

# Autodesk® AutoCAD® Sheet Sets: Custom Solutions to Improve Sheet Set Manager

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# Class Summary

- This class covers the use of custom tools and workflows that extend the functionality of AutoCAD Sheet Set Manager (SSM). SSM has revolutionized the way we create and work with sheet sets and with the help of some custom tools and a bit of ingenuity, we can take SSM to the next level—above and beyond! We show you tools that automate the creation and management of sheet set data and also touch on SSM best practices and related workflows.

# Class Schedule

- General Stuff
- Key Learning Objectives
- Overview of SSM
- Best Practices
- SSM Variables
- Sheet Views – Purpose, Creation, Streamlining/Automation
- Custom tools that extend functionality of SSM
  - Converting DST to and from other formats
  - “Sheet Set Properties Editor”
  - “Sheet Set Creator”

# Some General Stuff

## Who is in the audience?

- CAD Managers
- Power Users
- End Users
  - Designers
  - Drafters
  - “Technicians”
  - Engineers
  - Project Managers

# More General Stuff

## What is your SSM Experience

- New to SSM
- Production
- Veteran SSM Proponents

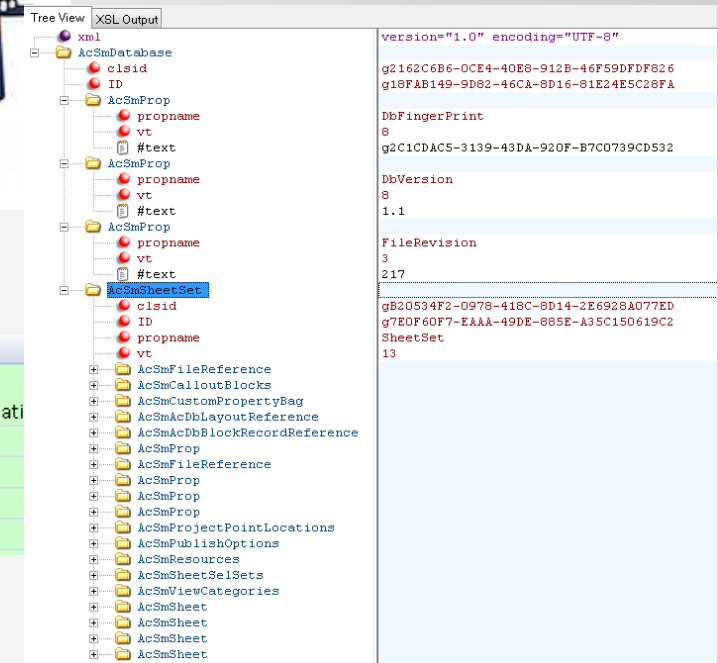
# Key Learning Objectives

At the end of this class, you will be able to:

- Automatically create AutoCAD named views for use with SSM
- Convert Sheet Set (DST) files to and from Excel and XML format
- Globally edit sheet properties of multiple sheets in a sheet set file
- Automatically create sheet sets (DST) and associated sheet files from a list of drawings in Microsoft® Excel®

# Overview of SSM...

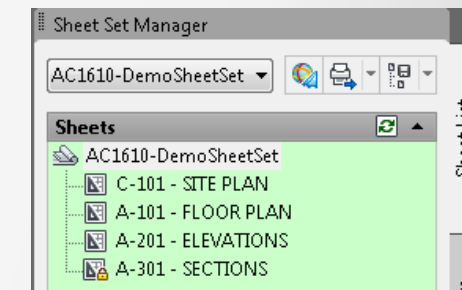
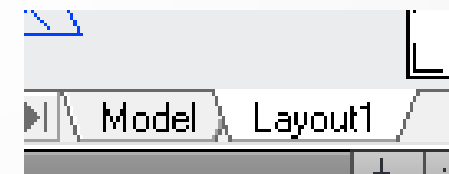
## What is it and how does it work?



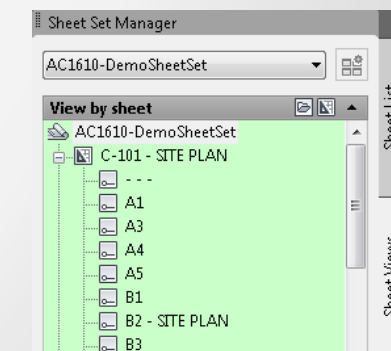
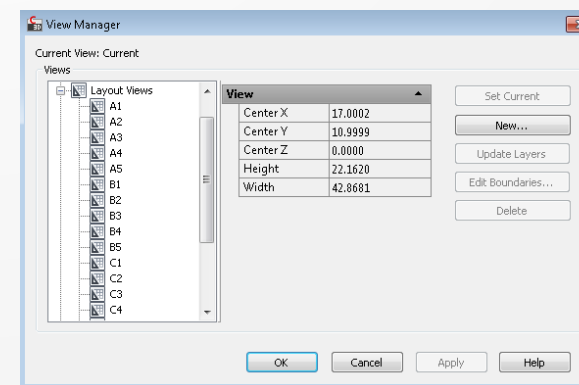
- In simple terms...It's a database manager!

Sheet ID	Sheet number	Sheet title	Description	publish	number	Revision date	Purpose	Category	Folder	File Name	Layout	Full Path	Relati
g1A94D27E-19BA-4665-A5CE-62056F03FBE3	C-101	SITE PLAN		Yes		2013-12-04				AC1610-C-101.dwg	Layout1	C:\_Projects\AC1610\cadd\_DemoSheetSet\	.
gB57D7ACB-96FE-4838-B2C4-EA1AC025F576	A-101	FLOOR PLAN		Yes		2013-12-04				AC1610-A-101.dwg	Layout1	C:\_Projects\AC1610\cadd\_DemoSheetSet\	.
g892F1FAA-E2A3-4A6D-A1E9-9ECAAFCEC7B4	A-201	ELEVATIONS		Yes		2013-12-04				AC1610-A-201.dwg	Layout1	C:\_Projects\AC1610\cadd\_DemoSheetSet\	.
gF688D1D5-724C-4CCB-B63A-16279574FC0F	A-301	SECTIONS		Yes		2013-12-04				AC1610-A-301.dwg	Layout1	C:\_Projects\AC1610\cadd\_DemoSheetSet\	.

- SSM sheets are links to drawing layouts



- SSM sheet views are links to Named Views



# Overview of SSM...

## What does it do?



- It manages data (information and objects)
- It's a management tool to help organize and centralize sheet "objects" and related data
  - Sheet views and model views
  - Sheet drawings (layouts)
  - Sheet information and related data (Sheet no's, titles, revision history, etc...)
- Plotting/Publishing
- Archiving/etransmittal

INDEX: 1 OF 5 Sheet Reference No. <b>SHT-001</b>	A	moftatt & nichol	Designed by: ZZZ	Date: 2013-12-04	Rev: REV/05
			Drawn by: AAA	Check by: BBB	M&N Project No. AC1610
			Reviewed by: CCC	Drawing code:	
			Submitted by: JM MACPHERSON MOFFATT & NICHOL	Drawing Scale: Plot scale: 1:1 (0 SHEET)	
			AU 2013 - CLASS AC1610		
			SITE PLAN		
			Table with 4 columns: Mark, Description, Date, Appr.		

File: C:\Projects\AC1610\cadd\SheetSet\AC1610-SHT-001, Plotted: 9/15/2013 7:45 PM by MACPHERSON, JM, Saved: 9/14/2013 12:54 AM by JMACPHERSON



# Best Practices

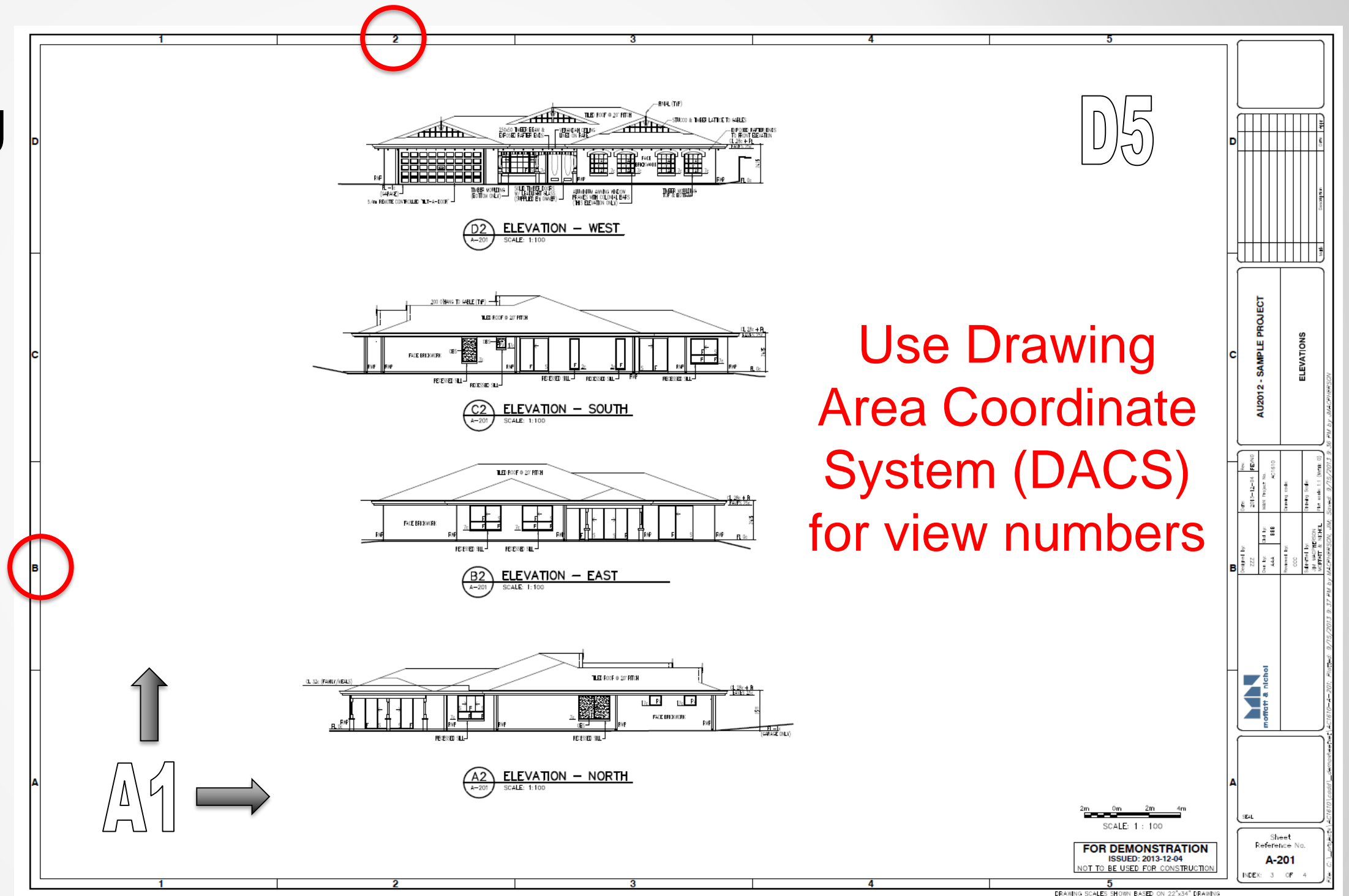
- Keep DST on local network – WAN performance is poor
- Utilize sheet and page overrides templates to automate plotting
- Centralize all sheet-specific data in SSM – eliminate the need to open drawing files to edit sheet data
- Label Named Views based on location
- Keep Named Views and Sheet Views coordinate
- What else...?

# SSM Variables

- **SSFOUND**
  - Displays the sheet set path and file name if a search for a sheet set is successful.
- **SSLOCATE**
  - Controls whether the sheet set associated with a drawing is located and opened when the drawing is opened.
- **SSMAUTOOPEN**
  - Controls the display behavior of the SSM when a drawing associated with a sheet is opened.
- **SSMPOLLTIME**
  - Controls the time interval between automatic refreshes of the status data in a sheet set.
- **SSMSHEETSTATUS**
  - Controls how the status data in a sheet set is refreshed.
- **SSMSTATE**
  - Indicates whether the Sheet Set Manager window is open or closed.

# Sheet Views – What's the Purpose?

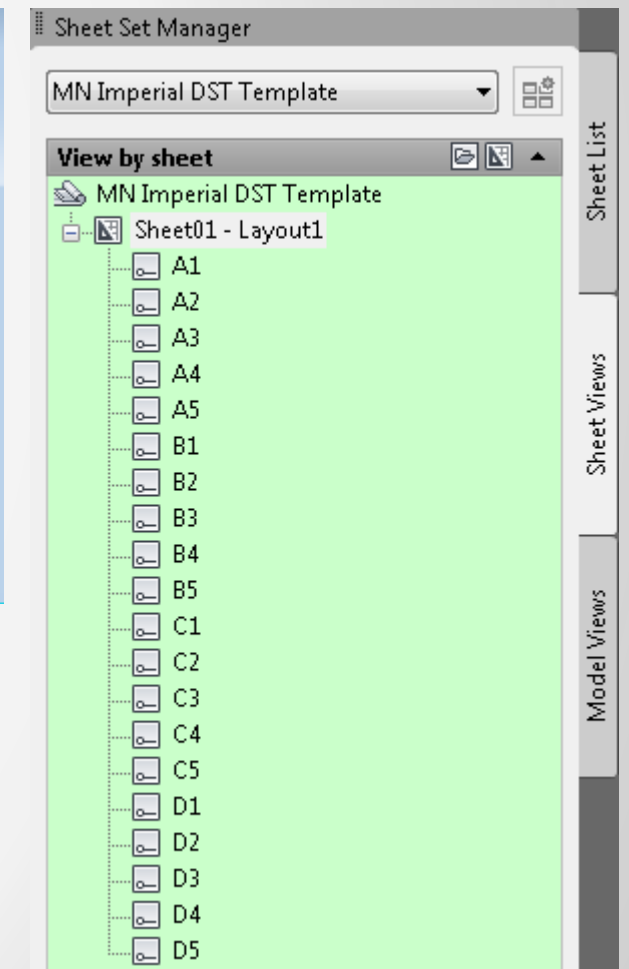
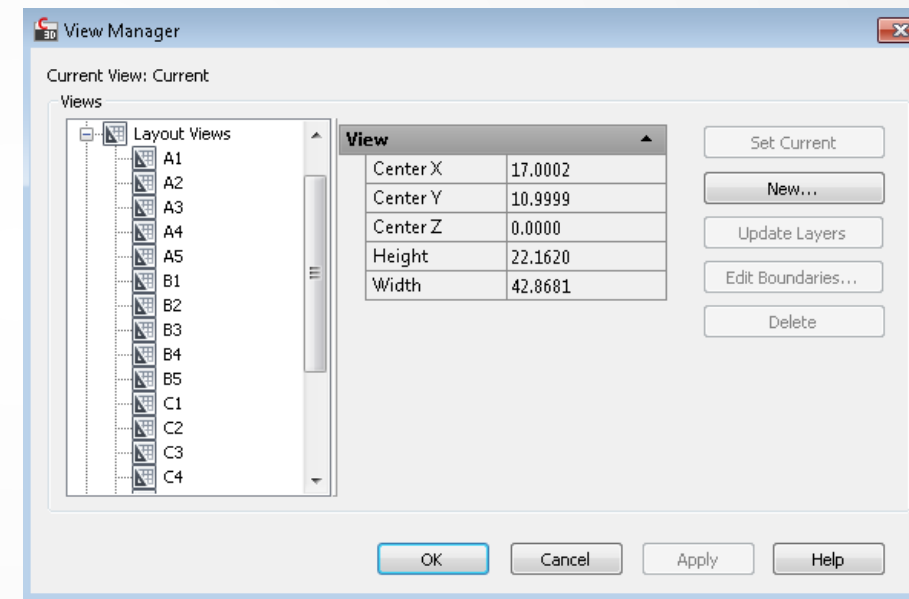
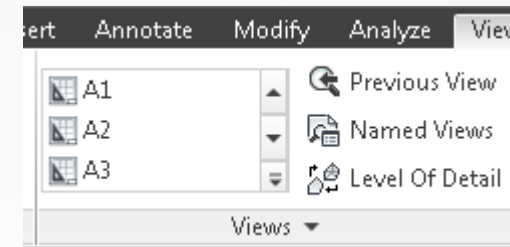
- Cross-referencing
- Navigation
- Organization
- Productivity!



Use Drawing Area Coordinate System (DACS) for view numbers

# Creating Sheet Views

- Use AutoCAD's View Manager to create named views that will be 'seen' by SSM
- Name ACAD views based on the DACS grid location – this will make it easier to manage!
- Keep Named Views and Sheet Views synchronized



# Creating Sheet Views Streamlining/Automating

- Add views to a template and use the template for creating new sheets in SSM
- Write some code to automatically create sheet views in existing drawings

Sheet Creation	
Sheet storage location	p:\7496-01\cadd\Active\201_ey-civil
Sheet creation template	Sheet(p:\7496-01\cadd\Active\201_ey-civil\749601-Sheet-Template.dwt)
Prompt for template	No

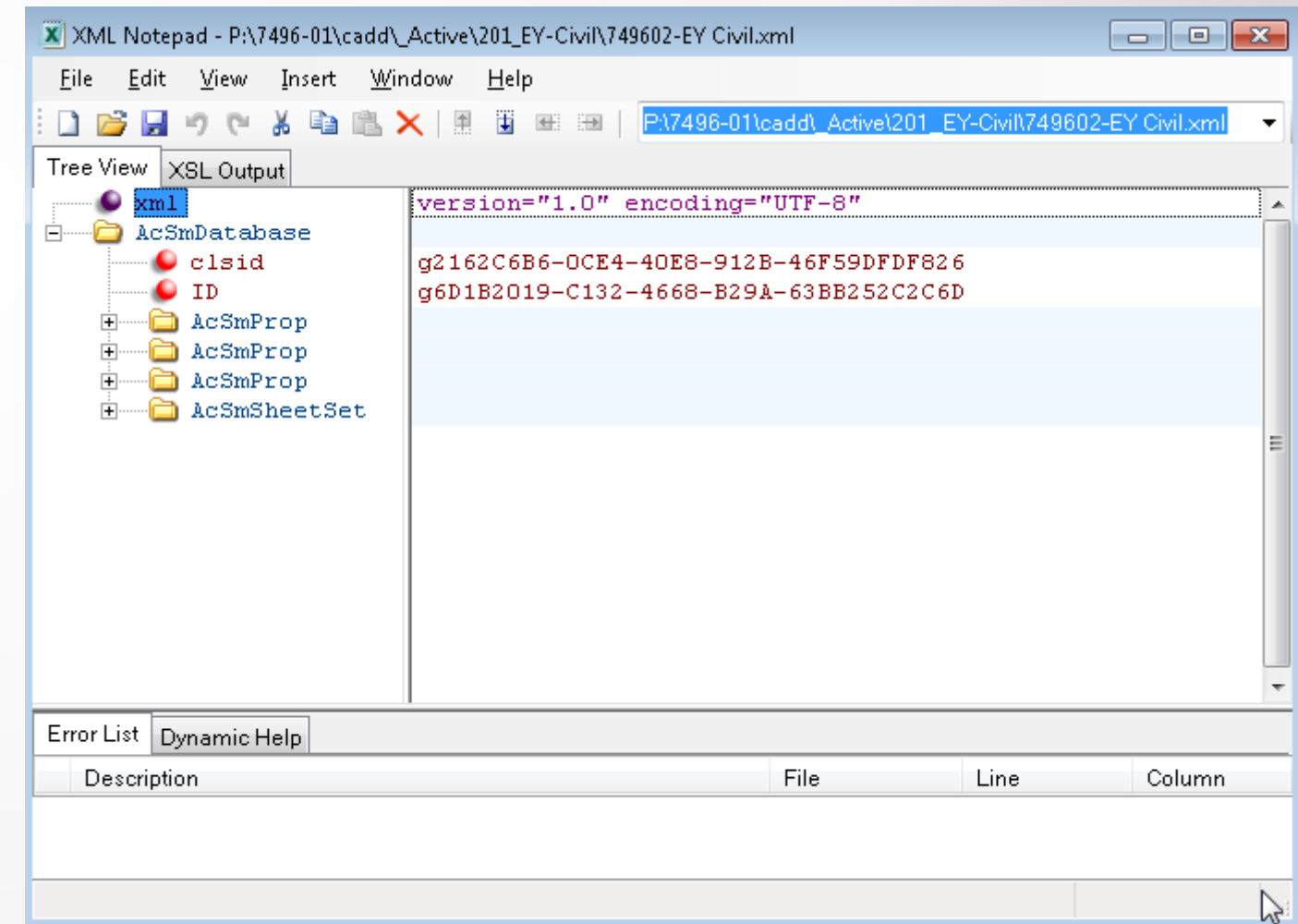
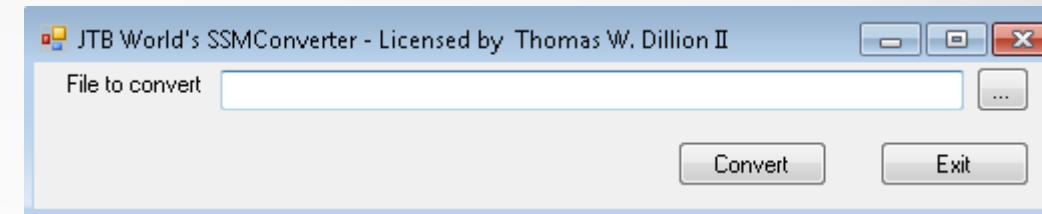
```
;CREATE STANDARD SHEET VIEWS
(defun c:ssv ()
  (setqold_tilemode (getvar "TILEMODE"))
  (setqold_osmode (getvar "OSMODE"))
  (command "tilemode" 0)
  (command "pspace")
  (setvar "OSMODE" 0)
  ;create named views
  (command "view" "w" "A1" "1.750,0.750" "7.579,5.875")
  (command "view" "w" "B1" "1.750,5.875" "7.579,11.000")
  (command "view" "w" "C1" "1.750,11.000" "7.579,16.125")
  (command "view" "w" "D1" "1.750,16.125" "7.579,21.250")
  (command "view" "w" "A2" "7.579,0.750" "13.408,5.875")
  (command "view" "w" "B2" "7.579,5.875" "13.408,11.000")
  (command "view" "w" "C2" "7.579,11.000" "13.408,16.125")
  (command "view" "w" "D2" "7.579,16.125" "13.408,21.250")
  (command "view" "w" "A3" "13.408,0.750" "19.237,5.875")
  (command "view" "w" "B3" "13.408,5.875" "19.237,11.000")
  (command "view" "w" "C3" "13.408,11.000" "19.237,16.125")
  (command "view" "w" "D3" "13.408,16.125" "19.237,21.250")
  (command "view" "w" "A4" "19.237,0.750" "25.066,5.875")
  (command "view" "w" "B4" "19.237,5.875" "25.066,11.000")
  (command "view" "w" "C4" "19.237,11.000" "25.066,16.125")
  (command "view" "w" "D4" "19.237,16.125" "25.066,21.250")
  (command "view" "w" "A5" "25.066,0.750" "30.895,5.875")
  (command "view" "w" "B5" "25.066,5.875" "30.895,11.000")
  (command "view" "w" "C5" "25.066,11.000" "30.895,16.125")
  (command "view" "w" "D5" "25.066,16.125" "30.895,21.250")
  (command "tilemode" old_tilemode)
  (setvar "OSMODE" old_osmode)
  (princ)
);end ssv
```

# Custom Tools

# Custom Tool “SSM Converter”

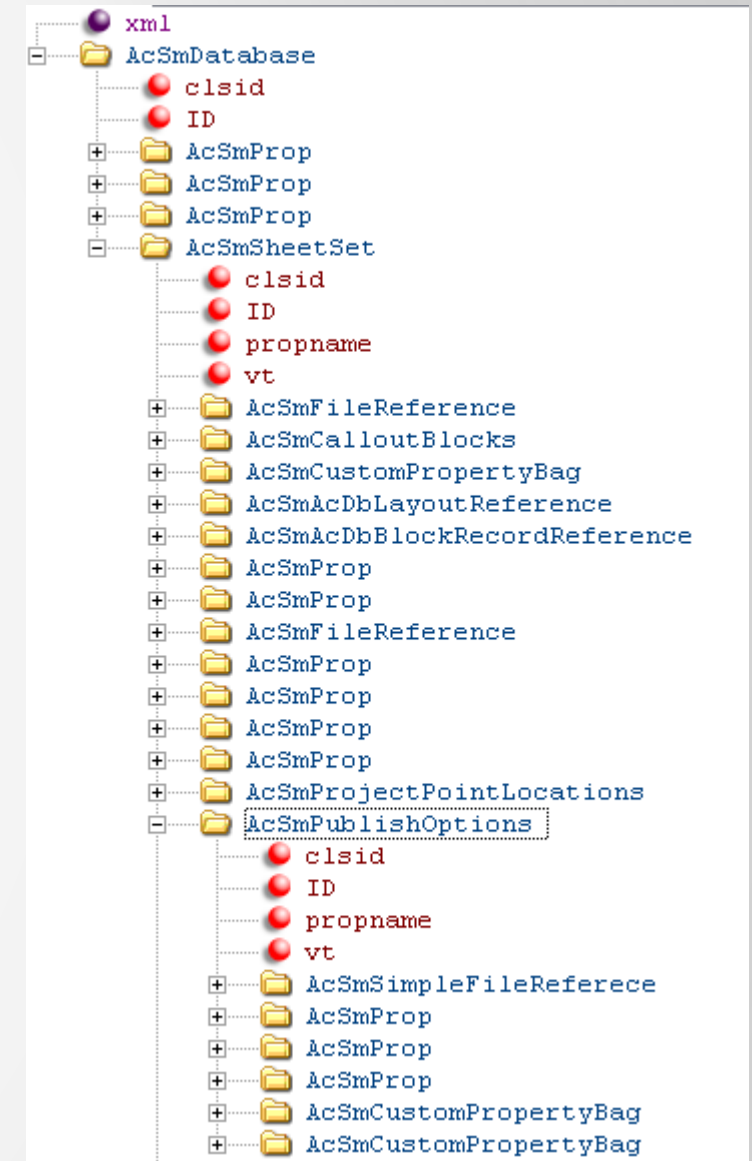
- Select a DST file and convert to XML
- Select an XML file and convert to DST
- Open XML in Excel or use XML Notepad (or similar) to edit data

<http://www.microsoft.com/en-us/download/details.aspx?id=7973>



# Tip: Fix a 'Bloated' DST

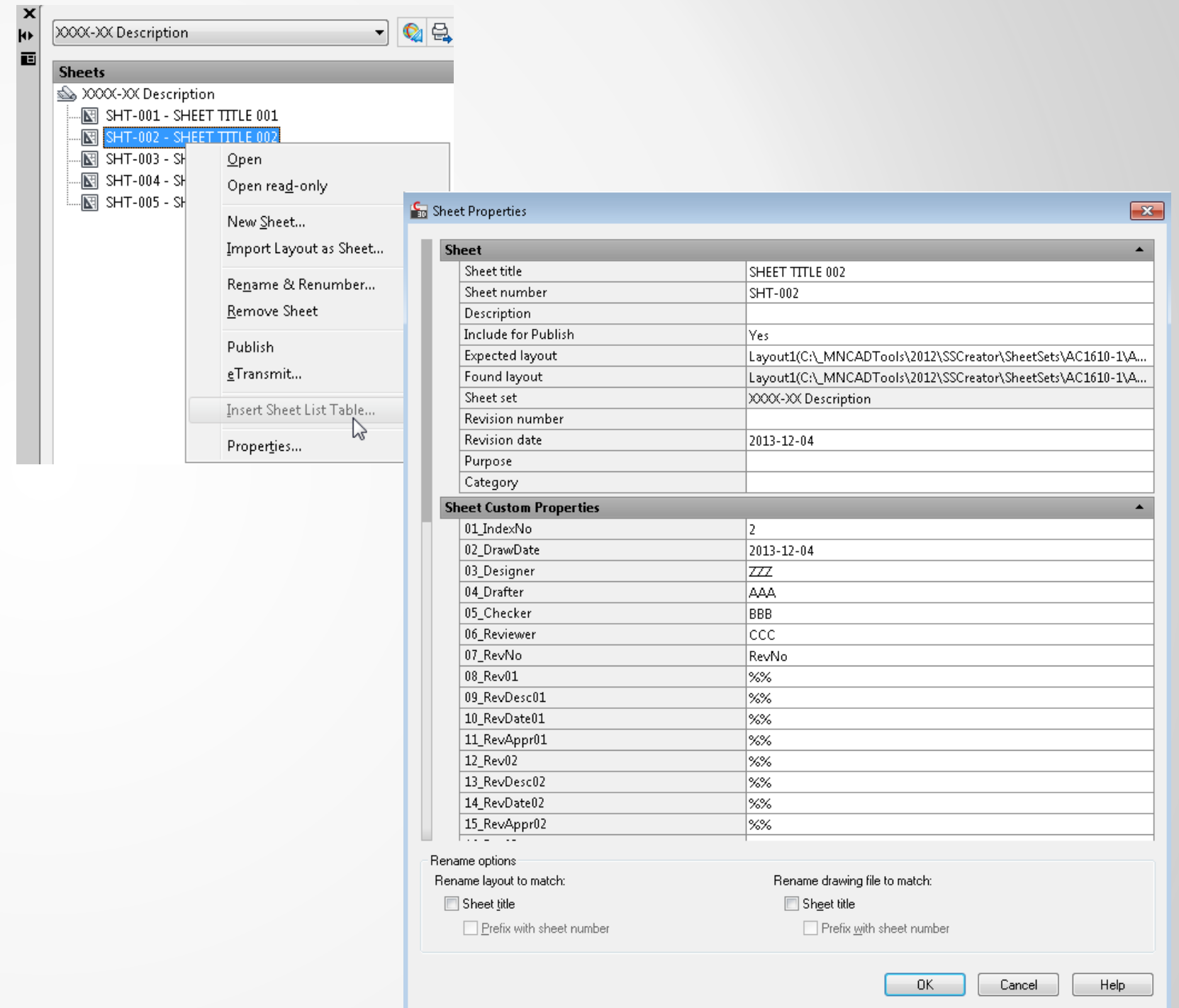
- Symptom: DST file size mysteriously grows by an order of magnitude
- Cause: Corrupt, superfluous data in DST
- Solution:
  - Convert DST to XML format using SSMConverter
  - Open XML using XML Notepad
  - Browse to the AcSmPublishOptions node and delete the two (2) instances of AcSmCustomPropertyBag below it.
  - Convert XML to DST using SSM Converter





# Updating sheet data

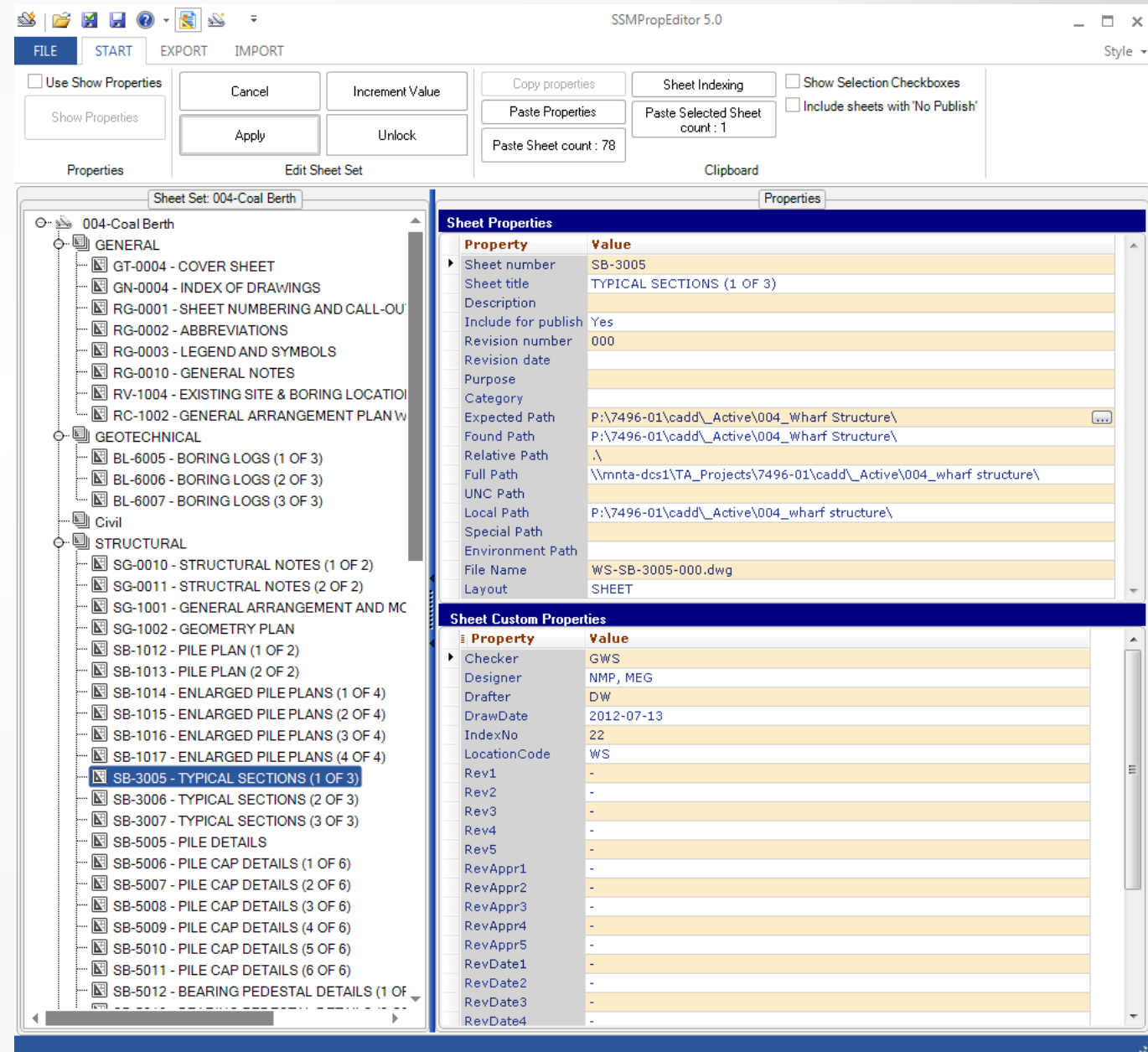
- Rename and Renumber workflow is efficient
- Editing custom properties in SSM is not



# Custom Tool

## “Sheet Set Properties Editor”

- Change content on multiple sheets in one step
- Automatically index sheets
- Increment values
- Correct non-existing paths to improve performance
- Export Sheet Set data to Excel and CSV



# Custom Tool

## “Sheet Set Creator” (SSC)

- Automatically creates a DST and associated sheet files from an Excel worksheet

	A	B	C
1	Sheet set name	AC1610-1	
2	Sheet set description		optional
3	Folder to store sheet set data file (.dst)	C:\Projects\AC1610\cadd\DemoSheetSet	
4	Create a folder hierarchy based on subsets	No	yes or no
5	Project number	AC1610-1	optional
6	Project name	AU Sample Project	optional
7	Project phase	Preliminary Submittal	optional
8	Project milestone		optional
9	Sheet storage location	C:\Projects\AC1610\cadd\DemoSheetSet	
10	Sheet creation template	C:\Projects\AC1610\cadd\support\MN-Sheet-AnsiD-Metric.dwg	
11	Sheet creation template layout	Layout1	
12	Prompt for template	yes	yes or no

	A	B
1	<b>Name</b>	<b>Default Value</b>
2	01_IndexNo	INDX
3	02_DrawDate	DATE
4	03_Designer	DSGN
5	04_Drafter	DRFT
6	05_Checker	CHKR
7	06_Reviewer	REVR
8	07_RevNo	RevNo
9	08_Rev01	%%
10	09_RevDesc01	%%
11	10_RevDate01	%%
12	11_RevAppr01	%%
13	12_Rev02	%%
14	13_RevDesc02	%%
15	14_RevDate02	%%
16	15_RevAppr02	%%
17	16_Rev03	%%
18	17_RevDesc03	%%

	A	B	C	D	E	F	G	H	I	J	K	L	M	
1	<b>Sheet Number</b>	<b>Sheet Title</b>	<b>File Name</b>	<b>Layout Name</b>	<b>Sheet Description</b>	<b>RevNo</b>	<b>Revision date</b>	<b>Purpose</b>	<b>Category</b>	<b>01_IndexNo</b>	<b>02_DrawDate</b>	<b>03_Designer</b>	<b>04_Drafter</b>	<b>05_C</b>
2	C-101	SITE PLAN	AC1610-C-101	Layout1			2013-12-04			1	2013-12-04	ZZZ	AAA	BBB
3	A-101	FLOOR PLAN	AC1610-A-101	Layout1			2013-12-04			2	2013-12-04	ZZZ	AAA	BBB
4	A-201	ELEVATIONS	AC1610-A-201	Layout1			2013-12-04			3	2013-12-04	ZZZ	AAA	BBB
5	A-301	SECTIONS	AC1610-A-301	Layout1			2013-12-04			4	2013-12-04	ZZZ	AAA	BBB

# SSC – What You Will Need

- Sheet template containing:
  - Border XREF
  - Sheet Data Attribute Block
- Callout and View Label blocks
- Page Setup Overrides template (DWT or DWG)
- SSC data (Excel) file containing:
  - Sheet creation parameters
  - Custom Sheet Set Properties
  - Custom Sheet Properties
  - Sheet Data List

# Sheet Set Creator

## ■ SSC Demo!

