Overview: This document will point users to How To instructions for developing a pond design in cadd depending on the items needed for the embankment.

Software: AutoCAD Civil 3D 2016, NRCS C3D customization & template, NRCS WinPond

<table>
<tr><td colspan="2">Create a drawing project file for this job.
HowTo - Starting a C3D Project</td></tr>
<tr><td colspan="2">HowTo – Geolocation w Online Bing Map C3D or
HowTo – Georeferenced Images C3D</td></tr>
<tr><td colspan="2">Will you be using LiDAR?</td></tr>
<tr><td>Yes</td><td>No</td></tr>
<tr><td>HowTo- LiDAR into C3D
(this can be done after survey)</td><td></td></tr>
<tr><td>Survey the footprint of the embankment, property line elevations, and other key features</td><td>Survey the storage area and footprint of the embankment</td></tr>
<tr><td>Trimble Access Download TSC3</td><td>Trimble Access Download TSC3</td></tr>
<tr><td>HowTo- Survey Point Files into C3D
HowTo – Merging Surveys C3D (Optional)</td><td>HowTo- Survey Point Files into C3D
HowTo – Merging Surveys C3D (Optional)</td></tr>
<tr><td>HowTo- Original Ground Contours C3D</td><td>HowTo- Original Ground Contours C3D</td></tr>
<tr><td>Extract stage storage based on LiDAR and CL cross section (optional) based on ground survey.
HowTo- Exporting NRCS Storage Data C3D</td><td>Extract stage storage and CL cross section (optional) based on ground survey.
HowTo- Exporting NRCS Storage Data C3D</td></tr>
<tr><td>Determine Drainage area, length of flow, and % land slope.
HowTo- Average WS Slope C3D
Or ArcMap or other tools</td><td>Determine Drainage area, RCN, soil loss, length of flow, and % land slope.
ArcMap or other tools</td></tr>
<tr><td>Determine RCN & soil loss.
ArcMap or other tools</td><td></td></tr>
<tr><td colspan="2">Determine sediment storage requirements.
IA-ENG-39 (Small Structure Sedimentation Form) or SCS-ENG-309</td></tr>
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<table>
<tr><td colspan="2">Determine embankment and auxiliary spillway elevations & pipe size.
WinPond or SITES</td></tr>
<tr><td colspan="2">HowTo- Pond Embankment C3D
Placing the Centerline & Top of Dam</td></tr>
<tr><td colspan="2">Does the embankment include an auxiliary spillway?</td></tr>
<tr><td>Yes</td><td>No</td></tr>
<tr><td>HowTo- Auxiliary Spillway Layout C3D</td><td>__</td></tr>
<tr><td colspan="2">Does the embankment use a “blister” berm?</td></tr>
<tr><td>Yes</td><td>No</td></tr>
<tr><td>HowTo- Pond Embankment w/ Blister Berm C3D
Placing the Toes and Blister Berm of the Dam</td><td>If required to design the size of a sloping wave berm use:
HowTo- Sloping Wave Berm Design C3D</td></tr>
<tr><td></td><td>HowTo- Pond Embankment C3D
Placing the Toes and Wave Berm of the Dam</td></tr>
<tr><td colspan="2">HowTo- Core Trench C3D</td></tr>
<tr><td colspan="2">HowTo – Plan View Grading Cleanup C3D
HowTo – Annotative Dimensions C3D</td></tr>
<tr><td colspan="2">Create profile views along CL of pipe, CL of embankment, & CL of auxiliary spillway
HowTo- Profiles & Sections C3D
HowTo – Soil Boring Logs into Profile or HowTo – gINT to C3D</td></tr>
<tr><td colspan="2">Create a pipe profile in the profile view along CL of pipe
HowTo – Profiles Creation & Editing C3D</td></tr>
<tr><td colspan="2">HowTo – Plotting C3D</td></tr>
<tr><td colspan="2">HowTo – Creating and Exporting Points C3D</td></tr>
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