DATA COLLECTION MANUAL – Commercial Properties

Commercial Properties

The data collection phase of a mass appraisal program consists of the collecting and recording of specific property data needed to process each parcel of property into an indication of value. Property characteristics data should be continually updated in response to changes brought about by new construction, new parcels, remodeling, demolition and destruction. The following procedures and specifications have been developed to promote both individual proficiency and standardization by providing the data collector with certain guidelines to follow in performing their duties. Data collection must be done in a consistent manner, meaning that it is done the same way every time and that everyone does it the same way. Doing something in a consistent manner significantly reduces the chance of forgetting to do it or doing it incorrectly.

Accuracy, thoroughness, and neatness are essential in recording data. Office computations and other operations depend upon this data, all of which is used to determine the market value of a property which is the basis for the amount of taxes each owner must pay. The standards and procedures incorporated in the manual cannot be depended upon alone for the establishment of sound and fair values on individual properties. Basically, reliance must be placed on the accuracy and thoroughness of field inspections and the recorded data on each parcel by appraisal personnel in the field. Unless the record is neat, clear, and accurate, it cannot be interpreted correctly and readily by others.

The appraisal procedure for determining values of improvements consists of(1) initiating the appraisal; (2) recording construction information; (3) classifying buildings; (4) recording, classifying, and valuing additional details; (5) determining depreciation adjustments; (6) measuring and sketching structures; (7) appraising special structures; (8) appraising incomplete structures; and (9) determining property values.

The primary tools used for maintaining property characteristics or data collection and maintenance are BPS worksheets and periodic property re-inspections.

The Commercial department is responsible for appraising the following types of improvements:

Structure code	Use type
13	Apartment
14	Condominium
20	Retail
21	Service Station
22	Public Garage
23	Office
24	Bank
25	Theater
26	Office Tower
27	Hotel
28	Warehouse
29	Factory
30	Motel
31	Restaurant
32	Fast Food
33	Convenience Store

1. Initiating the Appraisal

Prior to the actual recording of specific information and the determination of specific classes and values, four preliminary steps are performed in initiating the appraisal: identifying the parcel; observing the improvements generally; gaining entry; and obtaining information from the occupant.

The parcel of land, on which the improvements to be appraised are located, is first checked in order to make sure that the parcel identification number and legal description on the account correspond to those on the map, and that the property is the correct parcel. The appraiser also observes both side and rear property lines and approximates the size of the parcel to be sure that only improvements belonging on a specific parcel are included in the appraisal. In the case of some commercial or industrial buildings, it is also necessary to determine if the improvements and land belong to the same owner; and, if they do not, respective ownerships are determined and a separate account labeled "Improvements Only" is used for recording the building data.

The second step of the preliminary appraisal is observation of the building to gain a general perspective of its appearance, condition, and approximate classification. In addition to observing the building itself, the entire neighborhood is also observed and its general appearance is considered in determining environmental influence which may affect the amount of depreciation to allow a specific property.

A physical inspection is necessary to obtain initial property characteristics data. This inspection can be performed by either appraisers or specially trained data collectors. Any employee engaged in any type of field work activities or on-site inspections will wear their MCAD identification badge so that it is easily visible by the general public. Also appraisers registered with the Texas Department of Licensing and Regulation must have their identification card in the registrant's possession while on official duty.

The parts of buildings which cannot be observed from the exterior frequently contribute considerably to the value of a specific structure. In most appraisals, therefore, it is vitally important that the appraiser gain entry to the building in order to obtain descriptive information of interiors. For commercial or industrial buildings, the appraiser enters through the front entrance and asks for the owner, manager, or someone qualified to answer questions pertaining to the building. The appraiser should identify themselves in a courteous and professional manner and hand the person their business card. State the nature of their visit to the property explaining the necessity of the task being performed. If no one is qualified to provide information, the appraiser notes this on the BPS worksheet or appraisal card and revisits the property later. In some cases it may be necessary to make an appointment with the owner before the appraisal can be made.

Employees engaged in field work should take special care in the performance of their duties in order to maintain their personal safety and security. If the appraiser is refused admittance to a property or they are asked to leave, they should leave the premises immediately. Never argue with anyone. Once you are off the property the appraisal is made as accurately as possible from the exterior and a notation made on the worksheet or card that admittance was refused. Please refer to Section 5: General Guidelines of the MCAD Personnel Policy and Procedures for further employee conduct guidelines especially: sections 5.1.2 Fieldwork Safety Procedures, 5.3 Entering Occupied Property and 5.3.1 Dealing With Vicious Animals.

The final step in initiating the appraisal is obtaining information from the occupant. Most of the data required for the appraisal of a building are determined by inspection and observation; but some information is more easily obtained by questioning the occupant. Data such as the year of construction, when additions were made, use of accessory buildings, extent of used materials, and any other information pertinent to the appraisal process are normally obtained by questioning the owner or someone responsible for the building.

2. Recording Construction Information

Data for all improvements is recorded on either the Commercial BPS worksheet or appraisal card. This is done in the field by appraisal personnel from firsthand observation. One worksheet or appraisal card is made for each separate parcel of land and the improvement thereon except when there are improvements that are owned by someone other than the owner of the land.

Most improved accounts have an improvement segment for the building and a separate segment for yard improvements which is labeled as 'Site Imps' in the 'Improvement description' line of the improvement segment. Yard improvements or site imps typically include paving, light stands and fencing. Some commercial properties such as office campuses, industrial complexes and apartment complexes have multiple buildings and will have an improvement segment for each building.

Please refer to the BPS Worksheet Procedures for Commercial Properties for instructions on how to complete the BPS worksheet and to the Data Review Procedures-Periodic Property Re-Inspections for Commercial Properties for instructions on verifying and relisting to current appraisal standards a specific group of properties.

3. Classifying Buildings

Buildings or main structures are classified by designating their class according to their basic structure exclusive of additional details. Most buildings can be classified in accordance with the classification system set forth in the Commercial Classing manual. A few structures exist for which no classification is provided. They are to be appraised as special structures as discussed later in this chapter under the heading 'Appraising Special Structures'.

Determining the classification of buildings is divided into three separate steps: (1) determining use type; (2) determining construction type; and (3) determining quality of construction.

Use Type

Classification according to use type is determined by observation and generally is evident by the appearance or actual use of the structure. Since cost factors depend as much on use types as on construction classes, it is extremely important that this item be listed correctly. Commercial use

types are more varied, but the principal thing to keep in mind is that the use type generally means the use for which the building was originally constructed or for which it was completely remodeled or renovated. Use type is recorded using a two digit numeric code (see table on page 2).

Construction Type

Classification according to construction type necessitates ascertaining the material used in the structural frame of the exterior walls. Construction type is generally recognized from observation or by inspection of the exterior walls. The four fundamental types of building construction are wood frame, masonry wall, reinforced concrete frame and steel frame.

Wood frame construction known as class W consists of exterior bearing walls either single wall construction of wood boxing or framed with wood studding and covered with wood siding, asbestos siding, stucco or plaster, metal, composition siding, or masonry veneer. To distinguish between different outside wall coverings, wood frame construction type is further divided into four types, which are designated as:

WA – Wood frame with asbestos or vinyl siding
WP – Wood frame with plaster, stucco or EIFS exterior
WV – Wood frame with brick or stone veneer or hardi-plank exterior
WW – Wood frame with wood or masonite siding
WM – Wood frame with metal covering

Masonry wall construction or class M has exterior bearing walls of masonry units such as brick, stone, tile, or concrete block.

Reinforced concrete construction or class C has exterior walls of solid reinforced concrete or wall framing of reinforced concrete columns and beams with curtain walls of masonry units, steel panels, or reinforced concrete slabs. Class C includes concrete tilt wall.

Steel frame construction or class S has exterior wall framing of structural steel with curtain walls of masonry units, steel panels, or reinforced concrete slabs.

The construction type is recorded for all property by entering the construction type designation letters.

Quality of Construction

Classification according to quality of construction consists of assigning the appropriate numerical portion of the class in accordance with the classification system. The assignment of the quality designating number is achieved by relating

the structure being appraised to the typical building in the manual which it most closely resembles as to its specifications. Having selected the quality designating number by comparison, the appraiser next decides if the quality is equal to, slightly better than, or slightly less than that of the typical building; and, if the quality is better or less, the appraiser assigns a "+" (plus) or "-" (minus) to the classification. This step of the classification of buildings requires that the appraisers exercise considerable care and sound judgment in assigning classes to buildings. It is difficult to provide rules or guides for determining the classification according to quality so that appraisers must rely upon their judgment and opinion based on experience.

Most buildings have only one classification; but in some instances one building will include more than one use type, construction type, and/or quality of construction. In cases where a building has more than one classification, all appropriate classes are to be determined and recorded.

The classification for buildings is always recorded using the proper designation of numbers and letters. A two digit numeric code for use type, then the one or two digit alpha code for construction type followed by a one digit numeric code, which may have a '+' or '-', for quality.

4. Recording Additional Details

Additional details comprise those parts of improvements which generally vary from one structure to another and therefore, it is important that all additional details be determined and recorded accurately. Most typical commercial properties have the following items: heating, cooling or heating and cooling (HVAC), plumbing and canopies. (Apartments and condominiums will have porches and may have garages and carports or canopies.) Examples of other additional details or components that complement or complete the main structure for its intended use are cold storage, docks, elevators, finished areas, sprinklers, swimming pools and spas.

Heating- Cooling- Heating and Cooling (HVAC)

All types of installations for heating, cooling and HVAC that are permanently attached to the improvements are considered to be real property. Space heaters which are attached to the improvements by hose, cord, or temporary piping are disregarded because they are considered to be personal property. Likewise evaporative coolers, with or without limited duct work, are considered personal property.

The kinds of heating units generally found in buildings consist of floor furnaces, single wall furnaces, suspended ceiling furnaces, and central heating plants.

Appraisers determine the type and size of the heating unit in thousands of BTU's and enter it accordingly.

Room air conditioners installed in windows or walls are listed as freestanding heat pump units. Appraisers determine the size of the cooling unit in tons.

Permanently installed combination heating and cooling units are referred to as 'Heating and Cooling' or HVAC in this manual. Central plants for small commercial or central plants for multistory commercial are the only kind normally found in commercial buildings. Appraisers determine the size of the cooling unit in tons.

Plumbing

All plumbing for each building is appraised by recording the number of like fixtures designated in accordance with their quality. Fixtures are graded in quality as inferior, average or superior. The quality is determined by the appraiser after making a careful inspection of each fixture.

Canopies

Canopies are classed according to being attached or detached to a structure and if they have a slab foundation. Gas or service station and Bank drive thru canopies have their own separate classification. Canopies, except for gas or service station, are assigned a quality adjustment from low to excellent. The quality is determined by the appraiser after making a careful inspection of each canopy. Gas canopies do not have a quality adjustment because it is included in their class.

Porch - Garage – Carport (Apartments - Condominiums only)

Porches are classified according to openness or enclosure. The classification entered for each porch, therefore, consists of the letter or letters designating open, closed unfinished, or closed finished. 'O' is for open without walls or windows and may or may not have supporting columns or posts. 'CU' is for closed unfinished with walls and windows; exterior wall finished, exposed interior walls and ceiling. 'CF' is for closed finished with walls and windows; exterior walls, interior walls, and ceilings finished. Porches are assumed to be of the same quality as the structure they are attached to and are valued as a percentage of the main structure value.

Garages and carports are appraised by recording the class of each in accordance with the classification system. Garages are classified according to whether they are attached or detached from the main structure. Like porches, they are assumed to be of the same quality as the structure they are attached to and are valued as a percentage of the main structure value. See the Residential and Duplex Class Codes and Additive Codes reference sheet for type, method and class listing guidelines.

Other Additional Details

Parts of buildings or accessory items which generally vary from one structure to another are carried as other additional details. They complement or complete the main structure for its intended use. The wide variety of items that make up the other additional details are listed on the Other / Additional Detail Codes – Commercial Valuation reference sheet. They are schedule driven cost items which are entered using a three digit numeric code for Type and an alpha/numeric code for Class.

Unique items that are not specifically listed on the Other / Additional Detail Codes – Commercial Valuation reference sheet are listed using the Type code '443' and Class code 'MS1' or 'MS100K' for *miscellaneous* items that depreciate at the same rate as the main structure. Type code '819' and Class code 'SU1' or 'SU100K' or for *special unit* items that depreciate at a fixed rate. Costs for '443' and '819' codes are entered from Marshal and Swift. The appraiser states in the comment section of the improvement detail what the item is and the section, page and date (i.e. MS 17/14 Sep *12*) in Marshal and Swift the cost estimate is found.

Site, Yard or Ancillary Improvements

Many properties include paved driveways, parking areas, secondary or out buildings, fencing, exterior (light standards) lighting, railroad spurs, outbuildings for water supply or tanks. An outlined manner describing proper technique to list and capture these improvements is shown on the "Cost and Index Guide to – Other / Additional Detail Codes -- Commercial Valuation", the "Commercial Additional Detail Codes" sheets found in the Commercial/Industrial Cost Manual, the Data Collection Manual and in the addenda of this report (see Other Additional Details section above).

5. Determining Depreciation Adjustments

Determination of proper depreciation adjustments for improvements requires that the appraiser exercise extreme care in determining all factual information upon which opinion and judgment is based. Depreciation is experienced by all buildings but not at equal rates. Most buildings experience only depreciation which is considered normal and can readily be measured, while others may experience depreciation in excess of that which is considered normal and can be measured only by careful consideration of all factors involved.

The procedure for determining and recording data utilized in depreciation of improvements is discussed under seven of the ten items in which appraisal personnel are involved, namely: year of appraisal, year of construction, effective year of construction, life expectancy, physical condition, functional obsolescence, and economic obsolescence.

Year of Appraisal

Appraisers record in the space opposite 'Last Appraisal Year' the year for which the appraisal becomes effective.

Year of Construction

The actual year the building was originally constructed is recorded in the space opposite 'Actual Year Built'. When the actual year of construction cannot be determined, however, an estimate of that year is made by the appraiser. In making this determination, the appraiser must take all factors into consideration, including trends of the neighborhood, kinds of materials used, opinions and judgments of informed persons, and any public records available to them. Also add the note 'EYB' for estimated year built to the improvement comment area.

Effective Year of Construction

The effective year of construction matches the year of construction, if the building is relatively new has experienced no material changes or extensive remodeling since the date of construction. Due to proven ability to survive older structures may have effective year ratings less than their actual age, even without significant updates.

If the building has experienced sufficient changes due to remodeling, alterations, additions or renovations then the appraiser enters in the space opposite ‘Effective Year Built’ the year which, in their opinion, represents the year from which normal depreciation should be computed due to these changes to the structure.

Life Expectancy

The life expectancy of buildings is normally selected from schedules based on improvement type and class (life expectancy tables can be found in the Cost Manual).

Physical Condition

Physical condition is for the purpose of recognizing deterioration of buildings in excess of that which is considered normal and is included in the normal rate of depreciation. Physical condition is caused generally by inadequate maintenance, defective or improper materials, and/or faulty construction. Adjustments for additional depreciation due to the above causes are determined and recorded by the appraiser in the space opposite ‘Physical’ and usually in increments of 5%, 10%, or 15%. The appraiser should use all information and data at their disposal to determine the proper adjustment and a note or comment is entered detailing what the adjustment is for i.e. cracked slab followed by the date and appraiser’s initials.

Functional Obsolescence

Loss in value due to deficiency of design, lack of utility, or other causes inherent within a structure itself that causes it to be worth less than similar buildings without these characteristics is termed functional obsolescence. It is incorporated in the normal rate of depreciation; and only when the appraiser believes the effect to be in excess of the normal does he record it in the space opposite ‘Functional’, usually in increments of 5%, 10%, or 15%. Again, the appraiser should utilize all information at their disposal in determining the amount of additional functional obsolescence to be allowed and a note or comment is entered detailing what the adjustment is for, followed by the date and appraiser’s initials.

Economic Obsolescence

Loss in value due to causes other than those within the building itself—such as inappropriate location, change in use demands of the property, and other causes related to site rather than the building itself—is termed economic obsolescence. The appraiser again records in the space opposite 'Economic' depreciation adjustments usually in increments of 5%, 10%, or 15%, using whatever data are available to determine the proper adjustment and a note or comment is entered detailing what the adjustment is for, followed by the date and appraiser's initials.

6. Measuring and Diagramming

Space is provided on the worksheet or appraisal card to make a diagram of each structure being appraised. Only the perimeter walls of buildings are indicated on the diagram unless an interior wall represents a change in use type, construction type, quality, or floor level. In addition to the diagram of the building, the appraiser records in the provided space the appropriate shape. The shape of a main structure is determined in accordance with the shape of the floor area only exclusive of canopies, porches, garages, carports, storages, and other additional details. For commercial property the actual ceiling height is recorded by the appraisers in the appropriate space.

The building should be measured starting from the front left corner and proceeding counter clockwise around the building, recording each dimension to the nearest foot on the BPS worksheet or legal tablet. If obstructions prevent measuring directly on the building, the appraiser retreats to an unobstructed path and measures by sighting to the corners of the wall being measured. The diagram will be transferred later from the BPS worksheet or appraisal card to the sketch area on the computer. Please refer to BPS Worksheet Procedures for Commercial Properties for instructions on how to complete a BPS worksheet. Occasionally, the sketches or diagrams and/or site plans of unique, complex or projects with numerous or multiple identical structures may be placed in folders ('CF' folders) for referencing and illustration in lieu of being computer sketched.

7. Appraising Special Structures

The classification system is designed to embrace most structures. Some buildings, however, are either too complex in design or too specialized in use to be classified. The appraiser should not attempt to fit such buildings into a

classification, but he should appraise the structures individually using all pertinent value data obtainable. This type of appraisal is called a 'special appraisal' and is indicated by entering the class as Institutional.

The worksheet or appraisal card is marked in the same manner as a classified structure with the following exceptions:

1. 'C-Institutional' is written in the description line of the improvement segment.
2. 'Inst' is written in the classification blank.
3. The life expectancy is determined by the schedule.
4. The appraiser adjusts the first floor unit price and any additional floor unit prices using the 'Add Factor' percentage override.
5. Heating and cooling is entered as a feature using the appropriate feature code, not as an additional detail.
6. Plumbing, Electrical and Interior Finish are entered as features using the appropriate feature code.

There are three methods of determining the value of a structure requiring a special appraisal: (1) historical; (2) comparison; and (3) construction costs.

The historical method consists of compiling and analyzing all data regarding actual costs of the building. This data includes such documents as: (1) contracts; (2) building permits; and (3) both published and unpublished contract reports.

The comparison method involves comparing the subject building with other buildings of like construction and use type having established cost factors or values to determine comparable unit cost factors for the subject structure.

The construction cost method is employed only when no historical data are available and when no buildings of comparable construction or use type exist. This method involves using the Marshal and Swift cost guide. It is usually desirable that special appraisals be made by two or more appraisers working together.

8. Appraising Incomplete Structures

Inasmuch as property is subject to taxation on that which exists on January 1st, all property for which building permits have been issued during the year and have not been appraised as completed structures are visited by the appraisers to determine the percentage of completion during the last week or so of the year.

For convenience in establishing the percent of completion of buildings under construction, a schedule of percentages representing various construction stages is provided below:

IMPROVEMENT PERCENTAGE GUIDELINES
10-30% FOUNDATION All work from beginning up to, but not including, The raising of exterior walls.
30-40% OPEN FRAME All framing work in the exterior walls, ceilings, Roofs, and interior bearing walls.
40-50% BOXED All roof and exterior wall coverings and a primer coat of paint if required.
50-60% WEATHER-PROOF All openings and primer coat of paint if required.
60-70% INTERIOR WALL Raising interior nonbearing walls and the interior Wall and ceiling coverings.
70-80% TRIM All millwork and cabinet work.
80-90% PAINT All painting, sanding, and finishing.
90-100% FINISH All clean-up, hardware, and floor finish.

The appraiser records on the building permit or the appraisal card the percent of completion for all buildings visited during this period. If the building is less than 100% complete, a note to inspect the property for the next year is recorded in the building permit. The property will be appraised as a completed structure later in the calendar year, but the percentage of completion as of January 1st is used to determine the partial value of the improvements for that tax year. If the building is not yet completed when the appraiser revisits the property, a flat value based on the percentage of completion as of January 1st is determined as the improvement value for that year.

In an effort to streamline the appraising of incomplete properties, MCAD has developed Summary Reports. They are typically used by both departments in December and January to track the improvement's percent complete of construction and the permit's completeness as of January 1st, when detailed appraisal record inventory and listing is not practical due to time constraints. They are stand alone reports and do not need appraisal cards attached to them. For instructions on how to use BPS Summary Report please refer to the BPS Worksheet Procedures for Commercial Properties.

9. Determining Property Values

Upon completion of the listing process, the BPS worksheet or appraisal card is forwarded to a clerk for data entry. The process of appraising land and buildings separately, although necessary for appraisal purposes, is not a complete appraisal process within itself. It is necessary, therefore, that appraisers review the total value of the property to determine the accuracy of the two appraisal processes. If, in the opinion of the appraiser, the total property value is acceptable, the appraisal becomes final and the values are processed onto the appraisal records. If, however, the total value is not acceptable the appraisal is rechecked to determine what, if any, adjustments are necessary.

The Addenda contains Commercial and Residential Reference sheets used in data collection.

A D D E N D A

General Real Property Quality Classification Cross Index

General Real Property Quality Classifications Cross Index
By MCAD Structure Code and Class 2011

Quality / MCAD Struc Code		V Low			Low			Fair			Avg			Good			V G			Exc			"Mansion" or "Luxury"/"Large"	
		0		+	-	0	+	-	0	+	-	0	+	-	0	+	-	0	+	-	0	+		
Residential	11	1	1+		2-	2	2+	3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+	7-	7	7+	8-	8
Duplex 3Plex	12	1	1+		2-	2	2+	3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+					
Apt	13					2	2+	3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+					
Condo	14					3	3+	4-	4	4+	5-	5	5+	6-	6	6+	7-	7	7+	8-	8			
Retail	20	1	1+		2-	2	2+	3-	3	3+	4-	4	4+	5-	5	5+	6-	6						
Serv St	21					1	1+	2-	2	2+	3-	3												
Garage	22				1	1+		2-	2		2+	3-		3	3+									
Ofc	23				3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+								
Bank	24							3-	3	3+	4-	4	4+	5-	5	5+	6-	6						
Theater	25										3-	3	3+	4-	4	4+								
Ofc Tower	26										4-	4	4+	5-	5									
Hotel	27								3			4			5									
Wrhs	28				1	1+		2-	2		2+	3-	3	3+										
Factory	29				1	1+		2-	2		2+	3-	3	3+	4-			4	4+					
Motel	30				2	2+		3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+					
Rest	31				3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+								
Fast Fd	32							3-	3	3+	4-	4	4+	5-	5	5+	6-	6	6+	7-				
C-Store	33	2-	2			2+	3-		3	3+	4-		4		4+									

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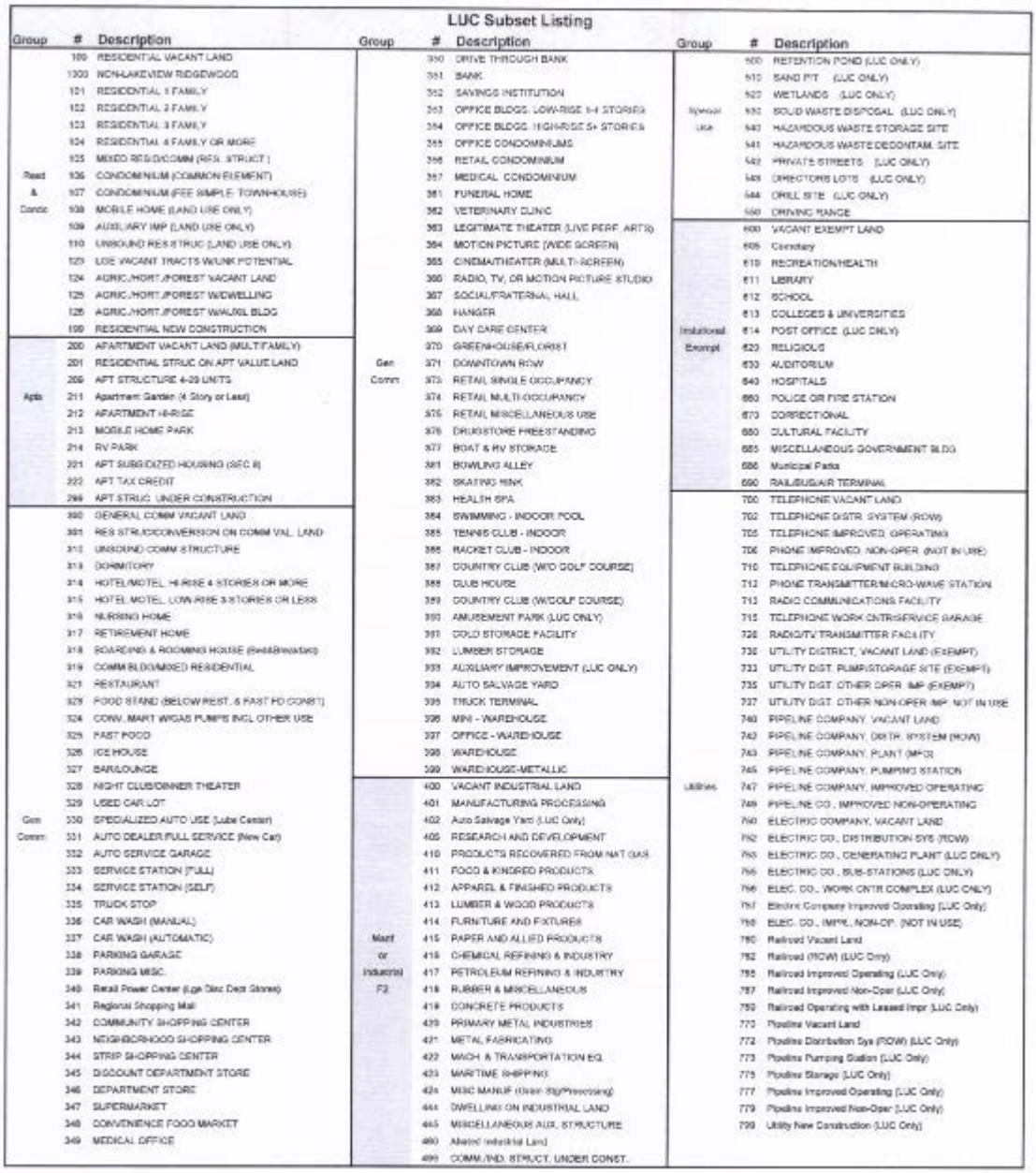
LUC Subset Listing



LUC Subset Listing

Group	#	Description
	100	RESIDENTIAL VACANT LAND
	1000	NON-LAKEVIEW RIDGEWOOD
	101	RESIDENTIAL 1 FAMILY
	102	RESIDENTIAL 2 FAMILY
	103	RESIDENTIAL 3 FAMILY
	104	RESIDENTIAL 4 FAMILY OR MORE
	105	MIXED RES/COMM (RES. STRUCT.)
Resd	106	CONDOMINIUM (COMMON ELEMENT)
&	107	CONDOMINIUM (FEE SIMPLE- TOWNHOUSE)
Condo	108	MOBILE HOME (LAND USE ONLY)
	109	AUXILIARY IMP (LAND USE ONLY)
	110	UNBOUND RES STRUC (LAND USE ONLY)
	123	LOE VACANT TRACTS W/UNK POTENTIAL
	124	AGRIC./HORT./FOREST VACANT LAND
	125	AGRIC./HORT./FOREST W/DWELLING
	126	AGRIC./HORT./FOREST W/ADDL BLDG
	199	RESIDENTIAL NEW CONSTRUCTION
	200	APARTMENT VACANT LAND (MULTI FAMILY)
	201	RESIDENTIAL STRUC ON APT VALUE LAND
	209	APT STRUCTURE 4-29 UNITS
Apts	211	Apartment Garden (4 Story or Less)
	212	APARTMENT HI-RISE
	213	MOBILE HOME PARK
	214	RV PARK
	221	APT SUBSIDIZED HOUSING (SEC 8)
	222	APT TAX CREDIT
	299	APT STRUC. UNDER CONSTRUCTION
	300	GENERAL COMM VACANT LAND
	301	RES STRUC/CONVERSION ON COMM VAL. LAND
	310	UNBOUND COMM STRUCTURE
	313	DORMITORY
	314	HOTEL/MOTEL HI-RISE 4 STORIES OR MORE
	315	HOTEL MOTEL LOW-RISE 3 STORIES OR LESS
	316	NURSING HOME
	317	RETIREMENT HOME
	318	BOARDING & ROOMING HOUSE (Bed&Breakfast)
	319	COMM BLDG/MIXED RESIDENTIAL
	321	RESTAURANT
	323	FOOD STAND (BELOW REST. & FAST FD CONST)
	324	CONV. MART W/GAS PUMPS INCL OTHER USE
	325	FAST FOOD
	326	ICE HOUSE
	327	BAR/LOUNGE
	328	NIGHT CLUB/DINNER THEATER
	329	USED CAR LOT
Com	330	SPECIALIZED AUTO USE (Lube Center)
Comm	331	AUTO DEALER (FULL SERVICE (New Car)
	332	AUTO SERVICE GARAGE
	333	SERVICE STATION (FULL)
	334	SERVICE STATION (SELF)
	335	TRUCK STOP
	336	CAR WASH (MANUAL)
	337	CAR WASH (AUTOMATIC)
	338	PARKING GARAGE
	339	PARKING MISC.
	340	Retail Power Center (Lge Disc Dept Stores)
	341	Regional Shopping Mall
	342	COMMUNITY SHOPPING CENTER
	343	NEIGHBORHOOD SHOPPING CENTER
	344	STRIP SHOPPING CENTER
	345	DISCOUNT DEPARTMENT STORE
	346	DEPARTMENT STORE
	347	SUPERMARKET
	348	CONVENIENCE FOOD MARKET
	349	MEDICAL OFFICE
	350	DRIVE THROUGH BANK
	351	BANK
	352	SAVINGS INSTITUTION
	353	OFFICE BLDGS. LOW-RISE 1-4 STORIES
	354	OFFICE BLDGS. HIGH-RISE 5+ STORIES
	355	OFFICE CONDOMINIUMS
	356	RETAIL CONDOMINIUM
	357	MEDICAL CONDOMINIUM
	361	FUNERAL HOME
	362	VETERINARY CLINIC
	363	LEGITIMATE THEATER (LIVE PERF. ARTS)
	364	MOTION PICTURE (WIDE SCREEN)
	365	CINEMA/THEATER (MULTI-SCREEN)
	366	RADIO, TV, OR MOTION PICTURE STUDIO
	367	SOCIAL/FRATERNAL HALL
	368	HANGER
	369	DAY CARE CENTER
	370	GREENHOUSE/FLORIST
Gen	371	DOWNTOWN ROW
Comm	373	RETAIL SINGLE OCCUPANCY
	374	RETAIL MULTI-OCCUPANCY
	375	RETAIL MISCELLANEOUS USE
	376	DRUGSTORE FREESTANDING
	377	BOAT & RV STORAGE
	381	BOWLING ALLEY
	382	SKATING RINK
	383	HEALTH SPA
	384	SWIMMING - INDOOR POOL
	385	TENNIS CLUB - INDOOR
	386	RACKET CLUB - INDOOR
	387	COUNTRY CLUB (W/O GOLF COURSE)
	388	CLUB HOUSE
	389	COUNTRY CLUB (W/GOLF COURSE)
	390	AMUSEMENT PARK (LUC ONLY)
	391	COLD STORAGE FACILITY
	392	LUMBER STORAGE
	393	AUXILIARY IMPROVEMENT (LUC ONLY)
	394	AUTO SALVAGE YARD
	395	TRUCK TERMINAL
	396	MINI - WAREHOUSE
	397	OFFICE - WAREHOUSE
	398	WAREHOUSE
	399	WAREHOUSE-METALLIC
	400	VACANT INDUSTRIAL LAND
	401	MANUFACTURING PROCESSING
	402	Auto Salvage Yard (LUC Only)
	405	RESEARCH AND DEVELOPMENT
	410	PRODUCTS RECOVERED FROM NAT GAS
	411	FOOD & KINDRED PRODUCTS
	412	APPAREL & FINISHED PRODUCTS
	413	LUMBER & WOOD PRODUCTS
	414	FURNITURE AND FIXTURES
Manf	415	PAPER AND ALLIED PRODUCTS
or	416	CHEMICAL REFINING & INDUSTRY
Industrial	417	PETROLEUM REFINING & INDUSTRY
F2	418	RUBBER & MISCELLANEOUS
	419	CONCRETE PRODUCTS
	420	PRIMARY METAL INDUSTRIES
	421	METAL FABRICATING
	422	MACH. & TRANSPORTATION EQ.
	423	MARITIME SHIPPING
	424	MISC MANUF (Grain Stg/Processing)
	444	DWELLING ON INDUSTRIAL LAND
	445	MISCELLANEOUS AUX. STRUCTURE
	490	Abated Industrial Land
	499	COMM./IND. STRUCT. UNDER CONST.
	500	RETENTION POND (LUC ONLY)
	510	SAND PIT (LUC ONLY)
	522	WETLANDS (LUC ONLY)
Sylvicul	532	SOLID WASTE DISPOSAL (LUC ONLY)
Use	540	HAZARDOUS WASTE STORAGE SITE
	541	HAZARDOUS WASTE DECONTAM. SITE
	542	PRIVATE STREETS (LUC ONLY)
	549	DIRECTORS LOTS (LUC ONLY)
	644	DRILL SITE (LUC ONLY)
	660	DRIVING RANGE
	600	VACANT EXEMPT LAND
	605	Cemetery
	610	RECREATION/HEALTH
	611	LIBRARY
	612	SCHOOL
	613	COLLEGES & UNIVERSITIES
Institutional	614	POST OFFICE (LUC ONLY)
Exempt	620	RELIGIOUS
	630	AUDITORIUM
	640	HOSPITALS
	650	POLICE OR FIRE STATION
	670	CORRECTIONAL
	680	CULTURAL FACILITY
	685	MISCELLANEOUS GOVERNMENT BLDG
	686	Municipal Parks
	690	RAIL/BUS/AIR TERMINAL
	700	TELEPHONE VACANT LAND
	702	TELEPHONE DISTR. SYSTEM (ROW)
	705	TELEPHONE IMPROVED, OPERATING
	706	PHONE IMPROVED, NON-OPER. (NOT IN USE)
	710	TELEPHONE EQUIPMENT BUILDING
	712	PHONE TRANSMITTER/MICRO-WAVE STATION
	713	RADIO COMMUNICATIONS FACILITY
	715	TELEPHONE WORK CNTR/SERVICE GARAGE
	720	RADIO/TV TRANSMITTER FACILITY
	730	UTILITY DISTRICT, VACANT LAND (EXEMPT)
	733	UTILITY DIST. PUMP/STORAGE SITE (EXEMPT)
	735	UTILITY DIST. OTHER OPER. IMP (EXEMPT)
	737	UTILITY DIST. OTHER NON-OPER IMP. NOT IN USE
	740	PIPELINE COMPANY, VACANT LAND
	742	PIPELINE COMPANY, DISTR. SYSTEM (ROW)
	743	PIPELINE COMPANY, PLANT (IMPR.
	745	PIPELINE COMPANY, PUMPING STATION
Utilities	747	PIPELINE COMPANY, IMPROVED OPERATING
	749	PIPELINE CO., IMPROVED NON-OPERATING
	760	ELECTRIC COMPANY, VACANT LAND
	762	ELECTRIC CO., DISTRIBUTION SYS (ROW)
	765	ELECTRIC CO., GENERATING PLANT (LUC ONLY)
	766	ELECTRIC CO., SUB-STATIONS (LUC ONLY)
	766	ELEC. CO., WORK CNTR COMPLEX (LUC ONLY)
	767	Electric Company Improved Operating (LUC Only)
	769	ELEC. CO., IMPR., NON-OP. (NOT IN USE)
	780	Railroad Vacant Land
	782	Railroad (ROW) (LUC Only)
	785	Railroad Improved Operating (LUC Only)
	787	Railroad Improved Non-Oper (LUC Only)
	789	Railroad Operating with Leased Impr (LUC Only)
	770	Pipeline Vacant Land
	772	Pipeline Distribution Sys (ROW) (LUC Only)
	773	Pipeline Pumping Station (LUC Only)
	775	Pipeline Storage (LUC Only)
	777	Pipeline Improved Operating (LUC Only)
	779	Pipeline Improved Non-Oper (LUC Only)
	799	Utility New Construction (LUC Only)

Commercial Additional Detail Codes

OTHER / ADDITIONAL DETAIL CODES – Commercial Method -- Commercial Valuation

12/31/10

Type	Description	Class	Description	Qual Adj (Cst) Add Per Off
071	Wall Furnace	WF 15-60	15-60 BTUs	No
		WF 61-125	61-125 BTUs	No
		WF126-330	126-330 BTUs	No
072	Floor Furnace	FF 15-60	15-60 BTUs	No
		FF 61-125	61-125 BTUs	No
		FF126-330	126-300 BTUs	No
073	Ceiling Furnace	CF 15-60	15-60 BTUs	No
		CF 61-125	61-125 BTUs	No
		CF126-330	126-300 BTUs	No
074	Cent Heat	CH60-90	60-90 BTUs	No
		CH91-150	91-150 BTUs	No
		CH151-330	151-330 BTUs	No
075	MultiSt Heating	MSH > 0	Cent Heat Multi Story Bldg	No
081	Cent Cooling	CC .5-3	1/2 ton - 3 ton Central	No
		CC 3.1-6	3.1 ton - 6 ton Central	No
		CHC> 6	6+ ton Central	No
082	Freestanding Cooling	FC .5-3	1/2 ton - 3 ton Unit	No
		FC 3.1-6	3.1 ton - 6 ton Unit	No
		FC> 6	6+ ton Unit	No
083	MultiSt Cooling	MSC> 0	Cent Cooling Multi Story Bldg	No
091	Cent Htg & Cl (HVAC)	CHC .5-3	1/2 ton - 3 ton HVAC	No
		CHC 3.1-6	3.1 ton - 6 ton HVAC	No
		CHC> 6	6+ ton HVAC	No
092	Multistory HVAC	MHC> 0	HVAC Multi- Story Bldg	No
093	Freestanding HT Pump	CHP.5-.9	Ht Pump 0.50 to 0.9 Tons	No
		CHP>1	Ht Pump >1.0 Tons	No
111	Bath Tub	BTI	Bath Tub Inferior	No
112	Bath Tub	BTA	Bath Tub Average	No
113	Bath Tub	BTS	Bath Tub Superior	No
121	Commode	CMI	Commode Inferior	No
122	Commode	CMA	Commode Average	No
123	Commode	CMS	Commode Superior	No
131	Lavatory	LVI	Lavatory Inferior	No
132	Lavatory	LVA	Lavatory Average	No
133	Lavatory	LVS	Lavatory Superior	No
141	Shower Stall	SHI	Shower Stall Inferior	No
142	Shower Stall	SHA	Shower Stall Average	No
143	Shower Stall	SHS	Shower Stall Superior	No
151	Sink	SKI	Sink Inferior	No
152	Sink	SKA	Sink Average	No
153	Sink	SKS	Sink Superior	No
161	Water Heater	WHI	Water Heater Inferior	No
162	Water Heater	WHA	Water Heater Average	No
163	Water Heater	WHS	Water Heater Superior	No
241	Urinal	URI	Urinal Inferior	No
242	Urinal	URA	Urinal Average	No
243	Urinal	URS	Urinal Superior	No
251	Fountain	FNI	Fountain Inferior	No
252	Fountain	FNA	Fountain Average	No
253	Fountain	FNS	Fountain Superior	No
261	Water Sewer	WSI	Water Sewer Conn. Inferior	No
262	Water Sewer	WSA	Water Sewer Conn. Average	No
263	Water Sewer	WSS	Water Sewer Conn. Superior	No
271	Intercom	INTI	Intercom Inferior	No
272	Intercom	INTA	Intercom Average	No
273	Intercom	INTS	Intercom Superior	No
404	Canopy	CPS	Canopy Only	Yes
		CPRA	Canopy Roof/Slab Attached	Yes
		CPRD	Canopy Roof/Slab Detached	Yes
		CP7	Canopy Rf-SRV STA-Eco.	No
		CP8	Canopy Rf-SRV STA-Avg.	No
		CP9	Canopy Rf-SRV STA-Good	No
		BC1	Bank Canopy - Drive Thru	Yes
405	Cold Storage	CF1	Walk-in Box - Chiller	No
		CF2	Walk-in Box - Freezer	No
		CF3	Walk-in Box - Sharp Frzr	No
407	Cross Way	CW1	Crossways	No
408	Dock Leveler	DL2	Dock Leveler, Manual	No
		DL3	Dock Leveler, Automatic	No

Type	Description	Class	Description	Qual Adj (Cst) Add Per Off
409	Docks Loading	DL1	Dock Level Floor (Bldg Interior)	No
		LD1	Load Dock, Stone or Conc	No
		LD2	Loading Dock, Wood	No
		LD3	Loading Dock, Interior	No
		LD4	Truck or Train Wells	No
		LD5	Concrete Ramp	No
410	Door Opener	DO1_K	Door Op Gen $1000	AF No
413	Elevator — New for 2005	EL1_K	Elev/Escal. $1,000 per Unit	AF No
		EL100K	Elev/Escal. $100,000 per Unit	AF No
		(EL1)	Elev Elec Freight for '06 or '07	n/a
		(EL2)	Elev Elec Passenger for '06 or '07	n/a
	Not in Use for 2005	(EL3)	Elev Hydrl Frgt for '06 or '07	n/a
		(EL4)	Elev Hydrl Passenger for '06	n/a
414	Escalator — New for 2005	EL1_K	Elev/Escal. $1,000 per Unit	AF No
		(EL3)	Escalator 32" Width for '06	n/a
	Not in Use for 2005	(EL4)	Escalator 48" Width for '06	n/a
415	Exhaust Fan	EV1	Ventilator Eco 24"-30"	No
		EV2	Ventilator Typ 36"	No
		EV3	Ventilator Sup 48" or more	No
417	Fence	FC1	Fence Chainlink 4'	No
		FC2	Fence Chainlink 6'	No
		FC3	Chainlink 6' 3 Str BW	No
		FC4	Chainlink 6' w/ Coils/Slats	No
		FM1	Fence Metal 5'-7'	No
		FM2	Wrought Iron Typical	No
		FM3	Wrought Iron Elaborate	No
		FW1	Fence Wood 5-6'	No
		MW1	Masonry Wall Typical	No
		MW2	Masonry Wall Good	No
		MW3	Masonry Wall Elaborate	No
419	Fireplace	FI1	1 Opening, Inside F/P	Yes
		FI2	2 Openings, Inside F/P	Yes
		FI3	3 Openings, Inside F/P	Yes
421	Greenhouse	GH1	Greenhouse Hoop	No
		GH2	Greenhouse Economy	No
		GH3	Greenhouse Average	No
		GH4	Greenhouse Good	No
429	Light Standard	LT1	LGT Quartz/Fluor 15' Avg	No
		LT2	LGT Quartz/Fluor 25' Avg	No
		LT3	Mer/Sodium/Halide 15'	No
		LT4	Mer/Sodium/Halide 25'	No
		LT5	LGT Ornamental Pole 12'	No
430	Lumber Shed	Special	Exceptional	No
432	Masonry Wall	MW1	Masonry Wall Typical	No
		MW2	Masonry Wall Good	No
		MW3	Masonry Wall Elaborate	No
433	Mezzanine	MU6	Multi-Use Mez Fin (Ofc, etc.)	Yes
		MU7	Multi-Use Mez Deck - Open	Yes
		MU8	Multi-Use Mez Stg Low Cost	Yes
		MU9	Multi-Use Mezz Stg Typical	Yes
435	Office Plus Retail/Storage Residential & Plus Areas	MU1	Multi-Use, Living Area	Yes
		MU2	Multi-Use, Office	Yes
		MU3	Multi-Use, Sales	Yes
		MU4	Multi-Use, Storage	Yes
		MU5	Low Cost Utility Stg Area	Yes
436	Paint Room	PB1	Paint Booth General $100	AF No
		PB1_K	Paint Booth $1,000 per Unit	AF No
437	Paved Area	PA1	Paving Asphalt Typ	No
		PA2	Asp/Conc Serv Station Hvy	No
		PC1	Paving Concrete	No
		PC2	Paving Conc Heavy	No
		PC3	Paving Conc Med/Slab	No
		SG1	Stabilized Gravel	No
438	Railroad Spur	RR1	Rail 100# (Spur Lines)	No
440	Shed	Special	Exceptional	No
442	Spa / Whirlpool	SW1	Spa Whirlpl ECO 4-6 People	No
		SW2	Spa Whirlpl AVG 7-8 People	No
		SW3	Spa Whirlpl GOOD 9-16 People	No

Type	Description	Class	Description	Qual Adj (Cst) Add Per Off
443	Miscellaneous Special Unit	MS1	Misc General $100	AF No
		MS1_K	Misc $1,000 per Unit	AF No
		PF1	Plumbing Fixture	No
		PF1R	Rough-in Only for Fixture	No
		PF100K	SPF $100K per unit	AF No
444	Sprinkler	SH_HD	No. Sprinkler Heads	No
		SS1	Wet Sprinkler – Area	No
		SS2	Dry Sprinkler – Area	No
445	Stairway - Ext	SE1	Stairs Exterior (per Floor)	Yes
446	Stops Elevtr		Codes TBA	--
		ES1_K	Stops $1,000 per Unit	AF No
		ES10K	Stops $10,000 per Unit	AF No
447	Storage	RS1	Utility Bldg - Frame	Yes
		RS2	Utility Bldg - Metal	Yes
		RS3	Utility Bldg MTL/STN	Yes
448	Store Front	SF1	Store Front Typical	Yes
		SF2	Store Front Good	Yes
		SF3	Store Front Elaborate	Yes
449	Swimming Pool	SC1	Swimming Pool Outdoor	No
		SC2	Swimming Pool Indoor	No
451	Tennis Court	TC1	Tennis Court - Asphalt	No
		TC2	Tennis Court - Concrete	No
		TC3	Tennis Court - Clay	No
452	Terrace	PC5	Terrace Typical -Conc	No
		PC6	Terrace Superior	No
		PC7	Terrace Elaborate	No
454	Truck Scales	TS1	Truck Scales	No
		TS1-K	Lump Sum Gen Truck Scales	AF No
455	Banking Equip	BE1	Bank Vault Money	No
		BE2	Bank Vault Rec Stg	No
		BE3	Vault Door 3'-6"	No
		BE4	Vault Door 7" or more'	No
		BE5	Night Deposit Drop	No
		BE6	Pneumatic Tube System	No
		BE7	ATM Unit-Equip	No
		BE8	ATM Bldg - Freestanding	No
457	RestRooms (incl. Fixtures)	TR1	Restroom Struc FR/CB	No
		TR2	Restroom Struc Brk / Stone	No
		TR3	Restroom Struc Mtl (Cls 'S')	No
458	Gas Attendant Booth	GS3	Low SB/Glass or Masonry	No
		GS4	Low Stucco/Glass or Frame	No
		GS5	Typ SB / Glass or Masonry	No
459	Port. / Modular Office (inc. Fixtures)	OM1	Port/Modular Ofc - ECO	No
		OM2	Port/Modular Ofc - AVG	No
		OM3	Port/Modular Ofc - GOOD	No
		OM4	Port/Modular Ofc - Very Gd	No
522	BathRoom Avg	BATHA	AVG Baths - Commercial	No
523	BathRoom Sup	BATHS	SUP Baths -Commercial	No
532	Built-ins – Avg	BLTNA	Avg Built-in (Wash/Dry)	No
533	Built-ins – Sup	BLTNS	Superior Built-in (Wash/Dry)	No
542	Avg Half Bath	HFBATHA	Avg Half Bath	No
543	Sup Half Bath	HFBATHS	Sup Half Bath	No
552	All Built-in - Avg	BLTAA	Avg Bltn R W/D Disp Micwv	No
553	All Built-in - Sup	BLTAS	Sup Bltn R W/D Disp Micwv	No
810	Manufactured Housing (Mobile Homes)	RM1	MH 8' - 10' Width	AF No
		RM2	MH 12' - 14' Width	AF No
		RM3	MH 16', 18' & 20' Width	AF No
		RM4	MH 24' & 28' Width	AF No
		RM5	MH 34' - 36' Width	AF No
815	Manufactured Home Park Classification	MP1	MH Single Space Sites	No
		MP2	Recreational Vehicle Sites	No
		MP3	MH Economy Space Sites	No
		MP4	MH Very Low Cost Space	No
		MP5	MH Low Cost Spc Sites	No
		MP6	MH Avg Space Sites	No
		MP7	MH Above Avg Space Sites	No
		MP8	MH Good Space Sites	No
		MP9	MH Excellent Space Sites	No
819	Special Unit	SU1	Sp Unit General $100	AF No
		SU1_K	Sp Unit $1,000 per Unit	AF No

Commercial Tanks Listing

450 TANKS -- FARM STORAGE MS 17/54 5/2009
Steel Grain Bins

Where:

Type = 450
Method = R or C
Class = **AG1** for Mtl Grain Bin w/o Dryer
or **Class** = **AG2** for Mtl Grain Bin /w Dryer
Area = No. of Bushels
Length = 0 (Zero Entry)
Width = Diameter of Bin
Height = Height to Eave
Perimeter = 0 (Override /w Zero Entry)

Conversion Systems

1 Cubic Foot = 0.8036 Bushels
1 Bushel = 1.244 Cubic Feet
1 Gallon = 0.1337 Cubic Feet = 0.1074 Bu.

Formula --Calculate a Grain Bins's Bushel Capacity According to Eave Height:

Dia X *Dia* X 0.7854 X 0.8036 X *Height to Eave*

OR -- *Dia* X *Dia* X 0.6311 X *Height to Eave*

To Calculate the Capacity of a Grains Bin's Cone in Bushels:

Height of Cone = 1/3 of Diameter

1/3 X *Dia* X *Dia* X 0.6311 X *Height of Cone*

A Grain Bin's Maximum Capacity = Bushels to Eave Height plus Cone Bushels.

MS CURRENT COST & INDEX GUIDE TO: -- OTHER / ADDITIONAL DETAIL CODES -- Commercial Valuation 03/28/12
For 2012

Type	Description	*Method 'C'* Class	Description	Dimensions	Unit of Measure	Yr Blt	Eff Year	Expected Life	Qual Adj (CM); Add Factor OR	CCM & LM
450	Tanks (Bulk)	AG1	Grain Bin Stl w/o Dryer	Dia. X Ht.	Bu	Yes	Yes	30	No	CC17Barn
		AG2	Grain Bin Stl with Dryer	Dia. X Ht.	Bu	Yes	Yes	30	No	CC17Barn
		TB1	Bolted Steel Tank - API	API Dia. X Ht.	Bbl	Yes	Yes	30	No	U61_1-8
		TW1	Welded Stl Tank Floating Rf	API Dia. X Ht.	Bbl	Yes	Yes	30	No	U61_1-8
		TW2	Welded Stl Tank Dbl Roof	API Dia. X Ht.	Bbl	Yes	Yes	30	No	U61_1-8
		TW3	Welded Steel Tank- API	API Dia. X Ht.	Bbl	Yes	Yes	30	No	U61_1-8
	(TB1, TW1, TW2 & TW3 are API Oil Storage Tanks)	TW4	Vertical Mild Stl Welded Tank	Dia. X Ht.	Gallons	Yes	Yes	25	No	U61_1-8
		TV1	Vertical Galv Bolted Storage	Dia. X Ht.	Gallons	Yes	Yes	25	No	U61_1-8
		TH1	Horizontal Bulk Stg Mtl Tank	Dia. X Length	Gallons	Yes	Yes	25	No	U61_1-8
		TK100K	Mtl Stg Tank-Lump Sum	FV- Dia X Ht	# - Items	Yes	Yes	30	AF No	U61_1-8

Commercial Tanks Listing (pg 2)

TANKS

DEFINITIONS AND COMMENTS

API refers to the standard specifications of the American Petroleum Institute.
ASME refers to the standard specifications for pressure tank design of the American Society of Mechanical Engineers.
WATER TANKS are normally measured in gallons.
OIL TANKS are normally measured in barrels of 42 gallons each.
STEEL RING CURB is a steel ring used to hold the foundation sand or gravel in place. The tank bottom is then placed on the sand. All tanks do not have curb rings.
HORTON SPHERE, HEMISPHEROID, DEWAR, etc., are types of large liquid- and gas-pressure vessels.

Many special tanks found in use cannot be included here, such as those for storage of exotic fuels, or those used in food or beverage processing which are in the nature of industrial processing equipment.

The costs of the tanks listed in this section are averages of total costs in place at the site including necessary foundations and tank fittings, but not pilings, pipe, fencing, site roads, etc.

The tanks included in this section are those used primarily for liquid and industrial storage. For grain bins and silos, see Section 17.

The tank costs listed do not include an allowance for cathodic protection. Add 2% to 5% of the tank cost when found.

The steel tanks listed are for carbon steel, unless otherwise noted. Add 150% - 300% for stainless steel.

Adjustments will need to be made for extra warrantees or difficult site conditions.

CAPACITY OF CYLINDRICAL TANKS OR RESERVOIRS

(per foot of depth or height)

DIAMETER (feet)	U.S. (gallons)	BARRELS (42 gals.)	DIAMETER (feet)	U.S. (gallons)	BARRELS (42 gals.)
1	5.87	.14	32	6,016.2	143.2
2	23.50	.56	33	6,398.1	152.3
3	52.88	1.26	34	6,790.7	161.6
4	94.00	2.24	35	7,196.0	171.3
5	146.88	3.50	36	7,613.3	181.3
6	211.51	5.00	37	8,041.9	191.5
7	287.88	6.80	38	8,482.4	202.0
8	376.01	9.00	39	8,934.9	212.7
9	475.89	11.30	40	9,398.7	223.8
10	587.52	14.00	41	9,875.8	235.1
11	710.90	16.90	42	10,362.0	246.7
12	846.03	20.20	43	10,861.6	258.6
13	992.91	23.70	44	11,374.0	270.8
14	1,151.50	27.40	45	11,895.3	283.2
15	1,321.90	31.50	46	12,430.1	296.0
16	1,504.10	35.80	47	12,976.1	309.0
17	1,697.90	40.40	48	13,534.8	322.3
18	1,903.60	45.30	49	14,104.0	335.8
19	2,120.90	50.50	50	14,685.9	349.7
20	2,350.10	56.00	60	21,149.3	503.6
21	2,591.00	61.70	70	28,786.5	685.5
22	2,843.60	67.70	80	37,598.7	895.3
23	3,108.00	74.00	90	47,585.9	1,133.1
24	3,384.10	80.60	100	58,748.0	1,399.0
25	3,672.00	87.40	120	84,597.1	2,014.5
26	3,971.60	94.60	140	115,146.1	2,742.0
27	4,283.00	102.00	160	150,394.9	3,581.4
28	4,606.20	109.70	180	190,343.5	4,532.7
29	4,941.00	117.60	200	234,992.0	5,596.0
30	5,287.70	125.80	220	284,340.3	6,771.2
31	5,646.10	134.40	240	338,388.5	8,056.9

WEIGHTS AND MEASURES

1 gallon (water)	weighs	8.34 pounds
1 gallon	equals	.1337 cubic foot
1 gallon	equals	.1074 bushel
1 gallon	equals	.8327 Imperial gallon
1 gallon	equals	3.7853 liters
1 acre foot	equals	325,900 gallons
1 cubic foot	equals	.8032 bushel
1 cubic meter	equals	6.2898 barrels (oil)
1 barrel (oil)	equals	42 gallons
1 barrel (oil)	equals	.1590 cubic meter
1 barrel (water)	equals	31.5 gallons

Pressure in pounds per square inch of column of water equals .434 times the height of the column in feet.

Circumference of a circle	=	3.1416 x the diameter
Area of a circle	=	.7854 x square of the diameter
Area of an ellipse	=	.7854 x product of both diameters
Volume of a sphere	=	.5236 x cube of the diameter
Volume of a cone	=	area of base x 1/3 of the altitude

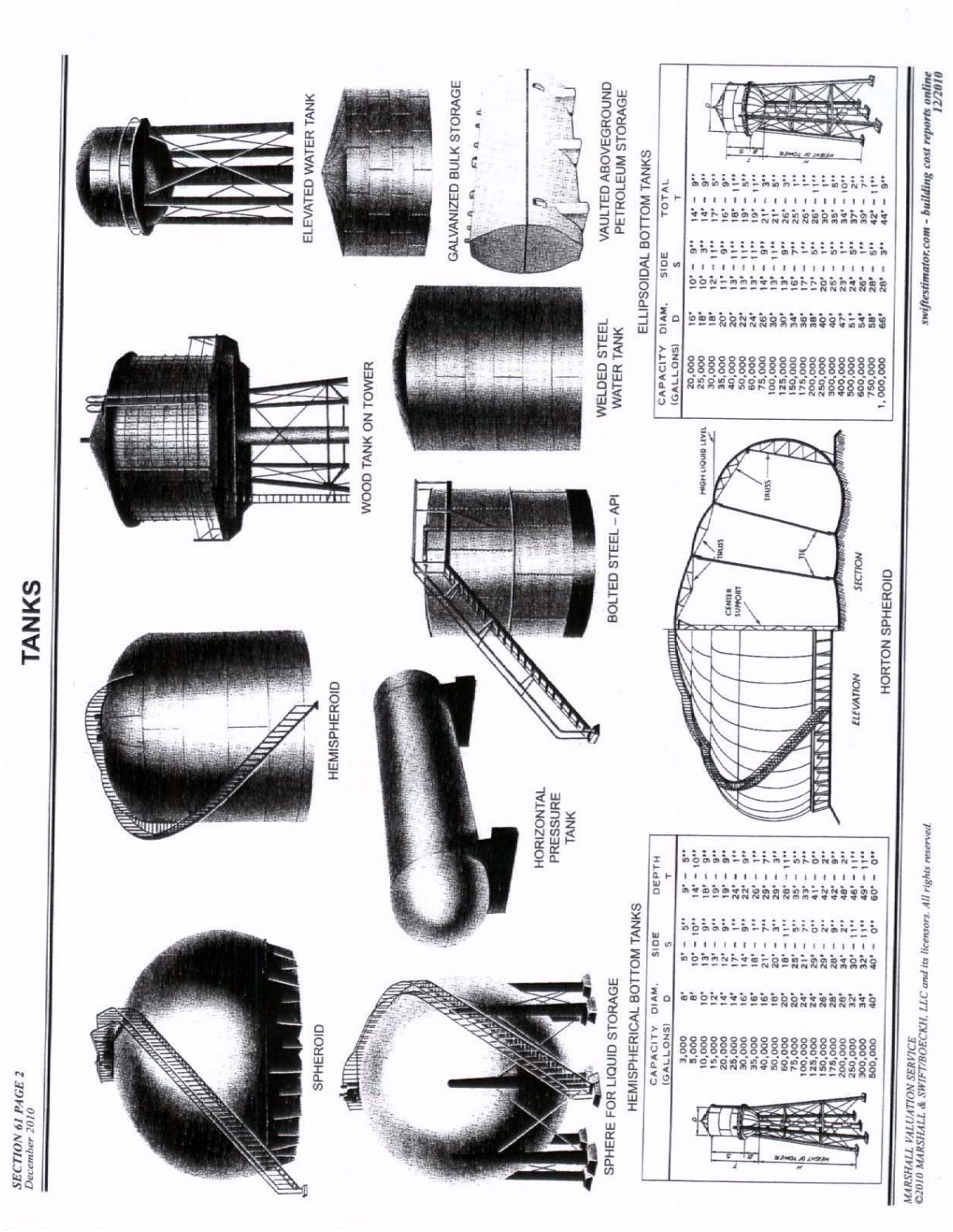
Capacity in barrels (oil) = D2 x .1399 x height (diameter and height in feet)
Capacity in gallons = D2 x 5.8748 x height (diameter and height in feet)
Capacity in bushels = D2 x .6308 x height (diameter and height in feet)

TYPICAL TANK LIVES

Tank lives can vary widely depending on the storage loads and conditions placed on the individual tank, the method of installation and appropriate maintenance and warranties. The typical lives listed below represent averages under standard applications. Lives may be shortened under severe requirements, such as extremely corrosive materials and/or atmospheric conditions or lengthened under very mild circumstances, by special coatings, double walls, etc.

	Years
Galvanized steel	15 – 20
Steel oil storage	25 – 30
Steel surface water storage	25 – 50
Elevated steel tanks	30 – 40
Underground steel, single wall	10 – 20
double walled	25 – 35
fiber coated	25 – 35
Galvanized steel chemical storage	3 – 17
Stainless steel chemical storage	15 – 30
Polyethylene chemical storage	15 – 20
Fiberglass chemical storage	15 – 20
Underground fiberglass	30 – 35
Wood	20 – 35
Steel pressure tanks	20 – 40

Commercial Tanks Listing (pg 3)



CAPACITY (GALLONS)	DIAM. D	SIDE S	DEPTH T
3,000	8'	5' – 5''	9' – 5''
5,000	8'	10' – 10''	14' – 10''
10,000	10'	13' – 9''	18' – 9''
15,000	12'	13' – 9''	19' – 9''
20,000	14'	12' – 9''	19' – 9''
25,000	14'	14' – 9''	21' – 9''
30,000	16'	14' – 9''	22' – 9''
35,000	16'	16' – 1''	24' – 1''
40,000	16'	18' – 1''	26' – 1''
50,000	16'	21' – 7''	29' – 7''
60,000	18'	20' – 3''	29' – 3''
75,000	20'	18' – 11''	28' – 11''
100,000	20'	28' – 5''	35' – 5''
125,000	24'	21' – 7''	33' – 7''
150,000	24'	29' – 0''	41' – 0''
175,000	26'	29' – 2''	42' – 2''
200,000	28'	28' – 9''	42' – 9''
250,000	28'	34' – 2''	48' – 2''
300,000	32'	30' – 11''	46' – 11''
500,000	34'	32' – 11''	49' – 11''
	40'	40' – 0''	60' – 0''

CAPACITY (GALLONS)	DIAM. D	SIDE S	TOTAL T
20,000	16'	10' – 9''	14' – 9''
25,000	18'	10' – 3''	14' – 9''
30,000	18'	12' – 11''	17' – 5''
35,000	20'	13' – 9''	17' – 9''
40,000	20'	13' – 11''	18' – 11''
50,000	22'	13' – 11''	18' – 11''
60,000	24'	13' – 11''	19' – 11''
75,000	26'	14' – 9''	21' – 3''
100,000	30'	13' – 11''	21' – 8''
125,000	30'	13' – 9''	26' – 3''
150,000	34'	16' – 7''	25' – 1''
175,000	36'	17' – 1''	26' – 1''
200,000	38'	17' – 5''	26' – 11''
250,000	40'	20' – 1''	30' – 1''
300,000	40'	25' – 5''	35' – 5''
400,000	47'	23' – 1''	34' – 10''
500,000	51'	24' – 5''	37' – 2''
600,000	54'	26' – 1''	39' – 7''
750,000	58'	28' – 5''	42' – 11''
1,000,000	66'	28' – 3''	44' – 9''

Commercial Tanks Listing (pg 4)

TANKS

ELEVATED STEEL TANKS

Costs are averages for each of the high-stress and low-stress areas. A check of local building codes will indicate which areas require extra structural strength to resist possible hurricane or seismic forces. Costs include tank, tower or pedestal, riser pipe, ladder, and other equipment normally installed, completely erected as well as typical foundations and painting.

LOW-STRESS AREAS

Average costs in areas not requiring earthquake- (including zone 1 areas) or hurricane-resistant structures.

CAPACITY	TOWER HEIGHT		
(gallons)	75'	100'	150'
25,000	$ 356,000	$ 412,000	$ 535,000
50,000	343,000	435,000	562,000
75,000	411,000	455,000	509,000	632,000
100,000	444,000	486,000	544,000	670,000
150,000	544,000	596,000	651,000	778,000
200,000	732,000	791,000	851,000	971,000
300,000	911,000	995,000	1,059,000	1,178,000
400,000	1,070,000	1,169,000	1,224,000	1,355,000
500,000	1,194,000	1,298,000	1,399,000	1,544,000
750,000	1,565,000	1,693,000	1,842,000	2,073,000
1,000,000	1,979,000	2,135,000	2,328,000	2,611,000
1,500,000	2,754,000	2,963,000	3,242,000	3,670,000
2,000,000	3,522,000	3,785,000	4,150,000	4,737,000

HIGH-STRESS AREAS

Average costs in areas requiring earthquake- (zones 3 and 4) or hurricane-resistant structures.

CAPACITY	TOWER HEIGHT		
(gallons)	50'	75'	100'	150'
25,000	$ 405,000	$ 450,000	$ 523,000	$ 672,000
50,000	437,000	485,000	552,000	711,000
75,000	515,000	573,000	648,000	801,000
100,000	564,000	616,000	693,000	850,000
150,000	691,000	753,000	827,000	984,000
200,000	925,000	1,002,000	1,081,000	1,232,000
300,000	1,154,000	1,266,000	1,336,000	1,494,000
400,000	1,354,000	1,481,000	1,548,000	1,718,000
500,000	1,514,000	1,645,000	1,770,000	1,953,000
750,000	1,983,000	2,145,000	2,332,000	2,627,000
1,000,000	2,510,000	2,705,000	2,950,000	3,307,000
1,500,000	3,486,000	3,755,000	4,110,000	4,647,000
2,000,000	4,464,000	4,799,000	5,261,000	6,003,000

RESERVOIRS

Average cost of cut and fill reservoirs with concrete linings and roof structures, per unit of rated capacity.

Roof Cover	Cost per gallon	Cost per acre foot
Floating	$ .34	$110,750
Steel	.71	230,000
Aluminum	.80	259,500
Concrete	.83	270,000

WELDED STEEL WATER TANKS

Costs are average costs of surface reservoirs including typical tank ancillaries such as roofs, ladders, painting, fittings on tank, etc. Steel standpipes (height exceeds diameter) will cost 35% more. Sand and gravel foundations with steel retaining rings are included on those of 1,000,000 gallons capacity, or less, concrete foundations on larger tanks.

CAPACITY (gallons)	COST	CAPACITY (gallons)	COST	CAPACITY (gallons)	COST
10,000	$ 46,000	200,000	$ 275,500	2,000,000	$1,274,000
20,000	73,500	250,000	310,750	2,500,000	1,490,750
30,000	96,250	300,000	344,500	3,000,000	1,705,750
50,000	131,500	400,000	430,750	4,000,000	2,080,000
75,000	172,000	500,000	505,000	5,000,000	2,432,750
100,000	209,000	750,000	648,750	6,000,000	2,774,500
125,000	225,500	1,000,000	750,000	7,500,000	3,240,500
150,000	243,750	1,500,000	1,046,250	10,000,000	3,958,750

BOLTED STEEL WATER TANKS

Costs are average costs for factory coated, bolted steel surface reservoirs erected on sand or gravel with a steel ring curb, including typical accessories such as roof, ladders, manways, vents, fittings on tank, and liquid level indicators, etc. Concrete foundations cost an additional $4.50 to $6.00 per cubic foot. Tank and foundation costs depend on seismic zone. For areas requiring earthquake resistant structures add 5% to the tank cost and use $7.00 per cubic foot for a concrete foundation cost. Modular knockdown containment tanks with membrane liner and cover will cost 5% to 15% less.

CAPACITY (gallons)	DIMENSIONS (d x h)	TANK COST
10,000	15' x 8'	$ 27,750
30,000	18' x 16'	49,750
100,000	26' x 20'	80,500
125,000	29' x 24'	97,750
150,000	32' x 24'	116,250
200,000	37' x 16'	145,000

CONCRETE WATER TANKS

Costs are averages of completely erected surface reservoirs, including foundations, dome roofs and typical tank ancillaries. Sitework and exterior piping are extra. Small precast modular tanks, up to 30,000 gallons, cost $6,800 to $8,250 per 5,000-gallon module. For high-stress areas requiring earthquake- (zones 3 and 4) or hurricane-resistant structures, add 30%.

CAPACITY (gallons)	COST	CAPACITY (gallons)	COST	CAPACITY (gallons)	COST
10,000	54,500	200,000	$340,750	2,000,000	$1,294,000
20,000	83,250	250,000	386,750	2,500,000	1,446,000
30,000	105,250	300,000	471,750	3,000,000	1,674,250
50,000	144,500	400,000	512,750	4,000,000	2,009,000
75,000	242,750	500,000	554,750	5,000,000	2,359,000
100,000	287,750	750,000	693,500	6,000,000	2,739,500
125,000	325,250	1,000,000	797,750	7,500,000	3,195,750
150,000	367,250	1,500,000	977,750	10,000,000	4,109,000

The data included on this page becomes obsolete after November 2012.

Commercial Tanks Listing (pg 5)

WOOD TANKS

Costs are averages for cedar or fir tanks completely erected on the buyer's foundation. Add 33% for cypress tanks. Sizes given are typical diameters and heights, in feet. Smaller tanks up to 10,000 gallons have 2" staves, larger tanks have 3". For elevated tanks, add tower cost. Add $46 to $52 per foot of diameter for sand and gravel foundation with retaining ring. Concrete slab foundation costs an additional $6.25 to $8.20 per cubic foot. Add wood cover, joists and ladders to basic tank cost as necessary.

CAPACITY (gallons)	SIZE (d x h)	TANK COST	FLAT COVER	CONICAL COVER	CHIME JOISTS	WOOD LADDER	STEEL LADDER
200	4 x 3	$ 1,700	$ 290	----	$ 55	----	----
300	4 x 4	2,025	290	----	55	----	----
500	5 x 4	2,725	400	$ 800	80	----	----
1,000	6 x 6	4,175	590	950	120	$180	$260
1,500	7 x 6	5,325	660	1,125	160	180	260
2,000	8 x 6	6,400	760	1,300	200	180	260
3,000	8 x 8	8,025	760	1,300	200	235	320
4,000	10 x 8	9,525	1,025	1,750	310	230	320
5,000	11 x 8	11,575	1,275	2,050	400	230	320
7,500	12 x 10	14,175	1,675	2,325	460	290	380
10,000	14 x 10	17,875	1,925	2,800	700	290	380
15,000	14 x 14	25,500	1,925	2,800	700	390	510
20,000	16 x 14	31,450	2,375	3,800	925	390	510
30,000	18 x 16	40,725	2,700	4,550	1,175	430	575
50,000	22 x 18	56,375	3,375	6,100	1,450	480	650
75,000	26 x 20	72,500	4,075	7,600	1,725	540	700
100,000	30 x 20	88,200	4,525	9,350	2,250	540	700
150,000	37 x 20	115,025	6,375	12,225	3,275	540	700
200,000	43 x 20	138,875	7,350	15,125	4,050	540	700

GALVANIZED STEEL TANKS

Costs are averages of 13- to 20-gauge, coated, corrugated steel tanks, installed or erected on the buyer's foundation. Prices include conical roof with manhole, freight and typical accessories. Deduct 15% for open tanks. Add $45 to $51 per foot of diameter for sand and gravel foundation with retaining ring. Add an additional $6.00 to $8.00 per cubic foot for concrete slab foundation. For elevated tanks, add tower cost. For smaller tanks, see Section 17.

CAPACITY (gallons)	DIMENSIONS (d x h)	TANK COST	CAPACITY (gallons)	DIMENSIONS (d x h)	TANK COST
500	4 x 5½	$1,350	10,000	12 x 12	$13,400
1,000	6 x 5	2,275	15,000	15 x 11	16,650
2,000	7 x 6½	3,625	20,000	18½ x 11	23,150
3,000	8 x 8	4,475	30,000	22 x 11	31,975
4,000	8 x 11	5,425	50,000	24 x 15	46,250
5,000	9 x 10	6,200	75,000	34 x 11	68,550
7,500	10 x 12	8,325	100,000	34 x 15	86,750

WOOD TOWERS

Costs are averages of painted towers for flat-bottom tanks, including added cost of erection of tank above ground, footings, piping to ground, valves, balconies, ladders to balconies, and indicator gauges.

CAPACITY (gallons)	TOWER HEIGHT 12'	25'	50'	75'	100'
1,000	$ 5,300	$ 6,400	----	----	----
1,500	6,000	7,750	$12,600	----	----
2,000	6,800	8,500	13,850	$21,950	----
3,000	7,850	9,800	15,600	24,850	$ 39,400
5,000	9,200	11,800	18,650	28,550	45,100
10,000	12,400	14,950	23,300	35,350	53,650
20,000	19,200	23,150	35,500	52,600	78,250
30,000	22,750	27,150	40,450	60,050	88,450
40,000	25,250	30,450	45,100	66,200	95,750
50,000	----	33,500	48,700	70,500	106,000
75,000	----	----	56,650	83,100	128,800

In areas subject to earthquakes or hurricanes, a rough estimate of additional cost can be obtained from the following formulas:

12' towers	$1,375 plus $ .040 per gallon of tank capacity
25'	2,025 plus $ .060 per gallon of tank capacity
50'	3,025 plus $ .081 per gallon of tank capacity
75'	5,150 plus $ .116 per gallon of tank capacity
100'	8,825 plus $ .151 per gallon of tank capacity

VAULTED ABOVEGROUND PETROLEUM STORAGE TANKS

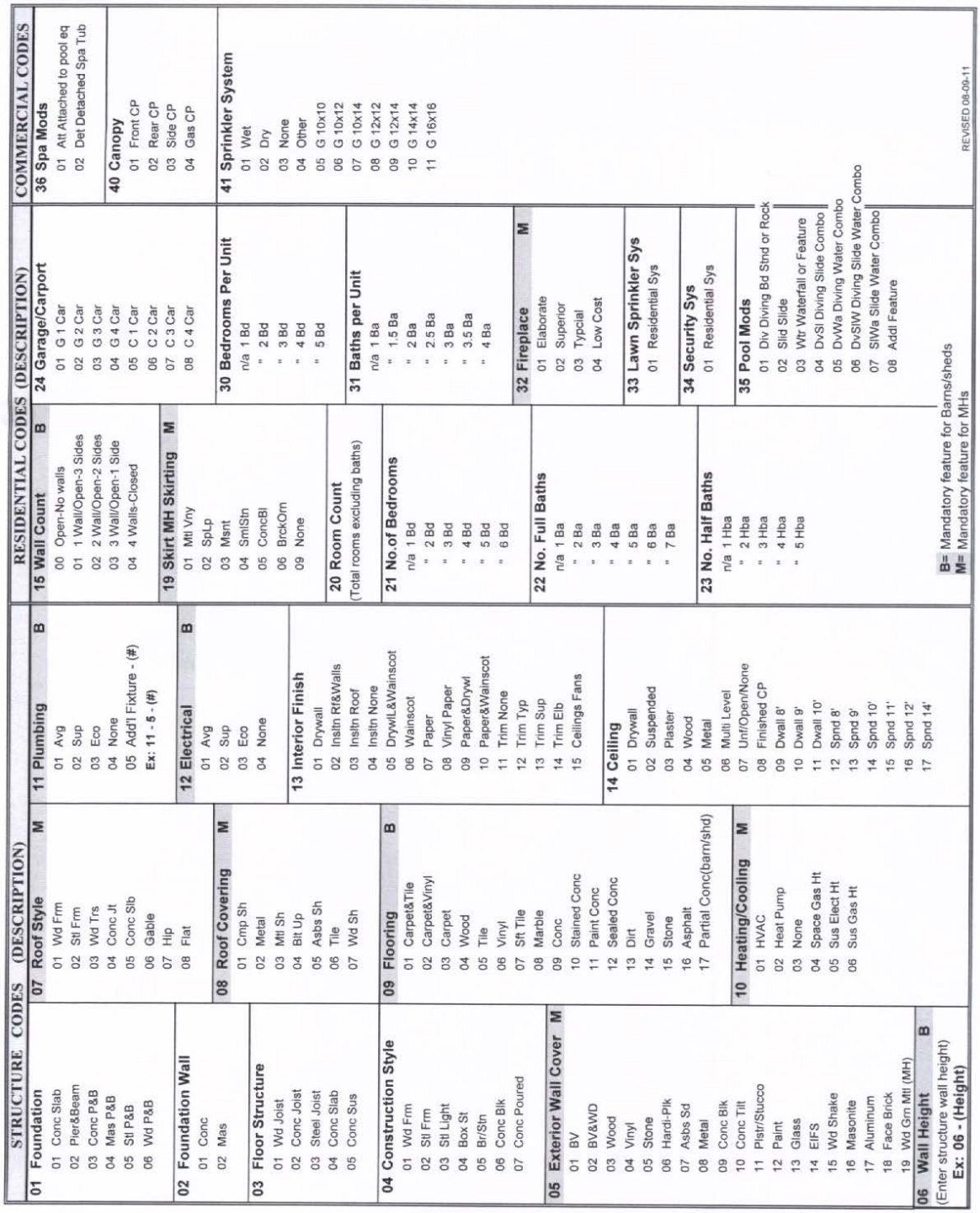
Costs are average for UL-listed cylindrical internal steel tanks encased inside a 6" precast concrete vault, providing a 2-hour fire wall and ballistic protection. The protective concrete outer shell is precast in two sections, allowing periodic internal tank inspection. Concrete support legs are cast monolithic with the lower section of the concrete vault. Costs include fittings and installation on the buyer's foundation. For supplemental internal overspill containment tank (7 to 25 gallons), add $1,200 to $2,975. For steps and platform, add $725 to $3,125.

CAPACITY (gallons)	SIZE (feet)	SINGLE COMPARTMENT Single Wall	SINGLE COMPARTMENT Double Wall	DUAL COMPARTMENT Single Wall	DUAL COMPARTMENT Double Wall
300	4½ x 7	$ 13,350	$ 20,125	----	----
550	5½ x 7	15,075	22,875	----	----
1,000	5½ x 12	19,375	29,800	$ 21,950	$ 33,500
2,000	7 x 14	29,675	46,100	32,425	50,250
4,000	9½ x 13	46,550	72,300	53,650	83,700
6,000	9½ x 18	59,825	93,425	67,425	105,375
8,000	9½ x 23	79,750	124,175	86,875	135,575
10,000	9½ x 29	86,875	135,575	93,500	146,375
12,000	9½ x 34	104,875	164,625	112,475	176,000

The data included on this page becomes obsolete after November 2012.

swiftestimator.com - building cost reports online
12/2010

Commercial Features Codes



STRUCTURE CODES (DESCRIPTION)

01 Foundation
- 01 Conc Slab
- 02 Pier&Beam
- 03 Conc P&B
- 04 Mas P&B
- 05 Stl P&B
- 06 Wd P&B

02 Foundation Wall
- 01 Conc
- 02 Mas

03 Floor Structure
- 01 Wd Joist
- 02 Conc Joist
- 03 Steel Joist
- 04 Conc Slab
- 05 Conc Sus

04 Construction Style
- 01 Wd Frm
- 02 Stl Frm
- 03 Stl Light
- 04 Box St
- 05 Br/Stn
- 06 Conc Blk
- 07 Conc Poured

05 Exterior Wall Cover M
- 01 BV
- 02 BV&WD
- 03 Wood
- 04 Vinyl
- 05 Stone
- 06 Hardi-Plk
- 07 Asbs Sd
- 08 Metal
- 09 Conc Blk
- 10 Conc Tilt
- 11 Plstr/Stucco
- 12 Paint
- 13 Glass
- 14 EIFS
- 15 Wd Shake
- 16 Masonite
- 17 Aluminum
- 18 Face Brick
- 19 Wd Grn Mtl (MH)

06 Wall Height B
(Enter structure wall height)
Ex: 06 - (Height)

07 Roof Style M
- 01 Wd Frm
- 02 Stl Frm
- 03 Wd Trs
- 04 Conc Jt
- 05 Conc Slb
- 06 Gable
- 07 Hip
- 08 Flat

08 Roof Covering M
- 01 Cmp Sh
- 02 Metal
- 03 Mtl Sh
- 04 Bit Up
- 05 Asbs Sh
- 06 Tile
- 07 Wd Sh

09 Flooring B
- 01 Carpet&Tile
- 02 Carpet&Vinyl
- 03 Carpet
- 04 Wood
- 05 Tile
- 06 Vinyl
- 07 Sft Tile
- 08 Marble
- 09 Conc
- 10 Stained Conc
- 11 Paint Conc
- 12 Sealed Conc
- 13 Dirt
- 14 Gravel
- 15 Stone
- 16 Asphalt
- 17 Partial Conc(barn/shd)

10 Heating/Cooling M
- 01 HVAC
- 02 Heat Pump
- 03 None
- 04 Space Gas Ht
- 05 Sus Elect Ht
- 06 Sus Gas Ht

11 Plumbing B
- 01 Avg
- 02 Sup
- 03 Eco
- 04 None
- 05 Add'l Fixture - (#)
  Ex: 11 - 5 - (#)

12 Electrical B
- 01 Avg
- 02 Sup
- 03 Eco
- 04 None

13 Interior Finish
- 01 Drywall
- 02 Insltn Rf&Walls
- 03 Insltn Roof
- 04 Inslin None
- 05 DrywlL&Wainscot
- 06 Wainscot
- 07 Paper
- 08 Vinyl Paper
- 09 Paper&Drywl
- 10 Paper&Wainscot
- 11 Trim None
- 12 Trim Typ
- 13 Trim Sup
- 14 Trim Elb
- 15 Ceilings Fans

14 Ceiling
- 01 Drywall
- 02 Suspended
- 03 Plaster
- 04 Wood
- 05 Metal
- 06 Multi Level
- 07 Unf/Open/None
- 08 Finished CP
- 09 Dwall 8'
- 10 Dwall 9'
- 11 Dwall 10'
- 12 Spnd 8'
- 13 Spnd 9'
- 14 Spnd 10'
- 15 Spnd 11'
- 16 Spnd 12'
- 17 Spnd 14'

RESIDENTIAL CODES (DESCRIPTION)

15 Wall Count B
- 00 Open-No walls
- 01 1 Wall/Open-3 Sides
- 02 2 Wall/Open-2 Sides
- 03 3 Wall/Open-1 Side
- 04 4 Walls-Closed

19 Skirt MH Skirting M
- 01 Mtl Vny
- 02 SpLp
- 03 Msnt
- 04 SmlStn
- 05 ConcBl
- 06 BrckOrn
- 09 None

20 Room Count
(Total rooms excluding baths)

21 No.of Bedrooms
- n/a 1 Bd
- " 2 Bd
- " 3 Bd
- " 4 Bd
- " 5 Bd
- " 6 Bd

22 No. Full Baths
- n/a 1 Ba
- " 2 Ba
- " 3 Ba
- " 4 Ba
- " 5 Ba
- " 6 Ba
- " 7 Ba

23 No. Half Baths
- n/a 1 Hba
- " 2 Hba
- " 3 Hba
- " 4 Hba
- " 5 Hba

24 Garage/Carport
- 01 G 1 Car
- 02 G 2 Car
- 03 G 3 Car
- 04 G 4 Car
- 05 C 1 Car
- 06 C 2 Car
- 07 C 3 Car
- 08 C 4 Car

30 Bedrooms Per Unit
- n/a 1 Bd
- " 2 Bd
- " 3 Bd
- " 4 Bd
- " 5 Bd

31 Baths per Unit
- n/a 1 Ba
- " 1.5 Ba
- " 2 Ba
- " 2.5 Ba
- " 3 Ba
- " 3.5 Ba
- " 4 Ba

32 Fireplace M
- 01 Elaborate
- 02 Superior
- 03 Typcial
- 04 Low Cost

33 Lawn Sprinkler Sys
- 01 Residential Sys

34 Security Sys
- 01 Residential Sys

35 Pool Mods
- 01 Div Diving Bd Stnd or Rock
- 02 Slid Slide
- 03 Wtr Waterfall or Feature
- 04 DvSl Diving Slide Combo
- 05 DvWa Diving Water Combo
- 06 DvSlW Diving Slide Water Combo
- 07 SlWa Slide Water Combo
- 08 Addl Feature

B= Mandatory feature for Barns/sheds
M= Mandatory feature for MHs

COMMERCIAL CODES

36 Spa Mods
- 01 Att Attached to pool eq
- 02 Det Detached Spa Tub

40 Canopy
- 01 Front CP
- 02 Rear CP
- 03 Side CP
- 04 Gas CP

41 Sprinkler System
- 01 Wet
- 02 Dry
- 03 None
- 04 Other
- 05 G 10x10
- 06 G 10x12
- 07 G 10x14
- 08 G 12x12
- 09 G 12x14
- 10 G 14x14
- 11 G 16x16

REVISED 08-09-11

Commercial Misc Reference Sheets

Commercial Reference Sheets

Com Improvement Percentage Guidelines
10-30% FOUNDATION All work from beginning up to, but not including, raising of exterior walls.
30-40% OPEN FRAME All framing work in exterior walls, ceilings, roofs and interior bearing walls.
40-50% BOXED All roof and exterior wall coverings and a primer coat of paint if required.
50-60% WEATHER-PROOF All openings and primer coat of paint if required.
60-70% INTERIOR WALL Raising interior nonbearing walls and interior wall and ceiling coverings.
70-80% TRIM All millwork and cabinet work.
80-90% PAINT All painting, sanding, and finishing.
90-100% FINISH All clean-up, hardware, and floor finish.

Com HVAC	
Ceiling Height	Sqft/ Ton
8	500
9	445
10	400
11	364
12	333
14	285
16	250
18	222
20	200
22	182

Property Characteristics					
UTILITIES		TOPOGRAPHY		ROAD ACCESS	
W - *Water*	1	**LEV** - *Level*	1	**UIMP** - *Unimproved*	1
S - *Sewer*	2	**SLP** - *Sloping*	2	**GRAV** - *Graveled*	2
E - *Electricity*	3	**HIGH** - *High*	3	**PVD** - *Paved*	3
G - *Gas*	4	**LOW** - *Low*	4	**C&G** - *Curb & Gutter*	4
SP - *Septic Tank*	5	**RAV** - *Ravine*	5	**SDWK** - *Sidewalk*	5

ENTRY CODES	
Code	Definition
FCO	Field conf w/owner (no walk thru)
NOH	No one home (no walk thru)
WT	Walk thru
PLNS	Drawn from plans (no walk thru)
PICT	Pictometry (no walk thru)
EST	Estimated (no walk thru)

Commercial Appraiser Tab Information

APPRAISER TAB INFO for Com Properties

UNDER COMMENT

PTD INFO: PTDYR $XX,XXX. (*Used for commercial properties only*)
EXAMPLE: PTD01 $419,806.

FEE APPRAISAL INFO: (F/APP, $XX,XXX, MM-DD-YR.)
EXAMPLE: (F/APP, $520,000, 06-05-02.)

UNDER REMARKS

Date contract was written.

CONTRACT FOR SALE: COS, MM-DD-YR $XX,XXX, "source - GTE/GTR" , date.
EXAMPLE: COS,10-05-01 $48,600, GTR, 06-02.

LISTING INFO: 4SALE $XX,XXX, $/sf, "source – ie COLDWELL BANKER, FSO/FLYER", MM-DD-YR.
EXAMPLE: 4SALE $95,000, $85.00/sf, KELLY REALTORS, 02-19-01.

For rent houses, duplexes, tri & four plexes.

RENTAL "school", xBd/xBa, $XXX, MM-YR.
EXAMPLE for house: RENTAL WACO, 2Bd/1Ba, $375, 100% OCC, 05-02.
EXAMPLE for duplex: RENTAL WACO, 2Bd/1Ba, $750($375/ea) 50% OCC, 05-02.
EXAMPLE for 4plex: RENTAL WACO, 2Bd/1Ba, $1450($350-375/ea) 75% OCC, 05-02.
*Then go to **IDENTIFICATION tab*** under ***DBA*** : RENTAL "school"
EXAMPLE: RENTAL WACO

(Bd & Ba are per unit, rent is per month.)

Commercial Land Tables

Commercial Land Quality Table
General -- 2003

Land Table	Description	Code	Base $/SF
QX+.COMLND	Excellent Qual Plus	X +	25.00
QX0.COMLND	Excellent Qual	X	20.00
QX-.COMLND	Excellent Qual Minus	X -	18.00
QA+.COMLND	Very Good Qual Plus	A +	16.00
QA0.COMLND	Very Good Qual	A	14.00
QA-.COMLND	Very Good Qual Minus	A -	12.00
QB+.COMLND	Good Qual Plus	B +	10.00
QB0.COMLND	Good Qual	B	8.00
QB-.COMLND	Good Qual Minus	B -	7.00
QC+.COMLND	Average Qual Plus	C +	6.00
QC0.COMLND	Average Qual	C	5.00
QC-.COMLND	Average Qual Minus	C -	4.50
QD+.COMLND	Fair Qual Plus	D +	4.00
QD0.COMLND	Fair Qual	D	3.50
QD-.COMLND	Fair Qual Minus	D -	3.00
QE+.COMLND	Low Qual Plus	E +	2.50
QE0.COMLND	Low Qual	E	2.00
QE-.COMLND	Low Qual Minus	E -	1.50
QF+.COMLND	Very Low Qual Plus	F +	1.00
QF0.COMLND	Very Low Qual	F	0.75
QF-.COMLND	Very Low Qual Minus	F -	0.50

Commercial Land Adjustment Codes

Commercial Strip Land Adjustment Type Codes
General -- 2003/2004

Type / Code	Description	Adjustment
NC1	Com Nbhd Cluster Low	115%
NC2	Com Nbhd Cluster Typical	125%
NC3	Com Nbhd Cluster Good	135%
NC4	Com Nbhd Cluster Exc	150%
CI1	Corner Influence Very Low	110%
CI2	Corner Influence Low	115%
CI3	Corner Influence Typical	120%
CI4	Corner Influence Good	125%
CI5	Corner Influence Very Good	135%
CI6	Corner Influence Excellent	150%
VA1	Visibility Access Fair	90%
VA2	Visibility Access Poor	80%
VA3	Visibility Access Very Poor	70%
VA4	Visibility Access LTD (Extreme)	60%
VA *	Visibility & Access (Describe)	User Defined *

Strip Type Adjustments for Commercial NBHD's by Land Segment

A. **'NC'** Nbhd Business Cluster Adj - In a Commercial Strip Nbhd Near Major Intersections Land Use Density Sometimes Rises Significantly. Use "NC" - NBHD Cluster Codes to Adjust Land Valuations.
B. **"CI"** Corner Influence Codes 1-5 for Type of Corner Intersection
C. **"CI"** May Be Used in Conjuction With Any Adjustment
D. **"VA"** Visiblity & Access Adj Reflects General Lack of Market Appeal Contrasted to Other Sites in a NBHD (Generally Due a Site's Location or Accessiblity Within the Nbhd)

Examples of Other Common 'Influence Factors' By Land Segment

ECON	Economic	User Defined *
FUNC	Functional	User Defined *
OTH	Other (Describe)	User Defined *
PHYS	Physical Limitations	User Defined *
TOPO	Topography	User Defined *
FQFL	Frequent Flooding	User Defined *
RSTR	Restrictive or NonConforming	User Defined *
ADJ	Misc Adjustment (Describe)	User Defined *
SCM	Comp Sale/Mkt App Adj	User Defined *
SOS	Sale of Subject Adj	User Defined *
ESMT	Encumbrance Esmt P/L Transmission Ln	User Defined *

* **'User Defined'** -- Appraiser Must State Reason for Adjustment in 'Description' Field in Type Adjustment

Note: Other Factors Should be Applied to Land Segments on an Individual Basis, Such as, Limited Only to the Area Directly Effected by the Physical Limitation (ie. Flood Plain, Easement or Restrcition)

Barn Listing Codes

Building Class Code and the Base $/SF Showing

Type (If Possible could we have diff types in the Matrix)

Type	Method	Class	$/Unit (BaseValue)
402	S	AB1	25.64
402	S	AB2	19.13
402	S	FB1	21.27
402	S	FB2	16.10
402	S	FB3	12.86
402	S	FB4	14.54
440	S	FB5	18.36
440	S	FB6	12.44
440	S	FB7	9.70
402	S	FB8	24.14
440	S	FBL	50% of Attached Unit Value (the Previous Entry)

Cornelius - Is it possible to mix "TYPES" as shown above and if so can they be duped like below?
Also can we do a look up table to use different Depr?

460	R	FB1	21.27	
460	R	FB2	16.10	
460	R	FB6	12.44	
461	R	FB1	21.27	
461	R	FB2	16.10	
461	R	FB6	12.44	

Where:

402 = Barn
440 = Shed
460 = Mtl Bldg
461 = Work Shop

R = Residential
S = Shed/FarmBldg

AB1 = Ag Bank Barn or Dairy Parlor/Barn
AB2 = Ag Flat Barn
FB1 = Farm Bldg Metal Frame of Light Comm Construction (On or Near Professional Quailty & Workmanship some Name Brand Manfacturors Butler Mesco Mueller)
FB2 = Frm Bldg Farm/Ranch Construction (Lighter Frame - Some Home Built)
FB3 = Frm Bldg Wd Frame of farm/ranch construction
FB4 = Farm Bldg Slant Wall or Quonset Style Construction
FB5 = Pole (Mtl or Wd) Frame Construction Horse or Cattle Stalls /w closed storages (includes specialty occupancies Hog & Sheep Sheds)
FB6 = Pole Frame (Mtl or Wood) Constr. Farm/Ranch Utilitarian Bldgs for many occupancies (includes specialty occupancies Turkey & Poultry Barns/Sheds)
FB7 = Minimum Pole Fr Construction Light Sheds or Shelters - Little or no Finish
FB8 = Horse Stables (No Estate or High Value Stables)
FBL = Lean to
Arenas should be classed as FB2 or FB6 Depending on Contstruction Type & Finish

Sub Class Factors

(Quality/Cost Modifiers)

Qual/Desc	Code	Factor
Exc Plus	X+	3.10
Excellent	X0	2.50
Exc Minus	X-	2.10
V Gd Plus	A+	1.67
V Gd	A0	1.55
V Gd Minus	A-	1.45
Good Plus	B+	1.35
Good	B0	1.26
Good Minus	B-	1.17
Avg Plus	C+	1.08
Avg	C0	1.00
Avg Minus	C-	0.92
Fair Plus	D+	0.85
Fair E	D0	0.78
Fair Minus	D-	0.70
Low Plus	E+	0.60
Low	E0	0.50
Low Minus	E-	0.40

15 Wall Count Barn Sheds -- "Adjustment"

Description	No. of Sides (Code)	% of Base (Factor)	"Improvement Detail Attribute'
Closed	4	1.00	04 Closed- 4 Walls
One Side Open	3	0.87	03 Open 1 Side
2 Sides Open	2	0.75	02 Open 2 Sides
3 Sides Open	1	0.60	01 Open 1 Side
Open	0	0.50	00 Open- No Walls

12 Electrical -- Electrical Cost Adjustment as a Percent (Fa

Descr	Code	Factor	"Improvement Detail Attribute" in PACS
Avg	1	100.00	01Avg Average
Sup	2	102.41	02Sup Superior
Eco	3	98.63	03Eco Economy
None	0	97.18	04Non None

11 Plumbing -- Plumbing Cost Adjustment as a Percent (Factor)

Descr	Code	Factor	"Improvement Detail Attribute" in PACS
Avg	1	100.00	01Avg Average
Sup	2	102.41	02Sup Superior
Eco	3	98.39	03Eco Economy
None	0	96.78	04Non None

09 Flooring -- Floor Cost Adjustment as a Percent (Factor)

Floor Desc	Factor	"Improvement Detail Attribute" in PACS
Concrete	100.00	09Cnc Concrete
Partial Conc	91.67	17Prl Partial Conc Floor Barn/Shed
Ashpalt	83.33	16Asp Asphalt
Dirt	75.00	13Drt Dirt

Effective 11-28-07
Revised 11-28-12

Barn Listing Codes (pg 3)

Marshall & Swift: Sheds & Farm Buildings Section 17 Page 1-60 (May 2009)

Story Height Multpliers -- Wall Height Adjustments

Wall Ht Adj (Key Ht in Features)

Feet (Height)	Sq Ft Mult.	
5	0.887	
6	0.914	
7	0.943	
8	0.963	
9	0.981	
10	**1.000**	(***Base***)
11	1.019	
12	1.038	
13	1.058	
14	1.077	
15	1.102	
16	1.115	
17	1.138	
18	1.154	
19	1.177	
20	1.192	
21	1.216	
22	1.231	
23	1.255	
24	1.269	
25	1.300	
26	1.321	
27	1.335	
28	1.346	
29	1.375	
30	1.399	
32	1.423	
34	1.472	
36	1.500	

Sub Class Factors *(Quality/Cost Modifiiers)*

Qual/Desc	Code	Factor
Exc Plus	X+	3.10
Excellent	X0	2.50
Exc Minus	X-	2.10
V Gd Plus	A+	1.67
V Gd	A0	1.55
V Gd Minus	A-	1.45
Good Plus	B+	1.35
Good	B0	1.26
Good Minus	B-	1.17
Avg Plus	C+	1.08
Avg	C0	1.00
Avg Minus	C-	0.92
Fair Plus	D+	0.85
Fair E	D0	0.78
Fair Minus	D-	0.70
Low Plus	E+	0.60
Low	E0	0.50
Low Minus	E-	0.40

Barn Listing Codes (pg 4)

Index to Depreciation by Building Class(Class) by Quality of Construction (Sub Class)

SubClass	Sub Cl	Typical Life Expectancy by Building Class (Depreciation Table by Quality)										
Qual/Desc	Code	AB1	AB2	FB1	FB2	FB3	FB4	FB5	FB6	FB7	FB8	FBL *
Exc Plus	X+	30	30	30	30	25	30	30	30	25	30	30
Excellent	X0	30	30	30	30	25	30	30	30	25	30	30
Exc Minus	X-	30	30	30	30	25	30	30	30	25	30	30
V Gd Plus	A+	30	30	30	30	25	30	25	25	20	30	25
V Gd	A0	30	30	30	30	25	30	25	25	20	30	25
V Gd Minus	A-	30	30	30	30	25	30	25	25	20	30	25
Good Plus	B+	30	25	25	25	25	25	25	25	20	30	20
Good	B0	30	25	25	25	25	25	25	25	20	30	20
Good Minus	B-	30	25	25	25	25	25	25	25	20	30	20
Avg Plus	C+	25	20	25	25	20	25	20	20	15	25	15
Avg	C0	25	20	25	25	20	25	20	20	15	25	15
Avg Minus	C-	25	20	25	25	20	25	20	20	15	25	15
Fair Plus	D+	20	15	20	20	15	20	15	15	10	20	10
Fair E	D0	20	15	20	20	15	20	15	15	10	20	10
Fair Minus	D-	20	15	20	20	15	20	15	15	10	20	10
Low Plus	E+	10	10	20	15	10	20	15	15	10	15	10
Low	E0	10	10	20	15	10	20	15	15	10	15	10
Low Minus	E-	10	10	20	15	10	20	15	15	10	15	10

* FBL "Lean To" if Possible is 50% of previous building entry, Its depreciation if possible would be like "MAD"
Thus, if a Lean To is attached to a AB1 its RCN would be 50% of AB1 and its deprciation would be equal to AB1 depreciation.

Barn Listing Codes (pg 5)

Normal Depreciation Tables -- Farm Buildings 2010 to _____

Effective Age	Typical Life Expectancy in Years				
	30	25	20	15	10
	as a Percent Good -- Percentage				
1	99	99	99	99	99
2	97	97	95	93	92
3	94	94	89	86	83
4	90	90	84	78	72
5	86	85	78	71	65
6	83	81	73	64	58
7	80	77	68	58	51
8	76	74	63	53	44
9	73	70	58	48	37
10	70	67	54	43	30
11	68	64	50	39	29
12	66	61	46	36	28
13	64	59	43	32	26
14	62	56	40	30	24
15	60	52	37	27	22
16	58	48	35	25	20
17	56	44	32	25	
18	54	40	30	24	
19	51	36	28	24	
20	47	32	27	23	
21	43	29	25	23	
22	40	27	24	22	
23	37	25	23	22	
24	34	23	22	21	
25	31	21	21	21	
26	28	20	20	20	
27	25				
28	23				
29	22				
30	21				
31	21				
32	20				
33					
34					
35					

Residential & Duplex Code Sheet

Residential & Duplex Class Codes and Additive Codes 2010

Type	Method	Class	Description	% of Base (if Applicable)
Residential Base Stucture Codes for 2009				
MA1	R	"Class" **	1st Fl Struc Code 11	Base
MA2	R	11SEC	2nd Fl Struc Code 11	95.0%
MA3	R	11THI	3rd Fl Struc Code 11	90.0%
MA4	R	11FOU	4th Fl Struc Code 11	90.0%
MA5	R	11FIF	5th Fl Struc Code 11	90.0%
MA91	R	11HAL	1/2 Story Struc Code 11 Res	65.0%
MA92	R	11ATT	Attic Struc Code 11 Res	30.0%
MA93	R	11FIN	Finished Bsmt Struc Code 11	60.0%
MA94	R	11UNF	Unfinished Bsmt Struc Code 11	40.0%
MA1	R	"Class" **	1st Fl Struc Code 12 Duplex	Base
MA2	R	12SEC	2nd Fl Struc Code 12 Duplex	90.0%
MA3	R	12THI	3rd Fl Struc Code 12 Duplex	87.0%
MA4	R	12FOU	4th Fl Struc Code 12	87.0%
MA5	R	12FIF	5th Fl Struc Code 12	87.0%
MA91	R	12HAL	1/2 Story Struc Code 12	65.0%
MA92	R	12ATT	Attic Struc Code 12	30.0%
MA93	R	12FIN	Finished Bsmt Struc Code 12	60.0%
MA94	R	12UNF	Unfinished Bsmt Struc Code 12	40.0%

Feature Value Codes for 2009:
10 Htg/Coolx 01 HVAC
32 Fireplace EL SU TYP LO
11 Plumbing 05 Add'l Fixture
05 Exterior Wall 05 Stone Veneer

Residential Additive Codes for 2009				
11	R	PO	Open Porch (011 012 013 . . . 016)	25.0%
21	R	PCF	Closed Finished Porch (021 . . . 026)	55.0%
21	R	PCU	Closed Unf Porch (021 022 . . . 026)	45.0%
31	R	GRD ***	Det Garage - Res (031 032 033)	60.0%
41	R	GRA	Att Garage - Res (041 042 043)	50.0%
51	R	CPD ***	Carport Detached (051 052 053)	20.0%
61	R	CPA	Carport Attached (061 062 063)	20.0%
411	R	RCON	Res Concrete Drive	Scheduled
412	R	RASP	Res Asphalt Drive	Scheduled
413	R	ER2	Res Elevator 2 Stop	Scheduled
413	R	ER3	Res Elevator 3 Stop	Scheduled
413	R	ER4	Res Elevator 4 Stop	Scheduled
447	R	RS1	Utility Bldg-Frame	Scheduled
447	R	RS2	Utility Bldg-Metal	Scheduled
447	R	RS3	Utility Bldg-MTL/STN	Scheduled
452	R	T1	Inferior Terrace	Scheduled
452	R	T2	Avg Terrace	Scheduled
452	R	T3	Good Terrace	Scheduled
466	R	KE_$100K	Outdoor Kitchen $100K Generic Sch	Adj Factor Required
521	R	BATHI	Inferior Bathroom	Scheduled
522	R	BATHA	Average Bathroom	Scheduled
523	R	BATHS	Superior Bathroom	Scheduled
531	R	BLTNI	Inferior Built-Ins (Do Not Use)	Scheduled
532	R	BLTNA	Average Built-Ins (Do Not Use)	Scheduled
533	R	BLTNS	Superior Built-Ins (Do Not Use)	Scheduled
541	R	HFBATHI	Inferior Half Bath	Scheduled
542	R	HFBATHA	Average Half Bath	Scheduled
543	R	HFBATHS	Superior Half Bath	Scheduled
815	R	MP1	Single Space Mfg Home Site	Scheduled

* Other Codes in use are Hard Codes "SPEC" "EXCP" /w most to be converted later
** Class Examples: Structure Code 11WV4 or 12WV3+
*** If Main Area does not Exist Use Former Detached Carport & Detached Garage Class Codes

8/5/2009

Residential Mobile Home Code Sheet

Manufactored Housing Class Codes and Additive Codes 2009

Type	Method	Class	Description	Lf Exp	% of Base (if Applicable)
			Main Area Codes - Mfg Housing		
MA1	M	DLX	Lux Dbl MH	30 yr	Base-Scheduled
MA1	M	DLXM	Lux M Dbl MH	30 yr	"
MA1	M	DLXMM	Lux M- Dbl MH	30 yr	"
MA1	M	DLXP	Lux P Dbl MH	30 yr	"
MA1	M	DLXPP	Lux P+ Dbl MH	30 yr	"
MA1	M	DDX	Delx Dbl MH	35 yr	"
MA1	M	DDXM	Delx M Dbl MH	35 yr	"
MA1	M	DDXMM	Delx M- Dbl MH	35 yr	Base-Scheduled
MA1	M	DDXP	Delx P Dbl MH	35 yr	"
MA1	M	DDXPP	Delx P+ Dbl MH	35 yr	"
MA1	M	DST	Std Dbl MH	35 yr	"
MA1	M	DSTM	Std Minus Dbl MH	35 yr	"
MA1	M	DSTMM	Std M- Dbl MH	35 yr	Base-Sc
MA1	M	DSTP	Std P Dbl MH	35 yr	"
MA1	M	DSTPP	Std P+ Dbl MH	35 yr	"
MA1	M	DEC	Eco Dbl MH	35 yr	"
MA1	M	DECM	Eco Minus Dbl MH	35 yr	"
MA1	M	DECMM	Eco M- Dbl MH	35 yr	"
MA1	M	DECP	Eco Plus Dbl MH	35 yr	Base-Scheduled
MA1	M	DECPP	Eco Plus+ Dbl MH	35 yr	"
MA1	M	SLX	Lux Sngl MH	35 yr	"
MA1	M	SLXM	Lux Minus Sngl MH	35 yr	"
MA1	M	SLXMM	Lux M- Sngl MH	35 yr	"
MA1	M	SLXP	Lux Plus Sng MH	35 yr	"
MA1	M	SLXPP	Lux Plus+ SngMH	35 yr	"
MA1	M	SDX	Delx Sngle MH	30 yr	"
MA1	M	SDXM	Dexl Minus Sngl MH	30 yr	"
MA1	M	SDXMM	Delx M- Sngl MH	30 yr	"
MA1	M	SDXP	Delx Plus Sngl MH	30 yr	"
MA1	M	SDXPP	Delx Plus+ Sng MH	30 yr	"
MA1	M	SST	Std Single MH	30 yr	Base-Scheduled
MA1	M	SSTM	Std Minus Sngl MH	30 yr	"
MA1	M	SSTMM	Std Minus- Sng MH	30 yr	"
MA1	M	SSTP	Std Plus Sngl MH	30 yr	"
MA1	M	SSTPP	Std Plus+ Sngl MH	30 yr	"
MA1	M	SEC	Eco Single MH	30 yr	"
MA1	M	SECM	Eco Minus Sng MH	30 yr	"
MA1	M	SECMM	Eco M- Sngl MH	30 yr	"
MA1	M	SECP	Eco Plus Sngl MH	30 yr	"
MA1	M	SECPP	Eco Plus+ Sngl MH	30 yr	Base-Scheduled
MA1	M	AFR	Attached Frame 1st Fl MH	n/a	75.0%
			Manufactored Housing Additives		
810	M	CP	Carport /w Floor MH		25.0%
810	M	CP2	Carport Dirt Floor MH		20.0%
810	M	GA1	Garage Res Type MH		55.0%
810	M	GA2	Garage Mtl Roof Sdx MH		50.0%
810	M	PA	Patio Alum Cov Slab MH		25.0%
810	M	PE	Encl Po Wd Mtl Glass Addn MH		50.0%
810	M	PL	Patio Slab Only MH		10.0%
810	M	PO	Open Porch		30.0%
810	M	PS	Screen Porch MH		35.0%
810	M	RASP	Res Asphalt Drive		3.5%
810	M	RCON	Res Concrete Drive		7.0%
810	M	RS1	Utility Bldg-Frame		45.0%
810	M	RS2	Utility Bldg-Metal		40.0%
810	M	RS3	Utility Bldg-MTL/STN		50.0%
810	M	WD	Wood Deck MH		20.0%
815	R	MP1	Single Space Mfg Home Site		Scheduled

Where 1st Character = D or S for Double or Single Wide

Where 2nd & 3rd Character = LX = Luxury, DX = Deluxe, ST = Standard or EC = Economy Quality Class / Grade

Where 4th & 5th Character = M = Minus, MM = Minus Minus, P = Plus and PP = Plus Plus

3/24/2009
Rev 5/9/09

Residential Residence & Barn Listing Sheet

Listing order of Improvement Detail - Residence

Type	METHOD	Detail	Class Code	FEATURES		ADD'L INFO
MA1	R	1st Floor	**SEE CLASSING CHART	**SEE FEATURE CHART		
MA2	R	2nd Floor	11SEC			
041/031	R	ATT/DET GAR	GRA/GRD			
061/051	R	ATT/DET CP	CPA/CPD			
011	R	OPEN PORCH 1ST	PO			
012	R	OPEN PORCH 2ND	PO			
021	R	CLOSED FIN/UNFIN PORCH	PCF/PCU			
521/522/523	R	INF/AVG/SUP BATH	BATHI/BATHA/BATHS			
541/542/543	R	INF/AVG/SUP HALF BATH	HFBATHI/HFBATHA/HFBATHS			
411	R	CONC DRWAY	RCON			
412	R	ASPHALT DRWAY	RASP			
413	R	2 STOP/3 STOP/4 STOP ELEVATOR	ER2/ER3/ER4			**INPUT IN AREA: 1
417	R	FENCE CHAINLINK 4'	FC1			
		FENCE CHAINLINK 6'	FC2			
		FENCE CHAINLINK 6' 3 Std BW	FC3			
		FENCE CHAINLINK 6'/w COILS/SLATS	FC4			
		FENCE METAL 5'-7'	FM1			
		FENCE WROUGHT IRON TYPICAL	FM2			
		FENCE WROUGHT IRON ELABORATE	FM3			
		FENCE WOOD 5'-6'	FW1			
		MASONRY WALL TYPICAL	MW1			
		MASONRY WALL GOOD	MW2			
		MASONRY WALL ELABORATE	MW3			**INPUT IN AREA PERIMETER OF FENCE
449	R	POOL GUNITE/VINYL/CONCRETE REINFORCED/FIBERGLASS	RP1/RP2/RP3/RP4	35- [01 DIVING BOARD, 02 SLIDE, 03 WATERFALL/WATER FEATURE, 04 DIVING/SLIDE COMBO, 05 DIVING/WATER COMBO, 06 DIVING/SLIDE/WATER COMBO, 07 SLIDE/WATER COMBO, 08 ADD'L FEATURE]		**INPUT IN AREA THE AREA OF THE POOL
442	R	SPA WHIRLPOOL ECO(4-6 PPL)/AVG(7-8 PPL)/GOOD(9-10+ PPL)	SW1/SW2/SW3	36- [01 ATTACHED TO POOL; USES COMMON FILTER, 02 DETACHED FROM POOL		**INPUT IN AREA: 1
467	R	POOLHSE FRAME/POOLHSE MTL/POOLHSE STONE-MTL/ POOLHSE BRK-MTL	RS1/RS2/RS3/RS4	10, 11		
439	R	DECK TYP/GOOD/ELAB	T5/T6/T7			
452	R	TERRACE INF/AVG/GOOD/ELAB	T1/T2/T3/T4			
447	R	STG FRAME/STG MTL/STG STONE-MTL/STG BRK-MTL	RS1/RS2/RS3/RS4			
421	C	GREENHOUSE HOOP/ECON/AVG/GOOD	GH1/GH2/GH3/GH4			
416	R	STORM SHELTER	MS100K			**MANUALLY APPRAISE IMP DETAIL IN THE BASE YEAR BY USING 'ADJ FACTOR' PERCENTAGE

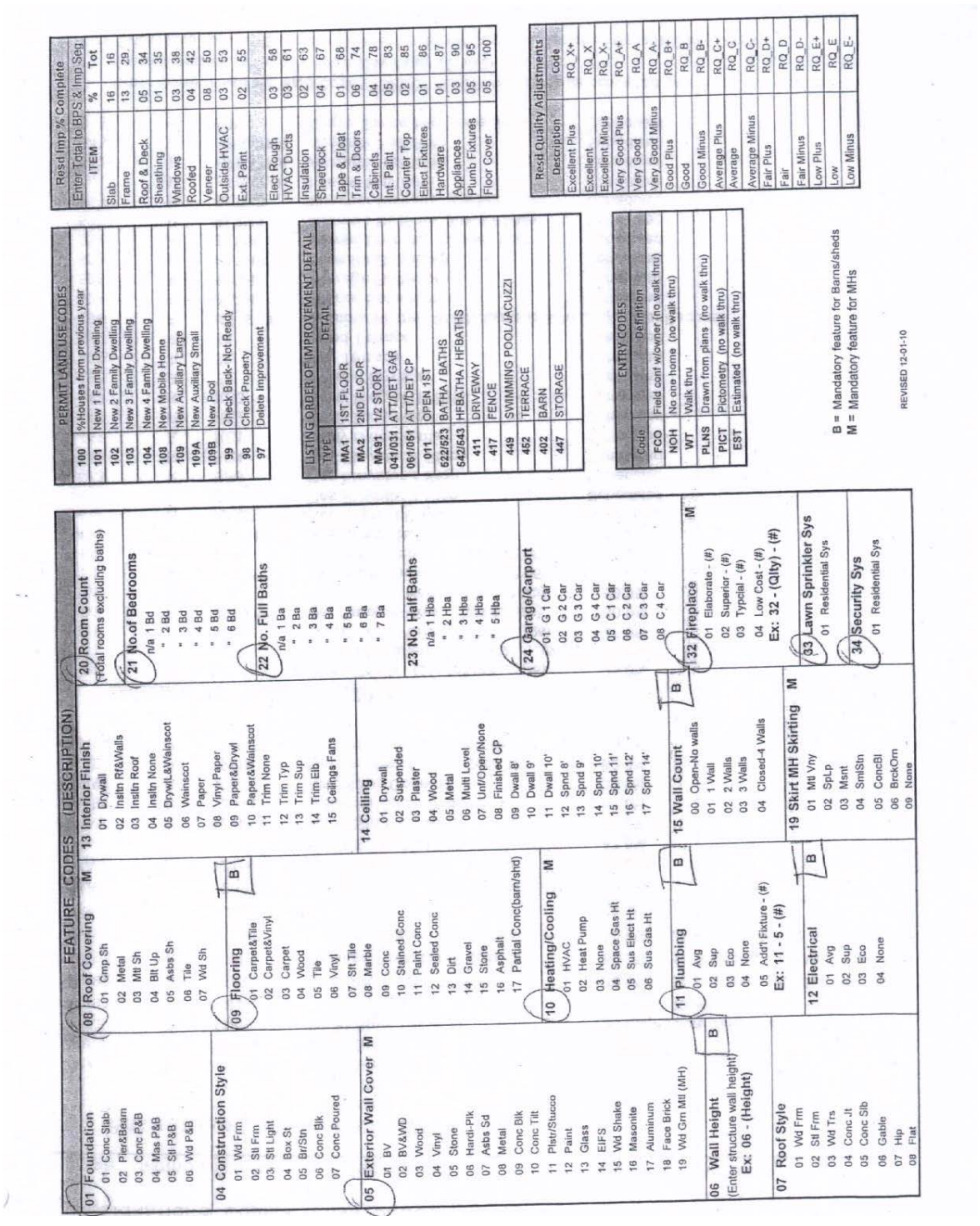
Residential Residence & Barn Listing Sheet (pg 2)

Type	METHOD	Detail	Class Code	FEATURES	ADD'L INFO
466	R	OUTDOOR KITCHEN	KE_100K		**MANUALLY APPRAISE IMP DETAIL IN THE BASE YEAR BY USING 'ADJ FACTOR' PERCENTAGE
465	SP	GAZEBO	EXCP		**$25/SQFT

BARN SCHEDULE

TYPE	METHOD	CLASS/DESCRIPTION	SUBCLASS	FEATURES
402 (BARN)	B	AB1 - AG BANK BARN OR DAIRY PARLOR/BARN AB2 - AG FLAT BARN FB1 - FARM BLDG MTL FRM (ON OR NEAR PROF QLTY/BUTLER, WILSON, MESCO, MUELLER) FB2 - FARM BLDG FRM (LIGHTER FRAME-SOME HOME BUILT) FB3 - FARM BLDG WD FRAME FB4 - FARM BLDG SLANT WALL/QUONSET STYLE FB8 - HORSE STABLES (NO ESTATE OR HIGH VALUE STABLES)	A+,AO,A- THROUGH E+,EO,E- TYPICAL IS CO ADJUST BASED ON CONDITION FROM CO	06-WALL HEIGHT 09-FLOORING TYPE 11-PLUMBING TYPE 12-ELECTRICAL TYPE 15-NUMBER OF WALLS
404 (CANOPY)	B	FB5 - POLE (MTL OR WD) FRAME HORSE OR CATTLE STALLS W/CLOSED STG FB6 - POLE (MTL OR WD) FRAME FARM/RANCH UTLITARIAN BLDGS (TURKEY/POULTRY FB7 - MINIMUM POLE FRAME LIGHT SHED OR SHELTER W/LITTLE OR NO FINISH FBL - LEAN TO	SAME	SAME
440 (SHED)	B	FB5 - POLE (MTL OR WD) FRAME HORSE OR CATTLE STALLS W/CLOSED STG FB6 - POLE (MTL OR WD) FRAME FARM/RANCH UTLITARIAN BLDGS (TURKEY/POULTRY FB7 - MINIMUM POLE FRAME LIGHT SHED OR SHELTER W/LITTLE OR NO FINISH FBL - LEAN TO	SAME	SAME
460 (MTL BLDG)	B	FB1 - FARM BLDG MTL FRM (ON OR NEAR PROF QLTY/BUTLER, WILSON, MESCO, MUELLER) FB2 - FARM BLDG FRM (LIGHTER FRAME-SOME HOME BUILT) FB6 - POLE (MTL OR WD) FRAME FARM/RANCH UTLITARIAN BLDGS (TURKEY/POULTRY	SAME	SAME
461 (WORKSHOP)	B	FB1 - FARM BLDG MTL FRM (ON OR NEAR PROF QLTY/BUTLER, WILSON, MESCO, MUELLER) FB2 - FARM BLDG FRM (LIGHTER FRAME-SOME HOME BUILT) FB6 - POLE (MTL OR WD) FRAME FARM/RANCH UTLITARIAN BLDGS (TURKEY/POULTRY	SAME	SAME

Residential Features Codes Sheet



Clerical Outline-Periodic Re-Inspection Procedures

CLERICAL OUTLINE - PERIODIC RE-INSPECTION PROCEDURES September 27, 2012

First phase *

Revised 9-27-2012

I. Assigned ISD – Commercial appr preparations
-obtain Wendy Bennet cards from Ben/Linda/Jamey for the school district
-Pat/appraiser print out C2, B1, F1, F2, F3, F4, J1, J2, J3, J4, J5, J6, J7 & J8 in geo order
-Pat/appraiser prints out commercial nbhd "900's" without commercial state code, generally includes cat. E&D & some C1 & A1 in geo order
-forward to clerical A) W. Bennett & B) soft card

II. 3 way match – clerical preparation
-for ISD pull hard cards from file cabinet & pull the ISD BPS file
-collate by geo the four (4) source docs in this manner:
   A. Place soft cards from appr in geo order (ST CD printout & NB "900's" print out). Note = this step defines scope of work (total parcel count in ISD from parcel 1 to 9999)
   B. Place/file/attach Wendy Bennett cards with full ISD geo cards in "a" above
   C. Place/file/attach hard cards from file cabinet with soft cards
   D. Then place BPS hard cards & related BPS paper work with soft cards. Note=BPS materials must not be misplaced/or mislaid. Because any BPS not completed by clerical or appraiser in the next step must be completed in field & all existing BPS materials & this info must be returned to BPS folder.
   E. Any unmatched hard cards require additional research. Generally, they can be corrected & placed in GEO order after GEO number has been corrected to new acct no. Or this is a deleted acct.
   F. If a hard card remains unmatched after 'step E', submit it to a commercial appraiser for research and /or completion.

III. Clerical re-inspection procedures
-after substantial completion of 'step II'
   A. Land features
   B. Improvement features for all substantial 1st floor main areas
   C. Sketches completed, verified & keyed

-sketching, land & imp. Features of freestanding or single type multi-tenant building could generally be completed by clerical & forwarded to appraiser for review and completion

-on complicated properties & vacant land, land features are to be completed and any imp features & sketching may be completed to a point; then appraiser may be required to complete. Clerical should work closely with appraisers on this as it is an art (somewhat subjective, not a science). *"Don't be afraid to ask dumb questions, they are easier to handle than dumb mistakes"*

-clerical will forward updated/completed soft card/Wendy card/BPS materials & hard card to appraiser (note: do not separate the 2 way, 3 way or 4 way match. Record must stay intact (together for completeness)

*COMMERCIAL DEPT NOT RESPONSIBLE FOR GROUP CODE FOR CAPITAL APPRAISAL

Clerical Outline-Periodic Re-Inspection Procedures (pg 2)

CLERICAL OUTLINE - PERIODIC RE-INSPECTION PROCEDURES September 27, 2012

IV. Periodic re-inspection procedures for appraiser
-from records submitted by clerical, appraiser will correct & update or otherwise make provisions to complete inspection per IAAO & MCAD periodic re-inspection procedures such as nbhd, region, subset, sub market, property use, visibility, access, market region, nbhd/econ area property type, class on the PACS tabs identification, prop codes and income; complete imps, updates & corrections
Note: -appraiser should update & correct BPS file at this time. Thereby, completing as many BPS records as reasonable possible.

V. Appraiser will forward completed/updated soft & hard cards to clerical
-appraiser should make provisions that last appr, last appr date, land appraiser & value appraiser be updated as required by clerical on personally – mutually agreed.
-clerical & appraiser completes 'step iv' hard card is to be scanned & stamped scanned (note: scanning is to be done last in order that appraiser updates to hard card may be captured)

VI. This is a draft on 1-10-12 & steps to I, II, III, IV, V, & will be revised & updated to make them more concise & efficient, (especially in regards to step V.)

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