<u>Cheat Sheet – Pressure Pipes</u>

1. Edit the feature settings for the pressure network. Under the settings tab, right-click on "Pressure Network" and then select "Edit Feature Settings".

-				
pperty	Value	Override	Child Over	Lock
General				
Degree of Curvature				
Labeling				
Time				
🗍 Default Styles				
Appurtenance Default Style	Valve			8
Fitting Default Style	Fitting			8
Pressure Pipe Default Style	Centerline (Water)			8
Fitting Plan Label Style	Nominal Diameter Bend Angle and Material			8
Appurtenance Plan Label Style	Nominal Diameter Valve Type			8
Pressure Pipe Plan Label Style	Nominal Diameter and Material			8
Fitting Profile Label Style	Nominal Diameter Bend Angle and Material			8
Default Parts List	Water			8
Appurtenance Profile Label Style	Nominal Diameter Valve Type			8
Pressure Pipe Profile Label Style	Nominal Diameter and Material			8
Render Material	_GLOBAL_		L.	8
🕅 Default Name Format				
Appurtenance Name Template	Appurtenance - (<[Next Counter(CP)]>)			8
Fitting Name Template	Fitting - (<[Next Counter(CP)]>)			8
Pressure Pipe Network Name Template	Pressure Network - (<[Next Counter(CP)]>)			8
Pressure Pipe Name Template	Pressure Pipe - (<[Next Counter(CP)]>)			8
Alignment From Pressure Network Name Template	Alignment - (<[Pressure Pipe Network Name(CP)]>) - (<[Next Co			8
🕅 Default Profile Label Placement				
Dimension anchor option for pressure pipes	Fixed			æ
Dimension anchor elevation value for pressure pi	0.00'			8
Dimension anchor option for fittings	Fixed			8
Dimension anchor elevation value for fittings	0.00'			8
Dimension anchor option for appurtenances	Fixed			A

2. Right-click the part list you wish to use and select the edit button.

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3. Create and Edit a Parts List

When using pressure pipes in Civil 3D 2017, new parts have been added. You might want to create parts lists for different materials since different parts exist for each material.

	> 🗄	e (h • 🔿 •	🛱 Civi	i 3D			Au	todesk A	utoCAD Civi	I 3D 2017 D	Network Catalog	x
C3D Hon	ne In	sert	Annotate	Modi	fy	Analyze	View	Manage	Output	Survey	Autodesk 3	6	
370 1) Yyy	🚚 In	nport Survey	/ Data		Parcel -	-1-1 -1-	Alignment	- 👭 -	5	<u>*</u> -		_
Toolenzo	F 😑	-¢° Po	oints 🝷			Feature Lin	e • 🖬	Profile 🝷	#² -		5	a \Autodesk \C3D 2017\enu \Pressure Pipes Cata	2
Tooispace		🔗 Su	urfaces 🝷		()	Grading +	M	Corridor	3î -	4	* -	e file:	
Palettes	•	Creat	e Ground Da	ata 🔻						Profile & S	Section Views	_PushOn.sqlite 🔹	
					1	Create Figu	re from	Object	4	Create Netwo	ork Parts List	_Flanged.sqlite HDPE_sqlite	
					្នា	Create Sub	assembl	ly from Polyli	ne 📹	Create Full P	arts List		
					8 3	Create Poly	line Fro	m Corridor		Set Pipe Net	work Catalog	_PVC.sqlite	
					۲	Create Bou	ndary Fr	rom Corridor		Part Builder		_steel.squite	
					<u>11</u>	Set Pressur	e Netwo	ork Catalog					
				- 6	ļц.			Create D	esign)				

Set the catalog to the desired material, and then create a new parts list for that material. For example, PVC contains a fire hydrant, while others do not.

🖃 🔏 CMI - PVC			
🗄 🔏 Butterfly Valve_ DI_ FF_ Long Body_ Class 150A_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ FF_ Long Body_ Class 150B_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ FF_ Long Body_ Class 250B_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ FF_ Short Body_ Class 150A_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ FF_ Short Body_ Class 150B_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ FF_ Short Body_ Class 250B_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ MJF_ Class 250B_ AWWA C504	E,		54
🗄 🔏 Butterfly Valve_ DI_ WFR_ FF_ AWWA C504	E,		24
🗄 🔏 Gate Valve_ FF_ 200 PSI_ AWWA C500	E,		24
🗄 🔏 Gate Valve_ FF_ NRS_ 200 PSIG_ AWWA C509	E,		24
🕀 🔏 Gate Valve_ FF_ OS&Y_ 200 PSIG_ AWWA C509	E,		24
🗄 🔏 Gate Valve_ FFxMJF_ NRS_ 200 PSIG_ AWWA C509	E,		24
🗄 🔏 Gate Valve_MJF_200 PSIG_AWWA C509	E,		24
🕀 🞢 Gate Valve_ MJF_ 200 PSI_ AWWA C500	E,		24
🗄 🔏 Gate Valve_ MJF_ with Bypass_ 150 PSI_ AWWA C500	E,		24
🕀 🔏 Gate Valve_ MJF_ without Bypass_ 150 PSI_ AWWA C500	Ę	Ę	
🕀 🔏 Gate Valve_ MJxMJ BELL_ MJF_ 200 PSIG_ AWWA C509	Ę	Ę	
🕀 🔏 Gate Valve_ PFS_ 200 PSIG_ AWWA C509	E,	E,	24
🗄 🔏 Hydrant_MJ	E,		24
Hydrant_42in_Bury Depth_MJ	CMI Fire Hydrant	ByLayer 🛞	[none]
Hydrant_48in_Bury Depth_MJ	CMI Fire Hydrant	ByLayer 🛞	[none]
Hydrant_54in_Bury Depth_MJ	CMI Fire Hydrant	ByLayer 🛞	[none]
	CMI Fire Hydrant	ByLayer 🔘	[none]
- 🔐 Hydrant_66in_ Bury Depth_ MJ	CMI Fire Hydrant	ByLayer 🛞	[none]
Hydrant_72in_Bury Depth_MJ	CMI Fire Hydrant	ByLayer 🛞	[none]

4. Three choices for creating a pressure pipe network: (a) Create from Object, (b) Create By Layout (c) Create By Path

The Dressure Networks	
- ## Bridges	Create Pressure Pipe Network by Path
Corridors	Create Pressure Pipe Network by Layout
Assemblies	Create Pressure Pipe Network from Object
· Intersections	Create Folder
Survey	Refresh
View Frame Gro	

a. "Home" ribbon tab > Pipe Network > Create Pressure Network from Object



b. "Home" ribbon tab > Pipe Network > Pressure Network Creation Tools



During the drawing process, the compass will guide you with only angles that the parts list has. If you draw pressure pipe while in a model view (3D), then you can change the plane of the compass for more choices.



5. "Modify" ribbon tab > Pressure Pipe Network > Network Tools > Draw Parts in Profile

Either select the entire pipe network or select the parts you wish to show in the profile view. You can also click on a part, then right-click and choose add part to profile view. This is also available in the right-click menu after selecting a part. Alternatively, use the Pipe Network tab of the Profile View Properties to turn pipes on and off.

6. "Pressure Network" ribbon tab > Add Labels ... or "Home" tab > Add Labels



1. Using Grips

a. Plan View



You can edit the allowable deflection in the parts list by editing a pipe.

Name		Style		Render Material		Pay Item
🗆 🔏 Water						
😑 🔏 ductile in	on		Ę		ę	
🔏 pipe-4	4 in-push on-ductile	Double Line (W	/ater) 🔗	ByLayer	۲	[none]
- 👸 pip	<u>S in nuch an ductila</u>	Double Line 04	latar) R.	Pul aver	0	Inonal
- 🔏 pip	pipe-4 in-push on-	ductile iron-350) psi-AWWA C149			
- 🔏 pip						
- 🖉 pip	Property		Value	Ur	nit	
pip	Nominal Diameter		4.000000	in		
pip	Inner Diameter		4.000000	in		
pip	Outer Diameter		4.800000	in		
a pip	Wall Thickness		0.400000	in		
pip	Cut Length		18.000000	ft		
a pip	Allowable Deflectio	n (5.000000	deg	9	
a pip	Minimum Flex Radi	us	0.000000	ft	-	

b. Profile View – You can hot grip the invert, centerline, or crown of a pipe. You can also multihot-grip grips by holding down shift while selecting the grip.



2. Using the pressure part properties

Pres	sure Pipe Properties	Value
⊟G	eneral	
7-	Reference Surface	Finished Surface
	Reference Alignment	<none></none>
🗉 G	ieometry	
	Start Part	
	End Part	Fitting - (1)
	Bearing	S80° 42' 04"E
	Start Station	
	End Station	
	Start Offset	
	End Offset	
	Slope	-0.65%
	Pipe Start Easting	1655969.5002'
	Pipe Start Northing	174642.1404'
	Pipe End Easting	1656144.9052'
	Pipe End Northing	174613.4205'
	Start Centerline Elevation	38.78'
	End Centerline Elevation	39.93'
	Start Invert Elevation	38.36'
	End Invert Elevation	39.52'
	Start Outside Crown Elevation	39.24'
	End Outside Crown Elevation	40.40'
	2D Length	177.74'
	3D Length	177.74'
	Minimum Cover	2.92'
	Maximum Cover	3.84'
ΞP	art Data	
	Part Family Name	pipe-push on-ductile iron-350 psi
	Description	pipe-10 in-push on-ductile iron-350 psi-AWWA C151
	Cut Length	18.00'
	Diameter Inside	
	Diameter Outside	11.100"
	Type Description	standard
	Minimum Flex Radius	0.00'
	Thickness	0.550"
	Nominal Diameter Description	10 in x 10 in
	ld Coating Inside	
	ld Coating Outside	
	Id Material	ductile iron
	Pressure Class	350psi
	Maximum Pressure	
	Schedule	
	SDR	
	Series	
	Strength Class	
	Thickness Class	
	Compatible Standard	AWWA C151
	Connection Point Count	2
	Fid Manufacturer	
	Model Name	
	Version Number	

Fitti	ng Properties	Value	1
⊟ (General		
	Reference Surface	Finished Surface	
	Reference Alignment	<none></none>	
Ξ (Geometry		
	Insertion Point Easting	1656145.2752'	E
	Insertion Point Northing	174613.3599'	
	Insertion Point Elevation	39.94'	
	Insertion Point Station		
	Insertion Point Offset		
	Resultant Horizontal Angle	22.4960 (d)	Ч
	Resultant Vertical Angle	0.4318 (d)	
Ξ	Part Data		
	Pressure Part Type	Elbow	
	Part Family Name	elbow-22.5 degree-push on-ductile iron-350 psi	
	Description	elbow-10 in-22.5 degree-push on-ductile iron-350 psi	
	Angle	22.5000 (d)	
	Curve Radius		
	Cutback Angle		
	Type Description	elbow	-

3. Using the Edit Pipe Network Vista.

×																/ ?
**	Name	Descripti	Style	Render	Nominal	Referenc	Reference Surface	Start Stat	Start Offs	End Stati	End Offset	Start Cover	End Cover	Minimu	Maximu	Start
	Pressure 🖉		Double Line	ByLayer	10 in x 10 in		Finished Surface					3.00'	3.01'	2.92'	3.84'	16559(
	Pressure 🖉		Double Line	ByLayer	10 in x 10 in		Finished Surface					3.00'	3.00'	2.33'	3.15'	16561
	N Pressure		Double Line	ByLayer	10 in x 10 in		Finished Surface					3.00'	2.99'	2.50'	3.06'	16563
															-	
												Switch	botwoon	i+	1	
												proper	ties of eac	h nart tvn		
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AM																
No la																
PAN																
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4. Pressure networks allow for plan and profile layout tools during editing.



- Plan layout tools are the same commands described above in this document under pressure pipe layout tools.
- Profile layout tools allow the user to add additional parts as well as change values not allowed in the part properties, such as slope.

	🗁 Finished Surface	•	⊐®	4	Add Pressure Pipe	10	Ŧ		\∞	🖧 Swap Parts	Panorama	X
Network	<none></none>	Ŧ	Pines &	An	Add Bend	elbow-10 in-11.25 degree-p	•	Curve	Eollow	🔗 Break Pipe	🔏 Change Slope	Close
Properties	CMI Standard	Ŧ	Bends	ň	Add Appurtenance	gate valve-16 inch-push on	•	Pipe	Surface	🖧 Delete Part	🕼 Change Elevation	ciose
	Network Settings		Layo	out				Modify		Close		

http://www.cadmasters.com/c3d_cheatsheets.html

5. Other Tips and Tricks

a. Use the Swap Part command to change one or more pressure parts. This command is located in the ribbon if you select and pressure part first.



- b. The follow surface command in profile layout tools creates additional vertices to follow the surface more closely. The program does not allow the user to remove those vertices later, the user would have to delete the pipe and draw it again. This function only works with the Push On catalog.
- c. Use Design Check and Depth Check to analyze the pressure network for open connections and cover violations.
- d. Use the following link to see other pressure network tips and tricks.

http://www.thecadmasters.com/2022/04/11/pressure-network-in-civil-3d/

e. Drawing pipes and bends in the profile view creates an efficient way to create these vertical bends. This can also be done in a 3d view.

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