Year End Specials for Carlson Software

Updated 11/4/2013: I've just added several more end of year specials for **Survey with IntelliCAD**, **Takeoff Suite**, **Construction**, **Trench**, **GeoTech**, **Survey with IntelliCAD and manuals** and more… Remember to Add Coupon for best pricing!

Carlson jumped the gun a bit and announced their year-end specials today… Special pricing will end at noon on 12/31/2013. In addition, all software purchases through 12/31 include 2 hours of online training.

Check out my **online store** and make sure to pick the item's "Add Coupon" button for best pricing:

Carlson Civil Suite including one year of upgrades/maintenance

Carlson Survey 2014 with embedded AutoCAD

Carlson CADNet 2014 including one year of upgrades/maintenance

CADNet is a new module for 2014 – broken out of Takeoff. CADNet has tools for digitizing, importing raster and vector data from images and PDFs, merging two image files, BIM data and more. **Check out this recent webinar** introducing Carlson CADNet to see how powerful it is.

End of Year Workshops – New format for 2013

After several years of the same format for our end of year workshops, we've changed it up a bit this year.

For the first time, we will have one full day in both Statesville and Raleigh NC dedicated to Surveying and GIS topics and an additional day focusing on Civil and Hydrology topics. Each day will also include a unique presentation of the popular CAD Tips & Tricks session that, hopefully, sends everyone home with something they can use the next day.

In addition, we're conducting 1/2-day events in Wilmington and Hendersonville (Asheville area) covering a variety of topics.

Each full-day class will give NC licensed surveyors and engineers 8 PDH credits and the 1/2 day events are eligible for 4 PDH credits. All events include lunch, software pricing specials and giveaways.

November 11th, Hendersonville NC – $49 for 4 PDH credits
Download Hendersonville (Asheville) Announcement Here
Register for Hendersonville (Asheville) Workshop Here

November 12th, Survey & GIS Workshop, Statesville NC – $99 for 8 PDH credits
Download Statesville Survey/GIS Announcement Here
Register for Statesville Survey/GIS Workshop Here

November 13th, Civil & Hydrology Workshop, Statesville NC – $99 for 8 PDH credits
Download Statesville Civil/Hydro Announcement Here
Register for Statesville Civil/Hydro Workshop Here

December 9th, Wilmington NC – $49 for 4 PDH credits
Download Wilmington Announcement Here
Register for Wilmington Workshop Here

December 11th, Survey & GIS Workshop, Raleigh NC – $99 for 8 PDH credits
($89 registration thru 10/31/2013)
Download Raleigh Survey/GIS Announcement Here
Register for Raleigh Survey/GIS Workshop Here

December 12th, Civil & Hydrology Workshop, Raleigh NC – $99 for 8 PDH credits
($89 registration thru 10/31/2013)
Download Raleigh Civil/Hydro Announcement Here
Register for Raleigh Civil/Hydro Workshop Here

Carlson 2014 Has Been Released

Carlson released the 2014 version of their desktop products today. This includes: **Civil Suite**, **Civil**, **Survey**, **Hydrology**, **GIS**, Takeoff Suite, Construction, Point Cloud, Geology, Surface/Underground Mining and Natural Regrade.

The 2014 embedded-AutoCAD versions of Takeoff Suite and **Survey** have not yet been released.

Carlson Desktop products include **IntelliCAD 7.2b** and can run on top of full AutoCAD-based products versions 2004-2014. This includes AutoCAD, Map, Land Desktop and Civil 3d. Also, anyone using the FREE IntelliCAD that comes with Carlson is still eligible for a **FREE GIS Starter Kit from Esri** which includes ArcMap. [This offer ended on 12/31/2013]

You can download Carlson 2014 here.

View the "Survey and Civil – What's new in 2014" webinar here

If you are using 2013 and are current on your annual maintenance contract, you can **click here to look up your new 2014 serial number online.** You will need to enter your contact information and your 2013 serial number in order to generate the 2014 serial number. You can find your serial number by opening Carlson Software and going to Help > About Carlson Software > Change Registration.

If you have trouble finding your serial number or would like to know the cost to upgrade any product to 2014, **please email me with your request**.

Click here for the full list of improvements in Carlson 2014

Sneak Preview – Mass Haul Analysis in Carlson 2014

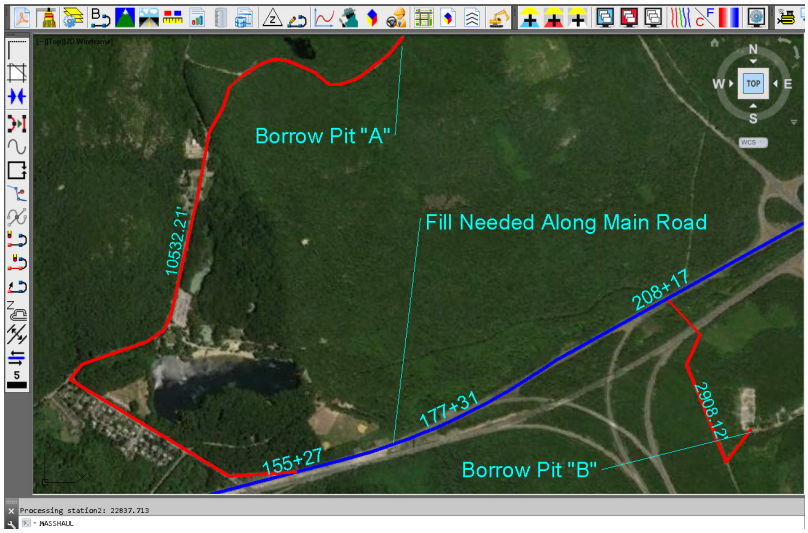
Todd Carlson helped me out with a demonstration of Carlson Takeoff a couple months ago and the company we were presenting to was looking for some particular features in a mass haul analysis routine. They had looked at several other programs as well as Takeoff and had yet to find a solution to their particular issue.

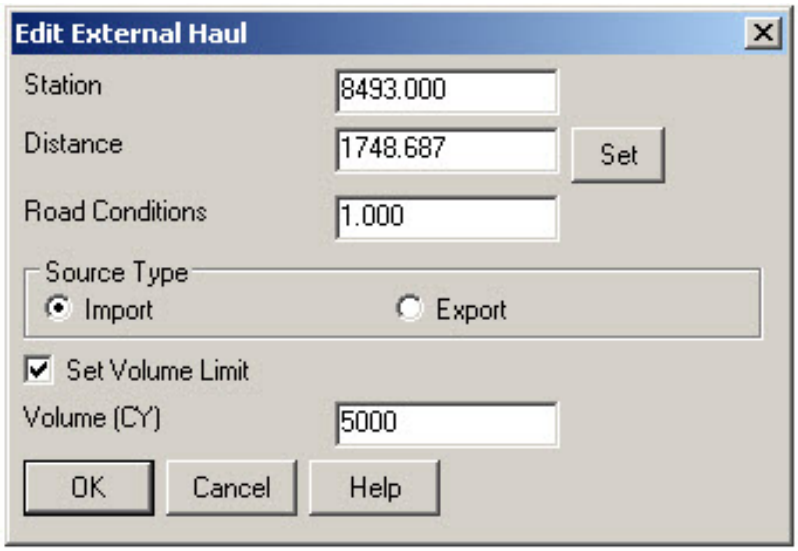
Fast-forward about a month and Todd followed up to let us know that the new functionality had been incorporated into the software and would be available in **Carlson Civil** and **Carlson Construction/Takeoff 2014.** This is a perfect illustration of how

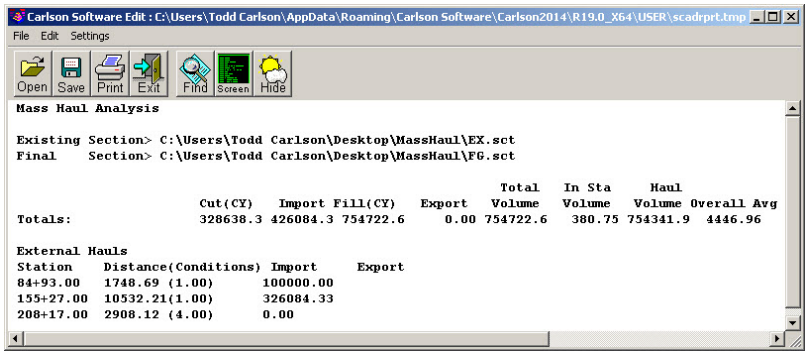
responsive Carlson is to their customers (or even prospects, in this case).

I asked Todd to write up a little preview of the new Mass Haul Analysis routine we'll see in Carlson 2014:

> ***Mass Haul Analysis in a nutshell:***
> *Mass Haul Analysis determines the volume and haul distance for groups of net cut and net fill station ranges along a road. The program calculates the optimized cut to fill movements so that the total volume-distance moved is minimized.*
>
> ***New Feature:***
> *When dealing with multiple external hauls, users can now input the distance (and a "road conditions" factor) a borrow pit or dump pile is from its entry station. The program will then use this information when minimizing earth movement along the road.*
>
> *For example, as shown in the first graphic below, an image of the area was inserted into the drawing from* ***Google Earth*** *or the* ***Esri Mapping Service****. CAD polylines were sketched along the travel paths from multiple pit locations to the project site.*
>
> *Then, purely based off stationing, borrow pit (A) may be closer to a fill area than borrow pit (B). However, if the distance from borrow pit (B) to its entry station is closer than borrow pit (A)'s, the program may determine to use (B) as the borrow pit over (A) to optimize the earth movement.*







Learn more about **Carlson Civil** and **Carlson Takeoff**

Software Review: AutoCAD and IntelliCAD

The May 2012 issue of Professional Surveyor magazine has been published. This month they are featuring a software review I submitted: AutoCAD and IntelliCAD.

You can order your FREE subscription to the print version of Professional Surveyor here.

You can click here to learn more about Carlson Software's offerings that include IntelliCAD.

Thank you to the Richmond AutoCAD Manifest (RAM)

I'd like to thank Art Thomas and the Richmond Virginia AutoCAD User Group for inviting Jeremy and me to demonstrate Carlson Software and data collection last night. Our hour-and-a-half long presentation covered the basic tools and Survey, Civil and GIS specific features of the Carlson products.

The RAM User Group has been active for 20+ years and has a lot to offer CAD users in the central Virginia area. Their meetings are usually on the 3rd Wednesday of each month and start after work at 5:30. If you're based in the Richmond area, I'd highly recommend that you join up with them.

Carlson SurvCE and Field to Finish Training with Jeremy Taylor PLS

Join us on Monday, May 7th when Jeremy and I will be presenting this part-field and part-office training with SurvCE.

Topics for the day will include:

- Set up and configuration of SurvCE with your equipment
- Managing data files and import/export options between the field and the office
- Field collection for boundary, features and topo including GIS collection
- Working with the Map Menu to import and export .dwg, .dgn, .mxd and shapefiles
- Stakeout techniques
- Overview of Field to Finish

Register Here

SurvCE and Field to Finish Training Announcement

Tips & Tricks for Setting Points in Carlson – Webinar

Yeah, you know all of them already… Unless you don't!

Carlson has a lot of great tools that are available for setting points but some of them are a little hidden. I will be covering some features in Carlson Survey and Carlson Civil that will, hopefully, help you increase your productivity.

Register Now! Wednesday, February 29th – Tips & Tricks for Setting Points in Carlson

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IntelliCAD Webinar – Do Over

Last week I presented a webinar sponsored by Carlson Software on the topic "Updates and Overview of IntelliCAD 7". Unfortunately we had some technical difficulties and didn't get a complete recording to post to the Movies collection on Carlson's website.

For those who are interested, we will be re-doing the webinar on Thursday, March 29th. By that time we expect to have additional updates and improvements to announce.

Keep an eye on this site to register for the next IntelliCAD webinar

You can register for these future webinars by clicking the link below:

- Tips and Tricks for Setting Points

- Debunking the “Carlson Isn’t Dynamic” Myth
- Carlson Annotation and Labeling

Picks and Clicks: Field to Finish Follow Up

This article originally appeared in the December 2011 issue of Professional Surveyor magazine.

After we published “Understanding Field to Finish” in the September issue, I received more feedback and questions than I had for any other article to date. Although my plan for this month’s column had been “CAD Standards Part 2” (Part 1 is in the June issue), it makes more sense to answer some of the questions that were sent my way about Field to Finish first.

(I am using Carlson Survey for the examples in this article, but corresponding features and commands should be available as part of the Field to Finish feature of most other programs.)

The majority of readers’ questions revolve around how to code field descriptions and generate linework for multiple point codes. You use multiple point codes when you have a single field shot that defines more than one feature—for instance, a shot that locates both an edge of pavement and a sidewalk. However, before diving too quickly into multiple point codes, let’s make sure we have a good understanding of the different ways that you can use descriptions and linework codes to generate linework.

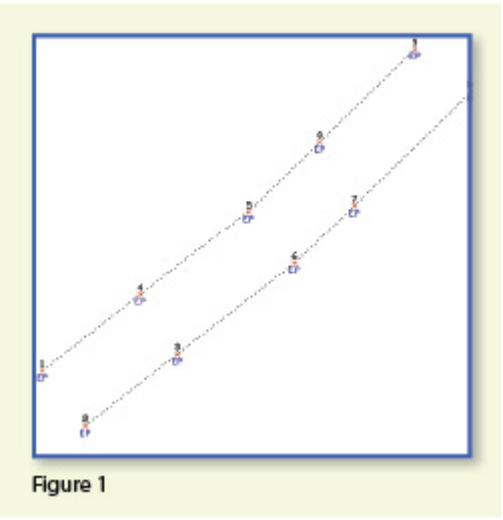

Figure 1

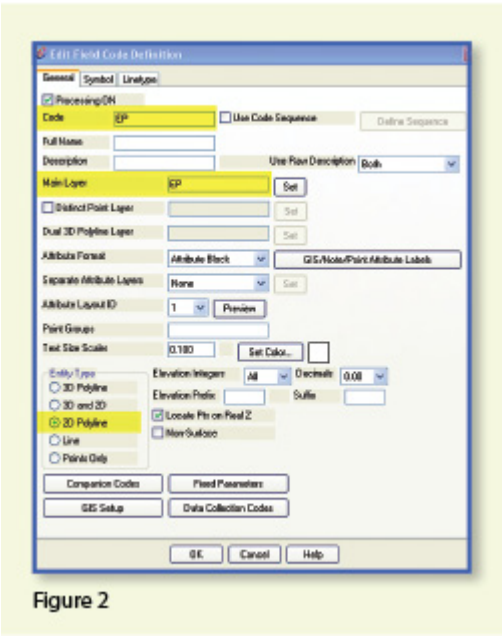

Figure 2

In **Figure 1**, the dotted lines represent the actual edges of pavement that exist in the field. Points 1-10 have a description “EP” designating them as Edge of Pavement.

When locating features that are generally symmetrical and that have two “sides,” such as a road, a sidewalk, or even a ditch having two tops of bank, we have a choice in how best to collect the points. Depending on field (and traffic) conditions, it may make more sense to take all the shots along one side of the road before crossing the road and taking all the shots along the opposite side.

The other way to collect shots is in what we call Zorro fashion: where we crisscross the street, taking shots on both sides, as we progress down the road. You can see that we used the Zorro style when taking shots in Figure 1. Point 1 is on the northwest side of the road, and shots 2 and 3 are on the southeast side. We then crossed back over to the northwest side to pick up 4 and 5, and so on.

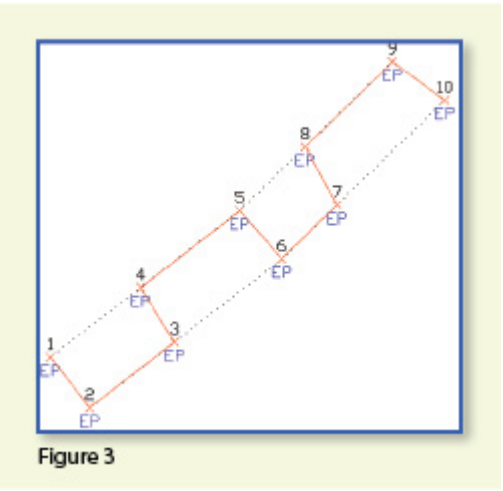

Figure 3

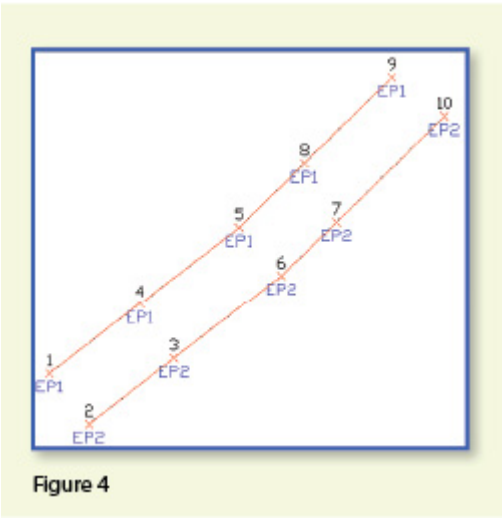

Figure 4

To draw the linework for the edges of pavement, you must create a field code for the EP description. You can see from **Figure 2** that it requires only a couple of specific settings to indicate that this is a 2D polyline type of entity and on what layer the polyline is to be created.

With the EP field code defined, using Field to Finish to draw points 1-10 generates the linework on layer “EP” (shown in red in **Figure 3**). Obviously this is not quite what we expected. I like to say that this is an example of the software doing exactly what we told it to do … rather than what we meant to tell it to do. So, we need to make a couple of adjustments.

The software understands only that it’s expected to connect all of the EP points with a 2D polyline. Carlson Survey allows you to choose whether the field code points are connected in “Sequential” order or “By Nearest Found.” The default setting is “Sequential,” which is why it connected the points the way it did. Unless we provide a little more information, there is no way for it to differentiate one edge of our pavement from another. If we make a minor change in the descriptions we use, we can have the program generate the linework correctly.

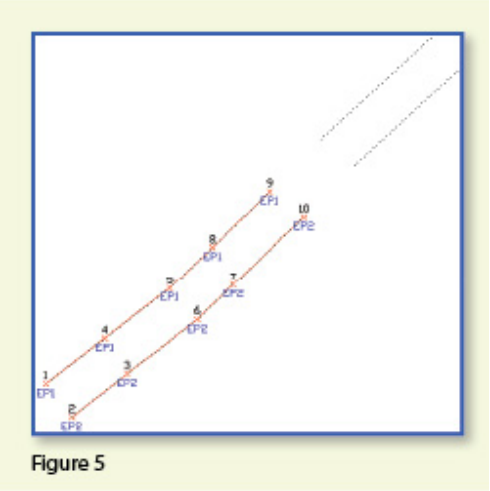

Figure 5

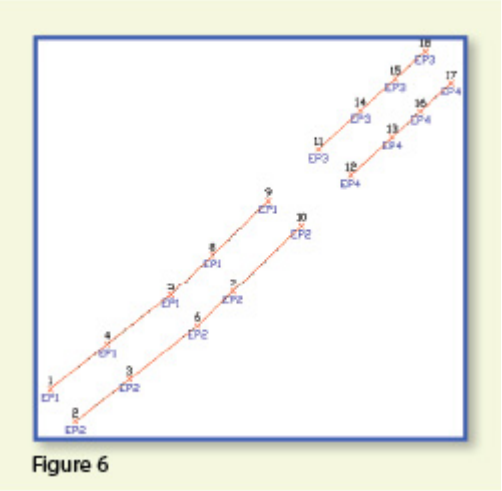

Figure 6

Rather than calling all edge of pavement points EP, we can use a number to modify the description so that we can tell the two polylines apart. We can use “EP1” for the northwest side and “EP2” for the southeast side. Now, when we redraw the points using Field to Finish, we end up with **Figure 4**, which is exactly what we wanted.

It is important to note that the field code does not change even though we’re now using EP1 and EP2 instead of EP. The field code is still “EP.”

Let’s introduce just a little more complexity. Beyond points 1-10, we have an extension of this road with two additional edges of pavement that are shown as dotted lines in **Figure 5**. We do not want to continue the linework from points 9 and 10 but to start new polylines instead.

If we use descriptions EP1 and EP2 for the new edges of pavement, Field to Finish will assume we are continuing the other edges of pavement. So we must, again, have a way to differentiate the new edges of pavement from the ones drawn previously.

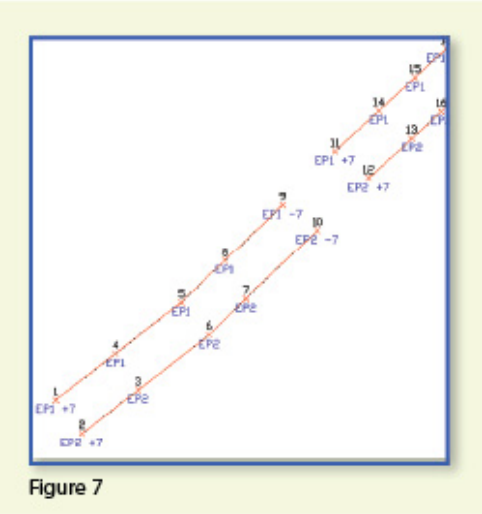

Figure 7

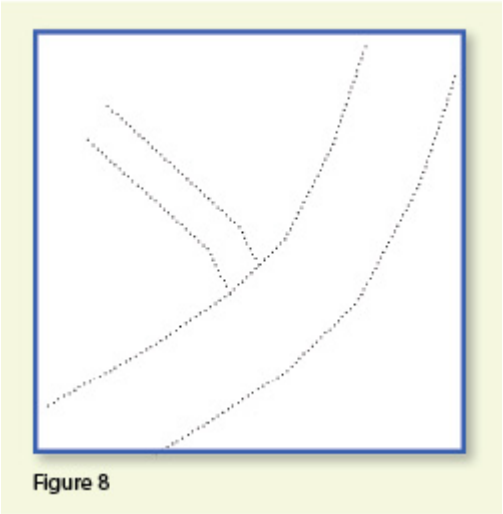
Figure 8

Using the same method as in the prior example, we can use descriptions “EP3” and “EP4” for the new edges of pavement. As you can see in **Figure 6**, this leaves us with the four separate polylines that we wanted.

The only drawback here is that the numbering of each distinct edge of pavement could get confusing on a large site. In this example, once they’ve been used, EP1 or EP2 can’t be used again without Field to Finish thinking all the EP1 points are part of the same polyline.

The good news is that it only requires another small coding difference to allow you to re-use EP1 or EP2 again. In **Figure 7**, we still use the EP1 and EP2 descriptions, but we use them in combination with special linework codes “+7” and “-7.” In Carlson lingo, “+7” is the default code to “Start a new polyline” and “-7” is the code to “End the polyline.” You can see that once we have descriptions “EP1 -7” and “EP2 -7” at points 9 and 10, we start new polylines by reusing EP1 and EP2 at points 11 and 12. As long as you’re diligent about using the “-7” special linework code to end the previously drawn polyline, you can reuse the descriptions.

Multiple Point Codes

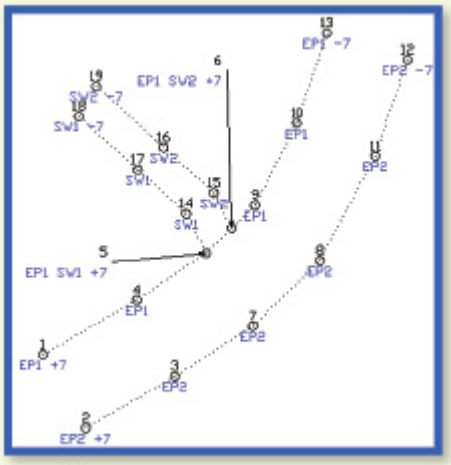

Figure 9

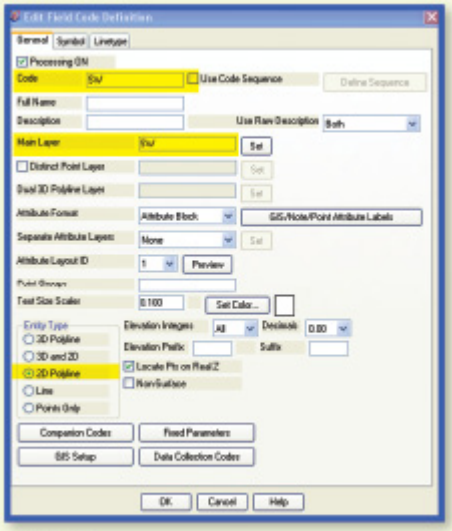

Figure 10

You use multiple point codes when you have two site features (such as the edge of pavement and a sidewalk) that intersect. As you can see in **Figure 8** there are two points where a sidewalk meets the edge of pavement. In **Figure 9**, you can see the descriptions we used so we could have Field to Finish process points 5 and 6 as part of both the EP and SW linework entities.

Point 5's description "EP1 SW1 +7" means that this shot is a vertex along the current EP1 polyline and also starts a new polyline named SW1 to define the edge of the sidewalk. Point 6's description "EP1 SW2 +7" means that this shot is also a vertex along the current EP1 polyline and starts another new polyline named SW2 for the other side of the sidewalk.

To have Carlson's Field to Finish process these points as shown, we had to create only one additional field code: the "SW" code for sidewalk. We set the Entity Type to 2D Polyline and set the Main Layer to "SW" (**Figure 10**).

Now, let's take a closer look at the descriptions for points 5 and

5	5015.03	5080.72	0.00	EP1 SW1 +7
6	5023.84	5089.72	0.00	EP1 SW2 +7

Figure 11

6 (**Figure 11**).
In Carlson Survey, if you use a space between two descriptions, the program allows you to process them separately using the two corresponding field codes. The corresponding field codes used to process these descriptions are EP and SW so Carlson will process the same point twice, first using the EP field code and then again using the SW field code.

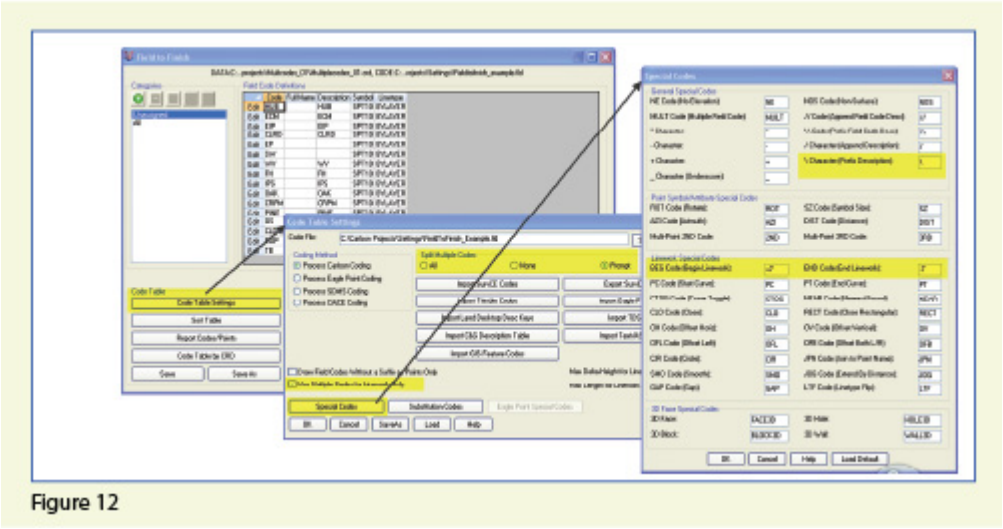
Figure 12

Because having a space in a point description is an indicator to Carlson that multiple field codes may need to be processed, it is a best practice to avoid using spaces in your descriptions. Using a description such as 24” RCP PIPE can create several problems, but the main one is that Carlson will think it is supposed to process three separate field codes: one for 24”, one for RCP and one for PIPE. A better description would be PIPE/24” RCP. In this example, a field code named PIPE would be processed. And, because a forward-slash (/) separates PIPE from 24” RCP, Carlson considers everything after the slash as a comment and will ignore it when processing Field to Finish.

If you follow the maze of dialog boxes in **Figure 12**, there are several settings to take note of:

- In the Code Table Settings dialog box, there are three possible settings for Split Multiple Codes.

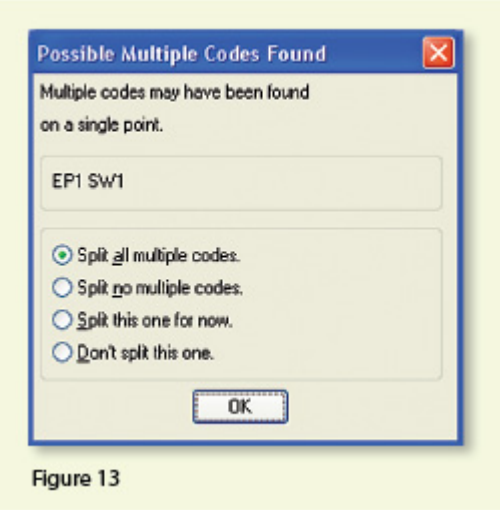

Figure 13

- If you select “All,” any point description that contains a space will be processed as a multiple point code. If you select “None,” all spaces will be ignored when it comes to processing multiple point codes. If you select “Prompt,” you will be prompted with the dialog box from **Figure 13** each time a space is encountered in a point description.
- In the Code Table Settings dialog box, select the option to “Use Multiple Codes for Linework Only.” This causes Carlson Survey to create both the EP and SW linework on their respective layers but only one point (created on the layer specified by the first field code). If you do not select this option, the program will create two points with the same point number but with different descriptions. Each point will be inserted on the layer specified by its respective field code.

In the Special Codes dialog box, you can see the default settings and are able to customize the Special Codes used to process descriptions, points, and linework in Field to Finish.

With that, I hope I’ve been able to answer a few more of your Field to Finish questions. Please don’t hesitate to call or email as needed. I hope everyone has a fantastic holiday season, and I’ll see you back here in 2012!

This article originally appeared in the December 2011 issue of Professional Surveyor magazine.