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This chapter describes the process used for valuing commercial and industrial yard structures. This chapter first presents an overview of the valuation process. The rest of this chapter provides step-by-step instructions for calculating and entering information about commercial and industrial yard structures in the "Summary of Improvements" section of the property record card. The necessary cost schedules are included in Appendix G and depreciation tables are included in Appendix F.

Commercial and industrial yard structures included in the following categories:

- fencing
- masonry walls
- paving
- guard rails
- railroad siding
- retaining walls
- bulkhead piling
- commercial boat docking facilities
- bridges
- dry and liquid storage tanks and bins
- standpipes and surface reservoirs
- earth dikes
- grain elevators and supporting structures
- stacks and incinerators
- drive-in theaters
- chimneys
- greenhouses
- car wash structures
- golf courses
- athletic facilities and surfaces
- mobile home parks
- swimming pools
- riverboats
- commercial solar heating and cooling systems
- geothermal heating and cooling systems
- landfill liners

Overview of the Valuation Process

The valuation of commercial and industrial yard structures involves the application of various models to represent typical types of construction. Each model assumes that there are certain elements of construction that can be defined as specifications. These specifications create the average or "C" grade. Unlike commercial and industrial buildings that are constructed with a vast range of quality materials and design, the quality of construction materials and design of yard structures is more consistent. Because of the variety of construction materials in commercial and industrial yard structures, some of the schedules use adjustments rather than grade classification to account for the variations in the quality of construction materials.

The commercial and industrial pricing schedules for yard structures consist of either whole dollar or square foot unit values. These structures generally are detached from the commercial or industrial building and are recorded and priced separately in the "Summary of Improvements" section of the property record card.

To use the commercial and industrial pricing schedules, identify the type of structure and select the most representative price based on the description given. The rates given for certain items, such as running tracks, golf courses, drive-in theaters, and mobile home parks, include both unit or component costs and typical installation costs.

Space is provided to itemize all buildings and yard structures in the "Summary of Improvements" section of the commercial and industrial property record card. If more space is needed, use additional cards.

When collecting data about a yard structure, review the appropriate pricing schedule to determine the features that are included in the model. Some of the schedules, such as for golf courses and mobile home parks, have detailed cost, and condition descriptions. Review these schedules carefully before beginning the assessment.

Completing a Property Record Card

The valuation of commercial and industrial yard structures is recorded in the "Summary of Improvements" section of the property record card, shown in Figure 7-1. Space is provided in the table to itemize each yard structure. Each row corresponds to one particular yard structure. The true tax value of all of the yard structures is totaled at the bottom of the of the "Summary of Improvements" section.

Note: If the property has more yard structures than there are rows in this section of the property record card, use an additional card (or cards) to describe those yard structures.

The steps for completing the property record card for commercial and industrial yard structures are grouped into the following tasks, described in the sections below:

- Task 1—Record information about the yard structure.
- Task 2—Determine the base rate for the yard structure.
- Task 3—Determine the adjusted base rate and replacement cost for the yard structure.
- Task 4—Calculate the remainder value of the yard structure.
- Task 5—Calculate the true tax value of the yard structure.
- Task 6—After performing Task 1 through Task 5 for each yard structure on the property, calculate the total true tax value for the property.

IMPROVEMENT DATA AND COMPUTATIONS

Circle One →	1 or A	2 or B	3 or C	4 or D	5 or E
Pricing Key					
S.F. AREA					
Effective Perimeter					
P.A.R.					
Number of units					
Average unit size					

	Hgt	Rate	Hgt	Rate	Hgt	Rate	Hgt	Rate	Hgt	Rate
Floor										
Basement										
1st										
2nd										
3rd										
4th										

Frame Adj. [±]
Wall Hght. Adj. [±]
Base Price
B.P.A. %
Sub-total
Unit Finish

Interior Finish
Div./Ptn. Walls
Lighting
Heating/Air Cond.
Sprinkler

S.F. Price
Area
Sub-total
Plumbing
Special Features
Exterior Features
TOTAL BASE
Location Multiplier
Grade Factor
Replacement Cost

Walls
Brick
Stone
Concrete
Frame or Metal
C.B. or Tile

Roofing
Built-up
Metal
Slate/Tile
Shingle
Insulation

Framing
Wood Joist
Fire Resistant
Fire Proof Steel
Reinf. Concrete

Flooring
Concrete
Wood
Tile or Carpet

Finish Type
Unfinished
Semifinished
Finished Open
Finished Divided

Use
Store
Office
Apartment
Vacant or Aband.

Heating & Air Conditioning
No Heating
Central Warm Air
Hot Wat. or Steam
Unit Heating
Central Air
Package or Unit Air

Sprinkler
Plumbing Fixtures # TF
Full Baths
Half Baths
Extra Fixtures
TOTAL

Other Fixtures | G/F | ES | SS
Wash Fountains
Circular 36"
Circular 54"
Semi-circular 36"
Semi-circular 54"
Industrial Gang Sinks
4' long, 4 man
8' long, 8 man
Shower - Column
Circular, 5 per
Semi-circular, 3 per
Corner, 2 per
Shower Multi-Stall
Circular, 5 per
Semi-circular, 3 per
Corner, 2 per
No. Fixtures
Gang Shower Heads
Drinking Fountains
Refrigerated Water Coolers
.......with Hot & Cold Water
Emergency Shower/eye Wash

O T E N

SPECIAL FEATURES
Description	Value

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Norm. Depr.	Remainder Value	Obsol. Depr.	True Tax Value
01																	
02																	
03																	
04																	
05																	
06																	
07																	
08																	
09																	
10																	
11																	
12																	
13																	

Data Collector / Date

Appraiser / Date

Total True Tax Improvement Value

Figure 7-1. Summary of Improvements Section

Task 1—Recording Information

In this task, you provide descriptive information about the characteristics of the yard structure. The shading in Figure 7-2 indicates the columns of the "Summary of Improvements" table that you complete in this task.

Figure 7-2. Columns Completed in Task 1

To record information about the structure, perform these steps:

Step 1   In the "ID" column, select an identification number for each individual yard structure. Record the information about the yard structure in the row corresponding to this identification number. Also, use this number to identify the location of each yard structure relative to the structure or structures in the sketch area.

Step 2   In the "Use" column, enter the present and predominant use of the yard structure.

Step 3   *If the structure is a yard building*, in the "Story Height" column, enter the height of the structure in feet, measured from the floor to the eave.

Step 4   In the "Const. Type" column, enter the type of construction material used to construct the yard structure.

Step 5   In the "Grade" column, enter the grade for the yard structure. Information about determining the grade for a yard structure is provided in the section ***Assigning Grades to Commercial Yard Structures*** in Appendix E.

Step 6   In the "Year Const." column, indicate when the yard structure was originally constructed. Follow these guidelines:
   - If you are sure of the date, enter just the date, for example "1949".
   - If you (the assessor) must estimate the date, enter the date followed by a question mark, for example "1945?".
   - If the owner estimates the date, enter the date followed by "+/–", for example "1945+/–".
   - Enter "Old" to indicate construction prior to 1928. If the structure is depreciated from the commercial swimming pool depreciation table enter "Old" if constructed prior to 1974.

Step 7   *Swimming pools only. If the pool shows excessive physical deterioration for its age and you have subtracted six (6) years from its construction year,* you must enter the new year in the "Eff. Age" column. This is explained in the section ***Using the Swimming Pools Depreciation Tables*** Appendix F.

   If the pool's remaining economic life has not been altered, leave this column blank.

Step 8   In the "Cond." column, enter the code indicating the assigned condition of the yard structure relative to its age. Table 7-1 describes the codes for this column.

   Note: Instructions for determining the condition code for a yard structure are provided in Appendix F.

Table 7-1. Condition Codes

Code	Indicated Depreciation
Excellent	The structure is in like-new physical condition and has been well maintained. It has been modernized and updated and suffers from no inutilities.
Good	The structure has been maintained in better physical condition than the majority of structures of its age and suffers from no deferred maintenance. It offers more amenities and has better utility than the majority of the structures of its design.
Average	The structure has been maintained like and is in the typical physical condition of the majority of structures of its age. It offers the same utility as the majority of the structures of its design.
Fair	The structure suffers from minor deferred maintenance and demonstrates less physical maintenance than the majority of structures of its age. It suffers from minor inutilities in that it lacks an amenity that the majority of structures of its design offer.
Poor	Many repairs needed; the structure suffers from extensive deferred maintenance. It suffers from major inutilities in that it lacks several amenities that the majority of structures of its design offer. However, it is still being put to some use in the farming operation.
Very Poor	Extensive repairs needed; the structure suffers from extensive deferred maintenance and is near the end of its physical life. It suffers from extensive inutilities in that it lacks most amenities that the majority of structures of its age and design offer. Poor location for the type of structure.

Step 10 In the "Features" column, enter any pertinent information for any features that alter the base rate for the yard structure.

Step 11 In the "L/M" column, enter the location cost multiplier for your county, which can be found in Table G-1 in Appendix G.

Step 12 In the "Size or Area" column, enter the size or area of the yard structure. "Size" refers to the dimensions of the yard structure, such as length and width or diameter and height. "Area" refers to the square foot ground area of the yard structure.

To determine whether to enter the size (and if size is used, exactly which dimensions) or the area of the yard structure, refer to the cost schedule for the yard structure type. Measure the dimensions and use the same units of measurement as the appropriate cost schedule uses.

Example: A 28,640 square foot, grade C parking lot is paved with 2 (two) inches of asphalt on an 8-inch base. The lot was built in 1981and is in average condition. The lot is surrounded on three sides by a grade C, 8-foot galvanized chain link fence, with a gauge size of 7. There is 510 linear feet of fencing.

Figure 7-3. Summary of Improvements Example

Task 2—Determining the Base Rate

You determine the base rate for the structure using the cost schedule for the appropriate type of structure. The cost schedules for commercial and industrial yard structures contain a variety of methods for determining the base rate for specific types of yard structures. These methods include square foot rates, linear foot rates, bushel capacity rates, site rates, cubic foot rates, golf course hole rates, person rates, wall surface rates, and whole dollar unit values. The cost schedules are provided in Appendix G.

The cost schedules are based on a "C" grade unless otherwise specified. Each schedule includes base rates for the typical range of size or configuration for the type of yard structure.

The shading in Figure 7-4 indicates the columns of the "Summary of Improvements" section that you complete when determining the base rate for a structure.

IMPROVEMENT DATA AND COMPUTATIONS

Circle One →	1 or A	2 or B	3 or C	4 or D	5 or E
Pricing Key					
S.F. AREA					
Effective Perimeter					
P.A.R.					
Number of units					
Average unit size					
Floor	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate
Basement					
1st					
2nd					
3rd					
4th					
Frame Adj. [±]					
Wall Hght. Adj. [±]					
Base Price					
B.P.A. %					
Sub-total					
Unit Finish					
Interior Finish					
Div./Ptn. Walls					
Lighting					
Heating/Air Cond.					
Sprinkler					
S.F. Price					
Area					
Sub-total					
Plumbing					
Special Features					
Exterior Features					
TOTAL BASE					
Location Multiplier					
Grade Factor					
Replacement Cost					

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Base Rate	Replacement Cost	Norm. Depr.	Remainder Value	Obsol. Depr.	True Tax Value
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08																		
09																		
10																		
11																		
12																		
13																		

Data Collector / Date　　　　Appraiser / Date

Total True Tax Improvement Value

SPECIAL FEATURES

Description	Value

O T E N

Walls: Brick, Stone, Concrete, Frame or Metal, C.B. or Tile

Roofing: Built-up, Metal, Slate/Tile, Shingle, Insulation

Framing (B): Wood Joist, Fire Resistant, Fire Proof Steel, Reinf. Concrete

Flooring (B): Concrete, Wood, Tile or Carpet

Finish Type (B): Unfinished, Semifinished, Finished Open, Finished Divided

Use (B): Store, Office, Apartment, Vacant or Aband.

Heating & Air Conditioning: No Heating, Central Warm Air, Hot Wat. or Steam, Unit Heating, Central Air, Package or Unit Air, Sprinkler

Plumbing Fixtures (#, TF): Full Baths, Half Baths, Extra Fixtures — TOTAL

Other Fixtures (G/F, ES, SS): Wash Fountains, Circular 36", Circular 54", Semi-circular 36", Semi-circular 54", Industrial Gang Sinks, 4' long, 4 man, 8' long, 8 man, Shower - Column, Circular, 5 per, Semi-circular, 3 per, Corner, 2 per, Shower Multi-Stall, Circular, 5 per, Semi-circular, 3 per, Corner, 2 per (No. Fixtures)

Gang Shower Heads, Drinking Fountains, Refrigerated Water Coolers, ...with Hot & Cold Water, Emergency Shower/eye Wash

Figure 7-4.　Columns Completed in Task 2

Using Area (Square Footage)

The cost schedules that use a square foot base rate are separated into two distinct types:

Type 1 Flat square foot rate dependent on the construction material:

- paving
- commercial dock facilities (piers)
- artificial turf
- running tracks
- car wash buildings (drive through)
- landfill liners
- bridges

Type 2 Variable square foot rates dependent on the size of the structure and type of construction materials:

- greenhouses
- swimming pools
- commercial solar heating and cooling systems.

Type 1 Structures Based on Square Foot Rate

To determine the base rate for a Type 1 yard structure based on a square foot rate, perform these steps:

Step 1 Based on the type of yard structure, locate the appropriate cost schedule.

Step 2 Locate the type of construction material that best represents the subject yard structure.

Step 3 In the "Base Rate" cell in the "Summary of Improvements" section, enter the base rate.

    Note: There should be no need to interpolate or extrapolate rates using these schedules.

Type 2 Structures Based on Square Foot Rate

To determine the base rate for a Type 2 yard structure based on a square foot rate, perform these steps:

Step 1 Based on the type of yard structure, locate the appropriate cost schedule.

Step 2 Locate the row containing the construction material that best represents the subject yard structure.

Step 3 In the "Area" column of the selected cost schedule, locate the row corresponding to the square footage of the yard structure which you entered in the "Size and Area" column in the "Summary of Improvements" section.

If the area of the structure is within the square foot parameters of the cost schedule, use the area in the cost schedule that is nearest to the actual square footage of the structure to determine the base rate.

If the area of the structure is less than the smallest square foot area of the cost schedule, use the area in the smallest square foot area column, to determine the base rate*.*

*If the area of the structure is larger than the largest square foot area of the cost schedul*e, use the rate identified in the "Over" or "Area+" column.

Step 4   Find the intersection of the selected row (area in square feet) and the appropriate column. In the "Summary of Improvements" section, enter the number that you find in the "Base Rate" column.

Note: The column headings vary in the cost schedules. Often there are separate columns for different types of construction. The various Type 1 and Type 2 cost schedules are included in Appendix G.

Using Whole Dollar Amounts

The cost schedules that use a whole dollar amount are separated into four distinct types:

Type 1   Whole dollar amount is dependent on the storage capacity of the yard structure:

- oil storage tanks
- welded steel pressure tanks
- wood water storage
- standpipes and surface reservoirs
- bulk storage tanks
- fuel oil tanks.

Type 2   Whole dollar amount is dependent on the diameter and height of the yard structure:

- commercial docking facilities (cells)
- dry storage bins
- brick and concrete stacks.

Type 3   Whole dollar amount is dependent on the capacity and height of the yard structure:

- elevated steel tanks
- towers.

Type 4   Whole dollar amount is dependent on specific attributes other than those named above:

- incinerators (pounds per hour)
- do-it-yourself car wash buildings (per item)
- shuffleboard courts (per court)
- small boat marina (per slip)

- geothermal heating and cooling systems (per ton)
- tennis courts (per court)
- paddle tennis courts (per set)

Type 1 Structures Based on Whole Dollar Rate

To determine the base rate for a Type 1 yard structure based on a whole dollar rate, perform these steps:

Step 1   Based on the type of yard structure, locate the appropriate cost schedule.

Step 2   Locate the capacity on the schedule that best represents the capacity of the subject yard structure. Note the corresponding whole dollar amount.

Step 3   In the "Base Rate" cell in the "Summary of Improvements" section, enter the whole dollar amount determined in Step 2.

If the capacity of the yard structure lies within the parameters of the cost tables, use the capacity in the cost schedules that is nearest to the actual capacity of the structure to determine the whole dollar amount.

If the capacity of the yard structure is larger than the largest capacity or smaller than the smallest capacity provided in the cost schedules, extrapolate to calculate the amount to add to or subtract from the whole dollar amount. When extrapolating, follow these guidelines:

(a) For a capacity larger than the capacity listed on the schedule, calculate the difference between the amount of the largest capacity and the amount of the next largest capacity. Add this difference to the amount of the largest capacity for each increment of capacity difference between the largest and the next largest capacity.

(b) For a capacity smaller than the capacity listed on the schedule, calculate the difference between the amount of the smallest capacity and the amount of the next smallest capacity. Subtract this difference from the amount of the smallest capacity for each increment of capacity difference between the smallest and the next smallest capacity.

Example 1—Size within the ranges: A fuel oil tank has a capacity of 6,000 gallons. Perform these steps:

1   Locate the fuel oil tank schedule.

2   The capacity of the subject structure is closest to 5,000 gallons.

3   In the "Base Rate" cell, enter the whole dollar amount for a 5,000 gallon capacity tank.

Example 2—Size outside the ranges: A bolted steel oil storage tank has a capacity of 18,000 barrels of oil. Perform these steps:

1   Locate the oil storage tank schedule for the bolted steel type.

2   The capacity increment difference between the 15,000 barrel capacity and the 10,000 barrel capacity is 5,000 barrels. To determine the whole dollar amount for the oil storage tank, find

the whole dollar amount difference between these two sizes and add one 5,000 barrel increment to the 15,000 barrel whole dollar amount.

3   In the "Base Rate" cell, enter the whole dollar amount determined in Step 2.

Note: The 18,000 barrel is rounded to the nearest capacity increment—20,000 barrels.

Type 2 Structures Based on Whole Dollar Rate

To determine the base rate for a Type 2 yard structure based on whole dollar rate, perform these steps:

Step 1   Based on the type of yard structure, locate the appropriate cost schedule.

Step 2   Locate the row containing the height or diameter, depending on the schedule. Locate the column that best describes the yard structure. Note the whole dollar amount at the intersection of the selected row and column.

Step 3   In the "Base Rate" cell in the "Summary of Improvements" section, enter the whole dollar amount from Step 2.

If the diameter and height of a subject yard structure is between the parameters of the cost schedules, use the variables that are the nearest to the actual diameter and height of the structure to determine the whole dollar amount.

If the diameter and height of the yard structure is larger than the largest diameter and height, or smaller than the smallest diameter and height provided in the cost schedule, extrapolate to calculate the amount to add to or subtract from the whole dollar amount. When extrapolating, follow these guidelines:

(a) For a diameter and height larger than those listed on the schedule, calculate the difference between the amount of the largest dimension in the first column and the amount of the next largest dimension in the first column. Add this difference to the amount of the largest dimension for each increment of dimension difference between the largest and the next largest dimension in the first column. Repeat the procedure to calculate the whole dollar amounts in the second column.

(b) For a diameter and height smaller than those listed on the schedule, calculate the difference between the amount of the smallest dimension in the first column and the amount of the next smallest dimension in the first column. Subtract this difference from the amount of the smallest dimension for each increment of dimension difference between the smallest and the next smallest dimension in the first column. Repeat the procedure to calculate the whole dollar amounts in the second column.

Example 1—Size within the ranges: A cylindrical dry storage bin has a diameter of 15 feet and a height of 50 feet. Perform these steps:

1   Locate the cylindrical type dry storage bin schedule.

2   Find the diameter of 15 feet in the first column. (The diameter is within the ranges of the first column, so the closest diameter in the schedule is chosen.)

3   Locate the height of 48 feet. (The height of 50 feet is within the range of the schedule heights, so the closest height in the schedule is chosen.)

4   In the "Base Rate" cell, enter the whole dollar amount for a height of 48 feet.

Example 2—Size outside the ranges: A concrete stack is 300 feet tall with a diameter of 16 feet. Perform these steps:

1   Locate the concrete stack schedule.

2   In the first column, determine that the tallest stack is 250 feet and that the stack heights are in increments of 25 feet
($300' - 250' = 50' \div 25' = 2$ increments of $25'$).

3   Determine the whole dollar amount difference between the 16′ diameter value for 225′ and the 16′ diameter value for 250′.

4   Add two increments of the difference determined in Step 3 to the whole dollar amount in the schedule for the 16′ diameter by 250′ high stack.

5   In the "Base Rate" cell in the "Summary of Improvements" section, enter the whole dollar amount determined in Step 4.

Type 3 Structures Based on Whole Dollar Rate

To determine the base rate for a Type 3 yard structure based on a whole dollar rate, perform these steps:

Step 1   Based on the type of yard structure, locate the appropriate cost schedule.

Step 2   Locate the row containing the capacity that best represents the capacity of the yard structure.

Step 3   Locate the column containing the height that best represents the height of the yard structure. At the intersection of the selected row and column, note the whole dollar amount.

Step 4   In the "Base Rate" cell in the "Summary of Improvements" section, enter the whole dollar amount determined in Step 3.

If the capacity and height of a yard structure are within the parameters of the cost schedules, use the values that are nearest to the actual capacity and height of the structure to determine the whole dollar amount.

Note: The extrapolation procedures for a Type 3 yard structure are the same as the procedures for a Type 2 yard structure.

Type 4 Structures Based on Whole Dollar Rate

To determine the base rate for a Type 4 yard structure based on a whole dollar rate, perform these steps:

Step 1   Based on the type of yard structure, locate the appropriate cost schedule.

Step 2   Locate the Type 4 attribute, such as incinerator, applicable to the specific schedule and compare the subject to this attribute.

Step 3   Locate the type of construction material applicable to the subject. Note the whole dollar amount.

Step 4   In the "Base Rate" cell in the "Summary of Improvements" section, enter the whole dollar amount, determined in Step 3.

Note: Interpolation or extrapolation is not necessary in Type 4 schedules. Specific additional amounts are identified in the pertinent schedules.

Using Linear Feet

The cost schedules that use a linear feet base rate are:
- fencing
- masonry walls
- guardrails
- railroad siding
- retaining walls
- bulkhead piling.

To determine the base rate for a yard structure that uses a linear feet base rate, perform these steps:

Step 1   Based on the type of yard structure, locate the appropriate cost schedule.

Step 2   Locate the type of construction material that best represents the yard structure.

Step 3   In the "Base Rate" cell in the "Summary of Improvements" section, enter the base rate per linear foot.

If the construction material is within the parameters of the cost schedules, use the type in the cost schedule that is nearest to the actual structure type to determine the linear foot rate.

If the construction material is larger than the largest type or smaller than the smallest type provided in the cost schedule, extrapolate to calculate the amount to add to or subtract from the rates. The extrapolation procedure for these situations is the same as those used in the section *Using Area (Square Footage)* in this chapter.

Using Other Methods

The cost schedules that use other methods of determining the base rates are:

- grain elevators (bushels)
- steel tanks and corrugated metal bins (bushels)
- horizontal storage (bushels)
- earth dikes (cubic feet)
- steel stacks (per foot of height)
- chimneys (per foot of height)
- golf courses (per hole)
- miniature golf courses (per hole)
- bleachers (square foot or seating)
- golf driving range (per station)
- sports stadium (per seating)
- mobile home parks (per site)
- drive-in theaters (per space)
- gaming riverboats (per person capacity).

The cost schedules for these structures are diverse and specific criteria are described to determine the base rate for each type. The steps to determine the base rate are similar to those described earlier in this chapter.

If the yard structure is within the parameters of the cost schedule, use the type in the cost schedule that is nearest to the actual type of structure to determine the base rate.

Many of the cost schedules indicate a rate that is to be used if the type exceeds the limits of the cost schedule. There are no extrapolation procedures necessary for larger sizes in these types of cost schedules. Extrapolation for sizes that are smaller can be determined by following the guidelines provided earlier in this chapter.

For the cost schedules where rates have not been established for larger sizes, extrapolation can be performed by following the guidelines discussed earlier in this chapter.

Task 3—Determining the Adjusted
Base Rate and Replacement Cost

The adjusted base rate for the yard structure is the base rate adjusted to take into account any relevant features identified for the structure, an adjustment for location, and the grade factor percentage. If the yard structure uses a cost schedule based on a factor other than a whole dollar amount, the replacement cost for the structure is its specified unit type, such as area, linear feet, bushels and so forth, multiplied by the adjusted base rate. If the structure uses a cost schedule based on whole dollar amounts, the replacement cost is the same as the adjusted base rate (rounded to the nearest $10).

The shading in Figure 7-5 indicates the columns of the "Summary of Improvements" section that you complete when determining the adjusted base rate and replacement cost of the yard structure.

Figure 7-5. Columns Completed in Task 3

To determine the adjusted base rate and replacement cost for the yard structure, perform these steps:

Step 1   Compare the features that you entered in the "Features" column in the "Summary of Improvements" with the features in the cost schedule for the yard structure. If the cost schedule indicates that the base rate should be adjusted because of one or more of the features, adjust the base rate accordingly.

Step 2   Determine the location cost multiplier for your county and enter the multiplier in the "L/M" cell in the "Summary of Improvements" section. Instructions for determining the location cost multiplier are provided in Appendix G.

Step 3   Divide the grade factor percentage corresponding to the grade entered in the "Grade" column in the "Summary of Improvements" section by 100 to arrive at a multiplier. Instructions for determining the grade factor percentage for a structure are provided in the section ***Assigning Grades to Commercial and Industrial Yard Structures*** in Appendix E.

Step 4   Calculate the adjusted base rate by multiplying the base rate (adjusted for any features) by the multiplier obtained in Step 2 and then the multiplier obtained in Step 3:

Adjusted = base rate	Base rate adjusted for features	x	Multiplier obtained in Step 2	x	Multiplier obtained in Step 3

Enter the adjusted base rate in the "Adj. Rate" column.

Step 5   *If the structure uses a schedule based on a unit of measurement other than a whole dollar amount*, calculate the replacement cost by multiplying the adjusted base rate (entered in the "Adj. Rate" column) by the structure's unit of measurement (entered in the "Size or Area" column):

Replacement cost	=	Adjusted base rate	x	Unit of measurement (area, linear feet, bushels, etc.)

Round the replacement cost to the nearest $10 and enter it in the "Replacement Cost" column.

If the structure uses a schedule based on whole dollar amounts, round the adjusted base rate (entered in the "Adj. Rate" column) to the nearest $10 and enter it in the "Replacement Cost" column.

Example: A 24,000 square foot commercial greenhouse is constructed of average quality steel with 9,600 square feet of concrete flooring within the building. The base rate for concrete flooring is $1.70 per square foot. The base rate for a 24,000 square feet of average steel greenhouse is $10.50. Adjust the base rate to account for the 40% of concrete flooring (9,600 sq. ft. ÷ 24,000 sq. ft. = 0.40) The concrete floor rate multiplied by 40% of total floor area, is 0.68 ($1.70 x .40 = 0.68). To determine the adjusted rate for the greenhouse, add the base rate for the greenhouse to the base rate for the concrete floor ($10.50 + .68 = 11.18). To determine the replacement cost, multiply the rate by the location

cost multiplier and then the total square footage ($11.18 x 1.00 x 24,000 sq. ft. = $268,320).

Task 4—Calculating the Remainder Value

The yard structure's remainder value is its replacement cost adjusted for normal depreciation. The shading in Figure 7-6 indicates the columns of the "Summary of Improvements" section that you complete when calculating the remainder value of the yard structure.

IMPROVEMENT DATA AND COMPUTATIONS

Walls: Brick, Stone, Concrete, Frame or Metal, C.B. or Tile

Roofing: Built-up, Metal, Slate/Tile, Shingle, Insulation

Framing: Wood Joist, Fire Resistant, Fire Proof Steel, Reinf. Concrete

Flooring: Concrete, Wood, Tile or Carpet

Finish Type: Unfinished, Semifinished, Finished Open, Finished Divided

Use: Store, Office, Apartment, Vacant or Aband

Heating & Air Conditioning: No Heating, Central Warm Air, Hot Wat. or Steam, Unit Heating, Central Air, Package or Unit Air, Sprinkler

Plumbing Fixtures: Full Baths, Half Baths, Extra Fixtures, TOTAL

Other Fixtures: G/F, ES, SS
Wash Fountains — Circular 36", Circular 54", Semi-circular 36", Semi-circular 54"
Industrial Gang Sinks — 4' long, 4 man; 8' long, 8 man
Shower - Column — Circular, 5 per; Semi-circular, 3 per; Corner, 2 per
Shower Multi-Stall — Circular, 5 per; Semi-circular, 3 per; Corner, 2 per
No. Fixtures — Gang Shower Heads, Drinking Fountains, Refrigerated Water Coolers, ... with Hot & Cold Water, Emergency Shower/eye Wash

Circle One → 1 or A | 2 or B | 3 or C | 4 or D | 5 or E

Pricing Key, S.F. AREA, Effective Perimeter, P.A.R., Number of units, Average unit size

Floor (Hgt, Rate), Basement, 1st, 2nd, 3rd, 4th
Frame Adj. [±], Wall Hght. Adj. [±], Base Price, B.P.A. %, Sub-total, Unit Finish
Interior Finish, Div./Ptn. Walls, Lighting, Heating/Air Cond., Sprinkler
S.F. Price, Area, Sub-total, Plumbing, Special Features, Exterior Features, TOTAL BASE, Location Multiplier, Grade Factor, Replacement Cost

SPECIAL FEATURES
Description | Value

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Norm. Depr.	Remainder Value	Obsol. Depr.	True Tax Value
01																	
02																	
03																	
04																	
05																	
06																	
07																	
08																	
09																	
10																	
11																	
12																	
13																	

Data Collector / Date   Appraiser / Date

Total True Tax Improvement Value

Figure 7-6. Columns Completed in Task 4

To calculate the remainder value of the yard structure, perform these steps:

Step 1   In the "Eff Age" cell enter the effective age determined from Table F-2 in Appendix F.

Step 2   Determine the total life expectancy for the yard structure from Table F-3e in Appendix F.

Step 3   In the "Normal Depr." column, enter the percentage of reduction in value due to normal depreciation determined from Table F-4 in Appendix F. Information about determining normal depreciation for a general commercial or industrial structure is provided in Appendix F.

Step 4   Determine the remainder value:

     a.   Subtract the percentage determined for normal depreciation (entered in the "Normal Depr." column) from 100%.

     b.   Divide the result obtained in Step a by 100 to arrive at a multiplier.

     c.   Calculate the remainder value by multiplying the replacement cost of the structure (entered in the "Replacement Cost" column) by the multiplier obtained in Step b:

       Remainder   =   Replacement   x   Multiplier obtained
         value   cost   in Step b

     d.   Round the remainder value to the nearest \$10 and enter it in the "Remainder Value" column.

Example: The replacement cost of a structure is \$8,000. The normal depreciation percentage for the structure is 30%. The remainder value is: 100% − 30% = 70% ÷ 100 = .70 x \$8,000 = \$5,600.

Task 5—Calculating the True Tax Value

The yard structure's true tax value is its remainder value adjusted for obsolescence depreciation, if necessary. The shading in Figure 7-7 indicates the columns of the "Summary of Improvements" section that you complete when calculating the true tax value of the yard structure.

Figure 7-7. Columns Completed in Task 5

To calculate the true tax value of the yard structure, perform these steps:

Step 1 *If **no** abnormal obsolescence depreciation applies to the yard structure*, round the remainder value to the nearest $100 and enter the amount in the "True Tax Value" column. Skip Step 2 and Step 3.

If abnormal obsolescence depreciation applies to the structure, divide the dollar amount of abnormal obsolescence by the remainder value to get an abnormal obsolescence depreciation percentage. Enter this percentage in the "Obsol. Depr." column of the property record card.

Step 2 Subtract the percentage determined for abnormal obsolescence depreciation (entered in the "Obsol. Depr." column) from 100%.

Step 3 Divide the result obtained in Step 2 by 100 to arrive at a multiplier.

Note: This column can also be utilized to make adjustments for improvements less than 100% complete. Be sure to indicate what you have done in the memorandum section.

Step 4 Calculate the true tax value by multiplying the remainder value of the structure (entered in the "Remainder Value" column) by the multiplier obtained in Step 3.

True tax value = Remainder value x Multiplier obtained in Step 3

Round the result to the nearest $100. Enter the rounded true tax value in the "True Tax Value" column.

Example: The remainder value of a structure is $5,600. The abnormal obsolescence depreciation percentage for the structure is 20%. The true tax value is: 100% − 20% = 80% ÷ 100 = .80 x $5,600 = $4,480 rounded to $4,500.

Task 6—Calculating the Total True Tax Improvement Value

Calculate the true tax value for each structure by performing Task 1 through Task 5 for each yard structure. If you run out of rows in the "Summary of Improvements" section of the property record card, use an additional card (or cards).

To calculate the total true tax value for the property, perform these steps:

Step 1 *If you used **only one** property record card to complete the "Summary of Improvements" for the property*, sum the entries in the "True Tax Value" column and enter the total in the "Total True Tax Improvement Value" cell.

*If you used **more than one** property record card to complete the "Summary of Improvements" for the property*, on each card except Card 001, sum the entries in the "True Tax Value" column and enter the total for each card in the card's "Total True Tax Improvement Value" cell.

Step 2 Sum the entries in the "Total True Tax Improvement Value" cell of all of the property record cards except Card 001.

Step 3   On Card 001, sum the entries in the "True Tax Value" column of Card 001 and add the result to the "Total True Tax Improvement Values" calculated in Step 2. Enter the grand total in the "Total True Tax Improvement Value" cell on Card 001.

Example: A 28,640 square foot, grade C parking lot is paved with 2 inches of asphalt on an 8-inch base. The lot was paved in 1981 and is in average condition. The base rate for 20,000 to 50,000 square feet of 2-inch asphalt paving on a 5-inch base is $1.60. Add 3 inches of additional base material ($.25) for a subtotal of $1.85 ($1.60 + $.25 = $1.85). To determine the adjusted rate for 28,640 square feet of asphalt paving, multiply by the location cost multiplier and grade multiplier ($1.85 x 1.00 x 1.00 = $1.85). To determine the replacement cost, multiply the adjusted rate by the number of square feet ($1.85 x 28,640 sq. ft. = $52,980). The normal depreciation percentage is 80%. To determine the remainder value, multiply the replacement cost by the normal depreciation percentage multiplier ($52,980 x .20 = $10,596). The remainder value is $10,596 rounded to the nearest $10 which equals $10,600. The true tax value is the remainder value rounded to the nearest $100 ($10,600).

A 510-linear foot galvanized chain link fence, 8 feet high, encloses three sides of the paved lot. The grade C fence was built in 1981, has a gauge size of 7, and is in average condition. The base price for the fence is $15.85. There are no adjustments for features. To determine the adjusted rate multiply the base rate by the location cost multiplier and grade multiplier ($15.85 x 1.00 x 1.00 = $15.85). To determine the replacement cost, multiply the adjusted rate by the number of linear feet ($15.85 x 510 ln. ft. = $8,080). The depreciation percentage is 80%. To determine the remainder value, multiply the replacement cost by the depreciation percentage multiplier ($8,080 x.20 = $1,616). The remainder value is $1616 rounded to the nearest $10 which equals $1,620. The true tax value is the remainder value rounded to the nearest $100 ($1,600).

The true tax value for the paved lot and the chain link fence is $12,200 ($10,600 + $1,600 = $12,200).

IMPROVEMENT DATA AND COMPUTATIONS

Walls: Brick, Stone, Concrete, Frame or Metal, C.B or Tile

Roofing: Built-up, Metal, State/Tile, Shingle, Insulation

Framing (B): Wood Joist, Fire Resistant, Fire Proof Steel, Reinf. Concrete

Flooring (B): Concrete, Wood, Tile or Carpet

Finish Type (B): Unfinished, Semifinished, Finished Open, Finished Divided

Use (B): Store, Office, Apartment, Vacant or Aband.

Heating & Air Conditioning: No Heating, Central Warm Air, Hot Wat. or Steam, Unit Heating, Central Air, Package or Unit Air, Sprinkler

Plumbing Fixtures: Full Baths, Half Baths, Extra Fixtures, TOTAL

Other Fixtures: Wash Fountains, Circular 36", Circular 54", Semi-circular 36", Semi-circular 54", Industrial Gang Sinks, 4' long, 4 man, 8' long, 8 man, Shower - Column, Circular, 5 per, Semi-circular, 3 per, Corner, 2 per, Shower Multi-Stall, Circular, 5 per, Semi-circular, 3 per, Corner, 2 per, Gang Shower Heads, Drinking Fountains, Refrigerated Water Coolers, ...with Hot & Cold Water, Emergency Shower/eye Wash

OTEN

Computation	1 or A	2 or B	3 or C	4 or D	5 or E
Circle One → Pricing Key					
S.F. AREA					
Effective Perimeter					
P.A.R.					
Number of units					
Average unit size					

	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate
Floor										
Basement										
1st										
2nd										
3rd										
4th										
Frame Adj. (±)										
Wall Hght. Adj. (±)										
Base Price										
B.P.A. %										
Sub-total										
Unit Finish										
Interior Finish										
Div./Ptn. Walls										
Lighting										
Heating/Air Cond.										
Sprinkler										
S.F. Price										
Area										
Sub-total										
Plumbing										
Special Features										
Exterior Features										
TOTAL BASE										
Location Multiplier										
Grade Factor										
Replacement Cost										

SPECIAL FEATURES

Description	Value

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Norm. Depr.	Remainder Value	Obsol. Depr.	True Tax Value
01	Paving		Asp	C	1981		AV	1.60	2'8"	1.00	1.85	2840	5980	80	10600		10600
02	Fencing	8'	Gal	C	1981		AV	15.85	7 gauge	1.00	15.85	5104	8080	80	1620		1620
03																	
04																	
05																	
06																	
07																	
08																	
09																	
10																	
11																	
12																	
13																	

Data Collector / Date   Appraiser / Date

Total True Tax Improvement Value   12200

Figure 7-8. Calculating the Total True Tax Value Example

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