2015 Design Training Expo

# Autodesk's Civil 3D Engineering Data Translator 2015

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# Autodesk's Civil 3D Engineering Data Translator 2015

**About the Autodesk Civil Engineering Data Translator:**

- You can use the Autodesk® Civil Engineering Data Translator 2015 extension to translate AutoCAD Civil 3D files to files that can be used in Bentley GEOPAK and Bentley InRoads, and to translate GEOPAK and InRoads files to files that can be used in AutoCAD Civil 3D.
- **The commands for the Autodesk Civil Engineering Data Translator are available in the AutoCAD Civil 3D Toolbox.**
- The Autodesk Civil Engineering Data Translator requires an Autodesk® 360 account and an Internet connection. If you do not have an Autodesk 360 account, you can create one when the Autodesk 360 log in dialog box is displayed when you run a translation command, or you can go to **www.autodesk.com/launch-a360** to create an account.

# Autodesk's Civil 3D Engineering Data Translator 2015

**Steps to Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:**

You can use the Autodesk Civil Engineering Data Translator to translate Bentley GEOPAK and Bentley InRoads files to file formats that can be used in AutoCAD Civil 3D.

1. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager Autodesk Civil Engineering Data Translator 2015.

2. Double-click one of the following commands:

- Import Bentley GEOPAK Project Data: Use this command to translate TIN and GPK files to files that can be used in AutoCAD Civil 3D. **Note:** Each file must be selected separately, so to translate both a TIN file and a GPK file, the command must be run twice. Each time you run the command, a separate AutoCAD Civil 3D drawing is created. You can use data shortcuts to link the data in the resulting drawings together.
- Import Bentley InRoads Project Data: Use this command to translate DTM and ALG files to files that can be used in AutoCAD Civil 3D. **Note:** Each file must be selected separately, so to translate both a DTM file and an ALG file, the command must be run twice. Each time you run the command, a separate AutoCAD Civil 3D drawing is created. You can use data shortcuts to link the data in the resulting drawings together.

# Autodesk’s Civil 3D Engineering Data Translator 2015

3. If you are not currently logged in to Autodesk 360, the Autodesk 360 Login dialog box is displayed. Use the **Login** dialog box to sign in, or click Need an Autodesk ID? to create an account. The **Open** dialog box is displayed.

4. In the Open dialog box, select the file to translate and click Open. **Note:** In order for GPK files to be translated successfully, they must be named job***.gpk, where *** can be numbers or letters (for example, job001.gpk or jobabc.gpk). The "j" in "job" or any other letters used in the file name can be lower case or capitalized. The file name cannot include special characters such as #.

5. At the Command line, enter the unit type of the source file.

6. If you selected a TIN or DTM file to translate, the **Surface Import Settings** dialog box is displayed. Specify the surface elements to import and whether to create a surface snapshot after import. **Note:** Selecting the Triangles option in the **Surface Import Setting**s dialog box improves the surface accuracy but reduces the speed of the translation process. When you select the Triangles option, the other options, except Contours, are selected automatically.

7. Click OK. A dialog box is displayed to inform you that the data is being transferred to the cloud.

8. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager  Autodesk® Civil Engineering Data Translator 2015. Double-click Open Job Monitor. The status of the translation job is displayed in the **Job Monitor** dialog box.

# Autodesk's Civil 3D Engineering Data Translator 2015

9. If you selected a GEOPAK GPK file that contains alignments and profiles, (Stage 1/2) will be displayed as part of the information in the Status column. When stage 1 is complete, you can initiate stage 2 of the conversion by clicking Configure Mapping in the Result column. When you click Configure Mapping, the **Profile to Alignment Mapping** dialog box is displayed. Use the Profile to Alignment Mapping dialog box to associate the profiles with the alignments and click OK.
10. When the job has completed, click Download in the Result column to download the files.

**Note:** You can specify a default location for the downloaded files by changing the Job Monitor Configuration settings..

Depending on the type of job performed, and the data available in the source file, different file types are created during the data translation process, as shown in the following table.

# Autodesk's Civil 3D Engineering Data Translator 2015

| Command | Source File Type Selected for Translation | Resulting File Types Created During Translation | Object Translation Notes |
|---|---|---|---|
| Import Bentley GEOPAK Project Data | .gpk | • <GPK name>.dwg<br>• <GPK name>-gpk.xlsx<br>• <GPK name>-gpk.xml | • Alignment chains are converted as alignments.<br>• Profiles that you assign to alignments using the Profile to Alignment Mapping dialog box are converted as profiles and are associated with the designated alignment. Any unassigned profiles are not converted.<br>• Parcels are converted as parcels.<br>• Survey chains are converted as 3D polylines. |
| Import Bentley GEOPAK Project Data | .tin | • <TIN name>.dwg<br>• <TIN name>-tin.xlsx<br>• <TIN name>-tin.xml | • Selecting the Triangles option in the Surface Import Settings dialog box improves the surface accuracy but reduces the speed of the translation process.<br>• An XML file is generated for each TIN file that you import. After you download the translated files, you can optionally point the surface in the AutoCAD Civil 3D drawing to the corresponding XML file by modifying the surface properties. |

# Autodesk's Civil 3D Engineering Data Translator 2015

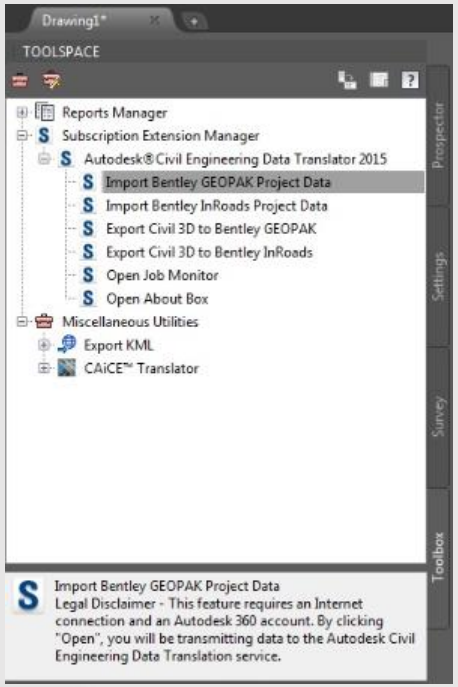
| | | | |
|---|---|---|---|
| Import Bentley InRoads Project Data | .alg | • <ALG name>.dwg<br>• <ALG name>-alg.xlsx<br>• <ALG name>-alg.xml | • Points are converted as points.<br>• Alignments are converted as alignments. If an alignment has disconnected segments, the segments are converted as part of the same alignment, and gaps are removed. For example, if the source alignment contains two disconnected lines, during the conversion process the start point of the second line will be adjusted so that it links to the end point of the first line, and the report file will list the difference in the alignment length.<br>• Profiles are converted as profiles and are associated with their related alignments. |
| Import Bentley InRoads Project Data | .dtm | • <DTM name>.dwg<br>• <DTM name>-dtm.xlsx<br>• <DTM name>-dtm.xml | • Selecting the Triangles option in the Surface Import Settings dialog box improves the surface accuracy but reduces the speed of the translation process.<br>• An XML file is generated for each DTM file that you import. After you download the translated files, you can optionally point the surface in the AutoCAD Civil 3D drawing to the corresponding XML file by modifying the surface properties. |

# Autodesk's Civil 3D Engineering Data Translator 2015

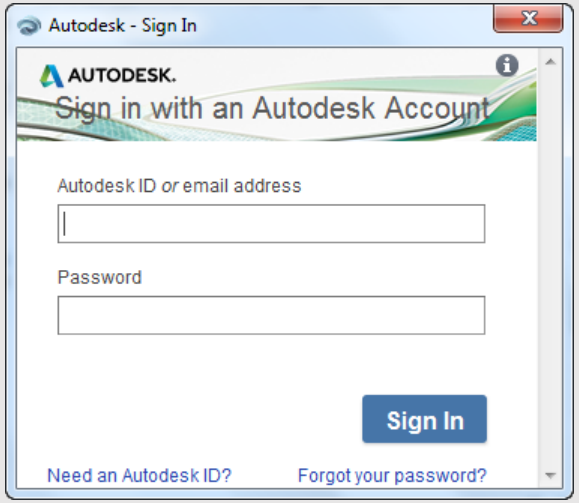
## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

1. **In Toolspace,**
   **Toolbox tab, expand Subscription Extension Manager Autodesk Civil Engineering Data Translator 2015.**

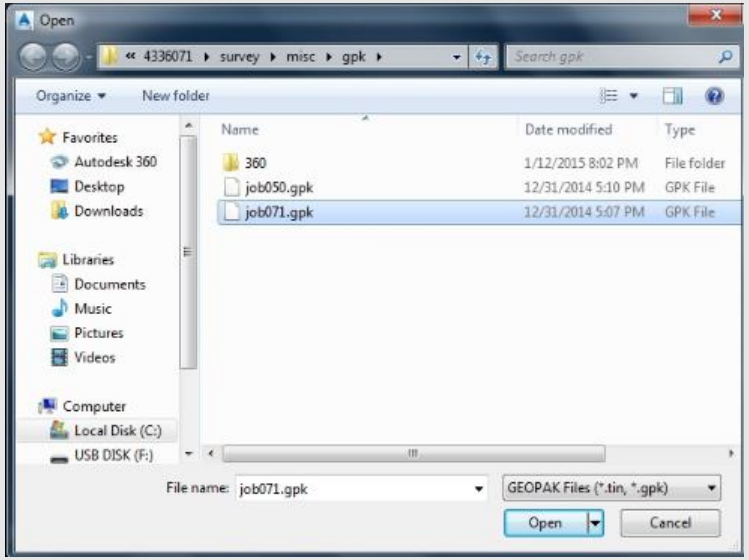
2. **Double-click on:**
   **Import Bentley GEOPAK Project Data**



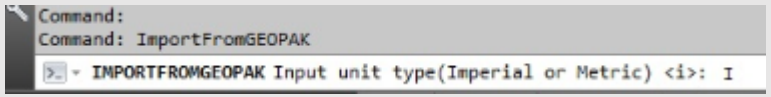

3. **If you are not currently logged in to Autodesk 360, the Autodesk 360 Login dialog box is displayed.**
   **Use the Login dialog box to sign in**




4. **In the Open dialog box, select the file to translate and click Open.**




5. **At the Command line, enter the unit type of the source file.**



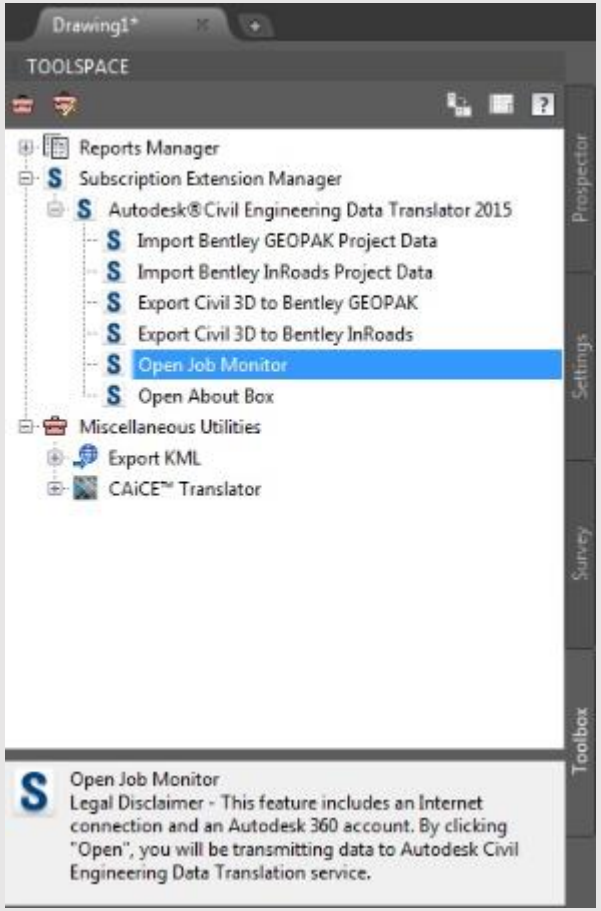

# Autodesk's Civil 3D Engineering Data Translator 2015

## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

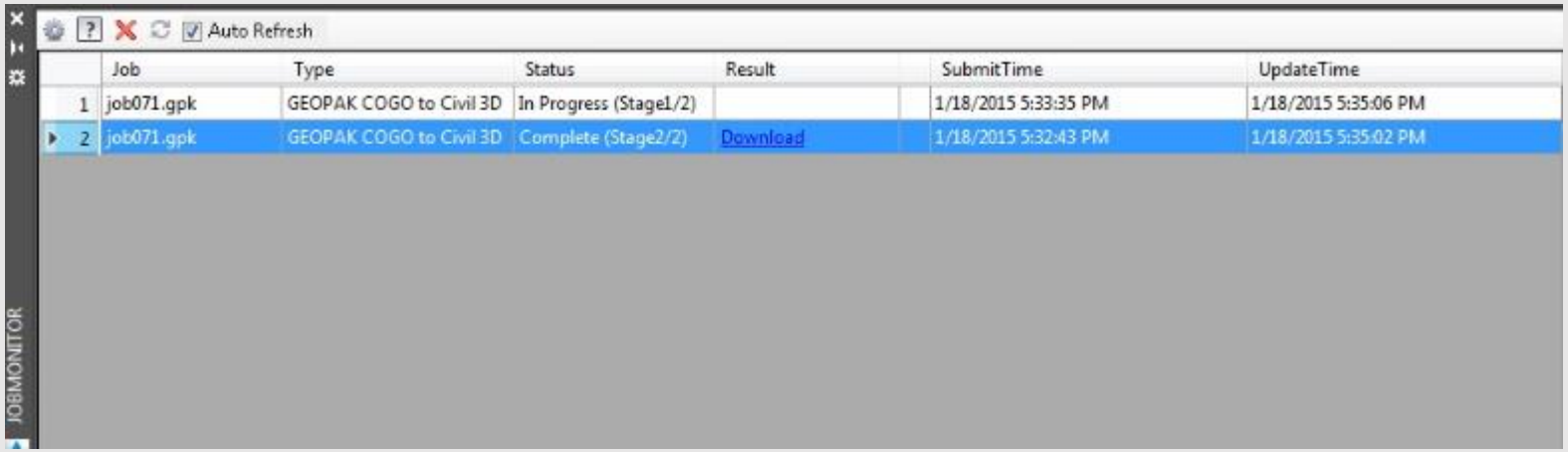
**7. A dialog box is displayed to inform you that the data is being transferred to the cloud.**


**8. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager Autodesk Civil Engineering Data Translator 2015.**

**Double-click on:**
**Open Job Monitor**




**The status of the translation job is displayed in the Job Monitor dialog box.**

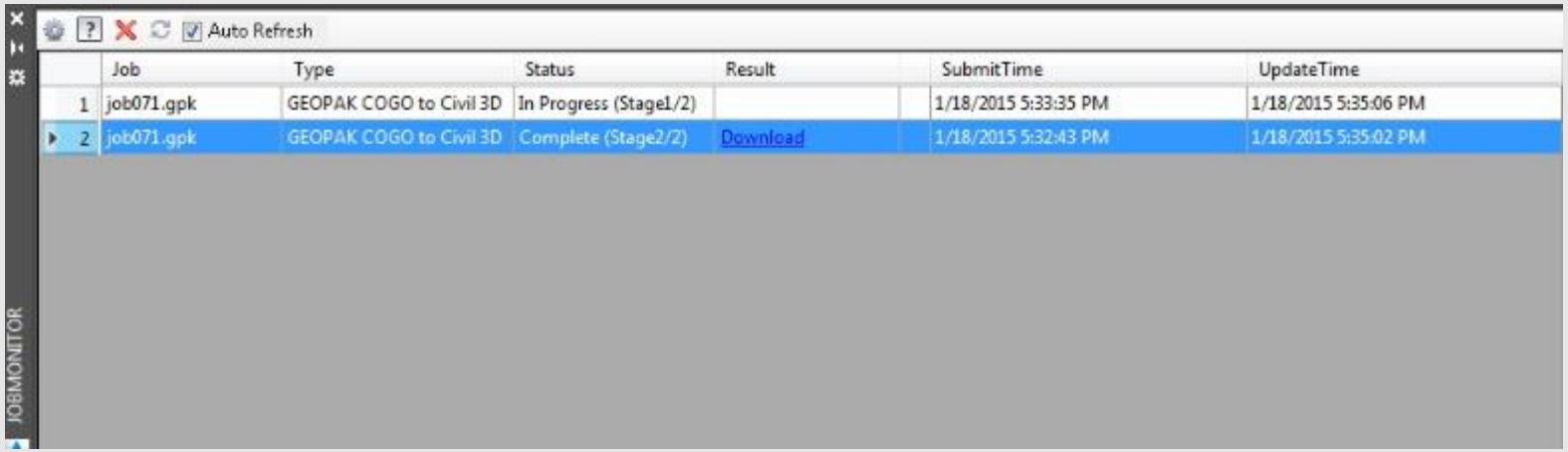



| | Job | Type | Status | Result | SubmitTime | UpdateTime |
|---|---|---|---|---|---|---|
| 1 | job071.gpk | GEOPAK COGO to Civil 3D | In Progress (Stage1/2) | | 1/18/2015 5:33:35 PM | 1/18/2015 5:35:06 PM |
| 2 | job071.gpk | GEOPAK COGO to Civil 3D | Complete (Stage2/2) | Download | 1/18/2015 5:32:43 PM | 1/18/2015 5:35:02 PM |

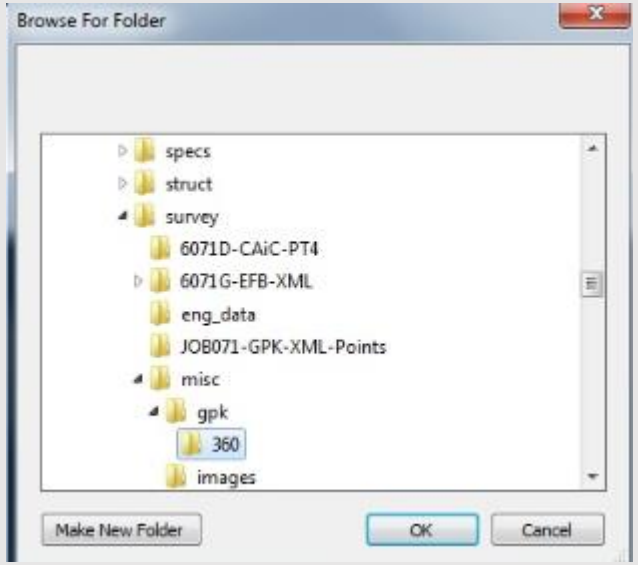
# Autodesk's Civil 3D Engineering Data Translator 2015

## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

**9. If you selected a GEOPAK GPK file that contains alignments and profiles, (Stage 1/2) will be displayed as part of the information in the Status column. When stage 1 is complete, you can initiate stage 2 of the conversion by clicking Configure Mapping in the Result column. When you click Configure Mapping, the** Profile to Alignment Mapping **dialog box is displayed. Use the Profile to Alignment Mapping dialog box to associate the profiles with the alignments and click OK.**




| | Job | Type | Status | Result | SubmitTime | UpdateTime |
|---|---|---|---|---|---|---|
| 1 | job071.gpk | GEOPAK COGO to Civil 3D | In Progress (Stage1/2) | | 1/18/2015 5:33:35 PM | 1/18/2015 5:35:06 PM |
| 2 | job071.gpk | GEOPAK COGO to Civil 3D | Complete (Stage2/2) | Download | 1/18/2015 5:32:43 PM | 1/18/2015 5:35:02 PM |




**10. When the job has completed, click Download in the Result column to download the files.**
**Note: You can specify a default location for the downloaded files by changing the Job Monitor Configuration settings.**

**Depending on the type of job performed, and the data available in the source file, different file types are created during the data translation process, as shown in the following table.**

# Autodesk's Civil 3D Engineering Data Translator 2015

## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

**Open the job71-gpk.xlsx in Excel, review the results of the data translation.**


job071-gpk.xlsx - Microsoft Excel Viewer

Home

Open | Quick Print | Print Preview | Copy | Find | Go To | Page Setup | Print Area | Switch Windows

Office Document | Edit | Page Setup | Window

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | **Alignments** | | | | | | | | |
| 2 | | Name | Start Station | Start X | Start Y | End Station | End X | End Y | Total Length |
| 3 | GEOPAK | BASELINE | 76750.55 | 604319.0075 | 1538281.093 | 103671.8832 | 628984.8006 | 1529211.015 | 26921.3332 |
| 4 | Civil 3D | BASELINE | 76750.55 | 604319.0075 | 1538281.093 | 103671.8832 | 628984.8006 | 1529211.015 | 26921.3332 |
| 5 | Difference | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | | | | | | | | | |
| 7 | GEOPAK | CR13 | 9200 | 622304.9791 | 1533172.533 | 11500.0001 | 621574.4345 | 1535353.428 | 2300.0001 |
| 8 | Civil 3D | CR13 | 9200 | 622304.9791 | 1533172.533 | 11500.0001 | 621574.4345 | 1535353.428 | 2300.0001 |
| 9 | Difference | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | | | | | | | | | |
| 11 | GEOPAK | SR419 | 1000 | 614548.5311 | 1536556.751 | 4256.0021 | 615527.5369 | 1539662.085 | 3256.0021 |
| 12 | Civil 3D | SR419 | 1000 | 614548.5311 | 1536556.751 | 4256.0021 | 615527.5369 | 1539662.085 | 3256.0021 |
| 13 | Difference | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |
| 16 | | | | | | | | | |
| 17 | **Points** | | | | | | | | |
| 18 | | Number of Points | Total X | Total Y | Total Z | | | | |
| 19 | GEOPAK | 350 | 215865524.3 | 537338240.5 | 130.5372 | | | | |
| 20 | Civil 3D | 350 | 215865524.3 | 537338240.5 | 130.5372 | | | | |
| 21 | Difference | 0 | 0 | 0 | 0 | | | | |
| 22 | | | | | | | | | |
| 23 | | | | | | | | | |
| 24 | | | | | | | | | |
| 25 | **Parcels** | | | | | | | | |
| 26 | | Total Parcel Area | Total Number of Parcels | | | | | | |
| 27 | GEOPAK | 0 | 0 | | | | | | |
| 28 | Civil 3D | 0 | 0 | | | | | | |

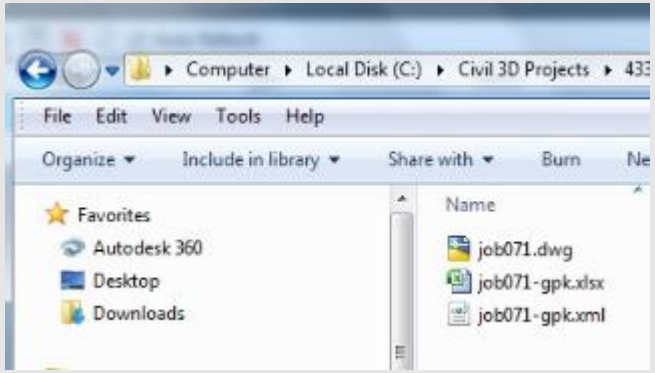
Translation Report

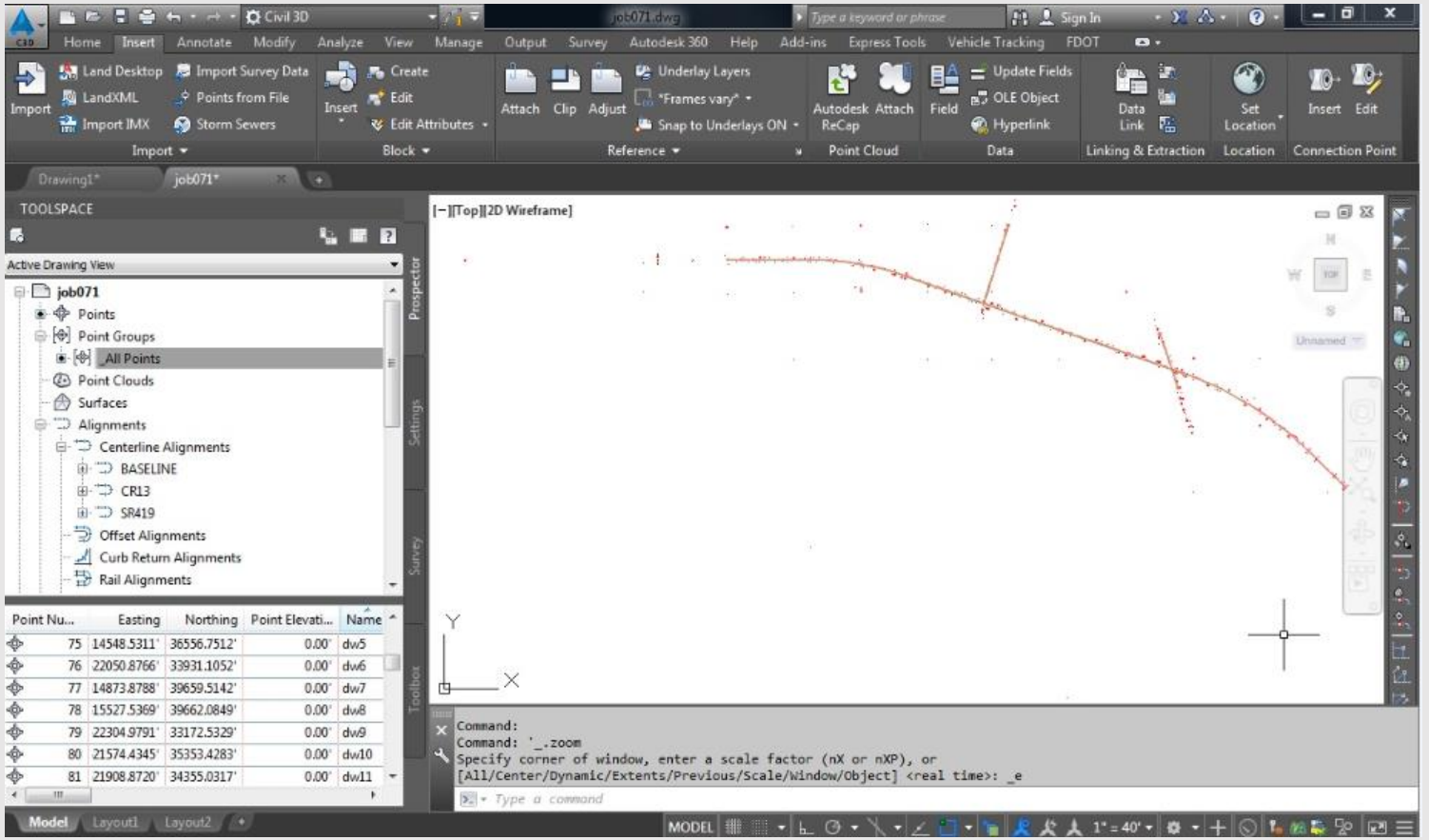
Ready 100%

# Autodesk's Civil 3D Engineering Data Translator 2015

## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

**Open the job71.dwg in Civil 3D 2015, review the results of the data translation.**





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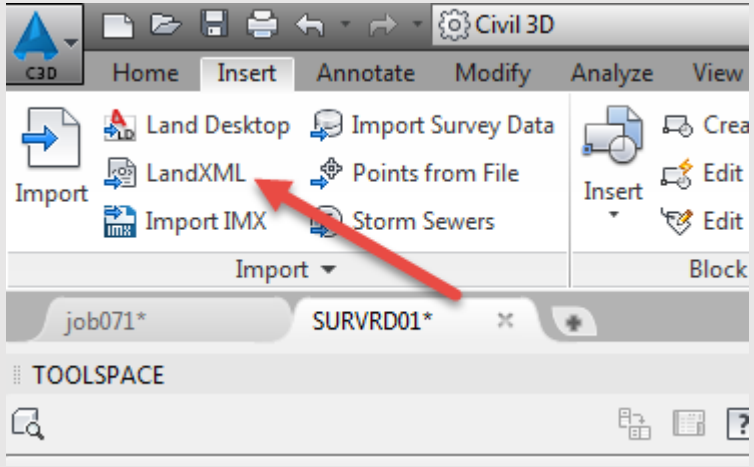
# Autodesk's Civil 3D Engineering Data Translator 2015

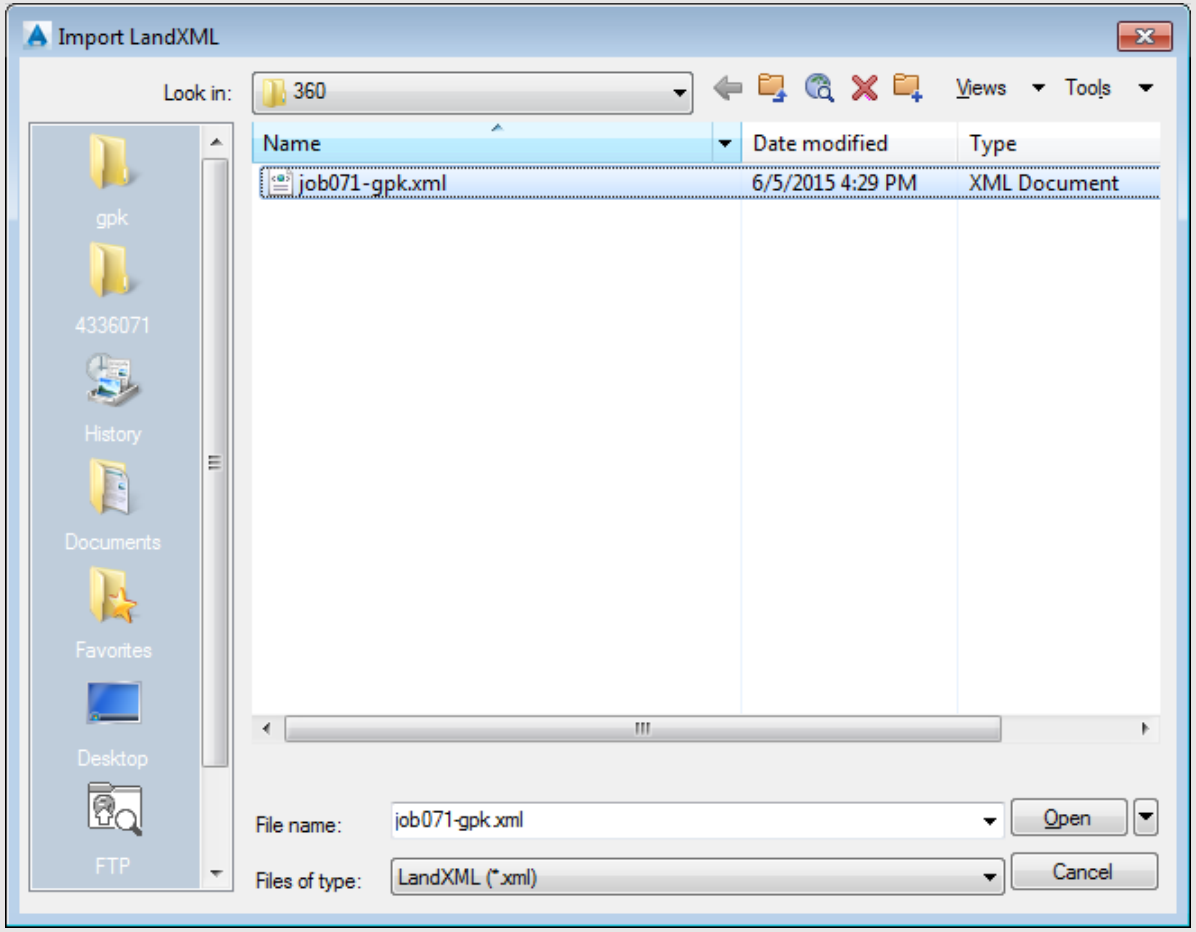
## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

**In Civil 3D 2015, Create/Open the Survrd01.dwg file, set the coordinate system using the setfleast command.**

**From the Insert tab, Import panel, select LandXML**




**Select the job071-gpk.XML file to import**

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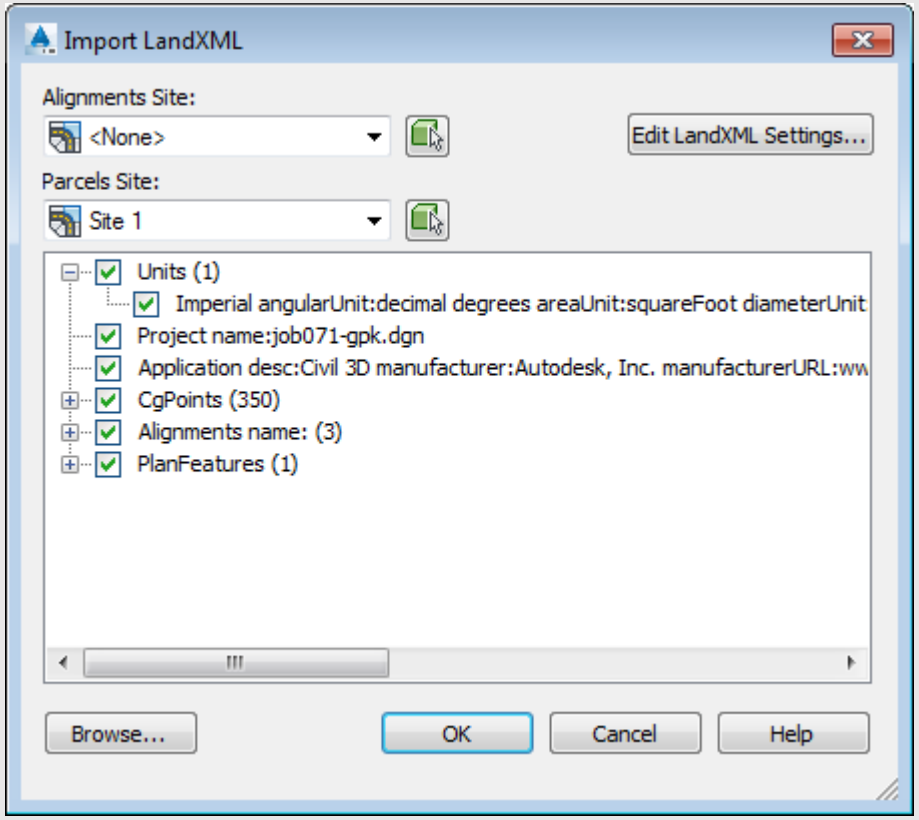
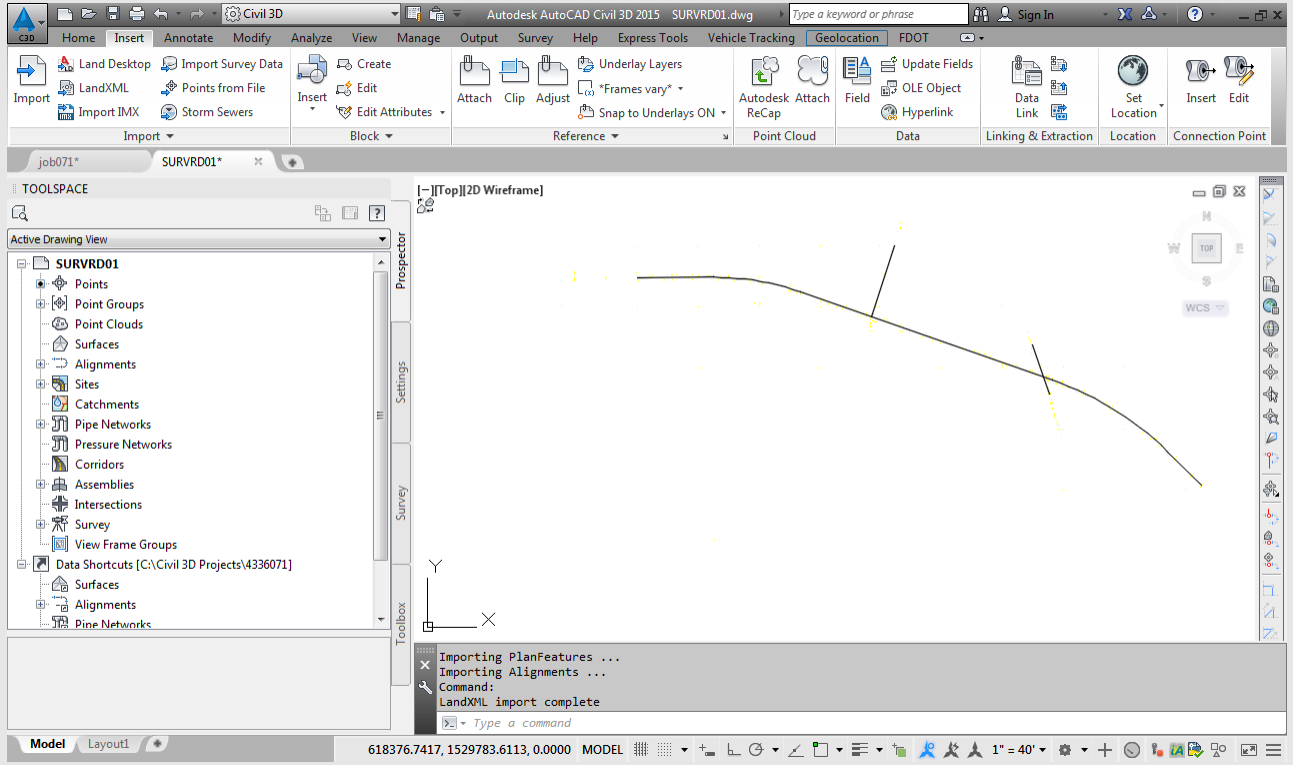
# Autodesk's Civil 3D Engineering Data Translator 2015

## To Translate Bentley GEOPAK and Bentley InRoads Files to Files that Can Be Used in AutoCAD Civil 3D:

**From the Insert LandXML dialog box, select OK**




**Review the results of the LandXML import.**





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# Autodesk's Civil 3D Engineering Data Translator 2015

**To Translate AutoCAD Civil 3D Files to Files that Can Be Used in Bentley GEOPAK and Bentley InRoads:**

You can use the Autodesk® Civil Engineering Data Translator to translate AutoCAD® Civil 3D® files to files that can be used

in Bentley®GEOPAK® and Bentley® InRoads®.

1. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager  Autodesk® Civil Engineering Data Translator 2015.
2. Double-click one of the following commands:
    - Export Civil 3D to Bentley GEOPAK: Use this command to translate AutoCAD Civil 3D DWG files to files that can be used in GEOPAK.
    - Export Civil 3D to Bentley InRoads: Use this command to translate AutoCAD Civil 3D DWG files to files that can be used in InRoads.
3. If you are not currently logged in to Autodesk 360, the Autodesk 360 Login dialog box is displayed. Use the Login dialog box to sign in, or click Need an Autodesk ID? to create an account. The Open dialog box is displayed.
4. In the Open dialog box, select the AutoCAD Civil 3D DWG file to translate and click Open .A dialog box is displayed to inform you that the data is being transferred to the cloud.
5. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager  Autodesk® Civil Engineering Data Translator 2015. Double-click Open Job Monitor. The status of the translation job is displayed in the **Job Monitor** dialog box

# Autodesk's Civil 3D Engineering Data Translator 2015

6. When the job has completed, click Download in the Result column to download the files. **Note:** You can specify a default location for the downloaded files by changing the Job Monitor Configuration settings.

**Depending on the type of job performed, and the data available in the source file, different file types are created during the data translation process, as shown in the following tables.**

| Command | Source File Type Selected for Translation | Resulting File Types Created During Translation | Object Translation Notes |
|---|---|---|---|
| Export Civil 3D to Bentley GEOPAK | .dwg | • <surface name>-001.dat<br>**Note:** DAT, TIN, and XML files are created for each surface in the drawing.<br>• job100.gpk<br>**Note:** A GPK file is created with the default name of job100.gpk.<br>• <surface name>-001.tin<br>• <drawing name>-dwg.xlsx<br>• <surface name>.xml<br>• <drawing name>-dwg.xml | • Each surface is converted to a TIN file.<br>• Points are converted as points.<br>• Alignments are converted as alignments.<br>• Profiles are converted as profiles that are not associated with an alignment.<br>• Parcels are converted as parcels. |

# Autodesk's Civil 3D Engineering Data Translator 2015

| | | | |
|---|---|---|---|
| Export Civil 3D to Bentley InRoads | .dwg | • <drawing name>-dwg.alg<br>• <surface name>.dtm<br>**Note:** DTM and XML files are created for each surface in the drawing.<br>• <drawing name>-dwg.xlsx<br>• <drawing name>-dwg.xml<br>• <surface name>.xml | • Each surface is converted to a DTM file.<br>• Points are converted as points.<br>• Alignments are converted as alignments.<br>• Profiles are converted as profiles. |

# Autodesk's Civil 3D Engineering Data Translator 2015

## Surface Import Settings Dialog Box:

Use this dialog box to specify which surface elements to import and whether to create a surface snapshot when you are importing a Bentley GEOPAK TIN file or a Bentley InRoads DTM file into AutoCAD Civil 3D.

**Surface Elements to Import:**

Specifies what data is imported into the drawing when creating each surface. During the data translation process, the data is translated from the source file by using LandXML. Use the following options to specify what data in the LandXML file to import into the resulting AutoCAD Civil 3D drawing file to create each surface.

- Points: Imports the surface point data.
- Breaklines: Imports the breakline data.
- Boundaries: Imports the boundary data.
- Contours: Imports the contour data.
- Triangles: Imports the surface triangle data. If you select this option, the other options, except Contours, are selected automatically.

**Note:** Selecting the Triangles option improves the surface accuracy but reduces the speed of the translation process.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Surface Import Settings Dialog Box: (cont.)

**Note:** Because the data is brought into the drawing in an XML file, Import XML File will be displayed as an Operation Type on the Definition tab of the Surface Properties dialog box. The data is not added to the surface definition in the Prospector tree.

**Create Snapshot After Import**

Specifies that a surface snapshot is created when each surface is imported into the drawing. By creating a snapshot after importing a LandXML file, AutoCAD Civil 3D does not attempt to find and open the LandXML file each time the surface is built.

**Tip:** An XML file is generated for each TIN or DTM file that you import. After you download the translated files, you can optionally point the surface in the AutoCAD Civil 3D drawing to the corresponding XML file by modifying the surface properties.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Job Monitor Dialog Box:

Use this dialog box to monitor the status of translation jobs being performed with the Autodesk Civil Engineering Data Translator and to download the resulting files for use in AutoCAD Civil 3D, Bentley GEOPAK, or Bentley InRoads.

**Tip:** Open the Job Monitor dialog box by selecting the Show Job Monitor command. In Toolspace, on the Toolbox tab, expand Subscription Extension Manager  Autodesk Civil Engineering Data Translator 2015, and then double-click Open Job Monitor.

## Job Monitor Controls:

### Job Monitor Configuration

Opens the Job Monitor Configuration dialog box, where you can specify the following:

Whether you want jobs to be deleted automatically from the Job Monitor dialog box and from the cloud after downloading them.

Whether you want to be prompted for a download location for the translation results or whether you want the results to always be downloaded to a specified folder.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Job Monitor Dialog Box: (cont.)

**Help**

Displays Help for the Job Monitor.

**Delete**

Deletes selected jobs from the Job Monitor dialog box and from the cloud. You can use Ctrl+click, Shift+click, or Ctrl+A to select multiple jobs to delete.

**Note:** Jobs are automatically deleted from the Job Monitor dialog box and from the cloud after seven days. To delete jobs before seven days have occurred, you can use the Delete option or you can select the Delete Jobs Automatically After Download check box in the Job Monitor Configuration dialog box.

**Refresh**

Refreshes the display of the Job Monitor dialog box when clicked. This button is not available if the Auto-Refresh check box is selected.

**Auto-Refresh**

Refreshes the display of the Job Monitor dialog box automatically when selected. When you select this check box, the Refresh button becomes unavailable for selection.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Job Monitor Dialog Box: (cont.)

### Job Monitor Columns:

**Job**

Displays the name of the file selected for translation.

**Type**

Displays the type of translation job performed based on the command that was used and the source file that was selected.

**Status**

Displays the current status of the translation job

**Result**

Displays links you can use to download the files when the translation process is complete, and to associate profiles with alignments when the first stage of translating a GPK file is complete.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Job Monitor Dialog Box: (cont.)

### Job Monitor Columns:

**Note:** Two stages are required for converting GEOPAK GPK files that contain alignments and profiles:

After you use the Import Bentley GEOPAK Project Data command and select a GPK file to be translated, (Stage 1/2) will be displayed as part of the information in the Status column.

When stage 1 is complete, you can initiate stage 2 of the conversion by clicking Configure Mapping in the Result column. When you click Configure Mapping, the Profile to Alignment Mapping dialog box is displayed. Use the Profile to Alignment Mapping dialog box to associate the profiles with the alignments and click OK. When the job has completed, Complete (Stage 2/2) is displayed in the Status column. Click Download in the Result column to download the files.

**Depending on the type of job performed, and the data available in the source file, different file types are created during the data translation process**

# Autodesk's Civil 3D Engineering Data Translator 2015

## Job Monitor Dialog Box: (cont.)

**Open Folder**

Opens the folder in which the files were downloaded. This column is empty if files have not yet been downloaded.

**Submit Time**

Displays the time that the translation job was submitted.

**Update Time**

Displays the time that the status of the translation job was updated.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Profile to Alignment Mapping Dialog Box:

Use this dialog box to assign profiles to their associated alignments when you are importing a GPK file into AutoCAD Civil 3D.

**Profiles that you do not assign to an alignment are not imported into the resulting DWG file.**

### Unassigned Profiles

Lists the unassigned profiles that are being imported from the GPK file. To assign a profile to an alignment, select the check box next to an unassigned profile, select the check box in the Parent Alignments list for the alignment to which it should be assigned, and then click Add>>.

### Parent Alignments

Lists the alignments that are being imported from the GPK file. Select the check box next to an alignment to specify it as the destination for a selected profile in the Unassigned Profiles list and then click Add>>.

### Add >>

Assigns selected profiles in the Unassigned Profiles list to a selected alignment in the Parent Alignments list.

# Autodesk's Civil 3D Engineering Data Translator 2015

## Profile to Alignment Mapping Dialog Box: (cont.)

**Remove <<**

Removes the association of an assigned profile with an alignment. Select the check box next to an assigned profile in the Parent Alignments list and click Remove <<. The profile is moved back to the Unassigned Profiles list.

**Reset**

Resets all assignments. All profiles that have been assigned to alignments in the Parent Alignments list are moved back to the Unassigned Profiles list.

# Autodesk's Civil 3D Engineering Data Translator 2015

**Autodesk Civil Engineering Data Translator Command Reference:**

The following table lists the commands and briefly describes their functionality.

| Command | Description |
|---|---|
| ExportToGEOPAK | Converts an AutoCAD® Civil 3D® drawing to files that can be used in Bentley® GEOPAK® |
| ExportToInRoads | Converts an AutoCAD Civil 3D drawing to files that can be used in Bentley® InRoads® |
| ImportFromGEOPAK | Converts a Bentley GEOPAK file to files that can be used in AutoCAD Civil 3D |
| ImportFromInRoads | Converts a Bentley InRoads file to files that can be used in AutoCAD Civil 3D |
| ShowAboutBox | Displays information about the Autodesk® Civil Engineering Data Translator |
| ShowJobMonitor | Displays the Job Monitor dialog box which you can use to monitor the progress of translation jobs and to download the translated files |

2015 Design Training Expo

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**Thank you for attending today's session!**
**For more information:**


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