A Civil Engineer’s Guide to Navigating Inventor and the Infrastructure Parts Editor

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Learning Objectives

- Learn how to use the Infrastructure Parts Editor to modify existing parts catalogs and create new ones
- Learn how to create parametric part shape models in Inventor
- Learn how to export parts created in Infrastructure Parts Editor for use in Civil 3D and InfraWorks
- Learn tips and tricks for modeling parts with Inventor and Infrastructure Parts Editor

About the speaker

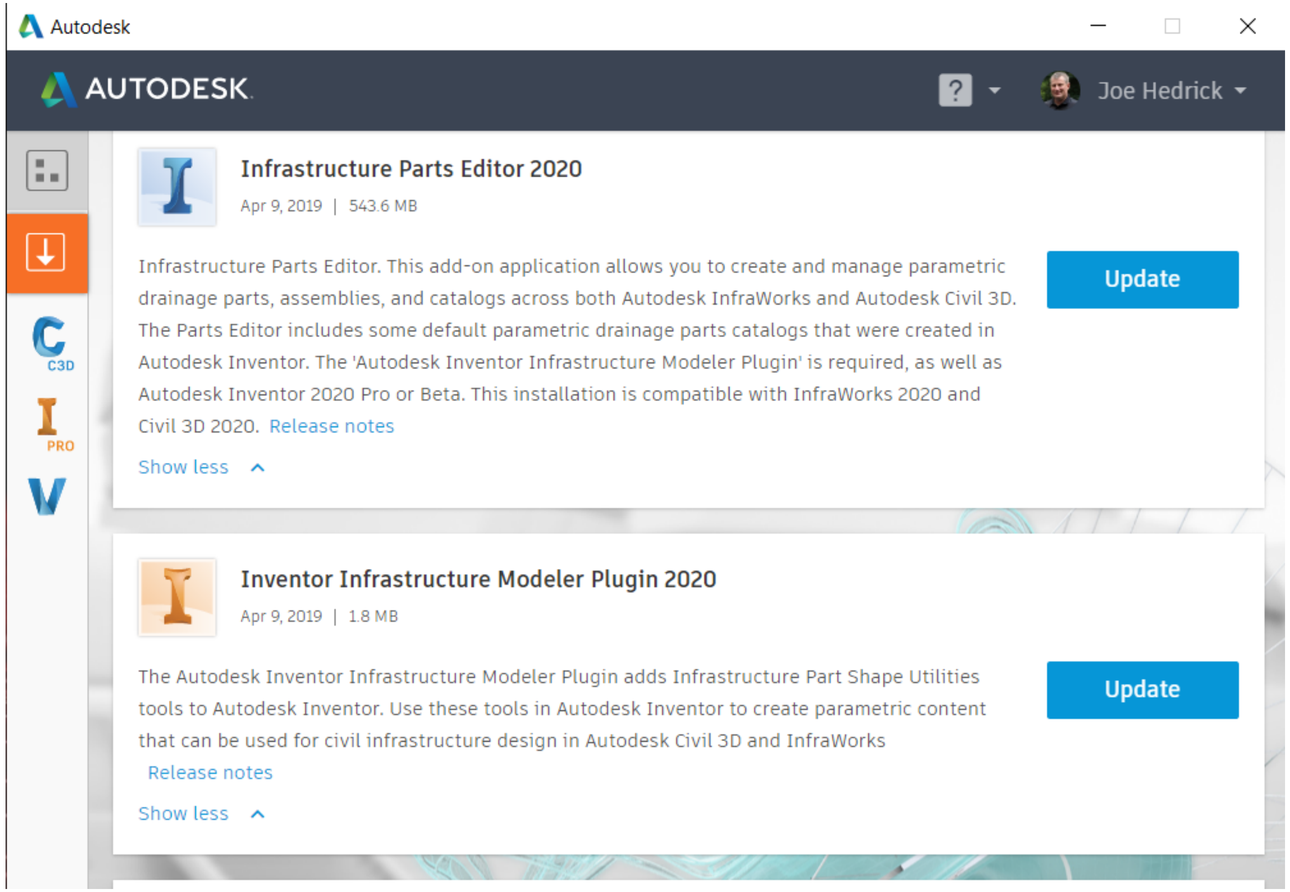
Joe Hedrick, LS, EIT

As the Infrastructure Solutions Team manager for IMAGINiT Technologies, Joe provides Autodesk civil engineering/survey implementation consulting services. Joe has over 25 years of experience in land surveying and civil engineering encompassing field-data collection, site design and layout, residential subdivision design, and land planning. He is an EIT and a licensed land surveyor in Virginia and earned his Bachelor of Science degree in Civil Engineering Technology from Old Dominion University in Norfolk, Virginia.

What to Install

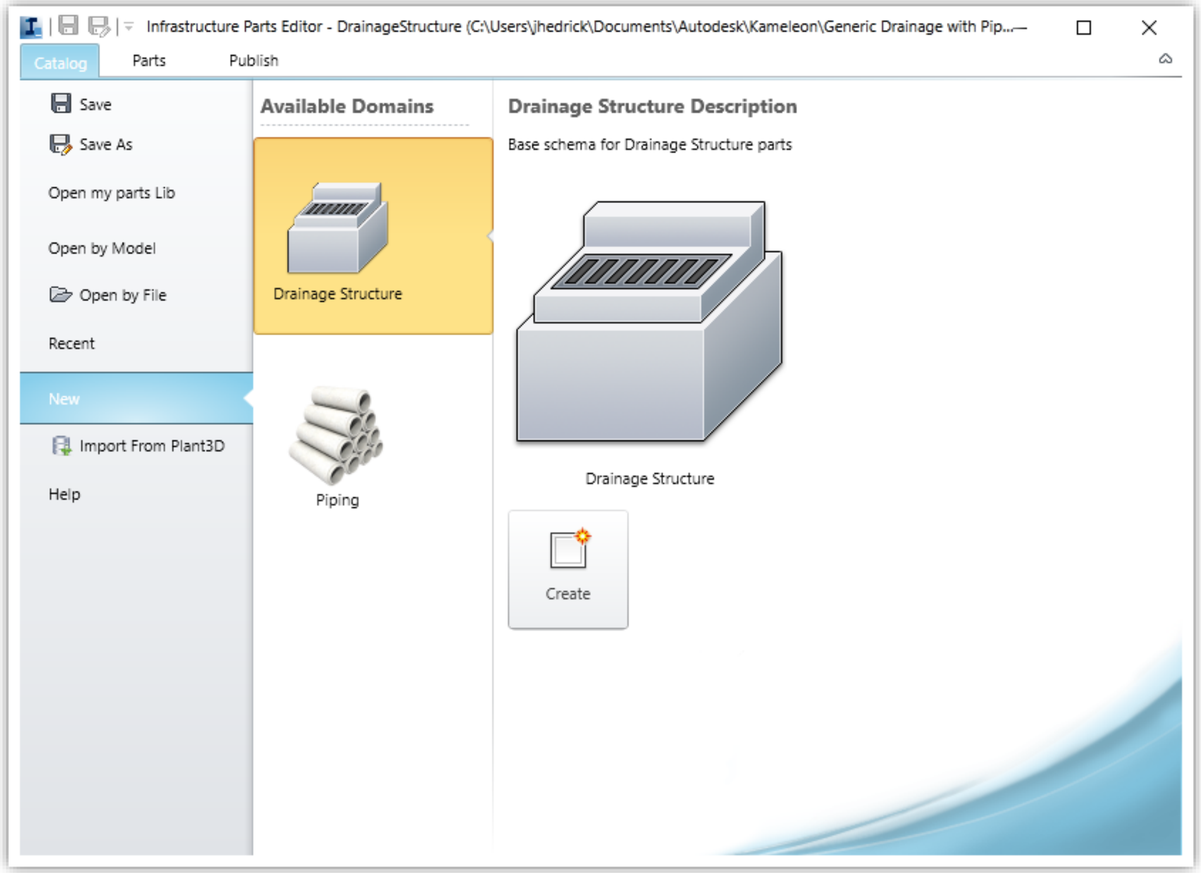
Pre-Requisites

- Civil 3D and/or Infraworks
- Infrastructure Parts Editor
- Autodesk Inventor
- Inventor Infrastructure Modeler Plugin



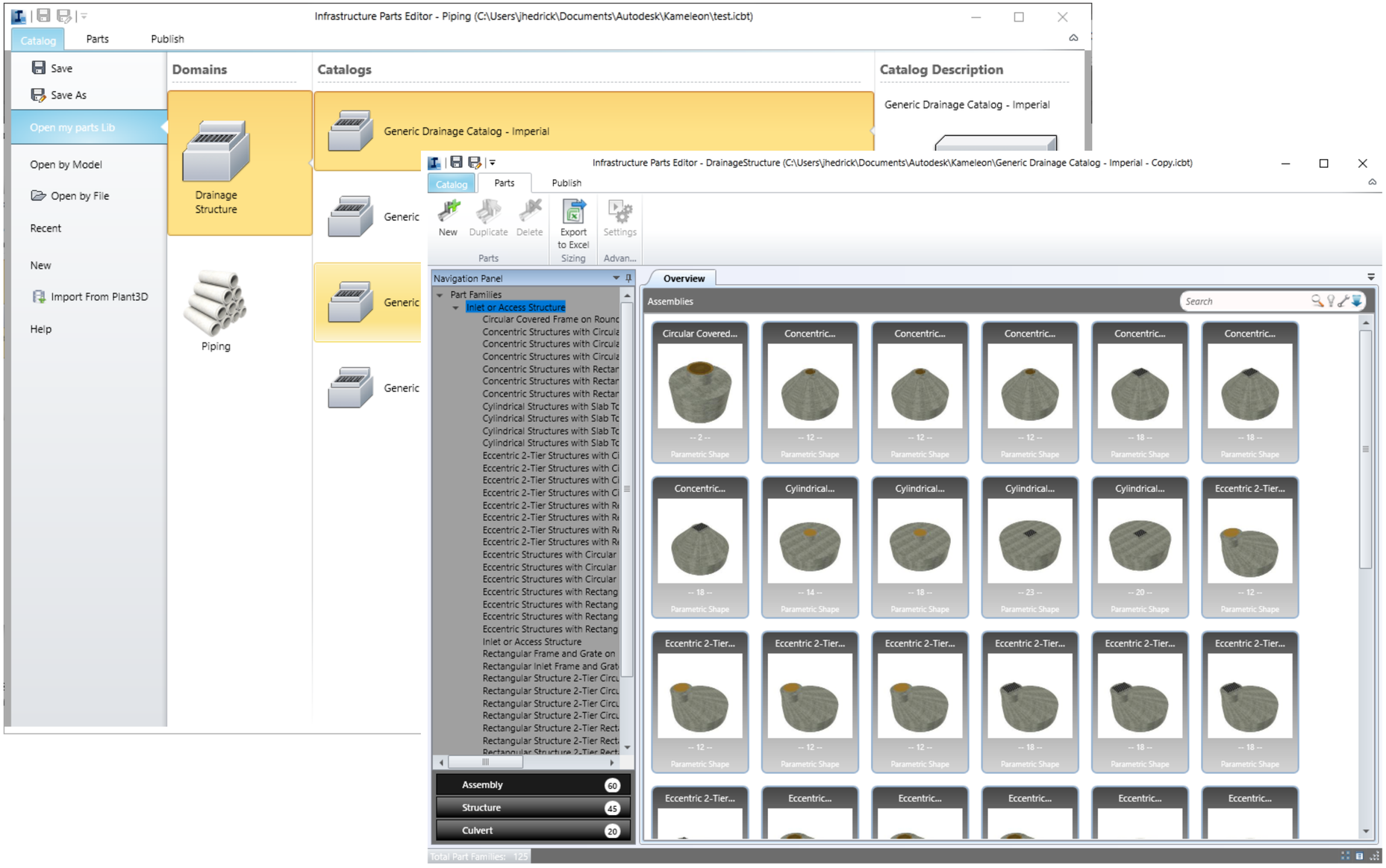
Infrastructure Parts Editor

Infrastructure Parts Editor

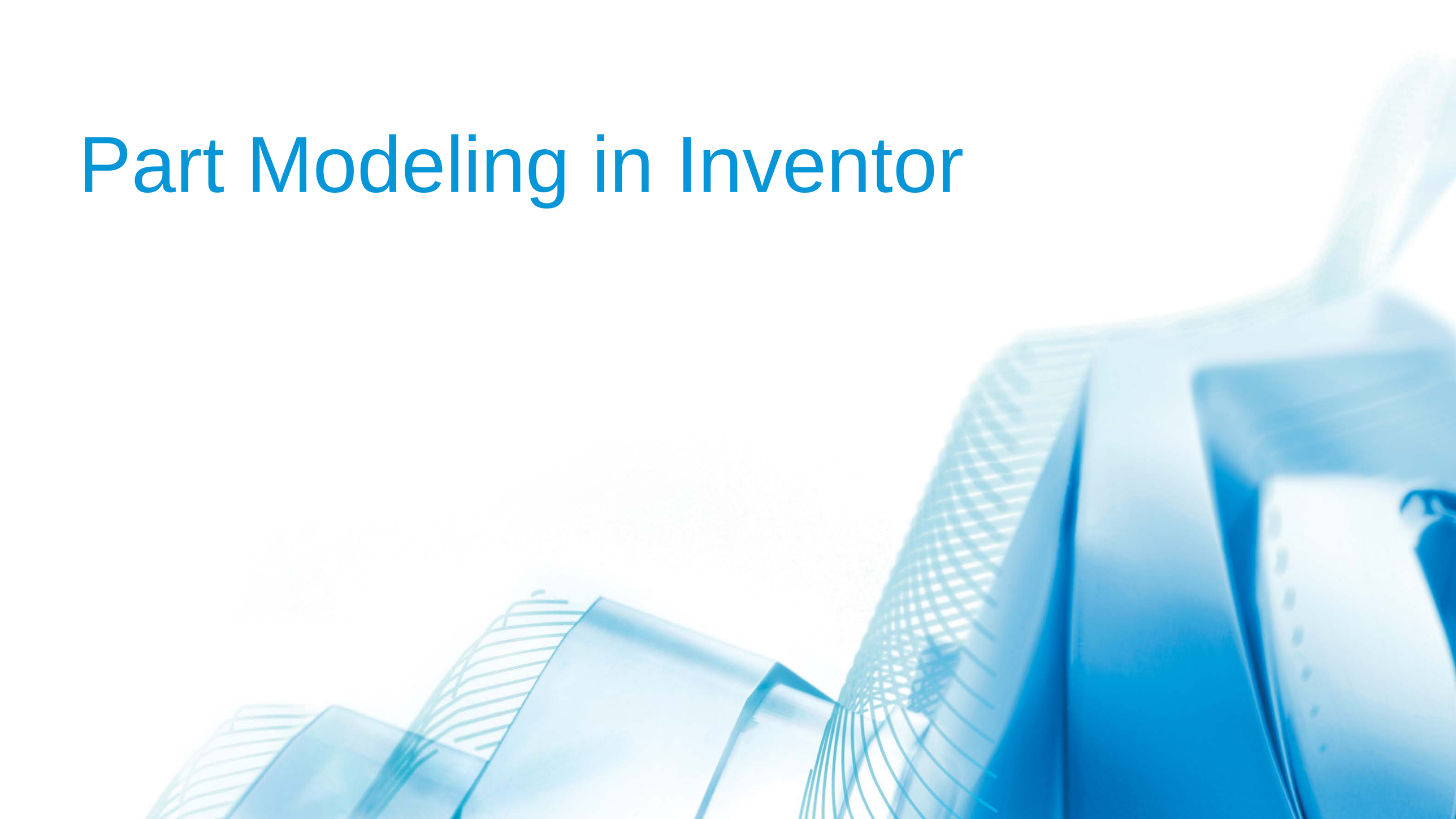


The Infrastructure Parts Editor is a tool created by Autodesk to author part catalogs for InfraWorks and an alternative method to author content for Civil 3D. Originally named Project Kameleon while in Autodesk Labs, this tool graduated a few years ago and is now a supported application.

Infrastructure Parts Editor Demo

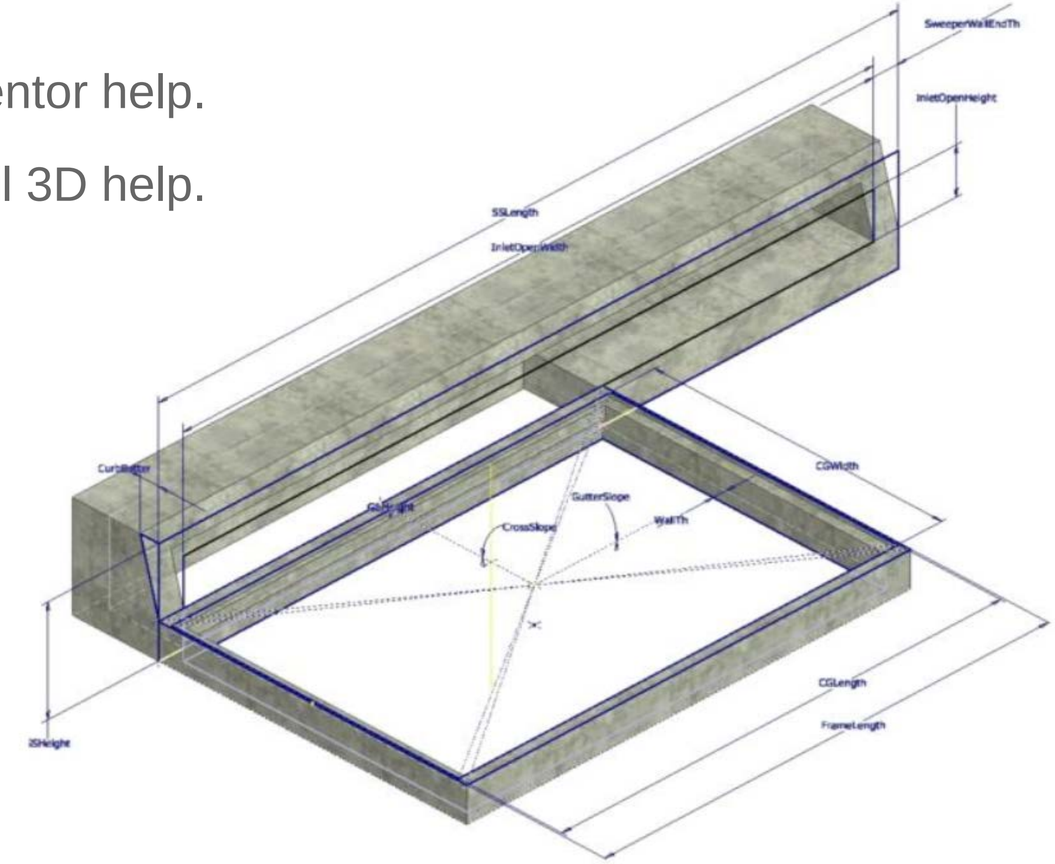


Part Modeling in Inventor



5 Things to do First…

1. Setup the Autodesk Inventor environment so the “Top” plane looks down the Z-axis.
2. Review Essential Skill Videos in Autodesk Inventor help.
3. Review Part Authoring Videos in Autodesk Civil 3D help.
4. Review the Parameters Reference.
5. Plan your modeling session.



Its all about the parameters!

not mark PierHeight as a key parameter in the Parameters dialog within Autodesk Inventor, the resulting pier model will not be supported in Autodesk InfraWorks.

Parametric Drainage Structures: Surface Structures

Parameter	Parametric Value	Required?	Notes
*FlangeTh	Base Flange Thickness	No	This is an optional parameter for circular and rectangular surface structures.
*SPDiameter	Underground Structure Port Diameter	Yes	This is a required parameter for circular surface structures.
*CGHeight	Height of grate (opening)	Yes	This is a required parameter for circular and rectangular surface structures.
*CG Diameter	Diameter of grate (opening)	Yes	This is a required parameter for circular surface structures.
*WallTh	Wall thickness of Inlet	Yes	This is a required parameter for circular and rectangular surface structures.
*SSHeight	Height of Inlet	Yes	This is a required parameter for circular and rectangular surface structures.
*SSDiameter	Diameter of Inlet	Yes	This is a required parameter for circular surface structures.
*CrossSlope	Roadway Cross Slope	No	This is an optional parameter for circular and rectangular surface structures.
*GutterSlope	Roadway Gutter Slope	No	This is an optional parameter for circular and rectangular surface structures.

Note: Some additional parameters may also be needed, depending on the type of surface structure. For example:

- *SP prefixes indicate that a structure port parameter is used to match the surface structure to circular or rectangular underground structures in an assembly.
- SPLength and SPWidth is required to match the surface structure to underground structures.
- CG* is used to match the surface structure to circular or rectangular covers or grates.
- SSLength & SSWidth are required parameters for rectangular surface structures.

They are required for a reason!!!!

Plan out the Modeling Session

Oldcastle Precast®

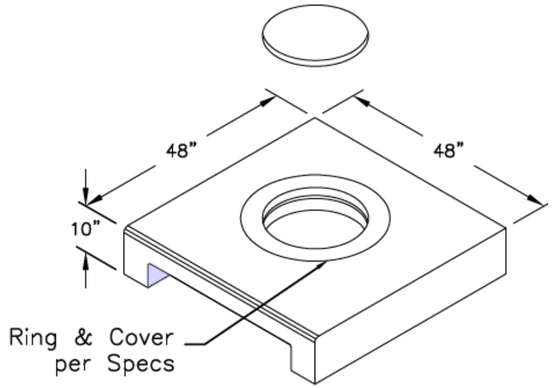
INLETS

36" x 36" C.O.H. Type "C" Inlet

File: 266-3636-TYP-C-DII Model: 3636-C-INLET

Top :

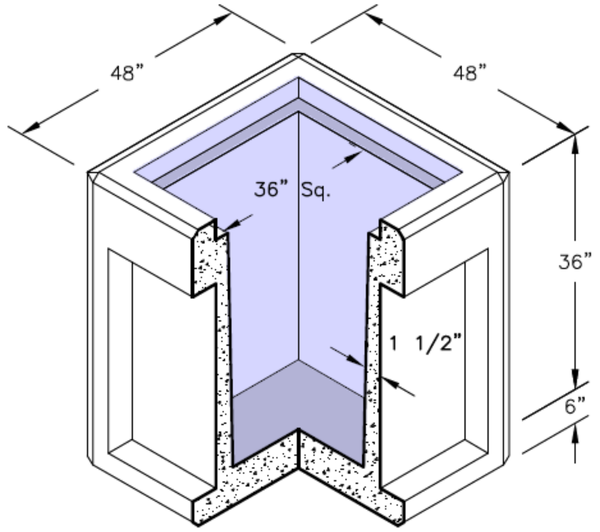
Weight : 2,040 Lbs.



Bottom :

Weight : See Chart

Bottom	
Wall(s)	Weight (Lbs.)
4–Way	3,220



Part Modeling in Inventor Demo

https://youtu.be/RWzZ2zJ4cZE

Questions

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