SOUTH DAKOTA NRCS CIVIL 3D 2010 DRAFTING NOTE

DAM – PROFILE

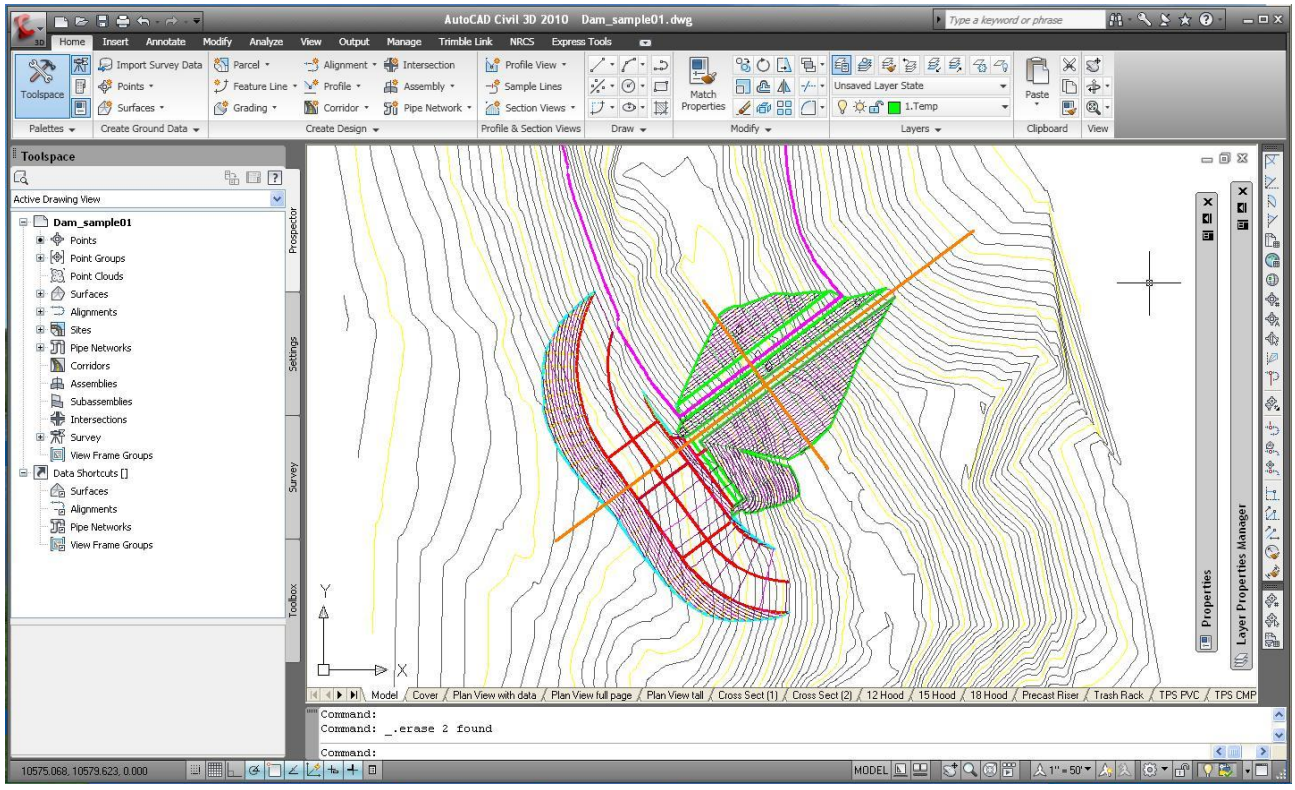
CREATE PROFILES

In this example, the profile along the centerline of the dam and the profile of the pipe will be created. The embankment and auxiliary spillway grading is already completed. For more information, see MN NRCS AutoCAD Civil 3D Quick Reference Guide Section 500 for alignments and Section 600 for profiles.

Create an Alignment Along the Centerline of the Dam

The first step is to create a 2D polyline along the centerline of the dam and another at the location of the pipe. These are shown as orange lines in Figure 1. The 2D polyline for the centerline is five hundred feet long and the STA 0+00 is on the east or the right side in Figure 1. The 2D polyline of the profile for the pipe is two hundred feet long with the north or top of the line as STA 0+00.

Figure 1: The original ground surface, Ognd and the embankment dam surface, Dam with locations for the profile along the centerline and the profile for the pipe.



The following steps show the creation of the profile along the centerline of the dam. The same steps are repeated for the profile of the pipe. Now, the polyline will be converted to an alignment by selecting Create Alignment from Object, under Alignment on the Home Tab as displayed in Figure 2.

Figure 2: Create Alignment from Objects.

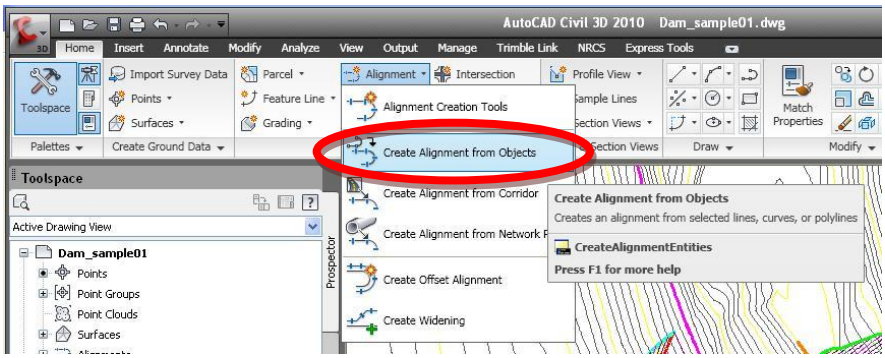
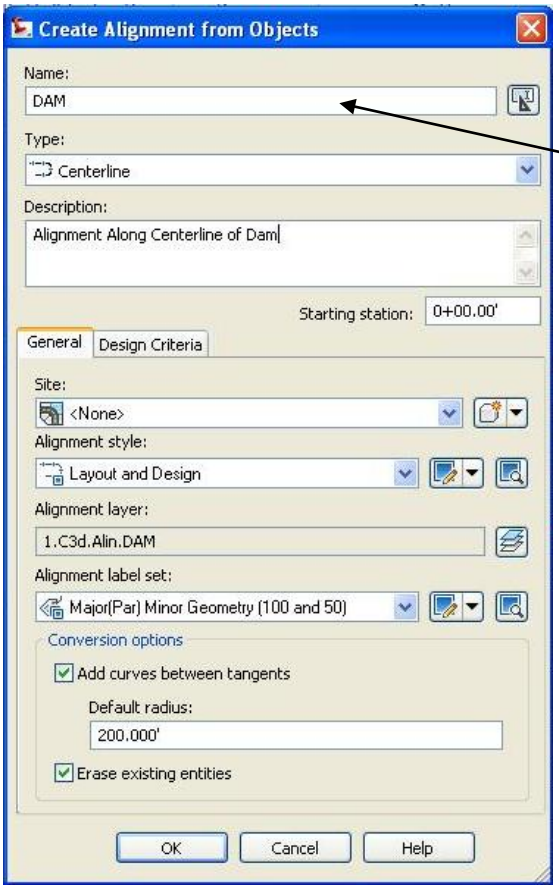
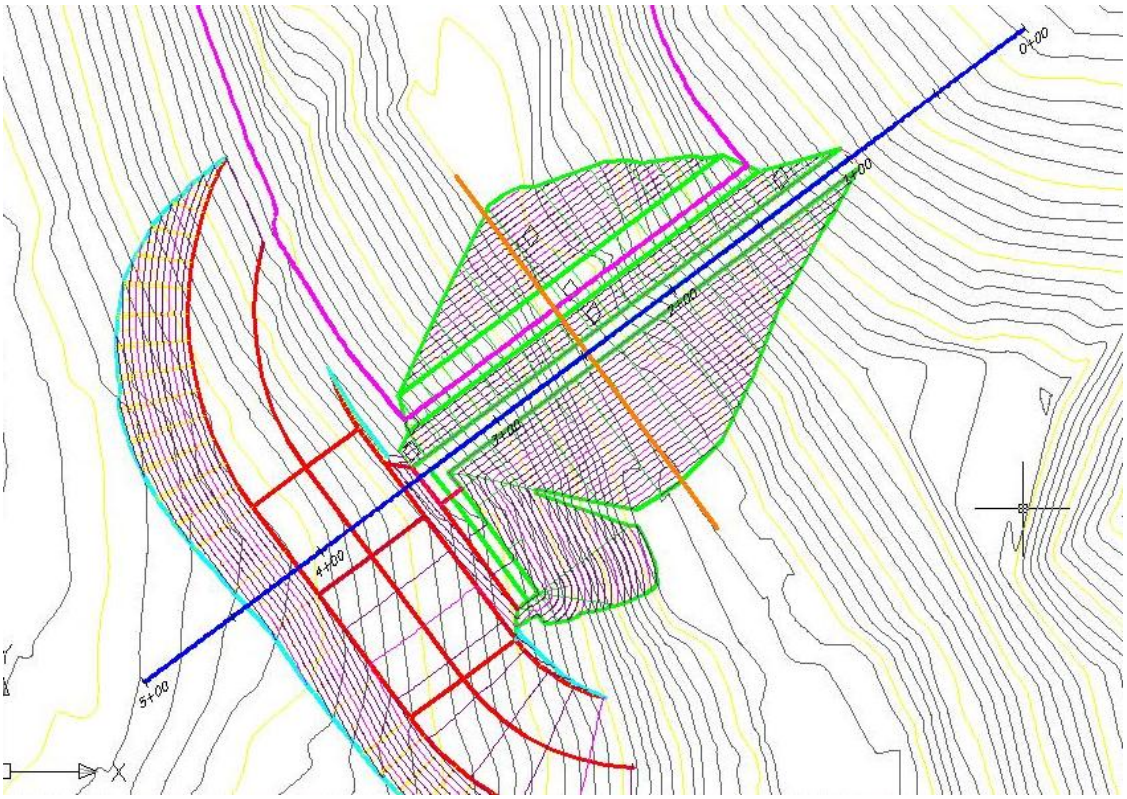


Figure 3: The Create Alignment from Objects window.



Change the name of the alignment

Figure 4: The alignment for the profile of the centerline of the dam.



Create a Profile Along the Centerline of the Dam

The surfaces along the DAM alignment are sampled. Sampling a surface involves taking surface vertical or elevation information and associating it with the alignment. To sample a surface, on the Home ribbon, go to Profiles and select Create Surface Profile. This opens the Create Profile from Surface window. For the alignment just created, the surfaces Ognd and Dam are included on the Profile list as shown in Figure 6. For more information on creating profile views see [MN NRCS AutoCAD Civil 3D 2010 Quick Reference Guide 610.0].

Figure 5: Create surface profile from an alignment.

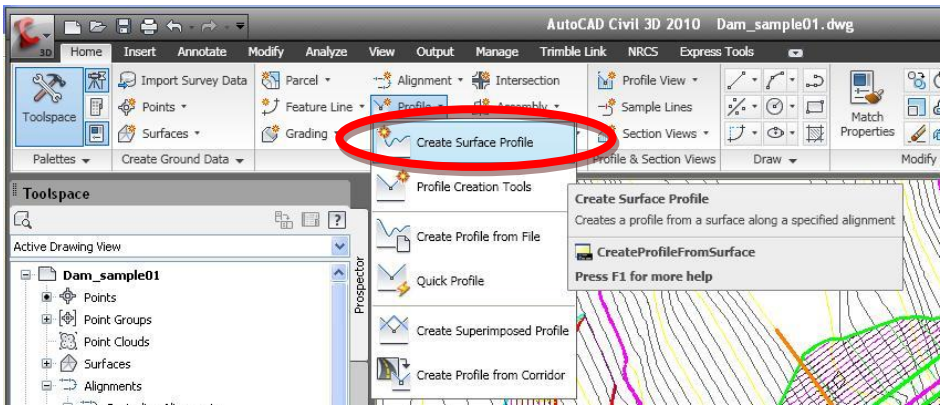
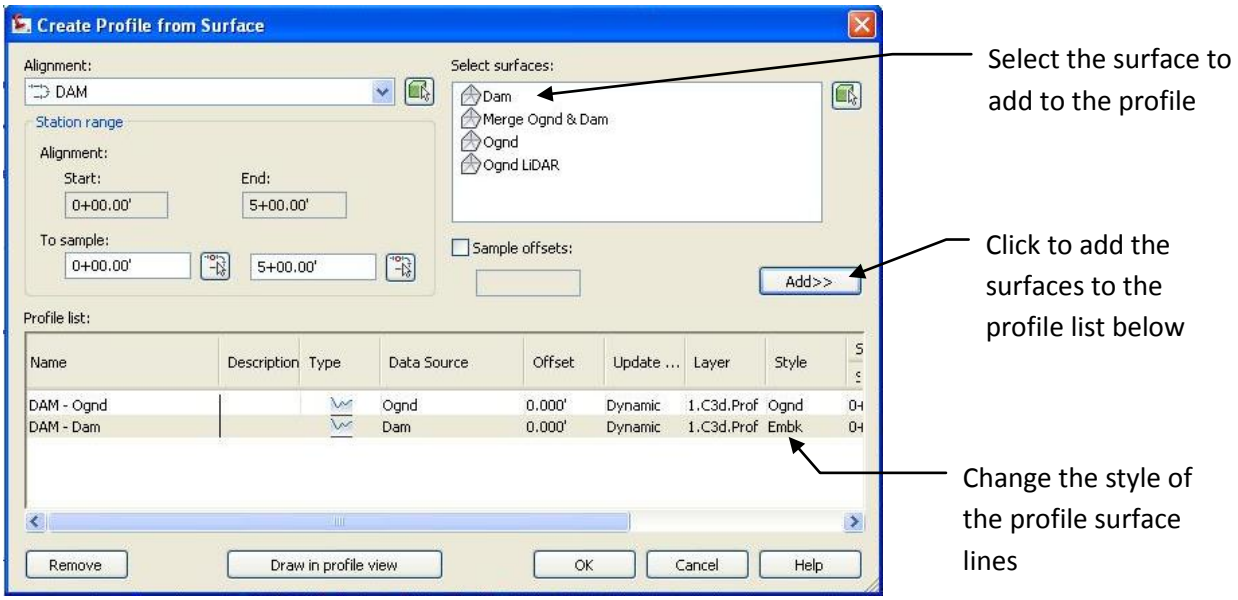


Figure 6: The create profile from surface window.



Create a Profile View Along the Centerline of the Dam

The next step is to create a profile view. On the Home ribbon, go to Profile View under the Profile and Section Views Panel. Click on Create Profile View. This opens the Create Profile View Wizard. The wizard screens are shown in Figures 8 to 13. For more information on creating profile views see MN NRCS AutoCAD Civil 3D 2010 Quick Reference Guide 620.0.

Figure 7: Create the profile view command.

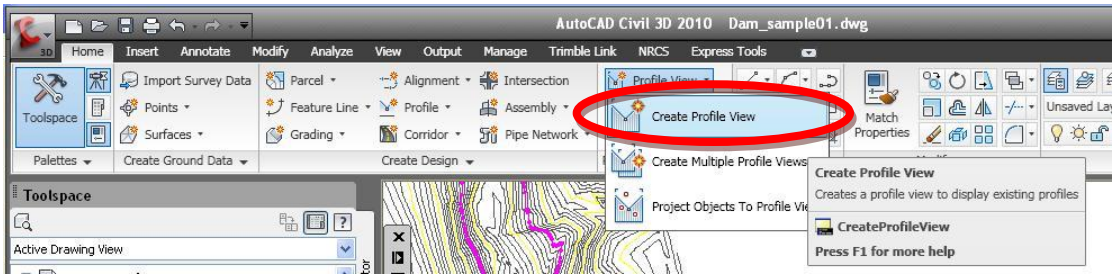
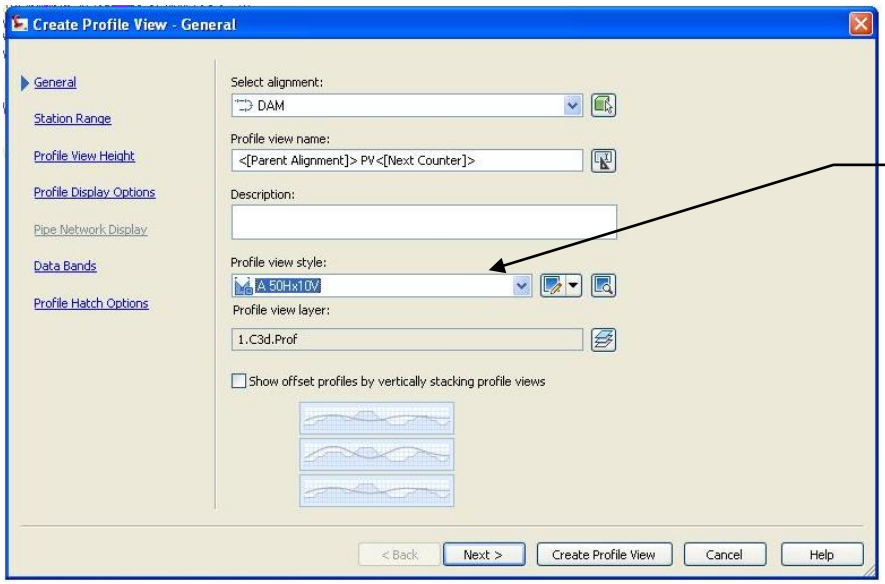
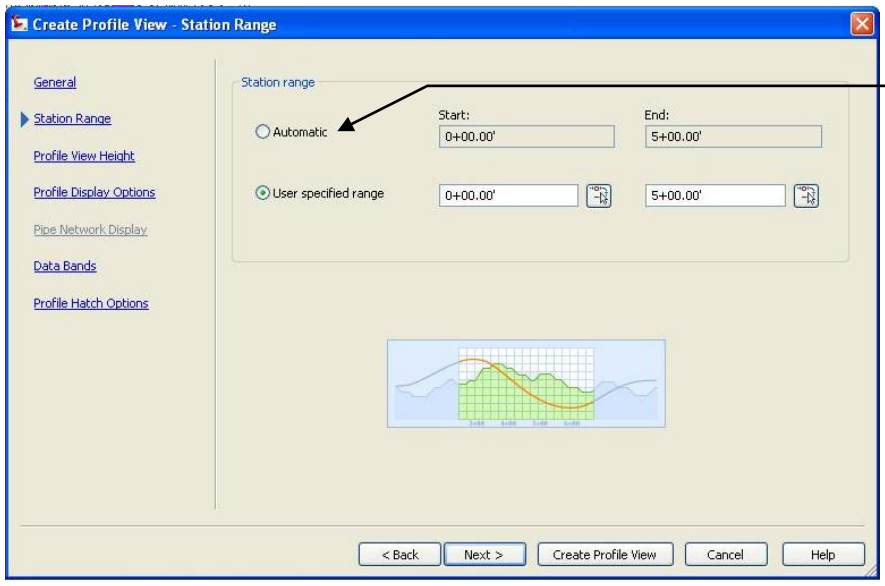


Figure 8: The create Profile View wizard.



Select the profile view style

Figure 9: The profile view station range.



Note that the automatic will add 100 feet to each end of the profile view. It would display -1+00 to 6+00.

Figure 10: The profile view height.

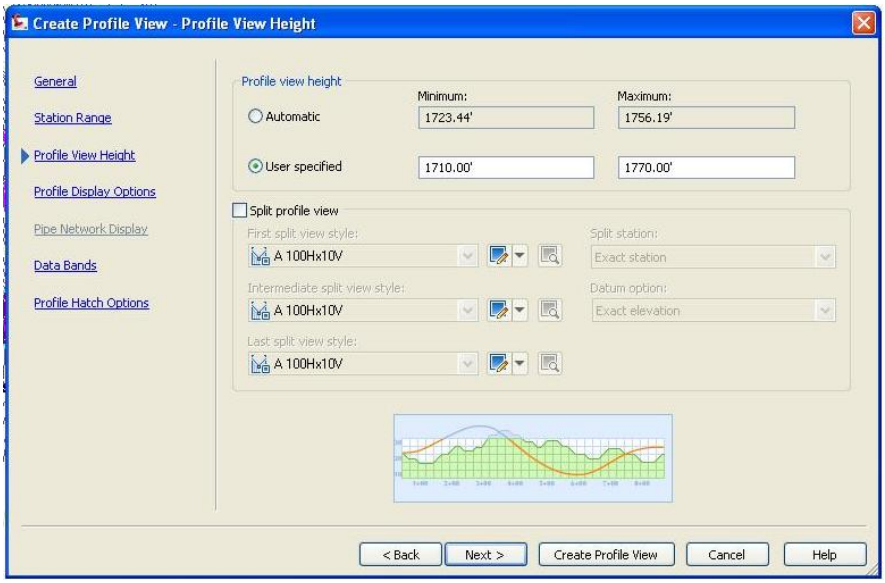


Figure 11: The profile view display options.

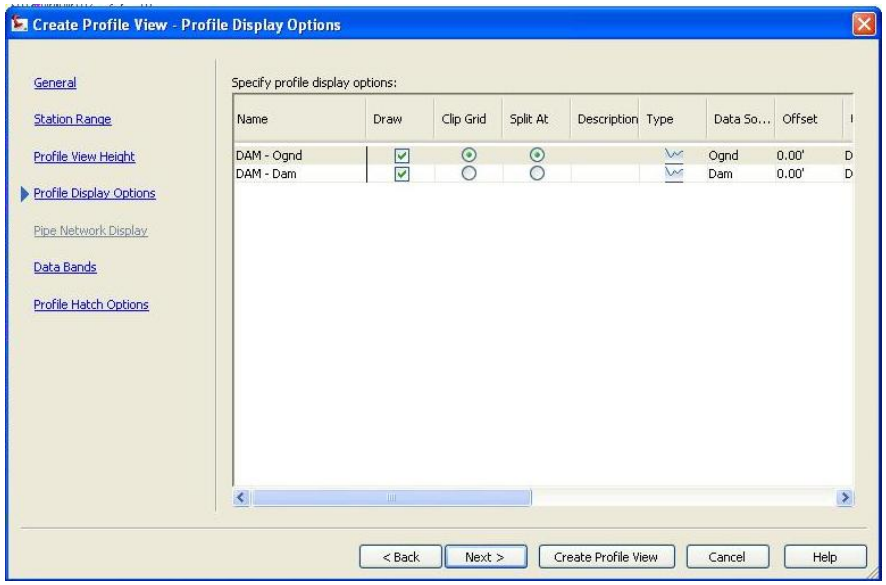


Figure 12: The profile view data bands.

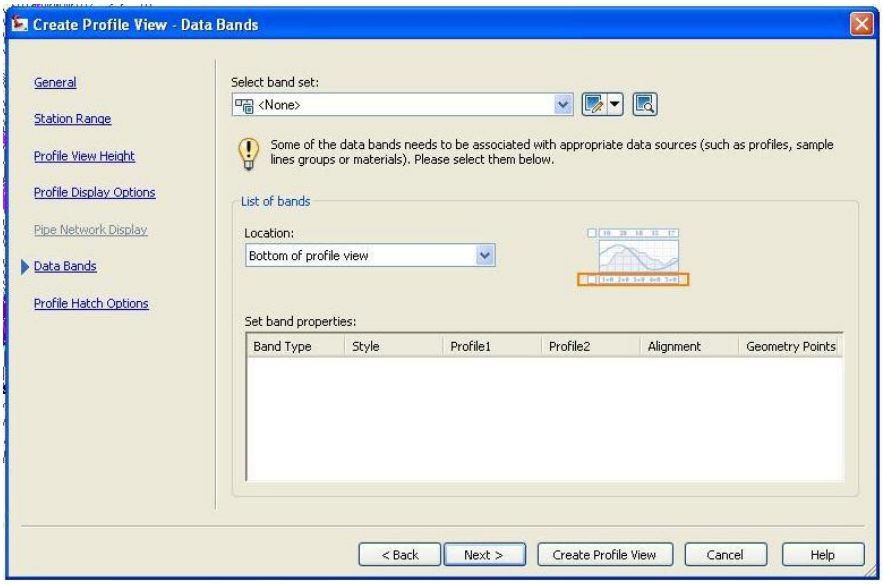


Figure 13: The profile hatch options.

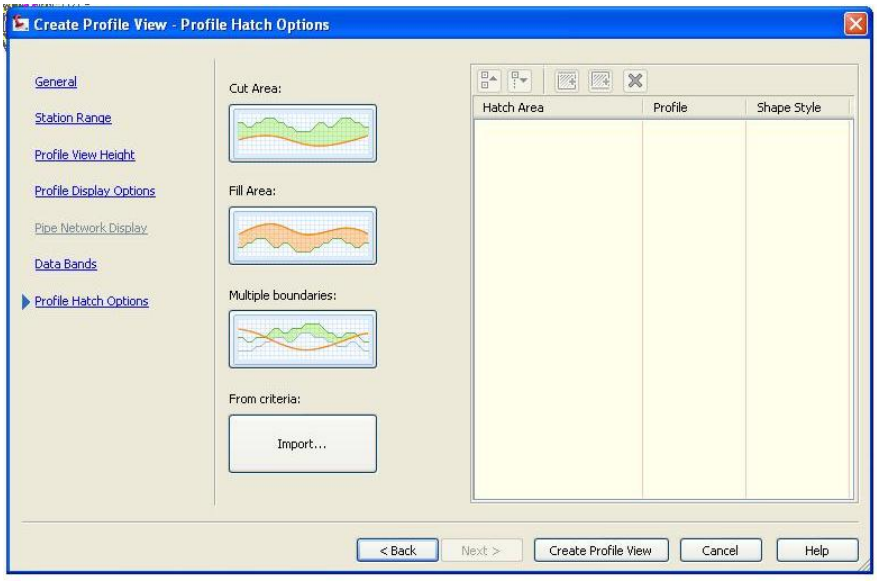


Figure 14: The profile view for the centerline of the dam inserted in Model space.

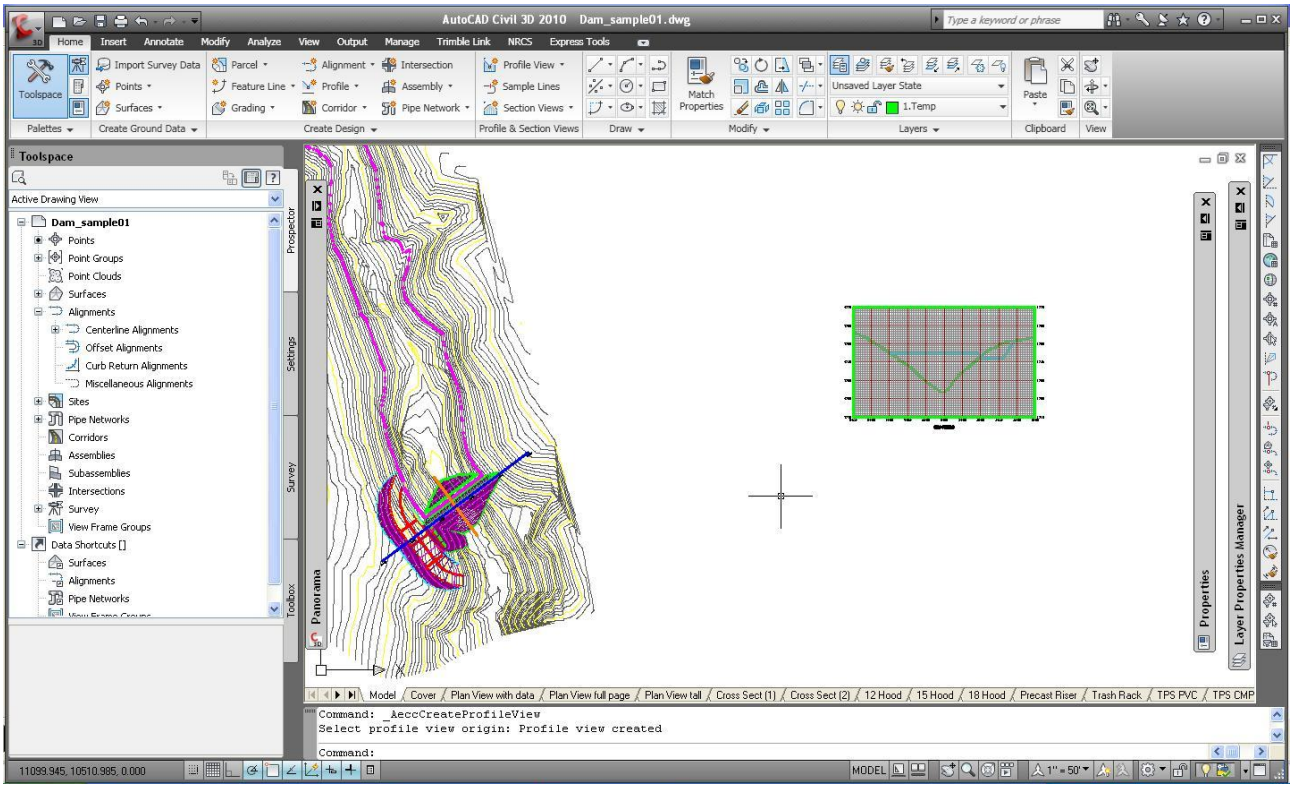
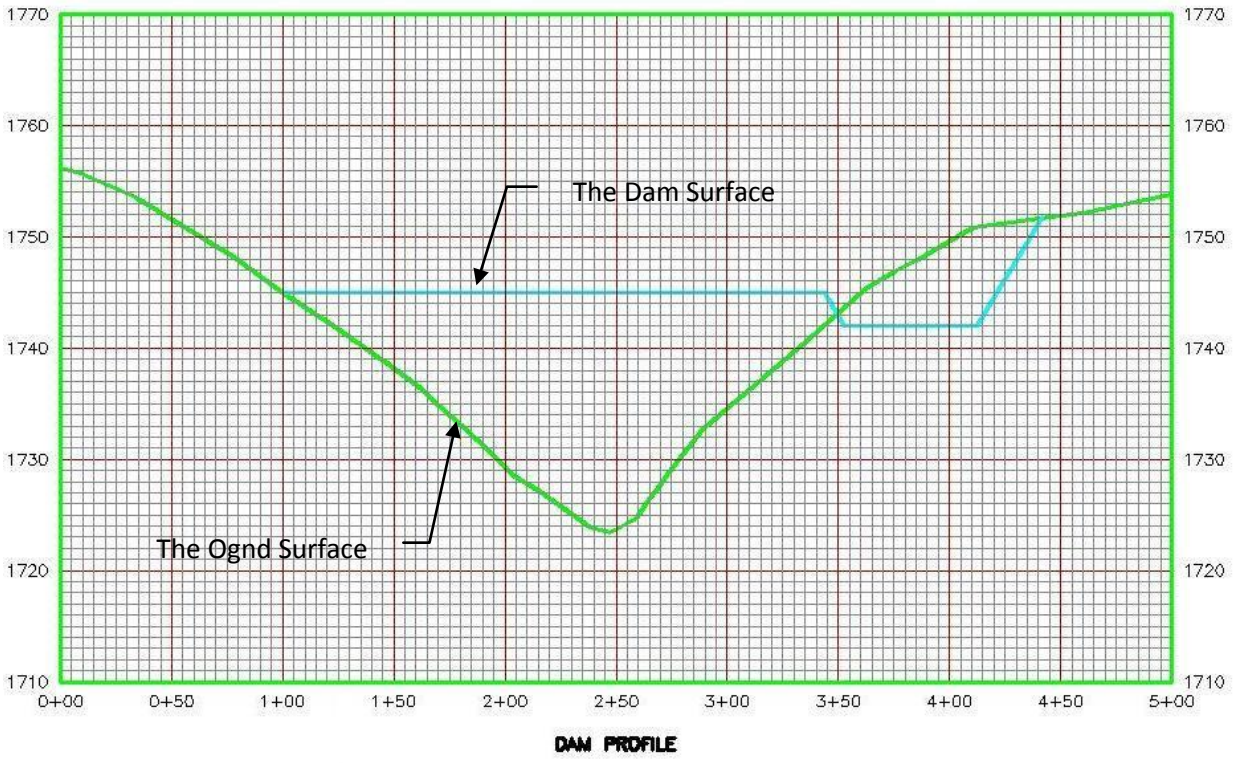


Figure 15: The profile of the centerline profile of the dam and cross-section of the auxiliary spillway.



Repeat the steps to create the profile of the pipe and cross-section through the dam embankment as shown in Figure 16.

Figure 16: The cross-section of the dam at the location for the pipe and the maximum cross-section.