

Chapter 1

Basic Calculations

RSMeans Building Construction Cost Data (BCCD) is the most widely used reference book for estimating construction costs in the United States and Canada. The costs for each construction item are broken down into the components of material, labor, equipment, and overhead and profit. The book also contains square foot costs by project type. The square foot cost data must be adjusted to fit the specific location, size, and conditions of a particular project. RSMeans Online Estimating and Cost Works¹ are electronic versions of the *BCCD* and contain all the same information plus additional features—including the ability to adjust all cost figures by a specific location factor, apply quantities to line items, and export cost data to a spreadsheet.

RSMeans Cost Data Format

The RSMeans Unit Price Line

All RSMeans unit price (UP) data are presented in the same basic format (Figure 1.1).

Each line in the RSMeans database contains information unique to that line: a specific 12-digit number address, detailed description, crew, daily output of the task using the noted crew, labor hours for the task using the specific crew, and a unit of measurement. Also included are the unit

033053.40 Concrete In Place											
★	🔍	Line Number	🔍	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment
☆	🔍	033053400010		CONCRETE IN PLACE							
☆	🔍	033053400020		Including forms (4 uses), grade 60 rebar, concrete (Portland cement							
☆	🔍	033053400050		Type I), placement and finishing unless otherwise indicated							
☆	🔍	033053400300		Beams (1500 psi), 5 kip per L.F., 10' span	C.Y.	C14A	15.62	12.804	330.00	635.00	53.50
☆	🔍	033053400350		25' span	C.Y.	C14A	18.55	10.782	345.00	535.00	45.00
										1018.50	1389.00
										925.00	1239.50

Figure 1.1

1. An RSMeans product for construction cost estimating that is provided on a CD and does not require Internet access.

bare cost (material, labor, equipment, and total) and the total unit cost, including overhead and profit.

Unit price information is presented according to the 50 divisions of the Construction Specifications Institute (CSI) MasterFormat 2016. These divisions are divided into major subdivisions and then into subsections of similar items. Within each subsection, items are arranged alphabetically by type. Each line item is unique.

Address Number

The address number of the line item shown here can be read as three parts:

03 30 Cast-In-Place Concrete is the Level Two, CSI MasterFormat subdivision. The first two digits of that number represent the Level One, MasterFormat division. (For this item, it is Division 3, or 03, which is Concrete.)

03 30 53 Miscellaneous Cast-In-Place Concrete is the Level Three subdivision.

Concrete In Place is the Level Four, RSMeans major classification. It appears in the RSMeans book as a line 03 30 53. 40, while it appears in RSMeans online estimating as just the number 40 in the extreme left and right columns.

0350 (first column from left in the RSMeans book and second column from left in RSMeans online estimating) is the RSMeans individual line number.

Note that while MasterFormat used spaces and a period in the number for better reading (03 30 53.40 0350), no spaces or period should be used when searching for an item in RSMeans online estimating software.

Description

The column to the right of the Line Number, for example 033053400350, contains a detailed description of the item. For a full description of an item, one must read up through the subsection, including all descriptive information that appears on lines above and to the left of the selected item.

Thus, the complete description for the item in line 03 30 53.40 0350 is “Concrete in place including forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placement and finishing unless otherwise indicated, Beams (3500 psi), 5 kip per LF, 25’ span.” An easier way to read description is to click on the Line Number, as shown in Figure 1.2.

033053400050	Type I), placement and finishin
0330534003	Line Number: 033053400350
0330534003	Description: Structural concrete, in place, beam
0330534005	(3500 psi), 5 kip per LF, 25' span,
0330534005	includes forms(4 uses), Grade 60
0330534005	rebar, concrete (Portland cement
0330534005	Type I), placing and finishing
0330534007	Crew: Crew C14A
0330534007	Graphic: NA
0330534007	Link: 033053 10 Spread Footings
0330534007	033053 60 Maximum Depth of Frost
0330534007	Penetration in Inches
0330534008	033105 10 Proportionate Quantities
0330534008	033105 20 Materials for One C.Y. of
0330534008	Concrete
0330534008	033105 50 Quantities of Cement,
0330534008	Sand and Stone for One Cubic Yard
0330534009	of Various Concrete Mixes
0330534009	033105 65 Field Mix Concrete
0330534009	033105 70 Placing Ready Mixed
0330534009	Concrete

Figure 1.2

Note that the wording here may not match the example in the previous paragraph exactly, but it is the same content.

In the RSMeans cost estimating database print books, the description box of some items may include an illustrative sketch or a reference box. The reference box next to the item indicates an RSMeans reference number or assembly. Reference numbers and assemblies contain detailed information that may be helpful to the estimator. Several reference boxes indicate that all these notes apply to all the items in that section. For example, R033053-10, R033053-60, R033105-10, R033105-20, R033105-50, R033105-65, and R033105-70 apply to items 03 30 53.40 0010 through 03 30 53.40 7050. They show in the pop-up window in Figure 1.2 under the title Link. View the note by clicking on the Reference number; a new tab opens to show the note in pdf format. It can be downloaded and saved or printed. In the same pop-up window are other categories: Crew (to be explained next) and Graphics, which may include a clickable file name. Most likely, this graphics is G.pdf, HANDICAP.pdf, or another file. The G.pdf is usually accompanied by a green leaf in the main spread sheet, indicating that this item was identified by the RSMeans engineering staff to be environmentally responsible and/or resource-efficient. The HANDICAP.pdf simply shows the handicap logo. Other items may have a graphic illustration.

Crew

In the database, the term *crew* refers to a unique grouping of workers and equipment, identified by letter and number. The crew on each line includes the labor trade or trades and equipment required to efficiently perform the indicated task. Crew details are shown in the reference section at the back

Crew C-14A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$51.25	\$410.00	\$78.50	\$628.00	\$49.40	\$75.64
16 Carpenters	49.25	6304.00	75.45	9657.60		
4 Rodmen (reinf.)	54.30	1737.60	83.70	2678.40		
2 Laborers	39.15	626.40	60.00	960.00		
1 Cement Finisher	46.80	374.40	69.60	556.80		
1 Equip. Oper. (medium)	53.55	428.40	81.00	648.00		
1 Gas Engine Vibrator		28.25		31.07		
1 Concrete Pump (Small)		806.40		887.04	4.17	4.59
200 L.H., Daily Totals		\$10715.45		\$16046.92	\$53.58	\$80.23

Figure 1.3

of the print book or by clicking on the item in the online database and then “Crew” in the pop-up window (Figure 1.3).

The opened tab shows all crews in pdf format, listed in alpha-numeric order. Another way to obtain the crew list is to click “Reference Items” on the top bar menu, and choose Crews. The “Reference Items” page gives a host of other useful information.

Crew labor hours are shown in the lower-left corner of the crew box. In the case of Crew C14A, the total is: 200 LH Daily Totals. This figure represents the total labor hours worked by the 25 members of Crew C14A in a normal eight-hour workday.

If the task is done by one type of laborer with no equipment (e.g., the crew is composed of one trade only), there will be no crew ID. Instead, there will be an abbreviation for that particular labor trade and the number of workers. For example, most items in section 03 21 11 60 0360 are done by rodmen, abbreviated as Rodm. Hence, Rodm appears in the crew column. The labor trade table lists the abbreviations and their detailed cost information. The table can be seen on the inside back cover of the *BCCD* book or it can be obtained online by choosing Labor Rates in the “Reference Items.”

0330 Cast-In-Place Concrete											
★	🔍	Line Number	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment	Total O&P
☐	★	033053400050	Type 1), placement and finishing unless otherwise indicated								
☑	★	033053400300	Beams (3500 psi), 9 kip per L.F., 10' span	C.Y.	C14A	15.62	12.804	330.00	635.00	53.50	1018.50
☐	★	033053400350	25' span	C.Y.	C14A	18.55	10.782	345.00	535.00	45.00	925.00
☐	★	033053400500	Chimney foundations (5000 psi), over 5 C.Y.	C.Y.	C14C	32.22	3.476	167.00	164.00	0.07	331.07
☐	★	033053400510	(3500 psi), under 5 C.Y.	C.Y.	C14C	33.71	4.724	193.00	222.00	1.18	416.18
☐	★	033053400700	Columns, square (4000 psi), 12" x 12", up to 1% reinforcing by area	C.Y.	C14A	11.96	16.722	365.00	825.00	68.50	1259.50
☐	★	033053400720	Up to 2% reinforcing by area	C.Y.	C14A	10.13	19.743	560.00	975.00	82.50	1617.50
☐	★	033053400740	Up to 3% reinforcing by area	C.Y.	C14A	9.03	22.148	825.00	1100.00	92.50	2017.50
☐	★	033053400800	16" x 16", up to 1% reinforcing by area	C.Y.	C14A	16.22	12.330	293.00	610.00	51.50	954.50
☐	★	033053400820	Up to 2% reinforcing by area	C.Y.	C14A	12.57	15.911	480.00	785.00	66.50	1331.50
☐	★	033053400840	Up to 3% reinforcing by area	C.Y.	C14A	10.25	19.512	730.00	965.00	81.50	1776.50
☐	★	033053400900	24" x 24", up to 1% reinforcing by area	C.Y.	C14A	23.66	8.453	252.00	420.00	35.50	707.50

Figure 1.4

Most columns can be resized by grabbing and dragging the divider lines at the tops of the columns.

Costs in the crew details box are itemized in three ways:

1. Bare costs
2. Including subs O&P (overhead and profit)
3. Cost per labor hour

The bare cost is based on the wages displayed in column A of the table “Installing Contractor’s Overhead and Profit” (located on the inside back cover of the printed book, or in the Crew Information (as show in Figure 1.3). The cost “Including Subs O&P” is based on the labor wages with add-ons, displayed in columns H and I of the same table. Equipment cost, including O&P, is calculated by adding 10 percent to the bare equipment cost. The cost per labor hour is based on labor and equipment cost, divided by total labor hours.

In our example, total daily labor bare cost of crew C14A is

$$\$410.00 + \$6,304.00 + \$1,737.60 + \$626.40 + \$374.40 + \$428.40 = \$9,880.80 / \text{day}$$

If this number is divided by 200 labor hours per day, we’ll get \$49.40 per average labor hour. If we repeat these steps with labor wages including O&P, we’ll get $\$15,128.80 / 200 = \75.64 per average labor hour.

For equipment, total daily bare cost is $\$28.25 + \$806.40 = \$834.65$, or \$4.17 average per labor hour, or $\$918.11 / 200 = \4.59 average per labor hour, including O&P. This is a hypothetical number that represents the average equipment cost per labor hour if the equipment costs are spread evenly among all workers.

When a crew contains a 0.5 or 0.25 worker, it means the worker is working a half day (4 hours) or a quarter of a day (2 hours) during a normal workday.

Daily Output

The number of units of a defined task that a designated crew will produce in one eight-hour workday is referred to as the *daily output*. Daily output represents an average figure, which will vary with job conditions. Daily output is measured in the units specified in the unit column. For line 03 30 53.40 0350, the output is 18.55 CY (cubic yards) per day.

Labor Hours

This number represents the total number of labor hours it takes to produce one unit of this task using the specified crew. Labor hours per unit is calculated by dividing the crew labor hours (found in the crew detail) by the daily output:

$$\begin{aligned} \text{Labor hours/Unit} &= \frac{\text{Daily crew labor hours}}{\text{Daily output}} \\ \text{Labor hours/CY} &= \frac{200 \text{ Labor hours/day}}{18.55 \text{ CY/day}} = 10.782 \text{ Labor hours/CY} \end{aligned}$$

This basic relationship of crew labor hours and productivity can be used to calculate labor hours for crews of different composition. It can also be used to calculate the length of time it will take to perform this task with crews of differing composition.

One important observation about the two terms representing productivity—namely, units/day and labor hours/unit—is the adjustment needed when productivity changes. There is an inverse proportionality between the two terms. For example, if productivity decreases, then units/day decreases while labor hours/unit increases, and vice versa.

Unit

In most cases, the unit is self-explanatory, such as CY (cubic yards), SF (square feet), or Ea (each). In some cases, the user might see an unusual unit, such as SFCA (square foot contact area), SQ (square= 100 SF), Cwt (100 pounds), or VLF (vertical linear feet). Refer to the abbreviations list in the reference section of the *BCCD*, or use “Reference Items” in RSMeans Online Estimating.

Bare Costs

This category has four columns: Materials, Labor, Equipment, and Total. The numbers here represent the contractor’s direct (bare) cost. They do not include any overhead, subcontractors’ markups, or profit.

Total Incl. O&P

This column represents the sum of the bare material cost plus 10 percent for profit, the bare labor cost plus labor burden and 10 percent for profit, and the bare equipment cost plus 10 percent for profit. This figure

represents the amount the installing contractor may charge to a general contractor or owner.

Productivity and Activity Duration

Labor cost is, without a doubt, the single most unpredictable expense in a construction project. Labor cost can be calculated in at least two ways, as shown in equations (1) and (2):

$$(1) \quad \text{Labor cost (\$)} = \text{Activity duration (days)} \times \text{Crew cost (\$/day)}$$

or

$$(2) \quad \text{Labor cost (\$)} = \text{Units to be completed} \times \text{Labor cost (\$/unit)}$$

Note: The unit of time used in activity duration could be hours, weeks, or any other unit of time. The crew cost then must be in dollars per the same time unit.

Both methods require knowing the productivity—that is, the total number of units produced by the unit of time. If we define productivity as a crew's daily output (units/day), then:

$$\text{Activity duration} = \frac{\text{Units to be completed (size of job)}}{\text{Daily output}}$$

and

$$\text{Labor unit cost (\$/unit)} = \frac{\text{Crew labor cost (\$/day)}}{\text{Daily output (units/day)}}$$

Then equations (1) and (2) can be rewritten as one equation:

$$(3) \quad \text{Labor cost(\$)} = \frac{\text{Units to be completed}}{\text{Daily output}} \times \text{Crew labor cost (\$/day)}$$

RSMeans productivity figures assume average conditions. Productivity involves two indicators: daily output and labor hours (per unit). For any given task:

$$\text{Labor hours} = \frac{\text{Crew labor hours}}{\text{Daily output}}$$

Example 1

For line 31 23 16.42 1600, an excavation crew (B10T) consists of one equipment operator, 0.5 laborer (4 hours/day), and a front-end loader. It has an output of 800 CY/day. What are the labor hours/CY?

Solution

The total crew labor hours/day for crew B10T is $8 + 4 = 12$ labor hours.

$$\text{Labor hours/CY} = \frac{12 \text{ labor hours/day}}{800 \text{ CY/day}} = 0.015 \text{ labor hours/CY}$$

Example 2

A crew of three bricklayers and two helpers laid 1,200 bricks in six hours. Calculate the daily output and the labor hours/M bricks.¹

Solution

Hourly output = $1,200 \text{ bricks}/6 \text{ hours} = 200 \text{ bricks/hour}$

$$\begin{aligned} \text{Daily output} &= 200 \text{ bricks/hour} \times 8 \text{ hours/day} \\ &= 1,600 \text{ bricks} \\ &= 1.6 \text{ M bricks (M = 1000)} \end{aligned}$$

$$\begin{aligned} \text{Crew labor hours/day} &= 5 \text{ workers} \times 8 \text{ hours/day} \\ &= 40 \text{ labor hours} \end{aligned}$$

$$\begin{aligned} \text{Labor hours} &= 40 \text{ labor hours}/1.6 \text{ M bricks} \\ \text{Labor hours/M bricks} &= 25 \text{ labor hours/M bricks} \end{aligned}$$

or:

In 6 hours, the crew puts out 30 labor hours ($5 \text{ men} \times 6 \text{ hours}$)

$$\begin{aligned} 30 \text{ labor hours} &= 1,200 \text{ bricks} \\ \text{Labor hours/brick} &= 30 \text{ labor hours}/1,200 \\ &= 0.025 \text{ labor hours/brick} \\ &= 25 \text{ labor hours/M bricks} \end{aligned}$$

¹ 1 M bricks means 1,000 bricks; in Roman numerals, the letter “M” represents 1,000.

If productivity increases (or decreases) by a certain percentage, the daily output will also increase (or decrease) by the same percentage. The labor hours per unit will go the opposite way—that is, they will decrease (or increase) by the same percentage. To understand this, let's consider the following scenario.

Example 3

The productivity of the crew in Example 1 dropped by 20 percent due to some adverse conditions. What would be the new daily output and labor hours/CY?

Solution

$$\begin{aligned}\text{New output} &= 800 \text{ CY/day} \times (100\% - 20\%) = 800 \times (0.80) = 640 \text{ CY/day} \\ \text{New labor hours} &= 0.015 \text{ LH/CY} / (100\% - 20\%) = 0.015 / 0.8 \\ &= 0.01875 \text{ LH/CY}\end{aligned}$$

Note that dividing by $(100\% - 20\%)$ is not equal to multiplying by $(100\% + 20\%)$. In case of a productivity drop, always use $(100\% - x\%)$. In case of productivity gains, always use $(100\% + x\%)$, where x is the productivity change.

Example 4

Calculate the estimated duration for excavating 10,000 CY of earth using Crew B10T of Example 1.

Solution

$$\text{Duration} = \frac{10,000 \text{ CY}}{800 \text{ CY/day}} = 12.5 \text{ days} \approx 13 \text{ days}$$

Duration varies significantly, not only with productivity but also by crew size or composition, or the number of crews used. Duration has an inverse relationship with productivity—that is, when productivity increases, duration decreases, and vice versa.

The estimator must exercise caution in calculating the duration of an activity. Duration is important for scheduling and calculating the expected finish time (for that activity and the entire project) as well as for estimating general conditions and overhead cost (rent, staff salary, utilities, etc.) of the job.

Equipment Costs

Equipment for each task is shown in the crew detail. Crew equipment cost consists of equipment rental costs plus equipment operating costs.

$$\text{Equipment cost/unit} = \frac{\text{Crew equipment cost/day}}{\text{Daily output}}$$

For line 03 30 53.40 0350:

$$\text{Equipment cost} = \$45/\text{CY}$$

Using Crew C-14A information:

$$\begin{aligned}\text{Equipment cost} &= (\$28.25 + \$806.40)/18.55\text{CY/day} \\ &= \$45/\text{CY}\end{aligned}$$

RSMeans cost data for equipment are based on two assumptions:

1. Late-model, high-quality machines in excellent working condition, rented from equipment dealers².
2. Weekly rental:

$$\begin{aligned}\text{Crew equip. cost/day} &= \text{Hourly oper. cost} \times 8 \text{ hours/day} \\ &+ \frac{\text{Rent per week}}{5 \text{ workdays per week}}\end{aligned}$$

For the gas engine vibrator in Crew C14A, refer to line 01 54 33.10 3000.

The screenshot shows the RSMeans data interface. The search bar contains '033053400'. The search results table is displayed below, showing various construction items with their descriptions, units, and costs.

Line Number	Description	Unit	Crew	Daily Output	Hourly Labor	Hourly Material	Hourly Labor Equip	Hourly Total	Total O&P
033053400010	Structural concrete, in place				0.00				
033053400020	Structural concrete, in place, includes forms (4 uses), Grade 60 rebar, conon				0.00				
033053400050	Structural concrete, in place, beam (2000 psi), 5 rip per LF, 10' span, includes form	C.Y.	C14A	25.62	12,804	230.00	615.00	845.00	1,080.00
033053400050	Structural concrete, in place, beam (2000 psi), 5 rip per LF, 10' span, includes form	C.Y.	C14A	18.55	10,762	345.00	515.00	860.00	1,220.50
033053400050	Structural concrete, in place, chimney foundation (3000 psi), over 5 C.Y., includes form	C.Y.	C14C	32.22	3,470	187.00	194.00	381.00	404.97
033053400050	Structural concrete, in place, chimney foundation (3000 psi), under 5 C.Y., includes	C.Y.	C14C	25.71	4,724	193.00	223.00	416.00	554.32

Figure 1.5

For this equipment, the hourly operating cost is \$2.38 and the rent per week is \$46. The crew equipment cost per day is:

$$\text{Crew equip. cost/day} = \frac{\$2.38}{\text{hour}} \times \frac{8 \text{ hours}}{\text{day}} + \frac{\$46 \text{ per week}}{5 \text{ workdays per week}}$$

2. See RSMeans Reference Number R015433-10.

Crew equip. cost = \$28.24/day (in the crew cost, it shows as \$28.25 because of different rounding process).

This crew equipment cost per day (shown in the far-right-hand column in the equipment section in the print book only) is the figure used in the crew detail. Construction equipment is often rented for periods other than one week or may be owned. Variations in times for equipment rental will be discussed further in Chapter 13.

City Cost Indexes and Location Factors

The costs shown in the unit price section of the *BCCD* represent US national average prices and are given in US dollars. The *national average* is an average of costs in 30 major US cities. National average costs should be adjusted to local costs when performing an actual estimate. City cost indexes for 731 US and Canadian cities are available in the reference section of the *BCCD*. The 30-city national average is given a value of 100, and each of the 731 index figures is shown as a value relative to this figure. They are broken down not only by city but also by the major CSI division.

In the *BCCD* print book, the location factors list the same factors for 731 cities with the addition of zip codes (but without breakdown by CSI divisions). To determine the cost in a particular location, multiply the cost by the location factor and divide by 100.

$$\text{Cost in City A} = \text{National average cost} \times \frac{\text{Location factor}}{100}$$

All cost numbers in the *BCCD* print book show US national averages, and then the user needs to multiply the cost number by CCI factors. In the Online Estimating, it is adjusted automatically by choosing the Location: A small window will pop up, and the user chooses one of the available cities in the United States or Canada (Figure 1.6).

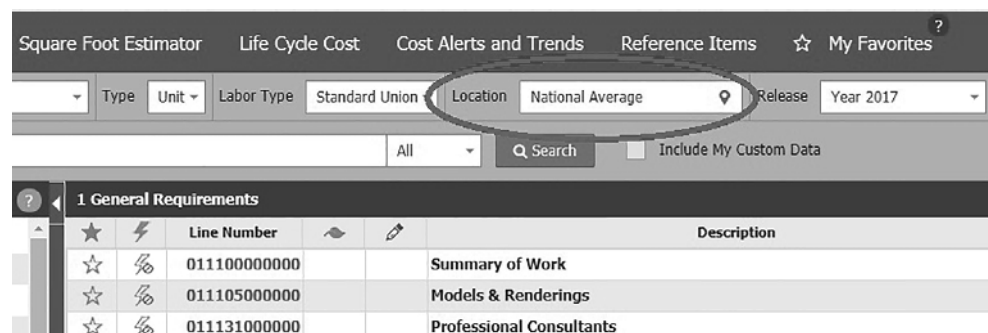


Figure 1.6 Project Location

In the examples in the next chapters, we will be using the numbers from the online estimating, that are already adjusted for location.

Example 5

What is the cost per CY for the concrete beams in RSMeans item 03 30 53.40 0350 in Omaha, Nebraska?

033053.40 Concrete In Place												
★	🔗	Line Number	🔗	🔗	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment
☆	🔗	033053400010			CONCRETE IN PLACE							
☆	🔗	033053400020			Including forms (4 uses), Grade 60 rebar, concrete (Portland cement							
☆	🔗	033053400050			Type 1), placement and finishing unless otherwise indicated							
★	🔗	033053400300			Beams (1500 psi), 5 kip per L.F., 10' span	C.Y.	C148	15.62	12.804	330.00	635.00	51.50
☆	🔗	033053400350			25' span	C.Y.	C148	18.55	10.782	345.00	535.00	45.00
											1018.50	1389.00
											925.00	1239.50

Figure 1.7

Solution

The bare cost per CY for the concrete beams in line item 03 30 53.40 0350, US national average, is \$925, which includes \$345, \$535, and \$45 for materials, labor, and equipment, respectively. The cost including O&P (overhead and profit) is \$1,239.50/CY. These numbers represent the national average for that item. City cost index (CCI) numbers are broken down by division and by subdivision for concrete. But since this item combines all concrete subdivisions (formwork, reinforcement, and concrete mix and placement), we will use the CCI factors for Division 03 Concrete for Omaha, Nebraska—90.8 percent for materials, 77.3 percent for installation (labor), and 95.8 percent for equipment, or 84.5 percent for total cost—as a percentage of the national average.

Using these factors we can find the cost per CY in Omaha:

Cost for Materials	= \$345 × 90.8%	= \$313.26/CY
Cost for Labor	= \$535 × 77.3%	= \$413.56/CY
Cost for Equipment	= \$45 × 95.8%	= \$43.11/CY
Total Bare Cost	= \$335.34 + \$379.95 + \$37.58	= \$769.93/CY
Or		
	= \$925 × 84.5%	= \$781.63/CY
Total Cost (incl. O&P)	= \$1,239.50 × 84.5%	= \$1,047.38/CY

When using the online estimating with automatic location adjustment, we get: \$309.81, \$426.93, \$43.11, \$779.85, and \$1,034.54, for materials, labor, equipment, bare total, and total including O&P; respectively.

As mentioned earlier, the results obtained by the *BCCD* book (and adjusted by CCI factors) differ slightly from those obtained from online estimating because the adjustment factors apply in a different way, and because of rounding (Figure 1.8).

DIVISION		NEBRASKA												NEVADA					
		NORFOLK			NORTH PLATTE			OMAHA			VALENTINE			CARSON CITY			ELKO		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.8	95.8		106.9	106.9		95.8	95.8		99.4	99.4		98.8	98.8		98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	84.0	94.0	90.9	103.8	94.7	97.9	91.3	94.7	93.7	87.2	100.1	96.2	87.7	98.5	95.2	70.1	91.2	89.0
0310	Concrete Forming & Accessories	83.3	74.3	75.5	96.3	70.7	74.1	99.5	75.4	78.2	84.2	55.2	59.2	108.1	80.2	84.0	113.8	77.0	81.9
0320	Concrete Reinforcing	101.0	64.9	82.7	103.2	73.8	88.3	95.9	74.1	86.6	103.8	64.6	83.9	105.9	109.7	107.8	113.7	90.5	102.1
0330	Cast-in-Place Concrete	108.3	60.1	89.9	114.1	62.0	94.9	89.8	79.8	86.0	100.7	55.1	83.4	95.3	82.0	92.2	92.3	75.0	85.7
03	CONCRETE	01.1	68.3	85.9	101.5	69.5	89.3	90.8	77.3	84.5	105.0	58.0	83.2	93.2	86.1	92.1	96.0	78.9	87.5
04	MASONRY	125.1	74.5	93.9	95.3	70.9	80.3	99.5	75.6	84.8	109.4	70.9	84.9	117.1	70.7	88.5	123.8	69.5	90.4
05	METALS	98.4	78.6	92.3	96.9	91.4	95.2	98.5	83.8	94.0	107.5	78.3	99.9	108.2	92.7	103.5	111.8	83.1	103.0
06	WOOD, PLASTICS & COMPOSITES	82.7	75.9	79.0	97.1	71.6	83.1	94.5	75.9	84.3	81.0	51.2	64.7	91.2	80.3	85.2	102.0	77.1	88.3
07	THERMAL & MOISTURE PROTECTION	102.5	78.6	92.6	99.0	77.8	92.7	98.6	80.0	90.9	99.9	74.2	89.2	106.6	79.4	95.3	103.3	73.2	90.8
08	OPENINGS	95.6	69.9	89.8	94.1	69.9	88.6	100.9	75.4	95.1	96.5	56.4	87.5	98.1	80.8	94.2	101.7	72.7	95.1
0920	Plaster & Gypsum Board	94.7	75.8	82.1	94.7	70.9	78.9	101.4	75.8	84.4	96.1	50.4	65.7	98.3	79.7	96.0	101.3	76.4	84.8
0950, 0980	Ceilings & Acoustic Treatment	96.1	75.8	82.6	86.5	70.9	76.1	95.3	75.8	82.3	101.9	50.4	67.7	96.9	79.7	85.5	97.4	76.4	84.3
0960	Flooring	109.0	93.1	104.4	93.9	93.1	93.7	104.0	85.1	96.0	119.8	70.4	106.5	102.7	71.1	93.5	108.0	71.1	93.4
0970, 0990	Wall Finishes & Painting/Coating	132.2	62.7	91.4	87.5	62.7	73.0	105.0	66.1	82.2	154.2	65.0	101.8	97.3	78.1	86.0	96.6	75.7	84.4
09	FINISHES	102.8	76.4	88.4	91.6	73.6	87.1	97.9	76.2	86.0	111.9	58.4	82.6	95.7	78.2	86.1	95.8	75.7	84.8
COVERS	DWS, 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.5	96.5	100.0	63.2	91.7	100.0	88.2	97.3	100.0	59.1	90.7	100.0	81.8	95.9	100.0	92.9	98.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.2	75.3	86.9	100.0	74.8	88.8	99.9	76.0	89.3	96.0	74.7	86.6	100.0	70.1	86.8	98.4	75.5	88.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.5	82.3	86.2	93.4	67.3	79.6	98.8	82.9	90.4	90.6	67.3	78.3	104.1	81.0	97.2	101.3	89.3	94.9
MF2014	WEIGHTED AVERAGE	98.6	77.3	89.2	98.2	75.1	88.0	98.0	79.8	90.0	100.9	69.7	87.1	101.6	81.8	92.8	101.5	80.1	92.0

Figure 1.8

In RSMMeans online estimating, location factors can be applied by clicking on Location on the Settings or in the estimate. A choice first must be made among: National Average (US), United States, or Canada. If the choice is United States or Canada, a dropdown menu appears to choose the state. Once a state is chosen, a final dropdown menu appears to choose the city (Figure 1.9). The location can be changed at any time, in the database or the estimate. If this happens while an estimate is open, the prices will adjust automatically but the user needs to save the estimate before / when exiting to keep this change.

▼

Localize your data

Location

United States▼

State/Region

FLORIDA▼

City

MIAMI (330-332,340)▼

Cancel

Save & Continue

Figure 1.9

