MONTANA
Department of Transportation

Project Development & Delivery - Digital Design and Modeling Services

Tip Guide

Application/Tool(s): AutoCAD / Civil 3D
Version(s): 13.6.2123.0 Civil 3D 2024.4.6
Environment: MDT Civil 3D State Kit r2024 v3.1.0
Released/Revised: 4/13/2026

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USING MDT PIPE NETWORKS IN CIVIL 3D

A new part catalog was introduced with Civil 3D State Kit version 1.23. The following offers an introduction to using the new part catalog “MDT-Pipes Catalog”, parts list, and related styles.

Structure Categorization

MDT structures are grouped into Autodesk categories within the parts list as shown in figure 1. The key below will help you locate the MDT structures you’re looking for.

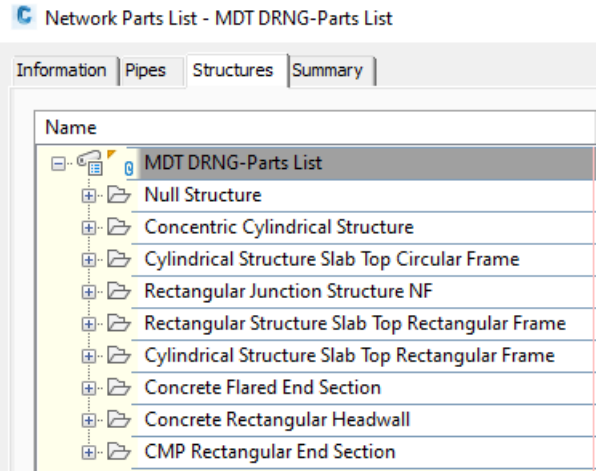


FIGURE 1

Autodesk Structure Categories	MDT Structures
Concentric Cylindrical Structure	Type 1 Manhole, 48” Dia.
Cylindrical Structure Slab Top Circular Frame	Type 3 Manhole, 48”-120” Dia.
Rectangular Junction Structure NF	Type 1, 2, & 3 Median Inlets, 24”-36”
Rectangular Structure Slab Top Rectangular Frame	Type III/VI Drop Inlet
Cylindrical Structure Slab Top Rectangular Frame	Type A & B Curb Inlet, Type II Curb Inlet, Type II Combination Inlet, Type IV Drop Inlet, Type IV Combination Inlet, Type I & V Drop Inlet
Concrete Flared End Section	Concrete FETS, 15”-54”
Concrete Rectangular Headwall	Concrete Headwalls
CMP Rectangular End Section	CMP FETS

Object Layers

Object layers are used to develop a base layer on which the object physically lives. The object layers for pipe networks shown in *Figure 1* are set by default. If you are designing a storm drain system, you will need to change the object layers as shown in *Figure 2*.

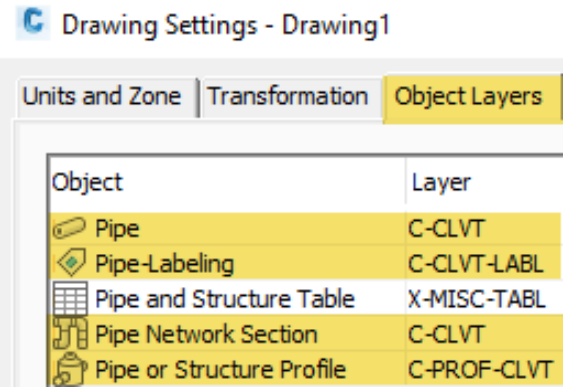


FIGURE 1

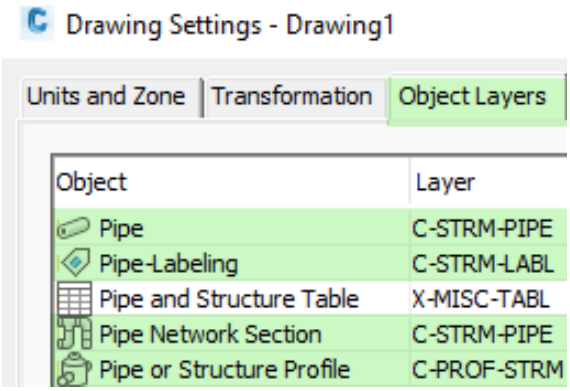


FIGURE 2

Object layers are accessed from the C3D pulldown under Drawing Utilities.



Pipe Network Labeling

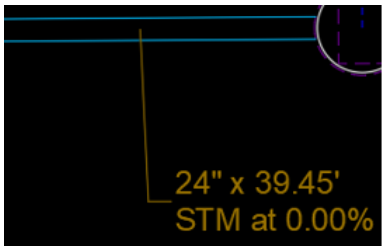
Label styles are used to label pipe network components. A preview of the label styles is provided below:

*Plan Profile Label Styles

MDT DRNG-Crossing Name Only (Profile)

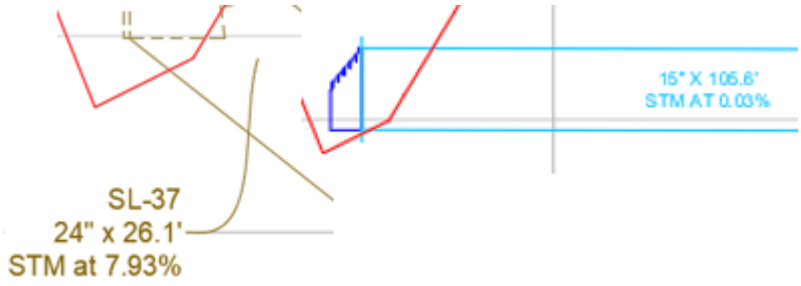
SL-81

MDT DRNG-Inside-Inside Length Description & Slope Stacked (Plan)

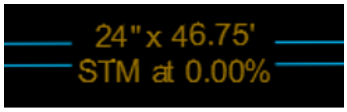


MDT DRNG-Length Desc & Slope Staked (Profile)

Crossing Section Label Styles



MDT DRNG-Length Description & Slope Stacked (Plan)



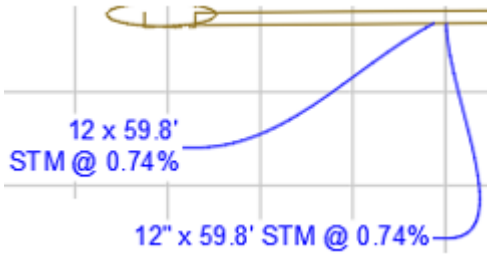
MDT DRNG-Name Only (Plan)



MDT DRNG-Name Only (Profile)

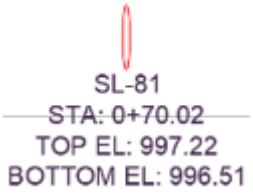


MDT DRNG-Length Description & Slope (Section) and
MDT DRNG-Length Description & Slope Stacked (Section)



MDT DRNG-New XX" Storm Stacked (Section)



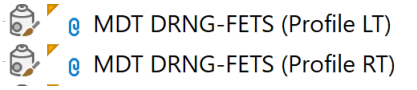
	MDT SSWR-XX” PIPE (Section) 
Crossing Profile Label Styles	MDT DRNG-Crossing Size Pipe 
	MDT DRNG-Crossing Pipe Name Sta and Top-Bottom Elev 

** Plan Profile Label styles are included for existing parts. They have an MDT DNRG E- and MDT SSWR E- prefix and display the same as the proposed with different colors.*

FETS and End Sections

Here are a few things to be aware of when working with FETS and End Sections.

1. You cannot give the FETS slope.
2. The scaling of the FETS is not accurate. They only serve as a visual representation of a FET.
    a. The size of the CMP FETS listed in the Parts List do not correspond to any dimensions in the Detailed Drawings. They are out-of-the-box Autodesk parts.
3. You can only assign one style to each structure. Therefore, FETS may appear only orientated to the right. You can change this by changing the style for your particular part to the left orientation style.



4. The structure styles for the CMP FETS are:
    a. MDT DRNG – FETS…
    b. MDT DRNG E – FETS…
5. The structure styles for the RCP FETS are:
    a. MDT DRNG – Flared End Section…
    b. MDT DRNG E – Flared End Section…
6. Due to the scaling of FETS, there are no arch FETS only arched pipes. You may just apply the normal FETS to the arch pipes.
7. Sloped End Sections, Concrete Edge protection, etc. will need to be hand drawn into plan views, profiles, and cross-sections. There are no parts in the part catalog for these.

Storm Drain Structures

The scale on the proposed storm drain structures is not visually precise. For each part to be scaled exactly, each part would need its own style. To keep the functionality and maintenance of the pipe networks simple, groups of parts have the same style, and this results in some scale creep. This is a visual issue and does not affect the lengths and elevations of pipes and structures in Autodesk Storm and Sanitary Analysis (SSA).