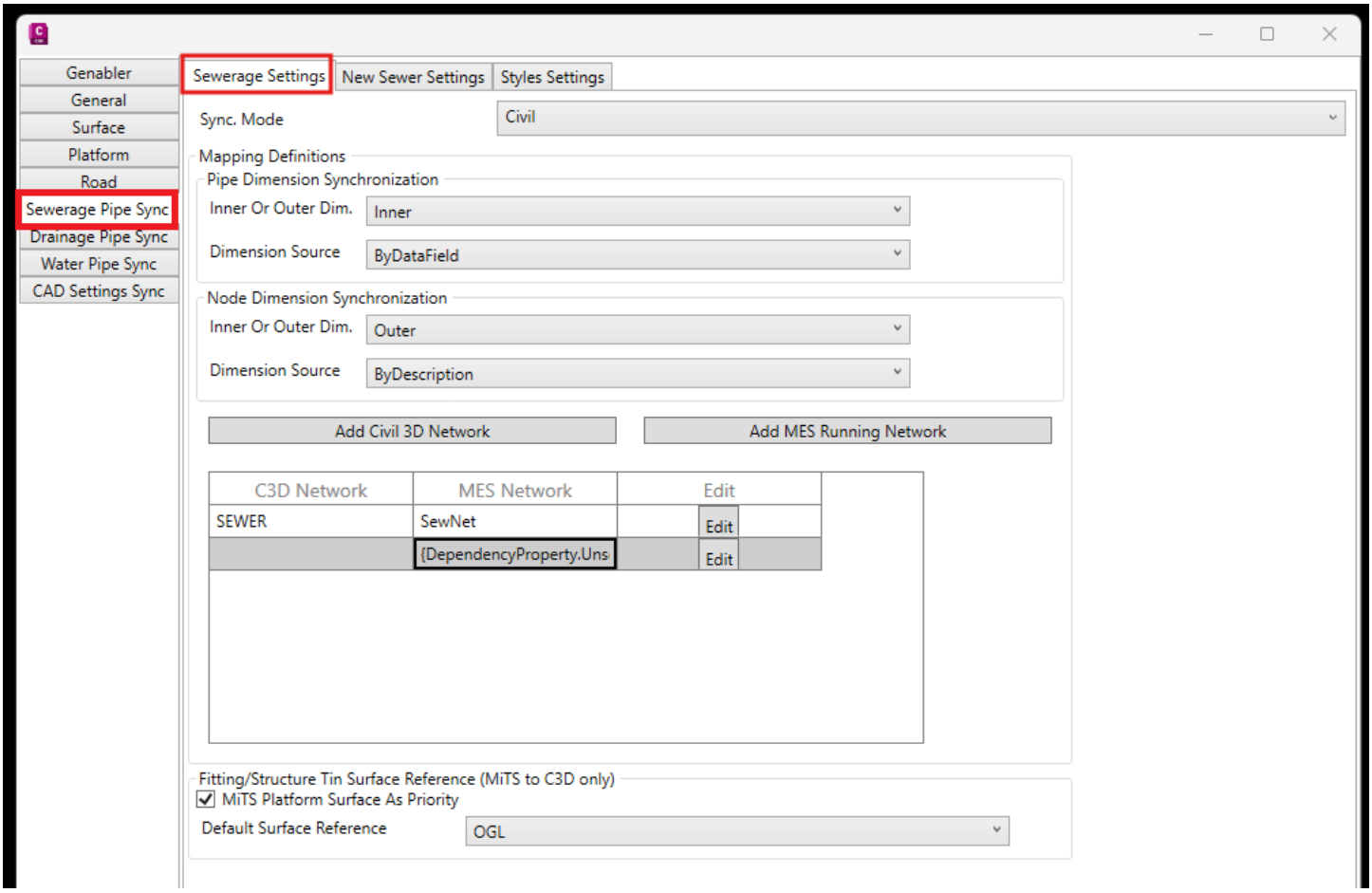
Gravity Pipe Network (MCIntegrator-Genabler Synchronization): Guide for Sewerage & Drainage

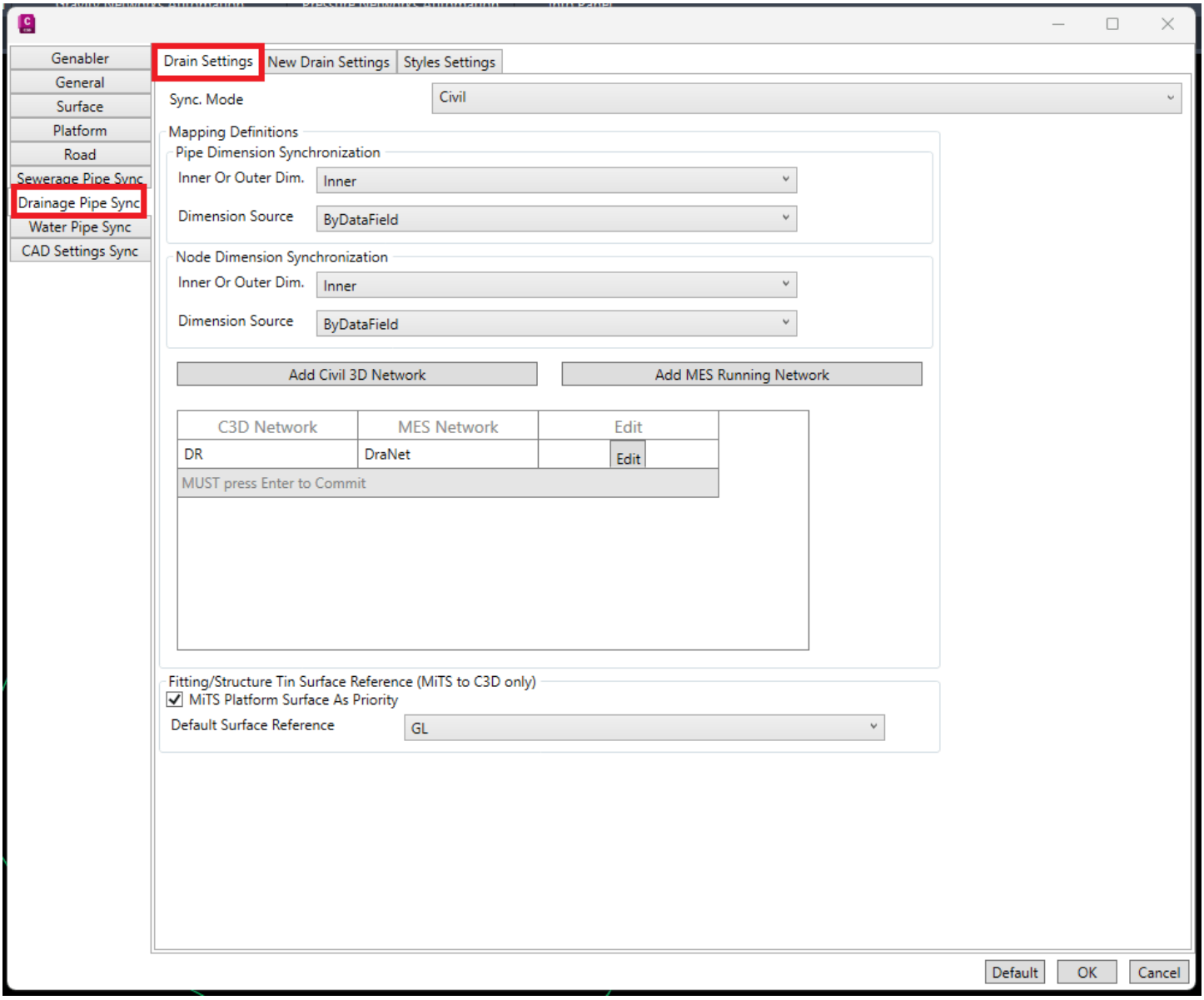
Gravity and Pressure Networks · https://mes100.com/docs/gravity-pipe-network-mcintegrator-genabler-synchronization-guide-for-sewerage-drainage/

Sewerage or Drainage Mapping Definition:

Please refer to the guide– ***Required Mapping Definition for Gravity Pipe Network (Sewerage or Drainage)***.



Sewerage Settings Definition



Drainage Settings Definition

Sync Steps:

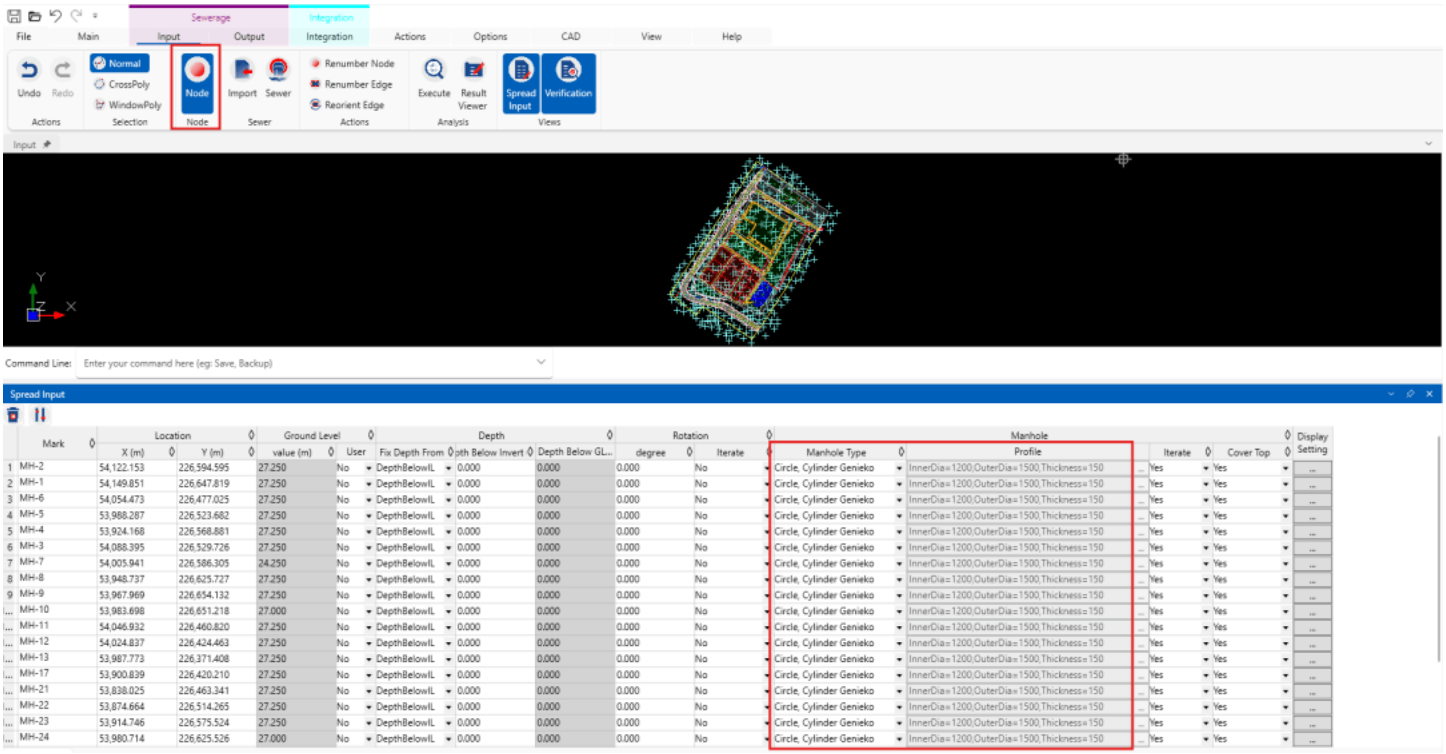
In MiTS

1. Go to the utility module (sewerage/stormsync) and check the Nodes and Pipes information below:
    - Manhole/Sump Type

- Manhole/Sump Diameter
- Pipe/Drain Types & Diameters
- Running Network

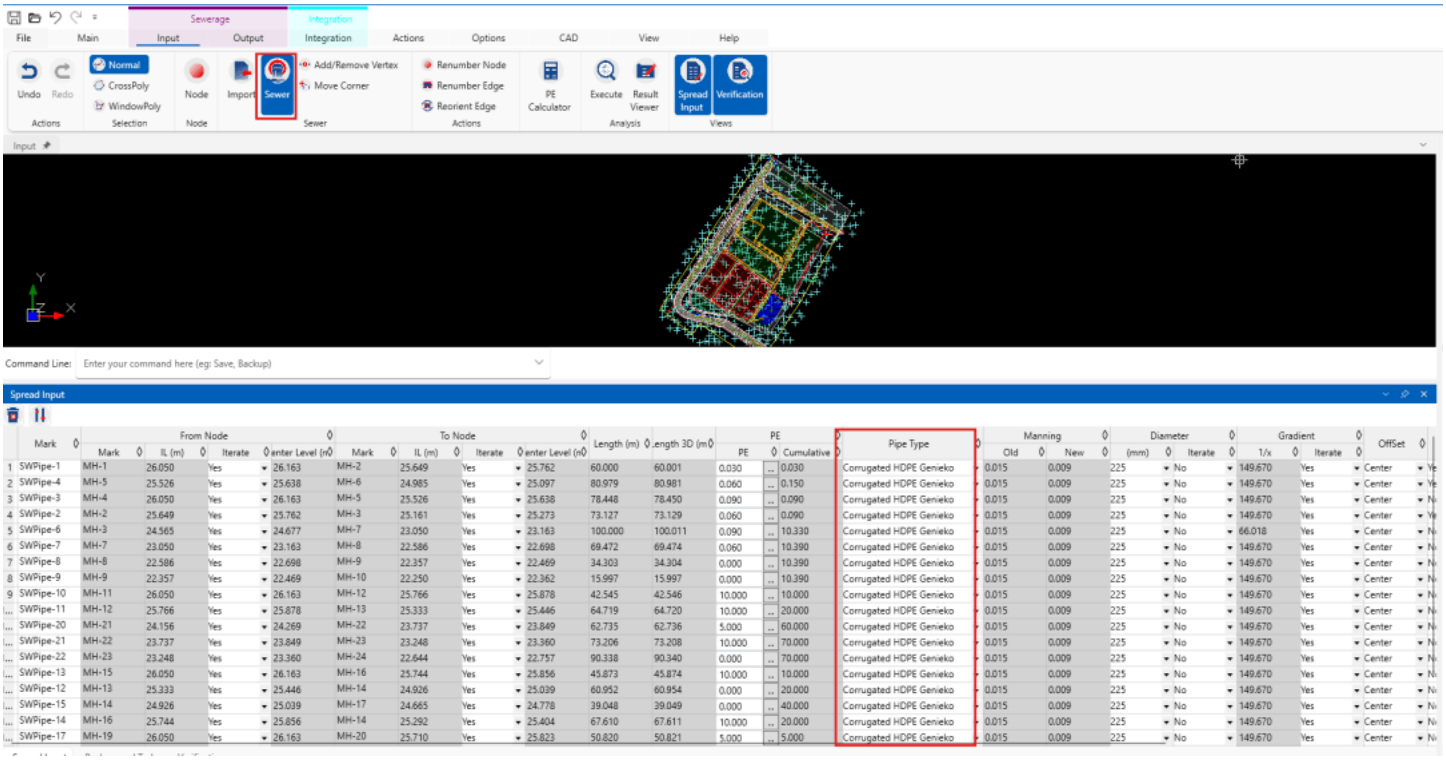
2. Ensure the **Manhole/Sump Type and Pipe/Drain Type are set to Genieko Category**, which follows the same diameter as the Genieko Part List for Gravity Network in Civil 3D.

3. Assigning the Genieko Category in MiTS allows us to apply **Default Mapping – Genabler** for the pipe and structures mapping definition during the Civil 3D sync. This automatically maps the MiTS category to Genieko Part Families, significantly reducing the percentage of synchronization errors.

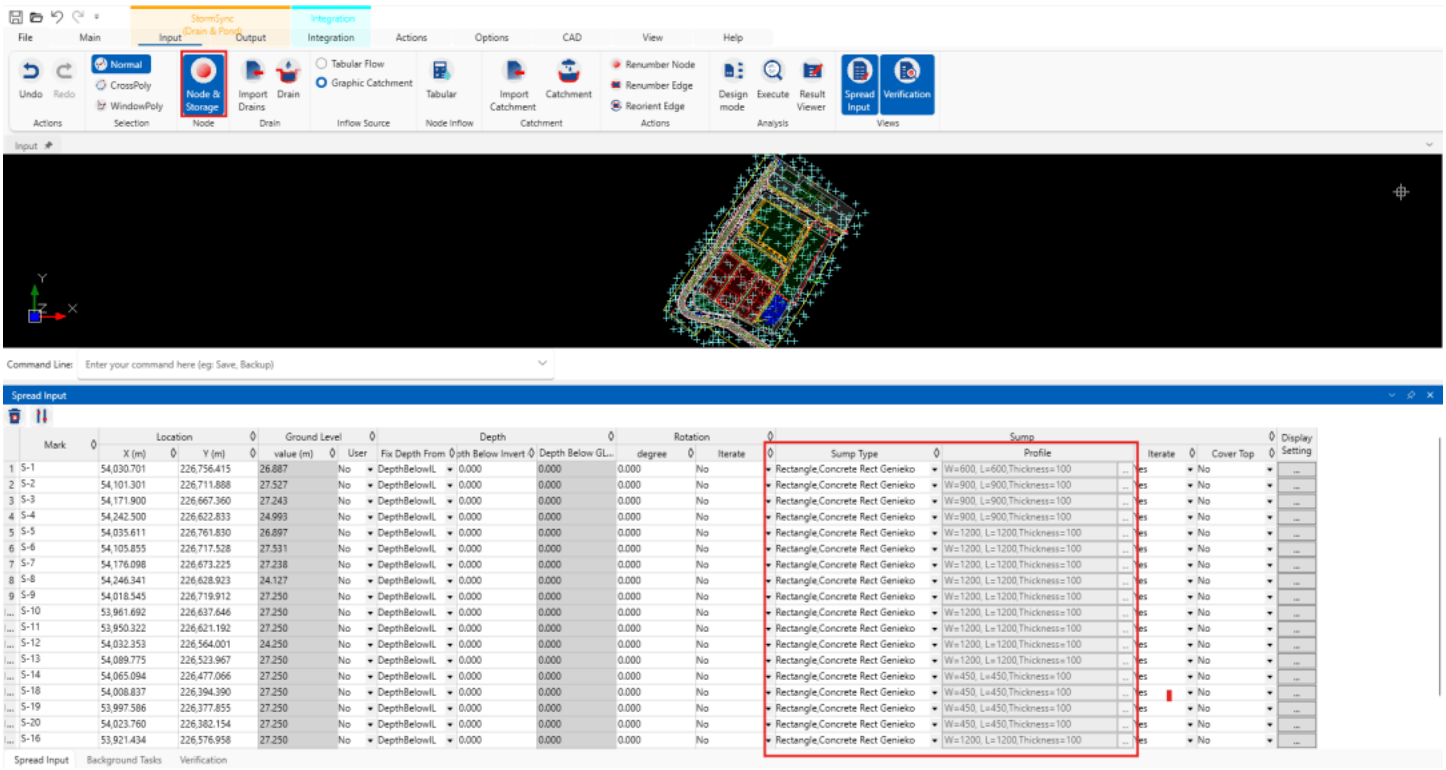


Mark	Location		Ground Level		Depth			Rotation		Manhole				Display Setting
	X (m)	Y (m)	value (m)	User	Fix Depth From	pth Below Invert	Depth Below GL...	degree	Iterate	Manhole Type	Profile	Iterate	Cover Top	
1 MH-2	54,122.153	226,594.595	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
2 MH-1	54,149.851	226,647.819	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
3 MH-6	54,054.473	226,477.025	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
4 MH-5	53,988.287	226,523.682	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
5 MH-4	53,924.168	226,568.881	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
6 MH-3	54,088.395	226,529.726	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
7 MH-7	54,005.941	226,586.305	24.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
8 MH-8	53,948.737	226,625.727	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
9 MH-9	53,967.969	226,654.132	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-10	53,983.698	226,651.218	27.000	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-11	54,046.932	226,460.820	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-12	54,024.837	226,424.463	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-13	53,987.773	226,371.408	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-17	53,900.839	226,420.210	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-21	53,838.025	226,463.341	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-22	53,874.664	226,514.265	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-23	53,914.746	226,575.524	27.250	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...
... MH-24	53,980.714	226,625.526	27.000	No	DepthBelowIL	0.000	0.000	0.000	No	Circle, Cylinder Genieko	InnerDia=1200,OuterDia=1500,Thickness=150	Yes	Yes	...

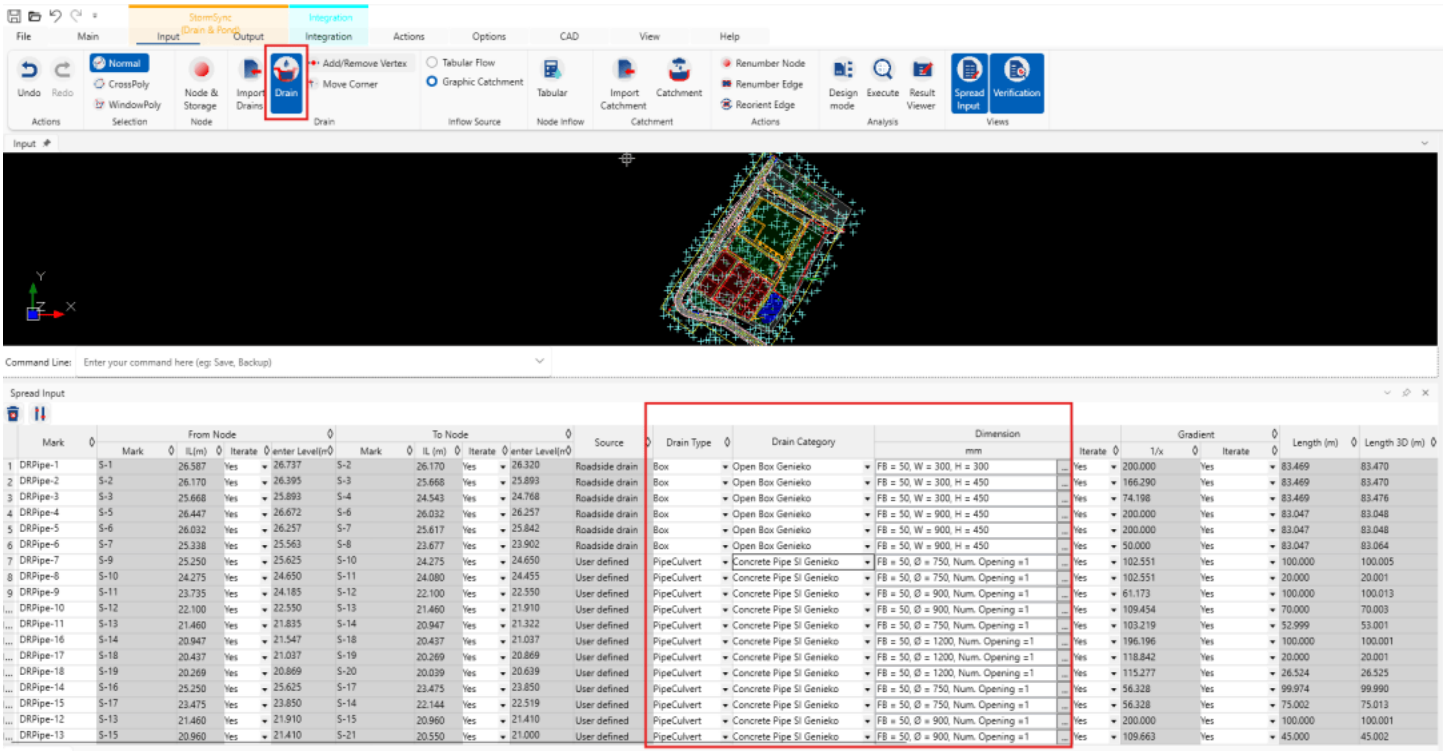
Example of Sewer Node Manhole Profile



Example of Sewer Pipe Type



Example of StormSync (Drainage) Node Sump Profile



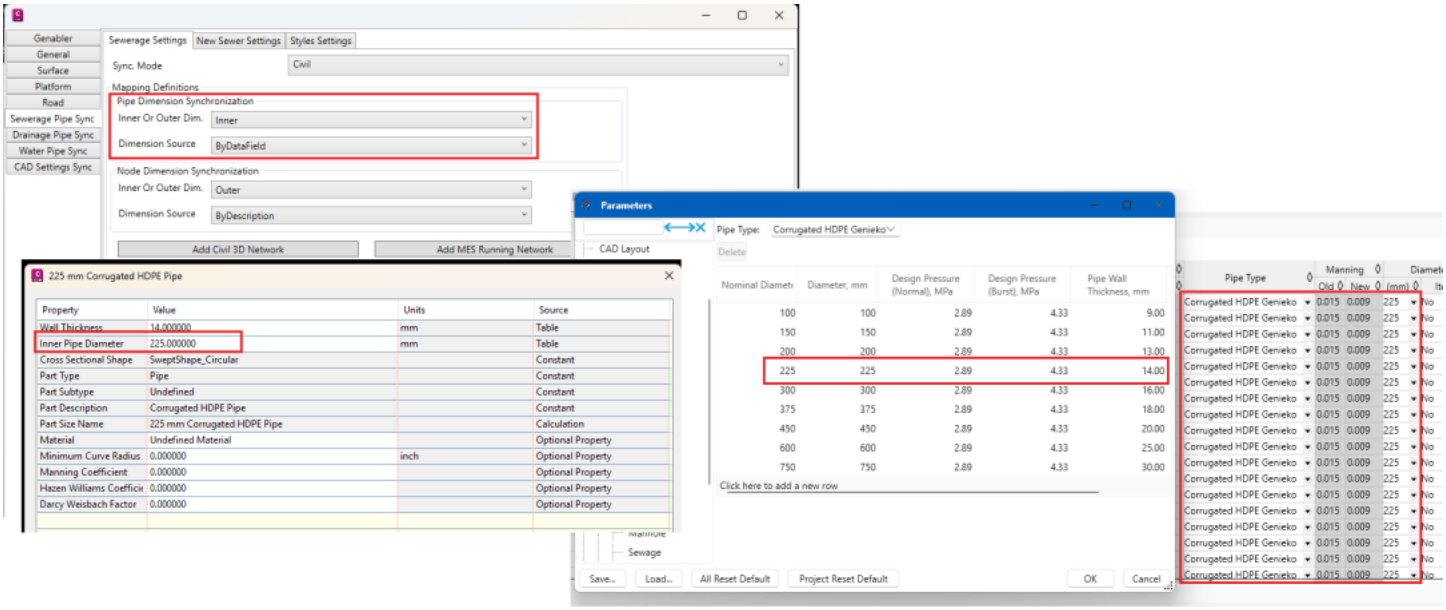
Example of StormSync Drain Type

In Civil 3D

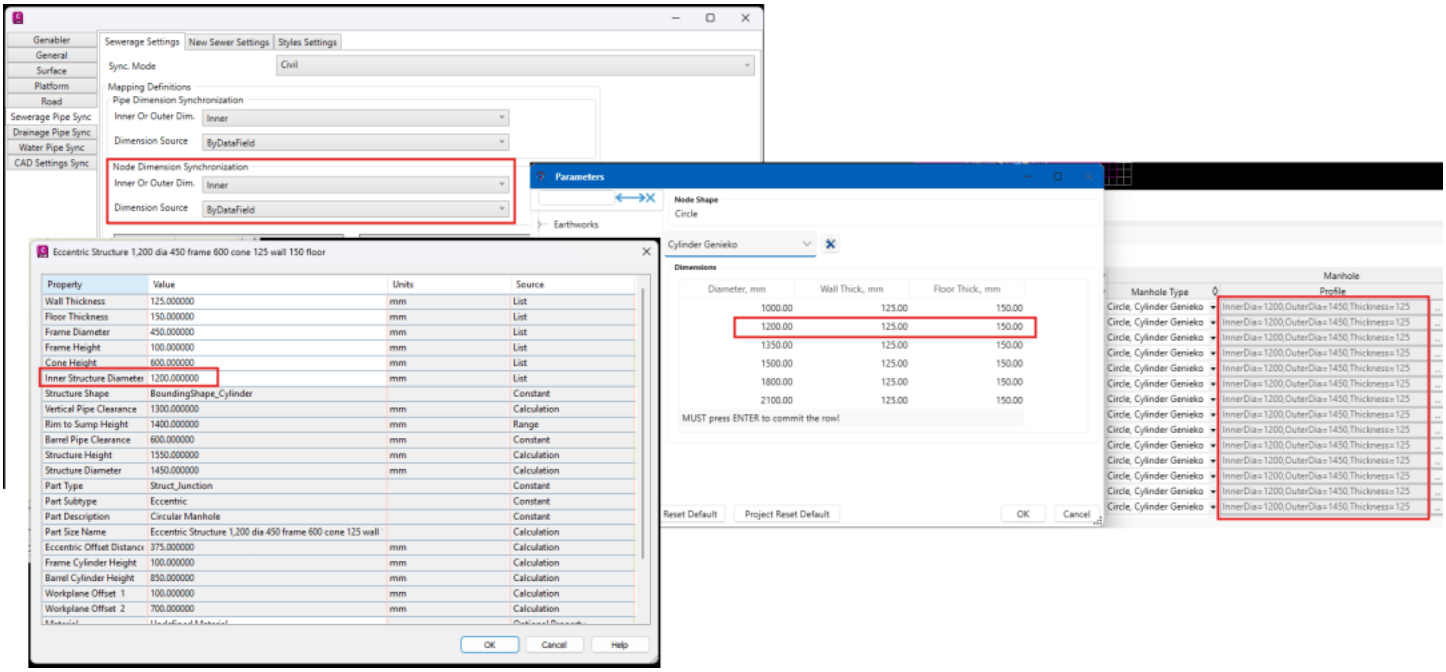
1. For gravity pipe network sync, it is **highly recommended that users also sync the Surface and Platform** to define the Reference Surface of the structures.

2. Under Project definition, click on the Sewerage Pipe Sync Tab/Drainage Pipe Sync Tab and define the **required mapping above** as follows.

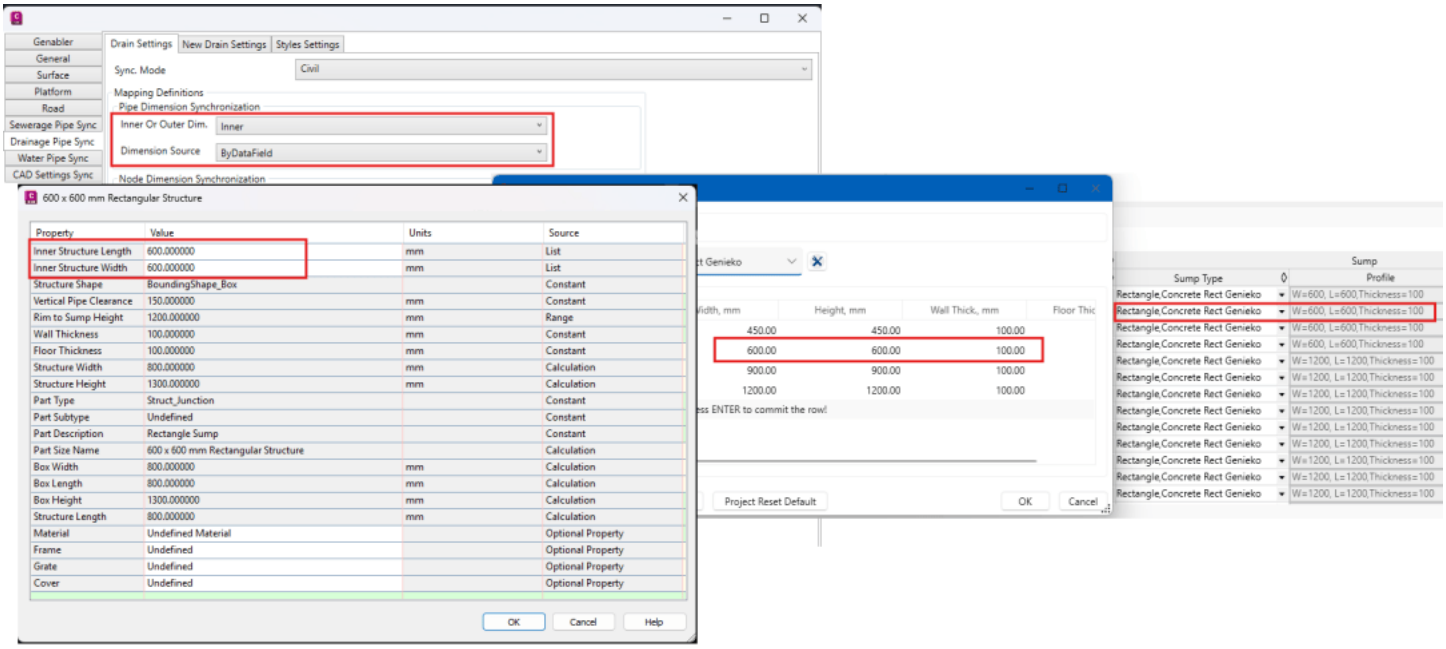
    - Set the sync mode to **Civil Sync** to ensure the entities are integrated as Civil Objects in the drawing file.
    - Set the Pipe and Node Dimension Synchronization according to the numerical diameter value in MiTS and the Genieko parts' diameter. By default, the **pipe is set to the Inner Diameter based on ByDataField**, while the **node/structure is set to the Outer Diameter based on ByDataField**.
    - As an example,
        - Pipe Dimension Synchronization: **Inner Diameter; ByDataField**
        - Node Dimension Synchronization: **Inner Diameter; ByDataField**



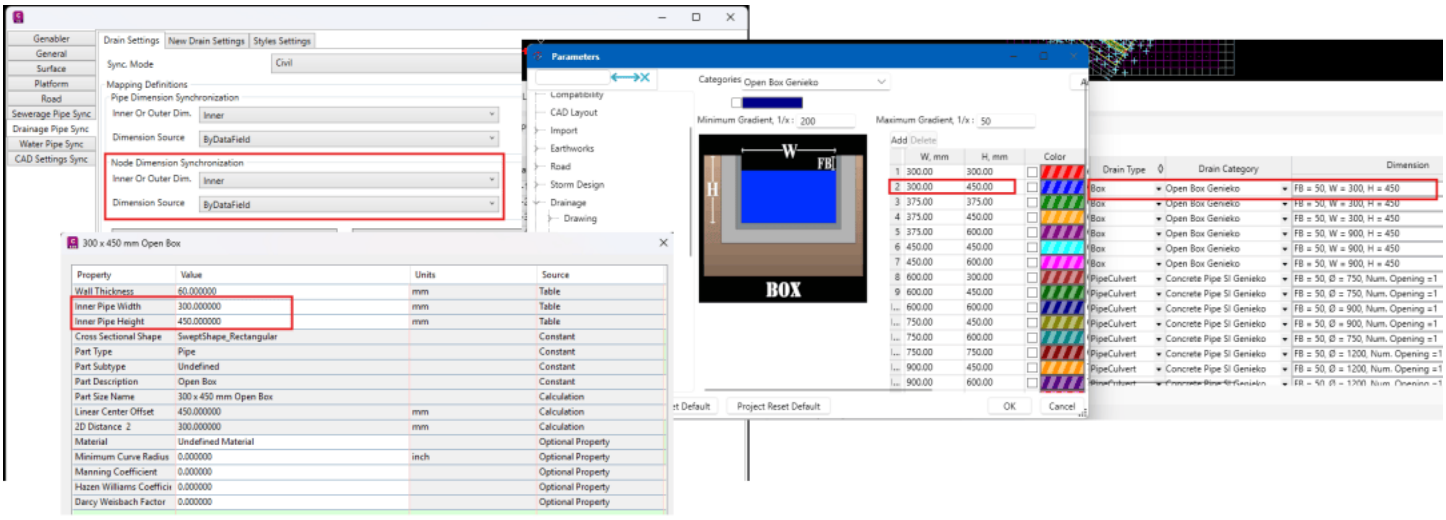
Example of Sewer Pipe Dimension Synchronization



Example of Manhole Dimension Synchronization

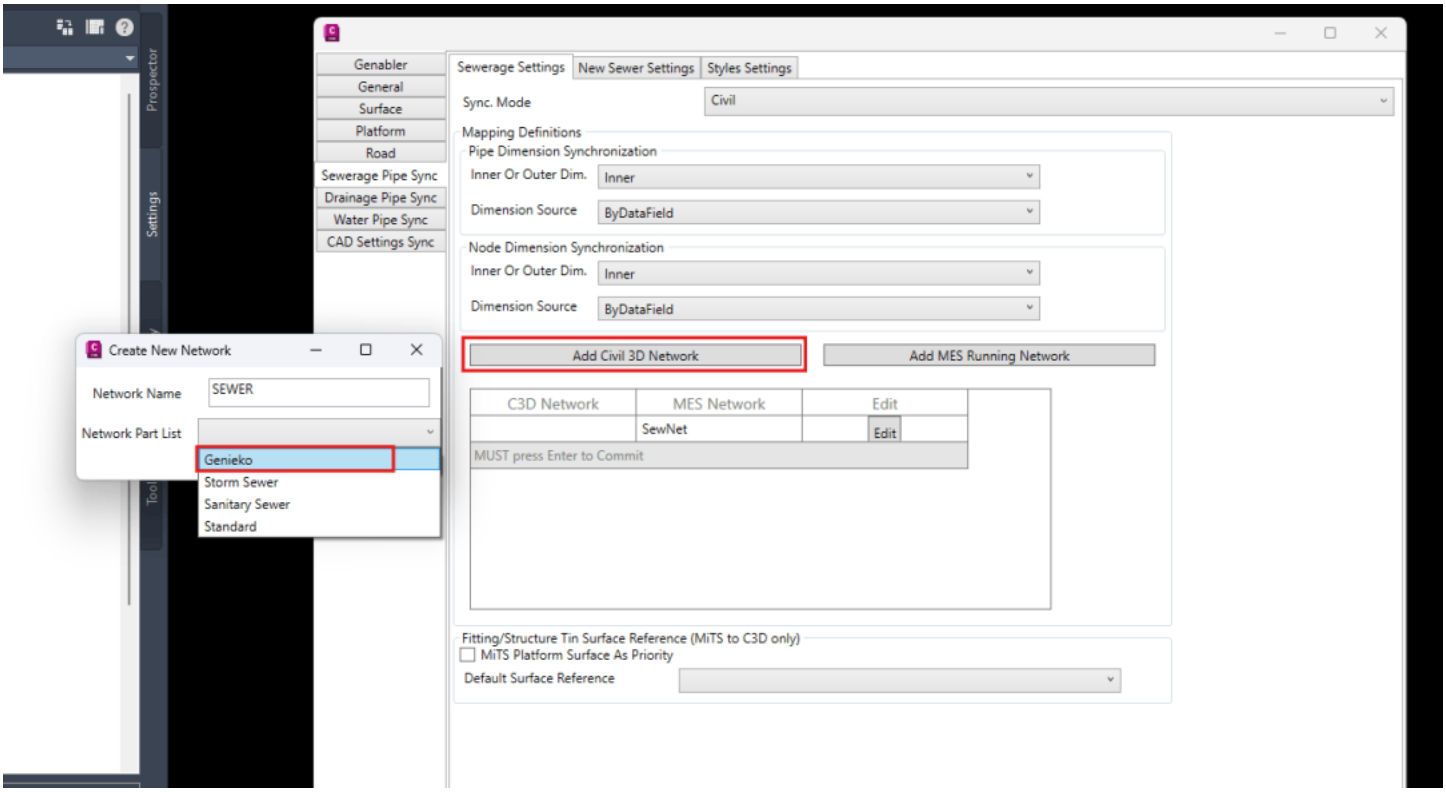


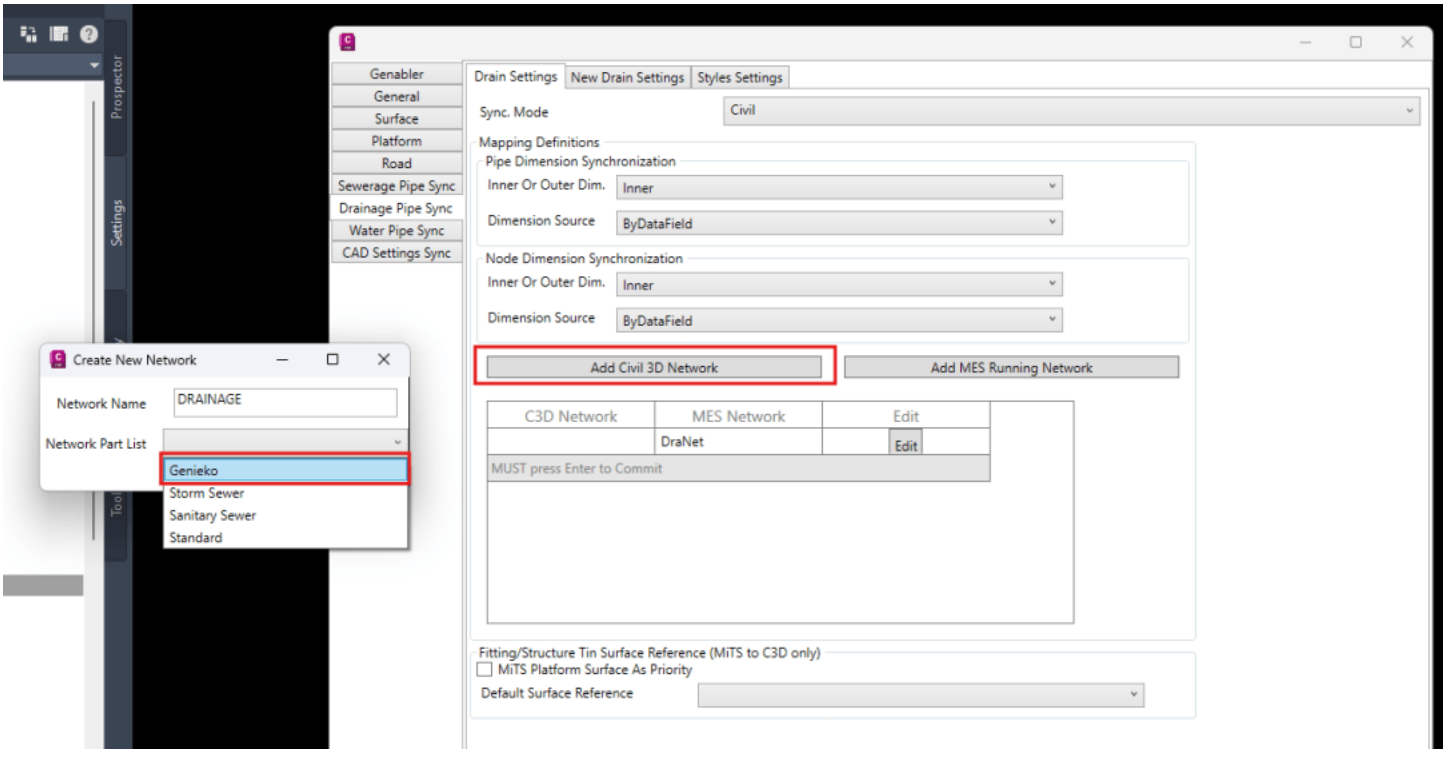
Example of Drainage Pipe Dimension Synchronization



Example of Sump Dimension Synchronization

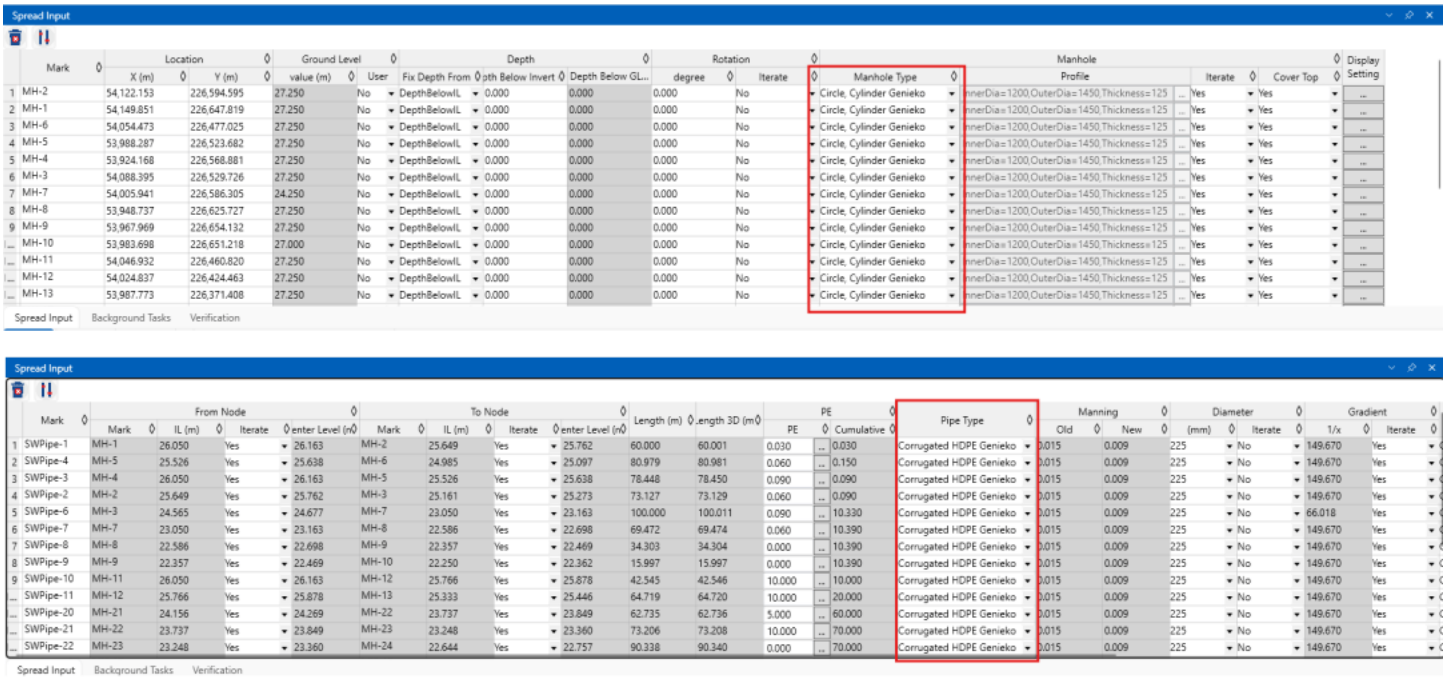
3. Define Civil 3D Networks corresponding to the available MES Network- Click ‘Add C3D Network’ > Define the network name > Select the **Genieko Part List** as the Network Part List.
    - Note: The **Genieko Part List** will contain the pipe and structures for the gravity pipe networks.



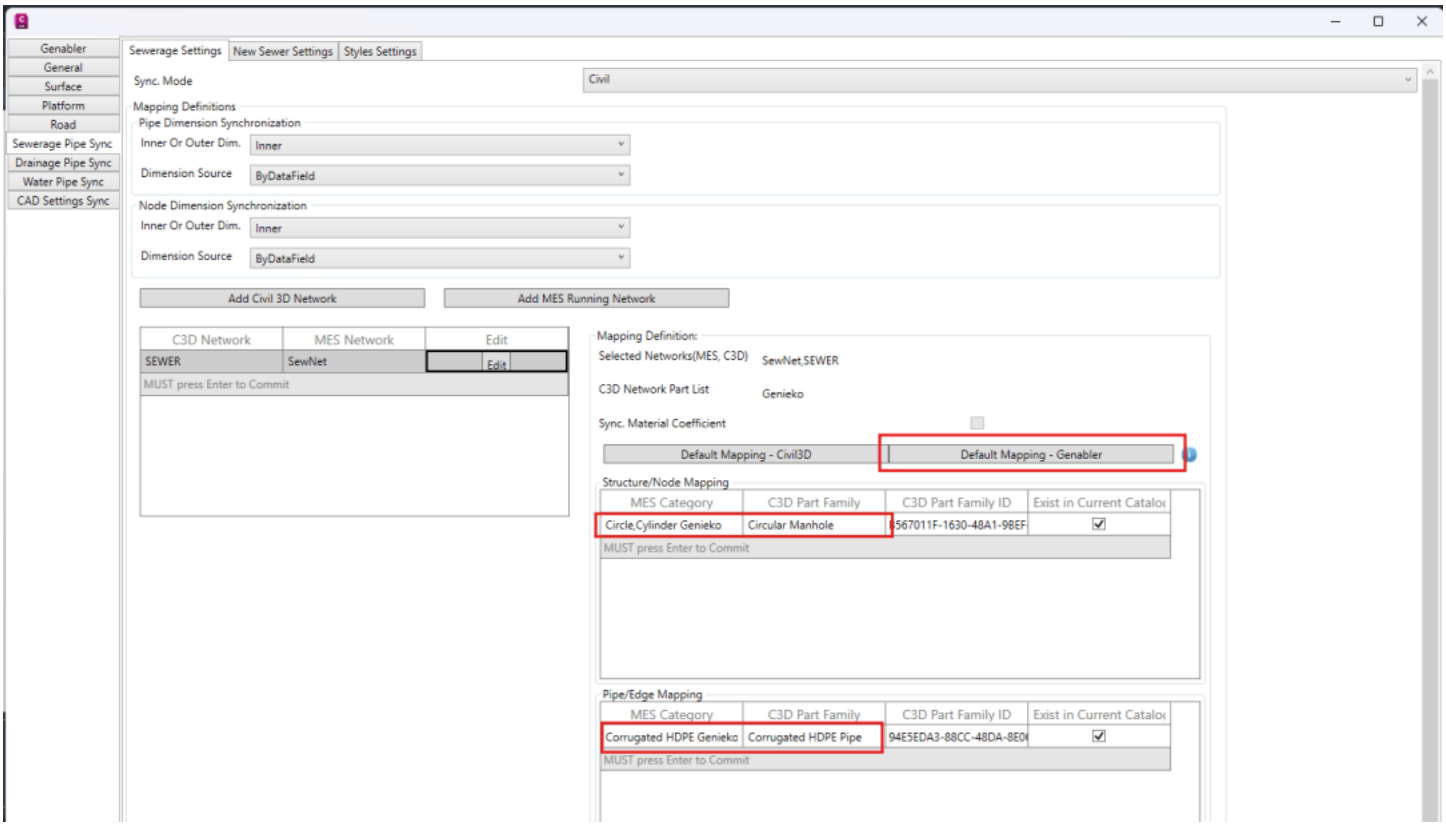


4. Click the ‘Edit’ button for the defined network. For the Structure/Node and Pipe/Edge Mapping, it is now automated by clicking the ‘**Default Mapping – Genabler**‘ button.

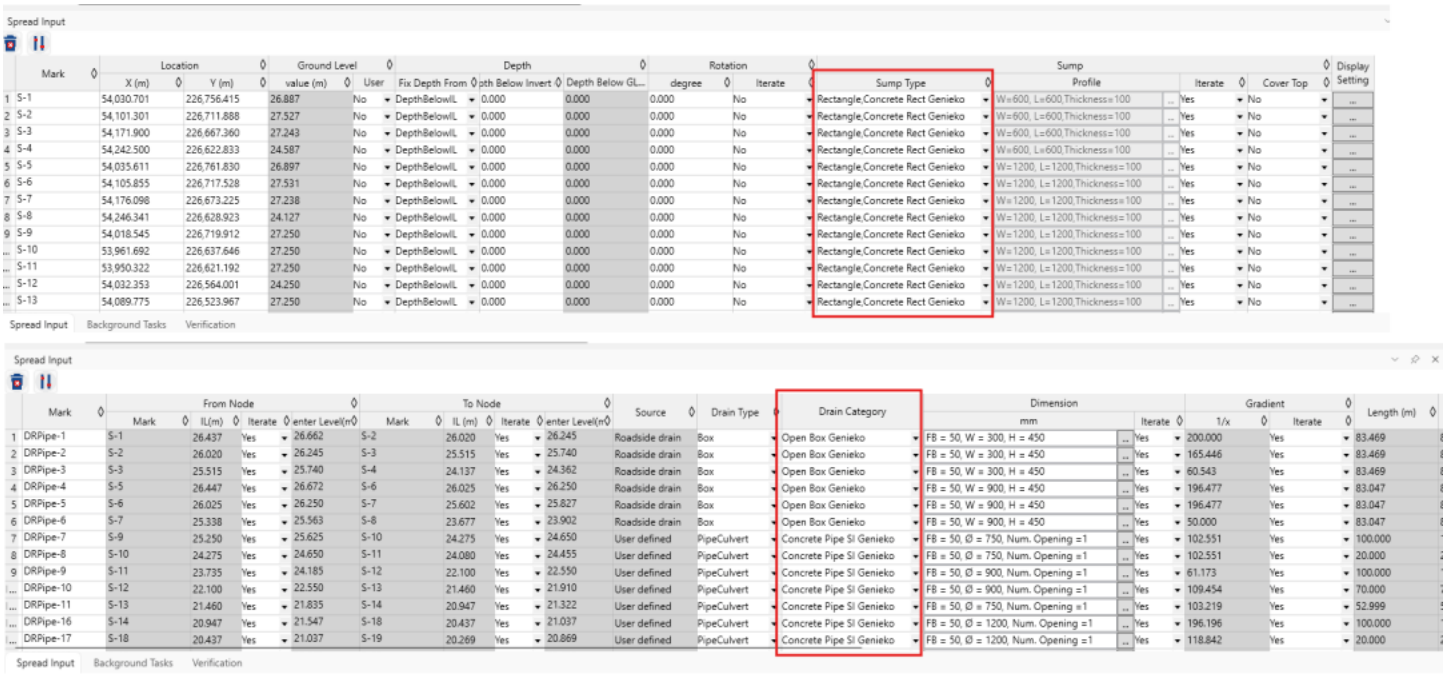
- Note: For **Default Mapping – Genabler**, the MES Category of the pipes and nodes **must be set to Genieko**. Then only the software can map the MES Category ‘Genieko’ to the corresponding pipes or structures from the Genieko Part List.



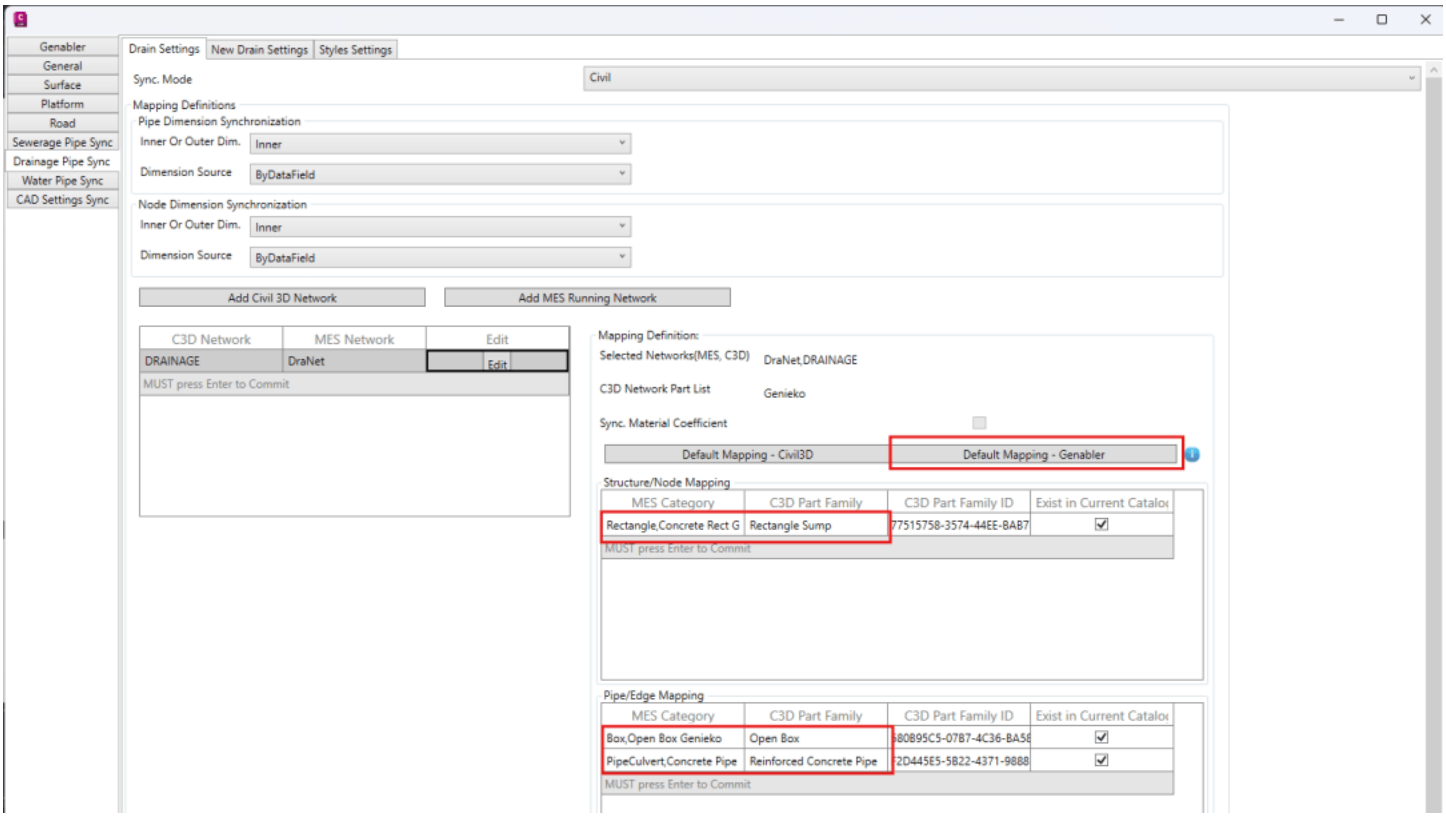
Manhole (Node) and Pipe Category set in MiTS



Default Mapping – Genabler applied for sewer pipe sync



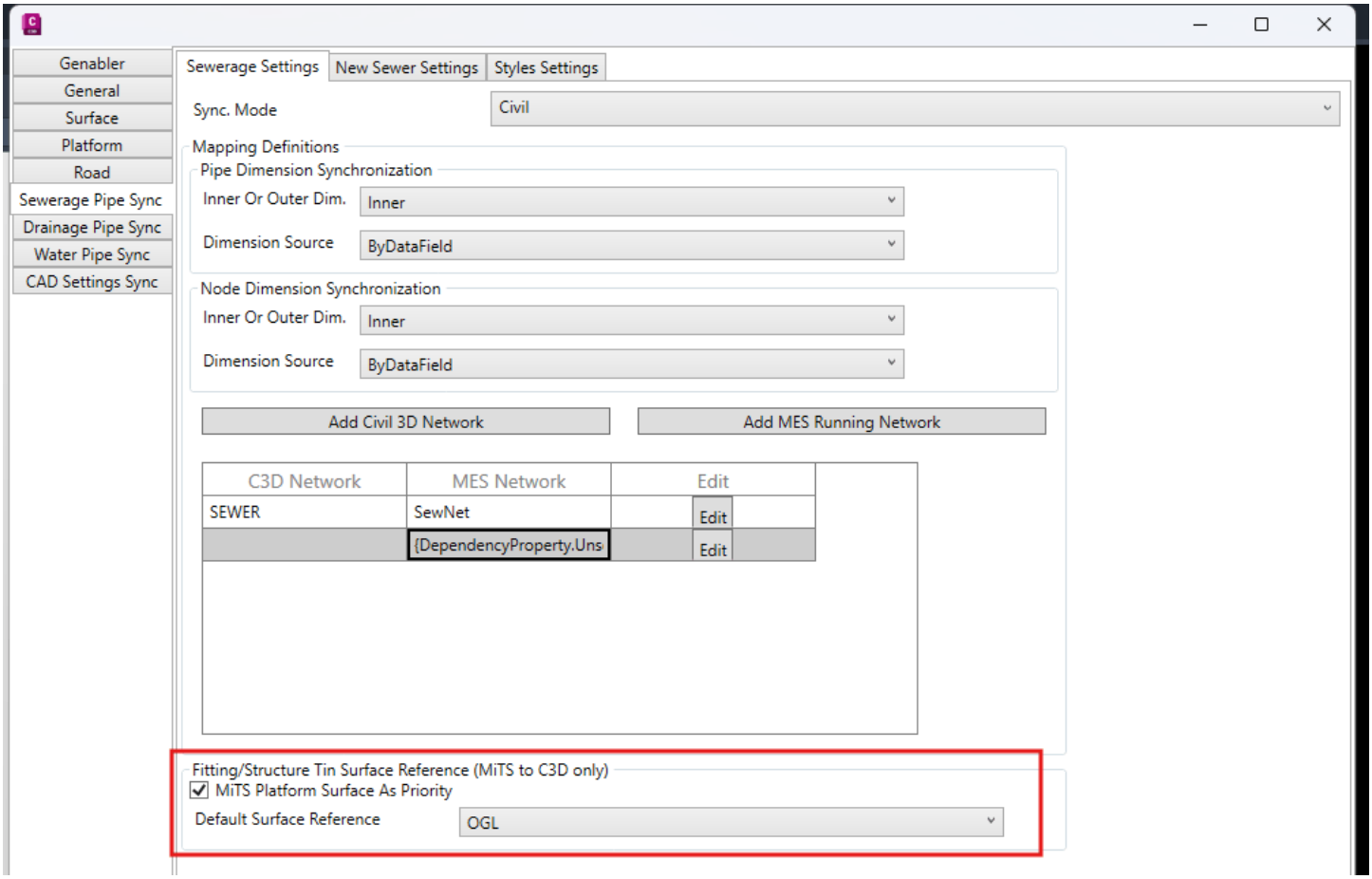
Sump (Node) and Drain Category set in MiTS



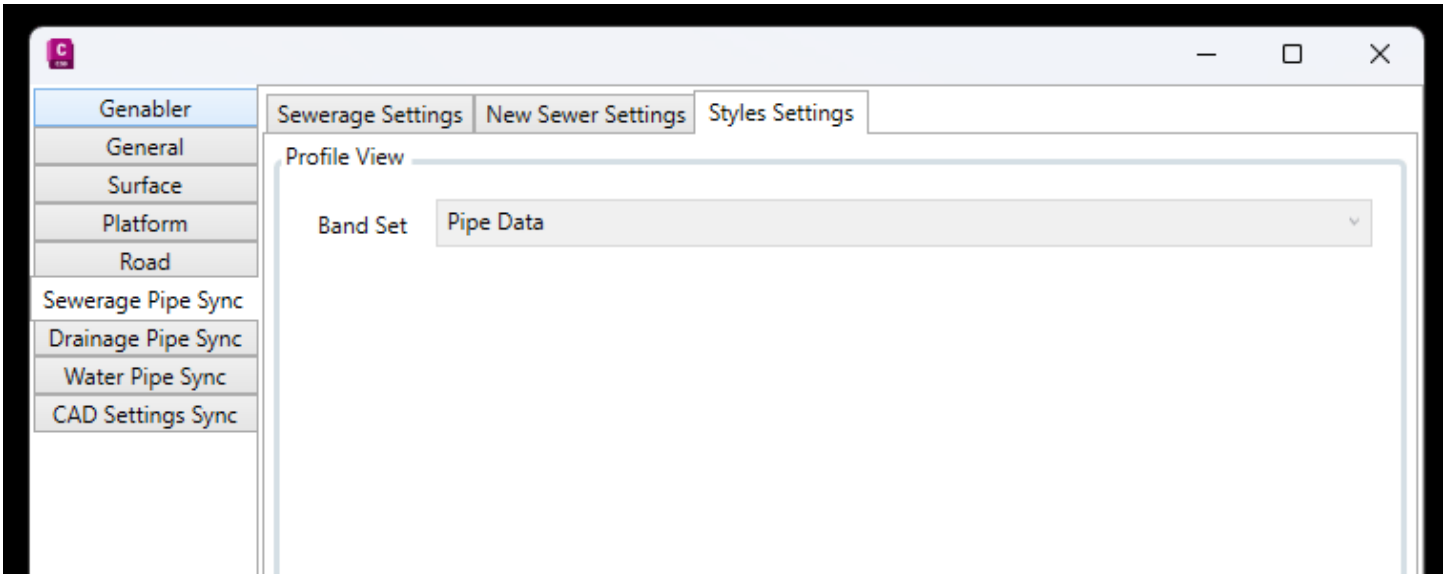
Default Mapping – Genabler applied for drain pipe sync

5. Press Enter for the C3D and MES Network defined to have the parameters defined committed by the software.

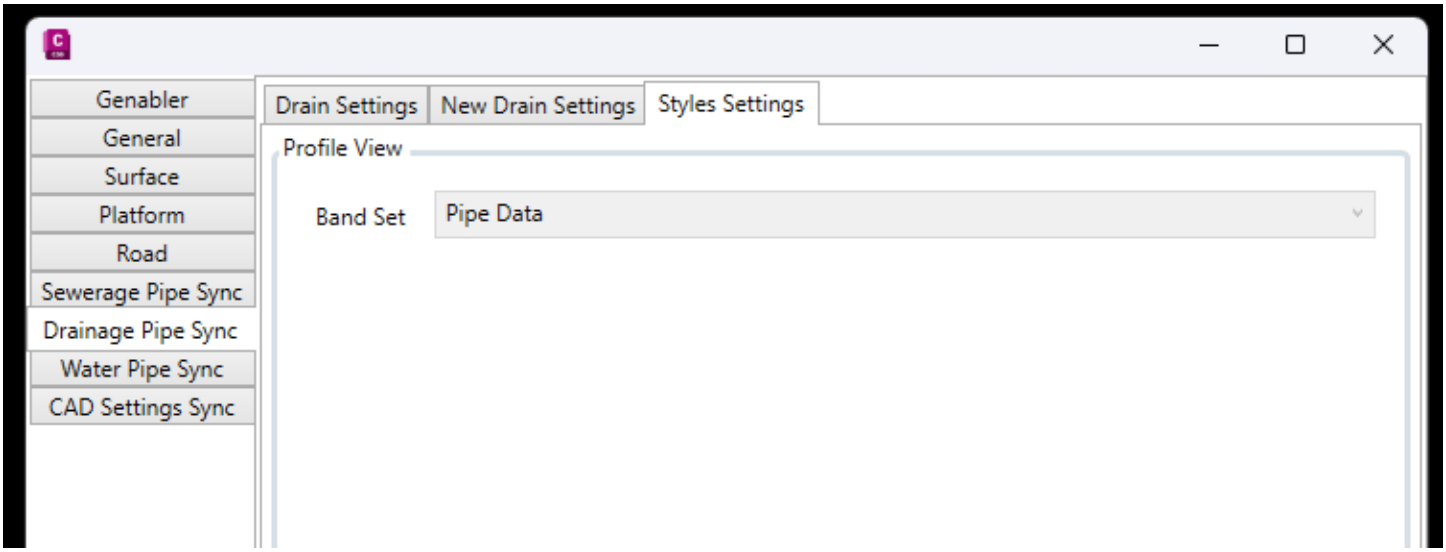
6. It is recommended to tick ‘MiTS Platform Surface As Priority’ and select the ‘Default Surface Reference’ to **ensure the insertion point for the structures tallies with the Ground Level detected in MiTS**.



7. Under the Project Dialog, go to the **Style Settings** tab. With Genabler, the long sections of the gravity networks in MiTS will be synced as the Profile View. Therefore, the band sets will be set to the dedicated Genabler Stylings (Hence, the options for the Band Set is disabled)



Profile View Styles of the Sewer Pipe Sync



Profile View Styles of the Drain Pipe Sync

8. If you **wish to only sync the gravity network (sewerage/drainage) in MiTS**, you may proceed to set the Sync. Mode for other entities to NoSync.

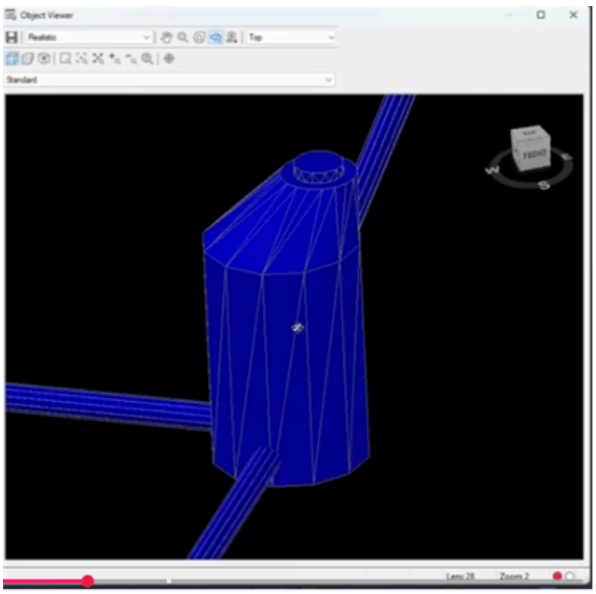
9. If you wish to sync other entities as well, you may proceed to follow the guides available on our website.

10. Click OK to close the Project Dialog. Then, click on **Load From MiTS** and click OK to sync the entity.

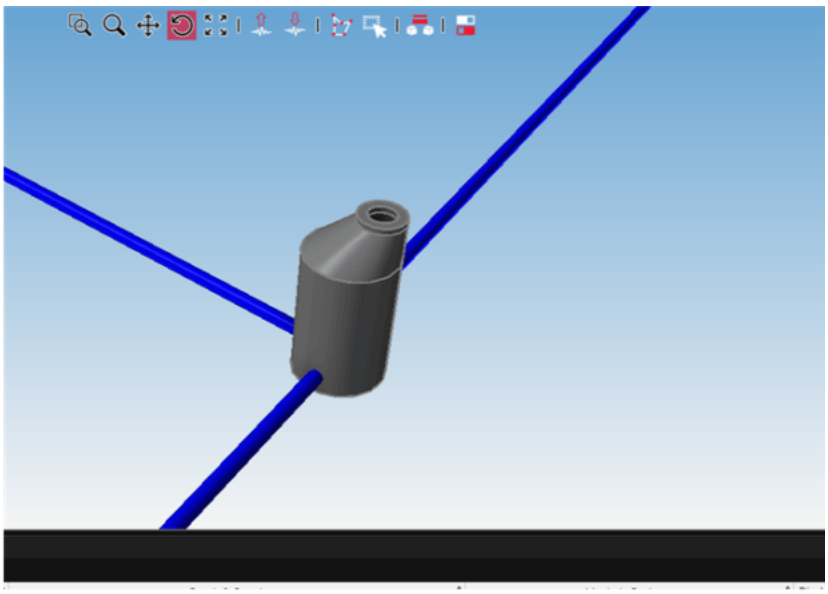
Embedded media:

https://www.youtube.com/embed/2VRR7IHWIL4?version=3&rel=1&showsearch=0&showinfo=1&iv_load_policy=1&fs=1&hl=en-US&autohide=2&wmode=transparent&enablejsapi=1

After sync, one can see that the manhole's 3D shape is identical between MiTS and Civil 3D after sync:



Civil 3D



MiTS

Embedded media:

https://www.youtube.com/embed/_e0a5G6FgYU?version=3&rel=1&showsearch=0&showinfo=1&iv_load_policy=1&fs=1&hl=en-US&autohide=2&wmode=transparent&enablejsapi=1

Related



Ngu Soon Hui

I'm the Benevolent Dictator for Life for MiTS Software cum Editor of this website. Read more here.

You can also contact me at soonhui@mes100.com