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# 90 CADWorx Tips in 90 Minutes

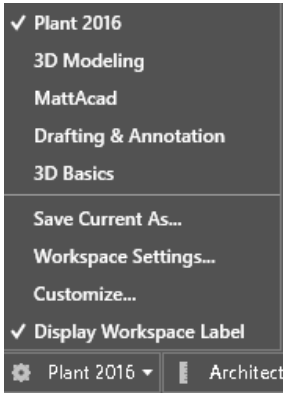
Matt Worland
Senior Application Engineer

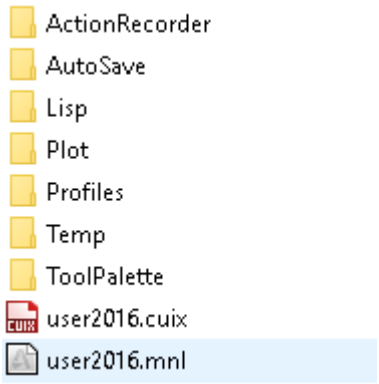
# Objectives:

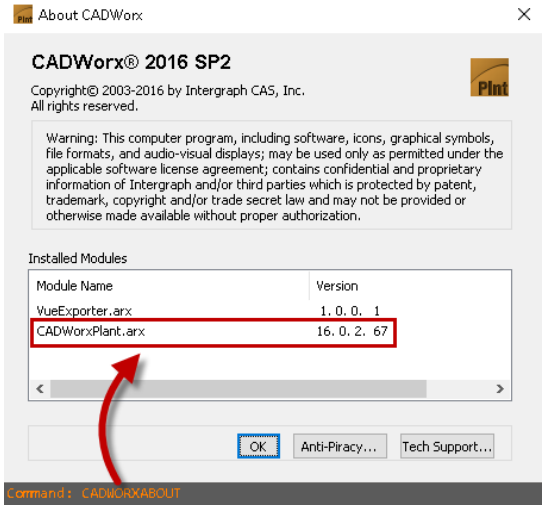
Share 90 of my favorite tips and techniques that have increased my productivity and efficiencies during my years of design using CADWorx

# Project Setup – Computer Tips

1) Create your own workspace
2) Create and use a custom CUIX file
3) Export your CADWorx Profile regularly
4) Run the latest version when starting a new project



# Project Setup – Project Centric Files

5) Setup your piping rules
6) Project Standard Config files
7) Project Standard Client Approved Specification files
8) Create Assemblies
9) Project Standard Equipment Data files
10) Project Standard Insulation Files
11) Create ISOGEN styles for different needs

| Piping Rules | | Include in CFG |
|---|---|---|
| Apply Size Rule | Automatic | ☑ |
| Apply Specification Rule | Automatic | ☑ |
| Apply End Type Rule | Automatic | ☐ |
| Apply Pipe Length Rule | No | ☑ |
| Apply Weld Insertion Rule | Automatic - Buttweld Only | ☐ |
| Apply Gasket Insertion Rule | Automatic | ☐ |
| Apply Bolt Insertion Rule | Automatic | ☐ |
| Apply Trimmed Elbow Rule | No | ☑ |
| Apply Pipe Healing Rule | Automatic | ☑ |
| Apply Branch Table Rule | Automatic | ☐ |
| Apply Flange Insertion Rule | Automatic - Use Spec Setting | ☐ |
| Apply Bolt Hole Orientation Rule | Automatic - 2 Holes | ☑ |
| Apply Pipe End Prep Rule | Automatic | ☐ |
| Apply Auto Coupling Rule | No | ☑ |
| Apply Line Number Rule | Always Inherit | ☑ |
| Apply Change Data Rule | Tag, ... | ☑ |
| Apply O-Let Minimum Spacing Rule | 3 | ☑ |
| Center Line | On | ☑ |
| Apply Skew Pipe Maximum Angle | 15.0000 | ☑ |
| Variable Component Length Assign | Show Options | ☑ |
| Incompatible Component Actions | Update Compatible Components | ☐ |

# Project Setup – File Tips

12) Always start with a CADWorx template - Don't copy old files

13) Design near 0,0,0

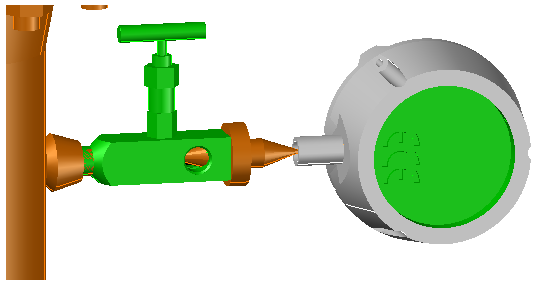
CADWorx Error Number 2012

CADWorx coordinate limits are as follows:
In imperial coordinates (English / Inch Mode), the limit is approximately:
-9000000 inches to 99000000 inches
-750000 feet to 8250000 feet
-140 miles to 1500 miles
In metric coordinates (Metric / Metric Mode), the limit is approximately:
-9000000 millimeters to 99000000 millimeters
-9000 meters to 99000 meters
-9 kilometers to 99 kilometers

14) Use AutoCAD north as plant/world north

# Specifications – Catalog Tips

15) Don’t modify OOTB files - Create copies of modified files (CATS, PRJs, Blocks, Templates…)
16) Create missing components with OOTB component types Orifice Plates
17) Create usershapes for everything else - Detailed Filters
18) Use Topworks
19) Use optimized vendor drawings when possible - Topworks, Usershapes and Equipment

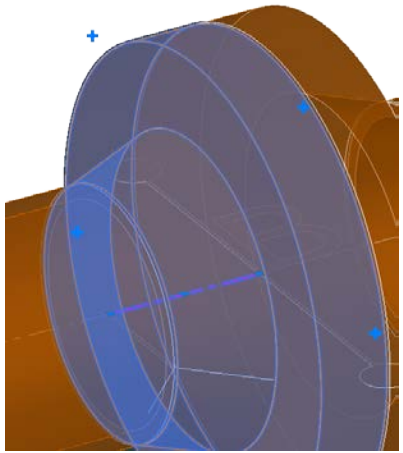


# Specifications – Catalog Data Tables

## 20) Use Orifice taps on the flange data tables

| | |
|---|---|
| OTD | Orifice Tab Diameter |
| OTA | Orifice Tab Angle |
| OTN | Orifice Tab Number |

| OTD | OTA | OTN |
|---|---|---|
| 0.5000 | 45.00 | 8 |



## 21) Use Excel like formulas in the spec editor

=MAINSIZE*1.5

# Specifications – PRJ Tips

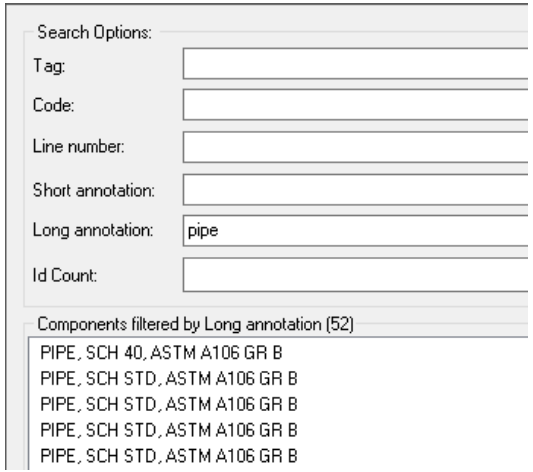
22) Set your defaults in your catalog and PRJ
23) Use custom colors for non engineered items
24) Use long description formats

=DESC_CMP_TBL, MAINSCH_SCH_TBL, SPEC_MAT_TBL GRADE_MAT_TBL, STANDARD_CMP_TBL

25) Use Schedule Assignment Tables
26) Use Material Assignment Tables
27) Use custom data in your PRJ to track status data in your model
28) Export your specs for checking

# Long Description Accuracy

29) Use find tab on line view palette to keep an eye on your BOM




30) Use database to fix Long Descriptions

# Line Numbering

31) Use line numbers in static mode
32) Use line numbers from your PID database.
33) Use line view palette
34) Create line view filters
    - Issue Stages
    - Stress Stages
    - Services
    - Specs

35) Use Routing Command

36) Use Connect option in pipe routing

**Pick end point or [component List/Slope/sKew/Elevation/Plane /Reference/Fitting mode/elBow type/Undo/Connect/Toggle length/Alignment]:**

37) Use BOP Alignment option to route pipe on top of pipe supports

**Specify start point or [Alignment/Reference] <last point>:**

38) Use the Elevation option when routing pipe to drop an elbow down

39) Swap a support using the Design Grip

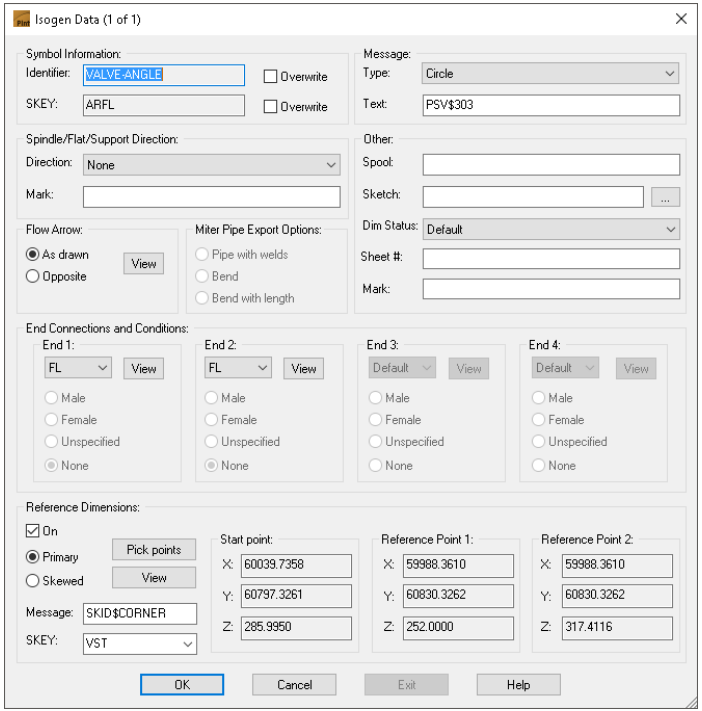
# Creating Isos

40) Place all data into model for no touch ISOs

41) ISOGEN Data - Use the ICEDIT command

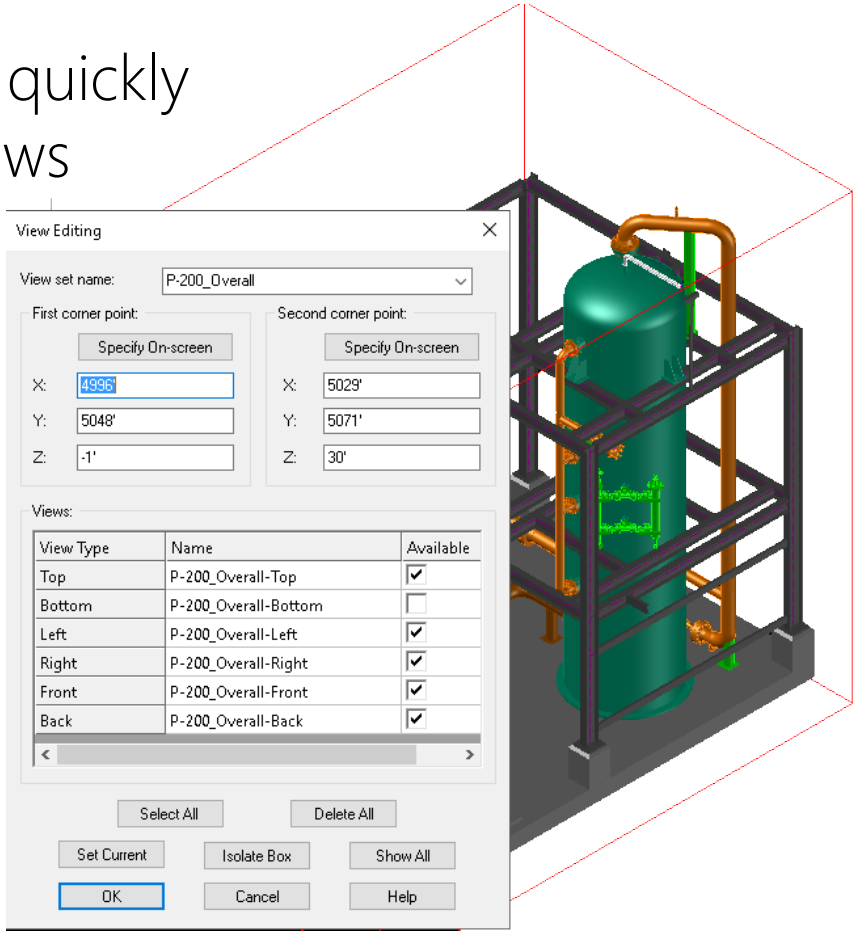
42) Isogen Start and Stop signs

43) Use Discontinuity Palette



# Viewbox

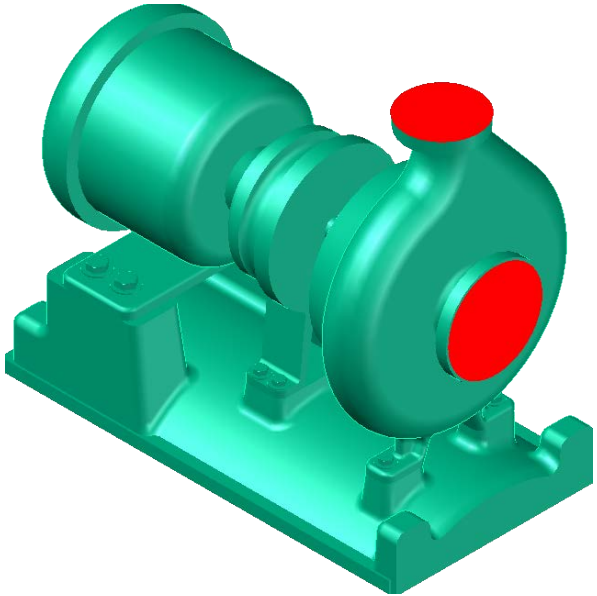
## 44) Use Viewbox to quickly create saved views



45) Use the equipment palette

46) Don't use AutoCAD commands on equipment

47) Use generic nozzle attach



Equipment Name:

P-101A

Placement | Components

| | |
|---|---|
| **Impeller** | |
| Description | |
| Width | 6.000000 |
| Diameter | 29.000000 |
| Extension diameter | 6.000000 |
| Extension length | 6.000000 |
| Flip orientation | No |
| Pump base | |
| Pump nozzle [SUCTION] | |
| Description | SUCTION |
| Distance | 0.000000 |
| Nozzle details | 6" - 300 - LWN |
| Layout angle | 0.00 |
| Length | 3.750000 |
| Suction side | Yes |
| Pump nozzle [DISCHARGE] | |
| **Shaft** | |
| **Coupling** | |
| **Motor** | |

# Reports

48) Pipe BOM, Pipe Supports BOM, Steel BOM, HVAC BOM

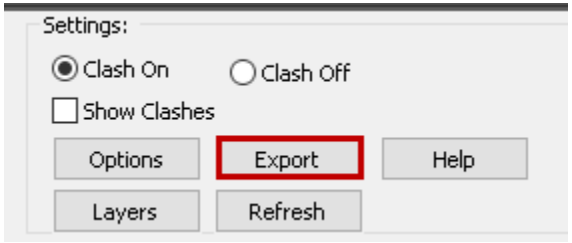
49) Insulation Reports

50) Center of Gravity Reports

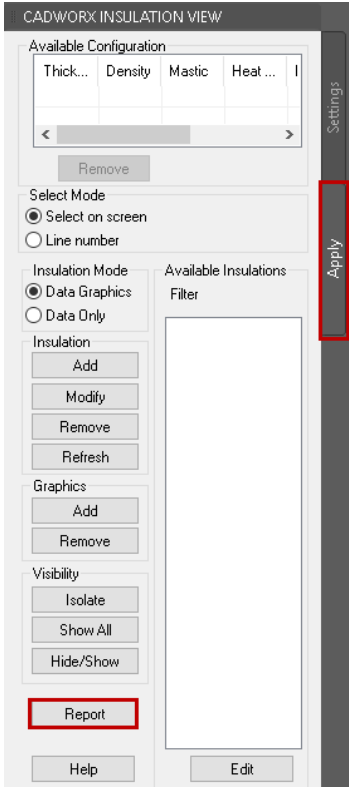
51) Weld Total Reports

52) Clash Detection Report

53) Discontinuity Report







# 54) Use Design Review to create iCDR files to view in the field

# Xrefs

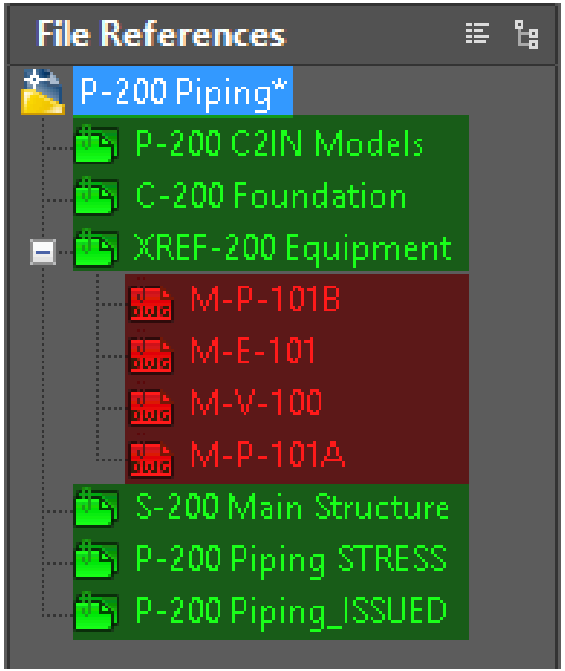
55) Never rename an Xrefs

56) Never modify CADWorx models using REFEDIT, Use XOPEN

57) Xref Working Models as Overlays

58) Xref Overall Models as Attachments

59) Use Xrefs to lock your issued lines



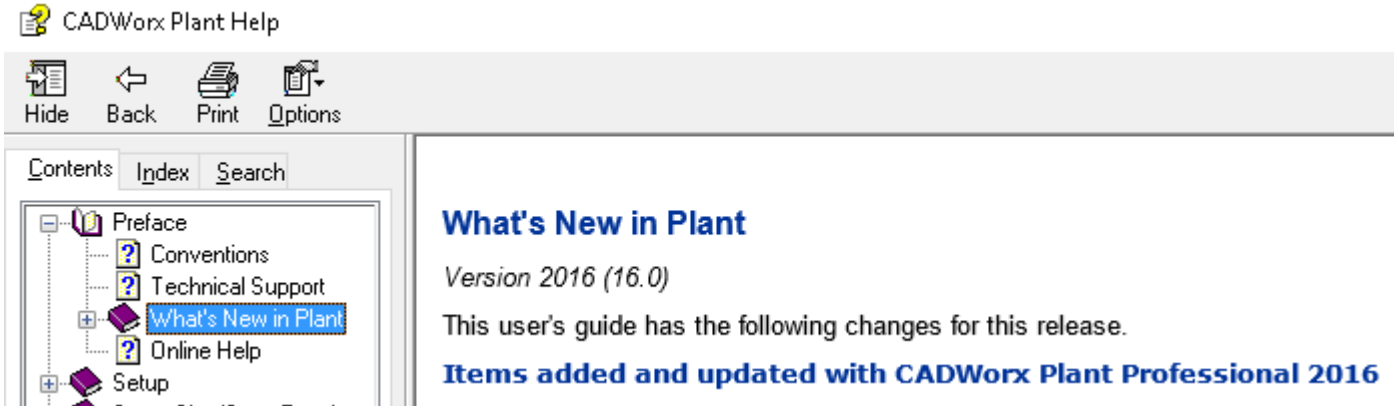
# Learning – In CADWorx

60) MANUAL - Learn what you already have

61) Learn the new features each release

62) LSP command - Learn hidden commands and variables

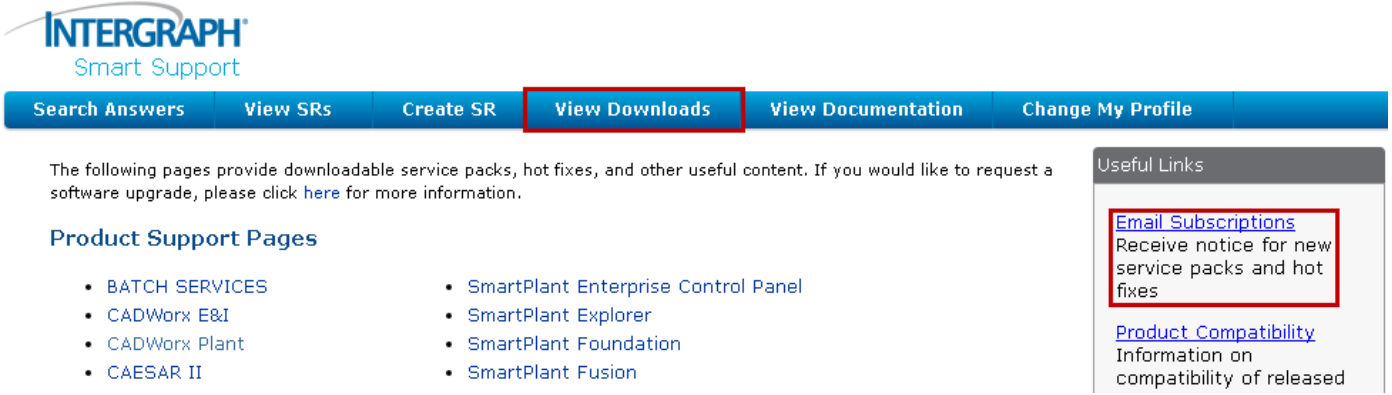
63) Join the Beta team



# Learning – Staying in the know

64) Receive notification from SmartSupport when software updates are available

– https://smartsupport1.intergraph.com




65) Follow Blogs for latest information

# Learning – Staying Current

66) Participate on the forums

67) Participate on LinkedIn

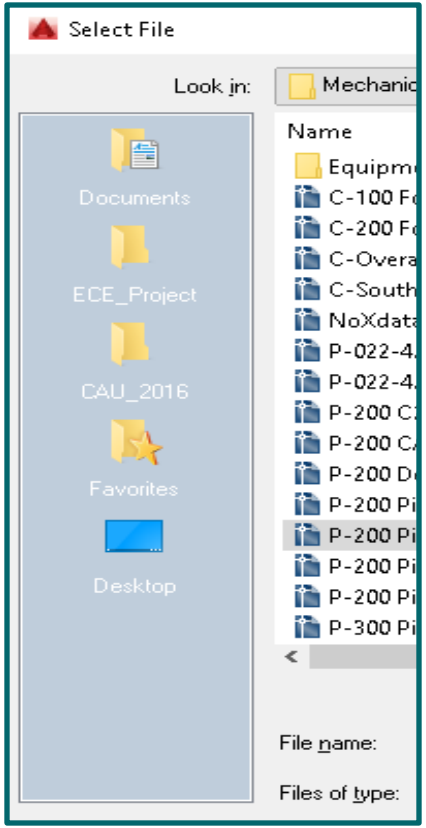
- CADWorx User Group
- Intergraph CADWorx and Analysis Group
- Intergraph CADWorx
- CADWorx and Analysis University

68) Get involved internally, Lunch and Learns

69) Network with as many experts that are here as you can

# Customization

70) Customize open file dialog shortcut folders
71) Type your commands
72) Learn the Command Line options
73) Change command line settings to search layers and sysvars
74) Use the command lines learning capabilities
75) Create you own quick key commands



# Time Savers

76) Use heads up display dynmode = 3
77) Use copy array - Pipe Racks
78) Rotate with Copy option
79) Use different view styles at different times - Don't always stay in Rendered mode
80) Shift Middle Mouse Orbit (ORBITAUTOTARGET)
81) Use in canvas tools to switch between saved views
82) View Cube use WCS - Turn off View Cube

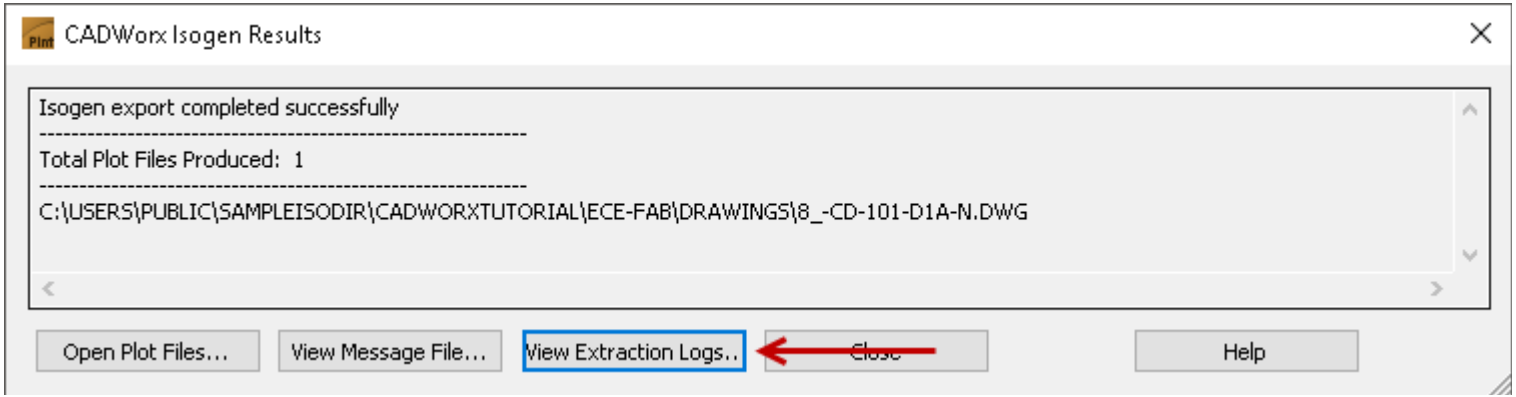
# Troubleshooting

83) Use vanilla AutoCAD to recover the files.

84) Recover models using the database

85) Vars2scr to compare variables to another drawing

86) Use Isogen Export Files from IGO command for troubleshooting



# Hardware

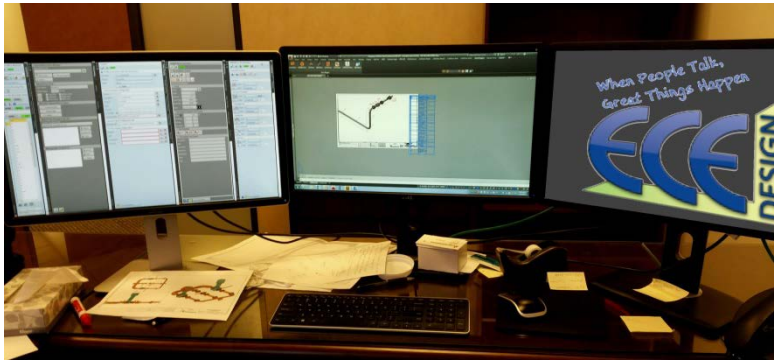
87) SSD Hard drives

88) Max your RAM to your budget/computer

89) Dual MONITORS or more

90) Verify your Graphics Card is Autodesk Certified
   - www.**autodesk**.com/graphics-**hardware**

91) Ensure you are running the computer manufactures latest driver for your Graphics Card



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Thank you!