive or negative influences exist for only some areas within the neighborhood. Examples are: lots adjoining the waterfront, golf course, or negative influences, such as noise or noxious smells.

Road frontage/ Corner influence/ Traffic count

The amount of road frontage or a corner location will affect land value. Commercial property values tend to increase due to road frontage, traffic count, or location on a corner. Residential land may not need an adjustment. A positive or negative adjustment is made on the land line with the code LOC, representing location. In some neighborhoods corner lots may be a separate land line and priced higher than other lots.

Description	Adjustment
Lot superior due to location on a corner of two secondary streets. Road frontage less than typical for property type.	+10% to +25% -10% to -25%
Located in a higher than typical traffic area, Intersection of two major streets.	+25% to 100%

Topography

Topography problems are usually corrected before property is improved. This adjustment is made at the land line level. Topography adjustments are negative adjustments for natural land features such as gullies, ditches, rock cliffs, etc., affecting the use of the property. Adjustments are made based on estimating the cost to cure the problem. Consider the following guidelines.

Description	Adjustment
Lot is buildable but less desirable than typical lots.	10% to 25%
Problems can be corrected. Lot is unbuildable until corrected.	25% to 70%
Not economically feasible to correct.	75% to 90%

View

This code is not used to adjust the land value just because the property has a good view. If the typical lots have similar views, no view adjustment is needed. View is a positive or negative adjustment where the view enhances or distracts from the typical lot value.

Description	Adjustment
Moderate enhancement or distraction	10% to 25%
View has a significant effect on lot value	70% to 100%

Access

The typical access to a parcel in a subdivision or developed area is considered to be direct access from a paved road. In rural areas access from an unpaved road may be typical for the area. Tracts with no access or limited private access may be given a negative adjustment on the land line. The adjustment depends on the comparability of the sales used to set the land values for the neighborhood. If the sales had the same access issues then no adjustment is needed.

Easements

Easements can be for above ground or surface of the land only, air rights overhead, or below ground. Negative adjustments for easements may be made at the land line level based on the amount of land affected by the easement.

Shape

The shape adjustment may be a negative adjustment made at the land line level when the shape of parcel (for example large enough in total size but only 6 feet wide) makes it have a lower than typical value.

Size

Size is an important factor in land value. A small lot with access to public water and sewer may be a buildable lot. Lots that do not have access to public water and sewer must meet Health Department requirements for size. In addition, each municipality in Buncombe County has rules limiting building and development. Lots are adjusted for size by a land size adjustment formula developed from market sales. In addition, land may be adjusted by the appraiser for size with the SZE adjustment per land line.

Description	Adjustment
Lot is buildable but less desirable than typical lots due to shape or size	10% to 25%
Restricts uses of the property to significantly less than typical lot	25% to 70%
Unusable due to size or shape	75% to 90% Or flat priced

Undeveloped Land

Parcels priced by the "lot" method have improvements (utilities, site grading, streets, etc.) included in the per lot rate. Undeveloped lots without improvements are adjusted with the ULA adjustment applied at the land line level. Suggested adjustments:

Rural -20%-25% Suburban -10% -25% Urban -10% -25%

Land Segments: Building lots and small parcels of land are valued as home sites. Land segments have a value set for each neighborhood based on market data. Other tracts of land are valued based on the type of land within each tract. Rural land is divided into segments based on topography. The land codes are:

L1 = Land Code One 0% to 25% slope

L2 = Land Code Two 25.01% and greater slope

The value per acre for each type of land segment is applied to the land based on sales of similar properties. For example, in a neighborhood, L1 land sold for \$25,000 per acre, L2 land for \$10,000 per acre. These values are applied to the acreage for each land segment in the neighborhood. Fifteen (15) vacant acres may be valued as:

L1 10 acres X \$25,000 = 250,000 L2 5 acres X \$10,000 = 50,000

15 Acres \$300,000 Total Assessment before adjustments for size, topography, etc.

Lot: An improved residential building site. Included is the cost of normal site preparation, water, and sewer or septic. Parcels of one acre or less are typically valued as one home site. Additional home sites may be added when more than one residence is located on a lot.

Home Site: Parcels larger than one acre, or not valued per lot, will have a home site added for each residential building including manufactured homes (real or personal). The value of each home site is added to the base land value. The home site includes all utilities and site preparation that make the land available for the addition of improvements. Once the home site is added to the land it usually remains even if the structure is removed. The value of the vacant land has been developed based on price per acre.

Residual Land: Residual land would be defined as remaining land that is not used or needed to satisfy the intended use. Residual land adds a nominal value to the parcel.

Wasteland: Unsuitable for practical use.

Common Area: Owned by a homeowner's association or owned in common (undivided interest) by condominium unit owners.

Roadway: Roadways are not taxed. The area of a parcel that is taken up by roadways is not taxed and is listed as RDW on the land line.

Land Adjustments

Commonly used land adjustments are listed below. Some have been detailed or described in the preceding text.

Code	Description
BER	Board of Equalization and Review
COA	Common Area
CON	Conservation Easement
COR	Corner Influence
DR	Deed Restriction
ECO	Economic / External Influence
EHS	Environmental Health Size Limitation
EPA	Environmental Contamination
ESM	Easement Adjustment
FLD	Land / Flood Plain Adjustment
HDR	Land / Health Department Rej
HIS	Historical / Land Adjustment
LOC	Location Adjustment
RAT	Rate Override
RDW	Roadway / Easement
RL	Rear Lot
SHP	Land / Shape Adjustment
SRA	Staff Review Adjustment
SZE	Size Adjustment
ULA	Undeveloped Land Adjustment
UWL	Under Water Land
VIE	View Adjustment
WET	Wetland / Bog / Swamp
ZON	Land / Zoning Adjustment

Cost Estimation Schedules

Cost estimation schedules are used in mass appraisal to estimate the cost new of all improvements including commercial buildings, residential buildings, site improvements, special features, and yard items.

The importance of property cost estimation schedules cannot be overemphasized. Up-to-date cost estimation schedules are necessary for establishing accurate cost figures for use in the cost approach. The cost estimation schedules should be developed for all property components that influence value. Also, the Schedule, along with a complete listing of property components for an individual property, is helpful in discussing assessments with the public.

The best local reference sources for current costs of improvements are builders, property developers, and material suppliers. Some cost sources include national cost manuals and data from other assessment jurisdictions. Data from national sources may not be as accurate as local data and must be carefully adjusted in order to reflect local market conditions.

Cost estimation schedules were developed in-house using multiple sources. A comparison of market conditions to Marshall and Swift valuation service, a national cost estimation manual, and to local and non-local data was evaluated. Surveys and interviews were completed by local builders, developers, appraisers, and Realtors. All of this information was considered in the development of these schedules.

Depreciation Estimation Schedules

Depreciation estimation schedules are used to estimate the amount of depreciation for an improvement to the land. First, the cost new of an improvement is determined using the cost estimation schedules, the amount of depreciation is then deducted from the cost new of the improvement to produce the current value of the improvement.

There are many types of depreciation estimation schedules. Commonly used schedules are:

1. Age-life: this depreciation schedule reflects physical deterioration and sometimes functional obsolescence. A depreciation curve is constructed by dividing the effective age of the improvement by its total economic life, showing the "percent good." With this schedule there is always some value remaining in the improvement.

Example: Age-Life Depreciation Effective age/ total economic life = remaining economic life 25 years/80 years = 31% percent depreciation with 69% good remaining

2. Straight-line: this schedule takes the total economic life of a property and allocates an even percentage of depreciation each year. The value of the improvements will be reduced to a residual value in a number of years. Example: Economic life is 20 years: residual value is \$10,000: and cost new is \$60,000. The amount depreciated each year is \$2,500 for 20 years.

Improved Property Schedules and Units of Measure

Schedules that reflect normalized value estimates of improved properties can be grouped into two categories, sales comparison schedules and income comparison schedules.

Sales comparisons may be subdivided into the following units of measure:

- 1. Lot size: this may be a valid unit to employ when the market adjusts the value of similar improvements by adjusting for the lot size.
- 2. Improvement size: these are the most commonly used units of measure, and include base area; the area measured by the outline of the improvement upon the ground; gross leasable area; the total area of the improvement including halls, elevators, restrooms, etc., expressed in square feet; and net leasable area, being that area which is utilized by the individual tenant, also measured in square feet.
- 3. Special purpose units of measure: for special purpose commercial properties the following may be developed from the market;

Property Type	Units of Measurement
Apartments	
	Units, Bedrooms,
Hospitals/Nursing Homes	Square Foot per Unit
Theaters/Restaurants	Beds
Hotels	Seats/Screens
1101010	Rooms

Area / Perimeter Adjustments

Small structures usually have a higher building cost per square foot then larger structures because fixed cost are spread over more area in large structures. Variations in building costs with size can be treated in one of two ways. Either cost tables can be developed for various square foot increments or a base rates can be specified for structures of standard size and size adjustment multipliers developed. Buncombe County using the methodology of adjustment multipliers. (Property assessment Valuation, Third Ed. (2015)@ 145).

Methodology: Size of structure X base rate X adjustment factor = adjusted base rate or adjusted value.

An Area Adjustment Factor Table can be found in the Additional AssessPro Table section of the appendix.

Improved Property Schedules and Units of Measure (Continued)

Income comparisons, the second category, are developed from net income and gross income information about income producing properties. These measures can be valuable in accurately valuing property. Some common income comparison measures are:

- 1. Gross rent multiplier (GRM) Used for commercial and multifamily residential properties the GRM is obtained by dividing the market value, or sale price, of a property by its gross annual income. The use of this comparison method is considered part of the comparative sales approach in the valuation of income producing properties.
- 2. Net income the comparison of the net incomes of properties. It is generally expressed as the ratio of net income to effective gross income.

Income and Expense Ratio Determination

This process begins with the gathering of income and expense data from the local market. This data is then stratified by type. Rental information for apartments is not compared to rental information for office or retail space. Rental information used to determine the ratio is based on local market rents. Market rent is the price a property should produce. Property that is rented for less than market rent is not used in this process. Expenses are only those costs which are applicable to the cost of ownership. A complete list of allowable expenses is included in the commercial section of this manual.

Capitalization Rate Determination

The capitalization rate is used in the income approach to estimate the market value of the property based on its ability to produce income for the owner. Capitalization rates used for Ad Valorem taxes will include the following:

Recapture Rate – annual rate of return of the depreciable items of an investment.

Discount Rate – the annual rate of return on an investment.

Effective Tax Rate – The relationship between the level of assessment and the tax rate.

Income Approach Allowable Expenses

- 1. **Management -** Typically 3-10% of total collected rent it is the cost of administration. The cost of management is relative to the amount of risk.
- 2. **Salaries** On- site workers' salaries, FICA taxes, insurance, and other benefits paid to employees.
- 3. **Utilities -** Gas, telephone, cable TV, or electric services.
- 4. **Supplies and materials** Office supplies, light bulbs, etc.
- 5. **Repairs and maintenance -** Painting, repair broken glass normal maintenance, etc.
- 6. Insurance
- 7. **Miscellaneous -** Small items that reflect a nominal amount of income.
- 8. **Reserves for Replacement** Short-lived items that will need to be replaced during the life of the property. (For example: carpet, appliances, roof covering, heat/ac, elevators, etc.)

Income Approach Improper Expenses

- **1. Depreciation -** The depreciation of improvements is considered as part of the recapture portion of the capitalization rate.
- **2. Debt service** The interest and principle paid on a loan. This is considered in the capitalization rate as part of the **discount rate.**
- **3. Income taxes -** This is based on the owner's individual income and not income attributable to the property.
- 4. **Property tax -** Property taxes are not considered proper expenses when using the income approach for assessing property for taxation purposes. The preferred method is to load the property tax rate into the capitalization rate because the future taxes will be based on a new value.
- **5.** Capital improvements These improvements can be made any time and usually increase the value of the property or economic life of the property. Capital improvements are not necessary to maintain the level of income and are not considered annual expenses.
- **6.** Owner's individual business expense This expense is not related to the income produced by the property, therefore it is not allowed.

Developing Capitalization Rates

The overall rate reflects the relationship between the property value or sales price and the net operation income. A capitalization rate that is established for use in appraising for Ad Valorem Taxes will consist of the following factors:

- 1 Recapture the annual rate of return of the depreciable items of a real estate investment.
- 2 Discount Rate the annual rate of return on investment.
- 3 *Effective tax rate* the tax bill divided by the property value or the level of assessment is multiplied by the tax rate.

Recapture Rate - The straight-line method of recapture is the simplest method and the one which seems to most reflect the action of the investors in general. It calls for the return of capital in equal increments or percentage allowances spread over the estimated remaining economic life of the building.

Examples:

```
50 years remaining; 100/50 = 2.0\% per year 40 years remaining; 100/40 = 2.5\% per year 25 years remaining; 100/25 = 4.0\% per year
```

Discount Rate

There are several methods currently employed by appraisers to determine the acceptable normal rate of return expected by investors including the band of investment and direct comparison methods. Applying these procedures on an adequate representative sampling should provide a pattern from which to select the most appropriate discount rate.

When using the band of investment method, it is necessary to first determine the rate of return local investors require on their equity (cash outlay). It is then necessary to contact lenders and obtain the current interest rates for money and the amount of equity required, then multiply the percentages of equity and mortgage by the investors' and lenders' rates. The sum of these products will indicate the actual rate of return.

In the direct comparison method, the rate of return is extracted directly from actual market data. It is reasonable to assume that informed investors fully aware of the existence of comparable properties will invest in those properties, which are able to produce the required and desirable net return.

Following are the steps involved in determining the normal rate of return by the direct comparison method:

- 1. Collect sales data on valid open market transactions involving properties for which the appraiser is able to accurately estimate both the net income and the land or building value.
- 2. Allocate the proper amounts of the total sales price to land and buildings.
- 3. Estimate the remaining economic life of the building and compute the amount of return required annually for the recapture of the investment to the building.
- 4. Determine the net income before recapture.
- 5. Deduct the amount required for recapture from the net income. The residual amount represents the actual amount of interest.
- 6. Divide the actual amount of interest by the sales price to convert it into a percentage rate of return.

Example A:

```
1 - \text{Sale Price} = \$250,000
```

2 -Amount allocated to land = \$87,500; to building = \$162,500

3 - Remaining Life = 20 years

Annual Rate of Recapture = 100% divided by 20 years = 5%Amount required annually = $$162,500 \times 5\% = $8,125$ per year.

4 – Net Income before Recapture = \$35,600

5 – Less Recapture - \$ 8,125

=\$27,475

6 - Indicated Rate of Return = \$27,475 divided by \$250,000 = 10%

Tax Rate

To make the proper provisions for real estate taxes, the appraiser must anticipate two factors:

- 1 The tax rate for assessed valuation.
- 2 The percentage of the appraised value to be used for assessment purposes.

The annual rate required to pay the cost of taxes can then be calculated by multiplying the tax rate in dollars per \$100.00 assessment (equivalent to a percentage) by the percentage level of assessment.

Maintenance and Insurance Rates

It is essential for these figures reflect local conditions. The actual local cost may be extracted from income and expense data collected from available technical publications.

Contingency Rate

The percentage allowance for contingencies should be established at the local level. The element provides the appraiser some flexibility in:

- 1 Arriving at a proper market value based on the individual project.
- 2 Providing some consideration for unusual expenses that may occur on properties appraised without the benefit of a detailed operating statement.

Total Land Rate

Since the income produced by land will theoretically continue for an infinite period of time it is not necessary to recapture the investment of land. The capitalization rate applicable to land is the sum of the interest rate and tax rate.

Total Building Rate

A building is a depreciable item. Since the income produced by a building will terminate in a given number of years, it is necessary to recapture the investment in the buildings. The capitalization rate applicable to buildings is the sum of the rates of interest, recapture, tax, maintenance, insurance, and contingency.

Since it's the appraiser's job to interpret the local real estate market, the capitalization rates used must reflect the action of local investors

Capitalization Methods

The most prominent methods of capitalization are direct, straight line, sinking fund, and annuity. Each of these is a valid method for capitalizing income into an indication of value. The basis for their validity is the action of the market which indicates that the value of income producing property can be derived by equating the net income with the net return anticipated by informed investors. This can be expressed in terms of a simple equation:

Value = Income /Rate / (Value = Net Income divided by Capitalization Rate)

In direct capitalization, the appraiser determines a single "over all" capitalization rate. This is done by analyzing actual market sales of similar types of properties. The net income for each property is developed and then divided by the appropriate overall rate to provide an indication of value.

A significant disadvantage of this method is that it does not provide for using separate rates for land and buildings. It calls for highly subjective judgment on the part of the appraiser in applying an overall rate to properties having different land to building ratios.

Mortgage equity capitalization is a form of direct capitalization. The major difference in the two approaches is in the development of the overall rate. In this method, equity yields and mortgage terms are considered influencing factors in construction of the lease rate. In addition, a plus or minus adjustment is required to compensate for anticipated depreciation or appreciation. This adjustment can be related to the recapture provisions used in other capitalization methods and techniques.

The straight line and sinking fund methods are both actually forms of direct capitalization with one using straight line recapture and the other using sinking fund recapture, differing only in that they provide for separate capitalization rates for land and buildings. That is, the building rate differing from the land rate in that it includes an allowance for recapture. Straight-line recapture calls for the return of investment capital in equal increments or percentage allowances spread over the estimated remaining economic life of the buildings.

Sinking fund recapture calls for the return of invested capital in one lump sum at the termination of the estimated remaining economic life of the building. This is accomplished by providing for the annual return of a sufficient amount needed to invest, and annually re – invest, in "safe" interest bearing accounts, such as government bonds or regular savings accounts, which will ultimately yield the entire capital investment during the course of the building's economic life.

Annuity capitalization can be used to value long-term leases. In this method, the appraiser determines, by the use of annuity tables, the present value of the right to receive a certain specified income over a stipulated duration of the lease. In addition to the value of the income stream, the appraiser must also consider the value the property will have once it reverts back to the owner at the termination of the lease. This reversion is valued by discounting its anticipated value against its present day worth. The total property value then is the sum of the capitalized income stream plus the present worth of the reversion value.

Residual Techniques

It can readily be seen that any one of the factors of the capitalization equation (Value = Net Income divided by Capitalization Rate) can be determined if the other two factors are known. Since the value of property is the sum of the land value plus the building value, it holds that either of these can be determined if the other is known. The uses of these mathematical formulas in capitalizing income into an indication of value are referred to as the residual techniques, or more specifically, the property residual, the building residual, and the land residual techniques.

The property residual technique is an application of direct capitalization. In this technique, the total net income is divided by an over-all capitalization rate (which provides for the return on the total investment to land and buildings plus the recapture of the investment to the building) to arrive at an indicated value for the property.

The building residual technique requires the value of the land to be a known factor. The amount of net income required to earn an appropriate rate of return on the land investment is deducted from the total net income. The remainder of the net income (residual) is divided by the building capitalization rate (which is composed of a percentage for the recapture of the investment) to arrive at an indicated value for the building.

The land residual technique requires the value of the building to be a known factor. The amount of net income required to provide both a proper return on and the recapture of the investment is deducted from the total net income. The remainder of the net income (residual) is then divided by the land capitalization rate (which is composed of a percentage for the return on the investment) to arrive at an indicated value for the land.

Gross Rent Multiplier (GRM) Method

When specific types of income properties are rented in any significant number in the market, the tendency is for the ratio between sales price and gross incomes to be fairly consistent. The gross rent multiplier, commonly referred to as GRM, is a factor reflecting this relationship between the gross annual income and value. Once the GRM has been determined for a specific type of property it can be applied against the gross income of other similar properties to indicate their economic value.

The appraiser, as with any income approach, must still give consideration to age of building, size, location, and land to building ratios. Many adjustments, which would normally involve judgment estimates, have been resolved by the free action of the rental market. For instance, if one property has some advantage, such as location or accessibility over another property, this difference would probably be reflected in the rental.

The GRM may be applied to either the gross income or to the effective gross income depending on the circumstances and available data in the local market. This approach is frequently applicable to apartment, retail, and certain types of industrial properties, where a relatively consistent net to gross income operating ratio exists.

Land Valuation

Land Class	
Types	Definition
Т 1	Land Value Clone 1
L1	Land Value Slope 1
L2	Land Value Slope 2
HMS	Home Site
LOT	Building Site
COA	Common Area
RIS	Residual
WAS	Wasteland
COM	Commercial Primary
RDW	Roadway
PON	Pond or Lake
COR	Corner Lot
PRK	Park
CON	Conservation Easement
WET	Wetland
MP1	MH Park - Type 1 Sites
MP2	MH Park - Type 2 Sites
MP3	MH Park - Type 3 Sites
RV1	Recreational Vehicle Sites

Neighborhood Delineation

The purpose of neighborhood delineation is to stratify property into like areas for valuation study. These areas can be divided by geographic area, age of properties, zoning, school districts, subdivisions, or property use. This information is analyzed to determine market value. Neighborhoods may be similar but be located in different areas based on value range, design styles, age of improvements, or life cycle. Neighborhoods will be grouped into types or grades to allow property in similar neighborhoods to be compared to each other.

Procedure for assigning neighborhoods:

- 1. Identify subdivisions;
- 2. Identify major areas of density;
- 3. Divide major areas into smaller areas (neighborhoods) by like characteristics; and
- 4. Assign neighborhood code to selection.

Considerations for grading neighborhoods include:

- Type, quality, and age of improvements
- Predominate land use (residential, commercial, rural, etc.)
- Lot size and value
- Life cycle (stable, improving, declining)
- Sales price range
- Neighborhood name
- Type: Subdivision, Rural, City, Other
- Typical building grade
- Utilities, public
- Roads

Percent Complete Standards for New Construction

Items Complete	Total %	
Condition:		
Building		
Footings	10%	
Foundation		=
OS Studs, plates		
IS Studs, ceiling joists	20%	
Wall Sheathing		
Roof Framing		
OS Windows and Door Frames		
Windows	30%	_
OS Doors		
Permanent Roof		
Roof sheathing-felt		
Rough-In Plumbing	40%	_
Rough-In Wiring		
Rough-In Heat		
Siding/Veneer		
Exterior-Trim	50%	_
Exterior Prime		
Drywall-Rough		
Drywall-Finish		
Bath-wall tile	60%	_
Bath-floor Tile		
Furnace		
IS Trim-Panel-Wood floor	70%	-
IS Doors		
Cabinets		
Hardware	80%	-
Interior Paint-Primer		
Interior Paint-complete		
Plumbing Fixtures	90%	-
Wiring Complete-fixtures		
Floor Covering-carpet/tile/hardwood		
MH Site		
Miscellaneous	100%	Complete

Sales Qualification

Automatic disqualification

Certain deed types or transfers are disqualified without the need of further review:

- -Quit claim or correction deeds.
- -Revenue stamps less than \$1.
- -Related grantor (seller) and grantee (buyer).
- -Bank or loan company grantee or grantor.
- -Life Estate (LE).
- -Sales involving government, non-profits or utility companies. -Wills or estates or court proceedings.

Research

Some sales require research to determine if the transaction should be used in the valuation process:

- -Transfer did not include all interest in the property.
- -Transfer included personal property.
- -Property was traded or exchanged for another property.
- -Property is located in Buncombe and another county.
- -Property was tax exempt at time of sale.
- -All rights to property not transferred (mineral, timber, etc.)
- -Forced sale
- -Multi-parcel sales

Sales can be qualified from conversations or emails with the buyer or seller. If the only available information is the deed stamp and the sales price is supported by other qualified sales the sale can be qualified. This will allow these sales to be used in our analysis.

When the value of personal property is known, the sale price should be adjusted to subtract the value of personal property that was included in the stamps on the deed.

Sales information may be verified from sales letters, sellers, buyers, MLS, or agents (attorneys, sales persons, realtors or appraisers). ⁵

⁵ Requirements for qualified sales based on Department of Revenue guidelines

RESIDENTIAL BUILDING

DESIGN STYLES



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Arts and Crafts Code ART

The arts and crafts house resulted from an international design movement that began in the 1860's. This design was especially popular between 1910 and 1940. The goal was for buildings to be simple in form, without superfluous decoration, and emphasize the quality of the materials used in construction. Builders wanted craftsmanship and quality construction which was the opposite to mass production and cheap materials. This design style has increased in popularity and is once again highly desirable to buyers.







A-Frame Code AFR

An A-frame building has the roof as part of the exterior wall. The roof has an extreme pitch (A shaped) giving this design its name. This design is usually 1.5 stories, but occasionally will be only one story. This design style first became popular in 1957.





Bi- Level Code BL

The bi-level house design is also known as a split foyer design. In a bi-level house the entry door opens to a foyer between floors. Stairs leading from the entry foyer provide access to the main living area. Downstairs from the foyer is the basement or lower living area. If the lower living area is below grade it is listed as BGL (below grade living area).



Cape Cod Code CAP

The Cape Cod is a 1.5 story house with the upper floor having an excessive roof pitch that allows for the second floor to provide living area up to 75% of the main living area. This design style usually includes dormers, either two small ones or full shed dormers. If the building has two full shed dormers, list it as two story.



Code COL

The Colonial always has two full stories above grade. This design typically has a centrally located front porch with columns. In addition, one story additions may be on each side of the main two story section.



Container Code CNT

Container homes are constructed from steel shipping containers. The container requires some type of concrete foundation. This can be a slab, piers or basement. The containers are lifted by crane onto the foundation, then embedded and welded into place. The interior of the home is finished to be comparable to conventional residential construction.





Contemporary Code CON

This design includes all non-conventional design styles: geodesic, underground, and multi-level. Houses with shed or tar and gravel roofs, extensive windows or unusual design should be listed as contemporary.





1 Story Conventional

Code 1CN

The one story conventional dwelling code is used for any one story building that cannot be assigned a more descriptive design style.



1.5 Story Conventional (not a Cape Cod)

Code 1+C

The 1.5 story conventional dwelling code is used for any 1.5 story building that cannot be assigned a more descriptive design style. If a dwelling has two full shed dormers, it should be listed as a 2 story dwelling.





2 Story Conventional

Code 2CN

A two story dwelling will have the living area on the upper floor equal to the ground-floor living area.



2.5 Story Conventional

Code 2+C

A two story dwelling will have the living area on the upper floor equal to the ground floor living area with an additional half story of living area usually due to roof pitch or shed dormers.



3 Story Conventional

Code 3CN

A three story dwelling with have the living area on the upper floors equal to the ground floor living area.





Condominium/Townhome

Condominium is a type of ownership not a building type. The common area of the building and the land is owned by the owners of the individual units as undivided interest. A townhome unit includes fee simple ownership of land and membership in a homeowners' association that owns the common areas. The design style varies depending on the style of the unit. Units can be attached or detached.

Townhome Code C01

Townhomes are vertically split units that can be attached or detached. Townhomes include land with each unit.







Condominium Code C02

These condominiums are a type of ownership of a unit within a building. Use code C02 for new complexes, or buildings originally built as condominiums. They can be vertical or horizontal. Land is not attached to the units.

Condominiums (Converted)

Code C04

Design style C04 is used for buildings converted to condominiums from another use. The original use may have been apartments or retail buildings.





Condominium/Villa Code C05

Condominium ownership of detached residential buildings.



Cottage (Seasonal) Code COT

These are seasonal homes often unheated with minimal or no insulation. These are built with simple design and low cost materials.





Compact Cottage Code CPC

Compact cottages are typically built in urban areas on small lots. The construction is designed to be efficient modern living. The design is typically 2 or 3 stories with the foot print being no more than 500-600 square feet.



Duplex Code DUP

Two attached living units usually with separate entrances and kitchens. These units may be vertically or horizontally split.





Garage Apartment Code GAP

This design is a living unit over a garage. Occasionally the garage area will be over the apartment area. Many of these were originally carriage houses and have been converted to their present use.







Log Code LOG

This design code describes the material rather than a specific style. Includes older round log homes and new dovetail plank logs. These are often conventional or cap code design styles.



Mansion Code MAN

This design style is a very large, impressive, or stately residence. The mansion may be any story height but typically multi-story.



Manufactured Housing

Code MFG

Manufactured housing that is built in a factory, transported to the building site, and assembled on site.



Manufactured Home Conversion

Code MHC

A manufactured home that has been converted to resemble a stick built home. The only difference may be the presence of the original steel frame of the manufactured home. Many times these homes have gable roofs and brick or wood siding added so that the original manufactured home is completely incorporated with the additions.



Manufactured Home/Double-wide

Code MHD

A double-wide manufactured home is multi-section home built off-site and greater than 18 feet wide.



Manufactured Home/Single-wide

Code MHS

A single-wide is a single section home built off-site. The single section is 18 or less feet wide.



Manufactured Home/Triple-wide

Code MHT

A manufactured home made up of three or more sections built off-site.



Modular Code MOD

A modular is a multi-section home built off-site and transported to the building site where it is assembled. The modular must meet the same building code as a stick built home. Unlike a manufactured home which must only meet HUD standards.





Ranch Code RAN

This design style was developed in the 1950's. It is always one story rectangular-shaped. The ranch style may include an attached garage or carport.



Ranch/ Elevated Code ER

This design style is similar to both ranch and garage apartment design styles. This style is a ranch with a basement that is completely above grade, but it does not have a split foyer like a bi-level design.



Rondette Code RON

A round or octagonal house with multi sides all the same dimensions.





Split –Level Code SL

This home has two floors: a main floor, upper floor and a partially below grade basement. The front door leads to an entrance on the main level. The main level has stairs leading to the upper and lower living areas. The main living area will be located on the main floor while the bedrooms and family room will be on the upper and lower level.



Treehouse Code TRE

A tree house building is constructed around, next to or among the trunk or branches of one or more mature trees while above ground level. Tree houses are comparable to conventional residential construction with exception of the foundation. Tree houses are connected to tree trunks and branches rather that concrete slabs or piers.



Triplex Code TRI

A building that has three living units and can be a horizontal or vertical split.



Other Code OTR

This is the design style used when the building does not fit any other design style.











Residential Building Design Styles

Code	Description
1+C	One & 1/2 Story Conventional
1CN	One Story Conventional
2+C	Two & 1/2 Story Conventional
2CN	Two Story Conventional
3CN	Three Story Conventional
AFR	A Frame
ART	Arts and Crafts
BL	Bi-Level
C01	Townhome
C02	Condo
C04	Apartment Converted to Condos
C05	Villa or detached Condo
CAP	Cape Cod
COL	Colonial
CNT	Container Home
CON	Contemporary
COT	Cottage
CPC	Compact Cottage
DUP	Duplex
ER	Ranch/Elevated
GAP	Garage Apartment
LOG	Log
MAN	Mansion
MFG	Manufactured Housing
MHC	Manufactured Home Conversion
MHD	Manufactured Home Double-wide
MHS	Manufactured Home Single-wide
MHT	Manufactured Home Triple-wide
MOD	Modular
OTR	Other
RAN	Ranch
RON	Rondette
SL	Split Level
TRE	Treehouse
TRI	Triplex

BUILDING GRADE AND CONDITION



Quality Grade

The quality grade (grade) of a structure is based on both the quality of construction, workmanship, and materials. Similar buildings may have the same floor plan and the same features, but the variation in cost can be significant. For example, not all 1400 square foot, 2 baths, three bedroom houses cost the same to build. A house built of economy grade materials having low cost fixtures can cost half the price of the same size house built with high grade materials. The cost of materials and workmanship are reflected in the grade. The grade is the basis for the cost estimation used to value all improvements.

Replacement cost and grade are interrelated. A dwelling built in 1920 of average quality usually has plaster interior wall finish. A new dwelling will have drywall interior finish. Both plaster and drywall perform the same function and have equal utility. In 1920, plaster was common (average), but drywall has replaced plaster as the common or average interior finish. The replacement cost of an average dwelling includes drywall as the interior finish. In new construction, plaster interior walls are considered above average construction. The grade placed on a structure should reflect the common building practices at the time of construction. For instance, a dwelling constructed in 1890 with central heating was above average construction (grade B or above). Today, central heat is considered standard and a dwelling without central heat is usually below average construction (grade D).

The base grade C is the standard for quality and design. The base grade represents the cost of construction with average quality materials and workmanship. The relationship between the highest grade (L) and the lowest grade (E) is based on percentage adjustments from the base. The grade C structure has a multiplier of 100 and is considered the standard or average. The higher than average grades have multipliers greater than 100, the lower grades have multipliers less than 100. Below average construction materials and workmanship is graded "D" or "E" to reflect their costs as below the base or average dwelling. Above average construction is graded "B", "S" or "L" to reflect cost and workmanship that is above average.

The size of the structure does not always relate to its quality of construction. Many homes have been added to over time with little or no planning. This may produce a large structure that has average or below average quality of construction.

Grade or quality should not be confused with condition or state-of-repair. It is possible to have a structure built of high quality materials in poor condition. It is also possible to have a structure built of shoddy materials in good condition. Grade or quality of construction is not dependent on maintenance and repair. A structure built with high quality materials retains that quality grade until it is torn down. The grade of the structure reflects the quality of materials and workmanship only, not its state of repair.

Quality Grade

The primary difference between grades is cost of materials and quality workmanship. The more the materials cost and the greater the quality of workmanship, the higher the grade. The following is a list of grades beginning with the highest quality and ending with the lowest quality.

Grade

Code Definition

- L *Luxury:* The L quality grade is used for structures constructed of exceptional materials, workmanship, and designs that are unique.
- S *Exceptional:* The S quality_ grade describes structures of excellent quality materials and workmanship. They are architect designed and supervised structures that may include special features such as an indoor pool, bowling alley, theater, or conservatory.
- A Superior: The A quality grade describes structures that are architect designed and supervised buildings that have unusual design and style features. Like the S grade, the A grade will have many upgrades and special features.
- B *Custom*: The B quality grade describes structures built with better than average materials and may be architect designed or stock plans. Better than average workmanship with some special features.
- C Average: The C quality grade is the base from which all other grades are measured. The design is an average stock plan, with average materials and workmanship.
- D Fair: The D quality grade describes structures built with fair construction and materials and no design features and fair to low quality material.
- E *Poor:* The E quality grade describes structures built without plans using low quality, used or cull material, with unskilled labor. The building may not meet current Building code requirements.
- U *Unsound:* The U quality grade describes structures with a condition of unsound. The grade is used to value a residential building at its salvage value only.

Quality Grade Adjustments

Adjustments between these quality grade are allowed to be used to account for special features and quality of building material which may define the structure to be of better quality or less quality than the next section in the grade descriptions. The appraisers may use judgement and experience to allow for these differences.

Example: A "C" quality grade building that may only have an upgraded kitchen and still overall have average quality material. The upgrade kitchen may not make the building a B quality grade but does improve the quality beyond the C quality grade. Therefore, the appraiser may select the quality grade as a C+5% or C+10%. The percentage for each quality grade can range from -20% to +100% for each quality grade. The same methodology would apply to all categories of quality grades.

Quality grade for baths and other features

Baths, Kitchens, fireplaces and elevators are an example of features than can have an independent quality grade separate from the overall building grade. This is used to accomplish the same effect on value as the application of the percent grade adjustment. A "C" quality grade building can have an upgraded feature such as a bathroom or kitchen, but still not be considered a B quality grade overall. Therefore, the application of quality grade for the specific feature is allowed. The grade adjustment percentages will follow the same methodology or percentage scale as the overall building quality grade.

Grade L (Unique)

Structures graded "L" are high cost and unique. The "L" grade home is usually a one of a kind home. These structures are individually designed and built with the finest quality materials and workmanship, with attention to detail. Artisans are often employed to add special features such as painted murals, special woodwork, individually designed tiles, or stained glass. The materials used are also unique, such as mahogany, teak, and other exotic and rare woods. These woods may be used for floors, walls, and cabinets. Granite, slate, marble, and other stonework will also be present. Expect to find ornamental doorways, columns, and fireplaces. In addition, the interior may have hand-carved wood molding, floating stairways, conservatories, and other special features. The quality of construction is also evident in the landscaping which may include formal gardens, waterfalls, and ponds. All aspects of the building, both interior and exterior, are of the highest quality.

These properties present special challenges for the mass appraiser because no two luxury properties are alike. Special consideration must be given to the unique features of each property when estimating its replacement cost. The market for these homes may be limited. Most of these homes are built to the specification and tastes of the owner for their enjoyment and not for sale. Due to the personalization by the owner, when they are sold, the cost of the structure may not be reflected in the market. **The cost approach may be the most relevant method to value these structures**. The decision on the valuation of these properties should be based on the data that is available. Sales data may have to be gathered from other locations nationally to find comparable properties that have sold.

Interior Finish

The interior will include high or vaulted ceilings, exotic woods, extra features such as elevators, granite or marble counters, inlaid wood, hand blocked wallpaper, extensive carved wood, large entry foyers, and other luxury items. Extensive storage areas and closet space are found throughout the structure. Storage areas may have special climate control.

Plumbing

Fixtures will be abundant and of the highest quality and design. The fixtures may include silver, gold, or other fine metals.

Floor Cover

The floor covering can be high grade carpet, exotic or expensive hardwood, tile, slate, flagstone, terrazzo, brick inlaid wood, or other high quality floor coverings.

Roof

The roof will be covered with tile, slate, copper, or a combination of high quality materials.

Grade L Examples













Examples of amenities in Luxury Construction:

Granite Countertops
Limestone Floors
Stone Columns
Ceramic Tile Floors
Open Foyer with Marble Floor
Arched Openings
Spiral Staircase
20'Ceilings in Heated Triple Garage
Formal Ballroom

Sunken Living Room
Sunken Media Room
Fully Fenced with Ornamental Wrought Iron
Octagon Formal Dining
Granite Floors in Formal Dining
Living Room/Kitchen with 2 Story ceiling
20` Stone Fireplace in Living Room
Elevator

Grade L Examples (Continued)







Grade S (Exceptional)

Structures graded "S" are high cost structures individually designed and built with considerable attention to detail. Dwellings generally have superior architectural style and workmanship. The interior finish is of superior quality which may include special features such as painted murals, individually designed tiles, or stained glass. The materials used are also unique such as mahogany, teak, and other exotic and rare woods. These woods are used for floors, walls, and cabinets. Granite, slate, marble, and other stonework will also be present. Expect to find ornamental doorways, columns, and fireplaces. In addition, the interior may have hand carved wood molding, floating stairways, conservatories, elevators, ballrooms, and other special features. Expect to find high ceilings with ornamentation or painted murals. These homes are not as rare as the luxury home. Many older neighborhoods will have at least one superior grade home. Some newer developments are all built to this standard.

Interior Finish

Interior walls are predominately painted drywall, hand blocked, or high grade wallpaper and wood panel. The kitchen and baths include an abundant amount of cabinetry, usually constructed of hardwoods. Doors and hardware are custom design. Extensive storage areas and closet space are present in every section of the structure. Large rooms are the norm with high or vaulted ceilings. May have hot water, forced air, radiant floor heat, and zoned thermostatic controls.

Plumbing

Kitchen and bath fixtures are abundant and of the highest quality.

Floor Cover

The floor covering can be high quality carpet, hardwood, tile, brick, slate, flagstone, marble, granite, or a combination of high quality materials.

Roof

The roof will have coverings such as slate, tile, copper, wood shakes, or architectural shingles on heavy wood rafters. Roof includes large eaves with gutters and downspouts.

Grade S Examples









Grade A (Superior)

These residences are of superior quality, they may be mass produced in above average residential developments or for an individual owner. Superior quality materials are used throughout the structure. Architect designed and supervised, with quality both in refinements and details is evident. The exterior has good fenestration (placement of windows and doors) and design.

Interior Finish

Interior walls are predominately painted drywall and may include some wallpaper or paneling. The kitchen and baths include an ample amount of cabinetry usually with wood veneer finish. Doors are superior quality, solid core, with attractive hardware. Ample linen and storage closets are included. The workmanship throughout is of excellent quality.

Plumbing

Very good quality plumbing fixtures are included. The fixtures may include any of the following: water heater, tiled or modular plastic shower stall, toilet, lavatory, tub, tub with shower, or kitchen sink.

Floor Cover

The floor covering can be carpet, hardwood (oak), ceramic tile, high quality sheet vinyl, or a combination of these.

Roof

The roof has a covering of architectural shingles, copper, tile, slate, or wood shakes. The roof will also have large eaves with gutters and downspouts.

Other

Well-designed fenestration with superior quality ornamentation and trim.

Grade A Examples











Grade B (Custom)

These residences are of good quality, they may be mass produced in above average residential developments or for an individual owner. Good quality, standard materials are used throughout the structure. These structures generally exceed the minimum construction requirements of local building codes. Attention to architectural design both in refinements and details is evident. The exterior has good fenestration (placement of windows and doors) and design.

Interior Finish

Interior walls are predominately painted drywall and may include some wallpaper or paneling. The kitchen and baths include an ample amount of cabinetry usually with wood veneer finish. Doors are good quality hollow core with attractive hardware. Ample linen and storage closets are included. The workmanship throughout is of good quality.

Plumbing

Good quality plumbing fixtures are included. The fixtures may include any of the following: water heater, tiled or modular plastic shower stall, toilet, lavatory, tub, tub with shower, or kitchen sink.

Floor Cover

The floor covering can be carpet, hardwood (oak), softwood (pine), ceramic tile, sheet vinyl, or a combination of these.

Roof

The roof has a covering of composition shingles or architectural shingles or high grade metal.

Other

Well-designed fenestration with custom ornamentation and trim.

Grade B Examples











Grade C (Average)

Dwelling constructed of average quality materials and workmanship, with moderate architectural styling and treatment with built-in features is a grade C. This grade of structure has a basic design. Grade C residences are usually mass produced and will meet all local building requirements. Workmanship is acceptable but does not reflect custom craftsmanship. Cabinets, doors and hardware, and plumbing are usually stock items, with an adequate number of each item.

Interior Finish

Interior walls are predominately painted drywall and may include some wallpaper or paneling. The kitchen and baths include an adequate amount of cabinetry, usually with wood veneer finish. Doors are good quality, hollow core, with attractive hardware. Ample linen and storage closets are included

Plumbing

Eight, average quality plumbing fixtures are included in the grade C model. The fixtures may include any of the following: water heater, tiled or modular plastic shower stall, toilet, lavatory, tub, tub with shower, or kitchen sink.

Floor Cover

The floor covering can be carpet, hardwood (oak), softwood (pine), ceramic tile, sheet vinyl, or a combination of these.

Roof

The roof has a basic design with a covering of composition shingles.

Grade C Examples











Grade D (Fair)

Grade "D" dwellings are constructed of economy grade (fair quality) materials and using fair workmanship. They are generally lacking in style and built-in features. Mass built homes designed to meet minimal housing codes are "D" grade structures.

Interior Finish

Interior walls are painted drywall or paneling. Inexpensive cabinets are in the kitchen with a small vanity in the bath. Countertops are inexpensive laminate with a small backsplash. Interior doors are stock, hollow doors, with inexpensive hardware. A minimal amount of closet and storage space is the norm for this class. Minimal number of electrical outlets with fair quality lighting fixtures is standard for this grade. Heating is forced air furnace or electric baseboard heat with a thermostat.

Plumbing

Five, average quality plumbing fixtures are included in the grade "D" model. The fixtures may include any of the following: water heater, tiled or modular plastic shower stall, toilet, lavatory, tub, tub with shower, or kitchen sink. One full bath with fair quality fixtures is standard for this grade.

Floor Cover

Floor coverings are linoleum, asphalt tile or carpet, softwood (pine), sheet vinyl, or a combination of these.

Roof

The roof has a basic design with plywood sheathing covered with asphalt shingles, metal, low-cost composition shingles, or roll roofing with prefabricated trusses and a plain wood cornice.

Grade D Examples





Grade E (Low Cost)

Dwellings constructed of low cost materials and poor workmanship, with no architectural design. The interior and exterior finishes are plain and inexpensive. The materials used in construction are often "seconds" or other low cost and inferior materials.

Interior Finish

Interior Finish: Interior walls are painted drywall, concrete block, or paneling. Inexpensive paint grade cabinets are in the kitchen. Countertops are inexpensive, wood or plastic. Interior doors are stock, hollow doors, with inexpensive hardware. A minimal amount of closet and storage space is available. A minimal number of electrical outlets and low quality lighting fixtures is standard for this grade. Heating is forced air furnace or electric baseboard heat with a thermostat. This class may also include structures with no heat or bath.

Plumbing

Five or less, low quality plumbing fixtures are included in the grade "E" model. The fixtures may include any of the following: water heater, tiled or modular plastic shower stall, toilet, lavatory, tub, tub with shower, or kitchen sink. One full bath with low quality fixtures is standard for this grade.

Floor Cover

The floor covering is plywood flooring with low grade carpet linoleum, asphalt tile, softwood (pine), low cost sheet vinyl, unfinished sub-floor, or a combination of these.

Roof

The roof has a basic design (usually gable or shed), sheathed with plywood or planks covered with asphalt shingles or metal, low cost composition shingles, roll roofing with no cornice or gutters.

Other

The foundation may be cement block, brick, or wooden piers. Exterior Walls may be wood frame, concrete block, asbestos, or composition roll siding with inexpensive sash and little or no trim.

Grade E Examples





Unsound Grade: Unsound is a special grade assigned to all buildings that have salvage value only.

Unsound



Condition

Condition of a structure is also known as the "state of repair." Condition is relative to the age of the structure. Normal condition for example is a newly completed home that is available for sale or habitation. Normal condition for a home built in 1958 will show some deterioration allowing for routine maintenance but no major updates. A home built in 1958 that has just had a new roof, new siding, windows, and gutters is not in normal condition for its age, it is in good condition. The appraiser must not confuse grade and condition. Consider the condition and desirability of the building in relation to its age. The options for condition are:

Condition Code

Definition

- **Renovated.** The structure has been mostly renovated or restored to a new condition, which may include new kitchen, new electrical and plumbing, new windows, doors, exterior/Interior finish (vinyl, brick, etc.), or a combination of upgrades. The economic and age-life of the structure has been increased. The condition may have been restored to "like new" with little or no physical depreciation.
- **Superior.** Exceptionally maintained. In "like new" condition with no evidence of wear and tear or deferred maintenance. Has many upgrades and replacement of features that extend the life of the structure. The economic and age-life of the structure has been increased. This condition is "like new" with a small amount of physical deprecation.
- Good. Well maintained with minor evidence of physical deterioration. Has many upgrades and replacement of features that extends the life of the structure and therefore decreased the amount of depreciation. The economic and age-life of the structure has been increased. This building would present a small or moderate amount of deprecation.
- **N Normal**. Normal or average condition that is typical for its age with no deferred maintenance.
- **Fair.** The structure has below normal maintenance with noticeable deterioration. The building would have an increased amount of physical depreciation. The economic and age-life of the structure has been decreased.

- **Poor.** The structure has little or no maintenance evident since the time of construction. Definite deterioration is noticeable. Structure is approaching unsound condition but it is still useable. The structure may have severe functional obsolescence and physical depreciation.
- U Unsound: No maintenance with definite and extensive deterioration. May be marginally useable if repaired but is currently not in use. The building has reached the end of its economic life and has only a residual value if any value is present.

Unsound Condition



Poor Condition



Fair Condition



Normal Condition



Good Condition



Renovated Condition



2017

MANUFACTURED HOUSING VALUATION





Manufactured Housing

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Manufactured Housing / Manufactured Homes

Manufactured housing is off-site construction.

Manufactured housing is defined as factory built sectional structures that are transported to the building site and installed. These units can be single-wide, double-wide, triple-wide homes, modular offices, classrooms, or other multi-sectional buildings. **Manufactured housing** is federally regulated by the Manufactured Home Construction and Safety Standards (MHCCSS) regulation also known as the HUD code which went into effect June 15, 1976. The HUD code provides the design and construction requirements for the complete production of the structure in the factory, with some modifications allowed for on-site completion. A HUD certification seal showing that these standards have been met must be displayed on each unit. The HUD code certification is for the manufactured home only, any attachments must meet local building codes.

What is the difference between a mobile home, a manufactured structure, and a modular home?

In practice all of these homes are referred to as manufactured housing. This is because they are constructed inside a building and moved to the building site, not built on-site. Mobile home was the name given to factory built homes that were on wheels and could be moved from one site to another. All new, factory built homes are considered to be manufactured housing by their homebuilders. There is a difference between the standards for each type of construction. This difference cannot be easily observed. The tax office depends on the inspections and permit offices to determine the type of manufactured housing.

Pre HUD Manufactured Homes are factory-built homes produced before June 16, 1976. These homes are also known as pre-HUD code homes and can be single or double-wide homes. All 1976 and older homes are graded as "D".

HUD Approved Manufactured homes are built with a steel undercarriage used to transport the home to the building site. Manufactured homes are valued for assessment purposes using the standards for manufactured homes in this manual. Housing units are assessed by using a combination of grade and condition or replacement cost new less depreciation. Standards for the different grades are detailed as part of this manual.

Manufactured Housing / Modular Structures

Modular structures are factory built multi-sectional buildings that must meet the same North Carolina State building codes as stick or site-built construction. The differences between the MCHCCSS, or HUD requirements, and state building codes include structural considerations, energy design, accessibility, and electrical requirements. If the structure does not have a HUD certification it must meet local building code requirements. In Buncombe County, these structures must meet the requirements of the North Carolina Residential Building Code, a subsidiary of the International Residential Building Code. These structures are assessed using the same standards and rules as site-built homes.

Many new manufactured homes are being built to meet both HUD and local building codes. This marketing tool allows the home to be placed in a manufactured home park or a site-built subdivision. In this case, the steel undercarriage is not a necessary structural component and can be removed when the unit is placed on a permanent foundation. Sometimes these are called "onframe" or "off-frame" modular construction.

The difference in manufactured housing depends on the standards that are followed during construction. If a home built after June 1, 1976 meets HUD standards, it is a manufactured home. **If the home meets North Carolina State Building codes, it is a modular home**. All modular structures are listed as real estate. Manufactured homes may be listed and assessed as real estate or personal property.

Real or Personal Property?

North Carolina G.S.105-273. Definitions.

Personal Property

- (8) **Intangible personal property.** Patents, copyrights, secret processes, formulae, good will, trademarks.
- trade brands, franchises, stocks, bonds, cash, bank deposits, notes, evidences of debt, leasehold interests in exempted real property, bills and accounts receivable, or other like property.
- (14) **Tangible personal property.** All personal property that is not intangible and that is not permanently affixed to real property.

Real Property

(13) "Real property", "real estate" and "land" mean not only the land itself, but also buildings, structures, improvements and permanent fixtures thereon, and all rights and privileges belonging or in any wise appertaining to the property.

Real property, real estate, or land. – Any of the following:

- a. The land itself.
- b. Buildings, structures, improvements, or permanent fixtures on land.
- c. All rights and privileges belonging or in any way appertaining to the property.
- 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.

North Carolina G.S. 143-143.9(6)

Manufactured home. – A structure, transportable in one or more sections, which, in the traveling mode, is eight feet or more in width or is 40 feet or more in length, or when erected on site, is 320 or more square feet, and which is built on a permanent chassis and **designed to be used as a dwelling** with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning and electrical systems contained therein.

Any manufactured home that is used for a commercial purpose is personal property. A manufactured home is defined as a single-wide or double-wide manufactured home, built on a chassis. Manufactured homes are not the same as modular constructed buildings.

Modular constructed buildings are real estate. Examples; classrooms, offices, etc.

Is the manufactured home real or personal property?

- 1. A multi-section residential structure consisting of two or more sections.
- 2. The hitch, wheels, and axles have been removed.
- 3. Is placed on a permanent foundation.
- 4. Located on land owned by the owner of the manufactured home.

If all above conditions exist, the manufactured home <u>must</u> be considered real property. Commercial property manufactured homes are not covered by this standard. Commercial-use manufactured housing must be listed as a MOD (modular). Manufactured homes used for commercial purposes are personal property.

Even if the owner of the manufactured home is not the owner of the land a manufactured home can be considered real estate under the following conditions:

The manufactured home owner has a lease of twenty years or longer, or the lease provides for the disposal or transfer of the home after the termination of the lease.

In the case of a long-term lease where the manufactured home is considered real estate and the manufactured home owner does not own the land, the Land Records staff will create a non-mapped leasehold record or "L0001". A leasehold record is used when the land owner does not own the improvement being considered real estate. In order to create the L0001 a citizen must contact the Land Records Office staff assigned to the township where the property is located. The Land Records staff will create a "non-mapped" parcel for the leasehold improvement in the name of the owner of the home.

Grading

Quality grade definition for manufactured homes.

Quality Grade	<u>Definition</u>
В	Good
С	Average
D	Fair

Any manufactured home of higher quality than a "B" grade is listed with the same schedule as conventional modular construction.

Grade B

Item Good Quality

Foundation Concrete piers with underpinning.

Frame Steel beam undercarriage.

Floor Structure Wood floor with particle board or plywood waterproofed

and insulated.

Exterior Wall Aluminum, wood, or vinyl siding.

Roof Composition shingles with roof pitch typical to site built

homes.

Interior Finish Has good quality paneling or drywall.

Heating and A/C Forced air furnace or heat pump with A/C.

Plumbing Good quality fixtures with two or more baths.

The building has an attractive exterior.

Grade B Manufactured Home



Grade C

Grade C differs from grades D and B only in the quality of materials in the structure. The building materials are average including fixtures, outlets, windows, and doors.

Grade C Manufactured Homes







Grade D

Item Fair

Foundation Cement block, aluminum, wood, or no skirting.

Frame Medium weight steel undercarriage.

Floor Structure Wood floor joists, particle board or plywood, waterproofing.

Exterior Wall Pre-finished aluminum or wood panels.

Roof Engineered trusses and sheathing with metal roofing.

Low pitch arched or slope with minimal overhang.

Interior Finish Low quality, plywood paneling. Standard-grade, hollow core

doors. Laminated plastic countertops and backsplashes.

Ceiling height typically 7'6" to 8'.

Heating Forced air with adequate ductwork or wall furnace.

Electrical Minimal number of electrical outlets. Low cost lighting fixtures.

Plumbing Includes inexpensive fixtures (1 or 2 baths).

Meets minimum housing standards. All 1976 and older manufactured homes are graded "D".

Grade D Manufactured Homes













Residential Building Refinements

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Roof Styles

Gable: A ridged roof that slopes from the center and resembles an "A". It has a triangular shape when viewed from the side. A gable is also referred to as a pitched roof.





Hip: A pitched roof with four sloping sides. The pitch typically runs to each exterior wall.





Gambrel: Also known as a "barn" style roof. It has two pitches with the lower slope steeper than the upper slope.





Roof Styles

Mansard: Similar to a gambrel roof except it slopes at all sides it is sometimes called a "double hip." The lower slope is very steep and the upper slope is almost flat. A ridged roof with two slopes on either side, the lower slope having the steeper pitch.

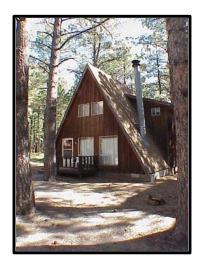




Flat/Shed: A flat roof is level with the structure. A shed roof has only one side that generally has a steep slope.



A-Frame: Has an extreme pitched roof where the roof actually forms the wall structure.



Roof Styles

Arch/ Bow: A straight, continuous arched vault or ceiling, either semi-circular or semi-elliptical in profile.



Other: All other roof styles.







Roof Materials

Composition Shingle: This material may be fiberglass or asphalt formed in strips (shingles). The shingles are nailed to the roof by in an overlapping pattern that creates a weatherproof seal.



Metal: A metal roof may be corrugated or crimped, aluminum or steel. The metal is nailed to the sheathing. New metals roofs have the look of traditional shingle roof materials.







Wood Shingle: Wood shingles are usually cedar or cypress that is cut into wedge-shaped shingles about 3/8" thick. Wood shingles are nailed to the sheathing.



Wood Shakes: Wood shakes differ from wood shingles in two ways; they are much thicker than wood shingles and less uniform in shape and size. Wood shakes may be hand split. They are attached to the roof by nails.



Asbestos Shingle: The asbestos shingle can be distinguished from the composition shingle by its more brittle appearance. The shingle is made of asbestos or asbestos materials. Only found on older homes.



Roll Composition: This is a fibrous material impregnated with tars, purchased in rolls. The material is rolled onto the roof and attached with nails or tar.



Slate: Slate stone shingles are sawed or split into individual shingles and are nailed to the roof.





Tile: Tile shingles are made of clay, baked to a hard surface and need no paint. The tiles usually are a half circle shape and are the color of clay (red, brown, or rust).





Copper: Sheets of copper are nailed to the roof.



Tar and Gravel: A layer of roll composition is covered with tar which is embedded with gravel. This roof material is usually found on flat or shed roofs.



Roof Type Codes

This code describes both the style of the subject roof and the finished roof covering. The predominant type of roof and material is listed when more than one type of roof is present. Following is a list of the roof codes and the combination of style and materials. A more detailed description of both roof style and roof materials is included in the next section.

Roof Type

Code	Style	Material
100	Gable	Composition Shingle
102	Gable	Metal
104	Gable	Wood Shingle
106	Gable	Wood Shakes
108	Gable	Asbestos Shingle
110	Gable	Roll Composition
112	Gable	Slate
114	Gable	Tile
116	Gable	Copper
118	Gable	Other Material
120	Hip	Composition Shingle
122	Hip	Metal
124	Hip	Wood Shingle
126	Hip	Wood Shakes
128	Hip	Asbestos Shingle
130	Hip	Roll Composition
132	Hip	Slate
134	Hip	Tile
136	Hip	Copper
138	Hip	Other Material

Roof Type

Code	Style	Material
140	Gambrel	Composition Shingle
142	Gambrel	Metal
144	Gambrel	Wood Shingle
146	Gambrel	Wood Shakes
148	Gambrel	Asbestos Shingle
150	Gambrel	Roll Composition
152	Gambrel	Slate
154	Gambrel	Tile
156	Gambrel	Copper
158	Gambrel	Other Material
160	Mansard	Composition Shingle
162	Mansard	Metal
164	Mansard	Wood Shingle
166	Mansard	Wood Shakes
168	Mansard	Asbestos Shingle
170	Mansard	Roll Composition
172	Mansard	Slate
174	Mansard	Tile
176	Mansard	Copper
178	Mansard	Other Material
180	Flat or Shed	Composition Shingle
182	Flat or Shed	Metal
184	Flat or Shed	Wood Shingle
186	Flat or Shed	Wood Shakes
188	Flat or Shed	Asbestos Shingle
190	Flat or Shed	Roll Composition
182	Flat or Shed	Slate
184	Flat or Shed	Tile
186	Flat or Shed	Tar and Gravel
198	Flat or Shed	Other Material
210	A Frame	Composition Shingle
212	A Frame	Other Material
220	Arch or Bowed	Other Material
299	Other	Other Material or Shape

Floor Finish

Floor finish is the predominant floor covering in the main heated areas, carpet or hardwood are the most common. Floor finish is listed for descriptive purposes only; it does not add value to the cost calculation.

Code	Description
100	Carpet
102	Hardwood
104	Sheet Vinyl
106	Softwood
108	Asphalt Tile
110	Ceramic or Quarry Tile
112	Unfinished Concrete
114	Parquet
116	Earth
118	Brick
120	Terrazzo
122	Slate
124	Flagstone
126	Marble
128	Unfinished Sib-Floor
199	Other

Carpet: This must be attached to the sub-floor and can be any type or material.

Hardwood: Hardwood boards of various lengths and widths. Oak is the most commonly used wood, however, maple, walnut and other woods are also used.



Softwood: Softwood is similar to hardwood; usually made of pine.

Sheet Vinyl: Wall-to-wall sheet material in various patterns and thicknesses.

Asphalt Tile: Square tiles made of asphalt composition, in various colors that are glued to the sub-floor or peel and stick tiles.

Ceramic Tile: Ceramic tile is kiln baked and set in grout on the sub-floor.

Unfinished Concrete: Concrete that is at grade with no finished floor surface.

Parquet: Small hardwood squares or strips laid in various patterns and designs.







Earth: No floor, only exposed earth.

Brick: Common or face brick that is laid in various designs with mortar.

Terrazzo: A floor surface of marble chips, pebbles or stones in concrete. After the concrete has hardened, the floor is ground and polished to expose the chips. Epoxy terrazzo has a filler of plastic.





Slate: Cut or randomly broken slate that is set in grout or concrete.



Flagstone: Cut or randomly broken stone that is set in grout or concrete.

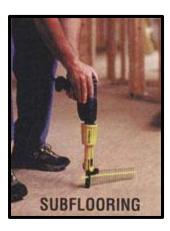




Marble: Cut or randomly broken marble that is set in grout or concrete.



Unfinished Sub-Floor: No floor finish is added. The plywood, particle board or chip board sub- floor is the only flooring.



Interior Finish Residential

Interior finish describes the exposed living surface. This code does not adjust the value of the building and is for descriptive information only.

Code	Description
100	Drywall
102	Plaster
104	Wood Paneling
106	Wood Boards
108	Knotty Pine
110	Wallboard
112	Painted Block
114	Glazed Brick or Block
116	Unfinished
199	Other

Drywall: A finish material composed of plaster with a paper surface. It is fastened to studding and sealed at the joints. Drywall is the standard for new construction.

Plaster: Lime, water and sand is mixed and applied to the walls with a trowel. Plaster hardens to form a durable and attractive wall surface. Plaster was the standard for average or better construction before the introduction of drywall.

Wood Paneling: A man-made material produced in various patterns or natural wood panels, typically made in 4' X 8' sheets.

Wood Boards: Plain wood boards usually found in older construction.

Knotty Pine: Tongue and groove knotty pine boards.

Wallboard: A man-made pressed paper product, usually 2' x 8' or 4' x 8' sheets and painted after installation.

Painted Block: This is found where the exterior is concrete block and no interior wall has been added. The concrete block is painted and is the interior finished surface.

Glazed Brick or Block: The interior wall is glass block, brick or kiln fired block.

Unfinished: No interior finish only exposed studs.



DETACHED STRUCTURES

SPECIAL FEATURES

YARD ITEMS

COMMERCIAL REFINEMENTS







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Introduction

Yard Items listed in this section are structures attached to the land. They are freestanding outbuildings and yard improvements. A yard item is not attached to the dwelling, it is free standing.

Grade

Quality grading refers to a process that values structures based on construction quality or grade. Construction quality is defined as the materials, quality, workmanship, and basic design/style (e.g. Architect designed, custom plans, stock plans, owner built) of the original construction.

The condition is defined as maintenance relative to age, or in other words, the condition of the subject compared to a model of the same age which has received normal maintenance. The current condition of a structure has nothing to do with its grade or quality of construction. A structure of better than average grade will retain the same construction quality until it is removed regardless of the condition. The age or condition does not change the quality of the original construction, workmanship, or materials. Condition or state of repair should not be confused with quality of construction.

The following specifications indicate construction quality associated with each grade. The intent is estimating the replacement cost.

Grade Description:

- A *Superior:* Architect designed and supervised structures. Many unusual design/style features. Superior materials and highest quality workmanship throughout the structure.
- B *Custom:* High grade custom built construction; may be architect designed. Material quality and workmanship is better than average.
- C *Average:* Forms the base from which others are measured. This grade represents the average stock plan, with average materials, and average workmanship.
- D Fair: Low quality materials and below average workmanship.
- E *Poor:* Constructed without plans, of used or cull material, poor quality construction, and workmanship.

Improvements

Quality grading is used to adjust value relative to a baseline value. The baseline value or C grade is considered average quality. The grade C structure is valued at 100 % of the assigned value. Grade A and B structures are higher quality construction than a C grade and are adjusted upward to reflect this difference. Grades D and E are lower than average quality construction and are adjusted downward. For example, if the base value per square foot of a C grade garage is \$25.00, the square footage is multiplied by the price per square foot to give an estimate of the cost new of the improvement. If the grade of the garage is a higher quality than C the price per square foot is adjusted by a higher percentage than the C grade. If the grade of the garage is lower quality than C the price per square foot is adjusted by a lower percentage than the C grade.

Example: C Grade Garage 20x20= 400 SF.

Grade	**% Adj		Base		Grade		Square		
	For Grade		Cost		Adjusted		Footage		RCN
A	150%	X	\$25	=	\$37.50	X	400	=	\$15,000
В	125%	X	\$25	=	\$31.25	X	400	=	\$12,500
C	100%	X	\$25	=	\$25.00	X	400	=	\$10,000
D	75%	X	\$25	=	\$18.75	X	400	=	\$7,500
E	50%	X	\$25	=	\$12.50	X	400	=	\$5,000

^{**}The example above is for demonstration only. The actual percentage adjustments can be found in the rate tables

Once the replacement cost new is calculated, the improvement is then depreciated for age. The depreciation is calculated based on the average life of the item. Each improvement type is assigned a year life table. The depreciation table calculates the amount of depreciation for the item. The depreciation is subtracted from the replacement cost to calculate the remaining value of the improvement. All improvements are depreciated a maximum of 80%. This means that the improvement is considered to retain at least 20% of its value throughout its life.

Example: Cost new	Age	** Year –Life Table	Remaining Value
\$10,000	10 Years	10	\$ 2,000
\$ 2,000	18 Years	20	\$ 500

^{**}The example above is for demonstration only. The actual year life table can be found in the rate tables.

Barns and Utility Buildings

Two Story Barn or Utility Building Unfinished

Code B2S

Two story barns or high quality, two story utility buildings are represented by the code B2S. The roof styles include gable and gambrel. A loft, above the level of the second story, may also be present. The original design provided for livestock shelter on feeding on the lower level, and hay and/or storage on the upper level. The cost per square foot is based on a two-story structure. This structure is measured by square feet and assessed based on its size.

Two Story Barn or Utility Building Finished

Code BAR

Two story barns or high quality two story barns with utilities and minimal finish are represented by the code BAR. The finish is not the same quality as living area but is more than an unfinished barn.

Stable Code STB

A stable is used to house horses or other livestock. This improvement includes stalls and storage facilities. The structure may include restrooms and living area.

Low Cost Two Story Out Building or Tobacco Barn

Code TB

Tobacco barns and other two story and low cost utility buildings or barns are represented by the code TB. Many of these tobacco barns were originally used for storage and/or curing of tobacco. Most tobacco barns are now used for storage of equipment or hay. In addition to tobacco barns, other low quality, two story barn or utility buildings may be represented by the code TB.

Poultry House Code PH

A poultry house can be 1 or 2 stories. If the structure was originally built as a poultry house and has been converted to a barn or utility building the appraiser may list the structure as it is being used.

Pump House Code PH1

A structure for housing water pumping and filtering equipment, including light and water connections, concrete floor, and no interior finish. This structure is similar to a utility building in appearance. The difference between a pump house and a utility building is in the use of the building and the addition of plumbing, utilities, and well fixtures. A pump house can be constructed of wood, concrete block, or brick. Usually a pump house is lower in height than utility building.

Barns and Utility Buildings

Utility Building Unfinished

Code UB

An unfinished one story barn or four-sided shed is represented by the code UB. These structures may be located on any property type. There are no utilities and the quality can vary from poor to very good. This is a basic building used for storage of farm equipment, machinery or tools. They may also be used as workshops or studios. The primary deciding factor is the lack of utilities.

Utility Building Finished

Code UBF

A finished one story barn or four-sided shed is represented by the code UBF These structures may be located on any property type. These buildings have utilities and the quality varies from average to very good. This is a basic building used for storage of farm equipment, machinery, and tools and used as workshops or studios. The primary deciding factor is the addition of power or other utilities.

Concrete Building Code CBB

A simple concrete block building.

Manufactured Home Converted to Storage

Code MST

A manufactured home or mobile home that which has been converted from a single family living unit to a storage unit.

Prefabricated Metal Building

Code PMB

A prefabricated metal building is most often used for equipment storage, machine shops, workshops, or barns. The structure often has clear span interior (no support members) which allows optimum space utilization. The roof is usually low pitch gable. Most of these structures are prefabricated with the brand name displayed on the front of the building. Example: Dixie Steel, Star, Butler, or Morton.

Quonset Code QUO

A quonset is most often used for machinery storage or as a maintenance shop. The building is designed with precut arch rib frame steel and has no interior support beams. The base cost includes a concrete floor and electrical wiring but does not include plumbing or heating.

Carport / Canopy / Garage

Carport Code CPT

Similar to a canopy except this structure is sturdier and used for the protection of vehicles. This code is used for residential type construction, although it may be found on any property type.

Canopy Residential or Agricultural

Code CAN

A low to average quality open shed or canopy is represented by the code CAN. These structures are usually found on agricultural or residential property but they can also be on commercial property. For example, agricultural sheds with one or more open sides, low quality carports, or metal sheds will be represented by code CAN.

Commercial Quality Canopy/Frame or Metal

Code CNM

Free standing commercial grade metal or frame canopy. For example this improvement may be located over gas pumps.

Canopy/ Concrete

Code CNC

A commercial grade concrete canopy is usually found at motels, gas stations, hospitals, or office buildings.

Canopy/ over Concrete/Asphalt/etc.

Code CNP

A commercial grade concrete canopy is usually found at motels, gas stations, hospitals, or office buildings.

Garage Code GAR

A residential or small commercial garage is represented by code GAR. The primary purpose is to house automobiles. This structure may also include a workshop or other partitioned area. A garage includes four walls and a door opening. The door may be absent or either overhead, sliding, or hinged. The grade variation depends on complexity of design and materials, partitioning and utilities.

Condominium Garage

Code GR1

The primary purpose of this structure is to house automobiles. This structure may also include a workshop or other partitioned area. A condominium garage includes four walls, some will be common walls, and a door opening. The door may be absent or either overhead, sliding, or hinged. The garage is typically not attached to the condominium. The garage may be in a separate building or stand alone. GR1 is average quality.

Condominium Garage

Code GR2

The primary purpose is to house automobiles. This structure may also include a workshop or other partitioned area. A condominium garage includes four walls, some will be common walls, and a door opening. The door may be absent or either overhead, sliding, or hinged. The garage is typically not attached to the condominium. The garage may be in a separate building or stand alone. GR2 is above average quality.

Condominium Garage

Code GR3

The primary purpose is to house automobiles. This structure may also include a workshop or other partitioned area. A condominium garage includes four walls, some will be common walls, and a door opening. The door may be absent or either overhead, sliding, or hinged. The garage is typically not attached to the condominium. The garage may be in a separate building or stand alone. GR3 is superior quality.

Garage with Loft < Full Story

Code GRL

A structure with a utility room above the garage area is represented by the code GRL. If the area above the garage is finished living area, the building is coded as a garage apartment and not as a yard item.

Garage with Full Story Utility Area

Code GRU

A residential or small commercial garage with a utility room above the garage area is represented by the code GRU. If the area above the garage is finished living area, the building is coded as a garage apartment and not as a yard item.

Other Structures

Gazebo Open or Screened Porch

Code GAZ

A gazebo is a detached structure similar to an open porch or pavilion. The grade depends on the quality of materials and the design details. This code should also be used for a detached open or screened porch.

Deck Code DK

A free standing wood or other similar material deck is represented by the code DK.

Patio Code PT

An outdoor living area made of concrete, brick, or stone, terraced or flat.

Cabin/Cottage Unfinished

Code CB1

A low cost cabin usually found in resort or summer camps. These are intended primarily for summer or seasonal use. They have minimal insulation and no interior finish. This type of cabin should have electricity and plumbing.

Cabin/Cottage Finished

Code CB2

A low cost cabin differs from a CB1 because they can be used for year-round living. They have some insulation with interior finish, including electricity and plumbing.

Greenhouse Residential Quality

Code GH

Wood or metal framed, includes lighting, plumbing, and vents. Greenhouses made of plastic sheeting on metal or wood frames are not listed as real estate. This code represents residential type greenhouses with lesser quality and amenities than a commercial facility. These greenhouses are used for production of horticultural products for personal use. Quality could be established by the weight of the plastic cover, materials used to construct the frame, and the amenities within.

Greenhouse Commercial Quality

Code GHC

Wood or metal framed includes lighting, plumbing, heat, sprinkler system, and vents. Greenhouses made of plastic sheeting on metal or wood frames are not listed as real estate. This code represents a commercial facility of higher quality with more amenities than residential greenhouses. These greenhouses are used to produce horticultural products for a retail market. Quality could be established by the weight of the plastic cover, materials used to construct the frame, and the amenities within.

Reference Building No Value

Code REF

Buildings considered to have no assessment value and add no value to the property are represented by code REF.

Old Dwelling Code DWG

Dwelling no longer occupied, now used for storage, etc.

Recreational

Pool Enclosure (Detached)

Code POE

A building that encloses a pool and may include bathrooms and shower facilities is coded POE.

Swimming Pool Average Quality

Code SP1

A vinyl-lined swimming pool includes filtering system, circulating pump, and chlorinator.

Swimming Pool Custom Quality

Code SP2

In-ground poured concrete pool includes filtering system, circulating pump, and chlorinator.

Swimming Pool/ Wading

Code SP3

Wading pool is an average of two feet deep but may be up to three feet deep. The average grade

"C" includes filtering system, circulating pump, and chlorinator.

Swimming Pool/Lap Pool

Code SP4

A narrow pool used for lap swimming. Includes filtering system, circulating pump, and chlorinator, may include wave machine.

Indoor Swimming Pool

Code INSP

In-ground poured concrete pool includes filtering system, circulating pump, and chlorinator. The pool is comparable to an outdoor pool with the exception that the indoor pool would be located within an enclosure. The enclosure would be listed separately as code POE.

Infinity Pool Code SP5

Also called a zero edge or vanishing edge pool and gives the impression of extending into the horizon. Primarily located at resorts or exclusive estates. Infinity pools are very expensive due to the extensive structural, mechanical, and architectural detail required. The foundation systems required for these pools is the main cost of construction.

In ground Spa or Hot Tub

Code SP6

In-ground hot tubs and spas are similar to an in-ground pool. Includes a hot tub filtration system and heater. Typically built from and acrylic shells or concrete.

Racquetball Court Code RBC

Racquetball Courts built to regulation specification and would be suitable for all types of play including amateur and professional matches. The court would be an improvement found within and existing residential or commercial facility.

Tennis Court - Residential

Code TC1

Residential tennis court may or may not be built to regulation size. These courts are for residential personal use and will have minimal fencing and lighting.

Commercial or Special Use

Tennis Court - Commercial

Code TC2

Commercial tennis courts are built to regulation size with fencing, lighting, and an area for spectators. These courts would be designed to be used for amateur and professional matches.

Guard House Code GDH

Guard house building usually found at the entrance to a commercial, industrial, or manufacturing site.

Kiosk Code KK1

A kiosk is a simple sales structure that has electrical and possibly water connections. Examples are located at gas stations or freestanding photo kiosks.

Lumber Storage Shed

Code LSS

Any of the various two, three, or four sided sheds found in a lumber yard. These are very low cost structures whose primary purpose is to keep wood dry.

Pavilion/Open Park

Code PV1

A simple shelter usually found in parks or picnic areas. There are no exterior walls, heat, or interior finish. Pavilions may have electricity.

Pavilion/Enclosed Park

Code PV2

A pavilion/enclosed park is an enclosed structure with exterior walls and includes electricity with and minimal interior finish. Structure may also include plumbing.

Pavilion/Restroom Building/Bathhouse

Code PV3

Found in parks, rest areas, gas stations, and community areas. These buildings include plumbing fixtures, electricity, partitions, and interior finish. These can also be found on residential properties.

Pavilion/Concession Stand

Code PV4

A small food service area found in parks, stadiums, or roadside. Includes plumbing, electricity, heat, and minimal finish.

Commercial or Special Use

Tower Site Code TOW

The tower site represents the value of the improvements to the land for preparation of the construction of a tower. The site improvements may include any infrastructure such as site grading, building of access road, concrete pad and utilities need for the site. The physical tower and supporting equipment will be considered personal property.

Water Tank Code WTK

A wood, concrete, or metal water storage structure.

Cemetery Plot Code CEM

A piece of property within a cemetery purchased for a burial or burials for a family.

Mausoleum Niches Code MAU

A mausoleum is an external free-standing building constructed as a monument enclosing the interment space or burial chamber of a deceased person or people

Go-Kart Track Code GCT

A narrow asphalt or concrete race track that is built to race Go-Karts. Go-Karts are small racing cars with a lightweight or skeleton body.

Miniature Golf Course Code GC9

A novelty golf game played with a putter on a miniature course usually having tunnels, bridges, sharp corners, and obstacles.

Condo Storage 1 Code ST1

An area designed for personal storage within a condominium development. The area may be in a separate building or basement area. The area is typically not connected to the condominium unit. The area will normally be described in the deed as a unit number or may be transferred to a unit owner in a separate deed as fee simple ownership. Code ST1 would be consider below average finish. Finish minimal, often open air, and would be constructed of chain link fencing or something comparable.

Condo Storage 2 Code ST2

An area designed for personal storage within a condominium development. The area may be in a separate building or basement area. The area is typically not connected to the condominium unit. The area will normally be described in the deed as a unit number or may be transferred to a unit owner in a separate deed as fee simple ownership. Code ST2 would be consider average finish. Average finish could be an enclosed area constructed of drywall or comparable material.

Condo Storage 3 Code ST3

An area designed for personal storage within a condominium development. The area may be in a separate building or basement area. The area is typically not connected to the condominium unit. The area will normally be described in the deed as a unit number or may be transferred to a unit owner in a separate deed as fee simple ownership. Code ST3 would be consider above average finish. Above average finish would be an enclosed area constructed of drywall or comparable material. The area could have climate control, finished interior and exterior wall, insulated, and minimal floor finish.

Parking Space Code PKS

An area designed for personal vehicle parking/storage within a condominium development. The area may be in a separate building, basement, or open air lot. The area will normally be described in the deed as a unit number or may be transferred to a unit owner in a separate deed as fee simple ownership. Code PKS would be considered average finish. Average finish could be an enclosed area constructed of dry wall or comparable material.

Bank Money Vault Code BE1

A bank vault is a secure space where money, valuables, records, and documents can be stored. It is intended to protect their contents from theft, unauthorized use, fire, natural disasters, and other threats, much like a safe. Unlike safes, vaults are an integral part of the building within which they are built, using armored walls and a tightly fashioned door closed with a complex lock. Vault doors are considered personal property. Bank vaults are typically made with steel-reinforced concrete. This material is not substantially different from that used in construction work. Modern bank vaults are typically made of modular concrete panels using a special proprietary blend of concrete and additives for extreme strength. The concrete has been engineered for maximum crush resistance.

Bank Storage Vault Code BE2

A bank storage vault is a secure space where valuables, records, and documents can be stored. This are may be used by the bank for document storage or may be used by the bank customers for document storage. It is intended to protect their contents from theft, unauthorized use, fire, natural disasters, and other threats, much like a safe. Unlike safes, bank storage vaults are an integral part of the building within which they are built, using armored walls and a tightly fashioned door closed with a complex lock. Storage vault doors should be considered personal property. Bank storage vaults are typically made with steel-reinforced concrete. This material is not substantially different from that used in construction work. Modern bank storage vaults are typically made of modular concrete panels using a special proprietary blend of concrete and additives for extreme strength. The concrete has been engineered for maximum crush resistance. Bank storage vaults typically contain many safe deposit boxes, as well as places for teller cash drawers, and other valuable assets of the bank or its customers.

Mall Concourse Code CO

A shopping center complex may have three distinct components, major anchor stores, the center strip stores, and the mall concourse. The mall concourse are for the public pedestrian areas only, exclusive of open well areas, and include stairs and ramps as necessary. This may consist of a single access way or it may include a number of subsidiary approach routes connecting to the main shopping corridor or concourse. This will include typical paving, lighting and permanent focal elements such as built-in seating, planters, center court wells, stages and fountains commensurate with the quality of the center buildings.

Golf Course (Improvements to the land)

A golf course is the grounds where the game of golf is played. It comprises a series of holes, each consisting of a tee box, a fairway, the rough and other hazards such as sand traps and bunkers, and putting greens with a flagstick and hole. This code will capture the cost of the improvement to the land but not the value of the raw land. Included in the cost per hole are normal clearing of land, including incidental grading, complete irrigation and drainage systems, planting of trees in open land, greens, tees, fairways, service roads and cart paths, builders' profit and overhead, financing during construction and architects' fees for all items except structures.

Golf Course Average Improvements

Code GC2

Typical club, private or not, on undulating terrain, bunkers at most greens, average elevated tees and greens, some large trees moved in or clearing of some wooded areas, driving range. May have named architect.

Golf Course Superior Improvements

Code GC1

Better championship type course on good undulating terrain, fairway and greens bunkered and contoured, large tees and greens, large trees transplanted, driving range, will have named architect. May include longer, more challenging play of the game of golf.

Loading Dock Code LOD

A loading dock is an area of a building where goods vehicles are loaded and unloaded. They are commonly found on commercial and industrial buildings, and warehouses in particular. Loading docks may be exterior, flush with the building envelope, or fully enclosed. They are part of a facility's service or utility infrastructure, typically providing direct access to staging areas, storage rooms, and freight elevators.

Elevators

Elevators in some cases are included in the base costs of the occupancy codes. They are listed as refinements in two stages. The first describes the number of stops (doors or openings) while the second describes the elevator by type and capacity. For our purposes, stops will be the number of floors served. Elevators are defined as being either passenger or freight.

EL0 Freight Elevator Stop.

Required in freight elevator systems and separate from the actual freight elevator are the elevator stops. An elevator stop is required for each floor. The elevator stop includes the door, the opening, and the controls.

EL1 Freight Elevator

Freight elevator is a type of vertical transportation that moves freight between floors of a building. Elevators can be powered by electric motors that either drive traction cables or counterweight systems or pump hydraulic fluid to raise a cylindrical piston. Freight elevators are typically 100 to 200 foot per minute freight elevator.

EL2 Passenger Elevator Stop.

Required in the passenger elevator systems and separate from the actual passenger elevator are the elevator stops. An elevator stop is required for each floor. The elevator stop includes the door, the opening, and the controls.

EL3 Passenger Elevator

Passenger elevator is a type of vertical transportation that moves passengers between floors of a building. Elevators can be powered by electric motors that either drive traction cables or counterweight systems or pump hydraulic fluid to raise a cylindrical piston. Passenger elevators are typically 200 to 800 foot per minute elevators.

Mezzanine

- MZ1 Storage Mezzanine Usually found in industrial buildings above the internal office area. Unfinished with no partitions.
- MZ2 Display Mezzanine Typically found in a department store as additional sales area. Will have partitions and interior finish typical of the rest of the retail area.
- MZ3 Office Mezzanine Typically found in bank or office buildings usually as part of the high first floor. Partitions and interior finish similar to that of the rest of the office space in the building.
- MZ4 Hotel Mezzanine Associated with the lower floors of large hotels. Most often devoted to banquet and meeting rooms.
- MZ5 Theater Mezzanine Associated with the lower floors of theater or cinema. Most often devoted to extra seating. Finish is comparable with the main floor.

Refinement Codes

These refinement codes are for additional distinction only. No assessment value is assigned for each refinement. The data is used as descriptive only and for analysis in the income approach.

EFF	Efficiency apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
1BR	One bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
2BR	Two bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
3BR	Three bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
4BR	Four bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
BE1	Bank money vault - a standard poured concrete money vault excluding the door, which is listed as a separate item. Unit type is square feet.
BE2	Bank record vault - a standard record storage vault, excluding door; mainly providing fire protection. Unit type is square feet.
SHR	Standard hotel room. Used to identify the number of such units in a hotel or motel building. Unit type is EA (each).

LAND VALUATION



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The total assessment of improved property considers land values and buildings values as a single unit. Therefore, it is important to use an easily manageable and accurate method of valuing land. The varying types and uses of land within a jurisdiction can make this a complicated and difficult task.

The sales comparison approach is the most appropriate method of land valuation when qualified sales are available. The income approach to value is emphasized when valuing commercial or industrial land. The cost approach is also used employing the methods detailed previously.

The following techniques were employed in developing uniform and equitable land valuation schedules. Size adjustment formulas were developed for land in each neighborhood based upon the market activity present in the neighborhood. The key to development of size adjustment formulas is "market response" and sales data must conform to the following factors:

- (1) Sales price must be qualified as accurate and adjusted for time.
- (2) Land must be of the same use type.
- (3) Adjustments for location and physical characteristics of the land must be made.

Land – Units of Measure

The unit of measure for land can be front foot, square foot, acre, lot, site, or tract.

Parcels may be valued by any unit of measure valid for the appraiser's use. It is important that the selected unit of measure be the same as those used in the local market. This enables the appraiser to quickly determine developing valuation patterns and thus make changes in the valuation schedules in order to accurately reflect the market.

Front Foot - The front foot unit of measure is used when the frontage of a parcel is determined by the market to be significant. The frontage is the number of feet along the front part of a parcel and is particularly applicable for use where pedestrian traffic is heavy or where the frontage is irregular, as in shoreline property.

Square Foot - The square foot, however, is the most widely used unit of measure for land. It considers all of the land in a parcel and can, in varying degrees, be used for all types of land. This unit of measure is used primarily in the valuation of commercial land and is denoted as "dollars per square foot."

Acre - The acre (43,560 square feet) is the primary land unit of measure used in valuing large land areas such as farm land, timber land, mining land, and recreational land. It is denoted as "dollars per acre."

Lot - The lot, regardless of its size or other attributes, is an important unit of measure. Home builders and developers often acquire a tract of land based upon the number of lots (buildable sites) that tract contains. A lot can be valued as different units of measure such as "each", "square feet", or "acre"

Site - The site as a unit of measure is closely related to the lot. In using the lot as the unit of measure, each parcel is considered a portion of a larger tract. In the use of the site, however, unequal lots or parcel sizes are considered equal. The site may be used where separate sites are marketable, regardless of their size or other factors, and they are therefore considered comparable.

Tract - The tract may be used as a unit of measure where the parcels are large and similar in size. When a greater section or a homestead parcel is considered, the entire area may be used as the unit of measure without any breakdown into acres or square feet.

Land Valuation

The first step in land valuation is the accurate description of the property. The description of the property includes factors such as size, location, topography, and zoning. Zoning is very important in determining the property's highest and best use because zoning controls the allowed uses for the property. Land is then classified into neighborhoods based on the highest and best use of the property. Highest and best use considers four factors: the use must be legally permitted, physically possible, financially feasible, and the most productive use. One base rate for land is not realistic because of the wide range of land values within Buncombe County. Land rates are developed based on the following: lot, square foot, and acreage. Land rates are developed from recent sales. A base value is determined for all neighborhoods or land types and all factors that impact land value are considered, including, size, location, zoning, topography, etc.

Land Area Types

Rural

Rural areas are outlying, undeveloped areas of the county, consisting primarily of farm land or former farmland areas. Few sales may be available in some sections but sales from other rural areas can be used to set land values. Most improved properties will have wells and septic because public water and sewer may not be available.

Subdivisions and Suburban Areas

Developed areas located outside of a city center. When available, recent sales of vacant lots in new subdivisions can be used to set land values. For improved property, land values can be calculated by using a land to building ratio or allocation developed from market sales. The abstraction method subtracts the improvement's value from the total sale price using the remainder as the land value. When no sales are available in a subdivision or neighborhood, the appraiser uses sales from comparable neighborhoods and adjusts them for any differences due to location

Urban

Areas within and near a city center with residential, governmental, commercial, and industrial properties. Public water and sewer is usually available. Vacant land is usually sold for development or special purposes.

Land Class

Commercial or Industrial Land

Commercial property is not valued solely by its location in a specific neighborhood. Zoning is a major factor in the value of commercial or industrial land. In addition to zoning, road frontage, traffic count, utilities, size and shape of the parcel, and location near rail or other freight carriers are considered by industrial and commercial buyers. Land value is determined using market sales when they are available. For commercial and industrial property, the sales are stratified not only by neighborhood, but also by property type or potential use.

The best indication of value is recent market sales of similar property. Market sales are not always available. In addition to market sales, the income approach using the capitalization of ground rents or land residual methods are helpful in calculating land value.

Residential

Each parcel is assigned a neighborhood. Land rates derived from sales within that neighborhood or comparable neighborhoods are applied. The sales comparison approach to value is used to set the base rate by comparing properties that sold in each neighborhood and making adjustments for the different factors affecting the land value.

Each parcel can have multiple land lines or segmented into different types. Land lines are assigned to stratify the land based on criteria for the neighborhood or land type. Individual sections of land are valued based on these segments depending on the code and rate. Adjustments are added for flood, topography, access, etc.

Example: Rate * Size * Adjustments = Land Value

Non-Mapped Parcels

Buncombe County has two types of tax parcels mapped and non-mapped. A **mapped** parcel is a tract of land described in a deed or plat filed with the Register of Deeds Office. A **non-mapped** parcel represents ownership of a type other than physical land, such as a condo, leasehold interest, building rights, air rights, or mineral rights. Non-mapped parcels will be attached to the land or parent PIN, also known as a "container" parcel.

In the example of a condominium:

Land PIN: XXX-XXX-XXXX-00000

Condo Unit: XXXX-XX-XXXX-C00U1 (being Condo unit 1 attached to land PIN above)

Non-mapped parcels are created by condominium declarations, lease documents, deeds, or other transfers of non-mapped interest. The land PIN will be listed in the land owner's name. A condominium complex will be listed in the name of "condo complex unit owners" and each unit will be listed in the name of the unit owner.

Land Class

Condominium Townhome or Planned Unit Development

The deed for a condominium unit does not transfer fee simple ownership of any specific parcel of land. The deed does transfer fractional, undivided ownership of all common areas of land and improvements. This common area is valued using the second method described below. Owners of townhomes own in fee simple any land attached to the unit by the deed and plat. Acreage will vary for units per each plat and deed. This area will be valued as a building lot.

In addition, they also own, as members of the homeowner's association, any additional common area or improvements in their development. There are at least two methods of valuing the common area owned by a homeowners' association or in a condominium complex:

- 1. Value the common area land and improvements and allocate the value to each unit owner based on the percentage of common area ownership applicable to the unit.
- 2. Value each unit based on market sales with the knowledge that the market value for each unit includes the common area interest. A buyer considers both the unit amenities and the common area amenities. Therefore, the neighborhood factor includes the value of the common area.

North Carolina General Statutes § NCGS -105-277.8 define the options and requirements for the assessment of land owned by a homeowners association.

Land Segments / Unit type

Land segments may also be define as "unit type". Land segments are used to identify the different land uses or types of land for valuation purpose. Each segment will use one or multiple units of measure to calculate the value. Each segment will have a base rate assigned based on the use or type.

Land Segment/ Unit Type	
Code	Description
COA	Common Area
COR	Corner Lot
HM1	Home Site 1
HMS	Home Site 2
L1	Class 1
L2	Class 2
LOT	Lot
LZ1	Biltmore Zone 1
LZ2	Biltmore Zone 2
LZ3	Biltmore Zone 3
MKT	Market Residual
MP1	MH Park Basic
MP2	MH Park Average
MP3	MH Park Good
PRK	Park
PUV	Present Use Value
RDW	Roadway
RIS	Residual Land
RL	Rear Lot
RV1	RV Site
SIT	Building Site
SSL	Substandard Lot
STA	State Assessed
STE	Building Rights Only
TOW	Cell Tower Site
USE	Present Use Value
WAS	Wasteland
WET	Wetland or Pond
ZON	Mixed Zoning

Land Adjustments

Land values are developed based on normal properties within an area or neighborhood. Some individual parcels have factors that affect their land value and need adjustments to reflect their differences from the average parcel. Land may be adjusted for any reason that has an influence on value. The adjustment would be define based on the influence and the adjustment amount will range for 5% positive or negative to 90% positive or negative.

Size

Land is adjusted for size by a land size adjustment formula developed from market sales. In addition, land may be adjusted by the appraiser for size with the SZE adjustment per land line.

The size adjustment formulas are developed as power equations and applied as described below

Land Value = (rate * Net Acres)*(factor*(Gross Acres*exponent))

Land Segments

Tracts of land are divided into segments based on topography. The land unit types for these segments are defined as follows:

L1 = Land unit type 0.00% to 25% slope L2 = Land unit type 25.01% and greater slope

Solar Farms

Solar Farms are dedicated to advancing the integration of Solar Power into the mainstream of the American power grid. These solar farms are mostly located on large residential tracts of land. The installation of solar farms on residential land should be considered a change of use for the land and therefore allow the Assessor to reappraise the land under the General Statute 105-287. After the installation of the solar farm the land should be consider commercial land and valued as such. The lease rate within the land lease for the solar farm should be consider to assist in the valuation of the land at market value.

Commercial, Industrial, and Special Use Property











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Listing Procedure

This section describes the methods used to collect data and assess commercial and industrial property. Commercial structures are usually built for a specific purpose and have less uniformity than residential structures, therefore the assessment procedure is slightly different from residential property. For residential property, a combination of the cost approach and the market comparison approach is used to determine value. The motivation for most sales of residential structures is limited to providing a home for the buyer. This is not true for commercial properties where the motivation of the buyer is based on the amount of income the property will produce. In addition, sales of commercial properties are rarely homogeneous or localized enough to be used for analysis by neighborhood or area. When the sales comparison approach is used, the sales are stratified by type of use instead of neighborhood alone. For example, sales of hotels are compared to value hotels but are not used to value shopping centers. A combination of the cost approach, comparable sales, and the income approach is used to value commercial property.

Industrial property is even more special purpose and less uniform than commercial property. Sales of industrial property are rare. Because of the singularity of most manufacturing processes, industrial structures are usually built around these processes. Rarely are industrial buildings useful for a purpose other than for which they were designed and they rarely sell, therefore the sales approach is not always relevant for appraising property of this class. The income approach is rarely used to value special use properties because it is difficult to isolate the contribution of land and structures to the value of the final product. For mass appraisal, the method used to value special use properties is replacement cost new, minus depreciation. Adjustments are based on condition, income, and sales information obtained from the market.

Commercial Valuation

All property is assessed using either the residential or the commercial valuation procedure. The purpose of this section is to describe the procedures used to value commercial structures. Commercial properties offer a service or merchandise for sale. Industrial properties produce or manufacture a product. Special use properties include churches, schools, and government buildings. Property types assessed using the commercial valuation procedures are: multi-family rentals, retail sales, office buildings, warehouses, industrial, and special use property. Commercial procedures are used to value all of these property types. Therefore industrial, commercial, and special use property will be referred to as "commercial" throughout this document.

Commercial property, like residential property, can be valued using the three accepted appraisal approaches to value: Income, cost, or sales comparison. The most reliable approach to value depends on the use of the property and the information available to the assessor. The procedures for all three approaches to value are discussed in detail in the general information section of this document.

The basis for mass appraisal is the cost approach. The cost to construct an improvement is adjusted for depreciation and obsolescence to produce replacement cost new, less depreciation, also known as RCNLD. The depreciated value of the improvement is then added to the land cost to produce a value based on cost of construction.

Obsolescence in commercial properties examples:

Functional:

- Inadequate ratio of land to building area.
- Lack of available parking.
- Lack of useable space.
- Inadequate floor load capacity.
- Utilities not adequate.
- Ventilation, lighting, heat, or air conditioning is dated or lacking.
- Unappealing exterior appearance.
- Bad floor plan.
- Deferred maintenance.
- Deficient elevator service.

Economic:

- Building code requirements.
- Limitations due to zoning laws.
- Original use of property no longer profitable.
- Unsightly area surrounding property.

The value based on cost can be adjusted based on the sales of comparable properties to develop an assessment based on the sales comparison approach. This process, when used in mass appraisal. is called "market adjusted cost". Market value can also be calculated using the sales comparison approach. Data from sold properties is used to develop per unit, square foot, or site values then applying them to similar property. The practice of equating sales price to market value for assessment purposes is not allowed by North Carolina statutes. The income from a commercial property may not support its sale price or the actual cost may be higher or lower than market value. Therefore, the assessed value is determined from market trends rather than just one sale. Commercial property value can be calculated based on value to an investor using the income approach to value. Using this approach, the price paid by the typical investor is dependent on the expected rate of return on the investment. The value of an income producing property can be calculated based on the net operating income. The income approach determines the present worth of future benefits of ownership by capitalization of net income. Commercial property will be valued using the cost approach value modified by market sales. In addition, where applicable, the income approach will also be used to assess market value. North Carolina courts have held that the actual income stream for an income producing property is not the only basis for determining market value. When using the income approach to value, the appraisal is based upon market or economic rent and expense levels. This method is valid if the income stream is less or more than economic rent⁸

Reconciliation

Each of the three appraisal approaches indicates a market value. All three methods of valuation are considered to develop the assessment. Reconciliation of the three approaches to value is not an average of the values produced. An average gives equal weight to all approaches. During the appraisal process each appraisal method may be weighed differently, depending on property type and available information. In the reconciliation process the appraiser determines value by considering the type of property being appraised, the positives and negatives of each approach, and evaluating the reliability of each approach along with its correlation to value.

The three approaches to value are typically applied by type of property being appraised in the following order: ⁹

Residential	Commercial	Industrial or Special Purpose
1. Sales Comparison	1. Income	1. Cost
2. Cost	2. Cost	2. Either
3. Income	3. Sales Comparison	3. Either

The following should be considered when using the three approaches to value:

- 1. Is the approach being used relevant to the property being appraised?
- 2. What are the expected strengths and weaknesses of the approach being used?
- 3. Is the data being used adequately in quantity and reliability?
- 4. What is the effect of the local market on the data being used?

⁷ In re Pine Raleigh Corp North Carolina Supreme Court January (1963)

⁸ In re Property Located at 411-416 W. Fourth Street (F.W. Woolworth), by North Carolina Supreme Court, October (1972)

⁹ Information provided from IAAO One Day Forum 96

Highest and Best Use

Definition of Highest and Best Use¹⁰

Highest and best use is defined as "that use which will generate the highest net return to the property over a period of time." (Property Assessment Valuation page 31). All three approaches to value must consider highest and best use as the primary factor in appraising property. The highest and best use must be legally permitted, physically possible, and economically feasible.

- 1. **Legally Permitted**: The legal use of a property is the use permitted by the deed restrictions and zoning. If no zoning restrictions are present in a neighborhood but deed restrictions limit the use of the site to retail use anything other than retail use is not legally permitted. Zoning is the primary force limiting the legal use of commercial property.
- 2. **Physically Possible**: To be physically possible the intended use must fit on the subject lot and meet all size requirements.
- 3. **Economically Feasible**: To be economically feasible the use must provide the highest net return to the land over a period of time. For example, a lot can be legally used to build an apartment building and the lot meets all size requirements for the building and parking. No other improvements, except multifamily, are allowed and building them would not give a return on the investment. Selling the land as a vacant site would not provide a return on the investment until the time of sale. The only legally permitted, physically possible, and economically feasible use in the previous example is an apartment building.
- 4. **Most Productive Use**: Which use of all possible uses will produce the highest rate of return for the property and be maximally?

¹⁰ International Association of Assessing Officers Property assessment Valuation, Third Ed.(2015)

Income Approach to Value

The income approach to value converts anticipated future benefits into present value by capitalizing operating income by the capitalization rate. The capitalization rate is determined by analyzing the market and evaluating the return investors expect from various types of property. The income approach to value process includes estimating income by collecting local rental information and expense data, development of accurate capitalization rates, and the capitalization of net income into an indication of present value. Using the income approach to value when no income data is available is difficult, the results may be of little value. The income approach cannot be relied on as the only method of valuation. It is possible for the sales price to exceed the value supported by market rents. When sales price exceeds market rent other influences are affecting the value of the property such as the future benefits of the property or speculation. The income approach produces a value based on the investment value of the property, using the formula Income/Capitalization Rate=Value. Capitalization is the process of converting anticipated future payments or income into present value.

Income and Expense Ratio Determination

This process begins with the gathering of income and expense data from the local market. This data is then stratified by type. For example, rental information for apartments is not compared to rental information for office or retail space. Market rent is the price a property should produce. Property that is rented for less than market rent is not used in this process. Expenses are only those costs which are applicable to the cost of ownership. The expense ratio formula is Expense ratio = Expenses/Effective Gross Income.

Capitalization Rate Determination

The capitalization rate is used in the income approach to estimate the market value of the property based on its ability to produce income for the owner. Capitalization rates used for Ad Valorem taxes will include the following:

Recapture – Annual rate of return of the depreciable items of an investment.

Discount Rate – Annual rate of return on an investment.

Effective Tax Rate – Relationship between the level of assessment and the tax rate.

¹¹ International Association of Assessing Officers, <u>Property Assessment Valuation, Third Ed.(2015)</u>

Developing Capitalization Rates

In most cases, income, vacancy, and expense data can be obtained in our listing process from property owners. In addition, information used to develop overall capitalization rates is obtained from national commercial services and local commercial appraisers.

A capitalization rate established for use in appraising for Ad Valorem Taxes will generally consist of the following factors:

Recapture - the annual rate of return of the depreciable items of a real estate investment.

Discount Rate - the annual rate of return on a real estate investment.

Maintenance Rate - the annual rate of return on the total real estate investment required to pay the annual cost of each of these expenses.

Contingency Rate - the annual rate of return on the total real estate investment required to pay the annual cost of unusual and unanticipated expenses.

Recapture Rate Development- The straight-line method of recapture is the simplest method and the one which seems to most reflect the action of the investors in general. It calls for the return of capital in equal increments or percentage allowances spread over the estimated remaining economic life of the building.

Discount Rate

There are several methods currently employed by appraisers to determine the acceptable normal rate of return expected by investors, including the band of investment and direct comparison methods. Applying these procedures on an adequate representative sampling should provide a pattern from which to select the most appropriate rate of interest.

When using the band of investment method it is necessary to first determine the rate of return local investors require on their equity (cash outlay). Next, lenders will be contacted to obtain the current interest rates for money and the amount of equity required. Then percentages of equity and mortgage will be multiplied by the rates provided by investors and lenders. The sum of these products will indicate the actual rate of return.

Tax Rate

To make the proper provisions for real estate taxes, the appraiser must anticipate two factors:

- 1 The tax rate for assessed valuation.
- 2 The percentage of the appraised value to be used for assessment purposes.

The annual rate required to pay the cost of taxes can then be calculated by multiplying the tax rate in dollars per \$100.00 assessment (equivalent to a percentage) by the percentage level of assessment.

Maintenance and Insurance Rates

It is essential that these figures reflect local conditions. The actual local cost may be extracted from income and expense data collected from available technical publications.

Contingency Rate

The percentage allowance for contingencies should be established at the local level. This element provides the appraiser some flexibility in arriving at a proper market value based on the individual project. Also provides some consideration for unusual expenses that may occur on properties appraised without the benefit of a detailed operating statement.

Total Land Rate

Since the income produced by land will theoretically continue for an infinite period of time, it is not necessary to recapture the investment of land. The capitalization rate applicable to land is the sum of the interest rate and the tax rate

Total Building Rate

A building is a depreciable item. Since the income produced by a building will terminate in a given number of years, it is necessary to recapture the investment in the buildings. The capitalization rate applicable to buildings is the sum of the rates of interest, recapture, tax, maintenance, insurance, and contingency.

Because it's the appraiser's job to interpret the local real estate market, the capitalization rates used must reflect the action of local investors.

Capitalization Methods

The most prominent methods of capitalization are direct, straight-line, sinking fund, and annuity. Each of these is a valid method for capitalizing income into an indication of value. The basis for their validity is the action of the market which indicates the value of income producing property can be derived by equating the net income with the net return anticipated by informed investors. This can be expressed in terms of a simple equation:

Value = Net Income/Capitalization Rate

In direct capitalization, the appraiser determines a single "over all" capitalization rate. This is done by analyzing actual market sales of similar types of properties. The net income for each property is developed and then divided by the appropriate overall rate to provide an indication of value. A significant disadvantage of this method is it does not provide for using separate rates for land and buildings. It calls for highly subjective judgment on the part of the appraiser in applying an overall rate to properties having different land to building ratios.

Mortgage equity capitalization is a form of direct capitalization. The major difference in the two approaches is in the development of the overall rate. In this method, equity yields and mortgage terms are considered influencing factors in construction of the lease rate. In addition, a plus or minus adjustment is required to compensate for anticipated depreciation or appreciation. This adjustment can be related to the recapture provisions used in other capitalization methods and techniques.

The straight-line and sinking fund methods are both actually forms of direct capitalization with one using straight-line recapture and the other using sinking fund recapture, differing only in that they provide for separate capitalization rates for land and buildings; the building rate differing from the land rate in that it includes an allowance for recapture. Straight-line recapture calls for the return of investment capital in equal increments, or percentage allowances, spread over the estimated remaining economic life of the buildings. Sinking fund recapture calls for the return of invested capital in one lump sum at the termination of the estimated remaining economic life of the building. This is accomplished by providing for the annual return of a sufficient amount needed to invest, and annually re – invest, in "safe" interest – bearing accounts, such as government bonds, or regular savings accounts, which will ultimately yield the entire capital investment during the course of the building's economic life.

Annuity capitalization is used to value long-term leases. In this method, the appraiser determines, by the use of annuity tables, the present value of the right to receive a certain specified income over a stipulated duration of the lease. In addition to the value of the income stream, the appraiser must also consider the value the property will have once it reverts to the owner at the termination of the lease. This reversion is valued by discounting its anticipated value against its present day worth. The total property value then is the sum of the capitalized income stream plus the present worth of the reversion value.

Residual Techniques

It can readily be seen that any one of the factors of the capitalization equation (Value = Net Income / Capitalization Rate) can be determined if the other two factors are known. Since the value of property is the sum of the land value plus the building value, it holds that either of these can be determined if the other is known. The uses of these mathematical formulas in capitalizing income into an indication of value are referred to as the residual techniques, or more specifically, the property, building, and land residual techniques.

The property residual technique is an application of direct capitalization. In this technique, the total net income is divided by an over-all capitalization rate (which provides for the return on the total investment to land and buildings, plus the recapture of the investment to the building) to arrive at an indicated value for the property.

The building residual technique requires the value of the land to be a known factor. The amount of net income required to earn an appropriate rate of return on the land investment is deducted from the total net income. The remainder of the net income (residual) is divided by the building capitalization rate (which is composed of a percentage for the recapture of the investment) to arrive at an indicated value for the building.

The land residual technique requires the value of the building to be a known factor. The amount of net income required to provide both a proper return on and the recapture of the investment is deducted from the total net income. The remainder of the net income (residual) is then divided by the land capitalization rate (which is composed of a percentage for the return on the investment) to arrive at an indicated value for the land

Gross Rent/Income Multiplier (GIM)

When specific types of income properties are rented in any significant number in the market, the tendency is for the ratio between sales price and gross incomes to be fairly consistent. The gross income multiplier, commonly referred to as GIM, is a factor reflecting this relationship between the gross annual income and value. Once the GIM has been determined for a specific type of property, it can be applied against the gross income of other similar properties to indicate their economic value. The gross rent multiplier converts monthly income into value. The GIM approach, as with any income approach, must still give consideration to the age of a building, size, location, and land to building ratios. Many adjustments, which would normally involve judgment estimates, have been determined by the free action of the rental market. For example, if one property has an advantage, such as location or accessibility over another property, this difference is normally reflected in the rent price.

The GIM may be applied to either the gross income or to the effective gross income, depending on the circumstances and available data in the local market. This approach is frequently applicable to apartment, retail, and certain types of industrial properties, where a relatively consistent net to gross income operating ratio exists.

Income models - An income model is developed for each type of property use where income information can be obtained or used to determine value. The market information on incomes, expenses, vacancies, collection loss, and applicable capitalization rates are used to specify each model using the procedures listed in the income approach to value section.

Market income is the potential income the property is expected to produce, not the contract rent for the property.

Market operating expenses are the expenses anticipated for a business. They do not include special expenses only occurring once. Included are items such as: insurance, management, payroll, utilities, repair and maintenance, supplies, etc. Improper expenses are: depreciation, debt service, income taxes, capital improvements, and individual business expense. Real estate taxes are not included as expenses when calculating property values for taxation purposes.

Capitalization rates are developed from the local market, national appraisal services, and local experts. The effective tax rate will be added to capitalization rates because real estate taxes are not included in the expenses for the income model for tax assessment.

Manufactured Home Park Valuation Procedures

Manufactured Home and RV Parks

The average manufactured home park's purpose is to provide the manufactured home owner with utility services and a place to attach their home. The average park has limited street lighting, asphalt paving, concrete or asphalt pads, minimal or no landscaping, and recreational facilities. The manufactured home park site improvements are valued based on quality and income production. The quality of the park and park amenities is reflected in the rental income for the park. Better quality parks charge a higher rental fee than low quality parks. Therefore, better quality parks produce more income.

Each park's value is developed by adding the residual land value for the neighborhood plus the number of approved sites. A site improvement includes concrete pads, walks, grading for site preparation, electric service, water, and sewer or septic service. Site value does not include the land value. Any additional structures such as swimming pools, pavilions, etc. are added to the land value to produce the total park assessment.

Manufactured Home Park Grade

The manufactured home park grade is used to stratify manufactured home parks into similar quality groups for analysis and valuation.

Grade B	A good quality park wi	th superior design	and landscapin	g. Spacious lots
	with off- street parking,	may also include	recreational fac	ilities. The park

may limit the type, age, and quality of manufactured homes allowed in the park. Lots will allow large manufactured homes and may include patios, gardens, and garages. These parks will have a low density of lots per acre (8

-10) with a base site size of 4,400 square feet per lot.

Grade C Average park with adequate utilities and services and lot sizes, with

medium density of lots per acre (10-15) with an average lot size of 3,200

square feet.

Grade D A fair quality park with minimal amenities and high lot density, with an

average square footage of 2,400 each. Roads are usually narrow, unpaved,

and may be in disrepair.

Grade E A low cost park with basic utilities with little or no design. Lots sizes will

allow for smaller units only. These are usually older parks with closely

spaced, high density lots, averaging 1,600 square feet per space.

Manufactured Home Park Valuation Procedures

The manufactured home park value may be adjusted based on information developed using the income approach or comparable sales. All three approaches to value will be considered and the best value assigned depending on the information available from the market.

Cost Approach Valuation Procedure:

The costs and quality of the following items are considered by the appraiser when developing a cost approach to value for each site:

- Grading: normal grading needed for the development of each site, roads, and drainage.
- Street paving: absence or presence, quality.
- Patios and sidewalks.
- Utilities: water, sewer or septic, electric hookups.
- Features: landscaping, recreational facilities.

Market approach to valuing manufactured home parks develops all elements of the costs of the park and adjusts the cost approach based on comparable sales. Depreciated improvements and structures are added to the land value as in the cost approach. The total value based on the cost approach is then adjusted to market value, based on sales of comparable manufactured home park properties, to calculate the assessed value.

Income Approach

Manufactured home and RV park values are developed using market rent, expense, and capitalization rates.

Golf Courses

The items to consider in developing golf course costs depend on the size, layout, greens, watering system, fairways, bunkers, and landscaping. Golf courses are valued based on the land price for the area, plus the number of holes. The number of golf course holes is listed as miscellaneous improvements. The golf holes are valued based on the quality and cost of development of the course including grading, irrigation, roads, cart paths, etc. The cost per hole does not include the cost of clubhouses or other facilities located on the property.

Champion Golf Course Class I

This course is typically a private course with 18 holes on 130-200 acres, 6,500-7,000 yards long, par 72. The course is designed for championship play and is usually a signature course of a well-known golf course designer.

Examples include: The Cliffs at Walnut Cove, the Biltmore Forest Country Club, and Asheville County Club.

Average Golf Course Class II

A golf course with a simple design usually 18 holes on 110 - 130 acres or less, 6,000-6,500 yards long, and par 67-72. The course is designed for private club or municipal play. Examples are: the Municipal Golf Course or Reems Creek Golf Course.

Cost Approach Valuation Procedure:

The costs and quality of the following items are considered by the appraiser when developing a cost approach to value for a course or hole:

- Grading: normal grading needed for the development of each hole, roads, cart paths and drainage.
- paving: absence or presence, quality.
- Patios and sidewalks.
- Utilities: water, sewer or septic, electric.
- Features: landscaping, recreational facilities.

Market Approach to valuing golf courses considers all elements of the costs of the course. Course improvements and structures, adjusted for depreciation, added to the land value and adjusted to market value, based on sales of comparable properties.

Income Approach

Golf income revenue can be developed from the market based on actual or estimated future number of golf rounds, in addition to the average daily rate per round, and initiation fees. Assessed value will be based on potential income, less typical expenses capitalized to indicate market value. The following formula can be used to value golf courses based on stabilized number of rounds. Stabilized number of rounds X stabilized daily rate= GIR

GIR (golf income revenue) X GIM (golf income multiplier) = Value of Golf Course

Golf Course Grades

Grade A Designed for championship or professional play, with extensive

grading, well landscaped course with challenging fairways, quality greens, natural and man-made hazards. This is an excellent quality

course.

Grade B Good course design usually a private or semi-private club

membership. Has attractive landscaping with large above average

greens, cart paths, and bunkers. This is a superior course.

Grade C Average quality course designed for municipal or public play with

little landscaping or design.

Grade D A plain course with flat terrain and very little landscaping.

Typically a nine-hole course.

Cemeteries

North Carolina statutes separate cemeteries into two classes, exempt and taxable. In addition, each taxable cemetery may also have a portion of the property that is exempt. The exempt portion of the cemetery is the sold burial lots. The unsold lots and undeveloped land area is taxable.

North Carolina General Statute 105-278.2 Burial Property

- (a) Real property set apart for burial purposes shall be exempted from taxation unless it is owned or held for purposes of (i) sale or rental or (ii) sale of burial rights therein.
- (b) Taxable real property set apart for human burial purposes is hereby designated a special class of property under authority of Article V Section II(2) of the North Carolina Constitution, and it shall be assessed for taxation taking into consideration the following:
 - (1) The effect on its value by division and development into burial plots:
 - (2) Whether it is irrevocable dedicated for human burial purposes by plat recorded with the Register of Deeds in the county in which the land is located; and
 - (3) Whether the owner is prohibited or restricted by law or otherwise from selling, mortgaging, leasing or encumbering the same.
- (c) For the purposes of this section. The term "real property" includes; land, tombs, vaults, monuments and mausoleums and the term burial includes entombment. (1973,c.695,s.4:1987,c.724)

Private, commercial, or for-profit cemeteries are income producing and are assessed by using the number of unsold units (lots, niches) multiplied by the price developed for each, then adding the value of any undeveloped residual land. Any additional income will be capitalized using the income approach and used to assess the property.

The following questions will be used to determine the assessment:

- How many units are available for sale?
- How many units sell per year (absorption rate)?
- What is the price per unit?
- How much land is undeveloped for burial purposes?
- The value of the unsold units can be developed using Discounted Cash Flow

Land dedicated for burial purposes will be assessed based on the value per burial plot. This value does not include the land that has not been set aside for sale of burial sites. Any excess land not dedicated for burial purposes will be valued based on the land price for the economic area and adjusted for waste areas. All land containing sold lots or units will be exempt from taxation per NCGS 105-278.2.

The assessment for a cemetery includes the following:

- Buildings
- Developed acreage available for sale.
- Undeveloped acreage.
- Wasteland (roads, gullies etc.) will not be developed for burial sites.
- Exempted acreage, sold burial sites.

Real or Personal Property?

North Carolina G.S.105-273. Definitions. Personal Property

- (8) **Intangible personal property.** Patents, copyrights, secret processes, formula, good will, trademarks, trade brands, franchises, stocks, bonds, cash, bank deposits, notes, evidences of debt, leasehold interests in exempted real property, bills and accounts receivable, or other like property.
- (14) **Tangible personal property.** All personal property that is not intangible and that is not permanently affixed to real property.

Real Property

(13) "Real property," "real estate," and "land" mean not only the land itself, but also buildings, structures, improvements, and permanent fixtures thereon, and all rights and privileges belonging, or in any way appertaining, to the property.

Real property, real estate, or land. – Any of the following:

- a. The land itself.
- b. Buildings, structures, improvements, or permanent fixtures on land.
- c. All rights and privileges belonging or in any way appertaining to the property.
- 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.

North Carolina G.S.143.9(6)

Manufactured home. – A structure, transportable in one or more sections, which, in the traveling mode, is eight feet or more in width or is 40 feet or more in length, or when erected on site, is 320 or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning and electrical systems contained therein.

Modular constructed buildings are real estate. Examples: classrooms, offices, etc.

¹² Any manufactured home that is used for a commercial purpose is personal property. A manufactured home is defined as a single wide or double wide manufactured home, built on a chassis. Manufactured homes are not the same as modular constructed buildings.

¹² Property Tax Bulletin number 157 September 2010 Christopher B McLaughlin

Real or Personal Property?

Commercial property can be listed as real estate or business personal property, but not both. Each type of commercial building has a "model" used to value the structure. The model includes average materials and amenities for the structure type. Items included in the model for a structure type are assessed as real estate. All commercial buildings are considered to have minimal interior finish including, floors, drywall, electrical, and plumbing fixtures. Any building that does not meet this standard is valued at the percent complete and the unfinished portion is considered under construction. Replacement of floor coverings, interior remodeling, painting, and reroofing are considered general maintenance and may not increase the market value of a commercial building. Any value increase to the building will be determined by the appraiser based on the extent of the changes.

The determination of how any improvements made to a commercial property are listed and assessed is made by the Commercial Real Estate Appraiser and the Business Personal Property Appraiser. If the items are not listed as real estate they are listed and assessed as business personal property. According to Property Appraisal and Assessment (1990)" Personal property is defined by exception: anything not listed as real is personal."(p 76).

Leasehold Improvements

Modifications and up fits made by the tenant for the specific use of the business and not the building are taxable in North Carolina as business personal property (leasehold improvements). It is the responsibility of the occupant to list these improvements with the Assessor's Office during the listing period each year. ¹³

There are two tests for determining if an improvement should be listed as personal property:

- 1. The improvements are made by the occupant for the benefit of the business, not the building.
- 2. The components can be removed without damaging the building.

The commercial model for each structure type includes basic features such as minimal interior finish, plumbing, electrical, and lighting fixtures required for the general operation of the building. Personal property is anything added specifically for the operation of the specific business occupying the building and not for the use of the building itself. For example, if the business vacated the building, the next tenant would not use the items added by the previous business owner. Personal property can be generally defined as movable items. Items not listed and taxed as real estate are business personal property. It is the responsibility of the property owner to list any business personal property and to determine what should be listed as personal property. The following list of real and personal items is provided to aid real estate and business personal property appraisers and the property owner. When in doubt, the Commercial Appraiser and the Business Personal Property Appraiser will consult to insure that property is not taxed as both real estate and personal property.

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¹³ See memo dated December 23, 2011 North Carolina Department of Revenue in Addendum 14

Personal Property List

These improvements are made by the occupant for the benefit of the business, not the building.

These items may also be considered items related to a business process.

Item

Acoustical drapes and curtains

Appliances in rental houses

Air conditioning for business process

Architectural and engineering fees (leasehold or tenant)

Bar and bar equipment

Boiler for business process

Bowling alley equipment

Burglar alarms

Car wash equipment Canopy (removable)

Canopy (not removable)

Catwalks (movable)

Communication equipment

Compressed air systems

Computers

Concrete plant equipment

Construction allowances paid to tenants

Control systems

Conveyor systems

Cooking (restaurant equipment)

Cold storage equipment

Coolers (walk-in) portable

Cooling towers used in manufacturing

Dairy processing equipment

Diagnostic center equipment

Dock levelers

Doors (removable grille or security doors installed by tenant)

Drapes and blinds

Dust control systems

¹⁴ See rates and codes section for detailed list of real/personal property items

Personal Property List

Items for the benefit of the business (continued).

Item

Interior finish (not included in building model)

Mirrors, counters, movable columns

Fitting rooms (moveable)

Drive thru windows (detached)

Fans (removable)

Fencing

Fire alarm systems

Floors (movable or modular)

Foundations for machinery and equipment

Grain bins

Greenhouses (plastic)

Greenhouse equipment

Humidifiers used in process

Heating systems used for process

Hoppers

Hospital equipment

Incinerators (movable)

Industrial piping used in the business process

Interior finish (NOT included in building model)

Irrigation equipment

Kilns (moveable)

Lighting (outdoor)

Lighting fixtures (not included in model)

Modular offices (temporary sales offices, etc.)

Night depository

Ovens used in process

Power generator systems (backup system)

Electrical (for the business process)

Personal Property List

Items for the benefit of the business (continued).

Item

Piping for process (removable)

Public address systems

Restaurant kitchen equipment (removable)

Scales

Scale house

Screens (movie)

Theater Seats

Service station equipment

Shelving

Signs (including billboards)

Sound projection equipment

Sound systems

Sprinkler systems used for the process

Switchboard

Tanks

Teller machines (ATM)

Telephone system

Towers (cell, TV, radio, etc.)

Vacuum system used for the process

Vault doors (removable)

Ventilation system used for the process

Water tanks (all water tanks)

Water coolers

Wells (pumps, motors and equipment)

Wiring used for the process

Walls (portable)

Water lines for the business process

Hot air balloons

Counters, cabinets, bookcases (moveable)

Cell towers

Real Property List

Components cannot be removed without damaging the building. Items for the betterment of the building.

Item

Appliances in apartments, other

Air conditioning for comfort of occupants or customers

Malls, interior mall retail or service stores

Architectural and engineering fees (building)

Boiler for service of building

Cabinets (built-in)

Cold storage (built –in) rooms

Coolers (walk-in) permanent

Cooling towers used for building

Doors

Electrical (for building)

Elevators/escalators

Floors (basic included in model)

Interior finish (included in building model)

Drive thru windows (attached)

Fans (attached)

Floor finish (included in building model)

Golf course improvements

Greenhouses (glass, Plexiglas)

Humidifiers used for building

Heating systems used for building

Incinerators (permanent, built-in)

Kilns (built-in)

Modular offices

Plumbing fixtures

Sprinkler systems (fire protection for the building)

Vacuum system used for the building

Vaults

Ventilation systems used for the building

Wiring for the building

Walls (partition walls attached to the building)

Cell tower sites

Paint, stain, wall coverings

Leasehold Interest in Exempt Real Property

Leasehold Defined

Claim or right to enjoy the exclusive possession and use of an asset or property for a stated definite period, as created by a written lease. A long-term lease interest is a valuable asset in its own right which can be traded or mortgaged as a physical asset.

Government Unit Leasehold Parcels

All real property improvements are taxable to the land owner unless a leasehold parcel is created. Based on the terms of a contract lease, either the building, or the land and the building can become taxed to a leasehold parcel with the owner being the lessee. A request must be filed and a copy of the lease must be provided. A leasehold parcel can be created when the land owner is a government unit. Should a governmental unit lease real property to an entity and the contract rent is equal to market rent then the real estate is exempt. Should a government unit lease real property to an entity and the contract rent is below market rent, then the difference in value between contract rent and market rent is taxable to the lessee, and a leasehold parcel is created in the ownership of the lessee.

Assessment of Leasehold Interest in Exempt Real Property

A Leasehold Interest is one of only two types of intangible property that is subject to taxation in North Carolina. North Carolina General Statute 105-275(31) allows for taxation of leasehold interest in exempt real property. Assessors calculate the tax value of a leasehold interest to be the difference between the market rate and the actual lease rate. The amount by which the market rate exceeds the actual lease rate is the intangible property. If the analysis demonstrates that an intangible property actually exists, or a leasehold interest has been established, the assessor should create a taxable value for the difference and assess that value to the owner of the leasehold interest.

A non-mapped leasehold parcel will be created for the purpose of assessing the value of the leasehold interest. The non-mapped parcel will be created in the name of the owner of the leasehold interest.

N.C.G.S. 105-275 (31)

Intangible personal property other than a leasehold interest that is in exempted real property and is not excluded under subdivision (31e) of this section. This subdivision does not affect the taxation of software not otherwise excluded by subdivision (40) of this section.

Commercial

Industrial, Special Use, Property Structure Types







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Commercial Structure Types

Multi-Residential

Apartments include garden apartments and row or town house style apartments. Buildings of three or fewer stories, containing four or more units, in which each unit has a kitchen and bath, and are designed for other than transient occupancy.

CGAC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CGAD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Condominiums

Condominiums will be listed and valued based on their individual market value and their use as residential or commercial units. Condos are not valued as a package or complex in the same manner as apartments. Common area ownership is considered as part of the market value of each unit







Condominiums

High-Rise Apartments of three or more floors are multiple dwelling units with kitchen facilities; each unit has a bath and is designed for other than transient occupancy.

CHRA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CHRB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CHRC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CHRD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

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High Rise Apartments

Dormitories include college and boarding school residence halls, interns and nurses' quarters, armed services bachelor officers' and NCO quarters. They generally have a lounge and frequently have dining facilities and built-in features not found in apartments.

CDMA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CDMB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CDMC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CDMD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CDMS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Dormitories





Lodging

Hotels provide lodging for short term use. Hotel buildings are three or more floors, without individual kitchen facilities. The building costs are based on the type and amount of common-use or support facilities available.

Limited-Service Hotels will have little or no space designed for large groups or formal dining. Examples: Hampton Inns, Days Inn, etc.

CLSA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CLSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLSD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.



Limited Service Hotel

Full-Service Hotels will have meeting, ballroom, banquet, dining, and lounge facilities commensurate with the class and quality.

CFSA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CFSB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CFSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CFSD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.



Full Service Hotels

Motels are multiple sleeping units of three or fewer stories, with or without individual kitchen facilities, and designed for transient occupancy.

CMTC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMTD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMTS Prefabricated metal







Motels

Extended-Stay Facilities have larger rooms to accommodate kitchen facilities, but will have limited support facilities. An amount of office, lobby, coffee shop, meeting room, and managers' living space commensurate with the number of units and quality is included in the costs.

CESC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CESD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Lodges are generally of rustic design with multiple sleeping units and lobby, with some additional plumbing, and kitchen facilities, for the additional unrelated number of guests. The better quality structures will include large, formal dining and meeting rooms.

CLGC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLGD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.



Lodges



Bed and Breakfast Inns are residential buildings that provide sleeping accommodations for the night and a meal in the morning, but usually do not offer other meals.

CBBC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CBBD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.







Bed and Breakfasts

Condo Hotel

Condo hotels or condotels are a hybrid property type that have both residential and hotel components. Residential units are valued using the residential cost schedules and adjusted based on the income and market approaches to value.

Dining Establishments

Restaurants are constructed for the purpose of preparation and sale of food and/or beverages, and include cafeterias, bars and taverns, where the design is of restaurant type. The costs include all necessary plumbing, built-in refrigerators, and electrical connections to provide for these services, but do not include the restaurant and bar fixtures, or equipment or signs.

CREB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CREC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CRED Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CRES Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.





Restaurants

CDIN All types

Included in this code are modular and stick build diners or cafes providing basic food service.







Diner/Cafe

Fast Food or small limited-menu outlets will contain limited seating in relation to preparation area, including drive-up windows, commensurate with the quality.

CFAB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CFAC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CFAD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CFAS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Fast Food

Bars, Taverns or Lounges are designed primarily for the service and consumption of beverages, with the better qualities having limited food preparation areas and service. List as Structure type CFML, CFWF, or CDIN, depending on type and quality of construction, in addition to interior finish.

Stores

Gas Station, Mini-mart, and Convenience Stores are small convenience and service station fueling outlets catering primarily to a transient trade for self-service snack foods and beverages. The better stores will have public restrooms, limited hot or deli food preparation, and service areas. The better qualities will include small specialty or gourmet food, meat, and liquor shops.

CMMC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMMD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMMS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Gas Mini Market



Convenience Store

Markets also known as grocery stores and handle **limited lines of merchandise**, fixtures are not included in costs. Example: Grocery Outlet or Aldi's. These buildings are smaller with fewer types of items than a supermarket.

CMKB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CMKC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMKD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMKS Prefabricated metal



Market

Supermarkets are the large chain type food stores. Such as, *Ingles, Publix, Food Lion, Bilo, Harris Teeter, Greenlife, Earth Fare, etc.*

CSKB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CSKC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CSKS Prefabricated metal



Supermarket

Warehouse Discount Stores are of warehouse construction with minimal interior Typically large open shells with some partitioning for offices and partitioning storage areas. Membership stores typically fall into this category. Examples: COSTCO, Sam's, Super Walmart, Lowes, etc.

Discount department stores commonly have central customer checkout areas, generally in the front area of the store.

CWDC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CWDS Prefabricated metal



Warehouse Discount Stores

Warehouse Showroom Stores are typical of the large walk-through furniture outlets with a semi-finished showroom and large carry-out warehouse as one complete facility. Examples: Haverty's, Tyson's, etc.

CWSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CWSD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CWSS Prefabricated metal





Warehouse Showroom Stores



Mall Anchor Stores: In retail, an anchor store, draw tenant, anchor tenant, or key tenant is one of the larger stores in a shopping mall, usually a department store or a major retail chain, that attract shoppers to a large mall. They are not the pure discount/big box, no frill store, nor the old full-line, full service department store. The anchor stores are normally located as far from each other as possible, to maximize the amount of traffic exposure for other stores when shoppers walk from one anchor to another.

CMAB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CMAC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.



Mall Anchor Stores





Department Store is a retail establishment handling a wide range of durable goods and products, offering the consumer a choice of multiple merchandise lines, at variable prices, in all product categories. Department stores usually sell products including clothing, furniture, home appliances, toys, cosmetics, gardening, toiletries, sporting goods, do it yourself, paint, and hardware. Select other lines of products are offered, such as food, books, jewelry, electronics, stationery, photographic equipment, baby, and pet needs. Certain department stores are further classified as discount stores. Department stores are usually part of a retail chain of many stores situated around a country or several countries. Example: Kohl's.

CDSA All classes are this code.

Department Store



Shopping Centers are buildings designed for a group of commercial enterprises and considered one unit with multiple tenants and a common parking area. Typically rows of open stores comprising single lines of glazed storefronts with individual service entrances to the rear.

Strip Shopping Centers are oriented towards personal services such as food stores, food service, drugstores/pharmacies, flower shops, beauty shops, and cleaners. It is not anchored by a supermarket or other anchor store. May contain a small convenience market or minimarket. Example: River Ridge.

CSPC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CSPD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CSPS Prefabricated metal





Strip Shopping Centers



Neighborhood and Community Shopping Centers (Or Power Centers)

An intermediate group or cluster of stores, also called plazas or villages. Typically support a major anchor. Some better specialty or boutique centers may not have a large, major anchor store, they may emphasize a particular market, such as an off-price, discount, or big box center, or have a strong architectural theme for a group or village of specialty stores. Typical anchors will include secondary or junior departments or specialty retail/discount stores, major restaurant buildings, etc. Typical anchors include major supermarkets (market or discount food stores), large drug or warehouse discount stores, or bank buildings. Example: Gerber Village.

CNSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.





Neighborhood/Community Shopping or Power Center

Regional Mall or shopping center contains a large number of satellite stores in strips with one or more major or junior department or anchor department store buildings as anchors. Costs include all support and service areas and facilities for the strip, but not the major anchor buildings, which are priced separately. The cost model does not include finish in tenant or public areas. Example: Asheville Mall.

CRCC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.







Specialty Retail Stores and Service Occupancy Buildings: Retail buildings are designed for retail sales and display. Service buildings usually have display and/or decorative fronts. Included are businesses with limited merchandise lines and specialty shops. Also use for commercial buildings designed for general occupancy or general service providers.

Examples: Florist shops, barber or beauty shops, tanning salons, dress shops, men's suits, fabric shops, craft shop, etc.

CRSA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CRSB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CRSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CRSD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

RSS Prefabricated metal





Mixed Retail, Office, Residential, or Restaurant units are generally two or three-story buildings designed for multiple uses with one or more residential or office units.

CXOC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CXRB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CXRC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CXRD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.



Mixed Use

Drugstores include both the small neighborhood pharmacy and the large, chain, discount-type store with variety of merchandise departments, including convenience foods. Costs include built-in refrigerators, but do not include display freezers and coolers, or other trade fixtures.

CDGB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CDGC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CDGD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CDGS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Drugstore



Industrial Buildings

Industrial buildings are designed for manufacturing processes. An average amount of office space commensurate with the quality of the building is included. Typically, this is between 4% and 12% of the total area, either single story or stacked. Single-story offices may have a softwood flooring, storage mezzanine overhead, as part of the office area costs.

Loft and Flex Mall Buildings are large warehouses with high ceilings designed for manufacturing usually designed for multiple occupancies by relatively small-space users. Because of display areas, extra partitioning and plumbing in the higher qualities, they are a transition between industrial and office construction. They can also be a single tenancy structure with mixed functions, such as a publishing operation with distinct office, production, storage and distribution facilities all under one roof.

Industrial Flex Mall Buildings are the modern multi-tenant loft structure, typically of low-rise construction. The lower qualities are purely light industrial with the low cost category, having minimal subdivisions and finish per space user. The better qualities have fully finished customer service areas with storefront entries and lobby/display areas.

CLFC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLFD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CLFS Prefabricated metal



Loft

Light Industrials at the better qualities, typical of industrial parks, may have 15% - 25% offices and merge into the engineering buildings. Basic electric service is commensurate with building size, i.e., 200A @ 10,000; 400A @ 40,000; 600A @ 60,000; 800A @ 100,000 to 1,000A @ 200,000 square feet would be considered typical for light industrial-warehouse structures.

CLIA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CLIB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction

CLIC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLID Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CLIS Prefabricated metal



Light Industrial Building

Warehouses are designed primarily for storage. An amount of office space commensurate with the quality of the building is included in the costs. Typically, this is between 3% and 12% of the total area.

Storage Warehouses are designed primarily for long-term storage. An amount of office space commensurate with the quality of the building is included in the costs. Typically, this is between 3% and 12% of the total area.

CSWA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CSWB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CSWC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CSWD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CSWS Prefabricated metal

Distribution Warehouses will have larger areas, 15% to 30%, for office/sales and/or other subdivisions, designed to accommodate breakdown and transshipment of small lots. Increased plumbing, lighting, and compartments to accommodate a larger personnel load.

CDWB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CDWC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CDWD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CDWS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Transit Warehouses or truck terminals are designed for temporary closed storage, freight segregation, and loading. The costs include dock-height floors. They will generally have additional facilities, 10% to 30%, to cater to transient personnel.

CTWC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CTWS Prefabricated metal





Mega Warehouses are the large, storage-distribution facilities, typically over 200,000 sq. ft., where interior build-out is only 1% to 5%. Example: Ingles food warehouse.

CMWC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMWS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Cold Storage Warehouses are designed to keep stored commodities at various temperature levels. Some production or process areas are included in the better qualities.

CCSB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CCSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCSS Prefabricated metal

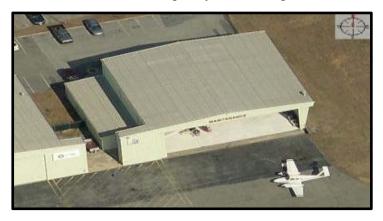


Cold Storage Warehouse

Storage Hangars are buildings designed for aircraft storage, repair, and maintenance. These buildings normally have offices and storage space commensurate with the quality and type of services they perform. Most will have limited facilities for light line maintenance and repair servicing only.

CSHS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Hanger

Mini-Warehouses are warehouses subdivided into a mixture of cubicles of generally small size, designed primarily to be rented for small self-storage or noncommercial storage and may include some service, office-living space.

CMIC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMID Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMIS Prefabricated metal



Mini Warehouses





Automotive

Complete Auto Dealerships include showroom/office and parts/service facilities.

CCDC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCDD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCDS Prefabricated metal

Showrooms are open salesrooms. When a salesroom and service garage or warehouse are located in the same building, the service garage should be valued separately.

CASC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CASM Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Showrooms

Service Stations are buildings designed for gasoline sales, in addition to vehicular maintenance and repair. Area includes office, storage, sales, restrooms, and lube areas for service bay stations. Square foot costs include base electric cost and interior circuits.

CSTC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CSTD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.



Service Station

Service Garages are buildings designed primarily for vehicular repair and maintenance.

CCDC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCDD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCDS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Auto Service Garage

Service Utility Sheds are buildings designed primarily for vehicular repair and maintenance and are usually of a lower quality construction than service repair garages.



Service Utility Shed

CSSC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CSSD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CSSS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Self-Serve Car Washes are small, coin-operated washes designed for the individual to exit their vehicle and clean it. Typically, they will have open bays with a roof overhead.

CSFC Masonry

Brick, block or any type of masonry construction.

CSFS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.

Self-Serve Car Wash



Drive-Thru Car Washes are small, single-car, drive-thru, roll-over-robot type automated car washes. They typically have enclosed walls and a roof overhead. To be cleaned, the vehicle is driven into the car wash.

CDTC Masonry

Brick, block or any type of masonry construction.

CDTS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.

Drive thru Car Wash



Automatic Car Washes are full-service or tunnel car wash service buildings. They may include finished office/sales area, locker and restrooms and a basic, carwash equipment room. The vehicle is moved through the car wash by a conveyor system.

CAWC Masonry

Brick, block or any type of masonry construction.

CAWD Frame

Wood, metal stud construction or a combination of both.

CAWS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.



Automatic Car Wash

Mini-Lube buildings are very small garages designed for quick maintenance lube and oil changes. May have drive-thru bays.

CMLC Masonry

Brick, block or any type of masonry construction.

CMLD Frame

Wood, metal stud construction or a combination of both.

CMLS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.

Parking Structures are structures with no exterior walls, or with partial walls, designed for above grade storage of automobiles. The costs are based on the number of stories where there is always one more parking level (rooftop) than stories.

CPSA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire.

CPSB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces.

Underground Parking Garages are independent structures built below grade with a load-bearing roof. Basement parking is situated beneath an above grade structure and receives the same multistory refinement as the balance of the building.

CUGB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces.

Passenger Terminals include the minimum small bus-stop-type waiting facility up to major airports with separate baggage, ticket lobby, concession, lounge, and concourse areas. Costs do not include any ticket, baggage, boarding, or concession equipment.

CPTB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces.

CPTS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.

Office and Medical Buildings

Office Buildings are buildings designed for general commercial occupancy, including administrative government and corporate uses, they are normally subdivided into relatively small units. If part of an office building has some other occupancy, such as a bank or store on the first floor, that portion should be priced using its appropriate base cost.

COBA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

COBB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

COBC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

COBD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

COBS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Medical Building

Banks, Central Offices, include savings and loan and credit union occupancies where the design is of a bank type. Where such uses are made of ordinary store or office buildings, the store or office costs should be used, adding for any extra features. While a branch bank tends to be a single purpose, low-rise neighborhood facility, the central or main bank facility may be more office building in character, where high-rise administrative office floors should be priced as such.

Central Office Bank

CCBA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CCBB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CCBC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCBD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCBS Prefabricated metal



Central Office Bank

Branch Banks tend to serve a single purpose. Branch Banks are similar in construction and design to the central bank with the only exception being size. Branch Banks are neighborhood facilities, while central or main bank facilities are more office building in character.

CBAB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CBAC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CBAD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CBAS Prefabricated metal



Branch Bank

Medical Office Buildings are designed for medical and/or dental services with examination and outpatient treatment, includes private and public clinics.

CMOA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CMOB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CMOC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMOD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMOS Prefabricated metal



Medical Office Building

Urgent Care, also known as Dispensaries or Infirmaries, are designed for emergency, urgent care, first aid, and medical treatment, usually having no facilities for long term care.

CUCC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CUCD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CUCS Prefabricated metal



Urgent Care Office

Outpatient Medical Office, freestanding, specialty treatment centers for ambulatory outpatient or same day surgery facilities and include all clinical surgery, diagnostic, lab, administrative, and public areas, commensurate with the quality level. Operating rooms, on average, represent 2.5% of the total floor area. Cost includes fixed equipment only. This category will also include specialized imaging and radiation treatment, and diagnostic centers for cancer, diabetes, eye and kidney diseases, etc. Extremely small, vault-type imaging equipment buildings only, are not included, where reported costs have been 50% to 100% greater. Example: Asheville Gastroenterology.

COPB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

COPC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

COPD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

COPS Prefabricated metal



Out Patient Medical Office

Adult Care / Group Homes / Senior Citizen Housing

Retirement Community Complexes include a mix of independent, assisted living, apartments, facilities for Alzheimer's or dementia patients, and skilled nursing living units, with fitness and care facilities, commensurate with the quality. Each type of structure is listed as to the build, design, and use. Complexes may include individual houses, apartments, assisted living units, and skilled nursing care buildings. Examples: Deerfield, Givens Estates.

Group Care Homes are small congregate care or special needs buildings that are more family or residential style in character. Includes intermediate-care facilities for the elderly, physically challenged, or mentally handicapped, substance abusers, domestic violence victims, emergency homeless, and other similar groups.

CGHC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction. Interior finish commensurate with the quality of building construction.

CGHD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction. Interior finish commensurate with the quality of building construction.

Homes for the Elderly / Assisted Living / Rest Homes, typically consist of one or two-room suites, normally with limited individual kitchen areas, common dining areas, and lounges. Residents do not need skilled nursing care.

CELA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CELB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CELC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CELD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Nursing Home or Convalescent Hospitals lack facilities for surgical care and treatment, include skilled nursing homes, sanitariums and like buildings of hospital-type construction, giving full nursing care. Individual or shared bedrooms, with no individual food preparation areas. Individual dining is in room or in a common dining area. Treatment and therapy rooms commensurate with the quality, are included.

CCNA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire. Interior finish commensurate with the quality of building construction.

CCNB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CCNC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCND Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCNS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Hospital All

CHOS A full service regional hospital. Example: Mission Hospital.



Hospital

Clubs/Recreational/Cultural Buildings

Clubhouses are general-purpose, recreation, or activity buildings, usually with light kitchen facilities, a large, general-use room, and multiple restrooms. They will often have stages, the better quality clubs are listed as fraternal buildings.

CCHC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCHD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCHS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Country Clubs are specialized clubhouses designed mainly for entertainment and have few, if any, sleeping rooms. Generally, the better clubs will have ballroom, bar, banquet, and pro shop facilities, as well as locker and shower rooms.





Country Clubs

CCLC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCLD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Fraternal Buildings are designed primarily for use by organizations such as Masons, Elks, etc. These multipurpose buildings typically have an auditorium, kitchen, dining, game room, and office facilities.

CFBB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CFBC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CFBD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CFBS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.



Fraternal Building

Live Stage Theatres are designed primarily for stage presentations and include a stage commensurate with type and quality of construction but not scenery, curtains, or seating.

CTRB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CTRC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

Cinema Theaters are designed primarily for screen presentations and include a stage commensurate with type and quality of construction. Better quality will include stadium seating theaters.

CCTA Fireproof steel

Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire.

CCTC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

Auditoriums are buildings designed for mass seating, visual and voice presentations. Costs include stage or arena, basic floor, and necessary lighting but not the seating, ice-making units, movable floors, or other special equipment. Only one code is used for all auditoriums

CAUD All Auditoriums

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

Handball / Racquetball Clubs include the basic playing courts and ancillary facilities, commensurate with the quality similar to tennis clubs. The better clubs will include full exercise, dressing, spectator, lounge, snack bar, and pro shop facilities, but not any of the equipment or fixtures associated with these amenities. Pools and spas are not included and must be added separately.

CRQC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.





Racquetball

Indoor Tennis

Indoor Tennis Clubs include the basic playing surfaces, including all necessary plumbing and electrical connections, but do not include any fixtures or equipment such as seating, lockers, food preparation, exercise equipment, or swim pools.

CITC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CITD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CITS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Bowling centers may include restaurant, bar, billiard and miscellaneous rooms with necessary plumbing and electrical connections, but do not include any equipment or fixtures such as the alleys, ball returns, kitchen and bar equipment, or other fixtures and chattels.

CBCC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

Natatoriums are specialized gymnasium-type structures for aquatic sports. The better facilities are complete aquatic centers.

CNTC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CNTD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CNTS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.





Natatoriums

Gymnasiums are complete multi-sport, commercial, recreational complexes distinguished by large gymnasium.

CGYC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CGYD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CGYS Prefabricated metal

Fitness Club/ Spas / Health Clubs are designed as physical fitness facilities, with varied exercise and conditioning areas. Generally, the better clubs will have a snack bar, massage and steam room, and sauna facilities, as well as locker and shower rooms. Whirlpool baths, swimming pools, and sport courts are not included.

CHCB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CHCC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CHCD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CHCS Prefabricated metal



Fitness Club

Government and Public Buildings

Community Recreation Centers are large municipal multisport complexes. These multipurpose buildings will include gym-basketball, handball, bowling, and other sports courts, rinks, varied swimming/natatorium facilities, running tracks, as well as exercise, craft, game, and other social/multipurpose rooms. The number of varied amenities and support facilities (locker room, saunas, snack bars, etc.) will vary with the quality level.

CCRC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCRD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Government Buildings

CGOV All government buildings

Courthouses, city hall, other governmental buildings, all building classes are covered by this code.

Library building includes main desk area, reading rooms, and office areas. Also included may be a conference room, workroom or an audio/visual room, or media room.

CLIR All library buildings

Good architectural features with stone, glass or brick exterior. Masonry Brick, block or any type of masonry construction. All public libraries, in all building classes, are listed using this code.

Museum is a high quality public and often governmental structure. Museums acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment.

CMUM Masonry

Brick, block or any type of masonry construction. All museums, in all building classes, are listed using this code.

Jails are correctional facilities designed for the security and safety of inmates and correctional officers. The model includes allowances for inmate reception, recreation, and confinement. All incarceration hardware is included in the model.

CJAL All jails.

Maximum security, the exterior is brick, stone, or architectural concrete with good ornamentation. Masonry, brick, block or any type of masonry construction.

School buildings include high schools, elementary schools, colleges, or alternative school buildings.

CALB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces.

CALC Masonry

Brick, block or any type of masonry construction.

CALD Frame

Wood, metal stud construction or a combination of both.

CALS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.



School Buildings

Post Office buildings are mail processing facilities typically less than 10,000 square feet.

CMPC Masonry or frame. All free standing post offices are listed with this code.

Other Commercial Structures

Churches are buildings designed primarily for worship, but in many churches, costs will include some kind of kitchen, social, meeting and office facilities. The costs include special lighting and stained glass, consistent with the overall quality of construction.

CCUB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

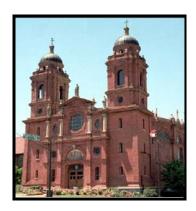
CCUC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CCUD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CCUS Prefabricated metal



Churches

Fellowship Halls are multipurpose structures for recreation and social gatherings and include gymnasium-type flooring, stages, kitchens, and other miscellaneous rooms, commensurate with the quality.

CFHB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CFHC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CFHD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Day Care Centers are early childhood, handicapped, and adult or senior care or development centers and include so-called kindergartens, nurseries or children's preschools. They have light kitchen facilities, activity rooms, and multiple restrooms, more residential style in character than schools. Generally, the better centers may have reception, office, conference, lunch, shower and changing facilities, as well as general activity or classrooms.

CDYB Reinforced concrete

Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces. Interior finish commensurate with the quality of building construction.

CDYC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CDYD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CDYS Prefabricated metal

Laundromats are constructed to hold automatic, self-service washing machines, dryers, and dry cleaning machines, in addition, the costs include the plumbing and electrical fixtures necessary for operation, but not the laundry or cleaning equipment, which is usually tenant-owned.

CLMC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLMD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CLMS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Laundry and Dry Cleaning Stores are designed for full-service laundry cleaning, including typical retail storefront and laundry workspace, commensurate with the quality level.

CLDC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CLDD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CLDS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Mortuaries or funeral homes include chapels, stained glass, and laboratories, commensurate with the general quality. Generally, the better funeral homes may include some living area.

CMRC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMRD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

Kennels have limited examination and treatment facilities, predominantly for the boarding of small animals. The better qualities include the large public animal control facilities and the high-cost pet hotels. Costs include the cages and enclosed runs, heated floors, extra plumbing for grooming rooms, and reception and office areas.

CKLC Masonry

Brick, block or any type of masonry construction.

CKLD Frame

Wood, metal stud construction or a combination of both.

Veterinary Hospitals are designed for the medical and surgical care and treatment of small animals. Costs do not include cages and runs or open shelters, which should be priced separately.

CVHC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CVHD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CVHS Prefabricated metal



Veterinary Hospitals

Multi - Use Buildings

Multi-purpose buildings are structures designed for a variety of activities. Multi-purpose buildings may include retail, storage and warehousing areas, office or finished areas, and miscellaneous rooms.

CMUC Masonry

Brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction.

CMUD Frame

Wood, metal stud construction or a combination of both. Interior finish commensurate with the quality of building construction.

CMUS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls. Interior finish commensurate with the quality of building construction.

Estate Barns and Deluxe Stables are the estate-type equine barns, with the better qualities being the custom, luxury breeding facilities, where cost is not an issue.

CSBC Masonry

Brick, block or any type of masonry construction.

CSBD Frame

Wood, metal stud construction or a combination of both.

CSBS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.





Estate Barns

Equestrian/ Livestock Sales Arenas incorporate a large, simple, clear span riding or exercise arena, with the better qualities, having some stabling facilities. The good show, exhibit or auction/sale facility will include spectator viewing and lounge, commensurate with the quality level, but does not include any fixtures or equipment such as seating, lockers, food preparation, or training equipment.

CECC Masonry

Brick, block or any type of masonry construction.

CECD Frame

Wood, metal stud construction or a combination of both.

CELS Prefabricated metal

Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.





Equestrian/Livestock Sales Arenas

Modular Shipping Container Buildings uses reclaimed shipping containers as modular box type self-supporting building units. Each container measures 8 feet wide by 40 feet long by 9 feet tall. The containers are made of pleated steel and the modular box unit forms the floor, wall, and ceiling of the building. One or two walls may be removed with sufficient beam supports. They may be set on a concrete block foundation, on pilings, or on other types of structures sufficient to support the structure. Roof structures are then added, and may be truss type, membrane, earth, etc. Utilities include heat, plumbing, and electrical systems. Interior finish commensurate with the quality of building construction.

CMCS Modular Shipping Container Building



Modular Shipping Container Buildings

Breweries are specialty built structures or converted warehouses for the manufacturing and distribution of beer with warehouse space to house machinery and may include a tasting bar for retail sales and entertaining.

CBRC Masonry, brick, block or any type of masonry construction. Interior finish commensurate with the quality of building construction. Interior finish commensurate with the quality of building construction.



Miscellaneous

CUWF

Unfinished wood frame building, this code is used for basic shed-type buildings or where the building class type is evident but the use of the building does not fit any other structure type. The building may have utilities but has no interior finish. Unfinished Masonry.

CUML

Unfinished masonry building, this code is used for basic concrete, brick, or stone buildings or where the building class type is evident but the use of the building does not fit any other structure type. The building may have utilities but has no interior finish. Unfinished

CUPM

Unfinished prefabricated metal building or where the building class type is evident but the use of the building does not fit any other structure type. The building may have utilities but has no interior finish.

CFFS

Finished fireproof steel building, this code is used where the building class type is evident but the use of the building does not fit any other structure type. Construction includes passive fire protection materials that insulate steel structures from the effects of high temperatures that may be generated in a fire.

CFRC

Finished reinforced concrete masonry building, this code is where the building class type is evident but the use of the building does not fit any other structure type. Construction includes concrete in which metal or steel is embedded so that the two materials act together in resisting forces

CFWF

Finished wood frame building, this code is used for basic shed-type buildings or where the building class type is evident but the use of the building does not fit any other structure type. Wood, metal stud construction or a combination of both.

CFML

Finished masonry building, this code is used for basic concrete, brick or stone buildings or where the building class type is evident but the use of the building does not fit any other structure type. Brick, block or any type of masonry construction.

CFPM

Finished prefabricated metal building or where the building class type is evident but the use of the building does not fit any other structure type. Prefab metal construction is engineered and fabricated off-site then assembled on-site. Generally consists of a metal or wood frame with single or insulated sandwich panels to form walls.

Occupancy Codes

In the BUILDING SECTION INFORMATION area, the Occupancy Code is used to describe the interior finish of each section. The codes are designed so many buildings will have only one code describing many sections of a complex structure. A hotel is a good example. Others, however, will require the use of more than one code to describe the use or finish of each section.

A Series - Apartments

A01 Walk-up Apartments

Walk-up Apartments consist of apartment buildings typically no higher than 4 to 8 stories with no elevators. They are usually medium density buildings with 4 to 8 units per floor.

A02 Converted Apartments

These properties were originally designed for some other use (usually row retail or single-family residence) but have been converted to multiple tenant living accommodations. The living units resulting from these conversions usually have poor functional utility. There can be any number of apartments.

A03 Garden Apartment

Typically one, two, or three story buildings designed and used as apartments. They are distinguished by their lower story height, "garden-like" setting and (often) a suburban location. This Occupancy Code usually has the lowest unit density of any apartment use.

A04 Row (Townhouse) Apartments

Typically designed as one or two-story attached units which are constructed in a row, share common walls and have similar architectural styles. All buildings in a row need not be held by a common owner.

A05 High-rise Apartments

For our purposes, these are elevator-serviced buildings of four (4) stories or more. High-rise apartments usually represent highest unit density of any apartment use. An allowance for elevators commensurate with size is included in the model for this occupancy code.

A06 Basement Apartment.

This code is to be used <u>only</u> at the BUILDING SECTION INFORMATION level. It is used to describe basement sections that have an apartment-type finish.

A07 Mixed Use/Apartment

These are commercial structures containing commercial apartment accommodations in addition to some other commercial use. The key to using this code is that the apartments are not the primary use of the commercial property being described.

B Series - Lodging

B01 Hotel

Generally, an urban facility offering lodging accommodations, as well as a wide range of other services, such as restaurants, convention facilities, meeting rooms, recreational facilities, and commercial shops. The appearance and construction of these buildings may be very similar to that of high-rise apartments or offices.

B02 Motel

Typically, a building or group of buildings located on or near major highways designed to serve the needs of travelers. They usually offer little more than parking and lodging. However, they <u>may</u> have other services that can be used to distinguish value: food and beverage service, recreational areas, service station and shops. These buildings are commonly no more than two or three stories in height and are of light residential type construction.

B03 Camps, Cottages, and Bungalow Colonies

This category includes camps, cottages, and bungalows which are grouped in a colony and belong to one owner on a contiguous property. Each building commonly comprises one or two units and is designed for seasonal rental on either a weekly, monthly, or season-long basis. The individual buildings should be coded according to improvement type. They can be distinguished in quality by size, presence of heat and related utilities, cooking facilities, sanitary facilities, and construction materials.

B04 Inns (Lodges)

Inns are older structures, which provide sleeping accommodations with or without separate kitchen or bath facilities. Normally, these structures can be distinguished from motels by the fact that they often have no exterior entrance to the individual units and are located in older multiple story buildings. This category includes "Bed and Breakfast".

B05 Resort Complexes

Motel or hotel-type structure found either near a resort community or comprising a resort community within itself. Normally, a full range of hotel services are available (see B01 description) along with such things as professional entertainment, beaches, marinas, tennis courts, or golf courses, depending on the resort location and characteristics.

B06 Rooming Houses, Dormitories, Fraternities, Sororities and City Clubs

This classification includes structures which provide sleeping accommodations along with some form of shared-bath facilities, often only one or two bathrooms per floor. Dining facilities, if present, are usually of cafeteria design and are shared by all occupants of the structure. Tenancy may be transient or long term.

Rectory or Convent Quite similar to B06 except owned by a religious institution or order. Better grades may contain an office, meeting rooms, and/or a chapel.

C Series - Restaurants

C01 Fast Food without Seating

C02 Fast Food with Seating

Fast food restaurants designed with high quantity, fast service in mind. Kitchen facilities are designed for rapid production of light meals. An allowance for drive-up windows is included in the model. Examples: McDonald's, Burger King, and Wendy's.

C03 Family Restaurant

This occupancy is characterized by local ownership, table service, and moderate prices. The structures may be of almost any type and may not be specifically designed for use as restaurants. There may or may not be alcoholic beverage service. Examples include Cornerstone, Happy Hill, and Athens.

C04 Franchise Steak House or Cafeteria

Designed according to the standards of a national or regional franchise organization. They have singular architectural detail with full kitchen facilities but usually no alcoholic beverage service. A cafeteria line is almost always present.

C05 Full Service Dining

A full service eating and drinking establishment contains provisions for multiple table seating, beverage consumption, and a large, multi-purpose kitchen area. This use may have separate areas to accommodate banquets and receptions. Applebee's, Chili's, and Cracker Barrel are examples of this use.

C06 Bar or Lounge

Dependence on beverage rather than food service distinguishes this from C05. Often only the bar area is present, but there may also be seating and a limited kitchen area. The ubiquitous 'roadhouse' is a lower quality example of this code. They may or may not be housed in structures specifically designed for the use.

C07 Franchise Family Restaurant

Similar to C03 except that they are designed to the specifications of a national or regional franchise organization. There is usually no alcoholic beverage service. Examples include Shoney's, Denny's, and Pizza Hut.

D Series - Stores and Commercial Buildings

D01 Retail Stores

Retail stores are freestanding buildings designed for retail sales and display. Usually have display and/or decorative fronts. These include general merchandise outlets, stores, specialty shops, and commercial buildings designed for general occupancy including services. Features include sales and display areas and a stockroom. Also included may be a small office, changing rooms, or a workshop. Both one and two story retail occupancies are included.

D02 Row Retail Stores

Often found in and radiating from the urban core, the buildings described by this Occupancy Code share common walls and may have multiple stories. They are often mixed use properties: Retail first floor use with apartments, offices, or vacant floors on the upper levels. The first floor may have a decorative or display front. D02 is appropriate for mixed occupancies where the first level is not a store but is still mercantile in nature.

D03 Department Stores

These are buildings of two or more stories, typically found in central business districts and in regional or community shopping centers. Department stores handle multiple lines of merchandise which are sold in departments or specialty shops.

D04 Discount Stores

Discount stores typically consist of large open shells with minimal partitions separating the departments or specialty areas. Cash registers are grouped in a check-out area near the exit.

D14 Furniture Warehouse/Showroom

While similar in design to the discount store Occupancy Code, the interior may not be finished to the same extent as normal mercantile occupancy.

D24 Home Improvement Center

Similar to the discount store Occupancy Code. This category includes building supply stores. Attention to architectural detail and 'curb appeal' are what differentiate this occupancy code from an F10 Lumber Yard.

D34 Lawn and Garden Center

A lightweight commercial building with exposed concrete floor. Features include lighting, electrical, and plumbing hookups and space heaters. Attached greenhouses should be listed as a separate section.

D44 Warehouse Retail or Club

Warehouse construction with high exterior walls. Minimal finish and partitions. Sam's Club is an example of this category. An allowance for overhead doors is included.

D06 Retail Basement

It is used to describe basement sections that have a retail sales area type finish.

D07 Miscellaneous Retail

This code is reserved for those retail store buildings and uses which are not the primary use of the site or to which no other code readily applies.

D08 Service Occupancy

This use differs from a retail store in that what is offered for sale may be services, not goods. Examples include electronic repair shops, small printing shops, and dry cleaners. It normally includes a small customer reception area in front with a larger workshop or storage area occupying the remainder of the building.

D18 Service Occupancy - Barber Shop or Beauty Parlor

Similar to D08 but will have more extensive and/or appealing interior finish but less storage or workshop area. Extra electrical fixtures and plumbing are allowed for. This code is only to be used on a free-standing barber shop building.

D28 Service Occupancy - Laundromat

A facility for coin operated washers, dryers and dry cleaning machines. The machines are personal property.

D09 Supermarket

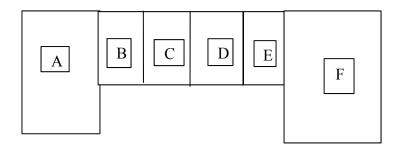
Large retail food stores similar in structure to D04 but containing built-in refrigerators, cold rooms, and ancillary cooling equipment. These buildings may be freestanding or part of a larger shopping center. Note that freezers and coolers for the display of merchandise are considered personal property. Ingle's and Bi-Lo stores are typical of this occupancy.

D10 Convenience Market

Small retail food stores with limited product range but with refrigeration and cooling equipment, commensurate with size. There may be limited gasoline service facilities. If so, the canopies should be listed as miscellaneous improvements. Use this code for buildings that were designed and built as convenience stores.

D11 Strip Shopping Center

Shopping Centers are buildings designed for a group of commercial enterprises, developed as a unit. A strip center is typically a row of stores with similar fronts built as a unit. Each unit has an individual customer entrance in the front and a separate service entrance at the rear. They are normally built parallel to the fronting street and have off-street customer parking areas in front of and close to the stores.

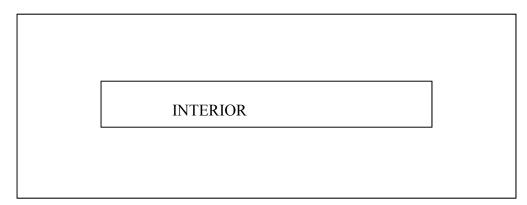


Strip Shopping Center Example

- A) Food Market
- D) Barber Shop
- B) Video Store
- E) Local Laundromat
- C) Shoes
- F) Hardware

D12 Mall Shopping Center

A mall center has anchor stores and satellite stores arranged in a courtyard fashion around an interior concourse. The concourse is the common area of the mall. The model includes: lighting, air conditioning, heating, floor covering, and interior finish for the public or common areas only. All improvements to individual stores are considered business personal property. All elevators and escalators are valued as real estate.



Leasehold Improvements

Modifications and up-fits made by the tenant for the specific use of the business and not the building are taxable in North Carolina as business personal property. It is the responsibility of the occupant to list these improvements with the Assessor's Office during the listing period each year. 15

There are two tests for determining if an improvement should be listed as personal property or real estate:

- 1. The improvements are made by the occupant for the benefit of the business, not the building.
- 2. The components can be removed without damaging the building.

Malls and strip centers are valued as shell buildings with minimal finish. Any improvements made to the individual rental spaces are considered "leasehold improvements" for the purpose of the specific business purpose of the tenant.

¹⁵ See memo dated December 23,2011 North Carolina Department of Revenue in Addendum

E Series - Offices, Medical Offices, Banks, and Hospitals

General Information

Office occupancies are normally subdivided into relatively small units. The descriptions below include allowances for lobby and reception areas, private offices and work spaces, conference rooms, and file areas. There may be a lounge or cafeteria, library or resource area, and storage facilities.

Medical offices are designed for individual or group medical or dental practice. Allowances are made for reception and waiting areas, examination and treatment rooms, offices, and record areas. A medical office will generally have more extensive plumbing and electrical service than the general office occupancy. Medical clinics are included in this use.

Banks include commercial banks and savings and loan associations. Allowances are included for the lobby area, teller space, offices, and vault space (except E22). VAULT DOORS, ATM MACHINES AND DRIVE-IN WINDOWS WITH ASSOCIATED EQUIPMENT ARE TO BE TREATED AS PERSONAL PROPERTY.

E01 Walk-Up Office

Freestanding 4 to 8 story buildings with no elevator service or marginal elevator capacity. Elevators should be added as refinements. These are older buildings usually found in downtown areas.

- **E02** Converted Office
- **E12** Converted Medical Office
- E22 Converted Bank

These uses occupy buildings that were designed for other purposes. The buildings are usually freestanding. Examples include offices and medical offices that were once single family residences and branch banks that were once gas stations. Add for elevators.

- E03 Garden Office
- E13 Garden Medical Office
- **E23** Garden or Branch Bank

Typically 1 to 3 story freestanding office structures which may or may not have elevators. These buildings are often found in office parks, high technology centers or medical complexes in suburban or even rural areas. Elevators should be listed as refinements.

- **E04** Row Office
- E14 Row Medical Office
- E24 Row Bank

These structures are often found in and radiating from the urban core.

- **E05** High-Rise Office
- E15 High-Rise Medical Office
- **E25** High-Rise Bank

These buildings are of four stories or more with ample elevator service. They may be multiple or single tenant buildings. There is often an impressive entry and a spacious lobby. The first floor will probably have a greater story height than the upper floors. An allowance is included for elevators but mezzanines should be added as refinements

E06 Basement Office

This code is to be used <u>only</u> at the BUILDING SECTION INFORMATION level. It is used to describe basement sections that have an office-type finish.

E07 Miscellaneous Office

This code is reserved for those office buildings and uses which are not the primary use of the SITE or to which no other code readily applies. It will only be used at the RENTAL INFORMATION and BUILDING SECTION INFORMATION level. A common example is that extensive office area attached or appended to the F series uses, warehouses and industrial buildings.

E08 Broadcasting Studios - Radio/TV

A facility for producing and transmitting radio and TV programs.

E09 Funeral Homes

An establishment with facilities for the preparation of dead bodies for burial or cremation. There are also areas for holding wakes and funerals. Allowances are included for a lobby, a social hall or chapel, offices, preparation rooms, and storage facilities.

E10 Veterinary Clinic

A doctor's office for animals. Characteristics include a waiting room or receiving area, examination and treatment areas, and attached boarding areas. Separate kennels should be listed separately as miscellaneous improvements.

E11 Nursing or Convalescent Home

This may also be called a rest home or sanitarium. Unlike a hospital, it only has limited patient care facilities. There will be patient rooms, examination and treatment rooms, offices, and a central kitchen and dining areas. When used at the building section level, care must be taken to distinguish between this use and facilities similarly named without patient care facilities. Unit Type is BE (Beds). Add for elevators.

E12 Hospital

A comprehensive in-patient care center including surgery and emergency facilities. Allowances are made for patient rooms, offices, common kitchens, laboratories, pharmacies, treatment rooms, surgeries and emergency electrical power. Elevators are included in the building model.

E17 Home for the Elderly

Similar to garden apartments. Usually of lighter residential construction. Differentiated from E11 Nursing Home by a lack of patient care facilities. Individual unit kitchen facilities and/or common dining/kitchen facilities may be present.

F Series - Industrial Buildings and Warehouses

F01 Utility Building

Usually a small to medium size, single story storage building with no partitioning or interior finish. Minimal plumbing, heating and electrical service are allowed for. Floors are at or near grade. This building type is assumed to be more substantial than the shed of the FC series of miscellaneous improvements.

F02 Storage Warehouse

Designed for medium to long-term storage of merchandise or commodities. These are single or multiple-story buildings that are divided into storage bays.

F12 Distribution Warehouse

Similar to F02 Storage Warehouse. Designed for short-term storage and breakdown and transshipment of small lots of goods or commodities. There will be more plumbing, lighting, and partitioning because they will accommodate more workers.

F22 Transit Warehouse (Truck Terminal)

Characterized by many overhead doors, this use is designed for very short-term storage and freight shipment. There may be a dispatcher's office and bunkhouse facilities for truck drivers. There will be little or no partitioning in the shipping area.

F32 Shipping Dock (Truck Terminal)

Similar to a F22 Transit Warehouse except that there are no exterior walls or partitions. This is essentially a large covered loading dock. There may be free-standing office or plumbing cubical on the dock.

F03 Mini Warehouse

Mini Warehouses subdivided into many small areas with individual access. Plumbing and electrical services are minimal. Generally used for non-commercial storage, individual units are rented out on a short to medium term basis. Overhead doors are included in the model. The data collector should note the number of units.

F04 Downtown Row Storage

This code is particularly useful for describing upper stories of older buildings in urban areas that have different occupancy codes on the first level. However, it may apply to first floors also. It may or may not be the primary use of the property. The buildings described will usually have common walls with other buildings and multiple stories. There may be floor load limitations on the upper stories.

F05 Industrial Building

These are used for manufacturing, fabrication, or processing of some product. There may be a production or shipping office with storage mezzanine above, comprising less than 12 percent of the floor space. They may or may not have dock height floors. The buildings may have more than one story and allowances are included for production, shipping, and receiving, in addition to storage areas. There may be a lunch or locker room. Often the only way to distinguish an F05 from an F02 is the level of lighting, plumbing, and heating.

F06 Loft

A loft is an intermediate or transitional type of building. Often called industrial mall buildings, they are designed for single users with mixed functions or multiple occupancy by relatively small space users in need of both office and processing space. In effect, each area is a small warehouse or industrial building. These buildings have extra plumbing and partitioning placing them somewhere between industrial and office buildings in construction detail.

F07 Miscellaneous Storage

This code is used to identify an income producing or other storage area that is not the primary use of the site.

F08 Aircraft Hangar

Hangars are large open structures designed for the storage and maintenance of aircraft. They usually have minimal plumbing, partitioning, and interior finish.

F09 Cold Storage

A structure or site for the storage of perishable commodities. Similar to a warehouse-type structure, except for the presence of an extensive refrigeration plant.

F10 Lumber Yard

A lumber yard will typically include several structures: saw mill, planing mill, and lumber storage sheds.

F11 Oil / Petroleum Storage and/or Distribution

A site for bulk storage of petroleum products and/or for wholesale or retail distribution of such products.

G Series - Automobile Parking, Service, and Sales

G01 Parking Lots

Commercial parking lots for automobiles. Spaces are rented by hour, day, week, or month. To be used at the SITE description level only.

G02 Small Parking Garage

Typically a residential type garage with 4 to 10 bays. Often found in residential areas.

G03 Parking Ramp

A multiple story drive-up parking facility which may be open or enclosed. Stairwells are included. No heating, cooling, or interior finish.

G04 Underground Parking Ramp (Parking Basement)

Quite similar to G03 Parking Ramp, except it is below grade and may be under a G03 or other type structure. Will be listed as a section of any building it may be under.

G05 Limited Service Gas Station

Sells gasoline and perhaps a few convenience items only. There are no automotive repair services. Usually a high volume facility with discount prices. The structure on the site may be anything from a simple kiosk to a small but elaborate glass, brick, and block sales room. There will be no bays.

G06 Convenience Gas Station

Offers a complete line of convenience goods in addition to gasoline but has no service or repair facilities.

G07 Full Service Gas Station

A full service gas station sells repair and lubrication services and perhaps towing services, in addition to gasoline. There may be a few convenience items.

G08 Mini-lube Service

Designed for quick oil changes and lubrication. Features include a grease pit for each bay. Bays may be drive through. May have been originally built as full service gas station. Overhead doors are included in the model.

G09 Self Service Carwash

A multiple stall structure with a coin operated spray system where all washing is done by the automobile owner. Features include two or more bays and a central machinery room. This code can be used at all three levels, including the building section level.

G10 Automatic Carwash

A linear structure with a fully automated wash line. Cars are pulled through with a chain pulley system. A small office may be included. There may be a convenience store attached, which should be listed at the building level by its own Occupancy Code. Canopies and kiosks should be listed as miscellaneous improvements.

- G11 Automobile Dealership (New Car)
- **G21** Farm Equipment Dealership
- **G31** Construction Machinery Dealership
- **G41** Recreational Vehicle Dealership
- **G51** Motorcycle Dealership

Typically a one story retail operation designed for automobile, farm equipment, construction machinery, recreational vehicle, or motorcycle sales and service. They are divided into sales and service areas. There, almost certainly, will be a used car sales area also.

G12 Automobile Dealership (Used Car)

Similar to G11 Auto Dealerships. Tend to be smaller and less ostentatious than new car dealerships. May have separate sales and service areas, a small office or trailer, and/or a garage.

G13 Automotive Showroom

A large, open, sales area characterized by large display windows, good lighting, average or superior interior finish. There will be small, partitioned offices and may be lounges, waiting rooms, and executive offices. This code will probably only be used at the BUILDING SECTION level. Mezzanines should be listed as refinements.

G14 Automotive Service Garage

A garage or warehouse-type building offering automotive repair services. May or may not be attached to an automotive showroom. Features include minimal interior finish and plumbing, adequate lighting and heating, and areas for parts storage.

G15 Auto Service Center

Usually a national chain auto service or tire company facility. There are areas for retail sales, service and repair, and customer waiting. Adequate plumbing, heating, and electrical service is included. There may be large display windows.

G16 Repair Garage/Body Shop

Automotive mechanical or collision repair services. This code is included to distinguish the small independently owned operation from the franchise dealers and national chains. The building is usually minimal construction with no retail services or customer waiting area.

H Series - Theaters and Auditoriums

H01 Legitimate Theater

Primarily for live, stage presentations, the legitimate theater structure is a large, open area with permanent seating and full facilities for live performances. Stage areas, balconies, mezzanines, marquee, orchestra pit, prop storage areas, and a full complement of necessary electrical and lighting devices are present. The Unit Type is SE (seat).

H02 Single Screen Cinema

This is a single 'house' motion picture theater. It may or may not be a free-standing building. There is a large, single screen and permanent seating. The stage, if any, is built to accommodate only the motion picture screen. There will probably be a marquee and a spacious lobby, ranging from simple to ornate in decor. A restroom area, lounge, concession area, projection room, and box office are included. Most of these were built before the middle 1960's. The Unit Type is SE (seat).

H03 Multi-Screen Cinema

A multiple 'house' motion picture facility. There will be two or more auditoriums, each with its own screen, permanent seating, but the partitions between auditoriums may be moveable. One central projection booth will serve all houses and there may be more than one box office. The building may or may not be free-standing. However, they are often found as satellites to shopping malls. Any stage is only there to support the screen. There will be a lounge and rest room area, a concession area, and a simple but spacious lobby. The Unit Type is SE (seat).

H05 Auditoriums

A large, open area with minimum ornamentation designed primarily for mass seating and visual or aural presentations. These may be either live performances or motion pictures. Seating is permanent, balconies are rarely found. A stage is always present but support facilities are much more limited than those found in a cinema or legitimate theater. The Unit Type is SE (seat).

I Series - Recreation

I01 Arena, Field House

A large, enclosed area usually used for indoor sporting events. If there is seating, it is situated around the perimeter of a large, open sports area. Commonly used for basketball, hockey, and similar events. Removable stage areas may be present. The Unit Type is SE (seat).

I02 Bowling Center

Includes all bowling alley facilities. May also comprise a restaurant, bar, billiard room, locker room(s), or other miscellaneous rooms. **Note: the actual alleys and the ball return equipment are personal property.** The unit type is LA (lane).

I03 Camping Facilities

Camping facilities are those offering temporary camping sites for tenting and trailer hookup only.

I04 Fraternal Building/Clubhouse/Recreation Building/Fellowship_Hall

These are multiple purpose buildings designed for meetings, entertainment, and social activities. Allowances include space for a large multi-purpose room, dining facilities, kitchen, small office(s), and game rooms. Larger examples may include an auditorium. Exercise and locker rooms may be present.

I05 Golf Course

Refers to all types of golf courses.

I06 Indoor Ice or Roller Rink

Any indoor skating facility. Specifications include a skating area, spectator's area, snack bar, and office. There may be locker and shower rooms in addition to a cashier's office. Refrigeration equipment and ice surface not included.

I07 Indoor Tennis Club

Large facility designed for indoor tennis.

IO8 Indoor Health or Racquetball Club

Designed for racquetball or exercise.

I09 Picnic Grounds

An outdoor area for picnics and barbecues.

I10 Playground

An outdoor play area. There may be swings and other play equipment.

I11 Riding Stables

A facility that keeps, cares for, and rents horses.

I12 Stadium

A field surrounded by bleachers or grandstands. Used for baseball, football, and field sports. Scoreboards, announcer's booth, concession stands, and extensive outdoor lighting may also be present.

I13 YMCA/YWCA

A multi-purpose facility, similar to an indoor health club. However, there is provision for sleeping rooms, a kitchen, and perhaps a chapel area. Gymnasiums should be listed as separate building sections.

I14 Youth Camps

A rural residential camping facility for young people.

I15 Religious Assembly

A reservation or camp, community owned and operated by a religious sect or denomination for purposes of worship, fellowship, or meditation.

I16 Country Club.

Similar to I05 Golf Courses except that ownership is private and membership is restricted

J Series - Public Buildings

J01 Church

This can be a church, synagogue, or mosque. This code is for the auditorium area. Allowances are included for the auditorium or gathering area, seating, and for preparation or storage rooms.

J02 Church School Building

Similar to a classroom building. Includes classrooms, meeting rooms, and office. May include kitchen and dining facilities. Usually attached or in close proximity to a church.

J03 Church Fellowship or Parish Hall

A general purpose building attached or close to a church. Closely associated with a clubhouse or fraternal building. Allowances include lobby area, activity hall, meeting rooms, kitchen, and dining area.

J04 City Hall

A city, town, or county administrative building. Similar to an office use. There are allowances for administrative offices, meeting rooms, and lobby areas. There may be record storage areas, lounge, and cafeteria.

J05 Courthouse

A building dedicated to, or used for, judicial proceedings. The City Hall description applies with the additional inclusion of courtrooms and jury rooms.

J06 Post Office

Reserved for buildings constructed under contract to or lease agreement with the United States Postal Service. Features will include a lobby and vestibule area, a counter area, office, mail workroom, and sorting areas. There may also be a loading dock, locker room, and record storage area. Do not classify contract post offices located in conventional buildings with this code.

J07 Fire Station

Built for the sheltering and maintenance of firefighting equipment. There is provision for an engine and equipment room, locker room, kitchen and dining facilities, and perhaps sleeping rooms. Drying towers, an office, and a training room may be included.

J08 Police Station

A building for the housing and dispatching of police personnel. Allowances include offices, dispatching area, day room, and lobby.

J09 Jail

Same as police station except that allowances for prisoner reception, recreation, and confinement areas are added. Incarceration hardware is included.

J10 School

Includes both elementary and secondary schools. There are allowances for classrooms, assembly areas, offices, and a library. There may be a cafeteria, laboratory rooms, music rooms, and industrial arts areas. More specialized spaces, like gymnasiums, natatoriums, and auditoriums should be listed as separate sections, according to their own occupancy codes.

J11 Library

Includes public and academic libraries. Specifications include stack areas, main desk area, reading rooms, and offices. There may be conference rooms, work rooms, and an audio/visual center. Free standing shelving is personal property.

J12 Gymnasium

An institutional gymnasium. Included are allowances for the gymnasium area, locker and shower facilities, equipment storage, and a small office. Arena seating is not included.

J13 Natatorium

A natatorium is a building that houses an indoor swimming pool. This code refers to the building. The pool must be listed as a miscellaneous improvement. The building includes the pool area, locker and shower facilities, a mechanical room, and a small office

J14 Air Terminal

A facility for the reception and routing of commercial airline passengers. There are allowances for the ticket areas, baggage claim and service areas, concourses, and waiting areas. Restaurants, lounges, and small shops may also be included.

J15 Armory

A building designed to headquarter and train National Guard Units. Features include classrooms, offices, drill hall (may be similar to a gymnasium), rifle range, kitchen, and storage rooms.

J16 Day Care Center

Refinement Codes -

Refinement are found within commercial structures and often used as units of measure for valuation purposes.

- **EFF** Efficiency apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
- **1BR** One bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
- **2BR** Two bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
- **3BR** Three bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
- **4BR** Four bedroom apartment. Used to identify the number of such units in an apartment building. Unit type is EA (each).
- BE1 Bank money vault a standard poured concrete money vault excluding the door, which is listed as a separate item. Unit type is SF (square feet).
- BE2 Bank record vault a standard record storage vault, excluding door; mainly providing fire protection. Unit type is SF (square feet).
- **SHR** Standard hotel room. Used to identify the number of such units in a hotel or motel building. Unit type is EA (each).

Refinement Codes (continued)

Elevators

Elevators in some cases are included in the base costs of the occupancy codes. They are listed as refinements in two stages. The first describes the number of <u>stops</u> (doors or openings) while the second describes the elevator by type and capacity. For our purposes, **stops** will be the number of floors served. Elevators are defined as being either passenger or freight. Attended passenger elevators are obsolete. We have no codes for them and should be listed manually.

- **EL0** Freight elevator stop. Includes the door, the opening, and the controls. Unit type is EA (each).
- EL1 Electric freight elevator typical 100 to 200 foot per minute freight elevator. Unit type is LB (capacity in pounds).
- **EL2** Passenger elevator stop. Includes the door, the opening, and the controls. Unit type is EA (each).
- EL3 Electric passenger elevator a 200 to 800 foot per minute unit. Unit type is LB (capacity in pounds).
- MZ1 Storage Mezzanine¹⁶ Usually found in industrial buildings above the internal office area. Unfinished with no partitions. Unit type is SF (square feet).
- MZ2 Display Mezzanine Typically found in a department store as additional sales area. Will have partitions and interior finish typical of the rest of the retail area. Unit type is SF (square feet).
- MZ3 Office Mezzanine Typically found in bank or office buildings usually as part of the high first floor. Partitions and interior finish similar to that of the rest of the office space in the building. Unit type is SF (square feet).
- MZ4 Hotel Mezzanine Associated with the lower floors of large hotels. Most often devoted to banquet and meeting rooms. Unit type is SF (square feet).

¹⁶ Mezzanine: an intermediate partial story between two main floors of a building especially one that projects in the form of a balcony. Costs include floor structure, stairs, lighting, heating, and a finish commensurate with the associated space. Wall structure is not included.



PRESENT-USE VALUE PROGRAM

SCHEDULES

2017

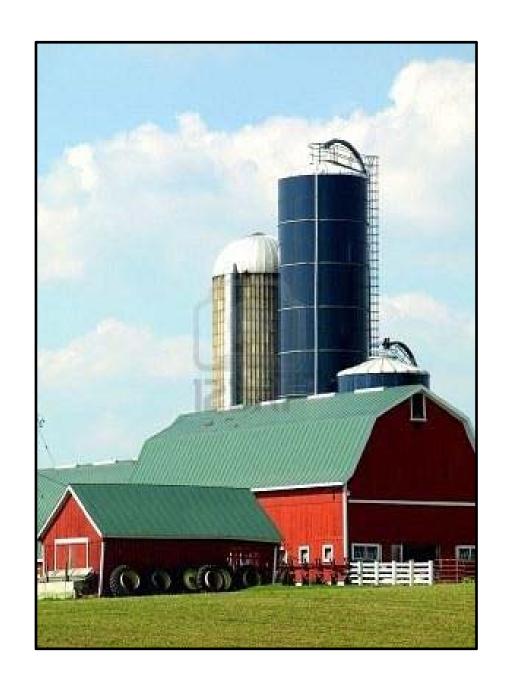


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Present-Use Value Assessment

Buncombe County administers the Present-Use Value Program by conforming to the requirements of North Carolina General Statutes. These requirements are subject to change by the Legislature each year. All requirements and changes are determined by the North Carolina General Assembly, not by Buncombe County Commissioners or Buncombe County Tax Department. All counties are required to develop both market value schedules and Present-Use value schedules. The Present-Use schedule values land based on its ability to produce agricultural, horticultural, or forestry products. The land values are based on land rent prices capitalized as required by general statutes. All improvements to farmland are valued using the market schedules as required by NCGS §105-317.

The present-use value statutes were enacted by the General Assembly in 1973.

The original intent of the use value taxation program was to "keep the family farm in the hands of the farming family". North Carolina had seen a steady increase in property values since the early 1970's. Farmers could not afford the increase in taxes produced by the increase in property values, so they sought relief from the General Assembly.

Present-Use Value Assessment

Use Value Advisory Board

Section 105-277.7 of the North Carolina General Statutes, establishes a nine member Use-Value Advisory Board and directs it to annually submit a recommended use-value manual to the Department of Revenue. Contents of the manual, as well as guidelines for their development, are further specified in NCGS §105-289(a)(5).

The contents of the Use-Value Manual reflect the combined judgment and effort of many professionals in the North Carolina Cooperative Extension Service and cooperating federal and state agencies. The 2017 Use Value Advisory Board Manual is included in this manual as a reference and is located in the addendum.

Application Process

All parcels approved for the Present-Use Program must be qualified by the Assessor. The guidelines for this procedure are outlined in the Machinery Act. The first requirement is the filing of a timely application. Applications for the Present-Use Value Program will be accepted only during the regular listing period (January 1- January 31 of each calendar year) or within thirty (30) days after a notice of change in the market value of the property or within sixty (60) days of a transfer of ownership. These applications are available in the Real Estate Division of the Tax Office or online. All sections of the application must be completed entirely and signed by the owner or they will not be accepted. Applications denied because of incomplete, missing, or erroneous information will be returned to the applicant for resubmission.

All applications will be reviewed and must meet the required qualifications for: Ownership, size, use, and sound management. All property will be field-checked (on-site visit by an appraiser) for sound management, farm activity, and qualifying land area types. The application is reviewed and either approved or denied based on Machinery Act requirements. If the application is denied, notice of denial is mailed to applicant. The applicant has 60 days to appeal the Assessor's decision.

If approved, the qualified acreage is divided into land classes. The land classes are developed based on a combination of the GIS mapping system, Management Plan, and field review. The soil types for an area may be unavailable or inaccurate. If the soil type indicated on GIS equals nonproductive wasteland, but the area is actually in production, then the land has changed since the last soil study. However, the final decision will be made by the appraiser based on experience and onsite evaluation. All available tools will be considered to accurately calculate the Present-Use Value of each property based on productivity.

Present-Use Value Assessment

A minimum of one (1) acre is to be valued as a home site for the first dwelling and a minimum of one-half (0.5) acre for each additional home site. Any area of the approved parcel not considered part of the farm unit will be valued as market residual. Wasteland, rock cliffs, and other nonproductive areas shall be valued as wasteland. This process creates a present-use value, a market value, and a deferred value. The market value is retained to allow calculation of the deferred tax. According to NCGS §105.277.4, the deferred tax and interest is due as of the date when the parcel, or a portion of the property, becomes disqualified from the Present-Use Value Program.

Program Requirements

Acceptance into the Present-Use Value Program is an implied contract. Buncombe County taxes the property at its use-value, as long as the owner continues to use the property as approved and continues to meet any statutory requirements. It is the property owner's responsibility to notify the Tax Assessor of any changes to the property, its use, or ownership.

§ 105-277.5. Agricultural, horticultural and forestland – Notice of change in use.

Not later than the close of the listing period following a change which would disqualify all or a part of a tract of land receiving the benefit of this classification, the property owner shall furnish the assessor with complete information regarding such change. Any property owner who fails to notify the assessor of changes as aforesaid regarding land receiving the benefit of this classification shall be subject to a penalty of ten percent (10%) of the total amount of the deferred taxes and interest thereon for each listing period for which the failure to report continues. (1973, c. 709, s. 1; 1975, c. 746, s. 8; 1987, c. 45, s. 1.)

All applicants for the Present-Use Value Program must meet the requirements in four areas, ownership, size of tract, use, and sound management. All requirements are subject to change by the General Assembly.

Ownership Requirements

Ownership Requirements: The owner of the property must be one of the following:

1. A natural person

An individual
Tenants by the Entireties*
Tenants in Common

*North Carolina courts have ruled that property owned by a husband and wife as tenants by the entirety is a different ownership than property owned by the husband or wife separately. [Duplin County V. Jones, 267 N.C. 68,147S.E.2d 603, (1966)]

NCGS 105-277.2(7) states "multiple parcels must be under the same ownership and the same classification". Therefore, to qualify, all parcels must be in the same name or they individually must meet all requirements. For example, five acres owned by the wife only cannot qualify based on a qualified tract owned by both husband and wife. Each type of ownership is considered a separate legal entity.

2. A business entity

Corporation
General Partnership
Limited Partnership
Limited Liability Company
Family Business Entity
Family Trust

The principal business activity of a business entity participating in the Present-Use Value Program must be the growing and production of agricultural, horticultural, or forestry products and the members of that business entity must either be actively engaged or related to a member actively engaged in the business entity. In addition, a property eligible for present-use value must satisfy one of the following conditions of ownership:

It is the owner's place of residence **or**;

It has been owned by the current owner, or a qualified relative of the current owner, as of January 1st of each of the four years prior to the year of application **or**;

It was appraised at present-use value and was eligible for present-use value at the time it was transferred to the present owner. The new owner continues to use the land for the approved purpose and the new owner assumes liability for the deferred taxes under G.S. §105-277.3(b2). A new application is required from the new owner within 60 days from the date of the transfer.

Land in Production Size Requirements

Land Size Requirements: Following are the land size requirements for acceptance into the use value program:

Agricultural: At least one parcel or tract with 10 acres in actual production.

Horticultural: At least one parcel or tract with 5 acres in actual production.

Forestland: At least one parcel or tract with 20 acres in actual production.

Land under a farm building can be considered "in production" if the building use is consistent with the use of the land. For example, a barn used for hay storage.

The home site acreage (minimum of 1 acre) cannot be included as part of the minimum acreage in actual production. A farm unit is considered an economic unit. The farm unit may be comprised of several parcels of land that may or may not be contiguous. At least one tract must meet the minimum size requirement, cited above. If an agricultural application is approved, up to 20 acres of woodland may be approved as part of the agricultural unit. All acreage over 20 acres must have an approved forestry plan to be listed as part of the farm unit. All acreage not part of the farm unit will be listed, assessed, and taxed at market value.



Income Requirements

An agricultural or horticultural applicant must be able to document the property is in actual production and has produced a minimum average annual income over the previous three years of \$1,000 (exception for Christmas trees \$2,000 per acre and in-lieu income requirement).

A special provision allows Christmas tree farmers to average gross income over the period of their growing cycle and must produce \$2,000 per acre in the western area (MLRA130). See the 2016 Use-Value Manual for Agricultural, Horticultural and page 22-23 for details on Christmas trees.



The value of a product consumed may be substituted for actual income when a crop is produced on the land and consumed on the farm to produce another farm product. Example: Hay produced to feed cattle.

Gross income is the amount of money received from all sources pertaining to the farm enterprise. Acceptable income must be derived from products produced on the land. The following are types of income not allowed:

- Ground rents received for acreage leased to another farmer.
- Income from stud fees, grazing, or boarding fees.
- Income received from leasing machinery or animals.
- Income received for performing a service for another farm operation.
- Income from the training and/or showing of livestock.
- Income from the sale of firewood or other forestry products.
- Income received from the leasing of hunting rights.

Consideration is given when the farm owner shows a history of active production, but has a time of crop loss due to flood, hail, frost, disease, etc.

Forestland does not have an income requirement for qualification.

Sound Management

The sound management requirement is set forth NCGS §105-277.3 which provides, in part,

- (f) Sound Management Program for Agricultural Land and Horticultural Land. If the property owner demonstrates any one of the following factors with respect to agricultural land or horticultural land, then the land is operated under a sound management program:
 - (1) Enrollment in and compliance with an agency administered and approved farm management plan.
 - (2) Compliance with a set of best management practices.
 - (3) Compliance with a minimum gross income per acre test.
 - (4) Evidence of net income from the farm operation.
 - (5) Evidence that farming is the farm operator's principal source of income.
 - (6) Certification by a recognized agricultural or horticultural agency within the county that the land is operated under a sound management program.

Operation under a sound management program may also be demonstrated by evidence of other similar factors. As long as a farm operator meets the sound management requirements, it is irrelevant whether the property owner received income or rent from the farm operator.

(g) Sound Management Program for Forestland. – If the owner of forestland demonstrates that the forestland complies with a written sound forest management plan for the production and sale of forest products, then the forestland is operated under a sound management program.

Every property considered for the use-value program must operate under a sound management program; defined in NCGS 105-277.2(6) as "a program of production designed to obtain the greatest net return from the land consistent with its conservation and long-term improvement."



Agriculture/Horticulture Sound Management

For agricultural and horticultural applications, sound management can be determined by one of the six possible factors listed above.

One test of sound management is gross income per acre, factor 4 above: Evidence of net income form the farm operation.

To determine if the income is enough to cover expenses and return a profit, divide the gross income by the number of acres used for production to determine the gross return per acre. This gross income per acre, per year should cover the costs of labor, machinery, and land, annualized.

Example: Land cost \$20,000

Machinery \$10,000 Labor \$5,000

Per year costs: Land \$1,000/year (over 20 years), Machinery \$1,000/year (over 10 years), Labor \$5,000/year = \$7,000 / 10 acres Cost = \$700 per acre annual cost

Gross income = \$10,000 / 10 (Number of acres) = \$1,000 per acre

Sound management requirement met because profits exceed costs.

Forestland Sound Management

Forestland applications must be accompanied by a well written forestry management plan. This plan must meet the same standards regardless of who prepares it.

All forestry management plans must include the following:

Management and Landowner Objectives – the long-range and short-range objectives for the property.

Location – a map locating the property described and delineates each stand of trees, by type, referenced in the written portion of the plan.

Inventory – a detailed description of various stands within the forestry unit. Each stand description should include acreage, species, age, size, and condition, plus information describing the soils, water, and fertility.

Harvest Dates - a timetable for harvest and periodic review to reflect current stand conditions.

Regeneration - an appropriate regeneration plan for each stand after harvest.

Silviculture Practices - thinning, disease control, herbicide injections, etc.

Protection and Maintenance – road maintenance, boundary lines, prescribed burning, fire breaks, etc.

Deferred Taxes

It is the property owner's responsibility to notify the Assessor's Office of any changes that occur to the property after an application is approved for the Present-Use Value Program.

North Carolina General Statute § 105-277.1F. - Uniform provisions for payment of deferred taxes.

- (a) Scope. -- This section applies to the following deferred tax programs:
 - (1) G.S. 105-275(12), real property owned by a nonprofit corporation held as a protected natural area.
 - (1a) G.S. 105-275(29a), historic district property held as future site of historic structure.
 - (2) G.S. 105-277.1B, the property tax homestead circuit breaker.
 - (2a) (See note for repeal) G.S. 105-277.1D, the inventory property tax deferral.
 - (3) G.S. 105-277.4(c), present-use value property.
 - (4) G.S. 105-277.14, working waterfront property.
 - (4a) G.S. 105-277.15, wildlife conservation land.
 - (4b) (Effective for taxes imposed for taxable years beginning on or after July 1, 2013) G.S. 105-277.15A, site infrastructure land.
 - (5) G.S. 105-278(b), historic property.
 - (6) G.S. 105-278.6(e), nonprofit property held as future site of low- or moderate-income housing.
- (b) Payment. -- Taxes deferred on property under a deferral program listed in subsection (a) of this section are due and payable on the day the property loses its eligibility for the deferral program as a result of a disqualifying event. If only a part of property for which taxes are deferred loses its eligibility for deferral, the assessor must determine the amount of deferred taxes that apply to that part and that amount is due and payable. Interest accrues on deferred taxes as if they had been payable on the dates on which they would have originally become due.

The tax for the fiscal year that begins in the calendar year in which the deferred taxes are due and payable is computed as if the property had not been classified for that year. A lien for deferred taxes is extinguished when the taxes are paid.

All or part of the deferred taxes that are not due and payable may be paid to the tax collector at any time without affecting the property's eligibility for deferral. A partial payment is applied first to accrued interest.

The difference between the assessed value (market value) and the taxable value (use value) is deferred. This amount becomes due (plus interest) if the property or a portion of the property no longer qualifies for the program.

Deferred Taxes (continued)

When a property, or a portion of a property, in the present-use value program is transferred, it is the responsibility of the seller to notify the Tax Department of the transfer in ownership and request a deferred tax bill if applicable. It is the responsibility of the buyer to file an application and assume the deferred taxes within **60 days** of the transfer date, if the buyer wishes to continue the farm use of the property. The new owner must meet **all** requirements of use, ownership, income, size, and sound management, as outlined in General Statute §105-277.4(c).

Anytime a tract or part of a tract of land becomes ineligible for present-use value assessment under the requirements of General Statutes 105-277, the deferred taxes, including interest, on that tract become due for the current year and the past three (3) years.

When changes in eligibility are not reported by the owner, a ten percent (10%) penalty for each year the ineligibility is unreported is required by General Statutes 105-277.5.

The following will result in loss of eligibility for all or a portion of the property and result in the creation of a deferred bill:

The use of the property changes to a non-conforming use.

The entire property is transferred to someone other than a relative and the new owner does not assume responsibility for the deferred taxes and the property is not the new owner's residence.

A portion of the property is transferred and no longer meets requirements for qualification.

The property is split and no longer meets size requirements.

A new residence is built or a manufactured home is added.

The acres in actual production drops below the minimum required for the approved classification.

The property is no longer being used for the approved classification and the land has been lying idle for more than one growing season, voluntary or not.

The minimum income requirement for agricultural or horticultural land is not being met.

The property is not being managed under a program of sound management.

The property owner does not intend to harvest timber or follow the guidelines required by the forest management plan they agreed to follow.

Penalty for Non-Compliance or Notification Failure

North Carolina General Statute § 105-277.5. Agricultural, horticultural and forestland – Notice of change in use.

Not later than the close of the listing period following a change which would disqualify all or a part of a tract of land receiving the benefit of this classification, the property owner shall furnish the assessor with complete information regarding such change. Any property owner who fails to notify the assessor of changes as aforesaid regarding land receiving the benefit of this classification shall be subject to a penalty of ten percent (10%) of the total amount of the deferred taxes and interest thereon for each listing period for which the failure to report continues.

Property owners are required to notify the Assessor of any changes that occurred to their property during the previous calendar year. There is no limit to the number of years the County may apply the 10% failure to give notice as required. The 10% penalty can be added for seven years if a change in the property is found seven years after the event that should have been reported. The five year discovery statute does not apply to failure to report noncompliance.

Examples (but not limited to only these) of changes requiring notification:

Orchard abandoned
Change in type of crop produced
Decrease in amount of land in production
Increase in amount of land in production
Clearing wooded land
Pasture converted to crops
New buildings constructed
Farming operation has been discontinued





Present-Use Value Assessment and Taxation

Compliance Reviews

North Carolina General Statute §105-296(j) requires a review of each property within every eight years to ensure eligibility is maintained. The purpose of the compliance review is to objectively evaluate all available information and ensure qualified owners are participating in the program. The compliance review is an audit of the use-value program to ensure fairness in the administration of the program for all property owners.

Information maintained on each property is audited at the time of a compliance review for the following items:

An original application should be on file and meet the ownership requirements.

The size requirements for the use-value program are met.

The income information must be complete and meet the minimum requirements.

The forestry management plan must be on file and meet minimum requirements.

The property is still being used for its qualifying purpose.



Wildlife Conservation Land Program

A new program for the taxation of wildlife conservation land went into effect for the 2010 tax year. The Wildlife Conservation Land Program is based on some concepts associated with the Present-Use Value Program, but it is a separate program set forth in NCGS §105-277.15.

Subject to the provisions set forth in NCGS §105-277.15, the Wildlife Conservation Land Program qualifications are:

- 1. The land must be managed under a written Wildlife Habitat Conservation Agreement. Property owners may contact the North Carolina Resources Commission with questions about an agreement. The completed and approved agreement must be submitted to the Assessor's office during the listing period (January 1 through January 31). The agreement must be in effect as of January 1 of the year for which application is made.
- 2. The land must consist of at least 20 contiguous acres. Property owners are restricted to 100 acres per county that may be classified as wildlife conservation.
- 3. The land must be owned by an individual, a family business entity or family trust.
- 4. The land must have been owned by the qualifying owner for the previous (5) five years unless one of the following applies:
 - Family business entity: land was owned by one or more of the family business entity for the five previous years.
 - Family Trust: the land was owned by one or more of the beneficiaries of the trust for the five previous years.
 - A new owner acquires land that was classified as wildlife conservation land under this section when it was acquired and the owner continues to use the land as wildlife conservation land, then the land meets the ownership requirement if the new owner files an application and signs the wildlife habitat conservation agreement in effect for the property within 60 days after acquiring the property.
- 5. Qualified land is assessed as though it were agricultural land under the Present-Use Value Program.
- 6. The difference in the taxable value and the market value is deferred, but is a lien on the land. The deferred taxes immediately become due and payable when the property is no longer qualified for the program.

Present-Use Land Value Rates

The present-use schedule values land based on its ability to produce agricultural, horticultural, or forestry products. The land types are divided into classes based on their ability to produce farm products.

Agriculture and Horticulture:

Class I Good Soil
Class II Average Soil
Class III Fair Soil
Class IV Wasteland

Buncombe County will use the land values developed and recommended by the Use-Value Advisory Board for 2017. These values were developed based on cash rents for land capitalized at 6.5% as required by the General Assembly. Forestland is valued using net income from actual production, capitalized at 9%.

A minimum of one acre be valued as a home site for the first dwelling and a minimum of one-half acre for each additional home site. Any area of the approved parcel not considered part of the farm unit will be valued at market value. Wasteland, rock cliffs and other nonproductive areas shall be valued as wasteland. This process creates a present-use value, a market value, and a deferred value. The market value is retained to allow calculation of the deferred tax.

All available tools will be considered to accurately calculate the present-use value of each property, based on productivity. The majority of forestland is Class I. If a farmer has a recent soil study, it can be used to set the farm use value and is considered the best information available. In all other cases, the standards set by the appraisal staff will be considered the best information available. Areas not in production will be valued at the market rate.

2017 Rates for Present Use

Type	Code	Rate per Acre
Agricultural		
Class I	A01	\$1,200.00
Class II	A02	\$760.00
Class III	A03	\$495.00
Wasteland	A04	\$40.00
Horticultural		
Class I	H01	\$2,260.00
Class II	H02	\$1,555.00
Class III	H03	\$1,020.00
Wasteland	H04	\$40.00
Forest Land		
Class I	F01	\$255.00
Class II	F02	\$190.00
Class III	F03	\$50.00
Class IV	F04	\$40.00
Class V	F05	\$40.00
Wasteland	F06	\$40.00

2017 Rate for Wildlife Conservation Land

Type	Code	Rate Per Acre
Wildlife		11010
Class I	W01	\$1,200.00
Class II	A02	\$760.00
Class III	A03	\$495.00
Wasteland	A04	\$40.00

Agriculture Horticulture Crops Crops

Alfalfa Apples/Pears
Barley Bamboo

Cattle Beans
Field Corn Blueberries
Hay Cabbage

Llamas/Alpacas Christmas Trees

Pasture Grass Cucumbers
Poultry Floral Products

Seed Corn Grapes
Sheep Hops

Silage Nursery Products Soybeans Ornamental Shrubs

Swine Peaches
Tobacco Potatoes
Wheat Sod
Squash
Strawberries

Sweet Corn Tomatoes

See definitions and statute references in the following section.



Definitions – Present-Use

Definitions to be followed in carrying out the requirements of present-use value as set out in NCGS §105-277.2 are:

Agricultural -- Land that is a 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. For purposes of this definition, the commercial production or growing of animals includes the rearing, feeding, training, caring, and managing of horses. Agricultural land includes woodland and wasteland that is a part of the farm unit, but the woodland and wasteland included in the unit must 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. If the agricultural land includes less than 20 acres of woodland, then the woodland portion is not required to be under a sound management program if it is determined that the highest and best use of the woodland is to diminish wind erosion of adjacent agricultural land, protect water quality of adjacent agricultural land, or serve as buffers for adjacent livestock or poultry operations.

Business entity. -- A corporation, a general partnership, a limited partnership, or a limited liability company.

Forestland Forestland. -- Land that is a 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 a part of the forest unit, but the wasteland included in the unit must 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.

Horticultural -- Land that is a 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 a part of the horticultural unit, but the woodland and wasteland included in the unit must 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. If the horticultural land includes less than 20 acres of woodland, then the woodland portion is not required to be under a sound management program. Also, woodland is not required to be under a sound management program if it is determined that the highest and best use of the woodland is to diminish wind erosion of adjacent horticultural land or protect water quality of adjacent horticultural land. Land used to grow horticultural and agricultural crops on a rotating basis or where the horticultural crop is set out or planted and harvested within one growing season, may be treated as agricultural land as described in subdivision (1) of this section when there is determined to be no significant difference in the cash rental rates for the land.

Land used for green beans, green peppers, or cucumbers and rotated with soybeans, grain, or corn should be treated as an agricultural unit. If the land is used for growing fruit trees, vineyard products, berries, or vegetables and other products that are not annuals, it should be classified as both agricultural and horticultural. It would be better to ask this applicant to complete two applications, even if only one tract of land is involved. However, it would be permissible to attach the land breakdown and income figures to one application form.

Individually owned. -- Owned by one of the following:

- **a.** An individual
- **b.** A business entity that meets all of the following conditions:
 - 1. Its principal business is farming agricultural land, horticultural land, or forestland. When determining whether an applicant under G.S. 105-277.4 has as its principal business farming agricultural land, horticultural land, or forestland, the assessor shall presume the applicant's principal business to be farming agricultural land, horticultural land, or forestland if the applicant has been approved by another county for present-use value taxation for a qualifying property located within the other county; provided, however, the presumption afforded the applicant may be rebutted by the assessor and shall have no bearing on the determination of whether the individual parcel of land meets one or more of the classes defined in G.S. 105-277.3(a). If the assessor is able to rebut the presumption, this shall not invalidate the determination that the applicant's principal business is farming agricultural land, horticultural land, or forestland in the other county.
 - **2.** All of its members are, directly or indirectly, individuals who are actively engaged in farming agricultural land, horticultural land, or forestland or a relative of one of the individuals who is actively engaged. An individual is indirectly a member of a business entity that owns the land if the individual is a member of a business entity or a beneficiary of a trust that is part of the ownership structure of the business entity that owns the land.
 - **3.** It is not a corporation whose shares are publicly traded, and none of its members are corporations whose shares are publicly traded.
 - **4.** If it leases the land, all of its members are individuals and are relatives. Under this condition, "principal business" and "actively engaged" include leasing.
- **c.** A trust that meets all of the following conditions:
 - 1. It was created by an individual who owned the land and transferred the land to the trust.

- **2.** All of its beneficiaries are, directly or indirectly, individuals who are the creator of the trust or a relative of the creator. An individual is indirectly a beneficiary of a trust that owns the land if the individual is a beneficiary of another trust or a member of a business entity that has a beneficial interest in the trust that owns the land.
- **d.** A testamentary trust that meets all of the following conditions:
 - 1. It was created by an individual who transferred to the trust land that qualified in that individual's hands for classification under G.S. 105-277.3.
 - **2.** At the date of the creator's death, the creator had no relatives.
 - **3.** The trust income, less reasonable administrative expenses, is used exclusively for educational, scientific, literary, cultural, charitable, or religious purposes as defined in G.S. 105-278.3(d).
- **e.** Tenants in common, if each tenant would qualify as an owner if the tenant were the sole owner. Tenants in common may elect to treat their individual shares as owned by them individually in accordance with G.S. 105-302(c)(9). The ownership requirements of G.S. 105-277.3(b) apply to each tenant in common who is an individual, and the ownership requirements of G.S. 105-277.3(b1) apply to each tenant in common who is a business entity or a trust.

Member. -- A shareholder of a corporation, a partner of a general or limited partnership, or a member of a limited liability company.

Present-use value. -- The value of land in its current use as agricultural land, horticultural land, or forestland, based solely on its ability to produce income and assuming an average level of management. A rate of nine percent (9%) shall be used to capitalize the expected net income of forestland. The capitalization rate for agricultural land and horticultural land is to be determined by the Use-Value Advisory Board as provided in G.S. 105-277.7.

Relative. -- Any of the following:

- **a.** A spouse or the spouse's lineal ancestor or descendant.
- **b.** A lineal ancestor or a lineal descendant.
- **c.** A brother or sister, or the lineal descendant of a brother or sister. For the purposes of this sub-subdivision, the term brother or sister includes stepbrother or stepsister.
- **d.** An aunt or an uncle.
- **e.** A spouse of an individual listed in paragraphs a. through d. For the purpose of this subdivision, an adoptive or adopted relative is a relative and the term "spouse" includes a surviving spouse.

Sound management program. -- A program of production designed to obtain the greatest net return from the land consistent with its conservation and long-term improvement.

Unit. -- One or more tracts of agricultural land, horticultural land, or forestland. Multiple tracts must be under the same ownership and be of the same type of classification. If the multiple tracts are located within different counties, they must be within 50 miles of a tract qualifying under G.S. 105-277.3(a).

2017 Codes And Rates AssessPro, developed by Patriot Properties, is the computer assisted mass appraisal software employed by the Real Estate Division of the Buncombe County Tax department. Many tables and calculations are programmed into this software to assist with the assessment process. Tax appraisers also manually calculate random assessment values to ensure the accuracy of the electronic calculations completed by the appraisal software. The electronic processes of the valuation process are open and available for inspection or additional clarification by appointment.

Included in the appendix of this schedule are many of the tables housed in AssessPro guiding the electronic calculations of value. Calculations of value depend on many varying factors associated with specific properties.

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Residential Building Sections - Living Area				
Code	Description	2017	Pricing	Range
R125	1.25 Living Area	\$ 71.48	to	\$ 87.36
R150	1.5 ST Living Area	\$ 71.48	to	\$ 87.36
R175	1.75 Living Area	\$ 71.48	to	\$ 87.36
R200	2 Story Living Area	\$ 71.48	to	\$ 87.36
R225	2.25 Living Area	\$ 71.48	to	\$ 87.36
R250	2.50 Living Area	\$ 71.48	to	\$ 87.36
R275	2.75 Living Area	\$ 71.48	to	\$ 87.36
R300	3 Story Living Area	\$ 71.48	to	\$ 87.36
R400	4 Story Living Area	\$ 71.48	to	\$ 87.36
RBGL	Below Grade Living Area	\$ 55.18	to	\$ 67.44
RC20	Condo - 2 Story	\$ 77.81	to	\$ 95.10
RC25	Condo - 1.25 Story	\$ 77.81	to	\$ 95.10
RC30	Condo - 3 Story	\$ 77.81	to	\$ 95.10
RC50	Condo - 1.5 Story	\$ 77.81	to	\$ 95.10
RC75	Condo - 1.75 Story	\$ 77.81	to	\$ 95.10
RCBL	Condo Below Grade	\$ 81.90	to	\$ 100.10
RCO2	Condo - 2nd Level	\$ 77.81	to	\$ 95.10
RCO3	Condo - 3rd Level	\$ 77.81	to	\$ 95.10
RCON	Condo Living Area 1	\$ 81.90	to	\$ 100.10
RL05	1/2 Story Living Area	\$ 71.48	to	\$ 87.36
RLA1	Living Area - Level 1	\$ 75.42	to	\$ 92.18
RLA2	Living Area - Level 2	\$ 71.48	to	\$ 87.36
RLA3	Living Area - Level 3	\$ 71.48	to	\$ 87.36
RLA4	Living Area - Level 4	\$ 71.48	to	\$ 87.36
RMHD	Manufactured Home Doublewide	\$ 41.60	to	\$ 50.84
RMHS	Manufactured Home Singlewide	\$ 37.80	to	\$ 46.20
RMHT	Manufactured Home Triplewide	\$ 41.60	to	\$ 50.84
RMOD	Classroom, Office, Etc.	\$ 39.55	to	\$ 48.33
RMFG	1 Story Modular	\$ 50.85	to	\$ 62.15
ROTR	Finished Area	\$ 55.87	to	\$ 68.29

Resid	Residential Building Sections - Non-Living Area				
Code	Description	2017	Pricing	Range	
BAF	Finished Basement	\$ 24.87	to	\$ 30.39	
BAR	Barn	\$ 16.20	to	\$ 19.80	
BEX	Basement Extension	\$ 17.10	to	\$ 20.90	
BZM	Multi-Level Breezeway	\$ 23.26	to	\$ 28.42	
BZW	Breezeway	\$ 23.26	to	\$ 28.42	
CAN	Canopy	\$ 6.30	to	\$ 7.70	
CNP	Canopy Over	\$ 13.91	to	\$ 17.00	
COS	Conservatory	\$ 70.67	to	\$ 86.37	
CPT	Carport	\$ 23.09	to	\$ 28.22	
CRT	Courtyard	\$ 31.88	to	\$ 38.96	
DK	Deck	\$ 13.91	to	\$ 17.00	
DKM	Multi-Story Deck	\$ 13.91	to	\$ 17.00	
EP	Enclosed Porch	\$ 27.23	to	\$ 33.28	
EPM	Multi-Level Enclosed Porch	\$ 27.23	to	\$ 33.28	
FBF	Future Basement Finish	\$ 17.10	to	\$ 20.90	
GAR	Garage	\$ 36.26	to	\$ 44.32	
OP	Open Porch	\$ 23.26	to	\$ 28.42	
OPM	Multi-Story Open Porch	\$ 23.26	to	\$ 28.42	
POE	Pool Enclosure	\$ 38.39	to	\$ 46.92	
PT	Patio	\$ 7.25	to	\$ 8.86	
REF	Sketch Only	\$ -	to	\$ -	
SP	Screened Porch	\$ 25.20	to	\$ 30.80	
SPM	Multi-Story Screened Porch	\$ 25.20	to	\$ 30.80	
STA	Stable	\$ 23.85	to	\$ 29.15	
STP	Masonry Stoop	\$ 9.41	to	\$ 11.50	
SUN	Sunroom	\$ 56.95	to	\$ 69.61	
TER	Terrace	\$ 13.50	to	\$ 16.50	
UBA	Unfinished Basement	\$ 17.10	to	\$ 20.90	
UR	Utility Room	\$ 25.43	to	\$ 31.08	
URM	Multi-Story Utility Room	\$ 25.43	to	\$ 31.08	

Residential Modifiers

Quality Modifier				
Grade	Description	2017	Modifier	Range
L	Luxury	\$ 2.20	to	\$ 2.30
S	Special	\$ 1.70	to	\$ 1.80
A	Superior	\$ 1.50	to	\$ 1.60
В	Custom	\$ 1.20	to	\$ 1.30
С	Average	\$ 0.95	to	\$ 1.05
D	Fair	\$ 0.80	to	\$ 0.90
Е	Poor	\$ 0.50	to	\$ 0.60
U	Unsound	\$ 0.20	to	\$ 0.30
Quality	Rating Codes Mo	difiers		
Code	Description	2017	Modifier	Range
R	Renovated	\$ 1.70	to	\$ 1.80
G	Good	\$ 1.20	to	\$ 1.30
N	Normal	\$ -	to	\$ -
F	Fair	\$ 0.70	to	\$ 0.80
P	Poor	\$ 0.45	to	\$ 0.55
VG	Very Good	\$ 1.45	to	\$ 1.55
R2	Renovated	\$ 1.95	to	\$ 2.05
R2.5	Renovated	\$ 2.45	to	\$ 2.55
R3	Renovated	\$ 2.95	to	\$ 3.05
Conditio	on Codes Modifier	rs		
Code	Description	2017	Modifier	Range
R	Renovated	\$ 0.15	to	\$ 0.25
G	Good	\$ 0.35	to	\$ 0.45
N	Normal	\$ -	to	\$ -
F	Fair	\$ 1.45	to	\$ 1.55
P	Poor	\$ 1.70	to	\$ 1.80
U	Unsound	\$ 0.75	to	\$ 0.99
Green B	uildings Codes			
Code	Description	2017	Modifier	Range
GOLD	Gold	1.15	to	1.25
SILV	Silver	1.15	to	1.25
BRON	Bronze	1.15	to	1.25
CERT	Certified	1.15	to	1.25

Commercial Building Sections - Finished Area				
Code	Description	2017	Pricing	Range
CALB	SCHOOL CLASS A B	\$ 205.08	to	\$ 250.66
CALC	SCHOOL CLASS C	\$ 167.90	to	\$ 205.21
CALD	SCHOOL CLASS D	\$ 161.47	to	\$ 197.35
CALS	SCHOOL CLASS S	\$ 124.17	to	\$ 151.77
CAMC	ARMORY ALL	\$ 104.28	to	\$ 127.46
CASC	AUTO SHOWROOM C	\$ 85.43	to	\$ 104.41
CASM	AUTO SHOWROOM S	\$ 78.50	to	\$ 95.94
CAUB	AUDITORIUM CLASS B	\$ 185.17	to	\$ 226.31
CAUD	AUDITORIUM CLASS C D	\$ 92.12	to	\$ 112.59
CAWC	AUTO CAR WASH C	\$ 99.58	to	\$ 121.70
CAWD	AUTO CAR WASH D	\$ 96.59	to	\$ 118.05
CAWS	AUTO CAR WASH S	\$ 95.73	to	\$ 117.01
СВАВ	BANK CLASS B	\$ 187.68	to	\$ 229.38
CBAC	BANK CLASS C	\$ 143.69	to	\$ 175.62
CBAD	BANK CLASS D	\$ 134.69	to	\$ 164.62
CBAS	BANK CLASS S	\$ 127.74	to	\$ 156.12
CBBC	BED BREAKFAST INN C	\$ 110.67	to	\$ 135.27
CBBD	BED BREAKFAST INN D	\$ 106.24	to	\$ 129.84
CBCC	BOWLING CENTER C	\$ 68.94	to	\$ 84.26
CBRC	BREWERY	\$ 98.09	to	\$ 119.89
CBRD	BREWERY	\$ 88.18	to	\$ 107.78
CBRS	BREWERY	\$ 87.78	to	\$ 107.28
ССВА	OFFICE BANK A	\$ 179.12	to	\$ 218.92
ССВВ	OFFICE BANK B	\$ 171.34	to	\$ 209.42
CCBC	OFFICE BANK C	\$ 139.73	to	\$ 170.79
CCBD	OFFICE BANK D	\$ 127.13	to	\$ 155.38
CCDC	AUTO DEALERSHIP C	\$ 75.41	to	\$ 92.17
CCDD	AUTO DEALERSHIP D	\$ 71.15	to	\$ 86.97
CCDS	AUTO DEALERSHIP S	\$ 69.77	to	\$ 85.27
CCHC	CLUBHOUSE CLASS C	\$ 79.13	to	\$ 96.71
CCHD	CLUBHOUSE CLASS D	\$ 72.84	to	\$ 89.02
CCHS	CLUBHOUSE CLASS S	\$ 67.66	to	\$ 82.70
CCLC	COUNTRY CLUB CLASS C	\$ 156.07	to	\$ 190.75
CCLD	COUNTRY CLUB CLASS D	\$ 113.65	to	\$ 138.91
CCNA	SKILLED NURSING A	\$ 167.36	to	\$ 204.56
CCNB	SKILLED NURSING B	\$ 167.36	to	\$ 204.56
CCNC	SKILLED NURSING C	\$ 113.25	to	\$ 138.41

CCNID	CIVILLED AULDSING D	* 100 = 0		
CCND	SKILLED NURSING D	\$ 108.59	to	\$ 132.73
CCNS	SKILLED NURSING S	\$ 107.86	to	\$ 131.82
CCOC	CONCRETE CANOPY	\$ 16.88	to	\$ 20.63
CCRC	COMM REC CENTER C	\$ 108.85	to	\$ 133.03
CCRD	COMM REC CENTER D	\$ 104.35	to	\$ 127.53
CCSB	COLD STORAGE WH A/B	\$ 69.59	to	\$ 85.05
CCSC	COLD STORAGE WH C	\$ 56.81	to	\$ 69.43
CCSS	COLD STORAGE WH S	\$ 52.76	to	\$ 64.48
ССТА	CINEMA CLASS A	\$ 144.44	to	\$ 176.54
ССТС	CINEMA CLASS C	\$ 123.55	to	\$ 151.01
CCUA	CHURCH CLASS A	\$ 190.12	to	\$ 232.36
CCUB	CHURCH CLASS B	\$ 180.14	to	\$ 220.17
CCUC	CHURCH CLASS C	\$ 141.28	to	\$ 172.68
CCUD	CHURCH CLASS D	\$ 93.76	to	\$ 114.60
CCUS	CHURCH CLASS S	\$ 92.02	to	\$ 112.46
CDGB	DRUGSTORE CLASS A B	\$ 99.54	to	\$ 121.66
CDGC	DRUGSTORE CLASS C	\$ 86.00	to	\$ 105.11
CDGD	DRUGSTORE CLASS D	\$ 82.27	to	\$ 100.55
CDGS	DRUGSTORE CLASS S	\$ 72.32	to	\$ 88.39
CDIN	DINER ALL	\$ 79.03	to	\$ 96.59
CDMA	DORMITORY CLASS A	\$ 120.60	to	\$ 147.40
CDMB	DORMITORY CLASS B	\$ 116.10	to	\$ 141.90
CDMC	DORMITORY CLASS C	\$ 92.70	to	\$ 113.30
CDMD	DORMITORY CLASS D	\$ 85.50	to	\$ 104.50
CDMS	DORMITORY CLASS S	\$ 85.50	to	\$ 104.50
CDSA	DEPARTMENT STORE ALL	\$ 103.50	to	\$ 126.50
CDTC	DRIVE THUR CARWASH C	\$ 80.27	to	\$ 98.11
CDTS	DRIVE THUR CARWASH S	\$ 78.35	to	\$ 95.76
CDWB	DISTRIBUTION WH B	\$ 65.13	to	\$ 79.61
CDWC	DISTRIBUTION WH C	\$ 42.70	to	\$ 52.18
CDWD	DISTRIBUTION WH D	\$ 38.41	to	\$ 46.95
CDWS	DISTRIBUTION WH S	\$ 37.80	to	\$ 46.20
CDYB	DAY CARE CENTER A B	\$ 130.82	to	\$ 159.90
CDYC	DAY CARE CENTER C	\$ 102.21	to	\$ 124.93
CDYD	DAY CARE CENTER D	\$ 93.30	to	\$ 114.04
CDYS	DAY CARE CENTER S	\$ 90.07	to	\$ 110.09
CECC	EQUESTRIAN CENTER C	\$ 23.88	to	\$ 29.18
CECD	EQUESTRIAN CENTER D	\$ 14.58	to	\$ 17.82
CECS	EQUESTRIAN CENTER S	\$ 11.61	to	\$ 14.19
CELA	RETIREMENT HOME A	\$ 117.00	to	\$ 143.00
CELB	RETIREMENT HOME B	\$ 116.10	to	\$ 141.90

CELC	RETIREMENT HOME C	\$ 94.50	to	\$ 115.50
CELD	RETIREMENT HOME D	\$ 89.10	to	\$ 108.90
CESC	EXTEND STAY HOTEL C	\$ 114.89	to	\$ 140.42
CESD	EXTEND STAY HOTEL D	\$ 108.20	to	\$ 132.24
CFAB	FAST FOOD CLASS A B	\$ 148.50	to	\$ 181.50
CFAC	FAST FOOD CLASS C	\$ 154.80	to	\$ 189.20
CFAD	FAST FOOD CLASS D	\$ 144.00	to	\$ 176.00
CFAS	FAST FOOD CLASS S	\$ 136.80	to	\$ 167.20
CFBB	FRATERNAL CLASS A B	\$ 134.10	to	\$ 163.90
CFBC	FRATERNAL CLASS C	\$ 106.20	to	\$ 129.80
CFBD	FRATERNAL CLASS D	\$ 101.70	to	\$ 124.30
CFBS	FRATERNAL CLASS S	\$ 96.30	to	\$ 117.70
CFFS	FIN FIRE RES STEEL	\$ 64.14	to	\$ 78.40
CFHB	FELLOWSHIP HALL B	\$ 117.00	to	\$ 143.00
CFHC	FELLOWSHIP HALL C	\$ 88.20	to	\$ 107.80
CFHD	FELLOWSHIP HALL D	\$ 83.70	to	\$ 102.30
CFHS	FELLOWSHIP HALL S	\$ 78.30	to	\$ 95.70
CFLH	FIELD HOUSE ALL	\$ 78.24	to	\$ 95.62
CFML	FINISHED MASONRY C	\$ 60.44	to	\$ 73.88
CFPM	FINISHED METAL BLD	\$ 36.82	to	\$ 45.00
CFRC	FIN REINIFORCED CONC	\$ 80.40	to	\$ 98.26
CFSA	FULL SERVICE HOTEL A	\$ 136.07	to	\$ 166.31
CFSB	FULL SERVICE HOTEL B	\$ 131.44	to	\$ 160.64
CFSC	FULL SERVICE HOTEL C	\$ 114.89	to	\$ 140.42
CFSD	FULL SERVICE HOTEL D	\$ 108.20	to	\$ 132.24
CFST	FIRE/RESCUE STATION	\$ 138.91	to	\$ 169.77
CFWF	FINISHED WOOD FRAME	\$ 42.77	to	\$ 52.27
CGAC	APARTMENT CLASS C	\$ 78.01	to	\$ 95.35
CGAD	APARTMENT CLASS D	\$ 75.26	to	\$ 91.98
CGAS	GARDEN APARTMENT S	\$ 69.86	to	\$ 85.38
CGHC	GROUP HOME C	\$ 87.67	to	\$ 107.15
CGHD	GROUP HOME D	\$ 81.90	to	\$ 100.10
CGOV	GOV BLD OR OFFICE	\$ 262.94	to	\$ 321.37
CGYC	GYMNASIUM C	\$ 114.90	to	\$ 140.44
CGYD	GYMNASIUM D	\$ 108.18	to	\$ 132.22
CGYS	GYMNASIUM S	\$ 99.21	to	\$ 121.25
СНСВ	FITNESS CENTER B	\$ 121.39	to	\$ 148.37
CHCC	FITNESS CENTER C	\$ 85.97	to	\$ 105.07
CHCD	FITNESS CENTER D	\$ 84.12	to	\$ 102.82
CHCS	FITNESS CENTER S	\$ 71.58	to	\$ 87.48
CHOS	HOSPITAL ALL	\$ 329.20	to	\$ 402.36

CHRA HIGHRISE APARTMENT A \$ 110.40 to CHRB HIGHRISE APARTMENT B \$ 104.77 to CHRC HIGHRISE APARTMENT C \$ 81.12 to CHRD HIGHRISE APARTMENT D \$ 76.28 to CITC INDOOR TENNIS CLUB C \$ 57.60 to CITS INDOOR TENNIS CLUB S \$ 49.13 to CJAL JAIL OR DETENTION \$ 252.28 to CKLC KENNEL CLASS C \$ 59.58 to CKLD KENNEL CLASS C \$ 59.58 to CKLD KENNEL CLASS D \$ 54.90 to CKLS KENNEL CLASS S \$ 51.30 to CLDC LAUNDRY DRY CLEAN C \$ 69.74 to CLDD LAUNDRY DRY CLEAN D \$ 64.72 to CLFC LOFT OR FLEX CLASS C \$ 56.28 to CLFC LOFT OR FLEX CLASS C \$ 56.28 to CLFS LOFT OR FLEX CLASS D \$ 52.88 to CLFS LOFT OR FLEX CLASS D \$ 52.	\$ 134.94 \$ 128.05 \$ 99.14 \$ 93.23 \$ 70.40 \$ 60.05
CHRC HIGHRISE APARTMENT C \$ 81.12 to CHRD HIGHRISE APARTMENT D \$ 76.28 to CITC INDOOR TENNIS CLUB C \$ 57.60 to CITS INDOOR TENNIS CLUB S \$ 49.13 to CJAL JAIL OR DETENTION \$ 252.28 to CKLC KENNEL CLASS C \$ 59.58 to CKLD KENNEL CLASS D \$ 54.90 to CKLS KENNEL CLASS S \$ 51.30 to CLDC LAUNDRY DRY CLEAN C \$ 69.74 to CLDD LAUNDRY DRY CLEAN D \$ 64.72 to CLDS LAUNDRY DRY CLEAN S \$ 61.25 to CLFC LOFT OR FLEX CLASS C \$ 56.28 to CLFC LOFT OR FLEX CLASS S \$ 53.91 to CLGC LODGE CLASS C \$ 112.64 to CLGC LODGE CLASS C \$ 112.64 to CLID INDUSTRIAL CLASS B \$ 44.51 to CLID INDUSTRIAL CLASS C \$ 33.30	\$ 99.14 \$ 93.23 \$ 70.40
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CLGD LODGE CLASS D \$ 109.78 to CLIA INDUSTRIAL CLASS A \$ 47.97 to CLIB INDUSTRIAL CLASS B \$ 44.51 to CLIC INDUSTRIAL CLASS C \$ 33.30 to CLID INDUSTRIAL CLASS D \$ 31.80 to CLIR LIBRARY C \$ 147.60 to CLIS INDUSTRIAL CLASS S \$ 29.81 to CLMC LAUNDROMAT CLASS C \$ 72.00 to CLMD LAUNDROMAT CLASS D \$ 66.38 to CLMS LAUNDROMAT CLASS S \$ 63.00 to CLSA LIMIT SER HOTEL A B \$ 116.98 to CLSC LIMIT SER HOTEL C \$ 112.64 to CLSD LIMIT SER HOTEL D \$ 109.78 to CMAB MALL ANCHOR CLASS B \$ 90.53 to	\$ 65.89
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CLIC INDUSTRIAL CLASS C \$ 33.30 to CLID INDUSTRIAL CLASS D \$ 31.80 to CLIR LIBRARY C \$ 147.60 to CLIS INDUSTRIAL CLASS S \$ 29.81 to CLMC LAUNDROMAT CLASS C \$ 72.00 to CLMD LAUNDROMAT CLASS D \$ 66.38 to CLMS LAUNDROMAT CLASS S \$ 63.00 to CLSA LIMIT SER HOTEL A B \$ 116.98 to CLSC LIMIT SER HOTEL C \$ 112.64 to CLSD LIMIT SER HOTEL D \$ 109.78 to CMAB MALL ANCHOR CLASS B \$ 90.53 to	\$ 58.63
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CLMD LAUNDROMAT CLASS D \$ 66.38 to CLMS LAUNDROMAT CLASS S \$ 63.00 to CLSA LIMIT SER HOTEL A B \$ 116.98 to CLSC LIMIT SER HOTEL C \$ 112.64 to CLSD LIMIT SER HOTEL D \$ 109.78 to CMAB MALL ANCHOR CLASS B \$ 90.53 to	\$ 36.43
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CLSD LIMIT SER HOTEL D \$ 109.78 to CMAB MALL ANCHOR CLASS B \$ 90.53 to	\$ 142.98
CMAB MALL ANCHOR CLASS B \$ 90.53 to	\$ 137.68
4 2000	\$ 134.18
CMAC MALL ANCHOR CLASS C \$ 75.32 to	\$ 110.65
	\$ 92.06
CMIC MINI WAREHOUSES C \$ 31.01 to	\$ 37.90
CMID MINI WAREHOUSES D \$ 28.94 to	\$ 35.37
CMIS MINI WAREHOUSES S \$ 28.06 to	\$ 34.30
CMKB RETAIL FOOD MARKET B \$ 86.54 to	\$ 105.78
CMKC RETAIL FOOD MARKET C \$ 67.57 to	\$ 82.59
CMKD RETAIL FOOD MARKET D \$ 62.09 to	\$ 75.89
CMKS RETAIL FOOD MARKET S \$ 62.99 to	\$ 76.99
CMLC MINI-LUBE CLASS C \$ 81.25 to	\$ 99.31
CMLD MINI-LUBE CLASS D \$ 78.66 to	\$ 96.14

CMLS	MINI-LUBE CLASS S	¢ 70 10	4.0	¢ 05.57
CMMC	GAS/MINI MART FOOD C	\$ 78.19 \$ 121.73	to	\$ 95.57
CMMD	GAS/MINI MART FOOD D	\$ 121.73	to	\$ 148.78
CMMS	GAS/MINI MART FOOD S	<u> </u>	to	\$ 143.00
	MEDICAL OFFICE BLD A	\$ 113.40	to	\$ 138.60
CMOA		\$ 153.14	to	\$ 187.18
CMOB	MEDICAL OFFICE BLD B	\$ 147.41	to	\$ 180.17
CMOC	MEDICAL OFFICE BLD C	\$ 117.55	to	\$ 143.67
CMOD	MEDICAL OFFICE BLD D	\$ 112.73	to	\$ 137.78
CMOS	MEDICAL OFFICE BLD S	\$ 107.15	to	\$ 130.97
CMPC	POST OFFICE ALL	\$ 112.62	to	\$ 137.64
CMRC	MORTUARY FUNERAL C	\$ 112.95	to	\$ 138.05
CMRD	MORTUARY FUNERAL D	\$ 91.58	to	\$ 111.93
CMTC	MOTEL CLASS C	\$ 74.39	to	\$ 90.93
CMTD	MOTEL CLASS D	\$ 71.69	to	\$ 87.62
CMTS	MOTEL CLASS S	\$ 67.40	to	\$ 82.38
CMUC	MULTI-USE BUILDING C	\$ 67.73	to	\$ 82.78
CMUD	MULTI-USE BUILDING D	\$ 67.73	to	\$ 82.78
CMUM	MUSEUM CULTURAL CENT	\$ 247.95	to	\$ 303.05
CMUS	MULTI-USE BUILDING S	\$ 45.00	to	\$ 55.00
CMWC	MEGA WAREHOUSE C	\$ 35.17	to	\$ 42.99
CMWS	MEGA WAREHOUSE S	\$ 31.74	to	\$ 38.80
CNSC	SHOP CNTR W ANCHOR C	\$ 75.32	to	\$ 92.06
CNTC	NATATORIUM CLASS C	\$ 103.50	to	\$ 126.50
CNTD	NATATORIUM CLASS D	\$ 90.90	to	\$ 111.10
CNTS	NATATORIUM CLASS S	\$ 89.24	to	\$ 109.08
COBA	OFFICE CLASS A	\$ 135.52	to	\$ 165.64
COBB	OFFICE CLASS B	\$ 131.36	to	\$ 160.56
COBC	OFFICE CLASS C	\$ 100.19	to	\$ 122.45
COBD	OFFICE CLASS D	\$ 87.58	to	\$ 107.04
COBS	OFFICE CLASS S	\$ 80.12	to	\$ 97.92
СОРВ	OUTPATIENT MED OFF B	\$ 179.55	to	\$ 219.45
COPC	OUTPATIENT MED OFF C	\$ 173.70	to	\$ 212.30
COPD	OUTPATIENT MED OFF D	\$ 166.05	to	\$ 202.95
COPS	OUTPATIENT OFFICE S	\$ 166.50	to	\$ 203.50
CPSA	PARKING STRUCTURES A	\$ 47.59	to	\$ 58.17
CPSB	PARKING STRUCTURE B	\$ 45.23	to	\$ 55.28
СРТВ	PASSENGER TERMINAL	\$ 188.61	to	\$ 230.53
CPTS	PASSENGER TERMINAL S	\$ 87.98	to	\$ 107.53
CRCC	REGIONAL MALL C	\$ 66.53	to	\$ 81.31
CREB	RESTAURANT CLASS A B	\$ 107.91	to	\$ 131.89
ļ	RESTAURANT CLASS C	\$ 89.42	to	\$ 109.30

CRES RESTAURANTS \$ 79.99 to \$ 97.77 CRQC RACQUETBALL COURT \$ 41.09 to \$ 50.22 CRSA RETAIL CLASS A \$ 91.84 to \$ 112.24 CRSB RETAIL CLASS B \$ 87.71 to \$ 107.26 CRSD RETAIL CLASS C \$ 70.94 to \$ 86.78 CRSD RETAIL CLASS D \$ 66.97 to \$ 81.85 CRSD RETAIL CLASS S \$ 64.20 to \$ 78.46 CSBC ESTATE LCASS S \$ 64.20 to \$ 78.46 CSBC ESTATE STABLE C \$ 124.87 to \$ 152.61 CSBD ESTATE STABLE S \$ 58.50 to \$ 71.51 CSBD ESTATE STABLE S \$ 58.50 to \$ 71.51 CSFC SELF SERVE CARWASH C \$ 26.93 to \$ 32.91 CSFC SELF SERVE CARWASH S \$ 22.95 to \$ 28.02 CSGC SERVICE GARAGES C \$ 38.25 to \$ 46.72 <td< th=""><th></th><th>250=111211=2</th><th></th><th></th><th></th></td<>		250=111211=2			
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CSKC SUPERMARKET C \$ 81.00 to \$ 99.00 CSKS SUPERMARKET S \$ 73.80 to \$ 90.20 CSPC STRIP SHOPPING C \$ 76.84 to \$ 93.92 CSPD STRIP SHOPPING D \$ 72.25 to \$ 88.31 CSPS STRIP SHOPPING S \$ 68.90 to \$ 84.21 CSSC SERVICE GAR SHED C \$ 21.24 to \$ 25.90 CSSD SERVICE GAR SHED D \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSTC SERVICE STATION C \$ 48.02 to \$ 58.69 CSTD SERVICE STATION D \$ 42.77 to \$ 52.27 CSWA STORAGE WAREHOUSE A \$ 45.27 to \$ 55.33 CSWB STORAGE WAREHOUSE B \$ 41.81 to \$ 51.11 CSWC STORAGE WAREHOUSE C \$ 31.75 to \$ 33.31 CTRB LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 <td>CSHS</td> <td>STORAGE HANGAR S</td> <td>\$ 32.63</td> <td>to</td> <td>\$ 39.88</td>	CSHS	STORAGE HANGAR S	\$ 32.63	to	\$ 39.88
CSKS SUPERMARKET S \$ 73.80 to \$ 90.20 CSPC STRIP SHOPPING C \$ 76.84 to \$ 93.92 CSPD STRIP SHOPPING D \$ 72.25 to \$ 88.31 CSPS STRIP SHOPPING S \$ 68.90 to \$ 84.21 CSSC SERVICE GAR SHED C \$ 21.24 to \$ 25.90 CSSD SERVICE GAR SHED D \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSSC SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSTC SERVICE STATION C \$ 48.02 to \$ 58.69 CSTD SERVICE STATION D \$ 42.77 to \$ 52.27 CSWA STORAGE WAREHOUSE A \$ 45.27 to \$ 55.33 CSWB STORAGE WAREHOUSE B \$ 41.81 to \$ 51.11 CSWC STORAGE WAREHOUSE C \$ 31.75 to \$ 38.81 CSWD STORAGE WAREHOUSE D \$ 28.90 to \$ 35.32 CSWS STORAGE WAREHOUSE S \$ 27.11 to \$ 33.13 CTRB LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 CTRC LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 CTWC TRANSIT WAREHOUSE C \$ 54.80 to \$ 66.98 CTWC URGENT CARE CENTER C \$ 118.80 to \$ 145.20 CUCC URGENT CARE CENTER D \$ 112.50 to \$ 137.50	CSKB	SUPERMARKET A/B	\$ 89.78	to	\$ 109.73
CSPC STRIP SHOPPING C \$ 76.84 to \$ 93.92 CSPD STRIP SHOPPING D \$ 72.25 to \$ 88.31 CSPS STRIP SHOPPING S \$ 68.90 to \$ 84.21 CSSC SERVICE GAR SHED C \$ 21.24 to \$ 25.96 CSSD SERVICE GAR SHED D \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSTC SERVICE STATION C \$ 48.02 to \$ 58.69 CSTD SERVICE STATION D \$ 42.77 to \$ 52.27 CSWA STORAGE WAREHOUSE A \$ 45.27 to \$ 55.33 CSWB STORAGE WAREHOUSE B \$ 41.81 to \$ 51.11 CSWC STORAGE WAREHOUSE C \$ 31.75 to \$ 38.81 CSWD STORAGE WAREHOUSE D \$ 28.90 to \$ 35.32 CTRB LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 </td <td>CSKC</td> <td>SUPERMARKET C</td> <td>\$ 81.00</td> <td>to</td> <td>\$ 99.00</td>	CSKC	SUPERMARKET C	\$ 81.00	to	\$ 99.00
CSPD STRIP SHOPPING D \$ 72.25 to \$ 88.31 CSPS STRIP SHOPPING S \$ 68.90 to \$ 84.21 CSSC SERVICE GAR SHED C \$ 21.24 to \$ 25.96 CSSD SERVICE GAR SHED D \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSTC SERVICE STATION C \$ 48.02 to \$ 58.69 CSTD SERVICE STATION D \$ 42.77 to \$ 52.27 CSWA STORAGE WAREHOUSE A \$ 45.27 to \$ 55.33 CSWB STORAGE WAREHOUSE B \$ 41.81 to \$ 51.11 CSWC STORAGE WAREHOUSE C \$ 31.75 to \$ 38.81 CSWD STORAGE WAREHOUSE D \$ 28.90 to \$ 35.32 CTRB LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 CTRC LIVE STAGE THEATRE C \$ 108.45 to \$ 66	CSKS	SUPERMARKET S	\$ 73.80	to	\$ 90.20
CSPS STRIP SHOPPING S \$ 68.90 to \$ 84.21 CSSC SERVICE GAR SHED C \$ 21.24 to \$ 25.96 CSSD SERVICE GAR SHED D \$ 16.71 to \$ 20.43 CSSS SERVICE GAR SHED S \$ 16.71 to \$ 20.43 CSTC SERVICE STATION C \$ 48.02 to \$ 58.69 CSTD SERVICE STATION D \$ 42.77 to \$ 52.27 CSWA STORAGE WAREHOUSE A \$ 45.27 to \$ 55.33 CSWB STORAGE WAREHOUSE B \$ 41.81 to \$ 51.11 CSWC STORAGE WAREHOUSE C \$ 31.75 to \$ 38.81 CSWD STORAGE WAREHOUSE D \$ 28.90 to \$ 35.32 CSWS STORAGE WAREHOUSE S \$ 27.11 to \$ 33.13 CTRB LIVE STAGE THEATRE B \$ 156.15 to \$ 190.85 CTWC TRANSIT WAREHOUSE C \$ 54.80 to \$ 66.98 CTWS TRANSIT WAREHOUSE S \$ 31.50 to \$	CSPC	STRIP SHOPPING C	\$ 76.84	to	\$ 93.92
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COC3 UNDERLICATE CENTER 3 \$ 103.50 to \$ 126.50	CUCS	URGENT CARE CENTER S	\$ 103.50	to	\$ 126.50
7 2000					

CUML	UNF MAS LOAD BEARING	\$ 33.53	to	\$ 40.98
CUPM	UNF PREFAB MTL BLDG	\$ 25.39	to	\$ 31.03
CUWF	UNF WOOD FRAME	\$ 30.00	to	\$ 36.66
CVHC	VETERINARY HOSP C	\$ 117.00	to	\$ 143.00
CVHD	VETERINARY HOSP D	\$ 113.40	to	\$ 138.60
CVHS	VETERINARY HOSP S	\$ 107.10	to	\$ 130.90
CWDC	DISCOUNT WAREHOUSE C	\$ 40.92	to	\$ 50.02
CWDS	DISCOUNT WAREHOUSE S	\$ 37.80	to	\$ 46.20
CWSC	WH SHOWROOM STORE C	\$ 45.20	to	\$ 55.24
CWSD	WH SHOWROOM STORE D	\$ 41.18	to	\$ 50.34
CWSS	WH SHOWROOM STORE S	\$ 39.14	to	\$ 47.84
СХОС	MIXED USE OFFICE C	\$ 103.50	to	\$ 126.50
CXRB	MIXED USE RETAIL ALL	\$ 103.50	to	\$ 126.50
CXRC	MIXED USE RETAIL C	\$ 75.04	to	\$ 91.72
CXRD	MIXED USE RETAIL D	\$ 72.25	to	\$ 88.31

Commercial Building Sections - Un-Finished Area				
Code	Description	2017	Pricing	Range
CBAU	COM UNFINISHED BASEMENT	\$ 17.10	to	\$ 20.90
CBSM	MULTI LEVEL BZW SPR	\$ 27.95	to	\$ 34.16
CBZM	MULTI LEVEL BZW	\$ 23.26	to	\$ 28.42
CBZS	BREEZEWAY SPRINKLED	\$ 27.95	to	\$ 34.16
CBZW	BREEZEWAY	\$ 23.26	to	\$ 28.42
CCAN	COMMERCIAL CANOPY	\$ 13.73	to	\$ 16.78
CCNP	CANOPY OVER FLOOR	\$ 20.03	to	\$ 24.48
CCPS	SPRINKLED CANOPY	\$ 17.51	to	\$ 21.41
CDK	DECK	\$ 13.91	to	\$ 17.00
CDKM	MULTI LEVEL DECK	\$ 13.91	to	\$ 17.00
CDKS	DECK SPRINKLED	\$ 17.51	to	\$ 21.40
CDOS	LD2 SPRINKLED	\$ 18.28	to	\$ 22.34
CEP	ENCLOSED PORCH	\$ 27.23	to	\$ 33.28
CEPM	MULTI LEVEL EP	\$ 27.23	to	\$ 33.28
CEPS	EP/SPRINKLED	\$ 30.60	to	\$ 37.40
CFBA	FINISHED BASEMENT	\$ 30.83	to	\$ 37.68
CGAR	GARAGE NON SERVICE	\$ 29.24	to	\$ 35.74

CGH1	GREENHOUSE AVERAGE	\$ 22.73	to	\$ 27.78
CGH3	GREENHOUSE GOOD QUAL	\$ 34.43	to	\$ 42.08
CGHS	GH3/SPRINKLED	\$ 36.41	to	\$ 44.51
CLD1	LOADING DOCK, WOOD	\$ 10.35	to	\$ 12.65
CLD2	LOADING DOCK, STEEL	\$ 14.49	to	\$ 17.71
CMEP	EP MULTI LEVEL SPRIN	\$ 30.83	to	\$ 37.68
CMOP	OP MULTI SPRINKLED	\$ 26.86	to	\$ 32.82
СОР	OPEN PORCH	\$ 23.26	to	\$ 28.42
СОРМ	MULTI LEVEL OP	\$ 23.26	to	\$ 28.42
CPT	PATIO	\$ 7.25	to	\$ 8.86
CSBA	FBA SPRINKLED AND AC	\$ 36.09	to	\$ 44.11
CSFB	FIN BSMT SPRINKLED	\$ 32.72	to	\$ 39.99
CSGR	GARAGE/SPRINKLED	\$ 34.74	to	\$ 42.46
CSOP	OP SPRINKLED	\$ 26.86	to	\$ 32.82
CSP	SCREENED PORCH	\$ 25.20	to	\$ 30.80
CSPM	MULTI LEVEL SP	\$ 25.20	to	\$ 30.80
CTER	TERRACE PATIO SLAB	\$ 13.50	to	\$ 16.50
CTES	TERRACE/SPRINKLED	\$ 13.96	to	\$ 17.06
CUBA	UNFINISHED BASEMENT	\$ 17.10	to	\$ 20.90
CUBS	UNFIN BSMT SPRINKLED	\$ 20.12	to	\$ 24.59
CUR	UTILITY AREA OR ROOM	\$ 25.43	to	\$ 31.08
CURM	MULTI LEVEL UR	\$ 25.43	to	\$ 31.08
CURS	UTILITY ROOM SPRINKLED	\$ 27.41	to	\$ 33.51

Commercial Modifiers

Quality Modifien						
Grade	Description	2	2017	Modifier	Range	
L	Luxury	\$	2.20	to	\$	2.30
S	Special	\$	1.70	to	\$	1.80
A	Superior	\$	1.50	to	\$	1.60
В	Custom	\$	1.20	to	\$	1.30
С	Average	\$	0.95	to	\$	1.05
D	Fair	\$	0.80	to	\$	0.90
Е	Poor	\$	0.50	to	\$	0.60
U	Unsound	\$	0.20	to	\$	0.30
Quality Rating Codes Mo		difie	rs			
Code	Description	2	017	Modifier	R	ange
R	Renovated	\$	1.70	to	\$	1.80
G	Good	\$	1.20	to	\$	1.30
N	Normal	\$	-	to	\$	-
F	Fair	\$	0.70	to	\$	0.80
P	Poor	\$	0.45	to	\$	0.55
VG	Very Good	\$	1.45	to	\$	1.55
R2	Renovated	\$	1.95	to	\$	2.05
R2.5	Renovated	\$	2.45	to	\$	2.55
R3	Renovated	\$	2.95	to	\$	3.05
Condition	on Codes Modifie	rs				
Code	Description	2	017	Modifier	Range	
R	Renovated	\$	0.15	to	\$	0.25
G	Good	\$	0.35	to	\$	0.45
N	Normal	\$	-	to	\$	-
F	Fair	\$	1.45	to	\$	1.55
P	Poor	\$	1.70	to	\$	1.80
U	Unsound	\$	89.95	to	\$	90.05
Green B	uildings Codes					
Code	Description	_	2017	Modifier		ange
GOLD	Gold	\$	1.15	to	\$	1.25
SILV	Silver	\$	1.15	to	\$	1.25
BRON	Bronze	\$	1.15	to	\$	1.25
CERT	Certified	\$	1.15	to	\$	1.25

APPENDIX

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Definitions

Abstract a computer-printed report of appraised and/or assessed value(s) for

each parcel of real property in a given taxing district; generally

sequenced geographically.

Actual age the number of years elapsed since the original construction, as of

the effective valuation date. Compare with effective age.

Ad valorem tax in reference to property, a tax based upon the value of the property.

Aesthetic value a value, intangible in nature, which is attributable to the pleasing

appearance of a property.

Agricultural property land and improvements devoted to, or best adaptable for, the

production of crops, fruits, and timber, and the raising of livestock.

Air rights the right to the use of a certain specified space within the

boundaries of a parcel of land and above a specified elevation.

Alley influence the enhancement to the value of a property rising out of the

presence of an abutting alley; most generally applicable to

commercial properties.

Amenities in reference to property, the intangible benefits arising out of

ownership; amenity value refers to the enhancement of value

attributable to such amenities.

Apartment hotel a building designed for non-transient residential use, divided into

dwelling units similar to an apartment house, but having such hotel apartment hotel accommodations as room furnishings, lounges,

public dining room, maid service, etc.

Apartment house a multi-family residence containing three or more non-transient

residential living units and generally providing them with a

number of common facilities and services.

Assessment the value of taxable property to which the tax rate is to be applied

in order to compute the amount of taxes; may be used synonymously

with assessed value, taxable value and tax base.

Assessment ratio the ratio of assessed value to a particular standard of value,

generally the appraised value. A percentage to be applied to the

appraised value in order to derive the assessed value.

Assessment roll

the official listing of all properties within a given taxing jurisdiction by ownership, description and location, showing the corresponding assessed values for each; also referred to as tax list, tax book, tax duplicate and tax roll.

Average deviation

in a distribution of values, the average amount of deviation of all the values from the mean value, equal to the total amount of deviation from the mean divided by the number of deviations. As applied to an assessment-to-sale ratio distribution, the average amount which all the ratios within the distribution deviate from the mean ratio

Base price

a value or unit rate established for a certain specified model, and subject to adjustments to account for variations between that particular model and the subject property under appraisement.

Basement

a building story which is wholly or partly below the grade level.

Beam

a long structural load-bearing member which is placed horizontally or nearly so and which is supported at both ends or, infrequently, at intervals along its length.

Beam, spandrel

a wall beam supporting the wall, above, as well as the floor.

Building residual technique a building valuation technique which requires the value of the land to be a known factor; the value of the buildings can then be indicated by capitalizing the residual net income remaining, after deducting the portion attributable to the land.

CAMA

Computer-Assisted Mass Appraisal - Utilizing data processing to compare parcels, calculate values and maintain property characteristics while increasing efficiency and accuracy in the appraisal process.

Capitalization

a mathematical procedure for converting the net income which a property is capable of producing into an indication of its current value. See income approach.

Column

a structurally isolated vertical member which is at least 8 to 10 times as long as its least lateral dimension and which is designed to carry loads. Compare pier.

Concrete, reinforced

a type of construction in which the principal structural members, such as the floors, columns, beams, etc., are made of concrete poured around isolated steel bars or steel meshwork in such manner that the two materials act together in resisting forces.

Condo motel Residential condos that are rented, usually short term. The unit

owners may choose to include their units in the rental pool or decline the rental option. These unit's sales prices are typically based on the income available for the unit in addition to its

residential use.

Conduit a tube, pipe, or small artificial tunnel used to enclose wires or pipes

or to convey water or other fluids.

Construction, brick a type of construction in which the exterior walls are bearing walls

(q.v.) made of solid brick or brick and tile masonry.

Construction, brick veneer a type of construction in which the exterior walls are one-layer

brick curtain walls backed by a wood frame.

Construction, steel frame a type of construction in which there is a framework of steel

structural members for the support of all loads and the resistance of

all stresses.

Construction, wood frame a type of construction in which there is a framework of wooden

structural members for the support of all loads and the resistance of

all stresses. Loosely called "frame construction."

Coping a special capping at the top of a wall, serving principally as a

watershed.

Cornice a projecting element at the top of a wall, serving principally as a

decoration or as part of the coping (q.v.).

Corner influence the enhancement to the value of a property due to its corner

location; most generally applicable to commercial properties.

Cost approach one of the three traditional approaches to determination of the

value of a property; arrived at by estimating the value of the land, the replacement or reproduction cost new of the improvement and the amount of accrued depreciation to the improvement. The estimated land value is then added to the estimated depreciated value of the improvements to arrive at the estimated property value. Also referred to as the "cost-to-market approach" to indicate that the value estimates are derived from market data abstraction and

analysis.

Cottage Typically a one-story to two-story dwelling unit of small size and

humble character.

Course a uniform horizontal layer of brick, stone, terra cotta, shingles or

some other structural material extending continuously around a

building or along a wall.

Courtyard an open space bordered on two or more sides by the walls of a

single building or of two or more buildings.

Data verification Process of checking the accuracy of data that has been placed into

a data processing system.

Depreciation loss in value from all causes; may be further classified as *physical*,

referring to the loss of value caused by physical deterioration; *functional*, referring to the loss of value caused by obsolescence inherent in the property itself; and economic, referring to the loss

of value caused by factors extraneous to the property.

Accrued depreciation refers to the actual depreciation existing in a particular property as of a specified date. Normal depreciation refers to that amount of accrued depreciation one would normally expect to find in buildings of certain construction, design, quality

and age.

Deterioration impairment of structural condition evidenced by the wear and tear

caused by physical use and the action of the elements, also referred

to as physical depreciation.

Dormer (1) a relatively small structure projecting from a sloping roof. (2) a

window set upright in the face of such a structure.

Dwelling any building or portion thereof designed or occupied in whole, or in

part, as a place of residence.

Dwelling, duplex a two-family dwelling in which the two dwelling units are separate

with a private street entrance for each.

Dwelling, Multi-family a building designed as a place of residence for more than two

families or households; e.g., an apartment house.

Dwelling, row any one of a series of similar single-family, two-family or multi-

family dwellings having one or more contiguous common or party

walls.

Eaves the portion of a sloping roof which projects beyond the outside

walls of a building.

Economic life the life expectancy of a property during which it can be expected to

be profitably utilized.

Economic obsolescence obsolescence caused by factors extraneous to the property. Also

referred to as economic depreciation.

Economic rent the rent which a property can be expected to bring in the open

market as opposed to *contract rent* or the rent the property is actually

realizing at a given time.

Effective age an age assigned to a structure based upon its condition as of the

effective valuation date; it may be greater or less than the

structure's actual age. Compare with actual age.

Effective gross income the estimated gross income of a property, less an appropriate

allowance for vacancies and credit losses.

Elevation a drawing which represents a projection of any one of the vertical

sides or vertical cross-sections of a building or of any other object.

Compare plan.

Façade the face of a building (exterior).

Firewall a wall of fire-resisting material erected between two parts of a

building to prevent the spread of fire from one part to the other.

Flashing small, metal strips used to prevent leaking of roofs around

chimneys, dormers, hips and valleys.

Footing a spreading base to a wall, column or other supporting member,

Serves to widen the ground area to which structural loads are

transmitted.

Foundation the structural members below grade level, or below the first tier of

beams above grade level, which transmit the load of a superstructure

to the ground.

Functional Obsolescence obsolescence caused by factors inherent in the property itself. Also

referred to as functional depreciation.

Functional utility the composite effect of a property's usefulness and desirability upon

its marketability.

Gable (1) the triangular portion of a wall between the slopes of a double-

sloping (i.e., gable) roof. (2) the whole of the wall containing such a triangular portion. (3) a portion of a building extending from the

remainder of the building and covered with a gable roof.

Girder a large or principal beam (q.v.) used to support concentrated loads

at isolated points along its length. (Girders usually support the

beams and structure above).

Grade the classification of an improvement based upon certain

construction specifications, and quality of materials and

workmanship.

Grantee a person to whom property is transferred and property rights are

granted by deed, trust instrument or other similar documents.

Compare with grantor.

Grantor a person who transfers property or grants property rights by deed,

trust instrument or other similar documents. Compare with grantee.

Gross area the total floor area of a building measured from the exterior of the

walls.

Gross income the scheduled annual income produced by the operation of a

business or by the property itself.

Gross income Multiplier a multiplier representing the relationship between the gross income

of a property and its estimated value.

Gross sales the total amount of invoiced sales before making any deductions

for returns, allowances, etc.

Ground lease a document entitling the lessee certain, specified rights relating to

the use of the land.

Ground rent net rent from a ground lease; that portion of the total rent which is

attributable to the land only.

Header (1) a structural member which is laid perpendicularly to a parallel

series of similar members and against which the latter members abut. (2) a brick or other piece of masonry which is laid in a wall in such manner that its longest dimension extends along the thickness of the

wall. Contrast stretcher.

Hip (1) a sloping line along which two roof surfaces meet to form an

external angle of more than 180 degrees. (2) a hip rafter (q.v.).

Compare ridge; valley.

Hotel a building designed for transient or semi-transient, residential use,

divided into furnished single rooms and suites. Has such accommodations as lounges, public dining rooms, maid service, etc.

Income approach

one of the three traditional approaches to determination of value; measures the present worth of the future benefits of a property by the capitalization of its net income stream over its remaining economic life. The approach involves making an estimate of the potential net income the property may be expected to yield, and capitalizing that income into an indication of value.

Joist

one of a series of small, parallel beams laid on edge and used to support floor and ceiling loads. Usually supported in turn by larger beams and girders.

Land residual technique

a land valuation technique which requires the value of the buildings to be known; the value of the land can then be indicated by capitalizing the residual net income remaining after deducting the portion attributable to the building(s).

Leasehold

a property held under the terms of a lease.

Leasehold improvements

additions, renovations and similar improvements made to a leased property by the lessee.

Legal description

a description of a parcel of land which serves to identify the parcel in a manner sanctioned by law.

Lintel

a beam over a wall opening, such as a door or windows, designed to carry the load of the wall over such opening.

Louver (or louvre)

a ventilator containing slats which are placed lengthwise across the ventilator opening, each slat being slanted in such a manner as to overlap the next lower slat and to permit ventilation but exclude rain.

Market value

the price an informed and intelligent buyer, fully aware of the existence of competing properties and not compelled to act, would be justified in paying for a particular property.

Marquee

a flat roof-like structure which shelters a doorway, which has no floor beneath it, and which is usually supported wholly from the walls or the building.

Mass appraisal

appraisal of property on a mass scale - such as an entire community, generally for ad valorem tax purposes, using standardized appraisal techniques and procedures to accomplish uniform equitable valuation with a minimum of detail, within a limited time period, and at a limited cost ... as opposed to a *fee appraisal* which is generally used to refer to a rather extensive, detailed appraisal of a single property or singularly used properties for a specified purpose.

Mezzanine

a low story formed by placing a floor between what would ordinarily be the floor and ceiling of a high story, *Note:* the mezzanine floor frequently has a smaller area than other floors and, if present at all, is usually between the first and second stories.

Millwork

all of the wooden portions of a building, whether frame construction or otherwise, which are customarily purchased in finished form from a planing mill, such as doors, windows, trim, balusters, etc.

Mineral rights

the right to extract subterranean deposits such as oil, gas, coal, and minerals, as specified in the grant.

MRA

Multi Regression Analysis - Also called the least squares method, is a mathematical method for producing a model for a dependent variable as a linear function of independent factors. As an example - the predicted sales price (dependent variable) is a function of independent factors such as square feet, style, neighborhood, etc.

Neighborhood trend

three stages in the life cycle of a neighborhood "the improving stage characterized by development and growth; the static stage characterized by a leveling off of values; and the declining stage characterized by infiltration and decay.

Net income

the income remaining from the effective gross income after deducting all operating expenses related to the cost of ownership.

Net lease

a lease wherein the lessee assumes to pay all applicable operating expenses related to the cost of ownership; also referred to as *net-net* (*double net*), or *net-net-net* (*triple net*) *lease*.

Net sales

gross sales less returns and allowances.

Net sales area

the actual floor area used for merchandising, excluding storage rooms, utility and equipment rooms, etc.

Non-conforming use

a use which, because of modified or new zoning ordinances, no longer conforms to current use regulations, but which is nevertheless upheld to be legal so long as certain conditions are adhered to.

Observed depreciation

that loss in value which is discernable through physical observation by comparing the subject property with a comparable property either new or capable of rendering maximum utility.

Obsolescence

a diminishing of a property's desirability and usefulness brought about by either functional inadequacies and over-adequacies inherent in the property itself, or adverse economic factors external to the property. Refer to *functional depreciation* and *economic depreciation*.

Operating expenses

the fixed expenses, operating costs and reserves for replacements, which are required to produce net income before depreciation and are to be deducted from effective gross income in order to arrive at net income.

Overall rate

a capitalization rate representing the relationship of the net income (before recapture) of a property to its value as a single rate; it necessarily contains, in their proper proportions, the elements of both the land and the building capitalization rates.

Overhang

a finished portion of a building having full story height which extends beyond the foundation wall line, if part of the ground story, or beyond the exterior walls of the ground story if part of any higher story.

Pier

(1) a thick, solid mass of masonry which is fully or partially isolated from a structural standpoint and which is designed to transmit vertical loads to the earth. (2) a structure projecting from land into water for use in loading and unloading vessels. Compare column.

Pilaster

a flat-faced pillar projecting somewhat from, but engaged in, the wall of a building and used for decorative purposes or to help support truss and girder loads or both.

Pile

a heavy timber, metallic, or masonry pillar forced into the earth to form a foundation member.

Pitch

the slope of any structural member, such as a roof or rafter, usually expressed as a simple fraction representing the rise per lateral foot.

Percentage lease

a type of lease in which the rental is stipulated to be a percentage of the tenant's gross or net sales, whichever specified.

Personal property

property, which is not permanently affixed to and a part of the real estate, as specified by state statutes.

Property class

a division of like properties generally defined by statutes and generally based upon their present use. The basis for establishing assessment ratios in a classified property assessment system. See *classified property tax*.

Property inspection

a physical inspection of a property for the purpose of collecting and/or reviewing property data.

Property record card

a document specially designed to record and process specified property data; may serve as a source document, a processing form, and/or a permanent property record.

Purlin a beam running along the underside of a sloping roof surface and at

right angles to the rafters, used to support the common rafters and usually supported in turn by larger structural members, such as

trusses or girders (usually run along length of building).

Quantity survey method a method of computing the replacement or the reproduction cost of

an improvement by applying unit costs to the actual or estimated material and labor quantities and adding an allowance for

overhead, profit and all other indirect construction costs.

Rafter a structural member placed, as a rule, in a sloping position and

used as the supporting element for the structural material forming

the plane of the roof.

Ridge a horizontal line along which the upper edges of two roof surfaces

meet to form an external angle of more than 180 degrees. Compare

hip; valley.

Rise (1) in general, any vertical distance. (2) specifically, the rise of a

roof being the distance between the top of an exterior wall and the peak of the roof; the rise of a stair being the distance from tread to

tread.

Real estate the physical land and appurtenances affixed thereto; often used

synonymously with real property.

Real property all the interests, benefits and rights enjoyed by the ownership of

the real estate.

Replacement cost the current cost of reproducing an improvement of equal utility to

the subject property; it may or may not be the cost of reproducing a

replica property. Compare with reproduction cost.

Reproduction cost the current cost of reproducing a replica property. Compare with

replacement cost.

Reserve for replacements a reserve established to cover renewal and replacements of fixed

assets.

Residential property vacant or improved land devoted to or available for use primarily

as a place to live.

Sales ratio study a statistical analysis of the distribution of assessment or appraisal-

to-sale ratios of a sample of recent sales, made for the purpose of drawing inferences regarding the entire population of parcels from

which the sample was abstracted.

Salvage value the price one would be justified in paying for an item of property

to be removed from the premises and used elsewhere.

Sash the wooden or metal framework in which the glass of a door or

window is set.

Sheathing the covering, usually of rough lumber, placed immediately over

studding or rafters.

Sill (1) the lower horizontal part of a door-case (the threshold) or of

a window. (2) the lowest horizontal structural member of a frame

building, upon which the superstructure is supported.

Site development costs all costs incurred in the preparation of a site for use.

Soil productivity the capacity of a soil to produce crops.

Standard deviation a statistical measure of the variation of a characteristic about its

average value. Standard deviation is the square root of the variance of a characteristic about its average observed value. Variance is the sum of the squared deviations of each observed value from the average, divided by one less than the number of observations. For normally distributed observations, approximately 70% of the observations will fall within one standard deviation of the mean or

average value.

Story that portion of a building enclosed by a floor, a ceiling, and the

exterior walls.

Stretcher a brick or other piece of masonry which is laid lengthwise in a wall.

Contrast *header*.

Strut any structural member, which holds apart two **or** more other

members by counteracting a pressure, which tends to bring them

together. Contrast tie.

Stud one of a series of small slender structural members placed

vertically and used as the supporting element of exterior or interior

walls. (Plural: studs or studding)

Sub floor the flooring laid directly on top of the floor joists, but beneath the

finish floor.

Tax levy in reference to property taxes, the total revenue, which is to be

realized, by the tax.

Tax mapping

the creation of accurate representations of property boundary lines at appropriate scales to provide a graphic inventory of parcels for use in accounting, appraising and assessing; such maps show dimensions and the relative size and location of each tract with respect to other tracts.

Trim

(1) the wooden portions of a plastered room, such as the doors, windows, wainscoting and molding, or the corresponding portions of a room finished with a material other than plaster. (2) the contrasting elements on the exterior of a building which serve no structural purpose, but are intended to enhance its appearance, e.g., the cornice. (3) occasionally, the hardware of a house, such as locks, hinges, doorknobs, etc.

Truss

a combination of structural pieces fastened together into a rigid open member which is supported at both ends and upon which loads are superimposed. Compare *girder*.

Unimproved land

vacant land; a parcel for which there is no improvement value.

Use value

the actual value of a commodity to a specific owner, as opposed to

its value in exchange or market value.

Vacancy

an un-rented unit of rental property.

Veneer

a thin, ornamental or protective facing which does not add appreciably to the strength of the body to which it is attached.

Wainscot (or wainscoting)

(1) a wooden facing on the lower portion of a contrasting interior wall. (2) by extension, a facing of marble tile, or the like, on the lower portion of interior walls.

Wall

a vertical structure serving to enclose, support, divide; such as one of the vertical enclosing sides of a building or room.

Wall, bearing

a wall designed primarily to withstand vertical pressure in addition to its own weight.

Wall, common

a wall owned by one or two parties and jointly used by both, one or both of whom is entitled to such use under the provisions of ownership.

Wall, curtain

a non-bearing wall which is supported by columns, beams or other structural members, whose primary function is to enclose space.

Wall, partition

an interior bearing or non-bearing wall separating portions of a story. Synonymous *with partition*.

Wall, party a wall jointly used by two parties under easement agreement and

erected at or upon a line separating two parcels of land held under

different ownership.

Wall, retaining a wall designed primarily to withstand lateral pressures of earth or

other filling or backing deposited behind it after construction.

Zoning regulations governmental restrictions relating to the use of land.

Definitions

Statistical Terms

Aggregate ratio as applied to real estate, the ratio of the total assessed value to the

total selling price.

Average deviation in a distribution of values, the average amount of deviation of all

the values from the mean value equal to the total amount of deviation

from the mean divided by the number of deviations.

Coefficient a value prefixed as a multiplier to a variable or an unknown

quantity.

Coefficient of dispersion as applied to an assessment-to-sale ratio distribution, a measure of

dispersion in a given distribution equal to the average deviation of

the ratios from the mean ratio divided by the mean ratio.

Frequency distribution a display of the frequency with which each value in a given

distribution occurs, or in a grouped frequency distribution, a display of the frequency with which the values within various

intervals, or value groupings, occur.

Mean a measure of central tendency equal to the sum of the values

divided by the number. Also referred to as arithmetic average or

arithmetic mean.

Median a measure of central tendency equal to that point in a distribution

above which 50% of the values fall and below which 50% of the

values fall. The 50th percentile. The 2nd quartile.

Mode a measure of central tendency equal to that value occurring most

frequently in a given distribution. In a grouped frequency distribution, the rnode is equal to the mid point of the interval with

the greatest frequency.

Normal distribution a distribution in which all the values are distributed symmetrically

about the mean value, with 68.26% of the values failing between +/- 1 standard deviation, 95.44% between +/- 2 standard

deviations, and 99.74% between +/- 3 standard deviations.

Percentile rank the relative position of a value in a distribution of values expressed

in percentage terms; for instance, as applied to an assessment-tosale ratio distribution, a ratio with a percentile rank of 83 would indicate that 83% of the ratios were lower and 17% of the ratios

were higher than that particular ratio.

Price related differential

as applied to real estate, an analytical measure of the vertical uniformity of values in a given distribution calculated by dividing the mean ratio by the aggregate ratio; a ratio of more than 1 being generally indicative of the relative undervaluation of high priced properties as compared to the less valuable properties, whereas a ratio of less than 1 would indicate the converse relationship.

Quartile

positions in a distribution at 25 percentile intervals; the *first* quartile being equal to the 25th percentile, the *second* quartile being equal to the 50th percentile or the median, and the *third* quartile being equal to the 75th percentile.

Range

the difference between the highest and the lowest value in a distribution.

Ratio

a fixed relationship between two similar things expressed in terms of the number of times the first contains the second; the quotient of one quantity divided by another quantity of the same type, generally expressed as a fraction.

Regression analysis

a statistical technique for making statements as to the degree of linear association between a criterion (dependent) variable and one or more predicator (independent) variables; a simple linear regression having one independent variable, and multiple linear regression having more than one independent variable.

Sample

as applied to real estate, a set of parcels taken from a given universe which is used to make inferences about values for the universe.

Sample size

as applied to real estate, the number of parcels needed from a universe to achieve a desired level of precision, given the total number of parcels in the universe and the standard deviation thereof.

Standard deviation

a measure of dispersion, variability or scatter of values in a given distribution equal to the square root of the arithmetic mean of the squares of the deviations from the mean.

Stratified sampling

the selection of sample parcels from distinct groups within the total universe based upon the known sizes and characteristics of these distinct groups.

Universe

as applied to real estate, all the parcels of a given type in the group under study, i.e., all the parcels of a given neighborhood, district, etc. Also referred to *as population*.

Real or Personal Property?

Leasehold Improvements

Modifications and up fits made by the tenant for the specific use of the business and not the building are taxable in North Carolina as business personal property (**leasehold improvements**). It is the responsibility of the occupant to list these improvements with the Assessor's Office during the listing period each year. ¹⁷

There are two tests for determining if an improvement should be listed as personal property:

- 1. The improvements are made by the occupant for the benefit of the business, not the building.
- 2. The components can be removed without damaging the building.

The commercial model for each structure type includes basic features such as minimal interior finish, plumbing, electrical and lighting fixtures, required for the general operation of the building. Personal property is anything added specifically for the operation of the specific business occupying the building and not for the use of the building itself. For example, if the business left, the next tenant would not use the items added by the previous business owner. Personal property can be generally defined as movable items. Items not listed and taxed as real estate are business personal property. It is the responsibility of the property owner to list any business personal property and to determine what should be listed as personal property. The following list of real and personal is provided to aid real estate and business personal property appraisers in addition to the property owner. When in doubt, the commercial appraiser and the business personal property appraiser will consult to insure that property is not taxed as both real estate and personal property.

Malls and strip centers are valued as shell buildings with minimal finish. Any improvements made to the individual rental spaces are considered "leasehold improvements" for the purpose of the specific business purpose of the tenant.

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¹⁷ See memo dated December 23,2011 North Carolina Department of Revenue in Addendum

Real or Personal Property?

The decision about whether to list and tax a building component as real or personal property is based on the purpose of the item. Was it added for the benefit of the building or for the benefit of the business? Items added for the benefit of the business are listed as business personal property. Model homes, either manufactured housing or stick built, not attached to utilities are considered inventory and are not taxable. Houses previously considered real estate but are being moved, in transition and not permanently attached are also considered inventory. The following chart lists the most common items and how they should be listed. An item with a red X is listed as personal property and an item with a blue X is real estate.

Item	Real	Personal
Acoustical drapes and curtains		X
Appliances		
Apartments	X	
Rental houses		X
Other	X	
Air Conditioning for comfort of occupants or customers	X	
Malls, interior mall retail or service stores	X	
Air Conditioning for business process		X
Architectural and engineering fees (building)	X	

Item	Real	Personal
Architectural and engineering fees (leasehold or tenant)		X
Bar and bar equipment		X
Boiler for service of building	X	
Boiler for business process		X
Bowling alley equipment		X
Burglar Alarms		X
Cabinets (built-in)	X	
Car Wash equipment		X
Canopy (removable)		X
Canopy (not removable)		X
Catwalks (movable)		X
Communication equipment		X
Compressed air systems		X
Computers		X
Concrete plant equipment		X
Construction allowances paid to tenants		X
Control systems		X
Conveyor systems		X
Cooking (restaurant equipment)		X
Cold storage built–in rooms	X	
Cold storage equipment		X
Coolers (walk-in) portable		X
Coolers (walk-in) permanent	X	
Cooling towers used in manufacturing		X
Cooling towers used for building	X	
Dairy processing equipment		X
Diagnostic center equipment		X
Dock levelers		X
Doors	X	
Doors (removable grille or security doors installed by	y tenant)	\mathbf{X}
Drapes and Blinds		X
Dust control systems		X
Electrical (for building)	X	
Drive thru windows (detached)		X
Drive thru windows (attached)	X	
Electrical (for the business process)		X
Elevators/Escalators	X	
Fans (attached)	X	
Fans (removable)		X
Fencing		X

Item	Real	Personal
Fire alarm systems		X
Floor finish (included in building model)	X	
Floors (movable or modular)		X
Floors (basic included in model)	X	
Foundations for machinery and equipment		X
Golf course improvements	X	
Gates		
Grain bins		X
Greenhouses (plastic)		X
Greenhouses (glass, Plexiglas)	X	
Greenhouse equipment		X
Humidifiers used in process		X
Humidifiers used for building	X	
Heating systems used for process		X
Heating systems used for building	X	
Hoppers		X
Hospital equipment		X
Incinerators (movable)		X
Incinerators (permanent, built-in)	X	
Industrial piping used in the business process		X
Interior finish (included in building model)	X	
Interior finish (NOT included in building model)		X
Mirrors, counters, movable columns		
Movable fitting rooms		
Irrigation equipment		X
Kilns (moveable)		X
Kilns (built-in)	X	
Lighting (outdoor)		X
Lighting fixtures (not included in model)		X
Modular Offices	X	
Modular Offices (temporary sales offices, etc.)		X
Night Depository		X
Ovens used in process		X
Power generator systems (backup system)		X
Plumbing fixtures	X	
Piping for process (removable)		X
Public address systems		X
Restaurant kitchen equipment (removable)		X
Scales		X
Scale house		X
Screens (movie)		X

Item	Real	Personal
Theater Seats		X
Service Station equipment		X
Shelving		X
Signs (including billboards)		X
Sound projection equipment		X
Sound systems		X
Sprinkler systems (fire protection for the building)	X	
Sprinkler systems used for the process		X
Switchboard		X
Tanks		X
Teller machines (ATM)		X
Telephone system		X
Towers (cell, TV, radio, etc.)		X
Vacuum system used for the process		X
Vacuum system used for the building	X	
Vaults	X	
Vault doors (removable)		X
Ventilation systems used for the building	X	
Ventilation system used for the process		X
Water tanks (all water tanks)		X
Water coolers		X
Wells (pumps, motors and equipment)		X
Wiring used for the process		X
Wiring for the building	X	
Walls (portable)		X
Walls (partition walls attached to the building)	X	
Water lines for the business process		X
Hot Air Balloons		X
Counters, Cabinets, Bookcases (moveable)		X
Cell Towers		X
Cell Tower Sites	X	
Campers		X
Model homes (Jim Walter, etc.)		X





PROPERTY TAX BULLETIN

NO. 157 | SEPTEMBER 2010

Property Tax Collection on Mobile Homes

Christopher B. McLaughlin

Mobile homes—or manufactured homes, trailers, single-wides, or double-wides, as they are variously known—are constant problems for tax officials. These problems often arise during the listing process, because mobile homes can be reclassified from real property to personal property and back again. Problems also arise during the collection process, in part because mobile homes and their owners sometimes disappear from the taxing unit without notice. This bulletin is intended to reduce the confusion related to this type of property for tax collectors and taxpayers alike.

Although the terms "manufactured home" and "mobile home" are often used interchangeably, they carry distinct technical meanings under the Machinery Act. *Mobile home* is defined as any type of structure that can be moved by attaching wheels to its frame and that is used as an office, dwelling, or similar "place of habitation." A *manufactured home* is a mobile home that satisfies additional criteria: it must be at least 8 feet wide and 40 feet long when in "traveling mode," is 320 or more square feet when erected on site, is built on a permanent chassis, and is to be used as a dwelling. Neither definition turns on whether the structure is a single- or double-wide.

All mobile homes—and therefore all manufactured homes—are subject to the moving permit requirement described in Question 3. But only manufactured homes—that is, mobile homes of a certain size that are to be used as residences and not offices—can be listed as real property, and only if they satisfy the requirements described in Question 1.

1. Should manufactured homes be listed as real property or personal property?

It depends on the home's physical characteristics, use, and location. A manufactured home must be listed as real property if it satisfies the criteria included in Section 105-273(13) of the North Carolina General Statutes (hereinafter G.S.), the Machinery Act's definition of real property:

- a. It is a residential structure;
- b. It has the moving hitch, wheels, and axles removed;

Christopher B. McLaughlin is a School of Government faculty member who specializes in local taxation. McLaughlin is writing a book to update and replace William A. Campbell's seminal work, *Property Tax Collection in North Carolina*, the most recent edition of which was published more than a decade ago. This bulletin represents one chapter of the new publication.

^{1.} N.C. Gen. Stat. (hereinafter G.S.) § 105-316.7. Presumably, the only type of movable structure that would *not* constitute a mobile home would be one used for storage and not "habitation."

^{2.} G.S. 105-273(13) adopts the definition of *manufactured home* used in G.S. 143-143.9(6), one of the statutes concerning manufactured home warranties.

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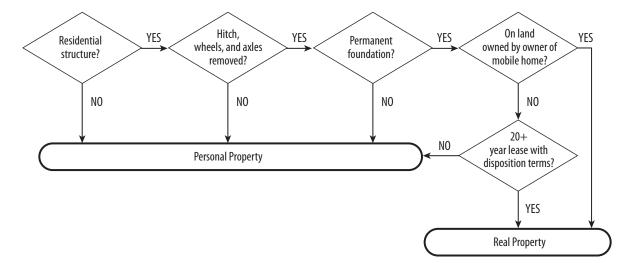


Figure 1. Classification of manufactured homes as real or personal property (G.S. 105-273(13))

- c. It is placed on a permanent foundation; and
- d. It is sited 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 with a term of at least 20 years and the lease provides for the disposition of the home upon the lease's termination.

The four requirements are presented in visual format in figure 1.

Before these requirements were clarified in 2001, many counties listed all double-wide manufactured homes as leasehold improvements, a type of real property, even if they did not satisfy all of the requirements in G.S. 105-273(13).³ Since the 2001 changes, the fact that a manufactured home is a single-wide or a double-wide should have no bearing on whether it is listed as real or personal property. If all four requirements are met, the manufactured home must be listed as real property. If the manufactured home fails to meet even one of the requirements, it must be listed as personal property.

To be a residential structure, the manufactured home must be intended to be used as a place for someone to live, not just a place for someone to conduct business. The home need not be someone's permanent residence nor must it be the owner's residence. For example, a manufactured home owned by the owner of a mobile home park and rented to families on a monthly basis could qualify as real property. The fact that business might be conducted out of the home would not disqualify it so long as it was also used for residential purposes. For example, if Tom Tarheel lives in a manufactured home but also runs his landscaping business from the home, that home could still qualify as real property.

The requirement that the home's hitch, wheels, and axles be removed is self-explanatory. But the same cannot be said for the requirement that the home be on a "permanent foundation." Exactly what does this mean? The statute provides no explanation, but the Department of Revenue advises that, to be "permanent," a manufactured home's foundation must satisfy the

^{3.} S.L. 2001-506 eliminated the requirement that a manufactured home be "multi-section" to qualify as real property and clarified that all manufactured homes that failed to satisfy all of the requirements in G.S. 105-273(13) must be listed as personal property.

applicable building code requirements, which can vary from county to county.⁴ If the foundation has been inspected by the appropriate local government and found to satisfy the building code, then it is permanent. If not, the foundation is not permanent and the manufactured home that sits thereon is personal property, not real property.

The fourth requirement is the one that prevents many manufactured homes from being classified as real property. If the manufactured home sits on land not owned by the owner of the manufactured home, it cannot be listed as real property unless the homeowner has a long-term lease on the land. For example, if Wanda Wolfpack owns a manufactured home that sits on land she owns, the home must be listed as real property if it satisfies the other three requirements. If Wanda's home sits on land owned by her sister, Wilma Wolfpack, the home must be listed as personal property unless Wanda is leasing Wilma's land for a term of at least 20 years and the lease has specific provisions for what happens to the mobile home when the lease ends. If Wanda's home sits on land owned jointly by Wanda and Wilma, the home must be listed as real property if it satisfies the other three requirements. The fact that Wanda owns a joint interest and not an exclusive interest in the property does not disqualify the home from having real property status. But if Wanda's home sits on land owned jointly by Wanda and her husband Walter as tenants by the entirety, the manufactured home could not be listed as real property absent a long-term lease because the owner of the home (Wanda) is different from the owner of the land (the marital couple of Wanda and Walter). Similarly, if Wanda's manufactured home sits on land owned by WW, Inc., a corporation of which Wanda is the only shareholder, the home could not be listed as real property without a long-term lease on the land because Wanda and her corporation are different taxpayers.

Record ownership of mobile homes should be based on documents filed with the N.C. Department of Motor Vehicles (DMV) or the county register of deeds. Mobile homes are titled and registered by the DMV unless and until they satisfy the Machinery Act's definition of real property. Record ownership of a mobile home properly classified as personal property should be based on the DMV title and registration documents. Once a mobile home is properly classified as real property and no longer registered with the DMV, record ownership should be based on the recorded deeds for the land on which the home sits.

2. What remedies are available to collect taxes on mobiles homes?

The remedies available depend in large part on whether the mobile home is classified as real or personal property.

If the mobile home is properly classified as real property, the taxes on the mobile home are a lien upon the land on which the home sits. The collector may use the foreclosure remedy against

^{4.} Letter from John C. Bailey, Director, Property Tax Division, N.C. Dept. of Revenue, to county assessors (February 1, 2002), referencing building codes for manufactured homes issued by the N.C. Dept. of Insurance that require piers and footings, the depth of which can vary by county based on the frost line.

^{5.} All vehicles "intended to be operated on the highways of this state" must be registered with the Department of Motor Vehicles (DMV). G.S. 20-50. A mobile home with its hitch, wheels, and axles attached is considered a vehicle because it is a "device in, upon, or by which any person or property is or may be transported or drawn upon a highway." G.S. 20-4.01(49). The obligation to register a mobile home can be terminated by filing with the DMV form MVR-46G, an affidavit that the home now satisfies the real property requirements found in G.S. 105-273(13).

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the land as well as attachment, garnishment, and levy remedies against the responsible tax-payer's personal property. The responsible taxpayer for taxes on real property is the owner as of the delinquency date, which is January 6 of the fiscal year for which the taxes are levied, plus all subsequent owners.⁶

If the mobile home is properly classified as personal property, the tax collector will be limited to remedies against the responsible taxpayer's personal property. The responsible taxpayer for taxes on personal property is the owner of record on the listing date, which is the previous January 1.7 If that listing taxpayer also owned real property in the taxing unit, then the tax collector could pursue foreclosure on that real property.8

For example, assume that Billy Blue Devil owns a manufactured home that sits on land owned by Suze Seahawk. The home must be listed as personal property in Billy's name and the taxes on the home will not be a lien on Suze's land. The tax collector could not pursue any collection remedies against Suze if the taxes on Billy's home become delinquent. Instead, the tax collector could pursue remedies against Billy's personal property such as a wage garnishment, a bank account attachment, or the seizure and sale of the mobile home or Billy's car. If Billy owned real property elsewhere in the county, the taxes on Billy's manufactured home would be a lien on that property and the tax collector could initiate a foreclosure action against it.

Assume Billy sells the mobile home to Suze in February 2011, when the 2010 taxes on the home are delinquent. Can the tax collector now proceed against Suze's property to collect the delinquent 2010 taxes on the mobile home? No. Billy remains the only responsible taxpayer for the 2010 taxes because he was the listing taxpayer. Billy will also be responsible for the 2011 taxes on the home, because as of January 1, 2011, the home was still properly classified as personal property and Billy was the listing owner. The home will finally be listed in Suze's name for 2012 taxes, assuming she still owns it as of January 1, 2012, when it should be listed as real property if it satisfies the three other requirements. If the 2012 taxes remain unpaid on January 6, 2013, while Suze still owns the land, then Suze will be personally responsible for those taxes. But Suze will never be responsible for the taxes from prior years.

3. When is a moving permit required?

To help with tax collection, the Machinery Act requires a person who wishes to move a mobile home to a different property to first obtain a moving permit from the tax collector. If the mobile home is moved to a different site on the same property, no permit is required. But if the mobile home is moved to any other property, even property owned by the same taxpayer, a permit is required.

Manufacturers and retailers of mobile homes are exempt from the permit requirement, except when they are repossessing a previously sold home. (Repossession is discussed in more detail in Question 5.) Thus, when a newly purchased mobile home is moved by the retailer to the buyer's property, no moving permit is required. Also exempt from the moving permit requirement are licensed carriers, the trucking companies that actually transport the homes. Although

^{6.} G.S. 105-365.1(b)(1). For example, the delinquency date for 2011 real property taxes is January 6, 2012. 7. G.S. 105-365.1(b)(2).

^{8.} Taxes on personal property are a lien on all real property owned by the same taxpayer in the same taxing unit. G.S. 105-355(a).

^{9.} G.S. 105-316.1(a).

not required to obtain permits themselves, these carriers are responsible for ensuring that the owners obtain the required permits and can be subject to criminal penalties if the owners fail to do so.¹⁰

4. What must an applicant do to obtain a moving permit?

An applicant must first do one of three things to obtain a moving permit:

- Pay all property taxes due to be paid by the owner to the county, city, and special districts.
- Provide proof that no taxes are due to be paid.
- Demonstrate that the removal of the mobile home will not jeopardize the collection of any property taxes due or to become due.¹¹

Read literally, the first requirement suggests that the only taxes at issue are those owed by the current owner of the mobile home. But this interpretation could allow buyers of mobile homes to obtain moving permits even if many years of taxes remain outstanding on those homes, clearly not the result intended by the Machinery Act or desired by tax collectors.

For example, assume that in February 2011 Mitch Mountaineer buys a mobile home from Fred Fortyniner. Fred owes 2010 taxes on the mobile home and on his boat. Mitch owns no real property and the only taxable personal property he owns is a car, on which no taxes are outstanding. If Mitch wants to move the mobile home, what taxes, if any, must he pay to obtain the necessary moving permit?

If the moving permit statutes were interpreted to require payment only of taxes owed by the current owner of the mobile home, then Mitch could obtain the permit without paying any additional taxes because, as of the date on which the permit is requested, Mitch is the current owner and owes no taxes. The mobile home is not listed in Mitch's name and will not be listed in his name until 2012, meaning as of February 2011 Fred is the responsible taxpayer for the taxes owed on the mobile home.¹²

Most tax collectors would instead require Mitch to pay both 2010 and 2011 taxes on the mobile home, despite the fact that the home was listed in Fred's name for those years. And many tax collectors would require Mitch also to pay the taxes on Fred's boat, because the statute refers to "all taxes due to be paid" by the (presumably former) owner.

Also subject to varying interpretations is the option of demonstrating that the removal of the mobile home will not "jeopardize" the collection of outstanding property taxes. The statute provides no guidance as to when or how a tax collector can make this determination. Most tax collectors err on the side of caution and very rarely, if ever, conclude that removal of a mobile home creates no risk to tax collection.

After paying the taxes, proving that the taxes have been paid, or demonstrating that the removal will not affect the collection of taxes, the applicant must provide his or her name and address, the addresses from which and to which the mobile home is to be moved, and the name and address of the carrier who will transport the home.¹³

^{10.} G.S. 105-316.1(b).

^{11.} G.S. 105-316.2(a).

^{12.} G.S. 105-365.1(b)(2).

^{13.} G.S. 105-316.2(b).

6 Property Tax Bulletin

5. What are the moving permit requirements when a mobile home is repossessed?

A North Carolina resident taking possession of a mobile home through the enforcement of a lien on that home and planning to move the home to another location in North Carolina can obtain a moving permit without initially paying any taxes. ¹⁴ The repossessing party must notify the tax collector of the intent to move the home when applying for the required permit and within seven days must pay all taxes due on the mobile home itself. The repossessing party is not required to pay any other taxes owed by the mobile home's former owner. If the repossessing party is not a resident of North Carolina, it is subject to the same obligations described in Question 4 and must pay the taxes prior to obtaining a permit. The same applies to North Carolina repossessors who intend to move the mobile home out of state.

6. How can the tax collector enforce the moving permit requirement?

Not very well, unfortunately. The moving permit statutes do not make a party who moves a mobile home without a moving permit personally liable for the taxes owed on the mobile home. Nor do they make a repossessor liable for the unpaid taxes if it fails to pay them within seven days of the move. As a result, tax collectors may not use Machinery Act collection remedies against new owners or repossessors based solely on their failure to obtain a permit. The statutes do provide for criminal misdemeanor liability for parties that fail to satisfy the moving permit requirements, but it is unclear if anyone has ever been prosecuted for a moving permit violation anywhere in the state. Even if a local district attorney were willing to attempt such a prosecution, the penalties are extremely light: the harshest sentence a first-time offender can receive is a ten-day suspended jail sentence and a \$200 fine.

The most frequent violators of the moving permit requirement are mobile home retailers and financing companies that repossess and move homes on which they have liens without providing notice or payment of outstanding taxes. Often these companies do not have offices in the taxing unit, making it extremely difficult for tax collectors to enforce the companies' Machinery Act obligations. Regardless, it is good practice for tax collectors to seek out these companies and remind them of the criminal sanctions they could face for violating the moving permit requirement.

^{14.} G.S. 105-316.4. This exception applies whether the repossessor is acting in reliance on a court order or on the terms of a financing agreement.

^{15.} G.S. 105-316.6 makes it a Class 3 misdemeanor to move a mobile home without a permit.

^{16.} G.S. 15A-1340.23.

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North Carolina Department of Revenue

Beverly Eaves Perdue Governor David W. Hoyle Secretary

December 23, 2011

Memorandum

To: County Assessors

From: David B. Baker, MPA, PPS

Director, Local Government Division

Re: Assessment of Improvements to Leased Property

The property tax treatment of improvements to leased real property has been subject to varying opinions by taxpayers and taxing authorities in North Carolina over the years. This memo is intended to restate and clarify the position of the Property Tax Section of the Local Government Division of the North Carolina Department of Revenue on this issue.

Improvements to leased real property include improvements made by or for a business to real property leased or used by the business. These improvements are almost always used to facilitate the trade or business of the tenant in an occupied space and are most often associated with retail businesses. A determination must be made as to whether these improvements are real property fixtures or personal property fixtures before one can appropriately classify, appraise, and assess this category of property. In order to make this determination, it remains the position of the Property Tax Section that each situation involving these types of improvements must be analyzed independently using a total circumstances test. A total circumstances test involves considering all relevant factors and appropriately weighting the importance of the factors as indicated by the situation under review.

The treatise, 1 James A. Webster, Webster's Real Estate Law in North Carolina: Possessory Estates and Present Interests in Real Property, § 2, at 23-36 (Patrick K. Hetrick & James B. McLaughlin, Jr., eds., 4th ed. 1994) (hereinafter "Webster's") and court decisions provide guidance on the treatment of these types of improvements under North Carolina law. Chapter 2 of Webster's discusses fixtures and provides four criteria that can be used to determine if fixtures have become real property: "(1) Is there an express agreement that the annexed chattel is to be either permanent or temporary? (2) What is the character of the annexation of the chattel to the land – will its severance tear or cause injury to the annexed item or to the realty to which it is attached? (3) What relationship exists between the annexor of the chattel to the land and what relationship exists between the annexor and other claimants – is the annexor's interest in the land a permanent estate since the probability of an intention to annex a chattel permanently to land is in proportion to the permanency of the interest that he claims in the land? and (4)

What is the nature and purpose of the annexation of the chattel to the land – is it for a "trade," "agricultural," "domestic," or "ornamental" purpose?"

(1) Express Agreement: Some leases may expressly state that the improvements become the property of the landlord at termination of the lease or even upon completion of the improvements, but the fact that those improvements are almost always removed before the next tenant occupies the property indicates that the improvements are usually intended to be temporary.

Lease provisions and treatment of property for financial reporting purposes and income tax purposes can change from day to day. Lease provisions, financial reporting practices, and income tax treatment are factors that may be considered when using a total circumstances test, but they should not be given much weight if the actions of the parties indicate a different intention or actual practice.

Additionally, Webster's discussion of the owner's intent states: ""Personal fixtures" retain their character as personalty; "real fixtures" are those items which have become in law so inseparably a part of the land as to be deemed a part of the real property. Again, the key factor in determining whether an item has become a fixture, i.e., a real fixture, is the intent of the owner of that item." The intent of the business in acquiring the assets and putting them in place is for use by the business, and the control of and use of these assets remain with the business (lessee) and not the lessor, regardless of any lease language.

(2) Character of the Annexation: This criteria requires an analysis of the character of the annexation of the improvement: What type of damage to the realty and to the annexed property will result from the removal of the improvements? Retail environments are designed for tenant improvements to be installed and removed on a regular basis, so the damage to the realty is usually negligible or at least expected as part of the business model. The injury caused to the item itself is less important since it is assumed that the next user will not be using the item in most cases (i.e. the damage to the item is irrelevant since it will be removed regardless of the damage caused to the item). The fact that the tenant attached the improvements to the realty in such a way as to accommodate the ability to remove the improvements without significant damage to the realty is also indicative that the improvements did not become real fixtures. However, certain types of improvements, such as structural items or basic construction items such as load-bearing walls, roofs, etc., would likely be considered permanent, regardless of whether installed by the tenant or the landlord.

(3) Relationship of the Annexor: The annexor or tenant has only a temporary interest in the realty. Webster's posits that "... if one has only a temporary interest in the real property, it is reasonably presumable that he does not intend for an attachment to the realty to be more than temporary, to parallel his limited interest in the realty, and thus to remain personalty." The fact that the vast majority of these improvements are removed when the tenant leaves, is a direct and strong argument against a position that the intent was to make the improvements realty. Of course, a county will have to recognize those situations when the improvements are continued to be used by the landlord after the original tenant has left. At that time, it will have to be considered whether the actions of the landlord in continuing to use the improvements have made those improvements real property. But those situations are the exception and not the norm. And certainly there are some types of tenant improvements that should be assumed to be permanently annexed, such as structural items.

(4) Nature and Purpose of Annexation: Webster's discussion of the nature and purpose of chattels annexed to realty includes the following: "...The law allows a tenant who places chattels on leased realty to remove whatever he has affixed to the premises for trade purposes. These chattels are called "trade fixtures" and remain personalty of the tenant." The tenant has paid for the improvements (either directly or indirectly) and the tenant is using the property for trade purposes and is reaping the rewards of that investment. However, continued use of the improvements by the landlord after the tenant has left might be evidence that the improvements have become real property, at that time. Two cases, Railroad v. Deal, 90 N.C. 110 (1884) and Horne v. Smith, 105 N.C. 322, 11 S.E. 373 (1890), support the concept that fixtures installed to promote trade remain personalty of the tenant.

(Note: Whether the improvements are called personal fixtures, "trade fixtures", or just personal property is not important, as long as it is recognized that they are not real property.)

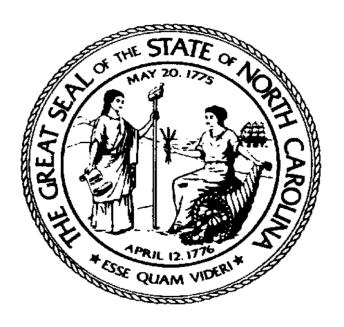
<u>Listing of Property for Taxation</u>: Businesses should list improvements made by or for the business to real property leased or used by the business. The improvements may or may not be intended to remain in place at the end of the lease, but they must still be listed by the business unless it has been determined that the improvements will be appraised as real property by the county in accordance with the county real property schedules of values. If the business owner has questions about what should be listed, they should contact the appropriate county.

<u>Schedules of Values</u>: Counties should develop their real property schedules of values in such a way that everyone involved in the listing and assessment process, as well as the taxpayer, can readily determine which assets are considered real fixtures and assessed as real property and which assets are considered personal fixtures and should be listed by the business owner and assessed as personal property by the county.

<u>Summary</u>: Reinforcing the long-held position of the Property Tax Section, *Webster's* states that, "Any attempt to place an absolute meaning on the term "real fixtures" must be done with the warning that the facts and circumstances of each particular case must be carefully examined. Nevertheless, "real fixtures" generally consist of things, originally chattels personal, which have been annexed to the land, or to things permanently attached to land, by the owner of the chattels or with his assent, and with the intention to make the annexation permanent. All other annexations are "personal fixtures"." These examinations require the use of a total circumstances test to determine the nature of the assets.

Items of personal property that are determined to have become part of the real property based on a "total circumstances test" or similar analysis should be assessed as real property to the owner of the underlying real property. Counties have a duty to develop their real property schedule of values to make sure that they have the ability to assess real fixtures as real property and personal fixtures as personal property.

2017 USE-VALUE MANUAL FOR AGRICULTURAL, HORTICULTURAL AND FOREST LAND



March 2016

North Carolina Use-Value Advisory Board North Carolina Department of Revenue Raleigh, North Carolina

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Foreword

When originally enacted in 1973, the objective of the present-use value program was to keep "the family farm in the hands of the farming family." By the early 1970's, North Carolina had become a prime site for industrial and commercial companies to relocate because of its plentiful and reliable work force. With this growth came other improvements to the State's infrastructure to accommodate this growth, such as new and larger road systems, more residential subdivisions, and new industrial and commercial developments. The land on which to build these improvements came primarily from one source: farmland. As the demand for this land skyrocketed, so did its price as well as its assessed value, as counties changed from a fractional assessment to a market value system. Farmers who owned land near these sites soon could not afford the increase in property values and sought relief from the General Assembly.

In response, the General Assembly passed legislation known as the Present-Use Value program. As originally enacted, the basic tenets of this program were that only individuals who lived on the land for which they were applying could immediately qualify and that the land had to have a highest and best use as agriculture, horticulture or forest land. Land might also have qualified if the farmer owned it for seven years. Passage of this law eased the financial burden of most farmers and eliminated to some degree the "sticker shock" of the new property tax values. From that time until the mid-1980's, the present-use value schedules were based on farmer-to-farmer sales, and quite often the market value schedules were very similar to the present use schedules, especially in the more rural areas.

Virtually every session of the General Assembly has seen new changes to the law, causing a constant rethinking as to how the law is to be administered. The mid-1980's saw several court cases that aided in this transformation. Among the legislative changes that resulted from these cases were the use of soil productivity to determine value, the use of a 9% capitalization rate, and the utilization of the "unit concept" to bring smaller tracts under the present use value guidelines.

Through the years the General Assembly has expanded the present-use value program to include new types of ownership such as business entities, tenants in common, trusts, and testamentary trusts. Legislation also expanded the definition of a relative. More recent legislation has established cash rents as the basis for determining present-use value for agricultural and horticultural land, while retaining the net income basis for determining present-use value for forestland.

This Use-Value Advisory Board Manual is published yearly to communicate the UVAB recommended present-use value rates and to explain the methodology used in establishing the recommended rates.

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USE-VALUE ADVISORY BOARD MANUAL

Following are explanations of the major components of this manual.

I. Cash Rents

Beginning in 1985, the basis for determining present-use value for agricultural land was based on the soil productivity for growing corn and soybeans. At that time, corn and soybeans were considered the predominant crops in the state. Over time, fewer and fewer acres went into the production of corn and soybeans and the land used for these crops tended to be lower quality. As a result, both the productivity and value of these crops plummeted, thus resulting in lower present-use values. A viable alternative was sought to replace corn and soybeans as the basis for present-use value. Following a 1998 study by North Carolina State University, cash rents for agricultural and horticultural land were determined to be the preferred alternative. Cash rents are a very good indicator of net income, which can be converted into a value using an appropriate capitalization rate.

The General Assembly passed legislation that established cash rents as the required method for determining the recommended present-use values for agricultural and horticultural land. The cash rents data from the NCSU study served as the basis for determining present-use value for the 2004-2007 UVAB manuals. However, starting in 2006, funding became available for the North Carolina Department of Agriculture to perform an extensive statewide cash rents survey on a yearly basis. The 2006 survey became the basis for the 2008 UVAB recommended values,

and this process will continue forward until changes dictate otherwise (i.e. the 2007 survey is used to establish the 2009 UVAB values, etc).

Forestland does not lend itself well to cash rents analysis and continues to be valued using the net income from actual production.

II. Soil Types and Soil Classification

The 1985 legislation divided the state using the six Major Land Resource Areas (MLRAs). Five different classes of productive soils and one non-productive soil class for each MLRA were determined. Each class was identified by its net income according to type: agriculture, horticulture and forestry. The net income was then divided by a 9% capitalization rate to determine the present-use value. For 2004 and forward, the following change has taken place. For agricultural and horticultural classifications, the five different soil classes have been reduced to three soil classes and one non-productive soil class. Forestland present-use value has kept the five soil classes and one non-productive soil class. The use of the six MLRAs has been retained.

The six MLRAs are as follows:

MLRA 130 Mountains
MLRA 133A Upper Coastal Plain
MLRA 136 Piedmont
MLRA 137 Sandhills
MLRA 153A Lower Coastal Plains
MLRA 153B Tidewater

The soils are listed in this manual according to the MLRA in which they occur. They are then further broken down into their productivity for each of the three types of use: agriculture, horticulture and forestry. Every soil listed in each of the MLRAs is ranked by its productivity into four classes (with the exception of forestry which retained its previous six classes). The classes for agricultural and horticultural land are as follows:

CLASS I Best Soils
CLASS II Average Soils
CLASS III Fair Soils
CLASS IV Non-Productive Soils

CLASS IV Non-Productive Soils

It should be noted that, in some soil types, all the various slopes of that soil have the same productivity class for each of the usages, and therefore for the sake of brevity, the word "ALL" is listed to combine these soils. Each of the classes set up by the UVAB soils subcommittee corresponds to a cash rent income established by the most recent cash rents survey conducted by the North Carolina Department of Agriculture. This rent income is then capitalized by a rate established each year by the UVAB (see below). The criteria for establishing present-use value for forestry have remained basically unchanged from previous years due to the quantity and quality of information already available.

III. Capitalization Rate

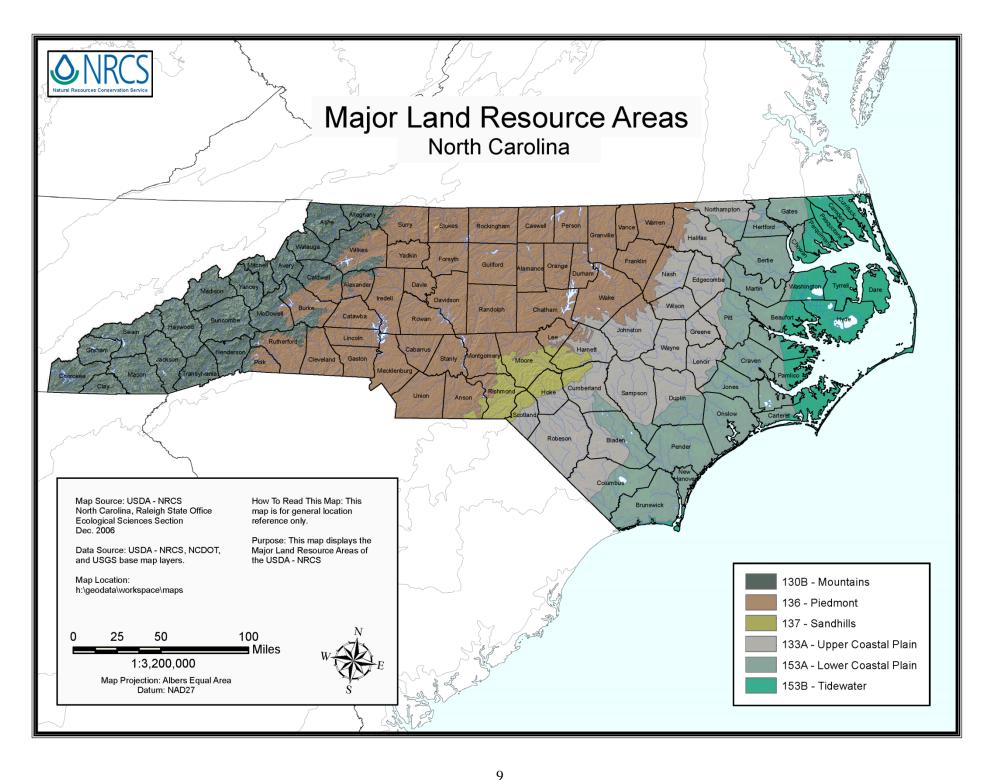
The capitalization rate mandated by the 1985 legislation for all types of present-use value land was 9%. The 1998 study by NCSU strongly indicated that a lower capitalization rate for agricultural and horticultural land was more in line with current sales and rental information. The 2002 legislation mandated a rate between 6%-7% for agricultural and horticultural land.

For the year 2004 and the subsequent years, the UVAB has set the capitalization rate at 6.5% for agricultural and horticultural land.

The capitalization rate for forestland continues to be fixed at 9% as mandated by the statutes.

IV. Other Issues

The value for the best agricultural land can be no higher than \$1,200 an acre for any MLRA.



PRESENT-USE VALUE SCHEDULES

AGRICULTURAL RENTS

MLRA	BEST	AVERAGE	FAIR
130	82.10	49.40	32.30
133A	74.70	53.00	39.70
136	56.20	38.30	24.90
137	61.40	43.00	29.30
153A	70.10	51.00	38.40
153B	94.50	64.30	48.20

AGRICULTURAL SCHEDULE

MLRA	CLASS I	CLASS II	CLASS III
130	\$1,200*	\$760	\$495
133A	\$1,150	\$815	\$610
136	\$865	\$590	\$385
137	\$945	\$660	\$450
153A	\$1,080	\$785	\$590
153B	\$1,200*	\$990	\$740

⁻⁻NOTE: All Class 4 or Non-Productive Land will be appraised at \$40.00 per acre.

⁻⁻Rents were divided by a capitalization rate of 6.5% to produce the Agricultural Schedule.

^{*} As required by statute, agricultural values cannot exceed \$1,200.

HORTICULTURAL SCHEDULE

All horticultural crops requiring more than one growing season between planting or setting out and harvest, such as Christmas trees, ornamental shrubs and nursery stock, apple and peach orchards, grapes, blueberries, strawberries, sod and other similar horticultural crops should be classified as horticulture regardless of location in the state.

HORTICULTURAL RENTS

MLRA	BEST	AVERAGE	FAIR
130	147.00	101.10	66.30
133A	90.10	62.20	47.50
136	81.10	52.80	36.50
137	76.70	51.70	34.30
153A	85.30	52.90	40.40
153B	111.30	84.40	76.70

HORTICULTURAL SCHEDULE

MLRA	CLASS I	CLASS II	CLASS III
130	\$2,260	\$1,555	\$1,020
133A	\$1,385	\$955	\$730
136	\$1,250	\$810	\$560
137	\$1,180	\$795	\$530
153A	\$1,310	\$815	\$620
153B	\$1,710	\$1,300	\$1,180

⁻⁻NOTE: All Class 4 or Non-Productive Land will be appraised at \$40.00 per acre.

⁻⁻Rents were divided by a capitalization rate of 6.5% to produce the Horticultural Schedule.

FORESTLAND NET PRESENT VALUES

MLRA	Class I	Class II	Class III	Class IV	Class V
130	\$22.98	\$17.14	\$4.67	\$3.61	\$3.49
133A	\$23.80	\$18.95	\$15.52	\$5.81	\$3.96
136	\$28.72	\$22.04	\$19.55	\$12.21	\$8.66
137	\$33.15	\$22.04	\$20.99	\$7.47	\$2.69
153A	\$23.80	\$18.95	\$15.52	\$5.81	\$3.96
153B	\$18.45	\$15.47	\$14.90	\$5.81	\$3.97

FORESTLAND SCHEDULE

MLRA	Class I	Class II	Class III	Class IV	Class V
130	\$255	\$190	\$50	\$40	\$40
133A	\$260	\$210	\$170	\$65	\$45
136	\$315	\$245	\$215	\$135	\$95
137	\$365	\$245	\$235	\$85	\$40
153A	\$260	\$210	\$170	\$65	\$45
153B	\$205	\$170	\$165	\$65	\$45

⁻⁻NOTE: All Class VI or Non-Productive Land will be appraised at 40.00/Acre. Exception: For MLRA 130 use 80 % of the lowest valued productive land.

⁻⁻Net Present Values were divided by a capitalization rate of 9.00% to produce the Forestland Schedule.

2009 Cash Rent Study

INTRODUCTION

The National Agricultural Statistics Service in cooperation with the North Carolina Department of Agricultural and Consumer Services collected cash rents data on the 2009 County Estimates Survey. North Carolina farmers were surveyed to obtain cash rent values per acre for three land types: Agricultural, horticultural, and Christmas tree land. Supporting funds for this project were provided by the North Carolina Legislature. Appreciation is expressed to all survey participants who provided the data on which this report is based.

THE SURVEY

The survey was conducted by mail with telephone follow-up during September through February. Values relate to the data collection time period when the respondent completed the survey.

THE DATA

This report includes the current number of responses and average rental rate per acre. Producers were asked to provide their best estimate of cash rent values in their county by land quality. The data published here are simple averages of the best estimate of the cash rent value per acre. These averages are not official estimates of actual sales.

Reported data that did not represent agricultural usage were removed in order to give a more accurate reflection of agricultural rents and values. To ensure respondent confidentiality and provide more statistical reliability, counties and districts with fewer than 10 reports are not published individually, but are included in aggregate totals. Published values in this report should never be used as the only factor to establish rental arrangements.

Data were collected for three land types: Agricultural, horticultural, and Christmas tree land. Agricultural land includes land used to produce row crops such as soybeans, corn, peanuts, and small grains, pasture land, and hay. Agricultural land also includes any land on which livestock are grown. Horticultural land includes commercial production or growing of fruits or vegetables or nursery or floral products such as apple orchards, blueberries, cucumbers, tomatoes, potted plants, flowers, shrubs, sod, and turfgrass. Christmas tree land includes any land to produce Christmas trees, including cut and balled Christmas trees.

2009 Average Cash Rents for Resource Area = 130 Mountains

	Agric	ultural	Agric	ultural	Agricultural		Horticultural		Horticultural		Horticultural		Christmas Trees		Christmas Trees		Christmas Tree	
	н	igh	Med	dium	L	ow	High		Medium		Low		High		Med	dium	l ı	.ow
	Drode	uctivity	Drodu	ctivity	Drod	uctivity	Drod	uctivity	Productivity		Productivity		Productivity		Productivity		Productivity	
	FIOU	activity	FIOUU	Cuvity	FIOU	uctivity	FIOU	activity	FIOU	Cuvity	FIOU	activity	FIOU	uctivity	FIOU	L	Froudcuvity	
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
ALLEGHANY	22	89.80		55.50														
ASHE	17	76.50	15	43.50	15	28.30							12	162.50				
AVERY																		
BUNCOMBE	37	100.70	31	53.90	27	33.80												
BURKE	25	55.20	22	33.20	19													
CALDWELL	13				10													
CHEROKEE	16	88.10	11	48.60	10	29.50												
CLAY	15	68.70	14	39.10	13	25.20												
GRAHAM																		
HAYWOOD	41	117.90			29													
HENDERSON	24	83.50	18	57.60	18	36.90												
JACKSON																		
MACDOWELL																		
MACON	11	73.20																
MADISON	26	116.50	22	63.20	23	40.50												
MITCHELL																		
POLK																		
SWAIN	, in the second	·		·														·
TRANSYLVANIA	14			·						·			11	181.36				
WATAUGA	27				14													·
WILKES	79				59													
YANCEY	17	117.90			13													
AREA TOTAL	422	82.10	349	49.40	317	32.30	78	147.00	47	101.10	41	66.30	69	153.60	47	93.60	38	61.30

2009 Average Cash Rents for Resource Area = 133A Upper Coastal Plain

	Agric	cultural	Agric	Agricultural		Agricultural		Horticultural		Horticultural		Horticultural		nas Trees			Christmas Tree	
	Н	ligh	Med	dium	L	ow	Н	igh	Med	lium	L	ow	н	igh	Med	dium	L	.ow
	Prod	uctivity	Produ	ıctivity	Prod	uctivity	Productivity		Productivity		Productivity		Productivity		Productivity		Prod	luctivity
	1100	douviey	Productivity		1100	activity	1100	l	1100	iourity	1100	activity	1100	donviey	11000	I	1100	douvily
																1		1 1
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	1	No. of	1 1
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
BLADEN	36			49.20	25													
COLUMBUS	77																	ldot
CUMBERLAND	36				25													
DUPLIN	142																	
EDGECOMBE	36																	
GREENE	61				36													
HALIFAX	28																	
HARNETT	58																	
JOHNSTON	103			49.90	63		13	93.90	10	53.00								
LENOIR	60																	
NASH	51																	
NORTHAMPTON	23		17															
ROBESON	53				28													
SAMPSON	128			56.40	87	41.80	10	95.00										
SCOTLAND	10																	
WAYNE	96			62.30	65													
WILSON	40				27				,	·						·		
AREA TOTAL	1038	74.70	819	53.00	655	39.70	61	90.10	46	62.20	35	47.50						

2009 Average Cash Rents for Resource Area = 136 Piedmont

	Agricu	ıltural	Agricultural		Agricultural		Horticultural		Horticultural		Horticultural		Christmas Trees		Christn	nas Trees	Christmas Trees	
	Hi	gh	Med	lium	L	ow	Н	igh	Me	dium	Low		High		Medium		l t	_ow
	Produ	ctivity	Produ	ctivity	Prod	uctivity	Produ	uctivity	Productivity		Productivity		Productivity		Productivity		Prod	luctivity
l 1	11044	ourity	11044	ourney	1100	activity	1 Todasaniej		1.00000000		1 Toddodviej		Fiductivity		Productivity		- Todasaria	
_	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
ALAMANCE	63	52.30	51	32.90	50	20.70			-									
ALEXANDER ANSON	35 35	49.10 50.10	28 31	33.40 41.30	29 25	20.00 28.40												
BURKE	25	55.20	22	33.20	19	26.60												
CABARRUS	20	42.20	16	37.80	13	23.90												
CALDWELL	13	35.40	11	23.50	10	16.70												
CASWELL	54	49.90	41	30.90	44	19.20												
CATAWBA	32	39.20	29	28.60	31	19.20												
CHATHAM	47	48.80	48	34.70	37	23.10												
CLEVELAND	44	36.50	39	29.20	34	21.20												
DAVIDSON	50	45.60	43	32.90	40	21.40												
DAVIE	38	60.70	27	39.30	24	21.30												
DURHAM	15	36.50	12	27.50	13	21.50												
FORSYTH FRANKLIN	26 41	63.60 59.20	16 38	48.80 37.10	18 35	23.30 21.90												
GASTON	17	33.50	15	27.30	15	18.80			-				-				_	
GRANVILLE	58	53.00	45	31.60	43	17.80												
GUILFORD	46	41.20	39	27.00	34	17.60												
HALIFAX	28	83.30	18	64.20	14	42.10												
IREDELL	52	53.90	49	43.40	43	27.90												
JOHNSTON	103	71.90	84	49.90	63	33.40	13	93.90	10	53.00								
LEE	25	72.40	20	45.40	16	33.10												
LINCOLN	16	35.60	14	21.80	12	15.60												
MECKLENBURG	11	61.40																
MONTGOMERY	16	41.60	16	39.10	14	20.00												<u> </u>
MOORE	37 51	56.50	33 39	37.30 52.70	25	23.90			<u> </u>									
NASH ORANGE	31	77.80 37.60	26	31.80	31 25	43.10 19.40			-			-		-				
PERSON	38	60.70	26	40.60	22	23.30												
POLK	36	00.70	20	+0.00	22	25.50			-				 					\vdash
RANDOLPH	96	48.20	81	33.80	73	21.90												
RICHMOND	21	32.60	15	23.30	18													
ROCKINGHAM	55	55.10	41	30.30	40	16.60												
ROWAN	47	48.80	36	34.70	33	23.50												
RUTHERFORD	21	37.40	16	27.60	14													
STANLY	34	52.50	30	40.30	29	27.90												
STOKES	54	74.20	39	47.10	34	28.10												<u> </u>
SURRY	73	83.00	57	53.90	53	35.30												
UNION	55	66.30	50	47.80	40	40.30 17.20			<u> </u>				<u> </u>					——
VANCE WAKE	32 55	55.00 61.20	22 46	29.30 36.20	23 39	17.20 26.20												₩
WARREN	24	40.90	15	36.∠0 25.30	20	∠6.∠0 17.80			-				-	-			 	
WILKES	79	57.30	71	39.30	59	27.00			-				-				 	\vdash
YADKIN	79	67.00	60	47.80	58	31.50							 					
AREA TOTAL	1798	56.20	1468	38.30	1324	24.90	125	81.10	101	52.80	89	36.50	46	77.90	43	52.90	41	35.00

2009 Average Cash Rents for Resource Area = 137 Sandhills

	Agric	ultural	Agric	ultural	Agric	Agricultural		Horticultural		Horticultural		Horticultural		as Trees	Christmas Trees		Christmas Trees	
	н	igh	Med	dium	L	ow	н	igh	Medium		Low		High		Medium		L	ow
	Produ	uctivity	Produ	ctivity	Prod	Productivity		uctivity	Produ	uctivity	Prod	uctivity	Prod	uctivity	Productivity		Prod	uctivity
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
HARNETT	58	74.50	52	51.70	39	36.40												
HOKE	17	56.50	11	45.00	11	29.10												
LEE	25	72.40	20	45.40	16	33.10												
MOORE	37	56.50	33	37.30	25	23.90												
RICHMOND	21	32.60	15	23.30	18	19.30												
SCOTLAND	10	44.50																
AREA TOTAL	168					29.30	*	76.70	*	51.70	*	34.30						

An * indicates the data is published even though there are less than 10 reports.

2009 Average Cash Rents for Resource Area = 153A Lower Coastal Plain

	Agric	ultural	Agric	ultural	Agricultural		Horticultural		Horticultural		Horticultural		Christmas Trees		Christmas Trees		Christmas Tree	
	H	igh	Med	dium	L	ow	High		Medium		Low		Н	igh	Med	lium	L	.ow
	Prod	uctivity	Produ	ctivity	Prod	uctivity	Produ	uctivity	Produ	uctivity	Productivity		Productivity		Productivity		Prod	uctivity
															111111111111			
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
0						A									l			
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
BEAUFORT	30 41			52.00 60.10	21 21	37.10 44.50												
BERTIE BLADEN	36				25							 						
BRUNSWICK	23													-			-	
CARTERET	23	44.40	13	36.00	13	30.00								-				
CHOWAN	20	87.00	13	58.90	12	51.70											 	
COLUMBUS	77											 						
CRAVEN	32																-	1
DUPLIN	142				90									1				
EDGECOMBE	36																	
GATES	13																i e	
HERTFORD	15			49.60														
JONES	25			49.80	20	41.30												
MARTIN	46	80.70	33	53.20	29	40.50								ì				
NEW HANOVER																		
ONSLOW	34	55.40	24	42.80	23	34.80												
PAMLICO	13	70.40	13	51.20	13	36.50												
PENDER	24			45.50														
PITT	45					40.50												
WASHINGTON	12					·	, and the second							·				
AREA TOTAL	672	70.10	525	51.00	442	38.40	30	85.30	19	52.90	13	40.40		·				

2009 Average Cash Rents for Resource Area = 153B Tidewater

	Agricultural High Productivity		High Medium		Agricultural Low Productivity		Horticultural High Productivity		Horticultural Medium Productivity		Horticultural Low Productivity		Christmas Trees High Productivity		Christmas Trees Medium Productivity		Christmas Trees Low Productivity	
																		l I
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
County	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average	reports	Average
BEAUFORT	30	83.70	23	52.00	21	37.10										Ť		
CAMDEN																		
CARTERET																		
CHOWAN	20			58.40	12	51.70												
CURRITUCK	10	88.00																
DARE																		
HYDE																		
PAMLICO	13	70.40	13															
PASQUOTANK	19		11	73.20				·										
PERQUIMANS	24	101.90	21	78.10	18	58.90	·											
TYRRELL	10	109.50	·															
WASHINGTON	12						·											
AREA TOTAL	163					48.20	12	111.30	*	84.40	*	76.70				·		·

An * indicates the data is published even though there are less than 10 reports.

2009 Average Cash Rents - State Total																		
	Agricultural		Agricultural		Agricultural		Horticultural		Horticultural		Horticultural		Christmas Trees		Christmas Trees		Christmas Trees	
	High		Medium		Low		High		Medium		Low		High		Medium		Low	
	Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity		Productivity	
	No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of		No. of	
County	reports	Average	reports		reports	Average	reports	Average	reports	Average		Average	reports	Average	reports	Average		Average
STATE TOTAL	3431	66.90	2743	45.60	2414	31.50	254	103.20	184	67.70	155	46.90	114	121.50	93	75.30	80	49.40

Christmas Tree Guidelines

This information replaces a previous memorandum issued by our office dated December 12, 1989. The 1989 General Assembly enacted an "<u>in-lieu of income</u>" provision allowing land previously qualified as horticulture to continue to receive benefits of the present-use value program when the crop being produced changed from any horticultural product to Christmas trees. It also directed the Department of Revenue to establish a separate <u>gross income</u> requirement different from the \$1,000 gross income requirement for horticultural land, when the crop being grown was evergreens intended for use as Christmas trees. N.C.G.S. 105-289(a)(6) directs the Department of Revenue:

"To establish requirements for horticultural land, used to produce evergreens intended for use as Christmas trees, in lieu of a gross income requirement until evergreens are harvested from the land, and to establish a gross income requirement for this type of horticultural land, that differs from the income requirement for other horticultural land, when evergreens are harvested from the land."

It should be noted that horticultural land used to produce evergreens intended for use as Christmas trees is the only use allowed benefit of the present-use value program without first having met a gross income requirement. The trade-off for this exception is a different gross income requirement in recognition of the potential for greater income than would normally be associated with other horticultural or agricultural commodities.

While the majority of Christmas tree production occurs in the western mountain counties (MLRA 130), surveys as far back as 1996 indicate that there are approximately 135 Christmas tree operations in non-mountain counties (MLRAs 136, 137, 133A, 153A & 153B). They include such counties in the piedmont and coastal plain as Craven, Halifax, Robeson, Wake, and Warren. For this reason we have prepared separate <u>in-lieu of income requirements</u> and gross income requirements for these two areas of the State. The different requirements recognize the difference in species, growing practices, markets, and resulting gross income potential.

After consulting with cooperative extension agents, the regional Christmas tree/horticultural specialist at the Western North Carolina Experimental Research Station, and various landowners/growers, we have determined the standards in the following attachments to be reasonable guidelines for compliance with G.S. 105-289(a)(6). Please note these requirements are subject to the whims of weather and other conditions that can have a significant impact. The combined effect of recent hurricanes, spring freezes, and ice storms across some parts of the State should be taken into consideration when appropriate within each county. As with other aspects of the present-use value program, owners of Christmas tree land should not be held accountable for conditions such as adverse weather or disease outbreak beyond their control.

We encourage every county to contact their local Cooperative Extension Service Office to obtain the appropriate local data and expertise to support particular situations in each county.

I. Gross Income Requirement for Christmas Trees

For MLRA 130, the gross income requirement for horticultural land used to grow evergreens intended for use as Christmas trees is \$2,000 per acre.

For all other MLRAs, the gross income requirement for horticultural land used to grow evergreens intended for use as Christmas trees is \$1,500 per acre.

II. In-Lieu of Income Requirement

MLRA 130 - Mountains

The <u>in-lieu of income requirement</u> is for acreage in production but not yet undergoing harvest, and will be determined by sound management practices, best evidenced by the following:

- 1. Sites prepared by controlling problem weeds and saplings, taking soil samples, and applying fertilizer and/or lime as appropriate.
- 2. Generally, a 5' x 5' spacing producing approximately 1,750 potential trees per acre. Spacing must allow for adequate air movement around the trees. (There is very little 4' x 4' or 4.5' x 4.5' spacing. Some experimentation has occurred with 5' x 6' spacing, primarily aimed at producing a 6' tree in 5 years. All of the preceding examples should be acceptable.)
- 3. A program for insect and weed control.
- 4. Generally, an eight-to-ten year setting to harvest cycle. (Most leases are for 10 years, which allows for a replanting of non-established or dying seedlings up through the second year.)

The gross income requirement for acres undergoing Christmas tree harvest in the mountain region of North Carolina (MLRA 130) is \$2,000 per acre. Once Christmas trees are harvested from specific acreage, the requirement for those harvested acres will revert to the in-lieu of income requirement.

As an example, if the total amount of acres devoted to Christmas tree production is six acres, three of which are undergoing harvest and three of which have yet to reach maturity, the gross income requirement would be \$6,000.

MLRA 136 – Piedmont, MLRA 137 – Sandhills, MLRA 133A – Upper Coastal Plain, MLRA 153A – Lower Coastal Plain, and MLRA 153B – Tidewater.

The <u>in-lieu of income requirement</u> is for acreage in production but not yet undergoing harvest, and will be determined by sound management practices, best evidenced by the following:

- 1. Sites prepared by controlling problem weeds and saplings, taking soil samples, and applying fertilizer and/or lime as appropriate.
- 2. Generally, a 7' x 7' spacing producing approximately 900 potential trees per acre. Spacing must allow for adequate air movement around the trees. (There may be variations in the spacing dependent on the species being grown, most likely Virginia Pine, White Pine, Eastern Red Cedar, and Leyland Cypress. All reasonable spacing practices should be acceptable.)
- 3. A program for insect and weed control.
- 4. Generally a five-to-six year setting to harvest cycle. (Due to the species being grown, soil conditions and growing practices, most operations are capable of producing trees for market in the five-to-six year range. However, the combined effect of adverse weather and disease outbreak may force greater replanting of damaged trees thereby lengthening the current cycle beyond that considered typical.)

The gross income requirement for acres undergoing Christmas tree harvest in the non-mountain regions of North Carolina (MLRAs 136, 137, 133A, 153A, and 153B) is \$1,500 per acre. Once Christmas trees are harvested from specific acreage, the requirement for those harvested acres will revert to the in-lieu of income requirement.

As an example, if the total amount of acres devoted to Christmas tree production is six acres, three of which are undergoing harvest and three of which have yet to reach maturity, the gross income requirement would be \$4,500.

Procedure for Forestry Schedules

The charge to the Forestry Group is to develop five net income per-acre ranges for each MLRA based on the ability of the soils to produce timber income. The task is confounded by variable species and stand type; management level, costs and opportunities; markets and stumpage prices; topographies; and landowner objectives across North Carolina.

In an attempt to develop realistic net income per acre in each MLRA, the Forestry Group considered the following items by area:

- 1. soil productivity and indicator tree species (or stand type);
- 2. average stand establishment and annual management costs;
- 3. average rotation length and timber yield; and
- 4. average timber stumpage prices.

Having selected the appropriate combinations above, the harvest value (gross income) from a managed rotation on a given soil productivity level can be calculated, netted of costs and amortized to arrive at the net income per acre per year soil expectation value. The ensuing discussion introduces users of this manual to the procedure, literature and software citations and decisions leading to the five forest land classes for each MLRA. Column numbers beside subheadings refer to columns in the Forestry Net Present Values Table.

<u>Soil Productivity/Indicator Species Selection (Col. 1).</u> Soil productivity in forestry is measured by site index (SI). Site index is the height to which trees of a given species will grow on a given soil/site over a designed period of time (usually 50 or 25 years, depending on species, site or age

of site table). The Forestry Group identified key indicator species (or stand types) for each MLRA and then assigned site index ranges for the indicator species that captured the management opportunities for that region. The site index ranges became the productivity class basis for further calculations of timber yield and generally can be correlated to Natural Resource Conservation Service (NRCS) cubic foot per acre productivity classes for most stand types. By MLRA, the following site index ranges and species/stand types cover the overwhelming majority of soils/sites and management opportunities.

MLRA 153A, 153B, 137, 136, 133A:

Species/Stand Type SI Range (50 yr. basi

Loblolly pine 86-104 Loblolly pine 66-85 Loblolly pine 60-65

Mixed hardwoods Mixed species and site indices on coves, river

bottoms, bottomlands

Pond and/or longleaf pine 50-55

Upland hardwoods (MLRA 136) 40-68 (Upland oak)

MLRA 130:

Species/Stand Type	SI Range (50 yr. basis)

White pine 70-89
White pine 55-69

Shortleaf/mixed hardwoods Mixed species/sites (SI 42-58 shortleaf)

Bottomland/cove hardwoods Mixed species/site indices on coves and bottoms

Upland oak ridges 40-68

The site index ranges above, in most cases, can be correlated to individual soil series (and series' phases) according to NRCS cubic foot per acre productivity classes. An exception will be the cove, bottomland, riverbottom, and other hardwood sites where topographic position must also

be considered. The Soils Group is responsible for assigning soil series to the appropriate class for agriculture, horticulture and forestry.

Stand Establishment and Annual Management Costs (Columns 2 and 3). Stand establishment costs include site preparation and tree planting costs. Costs vary from \$0 to over \$200 per acre depending on soils, species, and management objectives. No cost would be incurred for natural regeneration (as practiced for hardwoods) with costs increasing as pine plantations are intensively managed on highly productive sites. The second column in the Forestry Net Present Values Table contains average establishment costs for the past ten years as reported by the N.C. Forest Service for site classes in each MLRA.

Annual management may include costs of pine release, timber stand improvement activities, prescribed burning, boundary line maintenance, consultant fees and other contractual services. Cost may vary from \$0 on typical floodplain or bottomland stands to as high as \$6 per acre per year on intensively managed pine plantations. Annual management costs in Forestry Net Present Values Table are the best estimates under average stand management regimes by site class.

Rotation Length and Timber Yields (Columns 4, 5, 6). Sawtimber rotations are recommended on all sites in North Carolina. This decision is based on the market situation throughout the state, particularly the scarce markets for low quality and small-diameter pine and hardwood, which normally would be used for pulpwood. Timber thinnings are not available to most woodlot managers and, therefore, rotations are assumed to proceed unthinned until the optimum economic product mix is achieved.

Timber yields are based on the most current yield models developed at the N.C. State University School of Forest Resources for loblolly pine. (Hafley, Smith, and Buford, 1982) and natural hardwood stands (Gardner et al. 1982). White pine yields, mountain mixed stand yields, and upland oak yields are derived from U.S. Forest Service yield models developed by Vimmerstedt (1962) and McClure and Knight. Longleaf and pond pine yields are from Schumacher and Coile (1960).

<u>Timber Stumpage Prices (Columns 7 and 8)</u>. Cost of forestry operations are derived from the past five year regional data (provided by the NC DFR). For timber, stumpage prices (prices paid for standing timber to landowners) are derived over the same 5-year period from regional Forest2Market reports, a timber price reporting system.

<u>Harvest Values (Column 9</u>). Multiplication of timber yields (columns 5 and 6) times the respective timber stumpage prices (columns 7 and 8) gives the gross harvest value of one rotation.

Annualized Net Present Value (NPV) (Column 10). Harvest values (column 9) are discounted to present value at a 4 percent discount rate, which is consistent with rates used and documented by the U.S. Forest Service, forestry industry and forestry economists. This rate approximates the long-term measures of the opportunity cost of capital in the private sector of the U.S. economy (Row et al. 1981; Gunter and Haney, 1984). The respective establishment costs and the present value of annual management costs are subtracted from the present value of the income to obtain

the net present value of the timber stand. This is then amortized over the life of the rotation to arrive at the annualized net present value (or annual net income) figure.

Forestry Net Present Values

Indicator Species or Stand Types, Lengths of Rotation, Costs, Yields, Price and Annualized Net Present Value per Acre of Land by Site Index Ranges in Each Major Land Resource Area, North Carolina.

(1) Species/Stand Type	(2) Est. Cost	(3) Mgmt. Cost	(4) Rot. Lgth.	(5) Yield	(6) Yield	(7) Price /mbf	(8) Price /cd	(9) Harvest Value	(10) Annualized NPV
MLRAs 153A and 133A	(\$)	(\$)	(yrs)	(MBF)	(cds)	(\$)	(\$)	(\$)	(\$)
Mixed hardwoodsa	0	0	50	11.5	44	201	13.2	2892	18.95
Loblolly pine (86-104)	359	3	30	12	14.4	191	26.4	2667	23.8
Loblolly pine (66-85)	246	2	30	7	16.8	191	26.4	1781	15.52
Loblolly pine (60-65)	126	1	40	4.8	12.7	191	26.4	1252	5.81
Pond pine (50-55)	51	0.5	50	2.7	20	191	26.4	1044	3.96
Longleaf pine (50-55)	51	0.5	50	3.2	8	191	26.4	821	3.23
MLRA 153B									
Mixed hardwoodsa	0	0	50	8.43	44	201	13.2	2275	14.9
Loblolly pine (86-104)	451.5	3	30	12	14.4	191	26.4	2667	18.45
Loblolly pine (66-85)	246	2	30	7	16.8	191	26.4	1778	15.47
Loblolly pine (60-65)	126	1	40	4.8	12.7	191	26.4	1252	5.81
Pond pine (low site)	51	0.5	50	2.7	20	192	26.4	1045	3.97
MLRA 137									
Mixed hardwoodsa	0	0	50	11.9	46	214	17.8	3365	22.04
Loblolly pine (86-104)	249	3	30	12	15.6	207	22.5	2835	33.15
Loblolly pine (66-85)	128.2	2	30	6.4	16.9	207	22.5	1705	20.99
Loblolly pine (60-65)	50	1	50	7.2	7	207	22.5	1648	7.47
Longleaf pine (50-55)	50	0.5	50	3.2	8	207	22.5	842	2.69

(1) Species/Stand Type	(2) Est. Cost	(3) Mgmt. Cost	(4) Rot. Lgth.	(5) Yield	(6) Yield	(7) Price /mbf	(8) Price /cd	(9) Harvest Value	(10) Annualized NPV
MLRA 136	(\$)	(\$)	(yrs)	(MBF)	(cds)	(\$)	(\$)	(\$)	(\$)
Mixed hardwoodsa Loblolly pine (86-104) Loblolly pine (66-85) Loblolly pine (60-65) Upland hardwoods	0 249 128.2 55 0	0 3 2 0.5 0	50 30 30 40 50	11.9 11.5 6.4 4.1 6.05	46 15.6 16.9 15 32	214 194 194 194 214	17.8 22.5 22.5 22.5 17.8	3365 2587 1624 1135 1864	22.04 28.72 19.55 8.66 12.21
MLRA 130									
Mixed hardwoodsa White pine (70-89) White pine (55-69) Shortleaf/mixed hwd. Upland oak ridge (40-68)	0 254 163.4 0 0	0 2 1 0	50 30 35 60 70	10.95 17.8 8.5 6 5.32	0 0 0 0	239 125 125 143 239	19 16.8 16.8 16.8 16.8	2617 2225 1063 858 1271	17.14 22.98 4.67 3.61 3.49

Map Unit Name	Agri	For	Hort
Alluvial land, wet	ΙV	II	IV
Arents, loamy	IV	II	IV
Arkaqua loam, 0 to 2 percent slopes, frequently flooded	IV	II	IV
Arkaqua loam, 0 to 2 percent slopes, occasionally flooded	II	III	II
Arkaqua loam, 0 to 2 percent slopes, rarely flooded	II	III	II
Ashe and Edneyville soils, 6 to 15 percent slopes	IV	I	III
Ashe and Edneyville soils, 15 to 25 percent slopes	IV	I	III
Ashe and Edneyville soils, 25 to 45 percent slopes	IV	I	IV
Ashe fine sandy loam, 6 to 15 percent slopes	IV	III	III
Ashe fine sandy loam, 10 to 25 percent slopes	IV	III	III
Ashe fine sandy loam, 15 to 25 percent slopes	IV	III	III
Ashe fine sandy loam, 25 to 45 percent slopes	IV	III	IV
Ashe gravelly fine sandy loam, 25 to 65 percent slopes	IV	III	IV
Ashe stony fine sandy loam, ALL	IV	III	IV
Ashe stony sandy loam, ALL	IV	III	IV
Ashe-Chestnut-Buladean complex, very stony, ALL	IV	III	IV
Ashe-Cleveland complex, stony, ALL	IV	IV	IV
Ashe-Cleveland-Rock outcrop complex, ALL	IV	IV	IV
Ashe-Rock outcrop complex, 15 to 70 percent slopes	IV	VI	IV
Augusta fine sandy loam, cool variant, 1 to 4 percent slopes (Delanco)	II	I	II
Balsam, ALL	IV	VI	IV
Balsam-Rubble land complex, windswept, ALL	IV	VI	IV
Balsam-Tanasee complex, extremely bouldery, ALL	IV	VI	IV
Bandana sandy loam, 0 to 3 percent slopes, occasionally flooded	II	II	II
Bandana-Ostin complex, 0 to 3 percent slopes, occasionally flooded	III	II	III
Biltmore, ALL	IV	II	IV
Braddock and Hayesville clay loams, eroded, ALL	III	I	III
Braddock clay loam, 2 to 6 percent slopes, eroded	II	I	III
Braddock clay loam, 2 to 8 percent slopes, eroded	II	I	III
Braddock clay loam, 6 to 15 percent slopes, eroded	II	I	III
Braddock clay loam, 8 to 15 percent slopes, eroded	II	I	III
Braddock clay loam, eroded, ALL OTHER	IV	I	III
Braddock clay loam, 15 to 30 percent slopes, eroded, stony	IV	I	IV
Braddock fine sandy loam, 15 to 30 percent slopes	III	I	III
Braddock gravelly loam, 2 to 8 percent slopes	I	I	I
Braddock gravelly loam, 8 to 15 percent slopes	II	I	I
Braddock loam, 2 to 8 percent slopes	I	I	I
Braddock loam, 8 to 15 percent slopes	II	I	I
Braddock-Urban land complex, ALL	IV	I	IV
Bradson gravelly loam, ALL	II	I	I
Brandywine stony soils, ALL	IV	IV	IV
Brasstown-Junaluska complex, 8 to 15 percent slopes	III	IV	III
Brasstown-Junaluska complex, 15 to 30 percent slopes	IV	IV	III
Brasstown-Junaluska complex, ALL OTHER	IV	IV	IV
Brevard fine sandy loam, 1 to 6 percent slopes, rarely flooded	I	I	I
Brevard loam, 2 to 6 percent slopes	I	I	I
Brevard loam, 6 to 10 percent slopes	II	I	I
Brevard loam, 7 to 15 percent slopes	II	I	I
Brevard loam, 10 to 25 percent slopes	IV	I	I
Brevard loam, 15 to 25 percent slopes	IV	I	I
Brevard loam, 25 to 45 percent slopes	IV	I	II
Brevard sandy loam, 8 to 15 percent slopes	II	I	I

Map Unit Name	Agri	For	Hort
Brevard-Greenlee complex, extremely bouldery, ALL	IV	I	IV
Buladean-Chestnut complex, 15 to 30 percent slopes, stony	IV	I	III
Buladean-Chestnut complex, stony, ALL OTHER	IV	I	IV
Burton stony loam, ALL	IV	V	IV
Burton-Craggey complex, windswept, ALL	IV	VI	IV
Burton-Craggey-Rock outcrop complex, windswept, ALL	IV	VI	IV
Burton-Wayah complex, windswept, ALL	IV	VI	IV
Cashiers fine sandy loam, 2 to 8 percent slopes	II	I	I
Cashiers fine sandy loam, 8 to 15 percent slopes	II	I	II
Cashiers fine sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Cashiers fine sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Cashiers fine sandy loam, 50 to 95 percent slopes, stony	IV	I	IV
Cashiers gravelly fine sandy loam, 8 to 15 percent slopes	II	I	II
Cashiers gravelly fine sandy loam, 15 to 30 percent slopes	IV	I	II
Cashiers gravelly fine sandy loam, 15 to 50 percent slopes	IV	I	III
Cashiers gravelly fine sandy loam, 50 to 95 percent slopes	IV	I	IV
Cashiers sandy loam, 8 to 15 percent slopes, stony	II	I	II
Cashiers sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Cashiers sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Cashiers sandy loam, 50 to 50 percent slopes, stony Cashiers sandy loam, 50 to 95 percent slopes, stony	IV	I	IV
	IV	VI	IV
Cataska-Rock outcrop complex, 30 to 95 percent slopes			
Cataska-Sylco complex, 50 to 95 percent slopes	IV	VI	IV
Chandler and Fannin soils, 25 to 45 percent slopes	IV	I	IV
Chandler gravelly fine sandy loam, 8 to 15 percent slopes	IV	III	II
Chandler gravelly fine sandy loam, 15 to 30 percent slopes	IV	III	II
Chandler gravelly fine sandy loam, 30 to 50 percent slopes	IV	III	III
Chandler gravelly fine sandy loam, ALL OTHER	IV	III	IV
Chandler gravelly fine sandy loam, windswept, ALL	IV	VI	IV
Chandler loam, 2 to 8 percent slopes	III	III	II
Chandler loam, 8 to 15 percent slopes	IV	III	II
Chandler loam, 15 to 25 percent slopes	IV	III	III
Chandler loam, 25 to 65 percent slopes	IV	III	IV
Chandler silt loam, 10 to 25 percent slopes	IV	III	II
Chandler silt loam, 25 to 45 percent slopes	IV	III	III
Chandler stony loam, 45 to 70 percent slopes	IV	III	IV
Chandler stony silt loam, ALL	IV	III	IV
Chandler-Micaville complex, 8 to 15 percent slopes	IV	III	II
Chandler-Micaville complex, 15 to 30 percent slopes, stony	IV	III	II
Chandler-Micaville complex, 30 to 50 percent slopes, stony	IV	III	III
Chandler-Micaville complex, 50 to 95 percent slopes, stony	IV	III	IV
Cheoah channery loam, ALL	IV	I	IV
Cheoah channery loam, stony, ALL	IV	I	IV
Cheoah channery loam, windswept, stony	IV	VI	IV
Chester clay loam, 15 to 45 percent slopes, eroded (Evard)	IV	I	III
Chester fine sandy loam, 6 to 15 percent slopes (Evard)	II	I	I
Chester fine sandy loam, 15 to 25 percent slopes (Evard)	II	I	III
Chester fine sandy loam, 25 to 45 percent slopes (Evard)	IV	I	III
Chester loam, 2 to 6 percent slopes	II	I	I
Chester loam, 6 to 10 percent slopes	III	I	I
Chester loam, 10 to 25 percent slopes	IV	I	II
Chester loam, 25 to 45 percent slopes	IV	I	III
Chester stony loam, 10 to 15 percent slopes (Evard)	III	I	III

Map Unit Name	Agri	For	Hort
Chester stony loam, (Evard), ALL OTHER	IV	I	IV
Chestnut and Edneyville soils, 15 to 25 percent slopes	IV	I	II
Chestnut and Edneyville soils, 25 to 50 percent slopes	IV	I	III
Chestnut gravelly loam, 50 to 80 percent slopes	IV	III	IV
Chestnut-Ashe complex, ALL	IV	III	IV
Chestnut-Buladean complex, 8 to 15 percent slopes, rocky	III	III	III
Chestnut-Buladean complex, stony, ALL	IV	III	IV
Chestnut-Cleveland-Rock outcrop complex, windswept, ALL	IV	VI	IV
Chestnut-Edneyville complex, 8 to 25 percent slopes, stony	IV	III	III
Chestnut-Edneyville complex, 25 to 60 percent slopes, stony	IV	III	IV
Chestnut-Edneyville complex, windswept, stony, ALL	IV	VI	IV
Chestoa-Ditney-Rock outcrop complex, 30 to 95 percent slopes, very	IV	VI	IV
bouldery			
Cleveland-Chestnut-Rock outcrop complex, windswept, ALL	IV	VI	IV
Cleveland-Rock outcrop complex, 8 to 90 percent slopes	IV	VI	IV
Cliffield-Cowee complex, 15 to 30 percent slopes, very stony	IV	V	IV
Cliffield-Fairview complex, 15 to 25 percent slopes	IV	V	IV
Cliffield-Pigeonroost complex, very stony, ALL	IV	V	IV
Cliffield-Rhodhiss complex, 25 to 60 percent slopes, very stony	IV	V	IV
Cliffield-Rock outcrop complex, 50 to 95 percent slopes	IV	VI	IV
Cliffield-Woolwine complex, 8 to 15 percent slopes	IV	V	IV
Clifton (Evard) stony loam, ALL	IV	I	IV
Clifton clay loam, 8 to 15 percent slopes, eroded	III	I	III
Clifton clay loam, 15 to 30 percent slopes, eroded	IV	I	III
Clifton clay loam, 30 to 50 percent slopes, eroded	IV	I	IIII
Clifton loam, 2 to 8 percent slopes	II	I	I
Clifton loam, 6 to 10 percent slopes	II	I	I
Clifton loam, 8 to 15 percent slopes	II	I	II
Clifton loam, 10 to 25 percent slopes	IV	I	II
Clifton loam, 15 to 25 percent slopes	IV	I	II
Clifton loam, 25 to 45 percent slopes	IV	I	III
Clifton stony loam, 15 to 45 percent slopes	IV	I	IV
Clingman-Craggey-Rock outcrop complex, windswept, 15 to 95 percent	IV	VI	IV
slopes, extremely bouldery			
Codorus, ALL	II	II	III
Colvard, ALL	I	II	III
Comus, ALL	I	II	III
Cowee gravelly loam, stony, ALL	IV	V	IV
Cowee-Evard-Urban land complex, 15 to 30 percent slopes	IV	III	IV
Cowee-Saluda complex, stony, ALL	IV	V	IV
Craggey-Rock outcrop complex, 40 to 90 percent slopes	IV	VI	IV
Craggey-Rock outcrop-Clingman complex, windswept, rubbly, ALL	IV	VI	IV
Crossnore-Jeffrey complex, very stony, ALL	IV	I	IV
Cullasaja cobbly fine sandy loam, 8 to 30 percent slopes, very bouldery	IV	II	IV
Cullasaja cobbly loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly fine sandy loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly loam, extremely bouldery, ALL	IV	II	IV
Cullasaja very cobbly sandy loam, extremely bouldery, ALL	IV	II	IV
Cullasaja-Tuckasegee complex, 8 to 15 percent slopes, stony	IV	II	II
Cullasaja-Tuckasegee complex, 15 to 30 percent slopes, stony	IV	II	II
Cullasaja-Tuckasegee complex, 30 to 50 percent slopes, stony	IV	II	III
Cullasaja-Tuckasegee complex, 50 to 90 percent slopes, stony	IV	II	IV
Cullasaja-Tuckasegee complex, 50 to 95 percent slopes, stony	IV	II	IV
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Cullasaja-Tusquitee complex, 10 to 45 percent slopes IV II III Cullowhee fine sandy loam, 0 to 2 percent slopes, occasionally flooded II II II IV II IV IV I	Map Unit Name	Agri	For	Hort
Cullowhee, fine sandy loam, 0 to 2 percent slopes, occasionally flooded II	•	_		
Cullowhee, Frequently flooded, ALL IV II IV Cullowhee-Nikwasi complex, 0 to 2 percent slopes, frequently flooded IV II IV Delanco (Dillard) loam, ALL I I I Delanco fine sandy loam, 2 to 6 percent slopes II I I I Delanco fine sandy loam, 2 to 6 percent slopes II I I I I Delanco fine sandy loam, 0 to 5 percent slopes, frequently flooded IV II II II Dellwood, occasionally flooded, ALL III III III Dellwood, occasionally flooded, ALL III III III Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded IV II II III Dellwood-Urban land complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL I I III I		II	II	II
Cullowhee-Nikwasi complex, 0 to 2 percent slopes, frequently flooded		IV	II	IV
Delanco (Dillard) Joam, ALL I I I Delanco fine sandy loam, 2 to 6 percent slopes II I I Dellwood gravelly fine sandy loam, 0 to 5 percent slopes, frequently flooded IV II IV Dellwood, occasionally flooded, ALL III III III III III Dellwood, occasionally flooded, ALL III III III III III Dellwood-Orban land complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL II I III III III Dellwood-Orban land complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL I I I I I I I III IIII III		IV	II	IV
Delanco fine sandy loam, 2 to 6 percent slopes		I	I	I
Dellwood gravelly fine sandy loam, 0 to 5 percent slopes, frequently flooded IV Dellwood, occasionally flooded, ALL III III III Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded III III III Dellwood-Urban land complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL I I I III		II	I	I
Dellwood, occasionally flooded, ALL III III III Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded IV II III III III Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL I I I III III Dillsboro clay loam, 2 to 8 percent slopes I I I I III Dillsboro clay loam, 8 to 15 percent slopes, rarely flooded II I II III Dillsboro clay loam, 8 to 15 percent slopes, stony III I II III Dillsboro clay loam, 15 to 30 percent slopes, stony IV I II Dillsboro clay loam, 15 to 30 percent slopes I I I I II Dillsboro clay loam, 15 to 30 percent slopes I I I I II Dillsboro clay loam, 8 to 15 percent slopes I I I I II Dillsboro loam, 2 to 8 percent slopes I I I I II III Dillsboro clay loam, 8 to 15 percent slopes IV I IV Dillsboro loam, 2 to 8 percent slopes IV I IV Dillsboro-Urban land complex, 2 to 15 percent slopes IV I IV Dillsboro-Urban land complex, 2 to 15 percent slopes IV I IV Dillsboro-Urban land complex, 30 to 50 percent slopes, very rocky IV VI IV Dillsboro-Urban land complex, 30 to 50 percent slopes, very rocky IV VI IV Dillsboro-Urban land complex, 30 to 50 percent slopes IV I III Edneytown-Chestnut complex, 30 to 50 percent slopes, stony IV I III Edneytown-Chestnut complex, 30 to 50 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony IV I III Edneytille (Edneytown) fine sandy loam, 7 to 15 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I IV Edneyville-Chestnut complex, 30 to 50 percent slopes, stony IV I III Edneyvill		IV	II	IV
Dellwood-Reddies complex, 0 to 3 percent slopes, occasionally flooded III III Dellwood-Urban land complex, 0 to 3 percent slopes, occasionally flooded IV II IV Dillard, ALL I I I I I I I I I		III	II	III
Dellwood-Urban land complex, 0 to 3 percent slopes, occasionally flooded IV	•	III	II	III
Dillard, ALL I I I I I I I I I	1 1 1 V		II	IV
Dillsboro clay loam, 8 to 15 percent slopes, stony III	Dillard, ALL	I	I	I
Dillsboro clay loam, 8 to 15 percent slopes, stony III	·		I	I
Dillsboro clay loam, 8 to 15 percent slopes, stony III I III Dillsboro clay loam, 15 to 30 percent slopes, stony IV I III Dillsboro loam, 2 to 8 percent slopes I I I I III Dillsboro loam, 2 to 8 percent slopes II I I III Dillsboro loam, 8 to 15 percent slopes III I III Dillsboro-Urban land complex, 2 to 15 percent slopes III I III Dillsboro-Urban land complex, 2 to 15 percent slopes IV I IV Ditney-Unicoi complex, very stony, ALL Ditney-Unicoi complex, 50 to 95 percent slopes, very rocky IV VI IV Ditney-Unicoi complex, 50 to 95 percent slopes, very rocky IV VI IV Edneytown-Gravelly sandy loam, 8 to 25 percent slopes IV I III Edneytown-Chestnut complex, 30 to 50 percent slopes, stony IV I IV Edneytown-Chestnut complex, 50 to 80 percent slopes, stony IV I IV Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony III I III Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I IV Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony IV I IV Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes III I III Edneyville (Edneytown) fine sandy loam, 15 to 25 percent slopes III I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I IV Edneyville loam, 25 to 45 percent slopes IV I III Edneyville-Chestnut complex, 2 to 8 percent slopes, stony III III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut complex, 9 percent slopes,		II	I	II
Dillsboro clay loam, 15 to 30 percent slopes, stony IV I III Dillsboro loam, 2 to 8 percent slopes I I I I III Dillsboro loam, 8 to 15 percent slopes II I I III Dillsboro-Urban land complex, 2 to 15 percent slopes IIV I IV Ditney-Unicoi complex, very stony, ALL Ditney-Unicoi complex, 90 to 95 percent slopes, very rocky Ditney-Unicoi complex, 50 to 95 percent slopes, very rocky Ditney-Unicoi-Rock outcrop complex, ALL Edneytown gravelly sandy loam, 8 to 25 percent slopes IV I IV Edneytown-Chestnut complex, 30 to 50 percent slopes, stony IV I IV Edneytown-Chestnut complex, 50 to 80 percent slopes, stony IV I IV Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I IV Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I IV Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony IV I III Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony IV I IV Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I IV Edneyville loam, 15 to 25 percent slopes IV I IV Edneyville sony loam, 45 to 70 percent slopes IV I III Edneyville-Chestnut complex, 2 to 8 percent slopes, stony IV I III Edneyville-Chestnut complex, 2 to 8 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut-Urban land complex, ALL IV I IV Edneyville-Chestnut-Urban land complex, ALL IV I IV Edneyville-Chestnut-Urban land complex, ALL IV I IV Edneyville-Chestnut-Urban land complex, eroded IV I III Edneyville-Chestnut-Urban land complex, ALL III III Elijay silty clay loam, 8 to 15 percent slopes, eroded IV I IV Evard and Saluda fine sa	T T T		I	II
Dillsboro loam, 2 to 8 percent slopes II I I I I Dillsboro loam, 8 to 15 percent slopes III I I II I III Dillsboro-Urban land complex, 2 to 15 percent slopes IV I IV Ditney-Unicoi complex, very stony, ALL Ditney-Unicoi complex, 50 to 95 percent slopes, very rocky Ditney-Unicoi-Rock outcrop complex, ALL Ditney-Unicoi-Rock outcrop complex, ALL Edneytown-Grestnut complex, 30 to 50 percent slopes Edneytown-Chestnut complex, 30 to 50 percent slopes, stony Edneytown-Chestnut complex, 50 to 80 percent slopes, stony Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony Edneytown-Pigeonroost complex, 8 to 15 percent slopes, stony Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony III III Edneytown-Pigeonroost complex, 30 to 50 percent slopes, stony Edneyville (Edneytown) fine sandy loam, 7 to 15 percent slopes III III Edneyville (Edneytown) fine sandy loam, 15 to 25 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I IV Edneyville (Edneytown) fine sandy loam, 25 to 45 percent slopes IV I III Edneyville loam, 25 to 45 percent slopes IV I III Edneyville-Chestnut complex, 2 to 8 percent slopes, stony Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I III Edneyville-Chestnut complex, 8 to 15 percent slopes, stony IV I III Edneyville-Chestnut complex, 15 to 30 percent slopes, stony IV I IV Edneyville-Chestnut complex, ALL OTHER IV I IV Edneyville-Chestnut complex, ALL OTHER IV I IV Edneyville-Che		IV	I	II
Dillsboro loam, 8 to 15 percent slopes				
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Map Unit Name	Agri	For	Hort
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Hayesville fine sandy loam, 8 to 15 percent slopes	III	I	I
Hayesville fine sandy loam, 15 to 25 percent slopes	III	I	II
Hayesville fine sandy loam, 15 to 30 percent slopes	III	I	II
Hayesville fine sandy loam, 25 to 50 percent slopes	IV	I	III
Hayesville loam, 2 to 7 percent slopes	П	I	I
Hayesville loam, 2 to 8 percent slopes	II	I	I
Hayesville loam, 6 to 10 percent slopes	II	I	I
Hayesville loam, 6 to 15 percent slopes	III	I	I
Hayesville loam, 7 to 15 percent slopes	III	I	I
Hayesville loam, 8 to 15 percent slopes	III	I	I
Hayesville loam, 10 to 25 percent slopes	III	I	II
Hayesville loam, 15 to 25 percent slopes	III	I	II
Hayesville loam, 15 to 30 percent slopes	III	I	II
Hayesville sandy clay loam, 15 to 30 percent slopes, eroded	IV	I	III
Hayesville sandy clay loam, 15 to 50 percent stopes, croded Hayesville sandy clay loam, eroded, ALL OTHER	III	I	II
Hayesville-Evard complex, 15 to 25 percent slopes	III	I	II
Hayesville-Evard-Urban land complex, 15 to 25 percent slopes	IV	I	IV
· · · · · · · · · · · · · · · · · · ·	II		II
Hayesville-Sauratown complex, 2 to 8 percent slopes		I	
Hayesville-Sauratown complex, 8 to 15 percent slopes	III	I	II
Hayesville-Sauratown complex, 15 to 25 percent slopes	III	I	III
Hayesville-Sauratown complex, 25 to 60 percent slopes	IV	I	III
Hayesville-Urban land complex, ALL	IV	I	IV
Haywood stony loam, 15 to 25 percent slopes	IV	I	III
Haywood stony loam, 25 to 50 percent slopes	IV	I	IV
Hemphill, rarely flooded, ALL	IV	II	IV
Humaquepts, loamy, 2 to 8 percent slopes, stony	IV	II	IV
Huntdale clay loam, 8 to 15 percent slopes, stony	III	I	II
Huntdale clay loam, 15 to 30 percent slopes, stony	IV	I	II
Huntdale clay loam, 30 to 50 percent slopes, stony	IV	I	III
Huntdale silty clay loam, 15 to 30 percent slopes, stony	IV	I	II
Huntdale silty clay loam, 30 to 50 percent slopes, very stony	IV	I	III
Huntdale silty clay loam, 50 to 95 percent slopes, very stony	IV	I	IV
Iotla sandy loam, 0 to 2 percent slopes, occasionally flooded	II	II	III
Junaluska-Brasstown complex, 6 to 25 percent slopes	IV	IV	II
Junaluska-Brasstown complex, 15 to 30 percent slopes	IV	IV	III
Junaluska-Brasstown complex, 25 to 60 percent slopes	IV	IV	III
Junaluska-Brasstown complex, 30 to 50 percent slopes	IV	IV	IV
Junaluska-Tsali complex, ALL	IV	IV	IV
Keener-Lostcove complex, 15 to 30 percent slopes, very stony	IV	I	III
Keener-Lostcove complex, 30 to 50 percent slopes, very stony	IV	I	IV
Kinkora loam	IV	I	III
Lonon loam, 2 to 8 percent slopes	I	I	I
Lonon loam, 8 to 15 percent slopes	II	I	I
Lonon loam, 15 to 30 percent slopes	IV	I	II
Lonon-Northcove complex, 6 to 15 percent slopes	IV	I	III
Maymead fine sandy loam, ALL	IV	I	II
Maymead-Greenlee-Potomac complex, 3 to 25 percent slopes	IV	I	IV
Nikwasi, ALL	IV	II	IV
Northcove very cobbly loam, ALL	IV	Ι	IV
Northcove-Maymead complex, extremely stony, ALL			
Oconaluftee channery loam, ALL	IV	I	IV

Ocondustree channery loam, windswept, ALL	Map Unit Name	Agri	For	Hort
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Rock outcrop-Craggey complex, windswept, ALL Rosman, frequently flooded, ALL Rosman, ALL OTHER Rosman-Reddies complex, 0 to 3 percent slopes, occasionally flooded I II I Saunook gravelly loam, 2 to 8 percent slopes Saunook gravelly loam, 8 to 15 percent slopes I I I Saunook gravelly loam, 8 to 15 percent slopes I I I II I I	1		VI	
Rosman, frequently flooded, ALL Rosman, ALL OTHER I II I Rosman-Reddies complex, 0 to 3 percent slopes, occasionally flooded I II I Saunook gravelly loam, 2 to 8 percent slopes I I I Saunook gravelly loam, 8 to 15 percent slopes I I I Saunook gravelly loam, 8 to 15 percent slopes I I I II II II II II II II II	Rock outcrop-Cleveland complex, windswept, ALL	IV	VI	IV
Rosman, ALL OTHERIIIIRosman-Reddies complex, 0 to 3 percent slopes, occasionally floodedIIIISaunook gravelly loam, 2 to 8 percent slopesIIISaunook gravelly loam, 8 to 15 percent slopesIIISaunook gravelly loam, 8 to 15 percent slopes, stonyIIIII	1 00 1 1		VI	
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Saunook gravelly loam, 2 to 8 percent slopesIIISaunook gravelly loam, 8 to 15 percent slopesIIISaunook gravelly loam, 8 to 15 percent slopes, stonyIIIII	·	I	II	I
Saunook gravelly loam, 8 to 15 percent slopes I I I Saunook gravelly loam, 8 to 15 percent slopes, stony II I II		I	II	I
Saunook gravelly loam, 8 to 15 percent slopes, stony II I II	Saunook gravelly loam, 2 to 8 percent slopes	I	I	I
	Saunook gravelly loam, 8 to 15 percent slopes		I	I
Saunook gravelly loam, 15 to 30 percent slopes IV I II	Saunook gravelly loam, 8 to 15 percent slopes, stony		I	II
	Saunook gravelly loam, 15 to 30 percent slopes	IV	I	II

Map Unit Name	Agri	For	Hort
Saunook gravelly loam, 15 to 30 percent slopes, stony	IV	I	II
Saunook gravelly loam, 30 to 50 percent slopes, stony	IV	I	III
Saunook loam, 2 to 8 percent slopes	I	I	I
Saunook loam, 8 to 15 percent slopes	I	I	I
Saunook loam, 8 to 15 percent slopes, stony	II	I	II
Saunook loam, 15 to 30 percent slopes, stony	IV	I	II
Saunook loam, 15 to 30 percent slopes, very stony	IV	I	III
Saunook loam, 30 to 50 percent slopes, very stony	IV	I	IV
Saunook sandy loam, 2 to 8 percent slopes	I	I	I
Saunook sandy loam, 8 to 15 percent slopes, stony	II	I	II
Saunook salty loam, 8 to 15 percent slopes, story Saunook silt loam, 2 to 8 percent slopes	I	I	I
Saunook silt loam, 8 to 15 percent slopes	II	I	II
	IV	I	
Saunook-Nikwasi complex, 2 to 15 percent slopes	IV		III
Saunook-Thunder complex, ALL		I	III
Saunook-Urban land complex, 2 to 15 percent slopes	IV	I	IV
Sauratown channery fine sandy loam, 8 to 15 percent slopes	IV	V	III
Sauratown channery fine sandy loam, 8 to 15 percent slopes, very stony	IV	V	III
Sauratown channery fine sandy loam, ALL OTHER	IV	V	IV
Soco-Cataska-Rock outcrop complex, 50 to 95 percent slopes	IV	VI	IV
Soco-Ditney complex, 6 to 25 percent slopes, stony	IV	III	III
Soco-Ditney complex, 8 to 15 percent slopes, very stony	IV	III	III
Soco-Ditney complex, 15 to 30 percent slopes, very stony	IV	III	III
Soco-Ditney complex, ALL OTHER	IV	III	IV
Soco-Stecoah complex, 8 to 15 percent slopes, stony	IV	III	II
Soco-Stecoah complex, 15 to 30 percent slopes	IV	III	III
Soco-Stecoah complex, 15 to 30 percent slopes, stony	IV	III	III
Soco-Stecoah complex, ALL OTHER	IV	III	IV
Soco-Stecoah complex, windswept, 30 to 50 percent slopes	IV	VI	IV
Spivey cobbly loam, extremely bouldery, ALL	IV	I	IV
Spivey stony loam, 10 to 40 percent slopes	IV	I	IV
Spivey-Santeetlah complex, 8 to 15 percent slopes, stony	IV	I	III
Spivey-Santeetlah complex, 15 to 30 percent slopes, stony	IV	I	III
Spivey-Santeetlah complex, stony, ALL OTHER	IV	I	IV
Spivey-Whiteoak complex, ALL	IV	I	IV
Statler, rarely flooded, ALL	I	I	I
Stecoah-Soco complex, 15 to 30 percent slopes, stony	IV	I	III
Stecoah-Soco complex, 30 to 50 percent slopes, stony	IV	I	III
Stecoah-Soco complex, 50 to 80 percent slopes, stony	IV	I	IV
Stony colluvial land	IV	II	IV
Stony land	IV	VI	IV
Stony steep land	IV	VI	IV
Suncook loamy sand, ALL	IV	II	II
Sylco-Cataska complex, ALL	IV	IV	IV
Sylco-Rock outcrop complex, 50 to 95 percent slopes	IV	IV	IV
Sylco-Soco complex, 10 to 30 percent slopes, stony	IV	IV	IV
Sylva-Whiteside complex, ALL	IV	I	II
Talladega, ALL	IV	IV	IV
Tanasee-Balsam complex, ALL	IV	VI	IV
* :			
Tate fine sandy loam, 2 to 6 percent slopes	I	I	I
Tate fine sandy loam, 2 to 7 percent slopes	I	I	I
Tate fine sandy loam, 2 to 8 percent slopes	I	I	I
Tate fine sandy loam, 2 to 8 percent slopes, very stony	IV	I	II

Map Unit Name	Agri	For	Hort
Tate fine sandy loam, 6 to 15 percent slopes	II	I	I
Tate fine sandy loam, 7 to 15 percent slopes	II	I	I
Tate fine sandy loam, 8 to 15 percent slopes	II	I	I
Tate fine sandy loam, 8 to 25 percent slopes	IV	I	II
Tate fine sandy loam, 15 to 25 percent slopes	IV	I	II
Tate gravelly loam, 8 to 15 percent slopes	II	I	I
Tate gravelly loam, 8 to 15 percent slopes, stony	II	I	II
Tate gravelly loam, 15 to 30 percent slopes, stony	IV	I	II
Tate loam, 2 to 6 percent slopes	I	I	I
Tate loam, 2 to 8 percent slopes	I	I	I
Tate loam, 6 to 10 percent slopes	II	I	I
Tate loam, 6 to 15 percent slopes	II	I	I
Tate loam, 8 to 15 percent slopes	II	I	I
Tate loam, 10 to 15 percent slopes	II	I	I
Tate loam, 15 to 25 percent slopes	IV	I	II
Tate loam, 15 to 30 percent slopes	IV	I	II
Tate-Cullowhee complex, 0 to 25 percent slopes	IV	I	II
Tate-French complex, 2 to 10 percent slopes	II	I	II
Tate-Greenlee complex, ALL	IV	I	IV
Thunder-Saunook complex, ALL	IV	II	IV
Toecane-Tusquitee complex, ALL	IV	II	III
Toxaway, ALL	IV	II	IV
Transylvania silt loam	I	II	II
•			
Trimont gravelly loam, ALL	IV IV	I	IV
Tuckasegee-Cullasaja complex, 8 to 15 percent slopes, stony	IV	II	III
Tuckasegee-Cullasaja complex, 15 to 30 percent slopes, very stony		II	IV
Tuckasegee-Cullasaja complex, 30 to 50 percent slopes, extremely stony	IV	II	IV
Tuckasegee-Whiteside complex, 2 to 8 percent slopes	I	II	I
Tuckasegee-Whiteside complex, 8 to 15 percent slopes	II	II	I
Tusquitee and Spivey stony soils, ALL	IV	I	IV
Tusquitee loam, 6 to 10 percent slopes	I	I	I
Tusquitee loam, 6 to 15 percent slopes	II	I	I
Tusquitee loam, 7 to 15 percent slopes	II	I	I
Tusquitee loam, 8 to 15 percent slopes	II	I	I
Tusquitee loam, 10 to 15 percent slopes	II	I	I
Tusquitee loam, 15 to 25 percent slopes	IV	I	II
Tusquitee stony loam, 25 to 45 percent slopes	IV	I	IV
Tusquitee stony loam, ALL OTHER	IV	I	III
Udifluvents, frequently flooded, ALL	IV	II	IV
Udorthents, loamy, ALL	IV	V	IV
Udorthents-Pits complex, mounded, 0 to 2 percent slopes, occasionally	IV	V	IV
flooded			
Udorthents-Urban land complex, ALL	IV	V	IV
Unaka-Porters complex, very rocky, ALL	IV	V	IV
Unaka-Rock outcrop complex, 50 to 95 percent slopes, very bouldery	IV	VI	IV
Unicoi-Rock outcrop complex, 30 to 95 percent slopes, extremely bouldery	IV	V	IV
Unison fine sandy loam, 2 to 8 percent slopes	I	I	I
Unison fine sandy loam, 8 to 15 percent slopes	II	I	I
Unison fine sandy loam, 15 to 25 percent slopes	IV	I	II
Unison loam, 2 to 8 percent slopes	I	I	I
Unison loam, 8 to 15 percent slopes	II	I	I
Unison loam, 15 to 30 percent slopes	IV	I	II
Urban land	IV	VI	II

Map Unit Name	Agri	For	Hort
Watauga loam, 6 to 10 percent slopes	III	I	II
Watauga loam, 6 to 15 percent slopes	III	I	II
Watauga loam, 8 to 15 percent slopes	III	I	II
Watauga loam, ALL OTHER	IV	I	III
Watauga sandy loam, 8 to 15 percent slopes, stony	III	I	II
Watauga sandy loam, 15 to 30 percent slopes, stony	IV	I	II
Watauga sandy loam, 30 to 50 percent slopes, stony	IV	I	III
Watauga stony loam, 15 to 45 percent slopes	IV	I	IV
Wayah loam, windswept, eroded, stony, ALL	IV	VI	IV
Wayah sandy loam, stony, ALL	IV	V	IV
Wayah sandy loam, windswept, stony, ALL	IV	VI	IV
Wayah-Burton complex, 15 to 30 percent slopes, bouldery	IV	V	IV
Wayah-Burton complex, 30 to 50 percent slopes, bouldery	IV	V	IV
Wayah-Burton complex, 50 to 95 percent slopes, very rocky	IV	V	IV
Wayah-Burton complex, windswept, ALL	IV	V	IV
Whiteoak cobbly loam, 8 to 15 percent slopes, stony	II	I	II
Whiteoak cobbly loam, 15 to 30 percent slopes, stony	IV	I	III
Whiteoak fine sandy loam, 2 to 8 percent slopes	I	I	I
Whiteoak fine sandy loam, 8 to 15 percent slopes, stony	II	I	II
Whiteoak fine sandy loam, 15 to 30 percent slopes, very stony	IV	I	III
Whiteside-Tuckasegee complex, 2 to 8 percent slopes	I	I	I

Map Unit Name	Agri	For	Hort
Alluvial land, wet	III	III	III
Alpin, ALL	IV	II	IV
Altavista. ALL	I	I	I
Altavista-Urban land complex, 0 to 3 percent slopes, rarely flooded	IV	I	IV
Augusta, ALL	I	I	I
Autryville loamy sand, ALL	III	II	III
Autryville, ALL OTHER	IV	II	IV
Autryville-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Aycock very fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Aycock, ALL OTHER	I	II	I
Ballahack fine sandy loam	I	I	I
Barclay very fine sandy loam	I	I	I
Bethera loam, 0 to 1 percent slopes	II	I	II
Bibb and Johnston soils, frequently flooded	IV	III	IV
Bibb, ALL	IV	III	IV
Blaney, ALL	IV		IV
Blanton, ALL	IV	II V	IV
		II	
Bojac loamy fine sand, 0 to 3 percent slopes	III		III
Bonneau loamy fine sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 6 to 12 percent slopes	III	II	III
Bonneau sand, 0 to 3 percent slopes	II	II	II
Butters fine sand, 0 to 2 percent slopes	II	II	II
Butters loamy sand, 0 to 2 percent slopes	II	II	II
Byars loam	II	I	II
Candor sand, 1 to 8 percent slopes	IV	V	IV
Candor sand, 8 to 15 percent slopes	IV	V	IV
Cape Fear loam	I	I	I
Caroline sandy loam, 0 to 2 percent slopes	II	II	II
Caroline sandy loam, 2 to 6 percent slopes	II	II	II
Centenary sand	IV	II	IV
Chastain and Bibb soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Chastain silt loam, frequently flooded	IV	III	IV
Chewacla and Chastain soils, frequently flooded	IV	III	IV
Chewacla and Congaree loams, frequently flooded	III	III	III
Chewacla and Wehadkee soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Chewacla loam	II	III	II
Chewacla loam, 0 to 1 percent slopes, occasionally flooded	II	III	II
Chewacla loam, frequently flooded	IV	III	IV
Chewacla silt loam	II	III	II
Chipley loamy sand (Pactolus)	IV	II	IV
Chipley sand, 0 to 2 percent slopes	IV	II	IV
Conetoe loamy sand, ALL	III	II	III
Congaree silt loam	I	III	I
Congaree silt loam, frequently flooded	I	III	I
Cowarts loamy sand, 2 to 6 percent slopes	II	I	II
Cowarts loamy sand, 6 to 10 percent slopes	III	I	III
Cowarts sandy loam, 6 to 12 percent slopes, eroded	IV	I	IV
Coxville loam	II	I	II
Coxville sandy loam	II	I	II
Craven fine sandy loam, 0 to 1 percent slopes	II	I	II
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Map Unit Name	Agri	For	Hort
Craven fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven fine sandy loam, 4 to 10 percent slopes	III	I	III
Craven loam, 1 to 4 percent slopes	II	I	II
Craven sandy clay loam, 1 to 4 percent slopes, eroded	II	I	II
Craven sandy loam, 2 to 6 percent slopes, eroded	II	I	II
Craven sandy loam, 2 to 6 percent slopes, eroded (Gritney)	II	I	II
Craven sandy loam, 6 to 10 percent slopes, eroded (Gritney)	III	I	III
Craven-Urban land complex, 0 to 4 percent slopes	IV	I	IV
Croatan muck	I	V	I
Deloss loam	I	III	I
Dogue, ALL	II	I	II
Dothan loamy sand, 2 to 6 percent slopes	II	I	II
Dothan, ALL OTHER	I	I	I
Dragston loamy sand	I	III	I
Dunbar, ALL	II	I	II
Duplin, ALL	II	I	II
Duplin-Urban land complex, 0 to 5 percent slopes	IV	I	IV
Dystrochrepts, steep	IV	II	IV
Emporia, ALL	II	II	II
Emporia-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Emporia-Wedowee complex, 2 to 6 percent slopes	II	II	II
Eustis, ALL	IV	II	IV
Exum, ALL	I	II	I
Faceville fine sandy loam, ALL	II	II	II
Faceville loamy sand, 6 to 10 percent slopes, eroded	IV	II	IV
Faceville loamy sand, ALL OTHER	II	II	II
Faceville sandy loam, 0 to 2 percent slopes	II	II	II
Faceville sandy loam, 2 to 6 percent slopes	II	II	II
Faceville sandy loam, 2 to 6 percent slopes, eroded	III	II	III
Faceville sandy loam, 6 to 10 percent slopes, eroded	IV	II	IV
Faceville-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Foreston loamy sand, ALL	II	II	II
Fuquay, ALL	IV	II	IV
Gilead loamy sand, 0 to 2 percent slopes	III	II	III
Gilead loamy sand, 10 to 15 percent slopes	IV	II	IV
Gilead loamy sand, 2 to 6 percent slopes	IV	II	IV
Gilead loamy sand, 2 to 6 percent slopes, eroded	III	II	III
Gilead loamy sand, 6 to 10 percent slopes	IV	II	IV
Gilead loamy sand, 6 to 10 percent slopes, eroded	IV	II	IV
Gilead sandy loam, 2 to 8 percent slopes	III	II	III
Gilead sandy loam, 8 to 15 percent slopes	IV	II	IV
Goldsboro, ALL	I	I	I
Goldsboro-Urban land complex, ALL	IV	I	IV
Grantham, ALL	I	I	I
Grantham-Urban land complex	IV	I	IV
Grifton-Meggett complex, occasionally flooded	IV	I	IV
Gritney fine sandy loam, 2 to 6 percent slopes	II	II	II
Gritney fine sandy loam, 2 to 7 percent slopes	II	II	II
Gritney fine sandy loam, 4 to 8 percent slopes	III	II	III
Gritney fine sandy loam, 5 to 12 percent slopes, eroded	IV	II	IV
Gritney fine sandy loam, 6 to 10 percent slopes	III	II	III
Gritney fine sandy loam, 7 to 15 percent slopes	IV	II	IV
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Map Unit Name	Agri	For	Hort
Gritney fine sandy loam, 10 to 15 percent slopes	IV	II	IV
Gritney loamy fine sand, 2 to 7 percent slopes	II	II	II
Gritney sandy clay loam, ALL	III	II	III
Gritney sandy loam, 2 to 5 percent slopes, eroded	III	II	III
Gritney sandy loam, 2 to 6 percent slopes	II	II	II
Gritney sandy loam, 5 to 12 percent slopes, eroded	IV	II	IV
Gritney sandy loam, 6 to 10 percent slopes	III	II	III
Gritney-Urban land complex, 2 to 12 percent slopes	IV	II	IV
Hoffman loamy sand, 6 to 10 percent slopes, eroded (Gilead)	IV	II	IV
Hoffman loamy sand, 10 to 20 percent slopes (Gilead)	III	II	III
Johns, ALL	III	I	II
Johnston, ALL	IV	III	IV
	II	II	II
Kalmia loamy sand, 0 to 2 percent slopes Kalmia loamy sand, 0 to 3 percent slopes	II	II	II
Kalmia loamy sand, 0 to 3 percent stopes Kalmia loamy sand, 2 to 6 percent slopes			
	II	II	II
Kalmia loamy sand, 10 to 15 percent slopes	III	II	III
Kalmia loamy sand, 15 to 25 percent slopes	IV	II	IV
Kenansville, ALL	III	II	III
Kinston, ALL	IV	III	IV
Kureb sand, 1 to 8 percent slopes	IV	V	IV
Lakeland, ALL	IV	V	IV
Leaf loam	III	I	III
Lenoir loam	III	I	III
Leon sand, ALL	IV	V	IV
Liddell very fine sandy loam	I	I	I
Lillington-Turbeville complex, 8 to 15 percent slopes	III	II	III
Lucy loamy sand	II	II	II
Lumbee, ALL	II	I	II
Lynchburg, ALL	I	I	I
Lynchburg-Urban land complex	IV	I	IV
Lynn Haven and Torhunta soils	II	II	II
Mantachie soils, local alluvium	II	III	II
Marlboro, ALL	II	II	II
Marlboro-Cecil complex, 2 to 8 percent slopes	II	II	II
Marvyn and Gritney soils. 6 to 15 percent slopes	IV	I	IV
Marvyn loamy sand, 6 to 12 percent slopes	IV	I	IV
Maxton loamy sand, 0 to 2 percent slopes	II	II	II
McColl loam	III	II	III
McQueen loam, 1 to 6 percent slopes	II	II	II
Meggett, ALL	IV	I	IV
Muckalee, ALL	IV	III	IV
Myatt very fine sandy loam	II	I	II
Nahunta, ALL	I	I	I
Nankin ,ALL	II	II	II
Nixonton very fine sandy loam	I	I	I
Norfolk and Faceville soils, 6 to 10 percent slopes	II	II	II
Norfolk loamy fine sand, ALL	I	II	I
Norfolk loamy sand, 0 to 2 percent slopes	I	II	I
Norfolk loamy sand, 2 to 6 percent slopes	I	II	I
Norfolk loamy sand, 2 to 6 percent slopes, eroded	II	II	II
Norfolk loamy sand, 6 to 10 percent slopes	II	II	II
Norfolk loamy sand, 6 to 10 percent slopes, eroded	III	II	III

Map Unit Name	Agri	For	Hort
Norfolk sandy loam, 0 to 2 percent slopes	I	II	I
Norfolk sandy loam, 2 to 6 percent slopes	I	II	I
Norfolk sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Norfolk sandy loam, 6 to 10 percent slopes	II	II	II
Norfolk, Georgeville, and Faceville soils, 2 to 8 percent slopes	II	II	II
Norfolk-Urban land complex, 0 to 3 percent slopes	IV	II	IV
Norfolk-Wedowee complex, 2 to 6 percent slopes	II	II	II
Ocilla, ALL	III	II	III
Okenee loam (Paxville)	II	III	II
Orangeburg loamy sand, eroded, ALL	II	II	II
Orangeburg loamy sand, Croded, ALL Orangeburg loamy sand, ALL OTHER	I	II	I
Pactolus, ALL	IV	II	IV
Pamlico muck	III	V	III
		I	
Pantego, ALL	I		I
Paxville fine sandy loam	II	III	II
Paxville loam	II	III	II
Peawick, ALL	II	II	II
Pits-Tarboro complex	IV	VI	IV
Plummer and Osier soils	IV	I	IV
Plummer, ALL	IV	V	IV
Pocalla loamy sand, 0 to 3 percent slopes	III	II	III
Polawana loamy sand, frequently flooded	IV	III	IV
Ponzer muck, siliceous subsoil variant	I	V	I
Portsmouth, ALL	I	I	I
Rains, ALL	I	I	I
Rains-Toisnot complex, 0 to 2 percent slopes	IV	I	IV
Rains-Urban land complex, ALL	IV	I	IV
Rimini sand	IV	V	IV
Riverview loam, 0 to 1 percent slopes, occasionally flooded	I	III	I
Roanoke and Wahee loams	II	III	II
Roanoke, ALL	II	III	II
Roanoke-Urban land complex	IV	III	IV
Ruston loamy sand, ALL	III	II	III
Ruston sandy loam, 2 to 6 percent slopes, eroded	IV	II	IV
Rutlege loamy sand	IV	V	IV
Seabrook loamy sand, rarely flooded	IV	II	IV
Smoothed sandy land	IV	VI	IV
St. Lucie sand (Kureb)	IV	V	IV
Stallings, ALL	II	II	II
State, ALL	I	I	I
Swamp	IV	III	IV
Tarboro, ALL	IV	II	IV
Toisnot, ALL	IV	II	IV
Tomahawk sand	III	II	III
Tomotley, ALL	I	I	I
Torhunta and Lynn Haven soils	II	I	II
Torhunta, ALL	I	I	I
Trebloc loam	I	I	I
Troup sand	IV	II	IV
Turbeville fine sandy loam, 2 to 6 percent slopes	I	II	I
Turbeville gravelly sandy loam, 2 to 8 percent slopes	II	II	II
Turbeville loamy sand, 0 to 2 percent slopes	I	II	I

Map Unit Name	Agri	For	Hort
Turbeville loamy sand, 2 to 6 percent slopes	Ī	II	I
Turbeville sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Turbeville sandy loam, 0 to 2 percent slopes	I	II	I
Turbeville sandy loam, 2 to 6 percent slopes	I	II	I
Turbeville sandy loam, 2 to 8 percent slopes	I	II	I
Turbeville sandy loam, 6 to 12 percent slopes	II	II	II
Turbeville-Urban land complex, 0 to 8 percent slopes	IV	II	IV
Uchee, ALL	III	V	III
Udorthents, loamy	IV	VI	IV
Urban land	IV	VI	IV
Varina, ALL	II	II	II
Vaucluse loamy sand, 10 to 15 percent slopes	IV	II	IV
Vaucluse loamy sand, 10 to 15 percent slopes, eroded	IV	II	IV
Vaucluse loamy sand, 2 to 6 percent slopes	III	II	III
Vaucluse loamy sand, 2 to 6 percent slopes, eroded	III	II	III
Vaucluse loamy sand, 6 to 10 percent slopes	III	II	III
Vaucluse loamy sand, 6 to 10 percent slopes, eroded	III	II	III
Wagram fine sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 0 to 2 percent slopes	II	II	II
Wagram loamy sand, 0 to 6 percent slopes	П	II	II
Wagram loamy sand, 2 to 6 percent slopes	II	II	II
Wagram loamy sand, 6 to 10 percent slopes	III	II	III
Wagram loamy sand, 10 to 15 percent slopes	III	II	III
Wagram sand, thick surface, 0 to 6 percent slopes	II	II	II
Wagram sand, thick surface, 6 to 10 percent slopes	III	II	III
Wagram sand, thick surface, 10 to 15 percent slopes	III	II	III
Wagram-Troup sands, 0 to 4 percent slopes	IV	II	IV
Wagram-Urban land complex, ALL	IV	II	IV
Wahee, ALL	I	I	I
Wakulla, ALL	IV	V	IV
Wehadkee and Chewacla loams	IV	III	IV
Wehadkee, ALL	IV	III	IV
Wehadkee-Chastain association, frequently flooded	IV	III	IV
Weston loamy sand	III	I	III
Wickham fine sandy loam, 6 to 15 percent slopes, rarely flooded	II	I	II
Wickham fine sandy loam, ALL OTHER	I	I	I
Wickham loamy sandy, ALL	I	I	I
Wickham sandy loam, 0 to 4 percent slopes	I	I	I
Wickham sandy loam, 2 to 6 percent slopes, eroded	II	I	II
Wickham-Urban land complex, 1 to 6 percent slopes	IV	I	IV
Wilbanks loam, frequently flooded	IV	III	IV
Wilbanks silt loam	IV	III	IV
Winton fine sandy loam, ALL	IV	I	IV
Woodington loamy sand	II	II	II
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Map Unit Name	Agri	For	Hort
Ailey-Appling complex, 2 to 8 percent slopes	II	II	II
Ailey-Appling complex, 8 to 15 percent slopes, bouldery	IV	II	III
Alamance silt loam, gently sloping phase	II	II	II
Alamance variant gravelly loam, ALL	IV	II	II
Altavista fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Altavista fine sandy loam, 7 to 10 percent slopes	II	I	I
Altavista fine sandy loam, 0 to 2 percent slopes occasionally flooded	I	I	II
Altavista fine sandy loam, ALL OTHER	I	I	I
Altavista fine sandy loam, clayey variant	I	I	I
Altavista loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Altavista sandy loam, ALL	I	I	I
Altavista silt loam, ALL	I	I	I
Appling coarse sandy loam, eroded gently sloping phase	II	II	II
Appling coarse sandy loam, croded sloping phase	II	II	II
Appling coarse sandy loam, ALL OTHER	II	II	I
Appling fine sandy loam, 2 to 6 percent slopes	II	II	I
Appling fine sandy loam, 2 to 6 percent slopes Appling fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling fine sandy loam, 2 to 7 percent slopes	II	II	I
Appling fine sandy loam, 2 to 7 percent slopes Appling fine sandy loam, 2 to 7 percent slopes, eroded	II	II	II
Appling fine sandy loam, 6 to 10 percent slopes	II	II	I
Appling fine sandy loam, 6 to 10 percent slopes Appling fine sandy loam, 6 to 10 percent slopes, eroded	II	II	II
Appling fine sandy loam, 7 to 10 percent slopes (Wedowee)	II	II	I
Appling fine sandy loam, 7 to 10 percent slopes (wedowee) Appling fine sandy loam, 7 to 10 percent slopes, eroded (Wedowee)	II	II	II
	III	II	II
Appling fine sandy loam, 10 to 14 percent slopes (Wedowee)	III	II	II
Appling fine sandy loam, 10 to 14 percent slopes, eroded (Wedowee)	IV		
Appling fine sandy loam, (Wedowee), ALL OTHER		II	II
Appling gravelly sandy loam, 2 to 6 percent slopes	II	II	I
Appling gravelly sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling gravelly sandy loam, 6 to 10 percent slopes Appling gravelly sandy loam, 6 to 10 percent slopes, eroded		II	I
11 00 1 1	II	II	II
Appling loamy sand, 2 to 6 percent slopes Appling sandy clay loam, 6 to 10 percent slopes, severely eroded		II	I
	III IV	II	II
Appling sandy clay loam, 10 to 15 percent slopes, severely eroded		II	II
Appling sandy clay loam, severely eroded sloping phase	III	II	III
Appling sandy loam, 1 to 6 percent slopes	II	II	I
Appling sandy loam, 2 to 6 percent slopes			I
Appling sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Appling sandy loam, 2 to 8 percent slopes			I
Appling sandy loam, 6 to 10 percent slopes	II	II	I
Appling sandy loam, 6 to 10 percent slopes, eroded		II	
Appling sandy loam, 6 to 12 percent slopes	II	II	II
Appling sandy loam, 8 to 15 percent slopes	II	II	II
Appling sandy loam, 10 to 15 percent slopes	III	II	II
Appling sandy loam, 10 to 15 percent slopes, eroded	III	II	II
Appling sandy loam, 10 to 25 percent slopes, eroded (Wedowee)	IV	II	II
Appling sandy loam, 15 to 25 percent slopes (Wedowee)	IV	II	II
Appling sandy loam, 15 to 25 percent slopes, eroded (Wedowee)	IV	II	II
Appling sandy loam, eroded gently sloping phase	II	II	II
Appling sandy loam, eroded sloping phase	II	II	II
Appling sandy loam, eroded strongly sloping phase	III	II	II
Appling sandy loam, gently sloping phase	II	II	I
Appling sandy loam, moderately steep phase (Wedowee)	III	II	II

Appling sandy loam, sloping phase	Map Unit Name	Agri	For	Hort
Appling sandy loam, strongly sloping phase	1			
Appling-Marlboro complex, 1 to 6 percent slopes				
Appling-Urban land complex, ALL				
Armenia ALL				
Ashlar-Rock outcrop complex, ALL Augusta, ALL Augusta, ALL Badin channery loam, & to 15 percent slopes III II III Badin channery sil toam, 2 to 8 percent slopes IIII III IIII Badin channery sil toam, 8 to 15 percent slopes IIII III IIIIIIIIIIIIIIIIIIIIIIIIIII				
Augusta. ALL				
Ayersville gravelly loam, ALL Badin channery loam, 8 to 15 percent slopes III II II Badin channery sit loam, 8 to 15 percent slopes IIII II II Badin channery sit loam, 8 to 15 percent slopes IIII II II Badin channery sit loam, 8 to 15 percent slopes IIII II II Badin channery sit loam, 8 to 15 percent slopes IIII II III Badin channery sit loam, ALL OTHER IV III III Badin sity clay loam, 2 to 8 percent slopes, moderately eroded III II II III Badin sity clay loam, 2 to 15 percent slopes, moderately eroded III II II III Badin-Goldston complex, 2 to 8 percent slopes IIII III III Badin-Goldston complex, 2 to 8 percent slopes IIII III III Badin-Goldston complex, 8 to 15 percent slopes III III III Badin-Goldston complex, 15 to 25 percent slopes IV III IV Badin-Nanford complex, 15 to 25 percent slopes IV III IV Badin-Tarrus complex, 2 to 8 percent slopes IV III IV Badin-Tarrus complex, 2 to 8 percent slopes III III III Badin-Tarrus complex, 2 to 8 percent slopes III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III III III III III III III II				
Badin channery loam, 8 to 15 percent slopes				
Badin channery silt loam, 2 to 8 percent slopes			·	
Badin channery silt loam, & Lo 15 percent slopes	, i			
Badin channery silt loam, ALL OTHER Badin channery silt yel ay loam, eroded, ALL Badin channery silt yel ay loam, 2 to 8 percent slopes, moderately eroded III III III Badin silty clay loam, 2 to 8 percent slopes, moderately eroded III III III Badin silty clay loam, 8 to 15 percent slopes III III III Badin-Goldston complex, 2 to 8 percent slopes III III III Badin-Goldston complex, 8 to 15 percent slopes III III III Badin-Goldston complex, 15 to 25 percent slopes IV III III Badin-Goldston complex, 15 to 25 percent slopes IV III III Badin-Tarrus complex, 15 to 30 percent slopes IV III IV Badin-Tarrus complex, 2 to 8 percent slopes III III III Badin-Tarrus complex, 2 to 8 percent slopes III III III Badin-Tarrus complex, 2 to 8 percent slopes, moderately eroded III III III Badin-Tarrus complex, 8 to 15 percent slopes, moderately eroded III III III Badin-Tarrus complex, 8 to 15 percent slopes, moderately eroded IV III III Badin-Tarrus complex, 8 to 15 percent slopes, moderately eroded IV III III Badin-Tarrus complex, 15 to 25 percent slopes IV III III Badin-Tarrus complex, 2 to 45 percent slopes IV III IV Badin-Tarrus complex, 2 to 45 percent slopes IV III IV Badin-Tarrus complex, 2 to 45 percent slopes IV III IV Badin-Tarrus complex, 2 to 15 percent slopes IV III IV Banister loam, 1 to 6 percent slopes, rarely flooded III II III Bethlehem gravelly sandy loam, 8 to 15 percent slopes III III III Bethlehem-Hibriten complex, 6 to 15 percent slopes IV III IV Bethlehem-Fibriten complex, 2 to 15 percent slopes IV III III Bethlehem-Fibriten complex, 2 to 15 percent slopes IV III III Bethlehem-Fibriten complex, 6 to 16 percent slopes III III III Bethlehem-Light of the shady loam, 8 to 15 percent slopes III III III Carlison-Lignum complex, 2 to 6 percent slopes, eroded III III III Carlicaly loam, 2 to 6 percent slopes, eroded III III III Cecil clay loam, 2 to 6 percent slopes, eroded III III III Cecil clay loam, 6 to 10 percent slopes, eroded III III III Cecil clay loam, 6 to 10 percent slopes, eroded III III IIII Cecil clay				
Badin channery silty clay loam, eroded, ALL Badin silty clay loam, 2 to 8 percent slopes, moderately eroded III II II Badin silty clay loam, 8 to 15 percent slopes, moderately eroded III II II Badin-Goldston complex, 2 to 8 percent slopes III III III Badin-Goldston complex, 2 to 8 percent slopes III III III Badin-Goldston complex, 15 to 25 percent slopes IV III III Badin-Goldston complex, 15 to 25 percent slopes IV III III Badin-Aanford complex, 15 to 30 percent slopes IV III IV Badin-Tarrus complex, 15 to 30 percent slopes III II II Badin-Tarrus complex, 2 to 8 percent slopes III II II Badin-Tarrus complex, 2 to 8 percent slopes III II II Badin-Tarrus complex, 8 to 15 percent slopes III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III Badin-Tarrus complex, 8 to 15 percent slopes III III III Badin-Tarrus complex, 25 to 45 percent slopes IV III III Badin-Tarrus complex, 25 to 45 percent slopes IV III III Badin-Tarrus complex, 25 to 45 percent slopes IV III IV Badin-Tarrus complex, 25 to 45 percent slopes IV III IV Badin-Tarrus complex, 25 to 45 percent slopes IV III IV Badin-Tarrus complex, 25 to 45 percent slopes IV III IV Badin-Tarrus complex, 25 to 45 percent slopes IV III IV Badin-Tarrus complex, 26 to 45 percent slopes IV III IV Badin-Tarrus complex, 27 to 45 percent slopes III III III III Bethiehem gravelly sandy loam, 2 to 8 percent slopes III III III Bethiehem-Hibriten complex, 6 to 15 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 15 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 16 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 16 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 17 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 18 percent slopes IV III III Bethiehem-Hibriten complex, 6 to 19 percent slopes III III III Bethiehem-Hibriten complex, 6 to 19 percent slopes III III III Bethiehem-Hibriten complex, 6 to 10 percent slopes III III III Carlbonton-Brickhaven complex, 6				
Badin silty clay loam, 2 to 8 percent slopes, moderately eroded IV II II II Badin silty clay loam, 8 to 15 percent slopes, moderately eroded IV II II II II Badin-Goldston complex, 2 to 8 percent slopes III II II II II Badin-Goldston complex, 8 to 15 percent slopes IV II II III III Badin-Goldston complex, 15 to 25 percent slopes IV II II III III Badin-Goldston complex, 15 to 25 percent slopes IV II IV III III III Badin-Goldston complex, 15 to 25 percent slopes IV II IV III IV Badin-Tarrus complex, 2 to 8 percent slopes IV III IV Badin-Tarrus complex, 2 to 8 percent slopes III II II II II III III III III III I	·			
Badin sitty clay loam, 8 to 15 percent slopes, moderately eroded IV II II				
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Cecil fine sandy loam, 2 to 6 percent slopes II II II II Cecil fine sandy loam, 2 to 6 percent slopes, eroded II II II II Cecil fine sandy loam, 2 to 7 percent slopes II II II II Cecil fine sandy loam, 2 to 7 percent slopes, eroded II II II II Cecil fine sandy loam, 2 to 8 percent slopes II II II II Cecil fine sandy loam, 6 to 10 percent slopes III II II Cecil fine sandy loam, 6 to 10 percent slopes, eroded III II II Cecil fine sandy loam, 6 to 10 percent slopes, eroded III II II Cecil fine sandy loam, 7 to 10 percent slopes (Pacolet) III II II II II II II II II II II II				
Cecil fine sandy loam, 2 to 6 percent slopes, erodedIIIIIICecil fine sandy loam, 2 to 7 percent slopesIIIIIICecil fine sandy loam, 2 to 7 percent slopes, erodedIIIIIICecil fine sandy loam, 2 to 8 percent slopesIIIIIICecil fine sandy loam, 6 to 10 percent slopesIIIIIIICecil fine sandy loam, 6 to 10 percent slopes, erodedIIIIIIICecil fine sandy loam, 7 to 10 percent slopes (Pacolet)IIIIIII		IV	II	II
Cecil fine sandy loam, 2 to 7 percent slopesIIIIICecil fine sandy loam, 2 to 7 percent slopes, erodedIIIIIICecil fine sandy loam, 2 to 8 percent slopesIIIIIICecil fine sandy loam, 6 to 10 percent slopesIIIIIIICecil fine sandy loam, 6 to 10 percent slopes, erodedIIIIIIICecil fine sandy loam, 7 to 10 percent slopes (Pacolet)IIIIIII	Cecil fine sandy loam, 2 to 6 percent slopes	II	II	I
Cecil fine sandy loam, 2 to 7 percent slopes, eroded II II II Cecil fine sandy loam, 2 to 8 percent slopes II II II Cecil fine sandy loam, 6 to 10 percent slopes III II II Cecil fine sandy loam, 6 to 10 percent slopes Cecil fine sandy loam, 6 to 10 percent slopes, eroded III II Cecil fine sandy loam, 7 to 10 percent slopes (Pacolet) III II III III III III III III	, , , ,			II
Cecil fine sandy loam, 2 to 8 percent slopesIIIIICecil fine sandy loam, 6 to 10 percent slopesIIIIIIICecil fine sandy loam, 6 to 10 percent slopes, erodedIIIIIIICecil fine sandy loam, 7 to 10 percent slopes (Pacolet)IIIIIII		II	II	I
Cecil fine sandy loam, 6 to 10 percent slopesIIIIIIICecil fine sandy loam, 6 to 10 percent slopes, erodedIIIIIIICecil fine sandy loam, 7 to 10 percent slopes (Pacolet)IIIIIII		II	II	II
Cecil fine sandy loam, 6 to 10 percent slopes, erodedIIIIIIICecil fine sandy loam, 7 to 10 percent slopes (Pacolet)IIIIIII		II	II	
Cecil fine sandy loam, 7 to 10 percent slopes (Pacolet) III II II	Cecil fine sandy loam, 6 to 10 percent slopes	III	II	II
· · ·	Cecil fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil fine sandy loam, 7 to 10 percent slopes, eroded (Pacolet) III II II	Cecil fine sandy loam, 7 to 10 percent slopes (Pacolet)	III	II	II
	Cecil fine sandy loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II

Map Unit Name	Agri	For	Hort
Cecil fine sandy loam, 8 to 15 percent slopes	III	II	II
Cecil fine sandy loam, 10 to 14 percent slopes (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 14 percent slopes, eroded (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes (Pacolet)	III	II	II
Cecil fine sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	Ш	II	II
Cecil fine sandy loam, 14 to 25 percent slopes (Pacolet)	IV	II	II
Cecil fine sandy loam, 14 to 25 percent slopes, eroded (Pacolet)	IV	II	II
Cecil fine sandy loam, 25 to 40 percent slopes (Pacolet)	IV	II	III
Cecil fine sandy loam, 25 to 40 percent slopes, eroded (Pacolet)	IV	II	III
Cecil fine sandy loam, eroded gently sloping phase	II	II	II
Cecil fine sandy loam, eroded sloping phase	II	II	II
Cecil fine sandy loam, eroded strongly sloping phase	III	II	II
Cecil fine sandy loam, gently sloping phase	II	II	I
Cecil fine sandy loam, moderately steep phase	Ш	II	II
Cecil fine sandy loam, sloping phase	Ш	II	II
Cecil fine sandy loam, strongly sloping phase	Ш	II	II
Cecil gravelly fine sandy loam, 2 to 6 percent slopes	II	II	I
Cecil gravelly fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Cecil gravelly fine sandy loam, 2 to 7 percent slopes	II	II	I
Cecil gravelly fine sandy loam, 2 to 7 percent slopes, eroded	III	II	II
Cecil gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil gravelly fine sandy loam, 7 to 10 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 14 percent slopes (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 14 percent slopes, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, 10 to 15 percent slopes	III	II	II
Cecil gravelly fine sandy loam, 10 to 15 percent, eroded (Pacolet)	III	II	II
Cecil gravelly fine sandy loam, ALL OTHER	IV	II	II
Cecil gravelly sandy clay loam, 2 to 8 percent slopes, eroded	III	II	II
Cecil gravelly sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil gravelly sandy loam, 2 to 6 percent slopes	II	II	I
Cecil gravelly sandy loam, 2 to 6 percent slopes, eroded	II	II	I
Cecil gravelly sandy loam, 6 to 10 percent slopes	III	II	II
Cecil gravelly sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil gravelly sandy loam, 10 to 15 percent slopes	IV	II	IV
Cecil loam, 2 to 6 percent slopes	II	II	I
Cecil loam, ALL OTHER	III	II	II
Cecil sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil sandy clay loam, 8 to 15 percent slopes, moderately eroded	IV	II	II
Cecil sandy clay loam, ALL OTHER	III	II	II
Cecil sandy loam, 2 to 6 percent slopes	II	II	I
Cecil sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Cecil sandy loam, 2 to 8 percent slopes	II	II	I
Cecil sandy loam, 2 to 8 percent slopes, eroded	III	II	II
Cecil sandy loam, 6 to 10 percent slopes	III	II	I
Cecil sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Cecil sandy loam, 8 to 15 percent slopes	III	II	II
Cecil sandy loam, 8 to 15 percent slopes, eroded	IV	II	II
Cecil sandy loam, 10 to 15 percent slopes	III	II	II
Cecil sandy loam, 10 to 15 percent slopes, eroded	III	II	II

Map Unit Name	Agri	For	Hort
Cecil sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	II
Cecil sandy loam, 15 to 45 percent slopes (Pacolet)	IV	II	II
Cecil sandy loam, eroded gently sloping phase	III	II	II
Cecil sandy loam, eroded sloping phase	III	II	II
Cecil sandy loam, gently sloping phase	II	II	I
Cecil sandy loam, sloping phase	III	II	I
Cecil soils, (Pacolet), ALL	IV	II	II
Cecil stony fine sandy loam, (Uwharrie), ALL	IV	II	II
Cecil-Urban land complex, ALL	IV	II	IV
Chastain silty clay loam	IV	III	III
Chenneby silt loam, 0 to 2 percent slopes, frequently flooded	III	III	III
Chewacla and Chastain soils, 0 to 2 percent slopes, frequently flooded	IV	III	III
Chewacla and Wehadkee, ALL	IV	III	III
Chewacia silt loam, frequently flooded	III	III	III
Chewacia, ALL OTHER	II	III	III
Cid, ALL	III	II	II
Cid-Lignum complex, 1 to 6 percent slopes	II	II	II
Cid-Misenheimer complex, 0 to 4 percent slopes	III	II	II
Cid-Urban land complex, 1 to 5 percent slopes	IV	II	IV
	IV	IV	IV
Meadowfield-Fairview complex, 15 to 25 percent slopes	IV	IV	IV
Meadowfield-Rhodhiss complex, 25 to 60 percent slopes, very stony			
Meadowfield-Woolwine complex, 8 to 15 percent slopes	IV	IV	IV
Claycreek fine sandy loam, 0 to 2 percent slopes	III	I	II
Colfax sandy loam, ALL	III	II	II
Colvard sandy loam, 0 to 3 percent slopes, occasionally flooded	I	III	III
Colfax silt loam	III	II	II
Congaree, frequently flooded	II	III	III
Congaree, ALL OTHER	I	III	III
Coronaca clay loam, ALL	II	II	I
Coronaca-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Creedmoor coarse sandy loam, ALL	III	I	II
Creedmoor fine sandy loam, 8 to 15 percent slopes	IV	I	II
Creedmoor fine sandy loam, ALL OTHER	III	I	II
Creedmoor loam, 2 to 8 percent slopes	III	I	II
Creedmoor sandy loam, 10 to 15 percent slopes	IV	I	II
Creedmoor sandy loam, 10 to 20 percent slopes	IV	I	II
Creedmoor sandy loam, ALL OTHER	III	I	II
Creedmoor silt loam, ALL	III	I	II
Cullen clay loam, ALL	II	II	II
Cullen-Wynott complex, 15 to 35 percent slopes	IV	II	III
Cut and fill land	IV	VI	IV
Davidson clay, severely eroded strongly sloping phase	III	I	II
Davidson sandy clay loam, 15 to 25 percent slopes	III	I	I
Davidson, ALL OTHER	II	I	I
Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded	I	III	I
Dogue, ALL	II	I	I
Dogue-Roanoke complex, 0 to 6 percent slopes, rarely flooded	II	I	III
Durham coarse sandy loam, gently sloping phase	II	I	I
Durham coarse sandy loam, sloping phase	III	I	I
Durham loamy sand, 6 to 10 percent slopes, eroded	III	I	I
Durham loamy sand, ALL OTHER	II	I	I
Durham sandy loam, eroded sloping phase	II	I	I

Map Unit Name	Agri	For	Hort
Durham sandy loam, ALL OTHER	III	I	I
Efland silt loam, eroded gently sloping phase (Badin)	II	II	II
Efland silt loam, eroded sloping phase (Badin)	III	II	II
Efland silt loam, gently sloping phase (Badin)	II	II	II
Efland silt loam, sloping phase (Badin)	II	II	II
Efland silt loam, strongly sloping phase (Badin)	III	II	II
Efland silty clay loam severely eroded strongly sloping phase (Badin)	III	II	II
Efland silty clay loam, severely eroded sloping phase (Badin)	III	II	II
Enon clay loam, 2 to 6 percent slopes, eroded	III	II	II
Enon clay loam, 6 to 10 percent slopes, eroded	III	II	II
Enon clay loam, 10 to 15 percent slopes, eroded	IV	II	II
Enon clay loam, severely eroded sloping phase	III	II	II
Enon clay loam, severely eroded strongly sloping phase	IV	II	II
Enon cobbly loam, 2 to 8 percent slopes	II	II	II
Enon cobbly loam, 8 to 15 percent slopes	III	II	II
Enon complex, gullied	IV	II	IV
Enon fine sandy loam, 2 to 15 percent slopes, very stony	IV	II	II
Enon fine sandy loam, 2 to 6 percent slopes	II	II	II
Enon fine sandy loam, 2 to 6 percent slopes Enon fine sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Enon fine sandy loam, 2 to 8 percent slopes	II	II	II
Enon fine sandy loam, 6 to 10 percent slopes	III	II	II
Enon fine sandy loam, 6 to 10 percent slopes Enon fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Enon fine sandy loam, 8 to 15 percent slopes, eroded Enon fine sandy loam, 8 to 15 percent slopes	III	II	II
Enon fine sandy loam, 10 to 15 percent slopes	III	II	II
Enon fine sandy loam, 10 to 15 percent slopes, eroded	III	II	II
Enon fine sandy loam, eroded gently sloping phase	II	II	II
Enon fine sandy loam, eroded sloping phase	III II	II	II
Enon fine sandy loam, gently sloping phase Enon fine sandy loam, sloping phase	III	II	II II
1 01	II	II	II
Enon gravelly loam, 2 to 8 percent slopes			
Enon gravelly loam, 8 to 15 percent slopes	III II	II	II
Enon loam, 2 to 6 percent slopes		II	II
Enon loam, 6 to 10 percent slopes	II	II	II
Enon loam, 6 to 12 percent slopes	III	II	II
Enon loam, eroded gently sloping phase	II	II	II
Enon loam, eroded sloping phase	III		
Enon loam, eroded strongly sloping phase	III	II	II
Enon loam, gently sloping phase	II	II	II
Enon loam, sloping phase	III	II	II
Enon loam, strongly sloping phase	III	II	II
Enon sandy loam, 2 to 8 percent slopes	II	II	II
Enon sandy loam, 8 to 15 percent slopes	III	II	II
Enon very cobbly loam, very stony, ALL	IV	II	IV
Enon very stony loam, ALL	IV	II	IV
Enon-Mayodan complex, 15 to 35 percent slopes, very stony	IV	II	III
Enon-Urban land complex, ALL	IV	II	IV
Enon-Wynott complex, 2 to 8 percent slopes	II	II	II
Enon-Wynott complex, 4 to 15 percent slopes, very bouldery	IV	II	IV
Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded	IV	II	II
Fairview-Urban land complex, ALL	IV	II	IV

Map Unit Name	Agri	For	Hort
Fluvaquents-Udifluvents complex, 0 to 3 percent slopes, mounded,	IV	VI	IV
occasionally flooded			
Gaston clay loam, 2 to 8 percent slopes, eroded	II	II	II
Gaston clay loam, 8 to 15 percent slopes, eroded	III	II	II
Gaston loam, 15 to 25 percent slopes	III	II	II
Gaston sandy clay loam, 2 to 8 percent slopes, eroded	II	II	II
Gaston sandy clay loam, 8 to 15 percent slopes, eroded	III	II	II
Georgeville clay loam, 2 to 6 percent slopes, eroded	II	I	II
Georgeville clay loam, 2 to 8 percent slopes, eroded	II	I	II
Georgeville clay loam, 8 to 15 percent slopes, eroded	III	I	II
Georgeville gravelly loam, 2 to 6 percent slopes	II	I	I
Georgeville gravelly loam, 2 to 8 percent slopes, stony	III	I	II
Georgeville gravelly loam, 6 to 10 percent slopes	II	I	I
Georgeville gravelly loam, 10 to 25 percent slopes	IV	I	II
Georgeville gravelly silt loam, 2 to 8 percent slopes	II	I	I
Georgeville gravelly silt loam, 8 to 15 percent slopes	III	I	II
Georgeville loam, 2 to 6 percent slopes	II	I	I
	II	I	I
Georgeville loam, 2 to 8 percent slopes	II	I	
Georgeville loam, 6 to 10 percent slopes			I
Georgeville loam, 8 to 15 percent slopes	III	I	I
Georgeville loam, ALL OTHER	IV	I	II
Georgeville silt loam, 2 to 6 percent slopes	II	I	I
Georgeville silt loam, 2 to 6 percent slopes, eroded	III	I	II
Georgeville silt loam, 2 to 8 percent slopes	II	I	I
Georgeville silt loam, 2 to 10 percent slopes, eroded	III	I	II
Georgeville silt loam, 4 to 15 percent slopes, extremely stony	IV	I	IV
Georgeville silt loam, 6 to 10 percent slopes	II	I	I
Georgeville silt loam, 6 to 10 percent slopes, eroded	III	I	II
Georgeville silt loam, 8 to 15 percent slopes	III	I	I
Georgeville silt loam, 10 to 15 percent slopes	III	I	I
Georgeville silt loam, 10 to 15 percent slopes, eroded	III	I	II
Georgeville silt loam, 10 to 25 percent slopes	IV	I	II
Georgeville silt loam, 15 to 45 percent slopes, extremely bouldery	IV	I	IV
Georgeville silt loam, eroded gently sloping phase	II	I	II
Georgeville silt loam, eroded sloping phase	III	I	II
Georgeville silt loam, eroded strongly sloping phase	III	I	II
Georgeville silt loam, gently sloping phase	II	I	I
Georgeville silt loam, moderately steep phase	III	I	II
Georgeville silt loam, sloping phase	II	I	I
Georgeville silt loam, strongly sloping phase	III	I	I
Georgeville silty clay loam, 2 to 6 percent slopes, moderately eroded	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes, eroded	II	I	II
Georgeville silty clay loam, 2 to 8 percent slopes, moderately eroded	II	I	II
Georgeville silty clay loam, 6 to 10 percent slopes, moderately eroded	III	I	II
Georgeville silty clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Georgeville silty clay loam, 8 to 15 percent slopes, moderately eroded	IV	I	II
Georgeville silty clay loam, severely eroded gently sloping phase	III	I	II
Georgeville silty clay loam, severely eroded moderately steep phase	IV	I	III
Georgeville silty clay loam, severely eroded sloping phase	III	I	III
Georgeville silty clay loam, severely eroded strongly sloping phase	IV	I	III
Georgeville-Badin complex, ALL	IV	I	II
Congerna Dadin complex, ALL	Ι ٧	1	11

Map Unit Name	Agri	For	Hort
Georgeville-Urban land complex, ALL	ΙV	I	IV
Goldston, ALL	IV	II	III
Goldston-Badin complex, ALL	IV	II	III
Granville gravelly sandy loam, 2 to 8 percent slopes	II	II	I
Granville sandy loam, 2 to 6 percent slopes	II	II	I
Granville sandy loam, 2 to 6 percent slopes, eroded	II	II	I
Granville sandy loam, 2 to 8 percent slopes	II	II	I
Granville sandy loam, 6 to 10 percent slopes	III	II	I
Granville sandy loam, 6 to 10 percent slopes, eroded	III	II	I
Granville sandy loam, 10 to 15 percent slopes	IV	II	I
Grover, ALL	IV	II	III
Gullied land, ALL	IV	VI	IV
Halewood stony sandy loam, (Edneyville), ALL	IV	III	II
Hatboro sandy loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Hayesville and Cecil clay loams, 7 to 14 percent slopes, severely eroded	II	II	II
(Cecil and Cecil)			
Hayesville and Cecil clay loams, 7 to 14 percent slopes, severely eroded	III	II	II
(Cecil and Cecil)			
Hayesville and Cecil clay loams, 14 to 25 percent slopes, severely eroded	IV	II	II
(Pacolet and Pacolet)			
Hayesville and Cecil fine sandy loam, eroded, ALL	IV	II	II
Helena clay loam, severely eroded sloping phase	IV	II	II
Helena coarse sandy loam, sloping phase	IV	II	II
Helena coarse sandy loam, ALL OTHER	III	II	II
Helena fine sandy loam, 2 to 8 percent slopes	III	II	II
Helena sandy loam, 10 to 15 percent slopes	IV	II	II
Helena sandy loam, ALL OTHER	Ш	II	II
Helena-Sedgefield sandy loams, ALL	III	II	II
Helena-Urban land complex, ALL	IV	II	IV
Helena-Worsham complex, 1 to 6 percent slopes	IV	II	III
Herndon loam, 2 to 6 percent slopes	II	II	I
Herndon loam, 6 to 10 percent slopes	II	II	I
Herndon silt loam, 2 to 6 percent slopes	II	II	I
Herndon silt loam, 2 to 6 percent slopes, eroded	II	II	II
Herndon silt loam, 2 to 8 percent slopes	II	II	I
Herndon silt loam, 6 to 10 percent slopes	III	II	I
Herndon silt loam, 6 to 10 percent slopes, eroded	III	II	II
Herndon silt loam, 8 to 15 percent slopes	III	II	I
Herndon silt loam, 10 to 15 percent slopes, eroded	III	II	II
Herndon silt loam, 15 to 25 percent slopes	III	II	I
Herndon silt loam, eroded gently sloping phase	II	II	II
Herndon silt loam, eroded sloping phase	III	II	II
Herndon silt loam, eroded strongly sloping phase	III	II	II
Herndon silt loam, gently sloping phase	II	II	I
Herndon silt loam, moderately steep phase	III	II	I
Herndon silt loam, sloping phase	II	II	I
Herndon silt loam, strongly sloping phase	III	II	I
Herndon silty clay loam, ALL	IV	II	II
Herndon stony silt loam, 2 to 10 percent slopes	III	II	II
Hibriten very cobbly sandy loam, ALL	IV	V	III
Hiwassee clay loam, 8 to 15 percent slopes, eroded	III	II	II
Hiwassee clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Hiwassee clay loam, 10 to 15 percent slopes, eroded	III	II	II

Map Unit Name	Agri	For	Hort
Hiwassee clay loam, 15 to 30 percent slopes, moderately eroded	IV	II	II
Hiwassee clay loam, ALL OTHER	II	II	II
Hiwassee gravelly loam, 2 to 8 percent slopes	II	II	I
Hiwassee gravelly loam, 8 to 15 percent slopes	II	II	II
Hiwassee loam, 2 to 6 percent slopes	II	II	I
Hiwassee loam, 2 to 6 percent slopes, eroded	II	II	II
Hiwassee loam, 2 to 7 percent slopes, eroded	II	II	II
Hiwassee loam, 2 to 8 percent slopes	II	II	I
Hiwassee loam, 6 to 10 percent slopes	II	II	I
Hiwassee loam, 6 to 10 percent slopes, eroded	II	II	II
Hiwassee loam, 8 to 15 percent slopes	II	II	I
Hiwassee loam, 10 to 15 percent slopes	II	II	I
Hiwassee loam, 10 to 15 percent slopes, eroded	III	II	II
Hiwassee loam, 15 to 25 percent slopes	IV	II	II
Hornsboro, ALL	I	I	I
Hulett, ALL	IV	II	II
Hulett-Saw complex, 4 to 15 percent slopes, very rocky	IV	II	III
Hulett-Urban Land complex, 2 to 8 percent slopes	IV	II	IV
Iotla sandy loam, 0 to 2 percent slopes, occasionally flooded	II	III	III
Iredell clay loam, 2 to 6 percent slopes	III	II	III
Iredell fine sandy loam, 10 to 14 percent slopes (Wilkes)	IV	II	III
Iredell fine sandy loam, 10 to 14 percent slopes, eroded (Wilkes)	IV	II	III
Iredell fine sandy loam, ALL OTHER	III	II	III
Iredell gravelly loam, 1 to 4 percent slopes	III	II	III
Iredell loam, ALL	III	II	III
Iredell sandy loam, ALL	III	II	III
Iredell very stony loam, gently sloping phase (Enon)	IV	II	IV
Iredell-Urban land complex, ALL	IV	II	IV
Iredell-Urban land-Picture complex, 0 to 10 percent slopes	IV	II	IV
Kirksey silt loam, ALL	II	II	II
Kirksey-Cid complex, 2 to 6 percent slopes	III	II	II
Leaksville silt loam, 0 to 4 percent slopes	III	III	III
Leaksville-Urban land complex, 0 to 4 percent slopes	IV	III	IV
Leveled clayey land	IV	VI	IV
Lignum gravelly silt loam, 2 to 8 percent slopes	II	III	II
Lignum loam, 2 to 6 percent slopes	II	III	II
Lignum silt loam, 7 to 12 percent slopes	III	III	II
Lignum silt loam, ALL OTHER	II	III	II
Lloyd clay loam, 2 to 6 percent slopes, severely eroded (Gaston)	II	II	II
Lloyd clay loam, 2 to 10 percent slopes, severely eroded (Pacolet)	II	II	II
Lloyd clay loam, 6 to 10 percent slopes, severely eroded (Gaston)	II	II	II
Lloyd clay loam, 10 to 14 percent slopes, severely eroded (Pacolet)	III	II	III
Lloyd clay loam, 10 to 15 percent slopes, severely eroded (Gaston)	III	II	III
Lloyd clay loam, 14 to 25 percent slopes, severely eroded (Pacolet)	IV	II	IV
Lloyd clay loam, 15 to 25 percent slopes, severely eroded (Gaston)	IV	II	IV
Lloyd clay loam, severely eroded gently sloping phase (Gaston)	II	II	II
Lloyd clay loam, severely eroded sloping phase (Gaston)	II	II	II
Lloyd clay loam, severely eroded strongly sloping phase (Gaston)	III	II	III
Lloyd clay loam, severely eroded, moderately steep phase (Cecil)	IV	II	III
Lloyd fine sandy loam, 2 to 6 percent slopes (Cecil)	II	II	II
Lloyd fine sandy loam, 2 to 6 percent slopes (eech) Lloyd fine sandy loam, 2 to 6 percent slopes, eroded (Cecil)	II	II	II
Lloyd fine sandy loam, 6 to 10 percent slopes (Cecil)	III	II	II
Lioya The sandy roam, o to to percent stopes (ecen)	111	11	11

Map Unit Name	Agri	For	Hort
Lloyd fine sandy loam, 6 to 10 percent slopes, eroded (Cecil)	III	II	II
Lloyd fine sandy loam, 10 to 15 percent slopes (Pacolet)	II	II	II
Lloyd fine sandy loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	II
Lloyd fine sandy loam, 15 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd fine sandy loam, 15 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 2 to 6 percent slopes (Gaston)	II	II	I
Lloyd loam, 2 to 6 percent slopes (Gastell) Lloyd loam, 2 to 6 percent slopes, eroded (Davidson)	II	II	II
Lloyd loam, 2 to 6 percent slopes, eroded (Gaston)	II	II	I
Lloyd loam, 2 to 7 percent slopes (Pacolet)	II	II	I
Lloyd loam, 2 to 7 percent slopes, eroded (Pacolet)	II	II	II
Lloyd loam, 6 to 10 percent slopes (Cecil)	III	II	II
Lloyd loam, 6 to 10 percent slopes, eroded (Cecil)	III	II	II
Lloyd loam, 6 to 10 percent slopes, eroded (Davidson)	II	II	II
Lloyd loam, 7 to 10 percent slopes (Pacolet)	III	II	II
Lloyd loam, 7 to 10 percent slopes (Facolet) Lloyd loam, 7 to 10 percent slopes, eroded (Pacolet)	III	II	II
Lloyd loam, 10 to 14 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 10 to 14 percent slopes (racolet) Lloyd loam, 10 to 14 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 10 to 14 percent slopes, croacd (1 acolet) Lloyd loam, 10 to 15 percent slopes (Cecil)	IV	II	II
Lloyd loam, 10 to 15 percent slopes (eeen) Lloyd loam, 10 to 15 percent slopes, eroded (Davidson)	II	II	III
Lloyd loam, 10 to 15 percent slopes, eroded (Pacolet)	III	II	III
Lloyd loam, 14 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 14 to 25 percent slopes (1 acolet) Lloyd loam, 14 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 15 to 25 percent slopes (Pacolet)	IV	II	II
Lloyd loam, 15 to 25 percent slopes (Facolet) Lloyd loam, 15 to 25 percent slopes, eroded (Pacolet)	IV	II	III
Lloyd loam, 25 to 40 percent slopes (Pacolet)	IV	II	IV
Lloyd loam, eroded gently sloping phase (Gaston)	III	II	II
Lloyd loam, eroded sloping phase (Caston) Lloyd loam, eroded sloping phase (Cecil)	III	II	II
Lloyd loam, eroded strongly sloping phase (Cecil)	IV	II	II
Lloyd loam, gently sloping phase (Gaston)	II	II	I
Lloyd loam, level phase (Gaston)	II	II	I
Lloyd loam, moderately steep phase (Cecil)	II	II	II
Lloyd loam, sloping phase (Cecil)	II	II	II
Lloyd loam, strongly sloping phase (Cecil)	IV	II	II
Local alluvial land, ALL	IV	III	III
Louisa fine sandy loam, 25 to 45 percent slopes	IV	II	III
Louisa andy loam, 25 to 45 percent slopes Louisa sandy loam, 25 to 45 percent slopes	IV	II	III
Louisburg and Louisa soils, 25 to 55 percent slopes	IV	II	II
Louisburg and Louisa soils, ALL OTHER	IV	II	III
Louisburg coarse sandy loam, ALL	IV	II	II
Louisburg loamy coarse sand, ALL	IV	II	IV
Louisburg loamy coarse sand, ALL Louisburg loamy sand, 2 to 6 percent slopes	III	II	II
Louisburg loamy sand, 6 to 10 percent slopes	III	II	II
	IV		
Louisburg learny and 10 to 15 percent slopes		II	II
Louisburg learny and, 15 to 45 percent slopes	IV	II	II
Louisburg loamy sand, 15 to 45 percent slopes Louisburg sandy loam, ALL	IV IV	II	III II
<u> </u>	IV		
Louisburg-Wedowee complex, 15 to 25 percent slopes Louisburg-Wedowee complex, ALL OTHER	III	II	II
U I	IV		II
Made land Medison slov loom 2 to 6 percent slopes graded	III	VI II	IV
Madison clay loam, 2 to 6 percent slopes, eroded	III	II	II II
Madison clay loam, 6 to 10 percent slopes, eroded	IV		
Madison clay loam, eroded, ALL OTHER	1 V	II	II

Map Unit Name	Agri	For	Hort
Madison complex, gullied	IV	II	IV
Madison fine sandy loam, 2 to 6 percent slopes	II	II	II
Madison fine sandy loam, 2 to 7 percent slopes	II	II	II
Madison fine sandy loam, 2 to 7 percent slopes, eroded	II	II	II
Madison fine sandy loam, 6 to 10 percent slopes	III	II	II
Madison fine sandy loam, 7 to 10 percent slopes	III	II	II
Madison fine sandy loam, 7 to 10 percent slopes, eroded	III	II	II
Madison fine sandy loam, 10 to 14 percent slopes	III	II	II
Madison fine sandy loam, 10 to 14 percent slopes, eroded	IV	II	II
Madison fine sandy loam, 10 to 15 percent slopes	III	II	II
Madison fine sandy loam, 14 to 25 percent slopes	IV	II	II
Madison fine sandy loam, 15 to 45 percent slopes	IV	II	II
Madison gravelly fine sandy loam, 2 to 6 percent slopes	II	II	II
Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Madison gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Madison gravelly fine sandy loam, 7 to 10 percent slopes	III	II	II
Madison gravelly fine sandy loam, 10 to 14 percent slopes	III	II	II
Madison gravelly fine sandy loam, 10 to 15 percent slopes	III	II	II
Madison gravelly fine sandy loam, ALL OTHER	IV	II	II
Madison gravelly sandy clay loam, 2 to 8 percent slopes, moderately eroded	III	II	II
Madison gravelly sandy clay loam, 8 to 15 percent slopes, moderately eroded	IV	II	II
Madison gravelly sandy loam, 10 to 25 percent slopes, eroded	IV	II	II
Madison gravelly sandy loam, 10 to 23 percent stopes, croded	III	II	II
Madison sandy clay loam, 2 to 8 percent slopes, eroded	III	II	II
Madison sandy clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Madison sandy clay loam, 15 to 25 percent slopes, eroded	IV	II	II
Madison sandy loam, 2 to 6 percent slopes	II	II	II
Madison sandy loam, 2 to 6 percent slopes Madison sandy loam, 2 to 6 percent slopes, eroded	II	II	II
Madison sandy loam, 6 to 10 percent slopes	II	II	II
Madison sandy loam, 6 to 10 percent slopes Madison sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Madison sandy loam, 8 to 15 percent slopes	III	II	II
Madison sandy loam, 10 to 15 percent slopes Madison sandy loam, 10 to 15 percent slopes	III	II	II
Madison sandy loam, ALL OTHER	IV	II	II
Madison-Bethlehem complex, 2 to 8 percent slopes, stony, moderately eroded	III	II	II
Madison-Bethlehem complex, 8 to 15 percent slopes, very stony, moderately	IV	II	III
eroded	1 V	11	111
Madison-Bethlehem-Urban Land complex, 2 to 8 percent slopes	IV	II	IV
Madison-Udorthents complex, 2 to 15 percent slopes, gullied	IV	II	IV
Madison-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Mantachie soils	III	III	II
Masada fine sandy loam, ALL	I	II	I
Masada gravelly sandy clay loam, eroded, ALL	II	II	I
Masada loam, 2 to 8 percent slopes	I	II	I
Masada loam, 8 to 15 percent slopes	II	II	I
• •	II	II	I
Masada sandy clay loam, eroded ALL Masada sandy loam, 2 to 8 percent slopes	II I	II	I
Masada sandy loam, 2 to 8 percent slopes Masada sandy loam, 8 to 15 percent slopes	II	II	I
	IV		II
Masada sandy loam, 15 to 25 percent slopes	IV	II	IV
Masada-Urban land complex, 2 to 15 percent slopes			
Mayodan fine sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan fine sandy loam, 2 to 7 percent slopes	II	I	I

Map Unit Name	Agri	For	Hort
Mayodan fine sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan fine sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan fine sandy loam, 7 to 10 percent slopes	III	I	I
Mayodan fine sandy loam, 7 to 10 percent slopes, eroded	III	I	I
Mayodan fine sandy loam, 8 to 15 percent slopes	III	I	I
Mayodan fine sandy loam, 10 to 14 percent slopes	III	I	I
Mayodan fine sandy loam, 10 to 14 percent slopes, eroded	III	I	II
Mayodan fine sandy loam, ALL OTHER	IV	I	II
Mayodan gravelly sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan gravelly sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan gravelly sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan gravelly sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan gravelly sandy loam, 6 to 10 percent slopes, eroded	IV	I	I
Mayodan gravelly sandy loam, 8 to 15 percent slopes	III	I	II
Mayodan gravelly sandy loam, 10 to 15 percent slopes	III	I	II
Mayodan gravelly sandy loam, 15 to 25 percent slopes	IV	I	II
Mayodan sandy clay loam, 2 to 8 percent slopes, eroded	II	I	II
Mayodan sandy clay loam, 8 to 15 percent slopes, eroded	III	I	II
Mayodan sandy clay loam, 15 to 25 percent slopes, eroded	IV	I	II
Mayodan sandy loam, 2 to 6 percent slopes	II	I	I
Mayodan sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Mayodan sandy loam, 2 to 8 percent slopes	II	I	I
Mayodan sandy loam, 6 to 10 percent slopes	III	I	I
Mayodan sandy loam, 6 to 10 percent slopes, eroded	III	I	I
Mayodan sandy loam, 8 to 15 percent slopes	III	I	II
Mayodan sandy loam, 10 to 15 percent slopes	III	I	II
Mayodan sandy loam, 10 to 15 percent slopes, eroded	IV	I	II
Mayodan sandy loam, 15 to 25 percent slopes	IV	I	II
Mayodan sandy loam, 15 to 25 percent slopes, stony	IV	I	IV
Mayodan silt loam, 2 to 8 percent slopes	II	I	I
Mayodan silt loam, 8 to 15 percent slopes	III	I	II
Mayodan silt loam, 15 to 25 percent slopes	IV	I	II
Mayodan silt loam, 25 to 45 percent slopes	IV	I	III
Mayodan silt loam, thin, ALL	III	I	II
Mayodan silty clay loam, 2 to 8 percent slopes, eroded	III	I	II
Mayodan silty clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Mayodan-Brickhaven complex, 15 to 30 percent slopes	IV	I	III
Mayodan-Exway complex, eroded, ALL	III	I	II
Mayodan-Pinkston complex, 25 to 45 percent slopes	IV	I	III
Mayodan-Urban land complex, ALL	IV	I	IV
McQueen loam, 1 to 6 percent slopes	II	II	II
Mecklenburg clay loam, 2 to 8 percent slopes, eroded	II	II	II
Mecklenburg clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Mecklenburg clay loam, 6 to 15 percent slopes, severely eroded	IV	II	II
Mecklenburg clay loam, 8 to 15 percent slopes, eroded	III	II	II
Mecklenburg clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Mecklenburg clay loam, severely eroded sloping phase	IV	II	II
Mecklenburg fine sandy loam, 2 to 6 percent slopes	II	II	I
Mecklenburg fine sandy loam, 2 to 8 percent slopes	II	II	II
Mecklenburg fine sandy loam, 8 to 15 percent slopes	III	II	II
Mecklenburg loam, 2 to 6 percent slopes	II	II	I
Mecklenburg loam, 2 to 6 percent slopes, eroded	II	II	II

Mecklenburg Joam. 2 to 7 percent slopes. eroded II II II II II Mecklenburg Joam. 6 to 10 percent slopes II II II II II II Mecklenburg Joam. 6 to 10 percent slopes II II II II II II Mecklenburg Joam. 6 to 10 percent slopes. eroded II II II II II Mecklenburg Joam. 6 to 10 percent slopes. eroded III II II II II Mecklenburg Joam. 7 to 14 percent slopes. eroded III II II II II II Mecklenburg Joam. 8 to 15 percent slopes. eroded III II II II II II II II Mecklenburg Joam. 8 to 15 percent slopes. eroded III II II II II II II Mecklenburg Joam. 8 to 15 percent slopes. III II II II II II II Mecklenburg Joam. ALL OTHER II II II II II II II II Mecklenburg Joam. Alta Cotte Joan. 2 to 6 percent slopes II II II II II II Mecklenburg Joam. dark surface variant. 6 to 10 percent slopes III II II II II Mecklenburg Joam. dark surface variant, 10 to 15 percent slopes III II II II Mecklenburg Joam. dark surface variant, 10 to 15 percent slopes III II II II Mecklenburg Joam. eroded sleptly sloping phase II II II II Mecklenburg Joam. eroded sleptly sloping phase II II II II Mecklenburg Joam. eroded sleptly sloping phase II II II II Mecklenburg Joam. eroded sloping phase II II II II Mecklenburg Joam. eroded sloping phase II II II II Mecklenburg sandy clay Joam. eroded. ALL III II II II Mecklenburg sandy clay Joam. eroded. ALL III II II II Mecklenburg sandy clay Joam. eroded. ALL III II II II II Mecklenburg sandy clay Joam. eroded. ALL III II	Map Unit Name	Agri	For	Hort
Mecklenburg loam, 2 to 8 percent slopes	1			
Mecklenburg loam, 6 to 10 percent slopes				
Mecklenburg Joam, 6 to 10 percent slopes, eroded III III II III Mecklenburg Joam, 7 to 14 percent slopes IIII II II II II Mecklenburg Joam, 8 to 15 percent slopes III II II II II Mecklenburg Joam, 8 to 15 percent slopes III II II II II II Mecklenburg Joam, ALL O/THER IV II II II II Mecklenburg Joam, ALL O/THER IV II II II Mecklenburg Joam, ALR O/THER IV II II II Mecklenburg Joam, dark surface variant, 2 to 6 percent slopes III II II Mecklenburg Joam, dark surface variant, 6 to 10 percent slopes III II II Mecklenburg Joam, dark surface variant, 6 to 10 percent slopes III II II Mecklenburg Joam, dark surface variant, 10 to 15 percent slopes III II II Mecklenburg Joam, croded sloping phase II II II II Mecklenburg Joam, croded sloping phase II II II II Mecklenburg Joam, croded sloping phase III II II Mecklenburg Joam, croded sloping phase III II II II Mecklenburg Joam, croded strongly sloping phase III II II II II Mecklenburg Joam, croded Joan, croded				
Mecklenburg Joam, 7 to 14 percent slopes eroded III II II Mecklenburg Joam, 8 to 15 percent slopes III II II II II Mecklenburg Joam, 10 to 15 percent slopes III II II II Mecklenburg Joam, ALL OTHER IV II II Mecklenburg Joam, ALL OTHER IV II II Mecklenburg Joam, dark surface variant, 2 to 6 percent slopes II II I I Mecklenburg Joam, dark surface variant, 10 to 15 percent slopes III II II Mecklenburg Joam, dark surface variant, 10 to 15 percent slopes III II II Mecklenburg Joam, eroded strongly sloping phase II II II II Mecklenburg Joam, eroded strongly sloping phase II II II II Mecklenburg Joam, eroded strongly sloping phase III II II II Mecklenburg Joam, eroded strongly sloping phase III II II II Mecklenburg Joam, eroded, ALL III II II Mecklenburg Urban land complex, ALL IV II IV IV IV IV IV				
Mecklenburg Joam, 18 to 15 percent slopes III II II II Mecklenburg Joam, ALL OTHER IV II II II Mecklenburg Joam, ALL OTHER IV II II Mecklenburg Joam, AlL OTHER IV II II Mecklenburg Joam, Ark surface variant, 2 to 6 percent slopes II II II Mecklenburg Joam, Ark surface variant, 10 to 15 percent slopes II II II Mecklenburg Joam, Ark surface variant, 10 to 15 percent slopes III II II Mecklenburg Joam, Ark surface variant, 10 to 15 percent slopes III II II Mecklenburg Joam, croded sloping phase II II II II Mecklenburg Joam, croded sloping phase III II II II Mecklenburg Joam, croded strongly sloping phase III II II Mecklenburg Joam, croded strongly sloping phase III II II Mecklenburg Joam, croded, ALL III II II Mecklenburg Joam, croded, ALL III II II Mecklenburg Joam, croded, ALL III II II Mecklenburg to Joam, croded, ALL III II II Mecklenburg to Joam, croded, ALL IV II V V IV V V V V				
Mecklenburg loam, ALL OTHER				
Mecklenburg loam, dark surface variant, 2 to 6 percent slopes				
Mecklenburg loam, dark surface variant, 2 to 6 percent slopes II II I Mecklenburg loam, dark surface variant, 10 to 15 percent slopes III II II II Mecklenburg loam, dark surface variant, 10 to 15 percent slopes III II II II Mecklenburg loam, eroded gently sloping phase II II II II II Mecklenburg loam, eroded sloping phase II II II II II Mecklenburg loam, eroded sloping phase III II II II Mecklenburg sandy clay loam, eroded, ALL III II II II Mecklenburg sandy clay loam, eroded, ALL III II II II Mecklenburg sandy clay loam, eroded, ALL III II II II II Mecklenburg sandy clay loam, eroded, ALL III II II IV Miscellaneous water IV VI II Wiscellaneous water IV VI II Wiscellaneous water IV VI II Wiscellaneous water IV VI II Miscellaneous water IV VI II Mocksville sandy loam, 2 to 8 percent slopes IV VI II Mocksville sandy loam, 2 to 8 percent slopes II II II Mocksville sandy loam, 2 to 10 percent slopes IV II II Montonia very channery silt loam, 25 to 60 percent slopes, very stony IV VI VI VI VI VI Montonia very channery silt loam, 25 to 60 percent slopes II II II II Montonia very channery silt loam, 25 to 60 percent slopes II II II II II Montonia very channery silt loam, 25 to 60 percent slopes II II II II II II II				
Mecklenburg loam, dark surface variant, 6 to 10 percent slopes II				
Mecklenburg loam, dark surface variant, 10 to 15 percent slopes III II II Mecklenburg loam, eroded gently sloping phase II II II II II Mecklenburg loam, eroded sloping phase II II II II Mecklenburg loam, eroded sloping phase III II II II Mecklenburg loam, eroded sloping phase III II II II Mecklenburg sandy clay loam, eroded, ALL IIII II II II II Mecklenburg-Urban land complex, ALL III II II II II Mecklenburg-Urban land complex, ALL III II II IV Miscenterian state of the sta				
Mecklenburg loam, eroded gently sloping phase II II II Mecklenburg loam, eroded sloping phase II II II II II Mecklenburg sandy clay loam, eroded strongly sloping phase III II II II Mecklenburg sandy clay loam, eroded, ALL III II II Mecklenburg sandy clay loam, eroded, ALL III II II Mecklenburg sandy clay loam, eroded, ALL III II II II Mecklenburg sandy clay loam, eroded, ALL III II II II Mecklenburg sandy clay loam, eroded, ALL IV II IV IV IV IV IV				
Mecklenburg loam, eroded stoping phase				
Mecklenburg loam, eroded strongly sloping phase				
Mecklenburg sandy clay loam, eroded, ALL	1 11			
Mecklenburg-Urban land complex, ALL IV II IV Miscellaneous water IV VI III Miscellaneous water IV VI III Miscellaneous water IV VI III Miscellaneous IV VI III Mixed alluvial land, ALL IV III III Mocksville sandy loam, 2 to 8 percent slopes III II II Mocksville sandy loam, 15 to 45 percent slopes III II III Mocksville sandy loam, 15 to 45 percent slopes IV IV IV IV IV IV IV I				
Miscellaneous water Miscellaneous water Miscenheimer channery silt loam, 0 to 4 percent slopes IV V IIII Miscenheimer-Callison complex, 0 to 3 percent slopes IV V IIII Miscenheimer-Cid complex, 0 to 3 percent slopes IV V IIII Miscenheimer-Kirksey complex, 0 to 5 percent slopes IV V IIII Miscenheimer-Kirksey complex, 0 to 5 percent slopes IV V IIII Miscenheimer-Kirksey complex, 0 to 5 percent slopes IV IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII				
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Nason silt loam, 6 to 12 percent slopes III II I	Nason silt loam, 2 to 8 percent slopes	П	II	I
	Nason silt loam, 6 to 12 percent slopes	III	II	I

Map Unit Name	Agri	For	Hort
Nason silt loam, 8 to 15 percent slopes	III	II	I
Nason silt loam, 10 to 15 percent slopes	III	II	I
Nason silt loam, 15 to 25 percent slopes	IV	II	II
Nason stony silt loam, 10 to 15 percent slopes (Uwharrie)	IV	II	IV
Oakboro silt loam, ALL	III	III	III
Orange gravelly loam, 2 to 7 percent slopes	II	II	II
Orange loam, 0 to 2 percent slopes	II	II	II
Orange silt loam, 0 to 3 percent slopes	II	II	II
Orange silt loam, eroded gently sloping moderately well drained variant	III	II	II
Orange silt loam, eroded gently sloping phase	III	II	II
Orange silt loam, eroded sloping moderately well drained variant	III	II	II
Orange silt loam, gently sloping moderately well drained variant	III	II	II
Orange silt loam, gently sloping phase	II	II	II
Orange silt loam, nearly level phase	II	II	II
Orange silt loam, sloping moderately well drained variant	III	II	II
Pacolet clay loam, 2 to 6 percent slopes, eroded	II	II	II
Pacolet clay loam, 2 to 8 percent slopes, moderately eroded	II	II	II
Pacolet clay loam, 6 to 10 percent slopes, eroded	III	II	II
Pacolet clay loam, 6 to 10 percent slopes, severely eroded	III	II	II
Pacolet clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Pacolet clay loam, 10 to 15 percent slopes, eroded	III	II	II
Pacolet clay loam, 15 to 45 percent slopes, eroded	IV	II	II
Pacolet complex, 10 to 25 percent slopes, severely eroded	IV	II	III
Pacolet fine sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet fine sandy loam, 6 to 10 percent slopes	III	II	I
Pacolet fine sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet fine sandy loam, 10 to 15 percent slopes	III	II	II
Pacolet fine sandy loam, ALL OTHER	IV	II	II
Pacolet gravelly fine sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet gravelly fine sandy loam, 6 to 10 percent slopes	III	II	II
Pacolet gravelly fine sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet gravelly fine sandy loam, 15 to 25 percent slopes	IV	II	II
Pacolet gravelly sandy clay loam, 15 to 30 percent slopes, eroded	IV	II	II
Pacolet gravelly sandy loam, 2 to 8 percent slopes	II	II	I
Pacolet gravelly sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet gravelly sandy loam, ALL OTHER	IV	II	II
Pacolet loam, 10 to 15 percent slopes	III	II	II
Pacolet loam, 15 to 25 percent slopes	IV	II	II
Pacolet sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Pacolet sandy clay loam, 2 to 6 percent slopes, moderately eroded	II	II	II
Pacolet sandy clay loam, 2 to 8 percent slopes, eroded	II	II	II
Pacolet sandy clay loam, 6 to 10 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, 8 to 15 percent slopes, eroded	III	II	II
Pacolet sandy clay loam, 8 to 15 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, 10 to 15 percent slopes, moderately eroded	III	II	II
Pacolet sandy clay loam, ALL OTHER	IV	II	II
Pacolet sandy loam, 2 to 6 percent slopes	II	II	I
Pacolet sandy loam, 2 to 8 percent slopes	II	II	I
Pacolet sandy loam, 6 to 10 percent slopes	III	II	II
Pacolet sandy loam, 8 to 15 percent slopes	III	II	II
Pacolet sandy loam, 10 to 15 percent slopes	III	II	II
Pacolet sandy loam, ALL OTHER	IV	II	II

Map Unit Name	Agri	For	Hort
Pacolet soils, 10 to 25 percent slopes	ΙV	II	III
Pacolet-Bethlehem complex, 2 to 8 percent slopes, eroded	III	II	II
Pacolet-Bethlehem complex, 2 to 8 percent slopes, moderately eroded	III	II	II
Pacolet-Bethlehem complex, ALL OTHER	IV	II	II
Pacolet-Bethlehem complex, 15 to 25 percent slopes, stony	IV	II	III
Pacolet-Bethlehem-Urban Land complex, ALL	IV	II	IV
Pacolet-Madison-Urban land complex, ALL	IV	II	IV
Pacolet-Saw complex, 2 to 8 percent slopes, eroded	III	II	II
Pacolet-Saw complex, 2 to 8 percent slopes, moderately eroded	III	II	II
Pacolet-Saw complex, ALL OTHER	IV	II	II
Pacolet-Udorthents complex, gullied, ALL	IV	II	IV
Pacolet-Urban land complex, ALL	IV	II	IV
Pacolet-Wilkes complex, 8 to 15 percent slopes	III	II	II
Pacolet-Wilkes complex, 15 to 25 percent slopes	IV	II	II
Picture loam, 0 to 3 percent slopes	IV	II	III
Pinkston, ALL	IV	II	III
Pinoka, ALL	IV	II	III
Pinoka-Carbonton complex, 2 to 8 percent slopes	IV	II	III
Pits, ALL	IV	VI	IV
Poindexter and Zion sandy loams, 2 to 8 percent slopes	III	II	II
Poindexter and Zion sandy loams, 8 to 15 percent slopes	IV	II	II
Poindexter and Zion sandy loams, ALL OTHER	IV	II	III
Poindexter fine sandy loam, 25 to 60 percent slopes	IV	II	III
Poindexter loam, 2 to 8 percent slopes	III	II	II
Poindexter loam, 8 to 15 percent slopes	IV	II	II
Poindexter loam, 15 to 45 percent slopes	IV	II	III
Poindexter-Mocksville complex, 2 to 8 percent slopes	IV	II	II
Poindexter-Mocksville complex, 8 to 15 percent slopes	IV	II	II
Poindexter-Mocksville complex, ALL OTHER	IV	II	III
Poindexter-Zion-Urban land complex, 2 to 15 percent slopes	IV	II	IV
Polkton-White Store complex, 2 to 8 percent slopes, severely eroded	III	II	III
Polkton-White Store complex, ALL OTHER	IV	II	III
Quarry, ALL	IV	VI	IV
Rhodhiss, ALL	IV	II	II
Rhodhiss-Bannertown complex, 25 to 50 percent slopes	IV	II	III
Rion fine sandy loam, 2 to 8 percent slopes	III	II	II
Rion fine sandy loam, 8 to 15 percent slopes	IV	II	II
Rion fine sandy loam, 15 to 25 percent slopes	IV	II	II
Rion fine sandy loam, 25 to 60 percent slopes	IV	II	III
Rion loamy sand, 8 to 15 percent slopes	IV	II	II
Rion loamy sand, 15 to 25 percent slopes	IV	II	III
Rion sandy loam, 2 to 8 percent slopes	III	II	II
Rion sandy loam, 8 to 15 percent slopes	III	II	II
Rion sandy loam, 15 to 25 percent slopes	IV	II	II
Rion sandy loam, 15 to 30 percent slopes	IV	II	II
Rion sandy loam, ALL OTHER	IV	II	III
Rion, Pacolet, and Wateree soils, 25 to 60 percent slopes	IV	II	IV
Rion-Ashlar complex, 15 to 35 percent slopes, stony	IV	II	III
Rion-Ashlar complex, 25 to 60 percent slopes, rocky	IV	II	IV
Rion-Ashlar-Rock outcrop complex, 45 to 70 percent slopes	IV	II	IV
Rion-Cliffside complex, 25 to 60 percent slopes, very stony	IV	II	IV
Rion-Hibriten complex, 25 to 45 percent slopes, very stony	IV	II	IV

Map Unit Name	Agri	For	Hort
Rion-Urban land complex, 2 to 10 percent slopes	ΙV	II	IV
Rion-Wateree-Wedowee complex, 8 to 15 percent slopes	IV	II	III
Rion-Wedowee complex, ALL	III	II	II
Rion-Wedowee-Ashlar complex, ALL	IV	II	III
Riverview and Buncombe soils, 0 to 3 percent slopes, frequently flooded	II	III	III
Riverview and Toccoa soils, 0 to 4 percent slopes, occasionally flooded	II	III	III
Riverview, frequently flooded, ALL	II	III	III
Riverview, occasionally flooded, ALL	I	III	III
Roanoke, ALL	II	III	III
Roanoke-Wahee complex, 0 to 3 percent slopes, occasionally flooded	II	III	III
Rock outcrop	IV	VI	IV
Rock outcrop-Ashlar complex, 2 to 15 percent slopes	IV	VI	IV
Rock outcrop-Wake complex, ALL	IV	VI	IV
Sauratown channery fine sandy loam, 25 to 60 percent slopes, very stony	IV	IV	IV
Saw-Pacolet complex, ALL	IV	II	II
Saw-Wake Complex, very rocky, ALL	IV	II	IV
Secrest-Cid complex, 0 to 3 percent slopes	III	II	II
Sedgefield fine sandy loam, 1 to 4 percent slopes	II	II	II
Sedgefield fine sandy loam, 1 to 4 percent slopes	III	II	II
Sedgefield sandy loam, 1 to 6 percent slopes	III	II	II
Sedgefield sandy loam, 2 to 8 percent slopes	III	II	II
Severely gullied land, ALL	IV	VI	IV
Shellbluff loam, 0 to 2 percent slopes, occasionally flooded	II	III	III
Shellbluff silt loam, 0 to 2 percent slopes, frequently flooded	IV	III	III
Skyuka clay loam, 2 to 8 percent slopes, eroded	II	I	II
Skyuka loam, 2 to 8 percent slopes	I	I	II
Spray loam, 0 to 5 percent slopes	IV	II	III
Spray-Urban land complex, 0 to 5 percent slopes	IV	II	IV
Starr loam, ALL	II	I	III
State, ALL	I	I	I
Stoneville loam, 2 to 8 percent slopes	II	II	I
Stoneville loam, 8 to 15 percent slopes	III	II	I
Stoneville loam, 15 to 25 percent slopes	IV	II	II
Stoneville-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Stony land	IV	VI	IV
Swamp	IV	III	IV
Tallapoosa fine sandy loam, ALL	IV	II	III
Tarrus gravelly silt loam, 2 to 8 percent slopes	II	II	I
Tarrus-Georgeville complex, 8 to 15 percent slopes	II	II	I
Tatum and Nason channery silt loams, 15 to 25 percent slopes	IV	II	II
Tatum channery silt loam, ALL	III	II	I
Tatum channery silty clay loam, ALL	III	II	II
Tatum gravelly loam, 2 to 8 percent slopes	II	II	I
Tatum gravelly loam, 8 to 15 percent slopes	III	II	I
Tatum gravelly loam, ALL OTHER	IV	II	II
Tatum gravelly silt loam, 2 to 8 percent slopes	II	II	I
Tatum gravelly silt loam, 8 to 15 percent slopes	III	II	I
Tatum gravelly silt loam, ALL OTHER	IV	II	II
Tatum gravelly silty clay loam, eroded, ALL	III	II	II
Tatum loam, 2 to 6 percent slopes	II	II	I
Tatum loam, 10 to 15 percent slopes	III	II	II
Tatum loam, ALL OTHER	IV	II	II
Tatuii IVaiii, ALL UTTEK	1 V	11	11

Map Unit Name	Agri	For	Hort
Tatum silt loam, 2 to 8 percent slopes	II	II	I
Tatum silt loam, 8 to 15 percent slopes	III	II	I
Tatum silt loam, ALL OTHER	IV	II	II
Tatum silty clay loam, eroded, ALL	III	II	II
Tatum-Badin complex, 2 to 8 percent slopes	III	II	I
Tatum-Badin complex, 2 to 8 percent slopes, eroded	III	II	II
Tatum-Badin complex, 8 to 15 percent slopes	III	II	II
Tatum-Montonia complex, 15 to 30 percent slopes	IV	II	II
Tatum-Montonia complex, ALL OTHER	III	II	II
Tatum-Urban land complex, 2 to 8 percent slopes	IV	II	IV
Tetotum fine sandy loam, 1 to 4 percent slopes	I	I	I
Tetotum silt loam, 0 to 3 percent slopes	I	I	I
Tirzah silt loam, eroded gently sloping phase (Tatum)	III	II	I
Tirzah silt loam, eroded sloping phase (Tatum)	II	II	I
Tirzah silt loam, eroded strongly sloping phase (Tatum)	III	II	II
Tirzah silt loam, gently sloping phase (Stoneville)	II	II	II
Tirzah silt loam, sloping phase (Stoneville)	III	II	II
Tirzah silt loam, strongly sloping phase (Stoneville)	III	II	II
Tirzah silty clay loam, severely eroded gently sloping phase (Tatum)	III	II	II
Tirzah silty clay loam, severely eroded sloping phase (Tatum)	III	II	II
Tirzah silty clay loam, severely eroded strongly sloping phase (Tatum)	IV	II	II
Toast sandy loam, 2 to 8 percent slopes	II	I	I
Toast sandy loam, 8 to 15 percent slopes	III	I	II
Toccoa, ALL	I	III	III
Turbeville fine sandy loam, 0 to 3 percent slopes	I	II	I
Udorthents, ALL	IV	VI	IV
Udorthents-Pits complex, mounded, 0 to 2 percent slopes, occasionally	IV	VI	IV
flooded			
Udorthents-Urban land complex, ALL	IV	VI	IV
Urban land, ALL	IV	VI	IV
Urban land-Arents complex, occasionally flooded	IV	III	IV
Urban land-Iredell-Creedmoor complex, 2 to 10 percent slopes	IV	II	IV
Urban land-Masada complex, 2 to 15 percent slopes	IV	II	IV
Uwharrie clay loam, 2 to 8 percent slopes, eroded	III	II	III
Uwharrie clay loam, 8 to 15 percent slopes, eroded	IV	II	III
Uwharrie loam, 15 to 25 percent slopes	IV	II	III
Uwharrie loam, very stony, ALL	IV	II	III
Uwharrie silt loam, 2 to 8 percent slopes	II	II	I
Uwharrie silty clay loam, 2 to 8 percent slopes, eroded	III	II	II
Uwharrie silty clay loam, 2 to 8 percent slopes, moderately eroded	III	II	II
Uwharrie silty clay loam, 8 to 15 percent slopes, eroded	IV	II	II
Uwharrie stony loam, ALL	IV	II	III
Uwharrie stony loam, very bouldery, ALL	IV	II	IV
Uwharrie-Badin complex, ALL	IV	II	III
Uwharrie-Tatum complex, 8 to 15 percent slopes	III	II	III
Uwharrie-Tatum complex, 8 to 15 percent slopes, moderately eroded	IV	II	III
Uwharrie-Urban Land, 2 to 8 percent slopes	IV	II	IV
Vance clay loam, severely eroded sloping phase	IV	II	II
Vance coarse sandy loam, 2 to 8 percent slopes	II	II	II
Vance coarse sandy loam, eroded gently sloping phase	III	II	II
Vance coarse sandy loam, eroded sloping phase	III	II	II
Vance coarse sandy loam, gently sloping phase	II	II	II

Map Unit Name	Agri	For	Hort
Vance sandy clay loam, ALL	III	II	II
Vance sandy loam, 2 to 6 percent slopes	II	II	II
Vance sandy loam, 2 to 6 percent slopes, eroded	III	II	II
Vance sandy loam, 2 to 8 percent slopes	II	II	II
Vance sandy loam, 6 to 10 percent slopes	III	II	II
Vance sandy loam, 6 to 10 percent slopes, eroded	III	II	II
Vance sandy loam, 8 to 15 percent slopes	III	II	II
Vance sandy loam, 10 to 15 percent slopes	III	II	II
Vance sandy loam, eroded gently sloping phase	III	II	II
Vance sandy loam, eroded moderately sloping phase	III	II	II
Vance sandy loam, eroded strongly sloping phase	IV	II	II
Vance sandy loam, gently sloping phase	II	II	II
Vance-Urban land complex, 2 to 10 percent slopes	IV	II	IV
Wadesboro clay loam, 2 to 8 percent slopes, moderately eroded	II	I	II
Wadesboro clay loam, 8 to 15 percent slopes, moderately eroded	III	I	II
Wadesboro fine sandy loam, 2 to 7 percent slopes (Mayodan)	II	I	II
Wadesboro fine sandy loam, 2 to 7 percent slopes (Mayodan) Wadesboro fine sandy loam, 2 to 7 percent slopes, eroded (Mayodan)	II	I	II
Wadesboro fine sandy loam, 7 to 10 percent slopes (Mayodan)	III	I	II
Wadesboro fine sandy loam, 7 to 10 percent slopes, eroded (Mayodan)	III	I	II
Wadesboro fine sandy loam, 7 to 16 percent slopes (Mayodan) Wadesboro fine sandy loam, 10 to 14 percent slopes (Mayodan)	III	I	II
Wadesboro fine sandy loam, 10 to 14 percent slopes (Mayodan) Wadesboro fine sandy loam, 10 to 14 percent slopes, eroded (Mayodan)	IV	I	II
Wadesboro fine sandy loam, 14 to 30 percent slopes (Mayodan)	IV	I	II
Wahee, ALL	II	III	I
Wake soils, ALL	IV	II	III
Wake-Saw-Wedowee complex, 2 to 8 percent slopes, rocky	IV	II	III
Wake-Wateree complex, 15 to 30 percent slopes, very rocky	IV	II	III
Wake-Wateree-Wedowee complex, 8 to 15 percent slopes, rocky	IV	II	III
Warne and Roanoke fine sandy loams (Dogue)	IV	III	II
Wateree fine sandy loam, ALL	IV	II	II
Wateree-Rion complex, 40 to 95 percent slopes	IV	II	III
Wateree-Rion-Wedowee complex, 15 to 30 percent slopes	IV	II	III
Wedowee coarse sandy loam, 2 to 6 percent slopes	II	I	I
Wedowee coarse sandy loam, 6 to 10 percent slopes	III	I	II
Wedowee loam, 2 to 8 percent slopes	II	I	I
Wedowee loam, 8 to 15 percent slopes	III	I	II
Wedowee loam, 15 to 25 percent slopes Wedowee loam, 15 to 25 percent slopes	IV	I	II
Wedowee sandy clay loam, 8 to 15 percent slopes, eroded	IV	I	II
Wedowee sandy clay loam, 8 to 13 percent slopes, erroded Wedowee sandy loam, 2 to 10 percent slopes, extremely bouldery	IV	I	IV
Wedowee sandy loam, 2 to 10 percent slopes, extremely boundary Wedowee sandy loam, 2 to 15 percent slopes, bouldary	IV	I	III
· · · · ·	II	I	I
Wedowee sandy loam, 2 to 6 percent slopes	II		II
Wedowee sandy loam, 2 to 6 percent slopes, eroded	II	I	
Wedowee sandy loam, 2 to 8 percent slopes	III	I	I II
Wedowee sandy loam, 6 to 10 percent slopes			
Wedowee sandy loam, 6 to 10 percent slopes, eroded	III	I	II
Wedowee sandy loam, 6 to 15 percent slopes Wedowee sandy loam, 8 to 15 percent slopes	III	I	II II
v i i			
Wedowee sandy loam, 10 to 15 percent slopes	III	I	II
Wedowee sandy loam, 10 to 15 percent slopes, eroded	III	I	II
Wedowee sandy loam, 10 to 25 percent slopes	III	I	II
Wedowee sandy loam, 15 to 25 percent slopes	IV	I	II
Wedowee sandy loam, 15 to 35 percent slopes, bouldery	IV	I	III
Wedowee sandy loam, 15 to 40 percent slopes	IV	I	II

Map Unit Name	Agri	For	Hort
Wedowee-Louisburg complex, 2 to 6 percent slopes	II	I	II
Wedowee-Louisburg complex, ALL OTHER	III	I	III
Wedowee-Urban land-Udorthents complex, 2 to 10 percent slopes	IV	I	IV
Wehadkee and Bibb soils	IV	III	III
Wehadkee, ALL	IV	III	III
White Store clay loam, ALL	IV	II	III
White Store fine sandy loam, moderately eroded, ALL	IV	II	III
White Store loam, 8 to 15 percent slopes	IV	II	III
White Store loam, ALL OTHER	III	II	III
White Store sandy loam, 2 to 6 percent slopes	III	II	III
White Store sandy loam, ALL OTHER	IV	II	III
White Store silt loam, 8 to 15 percent slopes	IV	II	III
White Store silt loam, ALL OTHER	III	II	III
White Store-Polkton complex, ALL	IV	II	III
White Store-Urban land complex, ALL	IV	II	IV
Wickham fine sandy loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes Wickham fine sandy loam, 2 to 6 percent slopes, eroded	II	I	I
Wickham fine sandy loam, 2 to 7 percent slopes, croded	II	I	I
Wickham fine sandy loam, 2 to 8 percent slopes	II	I	I
Wickham fine sandy loam, 6 to 10 percent slopes	II	I	I
Wickham fine sandy loam, 6 to 10 percent slopes Wickham fine sandy loam, 6 to 10 percent slopes, eroded	III	I	II
Wickham fine sandy loam, 7 to 14 percent slopes, eroded	III	I	II
Wickham fine sandy loam, 10 to 15 percent slopes	III	I	II
Wickham sandy loam, ALL	I	I	I
Wickiam sandy toam, ALL Wilkes, ALL	IV	II	III
Wilkes-Poindexter-Wynott complex, ALL	IV	II	III
Wilkes-Poindexter-Wynott complex, ALL Wilkes-Urban land complex, 8 to 15 percent slopes	IV	II	IV
Winnsboro fine sandy loam, 2 to 8 percent slopes	II	II	I
Winnsboro loam, 2 to 8 percent slopes Winnsboro loam, 2 to 8 percent slopes	III	II	I
	IV		II
Winnsboro loam, 8 to 15 percent slopes	III	II	II
Winnsboro-Wilkes complex, 2 to 8 percent slopes Winnsboro-Wilkes complex, ALL OTHER	IV	II	
1 '	III	II	III II
Woolwine-Fairview complex, 2 to 8 percent slopes, moderately eroded Woolwine-Fairview complex, moderately eroded, ALL OTHER	IV	II	II
i v	IV	II	IV
Woodwine-Fairview-Urban land complex, ALL			
Wynott cobbly loam, 2 to 10 percent slopes, extremely stony	IV IV	III	III
		II	IV
Wynott loam, 2 to 8 percent slopes	III	II	II
Wynott-Enon complex, 2 to 8 percent slopes	II	II	II
Wynott-Enon complex, 2 to 8 percent slopes, moderately eroded	II	II	II
Wynott-Enon complex, 8 to 15 percent slopes	II	II	II
Wynott-Enon complex, 8 to 15 percent slopes, moderately eroded	III	II	II
Wynott-Enon complex, 15 to 25 percent slopes	IV	II	II
Wynott-Enon complex, extremely bouldery, ALL	IV	II	IV
Wynott-Wilkes-Poindexter complex, 2 to 8 percent slopes	IV	II	II
Wynott-Winnsboro complex, 2 to 8 percent slopes	II	II	II
Wynott-Winnsboro complex, 8 to 15 percent slopes	II	II	II
Wynott-Winnsboro complex, 15 to 25 percent slopes	IV	II	II
Zion gravelly loam, 2 to 8 percent slopes	III	II	II
Zion gravelly loam, 8 to 15 percent slopes	IV	II	II
Zion-Enon complex, 2 to 8 percent slopes	III	II	III

Map Unit Name	Agri	For	Hort
Zion-Enon complex, 8 to 15 percent slopes	IV	II	II
Zion-Mocksville complex, 25 to 45 percent slopes	IV	II	III
Zion-Wilkes complex, 8 to 15 percent slopes	IV	II	II
Zion-Winnsboro-Mocksville complex, ALL	IV	II	II

MLRA137-S and hills

Map Unit Name	Agri	For	Hort
Ailey gravelly loamy sand, 8 to 15 percent slopes	III	V	III
Ailey gravelly loamy sand, 15 to 25 percent slopes	IV	V	IV
Ailey loamy sand, ALL	III	V	III
Ailey sand, moderately wet, 0 to 6 percent slopes	II	V	II
Ailey-Urban land complex, ALL	IV	V	IV
Bibb loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Blaney loamy sand, 2 to 8 percent slopes	II	II	II
Blaney loamy sand, 8 to 15 percent slopes	III	II	III
Blaney-Urban land complex, ALL	IV	II	IV
Bragg sandy loam, 1 to 4 percent slopes	IV	V	IV
Candor and Wakulla soils, 8 to 15 percent slopes	IV	V	IV
Candor sand, ALL	IV	V	IV
Candor-Urban land complex, 2 to 12 percent slopes	IV	V	IV
Dothan gravelly loamy sand, 0 to 6 percent slopes	I	II	I
Dothan loamy sand, ALL	I	II	I
Emporia loamy sand, ALL	II	II	II
Faceville sandy clay loam, 2 to 6 percent slopes, eroded	II	II	II
Fuquay, ALL	II	II	II
Fuquay-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Gilead loamy sand, ALL	II	II	II
Johns fine sandy loam, 0 to 2 percent slopes	I	I	I
Johnston, ALL	IV	III	IV
Kalmia sandy loam, wet substratum, 0 to 2 percent slopes	I	II	I
Kenansville loamy sand, 0 to 4 percent slopes	II	I	II
Lakeland, ALL	IV	V	IV
Lakeland-Urban land complex, 1 to 8 percent slopes	IV	V	IV
Lillington gravelly sandy loam, 2 to 8 percent slopes	III	II	III
Lillington gravelly sandy loam, 8 to 15 percent slopes	IV	II	IV
Lillington gravelly sandy loam, 15 to 25 percent slopes	IV	II	IV
Pactolus sand, 0 to 3 percent slopes	IV	II	IV
Paxville fine sandy loam, 0 to 2 percent slopes	I	III	I
Pelion loamy sand, 0 to 2 percent slopes	II	II	II
Pelion loamy sand, 1 to 4 percent slopes	IV	II	IV
Pelion loamy sand, 2 to 8 percent slopes	III	II	III
Pelion loamy sand, 8 to 15 percent slopes	IV	II	IV
Pelion-Urban land complex, ALL	IV	II	IV
Pelion-Urban land complex, 8 to 15 percent slopes	IV	II	IV
Pocalla loamy sand, 0 to 6 percent slopes	II	II	II
Rains fine sandy loam, 0 to 2 percent slopes	III	I	III
Tetotum silt loam, 0 to 3 percent slopes, rarely flooded	I	I	I
Udorthents, ALL	IV	VI	IV
Urban land, ALL	IV	VI	IV
Vaucluse gravelly loamy sand, 2 to 8 percent slopes	III	II	III
Vaucluse gravelly loamy sand, 8 to 15 percent slopes	IV	II	IV
Vaucluse gravelly loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaucluse gravelly sandy loam, ALL	III	II	III
Vaucluse gravelly sandy loam, 8 to 15 percent slopes	III	II	III
Vaucluse gravelly sandy loam, 15 to 25 percent slopes	III	II	III
Vaucluse loamy sand, 2 to 8 percent slopes	II	II	II
Vaucluse loamy sand, 8 to 15 percent slopes	III	II	III
Vaucluse loamy sand, 15 to 25 percent slopes	IV	II	IV
Vaucluse very gravelly loamy sand, ALL	IV	II	IV
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Map Unit Name	Agri	For	Hort
Vaucluse-Gilead loamy sands, 15 to 25 percent slopes	IV	II	IV
Vaucluse-Urban land complex, ALL	IV	II	IV
Wakulla and Candor soils, 0 to 8 percent slopes	IV	V	IV
Wakulla sand, ALL	IV	V	IV
Wakulla-Candor-Urban land complex, 0 to 10 percent slopes	IV	V	IV
Wehadkee fine sandy loam	IV	III	IV
Wehadkee loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV

Map Unit Name	Agri	For	Hort
Alaga, ALL	IV	II	IV
Alpin, ALL	IV	II	IV
Altavista, ALL	I	I	I
Altavista-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Arapahoe fine sandy loam	II	I	II
Augusta, ALL	II	I	II
Autryville fine sand, 1 to 4 percent slopes	IV	II	IV
Autryville, ALL OTHER	III	II	III
Aycock, ALL ERODED	II	I	II
Aycock, ALL OTHER	I	I	I
Ballahack loam, 0 to 2 percent slopes, occasionally flooded	I	I	I
Bayboro, ALL	I	I	I
Baymeade and Marvyn soils, 6 to 12 percent slopes	IV	V	IV
Baymeade fine sand, ALL	IV	V	IV
Baymeade-Urban land complex, 0 to 6 percent slopes	IV	V	IV
Bethera, ALL	II	I	II
Bibb and Johnston loams, frequently flooded	IV	III	IV
Bibb, ALL	IV	III	IV
Bladen, ALL	III	I	III
Blanton, ALL	IV	V	IV
Bohicket, ALL	IV	VI	IV
Bonneau loamy fine sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 0 to 4 percent slopes Bonneau loamy sand, 0 to 4 percent slopes	II	II	II
Bonneau loamy sand, 0 to 4 percent slopes Bonneau loamy sand, 0 to 6 percent slopes	II	II	II
Bonneau loamy sand, 6 to 10 percent slopes	III	II	III
Bonneau loamy sand, 6 to 12 percent slopes Bonneau loamy sand, 6 to 12 percent slopes	III	II	III
V 1	IV	VI	IV
Borrow pits Bragg, ALL	IV	VI	IV
66.	IV	III	IV
Brookman loam, frequently flooded Butters loamy fine sand, 0 to 3 percent slopes	III	II	III
T I	II		
Byars loam	IV	III V	II
Cainhoy, ALL		I	IV
Cape Fear loam, ALL	I	_	I
Caroline fine sandy loam, ALL Carteret, ALL		II VI	II
	IV IV	II	IV IV
Chartain and Chart			
Chastain and Chenneby soils, frequently flooded	IV IV	III	IV IV
Chastain silt loam, frequently flooded		III	· ·
Chewacla and Chastain soils, frequently flooded	IV IV	III	IV
Chialan and	IV	III	IV
Chipley sand		II	IV
Chowan silt loam	IV	III	IV
Conetoe, ALL	III	II	III
Congaree silt loam, 0 to 4 percent slopes, occasionally flooded	I	III	I
Corolla fine sand	IV	VI	IV
Coxville, ALL	II	I	II
Craven clay loam, 4 to 12 percent slopes, eroded	IV	I	IV
Craven fine sandy loam, 0 to 1 percent slopes	II	I	II
Craven fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven fine sandy loam, 1 to 6 percent slopes, eroded	III	I	III
Craven fine sandy loam, 4 to 8 percent slopes	III	I	III
Craven fine sandy loam, 4 to 8 percent slopes, eroded	IV	I	IV

Map Unit Name	Agri	For	Hort
Craven fine sandy loam, 6 to 10 percent slopes	IV	I	IV
Craven fine sandy loam, 8 to 12 percent slopes, eroded	IV	I	IV
Craven loam, 1 to 4 percent slopes	II	I	II
Craven loam, 1 to 4 percent slopes Craven loam, 1 to 4 percent slopes, eroded	III	I	III
Craven silt loam, 1 to 4 percent slopes	II	I	II
Craven very fine sandy loam, 1 to 4 percent slopes	II	I	II
Craven very fine sandy loam, 4 to 8 percent slopes Craven very fine sandy loam, 4 to 8 percent slopes	IV	I	IV
Craven-Urban land complex, 0 to 2 percent slopes	IV	I	IV
	III	V	III
Croatan muck, frequently flooded Croatan muck, ALL OTHER	II	V	
*		· ·	II
Dogue sandy loam, 0 to 2 percent slopes	II	I	II
Dogue sandy loam, 2 to 6 percent slopes	III	I	III
Dogue sandy loam, 6 to 12 percent slopes	IV	I	IV
Dorovan, ALL	IV	V	IV
Duckston fine sand	IV	VI	IV
Echaw, ALL	IV	V	IV
Exum fine sandy loam, 0 to 1 percent slopes	I	II	I
Exum fine sandy loam, 1 to 6 percent slopes	II	II	II
Exum loam, 0 to 2 percent slopes	I	II	I
Exum silt loam, 0 to 2 percent slopes	I	II	I
Exum very fine sandy loam, 0 to 2 percent slopes	I	II	I
Exum very fine sandy loam, 2 to 5 percent slopes	II	II	II
Exum-Urban land complex, 0 to 2 percent slopes	IV	II	IV
Foreston loamy fine sand, ALL	II	II	II
Goldsboro sandy loam, 1 to 6 percent slopes	I	I	I
Goldsboro, ALL OTHER	I	I	I
Goldsboro-Urban land complex, ALL	IV	I	IV
Grantham, ALL	I	I	I
Grifton, ALL	II	I	II
Hobonny muck	IV	VI	IV
Icaria fine sandy loam, ALL	II	I	II
Invershiel-Pender complex, 0 to 2 percent slopes	I	II	I
Johns, ALL	II	I	II
Johnston and Pamlico soils, 0 to 1 percent slopes, frequently flooded	IV	III	IV
Johnston soils	IV	III	IV
Kalmia, ALL	II	II	II
Kenansville, ALL	III	II	III
Kinston loam, frequently flooded	IV	III	IV
Kureb, ALL	IV	V	IV
Lafitte muck	IV	VI	IV
Lakeland sand, 0 to 6 percent slopes	IV	V	IV
Leaf, ALL	III	I	III
Lenoir, ALL	III	I	III
Leon, ALL	IV	V	III
Leon-Urban land complex	IV	V	IV
Liddell silt loam	II	I	II
Lucy loamy sand, 0 to 6 percent slopes	II	II	II
Lumbee, ALL	II	I	II
Lynchburg, ALL	II	I	II
Lynchburg-Urban land complex	IV	I	IV
Lynn Haven sand	IV	II	IV
Mandarin, ALL	IV	V	IV
mandaill, ALL	1 1	v	1 4

Map Unit Name	Agri	For	Hort
Mandarin-Urban land complex	IV	V	IV
Marvyn and Craven soils, 6 to 12 percent slopes	IV	I	IV
Marvyn, ALL	IV	I	IV
Masada sandy loam, 0 to 4 percent slopes	I	II	I
Masontown, ALL	IV	III	IV
Masontown mucky fine sandy loam and Muckalee sandy loam, frequently	IV	III	IV
flooded			
Meggett fine sandy loam, frequently flooded	IV	III	IV
Meggett, ALL OTHER	III	I	III
Mine pits	IV	VI	IV
Muckalee loam, ALL	IV	III	IV
Murville, ALL	IV	V	IV
Nahunta, ALL	I	I	I
Nakina fine sandy loam	I	I	I
Nawney loam, 0 to 2 percent slopes, frequently flooded	IV	III	IV
Newhan, ALL	IV	VI	IV
Newhan-Corolla complex, 0 to 30 percent slopes	IV	VI	IV
Newhan-Corolla-Urban land complex, 0 to 30 percent slopes	IV	VI	IV
Noboco fine sandy loam, 0 to 2 percent slopes	I	I	I
Noboco fine sandy loam, 2 to 6 percent slopes	II	I	II
Norfolk, ALL	II	II	II
Norfolk-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Ocilla loamy fine sand, 0 to 4 percent slopes	IV	II	IV
Olustee loamy sand, sandy subsoil variant (Murville)	IV	II	IV
Onslow, ALL	II	II	II
Osier loamy sand, loamy substratum	IV	Ī	IV
Pactolus, ALL	IV	II	IV
Pamlico muck, frequently flooded	IV	V	IV
Pamlico muck, ALL OTHER	III	V	III
Pantego, ALL	I	I	I
Paxville sandy loam	II	III	II
Pender fine sandy loam	II	I	II
Pender-Urban land complex	IV	I	IV
Pits, ALL	IV	VI	IV
Pocalla loamy sand, 0 to 6 percent slopes	III	II	III
Rains, ALL	I	I	I
Rains-Urban land complex	IV	I	IV
Rimini sand 1 to 6 percent slopes	IV	V	IV
Roanoke, frequently flooded	IV	III	IV
Roanoke, ALL OTHER	II	III	II
Rumford, ALL	III	II	III
Rutlege mucky loamy fine sand	IV	V	IV
Seabrook, ALL	IV	II	IV
Seabrook-Urban land complex	IV	II	IV
Stallings, ALL	II	II	II
State fine sandy loam, 0 to 2 percent slopes	I	I	I
State fine sandy loam, 2 to 6 percent slopes	II	I	II
State loamy sand, 0 to 2 percent slopes	I	I	I
Stockade fine sandy loam	I	I	I
Suffolk loamy sand, 10 to 30 percent slopes	I	II	I
Swamp	IV	III	IV
Tarboro, ALL	IV	II	IV
Tarboro-Urban land complex, 0 to 6 percent slopes	IV	II	IV

Map Unit Name	Agri	For	Hort
Tomahawk fine sand, 0 to 3 percent slopes	IV	II	IV
Tomahawk loamy fine sand	IV	II	IV
Tomahawk loamy fine sand	IV	II	IV
Tomahawk loamy sand, 0 to 3 percent slopes	III	II	III
Tomotley, ALL	I	I	I
Torhunta, ALL	II	I	II
Torhunta-Urban land complex	IV	I	IV
Tuckerman fine sandy loam	II	II	II
Udorthents, ALL	IV	VI	IV
Udults, steep	IV	VI	IV
Umbric Ochraqualfs	IV	VI	IV
Urban land	IV	VI	IV
Valhalla fine sand, 0 to 6 percent slopes	III	II	III
Wagram loamy fine sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 6 to 10 percent slopes	III	II	III
Wagram loamy sand, 0 to 6 percent slopes	II	II	II
Wagram loamy sand, 10 to 15 percent slopes	IV	II	IV
Wahee, ALL	II	I	II
Wando fine sand, 0 to 6 percent slopes	IV	II	IV
Wando-Urban land complex, 0 to 6 percent slopes	IV	II	IV
Wakulla sand, ALL	IV	V	IV
Wasda muck	I	I	I
Wehadkee silt loam	IV	III	IV
Wickham fine sandy loam, 0 to 2 percent slopes	I	I	I
Wickham fine sandy loam, 2 to 6 percent slopes	II	I	II
Wickham fine sandy loam, 6 to 10 percent slopes	II	I	II
Wickham loamy sand, 1 to 6 percent slopes	II	I	II
Wickham sandy loam, 0 to 2 percent slopes	I	I	I
Wickham sandy loam, 0 to 6 percent slopes	II	I	II
Wickham sandy loam, 0 to 6 percent slopes, rarely flooded	II	I	II
Wickham sandy loam, 2 to 6 percent slopes	II	I	II
Wickham-Urban land complex, 2 to 10 percent slopes	IV	I	IV
Wilbanks, ALL	IV	III	IV
Winton, ALL	IV	I	IV
Woodington, ALL	II	II	II
Wrightsboro fine sandy loam 0 to 2 percent slopes	I	I	I
Yaupon silty clay loam, 0 to 3 percent slopes	III	VI	III

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Map Unit Name	Agri	For	Hort
Acredale silt loam, 0 to 2 percent slopes, rarely flooded	Ī	I	I
Altavista ,ALL	I	I	I
Altavista-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Arapahoe, ALL	I	I	I
Argent, ALL	II	I	II
Augusta ,ALL	II	I	II
Augusta-Urban land complex	IV	I	IV
Backbay mucky peat, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Ballahack fine sandy loam, occasionally flooded	I	I	I
Barclay very fine sandy loam	I	I	I
Bayboro, ALL	I	I	I
Baymeade ,ALL	IV	V	IV
Baymeade-Urban land complex 1 to 6 percent slopes	IV	V	IV
Beaches, ALL	IV	VI	IV
Beaches-Newhan association	IV	VI	IV
Beaches-Newhan complex, ALL	IV	VI	IV
Belhaven muck, 0 to 2 percent slopes, frequently flooded	IV	V	IV
Belhaven muck, ALL OTHER	II	V	II
Bertie ,ALL	II	I	II
Bibb soils	IV	III	IV
Bladen ,ALL	III	I	III
·	IV	VI	IV
Bohicket silty clay loam Bojac, ALL	III	II	III
Bolling loamy fine sand, 0 to 3 percent slopes, rarely flooded	II	I	II
Borrow pits	IV	VI	IV
Brookman loam, 0 to 2 percent slopes, rarely flooded	II	I	II
Brookman mucky loam, frequently flooded	IV	III	IV
Brookman mucky silt loam	I	I	I
Cape Fear, ALL	I	I	I
Carteret, ALL	IV	VI	IV
Chapanoke silt loam, ALL	I	I	I
Charleston loamy fine sand	III	II	III
Chowan, ALL	IV	III	IV
Conaby muck, ALL	II	I	II
Conetoe, ALL	III	II	III
Corolla, ALL	IV	VI	IV
Corolla-Duckston complex, ALL	IV	VI	IV
Corolla-Urban land complex	IV	VI	IV
Currituck, ALL	IV	VI	IV
Dare muck	IV	V	IV
Deloss fine sandy loam	I	III	I
Deloss mucky loam, frequently flooded	IV	III	IV
Delway muck, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Dogue, ALL	II	I	II
Dorovan, ALL	IV	V	IV
Dragston, ALL	II	I	II
Duckston, ALL	IV	VI	IV
Duckston-Corolla complex, 0 to 6 percent slopes, rarely flooded	IV	VI	IV
Dune land, ALL	IV	VI	IV
Dune land-Newhan complex, 2 to 40 percent slopes	IV	VI	IV
Elkton, ALL	II	I	II
Engelhard loamy very fine sand, 0 to 2 percent slopes, frequently flooded	IV	III	IV

MLRA153B – Tidewater Area

Map Unit Name	Agri	For	Hort
Engelhard loamy very fine sand, 0 to 2 percent slopes, rarely flooded	II	III	II
Fallsington fine sandy loam	IV	I	IV
Fork fine sandy loam, 0 to 2 percent slopes, rarely flooded	I	I	I
Fork loamy fine sand	II	I	II
Fortescue, ALL	I	III	I
Fripp fine sand, 2 to 30 percent slopes	IV	VI	IV
Galestown loamy fine sand	IV	II	IV
Gullrock muck, 0 to 2 percent slopes, rarely flooded	II	I	II
Hobonny muck, 0 to 1 percent slopes, frequently flooded	IV	VI	IV
Hobucken, ALL	IV	VI	IV
,			
Hyde, ALL Hydeland sitt loom 0 to 2 percent closes goally flooded	I	I I	I I
Hydeland silt loam, 0 to 2 percent slopes, rarely flooded			
Icaria loamy fine sand, 0 to 2 percent slopes, rarely flooded	II	I	II
Johns loamy sand, 0 to 2 percent slopes	II	I	II
Klej loamy fine sand	IV	II	IV
Kureb sand 1 to 8 percent slopes	IV	V	IV
Kureb-Urban land complex 1 to 8 percent slopes	IV	V	IV
Lafitte muck, ALL	IV	VI	IV
Lakeland sand 1 to 8 percent slopes	IV	V	IV
Leaf silt loam	III	I	III
Lenoir, ALL	III	I	III
Leon fine sand, 0 to 2 percent slopes, rarely flooded	IV	V	III
Leon sand	IV	V	III
Longshoal mucky peat, 0 to 1 percent slopes, very frequently flooded	IV	VI	IV
Lynn Haven, ALL	IV	II	IV
Made land and dumps	IV	VI	IV
Masontown mucky fine sandy loam	IV	III	IV
Matapeake fine and very fine sandy loams	I	П	I
Mattapex, ALL	II	I	II
Munden, ALL	II	I	II
Newhan, ALL	IV	VI	IV
Newhan-Beaches complex,	IV	VI	IV
Newhan-Corolla complex, ALL	IV	VI	IV
Newhan-Corolla-Urban land complex, 0 to 30 percent slopes	IV	VI	IV
Newhan-Urban land complex, ALL	IV	VI	IV
Newholland mucky loamy sand, 0 to 2 percent slopes, frequently flooded	IV	V	IV
Newholland mucky loamy sand, 0 to 2 percent slopes, rarely flooded	I	V	I
Nimmo, ALL	II	I	II
Nixonton very fine sandy loam	I	I	I
Osier fine sand, ALL	IV	I	IV
Othello, ALL	I	II	I
Ousley fine sand, ALL	IV	V	IV
Pactolus fine sand	IV	II	IV
Pasquotank, ALL	I	I	I
Paxville mucky fine sandy loam	II	III	II
Perquimans, ALL	I	I	I
Pettigrew muck, ALL	II	I	II
Pits, mine	IV	VI	IV
Pocomoke, ALL	II	I	II
Ponzer, ALL	II	V	II
·			
Portsmouth, ALL	I	I	I
Psamments, 0 to 6 percent slopes	IV	VI	IV

MLRA153B – Tidewater Area

Map Unit Name	Agri	For	Hort
Pungo muck, ALL	III	V	III
Roanoke, ALL	II	I	II
Roper muck, ALL	I	I	I
Sassafras loamy fine sand	II	I	II
Scuppernong muck, ALL	II	V	II
Seabrook, ALL	IV	II	IV
Seabrook-Urban land complex	IV	II	IV
Seagate fine sand	IV	II	IV
Seagate-Urban land complex	IV	II	IV
State fine sandy loam, ALL	I	I	I
State loamy fine sand, ALL	II	I	II
State sandy loam, ALL	I	I	I
State-Urban land complex, 0 to 2 percent slopes	IV	I	IV
Stockade loamy fine sand	I	III	I
Stockade mucky loam, ALL	IV	III	IV
Stono, ALL	I	Ι	I
Tarboro sand, ALL	IV	II	IV
Tidal marsh	IV	VI	IV
Tomotley fine sandy loam, ALL	I	I	I
Udorthents, ALL	IV	VI	IV
Urban land ALL	IV	VI	IV
Wahee, ALL	II	I	II
Wakulla sand, ALL	IV	V	IV
Wando, ALL	IV	II	IV
Wasda muck ALL	I	I	I
Weeksville loam, 0 to 2 percent slopes, frequently flooded	IV	I	IV
Weeksville, ALL OTHER	I	I	I
Wickham loamy sand, 0 to 4 percent slopes	II	I	II
Woodstown fine sandy loam	I	Ι	I
Wysocking very fine sandy loam, 0 to 3 percent slopes, rarely flooded	I	III	I
Yaupon fine sandy loam, 0 to 3 percent slopes	III	VI	III
Yeopim loam, 0 to 2 percent slopes	I	I	I
Yeopim loam, 2 to 6 percent slopes	II	I	II
Yeopim silt loam, ALL	I	I	I
Yonges, ALL	I	I	I

Additional AssessPro Tables

2017 Building Category Values

Building Category			Baths				
Building Category	Size Adj Table	Size Adj Table Per Adj	Full Bath Amt	Addl Bath Amt	Spec Features Amt	1/2 Bath Amt	Addl 1/2 Bath Amt
COMA - COM CLASS A	TBG-COMA - TBG-COMA	PA-COMA - PA-COMA					
COMB - COM CLASS B	TBG-COMB - TBG-COMB	PA-COMB - PA-COMB					
COMC - COM CLASS C	TBG-COMC - TBG-COMC	PA-COMC - PA-COMC					
COMD - COM CLASS D	TBG-COMD - TBG-COMD	PA-COMD - PA-COMD					
COMS - COM CLASS S	TBG-COMS - TBG-COMS	PA-COMS - PA-COMS					
MH - MFG Housing	TBG-MH - TBG-MH	PA-MH - PA-MH					
R - Residential	TBG-R - TBG-R	PA-R - PA-R	\$4,275.00	\$4,275.00	\$10,000.00	\$2,720.00	\$2,720.00

Building Category			Baths				
Building Category	Size Adj Table	Size Adj Table Per Adj	Full Bath Amt	Addl Bath Amt	Spec Features Amt	1/2 Bath Amt	Addl 1/2 Bath Amt
COMA - COM CLASS A	TBG-COMA - TBG-COMA	PA-COMA - PA-COMA					
COMB - COM CLASS B	TBG-COMB - TBG-COMB	PA-COMB - PA-COMB					
COMC - COM CLASS C	TBG-COMC - TBG-COMC	PA-COMC - PA-COMC					
COMD - COM CLASS D	TBG-COMD - TBG-COMD	PA-COMD - PA-COMD					
COMS - COM CLASS S	TBG-COMS - TBG-COMS	PA-COMS - PA-COMS					
MH - MFG Housing	TBG-MH - TBG-MH	PA-MH - PA-MH					
R - Residential	TBG-R - TBG-R	PA-R - PA-R	\$4,275.00	\$4,275.00	\$10,000.00	\$2,720.00	\$2,720.00

Building Category				Other Features				
Building Category	Size Adj Table	Size Adj Table Per Adj	Addtl Plumb Fix Amt	Fireplaces Amt	Kitchens Amt	Addl Kitchens Am	Elevator Amt	Bsmnt Garages Amt
COMA - COM CLASS A	TBG-COMA - TBG-COMA	PA-COMA - PA-COMA						
COMB - COM CLASS B	TBG-COMB - TBG-COMB	PA-COMB - PA-COMB						
COMC - COM CLASS C	TBG-COMC - TBG-COMC	PA-COMC - PA-COMC						
COMD - COM CLASS D	TBG-COMD - TBG-COMD	PA-COMD - PA-COMD						
COMS - COM CLASS S	TBG-COMS - TBG-COMS	PA-COMS - PA-COMS						
MH - MFG Housing	TBG-MH - TBG-MH	PA-MH - PA-MH						
R - Residential	TBG-R - TBG-R	PA-R - PA-R	\$1,360.00	\$3,650.00	\$10,000.00	\$15,000.00	\$18,000.00	\$1,900.00

Building Category			Heat/AC							
Building Category	Size Adj Table	Size Adj Table Per Adj	% Heat Base Amt	% Heat/Unit Amt	% AC Base Amt	% AC/Unit Amt	Solar HW Base Amt	Heat HW/Unit Amt	PercentSprinkledBaseAmount	PercentSprinkledPerUnitAmount
COMA - COM CLASS A	TBG-COMA - TBG-COMA	PA-COMA - PA-COMA		3.19	0	3.75			0	2.98
COMB - COM CLASS B	TBG-COMB - TBG-COMB	PA-COMB - PA-COMB		3.19	0	3.75			0	2.98
COMC - COM CLASS C	TBG-COMC - TBG-COMC	PA-COMC - PA-COMC		3.19	0	3.75			0	2.98
COMD - COM CLASS D	TBG-COMD - TBG-COMD	PA-COMD - PA-COMD		3.19	0	3.75			0	2.98
COMS - COM CLASS S	TBG-COMS - TBG-COMS	PA-COMS - PA-COMS		3.19	0	3.75			0	2.98
MH - MFG Housing	TBG-MH - TBG-MH	PA-MH - PA-MH								
R - Residential	TBG-R - TBG-R	PA-R - PA-R			0	3.26	0	3.19		

2017 Present Use Value Rates

Land Use Code	Land Unit Code	Method	Value Effect
A - PRESENT-USE/AGRI	A01 - AGRICULTURE CLASS 1	Rate	\$1,200.00
A - PRESENT-USE/AGRI	DWG - DWELLING SITE	Rate	\$15,000.00
A - PRESENT-USE/AGRI	F01 - FOREST LAND CLASS 1	Rate	\$255.00
A - PRESENT-USE/AGRI	F06 - FOREST WASTELAND	Rate	\$32.00
A - PRESENT-USE/AGRI	H01 - HORTICULTURE CLASS 1	Rate	\$2,260.00
A - PRESENT-USE/AGRI	H02 - HORTICULTURE CLASS 2	Rate	\$1,555.00
A - PRESENT-USE/AGRI	H03 - HORTICULTURE CLASS 3	Rate	\$1,020.00
A - PRESENT-USE/AGRI	H06 - HORT WASTELAND	Rate	\$40.00
A - PRESENT-USE/AGRI	A02 - AGRICULTURE CLASS 2	Rate	\$760.00
A - PRESENT-USE/AGRI	MKR - MARKET RESIDUAL	Rate	\$8,000.00
A - PRESENT-USE/AGRI	A03 - AGRICULTURE CLASS 3	Rate	\$495.00
A - PRESENT-USE/AGRI	A06 - AG WASTELAND	Rate	\$40.00
A - PRESENT-USE/AGRI	W01 - WILDLIFE CLASS 1	Rate	\$1,200.00
A - PRESENT-USE/AGRI	W02 - WILDLIFE CLASS 2	Rate	\$760.00
A - PRESENT-USE/AGRI	W03 - WILDLIFE CLASS 3	Rate	\$495.00
A - PRESENT-USE/AGRI	W06 - WASTELAND	Rate	\$40.00
C - CONSERVATION LAND	A01 - AGRICULTURE CLASS 1	Rate	\$1,200.00
C - CONSERVATION LAND	DWG - DWELLING SITE	Rate	\$15,000.00
C - CONSERVATION LAND	F01 - FOREST LAND CLASS 1	Rate	\$255.00
C - CONSERVATION LAND	F06 - FOREST WASTELAND	Rate	\$32.00
C - CONSERVATION LAND	H01 - HORTICULTURE CLASS 1	Rate	\$2,260.00
C - CONSERVATION LAND	H02 - HORTICULTURE CLASS 2	Rate	\$1,555.00
C - CONSERVATION LAND	H03 - HORTICULTURE CLASS 3	Rate	\$1,020.00
C - CONSERVATION LAND	H06 - HORT WASTELAND	Rate	\$40.00
C - CONSERVATION LAND	A02 - AGRICULTURE CLASS 2	Rate	\$760.00
C - CONSERVATION LAND	MKR - MARKET RESIDUAL	Rate	\$8,000.00
C - CONSERVATION LAND	A03 - AGRICULTURE CLASS 3	Rate	\$495.00
C - CONSERVATION LAND	A06 - AG WASTELAND	Rate	\$40.00
C - CONSERVATION LAND	W01 - WILDLIFE CLASS 1	Rate	\$1,200.00
C - CONSERVATION LAND	W02 - WILDLIFE CLASS 2	Rate	\$760.00
C - CONSERVATION LAND	W03 - WILDLIFE CLASS 3	Rate	\$495.00
C - CONSERVATION LAND	W06 - WASTELAND	Rate	\$40.00
F - PRESENT-USE/FOREST	A01 - AGRICULTURE CLASS 1	Rate	\$1,200.00
F - PRESENT-USE/FOREST	DWG - DWELLING SITE	Rate	\$15.000.00
F - PRESENT-USE/FOREST		Rate	\$255.00
	F01 - FOREST LAND CLASS 1 F06 - FOREST WASTELAND		
F - PRESENT-USE/FOREST		Rate	\$32.00 \$2,260.00
F - PRESENT-USE/FOREST	H01 - HORTICULTURE CLASS 1	Rate	· '
F - PRESENT-USE/FOREST	H02 - HORTICULTURE CLASS 2	Rate	\$1,555.00
F - PRESENT-USE/FOREST	H03 - HORTICULTURE CLASS 3	Rate	\$1,020.00
F - PRESENT-USE/FOREST	H06 - HORT WASTELAND	Rate	\$40.00
F - PRESENT-USE/FOREST	A02 - AGRICULTURE CLASS 2	Rate	\$760.00
F - PRESENT-USE/FOREST	MKR - MARKET RESIDUAL	Rate	\$8,000.00
F - PRESENT-USE/FOREST	A03 - AGRICULTURE CLASS 3	Rate	\$495.00
F - PRESENT-USE/FOREST	A06 - AG WASTELAND	Rate	\$40.00
F - PRESENT-USE/FOREST	W01 - WILDLIFE CLASS 1	Rate	\$1,200.00
F - PRESENT-USE/FOREST	W02 - WILDLIFE CLASS 2	Rate	\$760.00
F - PRESENT-USE/FOREST	W03 - WILDLIFE CLASS 3	Rate	\$495.00
F - PRESENT-USE/FOREST	W06 - WASTELAND	Rate	\$40.00
H - PRESENT-USE/HORT	A01 - AGRICULTURE CLASS 1	Rate	\$1,200.00
H - PRESENT-USE/HORT	DWG - DWELLING SITE	Rate	\$15,000.00
H - PRESENT-USE/HORT	F01 - FOREST LAND CLASS 1	Rate	\$255.00
H - PRESENT-USE/HORT	F06 - FOREST WASTELAND	Rate	\$32.00
H - PRESENT-USE/HORT	H01 - HORTICULTURE CLASS 1	Rate	\$2,260.00
H - PRESENT-USE/HORT	H02 - HORTICULTURE CLASS 2	Rate	\$1,555.00

2017 Present Use Value Rates

H - PRESENT-USE/HORT	H03 - HORTICULTURE CLASS 3	Rate	\$1,020.00
H - PRESENT-USE/HORT	H06 - HORT WASTELAND	Rate	\$40.00
H - PRESENT-USE/HORT	A02 - AGRICULTURE CLASS 2	Rate	\$760.00
H - PRESENT-USE/HORT	MKR - MARKET RESIDUAL	Rate	\$8,000.00
H - PRESENT-USE/HORT	A03 - AGRICULTURE CLASS 3	Rate	\$495.00
H - PRESENT-USE/HORT	A06 - AG WASTELAND	Rate	\$40.00
H - PRESENT-USE/HORT	W01 - WILDLIFE CLASS 1	Rate	\$1,200.00
H - PRESENT-USE/HORT	W02 - WILDLIFE CLASS 2	Rate	\$760.00
H - PRESENT-USE/HORT	W03 - WILDLIFE CLASS 3	Rate	\$495.00
H - PRESENT-USE/HORT	W06 - WASTELAND	Rate	\$40.00
W - WILDLIFE	A01 - AGRICULTURE CLASS 1	Rate	\$1,200.00
W - WILDLIFE	DWG - DWELLING SITE	Rate	\$15,000.00
W - WILDLIFE	F01 - FOREST LAND CLASS 1	Rate	\$255.00
W - WILDLIFE	F06 - FOREST WASTELAND	Rate	\$32.00
W - WILDLIFE	H01 - HORTICULTURE CLASS 1	Rate	\$2,260.00
W - WILDLIFE	H02 - HORTICULTURE CLASS 2	Rate	\$1,555.00
W - WILDLIFE	H03 - HORTICULTURE CLASS 3	Rate	\$1,020.00
W - WILDLIFE	H06 - HORT WASTELAND	Rate	\$40.00
W - WILDLIFE	A02 - AGRICULTURE CLASS 2	Rate	\$760.00
W - WILDLIFE	MKR - MARKET RESIDUAL	Rate	\$8,000.00
W - WILDLIFE	A03 - AGRICULTURE CLASS 3	Rate	\$495.00
W - WILDLIFE	A06 - AG WASTELAND	Rate	\$40.00
W - WILDLIFE	W01 - WILDLIFE CLASS 1	Rate	\$1,200.00
W - WILDLIFE	W02 - WILDLIFE CLASS 2	Rate	\$760.00
W - WILDLIFE	W03 - WILDLIFE CLASS 3	Rate	\$495.00
W - WILDLIFE	W06 - WASTELAND	Rate	\$40.00

2017 Building Size Adjustment Table

Size Adjustment Table Name Code	Standard Size	Curve Percent	Max Factor	Factor	Min Factor	RE	Area	PP	From Area	To Area	Price	Size Exponent
TBG-R - TBG-R		1	1	1	1	TRUE		FALSE	1400	9999999		
TBG-R - TBG-R		1	1	1.08	1	TRUE		FALSE	1	700		
TBG-R - TBG-R		1	1	1.07	1	TRUE		FALSE	700	800		
TBG-R - TBG-R		1	1	1.06	1	TRUE		FALSE	800	900		
TBG-R - TBG-R		1	1	1.05	1	TRUE		FALSE	900	1000		
TBG-R - TBG-R		1	1	1.04	1	TRUE		FALSE	1000	1100		
TBG-R - TBG-R		1	1	1.03	1	TRUE		FALSE	1100	1200		
TBG-R - TBG-R		1	1	1.02	1	TRUE		FALSE	1200	1300		
TBG-R - TBG-R		1	1	1.01	1	TRUE		FALSE	1300	1350		
TBG-R - TBG-R		1	1	1	1	TRUE		FALSE	1350	1400		
TBG-COMA - TBG-COMA	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	
TBG-COMS - TBG-COMS	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	
TBG-COMB - TBG-COMB	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	
TBG-MH - TBG-MH	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	
TBG-COMD - TBG-COMD	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	
TBG-COMC - TBG-COMC	1	1	1	1	1	TRUE	1	FALSE	0	999999	0	

2017 Depreciation Table

Depreciation Table	Full Description	Percent Per Year	Min Depreciation	Max Depreciation	Min Depreciation For AV	Max Depreciation For AV	Max Age
COMA	COM CLASS A		·	·			
СОМВ	COM CLASS B						
COMC	COM CLASS C						
COMD	COM CLASS D						
COMS	COM CLASS S						
MH	MFG Housing						
R	Residential						
C-00	C-00	1.00	0.00	90.00	0.00	90.00	99
C-05	C-05	1.00	0.00	90.00	0.00	25.00	99
C-10	C-10	1.00	0.00	90.00	0.00	35.00	99
C-15	C-15	1.00	0.00	90.00	0.00	45.00	99
C-20	C-20	1.00	0.00	90.00	0.00	80.00	99
C-25	C-25	1.00	0.00	90.00	0.00	80.00	99
C-30	C-30	1.00	0.00	90.00	0.00	80.00	99
C-35	C-35	1.00	0.00	90.00	0.00	80.00	99
C-40	C-40	1.00	0.00	90.00	0.00	80.00	99
C-45	C-45	1.00	0.00	90.00	0.00	80.00	99
C-50	C-50	1.00	0.00	90.00	0.00	80.00	99
C-55	C-55	1.00	0.00	90.00	0.00	80.00	99
C-60	C-60	1.00	0.00	90.00	0.00	80.00	99
C-65	C-65	1.00	0.00	90.00	0.00	80.00	99
C-70	C-70	1.00	0.00	90.00	0.00	80.00	99
C-75	C-75	1.00	0.00	90.00	0.00	39.00	99
C-80	C-80	1.00	0.00	90.00	0.00	37.00	99
C-85	C-85	1.00	0.00	90.00	0.00	35.00	99
M-16	M-16	1.00	0.00	90.00	0.00	90.00	99
M-21	M-21	1.00	0.00	90.00	0.00	80.00	99
M-26	M-26	1.00	0.00	90.00	0.00	80.00	99
M-31	M-31	1.00	0.00	90.00	0.00	80.00	99
M-36	M-36	1.00	0.00	90.00	0.00	80.00	99
M-41	M-41	1.00	0.00	90.00	0.00	80.00	99
M-46	M-46	1.00	0.00	90.00	0.00	80.00	99
M-51	M-51	1.00	0.00	90.00	0.00	80.00	99
M-56	M-56	1.00	0.00	90.00	0.00	80.00	99
R-00	R-00	1.00	0.00	90.00	0.00	90.00	99
R-10	R-10	1.00	0.00	90.00	0.00	80.00	99
R-15	R-15	1.00	0.00	90.00	0.00	80.00	99
R-20	R-20	1.00	0.00	90.00	0.00	80.00	99
R-25	R-25	1.00	0.00	90.00	0.00	80.00	99
R-30	R-30	1.00	0.00	90.00	0.00	80.00	99
R-35	R-35	1.00	0.00	90.00	0.00	80.00	99
R-45	R-45	1.00	0.00	90.00	0.00	71.00	99
R-50	R-50	1.00	0.00	90.00	0.00	64.00	99

2017 Depreciation Table

R-55	R-55	1.00	0.00	90.00	0.00	58.00	99
R-60	R-60	1.00	0.00	90.00	0.00	53.00	99
R-65	R-65	1.00	0.00	90.00	0.00	49.00	99
R-70	R-70	1.00	0.00	90.00	0.00	46.00	99
R-75	R-75	1.00	0.00	90.00	0.00	42.00	99
R-80	R-80	1.00	0.00	90.00	0.00	39.00	99
R-85	R-85	1.00	0.00	90.00	0.00	37.00	99
R-90	R-90	1.00	0.00	90.00	0.00	20.00	99
R-95	R-95	1.00	0.00	90.00	0.00	10.00	99
R-99	R-99	0.00	0.00	0.00	0.00	0.00	99

Depreciation Table Code	Physical Condition Code	Factor
C-00 - C-00	F - FAIR	1.50
C-00 - C-00	G - GOOD	0.40
C-00 - C-00	N - NORMAL	1.00
C-00 - C-00	P - POOR	1.75
C-00 - C-00	R - RENOVATED	0.20
C-00 - C-00	U - UNSOUND	90.00
C-05 - C-05	F - FAIR	1.50
C-05 - C-05	G - GOOD	0.40
C-05 - C-05	N - NORMAL	1.00
C-05 - C-05	P - POOR	1.75
C-05 - C-05	R - RENOVATED	0.20
C-05 - C-05	U - UNSOUND	90.00
C-10 - C-10	F - FAIR	1.50
C-10 - C-10	G - GOOD	0.40
C-10 - C-10	N - NORMAL	1.00
C-10 - C-10	P - POOR	1.75
C-10 - C-10	R - RENOVATED	0.20
C-10 - C-10	U - UNSOUND	90.00
C-15 - C-15	F - FAIR	1.50
C-15 - C-15	G - GOOD	0.40
C-15 - C-15	N - NORMAL	1.00
C-15 - C-15	P - POOR	1.75
C-15 - C-15	R - RENOVATED	0.20
C-15 - C-15	U - UNSOUND	90.00
C-20 - C-20	F - FAIR	1.50
C-20 - C-20	G - GOOD	0.40
C-20 - C-20	N - NORMAL	1.00
C-20 - C-20	P - POOR	1.75
C-20 - C-20	R - RENOVATED	0.20
C-20 - C-20	U - UNSOUND	90.00
C-25 - C-25	F - FAIR	1.50
C-25 - C-25	G - GOOD	0.40
C-25 - C-25	N - NORMAL	1.00
C-25 - C-25	P - POOR	1.75
C-25 - C-25	R - RENOVATED	0.20
C-25 - C-25	U - UNSOUND	90.00
C-30 - C-30	F - FAIR	1.50
C-30 - C-30	G - GOOD	0.40
C-30 - C-30	N - NORMAL	1.00
C-30 - C-30	P - POOR	1.75
C-30 - C-30	R - RENOVATED	0.20
C-30 - C-30	U - UNSOUND	90.00
C-35 - C-35	F - FAIR	1.50
C-35 - C-35	G - GOOD	0.40
C-35 - C-35	N - NORMAL	1.00
C-35 - C-35	P - POOR	1.75

C-35 - C-35	R - RENOVATED	0.20
C-35 - C-35	U - UNSOUND	90.00
C-40 - C-40	F - FAIR	1.50
C-40 - C-40	G - GOOD	0.40
C-40 - C-40	N - NORMAL	1.00
C-40 - C-40	P - POOR	1.75
C-40 - C-40	R - RENOVATED	0.20
C-40 - C-40	U - UNSOUND	90.00
C-45 - C-45	F - FAIR	1.50
C-45 - C-45	G - GOOD	0.40
C-45 - C-45	N - NORMAL	1.00
C-45 - C-45	P - POOR	1.75
C-45 - C-45	R - RENOVATED	0.20
C-45 - C-45	U - UNSOUND	90.00
C-50 - C-50	F - FAIR	1.50
C-50 - C-50	G - GOOD	0.40
C-50 - C-50	N - NORMAL	1.00
C-50 - C-50	P - POOR	1.75
C-50 - C-50	R - RENOVATED	0.20
C-50 - C-50	U - UNSOUND	90.00
C-55 - C-55	F - FAIR	1.50
C-55 - C-55	G - GOOD	0.40
C-55 - C-55	N - NORMAL	1.00
C-55 - C-55	P - POOR	1.75
C-55 - C-55	R - RENOVATED	0.20
C-55 - C-55	U - UNSOUND	90.00
C-60 - C-60	F - FAIR	1.50
C-60 - C-60	G - GOOD	0.40
C-60 - C-60	N - NORMAL	1.00
C-60 - C-60	P - POOR	1.75
C-60 - C-60	R - RENOVATED	0.20
C-60 - C-60	U - UNSOUND	90.00
C-65 - C-65	F - FAIR	1.50
C-65 - C-65	G - GOOD	0.40
C-65 - C-65	N - NORMAL	1.00
C-65 - C-65	P - POOR	1.75
C-65 - C-65	R - RENOVATED	0.20
C-65 - C-65	U - UNSOUND	90.00
C-70 - C-70	F - FAIR	1.50
C-70 - C-70	G - GOOD	0.40
C-70 - C-70	N - NORMAL	1.00
C-70 - C-70	P - POOR	1.75
C-70 - C-70	R - RENOVATED	0.20
C-70 - C-70	U - UNSOUND	90.00
C-75 - C-75	F - FAIR	1.50
C-75 - C-75	G - GOOD	0.40
C-75 - C-75	N - NORMAL	1.00

C-75 - C-75	P - POOR	1.75
C-75 - C-75	R - RENOVATED	0.20
C-75 - C-75	U - UNSOUND	90.00
C-80 - C-80	F - FAIR	1.50
C-80 - C-80	G - GOOD	0.40
C-80 - C-80	N - NORMAL	1.00
C-80 - C-80	P - POOR	1.75
C-80 - C-80	R - RENOVATED	0.20
C-80 - C-80	U - UNSOUND	90.00
C-85 - C-85	F - FAIR	1.50
C-85 - C-85	G - GOOD	0.40
C-85 - C-85	N - NORMAL	1.00
C-85 - C-85	P - POOR	1.75
C-85 - C-85	R - RENOVATED	0.20
C-85 - C-85	U - UNSOUND	90.00
M-16 - M-16	F - FAIR	1.50
M-16 - M-16	G - GOOD	0.40
M-16 - M-16	N - NORMAL	1.00
M-16 - M-16	P - POOR R - RENOVATED	1.75
M-16 - M-16		0.20
M-16 - M-16 M-21 - M-21	U - UNSOUND F - FAIR	90.00
M-21 - M-21	G - GOOD	0.40
M-21 - M-21	N - NORMAL	1.00
M-21 - M-21	P - POOR	1.75
M-21 - M-21	R - RENOVATED	0.20
M-21 - M-21	U - UNSOUND	90.00
M-26 - M-26	F - FAIR	1.50
M-26 - M-26	G - GOOD	0.40
M-26 - M-26	N - NORMAL	1.00
M-26 - M-26	P - POOR	1.75
M-26 - M-26	R - RENOVATED	0.20
M-26 - M-26	U - UNSOUND	90.00
M-31 - M-31	F - FAIR	1.50
M-31 - M-31	G - GOOD	0.40
M-31 - M-31	N - NORMAL	1.00
M-31 - M-31	P - POOR	1.75
M-31 - M-31	R - RENOVATED	0.20
M-31 - M-31	U - UNSOUND	90.00
M-36 - M-36	F - FAIR	1.50
M-36 - M-36	G - GOOD	0.40
M-36 - M-36	N - NORMAL	1.00
M-36 - M-36	P - POOR	1.75
M-36 - M-36	R - RENOVATED	0.20
M-36 - M-36	U - UNSOUND	90.00
M-41 - M-41	F - FAIR	1.50
M-41 - M-41	G - GOOD	0.40

M-41 - M-41	N - NORMAL	1.00
M-41 - M-41	P - POOR	1.75
M-41 - M-41	R - RENOVATED	0.20
M-41 - M-41	U - UNSOUND	90.00
M-46 - M-46	F - FAIR	1.50
M-46 - M-46	G - GOOD	0.40
M-46 - M-46	N - NORMAL	1.00
M-46 - M-46	P - POOR	1.75
M-46 - M-46	R - RENOVATED	0.20
M-46 - M-46	U - UNSOUND	90.00
M-51 - M-51	F - FAIR	1.50
M-51 - M-51	G - GOOD	0.40
M-51 - M-51	N - NORMAL	1.00
M-51 - M-51	P - POOR	1.75
M-51 - M-51	R - RENOVATED	0.20
M-51 - M-51	U - UNSOUND	90.00
M-56 - M-56	F - FAIR	1.50
M-56 - M-56	G - GOOD	0.40
M-56 - M-56	N - NORMAL	1.00
M-56 - M-56	P - POOR	1.75
M-56 - M-56	R - RENOVATED	0.20
M-56 - M-56	U - UNSOUND	90.00
R-00 - R-00	F - FAIR	1.50
R-00 - R-00	G - GOOD	0.40
R-00 - R-00	N - NORMAL	1.00
R-00 - R-00	P - POOR	1.75
R-00 - R-00	R - RENOVATED	0.20
R-00 - R-00	U - UNSOUND	90.00
R-10 - R-10	F - FAIR	1.50
R-10 - R-10	G - GOOD	0.40
R-10 - R-10	N - NORMAL	1.00
R-10 - R-10	P - POOR	1.75
R-10 - R-10	R - RENOVATED	0.20
R-10 - R-10	U - UNSOUND	90.00
R-15 - R-15	F - FAIR	1.50
R-15 - R-15	G - GOOD	0.40
R-15 - R-15	N - NORMAL	1.00
R-15 - R-15	P - POOR	1.75
R-15 - R-15	R - RENOVATED	0.20
R-15 - R-15	U - UNSOUND	90.00
R-20 - R-20	F - FAIR	1.50
R-20 - R-20	G - GOOD	0.40
R-20 - R-20	N - NORMAL	1.00
R-20 - R-20	P - POOR	1.75
R-20 - R-20	R - RENOVATED	0.20
R-20 - R-20	U - UNSOUND	90.00
R-25 - R-25	F - FAIR	1.50

R-25 - R-25	G - GOOD	0.40
R-25 - R-25	N - NORMAL	1.00
R-25 - R-25	P - POOR	1.75
R-25 - R-25	R - RENOVATED	0.20
R-25 - R-25	U - UNSOUND	90.00
R-30 - R-30	F - FAIR	1.50
R-30 - R-30	G - GOOD	0.40
R-30 - R-30	N - NORMAL	1.00
R-30 - R-30	P - POOR	1.75
R-30 - R-30	R - RENOVATED	0.20
R-30 - R-30	U - UNSOUND	90.00
R-35 - R-35	F - FAIR	1.50
R-35 - R-35	G - GOOD	0.40
R-35 - R-35	N - NORMAL	1.00
R-35 - R-35	P - POOR	1.75
R-35 - R-35	R - RENOVATED	0.20
R-35 - R-35	U - UNSOUND	90.00
R-45 - R-45	F - FAIR	1.50
R-45 - R-45	G - GOOD	0.40
R-45 - R-45	N - NORMAL	1.00
R-45 - R-45	P - POOR	1.75
R-45 - R-45	R - RENOVATED	0.20
R-45 - R-45	U - UNSOUND	90.00
R-50 - R-50	F - FAIR	1.50
R-50 - R-50	G - GOOD	0.40
R-50 - R-50	N - NORMAL	1.00
R-50 - R-50	P - POOR	1.75
R-50 - R-50	R - RENOVATED	0.20
R-50 - R-50	U - UNSOUND	90.00
R-55 - R-55	F - FAIR	1.50
R-55 - R-55	G - GOOD	0.40
R-55 - R-55	N - NORMAL	1.00
R-55 - R-55	P - POOR	1.75
R-55 - R-55	R - RENOVATED	0.20
R-55 - R-55	U - UNSOUND	90.00
R-60 - R-60	F - FAIR	1.50
R-60 - R-60	G - GOOD	0.40
R-60 - R-60	N - NORMAL	1.00
R-60 - R-60	P - POOR	1.75
R-60 - R-60	R - RENOVATED	0.20
R-60 - R-60	U - UNSOUND	90.00
R-65 - R-65	F - FAIR	1.50
R-65 - R-65	G - GOOD	0.40
R-65 - R-65	N - NORMAL	1.00
R-65 - R-65	P - POOR	1.75
R-65 - R-65	R - RENOVATED	0.20
R-65 - R-65	U - UNSOUND	90.00

R-70 - R-70	F - FAIR	1.50
R-70 - R-70	G - GOOD	0.40
R-70 - R-70	N - NORMAL	1.00
R-70 - R-70	P - POOR	1.75
R-70 - R-70	R - RENOVATED	0.20
R-70 - R-70	U - UNSOUND	90.00
R-75 - R-75	F - FAIR	1.50
R-75 - R-75	G - GOOD	0.40
R-75 - R-75	N - NORMAL	1.00
R-75 - R-75	P - POOR	1.75
R-75 - R-75	R - RENOVATED	0.20
R-75 - R-75	U - UNSOUND	90.00
R-80 - R-80	F - FAIR	1.50
R-80 - R-80	G - GOOD	0.40
R-80 - R-80	N - NORMAL	1.00
R-80 - R-80	P - POOR	1.75
R-80 - R-80	R - RENOVATED	0.20
R-80 - R-80	U - UNSOUND	90.00
R-85 - R-85	F - FAIR	1.50
R-85 - R-85	G - GOOD	0.40
R-85 - R-85	N - NORMAL	1.00
R-85 - R-85	P - POOR	1.75
R-85 - R-85	R - RENOVATED	0.20
R-85 - R-85	U - UNSOUND	90.00
R-90 - R-90	F - FAIR	1.50
R-90 - R-90	G - GOOD	0.40
R-90 - R-90	N - NORMAL	1.00
R-90 - R-90	P - POOR	1.75
R-90 - R-90	R - RENOVATED	0.20
R-90 - R-90	U - UNSOUND	90.00
R-95 - R-95	F - FAIR	1.50
R-95 - R-95	G - GOOD	0.40
R-95 - R-95	N - NORMAL	1.00
R-95 - R-95	P - POOR	1.75
R-95 - R-95	R - RENOVATED	0.20
R-95 - R-95	U - UNSOUND	90.00
R-99 - R-99	F - FAIR	1.50
R-99 - R-99	G - GOOD	0.40
R-99 - R-99	N - NORMAL	1.00
R-99 - R-99	P - POOR	1.75
R-99 - R-99	R - RENOVATED	0.20
R-99 - R-99	U - UNSOUND	90.00

2017 Special Feature / Yard Item Pricing Table

18R 18EDROOM APARTMENT TRUE EA - Per Each 0 \$0.00 TOB-18R - TOB-18R FALSE		100 100 100 100 100 100 100 100 100 100	MinUnitWarning	MaxUnitWarning
1BR 1 BEDROOM APARTMENT TRUE EA - Per Each 0 \$0.00 TOB-1BR - TOB-1BR FALSE		100 100 100 100 100 100 100 100 100 100		
28R 2 BEDROOM APARTMENT TRUE EA - Per Each 0 \$0.00 TOB-2BR - TOB-2BR FALSE		100 100 100 100 100 100 100 100 100		
38R 3 BEDROOM APARTMENT TRUE EA - Per Each 0 \$0.00 TOB-38R - TOB-38R FALSE		100 100 100 100 100 100 100 100 100		
ABR 4 BEDROOM APARTMENT TRUE EA - Per Each 0 \$0.00 TOB-4BR - TOB-4BR FALSE		100 100 100 100 100 100 100 100 100		
B1S BARN ONE STORY		100 100 100 100 100 100 100 100 100		
B2S 2 ST BARN		100 100 100 100 100 100 100 100 100		
BAR BARN FINISHED 2STORY		100 100 100 100 100 100 100 100		
BE1 BANK MONEY VAULT		100 100 100 100 100 100 100		
BE2 BANK RECORD VAULT		100 100 100 100 100		
BED NURSING HOME BEDS TRUE EA - Per Each 0 \$0.00 TOB-BED - TOB-BED FALSE		100 100 100 100		
CAN FRAME/ALUM. CANOPY FALSE SF - Square Feet O \$10.25 Table R-15 - R-15 TOB-CAN - TOB-CAN 1 - Detached FALSE		100 100 100		ł
CB1 CABIN SEASONAL FALSE SF - Square Feet 0 \$33.70 Table R-30 - R-30 TOB-CB1 - TOB-CB1 1 - Detached FALSE		100 100 100		
CB2 CABIN/HEAT/UTILITIES FALSE SF - Square Feet O \$40.25 Table R-30 - R-30 TOB-CB2 - TOB-CB2 1 - Detached FALSE		100 100		
CBB CONCRETE BUILDING FALSE SF - Square Feet 0 \$12.50 Table R-30 - R-30 TOB-CBB - TOB-CBB 1 - Detached FALSE CEM BURIAL LOT FALSE EA - Per Each 0 \$100.001 Table R-99 R-99 TOB-CCR - TOB-CCR 1 - Detached FALSE CNC CONCRETE CANOPY FALSE SF - Square Feet 0 \$16.75 Table R-30 - R-30 TOB-CNC - TOB-CNC 1 - Detached FALSE CNM CANOPY COMMERCIAL QY FALSE SF - Square Feet 0 \$15.50 Table R-30 - R-30 TOB-CNM - TOB-CNM 1 - Detached FALSE		100		
CEM BURIAL LOT FALSE EA - Per Each 0 \$100.00 Table R-99 - R-99 TOB-CEM - TOB-CEM 1 - Detached FALSE CNC CONCRETE CANOPY FALSE SF - Square Feet 0 \$16.75 Table R-30 - R-30 TOB-CNC - TOB-CNC 1 - Detached FALSE CNM CANOPY COMMERCIAL QY FALSE SF - Square Feet 0 \$15.50 Table R-30 - R-30 TOB-CNM - TOB-CNM 1 - Detached FALSE				
CNC CONCRETE CANOPY FALSE SF - Square Feet 0 \$16.75 Table R-30 - R-30 TOB-CNC - TOB-CNC 1 - Detached FALSE CNM CANOPY COMMERCIAL QY FALSE SF - Square Feet 0 \$15.50 Table R-30 - R-30 TOB-CNM - TOB-CNM 1 - Detached FALSE		100		———
CNM CANOPY COMMERCIAL QY FALSE SF - Square Feet 0 \$15.50 Table R-30 - R-30 TOB-CNM - TOB-CNM 1 - Detached FALSE		100		———
		100		———
CNP CANOPY OVER FLOOR FALSE SF - Square Feet 0 \$15.45 Table R-15 - R-15 TOB-CNP - TOB-CNP 1 - Detached FALSE P		100		
CON MALL CONCOURSE TRUE SF - Square Feet 0 \$95.25 Building C-00 - C-00 TOB-CON - TOB-CON 0 - Attached FALSE	Oren Toren	100		———
CPT RESIDENTIAL CARPORT FALSE SF - Square Feet 0 \$25.65 Table R-20 - R-20 TOB-CPT - TOB-CPT 1 - Detached FALSE		100		
		100		
DWG OLD DWELLING FALSE SF - Square Feet 0 S9.59 Table R-20 - R-20 TOB-DWG - TOB-DWG 1- Detached FALSE		100		
EFF EFFICIENCY APARTMENT TRUE EA- Per Each 0 \$0.00 TOB-EFF TOB-EFF FALSE	-			
ELO STOP, FREIGHT ELEV TRUE EA-Per Each 0 \$4,349.00 Building C-00 - C-00 TOB-ELO TOB-ELO 0 - Attached FALSE	-	100		
ELI ELEV, FREIGHT TRUE IBS - Pounds 0 \$15.69 Building C-00 - C-00 TOB-EL1 - TOB-EL1 0 - Attached FALSE		100		
ELL STOP, PASS ELEV TRUE EA - Per Each 0 \$4,630.00 Building C-00 - C-00 TOB-EL2 - TOB-EL2 0 - Attached FALSE		100		
ELS SIGN, PASSENGER TRUE LBS - Pounds 0 \$37.11 Bidling C-00 - C-00 TOB-EL3 - TOB-EL3 0 - Attached FALSE		100		
		100		
	Porch - Porch	100		
GC1 GOLEGO ONFILT FORCE TALSE 1 - Square Feet 0 32.5.94 Talse 10 10 10 10 10 10 10 1		100		
GC2 GOLF COURSE CLASS II FALSE HO - Holes 0 \$75,000.00 Table R-45 - R-45 TOB-GC2 - TOB-GC2 1 - Detachled FALSE		100		
GC2 GOVERNORSE FALSE NO -NOISS 0 \$75,000,00 Table R-45 - R-45 TOB-GC2 - TOP-GC2 TOP-GC3 - TOP-GC3 TOP-GC3 - TOP-GC3 - TOP-GC3 TOP-GC3 - TOP-		100		
GCS WINNING COURSE PALSE PROFESSION OF SUPPLY		100		
GDH GUARD HOUSE FALSE SF - Square Feet 0 574.75 Table R-20 - R-20 TOB-GDH - TOB-GDH 1 - Detached FALSE		100		
GDI GORNO DOSC 1 FALSE 31 - Square Feet 0 525.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - Square Feet 0 \$25.25 Table R-15 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TOB-GH 1 - Detaction FALSE 5 - R-15 TOB-GH - TO		100		
		100		
		100		
		100 100		
				1
	Garage - Garage	100		1
		100		—
HTB HOT TUB (NOT P/P) TRUE EA - Per Each 0 \$5,000.00 R-30 - R-30 TOB-HTB TOB-HTB 0 - Attached FALSE		100		1
	Pool - Pool	100		-
KK1 KIOSK, FINISHED SALE FALSE SF - Square Feet 0 \$132.25 Table R-20 - R-20 TOB-KK1 1 - Detached FALSE		100		1
LAN LANDSCAPING FALSE SF - Square Feet 0 \$28.49 Table R-30 - R-30 TOB-LAN - TOB-LAN FALSE		100		
LGH SPECIAL LIGHTING FALSE EA - Per Each 0 \$215.00 Table R-30 - R-30 TOB-LGH - TOB-LGH FALSE		100		
LOD LOADING DOCK FALSE SF - Square Feet 0 \$16.10 Table R-15 - R-15 TOB-LOD - TOB-LOD 1 - Detached FALSE		100		
LSS LUMBER STORAGE SHED FALSE SF - Square Feet 0 \$11.57 Table R-20 - R-20 TOB-LSS - TOB-LSS 1 - Detached FALSE		100		
MAU MAUSOLEUM NICHES FALSE FA-Per Each 0 \$1,000.00 Table R-99 - R-99 TOB-MAU - TOB-MAU 1 - Detached FALSE		100		—
MST STORAGE FALSE SF - Square Feet 0 \$10.49 Table R-30 - R-30 TOB-MST - TOB-MST 1 - Detached FALSE		100		
MZ1 STORAGE MEZZANINE TRUE SF - Square Feet 0 \$13.60 Building C-00 - C-00 TOB-MZ1 - TOB-MZ1 0 - Attached FALSE		100		—
MZZ DISPLAY MEZZANINE TRUE SF - Square Feet 0 \$24.62 Building C-00 - C-00 TOB-MZZ - TOB-MZZ 0 - Attached FALSE		100		
MZ3 OFFICE MEZZANINE TRUE SF - Square Feet 0 \$29.33 Building C-00 - C-00 TOB-MZ3 - TOB-MZ3 0 - Attached FALSE		100		
MZ4 HOTEL MEZZANINE TRUE SF - Square Feet 0 \$27.42 Building C-00 - C-00 TOB-MZ4 - TOB-MZ4 0 - Attached FALSE		100		
MZ5 THEATER MEZZANINE TRUE SF - Square Feet 0 \$23.75 Building C-00 - C-00 TOB-MZ5 - TOB-MZ5 - O - Attached FALSE		100		
PH POULTRY HOUSE FALSE SF - Square Feet 0 \$8.49 Table R-15 - R-15 TOB-PH 1 - Detached FALSE		100		
PH1 PUMP HOUSE FALSE SF - Square Feet 0 514.50 Table R-20 - R-20 TOB-PH1 - TOB-PH1 1 - Detached FALSE		100		
PMB PREFAB METAL BLDING FALSE SF - Square Feet 0 522.40 Table R-30 - R-30 TOB-PMB - TOB-PMB 1 - Detached FALSE 1 - Detached		100		
POE POOL ENCLOSURE FALSE SF - Square Feet 0 552.65 Table R-30 - R-30 TOB-POE - TOB-POE 1 - Detached FALSE		100		—
PRK PARKING SPACE (EA) FALSE EA - Per Each 0 \$15,000.00 Table R-99 - R-99 TOB-PRK - TOB-PRK 1 - Detached FALSE		100		
PT PATIO OR TERRACE FALSE SF - Square Feet 0 \$15.00 Table R-15 - R-15 TOB-PT - TOB-PT 1 - Detached FALSE		100		
PV1 OPEN PARK PAVILION FALSE SF - Square Feet 0 \$24.15 Table R-30 R-30 TOB-PV1 - TOB-PV1 1 - Detached FALSE DE CONTROL OF TOB-PV1 - TOB-		100		
PVZ ENCLOSED PARK PAVILI FALSE SF - Square Feet 0 536.22 Table R-20 - R-20 TOB-PVZ - TOB-PVZ 1 - Detached FALSE PVZ		100		—
PV3 RESTROOM/POOLHOUSE FALSE SF - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV4 CONCESSION FAME FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV5 CONCESSION FAME FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV6 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV7 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 FALSE 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached FALSE PV8 5 - Square Feet 0 \$47.19 Table R-20 - R-20 TOB-PV3 - TOB-PV3 1 - Detached Tob		100		
PV4 CONCESSION STAND FALSE SF - Square Feet 0 \$30.75 Table R-20 - R-20 TOB-PV4 - TOB-PV4 1 - Detached FALSE		100		
QUO QUONSET FALSE SF - Square Feet 0 515.50 Table R-20 - R-20 TOB-QUO - TOB-QUO 1 - Detached FALSE		100		——
RBC RACQUETBALLCT.(CO) FALSE CO - Courts 0 \$30,000.00 Table R-15 - R-15 TOB-RBC - TOB-RBC 1 - Detached FALSE		100		
REF NO VALUE FALSE SF - Square Feet 0 \$0.00 Table R-20 - R-20 TOB-REF - TOB-REF FALSE F		100		——
SHR STANDARD HOTEL ROOM TRUE EA - Per Each 0 \$0.00 TOB-SHR - TOB-S) P '	100		
		100		—
		100		ļ
		100		ļ
		100		ļ
		100		
		100		ļ
		100		ļ
ST1 CONDO STORAGE FALSE EA - Per Each 0 \$1,500.00 Table R-99 - R-99 TOB-ST1 - TOB-ST1 1 - Detached FALSE		100		ļ
ST2 CONDO STORAGE FALSE EA - Per Each 0 \$3,500.00 Table R-99 - R-99 TOB-ST2 - TOB-ST2 1 - Detached FALSE		100		
ST3 CONDO STORAGE FALSE EA - Per Each 0 \$7,000.00 Table R-99 - R-99 TOB-ST3 - TOB-ST3 1 - Detached FALSE		100		ļ
STB STABLE FALSE SF - Square Feet 0 \$40.83 Table R-99 - R-99 TOB-STB - TOB-STB 1 - Detached FALSE		100		
STR STORAGE UNITS FALSE SF - Square Feet 0 \$70.00 Table R-99 - R-99 TOB-STR - TOB-STR 1 - Detached FALSE		100		
TB 2 ST UB OR BARN FALSE SF - Square Feet 0 \$9.59 Table R-20 - R-20 TOB-TB - TOB-TB 1 - Detached FALSE		100		
TC1 TENNIS COURT BASIC FALSE CO - Courts 0 \$25,700.00 Table R-10 - R-10 TOB-TC1 - TOB-TC1 1 - Detached FALSE		100		
TC2 TENNIS GOOD QUALITY FALSE CO - Courts 0 \$32,000.00 Table R-10 - R-10 TOB-TC2 - TOB-TC2 1 - Detached FALSE		100		
UB 1 ST UB OR BARN FALSE SF - Square Feet 0 \$9.59 Table R-30 - R-30 TOB-UB 1 - Detached FALSE		100		
UBF UB FINISHED 1 STORY FALSE SF - Square Feet 0 \$33.46 Table R-30 - R-30 TOB-UBF - TOB-UBF 1 - Detached FALSE		100		
WTK WATER TANK FALSE GAL - Gallon 0 \$0.85 Table R-30 - R-30 TOB-WTK - TOB-WTK 1 - Detached FALSE		100		<u> </u>

2017 Story Height Table

Story Height	Full Description	Method	Value Effect	Comparison
0.50	0.50	Factor	1	0.5
1.00	1.00	Factor	1	1
1.25	1.25	Factor	1	1.25
1.50	1.50	Factor	1	1.5
1.75	1.75	Factor	1	1.75
10.0	10.00	Factor	1.035	10
11.0	11.00	Factor	1.04	11
12.0	12.00	Factor	1.045	12
13.0	13.00	Factor	1.05	13
14.0	14.00	Factor	1.055	14
15.0	15.00	Factor	1.06	15
16.0	16.00	Factor	1.065	16
17.0	17.00	Factor	1.07	17
18.0	18.00	Factor	1.075	18
19.0	19.00	Factor	1.08	19
2.00	2.00	Factor	1	2
2.25	2.25	Factor	1	2.25
2.50	2.50	Factor	1	2.5
2.75	2.75	Factor	1	2.75
20.0	20.00	Factor	1.085	20
3.00	3.00	Factor	1	3
3.50	3.50	Factor	1	3.5
4.00	4.00	Factor	1.005	4
4.50	4.50	Factor	1.0075	4.5
5.00	5.00	Factor	1.01	5
6.00	6.00	Factor	1.015	6
7.00	7.00	Factor	1.02	7
7.25	7.25	Factor	1.02125	7.25
7.50	7.50	Factor	1.0225	7.5
8.00	8.00	Factor	1.025	8
9.00	9.00	Factor	1.03	9
9.50	9.50	Factor	1.0325	9.5

2017 Building Category Table

Building Category	Short Description	Full Description
COMA	COM CLASS A	COM CLASS A
COMB	COM CLASS B	COM CLASS B
COMC	COM CLASS C	COM CLASS C
COMD	COM CLASS D	COM CLASS D
COMS	COM CLASS S	COM CLASS S
МН	MFG Housing	MFG Housing
R	Residential	Residential

2017 Depreciation Creation Table

Depreciation Table	Percent Per Year	Min Depr	Min Depr AV	Max Depr AV	Max Depr	Max Age	Create Table	AV Created
COMA							Automatic	
COMB							Automatic	
COMC							Automatic	
COMD							Automatic	
COMS							Automatic	
MH							Automatic	
R							Automatic	
C-00	1	0	0	90	90	99	Automatic	Manual
C-05	1	0	0	25	90	99	Automatic	Manual
C-10	1	0	0	35	90	99	Automatic	Manual
C-15	1	0	0	45	90	99	Automatic	Manual
C-20	1	0	0	80	90	99	Automatic	Manual
C-25	1	0	0	80	90	99	Automatic	Manual
C-30	1	0	0	80	90	99	Automatic	Manual
C-35	1	0	0	80	90	99	Automatic	Manual
C-40	1	0	0	80	90	99	Automatic	Manual
C-45	1	0	0	80	90	99	Automatic	Manual
C-50	1	0	0	80	90	99	Automatic	Manual
C-55	1	0	0	80	90	99	Automatic	Manual
C-60	1	0	0	80	90	99	Automatic	Manual
C-65	1	0	0	80	90	99	Automatic	Manual
C-70	1	0	0	80	90	99	Automatic	Manual
C-75	1	0	0	39	90	99	Automatic	Manual
C-80	1	0	0	37	90	99	Automatic	Manual
C-85	1	0	0	35	90	99	Automatic	Manual
M-16	1	0	0	90	90	99	Automatic	Manual
M-21	1	0	0	80	90	99	Automatic	Manual
M-26	1	0	0	80	90	99	Automatic	Manual
M-31	1	0	0	80	90	99	Automatic	Manual
M-36	1	0	0	80	90	99	Automatic	Manual
M-41	1	0	0	80	90	99	Automatic	Manual
M-46	1	0	0	80	90	99	Automatic	Manual
M-51	1	0	0	80	90	99	Automatic	Manual
M-56	1	0	0	80	90	99	Automatic	Manual
R-00	1	0	0	90	90	99	Automatic	Manual
R-10	1	0	0	80	90	99	Automatic	Manual
R-15	1	0	0	80	90	99	Automatic	Manual
R-20	1	0	0	80	90	99	Automatic	Manual
R-25	1	0	0	80	90	99	Automatic	Manual
R-30	1	0	0	80	90	99	Automatic	Manual
R-35	1	0	0	80	90	99	Automatic	Manual
R-45	1	0	0	71	90	99	Automatic	Manual
R-50	1	0	0	64	90	99	Automatic	Manual
R-55	1	0	0	58	90	99	Automatic	Manual
R-60	1	0	0	53	90	99	Automatic	Manual
R-65	1	0	0	49	90	99	Automatic	Manual
R-70	1	0	0	46	90	99	Automatic	Manual
R-75	1	0	0	42	90	99	Automatic	Manual
R-80	1	0	0	39	90	99	Automatic	Manual
R-85	1	0	0	37	90	99	Automatic	Manual
R-90	1	0	0	20	90	99	Automatic	Manual
R-95	1	0	0	10	90	99	Automatic	Manual
R-99	0	0	0	0	0	99	Automatic	Manual

Age	R	G	N	F	Р	U
0	18	36	90	90	90	90
1	18	36	90	90	90	90
2	18	36	90	90	90	90
3	18	36	90	90	90	90
4	18	36	90	90	90	90
5	18	36	90	90	90	90
6	18	36	90	90	90	90
7	18	36	90	90	90	90
8	18	36	90	90	90	90
9	18	36	90	90	90	90
10	18	36	90	90	90	90
11	18	36	90	90	90	90
12	18	36	90	90	90	90
13	18	36	90	90	90	90
14	18	36	90	90	90	90
15	18	36	90	90	90	90
16	18	36	90	90	90	90
17	18	36	90	90	90	90
18	18	36	90	90	90	90
19	18	36	90	90	90	90
20	18	36	90	90	90	90
21	18	36	90	90	90	90
22	18	36	90	90	90	90
23	18	36	90	90	90	90
24	18	36	90	90	90	90
25	18	36	90	90	90	90
26	18	36	90	90	90	90
27	18	36	90	90	90	90
28	18	36	90	90	90	90
29	18	36	90	90	90	90
30	18	36	90	90	90	90
31	18	36	90	90	90	90
32	18	36	90	90	90	90

Age	R	G	N	F	Р	U
33	18	36	90	90	90	90
34	18	36	90	90	90	90
35	18	36	90	90	90	90
36	18	36	90	90	90	90
37	18	36	90	90	90	90
38	18	36	90	90	90	90
39	18	36	90	90	90	90
40	18	36	90	90	90	90
41	18	36	90	90	90	90
42	18	36	90	90	90	90
43	18	36	90	90	90	90
44	18	36	90	90	90	90
45	18	36	90	90	90	90
46	18	36	90	90	90	90
47	18	36	90	90	90	90
48	18	36	90	90	90	90
49	18	36	90	90	90	90
50	18	36	90	90	90	90
51	18	36	90	90	90	90
52	18	36	90	90	90	90
53	18	36	90	90	90	90
54	18	36	90	90	90	90
55	18	36	90	90	90	90
56	18	36	90	90	90	90
57	18	36	90	90	90	90
58	18	36	90	90	90	90
59	18	36	90	90	90	90
60	18	36	90	90	90	90
61	18	36	90	90	90	90
62	18	36	90	90	90	90
63	18	36	90	90	90	90
64	18	36	90	90	90	90
65	18	36	90	90	90	90

Age	R	G	N	F	Р	U
66	18	36	90	90	90	90
67	18	36	90	90	90	90
68	18	36	90	90	90	90
69	18	36	90	90	90	90
70	18	36	90	90	90	90
71	18	36	90	90	90	90
72	18	36	90	90	90	90
73	18	36	90	90	90	90
74	18	36	90	90	90	90
75	18	36	90	90	90	90
76	18	36	90	90	90	90
77	18	36	90	90	90	90
78	18	36	90	90	90	90
79	18	36	90	90	90	90
80	18	36	90	90	90	90
81	18	36	90	90	90	90
82	18	36	90	90	90	90
83	18	36	90	90	90	90
84	18	36	90	90	90	90
85	18	36	90	90	90	90
86	18	36	90	90	90	90
87	18	36	90	90	90	90
88	18	36	90	90	90	90
89	18	36	90	90	90	90
90	18	36	90	90	90	90
91	18	36	90	90	90	90
92	18	36	90	90	90	90
93	18	36	90	90	90	90
94	18	36	90	90	90	90
95	18	36	90	90	90	90
96	18	36	90	90	90	90
97	18	36	90	90	90	90
98	18	36	90	90	90	90

Age	R	G	N	F	Р	U
99	18	36	90	90	90	90

Age	R	G	N	F	Р	U
0	5	10	25	37.5	43.75	90
1	5	10	25	37.5	43.75	90
2	5	10	25	37.5	43.75	90
3	5	10	25	37.5	43.75	90
4	5	10	25	37.5	43.75	90
5	5	10	25	37.5	43.75	90
6	5	10	25	37.5	43.75	90
7	5	10	25	37.5	43.75	90
8	5	10	25	37.5	43.75	90
9	5	10	25	37.5	43.75	90
10	5	10	25	37.5	43.75	90
11	5	10	25	37.5	43.75	90
12	5	10	25	37.5	43.75	90
13	5	10	25	37.5	43.75	90
14	5	10	25	37.5	43.75	90
15	5	10	25	37.5	43.75	90
16	5	10	25	37.5	43.75	90
17	5	10	25	37.5	43.75	90
18	5	10	25	37.5	43.75	90
19	5	10	25	37.5	43.75	90
20	5	10	25	37.5	43.75	90
21	5	10	25	37.5	43.75	90
22	5	10	25	37.5	43.75	90
23	5	10	25	37.5	43.75	90
24	5	10	25	37.5	43.75	90
25	5	10	25	37.5	43.75	90
26	5	10	25	37.5	43.75	90
27	5	10	25	37.5	43.75	90
28	5	10	25	37.5	43.75	90
29	5	10	25	37.5	43.75	90
30	5	10	25	37.5	43.75	90
31	5	10	25	37.5	43.75	90
32	5	10	25	37.5	43.75	90

Age	R	G	N	F	Р	U
33	5	10	25	37.5	43.75	90
34	5	10	25	37.5	43.75	90
35	5	10	25	37.5	43.75	90
36	5	10	25	37.5	43.75	90
37	5	10	25	37.5	43.75	90
38	5	10	25	37.5	43.75	90
39	5	10	25	37.5	43.75	90
40	5	10	25	37.5	43.75	90
41	5	10	25	37.5	43.75	90
42	5	10	25	37.5	43.75	90
43	5	10	25	37.5	43.75	90
44	5	10	25	37.5	43.75	90
45	5	10	25	37.5	43.75	90
46	5	10	25	37.5	43.75	90
47	5	10	25	37.5	43.75	90
48	5	10	25	37.5	43.75	90
49	5	10	25	37.5	43.75	90
50	5	10	25	37.5	43.75	90
51	5	10	25	37.5	43.75	90
52	5	10	25	37.5	43.75	90
53	5	10	25	37.5	43.75	90
54	5	10	25	37.5	43.75	90
55	5	10	25	37.5	43.75	90
56	5	10	25	37.5	43.75	90
57	5	10	25	37.5	43.75	90
58	5	10	25	37.5	43.75	90
59	5	10	25	37.5	43.75	90
60	5	10	25	37.5	43.75	90
61	5	10	25	37.5	43.75	90
62	5	10	25	37.5	43.75	90
63	5	10	25	37.5	43.75	90
64	5	10	25	37.5	43.75	90
65	5	10	25	37.5	43.75	90

Age	R	G	N	F	Р	U
66	5	10	25	37.5	43.75	90
67	5	10	25	37.5	43.75	90
68	5	10	25	37.5	43.75	90
69	5	10	25	37.5	43.75	90
70	5	10	25	37.5	43.75	90
71	5	10	25	37.5	43.75	90
72	5	10	25	37.5	43.75	90
73	5	10	25	37.5	43.75	90
74	5	10	25	37.5	43.75	90
75	5	10	25	37.5	43.75	90
76	5	10	25	37.5	43.75	90
77	5	10	25	37.5	43.75	90
78	5	10	25	37.5	43.75	90
79	5	10	25	37.5	43.75	90
80	5	10	25	37.5	43.75	90
81	5	10	25	37.5	43.75	90
82	5	10	25	37.5	43.75	90
83	5	10	25	37.5	43.75	90
84	5	10	25	37.5	43.75	90
85	5	10	25	37.5	43.75	90
86	5	10	25	37.5	43.75	90
87	5	10	25	37.5	43.75	90
88	5	10	25	37.5	43.75	90
89	5	10	25	37.5	43.75	90
90	5	10	25	37.5	43.75	90
91	5	10	25	37.5	43.75	90
92	5	10	25	37.5	43.75	90
93	5	10	25	37.5	43.75	90
94	5	10	25	37.5	43.75	90
95	5	10	25	37.5	43.75	90
96	5	10	25	37.5	43.75	90
97	5	10	25	37.5	43.75	90
98	5	10	25	37.5	43.75	90

Age	R	G	N	F	Р	U
99	5	10	25	37.5	43.75	90

Age	R	G	N	F	Р	U
0	7	14	35	52.5	61.25	90
1	7	14	35	52.5	61.25	90
2	7	14	35	52.5	61.25	90
3	7	14	35	52.5	61.25	90
4	7	14	35	52.5	61.25	90
5	7	14	35	52.5	61.25	90
6	7	14	35	52.5	61.25	90
7	7	14	35	52.5	61.25	90
8	7	14	35	52.5	61.25	90
9	7	14	35	52.5	61.25	90
10	7	14	35	52.5	61.25	90
11	7	14	35	52.5	61.25	90
12	7	14	35	52.5	61.25	90
13	7	14	35	52.5	61.25	90
14	7	14	35	52.5	61.25	90
15	7	14	35	52.5	61.25	90
16	7	14	35	52.5	61.25	90
17	7	14	35	52.5	61.25	90
18	7	14	35	52.5	61.25	90
19	7	14	35	52.5	61.25	90
20	7	14	35	52.5	61.25	90
21	7	14	35	52.5	61.25	90
22	7	14	35	52.5	61.25	90
23	7	14	35	52.5	61.25	90
24	7	14	35	52.5	61.25	90
25	7	14	35	52.5	61.25	90
26	7	14	35	52.5	61.25	90
27	7	14	35	52.5	61.25	90
28	7	14	35	52.5	61.25	90
29	7	14	35	52.5	61.25	90
30	7	14	35	52.5	61.25	90
31	7	14	35	52.5	61.25	90
32	7	14	35	52.5	61.25	90

Age	R	G	N	F	Р	U
33	7	14	35	52.5	61.25	90
34	7	14	35	52.5	61.25	90
35	7	14	35	52.5	61.25	90
36	7	14	35	52.5	61.25	90
37	7	14	35	52.5	61.25	90
38	7	14	35	52.5	61.25	90
39	7	14	35	52.5	61.25	90
40	7	14	35	52.5	61.25	90
41	7	14	35	52.5	61.25	90
42	7	14	35	52.5	61.25	90
43	7	14	35	52.5	61.25	90
44	7	14	35	52.5	61.25	90
45	7	14	35	52.5	61.25	90
46	7	14	35	52.5	61.25	90
47	7	14	35	52.5	61.25	90
48	7	14	35	52.5	61.25	90
49	7	14	35	52.5	61.25	90
50	7	14	35	52.5	61.25	90
51	7	14	35	52.5	61.25	90
52	7	14	35	52.5	61.25	90
53	7	14	35	52.5	61.25	90
54	7	14	35	52.5	61.25	90
55	7	14	35	52.5	61.25	90
56	7	14	35	52.5	61.25	90
57	7	14	35	52.5	61.25	90
58	7	14	35	52.5	61.25	90
59	7	14	35	52.5	61.25	90
60	7	14	35	52.5	61.25	90
61	7	14	35	52.5	61.25	90
62	7	14	35	52.5	61.25	90
63	7	14	35	52.5	61.25	90
64	7	14	35	52.5	61.25	90
65	7	14	35	52.5	61.25	90

Age	R	G	N	F	Р	U
66	7	14	35	52.5	61.25	90
67	7	14	35	52.5	61.25	90
68	7	14	35	52.5	61.25	90
69	7	14	35	52.5	61.25	90
70	7	14	35	52.5	61.25	90
71	7	14	35	52.5	61.25	90
72	7	14	35	52.5	61.25	90
73	7	14	35	52.5	61.25	90
74	7	14	35	52.5	61.25	90
75	7	14	35	52.5	61.25	90
76	7	14	35	52.5	61.25	90
77	7	14	35	52.5	61.25	90
78	7	14	35	52.5	61.25	90
79	7	14	35	52.5	61.25	90
80	7	14	35	52.5	61.25	90
81	7	14	35	52.5	61.25	90
82	7	14	35	52.5	61.25	90
83	7	14	35	52.5	61.25	90
84	7	14	35	52.5	61.25	90
85	7	14	35	52.5	61.25	90
86	7	14	35	52.5	61.25	90
87	7	14	35	52.5	61.25	90
88	7	14	35	52.5	61.25	90
89	7	14	35	52.5	61.25	90
90	7	14	35	52.5	61.25	90
91	7	14	35	52.5	61.25	90
92	7	14	35	52.5	61.25	90
93	7	14	35	52.5	61.25	90
94	7	14	35	52.5	61.25	90
95	7	14	35	52.5	61.25	90
96	7	14	35	52.5	61.25	90
97	7	14	35	52.5	61.25	90
98	7	14	35	52.5	61.25	90

Age	R	G	N	F	Р	U
99	7	14	35	52.5	61.25	90

Age	R	G	N	F	Р	U
0	9	18	45	67.5	78.75	90
1	9	18	45	67.5	78.75	90
2	9	18	45	67.5	78.75	90
3	9	18	45	67.5	78.75	90
4	9	18	45	67.5	78.75	90
5	9	18	45	67.5	78.75	90
6	9	18	45	67.5	78.75	90
7	9	18	45	67.5	78.75	90
8	9	18	45	67.5	78.75	90
9	9	18	45	67.5	78.75	90
10	9	18	45	67.5	78.75	90
11	9	18	45	67.5	78.75	90
12	9	18	45	67.5	78.75	90
13	9	18	45	67.5	78.75	90
14	9	18	45	67.5	78.75	90
15	9	18	45	67.5	78.75	90
16	9	18	45	67.5	78.75	90
17	9	18	45	67.5	78.75	90
18	9	18	45	67.5	78.75	90
19	9	18	45	67.5	78.75	90
20	9	18	45	67.5	78.75	90
21	9	18	45	67.5	78.75	90
22	9	18	45	67.5	78.75	90
23	9	18	45	67.5	78.75	90
24	9	18	45	67.5	78.75	90
25	9	18	45	67.5	78.75	90
26	9	18	45	67.5	78.75	90
27	9	18	45	67.5	78.75	90
28	9	18	45	67.5	78.75	90
29	9	18	45	67.5	78.75	90
30	9	18	45	67.5	78.75	90
31	9	18	45	67.5	78.75	90
32	9	18	45	67.5	78.75	90

Age	R	G	N	F	Р	U
33	9	18	45	67.5	78.75	90
34	9	18	45	67.5	78.75	90
35	9	18	45	67.5	78.75	90
36	9	18	45	67.5	78.75	90
37	9	18	45	67.5	78.75	90
38	9	18	45	67.5	78.75	90
39	9	18	45	67.5	78.75	90
40	9	18	45	67.5	78.75	90
41	9	18	45	67.5	78.75	90
42	9	18	45	67.5	78.75	90
43	9	18	45	67.5	78.75	90
44	9	18	45	67.5	78.75	90
45	9	18	45	67.5	78.75	90
46	9	18	45	67.5	78.75	90
47	9	18	45	67.5	78.75	90
48	9	18	45	67.5	78.75	90
49	9	18	45	67.5	78.75	90
50	9	18	45	67.5	78.75	90
51	9	18	45	67.5	78.75	90
52	9	18	45	67.5	78.75	90
53	9	18	45	67.5	78.75	90
54	9	18	45	67.5	78.75	90
55	9	18	45	67.5	78.75	90
56	9	18	45	67.5	78.75	90
57	9	18	45	67.5	78.75	90
58	9	18	45	67.5	78.75	90
59	9	18	45	67.5	78.75	90
60	9	18	45	67.5	78.75	90
61	9	18	45	67.5	78.75	90
62	9	18	45	67.5	78.75	90
63	9	18	45	67.5	78.75	90
64	9	18	45	67.5	78.75	90
65	9	18	45	67.5	78.75	90

Age	R	G	N	F	Р	U
66	9	18	45	67.5	78.75	90
67	9	18	45	67.5	78.75	90
68	9	18	45	67.5	78.75	90
69	9	18	45	67.5	78.75	90
70	9	18	45	67.5	78.75	90
71	9	18	45	67.5	78.75	90
72	9	18	45	67.5	78.75	90
73	9	18	45	67.5	78.75	90
74	9	18	45	67.5	78.75	90
75	9	18	45	67.5	78.75	90
76	9	18	45	67.5	78.75	90
77	9	18	45	67.5	78.75	90
78	9	18	45	67.5	78.75	90
79	9	18	45	67.5	78.75	90
80	9	18	45	67.5	78.75	90
81	9	18	45	67.5	78.75	90
82	9	18	45	67.5	78.75	90
83	9	18	45	67.5	78.75	90
84	9	18	45	67.5	78.75	90
85	9	18	45	67.5	78.75	90
86	9	18	45	67.5	78.75	90
87	9	18	45	67.5	78.75	90
88	9	18	45	67.5	78.75	90
89	9	18	45	67.5	78.75	90
90	9	18	45	67.5	78.75	90
91	9	18	45	67.5	78.75	90
92	9	18	45	67.5	78.75	90
93	9	18	45	67.5	78.75	90
94	9	18	45	67.5	78.75	90
95	9	18	45	67.5	78.75	90
96	9	18	45	67.5	78.75	90
97	9	18	45	67.5	78.75	90
98	9	18	45	67.5	78.75	90

Age	R	G	N	F	Р	U
99	9	18	45	67.5	78.75	90

Age	R	G	N	F	Р	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	1.4	2.8	7	10.5	12.25	90
3	2	4	10	15	17.5	90
4	2.8	5.6	14	21	24.5	90
5	3.6	7.2	18	27	31.5	90
6	4.4	8.8	22	33	38.5	90
7	5.2	10.4	26	39	45.5	90
8	6	12	30	45	52.5	90
9	7	14	35	52.5	61.25	90
10	8	16	40	60	70	90
11	9	18	45	67.5	78.75	90
12	10	20	50	75	87.5	90
13	11	22	55	82.5	90	90
14	12	24	60	90	90	90
15	13	26	65	90	90	90
16	13.8	27.6	69	90	90	90
17	14.6	29.2	73	90	90	90
18	15.2	30.4	76	90	90	90
19	15.6	31.2	78	90	90	90
20	15.8	31.6	79	90	90	90
21	16	32	80	90	90	90
22	16	32	80	90	90	90
23	16	32	80	90	90	90
24	16	32	80	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.4	0.8	2	3	3.5	90
1	0.4	0.8	2	3	3.5	90
2	1	2	5	7.5	8.75	90
3	1.4	2.8	7	10.5	12.25	90
4	2	4	10	15	17.5	90
5	2.6	5.2	13	19.5	22.75	90
6	3.2	6.4	16	24	28	90
7	3.8	7.6	19	28.5	33.25	90
8	4.4	8.8	22	33	38.5	90
9	5	10	25	37.5	43.75	90
10	5.8	11.6	29	43.5	50.75	90
11	6.4	12.8	32	48	56	90
12	7.2	14.4	36	54	63	90
13	8	16	40	60	70	90
14	8.8	17.6	44	66	77	90
15	9.6	19.2	48	72	84	90
16	10.4	20.8	52	78	90	90
17	11.2	22.4	56	84	90	90
18	12	24	60	90	90	90
19	12.8	25.6	64	90	90	90
20	13.6	27.2	68	90	90	90
21	14.2	28.4	71	90	90	90
22	14.6	29.2	73	90	90	90
23	15	30	75	90	90	90
24	15.4	30.8	77	90	90	90
25	15.8	31.6	79	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	Р	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.4	0.8	2	3	3.5	90
1	0.4	0.8	2	3	3.5	90
2	0.6	1.2	3	4.5	5.25	90
3	1	2	5	7.5	8.75	90
4	1.4	2.8	7	10.5	12.25	90
5	1.8	3.6	9	13.5	15.75	90
6	2.2	4.4	11	16.5	19.25	90
7	2.8	5.6	14	21	24.5	90
8	3.2	6.4	16	24	28	90
9	3.6	7.2	18	27	31.5	90
10	4.2	8.4	21	31.5	36.75	90
11	4.8	9.6	24	36	42	90
12	5.2	10.4	26	39	45.5	90
13	5.8	11.6	29	43.5	50.75	90
14	6.4	12.8	32	48	56	90
15	7	14	35	52.5	61.25	90
16	7.8	15.6	39	58.5	68.25	90
17	8.4	16.8	42	63	73.5	90
18	9.2	18.4	46	69	80.5	90
19	9.8	19.6	49	73.5	85.75	90
20	10.6	21.2	53	79.5	90	90
21	11.4	22.8	57	85.5	90	90
22	12	24	60	90	90	90
23	12.6	25.2	63	90	90	90
24	13.2	26.4	66	90	90	90
25	13.8	27.6	69	90	90	90
26	14.4	28.8	72	90	90	90
27	15	30	75	90	90	90
28	15.4	30.8	77	90	90	90
29	15.6	31.2	78	90	90	90
30	15.8	31.6	79	90	90	90
31	15.8	31.6	79	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.4	0.8	2	3	3.5	90
3	0.8	1.6	4	6	7	90
4	1	2	5	7.5	8.75	90
5	1.2	2.4	6	9	10.5	90
6	1.6	3.2	8	12	14	90
7	2	4	10	15	17.5	90
8	2.2	4.4	11	16.5	19.25	90
9	2.6	5.2	13	19.5	22.75	90
10	3	6	15	22.5	26.25	90
11	3.4	6.8	17	25.5	29.75	90
12	3.8	7.6	19	28.5	33.25	90
13	4.4	8.8	22	33	38.5	90
14	4.8	9.6	24	36	42	90
15	5.2	10.4	26	39	45.5	90
16	5.6	11.2	28	42	49	90
17	6.2	12.4	31	46.5	54.25	90
18	6.8	13.6	34	51	59.5	90
19	7.2	14.4	36	54	63	90
20	7.8	15.6	39	58.5	68.25	90
21	8.4	16.8	42	63	73.5	90
22	9	18	45	67.5	78.75	90
23	9.6	19.2	48	72	84	90
24	10.4	20.8	52	78	90	90
25	11	22	55	82.5	90	90
26	11.6	23.2	58	87	90	90
27	12.2	24.4	61	90	90	90
28	12.8	25.6	64	90	90	90
29	13.6	27.2	68	90	90	90
30	14.4	28.8	72	90	90	90
31	14.4	28.8	72	90	90	90
32	15	30	75	90	90	90

Age	R	G	N	F	Р	U
33	15	30	75	90	90	90
34	15.4	30.8	77	90	90	90
35	15.4	30.8	77	90	90	90
36	15.8	31.6	79	90	90	90
37	15.8	31.6	79	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	Р	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.4	0.8	2	3	3.5	90
3	0.6	1.2	3	4.5	5.25	90
4	0.8	1.6	4	6	7	90
5	1	2	5	7.5	8.75	90
6	1.2	2.4	6	9	10.5	90
7	1.4	2.8	7	10.5	12.25	90
8	1.6	3.2	8	12	14	90
9	2	4	10	15	17.5	90
10	2.2	4.4	11	16.5	19.25	90
11	2.6	5.2	13	19.5	22.75	90
12	2.8	5.6	14	21	24.5	90
13	3.2	6.4	16	24	28	90
14	3.6	7.2	18	27	31.5	90
15	4	8	20	30	35	90
16	4.4	8.8	22	33	38.5	90
17	4.8	9.6	24	36	42	90
18	5.2	10.4	26	39	45.5	90
19	5.6	11.2	28	42	49	90
20	6	12	30	45	52.5	90
21	6.4	12.8	32	48	56	90
22	7	14	35	52.5	61.25	90
23	7.4	14.8	37	55.5	64.75	90
24	8	16	40	60	70	90
25	8.6	17.2	43	64.5	75.25	90
26	9.2	18.4	46	69	80.5	90
27	9.8	19.6	49	73.5	85.75	90
28	10.4	20.8	52	78	90	90
29	10.8	21.6	54	81	90	90
30	11.4	22.8	57	85.5	90	90
31	12.4	24.8	62	90	90	90
32	12.4	24.8	62	90	90	90

Age	R	G	N	F	Р	U
33	12.4	24.8	62	90	90	90
34	13.6	27.2	68	90	90	90
35	13.6	27.2	68	90	90	90
36	14.6	29.2	73	90	90	90
37	14.6	29.2	73	90	90	90
38	15.4	30.8	77	90	90	90
39	15.4	30.8	77	90	90	90
40	15.8	31.6	79	90	90	90
41	15.8	31.6	79	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.8	1.6	4	6	7	90
6	0.8	1.6	4	6	7	90
7	1	2	5	7.5	8.75	90
8	1.2	2.4	6	9	10.5	90
9	1.4	2.8	7	10.5	12.25	90
10	1.6	3.2	8	12	14	90
11	1.8	3.6	9	13.5	15.75	90
12	2	4	10	15	17.5	90
13	2.4	4.8	12	18	21	90
14	2.6	5.2	13	19.5	22.75	90
15	2.8	5.6	14	21	24.5	90
16	3.2	6.4	16	24	28	90
17	3.6	7.2	18	27	31.5	90
18	3.8	7.6	19	28.5	33.25	90
19	4.2	8.4	21	31.5	36.75	90
20	4.6	9.2	23	34.5	40.25	90
21	5	10	25	37.5	43.75	90
22	5.4	10.8	27	40.5	47.25	90
23	5.8	11.6	29	43.5	50.75	90
24	6.2	12.4	31	46.5	54.25	90
25	6.6	13.2	33	49.5	57.75	90
26	7	14	35	52.5	61.25	90
27	7.4	14.8	37	55.5	64.75	90
28	8	16	40	60	70	90
29	8.4	16.8	42	63	73.5	90
30	9	18	45	67.5	78.75	90
31	9	18	45	67.5	78.75	90
32	10	20	50	75	87.5	90

Age	R	G	N	F	Р	U
33	10	20	50	75	87.5	90
34	11	22	55	82.5	90	90
35	11	22	55	82.5	90	90
36	12.2	24.4	61	90	90	90
37	12.2	24.4	61	90	90	90
38	13.4	26.8	67	90	90	90
39	13.4	26.8	67	90	90	90
40	14.4	28.8	72	90	90	90
41	14.4	28.8	72	90	90	90
42	15	30	75	90	90	90
43	15	30	75	90	90	90
44	15.4	30.8	77	90	90	90
45	15.4	30.8	77	90	90	90
46	15.6	31.2	78	90	90	90
47	15.6	31.2	78	90	90	90
48	15.8	31.6	79	90	90	90
49	15.8	31.6	79	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.6	1.2	3	4.5	5.25	90
6	0.6	1.2	3	4.5	5.25	90
7	0.8	1.6	4	6	7	90
8	1	2	5	7.5	8.75	90
9	1	2	5	7.5	8.75	90
10	1.2	2.4	6	9	10.5	90
11	1.4	2.8	7	10.5	12.25	90
12	1.6	3.2	8	12	14	90
13	1.8	3.6	9	13.5	15.75	90
14	2	4	10	15	17.5	90
15	2.2	4.4	11	16.5	19.25	90
16	2.4	4.8	12	18	21	90
17	2.6	5.2	13	19.5	22.75	90
18	2.8	5.6	14	21	24.5	90
19	3.2	6.4	16	24	28	90
20	3.4	6.8	17	25.5	29.75	90
21	3.6	7.2	18	27	31.5	90
22	4	8	20	30	35	90
23	4.2	8.4	21	31.5	36.75	90
24	4.6	9.2	23	34.5	40.25	90
25	5	10	25	37.5	43.75	90
26	5.4	10.8	27	40.5	47.25	90
27	5.6	11.2	28	42	49	90
28	6	12	30	45	52.5	90
29	6.4	12.8	32	48	56	90
30	6.8	13.6	34	51	59.5	90
31	6.8	13.6	34	51	59.5	90
32	6.2	12.4	31	46.5	54.25	90

Age	R	G	N	F	Р	U
33	7.6	15.2	38	57	66.5	90
34	8.6	17.2	43	64.5	75.25	90
35	8.6	17.2	43	64.5	75.25	90
36	9.6	19.2	48	72	84	90
37	9.6	19.2	48	72	84	90
38	10.6	21.2	53	79.5	90	90
39	10.6	21.2	53	79.5	90	90
40	11.8	23.6	59	88.5	90	90
41	11.8	23.6	59	88.5	90	90
42	13	26	65	90	90	90
43	13	26	65	90	90	90
44	14	28	70	90	90	90
45	14	28	70	90	90	90
46	14.8	29.6	74	90	90	90
47	14.8	29.6	74	90	90	90
48	15.4	30.8	77	90	90	90
49	15.4	30.8	77	90	90	90
50	15.8	31.6	79	90	90	90
51	15.8	31.6	79	90	90	90
52	15.8	31.6	79	90	90	90
53	15.8	31.6	79	90	90	90
54	15.8	31.6	79	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.2	0.4	1	1.5	1.75	90
5	0.4	0.8	2	3	3.5	90
6	0.4	0.8	2	3	3.5	90
7	0.6	1.2	3	4.5	5.25	90
8	0.6	1.2	3	4.5	5.25	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	1	2	5	7.5	8.75	90
12	1.2	2.4	6	9	10.5	90
13	1.2	2.4	6	9	10.5	90
14	1.4	2.8	7	10.5	12.25	90
15	1.6	3.2	8	12	14	90
16	1.8	3.6	9	13.5	15.75	90
17	2	4	10	15	17.5	90
18	2.2	4.4	11	16.5	19.25	90
19	2.4	4.8	12	18	21	90
20	2.6	5.2	13	19.5	22.75	90
21	2.8	5.6	14	21	24.5	90
22	3	6	15	22.5	26.25	90
23	3.2	6.4	16	24	28	90
24	3.4	6.8	17	25.5	29.75	90
25	3.8	7.6	19	28.5	33.25	90
26	4	8	20	30	35	90
27	4.2	8.4	21	31.5	36.75	90
28	4.6	9.2	23	34.5	40.25	90
29	4.8	9.6	24	36	42	90
30	5.2	10.4	26	39	45.5	90
31	5.2	10.4	26	39	45.5	90
32	6	12	30	45	52.5	90

Age	R	G	N	F	Р	U
33	6	12	30	45	52.5	90
34	6.8	13.6	34	51	59.5	90
35	6.8	13.6	34	51	59.5	90
36	7.6	15.2	38	57	66.5	90
37	7.6	15.2	38	57	66.5	90
38	8.4	16.8	42	63	73.5	90
39	8.4	16.8	42	63	73.5	90
40	9.2	18.4	46	69	80.5	90
41	9.2	18.4	46	69	80.5	90
42	10.2	20.4	51	76.5	89.25	90
43	10.2	20.4	51	76.5	89.25	90
44	11.2	22.4	56	84	90	90
45	11.2	22.4	56	84	90	90
46	12	24	60	90	90	90
47	12	24	60	90	90	90
48	12.8	25.6	64	90	90	90
49	12.8	25.6	64	90	90	90
50	13.6	27.2	68	90	90	90
51	13.6	27.2	68	90	90	90
52	13.6	27.2	68	90	90	90
53	13.6	27.2	68	90	90	90
54	13.6	27.2	68	90	90	90
55	15	30	75	90	90	90
56	15	30	75	90	90	90
57	15	30	75	90	90	90
58	15	30	75	90	90	90
59	15	30	75	90	90	90
60	15.6	31.2	78	90	90	90
61	15.6	31.2	78	90	90	90
62	15.6	31.2	78	90	90	90
63	15.6	31.2	78	90	90	90
64	15.6	31.2	78	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.2	0.4	1	1.5	1.75	90
5	0.2	0.4	1	1.5	1.75	90
6	0.4	0.8	2	3	3.5	90
7	0.4	0.8	2	3	3.5	90
8	0.4	0.8	2	3	3.5	90
9	0.6	1.2	3	4.5	5.25	90
10	0.6	1.2	3	4.5	5.25	90
11	0.8	1.6	4	6	7	90
12	0.8	1.6	4	6	7	90
13	1	2	5	7.5	8.75	90
14	1	2	5	7.5	8.75	90
15	1.2	2.4	6	9	10.5	90
16	1.4	2.8	7	10.5	12.25	90
17	1.4	2.8	7	10.5	12.25	90
18	1.6	3.2	8	12	14	90
19	1.8	3.6	9	13.5	15.75	90
20	1.8	3.6	9	13.5	15.75	90
21	2	4	10	15	17.5	90
22	2.2	4.4	11	16.5	19.25	90
23	2.4	4.8	12	18	21	90
24	2.6	5.2	13	19.5	22.75	90
25	2.8	5.6	14	21	24.5	90
26	3	6	15	22.5	26.25	90
27	3.2	6.4	16	24	28	90
28	3.4	6.8	17	25.5	29.75	90
29	3.6	7.2	18	27	31.5	90
30	4	8	20	30	35	90
31	4	8	20	30	35	90
32	4.4	8.8	22	33	38.5	90

Age	R	G	N	F	Р	U
33	4.4	8.8	22	33	38.5	90
34	5	10	25	37.5	43.75	90
35	5	10	25	37.5	43.75	90
36	5.6	11.2	28	42	49	90
37	5.6	11.2	28	42	49	90
38	6.4	12.8	32	48	56	90
39	6.4	12.8	32	48	56	90
40	7	14	35	52.5	61.25	90
41	7	14	35	52.5	61.25	90
42	7.8	15.6	39	58.5	68.25	90
43	7.8	15.6	39	58.5	68.25	90
44	8.6	17.2	43	64.5	75.25	90
45	8.6	17.2	43	64.5	75.25	90
46	9.6	19.2	48	72	84	90
47	9.6	19.2	48	72	84	90
48	10.6	21.2	53	79.5	90	90
49	10.6	21.2	53	79.5	90	90
50	11.6	23.2	58	87	90	90
51	11.6	23.2	58	87	90	90
52	11.6	23.2	58	87	90	90
53	11.6	23.2	58	87	90	90
54	11.6	23.2	58	87	90	90
55	13.4	26.8	67	90	90	90
56	13.4	26.8	67	90	90	90
57	13.4	26.8	67	90	90	90
58	13.4	26.8	67	90	90	90
59	13.4	26.8	67	90	90	90
60	14.8	29.6	74	90	90	90
61	14.8	29.6	74	90	90	90
62	14.8	29.6	74	90	90	90
63	14.8	29.6	74	90	90	90
64	14.8	29.6	74	90	90	90
65	15.6	31.2	78	90	90	90

Age	R	G	N	F	Р	U
66	15.6	31.2	78	90	90	90
67	15.6	31.2	78	90	90	90
68	15.6	31.2	78	90	90	90
69	15.6	31.2	78	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	Р	U
99	16	32	80	90	90	90

Age	R	G	N	F	P	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.4	0.8	2	3	3.5	90
5	0.6	1.2	3	4.5	5.25	90
6	0.6	1.2	3	4.5	5.25	90
7	0.8	1.6	4	6	7	90
8	0.8	1.6	4	6	7	90
9	1	2	5	7.5	8.75	90
10	1	2	5	7.5	8.75	90
11	1.2	2.4	6	9	10.5	90
12	1.2	2.4	6	9	10.5	90
13	1.4	2.8	7	10.5	12.25	90
14	1.6	3.2	8	12	14	90
15	1.6	3.2	8	12	14	90
16	1.8	3.6	9	13.5	15.75	90
17	1.8	3.6	9	13.5	15.75	90
18	2	4	10	15	17.5	90
19	2	4	10	15	17.5	90
20	2.2	4.4	11	16.5	19.25	90
21	2.2	4.4	11	16.5	19.25	90
22	2.4	4.8	12	18	21	90
23	2.4	4.8	12	18	21	90
24	2.6	5.2	13	19.5	22.75	90
25	2.6	5.2	13	19.5	22.75	90
26	2.8	5.6	14	21	24.5	90
27	3	6	15	22.5	26.25	90
28	3	6	15	22.5	26.25	90
29	3.2	6.4	16	24	28	90
30	3.2	6.4	16	24	28	90
31	3.4	6.8	17	25.5	29.75	90
32	3.4	6.8	17	25.5	29.75	90

Age	R	G	N	F	Р	U
33	3.6	7.2	18	27	31.5	90
34	3.6	7.2	18	27	31.5	90
35	3.8	7.6	19	28.5	33.25	90
36	4.4	8.8	22	33	38.5	90
37	4.4	8.8	22	33	38.5	90
38	4.8	9.6	24	36	42	90
39	4.8	9.6	24	36	42	90
40	5.4	10.8	27	40.5	47.25	90
41	5.4	10.8	27	40.5	47.25	90
42	5.8	11.6	29	43.5	50.75	90
43	5.8	11.6	29	43.5	50.75	90
44	6.2	12.4	31	46.5	54.25	90
45	6.2	12.4	31	46.5	54.25	90
46	7.2	14.4	36	54	63	90
47	7.2	14.4	36	54	63	90
48	8	16	40	60	70	90
49	8	16	40	60	70	90
50	9.2	18.4	46	69	80.5	90
51	9.2	18.4	46	69	80.5	90
52	9.2	18.4	46	69	80.5	90
53	9.2	18.4	46	69	80.5	90
54	9.2	18.4	46	69	80.5	90
55	11.8	23.6	59	88.5	90	90
56	11.8	23.6	59	88.5	90	90
57	11.8	23.6	59	88.5	90	90
58	11.8	23.6	59	88.5	90	90
59	11.8	23.6	59	88.5	90	90
60	12.6	25.2	63	90	90	90
61	12.6	25.2	63	90	90	90
62	12.6	25.2	63	90	90	90
63	12.6	25.2	63	90	90	90
64	12.6	25.2	63	90	90	90
65	13.8	27.6	69	90	90	90

Age	R	G	N	F	Р	U
66	13.8	27.6	69	90	90	90
67	13.8	27.6	69	90	90	90
68	13.8	27.6	69	90	90	90
69	13.8	27.6	69	90	90	90
70	15.2	30.4	76	90	90	90
71	15.2	30.4	76	90	90	90
72	15.2	30.4	76	90	90	90
73	15.2	30.4	76	90	90	90
74	15.2	30.4	76	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	Р	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.6	1.2	3	4.5	5.25	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	1	2	5	7.5	8.75	90
10	1	2	5	7.5	8.75	90
11	1.2	2.4	6	9	10.5	90
12	1.2	2.4	6	9	10.5	90
13	1.4	2.8	7	10.5	12.25	90
14	1.4	2.8	7	10.5	12.25	90
15	1.6	3.2	8	12	14	90
16	1.6	3.2	8	12	14	90
17	1.6	3.2	8	12	14	90
18	1.8	3.6	9	13.5	15.75	90
19	1.8	3.6	9	13.5	15.75	90
20	2	4	10	15	17.5	90
21	2	4	10	15	17.5	90
22	2.2	4.4	11	16.5	19.25	90
23	2.2	4.4	11	16.5	19.25	90
24	2.4	4.8	12	18	21	90
25	2.4	4.8	12	18	21	90
26	2.4	4.8	12	18	21	90
27	2.6	5.2	13	19.5	22.75	90
28	2.6	5.2	13	19.5	22.75	90
29	2.8	5.6	14	21	24.5	90
30	2.8	5.6	14	21	24.5	90
31	3	6	15	22.5	26.25	90
32	3	6	15	22.5	26.25	90

Age	R	G	N	F	Р	U
33	3	6	15	22.5	26.25	90
34	3.2	6.4	16	24	28	90
35	3.2	6.4	16	24	28	90
36	3.4	6.8	17	25.5	29.75	90
37	3.4	6.8	17	25.5	29.75	90
38	3.8	7.6	19	28.5	33.25	90
39	3.8	7.6	19	28.5	33.25	90
40	4.2	8.4	21	31.5	36.75	90
41	4.2	8.4	21	31.5	36.75	90
42	5	10	25	37.5	43.75	90
43	5	10	25	37.5	43.75	90
44	5.6	11.2	28	42	49	90
45	5.6	11.2	28	42	49	90
46	6.2	12.4	31	46.5	54.25	90
47	6.2	12.4	31	46.5	54.25	90
48	6.8	13.6	34	51	59.5	90
49	6.8	13.6	34	51	59.5	90
50	7.6	15.2	38	57	66.5	90
51	7.6	15.2	38	57	66.5	90
52	7.6	15.2	38	57	66.5	90
53	7.6	15.2	38	57	66.5	90
54	7.6	15.2	38	57	66.5	90
55	9.6	19.2	48	72	84	90
56	9.6	19.2	48	72	84	90
57	9.6	19.2	48	72	84	90
58	9.6	19.2	48	72	84	90
59	9.6	19.2	48	72	84	90
60	11.4	22.8	57	85.5	90	90
61	11.4	22.8	57	85.5	90	90
62	11.4	22.8	57	85.5	90	90
63	11.4	22.8	57	85.5	90	90
64	11.4	22.8	57	85.5	90	90
65	13	26	65	90	90	90

Age	R	G	N	F	Р	U
66	13	26	65	90	90	90
67	13	26	65	90	90	90
68	13	26	65	90	90	90
69	13	26	65	90	90	90
70	14.2	28.4	71	90	90	90
71	14.2	28.4	71	90	90	90
72	14.2	28.4	71	90	90	90
73	14.2	28.4	71	90	90	90
74	14.2	28.4	71	90	90	90
75	15	30	75	90	90	90
76	15	30	75	90	90	90
77	15	30	75	90	90	90
78	15	30	75	90	90	90
79	15	30	75	90	90	90
80	15.6	31.2	78	90	90	90
81	15.6	31.2	78	90	90	90
82	15.6	31.2	78	90	90	90
83	15.6	31.2	78	90	90	90
84	15.6	31.2	78	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.6	1.2	3	4.5	5.25	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	1	2	5	7.5	8.75	90
12	1	2	5	7.5	8.75	90
13	1.2	2.4	6	9	10.5	90
14	1.2	2.4	6	9	10.5	90
15	1.4	2.8	7	10.5	12.25	90
16	1.4	2.8	7	10.5	12.25	90
17	1.4	2.8	7	10.5	12.25	90
18	1.6	3.2	8	12	14	90
19	1.6	3.2	8	12	14	90
20	1.8	3.6	9	13.5	15.75	90
21	1.8	3.6	9	13.5	15.75	90
22	2	4	10	15	17.5	90
23	2	4	10	15	17.5	90
24	2.2	4.4	11	16.5	19.25	90
25	2.2	4.4	11	16.5	19.25	90
26	2.2	4.4	11	16.5	19.25	90
27	2.4	4.8	12	18	21	90
28	2.4	4.8	12	18	21	90
29	2.6	5.2	13	19.5	22.75	90
30	2.6	5.2	13	19.5	22.75	90
31	2.8	5.6	14	21	24.5	90
32	2.8	5.6	14	21	24.5	90
33	2.8	5.6	14	21	24.5	90
34	3	6	15	22.5	26.25	90

Age	R	G	N	F	Р	U
35	3	6	15	22.5	26.25	90
36	3.2	6.4	16	24	28	90
37	3.2	6.4	16	24	28	90
38	3.4	6.8	17	25.5	29.75	90
39	3.4	6.8	17	25.5	29.75	90
40	3.6	7.2	18	27	31.5	90
41	3.6	7.2	18	27	31.5	90
42	3.6	7.2	18	27	31.5	90
43	3.8	7.6	19	28.5	33.25	90
44	3.8	7.6	19	28.5	33.25	90
45	4	8	20	30	35	90
46	4	8	20	30	35	90
47	4.2	8.4	21	31.5	36.75	90
48	4.2	8.4	21	31.5	36.75	90
49	4.2	8.4	21	31.5	36.75	90
50	4.4	8.8	22	33	38.5	90
51	4.4	8.8	22	33	38.5	90
52	4.6	9.2	23	34.5	40.25	90
53	4.6	9.2	23	34.5	40.25	90
54	4.8	9.6	24	36	42	90
55	4.8	9.6	24	36	42	90
56	5	10	25	37.5	43.75	90
57	5	10	25	37.5	43.75	90
58	5	10	25	37.5	43.75	90
59	5.2	10.4	26	39	45.5	90
60	5.2	10.4	26	39	45.5	90
61	5.4	10.8	27	40.5	47.25	90
62	5.4	10.8	27	40.5	47.25	90
63	5.6	11.2	28	42	49	90
64	5.6	11.2	28	42	49	90
65	5.6	11.2	28	42	49	90
66	5.8	11.6	29	43.5	50.75	90
67	5.8	11.6	29	43.5	50.75	90

Age	R	G	N	F	Р	U
68	6	12	30	45	52.5	90
69	6	12	30	45	52.5	90
70	6.2	12.4	31	46.5	54.25	90
71	6.2	12.4	31	46.5	54.25	90
72	6.4	12.8	32	48	56	90
73	6.4	12.8	32	48	56	90
74	6.4	12.8	32	48	56	90
75	6.6	13.2	33	49.5	57.75	90
76	6.6	13.2	33	49.5	57.75	90
77	6.8	13.6	34	51	59.5	90
78	6.8	13.6	34	51	59.5	90
79	7	14	35	52.5	61.25	90
80	7	14	35	52.5	61.25	90
81	7	14	35	52.5	61.25	90
82	7.2	14.4	36	54	63	90
83	7.2	14.4	36	54	63	90
84	7.4	14.8	37	55.5	64.75	90
85	7.4	14.8	37	55.5	64.75	90
86	7.6	15.2	38	57	66.5	90
87	7.6	15.2	38	57	66.5	90
88	7.8	15.6	39	58.5	68.25	90
89	7.8	15.6	39	58.5	68.25	90
90	7.8	15.6	39	58.5	68.25	90
91	7.8	15.6	39	58.5	68.25	90
92	7.8	15.6	39	58.5	68.25	90
93	7.8	15.6	39	58.5	68.25	90
94	7.8	15.6	39	58.5	68.25	90
95	7.8	15.6	39	58.5	68.25	90
96	7.8	15.6	39	58.5	68.25	90
97	7.8	15.6	39	58.5	68.25	90
98	7.8	15.6	39	58.5	68.25	90
99	7.8	15.6	39	58.5	68.25	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.4	0.8	2	3	3.5	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	1	2	5	7.5	8.75	90
12	1	2	5	7.5	8.75	90
13	1	2	5	7.5	8.75	90
14	1.2	2.4	6	9	10.5	90
15	1.2	2.4	6	9	10.5	90
16	1.4	2.8	7	10.5	12.25	90
17	1.4	2.8	7	10.5	12.25	90
18	1.4	2.8	7	10.5	12.25	90
19	1.6	3.2	8	12	14	90
20	1.6	3.2	8	12	14	90
21	1.8	3.6	9	13.5	15.75	90
22	1.8	3.6	9	13.5	15.75	90
23	1.8	3.6	9	13.5	15.75	90
24	2	4	10	15	17.5	90
25	2	4	10	15	17.5	90
26	2.2	4.4	11	16.5	19.25	90
27	2.2	4.4	11	16.5	19.25	90
28	2.4	4.8	12	18	21	90
29	2.4	4.8	12	18	21	90
30	2.4	4.8	12	18	21	90
31	2.6	5.2	13	19.5	22.75	90
32	2.6	5.2	13	19.5	22.75	90
33	2.8	5.6	14	21	24.5	90
34	2.8	5.6	14	21	24.5	90

Age	R	G	N	F	Р	U
35	2.8	5.6	14	21	24.5	90
36	3	6	15	22.5	26.25	90
37	3	6	15	22.5	26.25	90
38	3.2	6.4	16	24	28	90
39	3.2	6.4	16	24	28	90
40	3.2	6.4	16	24	28	90
41	3.4	6.8	17	25.5	29.75	90
42	3.4	6.8	17	25.5	29.75	90
43	3.6	7.2	18	27	31.5	90
44	3.6	7.2	18	27	31.5	90
45	3.8	7.6	19	28.5	33.25	90
46	3.8	7.6	19	28.5	33.25	90
47	3.8	7.6	19	28.5	33.25	90
48	4	8	20	30	35	90
49	4	8	20	30	35	90
50	4.2	8.4	21	31.5	36.75	90
51	4.2	8.4	21	31.5	36.75	90
52	4.2	8.4	21	31.5	36.75	90
53	4.4	8.8	22	33	38.5	90
54	4.4	8.8	22	33	38.5	90
55	4.6	9.2	23	34.5	40.25	90
56	4.6	9.2	23	34.5	40.25	90
57	4.6	9.2	23	34.5	40.25	90
58	4.8	9.6	24	36	42	90
59	4.8	9.6	24	36	42	90
60	5	10	25	37.5	43.75	90
61	5	10	25	37.5	43.75	90
62	5.2	10.4	26	39	45.5	90
63	5.2	10.4	26	39	45.5	90
64	5.2	10.4	26	39	45.5	90
65	5.4	10.8	27	40.5	47.25	90
66	5.4	10.8	27	40.5	47.25	90
67	5.6	11.2	28	42	49	90

Age	R	G	N	F	Р	U
68	5.6	11.2	28	42	49	90
69	5.6	11.2	28	42	49	90
70	5.8	11.6	29	43.5	50.75	90
71	5.8	11.6	29	43.5	50.75	90
72	6	12	30	45	52.5	90
73	6	12	30	45	52.5	90
74	6	12	30	45	52.5	90
75	6.2	12.4	31	46.5	54.25	90
76	6.2	12.4	31	46.5	54.25	90
77	6.4	12.8	32	48	56	90
78	6.4	12.8	32	48	56	90
79	6.6	13.2	33	49.5	57.75	90
80	6.6	13.2	33	49.5	57.75	90
81	6.6	13.2	33	49.5	57.75	90
82	6.8	13.6	34	51	59.5	90
83	6.8	13.6	34	51	59.5	90
84	7	14	35	52.5	61.25	90
85	7	14	35	52.5	61.25	90
86	7	14	35	52.5	61.25	90
87	7.2	14.4	36	54	63	90
88	7.2	14.4	36	54	63	90
89	7.4	14.8	37	55.5	64.75	90
90	7.4	14.8	37	55.5	64.75	90
91	7.4	14.8	37	55.5	64.75	90
92	7.4	14.8	37	55.5	64.75	90
93	7.4	14.8	37	55.5	64.75	90
94	7.4	14.8	37	55.5	64.75	90
95	7.4	14.8	37	55.5	64.75	90
96	7.4	14.8	37	55.5	64.75	90
97	7.4	14.8	37	55.5	64.75	90
98	7.4	14.8	37	55.5	64.75	90
99	7.4	14.8	37	55.5	64.75	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.4	0.8	2	3	3.5	90
7	0.6	1.2	3	4.5	5.25	90
8	0.6	1.2	3	4.5	5.25	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	0.8	1.6	4	6	7	90
12	1	2	5	7.5	8.75	90
13	1	2	5	7.5	8.75	90
14	1	2	5	7.5	8.75	90
15	1.2	2.4	6	9	10.5	90
16	1.2	2.4	6	9	10.5	90
17	1.4	2.8	7	10.5	12.25	90
18	1.4	2.8	7	10.5	12.25	90
19	1.4	2.8	7	10.5	12.25	90
20	1.6	3.2	8	12	14	90
21	1.6	3.2	8	12	14	90
22	1.8	3.6	9	13.5	15.75	90
23	1.8	3.6	9	13.5	15.75	90
24	1.8	3.6	9	13.5	15.75	90
25	2	4	10	15	17.5	90
26	2	4	10	15	17.5	90
27	2.2	4.4	11	16.5	19.25	90
28	2.2	4.4	11	16.5	19.25	90
29	2.2	4.4	11	16.5	19.25	90
30	2.4	4.8	12	18	21	90
31	2.4	4.8	12	18	21	90
32	2.4	4.8	12	18	21	90
33	2.6	5.2	13	19.5	22.75	90
34	2.6	5.2	13	19.5	22.75	90

Age	R	G	N	F	P	U
35	2.8	5.6	14	21	24.5	90
36	2.8	5.6	14	21	24.5	90
37	2.8	5.6	14	21	24.5	90
38	3	6	15	22.5	26.25	90
39	3	6	15	22.5	26.25	90
40	3.2	6.4	16	24	28	90
41	3.2	6.4	16	24	28	90
42	3.2	6.4	16	24	28	90
43	3.4	6.8	17	25.5	29.75	90
44	3.4	6.8	17	25.5	29.75	90
45	3.6	7.2	18	27	31.5	90
46	3.6	7.2	18	27	31.5	90
47	3.6	7.2	18	27	31.5	90
48	3.8	7.6	19	28.5	33.25	90
49	3.8	7.6	19	28.5	33.25	90
50	3.8	7.6	19	28.5	33.25	90
51	4	8	20	30	35	90
52	4	8	20	30	35	90
53	4.2	8.4	21	31.5	36.75	90
54	4.2	8.4	21	31.5	36.75	90
55	4.2	8.4	21	31.5	36.75	90
56	4.4	8.8	22	33	38.5	90
57	4.4	8.8	22	33	38.5	90
58	4.6	9.2	23	34.5	40.25	90
59	4.6	9.2	23	34.5	40.25	90
60	4.6	9.2	23	34.5	40.25	90
61	4.8	9.6	24	36	42	90
62	4.8	9.6	24	36	42	90
63	5	10	25	37.5	43.75	90
64	5	10	25	37.5	43.75	90
65	5	10	25	37.5	43.75	90
66	5.2	10.4	26	39	45.5	90
67	5.2	10.4	26	39	45.5	90

Age	R	G	N	F	Р	U
68	5.2	10.4	26	39	45.5	90
69	5.4	10.8	27	40.5	47.25	90
70	5.4	10.8	27	40.5	47.25	90
71	5.6	11.2	28	42	49	90
72	5.6	11.2	28	42	49	90
73	5.6	11.2	28	42	49	90
74	5.8	11.6	29	43.5	50.75	90
75	5.8	11.6	29	43.5	50.75	90
76	6	12	30	45	52.5	90
77	6	12	30	45	52.5	90
78	6	12	30	45	52.5	90
79	6.2	12.4	31	46.5	54.25	90
80	6.2	12.4	31	46.5	54.25	90
81	6.4	12.8	32	48	56	90
82	6.4	12.8	32	48	56	90
83	6.4	12.8	32	48	56	90
84	6.6	13.2	33	49.5	57.75	90
85	6.6	13.2	33	49.5	57.75	90
86	6.6	13.2	33	49.5	57.75	90
87	6.8	13.6	34	51	59.5	90
88	6.8	13.6	34	51	59.5	90
89	7	14	35	52.5	61.25	90
90	7	14	35	52.5	61.25	90
91	7	14	35	52.5	61.25	90
92	7	14	35	52.5	61.25	90
93	7	14	35	52.5	61.25	90
94	7	14	35	52.5	61.25	90
95	7	14	35	52.5	61.25	90
96	7	14	35	52.5	61.25	90
97	7	14	35	52.5	61.25	90
98	7	14	35	52.5	61.25	90
99	7	14	35	52.5	61.25	90

Age	R	G	N	F	Р	U
0	18	36	90	90	90	90
1	18	36	90	90	90	90
2	18	36	90	90	90	90
3	18	36	90	90	90	90
4	18	36	90	90	90	90
5	18	36	90	90	90	90
6	18	36	90	90	90	90
7	18	36	90	90	90	90
8	18	36	90	90	90	90
9	18	36	90	90	90	90
10	18	36	90	90	90	90
11	18	36	90	90	90	90
12	18	36	90	90	90	90
13	18	36	90	90	90	90
14	18	36	90	90	90	90
15	18	36	90	90	90	90
16	18	36	90	90	90	90
17	18	36	90	90	90	90
18	18	36	90	90	90	90
19	18	36	90	90	90	90
20	18	36	90	90	90	90
21	18	36	90	90	90	90
22	18	36	90	90	90	90
23	18	36	90	90	90	90
24	18	36	90	90	90	90
25	18	36	90	90	90	90
26	18	36	90	90	90	90
27	18	36	90	90	90	90
28	18	36	90	90	90	90
29	18	36	90	90	90	90
30	18	36	90	90	90	90
31	18	36	90	90	90	90
32	18	36	90	90	90	90

Age	R	G	N	F	Р	U
33	18	36	90	90	90	90
34	18	36	90	90	90	90
35	18	36	90	90	90	90
36	18	36	90	90	90	90
37	18	36	90	90	90	90
38	18	36	90	90	90	90
39	18	36	90	90	90	90
40	18	36	90	90	90	90
41	18	36	90	90	90	90
42	18	36	90	90	90	90
43	18	36	90	90	90	90
44	18	36	90	90	90	90
45	18	36	90	90	90	90
46	18	36	90	90	90	90
47	18	36	90	90	90	90
48	18	36	90	90	90	90
49	18	36	90	90	90	90
50	18	36	90	90	90	90
51	18	36	90	90	90	90
52	18	36	90	90	90	90
53	18	36	90	90	90	90
54	18	36	90	90	90	90
55	18	36	90	90	90	90
56	18	36	90	90	90	90
57	18	36	90	90	90	90
58	18	36	90	90	90	90
59	18	36	90	90	90	90
60	18	36	90	90	90	90
61	18	36	90	90	90	90
62	18	36	90	90	90	90
63	18	36	90	90	90	90
64	18	36	90	90	90	90
65	18	36	90	90	90	90

Age	R	G	N	F	Р	U
66	18	36	90	90	90	90
67	18	36	90	90	90	90
68	18	36	90	90	90	90
69	18	36	90	90	90	90
70	18	36	90	90	90	90
71	18	36	90	90	90	90
72	18	36	90	90	90	90
73	18	36	90	90	90	90
74	18	36	90	90	90	90
75	18	36	90	90	90	90
76	18	36	90	90	90	90
77	18	36	90	90	90	90
78	18	36	90	90	90	90
79	18	36	90	90	90	90
80	18	36	90	90	90	90
81	18	36	90	90	90	90
82	18	36	90	90	90	90
83	18	36	90	90	90	90
84	18	36	90	90	90	90
85	18	36	90	90	90	90
86	18	36	90	90	90	90
87	18	36	90	90	90	90
88	18	36	90	90	90	90
89	18	36	90	90	90	90
90	18	36	90	90	90	90
91	18	36	90	90	90	90
92	18	36	90	90	90	90
93	18	36	90	90	90	90
94	18	36	90	90	90	90
95	18	36	90	90	90	90
96	18	36	90	90	90	90
97	18	36	90	90	90	90
98	18	36	90	90	90	90

Age	R	G	N	F	P	U
99	18	36	90	90	90	90

Age	R	G	N	F	P	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	1.4	2.8	7	10.5	12.25	90
3	2.2	4.4	11	16.5	19.25	90
4	3	6	15	22.5	26.25	90
5	4	8	20	30	35	90
6	4.8	9.6	24	36	42	90
7	5.6	11.2	28	42	49	90
8	6.6	13.2	33	49.5	57.75	90
9	7.6	15.2	38	57	66.5	90
10	8.6	17.2	43	64.5	75.25	90
11	9.6	19.2	48	72	84	90
12	10.6	21.2	53	79.5	90	90
13	11.4	22.8	57	85.5	90	90
14	12.2	24.4	61	90	90	90
15	13.2	26.4	66	90	90	90
16	14	28	70	90	90	90
17	14.6	29.2	73	90	90	90
18	15.2	30.4	76	90	90	90
19	15.6	31.2	78	90	90	90
20	15.8	31.6	79	90	90	90
21	15.8	31.6	79	90	90	90
22	16	32	80	90	90	90
23	16	32	80	90	90	90
24	16	32	80	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	P	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	1.2	2.4	6	9	10.5	90
3	1.8	3.6	9	13.5	15.75	90
4	2.4	4.8	12	18	21	90
5	3	6	15	22.5	26.25	90
6	3.6	7.2	18	27	31.5	90
7	4.4	8.8	22	33	38.5	90
8	5	10	25	37.5	43.75	90
9	5.8	11.6	29	43.5	50.75	90
10	6.4	12.8	32	48	56	90
11	7.2	14.4	36	54	63	90
12	8	16	40	60	70	90
13	8.8	17.6	44	66	77	90
14	9.6	19.2	48	72	84	90
15	10.4	20.8	52	78	90	90
16	11	22	55	82.5	90	90
17	11.8	23.6	59	88.5	90	90
18	12.6	25.2	63	90	90	90
19	13.4	26.8	67	90	90	90
20	14.2	28.4	71	90	90	90
21	14.8	29.6	74	90	90	90
22	15.2	30.4	76	90	90	90
23	15.4	30.8	77	90	90	90
24	15.8	31.6	79	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.4	0.8	2	3	3.5	90
1	0.4	0.8	2	3	3.5	90
2	0.8	1.6	4	6	7	90
3	1.2	2.4	6	9	10.5	90
4	1.8	3.6	9	13.5	15.75	90
5	2.4	4.8	12	18	21	90
6	2.8	5.6	14	21	24.5	90
7	3.4	6.8	17	25.5	29.75	90
8	3.8	7.6	19	28.5	33.25	90
9	4.4	8.8	22	33	38.5	90
10	5	10	25	37.5	43.75	90
11	5.6	11.2	28	42	49	90
12	6.2	12.4	31	46.5	54.25	90
13	6.8	13.6	34	51	59.5	90
14	7.4	14.8	37	55.5	64.75	90
15	8	16	40	60	70	90
16	8.6	17.2	43	64.5	75.25	90
17	9.2	18.4	46	69	80.5	90
18	10	20	50	75	87.5	90
19	10.6	21.2	53	79.5	90	90
20	11.2	22.4	56	84	90	90
21	11.8	23.6	59	88.5	90	90
22	12.4	24.8	62	90	90	90
23	13	26	65	90	90	90
24	13.6	27.2	68	90	90	90
25	14.2	28.4	71	90	90	90
26	14.8	29.6	74	90	90	90
27	15	30	75	90	90	90
28	15.4	30.8	77	90	90	90
29	15.6	31.2	78	90	90	90
30	15.8	31.6	79	90	90	90
31	15.8	31.6	79	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.4	0.8	2	3	3.5	90
1	0.4	0.8	2	3	3.5	90
2	0.8	1.6	4	6	7	90
3	1	2	5	7.5	8.75	90
4	1.4	2.8	7	10.5	12.25	90
5	1.8	3.6	9	13.5	15.75	90
6	2.2	4.4	11	16.5	19.25	90
7	2.6	5.2	13	19.5	22.75	90
8	3	6	15	22.5	26.25	90
9	3.4	6.8	17	25.5	29.75	90
10	4	8	20	30	35	90
11	4.4	8.8	22	33	38.5	90
12	4.8	9.6	24	36	42	90
13	5.2	10.4	26	39	45.5	90
14	5.8	11.6	29	43.5	50.75	90
15	6.4	12.8	32	48	56	90
16	6.8	13.6	34	51	59.5	90
17	7.4	14.8	37	55.5	64.75	90
18	8	16	40	60	70	90
19	8.6	17.2	43	64.5	75.25	90
20	9	18	45	67.5	78.75	90
21	9.6	19.2	48	72	84	90
22	10.2	20.4	51	76.5	89.25	90
23	10.8	21.6	54	81	90	90
24	11.4	22.8	57	85.5	90	90
25	12	24	60	90	90	90
26	12.4	24.8	62	90	90	90
27	13	26	65	90	90	90
28	13.6	27.2	68	90	90	90
29	14	28	70	90	90	90
30	14.2	28.4	71	90	90	90
31	14.4	28.8	72	90	90	90
32	14.8	29.6	74	90	90	90

Age	R	G	N	F	Р	U
33	15	30	75	90	90	90
34	15.4	30.8	77	90	90	90
35	15.6	31.2	78	90	90	90
36	15.8	31.6	79	90	90	90
37	15.8	31.6	79	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.6	1.2	3	4.5	5.25	90
3	0.8	1.6	4	6	7	90
4	1	2	5	7.5	8.75	90
5	1.4	2.8	7	10.5	12.25	90
6	1.8	3.6	9	13.5	15.75	90
7	2	4	10	15	17.5	90
8	2.4	4.8	12	18	21	90
9	2.8	5.6	14	21	24.5	90
10	3.2	6.4	16	24	28	90
11	3.6	7.2	18	27	31.5	90
12	4	8	20	30	35	90
13	4.4	8.8	22	33	38.5	90
14	4.8	9.6	24	36	42	90
15	5.2	10.4	26	39	45.5	90
16	5.6	11.2	28	42	49	90
17	6	12	30	45	52.5	90
18	6.4	12.8	32	48	56	90
19	6.8	13.6	34	51	59.5	90
20	7.4	14.8	37	55.5	64.75	90
21	7.8	15.6	39	58.5	68.25	90
22	8.4	16.8	42	63	73.5	90
23	8.8	17.6	44	66	77	90
24	9.4	18.8	47	70.5	82.25	90
25	10	20	50	75	87.5	90
26	10.4	20.8	52	78	90	90
27	11	22	55	82.5	90	90
28	11.4	22.8	57	85.5	90	90
29	11.8	23.6	59	88.5	90	90
30	12.4	24.8	62	90	90	90
31	12.8	25.6	64	90	90	90
32	13.4	26.8	67	90	90	90

Age	R	G	N	F	Р	U
33	13.8	27.6	69	90	90	90
34	14.2	28.4	71	90	90	90
35	14.4	28.8	72	90	90	90
36	14.8	29.6	74	90	90	90
37	15	30	75	90	90	90
38	15.4	30.8	77	90	90	90
39	15.6	31.2	78	90	90	90
40	15.8	31.6	79	90	90	90
41	15.8	31.6	79	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.4	0.8	2	3	3.5	90
3	0.6	1.2	3	4.5	5.25	90
4	0.8	1.6	4	6	7	90
5	1.2	2.4	6	9	10.5	90
6	1.4	2.8	7	10.5	12.25	90
7	1.6	3.2	8	12	14	90
8	2	4	10	15	17.5	90
9	2.2	4.4	11	16.5	19.25	90
10	2.6	5.2	13	19.5	22.75	90
11	2.8	5.6	14	21	24.5	90
12	3	6	15	22.5	26.25	90
13	3.4	6.8	17	25.5	29.75	90
14	3.8	7.6	19	28.5	33.25	90
15	4.2	8.4	21	31.5	36.75	90
16	4.6	9.2	23	34.5	40.25	90
17	5	10	25	37.5	43.75	90
18	5.4	10.8	27	40.5	47.25	90
19	5.6	11.2	28	42	49	90
20	6	12	30	45	52.5	90
21	6.4	12.8	32	48	56	90
22	6.8	13.6	34	51	59.5	90
23	7.2	14.4	36	54	63	90
24	7.6	15.2	38	57	66.5	90
25	8	16	40	60	70	90
26	8.6	17.2	43	64.5	75.25	90
27	9	18	45	67.5	78.75	90
28	9.4	18.8	47	70.5	82.25	90
29	9.8	19.6	49	73.5	85.75	90
30	10.4	20.8	52	78	90	90
31	10.8	21.6	54	81	90	90
32	11.2	22.4	56	84	90	90

Age	R	G	N	F	Р	U
33	11.6	23.2	58	87	90	90
34	12	24	60	90	90	90
35	12.4	24.8	62	90	90	90
36	13	26	65	90	90	90
37	13.4	26.8	67	90	90	90
38	13.8	27.6	69	90	90	90
39	14	28	70	90	90	90
40	14.4	28.8	72	90	90	90
41	14.6	29.2	73	90	90	90
42	15	30	75	90	90	90
43	15.2	30.4	76	90	90	90
44	15.4	30.8	77	90	90	90
45	15.6	31.2	78	90	90	90
46	15.8	31.6	79	90	90	90
47	15.8	31.6	79	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.4	0.8	2	3	3.5	90
3	0.6	1.2	3	4.5	5.25	90
4	0.8	1.6	4	6	7	90
5	1	2	5	7.5	8.75	90
6	1.2	2.4	6	9	10.5	90
7	1.4	2.8	7	10.5	12.25	90
8	1.6	3.2	8	12	14	90
9	2	4	10	15	17.5	90
10	2.2	4.4	11	16.5	19.25	90
11	2.4	4.8	12	18	21	90
12	2.6	5.2	13	19.5	22.75	90
13	3	6	15	22.5	26.25	90
14	3.2	6.4	16	24	28	90
15	3.4	6.8	17	25.5	29.75	90
16	3.8	7.6	19	28.5	33.25	90
17	4	8	20	30	35	90
18	4.4	8.8	22	33	38.5	90
19	4.8	9.6	24	36	42	90
20	5	10	25	37.5	43.75	90
21	5.2	10.4	26	39	45.5	90
22	5.6	11.2	28	42	49	90
23	5.8	11.6	29	43.5	50.75	90
24	6.2	12.4	31	46.5	54.25	90
25	6.6	13.2	33	49.5	57.75	90
26	7	14	35	52.5	61.25	90
27	7.4	14.8	37	55.5	64.75	90
28	7.8	15.6	39	58.5	68.25	90
29	8.2	16.4	41	61.5	71.75	90
30	8.8	17.6	44	66	77	90
31	9.2	18.4	46	69	80.5	90
32	9.4	18.8	47	70.5	82.25	90

Age	R	G	N	F	Р	U
33	9.8	19.6	49	73.5	85.75	90
34	10.2	20.4	51	76.5	89.25	90
35	10.6	21.2	53	79.5	90	90
36	11	22	55	82.5	90	90
37	11.4	22.8	57	85.5	90	90
38	11.8	23.6	59	88.5	90	90
39	12.2	24.4	61	90	90	90
40	12.6	25.2	63	90	90	90
41	12.8	25.6	64	90	90	90
42	13.2	26.4	66	90	90	90
43	13.4	26.8	67	90	90	90
44	13.8	27.6	69	90	90	90
45	14	28	70	90	90	90
46	14.4	28.8	72	90	90	90
47	14.6	29.2	73	90	90	90
48	15	30	75	90	90	90
49	15.2	30.4	76	90	90	90
50	15.4	30.8	77	90	90	90
51	15.6	31.2	78	90	90	90
52	15.6	31.2	78	90	90	90
53	15.8	31.6	79	90	90	90
54	15.8	31.6	79	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.4	0.8	2	3	3.5	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.8	1.6	4	6	7	90
6	1	2	5	7.5	8.75	90
7	1.2	2.4	6	9	10.5	90
8	1.4	2.8	7	10.5	12.25	90
9	1.6	3.2	8	12	14	90
10	1.8	3.6	9	13.5	15.75	90
11	2	4	10	15	17.5	90
12	2.2	4.4	11	16.5	19.25	90
13	2.4	4.8	12	18	21	90
14	2.6	5.2	13	19.5	22.75	90
15	3	6	15	22.5	26.25	90
16	3.2	6.4	16	24	28	90
17	3.4	6.8	17	25.5	29.75	90
18	3.8	7.6	19	28.5	33.25	90
19	4	8	20	30	35	90
20	4.2	8.4	21	31.5	36.75	90
21	4.4	8.8	22	33	38.5	90
22	4.6	9.2	23	34.5	40.25	90
23	4.8	9.6	24	36	42	90
24	5.2	10.4	26	39	45.5	90
25	5.4	10.8	27	40.5	47.25	90
26	5.8	11.6	29	43.5	50.75	90
27	6.2	12.4	31	46.5	54.25	90
28	6.6	13.2	33	49.5	57.75	90
29	6.8	13.6	34	51	59.5	90
30	7.2	14.4	36	54	63	90
31	7.6	15.2	38	57	66.5	90
32	8	16	40	60	70	90

Age	R	G	N	F	Р	U
33	8.4	16.8	42	63	73.5	90
34	8.8	17.6	44	66	77	90
35	9	18	45	67.5	78.75	90
36	9.4	18.8	47	70.5	82.25	90
37	9.8	19.6	49	73.5	85.75	90
38	10.2	20.4	51	76.5	89.25	90
39	10.6	21.2	53	79.5	90	90
40	11	22	55	82.5	90	90
41	11.4	22.8	57	85.5	90	90
42	11.8	23.6	59	88.5	90	90
43	12	24	60	90	90	90
44	12.4	24.8	62	90	90	90
45	12.6	25.2	63	90	90	90
46	13	26	65	90	90	90
47	13.2	26.4	66	90	90	90
48	13.6	27.2	68	90	90	90
49	13.8	27.6	69	90	90	90
50	14.2	28.4	71	90	90	90
51	14.4	28.8	72	90	90	90
52	14.6	29.2	73	90	90	90
53	15	30	75	90	90	90
54	15.2	30.4	76	90	90	90
55	15.4	30.8	77	90	90	90
56	15.6	31.2	78	90	90	90
57	15.6	31.2	78	90	90	90
58	15.8	31.6	79	90	90	90
59	15.8	31.6	79	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	18	36	90	90	90	90
1	18	36	90	90	90	90
2	18	36	90	90	90	90
3	18	36	90	90	90	90
4	18	36	90	90	90	90
5	18	36	90	90	90	90
6	18	36	90	90	90	90
7	18	36	90	90	90	90
8	18	36	90	90	90	90
9	18	36	90	90	90	90
10	18	36	90	90	90	90
11	18	36	90	90	90	90
12	18	36	90	90	90	90
13	18	36	90	90	90	90
14	18	36	90	90	90	90
15	18	36	90	90	90	90
16	18	36	90	90	90	90
17	18	36	90	90	90	90
18	18	36	90	90	90	90
19	18	36	90	90	90	90
20	18	36	90	90	90	90
21	18	36	90	90	90	90
22	18	36	90	90	90	90
23	18	36	90	90	90	90
24	18	36	90	90	90	90
25	18	36	90	90	90	90
26	18	36	90	90	90	90
27	18	36	90	90	90	90
28	18	36	90	90	90	90
29	18	36	90	90	90	90
30	18	36	90	90	90	90
31	18	36	90	90	90	90
32	18	36	90	90	90	90

Age	R	G	N	F	Р	U
33	18	36	90	90	90	90
34	18	36	90	90	90	90
35	18	36	90	90	90	90
36	18	36	90	90	90	90
37	18	36	90	90	90	90
38	18	36	90	90	90	90
39	18	36	90	90	90	90
40	18	36	90	90	90	90
41	18	36	90	90	90	90
42	18	36	90	90	90	90
43	18	36	90	90	90	90
44	18	36	90	90	90	90
45	18	36	90	90	90	90
46	18	36	90	90	90	90
47	18	36	90	90	90	90
48	18	36	90	90	90	90
49	18	36	90	90	90	90
50	18	36	90	90	90	90
51	18	36	90	90	90	90
52	18	36	90	90	90	90
53	18	36	90	90	90	90
54	18	36	90	90	90	90
55	18	36	90	90	90	90
56	18	36	90	90	90	90
57	18	36	90	90	90	90
58	18	36	90	90	90	90
59	18	36	90	90	90	90
60	18	36	90	90	90	90
61	18	36	90	90	90	90
62	18	36	90	90	90	90
63	18	36	90	90	90	90
64	18	36	90	90	90	90
65	18	36	90	90	90	90

Age	R	G	N	F	Р	U
66	18	36	90	90	90	90
67	18	36	90	90	90	90
68	18	36	90	90	90	90
69	18	36	90	90	90	90
70	18	36	90	90	90	90
71	18	36	90	90	90	90
72	18	36	90	90	90	90
73	18	36	90	90	90	90
74	18	36	90	90	90	90
75	18	36	90	90	90	90
76	18	36	90	90	90	90
77	18	36	90	90	90	90
78	18	36	90	90	90	90
79	18	36	90	90	90	90
80	18	36	90	90	90	90
81	18	36	90	90	90	90
82	18	36	90	90	90	90
83	18	36	90	90	90	90
84	18	36	90	90	90	90
85	18	36	90	90	90	90
86	18	36	90	90	90	90
87	18	36	90	90	90	90
88	18	36	90	90	90	90
89	18	36	90	90	90	90
90	18	36	90	90	90	90
91	18	36	90	90	90	90
92	18	36	90	90	90	90
93	18	36	90	90	90	90
94	18	36	90	90	90	90
95	18	36	90	90	90	90
96	18	36	90	90	90	90
97	18	36	90	90	90	90
98	18	36	90	90	90	90

Age	R	G	N	F	Р	U
99	18	36	90	90	90	90

Age	R	G	N	F	Р	U
0	1.6	3.2	8	12	14	90
1	1.6	3.2	8	12	14	90
2	3.2	6.4	16	24	28	90
3	4.8	9.6	24	36	42	90
4	6.4	12.8	32	48	56	90
5	8	16	40	60	70	90
6	9.6	19.2	48	72	84	90
7	11.2	22.4	56	84	90	90
8	12.8	25.6	64	90	90	90
9	14.4	28.8	72	90	90	90
10	16	32	80	90	90	90
11	16	32	80	90	90	90
12	16	32	80	90	90	90
13	16	32	80	90	90	90
14	16	32	80	90	90	90
15	16	32	80	90	90	90
16	16	32	80	90	90	90
17	16	32	80	90	90	90
18	16	32	80	90	90	90
19	16	32	80	90	90	90
20	16	32	80	90	90	90
21	16	32	80	90	90	90
22	16	32	80	90	90	90
23	16	32	80	90	90	90
24	16	32	80	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	1	2	5	7.5	8.75	90
1	1	2	5	7.5	8.75	90
2	2.2	4.4	11	16.5	19.25	90
3	3.2	6.4	16	24	28	90
4	4.2	8.4	21	31.5	36.75	90
5	5.4	10.8	27	40.5	47.25	90
6	6.4	12.8	32	48	56	90
7	7.4	14.8	37	55.5	64.75	90
8	8.6	17.2	43	64.5	75.25	90
9	9.6	19.2	48	72	84	90
10	10.6	21.2	53	79.5	90	90
11	11.8	23.6	59	88.5	90	90
12	12.8	25.6	64	90	90	90
13	13.8	27.6	69	90	90	90
14	15	30	75	90	90	90
15	16	32	80	90	90	90
16	16	32	80	90	90	90
17	16	32	80	90	90	90
18	16	32	80	90	90	90
19	16	32	80	90	90	90
20	16	32	80	90	90	90
21	16	32	80	90	90	90
22	16	32	80	90	90	90
23	16	32	80	90	90	90
24	16	32	80	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.8	1.6	4	6	7	90
1	0.8	1.6	4	6	7	90
2	1.6	3.2	8	12	14	90
3	2.4	4.8	12	18	21	90
4	3.2	6.4	16	24	28	90
5	4	8	20	30	35	90
6	4.8	9.6	24	36	42	90
7	5.6	11.2	28	42	49	90
8	6.4	12.8	32	48	56	90
9	7.2	14.4	36	54	63	90
10	8	16	40	60	70	90
11	8.8	17.6	44	66	77	90
12	9.6	19.2	48	72	84	90
13	10.4	20.8	52	78	90	90
14	11.2	22.4	56	84	90	90
15	12	24	60	90	90	90
16	12.8	25.6	64	90	90	90
17	13.6	27.2	68	90	90	90
18	14.4	28.8	72	90	90	90
19	15.2	30.4	76	90	90	90
20	16	32	80	90	90	90
21	16	32	80	90	90	90
22	16	32	80	90	90	90
23	16	32	80	90	90	90
24	16	32	80	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	1.2	2.4	6	9	10.5	90
3	2	4	10	15	17.5	90
4	2.6	5.2	13	19.5	22.75	90
5	3.2	6.4	16	24	28	90
6	3.8	7.6	19	28.5	33.25	90
7	4.4	8.8	22	33	38.5	90
8	5.2	10.4	26	39	45.5	90
9	5.8	11.6	29	43.5	50.75	90
10	6.4	12.8	32	48	56	90
11	7	14	35	52.5	61.25	90
12	7.6	15.2	38	57	66.5	90
13	8.4	16.8	42	63	73.5	90
14	9	18	45	67.5	78.75	90
15	9.6	19.2	48	72	84	90
16	10.2	20.4	51	76.5	89.25	90
17	10.8	21.6	54	81	90	90
18	11.6	23.2	58	87	90	90
19	12.2	24.4	61	90	90	90
20	12.8	25.6	64	90	90	90
21	13.4	26.8	67	90	90	90
22	14	28	70	90	90	90
23	14.8	29.6	74	90	90	90
24	15.4	30.8	77	90	90	90
25	16	32	80	90	90	90
26	16	32	80	90	90	90
27	16	32	80	90	90	90
28	16	32	80	90	90	90
29	16	32	80	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	1	2	5	7.5	8.75	90
3	1.6	3.2	8	12	14	90
4	2.2	4.4	11	16.5	19.25	90
5	2.6	5.2	13	19.5	22.75	90
6	3.2	6.4	16	24	28	90
7	3.8	7.6	19	28.5	33.25	90
8	4.2	8.4	21	31.5	36.75	90
9	4.8	9.6	24	36	42	90
10	5.4	10.8	27	40.5	47.25	90
11	5.8	11.6	29	43.5	50.75	90
12	6.4	12.8	32	48	56	90
13	7	14	35	52.5	61.25	90
14	7.4	14.8	37	55.5	64.75	90
15	8	16	40	60	70	90
16	8.6	17.2	43	64.5	75.25	90
17	9	18	45	67.5	78.75	90
18	9.6	19.2	48	72	84	90
19	10.2	20.4	51	76.5	89.25	90
20	10.6	21.2	53	79.5	90	90
21	11.2	22.4	56	84	90	90
22	11.8	23.6	59	88.5	90	90
23	12.2	24.4	61	90	90	90
24	12.8	25.6	64	90	90	90
25	13.4	26.8	67	90	90	90
26	13.8	27.6	69	90	90	90
27	14.4	28.8	72	90	90	90
28	15	30	75	90	90	90
29	15.4	30.8	77	90	90	90
30	16	32	80	90	90	90
31	16	32	80	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.6	1.2	3	4.5	5.25	90
6	0.8	1.6	4	6	7	90
7	0.8	1.6	4	6	7	90
8	1	2	5	7.5	8.75	90
9	1.2	2.4	6	9	10.5	90
10	1.2	2.4	6	9	10.5	90
11	1.4	2.8	7	10.5	12.25	90
12	3	6	15	22.5	26.25	90
13	3	6	15	22.5	26.25	90
14	2.4	4.8	12	18	21	90
15	3	6	15	22.5	26.25	90
16	3.6	7.2	18	27	31.5	90
17	8	16	40	60	70	90
18	8.8	17.6	44	66	77	90
19	9.6	19.2	48	72	84	90
20	10.6	21.2	53	79.5	90	90
21	11.6	23.2	58	87	90	90
22	12.6	25.2	63	90	90	90
23	13.6	27.2	68	90	90	90
24	14	28	70	90	90	90
25	14.4	28.8	72	90	90	90
26	14.8	29.6	74	90	90	90
27	15	30	75	90	90	90
28	15.2	30.4	76	90	90	90
29	15.4	30.8	77	90	90	90
30	15.6	31.2	78	90	90	90
31	15.8	31.6	79	90	90	90
32	16	32	80	90	90	90

Age	R	G	N	F	Р	U
33	16	32	80	90	90	90
34	16	32	80	90	90	90
35	16	32	80	90	90	90
36	16	32	80	90	90	90
37	16	32	80	90	90	90
38	16	32	80	90	90	90
39	16	32	80	90	90	90
40	16	32	80	90	90	90
41	16	32	80	90	90	90
42	16	32	80	90	90	90
43	16	32	80	90	90	90
44	16	32	80	90	90	90
45	16	32	80	90	90	90
46	16	32	80	90	90	90
47	16	32	80	90	90	90
48	16	32	80	90	90	90
49	16	32	80	90	90	90
50	16	32	80	90	90	90
51	16	32	80	90	90	90
52	16	32	80	90	90	90
53	16	32	80	90	90	90
54	16	32	80	90	90	90
55	16	32	80	90	90	90
56	16	32	80	90	90	90
57	16	32	80	90	90	90
58	16	32	80	90	90	90
59	16	32	80	90	90	90
60	16	32	80	90	90	90
61	16	32	80	90	90	90
62	16	32	80	90	90	90
63	16	32	80	90	90	90
64	16	32	80	90	90	90
65	16	32	80	90	90	90

Age	R	G	N	F	Р	U
66	16	32	80	90	90	90
67	16	32	80	90	90	90
68	16	32	80	90	90	90
69	16	32	80	90	90	90
70	16	32	80	90	90	90
71	16	32	80	90	90	90
72	16	32	80	90	90	90
73	16	32	80	90	90	90
74	16	32	80	90	90	90
75	16	32	80	90	90	90
76	16	32	80	90	90	90
77	16	32	80	90	90	90
78	16	32	80	90	90	90
79	16	32	80	90	90	90
80	16	32	80	90	90	90
81	16	32	80	90	90	90
82	16	32	80	90	90	90
83	16	32	80	90	90	90
84	16	32	80	90	90	90
85	16	32	80	90	90	90
86	16	32	80	90	90	90
87	16	32	80	90	90	90
88	16	32	80	90	90	90
89	16	32	80	90	90	90
90	16	32	80	90	90	90
91	16	32	80	90	90	90
92	16	32	80	90	90	90
93	16	32	80	90	90	90
94	16	32	80	90	90	90
95	16	32	80	90	90	90
96	16	32	80	90	90	90
97	16	32	80	90	90	90
98	16	32	80	90	90	90

Age	R	G	N	F	P	U
99	16	32	80	90	90	90

Age	R	G	N	F	Р	U
0	0.6	1.2	3	4.5	5.25	90
1	0.6	1.2	3	4.5	5.25	90
2	0.4	0.8	2	3	3.5	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.8	1.6	4	6	7	90
6	1	2	5	7.5	8.75	90
7	1	2	5	7.5	8.75	90
8	1.2	2.4	6	9	10.5	90
9	1.4	2.8	7	10.5	12.25	90
10	1.6	3.2	8	12	14	90
11	1.8	3.6	9	13.5	15.75	90
12	1.8	3.6	9	13.5	15.75	90
13	2	4	10	15	17.5	90
14	2.2	4.4	11	16.5	19.25	90
15	2.4	4.8	12	18	21	90
16	2.4	4.8	12	18	21	90
17	2.6	5.2	13	19.5	22.75	90
18	2.8	5.6	14	21	24.5	90
19	3	6	15	22.5	26.25	90
20	3.2	6.4	16	24	28	90
21	3.2	6.4	16	24	28	90
22	3.4	6.8	17	25.5	29.75	90
23	3.6	7.2	18	27	31.5	90
24	3.8	7.6	19	28.5	33.25	90
25	3.8	7.6	19	28.5	33.25	90
26	4	8	20	30	35	90
27	4.2	8.4	21	31.5	36.75	90
28	4.4	8.8	22	33	38.5	90
29	4.6	9.2	23	34.5	40.25	90
30	4.6	9.2	23	34.5	40.25	90
31	4.8	9.6	24	36	42	90
32	5	10	25	37.5	43.75	90

Age	R	G	N	F	Р	U
33	5.2	10.4	26	39	45.5	90
34	5.2	10.4	26	39	45.5	90
35	5.4	10.8	27	40.5	47.25	90
36	5.8	11.6	29	43.5	50.75	90
37	6	12	30	45	52.5	90
38	6	12	30	45	52.5	90
39	6.2	12.4	31	46.5	54.25	90
40	6.4	12.8	32	48	56	90
41	6.6	13.2	33	49.5	57.75	90
42	6.8	13.6	34	51	59.5	90
43	6.8	13.6	34	51	59.5	90
44	7	14	35	52.5	61.25	90
45	7.2	14.4	36	54	63	90
46	7.4	14.8	37	55.5	64.75	90
47	7.6	15.2	38	57	66.5	90
48	7.6	15.2	38	57	66.5	90
49	7.8	15.6	39	58.5	68.25	90
50	8	16	40	60	70	90
51	8.2	16.4	41	61.5	71.75	90
52	8.4	16.8	42	63	73.5	90
53	8.4	16.8	42	63	73.5	90
54	8.6	17.2	43	64.5	75.25	90
55	8.8	17.6	44	66	77	90
56	9	18	45	67.5	78.75	90
57	9.2	18.4	46	69	80.5	90
58	9.2	18.4	46	69	80.5	90
59	9.4	18.8	47	70.5	82.25	90
60	9.6	19.2	48	72	84	90
61	9.8	19.6	49	73.5	85.75	90
62	10	20	50	75	87.5	90
63	10	20	50	75	87.5	90
64	10.2	20.4	51	76.5	89.25	90
65	10.4	20.8	52	78	90	90

Age	R	G	N	F	Р	U
66	10.6	21.2	53	79.5	90	90
67	10.8	21.6	54	81	90	90
68	10.8	21.6	54	81	90	90
69	11	22	55	82.5	90	90
70	11.2	22.4	56	84	90	90
71	11.4	22.8	57	85.5	90	90
72	11.6	23.2	58	87	90	90
73	11.6	23.2	58	87	90	90
74	11.8	23.6	59	88.5	90	90
75	12	24	60	90	90	90
76	12.2	24.4	61	90	90	90
77	12.4	24.8	62	90	90	90
78	12.4	24.8	62	90	90	90
79	12.6	25.2	63	90	90	90
80	12.8	25.6	64	90	90	90
81	13	26	65	90	90	90
82	13.2	26.4	66	90	90	90
83	13.2	26.4	66	90	90	90
84	13.4	26.8	67	90	90	90
85	13.6	27.2	68	90	90	90
86	13.8	27.6	69	90	90	90
87	14	28	70	90	90	90
88	14	28	70	90	90	90
89	14.2	28.4	71	90	90	90
90	14.2	28.4	71	90	90	90
91	14.2	28.4	71	90	90	90
92	14.2	28.4	71	90	90	90
93	14.2	28.4	71	90	90	90
94	14.2	28.4	71	90	90	90
95	14.2	28.4	71	90	90	90
96	14.2	28.4	71	90	90	90
97	14.2	28.4	71	90	90	90
98	14.2	28.4	71	90	90	90

Age	R	G	N	F	Р	U
99	14.2	28.4	71	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.8	1.6	4	6	7	90
6	0.8	1.6	4	6	7	90
7	1	2	5	7.5	8.75	90
8	1.2	2.4	6	9	10.5	90
9	1.2	2.4	6	9	10.5	90
10	1.4	2.8	7	10.5	12.25	90
11	1.6	3.2	8	12	14	90
12	1.6	3.2	8	12	14	90
13	1.8	3.6	9	13.5	15.75	90
14	2	4	10	15	17.5	90
15	2.2	4.4	11	16.5	19.25	90
16	2.2	4.4	11	16.5	19.25	90
17	2.4	4.8	12	18	21	90
18	2.6	5.2	13	19.5	22.75	90
19	2.6	5.2	13	19.5	22.75	90
20	2.8	5.6	14	21	24.5	90
21	3	6	15	22.5	26.25	90
22	3	6	15	22.5	26.25	90
23	3.2	6.4	16	24	28	90
24	3.4	6.8	17	25.5	29.75	90
25	3.6	7.2	18	27	31.5	90
26	3.6	7.2	18	27	31.5	90
27	3.8	7.6	19	28.5	33.25	90
28	4	8	20	30	35	90
29	4	8	20	30	35	90
30	4.2	8.4	21	31.5	36.75	90
31	4.4	8.8	22	33	38.5	90
32	4.4	8.8	22	33	38.5	90

Age	R	G	N	F	Р	U
33	4.6	9.2	23	34.5	40.25	90
34	4.8	9.6	24	36	42	90
35	5	10	25	37.5	43.75	90
36	5.2	10.4	26	39	45.5	90
37	5.4	10.8	27	40.5	47.25	90
38	5.4	10.8	27	40.5	47.25	90
39	5.6	11.2	28	42	49	90
40	5.8	11.6	29	43.5	50.75	90
41	6	12	30	45	52.5	90
42	6	12	30	45	52.5	90
43	6.2	12.4	31	46.5	54.25	90
44	6.4	12.8	32	48	56	90
45	6.4	12.8	32	48	56	90
46	6.6	13.2	33	49.5	57.75	90
47	6.8	13.6	34	51	59.5	90
48	7	14	35	52.5	61.25	90
49	7	14	35	52.5	61.25	90
50	7.2	14.4	36	54	63	90
51	7.4	14.8	37	55.5	64.75	90
52	7.4	14.8	37	55.5	64.75	90
53	7.6	15.2	38	57	66.5	90
54	7.8	15.6	39	58.5	68.25	90
55	8	16	40	60	70	90
56	8	16	40	60	70	90
57	8.2	16.4	41	61.5	71.75	90
58	8.4	16.8	42	63	73.5	90
59	8.4	16.8	42	63	73.5	90
60	8.6	17.2	43	64.5	75.25	90
61	8.8	17.6	44	66	77	90
62	9	18	45	67.5	78.75	90
63	9	18	45	67.5	78.75	90
64	9.2	18.4	46	69	80.5	90
65	9.4	18.8	47	70.5	82.25	90

Age	R	G	N	F	Р	U
66	9.6	19.2	48	72	84	90
67	9.6	19.2	48	72	84	90
68	9.8	19.6	49	73.5	85.75	90
69	10	20	50	75	87.5	90
70	10	20	50	75	87.5	90
71	10.2	20.4	51	76.5	89.25	90
72	10.4	20.8	52	78	90	90
73	10.6	21.2	53	79.5	90	90
74	10.6	21.2	53	79.5	90	90
75	10.8	21.6	54	81	90	90
76	11	22	55	82.5	90	90
77	11	22	55	82.5	90	90
78	11.2	22.4	56	84	90	90
79	11.4	22.8	57	85.5	90	90
80	11.6	23.2	58	87	90	90
81	11.6	23.2	58	87	90	90
82	11.8	23.6	59	88.5	90	90
83	12	24	60	90	90	90
84	12	24	60	90	90	90
85	12.2	24.4	61	90	90	90
86	12.4	24.8	62	90	90	90
87	12.6	25.2	63	90	90	90
88	12.6	25.2	63	90	90	90
89	12.8	25.6	64	90	90	90
90	12.8	25.6	64	90	90	90
91	12.8	25.6	64	90	90	90
92	12.8	25.6	64	90	90	90
93	12.8	25.6	64	90	90	90
94	12.8	25.6	64	90	90	90
95	12.8	25.6	64	90	90	90
96	12.8	25.6	64	90	90	90
97	12.8	25.6	64	90	90	90
98	12.8	25.6	64	90	90	90

Age	R	G	N	F	Р	U
99	12.8	25.6	64	90	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.6	1.2	3	4.5	5.25	90
5	0.6	1.2	3	4.5	5.25	90
6	0.8	1.6	4	6	7	90
7	0.8	1.6	4	6	7	90
8	1	2	5	7.5	8.75	90
9	1.2	2.4	6	9	10.5	90
10	1.2	2.4	6	9	10.5	90
11	1.4	2.8	7	10.5	12.25	90
12	1.6	3.2	8	12	14	90
13	1.6	3.2	8	12	14	90
14	1.8	3.6	9	13.5	15.75	90
15	2	4	10	15	17.5	90
16	2	4	10	15	17.5	90
17	2.2	4.4	11	16.5	19.25	90
18	2.2	4.4	11	16.5	19.25	90
19	2.4	4.8	12	18	21	90
20	2.6	5.2	13	19.5	22.75	90
21	2.6	5.2	13	19.5	22.75	90
22	2.8	5.6	14	21	24.5	90
23	3	6	15	22.5	26.25	90
24	3	6	15	22.5	26.25	90
25	3.2	6.4	16	24	28	90
26	3.4	6.8	17	25.5	29.75	90
27	3.4	6.8	17	25.5	29.75	90
28	3.6	7.2	18	27	31.5	90
29	3.6	7.2	18	27	31.5	90
30	3.8	7.6	19	28.5	33.25	90
31	4	8	20	30	35	90
32	4	8	20	30	35	90

Age	R	G	N	F	Р	U
33	4.2	8.4	21	31.5	36.75	90
34	4.4	8.8	22	33	38.5	90
35	4.4	8.8	22	33	38.5	90
36	4.8	9.6	24	36	42	90
37	4.8	9.6	24	36	42	90
38	5	10	25	37.5	43.75	90
39	5.2	10.4	26	39	45.5	90
40	5.2	10.4	26	39	45.5	90
41	5.4	10.8	27	40.5	47.25	90
42	5.4	10.8	27	40.5	47.25	90
43	5.6	11.2	28	42	49	90
44	5.8	11.6	29	43.5	50.75	90
45	5.8	11.6	29	43.5	50.75	90
46	6	12	30	45	52.5	90
47	6.2	12.4	31	46.5	54.25	90
48	6.2	12.4	31	46.5	54.25	90
49	6.4	12.8	32	48	56	90
50	6.6	13.2	33	49.5	57.75	90
51	6.6	13.2	33	49.5	57.75	90
52	6.8	13.6	34	51	59.5	90
53	7	14	35	52.5	61.25	90
54	7	14	35	52.5	61.25	90
55	7.2	14.4	36	54	63	90
56	7.4	14.8	37	55.5	64.75	90
57	7.4	14.8	37	55.5	64.75	90
58	7.6	15.2	38	57	66.5	90
59	7.8	15.6	39	58.5	68.25	90
60	7.8	15.6	39	58.5	68.25	90
61	8	16	40	60	70	90
62	8.2	16.4	41	61.5	71.75	90
63	8.2	16.4	41	61.5	71.75	90
64	8.4	16.8	42	63	73.5	90
65	8.6	17.2	43	64.5	75.25	90

Age	R	G	N	F	Р	U
66	8.6	17.2	43	64.5	75.25	90
67	8.8	17.6	44	66	77	90
68	9	18	45	67.5	78.75	90
69	9	18	45	67.5	78.75	90
70	9.2	18.4	46	69	80.5	90
71	9.2	18.4	46	69	80.5	90
72	9.4	18.8	47	70.5	82.25	90
73	9.6	19.2	48	72	84	90
74	9.6	19.2	48	72	84	90
75	9.8	19.6	49	73.5	85.75	90
76	10	20	50	75	87.5	90
77	10	20	50	75	87.5	90
78	10.2	20.4	51	76.5	89.25	90
79	10.4	20.8	52	78	90	90
80	10.4	20.8	52	78	90	90
81	10.6	21.2	53	79.5	90	90
82	10.8	21.6	54	81	90	90
83	10.8	21.6	54	81	90	90
84	11	22	55	82.5	90	90
85	11.2	22.4	56	84	90	90
86	11.2	22.4	56	84	90	90
87	11.4	22.8	57	85.5	90	90
88	11.6	23.2	58	87	90	90
89	11.6	23.2	58	87	90	90
90	11.6	23.2	58	87	90	90
91	11.6	23.2	58	87	90	90
92	11.6	23.2	58	87	90	90
93	11.6	23.2	58	87	90	90
94	11.6	23.2	58	87	90	90
95	11.6	23.2	58	87	90	90
96	11.6	23.2	58	87	90	90
97	11.6	23.2	58	87	90	90
98	11.6	23.2	58	87	90	90

Age	R	G	N	F	Р	U
99	11.6	23.2	58	87	90	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.4	0.8	2	3	3.5	90
5	0.6	1.2	3	4.5	5.25	90
6	0.8	1.6	4	6	7	90
7	0.8	1.6	4	6	7	90
8	1	2	5	7.5	8.75	90
9	1	2	5	7.5	8.75	90
10	1.2	2.4	6	9	10.5	90
11	1.2	2.4	6	9	10.5	90
12	1.4	2.8	7	10.5	12.25	90
13	1.6	3.2	8	12	14	90
14	1.6	3.2	8	12	14	90
15	1.8	3.6	9	13.5	15.75	90
16	1.8	3.6	9	13.5	15.75	90
17	2	4	10	15	17.5	90
18	2.2	4.4	11	16.5	19.25	90
19	2.2	4.4	11	16.5	19.25	90
20	2.4	4.8	12	18	21	90
21	2.4	4.8	12	18	21	90
22	2.6	5.2	13	19.5	22.75	90
23	2.6	5.2	13	19.5	22.75	90
24	2.8	5.6	14	21	24.5	90
25	3	6	15	22.5	26.25	90
26	3	6	15	22.5	26.25	90
27	3.2	6.4	16	24	28	90
28	3.2	6.4	16	24	28	90
29	3.4	6.8	17	25.5	29.75	90
30	3.6	7.2	18	27	31.5	90
31	3.6	7.2	18	27	31.5	90
32	3.8	7.6	19	28.5	33.25	90

Age	R	G	N	F	Р	U
33	3.8	7.6	19	28.5	33.25	90
34	4	8	20	30	35	90
35	4	8	20	30	35	90
36	4.4	8.8	22	33	38.5	90
37	4.4	8.8	22	33	38.5	90
38	4.6	9.2	23	34.5	40.25	90
39	4.6	9.2	23	34.5	40.25	90
40	4.8	9.6	24	36	42	90
41	5	10	25	37.5	43.75	90
42	5	10	25	37.5	43.75	90
43	5.2	10.4	26	39	45.5	90
44	5.2	10.4	26	39	45.5	90
45	5.4	10.8	27	40.5	47.25	90
46	5.6	11.2	28	42	49	90
47	5.6	11.2	28	42	49	90
48	5.8	11.6	29	43.5	50.75	90
49	5.8	11.6	29	43.5	50.75	90
50	6	12	30	45	52.5	90
51	6.2	12.4	31	46.5	54.25	90
52	6.2	12.4	31	46.5	54.25	90
53	6.4	12.8	32	48	56	90
54	6.4	12.8	32	48	56	90
55	6.6	13.2	33	49.5	57.75	90
56	6.8	13.6	34	51	59.5	90
57	6.8	13.6	34	51	59.5	90
58	7	14	35	52.5	61.25	90
59	7	14	35	52.5	61.25	90
60	7.2	14.4	36	54	63	90
61	7.4	14.8	37	55.5	64.75	90
62	7.4	14.8	37	55.5	64.75	90
63	7.6	15.2	38	57	66.5	90
64	7.6	15.2	38	57	66.5	90
65	7.8	15.6	39	58.5	68.25	90

Age	R	G	N	F	Р	U
66	8	16	40	60	70	90
67	8	16	40	60	70	90
68	8.2	16.4	41	61.5	71.75	90
69	8.2	16.4	41	61.5	71.75	90
70	8.4	16.8	42	63	73.5	90
71	8.6	17.2	43	64.5	75.25	90
72	8.6	17.2	43	64.5	75.25	90
73	8.8	17.6	44	66	77	90
74	8.8	17.6	44	66	77	90
75	9	18	45	67.5	78.75	90
76	9.2	18.4	46	69	80.5	90
77	9.2	18.4	46	69	80.5	90
78	9.4	18.8	47	70.5	82.25	90
79	9.4	18.8	47	70.5	82.25	90
80	9.6	19.2	48	72	84	90
81	9.8	19.6	49	73.5	85.75	90
82	9.8	19.6	49	73.5	85.75	90
83	10	20	50	75	87.5	90
84	10	20	50	75	87.5	90
85	10.2	20.4	51	76.5	89.25	90
86	10.4	20.8	52	78	90	90
87	10.4	20.8	52	78	90	90
88	10.6	21.2	53	79.5	90	90
89	10.6	21.2	53	79.5	90	90
90	10.6	21.2	53	79.5	90	90
91	10.6	21.2	53	79.5	90	90
92	10.6	21.2	53	79.5	90	90
93	10.6	21.2	53	79.5	90	90
94	10.6	21.2	53	79.5	90	90
95	10.6	21.2	53	79.5	90	90
96	10.6	21.2	53	79.5	90	90
97	10.6	21.2	53	79.5	90	90
98	10.6	21.2	53	79.5	90	90

Age	R	G	N	F	Р	U
99	10.6	21.2	53	79.5	90	90

Age	R	G	N	F	P	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.4	0.8	2	3	3.5	90
4	0.4	0.8	2	3	3.5	90
5	0.6	1.2	3	4.5	5.25	90
6	0.6	1.2	3	4.5	5.25	90
7	0.8	1.6	4	6	7	90
8	0.8	1.6	4	6	7	90
9	1	2	5	7.5	8.75	90
10	1	2	5	7.5	8.75	90
11	1.2	2.4	6	9	10.5	90
12	1.2	2.4	6	9	10.5	90
13	1.4	2.8	7	10.5	12.25	90
14	1.6	3.2	8	12	14	90
15	1.6	3.2	8	12	14	90
16	1.8	3.6	9	13.5	15.75	90
17	1.8	3.6	9	13.5	15.75	90
18	2	4	10	15	17.5	90
19	2	4	10	15	17.5	90
20	2.2	4.4	11	16.5	19.25	90
21	2.2	4.4	11	16.5	19.25	90
22	2.4	4.8	12	18	21	90
23	2.4	4.8	12	18	21	90
24	2.6	5.2	13	19.5	22.75	90
25	2.6	5.2	13	19.5	22.75	90
26	2.8	5.6	14	21	24.5	90
27	3	6	15	22.5	26.25	90
28	3	6	15	22.5	26.25	90
29	3.2	6.4	16	24	28	90
30	3.2	6.4	16	24	28	90
31	3.4	6.8	17	25.5	29.75	90
32	3.4	6.8	17	25.5	29.75	90

Age	R	G	N	F	Р	U
33	3.6	7.2	18	27	31.5	90
34	3.6	7.2	18	27	31.5	90
35	3.8	7.6	19	28.5	33.25	90
36	4	8	20	30	35	90
37	4	8	20	30	35	90
38	4.2	8.4	21	31.5	36.75	90
39	4.4	8.8	22	33	38.5	90
40	4.4	8.8	22	33	38.5	90
41	4.6	9.2	23	34.5	40.25	90
42	4.6	9.2	23	34.5	40.25	90
43	4.8	9.6	24	36	42	90
44	4.8	9.6	24	36	42	90
45	5	10	25	37.5	43.75	90
46	5	10	25	37.5	43.75	90
47	5.2	10.4	26	39	45.5	90
48	5.4	10.8	27	40.5	47.25	90
49	5.4	10.8	27	40.5	47.25	90
50	5.6	11.2	28	42	49	90
51	5.6	11.2	28	42	49	90
52	5.8	11.6	29	43.5	50.75	90
53	5.8	11.6	29	43.5	50.75	90
54	6	12	30	45	52.5	90
55	6	12	30	45	52.5	90
56	6.2	12.4	31	46.5	54.25	90
57	6.4	12.8	32	48	56	90
58	6.4	12.8	32	48	56	90
59	6.6	13.2	33	49.5	57.75	90
60	6.6	13.2	33	49.5	57.75	90
61	6.8	13.6	34	51	59.5	90
62	6.8	13.6	34	51	59.5	90
63	7	14	35	52.5	61.25	90
64	7	14	35	52.5	61.25	90
65	7.2	14.4	36	54	63	90

Age	R	G	N	F	P	U
66	7.4	14.8	37	55.5	64.75	90
67	7.4	14.8	37	55.5	64.75	90
68	7.6	15.2	38	57	66.5	90
69	7.6	15.2	38	57	66.5	90
70	7.8	15.6	39	58.5	68.25	90
71	7.8	15.6	39	58.5	68.25	90
72	8	16	40	60	70	90
73	8	16	40	60	70	90
74	8.2	16.4	41	61.5	71.75	90
75	8.4	16.8	42	63	73.5	90
76	8.4	16.8	42	63	73.5	90
77	8.6	17.2	43	64.5	75.25	90
78	8.6	17.2	43	64.5	75.25	90
79	8.8	17.6	44	66	77	90
80	8.8	17.6	44	66	77	90
81	9	18	45	67.5	78.75	90
82	9	18	45	67.5	78.75	90
83	9.2	18.4	46	69	80.5	90
84	9.4	18.8	47	70.5	82.25	90
85	9.4	18.8	47	70.5	82.25	90
86	9.6	19.2	48	72	84	90
87	9.6	19.2	48	72	84	90
88	9.8	19.6	49	73.5	85.75	90
89	9.8	19.6	49	73.5	85.75	90
90	9.8	19.6	49	73.5	85.75	90
91	9.8	19.6	49	73.5	85.75	90
92	9.8	19.6	49	73.5	85.75	90
93	9.8	19.6	49	73.5	85.75	90
94	9.8	19.6	49	73.5	85.75	90
95	9.8	19.6	49	73.5	85.75	90
96	9.8	19.6	49	73.5	85.75	90
97	9.8	19.6	49	73.5	85.75	90
98	9.8	19.6	49	73.5	85.75	90

Age	R	G	N	F	Р	U
99	9.8	19.6	49	73.5	85.75	90

Age	R	G	N	F	Р	U
0	1	2	5	7.5	8.75	90
1	1	2	5	7.5	8.75	90
2	1	2	5	7.5	8.75	90
3	1	2	5	7.5	8.75	90
4	1	2	5	7.5	8.75	90
5	1.2	2.4	6	9	10.5	90
6	1.2	2.4	6	9	10.5	90
7	1.4	2.8	7	10.5	12.25	90
8	1.4	2.8	7	10.5	12.25	90
9	1.4	2.8	7	10.5	12.25	90
10	1.8	3.6	9	13.5	15.75	90
11	1.8	3.6	9	13.5	15.75	90
12	1.8	3.6	9	13.5	15.75	90
13	2	4	10	15	17.5	90
14	2	4	10	15	17.5	90
15	2.2	4.4	11	16.5	19.25	90
16	2.4	4.8	12	18	21	90
17	2.4	4.8	12	18	21	90
18	2.6	5.2	13	19.5	22.75	90
19	2.8	5.6	14	21	24.5	90
20	2.8	5.6	14	21	24.5	90
21	3	6	15	22.5	26.25	90
22	3	6	15	22.5	26.25	90
23	3.2	6.4	16	24	28	90
24	3.2	6.4	16	24	28	90
25	3.6	7.2	18	27	31.5	90
26	3.6	7.2	18	27	31.5	90
27	3.8	7.6	19	28.5	33.25	90
28	3.8	7.6	19	28.5	33.25	90
29	4	8	20	30	35	90
30	4	8	20	30	35	90
31	4.2	8.4	21	31.5	36.75	90
32	4.2	8.4	21	31.5	36.75	90

Age	R	G	N	F	Р	U
33	4.4	8.8	22	33	38.5	90
34	4.4	8.8	22	33	38.5	90
35	4.6	9.2	23	34.5	40.25	90
36	4.8	9.6	24	36	42	90
37	4.8	9.6	24	36	42	90
38	5	10	25	37.5	43.75	90
39	5	10	25	37.5	43.75	90
40	5.2	10.4	26	39	45.5	90
41	5.2	10.4	26	39	45.5	90
42	5.4	10.8	27	40.5	47.25	90
43	5.4	10.8	27	40.5	47.25	90
44	5.6	11.2	28	42	49	90
45	5.6	11.2	28	42	49	90
46	5.8	11.6	29	43.5	50.75	90
47	5.8	11.6	29	43.5	50.75	90
48	6	12	30	45	52.5	90
49	6	12	30	45	52.5	90
50	6.2	12.4	31	46.5	54.25	90
51	6.2	12.4	31	46.5	54.25	90
52	6.2	12.4	31	46.5	54.25	90
53	6.4	12.8	32	48	56	90
54	6.6	13.2	33	49.5	57.75	90
55	6.6	13.2	33	49.5	57.75	90
56	6.8	13.6	34	51	59.5	90
57	6.8	13.6	34	51	59.5	90
58	7	14	35	52.5	61.25	90
59	7	14	35	52.5	61.25	90
60	7.2	14.4	36	54	63	90
61	7.2	14.4	36	54	63	90
62	7.4	14.8	37	55.5	64.75	90
63	7.4	14.8	37	55.5	64.75	90
64	7.6	15.2	38	57	66.5	90
65	7.6	15.2	38	57	66.5	90

Age	R	G	N	F	Р	U
66	7.8	15.6	39	58.5	68.25	90
67	7.8	15.6	39	58.5	68.25	90
68	8	16	40	60	70	90
69	8	16	40	60	70	90
70	8.2	16.4	41	61.5	71.75	90
71	8.4	16.8	42	63	73.5	90
72	8.4	16.8	42	63	73.5	90
73	8.6	17.2	43	64.5	75.25	90
74	8.6	17.2	43	64.5	75.25	90
75	8.8	17.6	44	66	77	90
76	9.2	18.4	46	69	80.5	90
77	8	16	40	60	70	90
78	8	16	40	60	70	90
79	8.2	16.4	41	61.5	71.75	90
80	8.2	16.4	41	61.5	71.75	90
81	8.4	16.8	42	63	73.5	90
82	8.4	16.8	42	63	73.5	90
83	8.6	17.2	43	64.5	75.25	90
84	8.6	17.2	43	64.5	75.25	90
85	8.8	17.6	44	66	77	90
86	8.8	17.6	44	66	77	90
87	9	18	45	67.5	78.75	90
88	9	18	45	67.5	78.75	90
89	9.2	18.4	46	69	80.5	90
90	9.2	18.4	46	69	80.5	90
91	9.2	18.4	46	69	80.5	90
92	9.2	18.4	46	69	80.5	90
93	9.2	18.4	46	69	80.5	90
94	9.2	18.4	46	69	80.5	90
95	9.2	18.4	46	69	80.5	90
96	9.2	18.4	46	69	80.5	90
97	9.2	18.4	46	69	80.5	90
98	9.2	18.4	46	69	80.5	90

Age	R	G	N	F	Р	U
99	9.2	18.4	46	69	80.5	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.6	1.2	3	4.5	5.25	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	0.8	1.6	4	6	7	90
10	1	2	5	7.5	8.75	90
11	1	2	5	7.5	8.75	90
12	1.2	2.4	6	9	10.5	90
13	1.2	2.4	6	9	10.5	90
14	1.4	2.8	7	10.5	12.25	90
15	1.4	2.8	7	10.5	12.25	90
16	1.4	2.8	7	10.5	12.25	90
17	1.6	3.2	8	12	14	90
18	1.6	3.2	8	12	14	90
19	1.8	3.6	9	13.5	15.75	90
20	1.8	3.6	9	13.5	15.75	90
21	2	4	10	15	17.5	90
22	2	4	10	15	17.5	90
23	2.2	4.4	11	16.5	19.25	90
24	2.2	4.4	11	16.5	19.25	90
25	2.4	4.8	12	18	21	90
26	2.4	4.8	12	18	21	90
27	2.6	5.2	13	19.5	22.75	90
28	2.6	5.2	13	19.5	22.75	90
29	2.8	5.6	14	21	24.5	90
30	2.8	5.6	14	21	24.5	90
31	2.8	5.6	14	21	24.5	90
32	3	6	15	22.5	26.25	90
33	3	6	15	22.5	26.25	90
34	3.2	6.4	16	24	28	90

Age	R	G	N	F	Р	U
35	3.2	6.4	16	24	28	90
36	3.4	6.8	17	25.5	29.75	90
37	3.4	6.8	17	25.5	29.75	90
38	3.6	7.2	18	27	31.5	90
39	3.6	7.2	18	27	31.5	90
40	3.8	7.6	19	28.5	33.25	90
41	3.8	7.6	19	28.5	33.25	90
42	4	8	20	30	35	90
43	4	8	20	30	35	90
44	4.2	8.4	21	31.5	36.75	90
45	4.2	8.4	21	31.5	36.75	90
46	4.2	8.4	21	31.5	36.75	90
47	4.4	8.8	22	33	38.5	90
48	4.4	8.8	22	33	38.5	90
49	4.6	9.2	23	34.5	40.25	90
50	4.6	9.2	23	34.5	40.25	90
51	4.8	9.6	24	36	42	90
52	4.8	9.6	24	36	42	90
53	5	10	25	37.5	43.75	90
54	5	10	25	37.5	43.75	90
55	5.2	10.4	26	39	45.5	90
56	5.2	10.4	26	39	45.5	90
57	5.4	10.8	27	40.5	47.25	90
58	5.4	10.8	27	40.5	47.25	90
59	5.6	11.2	28	42	49	90
60	5.6	11.2	28	42	49	90
61	5.6	11.2	28	42	49	90
62	5.8	11.6	29	43.5	50.75	90
63	5.8	11.6	29	43.5	50.75	90
64	6	12	30	45	52.5	90
65	6	12	30	45	52.5	90
66	6.2	12.4	31	46.5	54.25	90
67	6.2	12.4	31	46.5	54.25	90

Age	R	G	N	F	Р	U
68	6.4	12.8	32	48	56	90
69	6.4	12.8	32	48	56	90
70	6.6	13.2	33	49.5	57.75	90
71	6.6	13.2	33	49.5	57.75	90
72	6.8	13.6	34	51	59.5	90
73	6.8	13.6	34	51	59.5	90
74	7	14	35	52.5	61.25	90
75	7	14	35	52.5	61.25	90
76	7	14	35	52.5	61.25	90
77	7.2	14.4	36	54	63	90
78	7.2	14.4	36	54	63	90
79	7.4	14.8	37	55.5	64.75	90
80	7.4	14.8	37	55.5	64.75	90
81	7.6	15.2	38	57	66.5	90
82	7.6	15.2	38	57	66.5	90
83	7.8	15.6	39	58.5	68.25	90
84	7.8	15.6	39	58.5	68.25	90
85	8	16	40	60	70	90
86	8	16	40	60	70	90
87	8.2	16.4	41	61.5	71.75	90
88	8.2	16.4	41	61.5	71.75	90
89	8.4	16.8	42	63	73.5	90
90	8.4	16.8	42	63	73.5	90
91	8.4	16.8	42	63	73.5	90
92	8.4	16.8	42	63	73.5	90
93	8.4	16.8	42	63	73.5	90
94	8.4	16.8	42	63	73.5	90
95	8.4	16.8	42	63	73.5	90
96	8.4	16.8	42	63	73.5	90
97	8.4	16.8	42	63	73.5	90
98	8.4	16.8	42	63	73.5	90
99	8.4	16.8	42	63	73.5	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.6	1.2	3	4.5	5.25	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	1	2	5	7.5	8.75	90
12	1	2	5	7.5	8.75	90
13	1.2	2.4	6	9	10.5	90
14	1.2	2.4	6	9	10.5	90
15	1.4	2.8	7	10.5	12.25	90
16	1.4	2.8	7	10.5	12.25	90
17	1.4	2.8	7	10.5	12.25	90
18	1.6	3.2	8	12	14	90
19	1.6	3.2	8	12	14	90
20	1.8	3.6	9	13.5	15.75	90
21	1.8	3.6	9	13.5	15.75	90
22	2	4	10	15	17.5	90
23	2	4	10	15	17.5	90
24	2.2	4.4	11	16.5	19.25	90
25	2.2	4.4	11	16.5	19.25	90
26	2.2	4.4	11	16.5	19.25	90
27	2.4	4.8	12	18	21	90
28	2.4	4.8	12	18	21	90
29	2.6	5.2	13	19.5	22.75	90
30	2.6	5.2	13	19.5	22.75	90
31	2.8	5.6	14	21	24.5	90
32	2.8	5.6	14	21	24.5	90
33	2.8	5.6	14	21	24.5	90
34	3	6	15	22.5	26.25	90

Age	R	G	N	F	P	U
35	3	6	15	22.5	26.25	90
36	3.2	6.4	16	24	28	90
37	3.2	6.4	16	24	28	90
38	3.4	6.8	17	25.5	29.75	90
39	3.4	6.8	17	25.5	29.75	90
40	3.6	7.2	18	27	31.5	90
41	3.6	7.2	18	27	31.5	90
42	3.6	7.2	18	27	31.5	90
43	3.8	7.6	19	28.5	33.25	90
44	3.8	7.6	19	28.5	33.25	90
45	4	8	20	30	35	90
46	4	8	20	30	35	90
47	4.2	8.4	21	31.5	36.75	90
48	4.2	8.4	21	31.5	36.75	90
49	4.2	8.4	21	31.5	36.75	90
50	4.4	8.8	22	33	38.5	90
51	4.4	8.8	22	33	38.5	90
52	4.6	9.2	23	34.5	40.25	90
53	4.6	9.2	23	34.5	40.25	90
54	4.8	9.6	24	36	42	90
55	4.8	9.6	24	36	42	90
56	5	10	25	37.5	43.75	90
57	5	10	25	37.5	43.75	90
58	5	10	25	37.5	43.75	90
59	5.2	10.4	26	39	45.5	90
60	5.2	10.4	26	39	45.5	90
61	5.4	10.8	27	40.5	47.25	90
62	5.4	10.8	27	40.5	47.25	90
63	5.6	11.2	28	42	49	90
64	5.6	11.2	28	42	49	90
65	5.6	11.2	28	42	49	90
66	5.8	11.6	29	43.5	50.75	90
67	5.8	11.6	29	43.5	50.75	90

Age	R	G	N	F	Р	U
68	6	12	30	45	52.5	90
69	6	12	30	45	52.5	90
70	6.2	12.4	31	46.5	54.25	90
71	6.2	12.4	31	46.5	54.25	90
72	6.4	12.8	32	48	56	90
73	6.4	12.8	32	48	56	90
74	6.4	12.8	32	48	56	90
75	6.6	13.2	33	49.5	57.75	90
76	6.6	13.2	33	49.5	57.75	90
77	6.8	13.6	34	51	59.5	90
78	6.8	13.6	34	51	59.5	90
79	7	14	35	52.5	61.25	90
80	7	14	35	52.5	61.25	90
81	7	14	35	52.5	61.25	90
82	7.2	14.4	36	54	63	90
83	7.2	14.4	36	54	63	90
84	7.4	14.8	37	55.5	64.75	90
85	7.4	14.8	37	55.5	64.75	90
86	7.6	15.2	38	57	66.5	90
87	7.6	15.2	38	57	66.5	90
88	7.8	15.6	39	58.5	68.25	90
89	7.8	15.6	39	58.5	68.25	90
90	7.8	15.6	39	58.5	68.25	90
91	7.8	15.6	39	58.5	68.25	90
92	7.8	15.6	39	58.5	68.25	90
93	7.8	15.6	39	58.5	68.25	90
94	7.8	15.6	39	58.5	68.25	90
95	7.8	15.6	39	58.5	68.25	90
96	7.8	15.6	39	58.5	68.25	90
97	7.8	15.6	39	58.5	68.25	90
98	7.8	15.6	39	58.5	68.25	90
99	7.8	15.6	39	58.5	68.25	90

Age	R	G	N	F	Р	U
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.4	0.8	2	3	3.5	90
5	0.4	0.8	2	3	3.5	90
6	0.4	0.8	2	3	3.5	90
7	0.6	1.2	3	4.5	5.25	90
8	0.8	1.6	4	6	7	90
9	0.8	1.6	4	6	7	90
10	0.8	1.6	4	6	7	90
11	1	2	5	7.5	8.75	90
12	1	2	5	7.5	8.75	90
13	1	2	5	7.5	8.75	90
14	1.2	2.4	6	9	10.5	90
15	1.2	2.4	6	9	10.5	90
16	1.4	2.8	7	10.5	12.25	90
17	1.4	2.8	7	10.5	12.25	90
18	1.4	2.8	7	10.5	12.25	90
19	1.6	3.2	8	12	14	90
20	1.6	3.2	8	12	14	90
21	1.8	3.6	9	13.5	15.75	90
22	1.8	3.6	9	13.5	15.75	90
23	1.8	3.6	9	13.5	15.75	90
24	2	4	10	15	17.5	90
25	2	4	10	15	17.5	90
26	2.2	4.4	11	16.5	19.25	90
27	2.2	4.4	11	16.5	19.25	90
28	2.4	4.8	12	18	21	90
29	2.4	4.8	12	18	21	90
30	2.4	4.8	12	18	21	90
31	2.6	5.2	13	19.5	22.75	90
32	2.6	5.2	13	19.5	22.75	90
33	2.8	5.6	14	21	24.5	90
34	2.8	5.6	14	21	24.5	90

Age	R	G	N	F	Р	U
35	2.8	5.6	14	21	24.5	90
36	3	6	15	22.5	26.25	90
37	3	6	15	22.5	26.25	90
38	3.2	6.4	16	24	28	90
39	3.2	6.4	16	24	28	90
40	3.2	6.4	16	24	28	90
41	3.4	6.8	17	25.5	29.75	90
42	3.4	6.8	17	25.5	29.75	90
43	3.6	7.2	18	27	31.5	90
44	3.6	7.2	18	27	31.5	90
45	3.8	7.6	19	28.5	33.25	90
46	3.8	7.6	19	28.5	33.25	90
47	3.8	7.6	19	28.5	33.25	90
48	4	8	20	30	35	90
49	4	8	20	30	35	90
50	4.2	8.4	21	31.5	36.75	90
51	4.2	8.4	21	31.5	36.75	90
52	4.2	8.4	21	31.5	36.75	90
53	4.4	8.8	22	33	38.5	90
54	4.4	8.8	22	33	38.5	90
55	4.6	9.2	23	34.5	40.25	90
56	4.6	9.2	23	34.5	40.25	90
57	4.6	9.2	23	34.5	40.25	90
58	4.8	9.6	24	36	42	90
59	4.8	9.6	24	36	42	90
60	5	10	25	37.5	43.75	90
61	5	10	25	37.5	43.75	90
62	5.2	10.4	26	39	45.5	90
63	5.2	10.4	26	39	45.5	90
64	5.2	10.4	26	39	45.5	90
65	5.4	10.8	27	40.5	47.25	90
66	5.4	10.8	27	40.5	47.25	90
67	5.6	11.2	28	42	49	90

Age	R	G	N	F	Р	U
68	5.6	11.2	28	42	49	90
69	5.6	11.2	28	42	49	90
70	5.8	11.6	29	43.5	50.75	90
71	5.8	11.6	29	43.5	50.75	90
72	6	12	30	45	52.5	90
73	6	12	30	45	52.5	90
74	6	12	30	45	52.5	90
75	6.2	12.4	31	46.5	54.25	90
76	6.2	12.4	31	46.5	54.25	90
77	6.4	12.8	32	48	56	90
78	6.4	12.8	32	48	56	90
79	6.6	13.2	33	49.5	57.75	90
80	6.6	13.2	33	49.5	57.75	90
81	6.6	13.2	33	49.5	57.75	90
82	6.8	13.6	34	51	59.5	90
83	6.8	13.6	34	51	59.5	90
84	7	14	35	52.5	61.25	90
85	7	14	35	52.5	61.25	90
86	7	14	35	52.5	61.25	90
87	7.2	14.4	36	54	63	90
88	7.2	14.4	36	54	63	90
89	7.4	14.8	37	55.5	64.75	90
90	7.4	14.8	37	55.5	64.75	90
91	7.4	14.8	37	55.5	64.75	90
92	7.4	14.8	37	55.5	64.75	90
93	7.4	14.8	37	55.5	64.75	90
94	7.4	14.8	37	55.5	64.75	90
95	7.4	14.8	37	55.5	64.75	90
96	7.4	14.8	37	55.5	64.75	90
97	7.4	14.8	37	55.5	64.75	90
98	7.4	14.8	37	55.5	64.75	90
99	7.4	14.8	37	55.5	64.75	90

Age	R	G	N	F	P	U
4	0.2	0.4	1	1.5	1.75	90
5	0.4	0.8	2	3	3.5	90
6	0.4	0.8	2	3	3.5	90
7	0.4	0.8	2	3	3.5	90
8	0.4	0.8	2	3	3.5	90
9	0.4	0.8	2	3	3.5	90
10	0.4	0.8	2	3	3.5	90
11	0.6	1.2	3	4.5	5.25	90
12	0.6	1.2	3	4.5	5.25	90
13	0.6	1.2	3	4.5	5.25	90
14	0.6	1.2	3	4.5	5.25	90
15	0.6	1.2	3	4.5	5.25	90
16	0.8	1.6	4	6	7	90
17	0.8	1.6	4	6	7	90
18	0.8	1.6	4	6	7	90
19	0.8	1.6	4	6	7	90
20	0.8	1.6	4	6	7	90
21	1	2	5	7.5	8.75	90
22	1	2	5	7.5	8.75	90
23	1	2	5	7.5	8.75	90
24	1	2	5	7.5	8.75	90
25	1	2	5	7.5	8.75	90
26	1.2	2.4	6	9	10.5	90
27	1.2	2.4	6	9	10.5	90
28	1	2	5	7.5	8.75	90
29	1.2	2.4	6	9	10.5	90
30	1.2	2.4	6	9	10.5	90
31	1.4	2.8	7	10.5	12.25	90
32	1.4	2.8	7	10.5	12.25	90
33	1.4	2.8	7	10.5	12.25	90
34	1.4	2.8	7	10.5	12.25	90
35	1.4	2.8	7	10.5	12.25	90
36	1.6	3.2	8	12	14	90

Age	R	G	N	F	Р	U
37	1.6	3.2	8	12	14	90
38	1.6	3.2	8	12	14	90
39	1.6	3.2	8	12	14	90
40	1.6	3.2	8	12	14	90
41	1.8	3.6	9	13.5	15.75	90
42	1.8	3.6	9	13.5	15.75	90
43	1.8	3.6	9	13.5	15.75	90
44	1.8	3.6	9	13.5	15.75	90
45	1.8	3.6	9	13.5	15.75	90
46	2	4	10	15	17.5	90
47	2	4	10	15	17.5	90
48	2	4	10	15	17.5	90
49	2	4	10	15	17.5	90
50	2	4	10	15	17.5	90
51	2.2	4.4	11	16.5	19.25	90
52	2.2	4.4	11	16.5	19.25	90
53	2.2	4.4	11	16.5	19.25	90
54	2.2	4.4	11	16.5	19.25	90
55	2.2	4.4	11	16.5	19.25	90
56	2.4	4.8	12	18	21	90
57	2.4	4.8	12	18	21	90
58	2.4	4.8	12	18	21	90
59	2.4	4.8	12	18	21	90
60	2.4	4.8	12	18	21	90
61	2.6	5.2	13	19.5	22.75	90
62	2.6	5.2	13	19.5	22.75	90
63	2.6	5.2	13	19.5	22.75	90
64	2.6	5.2	13	19.5	22.75	90
65	2.6	5.2	13	19.5	22.75	90
66	2.8	5.6	14	21	24.5	90
67	2.8	5.6	14	21	24.5	90
68	2.8	5.6	14	21	24.5	90
69	2.8	5.6	14	21	24.5	90

Age	R	G	N	F	Р	U
70	2.8	5.6	14	21	24.5	90
71	3	6	15	22.5	26.25	90
72	3	6	15	22.5	26.25	90
73	3	6	15	22.5	26.25	90
74	3	6	15	22.5	26.25	90
75	3	6	15	22.5	26.25	90
76	3.2	6.4	16	24	28	90
77	3.2	6.4	16	24	28	90
78	3.2	6.4	16	24	28	90
79	3.2	6.4	16	24	28	90
80	3.2	6.4	16	24	28	90
81	3.4	6.8	17	25.5	29.75	90
82	3.4	6.8	17	25.5	29.75	90
83	3.4	6.8	17	25.5	29.75	90
84	3.4	6.8	17	25.5	29.75	90
85	3.4	6.8	17	25.5	29.75	90
86	3.6	7.2	18	27	31.5	90
87	3.6	7.2	18	27	31.5	90
88	3.6	7.2	18	27	31.5	90
89	3.6	7.2	18	27	31.5	90
90	3.6	7.2	18	27	31.5	90
91	3.8	7.6	19	28.5	33.25	90
92	3.8	7.6	19	28.5	33.25	90
93	3.8	7.6	19	28.5	33.25	90
94	3.8	7.6	19	28.5	33.25	90
95	3.8	7.6	19	28.5	33.25	90
96	4	8	20	30	35	90
97	4	8	20	30	35	90
98	4	8	20	30	35	90
99	4	8	20	30	35	90

Age	R	G	N	F	Р	U
0	0.2	0.4	1	1.5	1.75	90
1	0.2	0.4	1	1.5	1.75	90
2	0.2	0.4	1	1.5	1.75	90
3	0.2	0.4	1	1.5	1.75	90
4	0.2	0.4	1	1.5	1.75	90
5	0.2	0.4	1	1.5	1.75	90
6	0.4	0.8	2	3	3.5	90
7	0.4	0.8	2	3	3.5	90
8	0.4	0.8	2	3	3.5	90
9	0.4	0.8	2	3	3.5	90
10	0.4	0.8	2	3	3.5	90
11	0.6	1.2	3	4.5	5.25	90
12	0.6	1.2	3	4.5	5.25	90
13	0.6	1.2	3	4.5	5.25	90
14	0.6	1.2	3	4.5	5.25	90
15	0.6	1.2	3	4.5	5.25	90
16	0.8	1.6	4	6	7	90
17	0.8	1.6	4	6	7	90
18	0.8	1.6	4	6	7	90
19	0.8	1.6	4	6	7	90
20	0.8	1.6	4	6	7	90
21	1	2	5	7.5	8.75	90
22	1	2	5	7.5	8.75	90
23	1	2	5	7.5	8.75	90
24	1	2	5	7.5	8.75	90
25	1	2	5	7.5	8.75	90
26	1.2	2.4	6	9	10.5	90
27	1.2	2.4	6	9	10.5	90
28	1	2	5	7.5	8.75	90
29	1.2	2.4	6	9	10.5	90
30	1.2	2.4	6	9	10.5	90
31	1.4	2.8	7	10.5	12.25	90
32	1.4	2.8	7	10.5	12.25	90

Age	R	G	N	F	Р	U
33	1.4	2.8	7	10.5	12.25	90
34	1.4	2.8	7	10.5	12.25	90
35	1.4	2.8	7	10.5	12.25	90
36	1.6	3.2	8	12	14	90
37	1.6	3.2	8	12	14	90
38	1.6	3.2	8	12	14	90
39	1.6	3.2	8	12	14	90
40	1.6	3.2	8	12	14	90
41	1.8	3.6	9	13.5	15.75	90
42	1.8	3.6	9	13.5	15.75	90
43	1.8	3.6	9	13.5	15.75	90
44	1.8	3.6	9	13.5	15.75	90
45	1.8	3.6	9	13.5	15.75	90
46	2	4	10	15	17.5	90
47	2	4	10	15	17.5	90
48	2	4	10	15	17.5	90
49	2	4	10	15	17.5	90
50	2	4	10	15	17.5	90
51	2	4	10	15	17.5	90
52	2	4	10	15	17.5	90
53	2	4	10	15	17.5	90
54	2	4	10	15	17.5	90
55	2	4	10	15	17.5	90
56	2	4	10	15	17.5	90
57	2	4	10	15	17.5	90
58	2	4	10	15	17.5	90
59	2	4	10	15	17.5	90
60	2	4	10	15	17.5	90
61	2	4	10	15	17.5	90
62	2	4	10	15	17.5	90
63	2	4	10	15	17.5	90
64	2	4	10	15	17.5	90
65	2	4	10	15	17.5	90

Age	R	G	N	F	Р	U
66	2	4	10	15	17.5	90
67	2	4	10	15	17.5	90
68	2	4	10	15	17.5	90
69	2	4	10	15	17.5	90
70	2	4	10	15	17.5	90
71	2	4	10	15	17.5	90
72	2	4	10	15	17.5	90
73	2	4	10	15	17.5	90
74	2	4	10	15	17.5	90
75	2	4	10	15	17.5	90
76	2	4	10	15	17.5	90
77	2	4	10	15	17.5	90
78	2	4	10	15	17.5	90
79	2	4	10	15	17.5	90
80	2	4	10	15	17.5	90
81	2	4	10	15	17.5	90
82	2	4	10	15	17.5	90
83	2	4	10	15	17.5	90
84	2	4	10	15	17.5	90
85	2	4	10	15	17.5	90
86	2	4	10	15	17.5	90
87	2	4	10	15	17.5	90
88	2	4	10	15	17.5	90
89	2	4	10	15	17.5	90
90	2	4	10	15	17.5	90
91	2	4	10	15	17.5	90
92	2	4	10	15	17.5	90
93	2	4	10	15	17.5	90
94	2	4	10	15	17.5	90
95	2	4	10	15	17.5	90
96	2	4	10	15	17.5	90
97	2	4	10	15	17.5	90
98	2	4	10	15	17.5	90

Age	R	G	N	F	Р	U
99	2	4	10	15	17.5	90