



Autosign

by **CGS Labs**



Array of Custom Elements in Autosign

Tutorial





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Array of Custom Elements in Autosign

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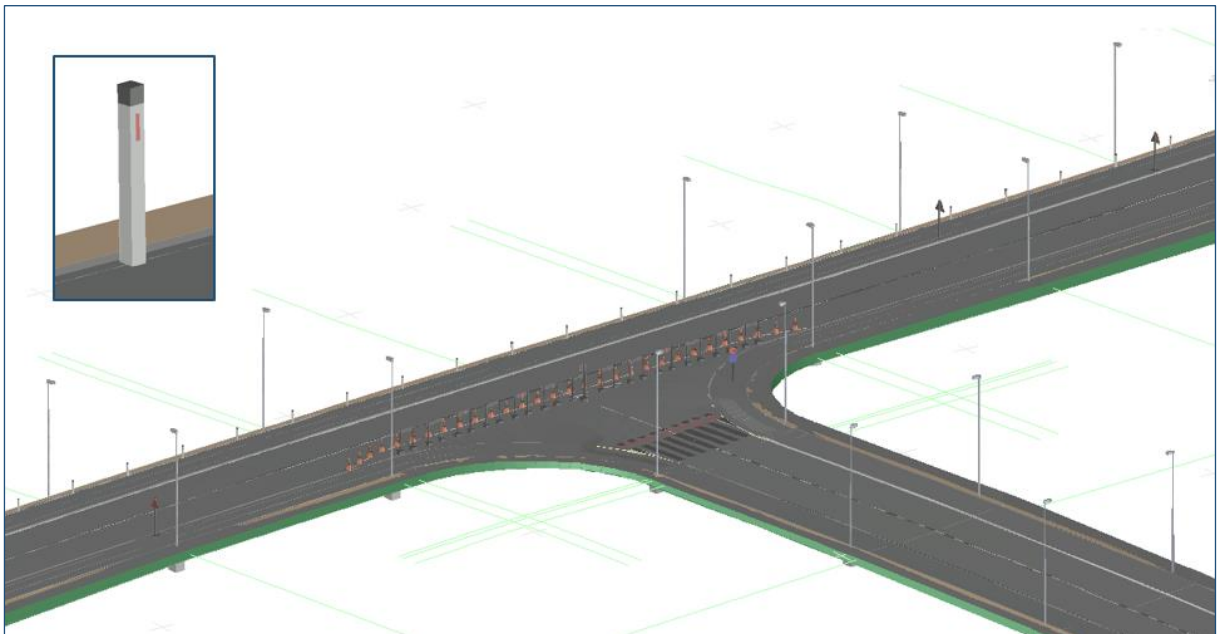
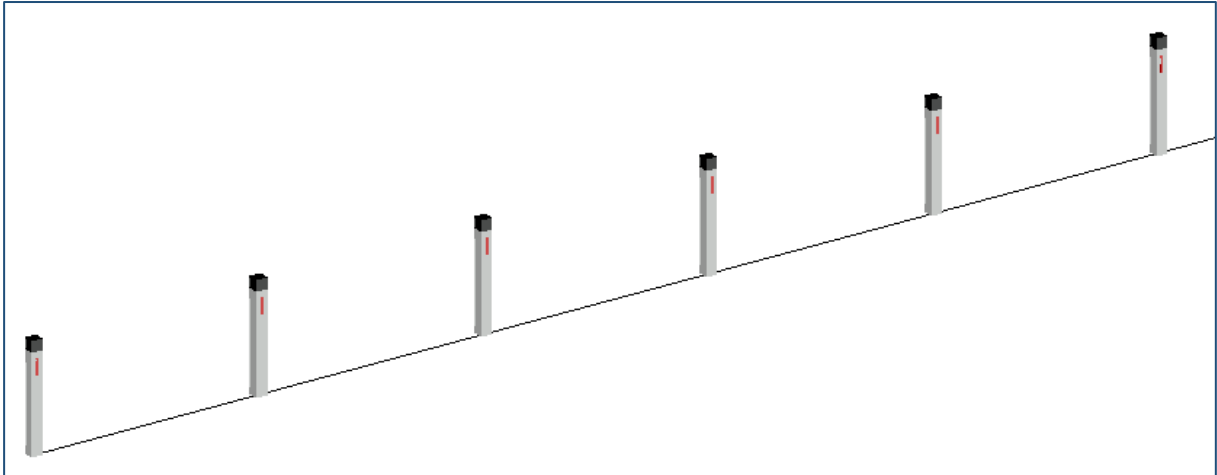
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Table of Contents

INTRODUCTION	3
Step 1 – Create a 3D Model of a Custom Element	4
Step 2 - Creating a .bmp Image	5
1. First Option: Using an Existing Image	5
2. Second Option: Using AutoCAD	5
3. Third Option: Using Screenshot Tools	6
Step 3 – Editing an XML file	6
Step 4 – Inserting Custom-Made Elements into the Drawing.....	9

INTRODUCTION

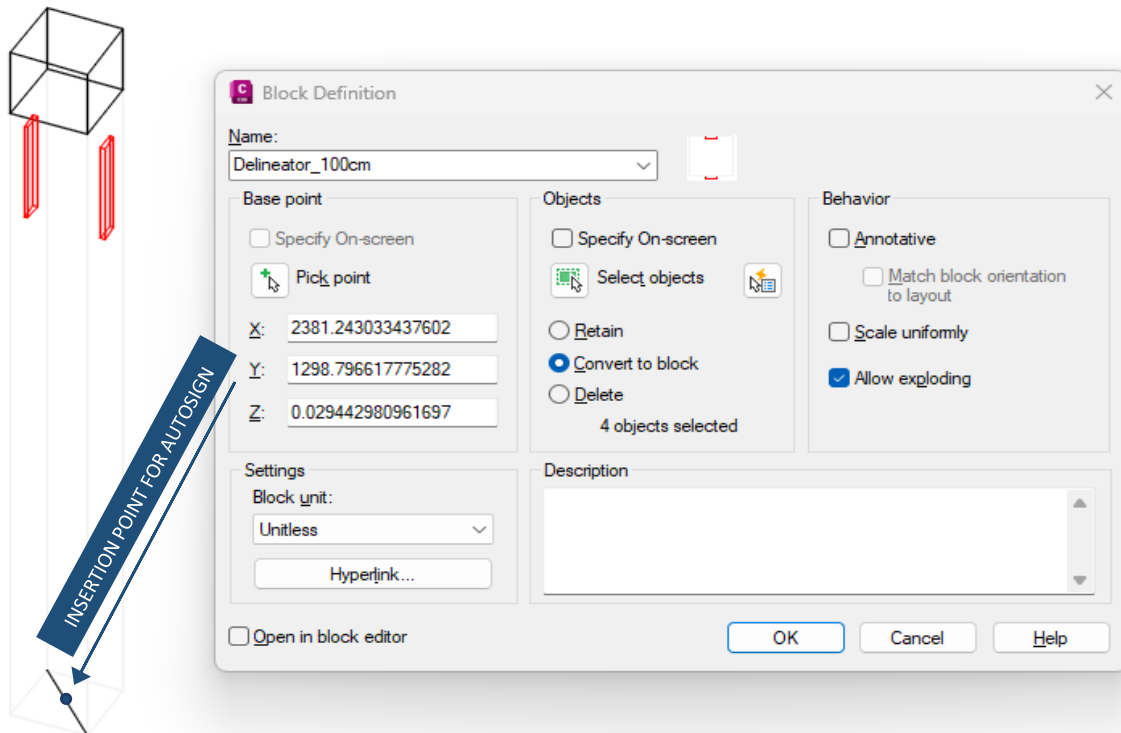
In the Autosign program, there is a tool called "Cones" that allows you to create an array of custom elements, such as street lights, bollards, delineators, catenary masts, or other items. This tutorial will demonstrate how to add any custom 3D element and use the tool to create an array of those elements. The example used will be a delineator. You can find the DWG drawing and BMP file at the end of this tutorial and download them to your computer.



Step 1 – Create a 3D Model of a Custom Element

Creating a Block for the Custom Element

1. Open a new DWG drawing in AutoCAD, Civil 3D, or BricsCAD.
2. In the drawing, create a 3D model of the custom element. Then create a block from the 3D solids. Pay attention to two things: the base point of the block, which will become the insertion point in the Autosign program, and the name of the block, as you will need this block name later when creating the XML file.



Step 2 - Creating a .bmp Image

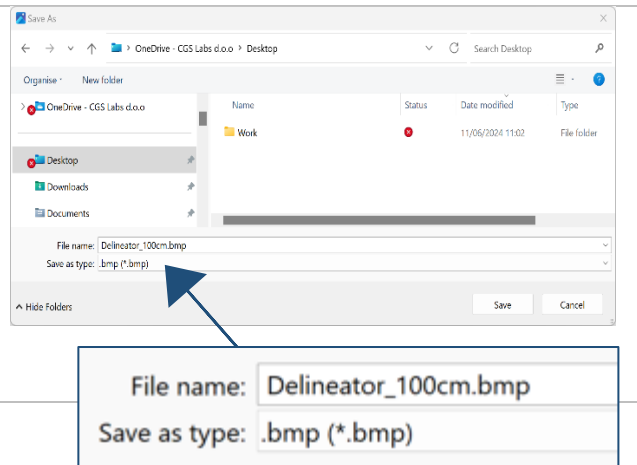
To ensure we have a preview of the element in the dialog box within the Autosign program, we need to create an image. We have three different options available to us.

1. First Option: Using an Existing Image

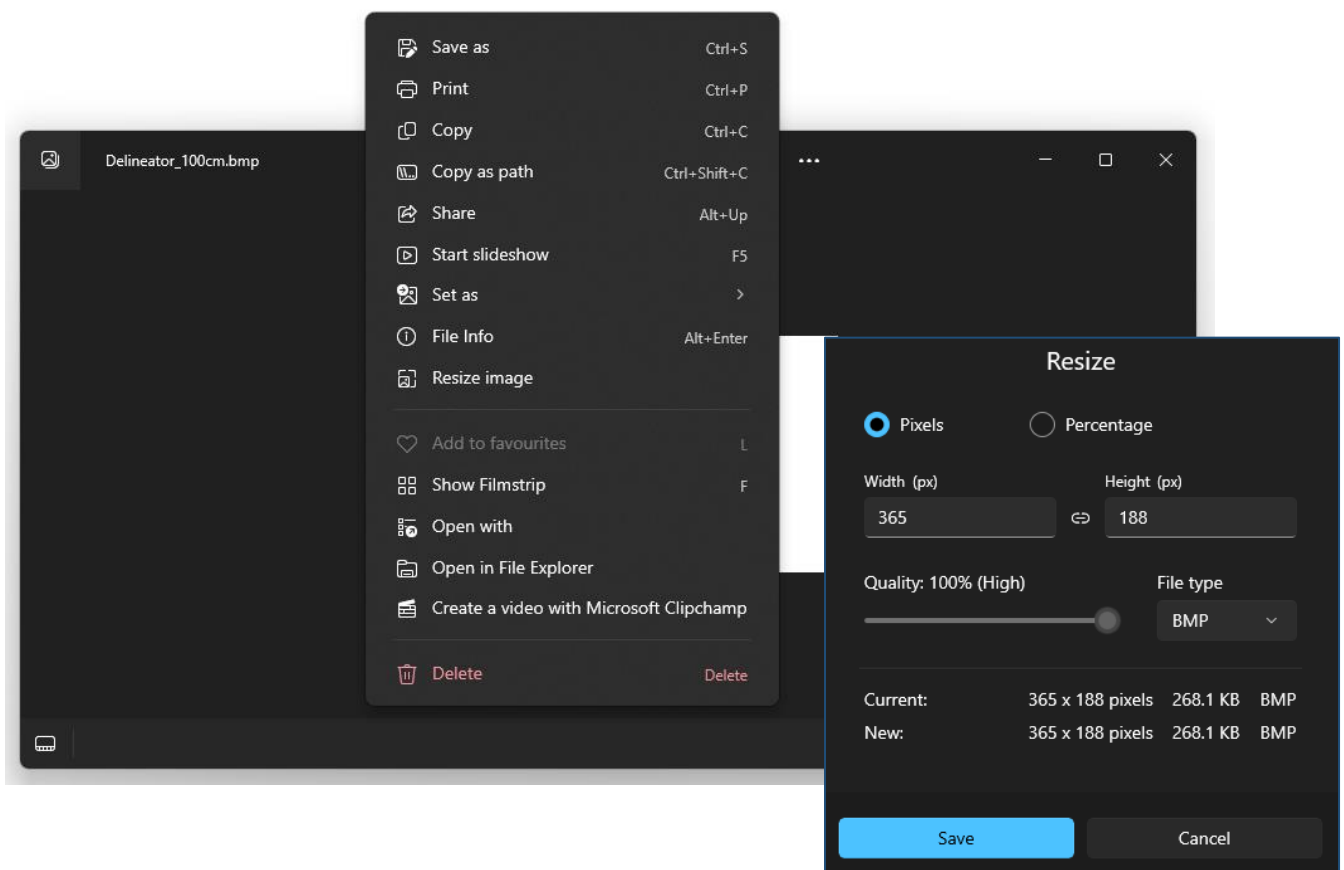
1. If you find a .jpg or any other similar format image of the element on the internet, download it to your computer, and then open the image.

2. Right-click on the image and select "Save as."

3. Define the name (we recommend that the name is the same as the name of the block) and add the .bmp extension at the end.

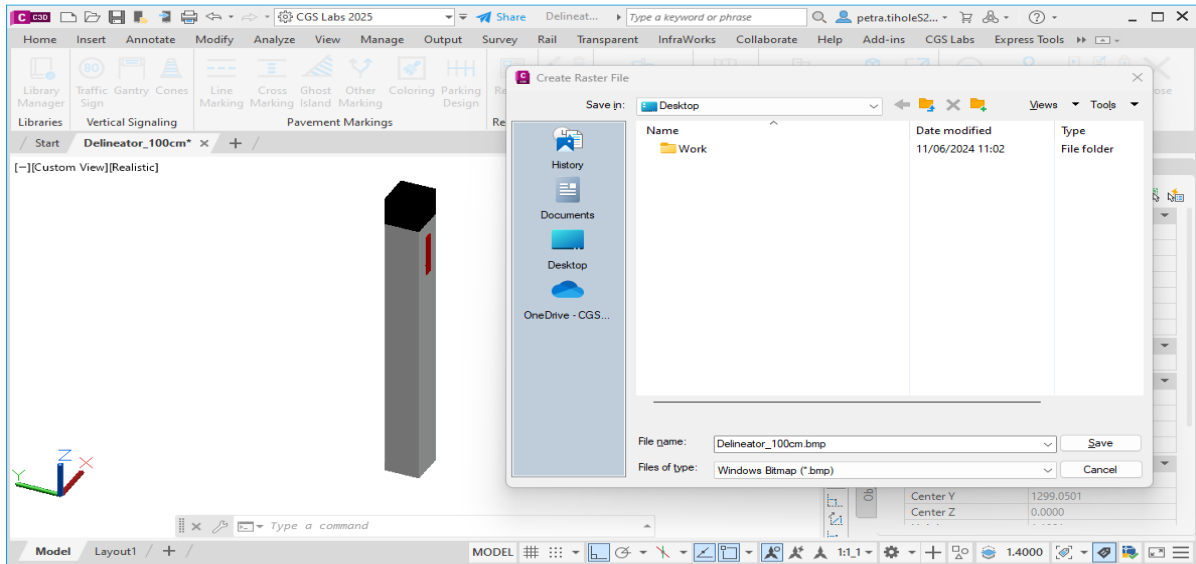


If you want to change the dimensions of the image, you can do so by right-clicking on the open image and then selecting the "Resize image" option:



2. Second Option: Using AutoCAD

1. Open the drawing in AutoCAD and zoom in on the element so that it is displayed exactly as you want it to be saved in BMP format.
2. Enter the command `BMPOUT` in the command line and press Enter.
3. A dialog box for saving the file will open. Choose the desired location and enter the file name. Ensure the BMP format is selected.



4. When you click Save, you will be prompted to select objects in the drawing. You can click Enter to export all elements.

****Be mindful of the background color in your drawing, as this will be reflected in the BMP format.***

3. Third Option: Using Screenshot Tools

1. You can also create an image using screenshot tools.
2. When you want to save the screenshot, you only need to change the format to .bmp

Step 3 – Editing an XML file

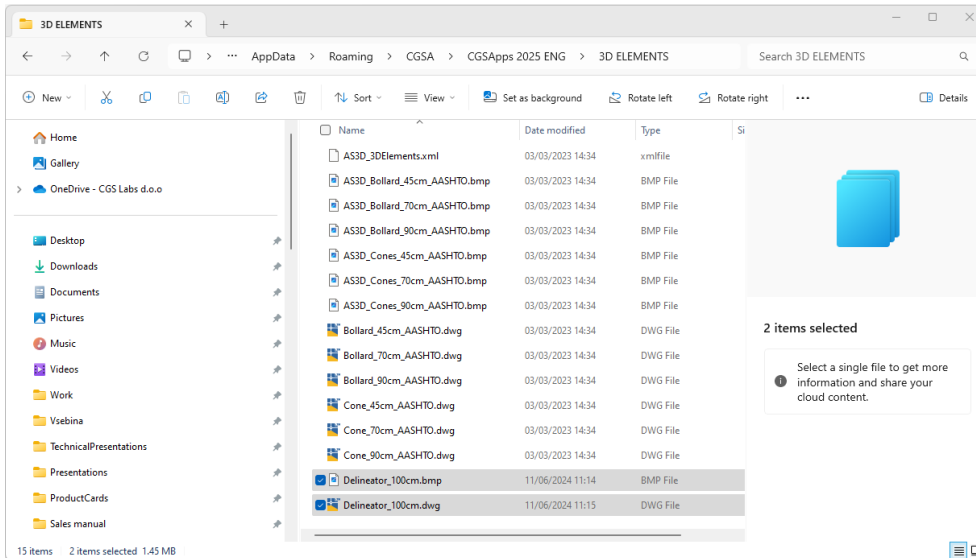
When we have a prepared **DWG drawing with the element and a BMP image**, we need to save these two files to the correct location and update the XML file 'AS3D_3DElements.xml'.

1. Open the following folder:

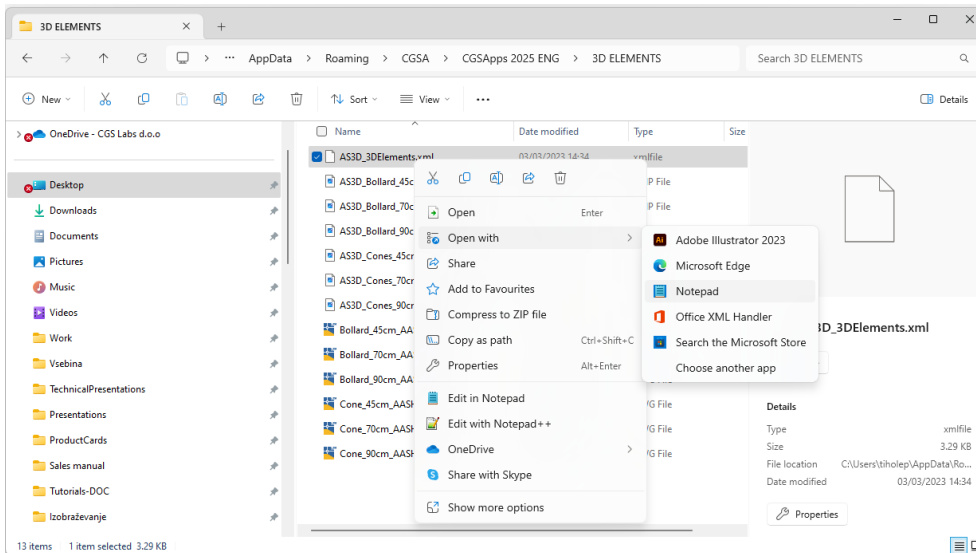
C:\Users**<YourUsername>**\AppData\Roaming\CGSA**CGSApps 2025 ENG**\3D ELEMENTS

Note: The parts in **bold** depend on the individual user - the computer name and the version of CGS Labs solutions being used.

2. Copy the DWG drawing and BMP image of the element into this folder.



3. Then open the file 'AS3D_3DElements.xml' with Notepad.



4. Then copy the last block in the XML file.

```

</Block3DPresets>
<standardPresets>
  <US>
    <Block3DPreset ID="00001" erasable="0">
      <name>AS3D Cone 45cm</name>
      <lockName>Cone_45cm_AASHTO.dwg</lockName>
      <image>AS3D_Cones_45cm_AASHTO.bmp</image>
      <length>0.35</length>
    </Block3DPreset>
    <Block3DPreset ID="00002" erasable="0">
      <name>AS3D Cone 70cm</name>
      <lockName>Cone_70cm_AASHTO.dwg</lockName>
      <image>AS3D_Cones_70cm_AASHTO.bmp</image>
      <length>0.40</length>
    </Block3DPreset>
    <Block3DPreset ID="00003" erasable="0">
      <name>AS3D Cone 90cm</name>
      <lockName>Cone_90cm_AASHTO.dwg</lockName>
      <image>AS3D_Cones_90cm_AASHTO.bmp</image>
      <length>0.45</length>
    </Block3DPreset>
    <Block3DPreset ID="00004" erasable="0">
      <name>AS3D Bollard 45cm</name>
      <lockName>Bollard_45cm_AASHTO.dwg</lockName>
      <image>AS3D_Bollard_45cm_AASHTO.bmp</image>
      <length>0.15</length>
    </Block3DPreset>
    <Block3DPreset ID="00005" erasable="0">
      <name>AS3D Bollard 70cm</name>
      <lockName>Bollard_70cm_AASHTO.dwg</lockName>
      <image>AS3D_Bollard_70cm_AASHTO.bmp</image>
      <length>0.15</length>
    </Block3DPreset>
    <Block3DPreset ID="00006" erasable="0">
      <name>AS3D Bollard 90cm</name>
      <lockName>Bollard_90cm_AASHTO.dwg</lockName>
      <image>AS3D_Bollard_90cm_AASHTO.bmp</image>
      <length>0.15</length>
    </Block3DPreset>
    <Block3DPreset ID="00008" erasable="0">
      <name>AS3D Bollard 90cm</name>
      <lockName>Bollard_90cm_AASHTO.dwg</lockName>
      <image>AS3D_Bollard_90cm_AASHTO.bmp</image>
      <length>0.15</length>
    </Block3DPreset>
  </US>
</standardPresets>
</Block3DPresets>

```


5. Now, update the data in the copied block as follows:
 - increase the "ID" by one -> 00007
 - "name" is the name of the element that will be displayed in the dropdown menu.
 - "blockname" is the name of the block in the DWG drawing.
 - "image" is the name of the BMP file.
 - "Length" is the length of the element.

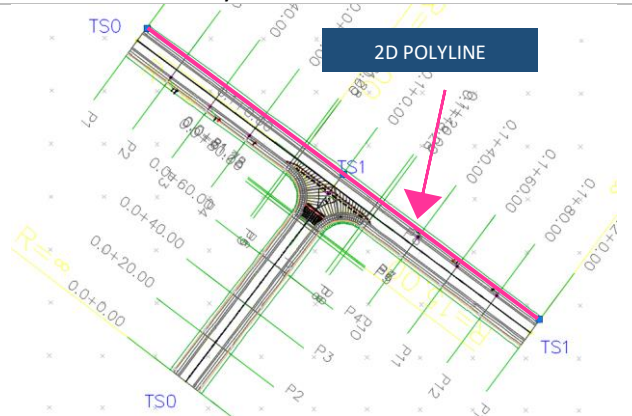
```
</Block3DPreset>  
<Block3DPreset ID="00007" erasable="0">  
  <Name>Delineator 100 cm</Name>  
  <Block>Delineator_100cm.dwg</Block>  
  <BlockName>Delineator_100cm</BlockName>  
  <Image>Delineator_100cm.bmp</Image>  
  <Length>0.1</Length>  
</Block3DPreset>
```

6. Once everything is arranged, save the XML file and close it.

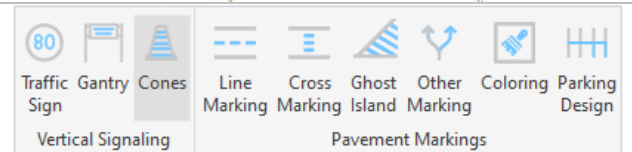
Step 4 – Inserting Custom-Made Elements into the Drawing

1. Open the drawing where you want to use the "Cones" or "Array of elements" function.

2. Draw a 2D polyline along which you want to position the elements. Utilize standard CAD commands like PLINE for this task.



3. Run the "Cones" command.




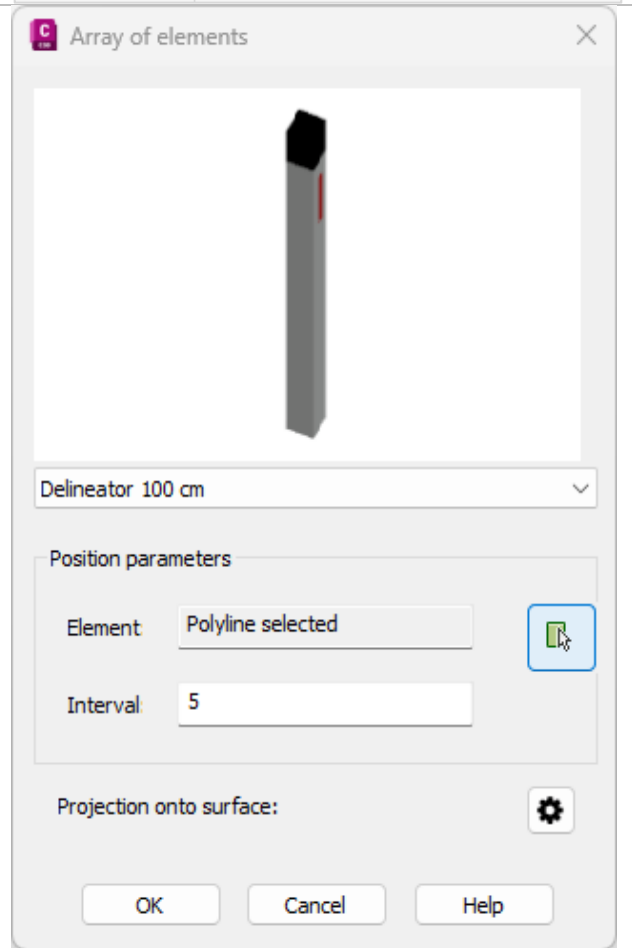
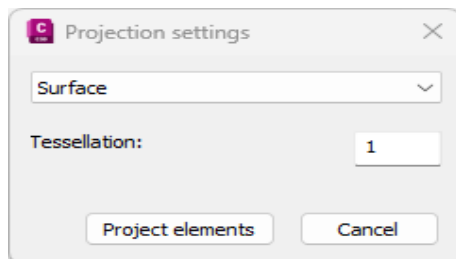
4. Open the drop-down menu and select the previously defined element.

5. Then click this button () and select the previously created 2D polyline directly in the drawing. (The elements will be inserted along this polyline.)

6. Specify the interval - the distance between two elements in meters.

7. If desired, you can also project the elements onto a selected surface:

- Click the command "  ".
- Select the surface currently in the DWG drawing. This can be a Civil 3D surface (TIN surface), BricsCAD surface, 3D face, or CGS Labs surface.



8. Click "Project elements" and elements will be automatically inserted into the drawing.

