

LUCAS COUNTY ENGINEERS CAD Procedures Manual

# AutoCAD Civil 3D® Procedures

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# Chapter

# **Startups for AutoCAD Civil 3D®**

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#### SEE THE LCE CAD STANDARDS AND SPECIFICATIONS MANUAL FOR CAD DRAFTING SPECIFICATIONS

### WHAT'S ON THE CD?

All manuals are on the root of the CD. The following are sub-folders of \CadStds\

icn	
usp.	
	isp:

\Plan Production Sheets:

\Specs & Notes:

iii) addlen.lsp         iii) ao.lsp         iii) ao.lsp         iii) ao.lsp         iii) aot.lsp         iii) Attools.VLX         iii) C3D_CB.zip         iii) C3D_CB.zip         iii) C3D_CB.zip         iii) C3D_CB.zip         iii) C3D_CB.zip         iii) C3D_CB.zip         iii) C4Lt.lsp         iii) DITCH4.LSP         iii) Flow.lsp         iii) PROLLSP         iii) PARENTH.lsp         iii) PCLSp         iii) PEND.LSP         iii) POLJSP         iiii) POLJSP         iiii) POLJSP         iiii) POLJSP         iiiiiii tedit.lsp         iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	Image: LCE NBDR.dwt         Image: LCE PP6-20.dwt         Image: LCE PP8-20.dwt         Image: LCE TNBDR.dwt         Image: LCE XSEC L.dwt         Image: LCE XSEC P.dwt         Image: LCE Ddsht.dwq         Image: LCE ppsht8.dwq         Image: LCE TITLE.dwt         Image: LCE XSHTD.dwq         Image: LCE XSHTD.dwq	SpecBook-Gen-Notes-Master.dwg
\Support:	\Symbols:	\C3D Tip Extras
<ul> <li>11x17.ctb</li> <li>22x34.ctb</li> <li>acad.dwt</li> <li>acad.lin</li> <li>boucles.shx</li> <li>CIVIL.SHX</li> <li>COMap.dwt</li> <li>HELVFILL.SHX</li> <li>HELVFILL.SHX</li> <li>LW310 2004 HDI.pc3</li> <li>SAMPLEX.SHX</li> <li>SAMPLEX.SHX</li> <li>SAMPLEX.SHX</li> <li>ULTRA.LSP</li> <li>ZERO_Z.LSP</li> </ul>	CAD Symbols.zip	ADDING PIPE SECTIONS TO EXISTING CROSS SECTIONS.pdf Adjusting the Profile Gap.pdf CIVIL 3D TEMPLATE FILE LOCATIONS AND DESCRIPTIONS.pdf CORRIDORS AND SECTIONS IN A SEPARATE DRAWING.pdf CREATING A TABLE IN CIVIL 3D.pdf CREATING P&P SHEETS USING PLAN PRODUCTION.pdf Cross Section EP's.pdf SETTING UP GENERAL NOTES and TRAFFIC NOTES.pdf USING MAP BOOKS TO CREATE TITLE SHEET.pdf

## STANDARD DRAWING NAME CONVENTIONS, LAYOUT AND SCALES

DRAWING TYPE(S)	NAMING CONVENTION	DOCUMENTS CONTAINED IN DRAWING	LAYOUT OR VIEW MODE
TITLE	TITLE_SHEET.DWG	TITLE SHEET	MAP IN MODEL SPACE - TITLE BLOCK IN LAYOUT
GENERAL NOTES	GEN_NOTES.DWG	MASTER GENERAL SPEC. NOTES	NOTES IN MODEL SPACE - SHEETS IN LAYOUT
DETAILS AND SUMMARIES	DET_SUM.DWG	DETAILS AND SUMMARY TABLES	DETAILS/SUMMARIES IN MODEL SPACE - SHEETS IN LAYOUT
PLAN & PROFILES	MASTER.DWG	OVERALL PROJECT PLAN, OVERALL PROFILE, PLAN AND PROFILES	OVERALL PLAN/PROFILE IN MODEL SPACE - SHEETS IN LAYOUT
CROSS SECTIONS	MASTER.DWG	EX. & PROP. CROSS SECTIONS AND CROSS SECTION SHEETS	EX. & PROP. CROSS SECTIONS IN MODEL SPACE - SHEETS IN LAYOUT

#### SCALES:

DRAWING TYPE(S)	DRAWING LTSCALE	PLOT SCALE	VIEWPORT SCALE
TITLE	1	1	N/A
GENERAL NOTES	1	1	1
DETAILS AND SUMMARIES	1	1	DETAIL DEPENDENT
PLAN & PROFILE SHEETS	1	20	1
CROSS SECTIONS	1	5	1

### STARTING A PROJECT / NEW DRAWING

In this exercise, you will start a new drawing.

To begin, start Civil 3D:



To begin your project, simply insert the .dwg you received from the Survey Dept., being sure to explode it on insert. Use 0,0 as your insertion point. Use the Insert pull down>Block or type in INSERT and Click the Browse button:

A Insert		<u>? ×</u>
Name: ADCADD_ZZ	Browse	
Path:	,	2
Insertion point Specify On-screen	Scale Specify On-screen	Rotation Specify On-screen
×: 0.0000	X: 1.0000	Angle: 0
۴: 0.0000	Y: 1.0000	Block Unit
Be sure to uncheck th as it will automatically insert at 0,0		Unit: Unitless Factor: 1.0000
Explode	ОК	Cancel Help

Browse to the project folder where the drawing is located, highlight it and click Open:

Select Drawing	File							×
Look in:		KA	•	\$ F2	Q 🗙 🕼	⊻iews	▼ Tools	•
History Solution My Documents ORIVE C (C:)	Name – NEBRASK	A.dwg		Size 261 KB	Preview			
CRIVE D (D:)		NEBRASKA.dwg		Þ		=	<u>O</u> pen a	
	File <u>n</u> ame:						Cancer	ď
	Files of type:	Drawing (*.dwg)				-	Cancer	

Explode OK have Cancel Help

Click OK and type 0 , 0, then zoom, extents. Here is your new drawing :



Now save your new drawing in the project folder as

### YOUR PROJECT NAME.dwg (Follow the standard naming conventions)

# **SURVEY FILES**

This procedure is for the Lucas County Engineers Office; however, if consultants use the raw survey file format presented in this manual, they can also use the Stringer Connect program, downloadable free from <u>http://www.civil3dtools.com/</u>.

Below is an example of the files you should receive from the Survey Dept.:



The .crd, .dc and .raw files are not crucial to your project, they are; however, crucial to the Survey Dept. Please DO NOT erase them, as they can be used to reprocess a job if there are problems.

The files that you are interested in are the .dwg, .rw5 and the .txt file.

The .txt file is the point file you will import into your drawing to create your TIN.

The .rw5 is the survey file that contains the survey data (note: it is not in coordinate format). The .rw5 file is viewable with the Stringer Connect program (freeware):



Start Stringer Connect. Click the "Click to Continue".

Browse to the RW5 file you wish to open and click "Accept Current File":

⊖ c: [DRIVE C] ▼ Pattern *.RW5	Stringer Connect
► Project	00NMSC V10-70 024220-Apr-06 10:31 132211 10NMNEBRASKA 122211 Time Date 04/19/2006 Time 12:32:59 95FC 100000 76NM11 C8NM3 55KI 1.00000000000000000000 08KI 55KI 1.00000000000000000000000 08KI 64KI> 64KI> 64KI> 64KI> 84KI 50KI 51KI 518.2820,E 521.0620,EL0.0000,341
·	Deleted 12:47:04 PM 4/19/2006 SP.PN7,N 471.5080,E 1006.8340,EL0.0000,341 Deleted 1:57:47 PM 4/19/2006
Accent Current File BW5	SP,PN102,N 0.0000,E 0.0000,EL676.8700,466
C:\Project\NEBRASKA\NEBRASKA.rw5	E4NMWikion 3 275.00000000000 C7NM0.000833333330.000833333330.00984250000000 C3AJ111 D2NM 0.14200000000003.300000000000 SP.PNS,N 518.2820,E 521.0620,EL674.5764,341 LS,HI5.130 BK,OP5,BP7,BS,BC95.2960 LS,HR5.100 BD,OP5,FP7,AR95.3000,ZE90.0905,SD488.044,341 A6F1 -0.0252285004868

Here is how the RW5 file looks in the Stringer Editor. Everything is color coded. When you click on an item, be sure to click on the item in the very far left column. When an item is highlighted, the information of that item appears at the bottom of the application screen:

Survey Reducer - File Name : C:\Project\NEBRASKA\NEBRASKA.rw5	
---	--

Options

#### Curvature Correction

Stringer Connect

Vote Vote		1		00NMSC V10-70 024220-Apr-06 10:31 132211	
lote				10NMNEBRASKA 122211	
				Time Date 04/19/2006 Time 12:32:59	
Vote				95FC 100000	
Vote				78NM11	
Vote				C8NM3	
Vote				65KI	
Vote				D5KI 1.000000000000000	
Vote				D8KI	
Vote				64KI>	
Vote				49KI1	
Vote				50KI	
Vote				81KI1	
Loord PN 5	5 521.062	518.282	0.000	341	
Vote				Deleted 12:47:04 PM 4/19/2006	
Loord PN 7	7 1006.834	471.508	0.000	341	
Vote				Deleted 1:57:47 PM 4/19/2006	
Loord PN 10	0.000	0.000	676.870	466	
Vote				E4NMNikon 3 275.0000	
Vote				C7NM0.0008333333330.00083333333330.009842	
Vote				C3AJ111	
Vote				D2NM 0.1420000000003.300000	
Loord PN 5	5 521.062	518.282	674.576	341	
HI 5.	.130 TH 0.000				
Drient OP 5	5 BP 7	BC 95.2960	BS 0.0000		
HT HI 5.	.130 TH 5.100				
Vote				BD, OP5, FP7, AR95.3000, ZE90.0905, SD488.044, 341	
lote				0.0252285004868	

The sole purpose of this program is to allow you to check the setups and bench marks in this file against what the survey crew has written down in the field book for your project.

# IMPORTING POINTS, MANAGE SURFACE SETTINGS AND CREATE BREAK LINES

Before importing points, be sure to do the following to the point text file:

🖹 NEBRASKA	B NEBRASKA-Carlson Points.TXT								
List Poin	List Points Report 4/20/2006 11:3								
File> C:\;	Program Files\Ca	arlson Software	2006\DATA\	NEBRASKA.crd					
				- · · · ·					
PointNo.	Northing(Y)	Easting(X)	Elev(Z)	Description					
3	480.002	1372.227	675.163	MONUMENT					
1351	476.168	1401.238	675.599	SPOT EL					
1352	474.350	1422.349	675.848	SPOT EL					
1353	479.825	1421.929	675.319	SPOT EL					
Number of	points listed>	398							

Delete the highlighted areas of text. Otherwise, they will interfere with the import process. The file should look like this when you're done.

NEBRASKA-Carlson Points.TXT								
β	480.002	1372.227	675.163	MONUMENT				
5	518.282	521.062	674.576	I_ROD				
7	471.508	1006.834	673.546	I_ROD				
105	519.343	876.706	675.602	в.м.				
1000	485.063	542.315	674.989	E/P ASPH				
1001	492.009	541.911	675.289	CL				
1002	498.625	543.583	674.808	E/P ASPH				
1003	500.312	543.401	674.856	EDGE STONE				
1004	504.176	546.506	674.763	SIGN				
1005	531.951	550.898	675.742	20" 30				
1006	527.296	555.594	675.518	TELE. POLE				
1008	473.003	550.532	675.175	6' BUSH				
1009	481.978	548.232	674.643	SPOT EL				
1010	468.806	546.596	675.038	SPOT EL				
1011	502.092	548.594	674.957	SPOT EL				
1012	518.373	549.011	675.030	SPOT EL				
1013	509.448	549.016	674.584	UNDG GAS				
1014	497.927	559.625	675.057	E/P ASPH				
1014	497.927	559.625	675.057	E/P ASPH				
1015	499.399	561.075	675.133	EDGE STONE				

In this procedure, you will import points from the point file of the project to the drawing.

To import points from the project point file:

- 1. Start Civil 3D, browse to the Project folder, open drawing created previously.
- 2. In Toolspace, on the Prospector tab, right-click Points. Click Create.
- 3. In the Create Points dialog box, click Import Points.
  4. In the Format list, select PNEZD (space delimited)
  5. Browse to the Source File
  6. Click Name A and click Open C and click Open
- 7. Click OK. You may get the following box. Select the overwrite option and click OK:



The points are imported.

Close the Points Dialogue Box.

The imported points should be under the Points and Point Groups. You'll notice that all the point groups are automatically grouped and filtered. Right click on each one that has the exclamation point in front of it and click update (including SRF under Surfaces):



Here is the point listing under points:

Poi	nt Nu	Easting	Northing	Point Elev	Name	Raw Descri
ф	3	1372.2270'	480.0020'	675.163'		MONUMENT
ф	5	521.0620'	518.2820'	674.576'		I_ROD
ф	7	1006.8340'	471.5080'	673.546'		I_ROD
¢	105	876.7060'	519.3430'	675.602'		в.м.
¢	1000	542.3150'	485.0630'	674.989'		E/P ASPH
<u>.</u>	1001	E41.0110	400,0000	47E 000 <sup>1</sup>		~

A Civil 3D Tip:



If you right click on point groups and click properties, you'll see this box:



If you highlight a point group, and click the up and down arrows, this will put one point group over the other, hence, filtering which point group(s) you want to or don't want to see. To create breaklines for your drawing, do the following:

Drill down through the SRF category, under Definitions and right click Breaklines and click Add...:



Give the Breakline group a name and click OK:

Description: FAULTS	
TRACTO	
Type:	
Standard	<u>•</u>
File link options:	
Break link to file	¥
Mid-ordinate distance:	
1.000'	۲.
Supplementing distance:	
100.000'	N
1001000	

(NOTE: If you wish to add a boundary after creating your breaklines, create a polyline around your project site, right click on Boundaries in the Toolspace, click Add..., give your boundary a name, click OK, select the polyline you created and you're done.)

You will be prompted to Select objects. Window up all the topo items in the view and hit Enter:



Right click SRF in Toolspace and rebuild your surface.

### \*Check Surface for anomalous elevations using 3D orbit or 3D View before proceeding further !

# **CREATE AN ALIGNMENT**

### To define an alignment from a polyline

- 1. Draw a polyline in your drawing that represents the surveyed baseline that came from the Survey Department. When polyline is drawn, continue to next step.
- 2. Click Alignments menu. Create Alignment From Polyline.
- 3. Select the polyline.
- 4. In the <u>Create Alignment From Polyline Dialog Box</u>, specify a Site or accept the default <None>.
- 5. Enter a unique name for the alignment.
- 6. Enter an optional description for the alignment.
- 7. Specify an alignment style or accept the default style.
- 8. Specify the object layer settings.
- 9. Specify an alignment label set or accept the default label set.
- 10. Specify the conversion options.
- 11. Click OK.

lame:	
BL Nebraska	<
escription:	
	2
	Starting station: 0+00.00'
Seneral Design Criteria	
Site:	
Nebraska	<b>•</b>
Alignment style:	
Ta LCE Standard	- <u>(</u> - Q
Alignment layer:	
BL_SURVEY1	4
Alignment label set:	
🔏 LCE Standard	- <u>1</u> - <u>Q</u>
Conversion options	
Add curves between ta	ngents
Erase existing entities	

# **CREATE A STATION-OFFSET REPORT**

In this procedure, you will create a station-offset report.

Type in staoff in the command prompt. Hit Enter.

Autodesk DWG. This file is a TrustedDWG or Autodesk licensed application.

Command: staoff

Type in SE for Settings and Enter:

```
STAOFF
Site: Nebraska Align: Alignment - (5)
Select points or [POintgroups/SEttings]:
```

Be sure to sort by Station, leave the rest as is. Click OK:

Site:	Nebraska	Sort B	
Alignment:	Alignment - (5)		oint Number
🔽 Write to	file: staoff.txt	େ ହ	tation
Use an asl	erisk (") to insert name of current (	trawing in filename.	
Clear Ou	tout File	OK	1

Type in PO for the Point Group:

				Alignment			
Select	; points	or	[POint	groups/SE	tti	ings]:	po

Check the box next to your point group and click OK:

Select Point Groups		×
Select Point Groups:	<u>S</u> elect All	<u>Cl</u> ear All
Select Point Groups:	<u>S</u> elect All	<u>Clear All</u>
ОК	<u>h</u>	]

Hit Enter.

Open up Notepad or Windows Explorer and open the report:



Here is the report:

Ī	🖹 NEBRASKA_s	staoff.txt			
	Site:	Nebraska	Alignment:	Alignment -	(5)
1	PT NUM	STATION	OFFSET	ELEV	DESCRIPTION
1	1014	0+01.99	-1.279	675.057	E/P ASPH
1	1015	0+03.41	-2.782	675.133	E/P ASPH
	1038	0+09.99	26.778	675.403	18" 25
	1016	0+11.04	-13.336	675.051	E/P ASPH
1	1017	0+12.30	-32.249	675.232	E/P ASPH
1	1018	0+22.71	-32.088	675.245	E/P ASPH
	1023	0+23.48	-30.499		
1	1019	0+23.53	-14.684	675.045	E/P ASPH
1	1037	0+24.37	22.260	675.392	12″ 20
1	1022	0+24.53	-15.528	675.092	ORN. LIGHT
1	1036	0+31.69	18.052	675.480	6' BUSH
1	1020	0+32.20	-2.405	675.061	EDGE STONE
1	1035	0+33.64	16.492	675.509	SIGN
1	1021	0+34.64	-0.214	674.996	E/P ASPH
1	1034	0+36.55	23.597	675.264	18" 25
1	1024	0+40.78	-39.983	675.423	SPOT EL
1	1025	0+41.97		675.509	SPOT EL
	1026	0+42.23	-8.153	674.816	
1	1028	0+42.41	-0.013		
	1029	0+42.41			
1	1027	0+42.43	-2.564	674.887	EDGE STONE
1	1031	0+42.64			
	1030	0+42.64			
	1032	0+42.78			
	1033	0+44.38			
	1039	0+66.49			
	1040	0+79.27			
	1043		0.362		
	1044	0+84.84	-3.580	674.852	E/P ASPH

NOTE TO CONSULTANTS: THE STATION-OFFSET COMMAND IS NOT A CIVIL 3D COMMAND. IF YOU ARE INTERESTED IN USING THIS COMMAND ALONG WITH SOME OTHER USEFUL ONES, VISIT <u>http://www.quux.biz/SincpacC3D.aspx</u> . SINCPAC C3D SOFTWARE IS AN ADD-ON TO C3D. WHEN INSTALLED, IT INSTALLS THE TRIAL VERSION, AND LIMITS SOME OF THE COMMANDS AVAILABLE, BUT THE COMMANDS THAT DO RUN, RUN COMPLETE (INCLUDING THE STATION-OFFSET).

C3D DOES HAVE A BUILT IN STATION OFFSET REPORT, BUT OUR OFFICE PREFERS THE SINCPAC VERSION .

# Chapter

# **Profiles and Cross Sections**

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# **CREATE A PROFILE**

#### To create a Profile (create profile in the Design.dwg)

1. Under the Create Design Tab, click Profiles pull down > Create Surface Profile.



2. In the Create Profile From Surface dialog box, in the Alignment field, select

Alignment:	
BL Monclova Rd	•

On the right side of the dialog box, click Add>> A centerline profile is added to the Profile List.

3. Click Draw in profile view

This is the Create Profile View Wizard. Give your profile view a name, check other settings, click Next:

🔄 Create Profile View - Genera	al	×
Create Profile View - General Station Range Profile View Height Profile Display Options Pipe Network Display Data Bands Profile Hatch Options	Select alignment: Select alignment: BL Monclova Rd Profile view name: Monclova Rd Profile Description: Profile view style: LCE Standard Profile view layer: PRF_View Show offset profiles by vertically stacking profile views Show offset profiles by vertically stacking profile views	X
	<u>Back</u> <u>Next &gt; In</u> Create Profile View Cancel	Help

Note: Most settings for the Profile and Profile View are preset.

Keep your Station Range to Automatic or customize it to your project needs:

itation Range		Start:	End:
rofile View Height	C Automatic	78+99.43'	131+93.93'
		Lunia Lunia	
rofile Display Options	User specified range	92+00	131+93.93'
pe Network Display			
ata Bands			

# Click Next.

### Adjust the Profile View height:

eneral tation Range	Profile view height	Minimum: 671.98'	Maximum: 678.17'	
rofile View Height rofile Display Options	C User specified	650.00'	700.00'	
<u>pe Network Display</u> ata Bands rofile Hatch Options	Split profile view First split view style: First split view style: LCE Standard LCE Standard Last split view style:	tyle:	Split station: Exact station Datum option: Exact elevation	<u>*</u>
	LCE Standard			

Here are the explanations of Split Profile Views:

#### **Split Profile View**

Specifies that the profile view will be split if the height of the profile extends beyond the User-Specified height value of the profile view.

#### **First Split View Style**

Specifies the profile view style to use for the first split profile view segment. Use the standard controls to edit the style or create a new one.

#### Intermediate Split View Style

Specifies the profile view style to use for the all split profile view segments between the first and last segments. Use the standard controls to edit the style or create a new one.

< Back	Next > Jbg	
		Click Next.

Profile Display Options (you shouldn't have to do anything to this):

Create Profile View - Pro <u>General</u>		ofile display (	options:	1	1	1	1	1	
Station Range	Name	Draw	Clip Grid	Split At	Descrip	Туре	Data So	Offset	Update
Profile View Height	SRF - Su.		•	0		- w	SRF	0.00'	Dynamic
Profile Display Options									
< Back Next	<u> </u>	Next.							

Data Bands (you shouldn't have to do anything to this either):



Profile Hatch Options (to be covered at a later time):





Lick Create Profile View. Select your Profile View origin.



# **EXISTING PIPE NETWORKS**

### **TO CREATE AN EXISTING PIPE NETWORK**

Draw in a pline either from a pipe end to a structure or from a structure to a structure. In this case, it's a pipe end to a structure:



Now, go to the Create Design>Pipe Network>Create Pipe Network from Pipe

### network:



Select the pline you drew. When the flow arrow appears, if it's pointing in the right direction, just hit the Enter key. If not, just type R and hit enter and then enter again:



### You should now have a box like this:

Create Pipe Network from Object	×
Network name:	
Monclova Ex. Stm. Pipe Network	R
Network description:	
Network parts list:	5 
🖙 LCE Ex Stm Parts List 📃	- 🎵
Pipe to create:	
12 inch C.P.	•
Structure to create:	
🕞 м.н.	<b>_</b>
Layers	
Surface name:	
SRF SRF	•
Alignment name:	
BL Monclova Road	-
Erase existing entity	
Use vertex elevations	
OK Cancel	Help
	1

Be sure your settings are correctly set for this type of pipe network, then click OK.

You'll notice it put a structure in at both ends. This is typical, but the only time you will have to deal with this is when you are starting a new pipe network. Just select the structure at the pipe end you do not need, and hit the delete key.



Now that you have an existing pipe network to begin with, you can now edit it to add other structures and pipes to this particular pipe network.

Click on the pipe and right click, then click Edit Network:



The Network Layout Tool appears for this pipe network. Change the mode to Pipes Only (if the next point is a pipe end-if it is a structure, select Structures Only):



### Select the Structure:



Then select the next point along the pipe run, whether it's a pipe end or the next structure:



If this is the end of the run, hit Enter. Here is your result. You can continue adding selective runs to this one network:



# **CREATING SAMPLE LINES**

In this procedure, you will create a set of sample lines along the alignment. This is the first step in generating cross sections. Start up your Cross Sections drawing that you created from the previous section.

The sample lines define the stations at which the cross sections are cut, and also the width of the sections to the left and right of the alignment. A set of sample lines is stored under a Sample Line Group for the alignment. Each sample line group has a unique name. Each line within the group also has a unique name.

To create sample lines

- 1. Click the Profiles and Section Views > Sample Lines.
- 2. At the Select an Alignment prompt, press Enter to display the Select Alignment dialog box.

Profile View • Sample Lines

Section Views

- 3. Select your alignment. Click OK.
- 4. On the next dialogue box, <u>be sure to select the layers for Sample line layer and the Section</u> <u>sampling defaults layer.</u>

	le Line Group				×
Name:			Sample line style	81	
SLG-<[Next Counter(CP)]>			LCE Stand	ard	💽 🔻 🛃
			Sample line label style:		
		4	🔏 LCE Standa	ard	- 🔽 - 🛃
		<b>_</b>	Sample line laye	r:	
Alignment:			SRF-SL		<b></b>
BL Monclova Ro			1		
5elect data sourc	1	Sample	Style	Section layer	Update Mode
Туре	Data Source	Dampie	Seyie		- pasto i losso
Type	Data Source SRF		LCE Standard	XEG	Dynamic

Click OK.

5. On the Sample Lines Tools bar, click this pull down to get the station range option:



You should get this box. Fill it in as shown:

Property	Value		
🖻 General			
Alignment	BL Monclova Road		
🖃 Station Range			
From alignment start	true		
Start Station	92+00.00		Γ
To alignment end	true		These are the right and left distances
End Station	131+93.93'		from CL – use own judgment for
🗉 Left Swath Width			determining
Snap to an alignment	false		
Alignment	BL Monclova Road		
Width	40.000'		
🗏 Right Swath Width			
Snap to an alignment	false		Click OK.
Alignment	BL Monclova Road		
Width	40.000		
🗆 Sampling Increments			
Use Sampling Increments	true	-	

Now select specific locations along you baseline, (such as drive locations, existing storm drain structures, etc.) to include them with the sample line creation. Be sure to include the swath widths (Note: Consult your driveway summary to specify drive locations by stations):


# CREATE EX. EDGES OF PVMT. IN CROSS SECTIONS

In your Cross Section drawing, create an Assembly called "EX-EP"



Be sure the settings are as follows. Keep the Code set style as Standard:

Create Assembly	×
Name:	
EX EP	R
Description:	
	<u> </u>
	-
Assembly style:	
📇 LCE Standard	- 🌄 - 🛃
Code set style:	
📇 LCE Standard	- 🗾 - 🛃
Assembly layer:	
X-P-ASSEMBLY	<u></u>
OK h Cancel	Help
🖬 🖬	

Pick a point to locate your new assembly:



#### Next, make sure your markers are on:



Click the light bulb to turn them on and click OK:

Marker Style						
/iew Direction: Plan	-					
Component disp Componen Marker	 Layer MARKER	Color magenta	Linetype ByLayer	LT Scale 1.0000	Lineweight ByLayer	Plot Style ByBlock
			OK <sub>2</sub> lm	Cancel	Apply	Help

Make sure your Tool Palettes is up to see the assemblies:



Select the following assembly component under the Imperial – Generic Tab:

#### LinkWidthAndSlope



Next, go to your properties box and make sure the side is set to right:

ADVANCED	Â
arameters	^
Version	R2008
Side	Right
Width	10.000
Slope	2.00%
Point Codes	P2
Link Codes	Top,Datum
Omit Link	No

Now, select the assembly maker:



#### You should see this:



Go back to Tool Palettes and select the same component LinkWidthAndSlope, then go to properties and switch the side to Left:

ADVANCED	
Parameters	^
Version	R2008
Side	Left Jhn
Width	10.000
Slope	2.00%
Point Codes	P2
Link Codes	Top,Datum
Omit Link	No

Now, select the assembly marker again and you should see this:



#### Go back to your Tool Palette and select LinkVertical:



Go to properties and change the Vertical Deflection to -1:

ADVANCED	
arameters	/
Version	R2008
Vertical Deflection	-1.000'
Point Codes	P2
Link Codes	Top,Datum
Omit Link	No

Now select one end marker and hit enter until you get the Command Prompt to insert the LinkVertical component. Repeat for the other side:



Now go to your Prospector Tab and right click your assembly called "EX-EP" and click properties:



Make the Construction tab active, right click on the Group Names and rename them to something meaningful:

🗆 🏨 EX EP	Input values:	1	Parameter Refe	vanca
Group - (23)     LinkW     Delete     LinkW     Rename     LinkW     Move up     LinkW     LinkWertical (Right) - (209)	Value Name	Default Input	Use	Get Value From
	Output values: Value Name		Output Value	

### Like LEFT and RIGHT group:

iem: E 🏨 EX EP	Input values:	1	Parameter Ref	
	Value Name	Default Input	Use	Get Value From
< <u>₽</u>	) Output values: Value Name		Output Value	
<[] »[				ubassembly help:

Click on the Right LinkWidthAndSlope, and under the Default Input Value, change the Omit Link to Yes. Repeat for the LEFT side:

em: EX EP	Input values:	1	Parameter R	lafaranza
	Value Name	Default Input	Use	Get Value From
LinkWidthAndSlope (Right) - (199 LinkVertical (Right) - (212)	Omit Link	No		<none></none>
	Side	Right		<none></none>
LinkWidthAndSlope (Left) - (203)	Use Supereleva	None		<none></none>
LinkVertical (Left) - (209)	Slope	2.00%		<none></none>
				<none></none>
Ves	OK	Cancel	vutput Valu	e
	OK	<b></b> ,	utput Valu	e
	OK Begin Offset End Elevation	<b></b> ,	utput Valu 000 0.000 0.000	e
	OK	<b></b> ,	utput Valu	e
	OK Begin Offset End Elevation	<b></b> ,	utput Valu 000 0.000 0.000	e
	OK Begin Offset End Elevation	<b></b> ,	utput Valu 000 0.000 0.000	e

#### Now click OK:

m: 3 🔒 EX EP	Input values:	1	Parameter Re	eference
🖻 [ 🖣 ] RIGHT	Value Name	Default Input	Use	Get Value Fron
LinkWidthAndSlope (Right) - (19)	Omit Link	Yes		<none></none>
	Side	Left		<none></none>
LinkWidthAndSlope (Left) - (203)	Use Supereleva	None		<none></none>
LinkVertical (Left) - (209)	Slope	2.00%		<none></none>
	Width	10.000'		<none></none>
	Output values:			
	Value Name		Output Value	
	Begin Elevation		0,000	
	Begin Offset		0.000	
	End Elevation		0.000	
	End Offset		0,000	
				Subassembly help:

Go back and turn off your markers.

Now you are going to create Feature Lines from the 3D EP lines you inserted earlier. First, do this. Go to Create Design>Feature Line>Create Feature Lines from Pipe networks:



Start selecting either the right or left 3D EP lines:



When one side is selected, hit Enter. Make the top settings as follows. Do not leave out <[Next Counter(CP)]> in the name:

ite:	
🚮 Monclova Site	• 🔿 •
Vame	
EX EP LT <[Next Counter(CP)]>	R
7 Style	
	<b>-</b>

For the Layer setting, do this. Pick the Layer button next to the first setting:

Layer	el	ection			
• 0		: Ionclova Rd 08\Cross Si	ections.dwg 💌		
C Use current layer	- 🙄   E	Color	Linetype	Lineweight	Plot Style
O Use selected entity layer	41 41	white white blue magenta VEY1 white	Continuous Continuous 3D Linetype 3D Linetype	Default Default Default Default Default	Color_7 Color_7 Color_5 Color_6
	3D_BLDG1 3D_CL 3D_CL_DIT 3D_CL_DIT	blue yellow 1 cyan 1 cyan	3D Linetype 3D Linetype Continuous 3D Linetype 3D Linetype	Default Default Default Default Default Default	Color_1 Color_5 Color_2 Color_4 Color_4
lect the Base Layer button next:	3D_CLP1 3D_CURB1 3D_DITCH1 3D_EP_LT 3D_EP_RT	cyan yellow cyan green	3D Linetype 3D Linetype 3D Linetype 3D Linetype 3D Linetype 3D Linetype	Default Default Default Default	Color_4 Color_2 Color_4 Color_3 Color_3
Object Layer	3D_PAVT1 3D_RIDGE1 3D_STRUC 3D_WALKS	1 <mark>-</mark> yellow 1 <b>-</b> 12	3D Linetype 3D Linetype 3D Linetype 3D Linetype	Default Default Default Default	Color_3 Color_4 Color_2 Color_12
Base layer name:	3D_WALLS	20 20	3D Linetype	Default	Color_20
Modifier: Modifier value:					

Make the selection (shown right) and click OK, then click OK again.

Help

Uncheck the Erase existing entities box and click OK:



Cancel

None Preview:

OK

Repeat these steps on page 32-33 for the other side of the Edge of Pavement that you haven't created yet.

You are now going to create a new corridor for your new assembly. Click the Corridor pull down and click Create Corridor:



Hit Enter to select from a list. Select the project baseline. Click OK.

Name	Description	
DBL Monclova Road	<description></description>	

Enter and select profile by clicking OK:

🔄 Select a Pro	file	×
Select an alignm	ent:	
BL Monclo	va Road	
Select a profile:		
SRF - Surfa	ace (10)	•
ОК	Cancel	Help

Enter and select the EX-EP assembly by clicking OK:

Select an Asse	mbly	×
EX-EP		•
ОК	Cancel	Help

Give the corridor an appropriate name (description optional) and click Set All Targets:

orridor name	e:			10-00	Corridor la	/er:			
P Corridor				K	SRF-COR	R			ź
escription:					Corridor st	yle:			
					K LCE S	itandard			-
	Add Ba	aseline		[			Set al	l Targets	շհղ
Vame		Alignment	Profile	Assembly	Start St	End Sta	Freque	Target	Overrides
E 63 7	🖌 BL	BL Moncl	SRF - Su		92+00.00'	131+93			
-	🗹 RG			EX-EP	92+0*	131+	25.000'		

Click on the Right Assembly Group-Pipe network Name field to target the Alignment:

Corridor name:			Corridor lay	/er:			
EP Corridor		K	SRF-COR	ર			
Description:			Corridor sty	/le:			
			LCE S	tandard		•	<b>&gt;</b>
Add Baseline					Set al	Targets j	·ا
Name	Alignment	Profile	Assembly	Start S	End St	Freque	Target I
😑 🛋 🖉 📝 BL - BL Monclova Ro	BL Monc	SRF - S		92+00.00'	131+93		

Set the Offset Target type to Feature Lines, etc. pull down (above) - click Select by Layer:

Layer Name	Select	Number of Entities.
3D_EP_RT	×	3
3D_EP_LT		] 3
3D_PAVT1		6

eature lines, survey figures and polylines	
Select feature lines, survey figures and p	olylines:
Select from drawing	
Select from drawing Select by layer <sub>Nn1</sub>	

Select the 3D\_EP\_RT layer and click OK.

Selected entities to target:			
Number	Туре	Name	×
1	📌 Feature Line	EX EP RT 3	
2	📌 Feature Line	EX EP RT 1	
3	📌 Feature Line	EX EP RT 2	
J			
Selection choice if multiple targ	gets are found:		
Target to Nearest Offset	-		
	ок 👆са	ncel Help	

Your feature lines have been added as targets for the right side EP's.

Now repeat for the left side, and you should have a result shown below:

Corridor - (<[Next Counter(CP)]>)			
issembly name:		Start Station:	End Station
EX EP		92+00.00	131+93.9
Target	Object Name	Subassembly	Assembly
- Surfaces	<click all="" here="" set="" to=""></click>		
<ul> <li>Width or Offset Targets</li> <li>Target Alignment</li> </ul>	t **Varies**	LinkWidthAndSlope (Righ	RIGHT
Target Alignment	**Varies**	LinkWidthAndSlope (Left	LEFT
Slope or Elevation Targets			
Target Profile	<none></none>	LinkWidthAndSlope (Righ	RIGHT
- Target Profile	<none></none>	LinkVertical (Right) - (212)	RIGHT
Target Profile	<none></none>	LinkWidthAndSlope (Left	LEFT
Target Profile	<none></none>	LinkVertical (Left) - (209)	LEFT

Now, click on the Target Profile Pipe network Name for the right side:

. ⊟ Slope or Elevation Targets			
Target Profile	<none></none>	LinkWidthAndSlope (Righ	RIGHT
Target Profile	<none></none>	LinkVertical (Right) - (212)	RIGHT

Again, following the same procedures as above, select the pull down to change to the Feature Line option, Select by Layer, click OK, then click OK again. Repeat the same steps for the left side. Do not target the Right and Left LinkVertical Subassemblies:

Target	Object Name	Subassembly	Assembly Group	Click OKand OK
Surfaces	<click all="" here="" set="" to=""></click>			again and your
👾 Width or Offset Targets				• •
- Target Alignment	,Ĵ **Varies**	LinkWidthAndSlope (Righ	RIGHT	Corridor is
Target Alignment	,J **Varies**	LinkWidthAndSlope (Left	LEFT	created.
Slope or Elevation Targets				
Target Profile	↓ **Varies**	LinkWidthAndSlope (Righ	RIGHT	🖃 🕥 Corridors
Target Profile	<none></none>	LinkVertical (Right) - (212)	RIGHT	🛄 🕅 EP Corridor
Target Profile	,,† **Varies**	LinkWidthAndSlope (Left	LEFT	
Target Profile	<none></none>	LinkVertical (Left) - (209)	LEFT	

Now add your new corridor to your sample line group:



Right click on the Sample Line group and click Properties.

		1
	Sample more sources Ju	
Layer	Station	

Click Sample more sources...



Highlight your corridor and click Add>>.



Click OK, then click OK again.

# **CREATING SECTION VIEWS**

Go to Profile & Section Views, and click Create Multiple Section Views :



#### Give the Section View a name and click Next:

eral	Select alignment:		Sample line group name:	
set Range	🚍 BL Monclova Road	•	[ <sup>-</sup> ] SLG-2	
	Station range		0.000	
ation Range	Automatic	Start: 92+00.00'	End: 131+93.93'	
tion Display Options		1	J	
a Bands	C User specified:	92+00.00'	-by 131+93.93'	10
ion View Tables				
	Section view name: Monclova Sections	<b>w</b>		
		<u>A</u>		
	Description:			
	Section view layer:			
	X-Section View	E E		
	Section view style:		Group plot style:	
	LCE Standard	- 💽 - 🖪	CE Standard	- 🐶 - 🛽

You can leave the Offset Range as is or change it. Click Next (Note-If you have sections that are cutting through pipe network crossings at a skewed angle, use the User Specified Offset range setting and make sure the left side is -40 and the right side is 40:

ffset Range	Offset range • Automatic	Left: -40.00'	Right:	_
evation Range	C User specified	-40.00'	40.00'	_
action Display Options ata Bands action View Tables	4			

Leave the Elevation range settings as is:

eneral	Elevation range	Minimum:	Maximum:	
ffset Range	<ul> <li>Automatic</li> </ul>	×*Varies**	×*Varies**	
evation Range	C User specified	Height: 15.00'		
ction Display Options	Section views height	option:		
ata Bands	C From lowest el	evations of all sections		
ction View Tables	📀 From mean ele	vations of all sections	Select section:	
COULT VIEW TODIES	C Follow a section	m	🕞 SRF	-

Section Display Options. Leave as is unless you want to exclude pipe networks from appearing in the sections. Click Next:

ffset Range	Select sections to	draw:				
evation Range	Name	Draw	Clip Grid	Change	Style	Overrid
	SRF	<b>V</b>	0	LCE Stan	LCE Standard	<not< td=""></not<>
ction Display Options	- 💦 EP Corri	Welling and the second			LCE Standard	Not
ata Bands	- Monclov					
	Pipe Cro	issin 🔽				
ction View Tables						

Again, leave this as is and click Create Section Views:

eneral	Select band set:			
ffset Range	ा LCE Standard			
levation Range	The section vi band annotatio		nds. Please select the sourc	ce surface(s) for the data
ection Display Options	List of bands			
ata Bands	Location:		10 20 10 12	U
ection View Tables	Bottom of section	view 💌	Ted 2ed 3ed 4ed	2
	Set band properties	Σ		
	Band Type	Style	Surface1	Surface2
		ă.		

#### Here is the result:



You'll notice that the pipe entering the structure does not look right. We can fix this.

In your plan that shows your sample lines, you'll see that the sample line is cutting straight through the structure and because the pipe is at an angle to the sample line, the pipe is actually shown correctly in the section. We need to change how the sample line is cutting through the structure and pipe:





Hit Esc. You'll notice the section has extended out past the swath width of the sections. This may not happen all the time, depending on where the end of the sample line ends in relationship to the other sample lines.



This is easily fixed. Just click the section view and right click and click Section View Properties:

(679.70)	Image: Section of the section of t	660
	_ ✔ Erase +∲+ Move	
$\overline{\mathbf{O}}$	Copy Selection	
Z73V	Scale Rotate	
(672.58)	Dra <u>w</u> Order	
( / 10	Section View Properties	
	Edit Section View Style 🍟	

Click the Offset Tab and change the Offset range by User specified settings, so that the left and right side are at an equal distance, which should be 40. Click OK:

ormation Offsets Elevations Sections Bands Volume Tables Profile G		ofile Grade Lines
Sample line:		Sample line group:
<sl-661></sl-661>		<5LG-3>
Alignment:		Station:
<bl monclova="" road=""></bl>		92+59.75'
Offset range:		
5	Left:	Right:
C Automatic	-40.000'	50.143'
User specified	-40.000'	40

Now the section view looks correct:



Remember, when you initially run the Create Multiple Section Views wizard, you can set the User Specified Offset range Settings to -40 Left and 40 Right and this will control any pipe networks or pipe crossing that goes beyond the sample line and section view limits.

# ADDING ADDITIONAL PIPE NETWORKS IN SECTION VIEWS

To add additional pipe networks to your section views, do this. After the pipe network has been created in your Topo drawing, be sure to add it as a data shortcut. Right click on the data shortcuts in Prospector and click Create Data Shortcuts:



If you want, you can check the Hide already published pipe networks to show just the pipe networks that you want published.



Check the pipe network(s) that you want published and click OK:

Object	Status	Description
→ Contraces		
Pipe Networks	1	
Add Pipe Test		

You see that this pipe network has been added as a data shortcut:



Click Save in your Topo drawing. Now open or switch to your Cross Section drawing. You will see the following balloon notification if you already had you Cross Section drawing opened:



If you do see this, click the Synchronize. If you re-opened your Cross Section drawing, the new data shortcut will have synchronized automatically. You will still need to make a new reference to the new data shortcut. Do this...right click the new data shortcut and click Create Reference:



Depending on the type of pipe network you've referenced, be sure your settings are correct, then click OK:

Create Pipe Network Referer	nce 🔀
Source pipe network:	
C:\Project\Monclova Rd 08\M	laster.dwg:A 💌
Network name:	100 - Q
Add Pipe Test	R
Network description:	
Network parts list:	
😭 LCE Ex Stm Parts List	• 🍢 •
Layers	
Override reference surface:	
🔗 SRF	-
Override reference alignment:	
🙄 BL Monclova Road	•
Include source labels	
Structure label style:	
🚰 Ex. Stm. Swr. Struc. 📃	
Pipe label style:	
🐔 Ex. Stm. Swr. Pipe 💌	
OK Jhn Cancel	Help
Include source labels Structure label style: Structure label style: Fipe label style: Structure label style: Fipe label style:	

Now drill down in Prospector to your Sample Line group, right click and click Properties:



Be sure the Sections tab is active, click the Sample more sources button:



Click on the available source(s) you wish to add and click the Add>> button:



Then click OK, and click OK again.



This is what was added to the Topo drawing...

And this is what has been updated in the Cross Section drawing:



### LABELING PIPES AND STRUCTURES IN SECTION VIEWS

#### Select the pipe or structure pipe network in the section and right click:



#### Select Add Label:



To move the label, just click it to highlight it and select the grip, move the label and pick a new location for the label:



3)



Repeat procedure for structures.

### **Sheet Management for AutoCAD Civil 3D®**

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# CREATING P&P SHEET LAYOUTS USING PLAN PRODUCTION

#### PLAN PRODUCTION – USING THE PLAN PRODUCTION TEMPLATE Typical Plan and Profile

When you are ready to create your sheet layouts, follow these steps.

Click on the Output Tab, then click Create View Frames:



Make sure you have your proper Alignment chosen and specify the type of Station Range:

Alignment	Choose the alignment and stat	ion range to use for crea	ating sheets.		
View Frame Group	Alignment				
Match Lines Profile Views	Station Range	Start:	End:		
	Automatic	0+00.00'	12+83.31'		
	O User specified:	0+00.00'	12+83.31		
				1	
	< <u>B</u> ack	Next > Crea	ate View Frames	Cancel	Help
Click Next.					

Under the Sheet Settings, click on the Browse button next to the Template for Plan and Profile sheet field (note-the template field may be already filled in with a default location-disregard this location):



In this box, again select the Browse button to navigate to the LCE standard template file:

	<u>? ×</u>
Cancel	Help
	OK Cancel

By default, the Open box should navigate to the Support folder out on the network. Click the Up Folder icon to go to the previous folder:

Look jn:	C Support	- 48
	Name 🔺	Size
	Traffic CTBs acad10.dwt	1,204 KB
uments	acad.dwt	915 KB
1	CoMap.dwt	349 KB

Select the Plan Production Sheets folder:



Select the PLAN PRODUCTION.dwt file and click Open:

🔄 Select Layout a	as Sheet Template		×
Look jn:	Plan Production Sheets	⇐ ➡ @ X ➡ Views ▼ Tools	•
My Documents My Documents Project ENGINEER Minimum Plan Produc Symbols	Name CROSS SECTION.dwt CLCE BDR.dwt CTCE DP-20.dwt CTCE NBDR.dwt CCE PP6-20-08.dwt CTCE PP8-20-08.dwt CTCE TNBDR.dwt CTCE TNBDR.dwt CTCE TITLE.dwt CTCETITLE.dwt CTCETITLE	Size       Preview         495 KB       294 KB         294 KB       327 KB         880 KB       353 KB         391 KB       876 KB         380 KB       366 KB	
	File name: PLAN PRODUCTION.dwt		
	Files of type: AutoCAD Drawing Template F	ile (*.dwt)	
Now your selection becomes clear. Select the appropriate layout you wish to use. In this case, we will use LCE PP6-20:



In the View Frame Placement settings, the default should be standard for our use. You may only need to change this setting in certain situations:

View Frame Placement	
<ul> <li>Along alignment</li> </ul>	
C Rotate to north	510
Set the first view frame before the start of the alignment by:	
50.000'	

**Click Next:** 



# Give your View Frame Group an appropriate name and click Next:

Alignment	Specify object creation criteria for the view frame group and view frames.
<u>Sheets</u>	View Frame Group
View Frame Group	Test Plan and Profile
Match Lines	Description:
Profile Views	⊂ View Frame
	Layer:
	Viewport 🧾
	Name:
	<[View Frame Start Raw Station(Uft FS P2 RN Sn OF AP B2 TP EN[W0]
	Style:
	🔚 LCE Standard
	Label style:
	🖓 LCE Standard
	Label location:
	Top left
J	
	< Back Next > Create View Frames Cancel Help

These settings are pre-set in the command settings or this wizard. You may change the Repositioning setting if for any reason you would need to reposition any of the match lines. Click Next:

Alignment	You can choose to insert match lines automatically and define how they are placed.
<u>Sheets</u>	Insert match lines     Positioning
View Frame Group	Snap station value down to the nearest: Allow additional distance for repositioning (increases view overlap):
Match Lines	50 100.000'
Profile Views	Match Line Layer: Name: Match Line
	Match Line     Imatch Line Statio       Style:       Imatch Line Standard
	Labels Left label style: Right label style:
	Left label location:     Right label location:       Middle     Middle
	< <u>B</u> ack <u>N</u> ext > Create View Frames Cancel <u>H</u> elp

In this box, you can pre-set the type of display you wish to see when your profile views are created. For now leave these settings as is and click Create View Frames:

Alignment Sheets	The following profile view information is required to determine the distances available in viewports.
View Frame Group Match Lines Profile Views	Profile View Style Select profile view style:
	Band Set Select band set style: The LCE Design View
	< <u>Back</u> <u>N</u> ext > Create View Frames Cancel <u>H</u> elp

You see your View Frames:



It's time to create your sheet layouts. Go back to the Ribbon and click Create Sheets:



As you can see, you have some control over what you can create here. In the Layout Creation, you will have to make the determination of where the layouts are going to go based on the type and length of the project you are doing. For this tutorial, I am putting them into a separate drawing (this coincides with the new work flow chart). Click Next:

View Frame Group and Layouts Sheet Set	Choose the View Frame Group and output s View Frame Group	ettings for layout creation.
<u>Director</u>	🔯 Test Plan and Profile	
Profile Views	Sheet type: Plan and Profile	
	View frame range:	
Data References	All C Selection:	Choose View Frames
	Layout Creation	
	<ul> <li>Number of layouts per new drawing:         <ol> <li>All layouts in one new drawing</li> <li>All layouts in the current drawing</li> </ol> </li> </ul>	

Now an explanation of the new north arrow block feature. Our north arrow is now a block that resides in each of the plan production layouts. By default, the wizard is automatically set to use our north arrow block called "narrow". When the sheet layouts are created, Civil 3D automatically orientates the north arrow to the orientation of the project. I specifically picked this test project to show exactly how this works, since this project is orientated from south to north:

Choose the north arrow block to align in layouts:	
	-

You will see this at the end of this tutorial.

**Click Next:** 



Here you can create a new Sheet Set or add what you are creating to an existing Sheet Set. Take note of the Sheet file name under Sheets. It is already set to be called Plan Production, again based on our new work flow chart. Do not change this. Click Next:

_	w sheet set:	
Τe	est Plan and Profile	
O Add	d to existing sheet set:	
Sheet :	set file (.DST) storage location:	
C:\Pro	ject\Test EP\	
Sheets		
Sheet f	iiles storage location:	
Sheet f C:\Pro	ject\Test EP\	
Sheet f C:\Pro Sheet f	iject\Test EP\ iile name:	
Sheet f C:\Pro Sheet f	ject\Test EP\	
Sheet f C:\Pro Sheet f	iject\Test EP\ iile name:	
Sheet f C:\Pro Sheet f	iject\Test EP\ iile name:	

In this next box, it shows the Profile view settings styles that will be used, the profile view options. Notice that the profile I had created previous to the starting of this tutorial is called Overall Profile. I think this may be a good practice for all users in the future. Click Next:

1	ofile view style to be used:	
1	±LCE Design View	
	nd set to be used:	
	ELCE Design View	
Othe	er profile view options Get other settings from an existing profile view:	
	Vverall Profile	
C	Choose settings:	
	Profile View Wizard	
Aligr	n views	
•	Align profile and plan view at start	
С	Align profile and plan view at center	
С	Align profile and plan view at end	

In this next box, since we are "transporting" the sheet layouts and the plan and the profile by x-ref over to a new drawing called "Plan Production", you can include any or all data shortcuts automatically just by choosing them here. Make your choices and click Create Sheets (notice you can copy your pipe network labels as well to your destination drawing):

Select the o	data you want r	eferenced in your	sheets.		
🗜 🖓 🖸	Surfaces				
😐 🗁 🗌	Alignments				
🖃 👘 🔁	Sites				
	Pipe Network				
- J	🖞 📃 Network	5			
💽 Pic	k from drawing				
🔽 Сору р	ipe network lab	els to destination	drawings		
	< <u>B</u> ack	<u>N</u> ext >	Create Sheets	Cancel	Help

#### Click OK to this next prompt:



Select a location for your new profile views:



When the process is completed, if you have created the layouts in the current drawing, then the new profile views and the sheet layouts should of appeared in your current drawing. Since we told the wizard to create a separate drawing for the profile views and layouts, we need to open the drawing called Plan Production in the project folder. Let's do that, shall we?

Go to the quick access toolbar, and click the Open folder icon. Select the Plan Production drawing file and click Open:

🔄 Select File		×
Look in:	👝 Test EP 💽 🤄 🔀 🗹 Views 🔻 Tools	•
My Documents	Name     Size       New Test.dwg     2,272 KB       Plan Production.dwg     626 KB	
📁 Project		1
2		
Plan Produc		
Symbols	▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲	
	File <u>name:</u> Plan Production.dwg	-
	Files of type: Drawing (*.dwg)	

Once opened, if you zoom in on the first profile view, you will notice that the profile is riding low in the view.



This is a small bug in the software. Back in the wizard, there was a step where you could base the profile views elevation range on the overall profile already created or you could manually enter in the elevation range that you wanted:



Had we selected the Profile View Wizard, this is what we would of seen:

Profile view height		
-	Minimum:	Maximum:
C Automatic	**Varies**	**Varies**
		Profile view datum by:
Ouser specified	31.250'	Minimum elevation

As you can plainly see, there is no way to change the elevation range here, because it's grayed out. So we'll have to adjust each profile view as we go along. Here's the quick way. Select and right click on the profile view. Click Profile View Properties:



Click on the Elevations Tab, and put in a reasonable elevation range:

Information Stations Elevations	Profiles Bands Hatch		
Elevation range			
O Automatic height	Minimum: 665.936'	Maximum:   667.885'	
User specified height	650.000'	680.000'	Height:

Now we are going to deviate a little from the current process to explain the two different grid styles. (Please refer to this section of this tutorial as a reference for any other plan production tutorials for switching between profile view styles and profile view band styles.) Ok, here we go.

By default, the profile view and the profile view band are set to what's known as the LCE Design View styles. We are going to change it to the LCE Plot View styles. Since you have the Profile View Properties still up, click on the Information Tab and click the Object style pull down and change the style to the Plot View style:

Information Stations Elevations Profiles Bands Hatch
Name:
PV - (10)
Description:
<u> </u>
Object style
LCE Plot View
LCE Plot View
Standard T
int.

Next, click the Bands Tab, and double click the Style under the Bands List. Click the pull down And select the Plot View Style and click OK:

Profile Data   List of bands  Location:  Bottom of profile view	
Location:	
Band Type Style Descrip	
Profile Data LCE Design View	×
OK Cancel	Help

Click OK:

ОК	Cancel	Apply	Help

Notice the change in the view:



To reverse the display, just reverse the process. Select Profile View, right click, select Profile View Properties, Information Tab, change object style back to Design View, click Bands Tab, change the style under the Bands List back to Design View, and click OK and voila you're back:





OK, back to the Plan Production drawing. Here is one of the layout sheets:

Now, just a bit of explanation to the Plan Production Layout Sheets, the grid and the north arrow block. As you may already know, the grid no longer resides with in the actual plan and profile block. We are now using the Civil 3D grid that is created with the Profile View. Here is the spacing details for the grid itself:



As for the north arrow, you no longer have to manually deal with this block. The Plan Production wizard does it for you:



This ends this tutorial.

# CREATING SPLIT PROFILE SHEETS USING PLAN PRODUCTION

### PLAN PRODUCTION SPLIT PROFILE- USING THE PLAN PRODUCTION TEMPLATE Typical Split Left and Right Plan and Profile

Before using this process, be sure that your pipe networks are separated by the left and right sides, because this process can take that into account and make adding your pipe networks to your split profiles that much easier.

When you are ready to create your overall profile and split profile layouts, follow these steps.

Be sure you are on the Home Tab, then click Profile View, then Create Profile View:



Next, give the Profile View an appropriate name, and make sure the stacked profile view is selected and click Next:

Select alignment:
Profile view name: Test - Split Profile
Description:
Profile view style: Markov Style:  Profile view layer:
PRF_View       Show offset profiles by vertically stacking profile views
< <u>B</u> ack <u>N</u> ext > Create Profile View Cancel

Specify your Station Range, give the length of each view as 550' and click Next:

Station range				
C Automatic	Start: 92+00.00'	End:	93.93'	
O User specified range	92+00.00'	-131+	93.93'	
Length of each view:	550.00'			
	3+99 4+99	5+09 6+09		
< <u>B</u> ack	Next >	Create Profile Views	Cancel	Help

For Multiple Profile Views, C3D only allows specific height, not Elevation Range. Use default:

Profile view height	Minimum: **Varies**	Maximum: **Varies**
• User specified	20.00'	Profile view datum by: Mean elevation

SPECIAL NOTE – The next section may be a bit confusing, but the best explanation is this. This section pertains to profiles that have larger elevation ranges where you would need to "split" the profile vertically across the profile view, just as it shows when you enable this feature:

Split profile view	
First split view style: MarcE Design View	Split station:
	,
Intermediate split view style:	Datum option:
Last split view style:	

Do not use this feature unless your profile requires it. In most if not all cases, you will not need this feature. By default, it is not enabled. Leave the box unchecked.

Split profile view       First split view style:       LCE Design View	Split station:
Intermediate split view style:	Datum option: Exact elevation
Last split view style:	
	0 7-60 8-90
< <u>B</u> ack Next > Creat	e Profile View Cancel Help

On the next screen, this is where the stacked profile settings are determined. The command settings for this feature are already set up for you. Click Next:

2		÷	
Gap between views:			
20.00'			
Top view style:			
LCE Design View		•	
Middle view style:			
🕍 LCE Design View	N	<b>_</b>	<b>V V</b>
Pattan view styles			
Bottom view style:			
🕍 LCE Design View	N		
	e and pipe networ ked profiles in the		ns for each of the pages.

Here are the Profile Display options. In the Specify profile display options area, click the check box under Draw:

Top View Bottom Vi	ew				
Specify pr	ofile display o	options:			
Specify pr	ofile display o	Clip Grid	Split At	Descrip	

Now click the Top View and repeat the same step:

Select stack	ed view to sp	becify option:	s for:			
Top View						
Bottom Viev	v					
Specify profi	ile display op	tions:				
	_				_	
Name	Draw	Clip Grid	Split At	Descrip	Туре	Data S
SRF - Su		۲			<b>M</b>	SRF
		<u> </u>	~			

#### **Click Next:**



This next screen allows you to add your pipe networks to your split profiles.

Select stacked view to specify options for:	
Top View	
Bottom View	

#### **Top View:**

Select pipe networks to draw in profile view:		
Name	Select	
🕂 🎢 Pipe Crossing Test		
Pipe Test 2		
🖶 🍈 Monclova Ex. Stm. Pipe Network		
庄 🎢 Storm #1 (Right)	<b>Z</b>	
🗄 📆 Storm #2 (Left)		25

Be sure to assign the proper pipe network to the correct view. Any left side pipe network will be assigned to the Top View and any right side pipe network the Bottom View.

**Bottom View:** 

Select pipe networks to draw in profile view:		
Name	Select	
💬 🎢 Pipe Crossing Test		
🕀 🎢 Pipe Test 2		
🕀 🎢 Monclova Ex. Stm. Pipe Network		
🕀 🎢 Storm #1 (Right)		
🗄 🎢 Storm #2 (Left)	<b>V</b>	

# The next screen should not be fooled with, just click Next:

t of bands			10 20	18 15 17
Bottom of profile '	view	•		
et band propertie	12 22		-	1.52
Band Type	Style	Profile1	Profile2	Alignment
Profile Data	LCE Design	Vie <del>na</del> SRF - Surface	e SRF - Surface	e BL Monciova R

Again, do not worry about the next screen either and click Next. At the last screen, if the screen doesn't look like this, change the settings to the following, and click Create Profile Views:

Draw order By rows By columns Maximum in a row: 1 Start corner: Lower left	Gap between adjacent profile views Row: 20.00' Column: 50.00'
< <u>B</u> ack Mext >	Create Profile Views Cancel

Here are the split profile views. Your Profile Views may look different in that the profiles will be lower in the profile view itself. Not to worry, we will fix this issue a little later:



Now, click on the Output Tab, then click Create View Frames:



Maximure you have your proper Alignment chosen and specify the type of Station Range:

Alignment	Choose the alignment and station range to use for creating sheets.	
<u>Sheets</u> View Frame Group	_ Alignment	
Match Lines	BL Survey	
Profile Views	Station Range         Start:         End:                ি Automatic               0+00.00'               12+83.31'	
	O User specified:         0+00.00'         "%]         12+83.31'	10 12 12 12
	<u></u>	
	< Back Next > Create View Frames Cance	I <u>H</u> elp
Click Next.		

Under the Sheet Settings, the Template for Plan and Profile sheet field will probably already be set to the proper location. If not, see the Plan Production-Typical Plan and Profile tutorial to browse to select the Plan Production template. Select the Browse button next to the template field :



Select the LCE PPSPLIT 20 layout and click OK:

Select Layout as Sheet Template	<u>? ×</u>
Drawing template file <u>n</u> ame:	
G:\DATA\ENGINEER\CadStds\Plan Production Sheets\PLAN PRODUCTION.dwt	
Select a layout to create new sheets	
LCE PP6-20 LCE PP8-20	
LCE PPSPLIT 20	
OK Jhn Cancel	Help

Be sure your offset distance is the way you want it and Click Next:

	View Frame Placement
	Along alignment
	C Rotate to north
	Set the first view frame before the start of the alignment by:
	50.000'
	< Back Next > Create View Frames
Ì	

Give the View Frame Group an app	ropriate name and click Next:
----------------------------------	-------------------------------

Test - Split	t				
Description	i:				
I					
-View Frame	,				
Layer:					
Viewport					<del>g</del>
Name:					
VF - (<[Ne	xt Counter(CP)]>	)			R
Style:					
E LCE S	tandard		-	🏹 🗸	
Label style:	:				
🔏 LCE S	itandard		•	🏹 🗸	
Label locat	ion:				
Top left					•
	< <u>B</u> ack	Next >	Create View Fran	_	Cance

# Just click Next:

You can choose to insert match lines automatically a Positioning	and denne now they are placed.
Snap station value down to the nearest:	Allow additional distance for repositioning (increases view overlap): 50.000'
Match Line	
Layer:	Name:
Match Line 🥩	MATCH LINE STA. <[Match Line Statio
Style:	
_ Labels	
Left label style:	Right label style:
CE Standard 🔽 🍢 🔍	👫 LCE Standard 💽 📝 🗖
Left label location:	Right label location:
Middle	Middle
< <u>B</u> ack <u>N</u> ext >	Create View Frames Cancel <u>H</u> elp

In this box, you can pre-set the type of display you wish to see when your profile views are created. For now leave these settings as they are and click Create View Frames:

Alignment Sheets	The following profile view information is required to determine the distances available in viewports.
View Frame Group Match Lines Profile Views	Profile View Style Select profile view style:
	Band Set Select band set style: The LCE Design View
	< <u>Back</u> Next > Create View Frames Cancel Help

You should see your View Frames:



It's time to create your split profile sheet layouts. Go back to the Ribbon and click Create Sheets:



As you can see, you have some control over what you can create here. In the Layout Creation, you will have to make the determination of where the layouts are going to go based on the type and length of the project you are doing. For this tutorial, I am putting them into a separate drawing (this coincides with the new work flow chart). Click Next:

View Frame Group     and Layouts     Sheet Set	Choose the View Frame Group and output se View Frame Group	ttings for layout creation.
Profile Views	Sheet type: Plan and Profile	
Data References	View frame range:	Choose View Frames
	Layout Creation     Number of layouts per new drawing:     1     All layouts in one new drawing     All layouts in the current drawing	

## **Click Next:**



Here you can create a new Sheet Set or add what you are creating to an existing Sheet Set. Take note of the Sheet file name under Sheets. It is already set to be called Plan Production, again based on our work flow chart. Do not change this. Click Next:

			_
Test - Split			
O Add to existing	g sheet set:		
Sheet set file (.DS	T) storage location:		
C:\Project\Test E	EPN		
Sheets			
Sheets Sheet files storage	location:		
Sheets Sheet files storage C:\Project\Test E			
Sheet files storage		 	
Sheet files storage C:\Project\Test E			
Sheet files storage C:\Project\Test E Sheet file name:			 
Sheet files storage C:\Project\Test E Sheet file name:			
Sheet files storage C:\Project\Test E Sheet file name:			

In this next box, it shows the Profile view settings styles that will be used, the profile view options. Notice that the profile I had created previous to the starting of this tutorial is called Test - Split Profile. I think this may be a good practice for all users in the future to call these elements that mean something. Click Next:

Pre	ofile view style to be used:			
	LCE Design View			
1	ind set to be used:			
Ц	ELCE Design View			
	er profile view options Get other settings from an existing profile view:			
	🖬 Test - Split Profile			
C	Choose settings:		-	
	Profile View Wizard			
Alig	n views			
•	Align profile and plan view at start	=	2	
С	Align profile and plan view at center	_		
С	Align profile and plan view at end	4	10 10 10 10 10 10 10 10 10 10 10 10 10 1	

In this next box, since we are "transporting" the sheet layouts and the plan and the profile by x-ref over to a new drawing called "Plan Production", you can include any or all data shortcuts automatically just by choosing them here. Make your choices and click Create Sheets (notice you can copy your pipe network labels as well to your destination drawing):

Select the data y	you want re	eferenced in you	r sheets.		
🖽 🖉 🛄 Sur	rfaces				
🗄 🗘 🗔 Aliq	gnments				
庄 🚮 🔲 Site	es				
🗄 📆 🗖 Pip	e Network	s			
- M -	Networks	;			
I					
R Pick from	n drawing		_		
🔽 Copy pipe ne	etwork lab	els to destination	drawings		
<	<u>B</u> ack	<u>N</u> ext >	Create Sheets	Cancel	Help

## Click OK to this next prompt:

AutoCAD	Civil 3D 2010	×
⚠	To complete this process your current drawing will be saved.	
	Cancel	

Select a location for your new profile views:



Here is the result. Notice the Profile Views it created are not split, but we're not going worry about that, as we are not going to use these Profile Views:



When the process is completed, if you have created the layouts in the current drawing, then the new profile views and the sheet layouts should appear in your current drawing. Since we told the wizard to create a separate drawing for the profile views and layouts, we need to open the drawing called Plan Production in the project folder. Let's do that, shall we? Go to the quick access toolbar, and click the Open folder icon. Select the Plan Production drawing

file and click Open:

🔄 Select File		×
Look jn:	Test EP 🕞 🗇 🖾 🖓 🖄 Views 🔹 Tools 🤹	•
My Documents	Name     Size       New Test.dwg     2,272 KB       Plan Production.dwg     626 KB	
Project		1
ENGINEER		
Plan Produc		
Symbols		
	File name:     Plan Production.dwg	-
	Files of type: Drawing (*.dwg)	

Once opened, if you zoom in on the first profile views, you will notice that the profiles are riding low in the views.



This is a small bug in the software.

So we'll have to adjust each profile view as we go along. Here's the quick way. Select and right click on the profile view. Click Profile View Properties:

690																					_
685				_				-													
680				-				-													_
675						 			-					===						ĥ	
870		 A	-								11										
10			開設	8348	開発		55 TA	8148 14	にある。 第二十二日 日本			8 <b>1</b> 13	88 88 88	話語	2	淵誠	8 <b>3</b> 408		罐式		_
						 					¦								÷		-
3927		 				 															-
260						 			i-		i	j GDG I		j.	i	i					-
275	}	 							_		<u>k</u> epeat Recent			LTIPLE	PROFI	LEVIEW		•	-		2
37		 	<b>R</b>			 					(eceni	. Inpoc						_			-
	12 12	13 14	囊苷	5526				98 148 148	8		solate		ts:					•	罐式	98. 184	
		 r		-			· · · · ·				lipboa	ard						▶			
										1	Basic M	lodify	Tools					۲			
											2isplay							•			
									-		Propert	ties									
										_	Quick S										
											Profile '					չհղ					
											Edit Pro		ew Stγ	/le		_ <b>₩</b> _					
									-		nquiry										
									ľ		Object	Viewe	r								
										:	Select S	Similar									

Click on the Elevations Tab, and put in a reasonable elevation range like the following:

Elevation range			
	Minimum:	Maximum:	
C Automatic height	647.061'	678.171'	
			Height:
Output User specified height	660.000'	680.000'	20.000'

Again, you will have to do this for each profile view.

Now we are going to deviate a little from the current process to explain the two different grid styles. (Please refer to this section of this tutorial as a reference for any other plan production tutorials for switching between the two new profile view styles and the two profile view band styles.) Ok, here we go.

By default, the profile view and the profile view band are set to what's known as the LCE Design View styles. We are going to change it to the LCE Plot View styles. Since you have the Profile View Properties still up, click on the Information Tab and click the Object style pull down and change the style to the Plot View style:

Information Stations Elevations Profiles Bands Hatch
Name:
PV - (10)
Description:
A
Object style
📊 LCE Plot View
LCE Design View
LCE Plot View
nt.

Next, click the Bands Tab, and double click the Style under the Bands List. Click the pull down and select the Plot View Style and click OK:

and type:				Select band style:		
Profile Data			-	📺 LCE Design Vie	ew	
List of bands Location: Bottom of profile v	view 💌					
Band Type	Style	Descrip	Gan	Show Labela	Major T	
Profile Data	LCE Design Vi	ewar	Pick	Band Style		
				CE Plot View	•	- 🖪
				OK Canc		telp

Click OK:



Notice the change in the view:



To reverse the display, just reverse the process. Select Profile View, right click, select Profile View Properties, Information Tab, change object style back to Design View, click Bands Tab, change the style under the Bands List back to Design View, and click OK and voila you're back:



Change the Profile View settings back to Plot View or simply undo.




Obviously, this is not the right profile, so let's use the Align Space method to get to the split profiles we want to see (Note-you will have to use this procedure for each sheet layout.)

First, click and right click on the profile viewport and click Properties (Note-if you have troubles selecting the viewport, just select the border block and send it to the back using the Display Order command, by clicking the block, right click, Display Order, Send to Back):



When the properties come up, change the locked setting to unlocked (No) :

M	isc	•
	On	Yes
	Clipped	No
	Display locked	Yes 🔻
	Annotation scale	Yes
	Standard scale	No No
	Custom scale	0.0500
	UCS per viewport	Yes
	Layer property o	No
	Visual style	2D Wireframe
	Shade plot	As Displayed
	Linked to Sheet	No

Hit the Escape key afterwards.

#### Double click inside the profile viewport:



Now pan to the split profiles that are associated with this view:



You should notice a point that's part of the border block. This will come in handy when you follow the next steps:



### Click the Express Tools Tab:



#### Click Align Space:



Snap by Endpoint to the location indicated:



Hit Enter. Then, holding the shift key on the keyboard, right click and select Node:



### Select the point that was pointed out earlier:



### Hit Enter.

### Here is your Plan Production Split Profile Sheet:



Proceed with re-aligning the rest of the sheet layouts. You can then delete the profile views that were created by the Create Sheets step of the Plan Production.

# CREATING DOUBLE PLAN SHEETS USING PLAN PRODUCTION

To start, go to the Ribbon Output Tab > Create View Frames:



This will be similar to the process for the Plan and Profile sheet generation steps. Choose your settings or leave as is. Click Next:

Alignment	Learn more     Choose the alignment and station range to use for creating sheets.
<u>View Frame Group</u> <u>Match Lines</u>	Alignment Alignment - (5)
Profile Views	Station Range         Start:         End:                • Automatic         -0+25.00'         26+67.34'
	C User specified: -0+25.00'
	Back Next Create View Frames Cancel Help

For this next setting, select Plan only and then click the Template for Plan sheet button:



# Browse to g:\data\engineer\cadstds\plan production sheets and choose LCE PSHT2.dwt and click Open:

Look jn:	📜 Plan Production Sheets		🥵 ⊻iews 🕶 Toolِs 👻
ė	Name 🔺	Size Preview	
	LCE NBDR.dwt	777 KB	
History	LCE PP6-20.dwt	310 KB	
	LCE PP8-20.dwt	330 KB	
N 100	LCE PSHT2.dwt	299 KB	
H. D.		782 KB	
My Documents	UCE XSEC L.dwt	332 KB 331 KB	
	LCETITLE.dwt	365 KB	
Favorites			
Desktop			
12		Þ	
FTP			
1	File name: LCE PSHT2.dwt		▼ <u>Open</u> hn ▼
	- Ino Tanto.		
Buzzsaw	Files of type: dwt file(*.dwt)		Cancel

## Now, just click OK:



If you need to set the view frame before the start of the alignment, check the box and set the preferred distance value. Click Next:

View Frame Placement  Along alignment  Rotate to north  Set the first view frame before the start of the alignment by:  100.000'
Back Next Create View Frames Cancel Help

### Give the View Frame Group a name:

	i Learn more
Alignment	
	Specify object creation criteria for the view frame group and view frames.
Sheets	View Frame Group
	Name:
View Frame Group	GUNN ROAD

### **Click Next:**

Label locatio	on:				
Top left				-	
	<u>B</u> ack	Next In	Create View Frames	Cancel	Help

### **Click Create View Frames:**

Left label lo Middle	cation:		•	Right label location: Middle			
	< <u>B</u> ack	<u>N</u> ext >	Cri	eate View Frames	Cancel	Help	

Here are your View Frames:



Next, go back to the Plan Production panel > Create Sheets:



## Use the following settings, then click Next:

<u>Set</u>	🔟 Gunn Road	
<u>Views</u> eferences	Sheet type: Plan only View frame range: All C Selection:	Choose View Frames
a choice	Layout Creation	
oased on project –	<ul> <li>Number of layouts per new drawing:</li> <li>All layouts in one new drawing</li> <li>All layouts in the current drawing</li> </ul>	
	Layout name:	
	STA. <[View Frame Start Station Value]> TO STA.	<[View Frame End Station Val
	Choose the north arrow block to align in layouts:	
	narrow	
	< Back Next > Cru	eate Sheets Cancel Help



### Click OK:



As you can see, only the top plan is created.



This was the only way to get this process to work; however, here is the quick workaround. Go to the quick View Layout and click on to the second layout:



Select the top viewport, right click, Clipboard and click Copy with Base Point:



Select the upper left hand corner of the viewport by endpoint of this layout:



Hit Escape.

Click back on the first layout.

Hit the combo keys ctrl-v or right click>Clipboard>Paste.

Select the lower left hand corner of the upper viewport using endpoint:



## And there you are, your double plan sheet:



Now, using this technique, you should be able to move and copy the rest of your viewports into their respective layouts until you are done. Delete any layouts you have left over. You will have to rename your layouts to reflect the new stationing per layout.

# USING MAP BOOKS TO CREATE A TITLE SHEET

# Click on the C3D Start a new drawing:



Select CoMap.dwt and click Open:

도 Select template	eX
Look jn:	Support 🕞 🗁 🏹 🖄 Views 🔻 Tools 🔻
My Documents My Documents Project ENGINEER CadStds	Name     Size       Traffic CTBs       acad10.dwt       acad10.dwt       915 KB       acadRW10.dwt       1,055 KB       acadRW10.dwt       349 KB
	✓     ✓       File name:     CoMap.dwt       Files of type:     Drawing Template (*.dwt)

Now create a tile for the Map Legend window of the title sheet. Use the rectangle command:



Select the project area on the map (we'll use Richfield Twp. as an example):



Note-the rectangle box is only thicker for clarity. Be sure this box is on layer viewport.

59

### Type in the command MAPBOOKCREATE.

### Follow these steps – give the Map Book a name:

Create Map Book	the second s	×
<ul> <li>Source</li> <li>Map Display</li> <li>Model Space</li> <li>Sheet Template</li> </ul>	Map Book Name: GUNN ROAD - Title Sheet	

# Click Settings under Sheet Template, then click the button next to the Choose Template sheet field:

Create Map Book		×
Source	🖀 Settings	
Map Display Model Space	Choose a <u>S</u> heet Template:	
Sheet Template		5
<ul> <li>Settings</li> <li>Tiling Scheme</li> </ul>	, Choose a Lavout:	<b>2</b>

# Browse to g:\data\engineer\cadstds\plan production sheets. Click the LCETITLE.dwt file and click Open:

Select template	e	<u>?</u> ×
Look jn:	📜 Plan Production Sheets 📃 👻	두 😥 🍳 🗙 🥵 🛛 Yiews 🔹 Tools 🔹
History History My Documents Cavorites Desktop	Name CE NBDR.dwt	Size 777 KB 310 KB 330 KB 330 KB 782 KB 332 KB 331 KB 368 KB
FTP		<u>&gt;</u>
12	File name: LCETITLE.dwt	▼
Buzzsaw	Files of type: Drawing Template (*.dwt)	Cance

## Your settings should be as follows:

Model Space	Choose a <u>S</u> heet Template:
📰 Sheet Template	G:\DATA\ENGINEER\CadStds\Plan Production Sheets\LCETI
Settings	
📰 Tiling Scheme	Choose a <u>L</u> ayout:
🛛 🔿 By Area	Title Sheet
🕖 🖲 By Number	
Custom	Layout Options
📰 Naming Scheme	
Columns and Rows	Include a <u>Title block</u> (name or file)
Grid Sequential	Icetitle 🗾
Sequential	
🔤 🖸 Data Driven	Include Adjacent sheet links (name or file)
E Key	▼
<ul> <li>Linked Drawing</li> </ul>	,
External Reference	Scale Factor: 1
O Layers	
None	

Click Tiling Scheme>Custom. Be sure the % overlap is set to 0 and then select the Select Tiles button:

Create Map Book	and the second	×
Source Map Display Model Space	E Custom	
<ul> <li>Sheet Template</li> <li>Settings</li> <li>Tiling Scheme</li> </ul>	0 selected Select Tiles >>	
By Area By Number Custom	0 % overlap of each tile	
Naming Scheme Oclumns and Rows	Skip any empty tiles	

Select the tile you created and hit enter:



Click under Naming Scheme>Sequential. Change the Start with and Increment by both to 1 and uncheck the Keep names box:



And voila...here's your map:

Preview Tiles >>

Generate<sub>1</sub>

Cancel

Help



# CREATE CROSS SECTION LAYOUTS (REFER TO CH. 4 UPDATE ALSO)

**Open your Cross Sections drawing.** 

Portrait and Landscape Version

Before you get started with this, be sure that your current layer is set to Viewport.

I have written two lisp routines that you will use to help create what are known as "Tiles". Essentially, tiles are polylines that represent the viewports for your cross sections in model space. The two lisp routines that you will use are tgenp.lsp (portrait) and tgenl.lsp (landscape).

To get these loaded, type in "appload" at the command prompt, hit enter.

Click on Contents under the Startup Suite:

Load/Unload Applic	ations			<u>? ×</u>
Look jn: 🚺 Nev	vLisp	G	🕫 📂 🗊	0 🕵 🕵
CADENCE Constant Constan	ADDPNT.LSP     ALIST.LSP     an.lsp     ao.lsp     AP.LSP     AP.LSP     AP.LSP     AP.LSP     Arcl.lsp	aream.lsp       Image: Arrow2.LSP       Arrow.LSP       arw.lsp       arw.lsp       B2.LSP       Image: B.LSP	BigPurge.LSP         BigPurge.LSP         BL20.LSP         BL40.LSP         BL40.LSP         BLB         BLSP         BB         BLLSP         BB         BB         BLLSP         BB         BB	
	toCAD Apps (*.arx;*.lsp	;*.dvb;*.dbx;*.vlx;*. ▼	Load	
Loaded Application	1		Add to History	
File acad.LSP acad.mnl acad2008.L acad2008do AcadMap.arx AcApp.arx	Path C:\Program Files\Aut C:\Documents and S C:\Program Files\Aut C:\Program Files\Aut C:\Program Files\Aut	ettings\bsmiller. oCAD Civil 3D . oCAD Civil 3D . oCAD Civil 3D . oCAD Civil 3D .	Unload Startup Suite Contents	
		<u>C</u> lose		

### Next, click Add:

e	<u>?</u> ×
ns: Path	
	ons:

Browse to "g:\data\engineer\cadstds\lisp" and highlight these two files and click Add:

Add File to Startup Suite		<u>? ×</u>
Look jn: 🚺 Lisp	🖸 🧿 🕫 🖽 -	
My Recent Documents       Attools.VLX chtext.lsp         My Recent Documents       Csr.lsp         DittCH4.LSF       If flow.lsp         Desktop       MTXTUTILL         My Documents       If pendets         My Documents       If pendets         My Documents       If pendets         My Documents       If pendets         My Computer       If pendets         My Computer       If pendets		
My Network File name: Places	"tgenl.lsp" "tgenp.lsp"	
Files of <u>type</u> :	AutoCAD Apps (*.arx;*.lsp;*.dvb;*.dbx;*.vlx;*.fas	

### **Click Close:**

File	Path		
tgenl.lsp tgenp.lsp	G:\DATA\ENGINEER\CadStds\Lisp\ G:\DATA\ENGINEER\CadStds\Lisp\		

Double click each file to load them (every time you launch Civil 3D from this point, it will automatically load these files) – Click Close:

Load/Unload Appli	cations			<u>? ×</u>
Look in: 📜 Ne	wLisp		1 📂 🖽 -	Q 🕵 🕵
CADENCE temp Sdppa.lsp SDROT.LSP ALSP ACAD.LSP	Image: ADDPNT.LSP       Image: ALIST.LSP       Image: ALIST.LSP       Image: Anisotration of the second seco	Gream.lsp     Gream.lsp     Arrow2.LSP     Gream.lsp     Arrow.LSP     Gream.lsp     Gream.ls	barr.lsp BigPurge.LSP BL20.LSP BL40.LSP BL40.LSP BL.LSP BPEX.LSP	
File <u>n</u> ame:	ıtoCAD Apps (*.arx;*.lsp ms History list )	;*.dvb;*.dbx;*.vlx;*. 💌	Load	
File tgenl.lsp tgenp.lsp	Path G:\DATA\ENGINEEF G:\DATA\ENGINEEF	R\CadStds\Lisp\ T\CadStds\Lisp\	Eemove Startup Suite Contents	
tgenp.lsp successf	ully loaded.	<u>C</u> lose h		

Now, we will start the process of creating tiles for the cross section layouts. We'll use the portrait version as this is the most commonly used one.

Type tgp at the command prompt and hit enter, then type in the number of columns of cross sections you have, hit enter:



Next, you are prompted to select the tile point (the tile point is the intersection location of where this routine needs to start from to create the tiles, you will always use the intersection of the centerline and the bottom most grid line of the first cross section):



Type mapbookcreate. You should have a wizard box that looks like this. In this procedure, you will need to change the <u>Source</u>, <u>Sheet Template</u>, <u>Tiling Scheme</u>, <u>Naming Scheme</u>, and <u>Sheet Set</u>:

eate Map Book	the second s	x
🔁 Source	🔚 Model Space	
Map Display	A	
Model Space	Map Book Name: Default-ModelSpace	
Sheet Template		
Tiling Scheme		
O By Area		
By Number		
O Custom		
🔄 Naming Scheme		
Olumns and Rows		
Grid Sequential		
Sequential		
O Data Driven		
Key		
Linked Drawing		
O Layers		
None		
Legend		
O Map Display		
- Ō User Defined		
None		
Sheet Set		
Create New		
Create New Subset		
		f
Preview Tiles >>	Generate Cancel	Help

1) Source - In this first setting, give your map book name something appropriate:



(Note-You cannot use the same name again if you complete the wizard but want to do the map book again unless you go to the location of where the sheet set file (Sheet Set setting) is saved and erase the .DST file that bears the name you gave it. You can only erase this file if you save and close your drawing. You <u>can</u> add new Sheet Subsets to an existing .DST file.) 2) Sheet Template – Click Settings under Sheet Template. This setting is the .DWT file that has the Cross Section block in it. There is a portrait version and a landscape version. Browse to g:\data\engineer\cadstds\plan productions sheets – select LCE XSEC P and click Open:

Source	solav	🖀 Settings			
Model Space		Choose a <u>S</u> heet T	emplate:		
Sheet Tem	and the second se				
Tiling Sche		Choose a Lavout:			
elect Sheet Te	emplate Drawin	ng			
Look jn:	📜 Plan Produ	uction	- 🖗 🖬	🔍 🗙 🌈 Views	s - Too <u>l</u> s -
	Name 🔺		Size	Туре	Date Modifie
<b>C</b>	I GUNN			File Folder	6/6/2008 3:
History	LCE PP6-2	<u>0.dwt</u>	314 KB	AutoCAD Template	6/3/2008 8:
HIStOly	LCE PP8-2	<u>0.dwt</u>	330 KB	AutoCAD Template	6/3/2008 8:
	LCE XS 22	2 <u>X34.dwt</u>	339 KB	AutoCAD Template	5/30/2008 3
	LCE XSEC	<u>L.dwt</u>	332 KB	AutoCAD Template	6/6/2008 8:
y Docum	LCE XSEC	<u>P.dwt</u>	331 KB	AutoCAD Template	6/5/2008 4:
*	ECE XSEC	<u>dwt</u>	347 KB	AutoCAD Template	6/5/2008 12
Favorites					
	•				•
Desktop					
	File <u>n</u> ame:	LCE XSEC P.dwt		•	<u>O</u> pen
		Sheet Templates (*.dw		-	Cancel



3) Tiling Scheme – Click Custom as this is the best method for our purposes. Change the overlap from 5 to 0, then click Select Tiles:

0 selected	Select Tiles >> h
0 ★ % overlap of each tile Skip any empty tiles	

It is very important that when you select the tiles in the drawing, you select them one by one and in sequence, otherwise the sequence will be jumbled and you will have to re-organize and rename each layout that is created. Select the Tiles:

	SO=	12+32.34,205	1.876 (Alignmer	nt - (5)) 📑
9 <u>11-11-</u> 11				
<u>) (</u>				
8 <u></u> 6				

When you have finished selecting the tiles, click the right mouse button or hit enter.

4) Naming Scheme – Under the Naming Scheme, select Sequential:

<u>O</u> rder	from: Forward	i 💌		
<u>S</u> tart	with: 1			
Increme	nt by: 1			

Change the Start with setting to 1 and the Increment by to 1. Uncheck the Keep names for skipped tiles.

### SKIP KEY AND LEGEND AS THESE DO NOT PERTAIN TO THIS PROCEDURE.

5) Sheet Set – Under this setting, you can choose to Create New, which will create a new .DST file in any location you choose or if you already have an existing .DST file, you can choose to add this set to the existing Sheet Set as Create New Subset:



### At the bottom of the wizard, you have several options:

	Preview Tiles >>		Generate 州	Cancel	Help
--	------------------	--	------------	--------	------

You can preview the tiles, generate the tiles, cancel or call on the help.

Click Generate to create your cross section layouts.

Your Cross Section layouts have been created.

# SETTING UP GENERAL NOTES AND TRAFFIC NOTES DRAWINGS

### **SETTING UP GENERAL NOTES OR TRAFFIC NOTES SHEETS**

### Start a new drawing. Click New:



### Click the indicated icon:



### Click on the Plan Production Sheets folder:



Click either of the indicated files (LCE\_NBDR – General Notes or LCE\_TNBDR – Traffic General Notes):



## For this example, we'll use the LCE\_NBDR.dwt. Click that file:

CROSS SECTION.dwt	495 KB
CE BDR RW.dwt	346 KB
Difference BDR.dwt	294 KB
DCE DP-20.dwt	327 KB
Divit LCE NBDR.dwt	880 KB
LCE PP6-20-08.dwt	353 KB

# Click on the main pull down in the upper left hand corner of Civil 3D and click Save As:

🌠 🗅 🕞 🖥 🖨 ·	🦕 Save Drawing As	×
30		j ⊻iews ▼ Tooļs ▼
New +	Name     Size       My Documents     Data Shortcuts       Imponents     Imponents       Project     Imponents       ENGINEER     Imponents       Imponents     Imponents       Imponents <t< th=""><th></th></t<>	
Save As Export	CadStds	▼ Save Cancel

Name this file LCE\_GNotes.dwg as directed in Chapter 1 and click Save.

# USING SHEET SET MANAGER TO ORGANIZE YOUR PROJECTS

## USING SHEET SET MANAGER TO ORGANIZE YOUR PROJECTS

Sheet Set Manager is a great way to organize projects in a methodical fashion without a lot of effort and time. Here is a breakdown of some of the things that Sheet Set Manager can do for us:



At the command prompt, type in "SSM".

As you may have notices, after you have gone through the Plan Production wizard, a Sheet Set has been created:



(Just a note here - Named drawing files in this example may not reflect the actual standard naming convention. Use the standard naming convention found in Chapter 1.)
Let's do a little re-organization and renaming. Right click on the Subset Name and click Rename Subset:



Rename this Subset to something appropriate. Click OK:

Subset Properties	<u>?</u> ×
Subset <u>n</u> ame:	
GUNN ROAD - P&P Sheets	
Store new sheet DWG files in:	
C:\Plan Production	
Sheet greation template for subset:	
LCE STD 8 PP20(C:\Plan Production\LCE PP8-20.dwt)	
Prompt for template	
OK In Cancel	Help

Now, let's re-organize these sheets so they are in the correct order. Click, hold and drag the sheet names above or below each other until they are in the proper order:



### There, that's better:



Now it's time to bring in the Cross Section Sheets. (Note-when your cross section sheets were created using Map Books, it associated your cross sections with another sheet set. You will need to delete that sheet set .DST file before moving on.) Right click on the Sheet Set Name and let's create another Subset:



### You should see this. Give the new Subset an appropriate name:

iubset <u>n</u> ame: GUNN ROAD - Cross Sections		
⊆reate folders relative to pa	arent subset storage location.	
tore new sheet DWG files in: C:\Plan Production		
iheet greation template for sub	oset:	
LCE STD 8 PP20(C:\Plan Produ	uction\LCE PP8-20.dwt)	
Prompt for template		

### It should look like this:



### Right click on the new Subset Name and click Import Layout as Sheet:



### You'll see this. Click Browse:

Import Layouts as	Sheets			<u>? ×</u>	
Select drawing files con	taining layouts	:			
	Bro	owse for Drawin	005		
layout can belong to ( hust create a copy of t			t alread, belongs to a shee	et set, you	
55 A		2			
Drawing Name	Layout N	lame	Status		
					Browse to your cross
	-				section drawing,
					highlight it and click
					Open:
					open.
	and a second second				
Prefix sheet Est	lect Drawing	-			?
	Look <u>i</u> n:	📜 GUNN			💈 🔍 🗙 🕵 🛛 <u>V</u> iews 🔻 Too <u>l</u> s
		Name 🔺		Siz 🔺	] Preview
	1	2004 Ma		1,466 K	
	History	acadinse		1,128 К 674 К	
	N		<u>vy</u> <u>O. RD. NO. 99 (1).dwg</u>	557 K	
	<b>W</b>		O. RD. NO. 99 (2).dwg	554 K	
Myl	Documents		O. RD. NO. 99 (3).dwg	551 K	
	<u> </u>		<u>O. RD. NO. 99 (4).dwg</u>	557 K	
			<u>0. RD. NO. 99.dwg</u>	558 K	
F	avorites	Master.c		1,567 K	
	-		<u>Master XSec.dwq</u> Master.dwq	990 K	
		prop hal		1,668 K 106 K	
	Desktop	a second s	<u>d NOTES.dwq</u>	1,045 K	
		10 Miles	GenSum.dwq	1,188 K—	-
				· · ·	1
		File erer	Meeting Master XSec.d	wa	▼ Open ,
		File <u>n</u> ame:			
	3	Files of type:	AutoCAD Drawing (*.dw	vg)	Cancel

As you can see, these layouts are available for import, but prior to doing this step, I had to delete the .DST file associated with the cross sections. Now, the first layout is not part of the cross sections, so I will uncheck that box so as not to allow that layout to be imported with the rest of the layouts. Click Import Checked:

avout can belong to only o	Browse for Drawings	ready belongs to a sheet set, you
st create a copy of the lay		Status
Meeting Master XSe	Layout1	Available for import
Meeting Master XSe	Gunn Cross Sections-1	Available for import
Meeting Master XSe	Gunn Cross Sections-2	Available for import
Meeting Master XSe	Gunn Cross Sections-3	Available for import
Meeting Master XSe	Gunn Cross Sections-4	Available for import
Meeting Master XSe	Gunn Cross Sections-5	Available for import
Meeting Master XSe	Gunn Cross Sections-6	Available for import
Meeting Master XSe	Gunn Cross Sections-7	Available for import
Meeting Master XSe	Gunn Cross Sections-8	Available for import
Meeting Master XSe	Gunn Cross Sections-9	Available for import
Meeting Master XSe	Gunn Cross Sections-10	Available for import
Meeting Master XSe	Gunn Cross Sections-11	Available for import
T		
ana ang ang barangan ang ang		

### Here is your result:

Sheets	<b>@</b> \
SUNN ROAD	
GUNN ROAD - P&P Sheets	
1 - STA0+25.00 TO STA. 5+00.00	
2 - STA. 5+00.00 TO STA. 10+50.00	
3 - STA. 10+50.00 TO STA. 16+00.00	
4 - STA. 16+00.00 TO STA. 21+50.00	
5 - STA. 21+50.00 TO STA. 26+67.34	
GUNN ROAD - Cross Sections	
Gunn Cross Sections-2	
Gunn Cross Sections-3	
Gunn Cross Sections-4	
Gunn Cross Sections-5	
Gunn Cross Sections-6	
Gunn Cross Sections-7	
Gunn Cross Sections-8	
Gunn Cross Sections-9	
Gunn Cross Sections-10	
Gunn Cross Sections-11	
Gunn Cross Sections-12	

Let's do one more...the Title Sheet and some Spec Notes. We will repeat the same processes again. Just follow along:



Subset Properties	<u>? ×</u>
Subset name:	
GUNN ROAD - Title Sheet and Spec Notes	
☐ <u>C</u> reate folders relative to parent subset storage location. Store new sheet DWG files in:	
C:\Plan Production	
Sheet creation template for subset:	
LCE STD 8 PP20(C:\Plan Production\LCE PP8-20.dwt)	
Prompt for template	
OK Cancel	Help



Import Layouts as Sheets	<u>? ×</u>
Select drawing files containing layouts:	
Browse for Drawings	
A layout can belong to only one sheet set. If a layout already belongs to a shee must create a copy of the layout to import it.	st set, you

Select Drawing						? ×
Look jn: 🚺	GUNN	-	(† 1 <u>2</u>	Q 🗙 🕵	⊻iews ◄	r Tooļs 🔻
History My Documents	ame 2004 Master.dwg acadinsert.dwg GUNN.dwg LUCAS CO. RD. NO. 9 LUCAS CO. RD. NO. 9 Master.dwg Master.dwg Meeting Master XSec.o Meeting Master XSec.o Meeting Master.dwg prop hatch.dwg TTTLE and NOTES.dwg	9 (2).dwg 9 (3).dwg 9 (4).dwg 9.dwg dwg	Siz ▲ 1,466 K 1,128 K 674 K 557 K 557 K 558 K 1,567 K 992 K 1,668 K 106 K 1,045 K 1,188 K	Preview		
	ets Iglayouts: Browse for Drawing Done sheet set. If a layout a		? eet set, you	×	• •	Open In Cancel
Drawing Name	Layout Name	Status		-		
<ul> <li>TITLE and NOTES.dwg</li> <li>TITLE and NOTES.dwg</li> <li>TITLE and NOTES.dwg</li> </ul>	Spec Notes-Sht 1	Available for import Available for import Available for import				
Prefix sheet titles with fil	e name Import Checker	Cancel	<u>H</u> elp			

### Now, there you are:

GUNN ROAD	-	8	8	•
Sheets				æ
SUNN ROAD				
📴 💷 GUNN ROAD - P&P Sheets				
1 - STA0+25.00 TO STA. 5+00.0	00			
2 - STA. 5+00.00 TO STA. 10+50.	00			
3 - STA. 10+50.00 TO STA. 16+00	0.00			
4 - STA. 16+00.00 TO STA. 21+50	0.00			
5 - STA. 21+50.00 TO STA. 26+67	7.34			
🚊 📖 GUNN ROAD - Cross Sections				
Gunn Cross Sections-1				
Gunn Cross Sections-2				
Gunn Cross Sections-3				
Gunn Cross Sections-4				
Gunn Cross Sections-5				
Gunn Cross Sections-6				
Gunn Cross Sections-7				
Gunn Cross Sections-8				
Gunn Cross Sections-9				
Gunn Cross Sections-10				
Gunn Cross Sections-11				
Gunn Cross Sections-12	-			
E GUNN ROAD - Title Sheet and Spec Not	tes			
Title Sheet				
Spec Notes-Sht 1				
Spec Notes-Sht 2				

There's just one more thing. I would like to re-organize the subsets to reflect the order of our plans. I'll just click, hold and drag the last Subset to the top of the list:

🖞 GUNN ROAD 🗾	2 2 ×
Sheets	3
GUN JOAD - P&P Sheets	
📮 💭 GUNN ROAD - Cross Sections	
Gunn Cross Sections-1	
Gunn Cross Sections-2	
Gunn Cross Sections-3	
Gunn Cross Sections-4	
Gunn Cross Sections-5	
Gunn Cross Sections-6	
Gunn Cross Sections-7	
Gunn Cross Sections-8	
Gunn Cross Sections-9	
Gunn Cross Sections-10	

### There, all nice and tidy:

GUNN ROAD	2 🕺 🕈
Sheets	æ
GUNN ROAD	
📴 💷 GUNN ROAD - Title Sheet and Spec Notes	
🔤 🔛 Spec Notes-Sht 2	
😑 💷 GUNN ROAD - P&P Sheets	
- 🏧 1 - STA0+25.00 TO STA. 5+00.00	
🔤 🔤 5 - STA. 21+50.00 TO STA. 26+67.34	
🖻 💭 GUNN ROAD - Cross Sections	
Gunn Cross Sections-3	
Gunn Cross Sections-4	
Gunn Cross Sections-5	
Gunn Cross Sections-6	
Gunn Cross Sections-7	
Gunn Cross Sections-8	
Gunn Cross Sections-9	
Gunn Cross Sections-10	
Gunn Cross Sections-11	
Gunn Cross Sections-12	

Now, some of the really cool things you can do from here. You can close the Sheet Set:

•	8	2.	
			<b>æ</b> <
slu			
	<u>ب</u>	<b></b> s	• ۵۵ ا <mark>ب ا</mark>

Add a New Sheet (not sure that we would use this-experiment):



# Import more layouts:



**Re-Save All Sheets. This will actually save all the sheets in the list:** 

<u></u>	New Subset	
⊨	Import Layout as Sheet	-
	Archive	- )C
	Publish	•

### Archive (this is so cool):



This will actually archive all the drawing files and associated files together into one .zip file. You can add notes and/or modify the archive setup. Click OK:

Arc	hive a Sheet Set	? ×
50	Current sheet set: GUNN ROAD	
~	Sheets Eiles Tree Files Table	
	🗆 🔄 GUNN ROAD	<b>_</b>
	🛱 🗐 GUNN ROAD - Title Sheet and Spec Notes	
	🗆 🔛 🗹 Title Sheet	
	Spec Notes-Sht 1	
	Spec Notes-Sht 2	
	🖻 📖 GUNN ROAD - P&P Sheets	
	└─ <u>₩</u> I STA: -0+25.00 TO STA: 5+00.00	
	2 STA. 5+00.00 TO STA. 10+50.00	
	🔣 3 STA. 10+50.00 TO STA. 16+00.00	<b>_</b>
	<u> </u>	
i	Inter notes to include with this archive:	
		OK
	<u></u>	Cancer
	<u>V</u> iew Report <u>M</u> odify Archive Setup	Help



### Here is the .zip file it created:

🍈 💋 -		<b>1</b>	😫 💋		X	
New Open 着 Contents of 'C:\F	Add Plan Prod		Convert Install IAD.zip'	Canci	el Action	Test
Name	Size	Туре	Modified	Ratio	Packed	Path
L		File Folder	6/12/2008 2:15	0%		GUNN\
L		File Folder	6/12/2008 2:15	0%		PlotCfgs
11x17.ctb	4785	AutoCAD Color-d	5/16/2008 10:56	33%	3220	PlotCfgs
22x34.ctb	4784	AutoCAD Color-d	4/10/2008 8:40	31%	3283	PlotCfgs
acad.fmp	294	AutoCAD Font M	3/23/2007 11:23	54%	135	_
🖉 Garden&Gunn-East	74264	Ulead PhotoImp	5/8/2008 1:52 PM	0%	74114	GUNN\
GUNN ROAD.dst	32180	AutoCAD Sheet	6/12/2008 2:15	86%	4527	
GUNN ROAD.txt	2017	Text Document	6/12/2008 2:15	63%	741	
LCE PP8-20.dwt	337536	AutoCAD Templ	6/12/2008 2:15	21%	266070	
🗖 LW310 2008.pc3	1177	AutoCAD Plotter	4/23/2008 3:46	0%	1177	PlotCfgs
Meeting Master XSe	835712	AutoCAD Drawing	6/12/2008 2:15	10%	747976	GUNN\
Meeting Master.dwg	1619008	AutoCAD Drawing	6/12/2008 2:15	11%	1436351	<b>GUNN</b> \
Meeting MasterGW	201	XML Document	6/12/2008 2:08	26%	149	
TITLE and NOTES	1029152	AutoCAD Drawing	6/12/2008 2:15	9%	932500	GUNN\
( <u> </u>						]

Very cool!

### You have all the Publish features at your fingertips:



### You can E-Transmit just like you can from the File pull down:



And, modify or create new setups for the Transmittal Setups:



The Properties are something we are not going to deal with right now. Part of the Properties feature was to be able to use Text fields with the sheet blocks for global labeling. That did not work so well. See the P&P and Cross Section Sheets chapters.

# LABELING P&P AND CROSS SECTION SHEETS

### LABELING P&P AND CROSS SECTION BLOCKS GLOBALLY

Before we begin, please note this process will not work for all block attributes. Some are unique to each layout (labels e.g.: Sheet Number, Station to Station). Here we go...

After creating and organizing your sheet layouts, click on the first layout sheet:



### At the command prompt, type in "ssx" and hit enter:

Command:

Command: ssx

Select object/<None>:

### Select the P&P sheet block:



### You will see this at the command prompt:

Select object/<None>: Filter: ((0 . "INSERT") (2 . "lceppsht8") (8 . "0") (66 . 1) (210 0.0 0.0 1.0))

>>Block name/Color/Entity/Flag/LAyer/LType/Pick/Style/Thickness/Vector:

#### Hit enter.

### Now go to the Properties box and click the Select Objects button:

ŀ	No selection	I 🗷 🕺 🦷
1	General	<b>H</b> _A
	Color	ByLayer
	Layer	BL_SURVEY1
	Linetype	
	Linetype scale	1.0000
	Lineweight	ByLayer
	Thickness	0.0000

### Type in "p" for previous:

Command: Command: \_.PSELECT Select objects: p 5 found

Select objects:

### Hit enter. Down at the bottom of the Properties box, you will see this:

lock:lceppsht8	
DRWNNAME	
DESNNAME	
OFSHTS	
SHTNO	
LCRN	
ROADNAME	
STATION	

### Fill out the appropriate information:



Again, these fields should be left blank as they are unique to each layout and should be filled in later Just hit Esc when you've completed filling in the information.

Now you'll notice that each sheet in each layout is labeled appropriately:



Use this same technique for cross section sheets.

# Chapter

# **AutoCAD Civil 3D® Tips**

### **Table of Contents**

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### **CREATING A TABLE IN CIVIL 3D**

Type in the command Table and hit enter

Create New Table Style

a name, then click Continue

٠

New Style Name LCEO Standard

Start With:

Standard



Once you have your table formatted the way you want it, click OK Set your Table Style current, then Close the previous box

OK

Cancel

Help

i Learn about Table Styles

2



You can start from scratch using an empty table. We'll do that one first. Set your Insertion behavior, Column and row settings and cell styles:

C Specify window	
Column & row settings	
<u>C</u> olumns:	Column width:
5 🗄	2.5000
Data rows:	Row height:
10 +	1.4 • Line(s)
Set cell styles	
First row cell style:	Title
Second row cell style:	Header
All other row cell styles:	Data

### Click OK:



Pick an insertion point by clicking a point or by typing one in:



You are now presented with this (Please note the font for the style you created is not the default-will continue to check on this and bring any updates to you):



You can start typing in a label name for the table if you wish. Click OK when you're done.

Now double click the first cell:

Standard 💌 🏝 txt 💌 🔺	0.1800 • B / U o ∽ ~ 4 ■ •	🔲 ОК 🕤	
-   X •   Ø   = = = = =   Ⅲ-	i≡+   22   IA AI   @+   <b>0/</b> 0.0000 ±   I	⊷b1.0000 ± 01.0000 ±	
		MY TABLE	
	I		
Ŷ			
Ϋ́Α			
R +			
24 422 46			
23			

You can start typing, when filled in, just hit the TAB key and voila, you are in the next cell, just like Excel:

Standard	bat 💽 🔬 🔍	1800 • B I U	0 n a & .	🚥   OK   🕑		
•   X •   🖾   🗐		≣+   <b>23</b>   ãA Aã	@• 0/ 0.0000 ÷ a+b	1.0000 🕂 💿 1.0000 🕂		
	MY TABLE					
	My First Cell	]				

### Just repeat until the table is filled. Another nice feature is the auto fill feature:

		MY TABLE	
PART NO.	DATE:		
1	4/14/2008		

If your table has numbers, dates or any other type of data that runs sequentially in order, just like in Excel, you can click once on the first cell, then click the lighter colored snap in the lower right hand corner of the cell and drag it down to fill in the other cells:

Table		19 • %. • 💀 🔁 fx •	By Bow/Column	💽 🛃 देश
		MY TABLE		
PART NO.	DATE:			
		-		
	5 2			
		MY TABLE		
PART NO.	DATE:			
1	4/14/2008			
2				
3				
4				
5				
6				
7				
8				
9				
10				

Repeat for the next cell column:

		MY TABL	E	
PART NO.	DATE:			
1	4/14/2008			
2	4/15/2008			
3	4/16/2008			
4	4/17/2008			
5	4/18/2008			
6	4/19/2008	T	2	
7	4/20/2008			
8	4/21/2008		2	10
9	4/22/2008			
10	4/23/2008		75	

Pretty cool – so far...

Let's try another type of insertion. Go back to Insert > Table and do this. Change the Insertion Option to – From a Data Link:

🔛 Insert Table	Click the button next to the data link
Table style	field
Insert options C Start from Table Style	Links:
From a data link	Create a new Excel Data Link
C From object data in the drawing (Data Extraction)	
You should get the box to the right –click on Create a new Excel Data Link	Details
	No details available.
You will see this:	Preview
Enter Data Link Name	No preview available.
Name: MY OTHER TABLE	OK Cancel Help
OK Cancel	Fill in the field and click OK.

# Let's go browsing:

New Excel Data Link: MY OTHER TABLE	? ×
Use an existing Excel file or browse for a new one:	
Browse for a file	
Link options	
Select a file.	
✓ Preview – No preview available.	
OK Cancel	Help to Excel

Browse for the excel file you wish to use.

	Name 🔺	Size Type	Date Modifie
<u> </u>	Autodesk	File Folder	3/28/2008 3
History	Brian S Miller files	File Folder	4/4/2008 12
nstory	CDBurnerXP Projects	File Folder	3/28/2008 4
	My Music	File Folder	3/28/2008 3
~	My Pictures	File Folder	3/31/2008 9
у Do	My Videos	File Folder	3/28/2008 2
	My Webs	File Folder	3/31/2008 1
Χ.	Contract Con	File Folder	3/31/2008 9
avorites	My Other Table.xls	26 KB Microsoft Office Exc	4/14/2008 2
6	•		•
esktop			
	File name: My Other Table.xls	•	<u>O</u> pen N

Click Open.

Here is the result:

New Excel Data Link: MY OTHER TABLE	×
C:\Documents and Settings\bsmiller.MILLER08\My Doc	]
Link options Select Excel sheet to link to:	1
Sheet1	
• Link entire sheet	
C Link to a named range;	
<b>X</b>	
C Link to range:	
<example: a1:m9=""> Preview</example:>	
	2
OK Cancel Help Q	
i Learn about linking to Excel	

You have some options here – Link the whole Excel sheet, or a named range or Link to a range. Click OK. Then click OK once more and once again to insert your new Excel table. Click or type in an insertion point:

G0191	Stitt Road	0128-01C	Waterville	Weckerly Road	Bucher Road	4/13/2005	W.S., D.M.L	North	South	980' to 1292'	908' to 1315'	312	405	TYPE-5
G0192	Stitt Road	0128-08C	Waterville	River Road	Russell Road	4/18/2007	W.S., D.M.L	West	East	1895' to 2199'	1895' to 2199'	304	304	TYPE-5
G0193	Strayer Road	0104-01C	Monclova	U.S. 20A	Salisbury Road	4/8/2005	W.S., D.M.L	West		3198' To 3699'		501		TYPE-5
G0194	Suder Avenue	0172-01C	Washingto n	Alexis Road	875' N. of Alexis	2/16/2006	G.W.	East	West	398' To 474'	401' To 497'	76	96	TYPE-5
G0195	Suder Avenue	0172-03C	Washingto n	Vistamar	Villamar	2/16/2006	G.W.	East	West	140' To 572'	165' To 596'	432	431	TYPE-5
G0196	Suder Avenue	0172-04C	Washingto n	Villamar	Rosemar	2/16/2006	G.W.	East	West	288' To 699'	311' To 753'	309	440	TYPE-5
G0197	Summit Street	1980-01C	Washingto n	Toledo City Limits	Shoreland Avenue	2/16/2006	G.W.	East	West	130' To 708'	130' To 533'	578	403	TYPE-5
G0198	Sylvania Avenue	5	Richfield	S. R. 295	Washburn Road	4/21/2005	W.S., D.M.L	North	South	2046' To 2083'	2063' To 2114'	37	51	TYPE-5
G0199	Sylvania Avenue	5	Richfield & Sylvania	Kilburn Road	Mitchaw Road	4/19/2005	W.S., D.M.L	North	South	6159' To 6379'	6151' To 6363'	220	212	TYPE-5
G0200	Sylvania Avenue	5	Sylvania	Centennial Road	Silica Road	4/20/2005	W.S., D.M.L	North	South	49' To 260'	49' To 215'	211	166	TYPE-5
G0201	Sylvania Avenue	5	Sylvania	Centennial Road	Silica Road	4/20/2005	W.S., D.M.L	North	South	1821' To 2249'	1811' To 2314'	428	503	TYPE-5
	Suhrania			Holland-Svl	Tantara		ws			1945' To	2785' To			

If you make a change in the Excel spreadsheet while still in the AutoCAD drawing, you will be notified that a change has been made and do you wish to update the drawing:



If you noticed the last cell in the table called out for all Type-5 guardrails. The updated table in AutoCAD now looks like this:

G0191	Stitt Road	0128-010	Waterville	Weckerly Road	Bucher Road	4/13/2005	W. S., D. M.L.	North	South	980' to 1292'	908' to 1315'	312	405	TYPE-4
G0192	Stitt Road	0128-08C	Waterville	River Road	Russell Road	4/18/2007	W.S., D.M.L.	West	East	1895' to 2199'	1895' to 2199'	304	304	TYPE-4
G0193	Strayer Road	0104-010	Monclova	U.S. 20A	Salisbury Road	4/8/2005	W.S., D.M.L.	West		3198'To 3699'		501		TYPE-4
G0194	Suder Avenue	0172-010	Washingto n	Alexis Road	875 ' N. of Alexis	2/16/2006	G.W.	East	West	398' To 474'	401'To 497'	76	96	TYPE-4
G0195	Suder Avenue	0172-03C	Washingto n	Vistamar	Villamar	2/16/2006	G.W.	East	West	140'To 572'	165'To 596'	432	431	TYPE-4
G0196	Suder Avenue	0172-04C	Washingto n	Villamar	Rosemar	2/16/2006	G.W.	East	West	288' To 699'	311'To 753'	309	440	TYPE-4
G0197	Summit Street	1980-01 C	Washingto n	Toledo City Limits	Shoreland Avenue	2/16/2006	G.W.	East	West	130'To 708'	130'To 533'	578	403	TYPE-4
G0198	Sylvania Avenue	5	Richfield	S. R. 295	Washburn Road	4/21/2005	W.S., D.M.L.	North	South	2046'To 2083'	2063'To 2114'	37	51	TYPE-4
G0199	Sylvania Avenue	5	Richfield & Sylvania	Kilburn Road	Mitchaw Road	4/19/2005	W.S., D.M.L.	North	South	6159'To 6379'	6151'To 6363'	220	212	TYPE-4
G0200	Sylvania Avenue	5	Sylvania	Centennial Road	Silica Road	4/20/2005	W.S., D.M.L.	North	South	49' To 260'	49' To 215'	211	166	TYPE-4
G0201	Sylvania Avenue	5	Sylvania	Centennial Road	Silica Road	4/20/2005	W.S., D.M.L.	North	South	1821'To 2249'	1811'To 2314'	428	503	TYPE-4
	Svivania	1		Holland-Svi	Tantara		W/S	1		1945' To	2785'To	1		

Enjoy creating tables from now on!

### **CORRIDORS, OBJECT VIEWER AND PERFORMANCE**

A post in the discussion group today got me thinking about something I do and take for granted. He was complaining, rightfully so, about how slow corridors are in the object viewer. Read on to find out a way to improve your performance.

The performance of the Object Viewer seems to be inversely proportional to the amount of data you're trying to view. Corridors have a ton of information in them typically.

- 1. You have corridor sections every X feet or metres; the more you have, the slower it will be.
- Each corridor section has a ton of information as well. Just think of a LaneOutsideSuper. 13 links 10 markers

4 shapes

That's 27 objects...and that's just a single subassembly. A typical urban road may have over 120 pieces that make up EVERY corridor section.



We may need all of that when we create our assembly, but we don't need to display all that info inside our corridor. Really, we just need the Top.

Show All (122 objects)



### Show Top Only (8 objects)



A savings of 114 objects per corridor section. a 93% reduction in objects. Even the most jaded techie can appreciate that.

How do we do this? Easy...the dreaded Code Set Styles.

To make a long story short, here is an image of my code set style. Notice that the styles for EVERYTHING except Top links are turned off.

Name	Description	Style
🖃 📮 Link		
- 📮 <default></default>		_None
- 📮 <no codes=""></no>		None
🔲 Тор		Basic
😑 🛅 Point		
👆 🖄 <default></default>		_No Markers
📩 📩 <no codes=""></no>		_No Markers
🖃 🛄 Shape		
🚽 🛄 <default></default>		_No Shading
🔲 <no codes=""></no>		_No Shading

Apply this to your corridor in the corridor properties and go to town in the object viewer

Information	Parameters	Codes	Feature Lines	Surfaces	Boundaries
Code set s	tyle:				
🖏 Тор (	)nly		*	<b>4</b> - (	Q

Just to make sure you're not missing anything. When you are creating those "No Markers" type of styles make sure you turn off the Links, Markers, or Shapes in both the 2D view and the 3D view. If you forget the 3D view then, well, you've done a lot of work for nothing.

Information	Marker	Display	Summary
View Direct	tion:		
3D			~
2D			
3D			
Compon	ent T	Visible	Layer

There is even more you can do to help yourself. Turn off all those pesky corridor feature lines that you really don't need...like all those that lie underground. You'll find a Feature Lines tab in corridor properties.

P2	No Description	$\checkmark$
Flange	No Description	
ETW_Sub	No Description	
ETW_Base	No Description	
Crown_Pave2	No Description	
Crown_Sub	No Description	
Back_Curb	No Description	<ul> <li>Image: A start of the start of</li></ul>
Hinge_Cut	No Description	<ul> <li>Image: A start of the start of</li></ul>
Sidewalk_Out	No Description	$\checkmark$
Sidewalk_In	No Description	<ul> <li>Image: A start of the start of</li></ul>
ETW	No Description	<ul> <li>Image: A start of the start of</li></ul>
+ - I		



### **CIVIL 3D TEMPLATE FILE LOCATIONS AND DESCRIPTIONS**

Location for the following - g:\data\engineer\cadstds\support:

- ACAD.DWT This file is the template that contains the Lucas County Engineers Standards by which all procedural and drawing standards are held by (Layers, Linetypes, Textstyles, Civil 3D Styles; etc.)
- CoMap.DWT This file is the template by which you can create the Title Sheet from

Location for the following - g:\data\engineer\cadstds\plan production sheets:

- LCE TITLE.DWT This file is the template that is used in conjunction with Map Book to create each project's Title sheet
- LCE PP6-20.DWT This is the plan and profile template file with the smaller profile grid that is used with Plan Production
- LCE PP8-20.DWT This is the plan and profile template file with the larger profile grid that is used with Plan Production
- LCE XSEC L.DWT This is the cross section template file (landscape) that is used with Map Book
- LCE XSEC P.DWT This is the cross section template file (portrait) that is used with Map book
- LCE NBDR.DWT This file is the template by which you can create the Master General Notes from. All 6 pages and their associated layouts are already set up in this template. Modify as necessary for each project
- LCE TNBDR.DWT This file is the template by which you can create the Master Traffic Notes from. All 4 pages and their associated layouts are already set up in this template. Modify as necessary for each project

### TECH. NOTE PAD (AN AREA TO MAKE NOTES):

### **CREATING SECTIONS VIEWS IN AUTOCAD CIVIL 3D 2010 UPDATE**

Right click on the model tab and click Page Setup Manager...:

<u>N</u> ew layout	
From <u>t</u> emplate	
Delete	
<u>R</u> ename	
Move or Copy	
Select <u>Al</u> l Layouts	
Activate Previous Layout	
Page Setup Manager	< $-$
<u>P</u> lot	
Import Layout as Sheet,	
Export Layout to Model	
Hide Layout and Model tabs	

Make sure that the orientation (portrait or landscape), you wish for your section layout is current. Click your desired orientation and click Set Current. Click Close:

	layout: Model	i <u>Learn about the</u> Page Setup manage
Page setups		
Current page se	tup: Cross Section Setup [P]	
	Section Setup [P])*	Set Current
Cross Section S Cross Section S		
		<u>N</u> ew
		Modify
		Import
Selected page se	tup details	
Device name:	DWF6 ePlot.pc3	
Plotter:	DWF6 ePlot	
Plot size:	4.40 x 7.80 inches (Portrait)	
Where:	File	
Description:		

For this example, we will use the portrait setup, since it is the most typical.

In the ribbon, under Section Views, click Create Multiple Views:



Under the Group Plot Style pull down, select the LCE Standard [P] or [L] style:

Group plot style:				
🕞 LCE Standard	🖃 🗾 🗖			
LCE Standard LCE Standard [L]				
		< <u>B</u> ack	<u>N</u> ext	Click Next.

### Modify your Offset Range (if needed):

Offset range	Left: **Varies**	Right: **Varies**		
O User specified	-30.00'	30.00'	Click	Next.
			Click	
			< <u>B</u> ack	<u>N</u> ext >

Make sure your settings are as follows for Elevation Range:

Elevation range					
C Automatic	Minimum:  **Varies**	Maximum:  **Varies**			
<ul> <li>User specified</li> </ul>	Height: 15.00'				
Section views height	option:				
C From lowest el	evations of all sections				
C From mean ele	vations of all sections	Select section:			
Follow a section	n	🗥 SRF	•		
				<b>Click Nex</b>	ĸt.
				< <u>B</u> ack	<u>N</u> ext >

If you've already worked on your pipe network, assemblies and corridors, they should show up here. For this example, this has not been done:

Name	Draw	Clip Grid	Change L	Style	Override
🟤 SRF		۲	LCE Stand	LCE Stand	📃 <not 0<="" td=""></not>
( <u> </u>		Create Sect			

Click Next, then Click Create Section Views or just click Create Section Views.

Select your View origin:



### Here are your sections:



Now run one of the tile creation lisp routines for Map Book (the lisp routines are tgenp.lsp or tgenl.lsp – the commands are tgp or tgl). We'll run tgenp.lsp for portrait:

Command: appload Command:

Type in appload:

Locate the lisp routine out on g:\data\engineer\cadstds\lisp\tgenp.lsp:

isp addlen.lsp         isp addnum.LSP         isp am.lsp         isp ao.lsp         isp aot.lsp         isp ccf.lsp         isp chtext.lsp	Image: Csd.lsp         Image: Csr.lsp         Image: DITCH4.LSP         Image: Csr.lsp         Image: DITCH4.LSP         Image: Csr.lsp         Image: Csr.lsp	LISP INVCALC.LSP LISP MTXTUTIL.LSP LISP PARENTH.lsp LISP pout.lsp LISP PEND.LSP LISP PMC.lsp LISP polyarea.lsp LISP pvxs.lsp	tsi       Rcut.lsp         tsi       revcloud.lsp         tsi       tedit.lsp         tsi       TEXTUTIL.LSP         tsi       tgenl10.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp         tsi       tgenl.lsp	LSP	
<b>I</b> IIIE <u>n</u> ame: [tg	enp.lsp		Load		

Click Load, then click Close at the bottom.

<u>C</u> lose	<u>H</u> elp

Type in, hit enter:

# Command: tgp

Type in the # of columns of your sections and hit enter (In this case, 23):



### Now run the Map Book as follows. Give a meaningful name:



Select the tiles you created before (be sure to select them one by one in

sequence):

Source	Custom 1	
<ul> <li>Model Space</li> <li>Sheet Template</li> <li>Settings</li> <li>Tiling Scheme</li> </ul>	0 selected Select Tiles >>	]
By Area     By Number     Custom	0 🕂 % overlap of each tile	
Naming Scheme Oclumns and Rows	Skip any empty tiles	

After selecting them, hit enter. Change the Sequential Naming Scheme to 1's:

<ul> <li>Sheet Template</li> <li>Settings</li> <li>Tiling Scheme</li> <li>By Area</li> <li>By Number</li> <li>Custom</li> <li>Naming Scheme</li> <li>Columns and Rows</li> <li>Grid Sequential</li> <li>Sequential</li> <li>Data Driven</li> </ul>	Order from: Forward Start with: 1 Increment by: 1 ✓ Keep names for skipped tiles
--	---

### **Click Generate:**



# Here is an example of your created sheet:

595	15' 10' 5' ¢ 5' 10' 15' 2	20' 25' 30' 35' 4	595 SEEDING END AREA VOLU
242			
590			590
585			585
580 (585.30)	3+00	(\$85.28)	580
(303,30)			
595			595
590			590
585			585
	2+50		
580 (585.70)	(587-02)	(585.32)	580
595			595
590			590
585			585
580 (585 99)	2+00	(585.37	580
595			595
590			590
585			585
	1+50		
(585.32)	(587.04)	(585.41)	
595			595
590			590
585	1.00		585
580 (585.75)	(687.23)	(585.45)	580
595			5
			595
590			590
585			585
580	0+50		580
(586.09)	(587-26)	(585.:	
40' 35' 30' 25' 20'	15' 10' 5' & 5' 10' 15' : CROSS SECTIONS	20' 25' 30' 35' 4	0' CALCULATED SCALE: