CONNECTICUT DEPARTMENT OF TRANSPORTATION

DIGITAL DESIGN ENVIRONMENT GUIDE

CONNECT EDITION

Volume 8 – OpenRoads Designer Landscape Base Modeling

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Course Overview

In this module you will learn how to place landscape features in a base model dgn file.

Skills Taught

- Select the proper seed file to create a Base Model
- Align a file so it's in the proper geospatial location
- Place Lines, Shapes and Cells
- Attach Item Types
- Edit Item Type Information

Introduction

Item Types Overview

An Item Type is a user defined set of properties used to describe graphical and non-graphical information of an object or element. Item Types are set up and managed by the CTDOT CAD administrators as part of the delivered workspace. Item Types will be attached after placement for elements such as lines and shapes. The workspace has been set up so as Plant Cells are placed, Item Types are already attached. The properties of an Item Type can be edited by the user in the Properties dialog box along with the other properties of an element. The properties in Item Types can be used to label and report.

CTDOT Item Types are connected to the Department's Master Bid List that contains pay item numbers, descriptions and units. Users will enter the required pay item description and the item number and pay unit fields will auto-populate. The most up to date Master Bid Item Lists can be found on the Department's Contract Development Website.

In the image below notice the look up information is grayed out and the user input is not. The greyed-out properties are getting auto-populated by other Item Type property fields or other attributes on the file itself. Some user input fields are actually pick lists and others are strictly manual input.

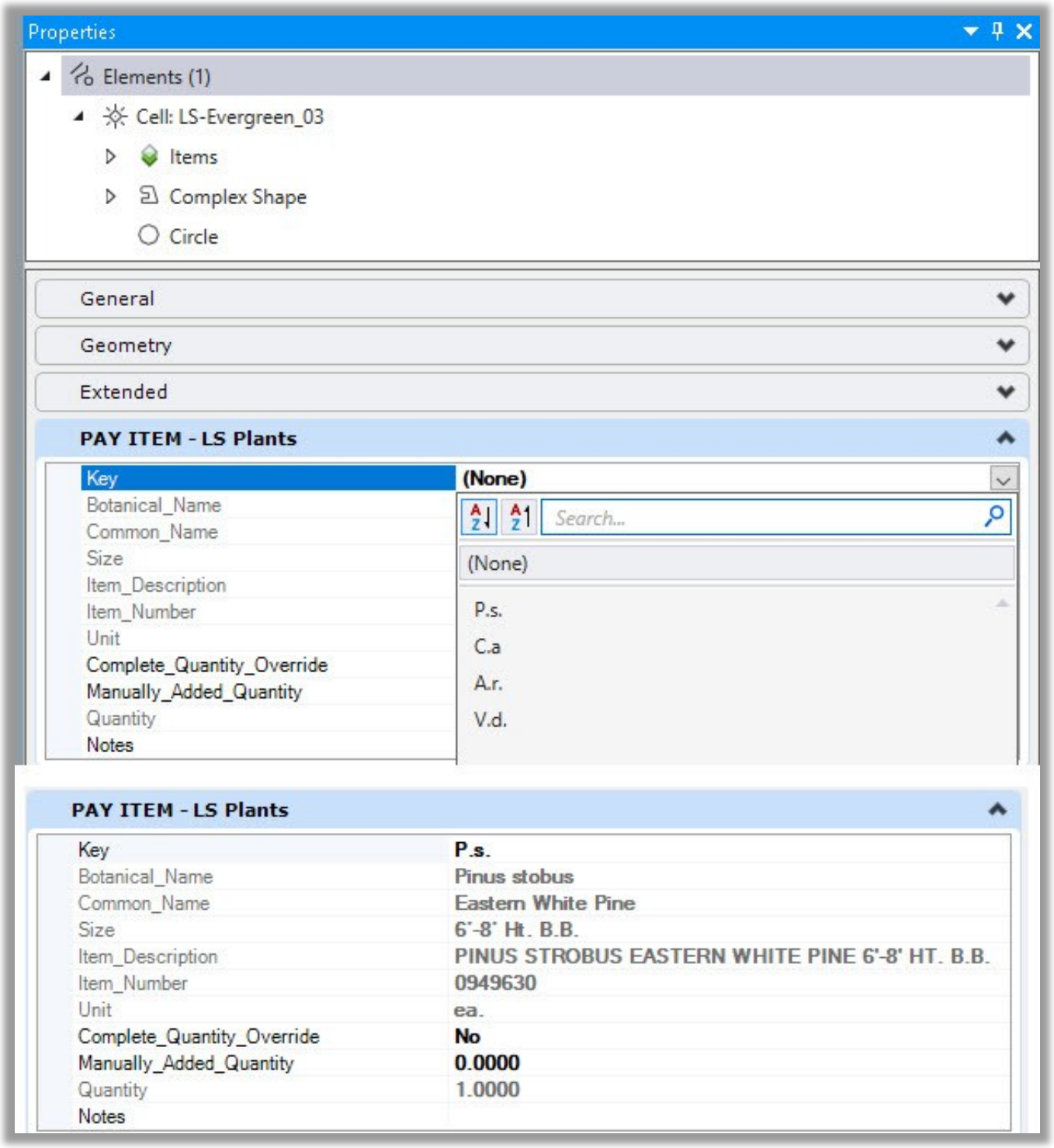

Figure 1 Landscape Item Type Plant Pay Item

PLACEMENT TOOLS AND ITEM TYPES

The Landscaping tab on the CTDOT workflow will be used to place graphics. These tools place 2D lines, shapes and cells. The **Hardscape, Landscape** and **Pattern** tools will open Cell Libraries.

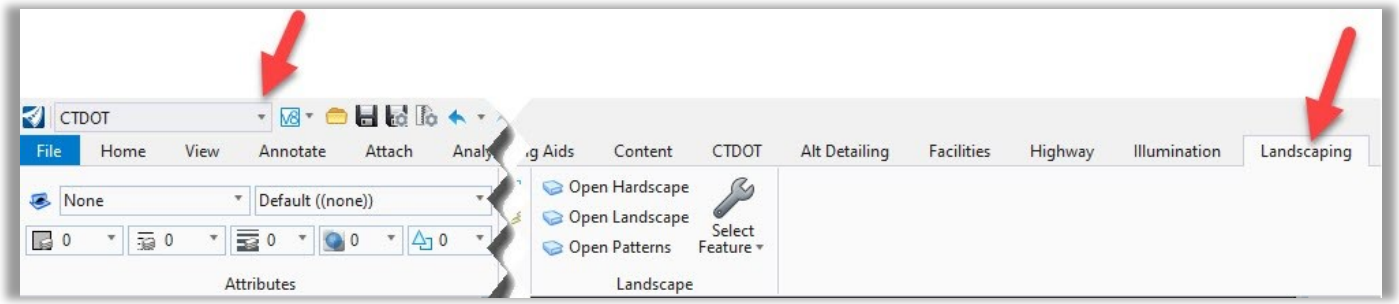

Figure 2 CTDOT Custom Workflow Landscaping Tools

Most Cells from the Landscape Cell Library will come prepopulated with an Item Type already attached during placement. Other Cells, Lines and Shapes can have Item Types attached after placement. Using the **Attach Item** tool.

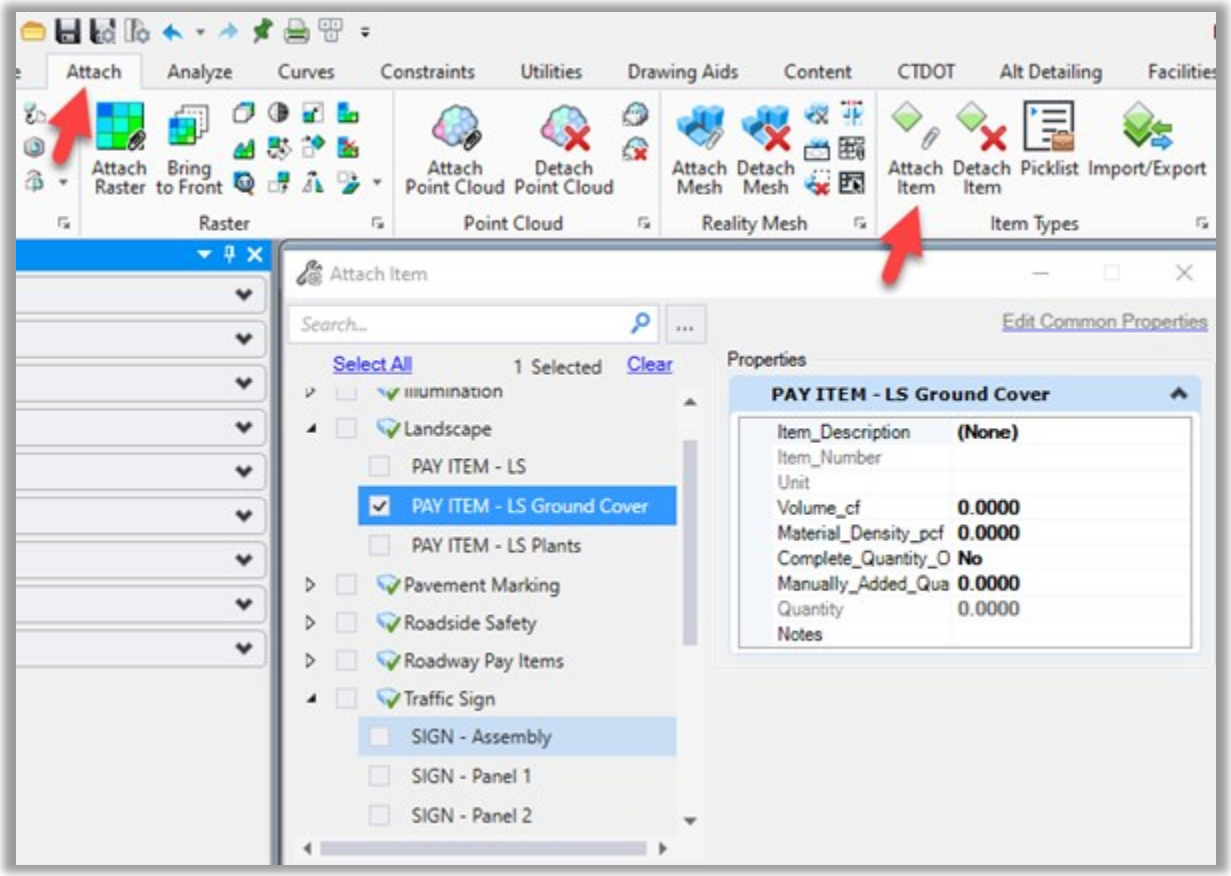

Figure 3 Attach Item Type

Exercise 1 - Base Model Creation

1.1 Startup

Before attempting to open or create DGN files users should make sure the following is in place:

1. CTDOT users should have the CTDOT CONNECT DDE synced through SharePoint with the COMPASS Project Synced along with the CAD Configuration.
2. Consultants should have CTDOT DDE properly installed or be syncing to the CTDOT DDE SharePoint/COMPASS system.
3. Make note of the **Coordinate System** you will be working in. If you have existing survey data, you will need to find out what system is being used **(NAD 83/NAVD 88 or NAD 27/NAVD 29).**
4. Log on to the CONNECTION Client. Bentley Connect licensing requires users to log into their Bentley account to secure a software license. CTDOT users should log in using your CTDOT email address and Bentley password.If you do not see the dialog box, select the ∧ icon on the bottom Windows Screen. Click on the Connection Client Icon and select **Open.**

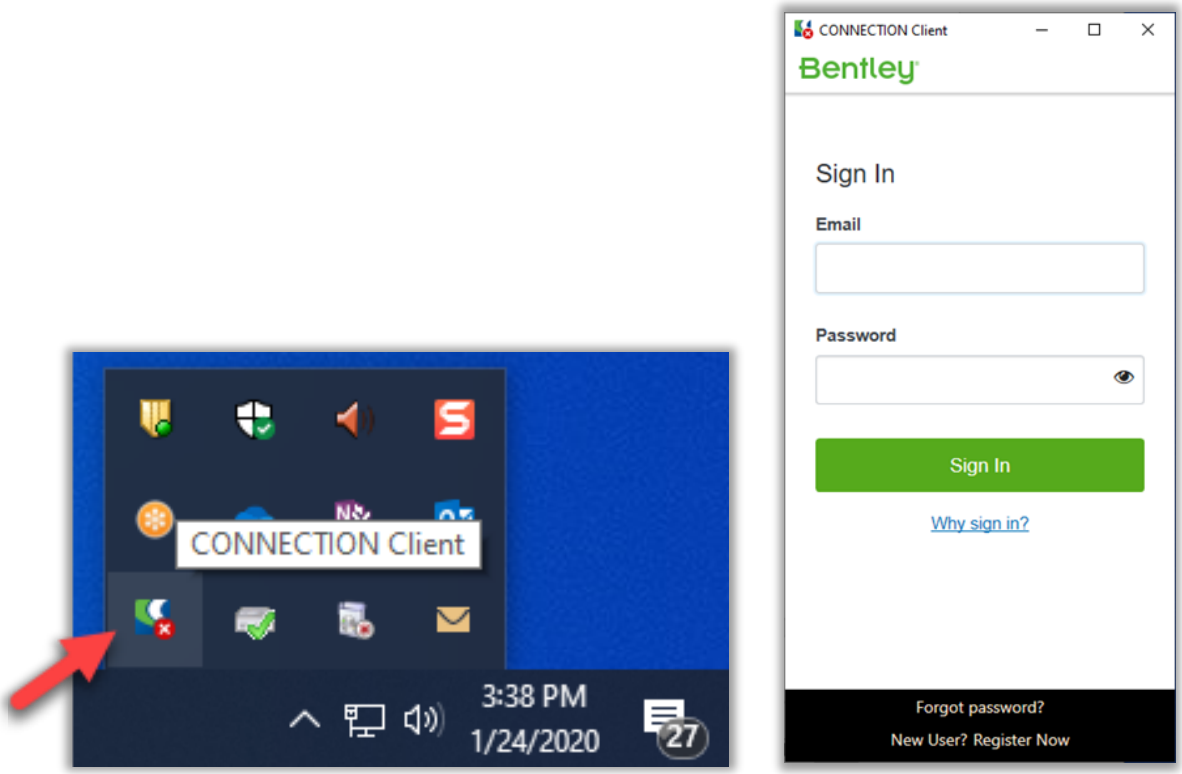

Figure 4 CONNECTION Client System tray

5. Launch the Application.
   - **Consultants**
     Start the software via an appropriate **CTDOT DDE** icon
   - **CTDOT employees**
     On your desktop double click on the **CAD Accounting** icon.

6. On the CT DOT Accounting Menu there will be select ***Compass OpenRoads CE***
In the ***Run Program*** field select the needed program, the ***Available Account*** (funding source) and ***Resource Type***. Click on the **Start** button to load the program.

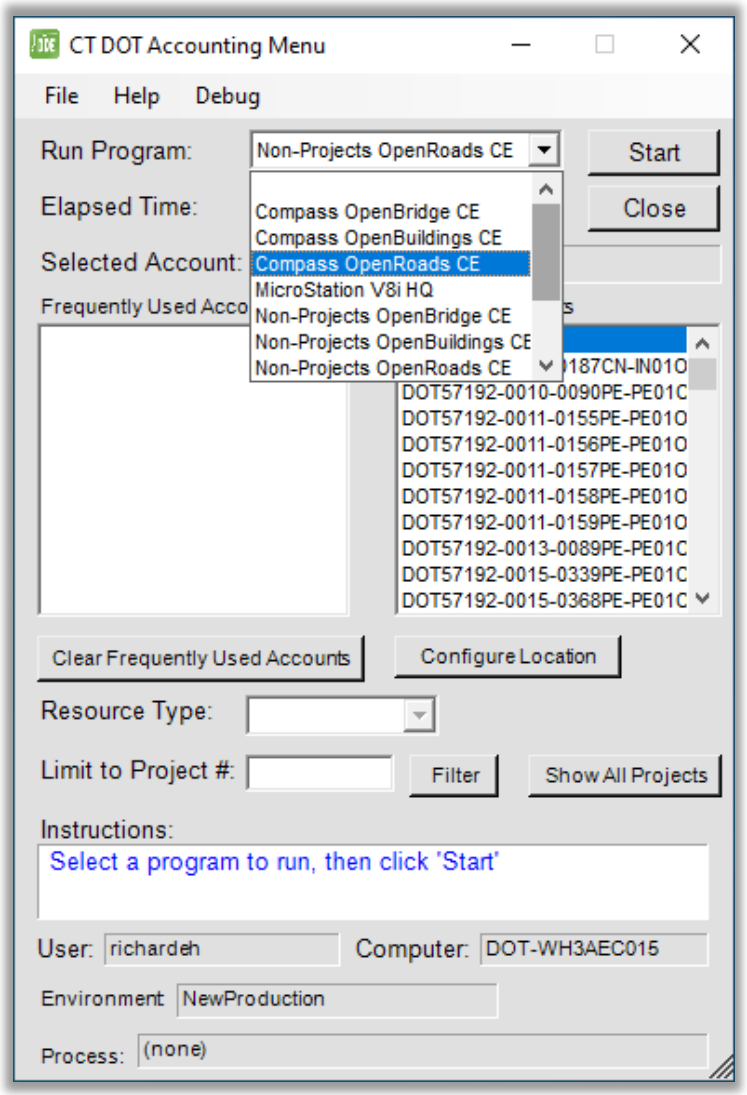

Figure 5 CAD Accounting dialog box

7. After launching the program, a Welcome Screen for ***OpenRoads Designer*** will appear.

8. Select **Custom Configuration**, using the small drop-down arrows select the Workspace **CT_Workspace**, the needed **WorkSet** and **Role**.

   Note: *If you do not see the Project Number listed, please request a Compass/CAD Setup using this link* [*New CAD Project Request*]

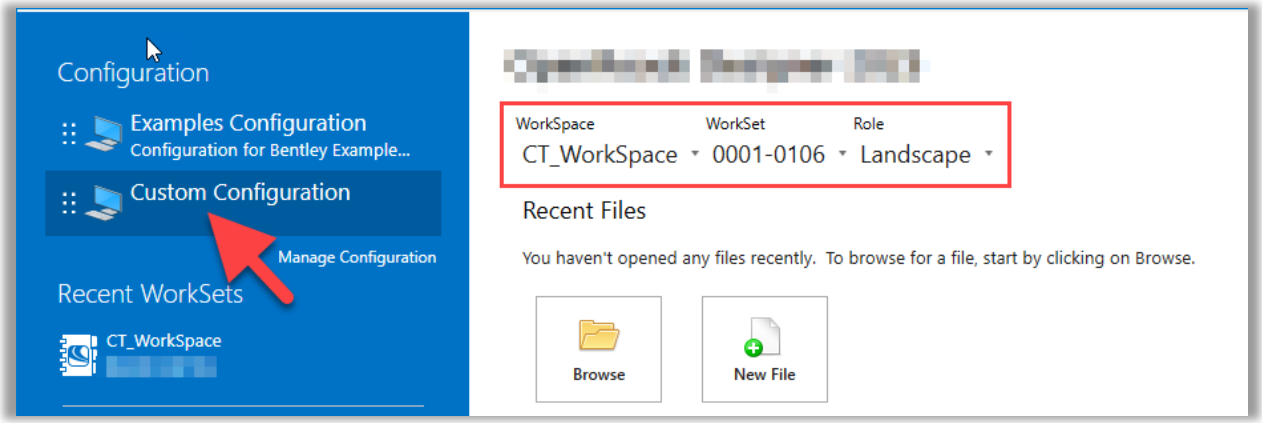

Figure 6 OpenRoads Splash Screen

1.2 Creating a New File

1. Select the **New File** icon.

Warning: Do not copy DGN files created with V8i SELECTseries or InRoads SS2, SS3, SS4, or SS10 to the new CTDOT CONNECT Project/WorkSet folders.

From the New dialog box, browse to the proper discipline folder and enter the proper file name in the ***File name:*** field using

Example: ***LS_1234_1234_BaseModel.dgn***

2. On the New dialog box click the **Browse** button to select the proper seed file.
   ...CT_Configuration|Organization|Seed|Road

   If the survey was done in an old Datum, use the 2D Seed Files in this folder
   ...CT_Configuration|Organization|Seed|GCS|

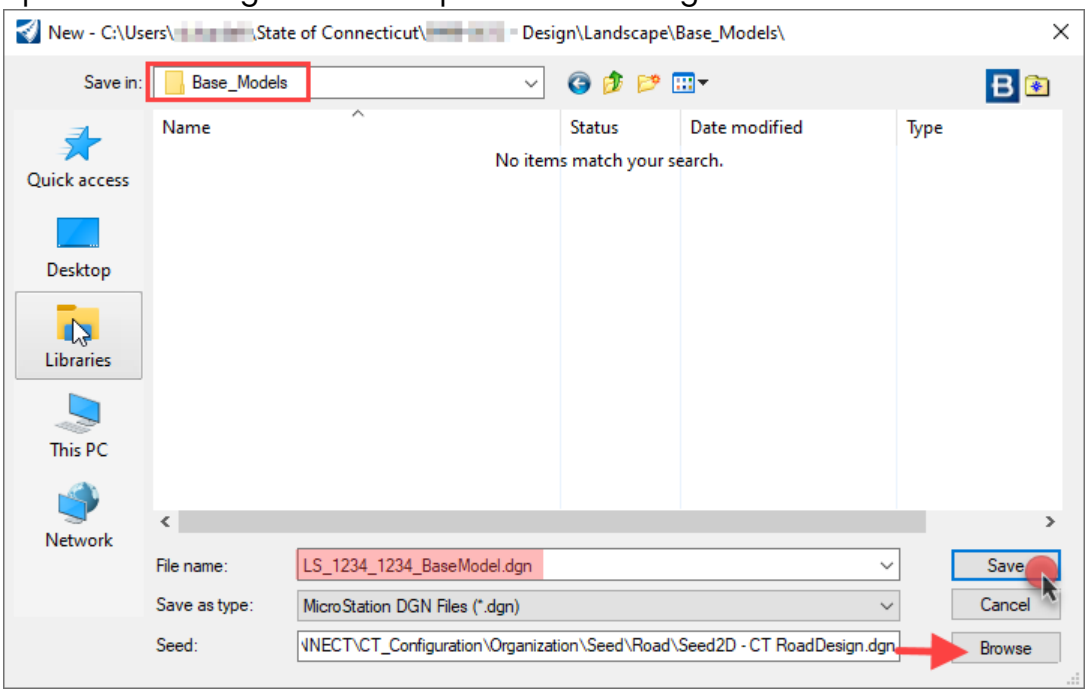

Figure 7 New File

3. After the DGN file is created open File Explorer and browse to the file, **right click** and select **View online**.

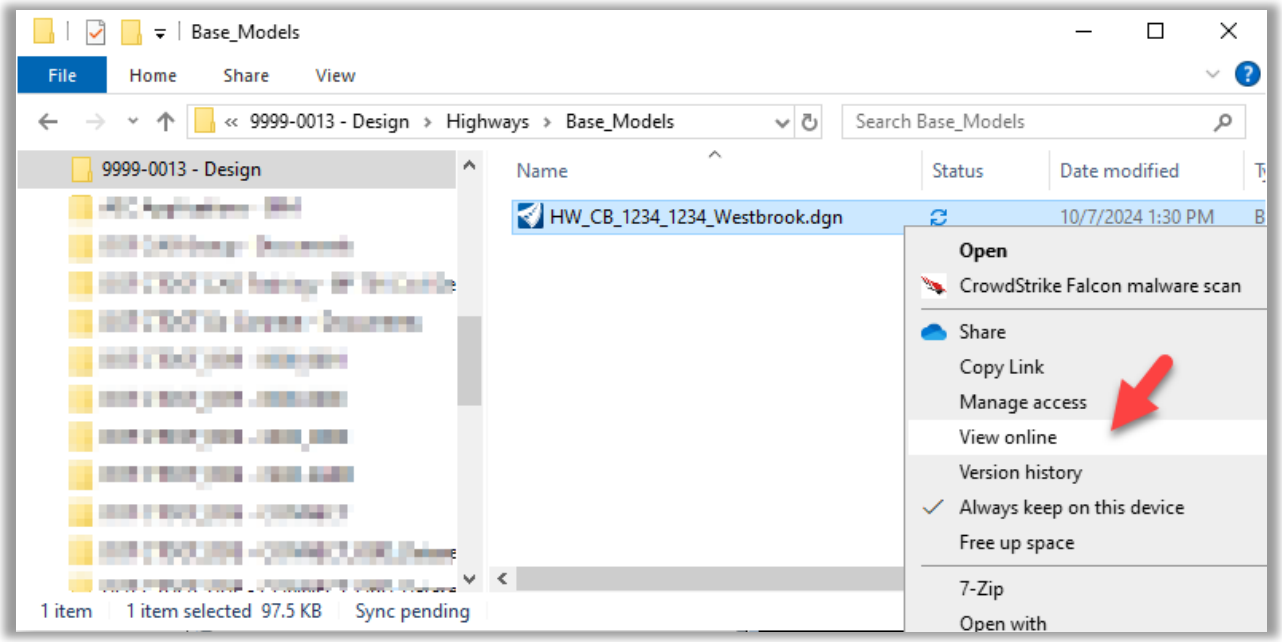

Figure 8 File Explorer View online tool

4. The Projects SharePoint site will open, sort by **Date**, click on the **three dots**, select ***More › Check Out***

   Note: *When you are done working on the DGN file, exit the program and go back to the SharePoint Site and* ***Check In*** *the file.*

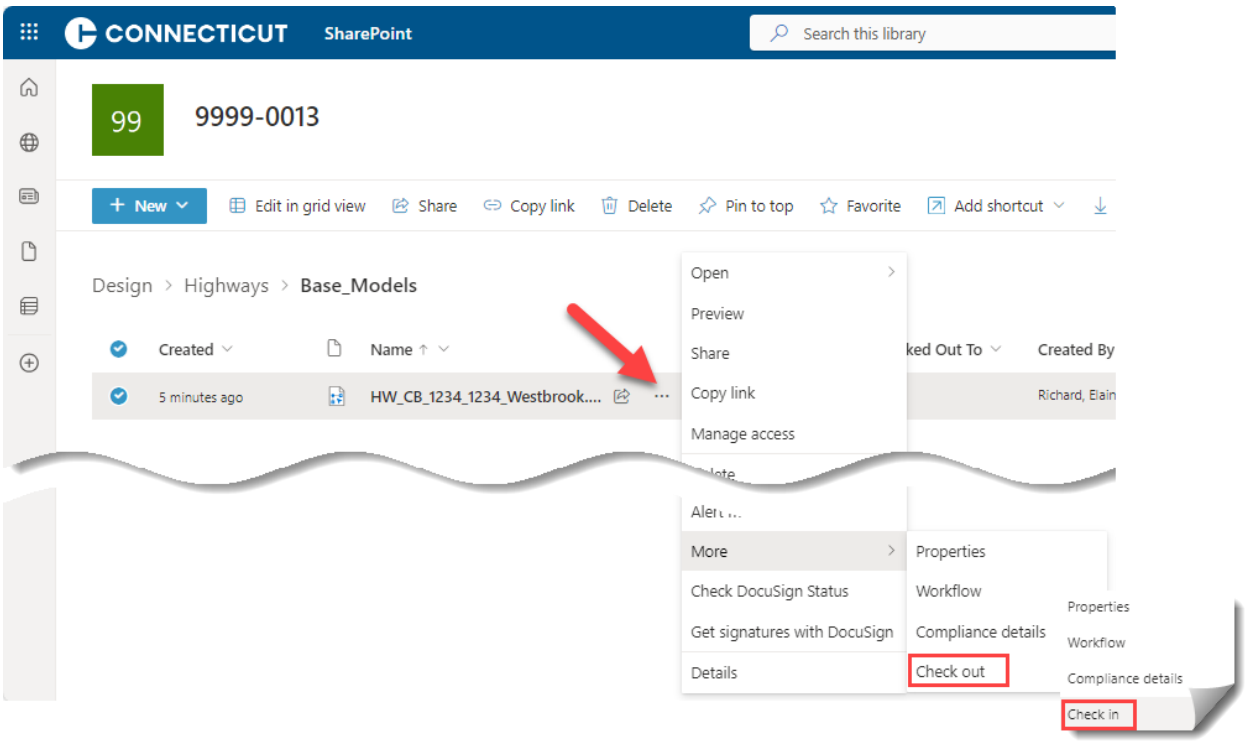

Figure 9 SharePoint Check out

1.3 Referencing

Reference in other Design Unit's DGN files. This could include but not limited to Highway, Illumination, Signal, Signing, Pavement Markings and Existing Survey.

1. Select the **CTDOT** workflow and click on the **Attach** Tab, in the **References** section click on **Attach Reference**.
2. Navigate to the ***Highways\Base_Models*** folder and reference the Highway Design Base Model files. Choose the needed Models (most likely its "Default") and use **No Nesting**.

   Note: *Highway Design may elect to have several DGN files which could include Alignment dgns, Modeling dgns, and Drainage dgns. Highway Design.*
3. Navigate to the ***Active_Survey*** folder and reference the Survey *.dgn file. This may include 2 files a Terrain DGN and a Ground Topo (grn) DGN

   Note: *Older DGN Files will need to be referenced in with certain settings to get them to line up in the correct Geospatial location.*
4. For older reference files turn **True Scale** off and set the Scale to ***1:1***.

   Note: *Always do a check by clicking on the Survey's Northing and Easting Grid Marks to compare the files read out. If they do not match you did not properly align the file Geospatially.*

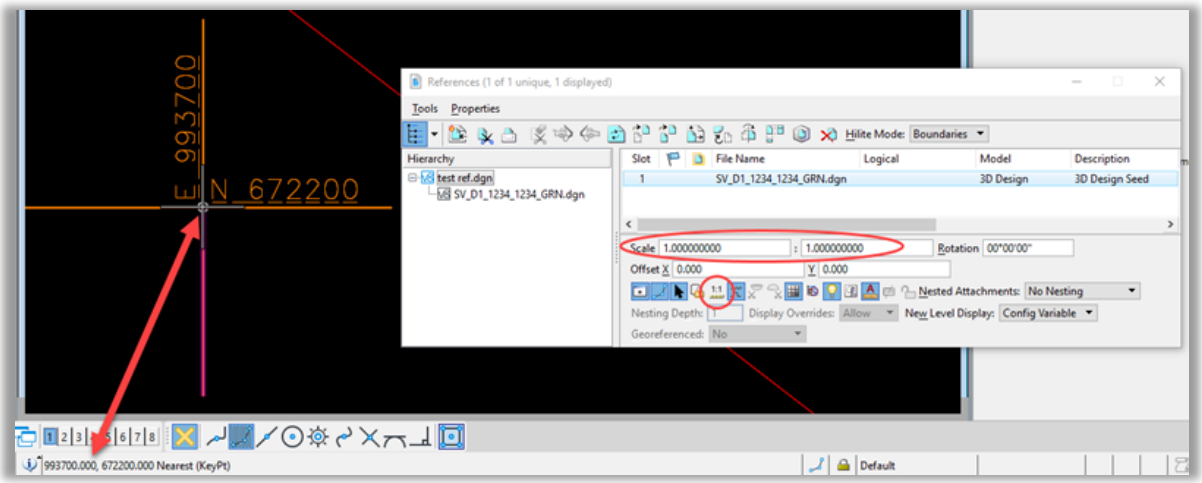

Figure 10 Reference Coordinates

5. Select **Level Display** and turn off the desired levels in the reference files.
6. Activate the terrain by clicking on the terrain boundary, hover over the boundary and from the pop-up menu select the ***Set Terrain Active*** tool.
7. Click again on the terrain boundary and set the override symbology to ***Yes***. Then to help with the horizontal alignment creation, you can turn on the contours.

Figure 11 Override Terrain Symbology

8. Select **Save Settings**.

Exercise 2 - Create Plant Key Project Lookup

1. In File Explorer, browse to your Project folder and check to see if the needed files are already in place for the project you are working on. If either the folder or file is missing, complete step 2 below, if they are already in place skip to step 3.

   ...Standards\|Project Item Types\|Asset_Lookup_Landscape.xlsx

2. Using File Explorer copy the ***Project Item Types*** folder from the CAD Workspace to your project.

   From ***...CT_Configuration\|Organization\|Item Types\|Project Item Types\| Asset_Lookup_Landscape.xlsx***

   To ***...Proj_Numb – Design\|Standards\|Project Item Types\| Asset_Lookup_Landscape.xlsx***

3. Open the Excel file, edit and add the look up information needed for the Plant Key. This can be modified at any time as the design progresses. Do not edit Row one, as this will break the look up functions in the CAD File.

Exercise 3 – Base Modeling

1. In the ***LS_CB_1234_1234_Master.dgn***, select the **CTDOT** workflow and click on the **Landscaping** tab to access the integrated CTDOT standard tools on the Ribbon.

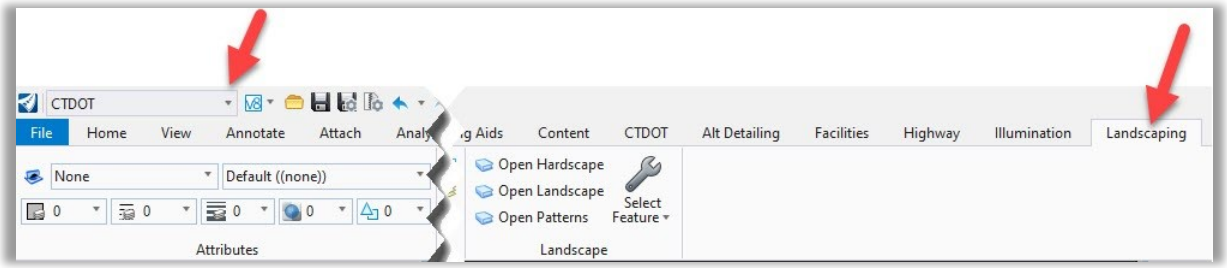

Figure 12 CTDOT Custom Workflow Landscaping Tools

2. In the **Landscape** section select the **Open Landscape** tool, in the Cell Library dialog box double click to select the desired cell for placement.
3. Follow the prompts to place the cell.
4. Using the Element Selection tool select the cell that was just placed. In the **Properties** dialog box select the ***PAY ITEM - LS Plants/KEY*** property and enter as needed in the Search field. The Item Description uses a pull-down menu, select the down arrow and search or select as needed.

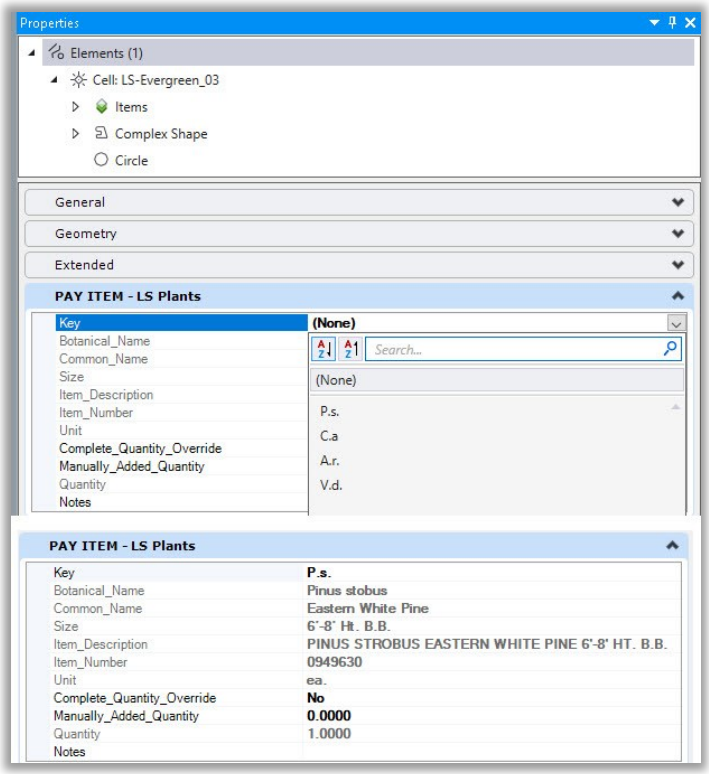

Figure 13 Landscape Item Type Plant Pay Item

5. Other Cells, Lines and Shapes can also have Item Types attached to them. Select the **Attach Item** tool and click on the needed Item Type under Landscape. Follow the prompts to attach one of the Landscape Item Types. In the Properties dialog box edit the Item Type fields as required. **PAY ITEM – LS Plants** *uses the* ***Key*** *to look up the pay item information.* **PAY ITEM – LS** *and* **PAY ITEM – LS Ground Cover** *look up the pay item information by the* ***Item_Description*****.**

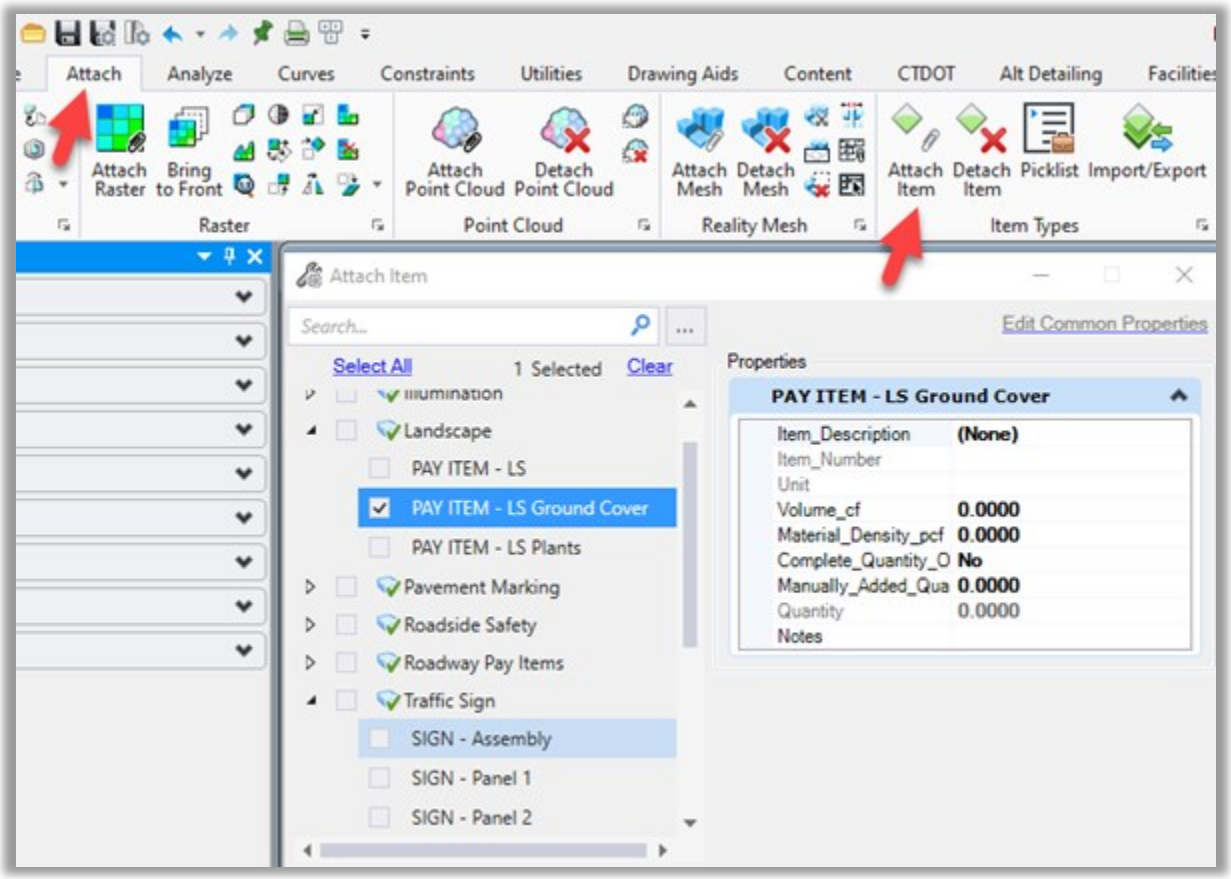

Figure 14 Attach Item Type

Revisions