



Department of Local Government Finance

Cost Approach Problems and Answers # 3

2023 Level I Tutorials

Level I – Cost Approach 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?



Level I - Cost Approach
Dwelling/Yard Structures Answers

1.) 1500 square foot basement. 850 square feet is finished.	
price for 1500 square foot basement unfinished PLUS	\$34,200
price for 850 square feet of finish in basement	\$26,100
Appendix C, Schedule A	\$60,300
2.) 1400 square foot one story frame house with two increments of brick.	\$97,900
Value for increment and home	\$3,400
Chapter 3, page26 for brick increment explanation	\$101,300
Appendix C, page 2 for value	
3.) Brick two story home	
2500 square feet on first floor	\$163,300
1750 square feet on second floor	\$69,900
2500 square feet unfinished basement	\$49,000
Appendix C, Schedule A	\$282,200
4.) Ready to install plumbing fixtures	
RCN of home	\$195,700
percent complete Appendix C, Schedule A.1	83%
	\$162,431
Round	\$162,430



- 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?



5.) Basement Rec Room with ceiling & floor finish
 968 square feet
 Rec Room Value
 This is a Rec Room 1--Chapter 3, Page 28-
 Table 3-11

\$4,700

6.) Add for A/C based on Problem 3 square footage
 2500 square feet on first floor
 1750 square feet on second floor
 Total A/C
 Appendix C, Schedule C, Page 6

\$5,400

\$2,700

\$8,100

7.) What needs to be added for plumbing for house in #3?

2 full baths 3 fixtures in each one =
 2 half bath 2 fixtures in each one=
 1 kitchen sink 1 fixture allowed
 1 water heater 1 fixture allowed

6

4

1

1

12

-5

7

\$800

\$5,600

OR

Base Price Includes 1 Full bath, Kitchen Sink & Water Heater

So you know you have:

1 Full Bath Extra

2 Half Baths Extra

Number of fixtures to add for

3 Fixtures =

2 Fixtures =

3

4

7

\$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

\$14,700



- 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 is a Grade C-1. What is the base rate for the garage? It is in Elkhart 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.



9.)	House in problem has exterior features: BrP 650 sq ft, OMP 348 sq ft, & MStp 80 sq ft			
	Brick Patio 650 square feet - Schedule only goes to 400 sq ft			
	<i>Brick Patio:</i>	<i>650 sq ft - 400 sq ft = 250 sq ft left</i>	<i>\$5,000 (first 400 sq ft)</i>	
		<i>250 is rounded to nearest 100 = 300</i>		
		<i>Per 100 add \$1,200 = 3 x \$1,200</i>	<i>\$3,600 (300 sq ft additional)</i>	
	Total Brick Patio		<u>\$8,600</u>	\$8,600
	Open Masonry Porch 348 square feet			\$12,300
	Stoop, 80 square feet			\$2,100
	All values come from App C, Sch E.2, page 9			\$23,000
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	\$22.81	
	Grade C-1		95%	
	<u>Base Rate - ?</u>		\$21.67	
	Elkhart	L/M = .92	<u>92.00%</u>	
	<u>Adjusted base rate - ?</u>			\$19.94
	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			11%
	Appendix B, C Grade Chart, page 11			
	Dwelling has an RCN of		\$210,500	
	Deprciation %		11%	
	Depreciation \$ Amount		\$23,155	
	Remainder Value (Rounded to nearest \$10)			\$187,350



Level I - Cost Approach Practice Problem # 1

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

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



Cost Approach Practice Problem # 1 Answer

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

Calculate Base Rate	
Det. Garage Base Price (Schedule G.1) =	\$31.48
C-1 Quality Grade Factor	x 95%
BASE RATE	\$29.91

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 Gar	1.0	Fr	C-1	1954		Fair	\$29.91		0.93	\$27.81	600	\$16,690	47%	\$8,850		0.93	\$8,200

Improvement Value for Detached Frame Garage **\$8,000** - Rounded to nearest \$100



Level I - Cost Approach House # 1

This house is in Clark County. It is a frame house that was built in 1906. 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 1991 and is a grade C+1 in average condition.

What is the total improvement value?



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	1/2 Finished	2	1/2	2		
4	4-6 Family		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	1,173	1.0	1,173	\$88,600			
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				\$88,600			
Asphalt Shingles				Row-type Adjustment		100%			
Slate or Tile				SUB-TOTAL		\$88,600			
Metal				Unfinished interior [-]					
Floors		B 1 2		Extra Living Units [+]					
Earth				Rec. Room [+]					
Slab				Loft [+]					
Sub & Joist				Fireplace [+]					
Wood				No Heating [+]					
Parquet				Full		Air Conditioning [+]	\$3,200		
Tile				No Electric [+]					
Carpet				Plumbing		TF 5 - 5 = 0 x \$800			
Unfinished				No Plumbing		[+]			
Interior Finish		B 1 2		Specialty Plumbing		[+]			
Plaster or Dry Wall				SUB-TOTAL, ONE UNIT					
Paneling				SUB-TOTAL, UNITS					
Fiberboard				Garages					
Earth				Integral		[-]			
Unfinished				Attached Garage		[+]			
No Electrical				Attached Carport		[+]			
Accommodations		TOTAL		Garages					
Total Number of Rooms				Integral		[-]			
Bedrooms				Attached Garage		[+]			
Family Room				Attached Carport		[+]			
Formal Dining Room				Basement		[+]			
				Exterior Features		\$6,400			
				SUB-TOTAL		\$98,200			
				Grade and Design Factor		115%			
				ADJUSTED SUB-TOTAL		\$112,930			
				Location Multiplier		90%			
				Replacement Cost		\$101,640			
				Heat & Air Conditioning		Plumbing # TF			
				Central Warm Air		Full Bath 1 3			
				Hot Water or Steam		Half Baths			
				Heat Pump		Kitchen Sink 1 1			
				NO HEAT		Water Heater 1 1			
				Gravity,Wall,Space		Extra Fixture			
				Central Air Cond.					
				TOTAL		5			
Roofing				Conversion #					
Masonry				Designed #					
Metal				No Plumbing					
Openings									

Cost Approach HOUSE #1

Clark County 90%

Schedule A 1175

Open Frame Porch 149 square feet	\$6,400	schedule e.2 150
	\$6,400	

A/C schedule c 1200

First Story	\$3,200	
	\$3,200	

Det Garage: 22 X 20 (440 Sq Ft) Concrete Block

	\$ 34.68	schedule g.1 450
	105%	schedule f
	\$ 36.41	

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.. 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	1906	117	Good						\$101,640	30%	\$71,150		1.01	\$71,900
02	Det Gar	1.0	CB	C+1	1991	32	Avg	\$36.41		90%	\$32.77	440	\$14,420	26%	\$10,670		1.01	\$10,800
03																		
04																		
05																		
06																		
07																		
Supplemental Card Residential Improvement Total																		
Total Residential Improvement Value																	\$82,700	

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																		
02																		
03																		
04																		
05																		
06																		
07																		
Supplemental Card Non-Residential Improvement Total																		
Total Non-Residential Improvement Value																		

Data Collector / Date _____ Appraiser / Date _____



Level I - Cost Approach

House # 2:

This brick 2 story home is located in Vermillion County. It was built in 1994. 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?



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

Construction		Base Area	Floor	Finished Living Area	Value	
1	Frame or Aluminum	7	2,329	1.0	2,329	\$153,800
2	Stucco	7	1,209	2.0	1,209	\$53,900
3	Tile					
4	Concrete Block					
5	Metal					
6	Concrete					
7	Brick	--		Attic		
8	Stone	--	1,925	Bsmt.	1,925	\$90,300
9	Frame w/Masonry	--		Crawl	-----	

Roofing		TOTAL BASE		Value
Asphalt Shingles				\$298,000
Slate or Tile				
Row-type Adjustment			100%	

Metal		SUB-TOTAL		Value
Floors	B 1 2			\$298,000
Earth Slab				
Sub & Joist				

Wood		SUB-TOTAL		Value
Parquet				
Tile				
Carpet				
Unfinished				

Interior Finish		SUB-TOTAL		Value
Plaster or Dry Wall	B 1 2			
Paneling				
Fiberboard				
Earth				

Plumbing		SUB-TOTAL		Value
TF 14-5 = 9 X \$800				\$7,200
No Plumbing				
Specialty Plumbing				

Accommodations		SUB-TOTAL		Value
Total Number of Rooms				
Bedrooms				

Family Room		SUB-TOTAL		Value
Formal Dining Room				

ADJUSTED SUB-TOTAL		SUB-TOTAL		Value
Location Multiplier	91%			\$361,100
Replacement Cost	\$328,600			

Loft Area		SUB-TOTAL		Value
Rec. Room				
Fire Place				

Masonry		SUB-TOTAL		Value
Openings				

Cost Approach HOUSE # 2

Vermillion County 0.91

Attached Garage 24 X 24 also brick (576 sq ft) \$19,400

Basement:
 Unfin Bsmt 1,925 sq ft \$ 40,600
 Bsmt Fin 1,925 sq ft \$ 49,700
 \$ 90,300

Open Frame Porch 312 square feet \$10,500
 Brick Patio 466 square feet * \$6,200
 Wood Deck 594 square feet * \$8,600
 \$25,300

* Brick Patio 466 - 400 = 66 so add for an additional 100 sq. feet \$5,000 + \$1,200 = \$6,200
 * Wood Deck 594 - 400 = 194 so add for 200 square feet \$6,000 + \$2,600 = \$8,600

Air Conditioning
 1st floor \$4,900
 2nd Floor \$1,800
 \$6,700

SUMMARY OF NON-RESIDENTIAL IMPROVEMENTS

Det Garage that is Brick 20 X 30 - 600 square feet Base Price \$39.35
 Adjust for Grade of B-1 115%
 Base Rate \$45.25

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	1994	29	Avg						\$328,600	24%	\$249,740		1.03	\$257,200	
02																			
03																			
04																			
05																			
06																			
07																			
Supplemental Card Residential Improvement Total																			
Total Residential Improvement Value																	\$257,200		

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	2023		Good	\$45.25		0.91	\$41.18	600	\$24,710	0%	\$24,710		1.03	\$25,500	
02																			
03																			
04																			
05																			
06																			
07																			
Supplemental Card Non-Residential Improvement Total																			
Total Non-Residential Improvement Value																	\$25,500		

Data Collector / Date _____ Appraiser / Date _____





Level I Cost Approach

This concludes the cost approach tutorial and is a reminder that should you have questions you can email these questions to the Department.

Please send emails to Level1@dlgf.in.gov