Cost Approach

2025 Level II Tutorials

Cost Approach

- Material will cover:
  - Book 2 Real Property Assessment Guidelines
  - Chapter 6 – Commercial and Industrial Units
  - Chapter 7 – Commercial and Industrial Yard Structures
  - Chapter 8 – Special Use Commercial Properties
  - Chapter 9 – Utility Properties

Cost Approach

- Material will cover (cont):
  - Appendix D – General Commercial Models
  - Appendix E – Commercial and Industrial Grade
  - Appendix F – Commercial and Industrial Depreciation
  - Appendix G – Commercial and Industrial Cost Schedules

Guidelines Chapter 6
Commercial and Industrial Units

Guidelines Chapter 6

- Methods Used to Complete the Property Record Card: (all found on page 4)
  - Sketching a structure
  - Measuring and calculating areas
  - Using the general commercial models
  - Using schedules
  - Understanding base rates for floor levels

Guidelines Chapter 6

- Determining a structure's finish type
- Determining a structure's use type
- Determining a structure's wall type
- Using a structure's floor height
- Understanding the perimeter-to-area ratio for a structure
- Determining a structure's construction type

Guidelines Chapter 6

- Understanding vertical and horizontal costs
- Determining the number of property record cards to use for a parcel

Guidelines Chapter 6

- <u>Sketching a structure:</u> (page 5)
  - If more than one structure is listed on the same card, number each one for identification purposes.
  - Draw the structure to approximate scale.
  - Draw the structure with the side facing the street towards the bottom of the sketch grid.

Guidelines Chapter 6

- Write the dimensions inside the sketch area as close to the corresponding lines as possible.
- Record the story height of the structure.
- Identify all party walls (walls held in common ownership between two structures).
- Identify all additions by name and exterior wall construction.

Guidelines Chapter 6

- <u>Measuring and Calculating Areas:</u> (page 6)
  - Measure sufficient outside dimensions of the structure to compute the gross square footage of the ground area.
  - Enter all the measurements carefully on the sketch grid.

Guidelines Chapter 6

- Using the General Commercial Models (page 7 & 8)
  - Conceptual tools used to assist in estimating the replacement cost new of a given structure.
  - Assumes that there are certain elements of construction for a given use type.

Guidelines Chapter 6

- Used to determine if adjustments are applicable between the subject structure being valued and the model selected for use.

- All the cost models are shown in Appendix D.

Guidelines Chapter 6

- <u>Using the Schedules (page 8)</u>
  - Schedule A – Base Rates
    - Provides base square foot unit rates by floor for various use and finish types.
    - Rates are for a range of perimeter-to-area ratios for a specific type of construction.

    - The cost schedules are shown in Appendix G, pages 12 – 16.

Guidelines Chapter 6

- Schedule A.1 – General Commercial Mercantile (GCM) (page 10)
  - Includes use types generally associated with mercantile districts.
    - Banks, medical offices, apartments, shopping centers, etc.
    - Structures with four or more stories.
    - Use types characteristic of commercial-type construction.
    - The base rate cost schedules for GCM type structures are found in Appendix G, Pages 12 & 13. Note these cost schedules are based upon floor level, basement, first floor and upper levels. When pricing structure you need to be careful that you are in correct floor level category by use type.

Guidelines Chapter 6

- Schedule A.2 – General Commercial Industrial (GCI) (page 10)
  - Includes use types generally associated with industrial-related operations.
    - Mill manufacturing, industrial offices, light and heavy manufacturing, warehouses, etc.
    - The base rate cost schedules for GCI type structures are found in Appendix G, Pages 14 & 15. Note these cost schedules are also based upon floor level.

Guidelines Chapter 6

- Schedule A.3 – General Commercial Residential (GCR) (page 10)
  - Includes use types generally associated with commercially-operated residential accommodations.
    - Structures that have up to three stories and are wood joist construction.
    - Apartments, motel units, nursing homes, etc.
    - If 4 or more stories, use GCM schedule.
    - If structure is fire resistant, cannot use GCR schedule to price.
    - The base rate cost schedules for GCR type structures are found in Appendix G, Pages 15 & 16.Note these cost schedules are based upon floor level.

Guidelines Chapter 6

- Schedule A.4 – General Commercial Kit (GCK) (page 10)
  - Is used to value light pre-engineered and pre-designed wood pole and metal framed structures with exterior walls of light metal or wood that are used for commercial and industrial purposes only.
  - You will not be pricing GCK type structures.
  - The base rate cost schedules for GCK type structures are found in Appendix G, Page 16.

Guidelines Chapter 6

- Schedule B – Base Price Adjustment (page 11)
  - Provides adjustments to total base unit rate obtained from Schedule A for story height variations.
  - Required to account for added construction costs of supports and material handling for multiple story construction.
  - Go to Appendix G, Schedule B, top of page 17.This is the schedule used to calculated the BPA adjustment.
  - Make sure to remove the basement / sub basement levels from total story height of building when using this schedule. See example on next slide.

Guidelines Chapter 6

- Example: You have a 25-story building which includes the basement. The story height without the basement is 24 stories, so the BPA factor is 110.

SCHEDULE B

GC Base Price Adjustment for Story Height (BPA)

		Story Height															
	B	1-3	4	5-7	8-9	10-11	12-13	14-15	16-18	19-20	21-22	23-24	25-26	27-28	29-30	31-32	33-34
BPA Factor	*NA	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115

*Basements and sub-basements are not included in the count of the story height, but the percentage multiplier is applicable to the base rates.

Guidelines Chapter 6

- Schedule C – GC Base Price Components and Adjustments (page 11)
  - Three sub-schedules (all on page 11)
    - Base Price Components and Adjustments
    - Unit Cost Adjustments
    - Unit Finish Adjustments

Guidelines Chapter 6

- Base Price Components and Adjustments
  - These are explained in Appendix G, Schedule C.
  - Indicates the cost of the interior and mechanical components included in the base rate unless otherwise noted.
  - All component prices are expressed as square foot rates except for column headed “Walls per LF” under the “Interior Finish” heading.
  - Includes guidelines to help in adjusting base rate for lighting.

Guidelines Chapter 6

- Example: An auto showroom does not have central air conditioning, only has heat only. You would take the $11.06 which reflects heat / vent and AC costs and subtract the $6.06 so the adjustment for lack of AC would be $5.00. A second example is auto service center has AC costs added, so you would add the $4.23.This is because an auto service center typically only has heat only.

ID	Floor Level	Fin Type	Use Type	CH	Interior Finish: Walls Per LF	Interior Finish: Floors Per SF	Interior Finish: Ceil Per SF	Ptns	Ltg	Htg Vent A.C.	Htg Only	Add for A.C.	Adjust Lighting		Spk **
GCM	Sub Bsmt	UF	Parking	8'	---	---	---	0.35	2.74	1.77	---	---	0.35	0.80	6
	Bsmt	UF	Utility/Storage	9'	---	---	---	0.79	2.05	---	1.33	4.23	0.38	0.63	6
			Stand Alone Basement	9'	---	---	---	0.79	2.05	---	1.33	4.23	0.38	0.63	6
			Parking Garage	8'	---	---	---	0.35	2.74	1.77	---	---	0.28	0.64	4
		FO	General Retail	10'	43.62	3.04	4.18	3.19	11.15	11.06	6.06	---	1.85	3.99	4
			Dinning/Lounge	8'	36.41	5.40	4.92	4.07	12.39	24.31	13.36	---	1.32	2.70	4
		FD	Office	8'	41.15	3.04	4.92	8.81	15.23	16.20	8.90	---	1.79	3.72	3
			Apartment	8'	44.06	3.24	4.90	11.72	6.35	---	4.96	2.63	1.82	3.78	2
	First	UF	Utility/Storage	14'	---	---	---	1.23	2.05	---	1.33	4.23	0.38	0.63	6
			Parking Garage	10'	---	---	---	0.44	2.74	0.89	---	---	0.28	0.64	4
		SF	Car Wash Auto	12'	11.69	---	---	4.23	6.85	---	1.33	---	0.81	1.83	6
			Ice Rink	18'	17.36	2.07	1.97	6.35	15.02	---	2.29	---	0.83	1.85	4
			Auto Service Center	14'	13.58	2.05	0.93	4.94	11.66	---	1.33	4.23	2.32	4.80	5
		FO	Auto Showroom	12'	58.79	3.04	4.92	4.14	12.39	11.06	6.06	---	1.60	3.30	4
			Bowling Alley	12'	58.79	0.75	4.67	3.40	15.02	13.72	7.52	---	1.12	2.35	4
			Theater	18'	88.62	3.90	4.92	8.82	15.02	16.25	8.94	---	1.01	2.11	1

Guidelines Chapter 6

Sprinkler Adjustment Schedule – Schedule C, page 18

Sprinkler Group	Total S.F. of Gross Coverage Per Floor									
	5,000	10,000	15,000	20,000	30,000	40,000	50,000	75,000	100,000	Over
1	5.46	4.32	3.90	3.72	3.49	3.25	3.04	2.94	2.82	2.82
2	5.39	4.22	3.77	3.60	3.43	3.20	2.90	2.87	2.75	2.71
3	5.29	4.16	3.71	3.54	3.37	3.14	2.87	2.81	2.70	2.64
4	4.97	3.95	3.53	3.36	3.18	3.01	2.75	2.75	2.58	2.58
5	4.75	3.74	3.34	3.30	3.07	2.90	2.70	2.63	2.52	2.51
6	3.67	2.99	2.68	2.57	2.45	2.29	2.17	2.07	198	196

- Example: In making sprinkler adjustment, you first need to determine the sprinkler group. This can be done from Schedule C, last column. The adjustment is based upon area “per floor". Where the group and square footage intersects is the sprinkler adjustment. Using information from prior slide. An Auto service center, the sprinkler group would be #5 (last column).If the building is 5,200 sq feet on first floor the sprinkler adjustment is $4.75.In determining the correct column round the square footage per floor to nearest area listed.

Guidelines Chapter 6

- Unit Cost Adjustments
  - Table of unit costs for the most typical interior components.
  - Please refer to Appendix G, Page 19 for schedule
  - Will not be making adjustments using this schedule in this class

- Unit Finish Adjustments
  - Tables of composite adjustments rather than individual component adjustments.
  - Applies to apartments, motels and hotels.
  - Please refer to schedule in Appendix G, top of page 20. We will discuss unit finish adjustments later in this tutorial.

Guidelines Chapter 6

- Schedule D – Plumbing (page 11)
  - Whole dollar values to be added per plumbing fixture unless otherwise noted.
  - Please turn to Appendix G, Schedule D, Page 20 for the plumbing fixture cost schedule. Base rate for C/I fixtures are $1,600.If the structure is hotel or apartments, the extra plumbing fixtures in the rooms are $800.

SCHEDULE D
Plumbing
Average cost per fixture, including supply, waste and vent lines, materials for rough and finish, labor and contractors overhead and profit. The difference between the residential rate and the commercial/industrial prices is primarily attributable to the longer pipe and sewer runs required to accommodate the latter type of construction. The residential rate is to be used for commercial structures only when the average unit size schedule is issued from Schedule C

CONVENTIONAL FIXTURES	
Residential	800
Commercial and Industrial	1600

Guidelines Chapter 6

- Schedule E – Special Features (page 12)
  - Either whole dollar or square foot unit values used to calculate the whole dollar replacement cost of special features not included in the Schedule A base rates.
    - Mezzanines, elevators, cold storage facilities, money vaults, record storage vaults, grade walls for truck wells and ramps are examples of special features.
    - Please refer to Appendix G, Schedule E, Page 21 – 26 for special feature cost schedules.
    - We will discuss later in this tutorial how to make some of the special feature adjustments.

Guidelines Chapter 6

- Schedule F – Quality Grade and Design Factor (page 12)
  - Provides the grade factor percentages corresponding to the grade classifications for commercial and industrial structures.
  - Prices reflect a “C” grade.
  - On the next slide is the grade factor schedule. This is the schedule I have found to be the easiest to follow.

Guidelines Chapter 6

Table E-2. Quality Grade Factors for Commercial and Industrial Improvements

GRADE	FACTOR
AAA	360%
AAA-1	330%
AA+2	300%
AA+1	270%
AA	240%
AA-1	220%
A+2	200%
A+1	180%
A	160%

GRADE	FACTOR
A-1	150%
B+2	140%
B+1	130%
B	120%
B-1	115%
C+2	110%
C+1	105%
C	100%
C-1	95%

GRADE	FACTOR
D+2	90%
D+1	85%
D	80%
D-1	70%
E+2	60%
E+1	50%
E	40%
E-1	30%

Guidelines Chapter 6

- Base rates for floor levels (page 12)
  - Includes the cost of the exterior walls, exterior wall openings, and interior components (interior finish, partitioning, built-ins, and mechanical features typical for that particular model).

Guidelines Chapter 6

- Also includes the following structural components:
- Basement-level:
  - Excavation and back-fill, the cost of which exceeds the cost of the inclusions for the first floor.
  - Structural floor construction of the first floor (subfloor and framing).
  - Stairways and access ways.

Guidelines Chapter 6

- First-level:
  - Site preparation and normal foundation construction for a structure at grade level.
  - Concrete ground floor slab, including base and cement finish.
  - Roof construction (roofing, insulation, decking and framing).
  - Wall copings and parapets.
  - Utility service.

Guidelines Chapter 6

- Upper-level:
  - Structural floor construction (subfloor and framing for each respective floor.
  - Stairways and access ways.

Guidelines Chapter 6

- Determining a Structure's Finish type (page 13)
  - In Schedule A, finish type is a descriptive classification indicating the extent to which the interior finish is included in the base rate. These are explained in more detail in Chapter 6, Page 13.

  - The 4 interior finish types are:
    - UF – Unfinished
    - SF – Semi Finished
    - FO – Finished Open
    - FD – Finished Divided

    - Make sure you know these different finish types!

Guidelines Chapter 6

- Determining a Structure's Use Type (page 14)
  - Descriptive classification indicating the commercial and industrial use model that best describes the structure.
  - The alphabetical use type schedule can be found in Appendix G, Pages 2 thru 11.
  - You need to first determine the structure use type.
  - Example: If you are valuing a bowling alley, first go to the use type schedule. The bowling alley line says to use the GCM bowling alley schedule. You would now go to the GCM base rate schedule and value the structure using the bowling alley line category.

Guidelines Chapter 6

- Determining a Structure's Wall Type
  - These are explained in Chapter 6, Page 14
  - Descriptive classification indicating the exterior wall construction material used for most of the use types.
  - Most all use types use Type 1 or Type 2.
  - Type 3 is used with GCI use types.
  - Type 4 is only for parking garages.
  - When pricing a structure you always need to know the wall type.

  - The four exterior wall types are shown on the next slide. Make sure you know the difference in these wall types!

Guidelines Chapter 6

Table 6-2. Wall Type Options

This option	Indicates the wall is constructed of
1	Concrete block, stucco, tile, wood, aluminum, metal siding, or an equivalent material
2	Brick, stone, concrete, or an equivalent material
3	Aluminum, metal, or steel siding on steel framing
4	Metal, concrete, or masonry guard walls 3 feet to 4 feet high. This option applies ***only*** to open parking garages.

Guidelines Chapter 6

- Determining a Structure's Wall Height (page 14)
  - Model specific and represents floor-to-floor or floor-to-roof heights.
  - Defined as the vertical distance from the top of the interior floor to either the top of the next upper interior floor or to the eave of the roof.
  - Model wall height can be determined by looking at the use type models previously discussed in Appendix D or go to the cost schedules in Appendix G. Example: If you go to the GCM cost schedules the fourth column is titled "floor height". If you go to bowling alley, first floor, the model wall height would be 14'.If the subject bowling alley has different wall height you will have to make wall height adjustment. Here is the screen shot showing wall height.

FO	Auto Showroom	14'
	Bowling Alley	14'

Guidelines Chapter 6

- Understanding Vertical and Horizontal Costs (page 15)
  - Vertical Cost components:
    - Structural components that are vertical in nature.
    - Valued according to linear feet of surface.
    - Examples are: studding, wall sheathing, brick or wood siding, wall insulation, interior finish, or exterior walls.

Guidelines Chapter 6

- Horizontal Cost components:
  - Structural components that are horizontal in nature.
  - Linked directly to the square feet of floor area.
  - Examples are: floor slabs, structural floors, floor covering, ceiling covering, roof structure, roof covering, and insulation.

Guidelines Chapter 6

- Understanding the Perimeter-to-Area Ratio of a Structure (page 15) & (2 examples on pages 16 – 17)

Formula for calculating a PAR.

- Divide the perimeter (add the dimensions on the four sides together) by the area (multiply the length times the width) and multiply the result by 100 to determine the ratio to be used.

Guidelines Chapter 6

- Perimeter-to-Area Ratio
  - Used to convert the vertical cost of a structure into a dollar amount per square foot.
  - If there is more than one floor, the PAR should be calculated for each floor.
  - Example: Building dimensions are 200’ x 100’. What is the PAR? The perimeter would be 600’. Square footage would be 20,000 sq ft. PAR = 3(600 / 20,000 x 100)

Guidelines Chapter 6

- If the PAR is greater than 10: (page 39 & 40)
  1. Subtract 10 from the calculated PAR.
  2. Multiply the adjustment price in the “+1” column in the same row by the result of the subtraction.
  3. Add the result of the multiplication to the base rate in the “10” column in the schedule.

Guidelines Chapter 6 – Base Prices

- Example: If you had calculated a PAR of 3 from previous example for a country club / first floor, wall type 1 the base price would be $108.73. If for example the par would be 11, the base rate would be $173.61 + $9.44 = $183.05. The line showing 1 to 10 and +1 column reflects the calculated PAR.

Schedule A.1 (continued)

GCM Base Prices (continued)

										2 Fire Resistant							1	3	4
Floor Level	Fin Type	Use Type	Flr Hgt	Wall Type	1	2	3	4	5	6	7	8	9	10	+1	Wood Jst (-)	Rein Conc (+)	F P Steel (+)
First	FD	Country Club	12'	1	92.23	99.18	108.73	117.97	126.06	134.32	143.47	155.54	163.65	173.61	9.44	7.34	13.52	16.19
				2	93.94	102.66	114.16	125.40	135.53	145.91	157.32	172.06	182.36	194.76	11.78	6.69	14.25	17.08
		Funeral Home	12'	1	87.02	93.87	103.20	112.25	120.24	128.39	137.40	149.27	157.28	167.11	9.39	7.55	13.93	16.68
				2	88.72	97.35	108.63	119.69	129.71	139.98	151.25	165.79	175.98	188.27	11.73	6.87	14.73	17.66
		Nursing Home	10'	1	80.12	86.32	94.79	103.03	110.26	117.66	125.79	136.58	143.80	152.72	8.51	9.82	14.12	16.97
				2	81.46	89.06	99.07	108.89	117.73	126.81	136.72	149.62	158.56	169.41	10.36	8.76	14.68	17.65
		Hotel - Motel Unit	10'	1	78.29	83.59	88.83	94.12	99.41	106.70	114.69	125.17	132.27	141.03	8.41	11.81	13.74	16.52
				2	79.79	86.60	93.34	100.10	106.88	115.85	125.61	138.20	147.02	157.72	10.26	12.40	14.28	17.18
		Apartment	10'	1	61.49	67.34	75.02	82.59	89.40	96.43	104.09	114.11	120.94	129.39	8.23	9.72	13.78	16.60
				2	62.83	70.08	79.30	88.45	96.88	105.57	115.01	127.14	135.70	146.09	10.08	10.33	14.58	17.34

Guidelines Chapter 6

- Determining a Structure's Construction Type:
  - These are explained in Chapter 6, Page 17 & 18
  - Base rates for GCM and GCI are based on framing that is fire resistant construction.
  - Base rates for GCR are based on wood joist construction and must be adjusted for fire resistant construction.

  - Know the difference between the four construction types shown on the next slide!

Guidelines Chapter 6

- Table 6-3. Framing Type Options

1 Wood Joist
- A flat or gable roof structure of wood or composition deck and structural floors of wood subflooring on wood or steel joists supported by wood and/or timber beams and columns or wood framing.

2 Fire Resistant
- A flat or low-profile gable roof on steel joists or open steel framing and structural floors of concrete on metal decking and steel joists supported by steel beams and columns or load bearing walls.

3 Reinforced Concrete
- A concrete slab flat roof and reinforced concrete flat slab structural roof on reinforced concrete joists supported by reinforced concrete beams and columns.

4 Fireproof Steel
- A flat roof of concrete or fireproofed steel deck and reinforced concrete slab on fireproofed steel deck structural floors on steel joists supported by fireproofed steel beams and columns.

Guidelines Chapter 6 – Framing Adjustment

- Here is an example on how to make the framing adjustment. You first need to know the Use Type, floor level and wall type construction. Next you need to know the interior framing construction, remember that for the GCM and GCI schedule the base rate costs reflect fire resistant construction. Next go to the three columns I've highlighted. If wood joist construction the adjustment will be a (-) and if reinforced concrete or fire-proof steel the adjustment will be (+).If the use type was a country club, first floor, wall type 2 and fireproof steel construction the framing adjustment would be $17.08.

Schedule A.1 (continued)

GCM Base Prices (continued)

																1	3	4
									2 Fire Resistant							Wood	Rein	F P
Floor Level	Fin Type	Use Type	Flr Hgt	Wall Type	1	2	3	4	5	6	7	8	9	10	+1	Jst (-)	Conc (+)	Steel (+)
First	FD	Country Club	12'	1	92.23	99.18	108.73	117.97	126.06	134.32	143.47	155.54	163.65	173.61	9.44	7.34	13.52	16.19
				2	93.94	102.66	114.16	125.40	135.53	145.91	157.32	172.06	182.36	194.76	11.78	6.69	14.25	17.08
		Funeral Home	12'	1	87.02	93.87	103.20	112.25	120.24	128.39	137.40	149.27	157.28	167.11	9.39	7.55	13.93	16.68
				2	88.72	97.35	108.63	119.69	129.71	139.98	151.25	165.79	175.98	188.27	11.73	6.87	14.73	17.66
		Nursing Home	10'	1	80.12	86.32	94.79	103.03	110.26	117.66	125.79	136.58	143.80	152.72	8.51	9.82	14.12	16.97
				2	81.46	89.06	99.07	108.89	117.73	126.81	136.72	149.62	158.56	169.41	10.36	8.76	14.68	17.65
		Hotel - Motel Unit	10'	1	78.29	83.59	88.83	94.12	99.41	106.70	114.69	125.17	132.27	141.03	8.41	11.81	13.74	16.52
				2	79.79	86.60	93.34	100.10	106.88	115.85	125.61	138.20	147.02	157.72	10.26	12.40	14.28	17.18
		Apartment	10'	1	61.49	67.34	75.02	82.59	89.40	96.43	104.09	114.11	120.94	129.39	8.23	9.72	13.78	16.60
				2	62.83	70.08	79.30	88.45	96.88	105.57	115.01	127.14	135.70	146.09	10.08	10.33	14.58	17.34

Guidelines Chapter 6 – Wall Height Adjustment

- On this and the next slide we are going to discuss how to make a wall height adjustment. Above I have highlighted the wall height adjustment schedule for GCM structures. There is also a wall height adjustment section in Appendix G for the GCI structures. The GCI wall height schedule is shown on Appendix G, top of page 15.

Schedule A.1 (continued)

GCM Base Prices (continued)

																1	3	4
					2 Fire Resistant											Wood	Rein	F P
Floor	Fin	Use	Flr	Wall												Jst	Conc	Steel
Level	Type	Type	Hgt	Type	1	2	3	4	5	6	7	8	9	10	+1	(-)	(+)	(+)
First	FD	Country Club	12'	1	92.23	99.18	108.73	117.97	126.06	134.32	143.47	155.54	163.65	173.61	9.44	7.34	13.52	16.19
				2	93.94	102.66	114.16	125.40	135.53	145.91	157.32	172.06	182.36	194.76	11.78	6.69	14.25	17.08
		Funeral Home	12'	1	87.02	93.87	103.20	112.25	120.24	128.39	137.40	149.27	157.28	167.11	9.39	7.55	13.93	16.68
				2	88.72	97.35	108.63	119.69	129.71	139.98	151.25	165.79	175.98	188.27	11.73	6.87	14.73	17.66
		Nursing Home	10'	1	80.12	86.32	94.79	103.03	110.26	117.66	125.79	136.58	143.80	152.72	8.51	9.82	14.12	16.97
				2	81.46	89.06	99.07	108.89	117.73	126.81	136.72	149.62	158.56	169.41	10.36	8.76	14.68	17.65
		Hotel - Motel Unit	10'	1	78.29	83.59	88.83	94.12	99.41	106.70	114.69	125.17	132.27	141.03	8.41	11.81	13.74	16.52
				2	79.79	86.60	93.34	100.10	106.88	115.85	125.61	138.20	147.02	157.72	10.26	12.40	14.28	17.18
		Apartment	10'	1	61.49	67.34	75.02	82.59	89.40	96.43	104.09	114.11	120.94	129.39	8.23	9.72	13.78	16.60
				2	62.83	70.08	79.30	88.45	96.88	105.57	115.01	127.14	135.70	146.09	10.08	10.33	14.58	17.34
Wall	UF	+/-	1'	1	0.23	0.37	0.53	0.69	0.85	1.02	1.20	1.42	1.59	1.79	0.18	0.20	0.23	0.24
Hgt.				2	0.41	0.74	1.10	1.48	1.85	2.25	2.66	3.16	3.56	4.02	0.43	0.35	0.40	0.42
	SF	+/-	1'	1	0.55	0.69	0.84	1.00	1.16	1.32	1.50	1.71	1.88	2.08	0.18	0.21	0.24	0.25
				2	0.73	1.05	1.41	1.78	2.16	2.55	2.96	3.45	3.86	4.31	0.43	0.37	0.41	0.45
	FO	+/-	1'	1	0.62	0.77	0.94	1.12	1.29	1.46	1.65	1.88	2.06	2.27	0.19	0.18	0.20	0.21
				2	0.80	1.13	1.51	1.90	2.29	2.69	3.11	3.62	4.03	4.50	0.44	0.25	0.28	0.32
	FD	+/-	1'	1	1.24	1.40	1.60	1.80	1.98	2.17	2.38	2.63	2.82	3.04	0.19	0.18	0.20	0.23
				2	1.42	1.77	2.17	2.58	2.98	3.39	3.84	4.37	4.79	5.27	0.44	0.24	0.27	0.31

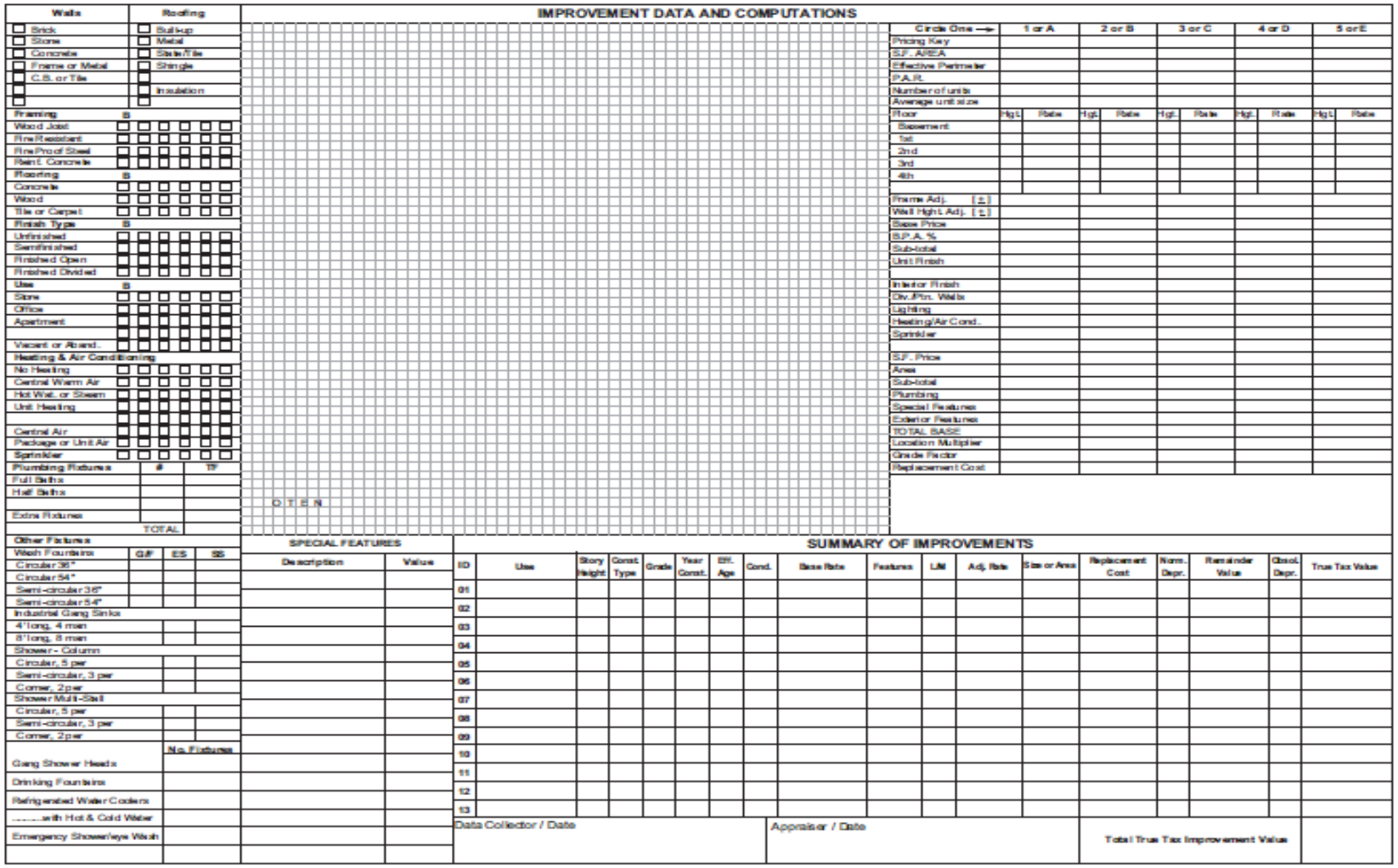
Guidelines Chapter 6 – Wall Height Adjustment

- When making wall height adjustment you need to know the following: Use type, floor level, floor (wall) height, wall type and framing construction.
- Let's work an example. You are pricing a 1 story building being used as a bowling alley. The bowling alley wall height is 16', fire resistant construction and wall type 2.The calculated PAR is 3.
- If you go to the bowling alley cost schedule you will see in the Fin Type column bowling alley is in the FO / Finished Open category. Also, you will see the model wall height is 14'.
- Using the information on previous slide go to the FO category, wall type 2, then go to the PAR column of 3.Where this intersects is $1.51.This is the wall height adjustment for 1'.Since the bowling alley is 16' you need to make 2' adjustment or $3.02 ($1.51 x 2).

Guidelines Chapter 6

- How many property record cards to use?
  - Determined on a parcel-by-parcel basis.
  - Depends on either the number of structures that require a sketch area or the number of structures and yard improvements that are recorded in the “Summary of Improvements” section.

Back of the Com / Ind PRC



IMPROVEMENT DATA AND COMPUTATIONS

Walls	Roofing
☐ Brick	☐ Built-up
☐ Stone	☐ Metal
☐ Concrete	☐ Slate/Tile
☐ Frame or Metal	☐ Shingle
☐ C.B. or Tile	☐
☐	☐ Insulation
☐	☐

	B					
Framing						
Wood Joist	☐	☐	☐	☐	☐	☐
Fire Resistant	☐	☐	☐	☐	☐	☐
Fire Proof Steel	☐	☐	☐	☐	☐	☐
Rein. Concrete	☐	☐	☐	☐	☐	☐
Flooring	B					
Concrete	☐	☐	☐	☐	☐	☐
Wood	☐	☐	☐	☐	☐	☐
Tile or Carpet	☐	☐	☐	☐	☐	☐
Finish Type	B					
Unfinished	☐	☐	☐	☐	☐	☐
Semifinished	☐	☐	☐	☐	☐	☐
Finished Open	☐	☐	☐	☐	☐	☐
Finished Divided	☐	☐	☐	☐	☐	☐
Use	B					
Store	☐	☐	☐	☐	☐	☐
Office	☐	☐	☐	☐	☐	☐
Apartment	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
Vacant or Aband.	☐	☐	☐	☐	☐	☐
Heating & Air Conditioning						
No Heating	☐	☐	☐	☐	☐	☐
Central Warm Air	☐	☐	☐	☐	☐	☐
Hot Wat. or Steam	☐	☐	☐	☐	☐	☐
Unit Heating	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
Central Air	☐	☐	☐	☐	☐	☐
Package or Unit Air	☐	☐	☐	☐	☐	☐
Sprinkler	☐	☐	☐	☐	☐	☐

Plumbing Fixtures	#	TF
Full Baths		
Half Baths		
Extra Fixtures		
TOTAL		

Other Features			
Wash Fountains	G/F	ES	SS
Circular 36"			
Circular 54"			
Semi-circular 36"			
Semi-circular 54"			
Industrial Gang Sinks			
4' long, 4 men			
8' long, 8 men			
Shower - Column			
Circular, 5 per			
Semi-circular, 3 per			
Corner, 2 per			
Shower Multi-Stall			
Circular, 5 per			
Semi-circular, 3 per			
Corner, 2 per			

	No. Fixtures
Gang Shower Heads	
Drinking Fountains	
Refrigerated Water Coolers	
.....with Hot & Cold Water	
Emergency Shower/eye Wash	

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

O T E N

SPECIAL FEATURES

Description	Value

SUMMARY OF IMPROVEMENTS

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

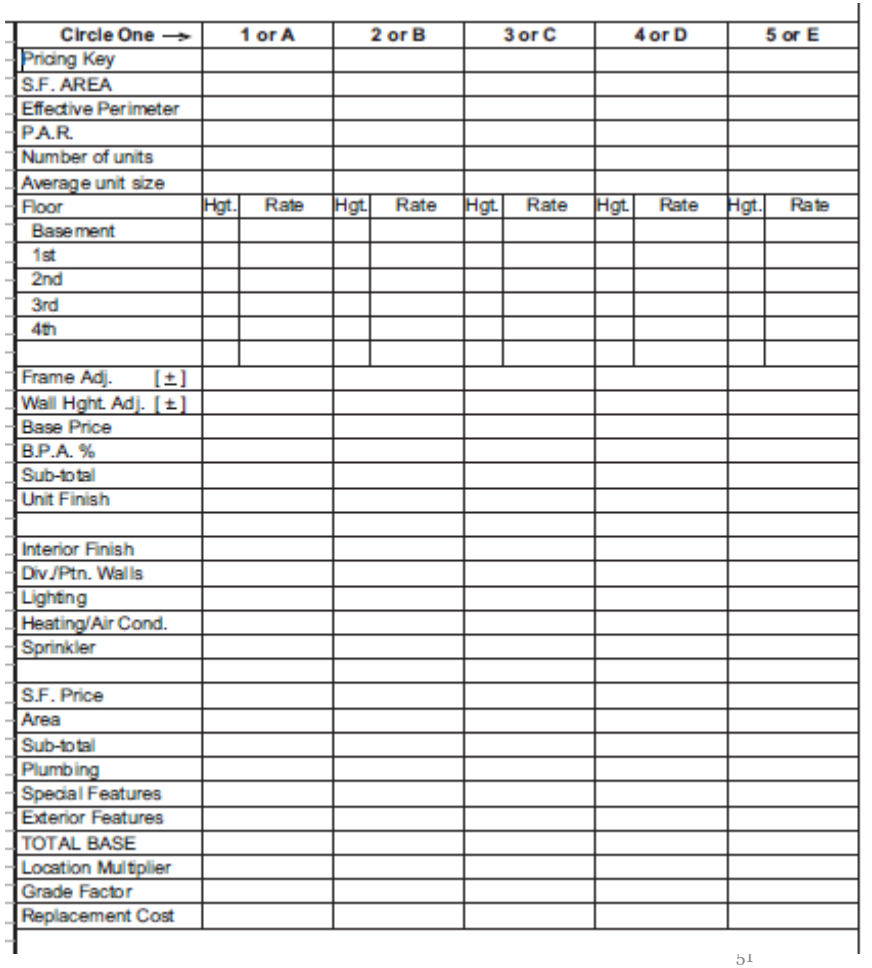
Data Collector / Date

Appraiser / Date

Total True Tax Improvement Value

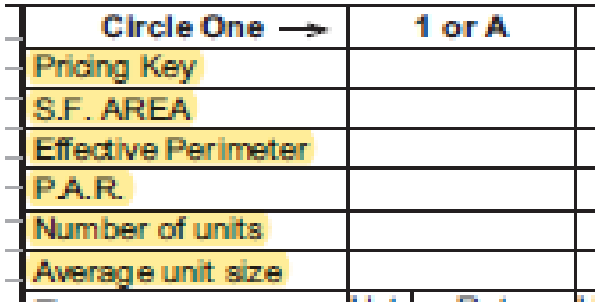
Pricing ladder of the PRC

- This part of the PRC is commonly referred to as the pricing ladder. As you will see there are 5 columns which can be used to price each floor of a multi story building in each column. As an example, the first column could be used for the basement, next column for the first floor and following columns for the upper floors. When using the pricing ladder, you start at the top and work your way down.



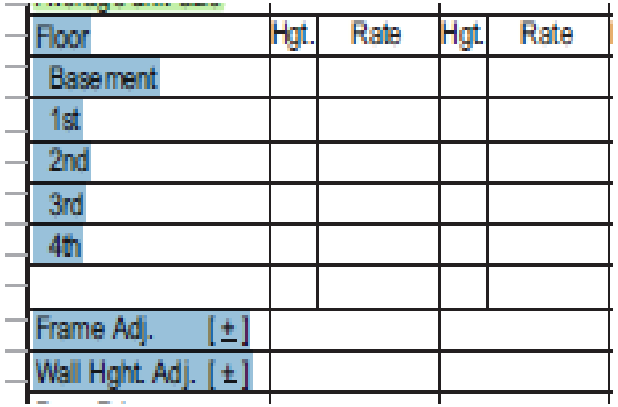
Circle One →	1 or A		2 or B		3 or C		4 or D		5 or E	
Pricing Key										
S.F. AREA										
Effective Perimeter										
P.A.R.										
Number of units										
Average unit size										
Floor	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate	Hgt.	Rate
Basement										
1st										
2nd										
3rd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

Pricing ladder sections breakdown



Circle One →	1 or A
Pricing Key	
S.F. AREA	
Effective Perimeter	
P.A.R.	
Number of units	
Average unit size	

- The above section is used to show the Pricing Key being used along with SF Area, effective Perimeter and the PAR calculation. The next two lines used to show # of units and average unit size if hotel or apartments.

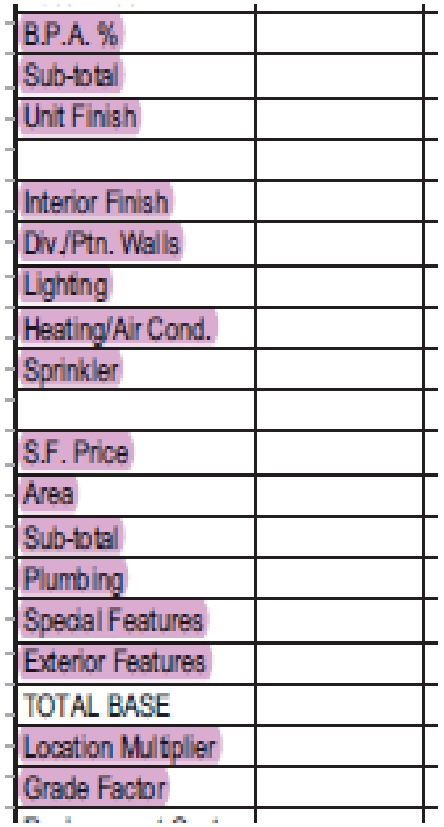


Floor	Hgt.	Rate	Hgt.	Rate
Basement				
1st				
2nd				
3rd				
4th				
Frame Adj. [±]				
Wall Hght. Adj. [±]				

- This section used to show the base rates for each floor from Appendix G cost tables along with any framing or wall height adjustment.

Pricing ladder sections breakdown

- This section of the pricing ladder used to enter the cost table information for the B.P.A. % along with any Lighting, Heating/ Air Cond, Sprinkler adjustments, etc. Any special features and exterior features will also be listed. The special features could consist of canopies, elevator, banking features, etc. The last two lines highlighted reflect the Location Cost Multiplier % along with the Quality Grade Factor %.



B.P.A. %	
Sub-total	
Unit Finish	
Interior Finish	
Div./Ptn. Walls	
Lighting	
Heating/Air Cond.	
Sprinkler	
S.F. Price	
Area	
Sub-total	
Plumbing	
Special Features	
Exterior Features	
TOTAL BASE	
Location Multiplier	
Grade Factor	

PRC – Summary of Improvements

SUMMARY OF IMPROVEMENTS

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

This is the summary of improvements section of the etc. The first line is used for the structure priced in the pricing ladder section. If multiple story building, the replacement cost column would reflect the total of all floor levels. You will then calculate remainder value & true tax value. The next lines are used to list each yard improvement. I have highlighted the base rate cell as you always need to remember when pricing yard improvements the base rate is adjusted for the quality grade factor. Also, when using this section of the PRC you will start in the first column and enter information left to right.

Guidelines Chapter 6

- Determining average wall height: This is discussed in Chapter 6, page 39.
  - If a structure has two or more sections with varying exterior wall heights, you must arrive at an average wall height.
    1. Determine the percentage of the structure containing each wall height.
    2. Multiply each percentage by its corresponding wall height.

Guidelines Chapter 6

3. Determine the average wall height for the structure by adding the results of 1 and 2 and rounding to the nearest whole number.
- Keep in mind that once you arrive at an average wall height, that is the wall height you use to compute the value of the property.

Problem #1

- Please go to your Cost Approach problem and answer module with audio and work Problem #1.

Problem #2

- Please go to your Cost Approach problem and answer module with audio and work Problem #2.

Guidelines Chapter 6

- If a structure has more than one use type: This is explained in Chapter 6, page 40 & 41
  1. Determine the PAR for the structure. This is always the first step.
  2. Determine the use type for each finish type in the structure.
  3. Using Appendix G, Schedule A, determine the base rate for each use type.

Guidelines Chapter 6

4. Determine the percentage of floor space occupied by each use type by dividing the area for each use type by the total area x 100.
5. Multiply the base rate for each use type by the percentage of that use for each floor.
6. Add the results of Step 5 for each use type together to get an adjusted base rate.

Problem #3

- Please go to your Cost Approach problem and answer module with audio and work Problem #3.

Problem #4

- Please go to your Cost Approach problem and answer module with audio and work Problem #4.

Guidelines Chapter 6

- If the framing material is not consistent throughout the structure. This is explained in Chapter 6, page 40 & 41.
  1. Determine the percentage of floor area that is not constructed of all fire-resistant framing material.
  2. Determine the adjustment necessary as if the entire building were constructed of non-fire-resistant material.
  3. Multiply the percentage from 1 by the adjustment from 2.

Problem #5

- Please go to your Cost Approach problem and answer module with audio and work Problem #5.

Guidelines Chapter 6

Schedule C – Unit Finish Adjustments (page 48)

- Applied to the following use types:
  - Apartments
  - Motels and Hotels
  - Strip retail centers
  - Neighborhood shopping centers
  - Regional shopping centers

Guidelines Chapter 6

Apartment Table: (page 48 – 49) & Appendix G, Page 20

- The square foot cost of partitioning, built-ins, plumbing fixtures, and central air conditioning is directly related to the average size of the living unit.
  - Average unit size = Total square footage divided by number of rentable units

Guidelines Chapter 6

As highlighted above if thru-the-wall air conditioning you would use the W/O AC structure. The apartment bldg. has 20,000 sq ft and has 20 apartments with all the apartments having central air, calculated unit finish adjustment would be $9.25 since apartments have central AC.

SCHEDULE C (continued)
Unit Cost Adjustments
APARTMENTS

Add per square foot per floor to account for variations in average unit size. The unit finish adjustment includes the cost of one (1) full bath, one (1) complete kitchen unit and air conditioning (if applicable). Thru-the-wall residential-type air conditioning units are not considered as real property in apartment units.

Average Unit Size	Add per S.F. W/O AC	W/AC	Average Unit Size	Add per S.F. W/O AC	W/AC
400	18.25	20.74	1350	4.74	7.24
450	16.24	18.73	1400	4.50	7.00
500	14.60	17.10	1450	4.31	6.81
550	13.24	15.74	1500	4.13	6.63
600	12.08	14.58	1550	3.95	6.44
650	11.07	13.57	1600	3.77	6.27
700	10.18	12.68	1650	3.63	6.13
750	9.39	11.89	1700	3.50	6.00
800	8.68	11.18	1750	3.38	5.87
850	8.13	10.62	1800	3.26	5.76
900	7.62	10.12	1850	3.12	5.62
950	7.17	9.67	1900	2.99	5.48
1000	6.75	9.25	1950	2.86	5.36
1050	6.39	8.89	2000	2.73	5.23
1100	6.06	8.56	2050	2.61	5.11
1150	5.75	8.25	2100	2.50	5.00
1200	5.50	8.00	2150	2.38	4.88
1250	5.24	7.74	2200	2.28	4.77
1300	5.00	7.50	Over	2.17	4.67

Guidelines Chapter 6

Motels and Hotels Table (page 48 – 49) & Appendix G (page 20)

- The square foot cost of built-ins, partitioning, and plumbing fixtures is directly related to the average size and arrangements of guest rooms.
  - Strip
  - Back-to-Back
  - Center Hall
  - These three types are explained in detail in Chapter 6, page 48.
  - Normally the average unit size calculated by taking total hotel square footage divided by the number of hotel rooms.
  - There is one exception, you need to remember this. If part of the hotel is priced as hotel motel service, you need to deduct that square footage from total square footage before calculating average room size.(Chapter 6, page 49)

Guidelines Chapter 6

Example: If hotel is center hall configuration and has 20,000 sq ft with 50 rooms, the average unit size would be 400 sq ft. The unit finish adjustment would be $3.89. Note: If for example the hotel would have had 5,000 sq ft priced as hotel motel service, you would first deduct that square footage before determining the average unit size.

MOTELS/HOTELS

Add per square foot per floor to account for variations in average unit size. The unit finish adjustment includes the cost of one (1) full bath.

Average Unit Size	Arrangement Strip	Back-Back	Center Hall
150	15.48	17.18	16.89
175	12.98	14.43	14.27
200	11.35	12.63	12.51
225	9.41	10.55	10.43
250	7.86	9.08	9.13
275	6.59	7.70	7.80
300	5.87	6.89	7.00
325	5.10	6.04	6.17
350	4.16	5.18	5.41
375	3.33	4.29	4.50
400	2.62	3.64	3.89
425	1.98	3.06	3.40
450	1.42	2.44	2.75
475	0.91	1.99	2.37
500	0.46	1.48	1.85
525	0.15	1.12	1.48
550	0.05	0.98	1.32
575	-0.22	0.67	1.01
600	-0.30	0.55	0.88
625	-0.53	0.29	0.61
650	-0.67	0.12	0.43
675	-0.72	0.04	0.34
700	-0.91	-0.18	0.12
Add per kitchen unit (cabinets and sink)			2,500

Guidelines Chapter 6

Strip Retail Table (page 49) & Appendix G (page 20)

- Applicable when using the general retail model for strip centers, neighborhood shopping center model or the regional shopping center model.
- Models do not include an amount for division walls (common wall between units).

Guidelines Chapter 6

- Calculating the Replacement Cost (page 50) When reviewing the next few slides, please have a blank PRC available.
  - Follow the pricing ladder down to the Sprinkler Cell—the values you are adding are all per square foot.
  - Enter this total square foot price in the S.F. Area cell.
  - Multiply this total square foot price by the area and round to the nearest $10.00 and enter it on the Sub-total line.

Guidelines Chapter 6

- Calculating the Replacement Cost (cont.)
  - Add for plumbing from Schedule D – Appendix G.
  - Add for any special features from Schedule E in Appendix G.
  - Add for any exterior features from Schedule G in Appendix G.
  - Total these amounts on the Total Base line. Round to the nearest $10.
  - Multiply the Total Base line by the Location Multiplier for the County location (Appendix G (page 45)).

Guidelines Chapter 6

- Calculating the Replacement Cost (cont.)
  - Multiply this total by the Quality and Grade Factor.
  - You now have the Replacement Cost New of the structure. Round to the nearest $10.This can then be carried down into the summary of improvements section, the RCN column.

Guidelines Chapter 6

- When you have a feature such as a canopy or a loading dock that is built as a part of the initial construction of the building, it is not figured separately as an improvement, but is figured as an exterior feature and a total is included on the “Exterior Features” line of the pricing ladder.

Guidelines Chapter 6

Special Features – Schedule E of Appendix G:

- This schedule provides whole dollar or square foot unit values used to calculate the whole dollar replacement cost of special features not included in the Schedule A base rates.
- To apply this schedule, identify the special feature and select the most representative rate based on the description of the special feature. All replacement costs are rounded to the nearest $10.

Guidelines Chapter 6

- Some examples of items in Schedule E are:
  - Banking features (pages 22)
  - Elevators (pages 23 and 24)
  - Health/Recreational Club Facilities (page 23)
  - Boilers (page 25)
  - Cold Storage Facilities (page 25)
  - Dock Facilities (page 26)
  - Canopies (Page 26)

Guidelines Chapter 6

- Pricing elevators, there are passenger and freight elevator cost schedules.
- When pricing elevator you will need to know the FPM the elevator travels, elevator capacity and number of elevator stops.
- Let’s look at example on next slide.

Guidelines Chapter 6

Example: Electric passenger operated elevator travels at 250 FPM and has 2000 lb. rated capacity. There are 5 stops. The lb. capacity are in 100 lb. increments and the costs are in hundreds of dollars. First go to the 250 FPM line, then to the 20 column as this would reflect 2,000 lb. capacity. The value would be $107,900. You then add $8,100 for each stop or $40,500 for the 5 stops. The total elevator value would be $107,900 + $40,500 = $148,400.

Conveying Systems

PASSENGER ELEVATORS

Price per item (in hundreds of dollars)

Electric (passenger operated) geared, variable voltage control.

	Capacity (100 lb)					
FPM	15	20	25	30	40	50
100	565	786	801	816	845	891
150	660	900	915	928	946	987
200	736	996	1010	1016	1025	1061
250	801	1079	1085	1088	1090	1126
300	860	1152	1153	1151	1148	1176
350	914	1218	1213	1206	1197	1227
400	961	1276	1267	1260	1241	1269
Add per stop	81	81	81	81	81	81

For manual operated doors, deduct ten percent (10%) of total.

Guidelines Chapter 6

- In pricing canopies, there are industrial dock type and commercial type.
- In this class we will only be working with commercial type canopies.
- The cost schedule for canopies are shown in Appendix G, page 26.
- Let’s work an example on the next slide.

Guidelines Chapter 6

- As shown, there are four different types of commercial type canopies. The example is good quality, finished soffit and has lighting. The base rate would be $30.98. If the canopy has 600 sq. ft. the canopy cost would be $18,590, this is calculated by taking the 600 sq. ft. x base rate of $30.98 and rounding to nearest $10.

Canopies

INDUSTRIAL DOCK TYPE	
Per square foot	
Basic, corrugated metal or composition, wood or steel deck and framing, without soffit or lighting	15.64 to 16.86
Add for soffit and lighting	3.65
COMMERCIAL TYPE	
Per square foot including lighting and soffit	
Low cost, unfinished soffit	21.67
Average, finished soffit	28.06
Good, finished soffit, lighting	30.98
High cost, finished soffit, lighting	28.60 to 33.42

NOTE: Refer to the residential schedule for patios, porches, porticos, wood decks, balconies, and other residential type features.

Guidelines Chapter 6

- To complete the property record card, you must now determine the correct depreciation for the structure and apply lighting. It will be discussed later on in this class the procedures for calculating depreciation.
- Next apply and subtract any obsolescence.
- You now have the True Tax Value of the structure which is rounded to the nearest $100.

Guidelines Chapter 7
Commercial and
Industrial Yard Structures

Guidelines Chapter 7

- The cost schedules for commercial and industrial yard structures are in Appendix G, pages 27 – 41.
- The depreciation tables for yard structures are in Appendix F.
- When using these cost tables there are some that require special adjustments.

Guidelines Chapter 7

- Examples of Commercial and Industrial Yard Structures include the following (page 2)
  - Fencing
  - Greenhouses
  - Golf Courses
  - Grain Elevators and supporting structures
  - Paving

Guidelines Chapter 7

- The valuation of Commercial and Industrial yard structures involves the application of various models that represent typical types of construction. Each model assumes that there are certain elements of construction that can be defined as specifications. These specifications create the use of the average or “C” quality and grade factor.
- When completing the PRC, you will value these yard improvements and show them in the summary of improvements section of the PRC.

Guidelines Chapter 7

- The steps for completing the Property Record Card for Commercial and Industrial Yard Structures are as follows:
  - Task 1—Record information about the item (page 6)
  - Task 2—Determine the base rate for the item (page 12)
  - Task 3—Determine the adjusted base rate (page 21)
  - Task 4—Calculate the remainder value (page 24)
  - Task 5—Calculate the True Tax Value (page 27)
  - Task 6—Calculate the total for the total property (page 29)

Guidelines Chapter 7

Task 1—Record information about the item (page 6)

- In this task you provide descriptive information about the characteristics of the yard structure.
- Use separate lines in the summary of improvements section of the PRC for each individual yard improvement.

Guidelines Chapter 7

Task 2—Determine the base rate for the item

- Two distinct types of structures that use the square foot base rate cost schedules:
  - Type 1 – Flat square foot rate dependent on construction material (page 14).An example is paving, separate cost schedules for asphalt & concrete paving.
  - Type 2 – Variable square foot rate dependent on size of structure and type of construction materials (page 14).

Guidelines Chapter 7

- Four distinct types of structures that use whole dollar amount cost schedules: (page 15)
  - Type 1 – Amount is dependent on the storage capacity of the yard structure
    - Oil storage tanks, fuel oil tanks, etc.

Guidelines Chapter 7

- Type 2 – Amount is dependent on the diameter and height of the yard structure
  - Dry storage bins, brick, and concrete stacks, etc.

- Type 3 – Amount is dependent on the capacity and height of the yard structure
  - Elevated steel tanks, towers.

Guidelines Chapter 7

- Type 4 – Amount is dependent on specific attributes other than those named in the other types
  - Incinerators, do-it-yourself car wash buildings, shuffleboard courts, etc.

Guidelines Chapter 7

- Linear Feet (page 20)
- The cost schedules that use linear feet are:
  - Fencing
  - Masonry walls
  - Guardrails
  - Railroad siding
  - Retaining walls
  - Bulkhead piling

Guidelines Chapter 7

- There are cost schedules that use other methods of determining the base rate. Grain elevators, for example, use bushels.
- Golf courses are no longer assessed under the Cost Approach. Golf courses are priced using the income approach to value.

Guidelines Chapter 7

Task 3—Determine the adjusted base rate (page 21), also see step 4 on page 23

- The adjusted base rate for the yard structure is the base rate adjusted to take into account any relevant features identified for the structure, an adjustment for location (LCM), and the grade factor percentage.
- If the structure uses a cost schedule based on whole dollar amounts, the replacement cost is the same as the adjusted base rate, rounded to the nearest $10.

Guidelines Chapter 7

- If the structure uses a schedule based on a unit of measurement other than a whole dollar amount, the replacement cost will be the adjusted base rate multiplied by the unit of measurement (area, linear feet, bushels, etc.).

- Base rate = Base rate from Appendix G multiplied by the applicable grade factor adjustment.

Guidelines Chapter 7

- Task 4—Calculate the remainder value (page 24)
- The remainder value is the replacement cost of the yard structure adjusted for normal depreciation. (Rounded to nearest $10.)

Guidelines Chapter 7

- Task 5—Calculate the True Tax Value (page 27)
- The yard structure's True Tax Value is its remainder value adjusted for obsolescence depreciation, if necessary. (round to nearest $100)

- Task 6—Calculate the total for the total property (page 29)
- Calculate the True Tax Value for each structure by performing Task 1 through Task 5 for each yard structure. (round to nearest $100)

Guidelines Chapter 7

- Let's work an asphalt paving example.
- When pricing asphalt paving you need to know square feet of paving along with how many inches of asphalt along with inches of base. The base rates are 2" asphalt on 5" base. You need to know total square feet paving to know which classification to use. If the installation is 23,000 sq ft the base rate would be $2.57. If the installation has 8" base you would add additional $.40 for extra 3" base. This would give you a total base rate of $2.97 for C quality grade. **Note:** If the quality grade is anything different than C grade, you need to multiply the $2.97 rate x the applicable quality grade factor.

Paving Per square foot ASPHALT	
2" on 5" base	
Under 20,000 square feet	2.81
20,000-50,000 square feet	2.57
Over 50,000 square feet	2.24
Add for sand finish course, 3/4" thick	3.45
Add for gravel surfacing	0.32
Add or deduct per 3" base	0.40
Heavy duty or industrial work areas	3.05

Guidelines Chapter 8
Special Use Commercial Properties

Guidelines Chapter 8

- Special Use Commercial Properties (page 2)
  - Fast food restaurants
  - Gasoline service stations, with and without service bays
  - Self-service cashier booths
  - Public restroom buildings
  - Detached canopies
  - The cost tables used to value the special use property are in Appendix G, pages 42 and 43.

Guidelines Chapter 8

- Pricing schedules for special use commercial properties consist of square foot unit values based on C quality grade construction.
- Basic layout for fast food restaurant may include the following:
  - Small office
  - Two restrooms
  - Areas for employee dressing, storage, food preparation, serving, and dining

Guidelines Chapter 8

- Basic layout for gasoline service station may include the following:
  - Sales and office area
  - Utility area
  - Two restrooms
  - One or more service bays

Guidelines Chapter 8

- Fast food restaurant (page 3)
  - Pre-designed
  - Normally built with different variations of the same plans with periodic updates of design
  - Solariums are included in the square footage calculation of the structure and are **not** valued as an exterior feature.

Guidelines Chapter 8

- Fast food restaurant:
  - Concerning air conditioning: The value of air conditioning is not an add on for the fast food restaurants. It is taken into account in the grade of the structure. Please see pages 60 & 61 of Appendix E. Look at the row titled Climate Control System. For grades A, B, and C, air conditioning is reflected in the grade. For grades D and E it is not. Most likely the D and E grades will either have no air or window units of some type.

Guidelines Chapter 8

- Gasoline service stations:
  - Assessor must determine whether converted stations with mini-grocery stores more resemble the service station without bay model or the convenience market model.

Guidelines Chapter 8

- Self-Service Cashier Booths: (page 5)
  - May or may not include restroom facilities
  - Divided into three quality ratings

- Public Restroom buildings: (page 5)
  - Rated by the area in square feet

- Detached Canopies: (pages 6-7)
  - Rated on quality and square footage

Guidelines Chapter 8

SPECIAL USE COMMERCIAL PROPERTI

Fast Food Base Costs

Per square foot, C - Grade quality and design

Area	Cost	Area	Cost
700	288.53	2200	191.88
800	276.80	2300	189.85
900	267.02	2400	187.82
1000	247.12	2500	186.10
1100	238.88	2600	184.37
1200	230.64	2700	182.92
1300	224.66	2800	181.46
1400	218.67	2900	180.16
1500	214.14	3000	178.85
1600	209.60	3500	172.50
1700	206.01	4000	169.06
1800	202.41	4500	166.25
1900	199.52	5000	163.90
2000	196.62	5500	161.84
2100	194.25	6000	160.08

Add for basements per square foot

Area	Unfinished	Finished Open	Finished Divided
200	75.62	138.43	---
400	59.71	116.72	---
600	51.93	107.20	123.86
800	49.67	101.46	118.28
1000	47.42	97.50	114.43
1200	45.41	94.67	111.68
1400	43.41	92.37	109.45
1600	41.42	90.61	107.73
1800	39.42	89.11	106.28
2000	37.42	87.79	104.99
2200	38.20	86.73	103.96
2400	38.01	85.76	103.01
2600	37.81	84.96	102.24
2800	37.61	84.16	101.47
3000	36.42	83.46	100.87
3200	35.50	82.93	100.27
3400	34.56	82.31	99.75
3600	33.64	81.87	99.25
3800	32.70	81.35	98.81
4000	31.77	80.90	98.38

Add for canopies per square foot 23.10

- Example: If fast food restaurant was 1,190 sq ft you would go to the 1200 area line, the base rate would be $230.64.If there was either a full or partial basement you would first need to determine the finish type, if finished open and only partial basement of 600 sq ft, the basement rate would be $107.20. Typically when completing the PRC, you would use two columns, one for the basement level and the other for the first floor.

Guidelines Chapter 8

- <u>Pricing Special Use Properties</u>
  - Replacement Cost New = Total base value x grade multiplier x location multiplier.
  - Remainder Cost = (Replacement Cost New times Depreciation Multiplier with resulting amount subtracted from Replacement Cost New.)
  - Both the Replacement Cost New & Remainder Cost are rounded to the nearest $10.

Guidelines Chapter 8

- True tax value is the remainder value rounded to the nearest $100.
- Don’t forget to include items such as paving or other items not included in the construction features in the “Summary of Improvements” on the PRC.

Guidelines Chapter 9
Utility Properties

Guidelines Chapter 9

- This chapter describes the process used for valuing utility properties. It also provides information about distinguishing locally assessed real property and distributable property.
- Additionally, it provides guidelines for identifying local real property for the following types of companies.
- Please refer to pages 4 thru 8 for list of property with classification of local real property (LRP) and state distributable property (DIST).

Guidelines Chapter 9

- Bus companies
- Light, heat, or power companies
- Pipeline companies
- Railroad companies
- Sewage companies
- Telephone, telegraph, or cable companies
- Water distribution companies
- Chapter 9, pages 9 – 14 will provide more information about these public utility companies.

Guidelines Chapter 9

- If the item is land, a building or building improvement, it is locally assessed real property.

- If the item is directly used to provide utility service or any other personal property, it is distributable property.

Guidelines Chapter 9

- The DLGF is responsible for the assessment of the distributable property which may also be referred to as state assessed distributable property.

- Property identified as local real property is assessed locally by the county or township assessor.

Guidelines Appendix D
General Commercial Models

Guidelines Appendix D

- This appendix contains Models for:
  - General Commercial Mercantile (GCM)
  - General Commercial Industrial (GCI)
  - General Commercial Residential (GCR)
  - You compare the subject property to the model to determine if adjustments need to be made to the subject property. Example: If model shows 12’ wall height and subject has 15’ wall height, you will need to make a 3’ wall height adjustment.
  - Base rate costs are developed based upon the model.

Guidelines Appendix D

- GCR models are only applicable to wood or metal stud framed load bearing construction, regardless of story height. Also, wood joist construction up to 3 stories could use GCR, but if 4 or more stories would have to use GCM or GCI schedule.

- Masonry construction requires the application of either GCM or GCI models as the base rates are based upon fire resistant construction.

- Note: Make sure you remember this information regarding the construction types.

Guidelines Appendix E
Commercial and Industrial Grade

Appendix E

- For each of the types of commercial and industrial improvements, a model has been defined to summarize the elements of construction quality that are typical of the majority of that type of improvement.
- Model has been assigned a “C” grade
- The characteristics of these typical models can be thought of as construction specifications for an improvement that was built with average quality materials and workmanship.

Appendix E

- The quality grade factor percentages are located on Table E-2, (page 8).
- Table E-3 (page 9) provides a list of the typical construction materials and design elements found in each full construction quality grade. It is designed to aid the local assessing official in determining the appropriate quality grade to assign to commercial and industrial structures.

Appendix F
Commercial and Industrial Depreciation

Appendix F

- <u>Understanding the Concept of Depreciation</u>
- Accrued depreciation is a loss in value to the cost new of the improvements from any and all causes.
- There are three major categories, or causes, of depreciation. See Appendix F, (page 4)
  - Physical Deterioration
  - Functional Obsolescence
  - External Obsolescence

- Make sure you know the differences in these!

Appendix F

- Physical Deterioration – loss in value caused by the building materials wearing out over time.
  - May be caused by wear and tear, use or abuse, action of the elements, and/or insect infestation.

Appendix F

- Functional Obsolescence – loss in value caused by inutility within the improvement.
  - May be caused by defects in design, style, size, poor room layout, a deficiency, the need for modernization, a super adequacy, and/or by changes in the tastes of potential buyers.

Appendix F

- External Obsolescence – caused by an influence outside the property's boundaries that has a negative influence on its value.
  - Noise, air, water or light pollution; heavy traffic; inharmonious land uses; and/or crime.

Appendix F

- When applying any form of functional or external obsolescence, the assessor should reevaluate the obsolescence on an annual basis.

Appendix F

- Determining the Actual Age of a Structure:
  - Actual age of a structure should be determined from the records of the owner. If not available, public records, such as building permits, may be used.
  - If structure has had additions built on, a “weighted” age must be calculated.

Appendix F

- Determining the “weighted” age of a structure (see example on page 5)
  - Method used is one of weighting the actual age of the original structure and each of its additions by the square footage contained in each part.
  - Make sure you can work a problem.

Appendix F

- <u>Determining the Normal Depreciation Percentage</u>:
- There are seven steps in this process:
  1. Determine the actual age of the structure: Use the construction date of the structure and subtract it from the current assessment date (2025).
  2. Assign the structure a condition rating (Table F-1, page 20).
  3. Convert the actual age to an effective age using the condition rating and actual age (Table F-2, page 21).
  4. Determine the typical life expectancy of the structure. (Tables F-3a, b, c, d, and e on pages 22 through 27)

Appendix F

- Determining the Normal Depreciation Percentage: (cont)
  5. Go to Table F-4 (page 28) and locate the life expectancy (from Step 4) across the top of the table.
  6. Locate the effective age (from Step 3) in the left hand column.
  7. Where Steps 5 and 6 intersect, this provides you with the normal depreciation percentage.

Appendix F

- Let's work an example. You have a bowling alley that was built in 2019. It is C quality grade, average condition and fire-resistant construction. What is the depreciation %.

- Step 1 – Determining effective age, go to Table F-2.Structure is 6 years old, average condition, where intersects is 5.The effective age is 5 years old.

- Step 2 – Determining life expectancy, go to Table F-3A.This is done by going down left column finding bowling alley, then C quality grade. Then across top go to fire resistant. Where this intersects would be life expectancy of 35 years.

- Step 3 – Determine depreciation %.Go to Table F-4.In the left column find effective age line of 5 years. Then go across top line to life expectancy of 35 years. Where intersects is 9, thus the depreciation is 9%.

Appendix F

- Once you have determined the depreciation %, this will be carried forward to the summary of improvement section of the PRC and shown in the normal depreciation cell. You will then calculate the remainder value by deducting the depreciation % from 100 % and multiplying that % by the replacement cost new column. Based upon the previous example the depreciation % is 9%, thus the remainder good is 91%.Assuming the RCN is $100,000 the remainder value would be $91,000.

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	LMI	Adj. Rate	Size or Area	Replacement Cost	Norm. Depr.	Remainder Value	Class. Depr.	True Tax Value
01																	
02																	
03																	

Appendix F

- The steps we just reviewed on previous slides will be followed when calculating deprecation for GCM, GCI, GCR structures along with the yard structures.

- If you are calculating depreciation for special use commercial property (fast food restaurant as example) you will use Table F-7 (page 33). In using this schedule you first determine the effective age from TableF-2. Once determined the Depreciation column will show you the depreciation %.

- Example: Fast food restaurant built 2019 and is in average condition. Using Table F-2 the effective age would be 5 years. Thus, the Depreciation % would be 25%. Note: You always need to make sure you calculate effective age from Table F-2 and not use the actual age.

Table F-7. Special Use Commercial Property Depreciation

Effective Age in Years	Depreciation
01	5
02	10
03	15
04	20
05	25
06	30
07-08	35
09-10	40
11-12	45

Appendix F

- <u>Determining Abnormal Functional Obsolescence</u>:
  - Any abnormal or excessive functional and external obsolescence that affect a structure must be considered separately since they have not been accounted for in the normal depreciation table.

  - In this class you will not be calculating abnormal obsolescence. If you were, here is the section from the summary of improvements section of PRC where you would show this % adjustment.

SUMMARY OF IMPROVEMENTS

ID	Use	Story Height	Const. Type	Grade	Year Const.	Eff. Age	Cond.	Base Rate	Features	LM	Adj. Rate	Size or Area	Replacement Cost	Norm. Depr.	Remainder Value	Abnorl. Depr.	True Tax Value
01																	
02																	

Appendix F

- As explained on previous slide in this class you will not be calculating abnormal functional or external obsolescence. This class being limited to only calculating normal depreciation.

- Abnormal Functional Obsolescence
  - Most common forms
    - Deficiency requiring an addition – something lacking in the improvement that potential owners of the property desire. (page 9)
    - Need for modernization – improvement has the item desired by the potential owners, but it is outdated or inefficient. (page 10)

Appendix F

- Super adequacy – an item that is bigger, better, or larger than potential owner's demand. (page 10 & 11)

- Excess operating costs – the inutility within the structure causes the owner to have to pay more to operate the property than he/she would if the inutility did not exist. (page 11 & 12)

Appendix F

- Determining Abnormal External Obsolescence
  - Temporary – caused by factors in the market such as an oversupply of the type of space it provides. (page 13)

  - Permanent – caused by the subject property's location to an encroaching land use. (page 13)

Appendix F

- Two methods of measuring external obsolescence, both requiring the use of market data. (page 14)
  - Paired Sales Analysis Method
  - Capitalization of Income Method

Appendix F

- In determining condition classifications, identify the classification that best fits the structure being assessed – not all of the descriptions must be met. (see Appendix F, Table F-1, page 20)

Level II Prep Class

- The rest of the session will be spent working problems from the problem packet.
- You will receive an answer packet at the end of the prep class that will contain the answers to all of the problems we have worked during these sessions.

Problem #6

- Please go to your Cost Approach problem and answer module with audio and work Problem #6.

Problem #7

- Please go to your Cost Approach problem and answer module with audio and work Problem #7.

Practice Problem #1

- Please go to your Cost Approach problem and answer module with audio and work Practice Problem #1.

Level II 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 Level2@dlgf.in.gov