Overview: Creating a subsurface log of the soil materials in a profile view can be done with the use of the Soil Profile block found in the NRCS Symbols & Blocks tool palette. Note: The geologists have gINT software for this purpose.

Software: AutoCAD Civil 3D 2016, NRCS C3D 2016 tool palette customization.

Prerequisite: A Profile View needs to exist for the soil borings to be placed on. The location of the soil boring was surveyed and is showing in the plan view. A log showing the depths of the sub-surface materials is needed.

Verify the Profile View
1) Review the Profile View elevations and allow enough room at the bottom for the depth of the soil boring logs.
   a. Select the Profile View, right-click Profile View Properties... click the Elevations tab. To change the elevation range displayed checkmark user specified height and input the Minimum and Maximum Elevations that you need.
   b. The Stations tab can have user specified adjustments also.
   c. Important: On the Information tab set the correct final scale for output. Important.
   d. Click Ok.

Mark the location of the Soil boring in the Profile View
2) Click Annotate.. Labels & Tables... Add Labels▼... Profile View... Station Elevation...
3) Select the Profile View grid
4) Input {'SPE} Press Enter (Profile Station Elevation from COGO Point)
5) Click on the surveyed soil boring survey shot to obtain the station
6) Input {'SPE} Press Enter
7) Click on the surveyed soil boring survey shot to obtain the elevation
8) A label will be placed in the Profile View. Press ESC.
9) Repeat 2-8 for each soil boring.

Insert the Soil boring block into the Profile View
10) Click the NRCS Tool Palettes – 11x17 Symbols B... bSoilProfile
11) Input {S} for scale. Press Enter.
12) Input the horizontal scale of the Profile View. E.g for 50Hx10V input {50}. Press Enter.
13) Shift Right-click Insert
14) Click the insertion marker of the Station Elevation label at the soil boring location.
15) Home... Modify... Explode... select the block in order to explode it. Press Enter.
16) Repeat for each soil boring

Note: The inserted depth of the block is equal to the vertical scale of the Profile View. The line dividing the soils is ½ of the block depth. E.g. For 50Hx10V the block depth is 10’.

Place elevation markers on the soil profile.
17) Click Annotate.. Labels & Tables... Add Labels▼... Profile View... Station Elevation...
18) Select the Profile View grid
19) For Specify station: Shift Right-click Midpoint to the middle of the bottom of the block.
Soil Boring Log into Profile View

20) For Specify elevation: Shift Right-click Midpoint to the middle of the bottom of the block
21) For Specify station: Shift Right-click Midpoint to the middle of the soil dividing line
22) For Specify elevation: Shift Right-click Midpoint to the middle of the soil dividing line
23) Press ESC.

Stretch the block to the bottom elevation of the soil boring.
24) Home... Modify... Stretch...
25) Use a Crossing Window selection from right to left around the lower line and the lower station/elevation label. Do not enclose the middle line. (Click at A & B in image)
26) Use shift + click to deselect the Profile View Grid. Press Enter.
27) Shift Right-click Midpoint to the middle of the bottom of the block
28) Input {PSE} Press Enter (Profile Station Elevation)
29) Select the Profile View grid
30) Shift Right-click Midpoint to the middle of the bottom of the block
31) Input the elevation value for the bottom of the soil boring E.g. {1070.9} Press Enter
32) Verify that the elevation label shows the correct depth.

Adjust the soil boring log
33) Determine the elevation of additional soil profile breaks. E.g. An additional soil break at 1073.9.
34) Select the original soil dividing line, the station/elevation label, and the soil text. (See C, D, & E in image)
35) Right click Basic Modify Tools... Copy...
36) Shift Right-click Midpoint to the middle of the dividing line
37) Input {PSE} Press Enter
38) Select the Profile View grid
39) Shift Right-click Midpoint to the middle of the dividing line
40) Input the elevation value for the bottom of the soil boring E.g. {1073.9} Press Enter
41) ESC ESC
42) Verify that the elevation label shows the correct depth.

43) Adjust the elevation of the original soil profile break using Right click Basic Modify Tools... Move... (use same 'PSE process as for additional breaks)
44) Double click on the soil description and the Soil Profile number text to edit.
45) Station/Elevation labels.
   a. Delete any unwanted labels, Or
   b. Select the label. Right click Properties... Set the Profile Station and Elevation Label = Elevation (Horizontal Right)