



## **2016 Level I Tutorials**

# **Cost Approach & How to Use the Real Property Assessment Guidelines – Book 1**



# Agenda

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- Real Property Assessment Manual
- Information for Assessment
- 2012 Real Property Assessment Guidelines
- Chapter 1 – Assessment Information
- Chapter 2 – Land
- Chapter 3 – Residential Dwelling Units
- Chapter 4 – Mobile and Manufactured Homes



# Agenda Continued

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- Chapter 5 – Residential and Agricultural Yard Structures
- Appendix A – Grade
- Appendix B – Depreciation
- Appendix C – Cost Schedules
- Rest of class time will be spent working problems.



# What You Will Learn

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- Content of the Manual
- Content of each Chapter of Book 1
- How to use the Schedules in the Appendix
- How to properly fill out a property record card
- Material will cover:
  - Book 1, Real Property Assessment Guidelines



# Real Property Manual

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- The guidelines adopted by the Department of Local Government Finance provide procedures and schedules that are acceptable in determining true tax value under the cost approach.
- Formula for the cost approach is:  
$$V = LV + (RCN - D)$$

Where V = value  
LV = land value  
RCN = replacement/reproduction cost new  
D = depreciation



# Real Property Manual

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- The resulting value of the previous slide is what is called True Tax Value.
- In the case of agricultural land True Tax Value shall be the value determined in accordance with the Guidelines and IC 6-1.1-4-13. (This process will be detailed in Chapter 2)
- In the case of all other real property, true tax value shall mean market value-in-use which is defined as follows:
- **The market value in use of a property for its current use, as reflected by the utility received by the owner or a similar user.**



# Information for Assessment

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- Primary method of valuation outlined in the Guidelines is the cost approach to value.
- The cost to be estimated by the assessor is made up of all the direct labor and material costs plus the indirect expenses required to construct an improvement.



# Information for Assessment

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- Examples of Direct Costs and Labor:
  - Labor
  - Materials
  - Supervision
  - Utilities used during construction
  - Equipment Rental





# Information for Assessment

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- Examples of Indirect Expenses:
  - Building Permits
  - Fees
  - Insurance
  - Taxes
  - Construction Interest
  - Profit
  - Overhead
  - Professional Fees



# Information for Assessment

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- Two major concepts of cost:
  - Reproduction cost
  - Replacement cost



# Information for Assessment

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- Reproduction cost – The cost of constructing a new improvement, reasonably identical with the subject improvement, using the same materials, construction standards, design, and quality of workmanship.
- Building your local Courthouse exactly as it appears today with the same details, craftsmanship and materials as was used when it was built so that you have a reasonably identical structure is reproduction cost.



# Information for Assessment

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- Replacement cost – cost of constructing a building having the same utility as the improvement being valued, but using modern materials, design, and workmanship.
- Building a modern courthouse with today's materials and technology so it has the same utility as your present courthouse is replacement cost.



# Assessment Date

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- The assessment date for all real property in 2015-pay-2016 is March 1.
- SEA 420 changes the assessment date to January 1 starting with the 2016-pay-2017 tax cycle.
- <http://www.in.gov/dlgf/files/pdf/140610> - [Vincent Memo](#) - [Property Tax Assessment Timeline](#) - [revised.pdf](#)



# Chapter 1

# General Assessment

# Information





# Chapter 1

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- Mission of reassessment is to inventory, verify, and value all real estate parcels.
- The general reassessment has been replaced by a cyclical reassessment.
- IC 6-1.1-4-4.2 stipulates that a reassessment plan be submitted to the DLGF and separated into four groups, one for each year.
- Each group of parcels must contain approximately 25% of the parcels within each class of property in the county (Residential, Agricultural, Commercial/Industrial/Other).



# Chapter 1

- The timeline for cyclical reassessment is listed below

<b>4 year Cyclical Reassessment</b>	
<b>Date</b>	<b>Action</b>
<b>7/1/2013</b>	<b>County Assessor must submit a cyclical reassessment plan to DLGF before this date</b>
<b>3/1/2014</b>	<b>DLGF must review and approve the plan before this date.</b>
<b>7/1/2014</b>	<b>Reassessment starts on the first 25% of the parcels within each property class</b>
<b>1/1/2015</b>	<b>Reassessment of the first 25% of the parcels must be completed</b>
<b>5/1/2015</b>	<b>Reassessment starts on the second 25% of the parcels within each property class</b>
<b>1/1/2016</b>	<b>Reassessment of the second 25% of the parcels must be completed</b>
<b>5/1/2016</b>	<b>Reassessment starts on the third 25% of the parcels within each property class</b>
<b>1/1/2017</b>	<b>Reassessment of the third 25% of the parcels must be completed</b>
<b>5/1/2017</b>	<b>Reassessment starts on the fourth 25% of the parcels within each property class</b>
<b>1/1/2018</b>	<b>Reassessment of the fourth 25% of the parcels must be completed</b>
<b>5/1/2017</b>	<b>County Assessor must submit plan to DLGF before this date for the next cyclical reassessment</b>

\*Note: Originally the reassessment was to start on July 1 of each year and end on March 1 of the succeeding year however with the implementation of SEA 420, this changed the starting time to May 1 to coincide with the new January 1 assessment date.



# Chapter 1

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- Real property is assessed at the place where it is situated, and it is assessed to the person liable for the taxes as provided in IC 6-1.1-2-4(b)(c).
- The township assessor, (if any), otherwise the county assessor, keeps the reassessment data and records current by securing the necessary field data and making changes in the assessed value of real property as changes occur in use.



# Chapter 1

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- The assessing official or PTABOA must give notice to the taxpayer, by mail, of the amount of the assessment or reassessment.
- The notice of assessed value is given on Form 11.
- The taxpayer has 45 days from the date of this form to appeal the assessment. If no Form 11 is sent, the tax bill becomes the first notice then the taxpayer has 45 days from then to file an appeal.



# Chapter 1

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- Property Reassessment Fund (IC 6-1.1-4-27.5 and IC 6-1.1-4-28.5)
  - Every county has one – The auditor of each county shall establish a Property Reassessment Fund. County council must levy sufficient amount to pay for reassessment costs .
  - County treasurer deposits tax collections into fund and invests surplus funds.
  - County council must approve any appropriations from the fund.





# Chapter 1

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## Property Reassessment Fund

Money in fund may only be used to pay for:

- Costs of general reassessment
- Computerization of assessment records
- Updating of plat books (A plat is a map, plan, or chart of a city, town, section, or subdivision, indicating the location and boundaries of individual properties. A map of a town or a section of land that has been subdivided into lots showing the location and boundaries of individual parcels with the streets, alleys, easements, and rights of use over the land of another. A plat is usually drawn to scale. The following Indiana Code gives a short description which would also apply. **IC 6-1.1-5-4 Transfer books:** Sec. 4. (a) Except as provided in section 9 of this chapter, the county auditor shall keep a transfer book, arranged by townships, cities, and towns. In the transfer book he shall enter a description, for the purpose of taxation, of land that is conveyed by deed or partition, the date of the conveyance, the names of the parties, and the post office address of the grantee.)
- Development or updating of soil survey data
- Making annual adjustments
- Payments to assessing officials or PTABOA members for training by the DLGF
- Salaries for permanent or temporary staff
- Sales Disclosure Verification





# Chapter 1

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- The use of a unit of machinery, equipment, or structure determines its classification as real or personal property.
- Table 1-1 contains listing of real and personal property.



# Chapter 1

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- During a period of cyclical reassessment, the assessing official must mail the notice of assessment within ninety (90) days after the completion of the appraisal of a parcel.



# Chapter 2

## Land



# Chapter 2

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- All property within a jurisdiction must be established as part of a neighborhood defined by the assessing official. The assessing official shall define neighborhoods according to:
  - Common development characteristics.
  - Average age of majority of improvements.
  - Size of lots or tracts.
  - Subdivision plats/zoning maps.
  - School and other taxing district boundaries.
  - Distinctive geographical boundaries.
  - Any manmade improvements that significantly disrupt the cohesion of adjacent properties.



# Chapter 2

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- Sales statistics.
- Other characteristics deemed appropriate to assure equitable determinations.
- All neighborhoods must be identified on easily read maps.
- All neighborhoods shall be assigned a code number for identification.



# Chapter 2

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- Neighborhoods shall be classified according to majority use as residential homesite, agricultural homesite, commercial, or industrial. (Homesite: A land area of one (1) acre per residential site on a parcel containing one (1) or more acres. If a developed residential site is less than one (1) acre, the homesite is the entire land area. The value of the homesite is set based on improved land sales in that neighborhood.)
- Three methods of evaluating sales information when establishing land values
  - Sales comparison method
  - Abstraction method
  - Allocation method





# Chapter 2

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- Sales comparison method
  - One of the most reliable methods of estimating land value.
  - Sale prices of similar properties are compared.
  - Most reliable when numerous sales are available.



# Chapter 2

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- Abstraction method
  - Used to determine the indicated value of residential land if sample of vacant land sales is insufficient.
  - Most reliable when minimum amount of depreciation has occurred on improvements.
  - Value of land is determined by subtracting the depreciated value of improvements from sale price.



# Chapter 2

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- Allocation or percentage of sale method
  - Used to determine indicated value of land if sample of sales for a neighborhood represent improved properties.
  - Depends on analysis of various neighborhoods to determine percentage contribution of land to the total sale.



# Chapter 2

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- Class Codes (Table 2-1) and Subclass Codes (Table 2-2).
- The class codes provide an index to identify the class of property for each individual parcel. A one digit code represents the general property class and a two digit suffix code is added for the subclass.



## Chapter 2

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- Example: 1 represents Agricultural taxable land and improvements used primarily for agricultural purposes.
- A subclass suffix of 03 would identify it as a Dairy Farm.
- So 103 would be a Dairy Farm



# Chapter 2

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- Determining Depth Factors for Platted Lots
  - A platted lot is a piece of land within a plat that has its dimensions, location, other attributes drawn to scale in order to identify it for various purposes.
  - Twp. assessor, if any, or the county assessor must designate the base lot size for each neighborhood.
  - Depth factor is a multiplier that is applied to a unit land value to adjust the value of a particular lot to account for the depth of the lot.
  - The Depth Charts are located on pages 41, 42, and 43.
  - Example Number 1 on page 40 is a good example to use.



# Chapter 2

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- Valuing Residential Acreage and Agricultural Homesites
  - Parcel size does not determine the property classification or pricing method for the parcel. It is determined by the property's use or zoning.
  - Land area of up to one acre per residential dwelling unit is assigned to agricultural parcels and residential parcels priced on an acreage basis.
  - Parcel's value is influenced by its location – lake front property vs. remote rural area.
  - Additional information in the guidelines.





# Chapter 2

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- Valuing Residential Acreage Parcels Larger Than One Acre
- Residential acreage parcels of more than one acre and not used for agricultural purposes are valued using the residential homesite base rate and the excess acreage base rate established by the township assessor, if any, otherwise the county assessor.



# Chapter 2

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- Residential acreage parcels containing one acre or less are valued using the base rate (per acre) determined by the township assessor, if any, otherwise the county assessor, and the appropriate factor from the Acreage Size Adjustment Table.
- A good example to use is located on page 56 and the chart is located on page 57.
- Influence Factors for Residential Acreage
  - Applied same way to residential acreage as they are to platted lots.





# Cost Approach

## Class Problems # 1, 2, and 3

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For problems 1, 2, and 3, assume the base rate for the lots is \$100 per front foot.

1. The standard lot for Neighborhood 1254 is 100 feet by 132 feet. Lot # 7 is 100 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?
2. The standard lot for neighborhood 781 is 100 feet by 150. Lot #12 is 125 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?
3. The Standard lot for Neighborhood 832 is 100 feet by 200 feet. Lot #61 is 100 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?

# Cost Approach

## Class Problems # 1, 2, and 3 Answers

For problems 1, 2, and 3, assume the base rate for the lots is \$100.

1. Standard lot for Neighborhood 1254 is 100 feet by 132 feet. Lot # 7 is 100 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?

Look at Table 2-7: The factor for 175 feet on the 132 foot table is 1.12. Multiply 1.12 by the base rate of \$100. The new adjusted base rate is now \$112. Multiply that by the frontage of 100 ( $112 \times 100$ ). The estimated value is \$11,200.

2. The standard lot for neighborhood 781 is 100 feet by 150. Lot #12 is 125 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?

From Table 2-7: The factor for 175 feet on the 150 foot table is 1.07. Multiply 1.07 by the base rate of \$100. The new adjusted base rate is then \$107. Multiply that by the frontage of 125 feet ( $\$107 \times 125$ ). The estimated value is \$13,375 or \$13,380 which then rounds to \$13,400 to the nearest \$100.

3. The Standard lot for Neighborhood 832 is 100 feet by 200 feet. Lot #61 is 100 feet wide by 175 feet deep. What is the adjusted base rate and the estimated value of the lot?

From Table 2-8: The factor for 175 feet on the 200 foot table is .95. Multiply .95 by the base rate of \$100. The new adjusted base rate is \$95. Multiply that by the frontage of 100 ( $100 \times \$95$ ). The estimated value is \$9,500.



# Cost Approach

## Class Problems # 4, 5, and 6

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For problems 4, 5, and 6 use Table 2-11 on Page 57, of Chapter 2

4. A .70 acre tract is located in a neighborhood where 1 acre tracts are valued at \$25,000 per acre. What is the estimated value of this parcel?
5. A .94 acre tract is located in a neighborhood where 1 acre tracts are valued at \$55,000 per acre. What is the estimated value of this parcel?
6. A .28 acre tract is located in a neighborhood where 1 acre tracts are valued at \$40,000 per acre. What is the estimated value of this parcel?





# Cost Approach

## Class Problems # 4, 5, and 6 Answers

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4. A .70 acre tract is located in a neighborhood where 1 acre tracts are valued at \$25,000 per acre. What is the estimated value of this parcel?

Going to Table 2-11, the factor for .70 acres is 1.32. Multiply the factor times the rate per acre and then multiply that answer by the amount of acreage.  $(1.32 \times \$25,000 = \$33,000)$ .  $\$33,000$  times .70 = \$23,100. Estimated Value

5. A .94 acre tract is located in a neighborhood where 1 acre tracts are valued at \$55,000 per acre. What is the estimated value of this parcel?

Going to Table 2-11, the factor for .94 acres is 1.06. Multiply the factor times the rate per acre and then multiply that answer by the amount of acreage.  $(1.06 \times \$55,000 = \$58,300)$ .  $\$58,300$  times .94 = \$54,800. Estimated Value

6. A .28 acre tract is located in a neighborhood where 1 acre tracts are valued at \$40,000 per acre. What is the estimated value of this parcel?

Going to Table 2-11, the factor for .28 acres is 1.91. Multiply the factor times the rate per acre and then multiply that answer by the amount of acreage.  $(1.91 \times \$40,000 = \$76,400)$ .  $\$76,400$  times .28 = \$21,400. Estimated Value





# Chapter 2

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- Four categories of commercial and industrial land:
  - Primary
  - Secondary
  - Usable Undeveloped
  - Unusable Undeveloped



# Chapter 2

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- Valuing Agricultural Land
  - Based on productive capacity of the land, regardless of the land's potential or highest and best use.
  - Income capitalization approach, where use-value is based on net income that will accrue to the land from agricultural production.



# Chapter 2

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- The base rate for agricultural land in Indiana is set each year by the Department of Local Government Finance. A memo is issued providing this price and promulgated by the Department each assessment year. That price is used throughout the State of Indiana.
- Adjusted based on detailed soil maps, aerial photography and local plat maps.
- Commercial/Industrial land devoted to agricultural use should be valued using the agricultural land assessment formula.
- To evaluate and categorize land according to productivity, measurements are calculated from the detailed soil maps published by the USDA.





## Chapter 2

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- Agricultural land assessment formula values farmland in part by productivity.
- The more productive land has a higher value.



# Chapter 2

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- Soil maps show where different soils are located.
- Soils are classified based on soil series and soil map units.
- Each soil map unit in Indiana is assigned a productivity rating.
- Soil productivity ratings in Indiana are based on corn yield estimates.



# Chapter 2

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- There is a wide array of soil Productivity Factors in Indiana. The higher the Productivity Factor is the more productive the land type is. The lower the Productivity Factor is the less productive the land type.
- Soil types and productivity of land are obtained from detailed soil maps published by the USDA.



# Farm Land Q & A

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- **How is the base rate adjusted for high- and low-quality soils?** Assessors adjust the base rate using soil productivity factors developed from soil maps published by the United State Department of Agriculture (USDA). These factors are used by local assessing officials to adjust the base rate to account for the soil's ability to produce a crop.
- Note: A parcel could have multiple soil types and multiple productivity factors. Click on the following hyperlink for further information on [USDA/Natural Resources Conservation Service for soil survey](#).





# Farm Land Q & A

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- **How are farms assessed?**
- The agricultural land assessment formula involves the identification of agricultural tracts using detailed soil maps, aerial photography, and local plat maps. A parcel is segmented into the various soil types that it could contain and then each soil type is measured in order to determine the acreage for it. The formula is based on the productivity of each parcel's soil resources; therefore more productive land has a higher value. A soil productivity factor is used to adjust soil types up or down. The range for productivity factors begins at .5 for the poorest soils in the state to 1.28 for the best soils. These factors are based on corn yield estimates.





# Farm Land Q & A

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- **How are farms assessed? (Cont)**
- Once the soil types are identified and measured on a parcel, the true tax value for each soil type would be calculated by taking the acreage for that particular soil type multiplied by the base rate multiplied by the productivity factor multiplied by any applicable influence factors to arrive at the true tax value. This step would be repeated until all soil types for the parcel have been assessed. The soil type information is on the property record card for each farm and also available for the whole county at the Soil and Water Conservation office. For further reference please review the “Classification and Valuation of Agricultural Land” memo.



# Farm Land Q & A

## What is a history of the previous rates?

History of Previous Farm Land Rates	
Assessment Date	Acreage Rate
March 1, 2007	\$1,140
March 1, 2008	\$1,200
March 1, 2009	\$1,250
March 1, 2010	\$1,290
March 1, 2011	\$1,500
March 1, 2012	\$1,630
March 1, 2013	\$1,760
March 1, 2014	\$2,050
March 1, 2015	* \$2,050
January 1, 2016	* \$2,050

\* The rate for March 1, 2015 would have increased but the State Legislature passed SEA 460 to keep the rate at \$2,050.

\* New base rate calculation for 2016 and beyond passed by State Legislature. New base rate is \$2,050 multiplied by the statewide Assessed Value Growth Quotient (AVGQ).

The change in previous rates are based on changes in cash rent, yields, production costs, market prices and interest rates as we remove one year's data and replaced it with the current data. For 2016,





# For 2016 and Beyond

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- SEA 436-2015 introduces IC 6-1.1-4-13.2 for assessing agricultural land for 2016 and beyond.
- **IC 6-1.1-4-13.2**
- **Calculation of statewide agricultural land base rate value per acre**
- Sec. 13.2. Notwithstanding the provisions of this chapter and any real property assessment guidelines of the department of local government finance, for the property tax assessment of agricultural land for the 2015 assessment date, the statewide agricultural land base rate value per acre used to determine the value of agricultural land is two thousand fifty dollars (\$2,050). For the 2016 assessment date and each assessment date thereafter, the statewide agricultural land base rate value per acre is equal to:
  - (1) the base rate value for the immediately preceding assessment date; multiplied by
  - (2) the assessed value growth quotient determined under
- IC 6-1.1-18.5-2 in the year including the assessment date.
- This amount shall be substituted for any agricultural land base rate value included in the Real Property Assessment Guidelines or any other guidelines of the department of local government finance that apply for those assessment dates.

As added by P.L.249-2015, SEC.7.



# Chapter 2

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- Residential acreage parcels of more than one acre and not used for agricultural purposes are valued using the residential homesite base rate and the excess acreage base rate established by the township assessor, if any, otherwise the county assessor.



## Chapter 2

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- A land area of one acre per residential dwelling unit is assigned to agricultural parcels and residential parcels priced on an acreage basis.



# Chapter 2

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- Calculating Farm land values
- In order to compute the value of farmland, you need to record the information for each land area, by Soil ID and use Type 2 through Type 7.
- Then you calculate the land value for each land area.



## Chapter 2

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- Total the values of all of the different areas listed to determine the land value.
- The next step is to record information about Type 8 and/or Type 9 land.
- To calculate the value of the farmland, you divide the Total Farmland Value by the Total Measured Acres.
- This gives you an average value that you apply to the parcel acreage.



## Chapter 2

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- You then need to value the classified land, a homesite (if there is one on the property) and the excess acres, if any.
- These numbers are then carried to the front of the card.



# Chapter 2

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- Agricultural Land Types
  - Type 2 – Classified land
  - Type 4 – Tillable land
  - Type 5 – Non-tillable land
  - Type 6 – Woodland
  - Type 7 – Other farmland
  - Type 8 – Agricultural support land
  - Type 9 - Homesite



# Chapter 2

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- Oil and gas interests are subject to assessment and taxation as real property annually by the township assessor, if any, otherwise the county assessor.
- The oil or gas interest is assessed to the person who owns or operates this interest.
- The total assessed value of an oil or gas interest is calculated as follows:
  - The average daily production x 365 x the posted price on the assessment date.



# Chapter 2

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- For example, if you have an oil interest where the average daily production is 20 barrels per day, the assessed value would be:
  - $20 \times 365 \times \$28.35$  (where the \$28.35 is the price on the assessment date) = \$206,955 or \$207,000.
  - The \$207,000 assessment would then be apportioned to the owners by the percentage of interest that they have.





# Chapter 2

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- The DLGF updates the values for oil and gas and includes them in the pricing memo that is issued each year on March 1.
- Any equipment (such as the pump) is an appurtenance to the land and is assessed annually as real property to the person who owns or operates the interest.
- Cost of appurtenances per well are updated each year on March 1. A memo will be issued on or about March 1 of each year and can be found on our website. (Note: this will change to January 1 beginning in 2016 to coincide with SEA 420)





# Chapter 2

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- In dealing with land, you need to understand how to read a legal description.
- Land is measured in sections (640 acres); quarter sections (160 acres); and smaller divisions (quarter quarter sections, etc.)



## Chapter 2

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- In order to read a legal description, you start at the far right of the description and read left, dividing by the denominator of the fraction for each division.
- For example, a legal description of  $NW\frac{1}{4}$  is 640 acres divided by 4 or 160 acres.



# Chapter 2

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- A legal description of NE $\frac{1}{4}$  SE $\frac{1}{4}$  would contain 40 acres (640 divided by 4 = 160; 160 divided by 4 = 40)
- A legal description of E $\frac{1}{2}$  NW $\frac{1}{4}$  would contain 80 acres (640 divided by 4 = 160; 160 divided by 2 = 80 )



## Chapter 2

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- Just remember to start on the far right side, read to the left and divide by the denominator of the fraction.
- How many acres would the following contain:
  - $NE\frac{1}{4} E \frac{1}{2} SW\frac{1}{4} SW\frac{1}{4}$



# Chapter 2

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- Work the math:
- $640 \text{ divided by } 4 = 160$
- $160 \text{ divided by } 4 = 40$
- $40 \text{ divided by } 2 = 20$
- $20 \text{ divided by } 4 = 5$
  
- So, the parcel contains 5 acres.



# Chapter 2

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- Refer to Page 84 in Chapter 2 for a guide on how to locate the various quarter sections and smaller divisions.



# Cost Approach

## Class Problems # 7, 8, and 9

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For problems 7, 8, and 9, assume a Homesite value of \$10,000, an excess acreage value of \$2,500 per acre and a farmland value of \$2,050 per acre with a productivity factor of 1.05.

7. A residential parcel contains 4 acres and is vacant. What is the estimated value of this parcel?
  
8. A residential parcel contains 10 acres and has a dwelling. Seven of the acres are being farmed. What is the estimated value of this parcel?
  
9. A residential parcel contains 5 acres, and has no dwelling. It is being farmed until construction on a new home starts. What is the estimated value of this parcel?

# Cost Approach

## Class Problems # 7, 8, and 9 Answers

For problems 7, 8, and 9, assume a Homesite value of \$10,000, an excess acreage value of \$2,500 per acre and a farmland value of \$2,050 per acre with a productivity factor of 1.05.

7. A residential parcel contains 4 acres and is vacant. What is the estimated value of this parcel?

Since this parcel is vacant, you multiply the excess acreage rate of \$2,500 by the number of acres. (\$2,500 X 4).  
The estimated value of the parcel is \$10,000.

8.

A residential parcel contains 10 acres and has a dwelling. Seven of the acres are being farmed. What is the estimated value of this parcel?

		A	B	C	D	E			
Land Type	Soil ID	Meas Acres	Prod Factor	Base Rate	Adj Rate	Ext Value	Infl Factor	Land Value	
4	RAH 1	7	1.05	\$2,050	\$2,153	\$15,070		\$15,070	
								\$0	
								\$0	

1 acre for homesite

2 acres excess

1				\$10,000	\$10,000			\$10,000	
2				\$2,500	\$5,000			\$5,000	
GRAND TOTAL								\$30,070	\$30,100

B TIMES C EQUALS D

A TIMES D EQUALS E

9. A residential parcel contains 5 acres, and has no dwelling. It is being farmed until construction on a new home starts. What is the estimated value of this parcel?

Land Type	Soil ID	Meas Acres	Prod Factor	Base Rate	Adj Rate	Ext Value	Infl Factor	Land Value	
4	RAH1	5	1.05	\$2,050	\$2,153	\$10,760		\$10,760	
								\$0	
								\$0	

Homesite

Excess Acres

						\$0		\$0	
						\$0		\$0	
GRAND TOTAL								\$10,760	\$10,807





## Cost Approach Practice Problems # 2 Farm Ground Pricing

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You are given the following information: You are valuing a 183 acre tract. There are 7 acres with a productivity factor of 1.04. 10 acres with productivity factor of .91. 30 acres with a productivity factor of 1.07. 4 acres with a productivity factor of .96 and the remaining 132 acres has a productivity factor of 1.02. You are to arrive at the Land Value rounded to the nearest \$10. All of the acres are tillable. The base rate of farmland for this problem is \$2,050.

Land Type	Soil I.D.	Measured Acres	Productivity Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Land Value
Supplemental Card				Supplemental Card				
Measured Acreage				LAND VALUE				



## Cost Approach Practice Problems # 2 Answer Farm Ground Pricing

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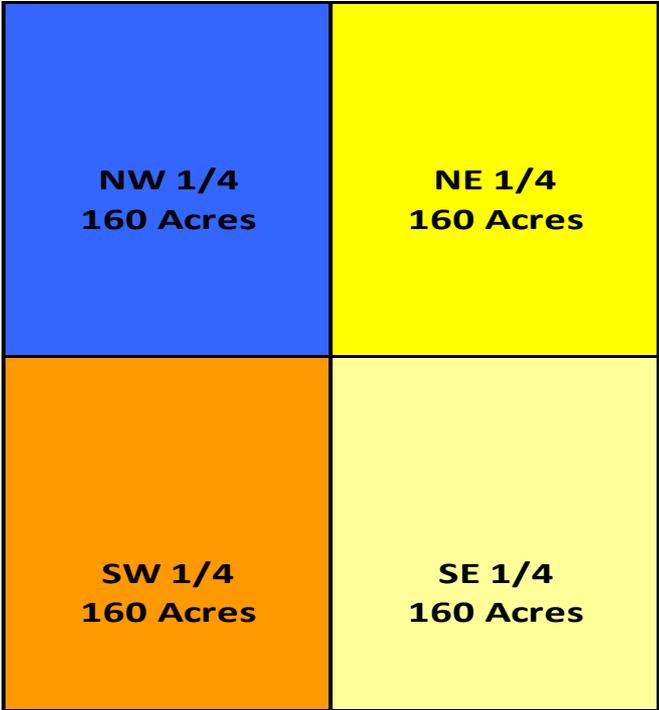
		A	B	C	D	E		F
Land Type	Soil I.D.	Measured Acres	Productivity Factor	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Land Value
4		7.00	1.04	\$2,050	\$2,132	\$14,920		\$14,920
4		10.00	0.91	\$2,050	\$1,866	\$18,660		\$18,660
4		30.00	1.07	\$2,050	\$2,194	\$65,820		\$65,820
4		4.00	0.96	\$2,050	\$1,968	\$7,870		\$7,870
4		132.00	1.02	\$2,050	\$2,091	\$276,010		\$276,010
Supplemental Card							Supplemental Card	
Measured Acreage			183.00				LAND VALUE	\$383,280

B TIMES C EQUALS D  
A TIMES D EQUALS E

F IS ROUNDED TO THE  
NEAREST \$10.00

**Cost Approach  
Practice Problem # 4  
Combination Legal Description and Depth Chart Calculations**

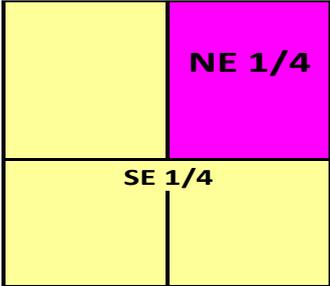
**Section 10**



**NW1/4 NE1/4 SE1/4 OF SECTION 10**

**READ DESCRIPTION FROM RIGHT TO LEFT  
ALL 4 QUARTERS EQUALS 640 ACRES**

- 1.) HOW MANY ACRES IN THE ABOVE DESCRIPTION?**
- 2.) HOW MANY SQ. FT. IN THE ABOVE DESCRIPTION?**

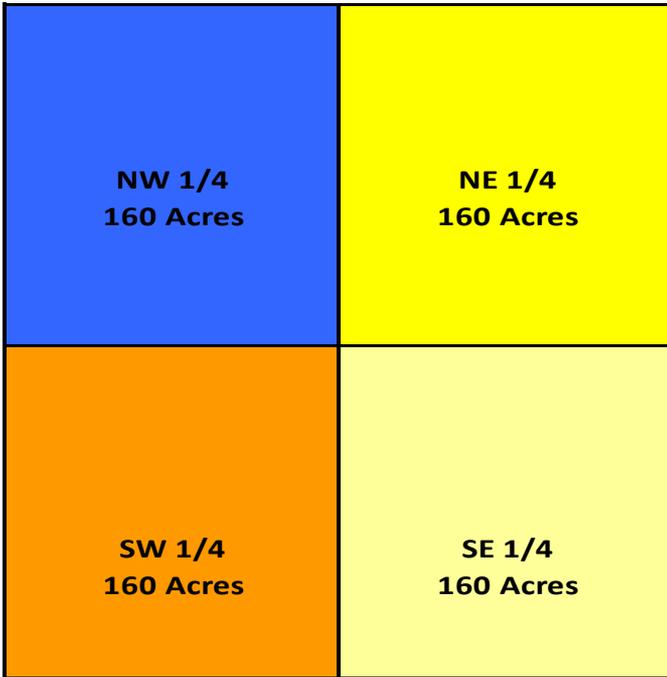


**NW 1/4 NE 1/4 SE 1/4**



**Cost Approach**  
**Practice Problem # 4 Answer**  
**Combination Legal Description and Depth Chart Calculations**

**Section 10**

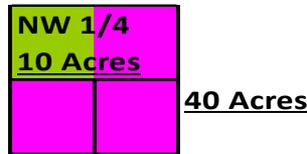
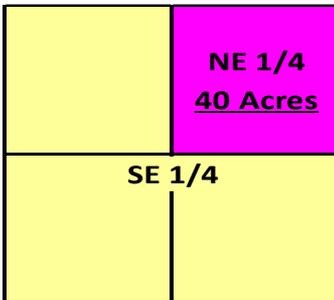


**NW1/4 NE1/4 SE1/4 OF SECTION 10**  
**READ DESCRIPTION FROM RIGHT TO LEFT**

**ALL 4 QUARTERS EQUALS 640 ACRES**

**1.) HOW MANY ACRES IN THE ABOVE DESCRIPTION?**

**2.) HOW MANY SQ. FT. IN THE ABOVE DESCRIPTION?**



**NW 1/4 NE 1/4 SE 1/4**

**1.) 10 Acres**

**2.) 435,600 Square Feet**

**Cost Approach**  
**Practice Problem # 4 (A)**  
**Depth Chart Problem**

**For depth table calculations**  
**Chapter 2**

- First Determine what the standard depth is.**
- Second Find that table**
- Third Find the factor in that table that relates to the depth of the lot you are pricing**
- Fourth Take that factor and multiply it times the front foot price that is given to you**
- Fifth This gives you the adjusted rate**
- Sixth Take this times the front foot of the lot you are pricing**
- Seventh This gives you the price of the lot**

**Example:**

**Standard lot size is 125 X 132**

**Lot we are pricing is 125 X 150**

**Front foot price is \$150**

**Adjusted front foot price is**

\_\_\_\_\_

**Lot value is**

\_\_\_\_\_

**Cost Approach**  
**Practice Problem # 4 (A)**  
**Depth Chart Problem Answer**

For depth table calculations  
 Chapter 2

First	Determine what the standard depth is.	132'
Second	Find that table	Chapter 2
Third	Find the factor in that table that relates to the depth of the lot you are pricing	1.06
Fourth	Take that factor and multiply it times the front foot price that is given to you	1.06 times \$150
Fifth	This gives you the adjusted rate	\$159
Sixth	Take this times the front foot of the lot you are pricing	\$159 Times 125
Seventh	This gives you the price of the lot	\$19,875

Example:

Standard lot size is 125 X 132

Lot we are pricing is 125 X 150

Front foot price is \$150

Adjusted front foot price is

Lot value is

<u>\$159</u>		
<u>\$19,875</u>	Round to nearest \$100	<u>\$19,900</u>



## Chapter 3

# Residential Dwelling Units



# Chapter 3

---

- In order to understand the process of valuing residential units, you need to understand the following concepts:
  - Measuring and calculating floor areas.
  - Determining the story description.
  - Categorizing a dwelling unit's garage or carport.
  - Labeling the sketch of a dwelling unit.



# Chapter 3

---

- When gathering data to assess a residential dwelling you must:
  - Gather general information with the occupant's assistance, if possible.
  - Gather information about the interior.
  - Take the necessary measurements.
  - Assess the general characteristics.
  - Review the data before you leave.



# Chapter 3

---

- General information:
  - Record the address.
  - Check exterior components. (foundation, walls, and roof)
  - Determine the age of the dwelling.
  - Determine number of rooms per floor.



# Chapter 3

---

- Information about interior:
  - How many stories and how finished.
  - Quality of construction.
  - General condition of dwelling.
  - Basement/attic – any improvements and degree of finish.
  - Crawl space – determine size.



# Chapter 3

---

- Measuring:
  - Measure dwelling and sketch it on the property record card as closely as possible to the proportions.
  - Note any exterior features (deck, porch, etc.) and sketch and label.
  - Garage – what kind, if any.
  - Make sure measurements of opposite sides are equal.



# Chapter 3

---

- Assessing the General Characteristics:
  - Establish idea of proper grade.
  - Determine the condition.
  - View dwelling from distance to get overall view.
  - Depreciation.



# Chapter 3

---

- Story descriptions and Garage types are found in Chapter 3.
- When you record the physical characteristics of the dwelling on the property record card, use abbreviations and symbols.





# Chapter 3

---

- Table 3-5 has Occupancy Options
- Table 3-6 has Story Height Options
- Table 3-7 has Attic Options
- Table 3-8 has Basement Options
- Table 3-9 has Crawl Space Options



# Chapter 3

---

- The following is not in your book:
  - Exterior Wall Types:
    - (1) Frame or Equal:
      - Type 1 – Frame (wood siding) or Aluminum
      - Type 2 – Stucco (either on wood frame or masonry)
      - Type 3 – Tile
      - Type 4 – Concrete block
      - Type 5 – Metal





# Chapter 3

---

- (2) Brick or Equal:
  - Type 6 – Concrete
  - Type 7 – Brick
  - Type 8 – Stone
  - These correspond with the construction codes contained on the property record card. They are located on the back of the card in the top left hand corner. We will use these later when we place values on properties. They determine which column we use to get the value from Schedule A of Appendix C.





# Chapter 3

---

- Table 3-10 contains the Mixed Frame and Masonry Wall Construction Codes
  - If a story has a mixture of similar exterior wall type materials such as frame (codes 1 through 5) or masonry (codes 6 through 8) on the sides or ends, you would use the codes from Table 3-10. Code 9 would be used for mixed frame and masonry exterior wall construction and requires a two digit code. The second digit identifies the number of increments of masonry.
  - This relates to the + column of the pricing schedule for residential dwellings in Appendix C, Schedule A.
  - It applies to each story of a multi-story structure.
  - If the construction is a Code 9, you would need to determine how many increments of brick are in the construction.
  - Example: If a one-story dwelling has brick on both ends but none on the front or back, then there would be 2 increments of brick a.k.a. Code 92.





# Chapter 3

---

- Table 3-11 contains the Basement Recreation Room Codes
  - Use this if there is a basement recreation room.
  - Ties back to the pricing schedule (Appendix C, Schedule C)



# Chapter 3

---

- If the dwelling has an attic:
  - If it is unfinished, use the “Unfin Attic” column and the square feet of the attic to determine the value to use.
  - If it is finished, then you need to pick up both the value for unfinished and the value in the “Attic Fin” column, and add them together to determine the correct value to use.



# Chapter 3

---

- If the dwelling has a basement:
  - If it is unfinished, use the “Unfin Bsmt” column and the square feet of the basement to determine the value to use.
  - If it is finished, then you need to pick up both the value for unfinished and the value in the “Bsmt Fin” column, and add them together to determine the correct value to use.





# Chapter 3

---

- A basement containing finish consistent with the remainder of the dwelling is considered as a finished basement. This is normally defined as basement living quarter.
- An area having finish inconsistent with the remainder of the dwelling is considered as a basement recreation room.





# Chapter 3

---

- If the dwelling has a crawl space, use the square footage of the space and the “Crawl” column to determine the value to use.



# Chapter 3

---

- Interior Features:
  - Schedules C (Appendix C), D (Appendix C) and E.1 (Appendix C)
  - Schedule C contains:
    - Deductions for unfinished interior, no central heating, and no electricity.
    - Additions for central air conditioning, basement recreation rooms, and lofts.



# Chapter 3

---

- If the dwelling has an unfinished interior, use Schedule C to determine the appropriate deduction.
- This deduction includes an adjustment for heating, so you do not need to make any additional adjustment.



# Chapter 3

---

- If there is no central heating system, use Schedule C to determine the appropriate deduction.
- If there is no electrical service, use Schedule C to determine the appropriate deduction.



# Chapter 3

---

- If there is a central air conditioning system, use Schedule C to determine the appropriate addition.
- If there is a basement recreation room, use Schedule C to determine the appropriate addition, based on the type.



# Chapter 3

---

- If the dwelling has a loft, use Schedule C to determine the appropriate addition.
- If the dwelling does not have plumbing, has water service only, or has fewer than five plumbing fixtures, use Schedule D to determine the appropriate deduction.



# Chapter 3

---

- Schedule D (Appendix C) contains:
  - Additions or deductions for plumbing features and fixtures.
- If the dwelling contains specialty plumbing fixtures (sauna bath, steam bath, whirlpool, or a bathtub with jet or steam conversion) use Schedule D to determine the appropriate addition.



# Chapter 3

---

- Schedule E.1 (Appendix C) contains:
  - Fireplaces – either masonry or prefab steel
- If there are fireplaces, use Schedule E.1 to determine the appropriate addition, based on the type of fireplace and the number of openings.



# Chapter 3

---

- Exterior Features:
  - Priced from Schedule E.2 (Appendix C)
  - Exterior Features include:
    - Patios, canopies, stoops, porches, bay windows, decks, balconies, etc.
  - Based on square footage



# Chapter 3

---

- Exterior Features:
  - If the dwelling has an attached, basement or integral garage or an attached carport, use Schedule E.2 (Appendix C) – Garages and Carports to determine the appropriate addition or deduction.



# Chapter 3

---

- Detached garages and carports are considered residential yard structures and are valued in the “Summary of Improvements” section of the property record card. (Appendix C)



# Chapter 3

---

- Assign the appropriate grade and grade factor percentage to the dwelling unit. (Table A-2 in Appendix A, or Schedule F Appendix C)
- Assign the appropriate location multiplier to the dwelling. (Table C-1, Appendix C)





# Chapter 3

---

- Table 3-12 (Chapter 3) explains the Condition Ratings
- If you have solar heating and cooling systems or geothermal heating and cooling systems, consult Chapter 3 for an explanation on how to collect the data and how they are valued.



# Chapter 3

---

- Schedule G.1 in Appendix C lists cost information for many residential yard improvements.
- Items such as utility sheds, tennis courts, and other yard items.
- Schedule G.2 in Appendix C lists cost information for agricultural yard improvements.
- Note: we will not be pricing agricultural yard improvements in this class.





# Chapter 4

## Mobile and Manufactured Homes



# Chapter 4

---

- The mobile home assessment date for 2015-pay-2016 is January 15.
- SEA 420 changes the mobile home assessment date to January 1 effective for the 2016-pay-2017 tax cycle.





# Chapter 4

---

- Annually Assessed Mobile Home:
- A mobile home that has a certificate of title issued by the bureau of motor vehicles under IC 9-17-6; and is not on a permanent foundation.

50 IAC 3.3-2-2 Authority: IC 6-1.1-7-2; IC 6-1.1-31-1 Affected: IC 6-1.1-7; IC 9-17-6 (Department of Local Government Finance; 50 IAC 3.3-2-2; filed Aug 15, 2007, 10:12 a.m.: 20070912-IR-050060560FRA)





# Chapter 4

---

- Certificate of Title Requirement:
- A person who owns a manufactured home that is:(1) personal property not held for resale; or(2) not attached to real estate by a permanent foundation; shall obtain a certificate of title for the manufactured home.

As added by P.L.2-1991, SEC.5. Amended by P.L.106-2007, SEC.1.



# Chapter 4

---

- Mobile Home
  - (1) a “dwelling” as defined in IC 6-1.1-7-1(b)
  - (2) a “manufactured home” as defined in IC 9-13-2-96
- “Mobile home” means a dwelling which:(1) is factory assembled;(2) is transportable;(3) is intended for year around occupancy;(4) exceeds thirty-five (35) feet in length; and(5) is designed either for transportation on its own chassis or placement on a temporary foundation.
- (Formerly: Acts 1975, P.L.47, SEC.1.) Mobile Home Defined IC 6-1.1-7-1(b)8





# Chapter 4

---

- "**Manufactured home**" means, except as provided in subsection (b), a structure that:(1) is assembled in a factory; (2) bears a seal certifying that it was built in compliance with the federal manufactured housing construction and safety standards law (42 U.S.C. 5401 et seq.);(3) is designed to be transported from the factory to another site in one (1) or more units;(4) is suitable for use as a dwelling in any season; and(5) is more than thirty-five (35) feet long.
- (b) "**Manufactured home**", for purposes of IC 9-17-6, means a structure having the meaning set forth in the federal manufactured Housing Construction and Safety Standards Law of 1974 (42 U.S.C. 5401 et seq.).
- As added by P.L.2-1991, SEC.1. Amended by P.L.106-2003, SEC.1.





# Chapter 4

---

## Permanent Foundation

- Any structural system capable of transposing loads from a structure to the earth at a depth below the established frost line.

**Real Property Mobile Home:** A mobile home that has an affidavit of transfer to real estate recorded by the county recorder under IC 9-17-6-15.5; or has a certificate of title issued by the bureau of motor vehicles under IC 9-17-6 and is attached to a permanent foundation.





# Chapter 4

---

- Application of Transfer to Real Estate:
  - 1) Manufactured home is attached to real estate by a permanent foundation.
  - 2) Affidavit of transfer to real estate and the retired certificate of title, if available, is filed with the county recorder's office.
  - 3) Manufactured home deemed an improvement upon the real estate upon which it is located.





# Chapter 4

---

(b) A mobile home shall be assessed as real property under the Department of Local Government Finance Real Property Assessment Rules in effect on March 1, using residential cost Schedule A found in the Department of Local Government Finance's Real Property Assessment Guideline, if the mobile home meets the definition given in 50 IAC 3.3-2-4.



# Chapter 5

## Residential and Agricultural Yard Structures



# Chapter 5

---

- Examples of both residential and agricultural yard structures can be found in Chapter 5.
- Pricing is done in the “Summary of Non-Residential Improvements” section of the property record card.
- If there is no attached Garage, the detached Garage if there is one, would be priced in “Summary of Residential Improvements” section of the property record card.





# Chapter 5

---

- Table 5-1 contains the Condition Ratings for Yard Improvements.
- Yard structures do receive a location multiplier.
- Cost schedules provide either whole dollar or square foot unit values.





# Chapter 5

---

- Rates, unless otherwise specified, apply to detached, free-standing structures.
- Make sure to read the schedules thoroughly, especially any notes that appear at the end of the schedules.





# Appendix A

# Residential and Agricultural Grade



# Appendix A

---

- For each of the types of improvements, a model has been defined to summarize the elements of construction quality that are typical of the majority of that type improvement.
- Assigned a “C” grade for residences and a “Good” quality grade for mobile/manufactured homes.





# Appendix A

---

- The replacement cost of an improvement is calculated by taking the base price, adjusting for various construction elements that add or deduct value, and then multiplying this adjusted cost by a percentage based on the improvement's grade. This percentage is known as the Quality Grade Factor.





# Appendix A

---

- An intermediate grade cannot be assigned to a mobile/manufactured home.
- An intermediate grade can be assigned to all other types of agricultural and residential improvements.
- Intermediate grade is +2, +1, -1 (e.g., B+1)





# Appendix A

---

- Table A-2 is the Quality Grade Factors for Dwelling Units
- Table A-3 is the Quality Grade Specifications for Dwelling Units



## Appendix B

# Residential and Agricultural Depreciation



# Appendix B

---

- Depreciation is defined as the loss in value that an improvement on a parcel of real property suffers, from a variety of causes.
- **Physical Deterioration** refers to the wear and tear that an improvement suffers from its regular use.





# Appendix B

---

- **Functional obsolescence loss** is caused by some type of inutility within the structure and materials or design that diminishes the ability of the structure to perform the function for which it was constructed and/or might be used.





# Appendix B

---

- **External obsolescence** typically is impairment in the utility or salability of the structure due to negative influences that occur outside the property.



# Appendix B

---

- The determination of depreciation must consider:
  - The **chronological age** of the structure.
  - The **effective** age of the structure.
  - The **quality** of the materials, workmanship and design used in the construction of the structure.
  - The **condition** rating of the structure.
  - The **neighborhood factor**.





# Appendix B

---

- For the valuation of real property in Indiana, the condition rating will reflect the effective age of the structure.
- Table B-1 contains the Residential Condition Ratings (other than yard structures)



# Appendix B

---

- Table B-2 (page 10) contains the Residential Depreciation Chart – Quality Grade “AAA” “AA” “A” and “B”
- Table B-3 (page 11) contains the Residential Depreciation Chart – Quality Grade “C”
- Table B-4 (page 12) contains the Residential Depreciation Chart – Quality Grade “D” “E”





# Appendix B

---

- For Residential/Agricultural Yard Structures:
  - You must first determine the correct depreciation table to use, based on life expectancy of the structure.
  - Table B-5 (Determining the Depreciation Table for Yard Structures) contains the information you need.





# Appendix B

---

- Table B-6 the Condition Ratings for Yard Structures
  - Sound value applies to agricultural improvements only.





# Appendix B

---

- Table B-7 – 20 Year Life Expectancy
- Table B-8 – 30 Year Life Expectancy
- Table B-9 – 40 Year Life Expectancy



# Appendix B

---

- Table B-10 is the depreciation table for Above Ground Swimming Pools
- Table B-11 is the depreciation table for In-Ground Swimming Pools and Pool Enclosures



# Appendix C

## Cost Schedules



# Appendix C

---

- Now, using the information we have discussed, and the cost schedules in Appendix C, we are going to spend the rest of the time working problems related to the valuation of residential property and yard structures. We are also going to figure some square footage of areas so you are familiar with how to do that. One other item I need to mention before we proceed is the percentage of completion schedule.



# Appendix C

---

- The percentage of completion schedule is located in Appendix C in Schedule A.1. This schedule is used if the structure is not complete on January 1. You would need to view the structure on January 1 and determine to what step the structure is complete. For example: say you believe the structure to be complete to the point of getting ready to start on the exterior. You would add up the percentages prior to that step and arrive a total percent of 56%. You would apply this percentage to the remainder value on the property record card in the summary of residential improvements section. The remainder value is the value left after applying depreciation against the replacement cost new that we have arrived at from our pricing schedules.





# Walking Through the PRC

---

- The Property Record Card contains three different sections: Cost Ladder, Summary of Residential Improvements, and Summary of Non-Residential Improvements.
- The Cost Ladder is used to calculate the Replacement Cost New (RCN) of the dwelling (including exterior features).
- The Summary of Residential Improvements is used to calculate the Remainder Value of the dwelling (value after depreciation) then the Improvement Value (final value after obsolescence, complete %, and neighborhood factor applied).
- The Summary of Non-Residential Improvements is used for any yard items that are not connected to the dwelling or are not a part of the Homestead Deduction (for tax caps purposes).





# Cost Ladder

---

- The Cost Ladder is broken up into three pieces: The Base Price section, the Adjustments section, and the Multipliers section.
- First you find the base prices for each floor, then you adjust for items (such as air conditioning, extra plumbing fixtures, etc.) that are not included in the base price, then multiply by your Quality Grade and Location Multiplier.
- The Cost Ladder must be done in this order; a good way to remember the three sections is using the acronym B.A.M.
- Once the Cost Ladder is finished, you then have your Replacement Cost New (RCN).





# B.A.M. – Base Prices

---

- Base prices are what it would cost to construct the dwelling in a specific circumstance. The base prices account for a C grade dwelling with a full bathroom, water heater, and kitchen sink. The cost schedule also factors in central heat.
- This section is also used to account for any basement or attic finishing.
- The goal is to add all of the base prices together to find the total base and subtotal for the next section.
- These costs can be found in Appendix C, Pages 2 – 4.
- All these costs are in hundreds of dollars.





# B.A.M. – Adjustments

---

- After the base prices are calculated and totaled, the next step in BAM is the Adjustment section.
- Adjustments are made to include real property items that are not included in the base price.
- Items such as central air conditioning, fireplaces, and others.
- Not all adjustments are positive; sometimes a deduction needs to be made for something unfinished or something absent from the dwelling that is included in the base price
- These adjustments are made to the subtotal from the Base Price section.
- These costs can be found in Appendix C, Pages 6 – 9.





# B.A.M. – Multipliers

---

- After adding/subtracting the adjustments, the final step in BAM is the Multipliers.
- The subtotal is adjusted by first multiplying the Quality Grade Factor and then multiplying by the Location Modifier (LCM).
- The Quality Grade Factor is based on the quality of craftsmanship within the dwelling. The factor is represented as a percentage based on a letter grade system (Appendix C - Schedule F). The Quality Grade factor can be found in Schedule F on page 9.
- Once the Quality Grade Factor is applied then the LCM is applied.
- The LCM represents the different costs (labor, materials, and equipment) around the State for the construction of the dwelling (e.g. you would not expect the building costs in Lake County to be the same costs as Wabash County). This can be found on page 23 in Appendix C.
- After applying the factors to the subtotal after adjustments, the end result is the RCN which concludes the Cost Ladder.





# Summary of Residential Improvements

- Once the RCN is calculated, that value is transferred over to the Replacement Cost column for the dwelling.
- The depreciation is then subtracted from the RCN to find the Remainder Value. This is done by multiplying the depreciation percentage times the RCN; this equals the depreciation dollar amount which is subtracted from the RCN. Another method is simply multiplying the remaining value in the dwelling times the RCN (e.g. a dwelling that is 20% depreciated has the RCN multiplied by 80% because there is still 80% of RCN value left in the dwelling [Remainder Value]).
- Finally, the Remainder Value is multiplied by any obsolescence percentage, incomplete percentage, and/or Neighborhood Factors; this calculates the Improvement Value. Note: Obsolescence and incomplete percentage multipliers are calculated the same way as depreciation.

<u>First Method</u>		<u>Second Method</u>	
\$100,000	= RCN	100%	= RCN %
X 20%	= Depreciation %	- 20%	= Depreciation %
\$20,000	= Depreciation \$	80%	= Remaining %
			
\$100,000	= RCN	\$100,000	= RCN
- \$20,000	= Depreciation \$	X 80%	= Depreciation %
\$80,000	= Remainder Value	\$80,000	= Remainder Value





# Summary of Non-Residential Improvements

---

- As stated earlier, the Summary of Non-Residential Improvements are yard items that are not attached to the dwelling or are included in the Homestead Deduction (exterior features and attached garages are included in the Cost Ladder calculations).
- Yard items such as utility sheds, barns, and detached garages (however if there is no attached garage, a detached garage can be included on the Summary of Residential Improvements).
- RCN is usually calculated using an adjusted base rate times the square footage. Note: the base rate column on the PRC is the base rate found in the cost schedules multiplied by the Quality Grade Factor.
- Improvement Value is calculated similarly to the dwelling (RCN minus depreciation = Remainder Value then adjust for obsolescence, partially complete, and/or Neighborhood factors)
- Costs can be found in Appendix C, pages 10-21.





# Let's do an example

---

- The next slides will show how to walk through a PRC step-by-step.
- You are given the following information about a property:
- A property in Porter County has a one story frame dwelling of 1,500 sq. ft., the dwelling has a masonry fireplace with one opening, central air conditioning throughout, and three full bathrooms. It has a basement with the same square footage as the first story. The dwelling also has an attached frame garage of 600 sq. ft., a wood deck that is 350 sq. ft., and an 80 sq. ft. masonry stoop. The dwelling was built in 2003, is a Grade C+1, and in average condition. Finally, the dwelling also has a frame utility shed of 80 sq. ft. which was built in 2010, in average condition, and a Grade C. What is the total improvement value?



HOUSE

Occupancy	Story Height	Attic	Bsmt Crawl
1 Single Family	[ ]	0 None	0 None
2 Duplex	2 Bi-level	1 Unfinished	1 1/4
3 Triplex		2 1/2 Finished	2 1/2
4 4-6 Family	3 Tri-level	3 3/4 Finished	3 3/4
5 M. Home		4 Finished	4 Full

Construction	Base Area	Floor	Finished Living Area	Value
1 Frame or Aluminum			<b>B</b>	
2 Stucco				
3 Tile				
4 Concrete Block				
5 Metal				
6 Concrete				
7 Brick		Attic		
8 Stone				
9 Frame w/Masonry		Crawl		
TOTAL BASE				\$0
Row-type Adjustment				100%
SUB-TOTAL				\$0
Floors	Unfinished Interior [-]			
Earth	Extra Living Units [+]			
Slab	Rec. Room [+]			
Sub & Joist	Loft [+]			
Wood	Fireplace [+]			
Parquet	No Heating [+]			
Tile	Air Conditioning [+]			
Carpet	No Electric [+]			
Unfinished				
Interior Finish	Plumbing			
Plaster or Dry Wall	5 - 5 = 0 X 800			
Paneling	No Plumbing (+)			
Fiberboard	Specialty Plumbing (+)			
Earth	SUB-TOTAL ONE UNIT			
Unfinished	SUB-TOTAL UNITS			
No Electrical				
Accommodations	Garages			
Total Number of Rooms	Integral (-)			
	Attached Garage (+)			
	Attached Carport (+)			
Bedrooms	Basement [+]			
Family Room	Exterior Features			
Formal Dining Room	SUB-TOTAL			\$0
	Grade and Design Factor			
	ADJUSTED SUB-TOTAL			\$0
	Location Multiplier			
	Replacement Cost			\$0

IMPROVEMENT FEATURES	
Major Items	Agricultural
C Concrete Floor	Barns
D Dirt floor	T/S/L/P/E/I/D/Q
E Electric Lights	Open Side
G Grade	Confinement
H Heating	T/P/E/C/I
I Insulation	Slatted Floors
L Loft	Pits
P Plumbing	Corn Crib
Q Living Quarters	T
S Stalls	Frame/Wire
T Type of Const.	Free standing Drive-thru
Residential	
	No Roof
BOAT HOUSE	Floor
T/G/D/Q	GRANARIES
Open Side	L
CAR SHED	Storage Bins
T/G/D	Pole Type
Open/Enclosed	GRAIN BINS
Back-To-Back	Diameter & Height
Stall Walls	or Bushel Capacity
DETACH GARAGE	QUONSET BUILDING
T/G/D/L/Q	E/I/H
GREENHOUSE	Floor:Asph/Conc
G	SLURRY TANKS
Free Standing	In/above ground
Attached at End	Round/Rectangle
Lean-to	Plank / No Cover
STABLES	SILO
T/G/D/L	Concrete:
SWIMMING POOL	Conc.Stave/Reinf'd
T	Masonry:
Underwater Lighting	Tile/Conc.. BIK/Brick
Tile: Ceramic/Plastic	Steel:
Filter	Unlined/Glass Lined
Heater	No Roof
Non-Rect.Shape	TRENCH AND BUNKER
Concrete Apron	SILO
Enclosure Type	Depth
TENNIS COURT	Width
Clay/Sod/Asphalt	
UTILITY SHED	
T/G	

SUMMARY OF RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01													\$0	11%	\$0		1.00	\$0
02																		
03																		
04																		
05																		
06																		
07																		
Supplemental Card Residential Improvement Total																		
Total Residential Improvement Value																\$0		

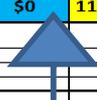
SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Heat & Air Conditioning		Plumbing															\$0
02	Central Warm Air		Full Bath															
	Hot Water or Steam		Half Baths															
	Loft Area		Heat Pump															
	Rec. Room		NO HEAT															
	Fire Place		Gravity Wall Space															
	Masonry		Central Air Cond.															
	Stacks		Conversion #															
	Openings		Designed #															
																		No Plumbing
Data Collector / Date													Appraiser / Date			Supplemental Card Non-Residential Improvement Total		
Total Non-Residential Improvement Value																\$0		

**B**

**A**

**M**



Supplemental Card Residential Improvement Total



# Base Prices

Construction		Base Area	Floor	Finished Living Area	Value	
1	Frame or Aluminum	1	1,500	1	1,500	\$91,700
2	Stucco					
3	Tile					
4	Concrete Block					
5	Metal					
6	Concrete					
7	Brick	--		Attic		
8	Stone	--	1,500	Bsmt.	0	\$30,200
9	Frame w/Masonry	--		Crawl	-----	
Asphalt Shingles				TOTAL BASE		\$121,900
Slate or Tile				Row-type Adjustment		100%
Metal				SUB-TOTAL		\$121,900
Floors	B 1			Unfinished interior [-]		
Earth						

- 1,500 sq. ft. for both the one story and the basement.
- Use the square footage and Appendix C – Schedule A to find the values for each of the floors.
- Add both together to find the total base and subtotal (Note: we will always assume the Row-type adjustment is 100% in this class so no adjustment needs to be made).





# Adjustments

SUB-TOTAL		\$121,900
	Unfinished interior [-]	
	Extra Living Units [+]	
	Rec. Room [+]	
	Loft [+]	
M/1	Fireplace [+]	\$4,400
	No Heating [+]	
Full	Air Conditioning [+]	\$3,300
	No Electric [+]	
Plumbing 11 - 5 = 6 X 800		\$4,800
	No Plumbing [+]	
	Specialty Plumbing [+]	
SUB-TOTAL, ONE UNIT		
SUB-TOTAL UNITS		
Garages		
	Integral [-]	
	Attached Garage [+]	\$16,700
	Attached Carport [+]	
	Basement [+]	
Exterior Features		\$7,100
SUB-TOTAL		\$158,200

- The dwelling has a masonry fireplace with one opening. This is found in Appendix C – Schedule E.1.
- The dwelling also has central air conditioning. This is found in Appendix C – Schedule C under the Add Central Air Conditioning columns.
- The description also listed that there are three full bathrooms so there will be extra fixtures that will need adjustments. Remember, each full bathroom has three fixtures.
- 600 sq. ft. Attached Frame Garage. This is found in Appendix C – Schedule E.2.
- There are two exterior features (80 sq. ft. Stoop and 350 sq. ft. Wood Deck). The values for exterior features are found in Appendix C – Schedule E.2





# Multipliers

SUB-TOTAL	\$158,200
Grade and Design Factor	105%
ADJUSTED SUB-TOTAL	\$166,110
Location Multiplier	112%
Replacement Cost	\$186,040

- The next step is multiplying by the Quality Grade Factor.
- The description indicated that this is a C+1 dwelling. Use Appendix C – Schedule F to find the percentage to be multiplied with the subtotal.
- After the adjusting for the grade, the LCM must be applied to the adjusted subtotal. Use Appendix C – Page 23 to find the LCM percentage for the aforementioned county.
- The Adjusted Sub-Total and RCN are both rounded to the nearest \$10.





# Finding the Remainder Value and Improvement Value

- The RCN from the Cost Ladder is transferred over to the Replacement Cost column for the Summary of Residential Improvements.
- Depreciation is then calculated and subtracted from the RCN which equals the Remainder Value. The depreciation is calculated by multiplying the depreciation percentage times the RCN to get the depreciation dollar amount; this is then subtracted from the RCN to get the Remainder Value. The depreciation for the dwelling can be found in Appendix B – Page 11 “C” Grade chart.
- The Remainder Value is then multiplied by the Neighborhood Factor. Note: there was no obsolescence or percent complete adjustments that needed to be made.
- The Remainder Value is rounded to the nearest \$10, and the Improvement Value is rounded to the nearest \$100.

SUMMARY OF RESIDENTIAL IMPROVEMENTS																			
ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L/M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value	
01	Dwelling	1	Frame	C+1	2003	13	Avg						\$186,040	12%	\$163,720		1.00	\$163,700	
02																			
03																			
04																			
05																			
06																			
07																			
													Supplemental Card Residential Improvement Total						
													Total Residential Improvement Value						\$163,700



# One Last Thing...

- The description indicated that the property also has a 80 sq. ft. utility shed.
- To find the base rate, multiply the rate per square foot in the cost schedule (Appendix C – Schedule G.1 Page 12) by the Quality Grade Factor (Appendix C – Schedule F).
- Then multiply by the LCM to get the adjusted base rate; this is then multiplied by the square footage which gives you the RCN.
- To find the improvement value, follow the same steps as you would with the dwelling (depreciation, Neighborhood Factor etc.)
- However, yard improvements have a different depreciation schedule.
- This is determined by the life expectancy of the improvement.
- Find the life expectancy of the improvement (Appendix B, pages 13-14) and use that particular life expectancy's depreciation schedule. These can be found in Appendix B, pages 17-18.

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS																		
ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Utility Shed	1.0	Frame	C	2010	6	Avg	\$22.23		1.12	\$24.90	80	\$1,990	20%	\$1,590		1.00	\$1,600
02																		
06																		
07																		
Data Collector / Date							Appraiser / Date					Supplemental Card Non-Residential Improvement Total						
												Total Non-Residential Improvement Value						\$1,600



# Finishing Up...

---

- Add both the improvement value for the dwelling and the improvement value for the utility shed to get the final answer of \$165,300.

Occupancy		Story Height	Attic	Bsmt	Crawl
1	Single Family	[ ]	0 None	0 None	0
2	Duplex	2	1 Unfinished	1 1/4	1
3	Triplex	2	1 1/2 Finished	2 1/2	2
4	4-6 Family	3	3 3/4 Finished	3 3/4	3
5	M. Home	0	4 Finished	4 Full	4
Construction		Base Area	Floor	Finished Living Area	Value
1	Frame or Aluminum	1,500	1	1,500	\$91,700
2	Stucco				
3	Tile				
4	Concrete Block				
5	Metal				
6	Concrete				
7	Brick	--	Attic		
8	Stone	1,500	Bsmt.	0	\$30,200
9	Frame w/Masonry	--	Crawl	----	
Asphalt Shingles		TOTAL BASE			\$121,900
Slate or Tile		Row-type Adjustment			100%
Metal		SUB-TOTAL			\$121,900
Floors		Unfinished interior [-]			
Earth		Extra Living Units [+]			
Slab		Rec. Room [+]			
Sub & Joist		Loft [+]			
Wood		Fireplace [+]			\$4,400
Parquet		No Heating [+]			
Tile		M/1	Air Conditioning [+]		\$3,300
Carpet		No Electric [+]			
Unfinished		Plumbing			\$4,800
Interior Finish		11 - 5 = 6 X 800			
Plaster or Dry Wall		No Plumbing			
Paneling		Specialty Plumbing			
Fiberboard		SUB-TOTAL ONE UNIT			
Earth		SUB-TOTAL UNITS			
Unfinished		Garages			
No Electrical		Integral			
Accommodations		Attached Garage			\$16,700
Total Number of Rooms		Attached Carport			
Bedrooms		Basement [+]			
Family Room		Exterior Features			\$7,100
Formal Dining Room		SUB-TOTAL			\$158,200
		Grade and Design Factor			105%
		ADJUSTED SUB-TOTAL			\$166,110
		Location Multiplier			112%
		Replacement Cost			\$186,040

IMPROVEMENT DATA AMD COMPUTATIONS

HOUSE

IMPROVEMENT FEATURES	
Major Items	Agricultural
C Concrete Floor	Barns
D Dirt floor	T/S/L/P/E/I/D/Q
E Electric Lights	Open Side
G Grade	Confinement
H Heating	T/P/E/C/I
I Insulation	Slatted Floors
L Loft	Pits
P Plumbing	Corn Crib
Q Living Quarters	T
S Stalls	Frame/Wire
T Type of Const.	Free standing Drive-thru
Residential	
	No Roof
BOAT HOUSE	
T/G/D/Q	Floor
Open Side	GRANARIES
	L
CAR SHED	
T/G/D	Storage Bins
Open/Enclosed	GRAIN BINS
Back-To-Back	Diameter & Height
Stall Walls	or Bushel Capacity
DETACH GARAGE	QUONSET BUILDING
T/G/D/L/Q	E/I/H
GREENHOUSE	Floor:Asph/Conc
G	SLURRY TANKS
Free Standing	In/above ground
Attached at End	Round/Rectangle
Lean-to	Plank / No Cover
STABLES	SILO
T/G/D/L	Concrete:
SWIMMING POOL	Conc.Stave/Reinf'd
T	Masonry:
Underwater Lighting	Tile/Conc.. Blk/Brick
Tile: Ceramic/Plastic	Steel:
Filter	Unlined/Glass Lined
Heater	No Roof
Non-Rect.Shape	TRENCH AND BUNKER
Concrete Apron	SILO
Enclosure Type	Depth
TENNIS COURT	Width
Clay/Sod/Asphalt	
UTILITY SHED	
T/G	

SUMMARY OF RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Dwelling	1	Frame	C+1	2003	13	Avg						\$186,040	12%	\$163,720		1.00	\$163,700
02																		
03																		
04																		
05																		
06																		
07																		
Supplemental Card Residential Improvement Total																		
Total Residential Improvement Value																	\$163,700	

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

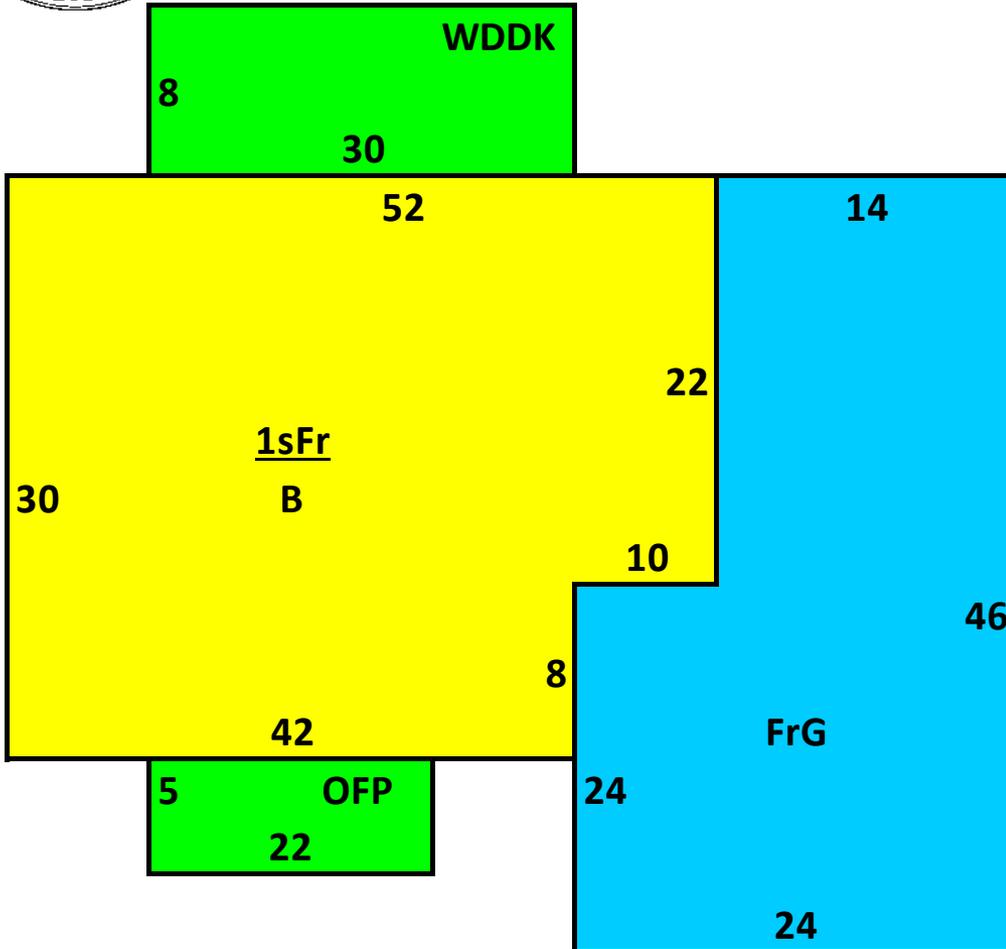
ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Utility Shed	1.0	Frame	C	2010	6	Avg	\$22.23		1.12	\$24.90	80	\$1,990	20%	\$1,590		1.00	\$1,600
	Central Warm Air																	
	Hot Water or Steam																	
	Half Baths																	
	Heat Pump																	
	NO HEAT																	
	Gravity,Wall,Space																	
	Extra Fixture																	
	Central Air Cond.																	
	TOTAL																	
Data Collector / Date													Appraiser / Date			Supplemental Card Non-Residential Improvement Total		
Total Non-Residential Improvement Value													\$1,600					



# Cost Approach

## Practice Problem # 6 House # 1

### Additional Square Foot Calculation Problems

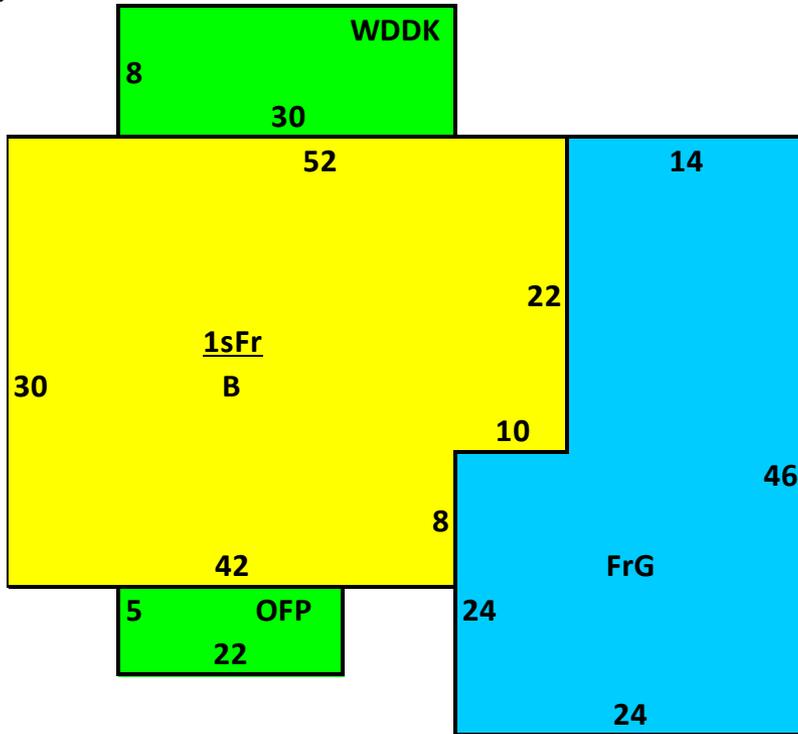


	Sq. Feet	Value
1sFr		
B		
FrG		
OFP		
Wddk		
<b>TOTAL</b>		<b>\$0</b>





**Cost Approach**  
**Practice Problem # 6 House # 1 Answer**  
**Additional Square Foot Calculation Problems**



	Sq. Feet	Value
1sFr	1,480	\$90,800
B	1,480	\$29,900
FrG	884	\$22,200
OFP	110	\$4,300
Wddk	240	\$4,000
<b>TOTAL</b>		<b>\$151,200</b>

30 X 42 = 1,260 + 10 X 22 = 220 for total first story of same for basement

1480

1480

24 X 24 = 576

14 X 22 = 308 for a total square footage of

884

5 X 22 = 110 for a total square footage of

110

8 X 30 = 240 for a total square footage of

240

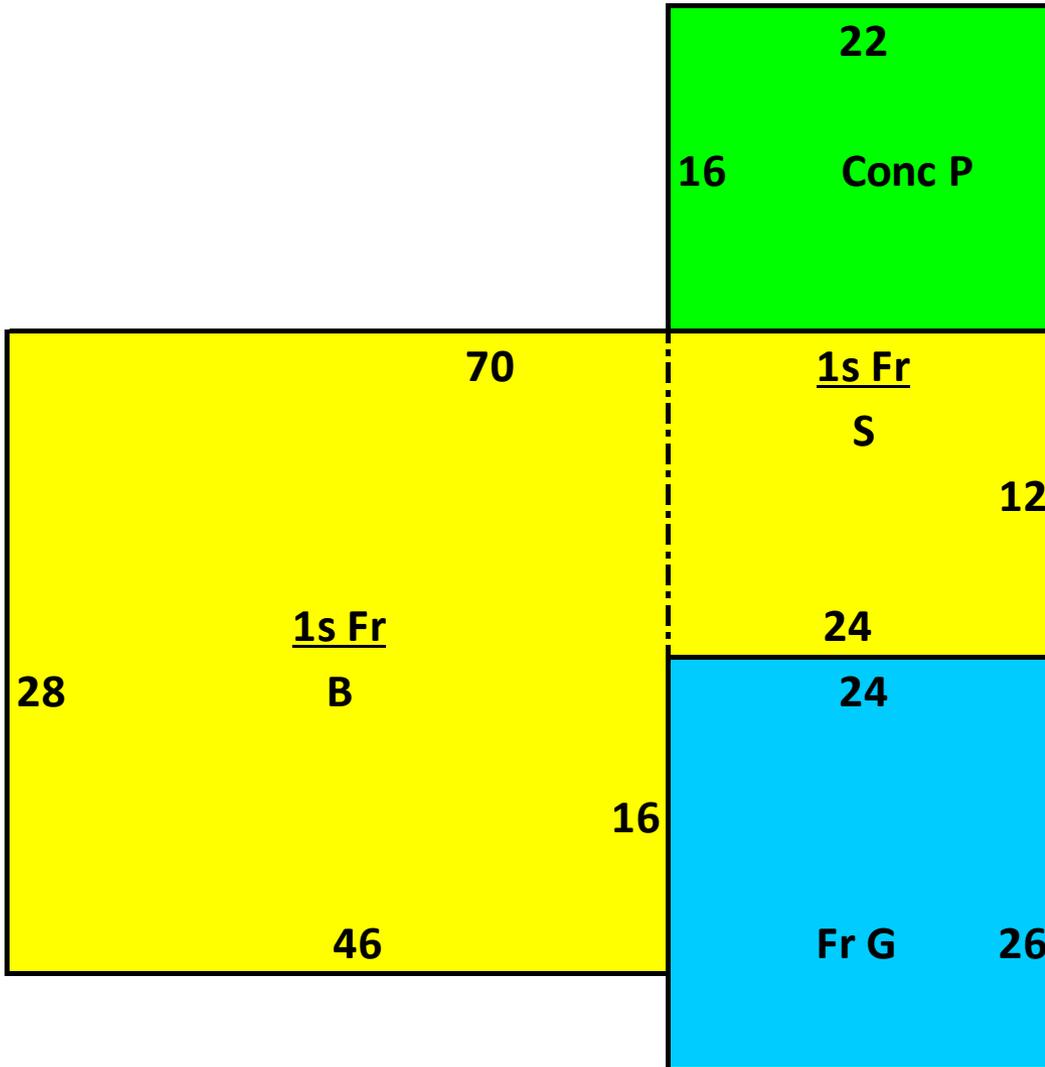




# Cost Approach

## Practice Problem # 6 House # 2

### Additional Square Foot Calculation Problems

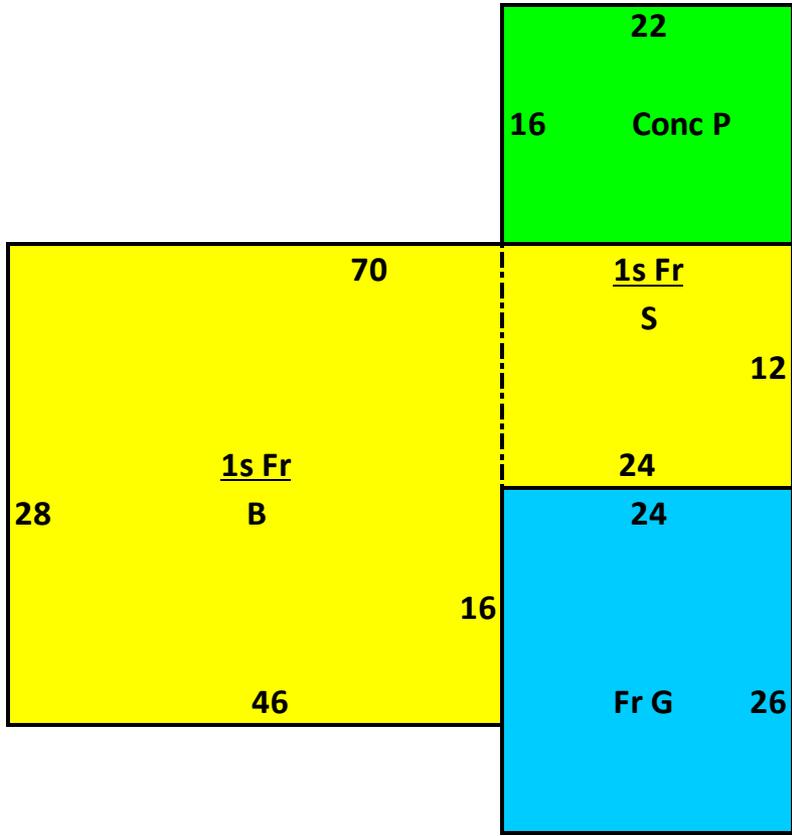


	Sq. Feet	Value
1sFr		
B		
FrG		
Conc P		
<b>TOTAL</b>		<b>\$0</b>



**Cost Approach  
Practice Problem # 6 House # 2 Answer**

**Additional Square Foot Calculation Problems**



	Sq. Feet	Value
1sFr	1,576	\$94,600
B	1,288	\$27,800
FrG	624	\$16,700
Conc P	352	\$1,700
<b>TOTAL</b>		<b>\$140,800</b>

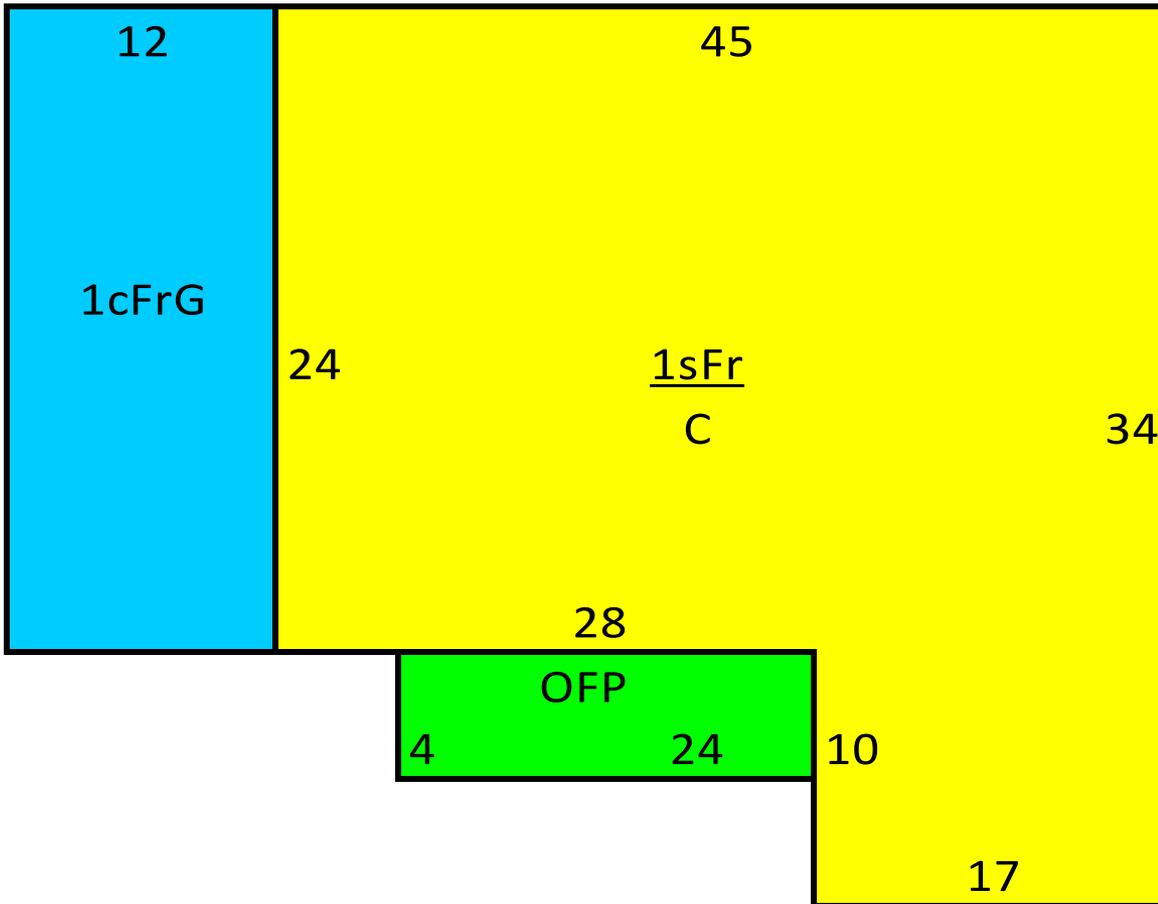
46 X 28 = 1,288 +  
 24 X 12 = 288 for a total square footage of 1,576  
 46 X 28 = 1,288 (For the Basement)  
 24 X 26 = 624  
 16 X 22 = 352



# Cost Approach

## Practice Problem # 6 House # 3

### Additional Square Foot Calculation Problems



	Sq. Feet	Value
1sFr		
C		
1cFrG		
OFP		
TOTAL		\$0

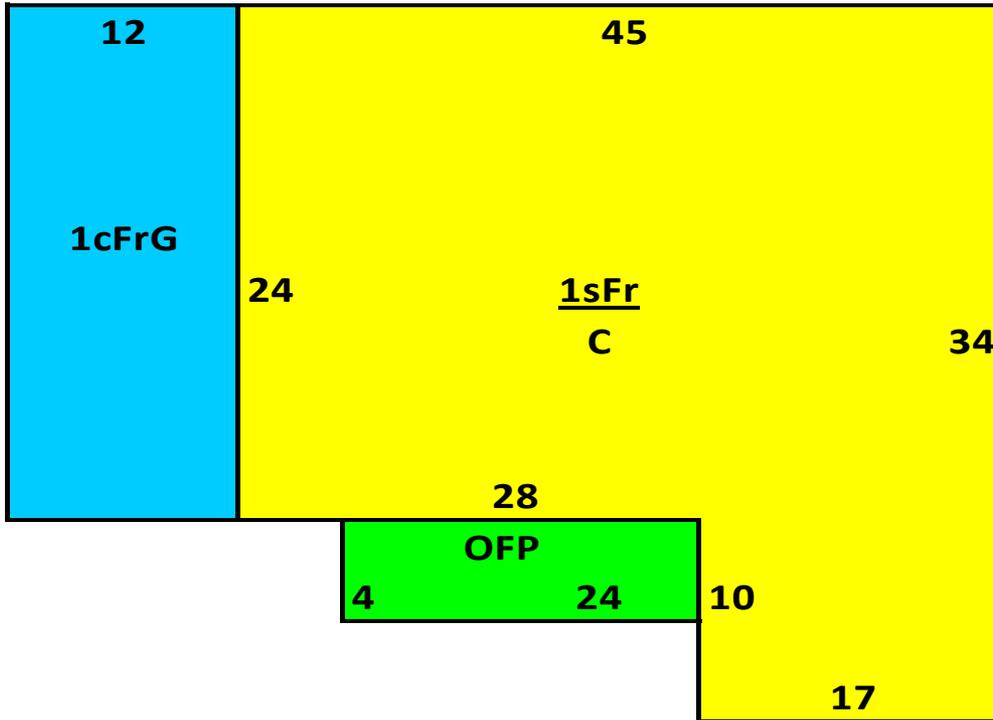




## Cost Approach

### Practice Problem # 6 House # 3 Answer

### Additional Square Foot Calculation Problems



	Sq. Feet	Value
1sFr	1,250	\$83,000
C	1,250	\$6,300
1cFrG	288	\$10,500
OFP	96	\$4,300
<b>TOTAL</b>		<b>\$104,100</b>

45 X 24 = 1080 Square Feet +  
 10 X 17 = 170 Square Feet = 1,250 1sFr & C same  
 12 X 24 = 288 Square Feet  
 4 X 24 = 96 Square Feet



## Cost Approach

### Level I--Dwelling/Yard Structures

- 1.) You are assessing a basement of 1,500 square feet. Of the total, 850 square feet is finished space. What amount would you put on the property record card to reflect the assessment for the basement?"
- 2.) A 1,400 square foot one-story frame house has two increments of brick on the front. What base price would you put on the property record card for the home?
- 3.) A brick home has 2,500 square feet on the first floor and 1,750 square feet on the second floor. You also have an unfinished basement of 2,500 square feet. What base prices would you record on the property record card for each floor? What would be the subtotal for the base prices?
- 4.) On January 1, a dwelling is not complete. When you do your field work, you discover that the house is complete to the point where the owners are ready to install the plumbing fixtures, floor coverings and light fixtures. You have calculated a remainder value for this home of \$195,700. Since it is not finished, what value would you place on the property record card for this home?



**Cost Approach**  
**Level I--Dwelling/Yard Structures Answers**

# 1.)	1500 square foot basement. 850 square feet is finished.	
	price for 1500 square foot basement unfinished PLUS	\$30,200
	price for 850 square feet of finish in basement	\$23,300
	Appendix C, Schedule A	\$53,500
# 2.)	1400 square foot one story frame house with two increments of brick.	\$88,100
	Value for increment and home	\$3,200
	Chapter 3, page26 for brick increment explanation	\$91,300
	Appendix C, page 2 for value	
# 3.)	Brick two story home	
	2500 square feet on first floor	\$147,400
	1750 square feet on second floor	\$63,800
	2500 square feet unfinished basement	\$43,200
	Appendix C, Schedule A	\$254,400
# 4.)	Ready to install plumbing fixtures	
	RCN of home	\$195,700
	percent complete Appendix C, Schedule A.1	83%
		\$162,431
	Round	\$162,430



## Cost Approach

### Level I--Dwelling/Yard Structures

- 5.) A home has a basement recreation room that has flooring and ceiling finish. It occupies 968 square feet. What value will you put on the property record card for the basement recreation room?
- 6.) Using the square footage from problem 3 above, how much would you add on the property record card for air conditioning?
- 7.) A house has 2 full baths and 2 half baths. How much will you show on the property record card for plumbing?
- 8.) The house in problem 3 has an attached brick garage that is 20 feet X 22 feet. What amount will you show on the property record card for this garage?

## Cost Approach

### Level I--Dwelling/Yard Structures Answers

# 5.) Basement Rec Room with ceiling & floor finish		
968 square feet		
Rec Room Value		\$4,400
This is a Rec Room 1--Chapter 3, Page 28-Table 3-11		
# 6.) Add for A/C based on Problem 3 square footage		
2500 square feet on first floor		\$4,800
1750 square feet on second floor		\$2,500
Total A/C		\$7,300
Appendix C, Schedule C, Page 6		
# 7.) What needs to be added for plumbing for house in #3?		
2 full baths	3 fixtures in each one =	6
2 half bath	2 fixtures in each one=	4
1 kitchen sink	1 fixture allowed	1
1 water heater	1 fixture allowed	1
		12
Less number allowed in pricing in App C		-5
Number of fixtures to add for		7
Price to add from App C, Schedule D, page 7		\$800
Total value to add 7 fixtures X \$800		\$5,600
# 8.) Attached Brick Garage for House in # 3		
20 by 22	440 square feet	
Value to add for Garage From App C, Sch. E.2, page 7		\$13,100



## **Cost Approach**

### **Level I--Dwelling/Yard Structures**

- 9.) The house in problem 3 also has a brick patio that contains 650 square feet, an open masonry porch of 348 square feet and a stoop of 80 square feet. What amount will you show on the property record card?
- 10.) A quality grade factor of B-1 is what percent?
- 11.) You are trying to determine the value of a detached frame garage that measures 30 feet by 50 feet. It contains a dirt floor and is a Grade C-1. What is the base rate for the garage? It is in Marshall County. What is the adjusted base rate?
- 12.) A dwelling is 12 years old, has a Quality Grade of C+2, and is in Average condition. What is the depreciation percentage for this dwelling? If the dwelling has an RCN of \$210,500, what is its Remainder Value? Round your answer to the nearest \$10.

# Cost Approach

## Level I--Dwelling/Yard Structures Answers

# 9.)	House in problem has exterior features		
	Brick Patio 650 square feet		\$8,100
	Open Masonry Porch 348 square feet		\$10,800
	Stoop, 80 square feet		\$1,900
	All values come from App C, Sch E.2, page 9		\$20,800
	 Brick Patio		
	Schedule only goes to 400 square feet & we have 650		\$4,800
	We have 250 more feet than schedule		
	For every 100 square feet we add	\$1,100	
	250 divided by 100 = 2.5 rounds to 3		
	3	\$1,100 equals	\$3,300
	TOTAL		\$8,100
# 10.)	Quality grade factor of B-1 is what percent?		115%
	App C, Schedule F, page 9 at the bottom		
# 11.)	Detached Frame Garage		
	30 by 50	1500 square feet	\$20.08
	Dirt Floor		-\$5.29
			\$14.79
	Grade C-1		95%
			\$14.05
	Marshall County	L/M = .92	92.00%
	Adjusted base rate?		\$12.93
	App C, Schedule G.1, Page 10		
# 12.)	A dwelling is 12 years old, has a Quality Grade of C+2, and is in Average condition		
	Appendix B, C Grade Chart, page 11		11%
	 Dwelling has an RCN of		\$210,500
	Deprciation %		11%
	Depreciation \$ Amount		\$23,155
	Remainder Value (Rounded to nearest \$10)		\$187,350



## Cost Approach Practice Problem # 1

You are valuing a detached garage. The following information was given to you.  
What total improvement value will you provide?

Detached Frame Garage	600 square feet	
Dirt Floor		
Grade		C-1
Location Multiplier Tippecanoe County		0.91
Neighborhood Factor		0.93
Built		1954
Condition		Fair



## Cost Approach Practice Problem # 1 Answer

Detached Frame Garage	600 square feet		
Dirt Floor			
Grade		C-1	
Location Multiplier Tippecanoe County		0.91	
Neighborhood Factor		0.93	
Built		1954	
Condition		Fair	
Detached garage--base price			\$27.94
Less Dirt Floor			-\$5.29
			\$22.65
Grade	C-1	95%	\$21.52
L/M		91.00%	\$19.58
Square footage		600	\$11,750
RCN			0.47
Depreciation Appendix B			\$6,230
Times Neighborhood Factor		93%	
True Tax Value of Improvement			\$5,800

## Cost Approach

### House # 1:

This house is in Clark County. It is a frame house that was built in 1905. It is in good condition with a B-1 Grade. The neighborhood factor is 1.01. The house contains 1,173 square feet and has one bath. It has central air. There is an open frame porch of 149 square feet. There is a detached concrete block garage that measures 22 feet by 20 feet. It was built in 1990 and is a grade C + 1 and is in average condition.

What is the total improvement value of this house?

Occupancy		Story Height	Attic	Bsmt	Crawl
1	Single Family	[ ]	0 None	0 None	0
2	Duplex	[ ] -	1 Unfinished	1 1/4	1
3	Triplex	2 Bi-level	2 1/2 Finished	2 1/2	2
4	4-6 Family	3 Tri-level	3 3/4 Finished	3 3/4	3
5	M. Home	0 Row-type	4 Finished	4 Full	4

Construction	Base Area	Floor	Finished Living Area	Value	
1 Frame or Aluminum	1	1,173	1.0	1,173	\$79,800
2 Stucco					
3 Tile					
4 Concrete Block					
5 Metal					
6 Concrete					
7 Brick	--		Attic		
8 Stone	--		Bsmt.		
9 Frame w/Masonry	--		Crawl		

Roofing		TOTAL BASE	Value
Asphalt Shingles			\$79,800
Slate or Tile		Row-type Adjustment	100%
Metal		SUB-TOTAL	\$79,800
Floors	B 1 2		
Earth		Unfinished Interior [-]	
Slab		Extra Living Units [+]	
Sub & Joist		Rec. Room [+]	
Wood		Loft [+]	
Parquet		Fireplace [+]	
Tile		No Heating [+]	
Carpet		Air Conditioning [+]	\$2,900
Unfinished		Full	
Interior Finish	B 1 2		
Plaster or Dry Wall			
Paneling		No Electric [+]	
Fiberboard			
Earth		Plumbing	
		TF 5 - 5 = 0 x \$800	
		No Plumbing	
		Specialty Plumbing	
Unfinished		SUB-TOTAL, ONE UNIT	
No Electrical		SUB-TOTAL, UNITS	
Accommodations		Garages	
		Integral	
		Attached Garage	
		Attached Carport	

Total Number of Rooms	Basement	Value
Bedrooms	Basement [+]	
Family Room	Exterior Features	\$5,600
Formal Dining Room	SUB-TOTAL	\$88,300
	Grade and Design Factor	115%
	ADJUSTED SUB-TOTAL	\$101,550
	Location Multiplier	90.00%
	Replacement Cost	\$91,400
Loft Area	Heat Pump	
Rec. Room	NO HEAT	
Room Area	Gravity Wall Space	
Fire Place	Central Air Cond.	
Masonry	TOTAL	5
Openings	Extra Living Unit	
	Conversion #	
	Designed #	
	No Plumbing	

IMPROVEMENT DATA AMD COMPUTATIONS

Cost Approach HOUSE #1

Clark County 90.00%

Open Frame Porch 149 square feet \$5,600

\$5,600

Det Garage 22 X 20 Concrete Block \$29.96  
C+1 Grade 105%

Base Rate \$31.46

A/C First Story \$2,900

\$2,900

IMPROVEMENT FEATURES	
Major Items	Agricultural
C Concrete Floor	Barns
D Dirt floor	T/S/L/P/E/I/D/Q
E Electric Lights	Open Side
G Grade	Confinement
H Heating	T/P/E/C/I
I Insulation	Slatted Floors
L Loft	Pits
P Plumbing	Corn Crib
Q Living Quarters	T
S Stalls	Frame/Wire
T Type of Const.	Free standing
	Drive-thru
Residential	No Roof
BOAT HOUSE	Floor
T/G/D/Q	GRANARIES
Open Side	L
CAR SHED	Storage Bins
T/G/D	Pole Type
Open/Enclosed	GRAIN BINS
Back-To-Back	Diameter & Height
Stall Walls	or Bushel Capacity
DETACH GARAGE	QUONSET BUILDING
T/G/D/L/Q	E/I/H
GREENHOUSE	Floor:Asph/Conc
G	SLURRY TANKS
Free Standing	In/above ground
Attached at End	Round/Rectangle
Lean-to	Plank / No Cover
STABLES	SILO
T/G/D/L	Concrete:
SWIMMING POOL	Conc. Slab/Reinfd
T	Masonry:
Underwater Lighting	Tile/Conc.. Blk/Brick
Tile: Ceramic/Plastic	Steel:
Filter	Unlined/Glass Lined
Heater	No Roof
Non-Rect.Shape	TRENCH AND BUNKER
Concrete Apron	SILO
Enclosure Type	Depth
TENNIS COURT	Width
Clay/Sod/Asphalt	
UTILITY SHED	
T/G	

SUMMARY OF RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Dwelling	1.0	Fr	B-1	1905		Good						\$91,400	30%	\$63,980		1.01	\$64,600
02	Det Gar	1.0	CB	C+1	1990		Avg	\$31.46		90%	\$28.31	440	\$12,460	22%	\$9,720		1.01	\$9,800
03																		
04																		
05																		
06																		
07																		

Supplemental Card Residential Improvement Total

Total Residential Improvement Value \$74,400

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Heat & Air Conditioning		Plumbing	#	TF													
02	Central Warm Air		Full Bath	1	3													
	Hot Water or Steam		Half Baths															
	Heat Pump		Electric	1	1													
	NO HEAT		Water Heater	1	1													
	Gravity Wall Space		Stratification															
	Central Air Cond.																	
	TOTAL																	

Data Collector / Date

Appraiser / Date

Supplemental Card Non-Residential Improvement Total

Total Non-Residential Improvement Value



## Cost Approach

### House # 2:

This brick 2 story home is located in Vermillion County. It was built in 1989. It is in average condition and graded a C. The neighborhood factor is 1.03. The house contains 2,329 square feet on the first floor and 1,209 square feet in the full upper story. There is a finished basement of 1,925 square feet. The home also has an open frame porch of 312 square feet, a brick patio of 466 square feet, and a wood deck of 594 square feet. The house has four full baths and central air conditioning throughout. There is one masonry fireplace with one opening. There is also an attached garage that is 24 by 24. There is also a detached brick garage that measures 20 feet by 30 feet. It was just built and is in good condition with a grade of B-1.

What is the total improvement value of this home?



Occupancy		Story Height	Attic		Bsm't Crawl	
1	Single Family		0	None	0	None
2	Duplex	[ ] -	1	Unfinished	1	1/4
3	Triplex	2 Bi-level	2	1/2 Finished	2	1/2
4	4-6 Family		3	3/4 Finished	3	3/4
5	M. Home	0 [ ] - Row-type	4	Finished	4	Full
Construction		Base Area	Floor	Finished Living Area	Value	
1	Frame or Aluminum	7	2,329	1.0	2,329	\$138,800
2	Stucco	7	1,209	1.0	1,209	\$49,300
3	Tile					
4	Concrete Block					
5	Metal					
6	Concrete					
7	Brick	--		Attic		
8	Stone	--	1,925	Bsm't.	1,925	\$80,000
9	Frame w/Masonry	--		Crawl	----	
Roofing		TOTAL BASE				\$268,100
Asphalt Shingles						
Slate or Tile						
Metal						
Floors		SUB-TOTAL				\$268,100
Earth						
Slab						
Sub & Joist						
Wood						
Parquet						
Tile						
Carpet						
Unfinished						
Interior Finish		SUB-TOTAL				\$6,100
Plaster or Dry Wall						
Paneling						
Fiberboard						
Earth						
Unfinished						
No Electrical						
Accommodations		SUB-TOTAL ONE UNIT				\$7,200
Garages						
Integral						
Attached Garage						
Attached Carport						
Basement						
Exterior Features		SUB-TOTAL				\$23,300
Grade and Design Factor						
ADJUSTED SUB-TOTAL						
Location Multiplier						
Replacement Cost						
Heat & Air Conditioning						
Central Warm Air						
Hot Water or Steam						
Heat Pump						
NO HEAT						
Gravity,Wall,Space						
Central Air Cond.						
Loft Area						
Rec. Type						
Room Area						
Fire Place						
Masonry						
Metal						
Openings						

### Cost Approach HOUSE # 2

**Vermillion County 0.9200**

Attached Garage 24 X 24 also brick **\$17,400**

Open Frame Porch 312 square feet **\$9,200**  
 Brick Patio 466 square feet **\$5,900**  
 Wood Deck 594 square feet **\$8,200**  
**\$23,300**

Brick Patio 466 - 400 = 66 so add for an additional 100 sq. feet **\$4,800 \$1,100 \$5,900**  
 Wood Deck 594 - 400 = 194 so add for 200 square feet **\$5,800 \$2,400 \$8,200**

IMPROVEMENT FEATURES	
Major Items	Agricultural
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E Electric Lights	Open Side
G Grade	Confinement
H Heating	T/P/E/C/I
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S Stalls	Frame/Wire
T Type of Const.	Free standing
	Drive-thru
	No Roof
Residential	
BOAT HOUSE	Floor
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Open Side	L
CAR SHED	Storage Bins
T/G/D	Pole Type
Open/Enclosed	GRAIN BINS
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DETACH GARAGE	QUONSET BUILDING
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Lean-to	Plank / No Cover
STABLES	SILO
T/G/D/L	Concrete:
SWIMMING POOL	Conc.Stave/Rein'f'd
T	Masonry:
Underwater Lighting	Tile/Conc.. Blk/Brick
Tile: Ceramic/Plastic	Steel:
Filter	Unlined/Glass Lined
Heater	No Roof
Non-Rect.Shape	TRENCH AND BUNKER
Concrete Apron	SILO
Enclosure Type	Depth
TENNIS COURT	Width
Clay/Sod/Asphalt	
UTILITY SHED	
T/G	

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

Det Garage that is Brick 20 X 30 600 square feet	Base Rate	\$35.39
Adjust for Grade of B-1		115%
	Base Rate	\$40.70

Air Conditioning

1st floor	\$4,400
2nd Floor	\$1,700
	<b>\$6,100</b>

SUMMARY OF RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Dwelling	2.0	Br	C	1989	27	Avg						\$300,380	24%	\$228,290		1.03	\$235,100
02																		
03																		
04																		
05																		
06																		
07																		
Supplemental Card Residential Improvement Total																		
Total Residential Improvement Value																	\$235,100	

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

ID	Use	Story Hgt.	Const. Type	Grade	Year Const.	Eff Age	Cond.	Base Rate	Features	L / M	Adj. Rate	Size or Area	Replacement Cost	Total Depr.	Remainder Value	% Comp	Nhbd Factor	Improvement Value
01	Det garage	1.0	Br	B-1	2016		Good	\$40.70			0.92	\$37.44	600	\$22,460	0%	\$22,460	1.03	\$23,100
02																		
03																		
04																		
05																		
06																		
07																		
Supplemental Card Non-Residential Improvement Total																		
Total Non-Residential Improvement Value																	\$23,100	

Data Collector / Date \_\_\_\_\_ Appraiser / Date \_\_\_\_\_



# Contact Us

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## Chris Wilkening

- Telephone: 317-234-8720
- E-mail: [cwilkening@dlgf.in.gov](mailto:cwilkening@dlgf.in.gov)
- Website: [www.in.gov/dlgf](http://www.in.gov/dlgf)
- “Contact Us”

<http://www.in.gov/dlgf/2338.htm>

