Online Training – Friend or Foe?

With the economy what it is and everyone trying to get as much bang for their buck as possible, I'm finding that online training for your CAD software programs is an increasingly popular and cost effective option.

Although this post describes my personal approach and may be different considering your trainer, hopefully it will answer some of your questions about online training and will encourage you to give it a try.

How does it work?
There are several online services that trainers may use for online training. WebEx, GoToMeeting and GoToWebinar are all very commonly used and popular. My preference is GoToMeeting and GoToWebinar as they have a very low footprint on your computer and are simple to use. When first entering an online meeting, a small installation of the program occurs allowing you to view and interact with the presenter's computer.

GoToMeeting is smaller scale and better for personalized training. GoToWebinar can handle up to 1,000 "attendees" and is typically used for presentation or demonstration to a large group.

Some of the online meeting services are free, but most require a monthly fee. The fee is paid by the organizer who then has the ability to schedule meetings/webinars in advance or "Meet Now" for meetings on the fly. Your organizer will either email you a link to the meeting site or can tell you the link on the phone. Each meeting has a unique "Meeting ID" that you'll enter at the main page.

GoToMeeting is typically used for standard training where more than one person may need to show their screen and/or be given control of the mouse and keyboard. This interaction can take place in a variety of ways. When in a meeting, anyone can be given (and must accept) the “Presenter” role which allows others to view their computer. And, even though the Presenter always has priority, control of the mouse movement and keyboard entry may be granted to others in the meeting. This allows someone else to work on my computer remotely.

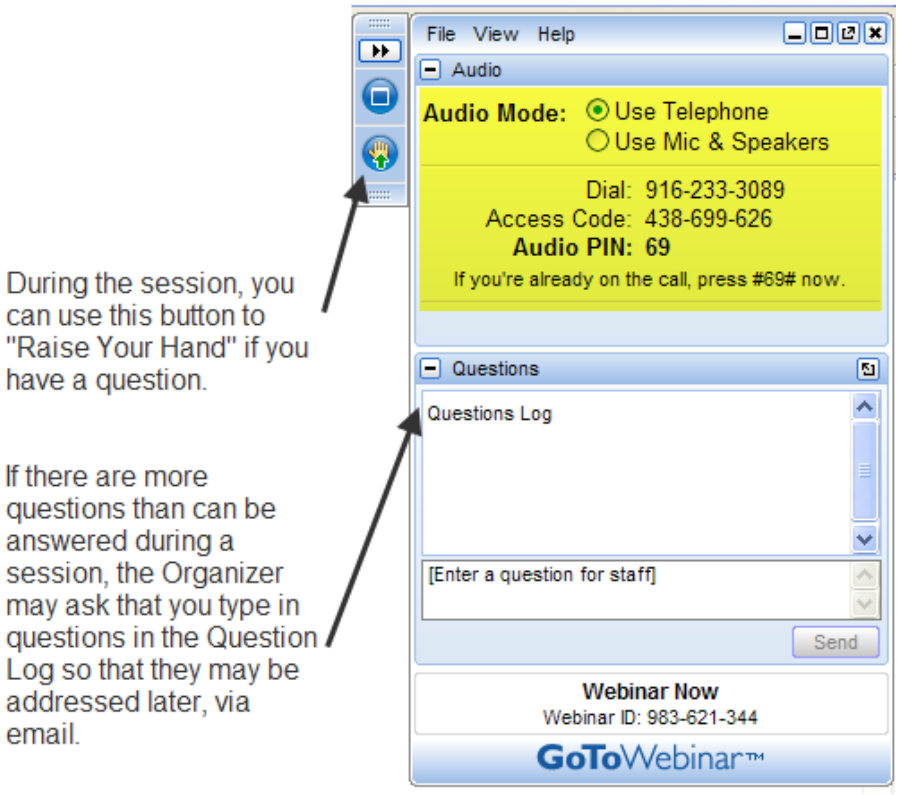
The audio portion of the training usually takes place by calling in on a conference call line supplied by GoToMeeting. VOIP (Voice Over Internet Protocol) is also available allowing you to use your computer’s speakers and microphone but it is not recommended because of quality.

GoToWebinar is used for larger scale demonstration and presentations and can accommodate up to 1,000 Attendees. Online Webinars are generally structured to have one or more Presenters making the presentation.

Like GoToMeeting, the audio portion of GoToWebinar usually takes place by calling in on a conference call line supplied by GoToWebinar. However, in a Webinar setting, the Attendees are muted automatically by the Presenter so that everyone isn’t blessed with the sound of crinkling potato chip bags and elevator music when someone puts the phone on hold. The Presenter has the ability to un-mute one or more Attendees as needed. The audio of all Attendees is managed by the Presenter by having each Attendee enter a unique “Audio PIN” upon arrival.

GoToWebinar has 2 ways to ask and respond to questions from Attendees. The Control Panel has a “Raise Your Hand” button that notifies the Presenter there is a question. Depending on time constraints, the Presenter may decide to un-mute and answer the

question during the online session. If there are more questions than can be answered during a session, the Organizer may ask that you type in questions in the “Questions Log” so that they may be addressed at a later time.



Pros and Cons

I’ve put together what I consider to be the Pros and Cons of online training for CAD Software programs. Please pitch in and offer your comments.

Pros

- Can eliminate travel time and expenses
- Very cost effective option for customized one-on-one training
- Allows for personalized, absolutely customized training because it’s normally one on one.
- Can’t find a local trainer? No problem. Felicia Provencal can train you from Hawai’i – although you may want to go

to her!
- Can be set up within minutes if there is a pressing technical support issue or project that suddenly comes up.
- Can be scheduled in shorter blocks of time – one of the best ways to make sure you retain what you are taught. I like to schedule 2 hours maximum per session.
- Shorter blocks of time allow for easy customization of training topics from one session to the next. If more time is needed on certain features, it's easy to squeeze in another 2 hour session.
- It IS interactive!
- All sessions can be recorded and played back at your convenience for a refresher.

Cons

- Some people are more comfortable sitting beside and working directly with the trainer
- It's less interactive than hands-on, in person training.
- For hands on training and depending on the material being covered, it may not work as well if you have several folks needing training at one time.
- Requires a high-speed connection and a telephone headset allowing two hands on keyboard. A speakerphone can be used as long as feedback doesn't become an issue.

Real World Example

I recently worked with a client from out of state. He is a grading contractor who thought he needed Carlson TakeOff training but, after some discussion, realized training in basic CAD (IntelliCAD) needed to come first and then TakeOff training.

The initial proposal was for me to travel there and spend 3-4 days training this client plus a second person (a competitor, in this case) who needed the same training. Both of them decided to give online training a try.

We scheduled online training for every morning one week. I worked with one from 7:30 – 9:30 am and then with the other from 10:30 – 12:30 pm. After the 3rd day, we had covered so much material that one asked to skip the next day so he could work with it himself and apply what he'd learned so far.

We ended up skipping two days. By the time we met again, he'd worked with it enough and become so much more proficient with the basic CAD operation that we were able to fast-forward through the next couple sessions and started working on his current project. Another subsequent session was cancelled because the rain finally stopped!

And then a few days later, he needed to get his project finished and out to bid. So, after our first session one morning, we set up another session at 4:00 that afternoon and worked until almost 7:00 that evening.

Both customers ended up very happy with the amount of material we covered and where they were with the software when we wrapped up our regular training. They still have the video recordings of the training for their reference to go back to when needed. In the end, the cost was almost the exact same as it would have been had I fulfilled the original proposal but they both learned and retained much more because the training was customized and personalized to their specific jobs.

Originally posted on **Carlson Connection** by Jennifer Dibona

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Carlson Webinar

That CAD Girl was invited to present an hour-long webinar for Carlson Software on the topic, "CAD Standards for Carlson

Software Using AutoCAD or IntelliCAD”.

The session can be viewed or downloaded here.

Carlson-IntelliCAD GIS Starter Kit from ESRI

Those currently using Carlson with IntelliCAD are eligible for a new “GIS Starter Kit” from ESRI. The Kit includes:

- ArcGIS ArcView desktop software
- A copy of the book *A to Z GIS: An Illustrated Dictionary of Geographic Information Systems*
- A copy of *GIS Tutorial: Workbook for ArcView 9*, Third Edition
- A 10% discount for the ESRI Survey & Engineering GIS Summit ($325 – standard registration price)

To take advantage of the offer, call 1-800-GIS-XPRT (1-800-447-9778) and request the **Carlson-IntelliCAD GIS Starter Kit** and **please have your Carlson Serial Number available**.

You can read more about ESRI’s commitment to survey and engineering services by visiting http://www.ESRI.com/engineering.

Originally posted on **Carlson Connection** by Jennifer DiBona

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ESRI Offer for Carlson IntelliCAD Users

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That CAD Girl – June Newsletter

Our June Newsletter can be downloaded HERE

The Power of LandXML

The ability to import and export to LandXML has been around for quite awhile, but I still get a lot of curious looks when I mention it in my training classes. So, what is it? And why should you be using it?

Why Should We Be Using It?

We've all become accustomed to saving archive copies of our drawings for various purposes but saving the corresponding project data is often overlooked. Retrieving the drawing file may allow you to recover proposed contours and profile grid, but the underlying "surface" is lost unless the project was also archived.

Importing and exporting using XML files is the most convenient way to convert, transfer and archive data created in Carlson Software, Land Desktop, Civil 3D, Eagle Point, TerraModel and, I'm sure, other programs.

But, What Is LandXML?

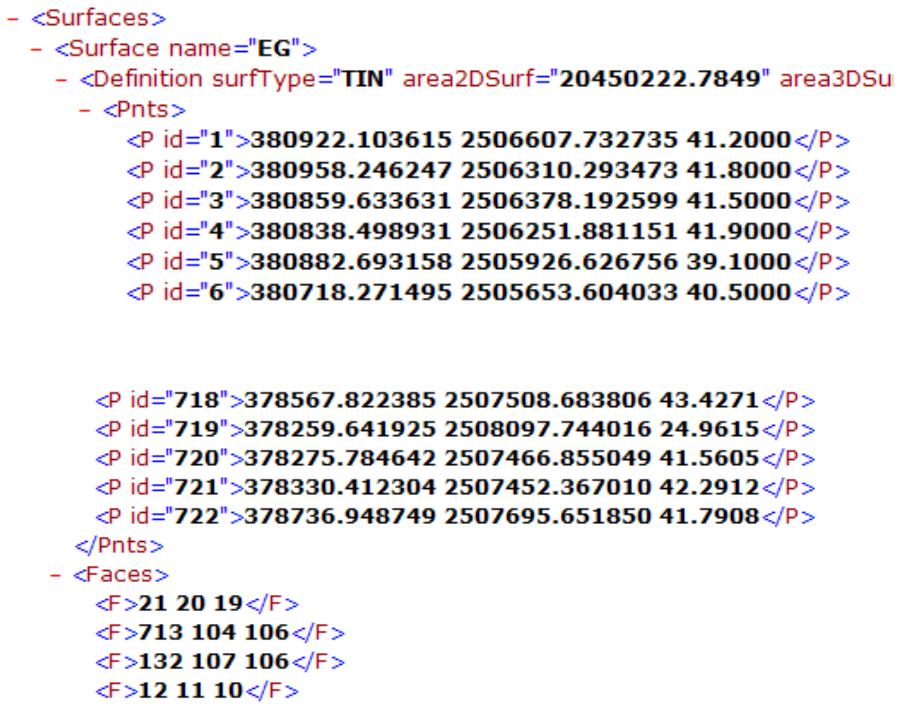
LandXML refers to a file format (.xml) containing data created in a civil/survey program. My recommendation is that ALL civil and survey data should be archived – progress, submittal and final archive – using LandXML.

The way I like to explain it is that we use XML files in the same way we used to rely on DXF files. They're mostly outdated now, but DXF files are a generic file format that, for example, we used to convert MicroStation DGN files to AutoCAD DWG files. At that time, AutoCAD couldn't read DGN files and Microstation couldn't read DWG files; but both could read DXF files. So, we had to convert our drawing files to the generic DXF format that could then be read into the other program.

Similarly, Carlson Software, Land Desktop, Civil 3D and the other programs create their own unique files for civil/survey project data such as points, point groups, surfaces, centerlines, profiles, etc. When we have to pass that data onto someone using a different civil/survey program – it's a nightmare!

That's where LandXML files prove their value.

Exporting your civil/survey data to an XML file breaks it all down into, basically, a text file. Specifically, it's an HTML file that can be viewed through a web browser such as Internet Explorer or Firefox. For instance, when a surface model (TIN) is exported to XML, the X, Y, Z values of each point on the TIN is assigned a number, and then each "face" (triangle) of the TIN is defined by specifying the 3 corners. See the examples below:



Note that one type of data that is currently not supported in XML files is typical cross-sections or template files.

Another benefit of using LandXML to transfer or archive project

data is that any combination or all of your project data can be saved in a single XML file. This is valuable because exporting ALL of the data for a project can create a massive XML file.

Even if you archive your project data in its native format, you should consider additional archiving in XML format. No one knows what kind data files we'll be using 10 or 20 years down the road so saving your data in such a generic, text-based format such as XML files allows for easier retrieval down the road.

Originally posted on **Carlson Connection** by Jennifer Dibona

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A Closer Look at the Drawing Inspector

Learn more about using the Drawing Inspector to view data about drawing entities.

More About IntelliCAD®

IntelliCAD – An Introduction

The development of IntelliCAD is overseen by the IntelliCAD Technology Consortium, "an organization of CAD software developers, who develop applications for IntelliCAD, a Computer-aided design engine. The IntelliCAD engine, which is based on the DWGdirect library from the Open Design Alliance reads and writes the '.dwg' data format – a widely used file format for

storing both graphic and textual information of CAD-related software applications."

The primary goals of the IntelliCAD Technology Consortium are to "research and develop CAD technology, the IntelliCAD platform, and to deliver CAD solutions to customers worldwide." In other words, to provide the personal and commercial CAD markets with a cost-effective solution that is capable of reading and writing the common drawing (DWG) file.

The ITC is a non-profit, independent organization of commercial software developers (members). The ITC has an elected, volunteer, member based Board of Directors which guide its strategic vision. An independent (non-member) President manages the tactical business operations. Members pay annual dues that fund the ITC. Today the ITC has over 50 members who support 13 languages and ship product in more than 35 countries.

IntelliCAD – A Trip through Time

Except where noted, each of the following items were obtained from An Outside Look in at IntelliCAD (used by permission) which requires the free Adobe Reader.

> *"Where did the name come from? The name of the software 'IntelliCAD' comes from a programming company that was formed in the early 1990s in San Diego, CA, USA. Their main claim to fame was ADE (AutoCAD Data Extension), which they sold to Autodesk, and which eventually became part of Autodesk Map."*

> *"IntelliCAD the software has a complex and fascinating history that winds its way through Softdesk, Autodesk, Boomerang, Visio, just missing Microsoft, then onto the IntelliCAD Technology Consortium, and now [includes] a variety of brand names, such as CADopia, Bricscad, and DWGEditor."*

- *1994, August: "IntelliCAD is purchased by Softdesk of Henniker, NH."*
- *1996, December: "Autodesk acquires Softdesk… Softdesk apparently did not tell Autodesk about its AutoCAD clone."*
- *1997, March: "Autodesk investigated by the FTC (Federal Trade Commission) over the alleged monopoly status of AutoCAD… The FTC allowed Autodesk to purchase Softdesk after Autodesk agreed to: (1) spin off IntelliCAD; (2) not attempt re-acquire the technology; (3) not attempt to acquire any company that owns or controls IntelliCAD; and (4) not interfere with employees who leave Autodesk to work with IntelliCAD… IntelliCAD was spun off as Boomerang Technology in San Jose, CA."*
- *1997, March: "Visio bought Boomerang."*
- *1998, March: "IntelliCAD 98 ships. The price was originally pegged at US$495; upon release, the price dropped to $349 as a 'special introductory price'; the price drops further to $149 at computer superstores, such as CompUSA. Through to the end of June, the first three months of sales for IntelliCAD were nearly 12,000 licenses, producing $3 million in gross revenue – an average of $250 per license."*
- *1998, May: "IntelliCAD is suddenly incompatible with AutoCAD! Autodesk releases a maintenance release for AutoCAD R14.01 that makes a change to the .dwg format, and preventing IntelliCAD from reading drawing files… Visio updated IntelliCAD 98 to work with 14.01 files."*
- *1999, July 27: "Visio cuts IntelliCAD loose by granting the IntelliCAD Technology Consortium a royalty-free, perpetual license for the source code of the IntelliCAD 2000 technology. The ITC was set up by Visio, but run by an independent board of directors.*
- *1999, September: "IntelliCAD Technical Consortium opens*

its Web site at http://www.intellicad.org/."

Subsequent releases of IntelliCAD through the ITC occur every year since its initial release (see the IntelliCAD version history link under the Press section of the IntelliCAD Technology Consortium web site).

IntelliCAD Release History

- *IntelliCAD 6.4 July 27, 2007*
- *IntelliCAD 6.3 February 28, 2007*
- *IntelliCAD 6.2 May 27, 2006*
- *IntelliCAD 6.1 September 5, 2005*
- *IntelliCAD 6.0 May 3, 2005*
- *IntelliCAD 5.1 January 12, 2005*
- *IntelliCAD 5.0 October 24, 2004*
- *IntelliCAD 4.0 March 14, 2003*
- *IntelliCAD 2001 version 3.3 July 19, 2002*
- *IntelliCAD 2001 May 22, 2001*
- *IntelliCAD 2000 March 6, 2000*
- *IntelliCAD 98 May 1, 1998*

Carlson Support for IntelliCAD

The Carlson 2009 installation comes with IntelliCAD 6.4 built-in. When you choose IntelliCAD as the CAD platform during installation, the IntelliCAD engine is installed along with the Carlson program files. Carlson 2009 only works with this built-in version of IntelliCAD and not on any other version of IntelliCAD or other IntelliCAD based products like Bricscad.

Running Carlson 2009 on IntelliCAD is largely the same as running on AutoCAD. IntelliCAD supports a development environment with a similar interface as AutoCAD which allows Carlson Software to use the same code base on both CAD

platforms. Of the over 1700 Carlson commands across the Carlson 2009 products, there are 11 commands that are not supported with IntelliCAD for the Carlson 2009 release. These are:

- Editor Reactors (ie Link Points To Coordinate File)
- Point Object Snap (node snap does work)
- Text Explode To Polylines
- Edit Centerline On-Screen
- Extract Centroid Data
- Label Object Data Areas
- Drape Image On Surface
- Retaining Wall Placement
- Pillar Cut
- Calculate Variogram
- Production By Block Model

IntelliCAD – AutoCAD Comparison

IntelliCAD has a very similar user interface as AutoCAD, supports the core AutoCAD commands and uses the DWG drawing formats 2009 to R14. For some Carlson commands, creating entities in AutoCAD is twice as fast as IntelliCAD which makes a significant difference in routines that create lots of entities.

The upcoming IntelliCAD 7 will be built on DWGdirect from the Open Design Alliance and will add a “DRX development environment” similar to ObjectARX with AutoCAD. Using DRX should greatly improve the speed of entity creation within IntelliCAD.

While most of the AutoCAD commands Carlson clients use in AutoCAD can also be found in IntelliCAD 6.4, there are many features in AutoCAD that are not in IntelliCAD. Among these features are ones for architectural and mechanical applications that don’t apply to Carlson customers. For this initial release of Carlson 2009 on IntelliCAD 6.4, here are AutoCAD commands

that Carlson customers might miss:

- Spell Check
- DGN import/export
- Orbit command
- Find command
- Express Tools
- Tool Palettes
- Annotative Text
- Sheet Set Manager
- Page Setup Manager
- Import .PC3 Files
- Irregular viewports
- Clipboard commands for copybase and paste to original
- VBA not supported for custom applications; VB with COM is supported
- Object Enablers for LDT points and contours
- User-interface for menu customizaiton (no CUI, old MNU method)
- Ctrl-pick cycle for object selection
- Dialog user interface for WBlock
- Dialog user interface for Purge command
- Dialog user interface for Filter command
- Right-Click menus
- Entity Properties as docked-dialog
- Grip snapping to other grips
- Highlighting of entities when dragging cursor over them
- Mudst hatch pattern

If you identify any other AutoCAD feature that you miss when running Carlson with IntelliCAD, please email us at support@carlsonsw.com and we willl add to this list which helps guide future developments.

Bibliography

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All links contained herein open in a new web-browser window.

Another Twist for World

I'd like to offer a few other arguments for the use of the DVIEW TWIST routines discussed in North Rotation: Using Twist Screen. The four Carlson DVIEW routines cited:

1. ***Standard*** *– This option allows you to select a rotation angle using the mouse.*
2. ***Line, Polyline or Text*** *– This option allow you to select an object to set as a view baseline. It is the most useful when trying to match views to objects such as property lines or road centerlines.*
3. ***Surveyor*** *– This option prompts for the manual entry of a bearing or azimuth for the rotation angle.*
4. ***Restore Due North*** *– This option returns the screen to the orientation where North is straight up.*

fall right in line with remarks made by ESRI's Brent Jones at the 2009 Carlson User Conference who said:

> *"GIS changes the whole domain for surveyors," Jones added, "And surveyors need to be ready for what's coming next – high accuracy GIS. The key is geo-referencing," he said. "We can use our data to communicate to our world with greater precision over greater areas."*

In my opinion, a **U**ser **C**oordinate **S**ystem (UCS, by its very definition), takes the data one step further away from being geo-referenced. There are those that would probably argue that having data in a World Coordinate System (WCS) and at assumed coordinates of something like 5000,5000,100 is no better than

using a UCS to shift this same data to a proper geo-referenced coordinate system. From a holistic stand-point, I'd tend to agree. However, what sets the WCS *vs.* UCS argument apart is this simple statement:

All drawings must have a WCS yet not all drawings have a UCS.

When one considers the longevity of information represented in drawings created to this point in time and then reflects on how this information might also be used in the future, I feel it is important to model that information (and subsequently allow that information to be easily extracted) in a consistent and reliable fashion. A **U**ser **C**oordinate **S**ystem is typically only understood and used by its creator which in turn, limits its use and subsequently increases the risk of liability when the **U**ser **C**oordinate **S**ystem isn't known or understood by a "downstream" recipient of the drawing (survey stake-out, machine control excavation, *etc*).

Side note observation… Is it me or are there some parallels between UCS and custom ARX objects used in other products? When I look at how long the DVIEW *vs.* UCS arguments have been made, I can only surmise the length of time that will be involved to bring the non-proprietary *vs.* proprietary data argument to a close. I suspect it's going to be a long, tough road.

In any event, it is my opinion that standardizing on a single WCS should provide more consistent deliverables when the drawings/projects span multiple people, offices and/or disciplines. When properly adopted, using a "twisted view" of geo-referenced data in a World Coordinate System should provide more feature-rich information now and into the future when our data is mapped onto the Earth.

Originally posted on **Carlson Connection** by Ladd Nelson

North Rotation: Using Twist Screen

There have been many debates in various blog posts, discussion group posts, and articles regarding what is the best way to handle North rotation on maps. With AutoCAD-based systems, there were essentially two choices: you could set a User Coordinate System (UCS) or rotate the screen using a tool such as 3D Dynamic View. Carlson Civil and Survey offers these choices with a twist.

One of the main drawbacks to setting up a UCS is that it can throw off calculations being made by your mapping/design software. For example, point databases and external TIN files often refer to the coordinates used in the field, or that existed when the data was generated (such as the TIN being built). If you change the UCS, the coordinates may be wrong, and you may end up with incorrect results for things such as profile generation.

Because of this, many people choose to rotate the screen without rotating the coordinate system. In AutoCAD, the simplest way to do this was by using 3D Dynamic View (DVIEW). The main drawback to the DVIEW command is that while the screen would be rotated, common tasks such as adding text and symbols would be more difficult as they would have to compensate for the rotation of the screen. This was usually managed using a setting called SNAPANG, which could be set to the opposite of the DVIEW rotation, making the use of ORTHO mode viable. In AutoCAD-based systems, this would be fairly tedious, particularly if you wanted to match the rotation to a specific item, such as a

portion of a road centerline.

In any of the Carlson desktop applications, there is a View pull-down menu with several commands that can solve this issue, often with a single click. To see the most commonly used options, go to the View pull-down menu and choose the Twist Screen sub-menu. There are four commands available, each one rotates the screen and automatically sets the SNAPANG to match.

- **Standard** – This option allows you to select a rotation angle using the mouse.
- **Line, Polyline or Text** – This option allow you to select an object to set as a view baseline. It is the most useful when trying to match views to objects such as property lines or road centerlines.
- **Surveyor** – This option prompts for the manual entry of a bearing or azimuth for the rotation angle.
- **Restore Due North** – This option returns the screen to the orientation where North is straight up.

By using these options, you can quickly set up plot sheets and layout tabs, annotate the maps appropriately, and preserve the coordinate system for future design work or other calculations.

Originally posted on **Carlson Connection** by Felicia Provencal