

## Cheat Sheet – Pipes – 2013

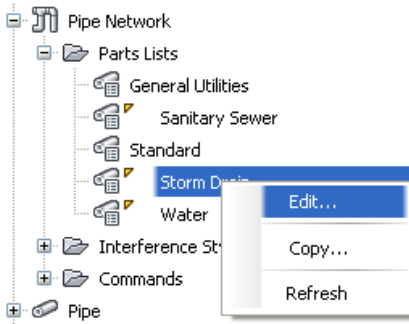
1. Edit the feature settings for the pipe network. Under the settings tab, right-click on “Pipe Network” and then select “Edit Feature Settings”.



| Property                                 | Value                                | Override | Child Override | Lock |
|--|--------------------------------------|----------|----------------|------|
| <b>General</b>                           |                                      |          |                |      |
| <b>Labeling</b>                          |                                      |          |                |      |
| <b>Default Styles</b>                    |                                      |          |                |      |
| Interference Default Style               | Basic                                |          |                |      |
| Pipe Default Style                       | SD Double Line                       |          |                |      |
| Structure Default Style                  | SD Catch Basin                       |          |                |      |
| Interference Render Material             | ByLayer                              |          |                |      |
| Structure Plan Label Style               | Plan Name Station Northing Eas...    |          |                |      |
| Pipe Plan Label Style                    | Plan Length Size Material            |          |                |      |
| Structure Profile Label Style            | Profile Above Name Sta Rim + P...    |          |                |      |
| Pipe Profile Label Style                 | Profile Length Size Material Slop... |          |                |      |
| Structure Section Label Style            | Profile Above Name Sta Rim + P...    |          |                |      |
| Pipe Section Label Style                 | Above Name Size + Inv Elev           |          |                |      |
| Render Material                          | ByLayer                              |          |                |      |
| Default Parts List                       | Storm Drain                          |          |                |      |
| <b>Default Name Format</b>               |                                      |          |                |      |
| Interference Check Name Template         | InterferenceCheck - (<[Next C...     |          |                |      |
| Network Name Template                    | Network - (<[Next Counter(CP)...     |          |                |      |
| Interference Name Template               | Interference - (<[Next Counter...    |          |                |      |
| Alignment From Network Name Template     | Alignment - (<[Pipe Network Na...    |          |                |      |
| Structure Name Template                  | MH# <[Next Counter]>                 |          |                |      |
| Pipe Name Template                       | SD# <[Next Counter]>                 |          |                |      |
| <b>Default Rules</b>                     |                                      |          |                |      |
| Pipe Default Rules                       | Basic                                |          |                |      |
| Structure Default Rules                  | Basic                                |          |                |      |
| <b>Storm Sewers Migration Defaults</b>   |                                      |          |                |      |
| Part Matching Defaults                   | Standard                             |          |                |      |
| Parts List Used For Migration            | Standard                             |          |                |      |
| <b>Default Profile Label Placement</b>   |                                      |          |                |      |
| Dimension Anchor Option for Pipes        | Fixed                                |          |                |      |
| Dimension Anchor Elevation Value for ... | 0.00'                                |          |                |      |
| Dimension Anchor Plot Height Value fo... | 0.0000"                              |          |                |      |
| Dimension Anchor Option for Structures   | Fixed                                |          |                |      |
| Dimension Anchor Elevation Value for ... | 0.00'                                |          |                |      |
| Dimension Anchor Plot Height Value fo... | 0.0000"                              |          |                |      |
| Structure Label Placement                | At Top of Structure                  |          |                |      |
| <b>Default Section Label Placement</b>   |                                      |          |                |      |
| Dimension Anchor Option for Pipes        | Fixed                                |          |                |      |
| Dimension Anchor Elevation Value for ... | 0.00'                                |          |                |      |
| Dimension Anchor Plot Height Value fo... | 0.0000"                              |          |                |      |
| Dimension Anchor Option for Structures   | Fixed                                |          |                |      |
| Dimension Anchor Elevation Value for ... | 0.00'                                |          |                |      |
| Dimension Anchor Plot Height Value fo... | 0.0000"                              |          |                |      |
| Structure Label Placement                | At Top of Structure                  |          |                |      |
| Pipe Section Label Placement             | At Bottom of Pipe                    |          |                |      |

Set all default styles here. Typically you'll need a different style for both plan and profile for each object type.

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

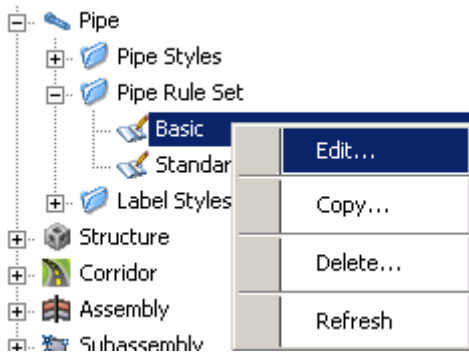


Network Parts List - STD

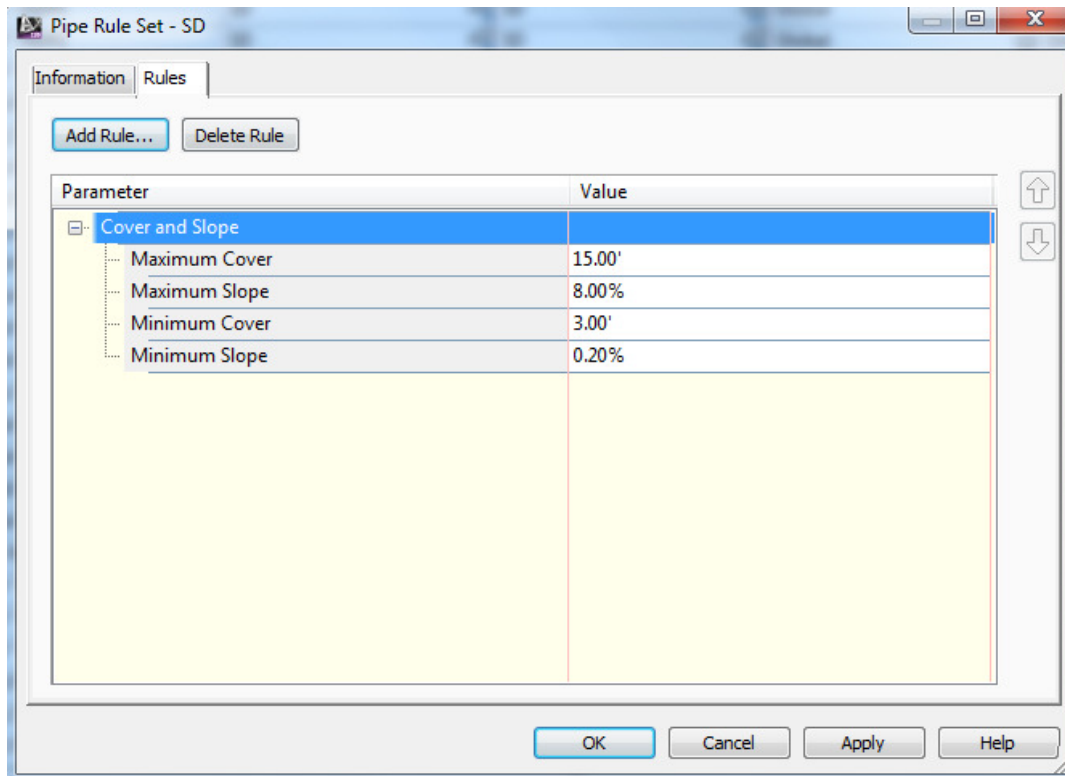
Information Pipes Structures Summary

| Name      | Style | Rules | Render Material | Pay Item |
|-----------|-------|-------|-----------------|----------|
| STD       |       |       |                 |          |
| HDPE Pipe |       |       |                 |          |
| 3" HDPE   | SD    | SD    | Global          | [none]   |
| 4" HDPE   | SD    | SD    | Global          | [none]   |
| 6" HDPE   | SD    | SD    | Global          | [none]   |
| 8" HDPE   | SD    | SD    | Global          | [none]   |
| 10" HDPE  | SD    | SD    | Global          | [none]   |
| 12" HDPE  | SD    | SD    | Global          | [none]   |
| 14" HDPE  | SD    | SD    | Global          | [none]   |
| 16" HDPE  | SD    | SD    | Global          | [none]   |
| 18" HDPE  | SD    | SD    | Global          | [none]   |
| 20" HDPE  | SD    | SD    | Global          | [none]   |
| 24" HDPE  | SD    | SD    | Global          | [none]   |
| 30" HDPE  | SD    | SD    | Global          | [none]   |
| 36" HDPE  | SD    | SD    | Global          | [none]   |
| 42" HDPE  | SD    | SD    | Global          | [none]   |
| 48" HDPE  | SD    | SD    | Global          | [none]   |
| 54" HDPE  | SD    | SD    | Global          | [none]   |
| 60" HDPE  | SD    | SD    | Global          | [none]   |
| 64" HDPE  | SD    | SD    | Global          | [none]   |
| PVC Pipe  |       |       |                 |          |
| 4" PVC    | SS    | SS    | Global          | [none]   |
| 6" PVC    | SS    | SS    | Global          | [none]   |
| 8" PVC    | SS    | SS    | Global          | [none]   |
| 10" PVC   | SS    | SS    | Global          | [none]   |

3. Right-click the “Basic” rule set, and then select edit.

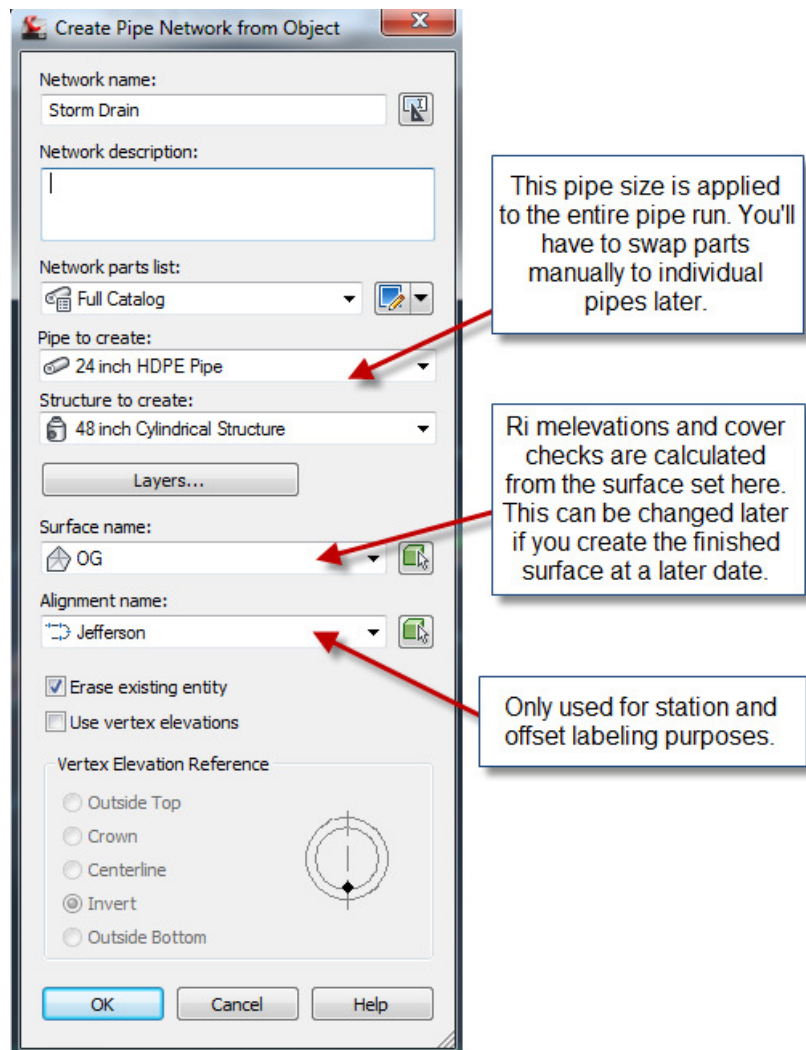
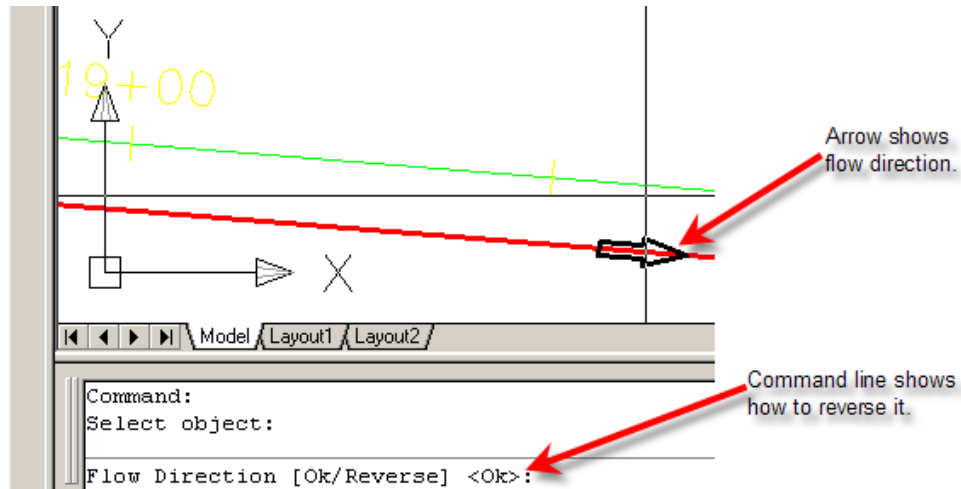


Add and delete the desired rules and change the order to determine how they react.

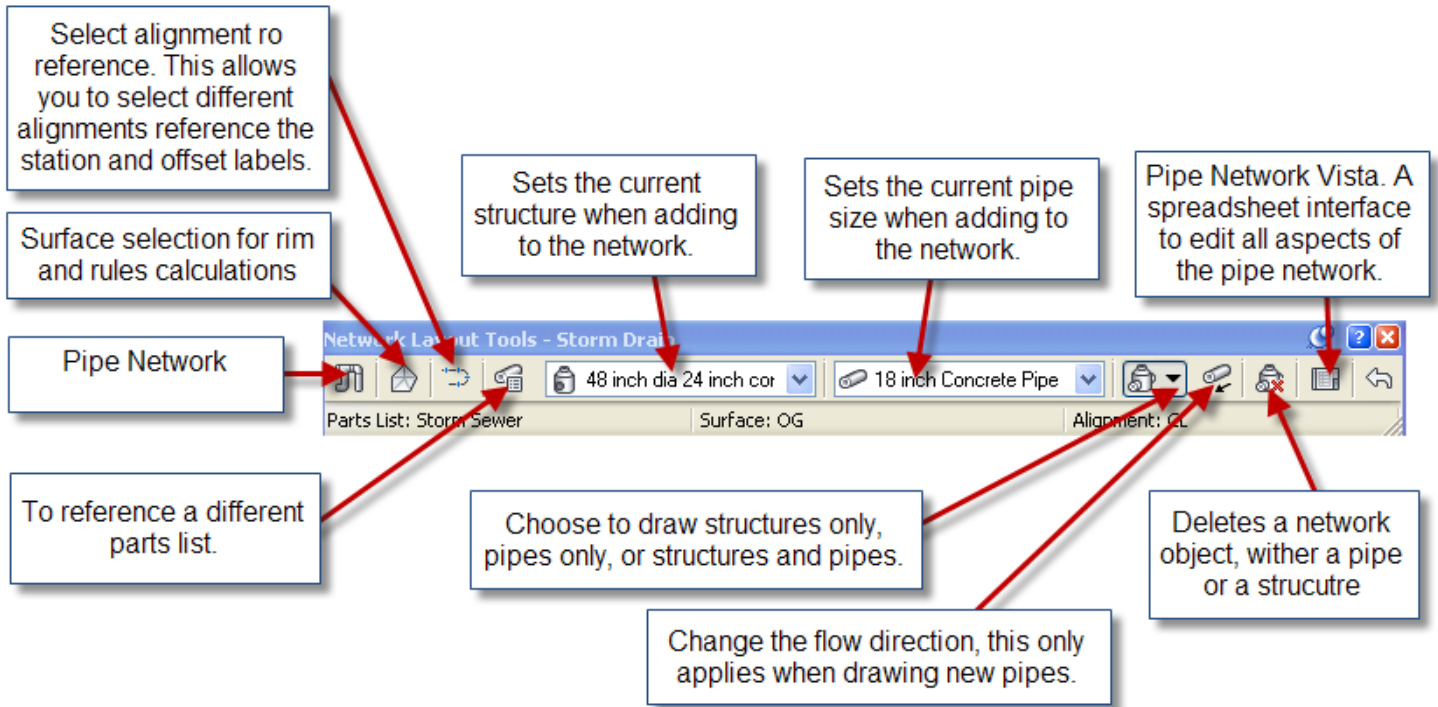


4. This next step is to either draw the pipe run or convert a polyline to a pipe network. You should make a note to realize that structures and pipes can only be connected together if they are in the same pipe network. Therefore you can start with one polyline, but then you need to edit the network in order to add more objects to the pipe network.

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



b. When editing a pipe network or creating a pipe network by **“Home” ribbon tab > Pipe Network > Create Pipe Network from Object**



5. **“Modify” ribbon tab > 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.

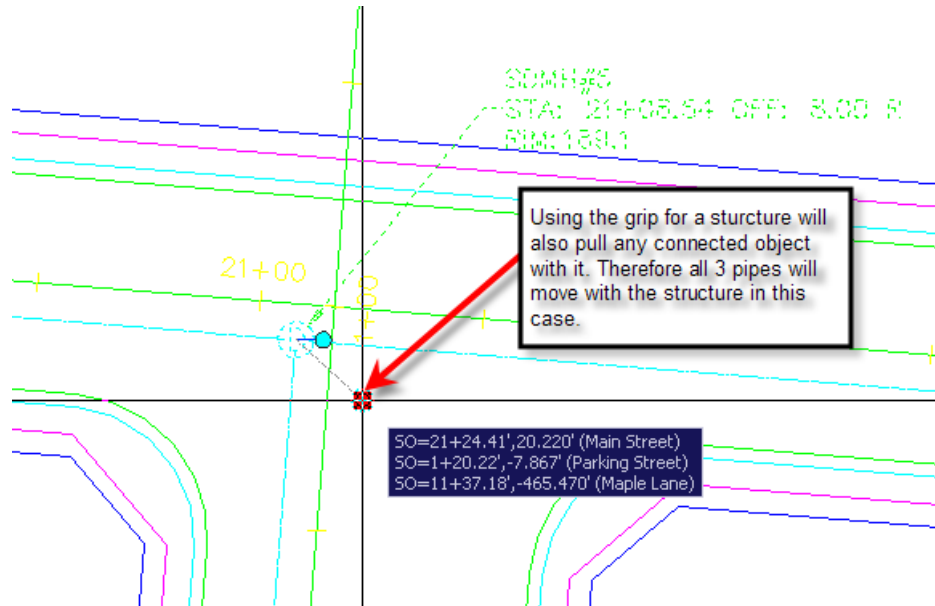
6. **“Pipe Network” ribbon tab > Add Labels ... or “Home” tab > Add Labels**

Choose either “Entire Network Plan”, “Entire Network Profile”, “Single Part Plan”, or “Single Part Profile”. You may also click on a part, then right-click and choose add label.

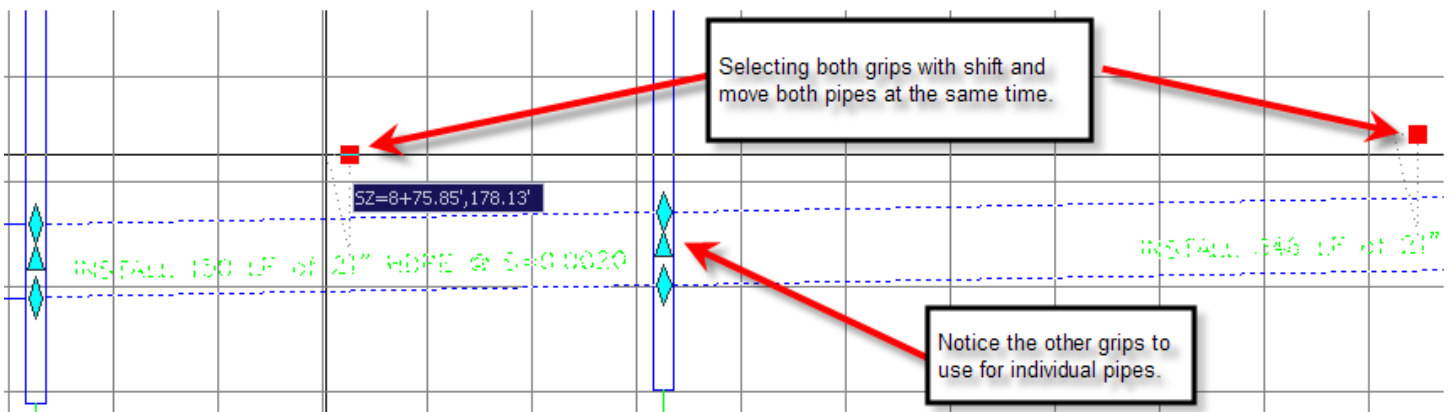
# Different Methods of Editing a Pipe Network

## 1. Using Grips

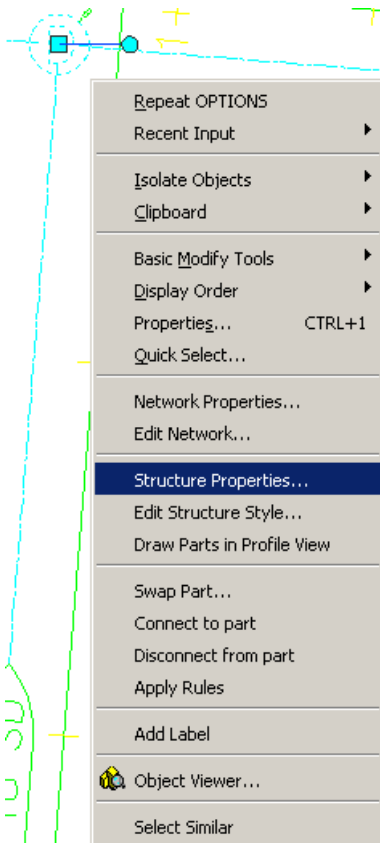
- a. Plan View – Hot gripping structures will pull all objects that are connected to it.



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

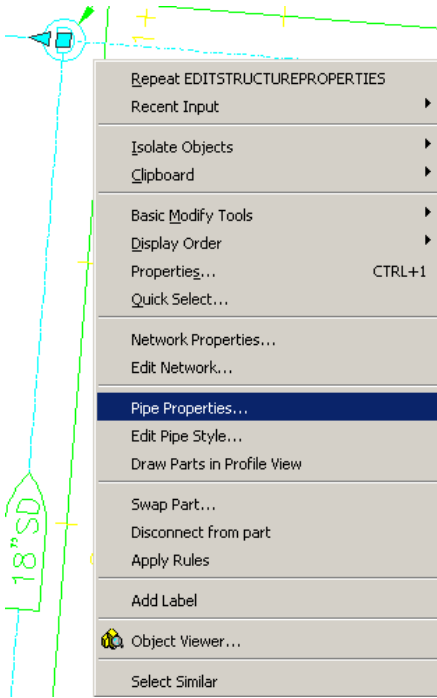


## 2. Using the part properties – one part at a time.



Click on a structure, right-click, and then choose “Structure Properties”.

| Structure Properties                 | Value   |
|--------------------------------------|---|
| <b>General</b>                       |   |
| Surface Elevation At Insertion Point | 189.072'  |
| Reference Surface                    | OG  |
| Reference Alignment                  | Main Street   |
| <b>Geometry</b>                      |   |
| Structure Rotation Angle             | 0.0000 (d)  |
| Structure Offset                     | 8.000'  |
| Structure Station                    | 21+08.54  |
| Structure Northing                   | 320093.3713'  |
| Structure Easting                    | 2004556.4581'   |
| Connected Pipes                      | 3   |
| <b>Insertion Rim Behavior</b>        |   |
| Insertion Rim Elevation              | 189.072'  |
| Surface Adjustment Value             | 0.000'  |
| Automatic Surface Adjustment         | true  |
| <b>Sump Behavior</b>                 |   |
| Sump Elevation                       | 175.310'  |
| Sump Depth                           | 2.000   |
| Control Sump By:                     | Depth   |
| <b>Part Data</b>                     |   |
| Part Type                            | Struct_Junction   |
| Part Subtype                         | Concentric  |
| Part Description                     | Concentric Cylindrical Structure                            |
| Part Size Name                       | Concentric Structure 48 dia 24 frame 24 cone 5 wall 6 floor |
| Structure Shape                      | BoundingShape_Cylinder                                      |
| Vertical Pipe Clearance              | 34.000"   |
| Rim to Sump Height                   | 13.762'   |
| Wall Thickness                       | 5.000"  |
| Floor Thickness                      | 6.000"  |
| Material                             | CONC  |
| Frame                                | Standard  |
| Grate                                | Standard  |
| Cover                                | Standard  |
| Frame Height                         | 4.000"  |
| Frame Diameter                       | 24.000"   |
| Frame Length                         |   |
| Frame Width                          |   |
| Barrel Height                        |   |
| Barrel Pipe Clearance                | 6.000"  |
| Cone Height                          | 24.000"   |
| Slab Thickness                       |   |
| Inner Structure Diameter             | 48.000"   |
| Structure Height                     | 14.262'   |
| Structure Diameter                   | 58.000"   |



Click on a pipe, then right-click and choose “Pipe Properties”.

| Pipe Properties              | Value                 |
|------------------------------|-----------------------|
| <b>General</b>               |                       |
| Pipe Flow Direction Method   | End to Start          |
| Flow Direction               | End to Start          |
| Reference Surface            | OG                    |
| Reference Alignment          | Main Street           |
| <b>Geometry</b>              |                       |
| Pipe Start Structure         | SDMH#5                |
| Pipe End Structure           | SDMH#4                |
| Bearing                      | S85° 23' 53"E         |
| Pipe Start Station           | 21+08.54              |
| Pipe End Station             | 26+16.54              |
| Start Offset                 | 8.000'                |
| End Offset                   | 8.000'                |
| Pipe Slope (Hold Start)      | 0.20%                 |
| Pipe Slope (Hold End)        | -0.20%                |
| Pipe Slope                   | -0.20%                |
| Start Invert Elevation       | 177.310'              |
| End Invert Elevation         | 178.326'              |
| Start Crown Elevation        | 179.060'              |
| End Crown Elevation          | 180.076'              |
| Pipe Start Easting           | 2004556.4581'         |
| Pipe Start Northing          | 320093.3713'          |
| Pipe End Easting             | 2005062.8204'         |
| Pipe End Northing            | 320052.6142'          |
| Start Centerline Elevation   | 178.185'              |
| End Centerline Elevation     | 179.201'              |
| Minimum Cover                | 9.425'                |
| Maximum Cover                | 9.955'                |
| 2D Length - Center to Center | 508.000'              |
| 3D Length - Center to Center | 508.001'              |
| 2D Length - To Inside Edges  | 504.005'              |
| 3D Length - To Inside Edges  | 504.006'              |
| <b>Resize Behavior</b>       |                       |
| On Resize, Hold:             | Invert                |
| <b>Part Data</b>             |                       |
| Part Type                    | Pipe                  |
| Part Subtype                 | Undefined             |
| Part Description             | Concrete Pipe         |
| Part Size Name               | 21 inch Concrete Pipe |
| Cross Sectional Shape        | SweptShape_Circular   |
| Wall Thickness               | 3.000"                |
| Material                     | RCP                   |
| Minimum Curve Radius         | 0.833'                |
| Manning Coefficient          | 10.000                |
| Hazen Williams Coefficient   | 10.000                |
| Darcy Weisbach Factor        | 10.000                |
| Inner Pipe Diameter          | 21.000"               |

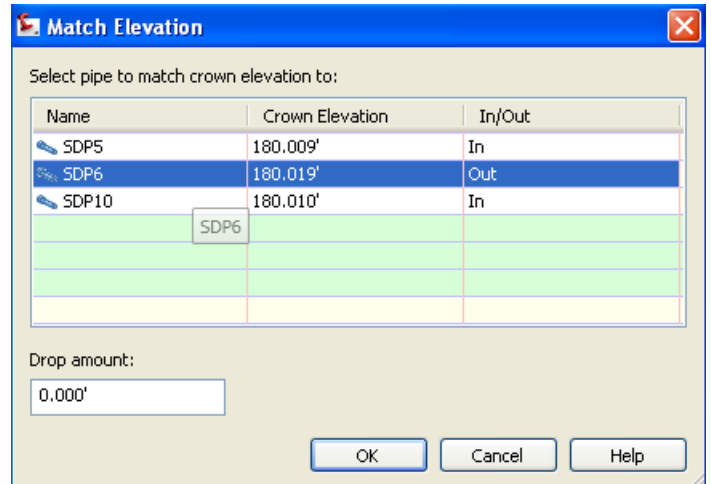
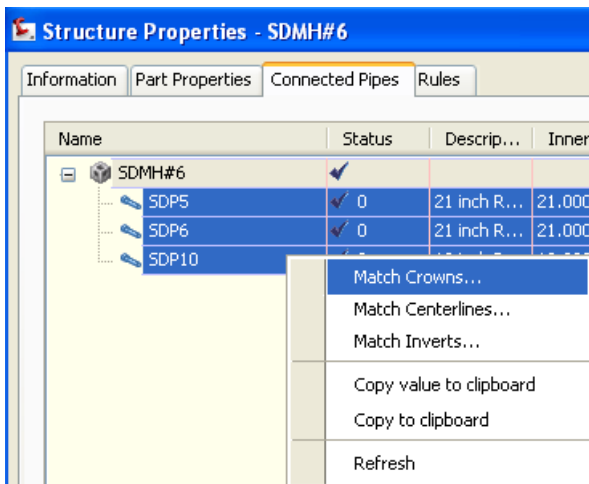


### 3. Using the Edit Pipe Network Vista.



### 4. Other Tips and Ticks

- To change a manhole or pipe to different part, simply select the part, right-click and select **Swap Part**.
- To change a pipe network globally you can change the pipe or structure rules, and then use the command "**Pipe Network**" ribbon tab > **Apply Rules** to set the rules to the desired parts.
- Renaming and renumbering pipes and structures can be accomplished by running the command "**Pipe Network**" ribbon tab > **Rename Parts**.
- With multiple pipes going in and out of a structure, you match the elevation of one of the pipes. In structure properties, go to the Connected Pipes tab, highlight all the pipes you wish to modify and then right-click and choose the desired option. Highlight the desired pipe to match and choose the drop amount.



© 2012 CAD Masters, Inc. All rights reserved.

