



FDOT STATE KIT, CIVIL 3D, & AUTOCAD TIPS & TRICKS

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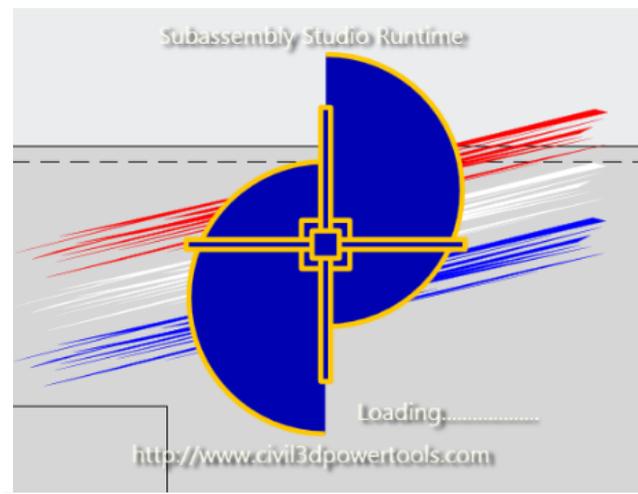
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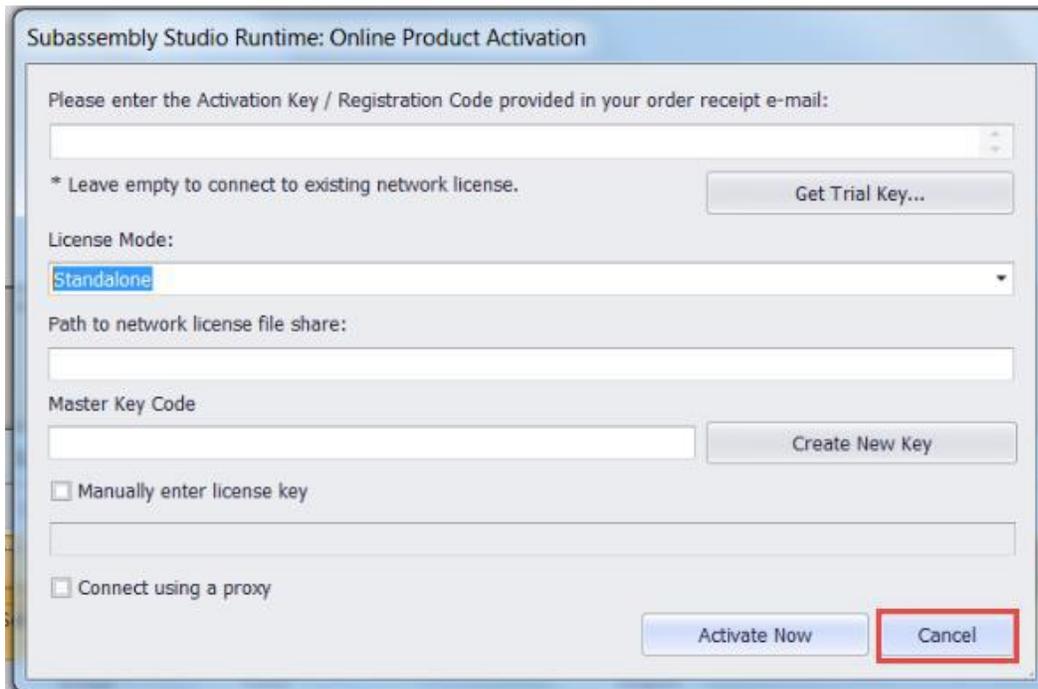
FDOT Civil 3D State Kit Tips

1. 2015 State Kit MR1

The most important tip here is to read the Installation Guide before you install the state kit. But in case you don't you will run across this situation after installation. The first time you launch the state kit you will see the messages below. Just click cancel when it requests the license and "OK" to continue. ***"This is the only time you will encounter this message"*** This is caused by a new runtime that is required for some of our assemblies that were created in Subassembly Studio to run.

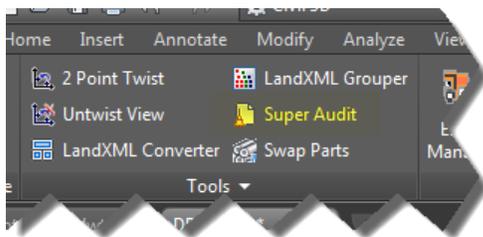
Another tip in the installation guide is a section on trouble shooting issues if you run into a problem after the install.





2. Super Audit

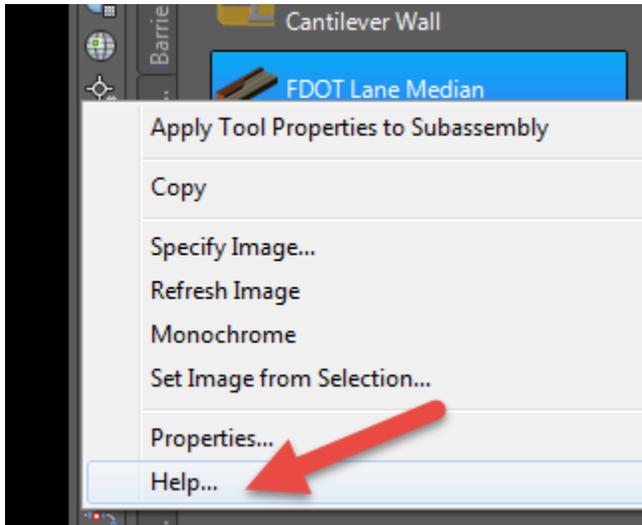
On the FDOT ribbon under the Tools section there is a command called Super Audit. What it does is execute the Audit Command and purges registered apps in one click without need for user interactions. Don't worry about purging registered apps in your drawing the required ones reload upon re-opening the file.



It's a good habit to run this command or the regular audit command daily on your files to help keep them clean and error free. If you are having issues with a drawing you can run the recover file from the drawing utilities, you don't have to wait to use it when a file won't open.

3. Subassembly Help Files

To get to the Help Files that explain how to use the FDOT Subassemblies, just right click on the desired subassembly and select help



HTML Help

Hide Back Print Options

Contents Search

- FDOT Subassemblies
 - Curb and Gutter
 - Lanes
 - Daylighting
 - Barriers & Fences
 - Medians
 - FDOT Median Fixed Slope and
 - FDOT Barrier Cantilever Wall
 - FDOT Barrier Wall
 - FDOT Barrier L Wall
 - FDOT Lane Median
 - FDOT Link to Marked Point
 - Resurfacing, Restoration, Rehab (
 - Urban
 - Walls
 - FDOT Conditional Horizontal Target
 - FDOT Existing Features
 - FDOT Stop Processing
 - FDOT Link Offset with Slope

FDOT Subassembly Reference

Lane Median

This subassembly inserts a crowned median lane which is connected to a marked point. It can be assigned Superelevation slope values.

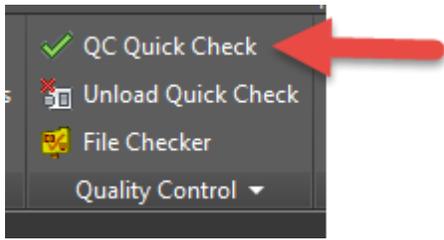
Attachment
The insertion/attachment point is at the top left edge of pavement. A marked point is required.

Input Parameters
Note: All dimensions are in feet unless otherwise noted.

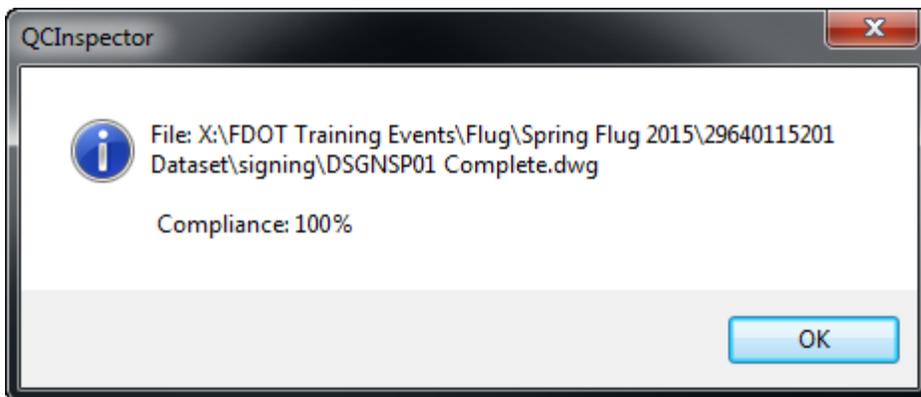
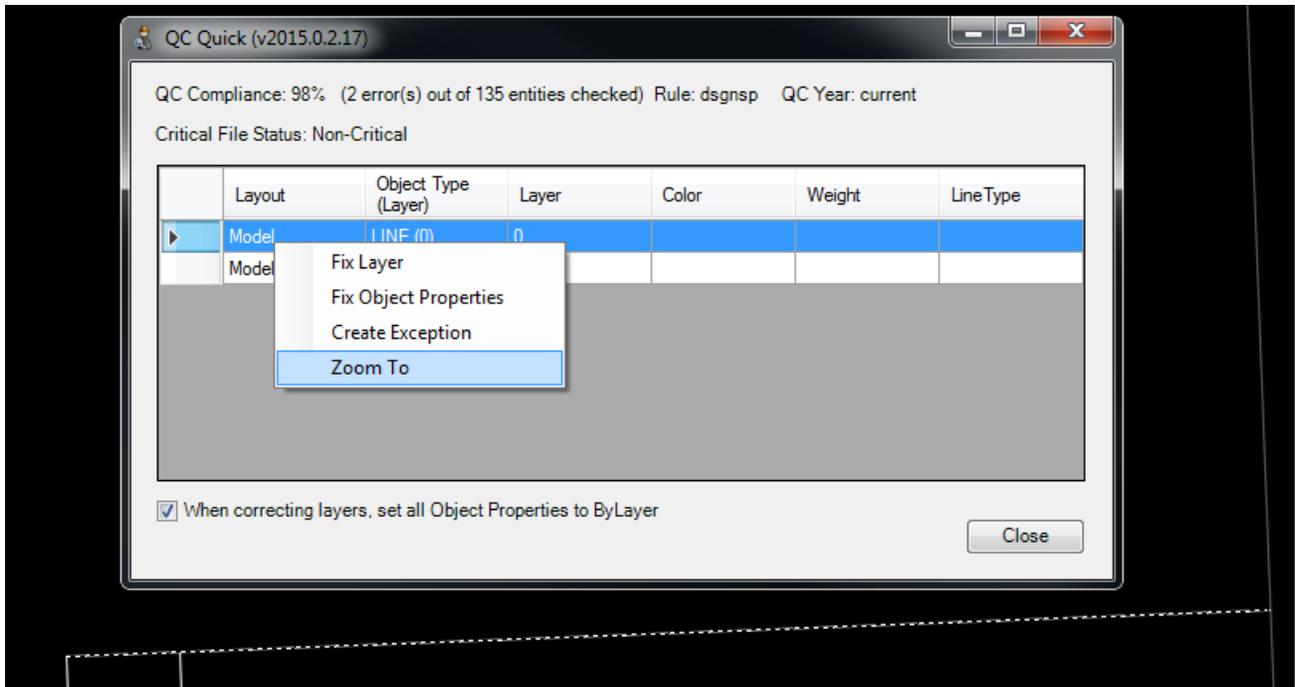
Parameter	Description	Type	Default Value
Side	Specifies which side to place the subassembly.	Left/Right	Right
Marked Point Name	Specifies the name of the marked point. (Required)	String	MPLane
Default Slope 1	Specifies the left slope when the "Slope 1 Superelevation" parameter is set to "Do Not Use".	DoublePercent	2.00%
Slope 1 Superelevation	Specifies the left slope from the selected baseline's alignment Superelevation property. Options include: <ul style="list-style-type: none"> Do Not Use Right Inside Shoulder Right Outside Shoulder Right Inside Lane Right Outside Lane Left Inside Shoulder Left Outside Shoulder Left Inside Lane 	SuperElevation	Left Inside Lane

From here you can see all the input parameters, all available targets, coding diagrams and more. It's a good place to investigate to see if and how you can use the Subassembly

4. QC Quick Check

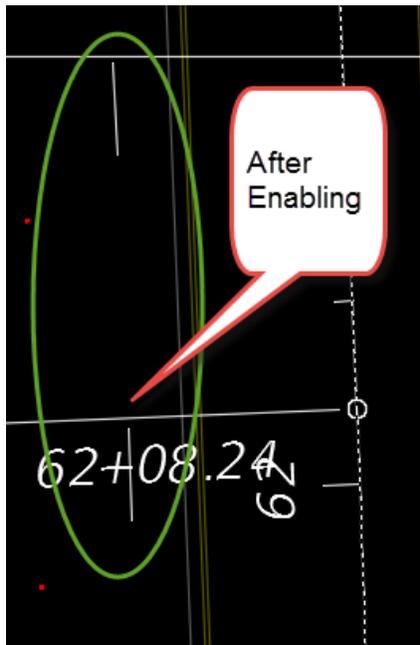
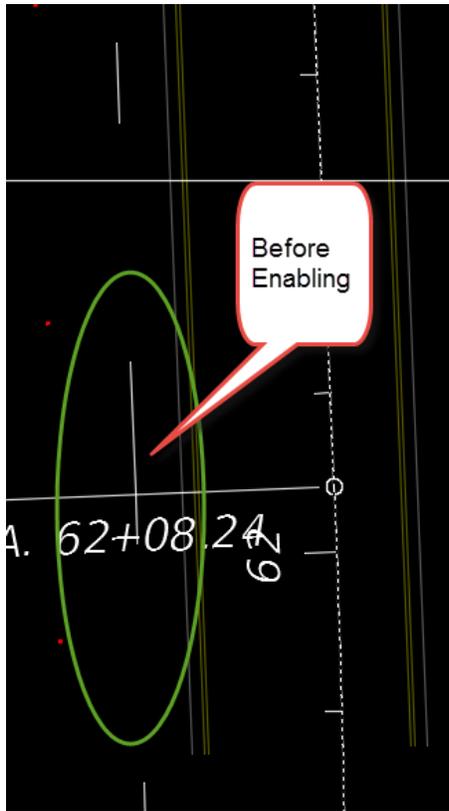


When you run the QC Quick Check and find issues with your file that is keeping it from being 100% compliant you can either right click or double click on the designated issue for the zoom to option. As you can see in the below picture it has zoomed to and highlighted the Stray Line in Question so it's easier to delete. This is also where you create exceptions for certain situations in your drawing file that will allow it to check at 100%



5. Lane Striping

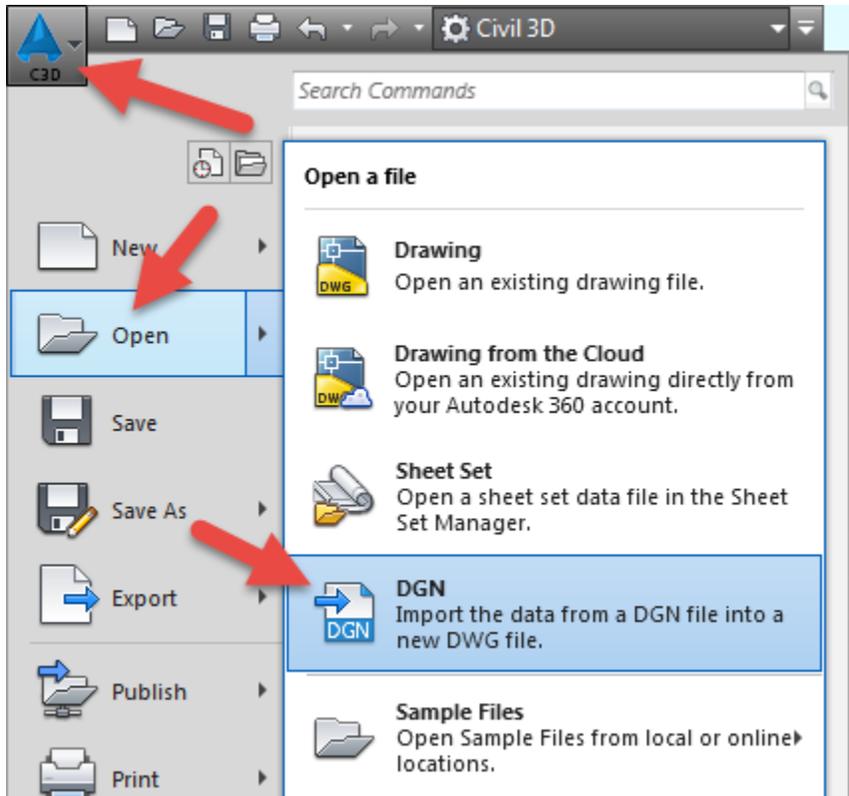
If you draw a 10-30 skip and notice that at the PC's and PT's that the pattern doesn't look right select the stripe which is a polyline and look at the properties and make sure the Linetype Generation is enabled.



It's the same as switching the Linetype on using the Pedit method.

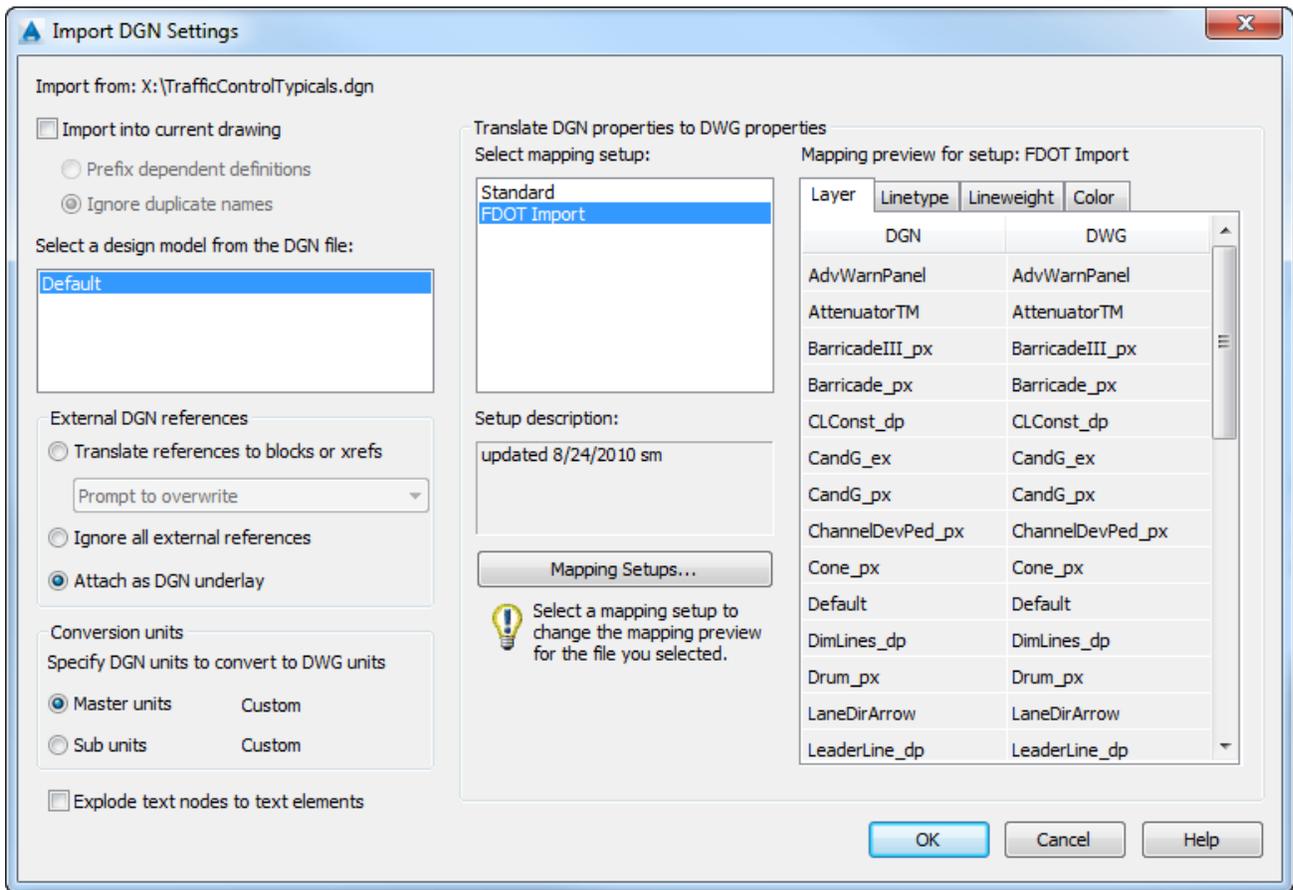
6. Opening a DGN file correctly in Civil 3D

The proper way to open a DGN file inside Civil 3D that will ensure all Layers and Linetypes come across as you expect is to have Civil 3D open and click on the Big Blue A in the top left corner of your screen and open < DGN File.



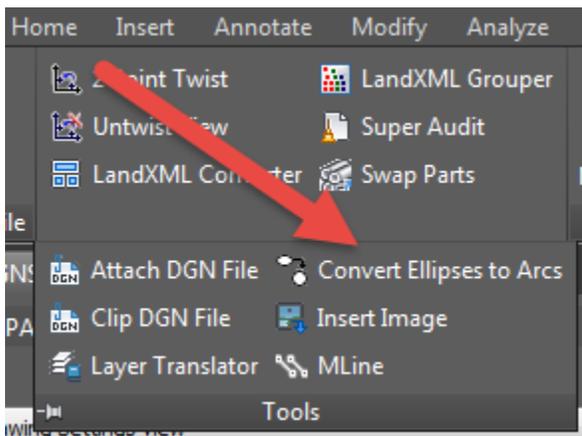
An Import DGN Settings dialog box opens and is preset to use the FDOT Import file. You have an option to open the DGN file in your current file or it will launch a new drawing tab and you will have to save the drawing as at that point. "DO NOT SAVE A DGN FILE AS A DWG FROM WITHIN MICROSTATION" Open it straight in Civil 3D.

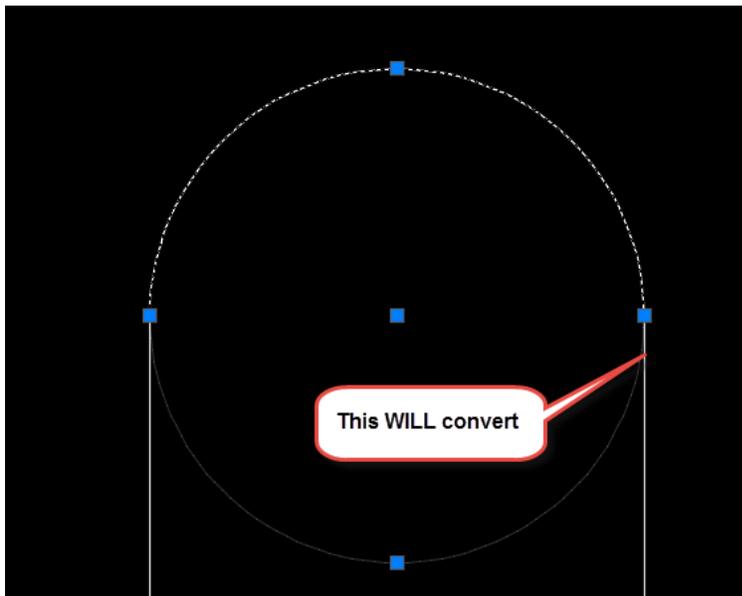
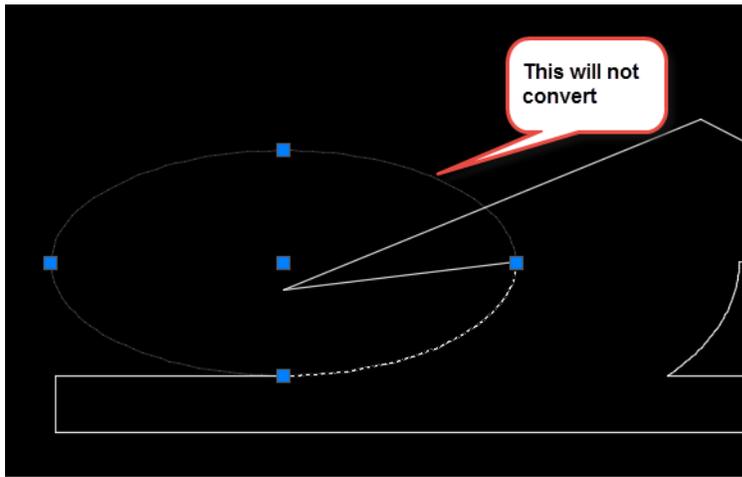
As you can see below there is a Layer, Linetype, Lineweight, & Color tab to let you see how it is going to map it to the dwg file.



7. Convert Ellipses to Arcs

If you open a DGN file in Civil 3D you may run across situations where if you select what looks like an arc it is really an ellipse if so use this command on the FDOT Ribbon under Tools to convert them to Arcs with one caveat. The ellipse must have the same axis length to be able to convert. See example below.

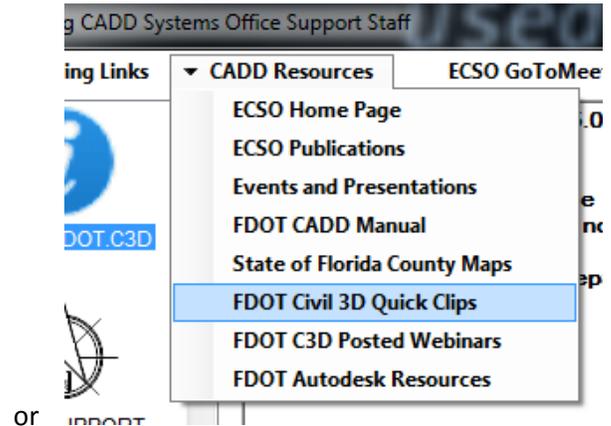
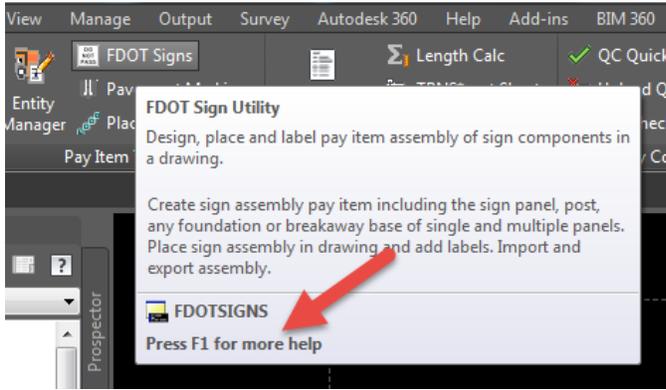




Typical use of this tool is for the fillets of medians and some curb returns

8. Quick Clips

We have been working on creating Quick Clips which are short videos of what each application or command does on our FDOT Ribbon. You can access these videos from our ECSO web page or press "F1" to bring up the help document which has a direct link to the specific video. You can also access it through the Links & Contacts on the Ribbon under CADD Resources



Click on the Link to the Quick Clip

FDOT Signs

This utility allows users to design, place, and label



Command Line: FDOTSIGNS

Summary:

Creates sign assembly pay items including the si

Quick Clip: 



Introduction to Quick Clips

- C3D State Kit Quick Clips
 - Introduction
- FDOT2015 C3D Folder
- Applications
 - Sheet Set Organizer
 - Land XML Visualizer
 - Create 3D Deliverables
 - Create Project
 - FDOT XML Signing
- FDOT Ribbon
- Tools
 - Create File
 - 2 Point Twist/Untwist
 - Land XML Converter
 - Land XML Grouper
 - Super Audit
 - Swap Parts
 - Attach DGN File
 - Clip DGN File
 - Layer Translator
 - Convert Ellipses to Arcs
 - Insert Image
 - Mline
- Pay Item Tools
 - Entity Manager
 - FDOT Signs**
 - Pavement Markings
 - Place Block Group
 - Database Editor for Entity Manager
- Quantities
 - FDOT Takeoff Manager
 - Length Calc
 - TRNS*port Sheets
 - Table
 - Database Editor for AECMERGE
 - FDOT Trns*port Web Interfaces
- Quality Control
 - QC Quick Check
 - Unload Quick Check
 - File Checker
 - Drawing Cleanup
- Reports
 - Lane Slope
 - QC Batch
 - Style List
- Geotech
 - Borehole
- Help
 - Links & Contacts

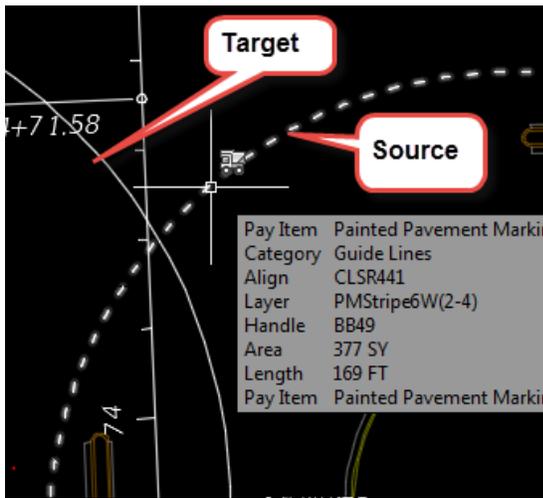
Your Video will be highlighted Yellow, but you can click on any of them from here.

Make sure you watch the Introduction video too.

9. Entity Manager (Match Properties)

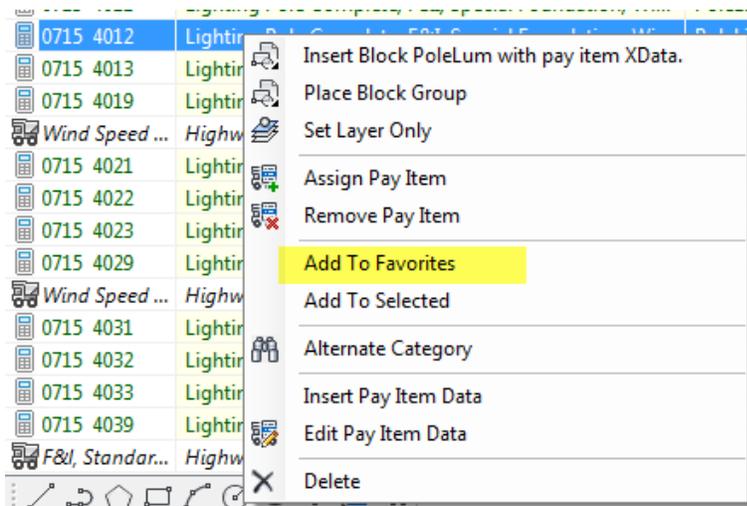
Now the Match properties you love using so much is in Entity Manager, which means you can match all the properties PLUS the Xdata from the source object. Click the source then the target and hit enter to make the change



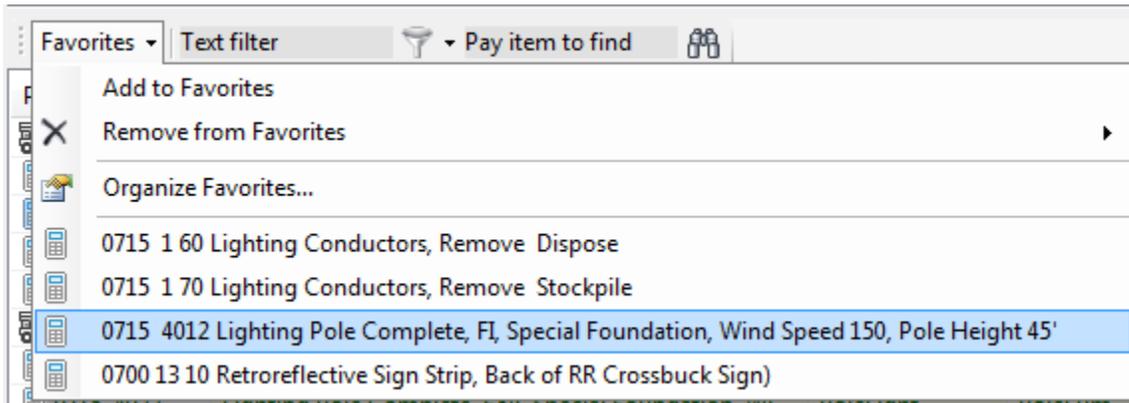


10. Entity Manager (Favorites & Selected List)

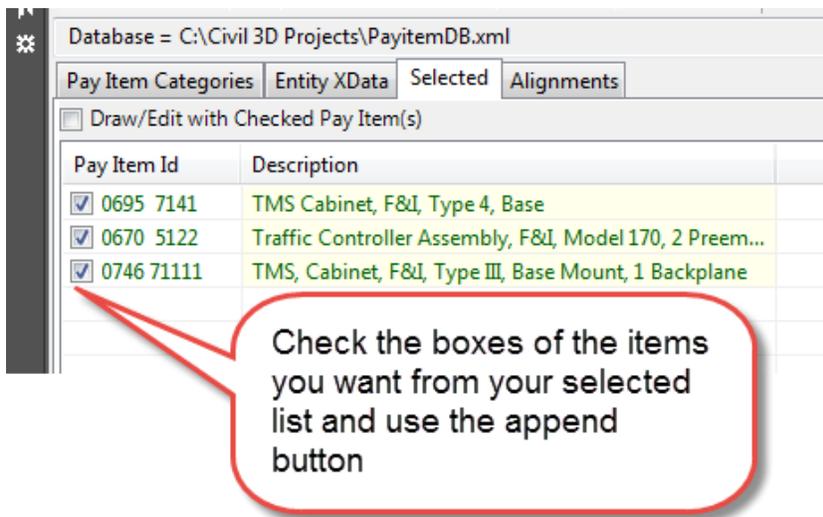
If you find yourself using a similar group of pay items you can create a Favorites List which you can use to quickly get to your objects. To create your favorites collection simply right click on your item and select add to favorites



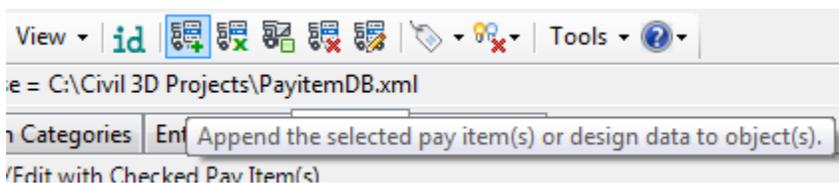
Once created pull down the favorite's button to select an item to navigate to that category



If you want to append multiple pay item x-data to one object you can build a Selection List. Select items and right click and select Add to Selected. The Selected tab will populate with your selections. You can select one at a time or use a window selection.



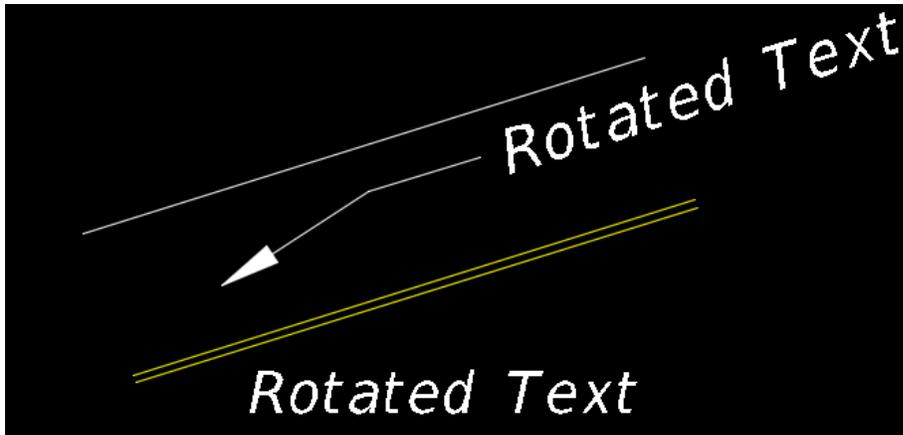
When ready select the Append Data Icon as shown below



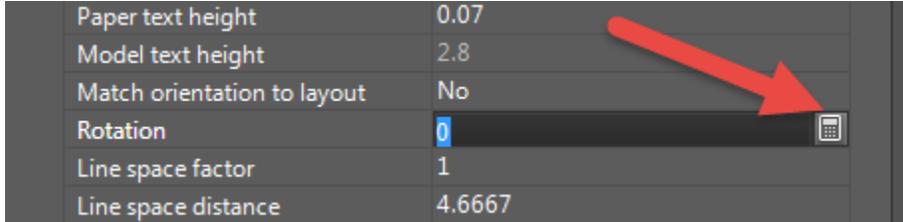
Civil 3D Tips

11. Rotating Text to match Object

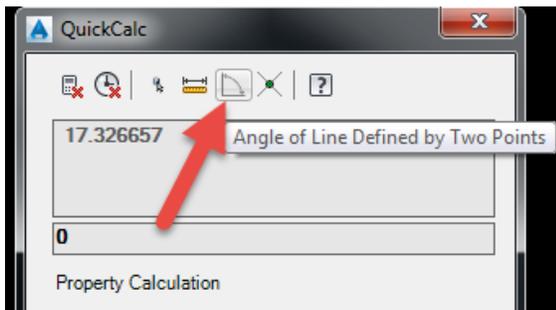
This trick works with Mtext and Multileader Labels. You have a situation as shown below where you want the Mtext label to match the angle of the line just like the Multileader Label

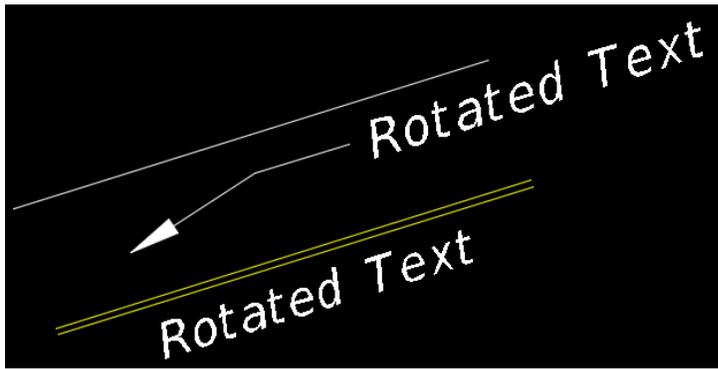


Select the Mtext label < Right Click < Properties < Click in the rotation window and a calculator appears



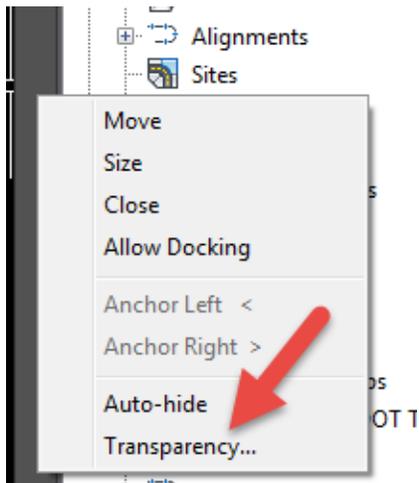
The QuickCalc opens and along the top there are Geometry tools that you can use, select the Angle by two points button < then in your file using end point Osnaps click the end points of the line from Left to Right so as to maintain the Right Reading Placement < when complete select Apply < Then Close on the QuickCalc to apply change



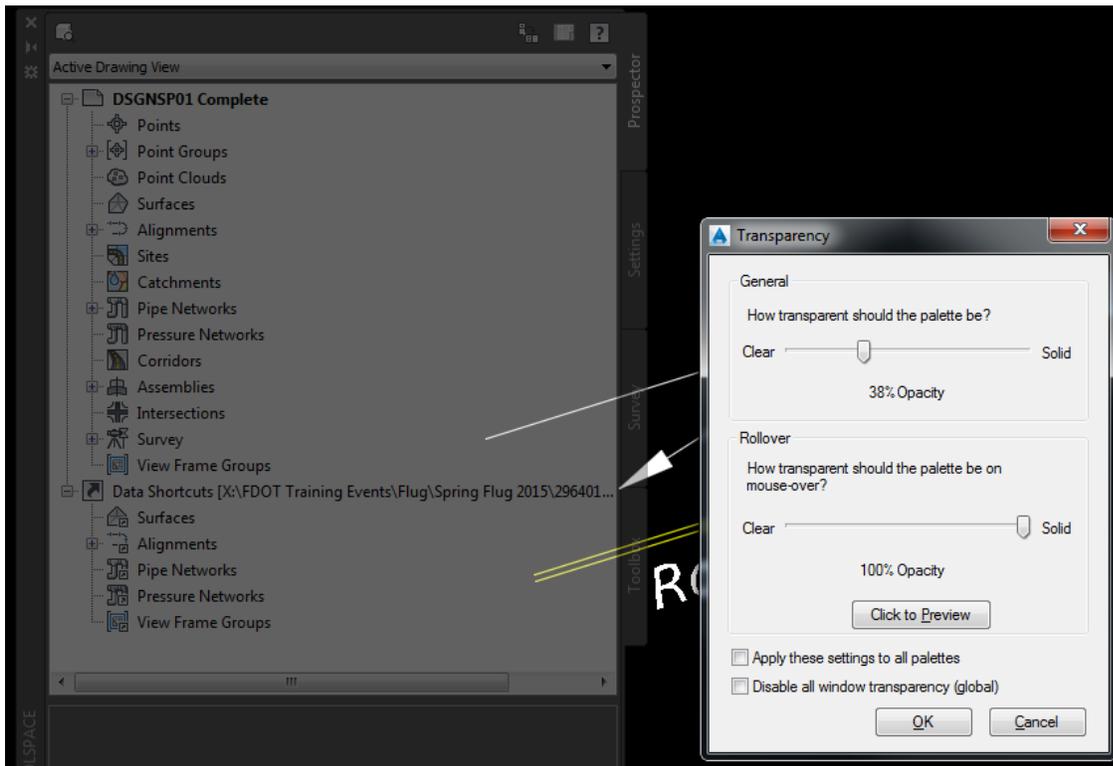


12. Palette Transparency

Did you know you can modify the Transparency of your Palettes? This is handy when you have limited screen real estate or working on a Laptop and need to see objects in the drawing behind your palette. To modify simply Right click on the Palette Bar and select Transparency

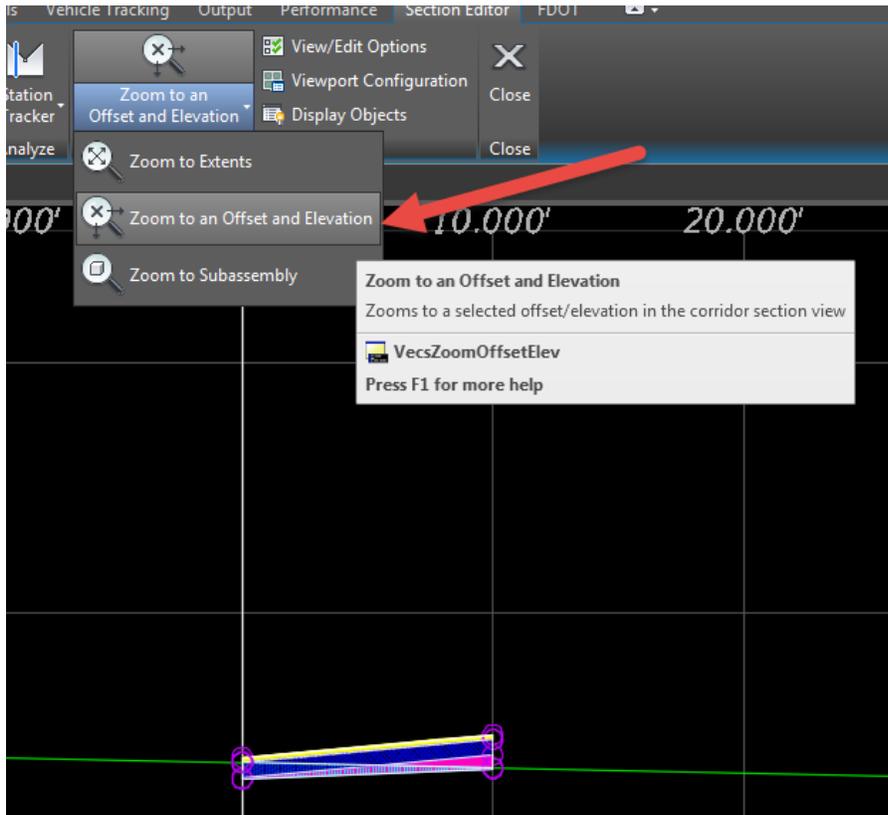


Notice when I adjust the Opacity you can see the objects behind the Toolspace Palette

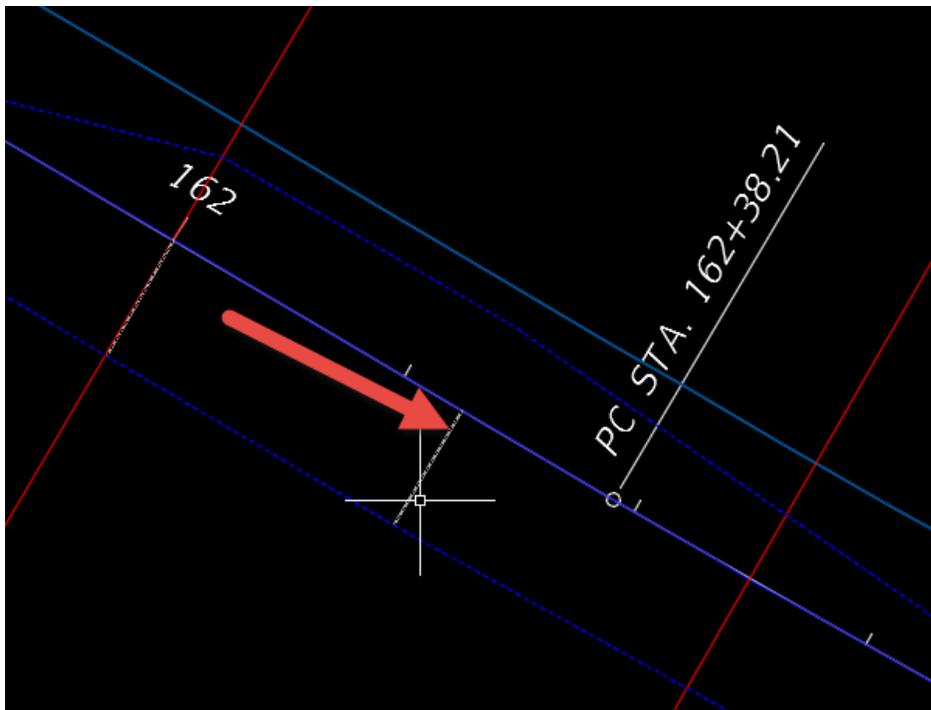


13. Section Editor Tips

Two Section Editor Tips for you. You already know that when using section editor to look at your corridor sections that as you zoom in and out the grid expands and your section gets smaller, however if you “Zoom to Extents” of your sections and then click “Zoom to an Offset and Elevation” it will lock your view so you can click through your stations with the same view without worrying that a particular section will be lost in the grid.



The second tip is you can open the section editor at a specific section on your corridor, simply pick a link at the desired station in the corridor plan view and launch the section editor from the contextual ribbon.



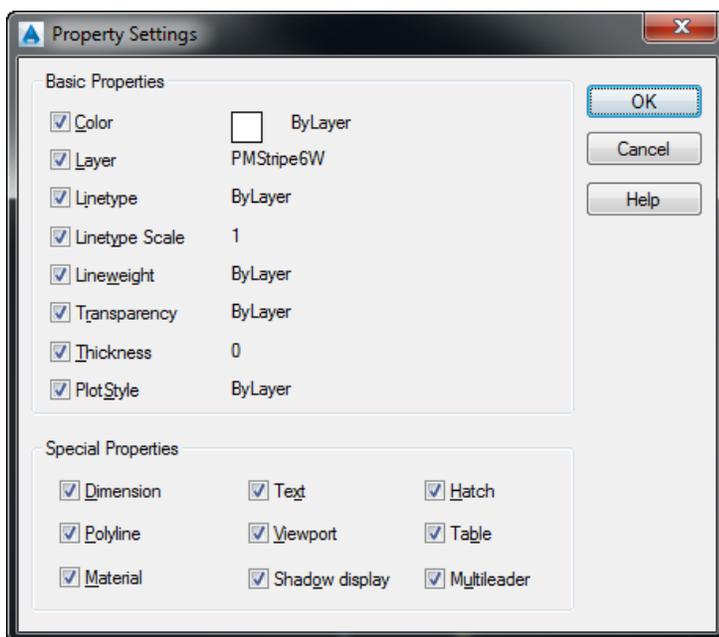
14. Listing Available/Used Point Numbers

If you are working with Survey Points and want to see point numbers that are available to use or if you want to see the point numbers that are in use you can type in the following respectively;

“LISTAVAILABLEPOINTNUMBERS” and **“LISTUSEDPOINTNUMBERS”** if you find yourself using this a good bit you can create a macro with an icon and add it to your ribbon or menu

15. Match Properties

Did you know that match properties goes beyond its normal wonderful use? You can use match properties for Civil 3D objects too like Alignments, Surfaces, Profiles Views just to name a few. You also have property settings to really refine match properties

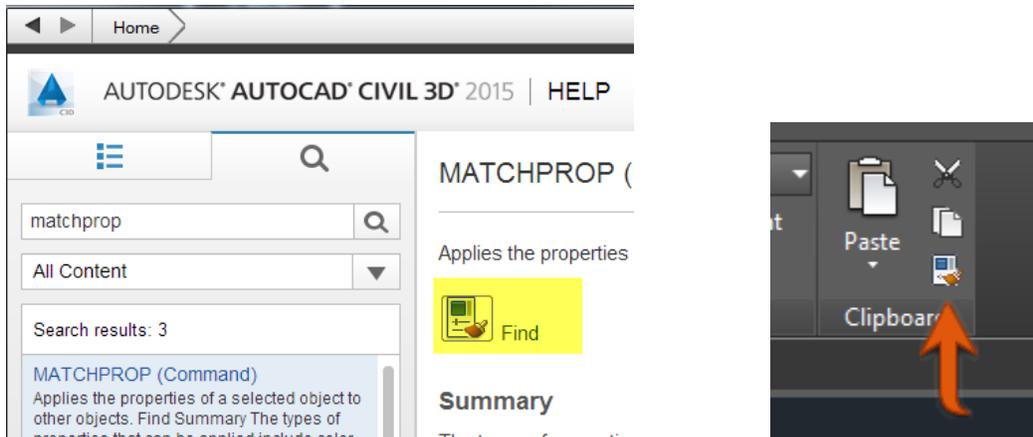


16. Close All Other Command (2016)

A new feature in the 2016 version that will allow you to close all other open files in your session except for the current file that is active on your screen. Type in **“CLOSEALLOTHER”** to execute

17. Animated Help

In the Help system (F1), if you click the command you want to use or its Find link, an animated arrow shows you where the tool is on the ribbon. If the tool isn't on the ribbon, a message tells you which ribbon tab and panel it's on.

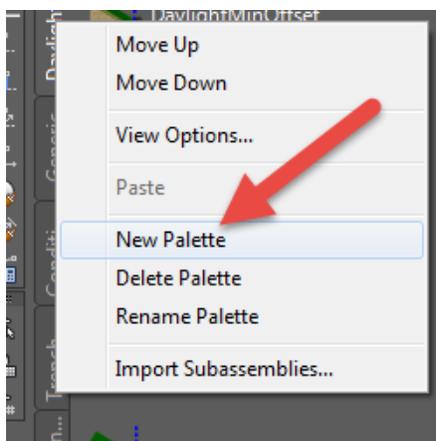


As a side note 2015 and forward supports the PNG format for icons in the ribbon!

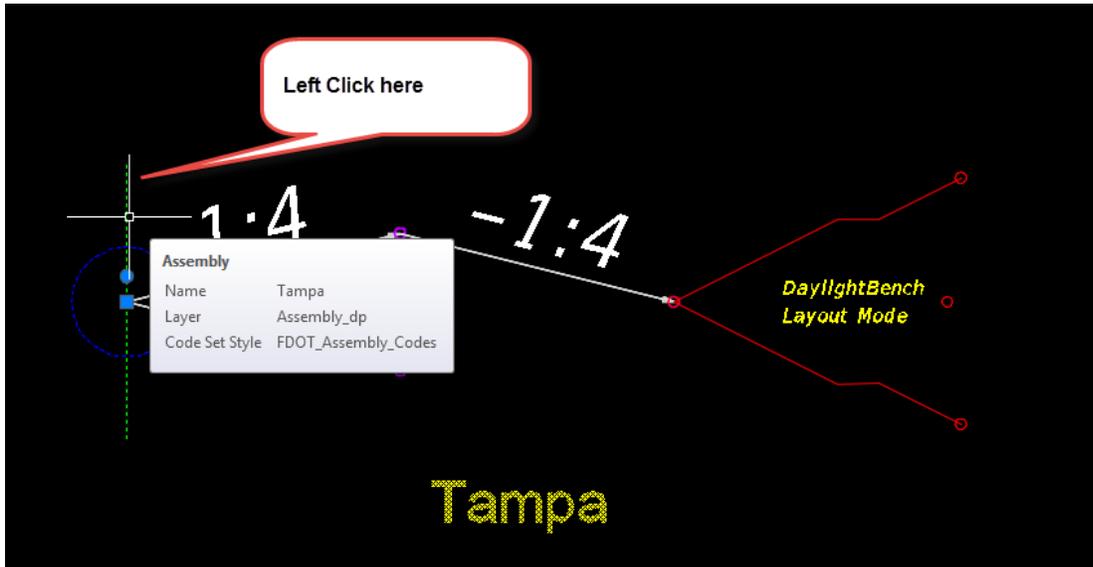
18. Creating Custom Sub Assembly Palette

If you have developed a custom sub assembly that you want to use going forward such as combining conditional daylight or ditches you can create a new palette group and drag and drop the assembly from your screen to the palette, just follow these simple directions.

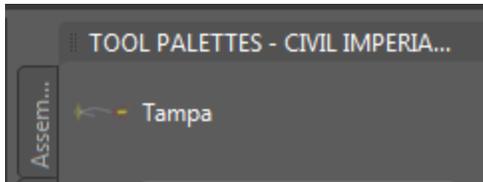
Right Click on any Palette tab and select New Palette and give it a good name



Left Click on the assembly and without selecting a grip, left click without releasing on the green line on the insertion point and drag it to the palette. You will see your cursor change when you move your mouse over the new palette. It looks the same as when you drag and drop a style from another drawing.



Release the left button and your assembly with a preview image will appear.



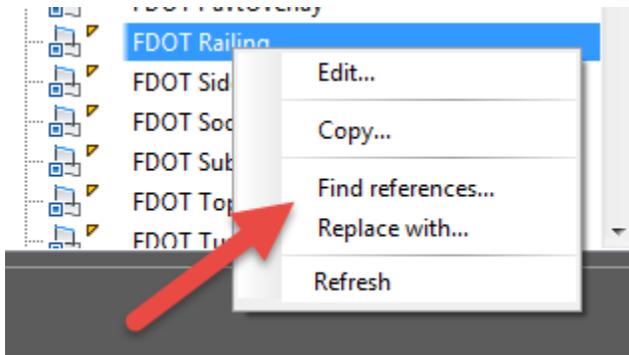
19. Working with Styles

Have you ever wondered where a particular object or label style is in use so you can change the usage from the command level? Or wanted to change an object to a new style without digging to find out it's in use for many instances? Confusing I know, but try utilizing these tools at your disposal.

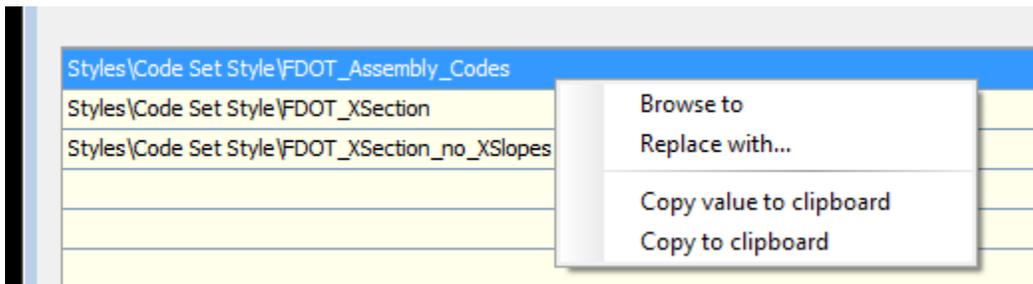
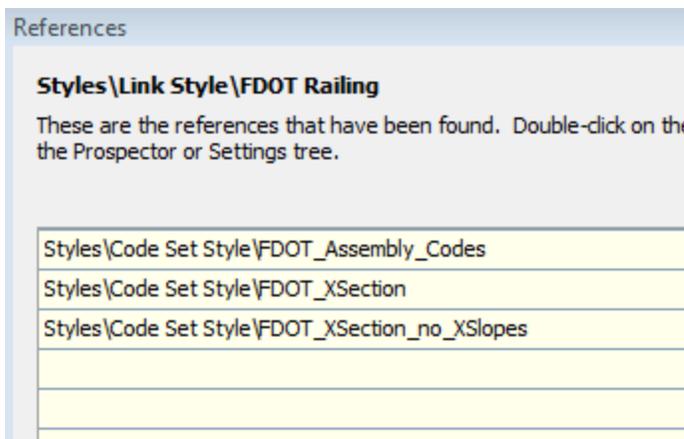
On your Settings Tab in your Toolspace let's look at some of the styles. The first thing to know is if you see a yellow triangle in front of a style it is in use either by a command or called for in another style. Using the FDOT Railing Link style as an example you can see it is in use. Notice the FDOT PavtOverbuild Style without the Triangle, which means it is not in use at this time.



To find out where FDOT Railing is used simply right click on the name and select **“Find references”**



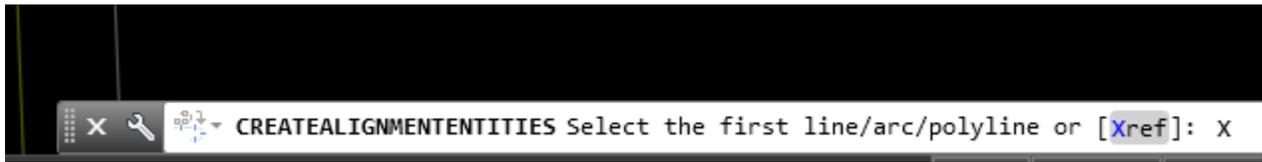
A References box opens showing where the style is used. In this example there are three code set styles that use the FDOT Railing style. A fast way to go to one of the styles is to right click on one and select **“Browse to”**



Let's say you have a new style that you want replace an older style. Use the **“Replace with”** option to make the change.

20. Civil 3D Objects from Xref's

Did you know you can create Civil 3D objects from Xref entities? For example if you want to create an Alignment from a line in an Xref select create alignment from objects and type X on the command line to individually select line work in your Xref.



21. Quick Corridor Region Selection

Let's say you have a corridor that has many regions and you want to edit your targets in a particular region. When you normally select your corridor the entire object turns blue and when you move your mouse over the selected corridor nothing happens. Type in **"SELECTIONEFFECT"** and change to 0. Now when you select your corridor and select edit targets on the contextual menu your regions highlight as you move your mouse around your selected corridor.

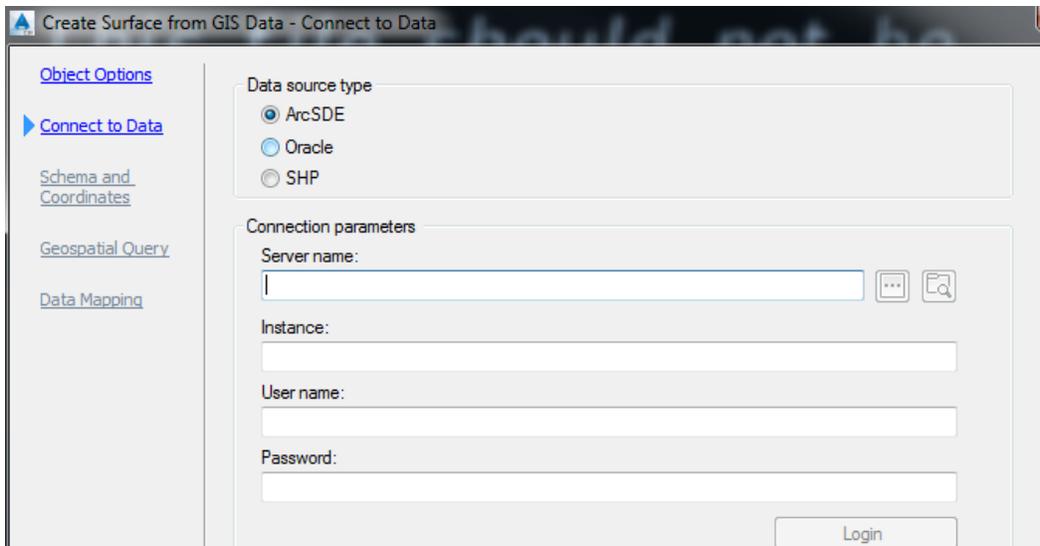
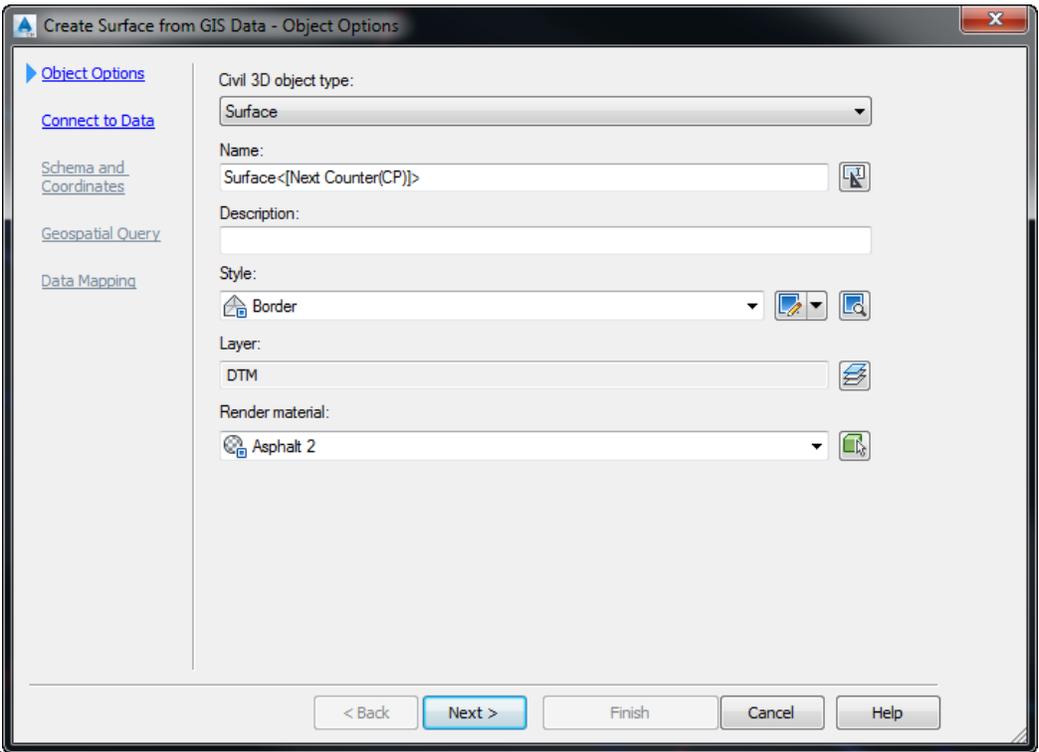
22. Old Earthwork Interface

Back in the day Land Desktop and Early Civil 3D had a very fast way to calculate earthwork. In time it morphed into more powerful options, but if you want to use the old way it still does exist. On the command line type in **"REPORTSURFACEVOLUME"** and your old friend is back



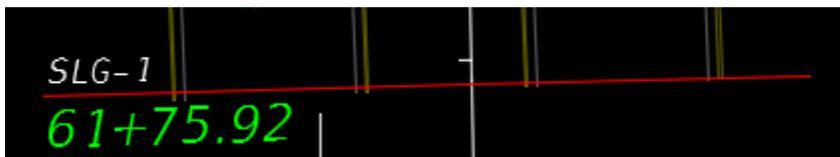
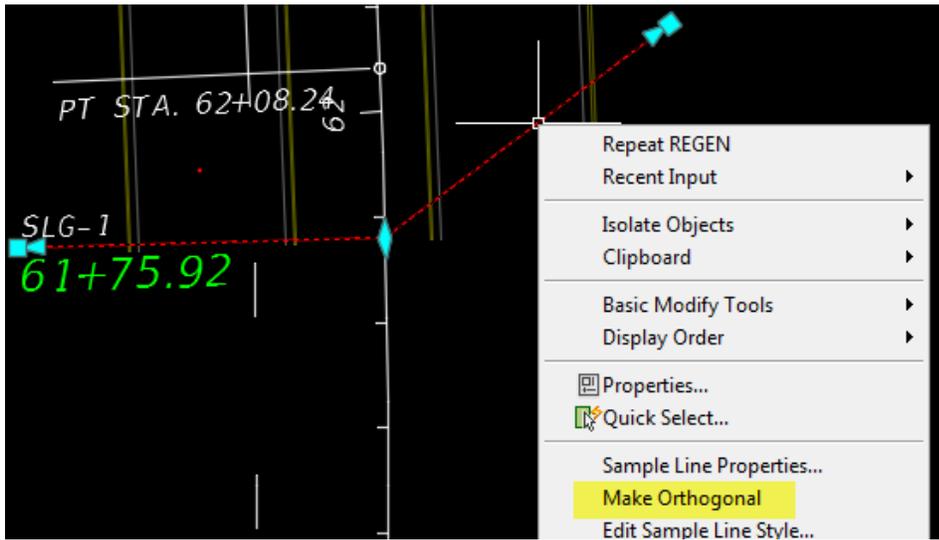
23. Quick Surface from GIS Data

You can create a quick surface from GIS data by typing in the command **"CreateSurfaceFromGISData"** when entered the Create Surface from GIS Data Wizard appears to walk you through options for your new surface. You can use **"ArcSDE"**, **"Oracle"**, or **"SHP"** as a Data Source



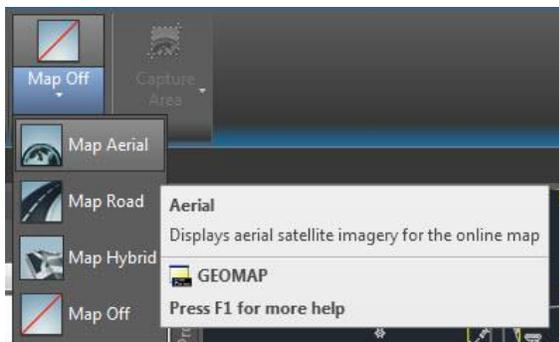
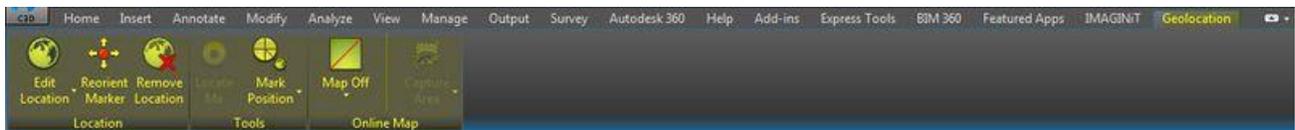
24. Sample Lines

When working with sample lines especially with drainage networks as shown below your sample lines bend to follow your pipes and structures, but what happens when you want to straighten your sample line. Select it < Right Click and select Make Orthogonal

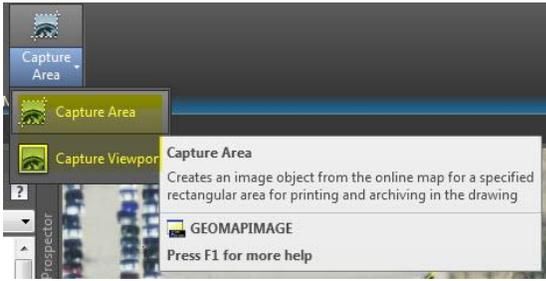


25. Geolocation Maps

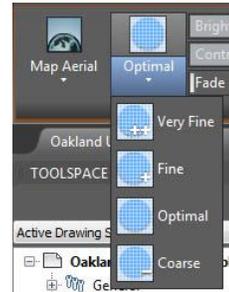
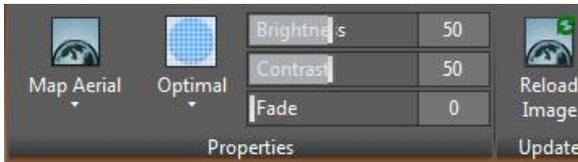
In case you don't know there is a readily available tab specifically for managing the "Live Maps" data called "Geolocation" where you can access map access tools, if your project is in a set coordinate zone.



The "Capture Area" and "Capture Viewport" commands are the real stars of this story because this is what now allows you to create a static and printable version of the images.



The new captured image is actually a new type of image object called a “Geomap Image” and has both static attached image type adjustments such as Brightness, Contrast and Fade but also has some unique features too including the ability to switch map types (Aerial, Road, Hybrid) as well as the ability to change the resolution of the captured image.



The bottom line is how useful it is to have nice, color geo referenced images easily accessible from within Civil 3D that you can print.

AutoCAD Tips

26. Smart Dimensioning (2016)

Dimensioning got a face lift in 2016 also. Now you can click on the dimension icon and hover over a line and a preview of the dimension appears. If you want to place it just left click.

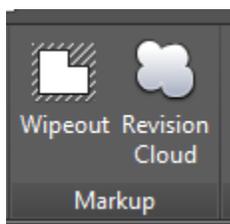


You can also continue the dimension off of that base line



27. Smart Revision Clouds (2016)

Revision clouds got an upgrade in 2016 which will allow you to modify already placed clouds and even let you add and trim them. If you draw a cloud and need to expand it to include a different section of your file click on the Revision Cloud icon located on the Annotate Ribbon



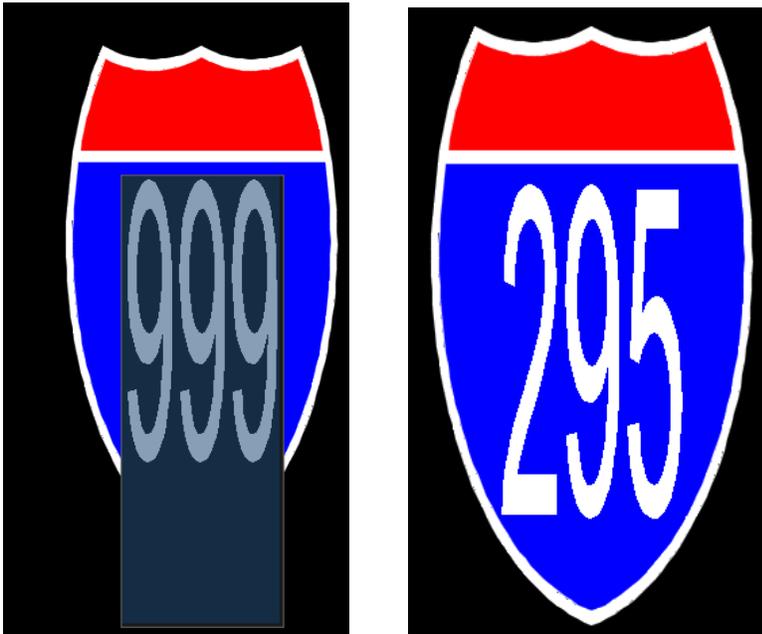
Once you click on the command look at your command line for instructions

Select “M” for modify and select your already placed revision cloud and then draw a new section of your cloud as you come back to tie it into your existing cloud it will snap to a vertex and will ask you which side of the cloud you want trimmed and also shows you a preview



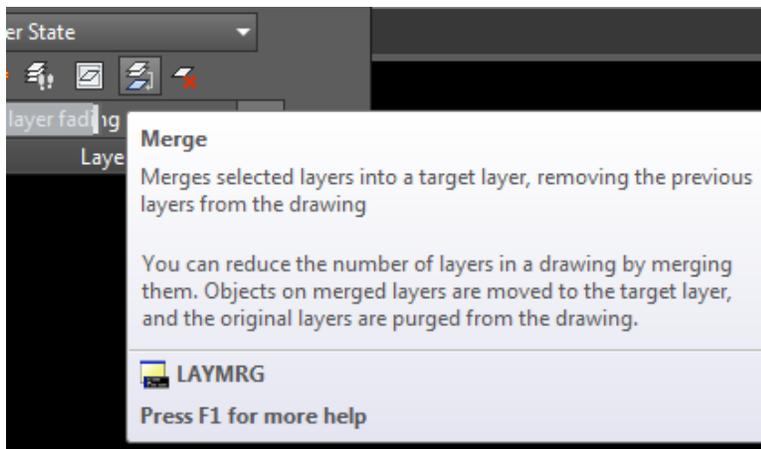
28. Editing Block Attributes

There are several ways to edit attributes of a placed block, one is to double click the block and the edit attribute dialog box opens, however there is an easier way just hold down the **control** key and double click the block. The attributes will highlight and let you type in your new values just like text.



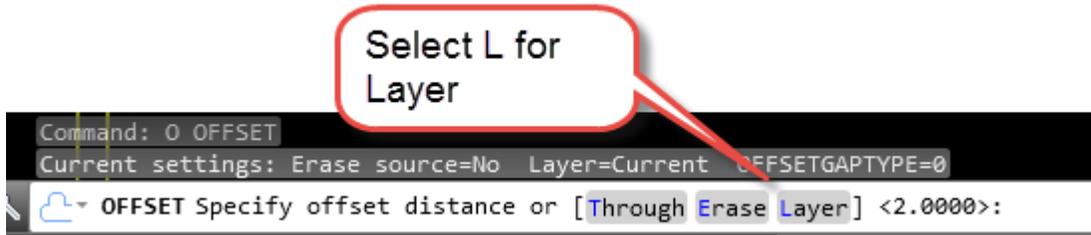
29. Layer Merge

If you have an instance where you want to delete a layer but it has objects still on it which means you can't delete it, you can use the merge layer option which will move all objects to the target layer and delete the desired layer when completed.



30. Offset to Current Layer

Everybody has used the offset command before but for those who are still new to AutoCAD there are some options that you should be aware of, such as you can offset a line to your current layer and the new object will take on all the properties of the current layer.

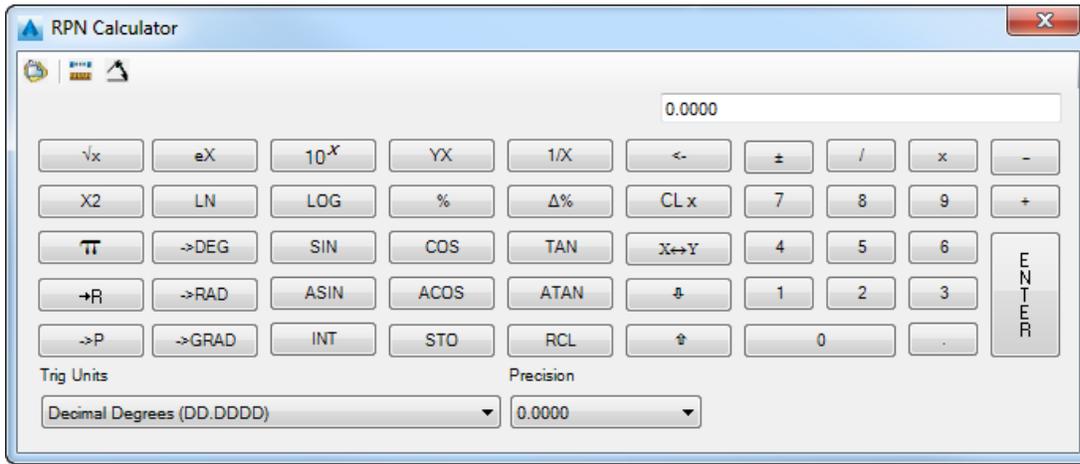


The example shown below is a case where I'm offsetting the face of curb 2'. My current Layer is PavtAsphalt and as you can see new properties have been assigned.



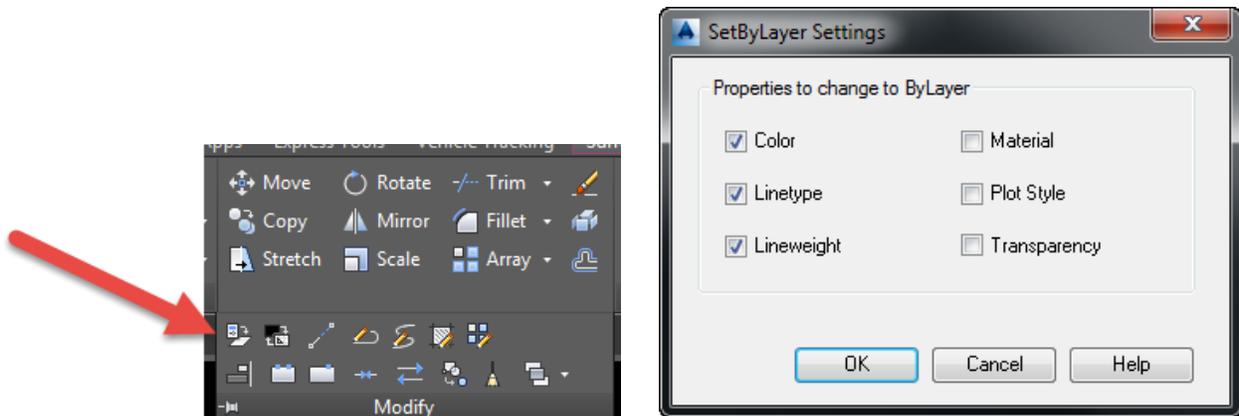
31. Calculator Option

If you need to use the AutoCAD calculator function in Reverse Polish Notation format simply type in RPN CALC on the command line.



32. Bulk ByLayer changes

You just got a drawing and there are objects that have linetypes and colors that are different than the parent layer has specified. You can change the entire drawing quickly to “ByLayer” with a few clicks. On the home ribbon pull down the modify panel.



You can also control what is changed by typing “S” for the settings dialog box. When ready to use just select or window the objects in your drawing file.