

TDOT Roundabout Civil Cells

File: Roundabouts_TDOT.dgnlib

In general, roundabout modeling is complex in OpenRoads Designer (ORD). It is necessary to have a fundamental understanding of how plan and profile lines interact with each other to create complex geometries, how to edit and control templates, and how to create surfaces from terrains. TDOT has developed civil cells based off TDOT roundabout standard drawings, which are to be used as a starting point in developing the geometry.

Note: *It is recommended that the user reference the [TDOT Roundabout Design Reference Guide](#) for more information on how to design roundabouts prior to utilizing the civil cells in ORD.*

In ORD 10.10 and 10.11, not all roundabout civil cells work properly due to a bug in the software. However, the user can still model a roundabout with the working civil cells. Additional terrain, surface template, and linear template hand modeling will be necessary to mimic the non-working civil cells.

Working Roundabout Civil Cells:

- TDOT APPROACH TEMPLATE - LEFT
- TDOT APPROACH TEMPLATE - RIGHT
- TDOT FASTEST PATH DESIGN CHECK - 4 LEG
- TDOT ISLAND TEMPLATE
- TDOT RTS-1 ROUNDEL TEMPLATE
- TDOT RTS-2 ROUNDEL TEMPLATE

Non-Working Roundabout Civil Cells:

- TDOT APPROACH MODEL
- TDOT ISLAND MODEL
- TDOT ROUNDEL MODEL

The three non-working civil cells are drapes of surfaces and templates on top of the working geometry civil cells. To use the civil cells, a minimum of **three** civil cells are needed: the **ROUNDEL TEMPLATES** and the **APPROACH TEMPLATES** plus optionally the **ISLAND TEMPLATE**.

The user needs to place the template civil cells as normal, with the proper alignment geometry set up. All the civil cells must be placed with the correct controlling geometry before modeling the surfaces. The **TDOT FASTEST PATH DESIGN CHECK - 4 LEG** civil cell should not be used for modeling purposes, but rather used as a guide for design decisions such as determining the fastest path.

Once the geometry civil cells are properly placed, the user will need to determine where to add the surfaces and templates. The user should place the **curb** and **roundel** templates first in the appropriate locations. Templates in both the **Linear Templates >> Roundabout** and **Linear Templates >> Civil Cells** locations will be needed to properly model the roundabout. Once the linear templates are placed and controlled properly, the roundabout should look nearly complete. The user would then use the **Create Terrain Model From Elements** tool (**OpenRoads Modeling >> Home >> Model Import/Export >> Terrain Import**) to create surfaces where the templates do not exist. To complete the roundabout modeling, the user would then apply a surface template to the surfaces created.