

SUDA SS4 – Questions & Answers

If the terrain model is altered will the nodes follow the change?

Yes. If the nodes are placed using a terrain model as a reference element and that terrain model is altered such as moved to higher elevation, the top of the node will adjust to the change. The bottom of the node will not adjust though.

Is the Trace DTM tool still available?

There is no Trace DTM tool available in SUDA although the Analyze trace slope is available in Civil Tools which creates a 3D line string that follows the terrain down to ponding.

Can the contours be changed to see Flat Terrain Contours?

To see more contours when analyzing more flat areas, select the terrain model, go to element information, access the Calculated Feature Displays and select Contours and change the Major and Minor Interval as needed.

Do we have the 7.5 and 10 ft. Type T inlets?

We have updated the drainage library so that 7.5 and 10 ft. Type T inlets can be used.

S1-S3 Inlets having different hydraulic rating charts

SUDA calculates the hydraulics of an inlet based upon the inlet type, width, length and the grate type. There are no charts need to run the hydraulic analysis. There is an option under inlet type to use a Flow to Inlet vs. Captured Flow table but must find a specific chart to use that design approach.

Can we insert the pipe 3 in. into the node structure?

We would have to change connection points on every structure which I don't think is possible, so manual calculation will need to be done when designing for this.

Will we be able to use arch and elliptical pipes?

We have up dated the drainage library to allow for the design of arch and box corrugated metal pipe as well as elliptical concrete pipe. If there are other pipes that frequently used in MoDOT design, let us know and we can look into adding them to the drainage library.

What is it meant by Thermoplastic pipe?

Thermoplastic is used to cover Polyethylene, Steel Reinforced Polyethylene, Polyvinyl, Double Wall Polypropylene, and Triple Wall Polypropylene. It was assumed that in design it was specified that thermoplastic pipe should be used and it was up to the contractor as to what type will be placed.

Can someone manually input a discharge to a node instead of having watershed?

Yes. You can access the Utility properties of the node and input a Wet Inflow value which enables the user to design for water constantly entering the inlet without having a watershed. You can also input the Flows value, which will add water directly into the piping system or at the node depending on which flow value you add it to.

Show existing and final terrain models in profiles.

To show existing and final terrain models in the all the user has to do is have both terrain models reference into the cross section drawing. If the drainage file is referenced into the cross section drawing, the drainage structures as well as the bottom trench line will show up in the cross section view.

Can SUDA design for Vertical Bends in the pipe (ex.- broken back pipe situation)?

SUDA cannot model vertical bends. For a work around, place a generic node at the location and elevation where the bend is needed. Connect the generic node by another pipe to complete the network. See link

https://communities.bentley.com/products/hydraulics__hydrology/f/haestad-hydraulics-and-hydrology-forum/167128/vertical-bends-in-suda/478421#478421

Is there an option for SUDA to calculate Roadway Freeboard?

There is no option to have SUDA compute freeboard because roadway information is not needed in the computations. It will have to be up to the designer to compute freeboard based upon roadway elevation and maximum hydraulic grade line.

How is the Longitudinal Slope calculated?

From testing at CADD Support, it is based off the slope of the triangle at the location of which the node was at according to the terrain model that was used at the referenced element. This should be checked over on every node, in our opinion. You can check the Longitudinal Slope under the Utility Properties – Hydraulic Analysis. That value can be manually inputted, but the terrain model that is used a reference element would need to be removed.

Bentley said that the longitudinal slope is computed based on the upstream node elevation minus the node being analyzed elevation divided by the distance between them.

https://communities.bentley.com/products/hydraulics__hydrology/f/haestad-hydraulics-and-hydrology-forum/167171/longitudinal-slope-calculation/478714#478714

Can you put in your own user defined scaled drainage area vs. using an actual drawn out scaled drainage area?

Yes. Going to the Utilities – Hydraulic Analysis of a drainage area, you can change the “Use Scaled Area” to False. Then you can input a “User Defined” drainage area for the defined shape.