

Creating a Wetland or Pond with a 4 – Sided Berm

The following instructions will guide you through drawing a 4 sided wetland/pond and creating the cut/fill pads. Volumes for cut and fill will also be determined for your proposed surfaces. These instructions assume that the 3D grid file for the site has been created and that your existing ground contours have been drawn. Carlson modules are displayed as {**Civil - Design**}, main menus are displayed as [**Grading**], and submenus and menu commands are displayed as <**Design Bench Pond**>.

- 1) Draw a 2D polyline to represent the centerline of the berm to be created. The polyline must be closed. The polyline can be any shape desired.
- 2) Create bench pond: {**Civil - Design**} \iff [**Grading**] \iff <**Design Bench Pond**>
- 3) The **Design Bench Pond** dialog box opens.
 - a. For the Source of Surface Model, select **Surface File**
 - b. Design slope format use **Ratio**
 - c. Pond Bottom Surface the user can either use **Set Elevation** or **Original Surface**.
 - d. By selecting the option Draw Slope Direction Arrows, once the berm is drawn, arrows will be drawn on the side slopes to show the direction of the slope. The arrow size can be manipulated.
 - e. Select your desired berm top width
 - f. The layer name can be given to the berm: **PLN-Proposed-Berm**
 - g. Once all options have been set click “**Ok**”
- 4) Select the top of berm polyline that was drawn in the previous steps.
- 5) The Select Existing Surface Grid dialog box opens. Select the existing grid file that was created for the current job, then click “**Open**”.
- 6) The command line prompts the user to enter the fill and cut slopes for the berm.
- 7) Enter the elevation for the top of the berm
- 8) Enter the elevation for the pond bottom if the **Set Elevation** for the pond bottom option was selected.
- 9) The pond in the shape of the polyline was drawn is now on the screen.
- 10) In the command line it asks the user to write the pond to a final grid surface. Type “**Y**” for Yes. This project will now have 2 separate grid files, the existing ground, and now one with the proposed pond on it.

- 11) Make sure to name the new grid a different name from the existing grid that was created before.
- 12) In the command line it wants the user to specify a method to specify storage elevations. Type "I" for interval. Hit **"Enter"**
- 13) The command line prompts the user for the starting storage elevation. The default value is the elevation of the pond bottom. Use the default value, then hit **"Enter"**.
- 14) Select the desired storage interval that is needed.
- 15) The Pond Report opens on the screen in an editable text document. The document contains the top of dam and pond bottom elevations, the side slopes, the grid resolution, earthwork volumes, and the pond storage volumes.
- 16) This document should be saved in the job folder and also printed for the file.
- 17) Once the document is closed, the command line will prompt for writing the stage storage to SEDCAD file. Type "N" for no, then hit **"Enter"**.
- 18) The command line prompts the user to adjust or redesign the pond. Type **"N"** for no. Hit **"Enter"**
- 19) Next, the command line prompts the user to trim existing contour segments inside the pond perimeter. Type **"Y"** for yes, then hit **"Enter"**
- 20) Also, type **"Y"** to retain those trimmed segments then hit **"Enter"**.
- 21) Answer **"Y"** at the command prompt, to create a layer for those trimmed contour segments. Hit **"Enter"**.
- 22) Enter the layer name: **CTR-EX-Trim**. Then hit **"Enter"**
- 23) Once the new layer for the trimmed contour segments have been created, that layer is then frozen automatically by the program.
- 24) The user will now have option to contour the pond. Select the contour interval to use for the proposed contours and change the layer name to **"CTR – Proposed"**. Trim the existing contours if desired and do not join the existing and proposed contours.
- 25) The pond is now contoured.