

# ***Data Transfer by Eagle Point***

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# DATA TRANSFER

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# CONCEPTS

**Data Transfer** runs on AutoCAD, BricsCad, and MicroStation.

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## Introduction

The **Data Transfer** product allows you to import and export points, Nodes, and linework. The program has over 100 formats that you can import and export. In addition to these formats, you are also able to create your own user-defined formats. When you are importing or exporting information, **Data Transfer** gives you options for how the data is transferred, including which point numbers to use and what elevation range to use. Besides these capabilities, you have the ability to get reports on the Nodes in the CAD graphic, check for duplicate Nodes, and calculate station offsets to various Nodes from a selected alignment.

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## Nodes

A Node is a specific point in the project that is placed using **Data Transfer** or other Eagle Point products such as **Data Collection**, **Survey Adjustment**, or **COGO**. A Node is comprised of a symbol and associated attributes. Each Node possesses coordinates in 3-D space and an ID value. The Node ID, or point number, is a unique identifier for the Node in the project (although duplicate IDs may occur, they can be resolved using the Report Duplicate Nodes command in **COGO**). The ID and coordinates may be represented in the CAD graphic by attributes with user-definable properties. You may place the Node ID, elevation, description, Northing and Easting coordinates, or station and offset information as attributes associated with the Node. The attributes, properties, position about the symbol, and Field Code are all controlled through the Node (Field Code) Library command in the **Eagle Point Menu**.

See *Node (Field Code) Library* in the **Eagle Point Menu** documentation.

The Node ID may be alphanumeric, which means it may contain up to seven alpha characters as a prefix to the Node ID. You may use the alpha prefix as a way to further group Nodes by giving all of the Nodes for a particular utility one prefix or name. The alpha character may also be used as a value (zz9 is greater than aa9).

✓ **You cannot have Node IDs that have a number prefix followed by a letter.**

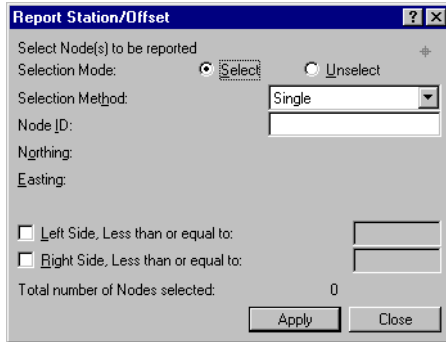
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## Select Nodes


Several commands within **Eagle Point** prompt you to select one or more Nodes. The Export Data, Report Nodes, and Report Station/Offset commands in **Data Transfer** may utilize these selection methods. The available selection methods are Single, Coordinate, Range, All, Name, AutoCAD(BricsCad)/Fence, Proximity, Description, Block/Cell, Field

Code, and Elevation Range. For any of the selection methods that prompt you for a Node ID, you can either type the Node ID in the edit field, or place focus in the edit field, click on the PIC button, and graphically select a Node from the CAD graphic. When typing a Node ID, be sure to press the Tab key so **Data Transfer** can find the Node and then click on Apply to accept the selection. If you do not press the Tab key, clicking on Apply the first time finds the Node and clicking on it a second time actually applies the selection. An example of the Report Station/Offset dialog box is found below.



**Figure 1-1 Report Station/Offset Dialog Box**

### Report Station/Offset Dialog Box Definitions

Option	Icon	Function
<b>PIC</b>		Click on this icon to graphically select a Node or Nodes from the CAD graphic. It also allows you to select a Northing and Easting coordinate pair when the Selection Method is set to Coordinate.
<b>Selection Mode</b>		This allows you to choose whether you are adding Nodes to the selection set or if you are removing them from the selection set. If the Selection Mode is set to Select when you click on Apply, the Nodes are added to the selection set. If the Selection Mode is set to Unselect, the Nodes are removed from the selection set when you click on Apply.

## Report Station/Offset Dialog Box Definitions

Option	Icon	Function
<b>Selection Method</b>		<p>This drop list allows you to choose the method that is used to select or unselect Nodes. Each available method is described in detail below.</p> <ul style="list-style-type: none"><li>➤ <b>Single:</b> You may select a single Node from the CAD graphic by clicking on the PIC button and selecting a Node, or by entering the Node ID in the edit field. When a Node is selected, the coordinates for the Node update in the static text fields next to the coordinate labels. You may continue to select Nodes and the fields update, but only one Node may be selected when you click on Apply.</li><li>➤ <b>Coordinate:</b> You may select a single point from the CAD graphic by clicking on the PIC button and selecting a point or by entering the coordinate values in the edit fields.</li><li>➤ <b>Range:</b> You may enter an interval for a range of Nodes, or select two Nodes from the CAD graphic by clicking on PIC and selecting the Nodes. The range may be entered with either the larger or smaller Node ID first. The Prefix option is available only if the Node ID Format is set to Alphanumeric (see <i>Formats</i> in the <b>Eagle Point Menu</b> manual). You may enter an alpha prefix for the Nodes to be selected. All Nodes within the range and with the portion of the alpha prefix entered are selected.</li><li>➤ <b>All:</b> This selects all of the Nodes for the project.</li><li>➤ <b>Name:</b> You may enter an alpha prefix for the Nodes to be selected. All Nodes with the alpha prefix entered are selected.</li><li>➤ <b>AutoCAD/BricsCad:</b> Within AutoCAD/BricsCad, you have several methods to select Nodes (window, crossing, fence, etc.). Select the desired Nodes and click on Apply. If you want to select additional Nodes, click on the PIC button.</li><li>➤ <b>Fence:</b> Within MicroStation, you may use a fence to select the Nodes. When you click on Apply, the fence is used to select the Nodes. If you want to select additional Nodes, redraw your fence and click on Apply.</li><li>➤ <b>Proximity:</b> You may select all of the Nodes within a proximity of a Node or point in the CAD graphic. To select a Node or point, enter a Node ID that exists in the project, enter the coordinate values in the edit fields, or place focus in a coordinate edit field, click on the PIC button, and select a location in CAD. You must also enter a horizontal distance to represent the proximity around the Node or point selected. All Nodes within this radius defined by the horizontal distance are selected.</li><li>➤ <b>Description:</b> Enter a description of the Nodes you would like to select. Any Nodes that have descriptions that match the description entered are selected. You may use an asterisk as a wild card when entering your description. For example, entering TREE* would select any Node that starts with the description of TREE. Entering just TREE would only select Nodes that had an exact description of TREE. The description option is <i>not</i> case sensitive.</li><li>➤ <b>Block:</b> Select Nodes in AutoCAD/BricsCad by the block name of the symbol placed. If your ground shots all use a PLUS block name but vary in description or Field Code, use the Block method and enter a block name of PLUS.</li></ul>

## Report Station/Offset Dialog Box Definitions

Option	Icon	Function
<b>Selection Method</b>		<ul style="list-style-type: none"> <li>➤ Cell: Select Nodes in MicroStation by the cell name of the symbol placed. If your ground shots all use a PLUS cell name but vary in description or Field Code, use the Cell method and enter a cell name of PLUS.</li> <li>➤ Field Code: Select Nodes based on the Field Code used when the Node was placed. For example, if you want to select all of your ground shots and they use the Field Code of GS, set your selection method to Field Code and select the GS Field Code from the drop list.</li> <li>➤ Elevation Range: Use this method to select any Nodes that are within a specified elevation range. If you would like to select all Nodes between the elevation of 100 and 125, use the Elevation Range method and enter 100 in the From edit field and 125 in the To edit field.</li> </ul>
<b>Node ID</b>		This is the Node ID for which you get a station/offset report.
<b>Northing</b>		This displays the Northing (Y) coordinate of the Node ID.
<b>Easting</b>		This displays the Easting (X) coordinate of the Node ID.
<b>Left Side, Less than or equal to</b>		You may specify a left side corridor edge to narrow down the selected Nodes. If this option is toggled on, type an offset distance for the left side of the selected alignment or object. If any of the selected Nodes occur outside the offset distance entered, they no longer are considered as part of the selection set after you click on Apply.
<b>Right Side, Less than or equal to</b>		You may specify a right side corridor edge to narrow down the selected Nodes. If this option is toggled on, type an offset distance for the right side of the selected alignment or object. If any of the selected Nodes occur outside the offset distance entered, they are no longer considered as part of the selection set after you click on Apply.
<b>Total number of Nodes selected</b>		This displays the number of Nodes that are in the selection set.

## LandXML Concepts

LandXML is a project data blueprint that has been developed for Land Planning, Civil Engineering, and Surveying professionals as a way to easily and seamlessly transfer data between different software packages. The leading software developers in the industry have come together in partnership with federal, state, and local government agencies as well as larger engineering consulting firms to develop an industry standard data format for land development projects.

XML stands for eXtensible Markup Language. Basically, it is a standard way of representing data to enhance its interoperability. The XML file format bridges software applications by letting data move easily between them without the incompatibility concerns that have plagued the land development industry in the past. Additionally, XML is a very “Web-friendly” language, meaning that many software developers and businesses can

use this language as a way to effectively share data over the Internet. It is often considered the universal format for structured documents and data on the Web. XML files are also very portable, which means that different operating systems (including properly equipped mobile devices) can read/write this type of data and it can be located on Web servers.

There are five major reasons why the LandXML initiative is important to our (your) industry today. First, it can help meet project deliverable requirements by eliminating the need for state DOTs, counties, and other agencies to mandate vendor- and version-specific software files. This open format can be the means by which you can pass data to these agencies. Second, LandXML files can help you pass project data to other team members within your own organization. Third, the Import LandXML command can convert the supported project data between imperial and metric unit projects. Fourth, the LandXML file has the ability to act as a Data Archival mechanism. Future releases of **Eagle Point** will include the latest version as well as all the past versions of the LandXML data model, making the “activation” of old projects as easy as “pointing” the software to these archived files and importing the necessary data. And last, because the XML file format is becoming the computing industry standard for passing data, there are tools available which allow you to present data “outside” the CAD world. XSL Style Sheets allow you to create Lot, Alignment, Node, and quantity takeoff/cost estimation reports to view over the Internet or over the company Intranet directly from the LandXML project file. You can also use graphical, Web-based data viewers to see the “project” on screen.

Eagle Point is currently supporting the LandXML 1.0 schema. You can visit <http://www.landxml.org/> to view the documentation of the LandXML schema. The **Data Transfer** Import LandXML and Export LandXML commands support the following LandXML major elements: Alignments (including cross-sections and profiles), Nodes (CGPoints), Lots/Parcels, and Surface Models.

# TRANSFER

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CHAPTER

2

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# Import File

DATA TRANSFER ⇨ TRANSFER ⇨ IMPORT FILE

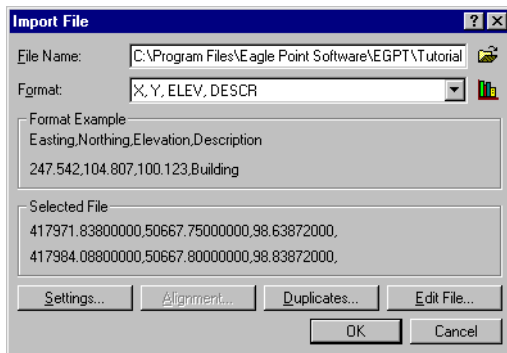
KEY-IN COMMAND: dt i mp

ICON:



The Import File command allows you to input an ASCII file into the project. You may import data that is in a coordinate, line, or cross-section type format. You may select any one of the predefined formats to import the data, or create your own custom format.

Before importing, you can edit the file and check for duplicate occurrences of Node IDs. You can also specify how to place the imported objects in the CAD graphic, set the Default Field Code and a Node ID value to add to the files, and select a specific range of point numbers and/or elevations to import.



**Figure 2-1 Import File Dialog Box**

## Import File Dialog Box Definitions

Option	Icon	Function
<b>File Name</b>		You may click on the Select File icon and select a file from the Open File dialog box or type the path and file name of the file to import.
<b>Format</b>		You may select the format to be used to import the selected file. The formats that are listed in the drop list are controlled by the filter on the Select Format dialog box.  See <i>Select Format</i> on page 10 for more information.
<b>Settings</b>		You may make modifications to the import file settings, such as how to place the objects in the CAD graphic, the default Field Code, a Node ID value to add to the file, and how to select a specific range of point numbers and/or elevations.  For more information, see <i>Transfer Settings</i> on page 50.

## Import File Dialog Box Definitions

Option	Icon	Function
<b>Alignment</b>		This option allows you to select an alignment to import the data along. This option is only available for cross-section formats.
<b>Duplicates</b>		You may list any of the Nodes being transferred that create more than one occurrence in the project.
<b>Edit File</b>		You may edit the selected file before importing it. To select an editor, first click on the Settings button and choose WordPad or Notepad or specify a different editor.

## QuickSteps

To import Nodes into your project, complete the following steps:

**1. Select Transfer → Import File.**

The Import File dialog box (Figure 2-1 on page 8) displays.

**2. Click on the Select File To Import icon, select a file from the Select File To Import dialog box, and click on Open, or type the path and file name of the file to import and press the Tab key.**

A sample from the selected file displays in the dialog box.

**3. Click on the Format drop list and select a format to import the file with, or use the Select File Format icon to select your import format.**

A sample of the selected format and selected file displays so that you can compare to make sure that the format matches the selected file.

**4. Click on the Settings button and make the necessary changes to the import settings.**

**5. Click on OK to accept the new settings and close the Transfer Settings dialog box (Figure 2-25 on page 51).**

**6. Check for any duplicate occurrences between the file and the project by clicking on the Duplicates button.**

**7. Click on Close on the Duplicate Nodes dialog box.**

**8. Click on the Edit File button and edit the file in the editor.**

**9. Save the file that was edited and exit the editor.**

## 10. Click on OK to import the data.

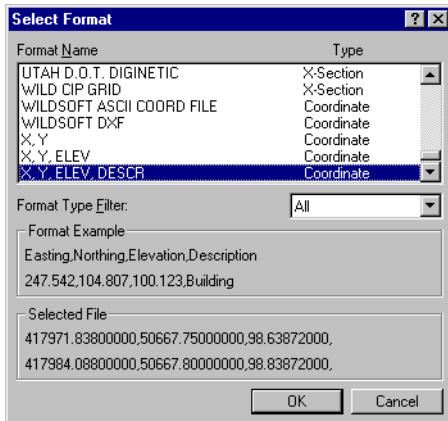
Depending on your data and the format you chose, Nodes/points and/or lines are placed in the CAD graphic.

## Select Format

DATA TRANSFER ⇨ TRANSFER ⇨ IMPORT FILE ⇨ SELECT FILE FORMAT



You may select the correct format to process the file you are importing. A sample from the file you are importing displays in the lower portion of the dialog box so that you can select a format that matches it from the list of supported formats. You may select a coordinate, linework, or cross-sectional type format to use.



**Figure 2-2 Select Format Dialog Box**


### Select Format Dialog Box Definitions

Option	Function
<b>Format Name</b>	You may select a format name from the list of supported formats. The format that is highlighted in the list displays on the Import (Figure 2-1 on page 8) or Export dialog box.
<b>Type</b>	The format may be used to read and store coordinate information, linework, or cross-sectional (X-section) information.
<b>Format Type Filter</b>	To narrow down the format selection, you may select a filter type to list only formats of the type selected in the Format Type Filter drop list. This filter is also used in displaying formats in the Format drop list on the Import File (Figure 2-1 on page 8) and Export Data (Figure 2-3 on page 11) dialog boxes.

# Export Data

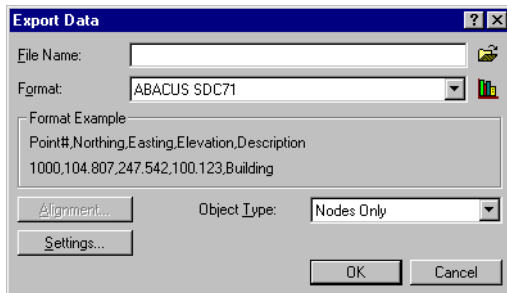
DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT DATA

KEY-IN COMMAND: dtexp

ICON: 



The Export Data command allows you to export existing Nodes and/or points from the CAD graphic to a file that can later be imported into a different project or another computer. After you establish the file name, format, and settings, clicking on OK launches another dialog box from which you can select the objects to export.

Refer to *Select Nodes* on page 2.



**Figure 2-3** Export Data Dialog Box

## Export Data Dialog Box Definitions

Option	Icon	Function
<b>File Name</b>		Select or enter the file to which to export the data. You can either select an existing file using the Select File icon, or enter the path and file name of the file to which to export the data. If you specify an existing file you are prompted to overwrite or append that file with your data selection.
<b>Format</b>		Select the format of the file in which to export the data. You can select the format from the drop list or click on the Select Format icon. The formats that are listed in the drop list are controlled by the filter on the Select Format dialog box (Figure 2-2 on page 10). See <i>Select Format</i> on page 10 for more information.
<b>Settings</b>		When you click on this button you are able to specify the Node number to add to each of the Nodes selected. You can also specify the precision of the Northing, Easting, elevation, station, and offset values that are written to the specified file. For more information, see <i>Transfer Settings</i> on page 50.

## Export Data Dialog Box Definitions

Option	Icon	Function
Alignment		If the format that you select is a cross-section format, you can select the alignment on which to base the station/offsets for the points selected. This button is only available when you select a cross-section format.
Object Type		This option allows you to specify what type of points to export. The available selections include Nodes Only, Nodes and Points, and Points Only.

## QuickSteps

To export Nodes or points from your project, complete the following steps:

**1. Select Transfer → Export Data.**

The Export Data dialog box (Figure 2-3 on page 11) displays.

**2. Click on the Select File icon to browse for the file name or type the path and file name of the file to export.**

**3. Click on the Format drop list and select a format name from the list of supported formats.**

A sample of the selected format displays.

**4. Make any modifications to the export settings by clicking on the Settings button.**

**5. If the format you select is a cross-section format, select the alignment to base the station/offsets on using the Alignment button.**

**6. Specify the object type to export. You can select from Nodes Only, Points Only, or Nodes and Points.**

**7. Click on OK to export the data to the selected file.**

**8. When the Select Nodes dialog box displays, choose a selection method, select your objects, and click on OK to export the information to the file.**

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## Import LandXML

DATA TRANSFER ⇨ TRANSFER ⇨ IMPORT LANDXML

KEY-IN COMMAND: dtxml imp

The Import LandXML command provides you with the capability of importing data into the current project from a LandXML format file. A LandXML file contains just the data for various project components and is a means by which project data can be transferred from

other users to your current project. The LandXML file contains the unit setting for the objects and therefore, can also act as a way to convert data from English to metric units (or vice versa).

Objects that can be imported via a LandXML file include **COGO** alignments (horizontal geometry), lots/parcels, Nodes, surface models, and **RoadCalc™** data (alignments and associated original, design, and actual cross-section surfaces, original ground profiles, and design profiles).

Upon selecting the command, an Open File dialog box displays, prompting you to select a LandXML file. After selecting the file, the Import LandXML dialog box (below) displays. The LandXML Explorer is populated with the different LandXML element groups from the selected file. By default, all groups are toggled on for importing and are also toggled on for previewing. Toggle the check mark off next to an individual group to exclude it from being imported. Toggle the folder off to globally uncheck all the groups contained under that folder. Highlight a specific group and right click, or click on the Edit button and then select the Toggle Group for Preview option from the menu. The preview can aid your group selection by graphically showing the elements to import prior to actually importing the data and graphics into the project.

Once you are satisfied with your group selections, click on the Import button. Depending on the groups toggled on, you are presented with various Import Object dialog boxes in which you can select individual components to import.

For more information, refer to *LandXML Concepts* on page 5, *Import LandXML Alignment* on page 15, *Import LandXML Lots/Parcels* on page 19, *Import LandXML Nodes* on page 24, and *Import LandXML Surface Model* on page 28.

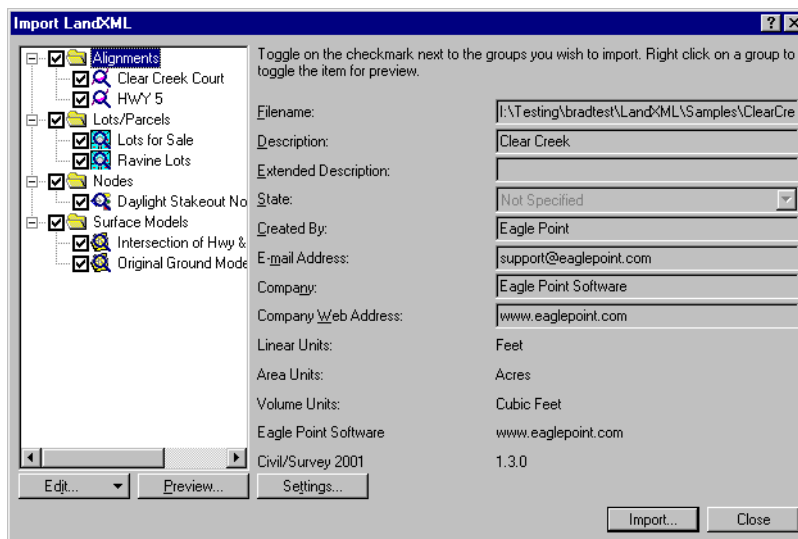


Figure 2-4 Import LandXML Dialog Box

## Import LandXML Dialog Box Definitions

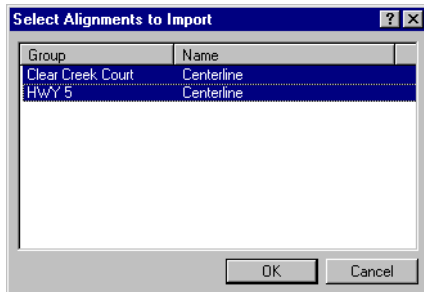
Option	Function
<b>LandXML Explorer</b>	This displays the groups within each element type that can be imported from the selected LandXML file. The elements that can be imported are alignments (including cross-section and profile data), lots/parcels, Nodes, and surface models. The groups that have a check mark next to them will be imported into the project and drawn in CAD. All groups are toggled on to import by default.
<b>Edit</b>	<p>Clicking on this button displays a drop down menu that allows you to toggle a group for preview and select all groups or unselect all groups for importing. This menu can also be accessed by right clicking in the LandXML Explorer.</p> <p>For more information on the available items in the menu, see below.</p> <p><b>Toggle Group for Preview:</b> Select this option to include or remove a group from being displayed in the Preview Objects dialog box. If the group has a magnified glass on the icon, the group is included in the preview. If there is no magnified glass on the icon, the group is not included in the preview. By default, all groups added are included in the preview.</p> <p><b>Select all Groups:</b> Select this option to check all groups for import. All groups displayed in the LandXML Explorer have a check mark placed next to the group name. All group names with a check mark are imported.</p> <p><b>Unselect all Groups:</b> Select this option to remove the check mark from all groups to import. All groups displayed in the LandXML Explorer do not have a check mark next to the group name. Only group names with a check mark are imported.</p>
<b>Preview</b>	<p>Clicking on this button displays all of the items within the groups toggled on to be included in the preview. This includes horizontal alignments, lots/parcels, Nodes, and surface model triangles. In the Display Settings on the Preview Object dialog box, each element type (alignments, lots/parcels, Nodes, and surface models) can be toggled off so they are not displayed.</p> <p>For more information, see <i>Preview Objects</i> in the <b>Eagle Point Menu</b> manual.</p>
<b>Filename</b>	This is the path and file name of the LandXML file selected to import.
<b>Description</b>	This is the description for the LandXML file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>Extended Description</b>	This is the extended description for the LandXML file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>State</b>	This is the state of the LandXML file selected to import. The states that can display in this field are Not Specified, Abandoned, Destroyed, Existing, or Proposed.
<b>Created By</b>	This field displays the author's name of the LandXML file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>E-mail Address</b>	This is the e-mail address for the author of the LandXML file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>Company</b>	This is the company name for the author of the LandXML data file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>Company Web Address</b>	This is the website address for the company that created the LandXML data file selected to import. Since this is an optional field when exporting data, this field may be blank.
<b>Linear Units</b>	This field displays the linear units for the LandXML file selected to import. The linear units are set when the data is exported to the LandXML file. The data in the file will be converted (if necessary) to whatever units your current project is set to.

## Import LandXML Dialog Box Definitions

Option	Function
<b>Area Units</b>	This displays the area units for the LandXML file selected to import. The area units are set when the data is exported to the LandXML file. The data in the file will be converted (if necessary) to whatever units your current project is set to.
<b>Volume Units</b>	This field displays the volume units for the LandXML file selected to import. The volume units are set when the data is exported to the LandXML file. The data in the file will be converted (if necessary) to whatever units your current project is set to.
<b>Manufacturer</b>	This is the name of the software manufacturer whose application software was used to create the LandXML file selected to import.
<b>Manufacturer URL</b>	This is the URL (Uniform Resource Locator) to the website for the software manufacturer whose application software was used to create the LandXML file selected to import.
<b>Application Name</b>	This is the name of the software package used to create the LandXML file selected to import.
<b>Version</b>	This is the version of the software package used to create the LandXML file selected to import.

## Import LandXML Alignment

The Import LandXML Alignment dialog box (Figure 2-6 on page 16) displays once you have selected the alignments within the groups to import from the selected LandXML file (see below).

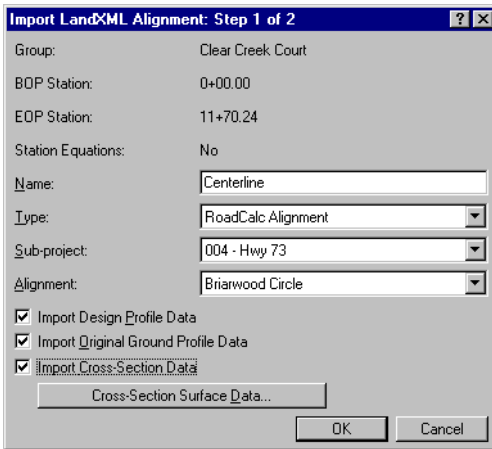


**Figure 2-5 Select Alignments to Import Dialog Box**

Each alignment being imported is a separate step on the Import LandXML Alignment dialog box. The alignment can be imported as a **COGO** alignment or as a **RoadCalc** alignment. When importing the alignment as a **RoadCalc** alignment, you select the sub-project and destination alignment. You can also select to import the design centerline profile, original ground centerline profile, and cross-section surface data.

**COGO** alignments are imported using the default CAD settings for **COGO** alignments. All **RoadCalc** data is imported using the CAD settings established in the sub-project.

- ✎ When importing an alignment as a **RoadCalc** Alignment, you must have the sub-project created and the cross-section surfaces added. If you do not, you will not be able to import all of the road data associated with the alignment.
- ✎ The number of alignments being imported determines the number of steps on the import that you need to complete. The number of steps to complete displays in the caption of the dialog box. For example, if there are eight alignments in the selected groups to import, then you need to complete eight steps. Clicking on Cancel at any step only cancels the import of the current alignment.
- ✎ Once an alignment has been imported from a LandXML file, it cannot be imported again while you are in the current session of the Import command.



**Figure 2-6 Import LandXML Alignment Dialog Box**

**Import LandXML Alignment Dialog Box Definitions**


<b>Option</b>	<b>Function</b>
<b>Group</b>	This field displays the name of the alignment group being imported.
<b>BOP Station</b>	This field displays the BOP (Beginning of Project) station for the alignment being imported.
<b>EOP Station</b>	This field displays the EOP (End of Project) station for the alignment being imported.
<b>Station Equations</b>	This field displays No if there are no station equations for the selected alignment and Yes if there are station equations for the alignment.
<b>Name</b>	This edit field displays the alignment name within the group being imported. This is the name the alignment was given when it was exported to the LandXML file. The alignment name can be up to 65 characters long. If you are importing a <b>COGO</b> type alignment, you can add it as a new <b>COGO</b> alignment or specify an existing <b>COGO</b> alignment name and overwrite the existing data.

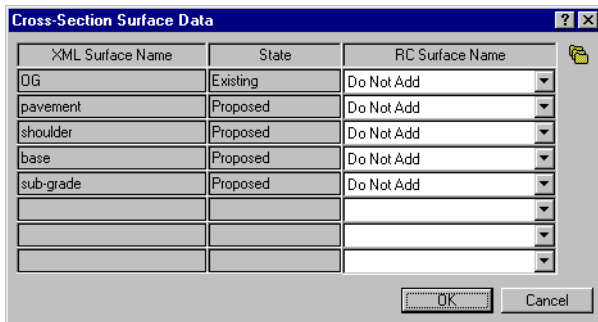
## Import LandXML Alignment Dialog Box Definitions

Option	Function
<b>Type</b>	Select the type of alignment from the drop list. The available types of alignments are <b>COGO</b> and <b>RoadCalc</b> . When a <b>RoadCalc</b> alignment is selected, you can optionally import the design centerline profile, original ground centerline profile, and cross-section data.
<b>Sub-project</b>	This drop list displays all of the <b>RoadCalc</b> sub-projects for the current project. The alignment being imported is assigned to the selected sub-project. This option is only available when the Type drop list is set to RoadCalc Alignment.
<b>Alignment</b>	This option is only available when selecting a <b>RoadCalc</b> -type alignment. Select the alignment from the drop list. The drop list contains all of the alignments for the selected sub-project. If you choose an alignment that is already defined within the sub-project it will be overwritten with the data from the LandXML file. In addition, there is also an option named "Add as New Alignment." When the "Add as New Alignment" option is selected, another alignment name is added to the selected <b>RoadCalc</b> sub-project. The name of the alignment is the same as the Name specified.
<b>Import Design Profile Data</b>	Toggle this option on if you want to import the design profiles into the selected <b>RoadCalc</b> sub-project. This option is only available when the Alignment type is set to RoadCalc Alignment.
<b>Import Original Ground Profile Data</b>	Toggle this option on if you want to import the original ground profiles into the selected <b>RoadCalc</b> sub-project. The profiles are drawn as a polyline/linestring into your profile coordinate system the next time it is viewed and no data is saved (similar to a profile from surface model). This option is only available when the Alignment type is set to RoadCalc Alignment.
<b>Import Cross-Section Data</b>	Toggle this option on if you want to import the cross-section data into the selected <b>RoadCalc</b> sub-project. You must already have the surfaces named within the specified sub-project (surfaces cannot be added via the Import LandXML command). Use the Cross-Section Surface Data button to specify which <b>RoadCalc</b> surfaces the LandXML surface data will be imported to. This option is only available when the Alignment type is set to RoadCalc Alignment.
<b>Cross-Section Surface Data</b>	Clicking on this button allows you to select which cross-section surfaces you wish to import for the road. Click on this button and toggle on the surfaces to import. If data already exists within the sub-project, only the surfaces specified at the stations specified in the file will be overwritten. This option is only available when the Import Cross-Section Data option is toggled on.  For more information, see <i>Cross-Section Surface Data</i> , below.

## Cross-Section Surface Data

The Cross-Section Surface Data command allows you to assign **RoadCalc** surface names to the LandXML Surface Names. All surfaces in the LandXML file selected to import are displayed along with their state of Existing, Proposed, Abandoned, or Destroyed. The RC Surface Name is also automatically assigned to the LandXML Surface Name if an exact match is made. If an exact match for the surface name is not made, you can select one of the surface names listed. All **RoadCalc** surface names are listed in the drop list along with an option of "Do Not Add." Selecting "Do Not Add" for a LandXML Surface Name prevents the cross-section data for that surface from being imported.

 You should add in all of the **RoadCalc** cross-section surfaces to the **RoadCalc** sub-project before importing the road data associated with the alignment.



**Figure 2-7 Cross-Section Surface Data Dialog Box**

### Cross-Section Surface Data Dialog Box Definitions

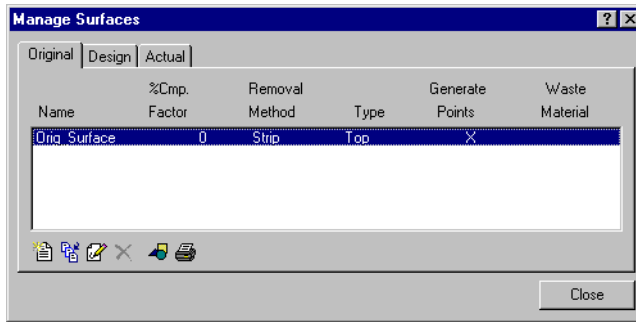
Option	Function
<b>XML Surface Name</b>	This column displays the cross-section surface names in the order that they exist in the LandXML data file selected to import.
<b>State</b>	This column displays the state of the surface in the LandXML file. The states of the surfaces can be Existing, Proposed, Destroyed, or Abandoned.
<b>RC Surface Name</b>	This column displays all of the surface names in the <b>RoadCalc</b> sub-project. The surfaces are automatically assigned to the LandXML Surface Name column if an exact match is made. You can select any surface name from the RC Surface Name drop list to be assigned to the LandXML Surface Name. You can also set the RC Surface Name to be "Do Not Add" and the cross-section data for the LandXML Surface Name will not be imported into the <b>RoadCalc</b> sub-project.

## Manage Surfaces

ICON: 

You have the ability to add **RoadCalc** cross-section surface names to the specified sub-project from within the Cross-Section Surface Data dialog box (above).

Select the Manage Surfaces icon to add Original, Design, or Actual surfaces to the specified sub-project.



**Figure 2-8 Manage Surfaces Dialog Box**

### Manage Surfaces Dialog Box Definitions

Option	Icon	Function
<b>New Surface</b>		Click on this icon to display the New Original Surface dialog box. Establish the name, compaction percentage, removal method (Normal or Strip), type (Existing Pavement, Parallel, or Absolute), and set the Waste Material (Exclude from Mass Haul) option.
<b>Insert Surface</b>		Click on this icon to display the Insert Original Surface dialog box. Establish the name, compaction percentage, removal method (Normal or Strip), type (Existing Pavement, Parallel, or Absolute), and set the Waste Material (Exclude from Mass Haul) option.
<b>Modify Surface</b>		Highlight the name of the surface that you want to modify in the Manage Surfaces dialog box and click on this icon to display the Modify Original Surface dialog box. Change any of the surface options as desired.
<b>Delete Surface</b>		Highlight the name of the surface that you want to delete and click on this icon. A message displays, asking whether you are sure you want to delete the surface. If you want to delete the surface, click on the Delete button. If you do not want to delete the surface, click on the Do Not Delete button.
<b>Surface CAD Settings</b>		Click on this icon to display the CAD Settings dialog box. Set the Description, Layer, Color, Line Type, and Width options.
<b>Print Surface Listing</b>		Click on this icon to display the Generate Cross-Section Reports dialog box. Click on the names of the surfaces for which to print reports and set options as desired for station range, whether to include I.H./R.R., and whether to include PT codes.

## Import LandXML Lots/Parcels

The Import LandXML Lots/Parcels command allows you to import lots from the selected LandXML file. Each group of lots/parcels selected to import is a separate step on the Import LandXML Lots/Parcels dialog box (Figure 2-9 on page 21). The Lots in Project


frame displays all of the lot information contained within the current project. You can display all lots or the lots contained within a **COGO** lot group. The Lots in LandXML Group frame displays all lots contained within the lot/parcel group being imported. The name and description of the lot/parcel group being imported from the LandXML file is displayed under the listing of lots. Select the lots to import by highlighting the lots in the LandXML group list. Highlight multiple lots using the Shift and Ctrl keys in conjunction with a “left” mouse click.

When the lots are imported, lot groups can automatically be created. To create the lot group in **COGO** automatically, toggle on the COGO Lot Group Name option and supply a Lot Group Name in the edit field. By default, this is the group name being imported from the LandXML file. Optionally, you can supply a description for the group. Once the lot groups are created in **COGO**, lot reports and mapcheck reports can be created for the entire lot group.

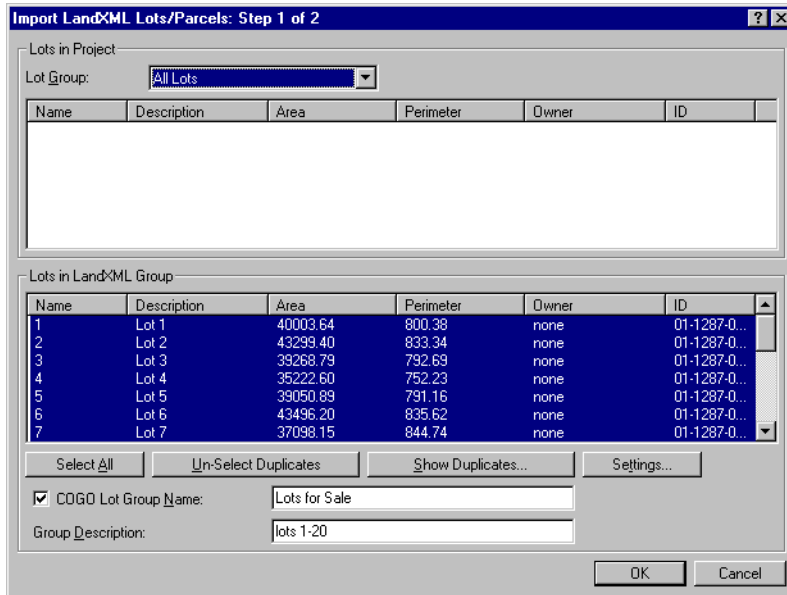
The lots are drawn in CAD using the settings found in the Default CAD Settings command. You may optionally have that lot annotated by using the Settings button. The lot annotation also reads its CAD settings from the Default CAD Settings command and annotates the lot information according to the drafting annotation style specified.

When importing lots into a project that already exists in the current CAD graphic, the Duplicate Lot in Project dialog box (Figure 2-10 on page 23) displays. This dialog box allows you to resolve the duplicate lot by overwriting the existing lot geometry or renaming the lot to give it a unique name. When overwriting the existing lot geometry, the existing lot is removed from the CAD graphic and the new lot is placed. When renaming the lot, the existing lot remains without change and the lot with the new name specified is placed in the project. The Duplicate Lot in Project dialog box only displays when lots selected to import are duplicates of lots in the project before the Import LandXML command is selected. During the Import command, if lots from one group are imported and those same lots exist in another lot group being imported within the current session of the Import LandXML command, the Duplicate Lot in Project dialog box does not display. The duplicate lots are filtered out before importing.

For more information on duplicate lots, see *Duplicate Lot in Project* on page 23.

 *The number of lot/parcel groups that are selected to be imported determines the number of steps on the import that you will need to complete. The number of steps to complete displays in the caption of the dialog box. For example, if there are four lot/parcel groups selected to import, you will need to complete four steps. Clicking on Cancel at any step will only cancel the import of the current lot/parcel group.*

- ✎ Once a lot has been imported from a LandXML file, it cannot be imported again while you are in the current session of the Import command.



**Figure 2-9 Import LandXML Lots/Parcels Dialog Box**

### Import LandXML Lots/Parcels Dialog Box Definitions

Option	Function
<b>Lot Group</b>	This filter is used to display lots that have been defined within the project. When a lot group is selected, all of the lots contained within the lot group are displayed in the list. By default, "All Lots" is selected in the Lot Group drop list. This displays all lots defined within the project.

## Import LandXML Lots/Parcels Dialog Box Definitions


Option	Function
<b>Lots in Project</b>	<p>This list displays all of the lots in the project when All Lots is selected in the Lot Group drop list. When a lot group is selected in the Lot Group drop list, only the lots contained within the group are displayed. The data displayed for the lots is Name, Description, Area, Perimeter, Owner, and Lot ID.</p> <p><b>Name:</b> This column displays the unique name that is given to the lot at the time it was created in <b>COGO</b>.</p> <p><b>Description:</b> This column displays the description that was given to the lot at the time it was created in <b>COGO</b>.</p> <p><b>Area:</b> This column displays the calculated area of the lot. The units depend on the Area Units displayed on the Import LandXML dialog box (Figure 2-4 on page 13). If the Area Units display as Square Feet (Meters), then the area is in Square Feet (Meters). If the Area Units display as Acres (Hectares), then the area is in Acres (Hectares).</p> <p><b>Perimeter:</b> This column displays the calculated length around the lot.</p> <p><b>Owner:</b> This column displays the owner of the lot that was given to the lot at the time it was created in <b>COGO</b>.</p> <p><b>Lot ID:</b> This column displays the ID, such as the Tax ID, that was given to the lot at the time it was created in <b>COGO</b>.</p>
<b>Lots in LandXML Group</b>	<p>This section displays all of the lots in the lot/parcel group selected to import. The information displayed is the Name, Description, Area, Perimeter, Owner, and Lot ID.</p> <p><b>Name:</b> This column displays the name of the lot from the LandXML file selected to import.</p> <p><b>Description:</b> This column displays the description of the lot from the LandXML file selected to import.</p> <p><b>Area:</b> This column displays the calculated area of the lot. The units depend on the Area Units displayed on the Import LandXML dialog box (Figure 2-4 on page 13). If the Area Units display as Square Feet (Meters), then the area is in Square Feet (Meters). If the Area Units display as Acres (Hectares), then the area is in Acres (Hectares).</p> <p><b>Perimeter:</b> This column displays the calculated length around the lot.</p> <p><b>Owner:</b> This column displays the owner of the lot from the LandXML file selected to import.</p> <p><b>Lot ID:</b> This column displays the ID, such as the Tax ID, of the lot from the LandXML file selected to import.</p>
<b>Select All</b>	<p>Clicking on this button allows you to select all of the lots in the Lots in LandXML file list. All of the highlighted lots in the Lots in LandXML Group list will be imported into the project.</p>
<b>Un-Select Duplicates</b>	<p>Clicking on this button removes the highlight from lots that already exist in the project. Only lots that are highlighted in the Lots in LandXML Group list are imported. If lots selected for import are duplicates with lots in the project before the Import LandXML command is selected, the Duplicate Lot in Project dialog box (Figure 2-10 on page 23) displays. This allows you to overwrite lot geometry or supply a new name to the lot. If lots from one group are imported and those same lots exist in another lot group being imported within the current session of the Import LandXML command, the Duplicate Lot in Project dialog box does not display.</p> <p>For more information, see <i>Duplicate Lot in Project</i> on page 23.</p>

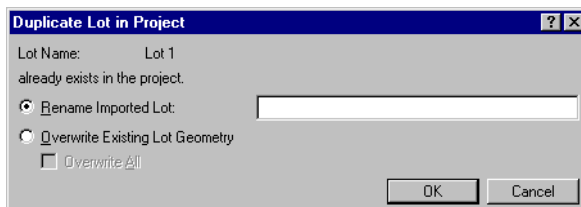
## Import LandXML Lots/Parcels Dialog Box Definitions

Option	Function
<b>Show Duplicates</b>	Clicking on this button displays the duplicate lot names in a dialog box. This helps you identify which lots you should or should not select to import. Use the Un-Select Duplicates option to have all duplicated lots in the LandXML file unhighlighted. When duplicate lot names are selected to import, the Duplicate Lot in Project dialog box (below) displays. For more information, see <i>Duplicate Lot in Project</i> , below.
<b>Settings</b>	Clicking on this button allows you to annotate the lot information in the CAD graphic once the lot is imported. Specify which annotation style you want to use to annotate the lot. For more information, see <i>Lot/Parcel Annotation Settings</i> on page 24.
<b>COGO Lot Group Name</b>	Toggle this option on if you want the name of the lot group automatically added as a <b>COGO</b> Lot Group. All lots imported are automatically added to the lot group. If the lot group already exists in <b>COGO</b> , the existing lot group is used and the lots are added to the existing lot group. When this option is toggled off, a lot group is not created for the imported lots.
<b>Group Description</b>	This is the description for the <b>COGO</b> Lot Group. This description further describes the lot group. This option is only available when the COGO Lot Group Name option is toggled on.

### Duplicate Lot in Project

The Duplicate Lot in Project dialog box displays when you are importing lots into the project that already exist in the current CAD graphic. The available options to resolve the duplicate lot are to overwrite the existing lot geometry and to assign a new name to the lot. When overwriting the existing lot geometry, the existing lot is removed from the CAD graphic and the new lot is placed. When renaming the lot, the existing lot remains without change. The lot with the new name specified will be placed in the project. If you are overwriting all the lots in the current project, toggle on the Overwrite All option.

 This dialog box only displays when lots selected to import are duplicates with lots in the project before the Import LandXML command is selected. During the Import command, if lots from one group are imported and those same lots exist in another lot group being imported within the current session of the Import LandXML command, the Duplicate Lot in Project dialog box does not display.



**Figure 2-10 Duplicate Lot in Project Dialog Box**

## Duplicate Lot in Project Dialog Box Definitions

Option	Function
<b>Lot Name</b>	This is the lot name that is being imported. This name already exists in the current CAD graphic within the project.
<b>Rename Imported Lot</b>	Turn on this radio button to keep the existing lot geometry. You will assign a new name to the lot selected to import. The lot with the new name is placed in the project.
<b>Overwrite Existing Lot Geometry</b>	Turn on this radio button to replace all of the lot geometry with the lot geometry defined for the selected lot. When selecting this option, the existing lot is removed from the CAD graphic and replaced with the geometry of the lot in the LandXML file.
<b>Overwrite All</b>	Toggle this option on to overwrite all existing lots in the project with the lots named the same in the LandXML file.

## Lot/Parcel Annotation Settings

The Lot/Parcel Annotation Settings command allows you to annotate lot information when the lot is imported. The lot information that can be annotated is the Name, Description, ID, Owner, Parent Name, and Area. Specify which **Drafting** Annotation Style you want to use when annotating the lot.

For more information on annotation styles, see *Annotation Styles* in the **Drafting** manual.

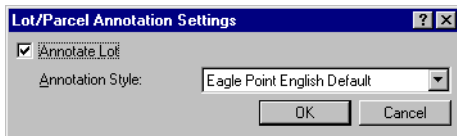


Figure 2-11 Lot/Parcel Annotation Settings Dialog Box

## Lot/Parcel Annotation Settings Dialog Box Definitions

Option	Function
<b>Annotate Lot</b>	Toggle this option on to annotate the lot information when the lot is imported. The items that can be annotated are Name, Description, ID, Owner, Parent Name, and Area.
<b>Annotation Style</b>	Select the annotation style to use for the lot annotation from the drop list. All annotation styles are displayed in the drop list. For more information on annotation styles, see <i>Annotation Styles</i> in the <b>Drafting</b> manual.

## Import LandXML Nodes


The Import LandXML Nodes command allows you to import Nodes from the selected LandXML file. Each group of Nodes selected to import is a separate step on the Import LandXML Nodes dialog box (Figure 2-12 on page 26). The Nodes in Project frame displays all of the Nodes contained within the current project. The Nodes in LandXML Group frame displays all Nodes contained within the Node group being imported. Select

the Nodes to import by highlighting the Nodes in the LandXML Group list. Highlight multiple Nodes using the Shift and Ctrl keys in conjunction with a “left” mouse click.

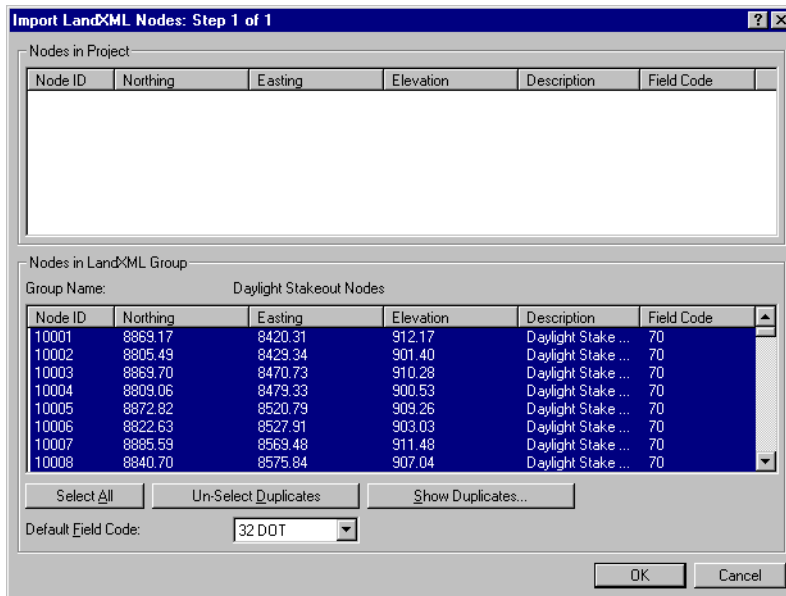
The LandXML file may contain Field Codes for each Node and may contain a DTM Attribute for the entire group. If the LandXML file was exported from **Eagle Point**, the Nodes will have the Field Code specified. The Field Code can be unique to each Node and controls the symbol placement, Node attributes, and surface model masking state. If the DTM Attribute is specified for the entire group, all Nodes in the group, regardless of field code, are either included or excluded according to the DTM Attribute in the LandXML file. The Nodes are placed into the project and follow the External Node Database options set in the project. The CAD attributes are also determined by the Field Code specified.

When importing Nodes into a project that has Nodes with the same ID, the Point Protection dialog box displays. This dialog box allows you to resolve the duplicate Node IDs. The Point Protection dialog box only displays when Node IDs selected to import are duplicates with Node IDs in the project before the Import LandXML command is selected. During the Import command, if Node IDs from one group are imported and those same Node IDs exist in another Node group being imported within the current session of the Import LandXML command, the Point Protection dialog box does not display. The duplicate Node IDs are filtered out before importing.

For more information on point protection, see *Point Protection* in the **Eagle Point Menu** manual.

 *The number of Node groups selected to be imported determines the number of steps on the import that you will need to complete. The number of steps to complete displays in the caption of the dialog box. For example, if there are four Node groups selected to import, you need to complete four steps. Clicking on Cancel at any step only cancels the import of the current Node group.*

✎ Once a Node has been imported from a LandXML file, it cannot be imported again while you are in the current session of the Import command.



**Figure 2-12 Import LandXML Nodes Dialog Box**

### **Import LandXML Nodes Dialog Box Definitions**

<b>Option</b>	<b>Function</b>
<b>Nodes in Project</b>	This list displays all of the Nodes in the project. It also displays Nodes that have already been selected to import from a previous Node group. The information displayed for the Nodes is Node ID, Northing, Easting, Elevation, Description, and Field Code.
<b>Node ID:</b>	This column displays the Node ID values for the Nodes that already exist in the project.
<b>Northing:</b>	This column displays the Northing or Y-coordinate values of the Nodes.
<b>Easting:</b>	This column displays the Easting or X-coordinate values of the Nodes.
<b>Elevation:</b>	This column displays the Elevation or Z-coordinate values of the Nodes.
<b>Description:</b>	This column displays the description values.
<b>Field Code:</b>	This column displays the Field Code associated with each selected Node.

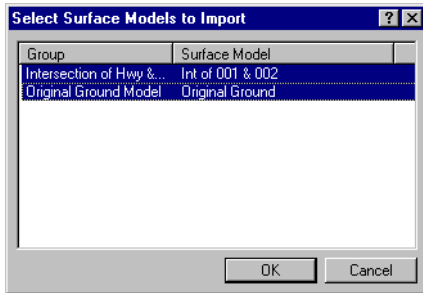
## Import LandXML Nodes Dialog Box Definitions

Option	Function
<b>Nodes in LandXML Group</b>	<p>This list displays all of the Nodes in the Node group selected to import. The information displayed for the Nodes is Node ID, Northing, Easting, Elevation, Description, and Field Code.</p> <p><b>Node ID:</b> This column displays the Node ID values for the Nodes in the group selected to import from the LandXML file.</p> <p><b>Northing:</b> This column displays the Northing or Y-coordinate values of the Nodes.</p> <p><b>Easting:</b> This column displays the Easting or X-coordinate values of the Nodes.</p> <p><b>Elevation:</b> This column displays the Elevation or Z-coordinate values of the Nodes.</p> <p><b>Description:</b> This column displays the description values.</p> <p><b>Field Code:</b> This column displays the Field Code associated with each selected Node.</p>
<b>Select All</b>	<p>Clicking on this button allows you to select all of the Nodes in the Nodes in LandXML file list. All of the highlighted Nodes in the Nodes in LandXML Group list will be imported into the project.</p>
<b>Un-Select Duplicates</b>	<p>Clicking on this button removes the highlight from Nodes that already exist in the project. Only Nodes that are highlighted in the Nodes in LandXML Group list are imported. If Nodes selected to be imported are duplicates with Nodes in the project before the Import LandXML command is selected, the Point Protection dialog box displays. This allows you to use a new Node ID, delete the old Node, not place the Node, place a duplicate Node and disable point protection. If Nodes from one group are imported and those same Nodes exist in another Node group being imported within the current session of the Import LandXML command, the Point Protection dialog box does not display.</p> <p>For more information, see <i>Point Protection</i> in the <b>Eagle Point Menu</b> manual.</p>
<b>Show Duplicates</b>	<p>Clicking on this button displays the duplicate Node IDs in a dialog box. This helps you identify which Nodes you should or should not select to import. Use the Un-Select Duplicates option to have all duplicated Nodes in the LandXML file unhighlighted. When duplicate Node IDs are selected to import, the Point Protection dialog box displays.</p> <p>For more information, see <i>Point Protection</i> in the <b>Eagle Point Menu</b> manual.</p>
<b>Default Field Code</b>	<p>This drop list displays all field codes for the active Node (Field Code) Library. The selected field code is used as the symbol to place when a field code is not available in the LandXML file selected to import. The selected field code also controls what attributes are placed with the Node. If the LandXML file was created with <b>Eagle Point</b>, the field codes are contained in the file for each Node and used to import the Nodes with specific symbols and attribute styles.</p> <p>For more information, see <i>Node (Field Code) Library</i> in the <b>Eagle Point Menu</b> manual.</p>

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## Import LandXML Surface Model


The Import LandXML Surface Model dialog box (Figure 2-14 on page 29) displays once you have selected the surface models within the groups to import from the selected LandXML file (see below).




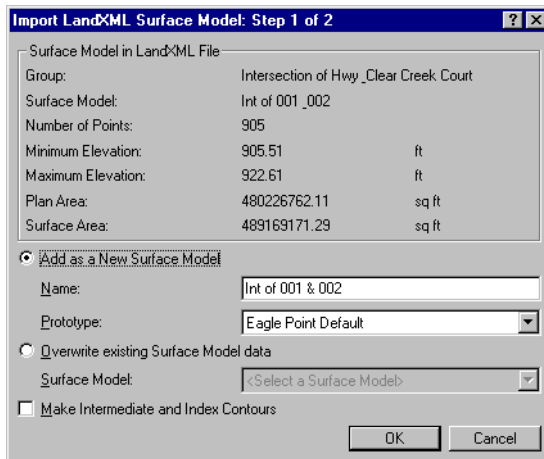
**Figure 2-13 Select Surface Models to Import Dialog Box**

Each surface model being imported is a separate step on the Import LandXML Surface Model dialog box. The surface model can be added as a new surface model using a prototype or it can overwrite existing surface model data. Also, you can toggle on the Make Intermediate and Index Contours option to place contours for the surface model in the CAD graphic automatically upon completion of the import.

Since the surface model files are written directly (and not triangulated), the resultant model is exactly the same triangulation as the original. The Import command currently only supports importing LandXML surface models using triangular faces (not grids).

-  *The number of surface models selected when importing determines the number of steps on the import that you will need to complete. The number of steps to complete displays in the caption of the dialog box. For example, if there are eight surface models in the selected groups to import, then you need to complete eight steps. Clicking on Cancel at any step only cancels the import of the current surface model.*

-  Once a surface model has been imported from a LandXML file, it cannot be imported again while you are in the current session of the Import command.



**Figure 2-14 Import LandXML Surface Model Dialog Box**

### Import LandXML Surface Model Dialog Box Definitions

Option	Function
<b>Group</b>	This field displays the name of the Surface Model Group being imported.
<b>Surface Model</b>	This field displays the name of the Surface Model within the Surface Model Group being imported.
<b>Number of Points</b>	This field displays the total number of points that were used for the surface model construction.
<b>Minimum Elevation</b>	This field displays the elevation of the lowest triangle vertex within the surface model file.
<b>Maximum Elevation</b>	This field displays the elevation of the highest triangle vertex within the surface model file.
<b>Plan Area</b>	This field displays the plan area of the surface model. This value is the calculated planar area of the surface model. This value is displayed in square feet or acres in an English project and square meters or hectares in a metric project, depending on the area units specified with the LandXML file selected to import.
<b>Surface Area</b>	This field displays the surface area of the surface model. This value is the calculated surface area of the 3-D surface model. This value is displayed in square feet or acres in an English project and square meters or hectares in a metric project, depending on the area units specified with the LandXML file selected to import.
<b>Add as a New Surface Model</b>	Select this option to add the surface model as a new surface model to the current project. When using this option, you need to provide a name for the surface model and a prototype to use to inherit additional surface model settings that are required.

## Import LandXML Surface Model Dialog Box Definitions

Option	Function
<b>Name</b>	This edit field displays the name of the surface model that is added to the Manage Surface Models dialog box. By default, the name of the surface model is the same name as the name in the LandXML file selected to import. The surface model name must be unique and is limited to 30 characters. This option is only available when the Add as a New Surface Model option is selected.
<b>Prototype</b>	This drop list displays all of the surface model prototypes that can be selected from for required settings for the surface model. The prototype contains information such as minimum and maximum valid elevation, contour intervals, object placement type, and CAD properties. This option is only available when the Add as a New Surface Model option is selected.  For more information on surface model prototypes, see <i>Surface Model Prototype Library</i> in the <b>Surface Modeling</b> manual.
<b>Overwrite existing Surface Model data</b>	Select this option to overwrite the surface model data for a surface model that already exists in your Manage Surface Models dialog box. When using this option, you need to select a surface model from the Surface Models drop list.
<b>Surface Models</b>	This drop list displays all of the surface models in the Manage Surface Models dialog box and an additional item called Select a Surface Model. The Surface Models drop list is defaulted to Select a Surface Model, which requires you to manually select the surface model you wish to overwrite.
<b>Make Intermediate and Index Contours</b>	Toggle this option on to create Intermediate and Index contours for the surface model when it is imported into the project. The contours are created according to the contour settings for the surface model.  For more information on intermediate and index contours, see <i>Make Intermediate &amp; Index Contours</i> in the <b>Surface Modeling</b> manual.

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## Export LandXML

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML


KEY-IN COMMAND: dtxml exp

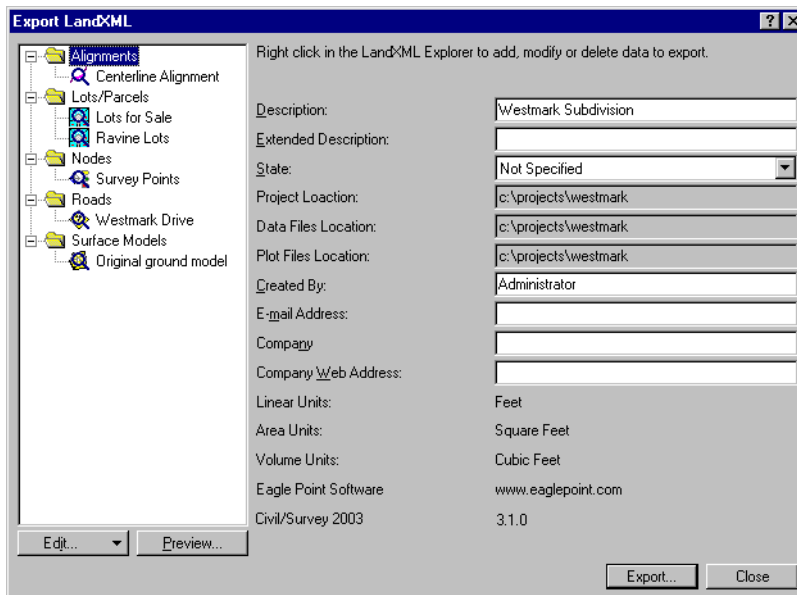
The Export LandXML command provides you with the capability of exporting data from the current project to a LandXML format file. A LandXML file contains just the data for various project components and is a means by which project data can be transferred to other users or projects. The LandXML file contains the unit setting for the objects and can therefore also act as a way to convert data from English to metric units (or vice versa).

Objects that can be exported via a LandXML file include **COGO** alignments (horizontal geometry), lots/parcels, Nodes, surface models, and **RoadCalc** data (alignments and associated original, design, and actual cross-section surfaces, original ground profiles, and design profiles).

Upon selecting the command, the Export LandXML dialog box (below) displays. The LandXML Explorer contains empty folders for which to add groups of data to export. “Right” mouse click in the Explorer pane or click on the Edit button to display a menu of commands from which you can add groups of data to export. Choose one of the five new group commands to display a dialog box that allows you to build a selection of data for a specified group. To remove a group from being exported, highlight the group and use the Edit button or “right” mouse click and choose the Delete Group option. Likewise, choose Rename Group to modify the highlighted group name.

Once you have defined all the groups to export, you can toggle on certain ones to preview prior to exporting to a file. By default, all groups added to export are toggled on to preview. Highlight the group you want added to the preview by “right” mouse clicking or clicking on the Edit button and choosing the Toggle Group for Preview option. The group icon changes to identify what groups will be contained in the graphic preview window. Then click on the Preview button to view the data you are about to export. If you are satisfied with the group definitions, click on the Export button and specify the destination file name.

 *Build multiple groups of objects to organize the data better. For example, add a group of Nodes that represent the original survey and add a second group of the Nodes that are the design Nodes to stake out.*



**Figure 2-15** Export LandXML Dialog Box

## Export LandXML Dialog Box Definitions

Option	Function
<b>LandXML Explorer</b>	<p>This displays the element types that can be exported to a LandXML file. The elements that can be exported are alignments, lots/parcels, Nodes, roads, and surface models. The LandXML Explorer also displays all of the groups added to each element. These added groups contain the data that is exported to the LandXML file.</p>
<b>Edit</b>	<p>Clicking on this button displays a drop down menu that allows you to add, rename, and delete groups. You can also toggle a group to be previewed. This menu can also be accessed by right clicking in the LandXML Explorer.</p> <p>For more information on the available items in the menu, see below.</p> <p><b>New Alignment Group:</b> Select this option to add an alignment group to be exported. The data that is exported is the horizontal geometry of the alignment. If the alignment is a <b>RoadCalc</b> alignment and you have cross-section and profile data that needs to be exported with the alignment, use the New Road Group option.</p> <p>For more information, see <i>New LandXML Alignment Group</i> on page 34.</p> <p><b>New Node Group:</b> Select this option to add an alignment group to be exported. The data that is exported includes the Node ID, Northing, Easting, elevation, description, and field code.</p> <p>For more information, see <i>New LandXML Node Group</i> on page 39.</p> <p><b>New Lot/Parcel Group:</b> Select this option to add a lot/parcel group to be exported. The data that is exported includes the name, description, area, perimeter, owner, lot ID, and lot geometry.</p> <p>For more information, see <i>New LandXML Lot/Parcel Group</i> on page 37.</p> <p><b>New Road Group:</b> Select this option to add a road group to be exported. The data that is exported includes the horizontal alignment data for the centerline of the selected <b>RoadCalc</b> sub-project. You can also choose to export the design centerline profile data, original ground centerline profile data, and cross-section surface data.</p> <p>For more information, see <i>New LandXML Road Group</i> on page 42.</p> <p><b>New Surface Group:</b> Select this option to add a surface group to be exported. The data that is exported for the surface model is a summary of the surface model, point data that makes up the surface model, and the triangle faces.</p> <p>For more information, see <i>New LandXML Surface Model Group</i> on page 44.</p> <p><b>Rename Group:</b> This option allows you to change the name of the highlighted group in the LandXML Explorer. You can also rename the group by performing a single left click on the highlighted item. The name of the group will be highlighted, allowing you to change any information. When you are done modifying the group name, press the Tab key or select a new item in the list to accept the change.</p> <p><b>Delete Group:</b> This option allows you to remove the highlighted group from the LandXML Explorer. Once the group has been removed, it is not exported. Only the groups displayed in the LandXML Explorer are exported. Use this option if a mistake was made when the group was added. Delete the group and then add the new group again.</p> <p><b>Toggle Group for Preview:</b> Select this option to include or remove a group from being displayed in the Preview Objects dialog box. If the group has a magnifying glass on the icon, the group is included in the preview. If there is no magnifying glass on the icon, the group is not included in the preview. By default, all groups added are included in the preview.</p>

## Export LandXML Dialog Box Definitions

Option	Function
<b>Preview</b>	<p>Clicking on this button displays all of the items within the groups toggled on to be included in the preview. This includes horizontal alignments, lots/parcels, Nodes, roads, and surface model triangles. In the Display Settings on the Preview Object dialog box, each element type (alignments, lots/parcels, Nodes, roads, and surface models) can be toggled off so they are not displayed.</p> <p>For more information, see <i>Preview Objects</i> in the <b>Eagle Point Menu</b> manual.</p>
<b>Description</b>	<p>This edit field displays the description for the LandXML file. By default, the description for the current project is displayed. The description is optional. Therefore, the Description edit field may be left blank.</p>
<b>Extended Description</b>	<p>This is an additional description that can be added to the LandXML file. By default, the Extended Description edit field is blank. The extended description is optional. Therefore, the Extended Description edit field may be left blank.</p>
<b>State</b>	<p>Select the state of the project from the drop list before exporting the groups to the LandXML file. The available states are Not Specified, Abandoned, Destroyed, Existing, and Proposed. Select the appropriate state for the project before exporting. Group states can be used in some software packages to limit the LandXML data imported. Additionally, you can set the state for each group when the group is added to export.</p> <p><b>Not Specified:</b> Select this option if you do not want to set a state for the project.</p> <p><b>Abandoned:</b> Select this option if the project is in an Abandoned state.</p> <p><b>Destroyed:</b> Select this option if the project is in a Destroyed state.</p> <p><b>Existing:</b> Select this option if the project is in an Existing state.</p> <p><b>Proposed:</b> Select this option if the project is in a Proposed state.</p>
<b>Project Location</b>	<p>This field displays the path to the current project. The contents in this edit field cannot be modified.</p>
<b>Data Files Location</b>	<p>This field displays the path to the data files for the current project. The contents in this edit field cannot be modified.</p>
<b>Plot Files Location</b>	<p>This field displays the path to the plot files for the current project. The contents in this edit field cannot be modified.</p>
<b>Created By</b>	<p>This information is the author of the LandXML data file. By default, your Windows username is displayed in the edit field. Once a file has been exported, the name in the Created By edit field is saved with the value in the edit field for the Windows username for the current project. When the Export LandXML command is run again by the same user in the same project, the value displayed in the Created By edit field is the saved value instead of the username. This is done so you do not need to change your username every time you export a LandXML file when your username is only an abbreviation of your name.</p>
<b>E-mail Address</b>	<p>This field displays the e-mail address for the author of the LandXML data file. By default, this edit field is blank. Once a file is exported, the e-mail address is saved for the current project. When the Export command is run again within the same project, the e-mail address saved is displayed in the edit field. This edit field is optional, so an e-mail address does not need to be provided.</p>

## Export LandXML Dialog Box Definitions

Option	Function
<b>Company</b>	This field displays the company name that the author of the LandXML data file works for. By default, this edit field is blank. Once a file is exported, the company name is saved for the current project. When the Export command is run again within the same project, the company name saved is displayed in the edit field. This edit field is optional, so a company name does not need to be provided.
<b>Company Web Address</b>	This field displays the website address for the company that created the LandXML data file. By default, this edit field is blank. Once a file is exported, the company Web address is saved for the current project. When the Export command is run again within the same project, the company Web address saved is displayed in the edit field. This field is optional, so a company Web address does not need to be provided.
<b>Linear Units</b>	This field displays the linear unit for the current project. Feet displays when exporting from an English project and Meters displays when exporting from a metric project. The linear units are used for any distances exported to the LandXML file.
<b>Area Units</b>	This field displays the output units for planimetric area. Feet or Acres displays when exporting from an English project and Meters or Hectares when exporting from a metric project. The area units are used for any areas exported to the LandXML file.
<b>Volume Units</b>	This field displays Cubic Feet when exporting from an English project and Cubic Meters when exporting from a metric project.
<b>Manufacturer</b>	This field displays the name of the software manufacturer whose application software was used to create the LandXML file. This information is written to the LandXML file and displayed when importing a LandXML file.
<b>Manufacturer URL</b>	This field displays the URL (Uniform Resource Locator) to the website for the software manufacturer whose application software was used to create the LandXML file. This information is written to the LandXML file and displayed when importing a LandXML file.
<b>Application Name</b>	This field displays the name of the software package used to create the LandXML file. This information is written to the LandXML file and displayed when importing a LandXML file.
<b>Version</b>	This field displays the version of the software package used to create the LandXML file. This information is written to the LandXML file and displayed when importing a LandXML file.

## New LandXML Alignment Group

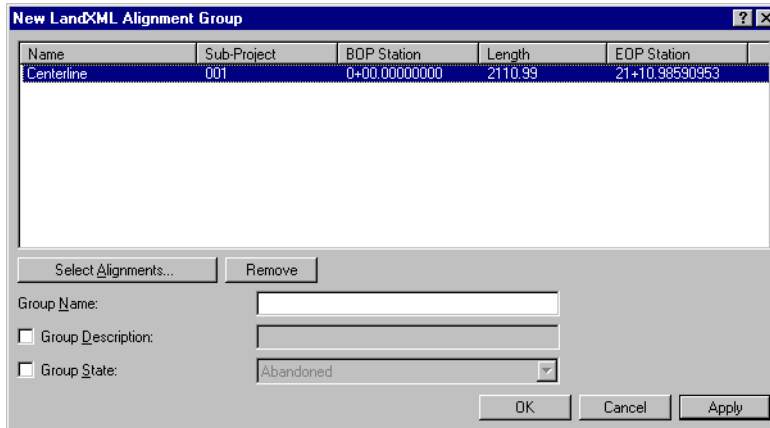
DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML L ⇨ EDIT ⇨ NEW ALIGNMENT GROUP

The New LandXML Alignment Group command allows you to create a group of alignments to export to a LandXML file. You can select multiple alignments to add to the list and remove any alignments from the list that should not be exported. The New Alignment Group command only exports horizontal alignment data (name, length, BOP station, station equations, and the horizontal geometry). If the alignment is a centerline alignment for a **RoadCalc** sub-project and you want to export cross-section and profile data, use the New Road Group command. If the alignment is a **RoadCalc** special

alignment (non-centerline), use this option to write the data to the LandXML file. After importing it as a **COGO** alignment, associate it to the desired sub-project.

Once the desired alignments are selected to export, enter a group name for the alignments. The Group Name is optional, so it can be left blank. However, the group names within the alignments section need to be unique. Therefore, if you add another group of alignments, you must supply a Group Name. Optionally, you can specify a Group Description and a Group State. The description and state only display in the LandXML file. Some software packages can use the Group State to limit the LandXML data to import.

For more information on the New Road Group command, see *New LandXML Road Group* on page 42.



**Figure 2-16 New LandXML Alignment Group Dialog Box**

### ***New LandXML Alignment Group Dialog Box Definitions***

<b><i>Option</i></b>	<b><i>Function</i></b>
<b>Name</b>	This column displays the name of the alignment selected to export.
<b>Sub-project</b>	This column displays the sub-project number of the selected alignment. A sub-project number of 000 is used for any alignment created with the <b>COGO</b> module.
<b>BOP Station</b>	This column displays the BOP (Beginning of Project) station value of the selected alignment.
<b>Length</b>	This column displays the total calculated length of the selected alignment (with any station equations applied).
<b>EOP Station</b>	This column displays the EOP (End of Project) station value of the selected alignment (with any station equations applied).
<b>Select Alignments</b>	Clicking on this button displays the Select Alignments dialog box, allowing you to select a single alignment or multiple alignments to export to the LandXML file.  For more information on selecting alignments, see <i>Select Alignments</i> in the <b>Eagle Point Menu</b> manual.
<b>Remove</b>	Clicking on this button removes the highlighted alignments from the list.

## New LandXML Alignment Group Dialog Box Definitions

Option	Function
<b>Group Name</b>	This is the name of the alignment group being exported. The Group Name edit field can be left blank. When the Group Name is left blank, a Group Name of <Unnamed> is displayed in the LandXML Explorer on the Export LandXML dialog box (Figure 2-15 on page 31). Group names must be unique; therefore, only one group can be added without entering a Group Name.
<b>Group Description</b>	Toggle this option on if you want to enter a description for the alignment group. The Group Description only displays in the LandXML file created when you export.
<b>Group State</b>	Toggle this option on if you want to select a state for the alignment group. This is in addition to the state that can be set for the project. The available states to select from are Abandoned, Destroyed, Existing, and Proposed. If the option is not toggled on, the Group State is "Not Specified." The Group State only displays in the LandXML file created when you export. Group states can be used in some software packages to limit the LandXML data that is imported.

## Select Alignments

The Select Alignments command allows you to select alignments from a list of all defined alignments within the project. You can also select an alignment by using the PIC button and graphically selecting an alignment from the CAD graphic. Highlight multiple alignments using the Shift and Ctrl keys in conjunction with a "left" mouse click. The selected alignment is highlighted in the dialog box.

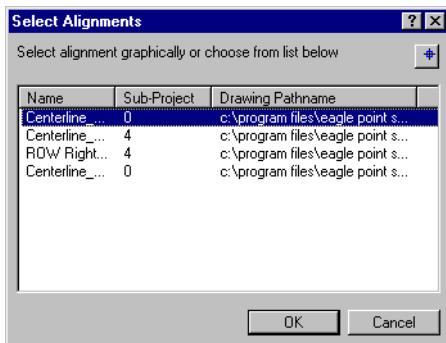



Figure 2-17 Select Alignments Dialog Box

## Select Alignments Dialog Box Definitions

Option	Icon	Function
<b>Name</b>		This column displays the name of the alignment. The alignment names are unique per sub-project within a project.
<b>Sub-Project</b>		This column displays the sub-project number for the alignment. This applies to <b>RoadCalc</b> alignments. If the Sub-Project number is 0, the alignment is a <b>COGO</b> alignment.

## Select Alignments Dialog Box Definitions

Option	Icon	Function
Drawing Pathname		This column displays the full path name for the drawing in which the alignment appears.
PIC		Click on this icon to select an alignment from the CAD graphic.

## New LandXML Lot/Parcel Group

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML ⇨ EDIT ⇨ NEW LOT/PARCEL GROUP

The New LandXML Lot/Parcel Group command allows you to create a group of lots to export to a LandXML file. You can select multiple lots to add to the list using the Select Lots option. You can also add all of the lots within a **COGO** Lot Group by using the Select Lot Group option. Any lots can be removed from the list that should not be exported. The data contained in the LandXML file includes the lot name, description, area, owner, parcel/tax ID, centroid coordinates, and lot geometry.

Once the desired lots/parcels are selected to export, enter a Group Name for the lots/parcels. The Group Name is optional, so it can be left blank. However, the group names within the Lots/Parcels section need to be unique. Therefore, if you add another group of lots/parcels, you must supply a Group Name. Optionally, you can specify a Group Description and a Group State. The description and state only display in the LandXML file. Some software packages can use the Group State to limit the LandXML data to import.

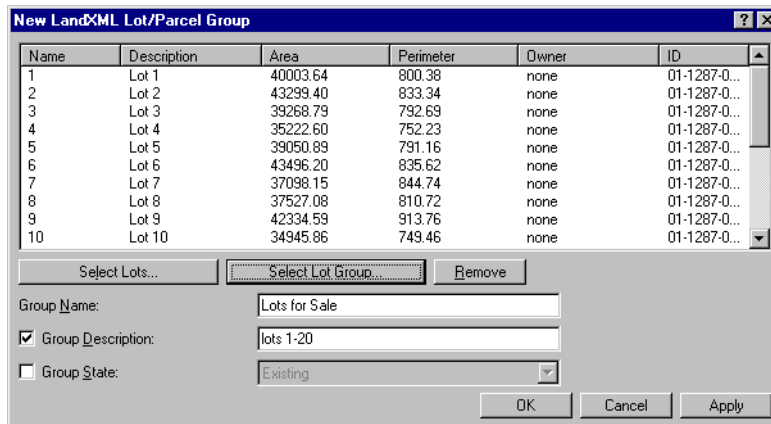


Figure 2-18 New LandXML Lot/Parcel Group Dialog Box

## New LandXML Lot/Parcel Group Dialog Box Definitions

<b>Option</b>	<b>Function</b>
<b>Name</b>	This column displays the unique name that was given to the lot at the time it was created in <b>COGO</b> .
<b>Description</b>	This column displays the description that was given to the lot at the time it was created in <b>COGO</b> .
<b>Area</b>	This column displays the calculated area of the lot. The units depend on the Area Units displayed on the Export LandXML dialog box (Figure 2-15 on page 31). The Area Units are read from the Planimetric Area Output Units settings in the <b>Eagle Point Menu</b> . If the Area Units display as Square Feet (Meters), then the area is in Square Feet (Meters). If the Area Units display as Acres (Hectares), then the area is in Acres (Hectares).
<b>Perimeter</b>	This column displays the calculated length around the lot.
<b>Owner</b>	This column displays the owner of the lot that was given to the lot at the time it was created in <b>COGO</b> .
<b>Lot ID</b>	This column displays the ID, such as the Tax ID, that was given to the lot at the time it was created in <b>COGO</b> .
<b>Select Lots</b>	Clicking on this button allows you to select lots from a list of all of the defined lots. Highlight all the lots you want to include and click on OK.  For more information, see <i>Defined Lots</i> in the <b>Drafting</b> manual.
<b>Select Lot Groups</b>	Clicking on this button allows you to select a lot group from the list of lot groups to export. All of the lots contained in the selected lot group are listed. If you use this option to build your LandXML Lot/Parcel Group, the <b>COGO</b> lot group name will be defaulted as the Lot/Parcel Group Name.  For more information on lot groups, see <i>Create Lot Groups</i> in the <b>COGO</b> manual.
<b>Remove</b>	Clicking on this button removes the highlighted lots/parcels from the list.
<b>Group Name</b>	This edit field displays the name of the lot/parcel group being exported. The Group Name edit field can be left blank. When the Group Name is left blank, a Group Name of <Unnamed> is displayed in the LandXML Explorer on the Export LandXML (Figure 2-15 on page 31) dialog box. Group names must be unique within each element type; therefore, only one group can be added without entering a group name.
<b>Group Description</b>	Toggle this option on if you want to enter a description for the lot/parcel group. The group description only displays in the LandXML file created when you export.
<b>Group State</b>	Toggle this option on if you want to select a state for the lot/parcel group. This is in addition to the state that can be set for the project. The available states to select from are Abandoned, Destroyed, Existing, and Proposed. If the option is not toggled on, the Group State is "Not Specified." The Group State only displays in the LandXML file created when you export. Group states can be used in some software packages to limit the LandXML data that is imported.

## New LandXML Node Group

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML ⇨ EDIT ⇨ NEW NODE GROUP

The New LandXML Node Group command allows you to create a group of Nodes to export to a LandXML file. You can select Nodes to add to the list using any of the Select Nodes options. These options include Single, Elevation Range, Range, All, Name, AutoCAD/BricsCad/Fence, Proximity, Description, Block, and Field Code. Any Nodes can be removed from the list that should not be exported. The data contained in the LandXML file includes the Node ID, Northing, Easting, Elevation, Description, and Field Code.

Once the desired Nodes are selected to export, enter a Group Name for the Nodes. The Group Name is optional, so it can be left blank. However, the group names within the Nodes section need to be unique. Therefore, if you add another group of Nodes, you must supply another Group Name. Optionally, you can specify a Group Description and a Group State. The description and state only display in the LandXML file. Some software packages can use the Group State to limit the LandXML data to import.

For more information on Select Nodes options, see *Select Nodes* on page 2.

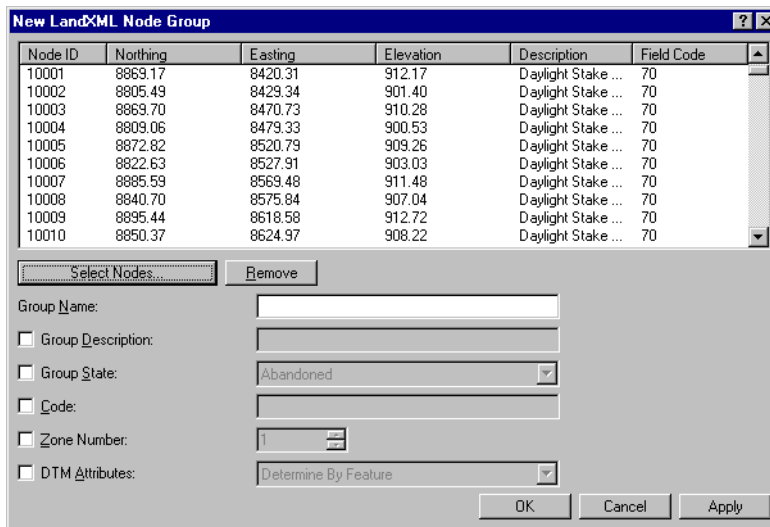


Figure 2-19 New LandXML Node Group Dialog Box

### New LandXML Node Group Dialog Box Definitions

Option	Function
<b>Node ID</b>	This column displays the Node ID values for the Nodes to be exported to the LandXML file.
<b>Northing</b>	This column displays the Northing or Y-coordinate values of the Nodes.

## New LandXML Node Group Dialog Box Definitions

<b>Option</b>	<b>Function</b>
<b>Easting</b>	This column displays the Easting or X-coordinate values of the Nodes.
<b>Elevation</b>	This column displays the Elevation or Z-coordinate values of the Nodes.
<b>Description</b>	This column displays the description of the Node.
<b>Field Code</b>	This column displays the field code associated with each selected Node.
<b>Select Nodes</b>	Clicking on this button allows you to display the Select Nodes dialog box to select or deselect Nodes to be exported.  For more information on Select Nodes options, see <i>Select Nodes</i> on page 2.
<b>Remove</b>	Clicking on this button removes the highlighted Nodes from the list.
<b>Group Name</b>	This edit field displays the name of the Node group being exported. The Group Name edit field can be left blank. When the Group Name is left blank, a Group Name of <Unnamed> is displayed in the LandXML Explorer on the Export LandXML dialog box (Figure 2-15 on page 31). Group names must be unique within each element type; therefore, only one group can be added without entering a Group Name.
<b>Group Description</b>	Toggle this option on if you want to enter a description for the Node group. The Group Description only displays in the LandXML file created when you export.
<b>Group State</b>	Toggle this option on if you want to select a state for the Node group. This is in addition to the state that can be set for the project. The available states to select from are Abandoned, Destroyed, Existing, and Proposed. If the option is not toggled on, the Group State is "Not Specified." The Group State only displays in the LandXML file created when you export. Group states can be used in some software packages to limit the LandXML data that is imported.
<b>Code</b>	Toggle this option on if you want to enter a code for the Node group. This code only displays in the LandXML file created when you export.
<b>Zone Number</b>	Toggle this option on if you want to enter a zone number for the Node group. You can enter the number or click on the spinner to increase or decrease the number currently displayed. The zone number can be between 1 and 99. This code only displays in the LandXML file created when you export.

## New LandXML Node Group Dialog Box Definitions

Option	Function
<b>DTM Attributes</b>	<p>Toggle this option on if you want to specify additional information about the Node group related to a surface model. The available DTM attributes are Determine By Feature, Do Not Include, Spot, Spot and Break, Void, Drape Void, Break Void, Island, Boundary, Contour, Feature, Ground, Cross Section, and User.</p> <p><b>Determine By Feature:</b> Select this option if you want the field code of the individual Nodes to control the surface modeling masking state of the Node.</p> <p><b>Do Not Include:</b> Select this option if all of the Nodes in the group should not be included when a surface model is created from them. This overrides any field code masking setting you may have specified for the Nodes.</p> <p><b>Spot:</b> Select this option if all of the Nodes in the group should be included when a surface model is created from them. This overrides any field code masking setting you may have specified for the Nodes.</p> <p><b>Spot and Break:</b> Select this option if all of the Nodes in the group should be included when a surface model is created from them. This overrides any field code masking setting you may have specified for the Nodes.</p> <p><b>Void:</b> Select this option if the Node group consists of Nodes that were used to create a void region for a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Drape Void:</b> Select this option if the Node group consists of Nodes that were used to create a three-dimensional void region that is draped onto a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Break Void:</b> Select this option if the Node group consists of Nodes that were used to create a break void region for a surface model.</p> <p><b>Island:</b> Select this option if the Node group consists of Nodes that were used to create an island within a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Boundary:</b> Select this option if the Node group consists of Nodes that were used to create the boundary of a surface model.</p> <p><b>Contour:</b> Select this option if the Node group consists of Nodes along contours for a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Feature:</b> Select this option if the Node group consists of Nodes that are described by the feature code assigned to them. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Ground:</b> Select this option if the Node group consists of ground shot Nodes for a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>Cross Section:</b> Select this option if the Node group consists of cross-section Nodes for a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p> <p><b>User:</b> Select this option if the Node group consists of user-defined Nodes for a surface model. This option is not used by <b>Eagle Point</b> when importing data using the Import LandXML command.</p>

## New LandXML Road Group

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML ⇨ EDIT ⇨ NEW ROAD GROUP

The New LandXML Road Group command allows you to create a group of **RoadCalc** data to export to a LandXML file. Once you select the sub-project for the horizontal centerline alignment, you can include the original and design centerline profiles and cross-section surface data for any of the surfaces contained within the sub-project. Specifically, the data included can be the centerline horizontal geometry, BOP station, length, station equations, original, design, or actual cross-section surface data, all original ground profiles, and all design profiles. Any special alignments (non-centerline) should be exported as just alignment data using the New LandXML Alignment Group command. When these special alignments are imported, import them as **COGO** alignments and then associate them to the desired sub-project using the Manage Alignments – Associate Alignment command.

Once the desired road data is selected to export, enter a Group Name for the road. The Group Name is optional, so it can be left blank. However, the group names within the Roads section need to be unique. Therefore, if you add another road group, you must supply another Group Name. Optionally, you can specify a Group Description and a Group State. The description and state only display in the LandXML file. Some software packages can use the Group State to limit the LandXML data to import.

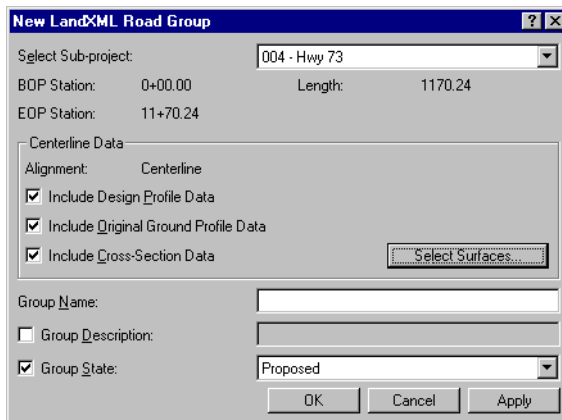


Figure 2-20 New LandXML Road Group Dialog Box

### New LandXML Road Group Dialog Box Definitions

Option	Function
<b>Select Sub-project</b>	This drop list displays all of the <b>RoadCalc</b> sub-projects for the current project. Select the desired sub-project from the drop list to export road data to the LandXML file.
<b>BOP Station</b>	This field displays the BOP (Beginning of Project) Station value for the centerline alignment of the sub-project selected.

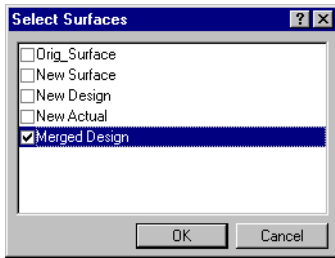
## New LandXML Road Group Dialog Box Definitions

Option	Function
<b>Length</b>	This field displays the calculated length of the centerline alignment for the selected sub-project (with any station equations applied).
<b>EOP Station</b>	This field displays the EOP (End of Project) Station value for the centerline alignment of the sub-project selected (with any station equations applied).
<b>Alignment</b>	This field displays the name of the centerline alignment for the selected sub-project.
<b>Include Design Profile Data</b>	Toggle this option on to export all the design profile data for the selected <b>RoadCalc</b> sub-project to the LandXML file.
<b>Include Original Ground Profile</b>	Toggle this option on to export the all the original ground profile data for the selected <b>RoadCalc</b> sub-project to the LandXML file.
<b>Include Cross-Section Data</b>	Toggle this option on to export cross-section surface data for the selected <b>RoadCalc</b> sub-project to the LandXML file. When this is toggled on, the Select Surfaces button is enabled. Click on the Select Surfaces button to select the desired cross-section surfaces to export.
<b>Select Surfaces</b>	Clicking on this button allows you to select which cross-section surface data to export to the LandXML file. All cross-section surfaces for the selected <b>RoadCalc</b> sub-project display. This option is only available when the Include Cross-Section Data option is toggled on.  For more information, see <i>Select Surfaces</i> , below.
<b>Group Name</b>	This edit field displays the name of the road group being exported. The Group Name edit field can be left blank. When the Group Name is left blank, a Group Name of <Unnamed> is displayed in the LandXML Explorer on the Export LandXML dialog box (Figure 2-15 on page 31). Group names must be unique within each element type; therefore, only one group can be added without entering a Group Name.
<b>Group Description</b>	Toggle this option on if you want to enter a description for the road group. The Group Description only displays in the LandXML file created when you export.
<b>Group State</b>	Toggle this option on if you want to select a state for the road group. This is in addition to the state that can be set for the project. The available states to select from are Abandoned, Destroyed, Existing, and Proposed. If the option is not toggled on, the Group State is "Not Specified." The Group State only displays in the LandXML file created when you export. Group states can be used in some software packages to limit the LandXML data that is imported.

## Select Surfaces

The Select Surfaces command allows you to select the cross-section surfaces to export to the LandXML file. All cross-section surfaces display in the Select Surfaces dialog box (Figure 2-21 on page 44), allowing you to select the desired surfaces. When exporting Road data, you may export the "topmost" design surface by selecting the Merged Design surface in the Select Surfaces dialog box.

To select the original, design, or actual surfaces contained within the sub-project, click in the box next to the surface name you want to select.



**Figure 2-21 Select Surfaces Dialog Box**

### Select Surfaces Dialog Box Definition

Option	Function
<b>Surface Listing</b>	This list box displays all of the Original, Design and Actual cross-section surfaces for the selected <b>RoadCalc</b> subproject. In addition, a Merged Design option is available that allows you to export "topmost" design surface. Click in the box next to the surface name to select the cross-section surface.

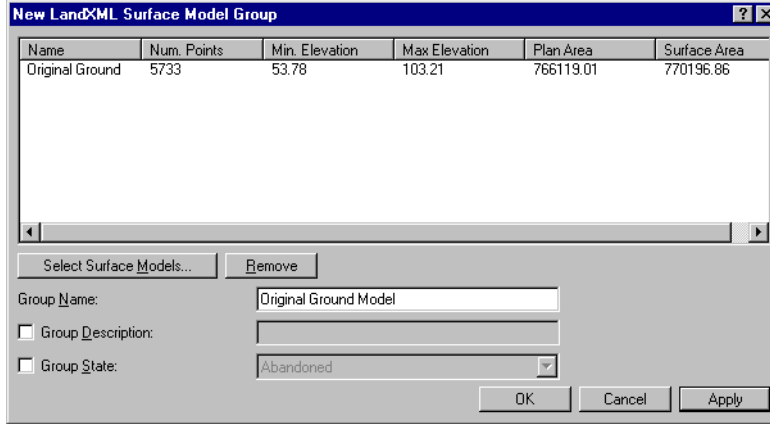
## New LandXML Surface Model Group

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT LANDXML L ⇨ EDIT ⇨ NEW SURFACE MODEL GROUP

The New LandXML Surface Model Group command allows you to create a group of surface models to export to a LandXML file. You can select multiple surface models to add to the list from the current project to be exported. Any surface models can be removed from the list that should not be exported. The data contained in the LandXML file includes the triangle points and triangle faces definitions.

Once the desired surface models are selected to export, enter a Group Name for the surface models. The Group Name is optional, so it can be left blank. However, the group names within the Surface Models section need to be unique. Therefore, if you add another group of surface models, you must supply another Group Name.

Optionally, you can specify a Group Description and a Group State. The description and state only display in the LandXML file. Some software packages can use the Group State to limit the LandXML data to import.



**Figure 2-22 New LandXML Surface Model Group Dialog Box**

### **New LandXML Surface Model Group Dialog Box Definitions**

<b>Option</b>	<b>Function</b>
<b>Name</b>	This column displays the name of the surface model selected to be exported to the LandXML file.
<b>Number of Points</b>	This column lists the total number of points that were used for the surface model construction.
<b>Minimum Elevation</b>	This column displays the elevation of the lowest triangle vertex within the surface model file.
<b>Maximum Elevation</b>	This column displays the elevation of the highest triangle vertex within the surface model file.
<b>Plan Area</b>	This column displays the plan area of the surface model. This value is the calculated planar area of the surface model. This value may be displayed in square feet or acres in an English project and square meters or hectares in a metric project.
<b>Surface Area</b>	This column displays the surface area of the surface model. This value is the calculated surface area of the 3-D surface model. This value may be displayed in square feet or acres in an English project and square meters or hectares in a metric project.
<b>Select Surface Models</b>	Clicking on this button displays the Select Surface Model dialog box, allowing you to select a single surface model or multiple surface models to export to the LandXML file.
<b>Remove</b>	Clicking on this button removes the highlighted surface model from the list.
<b>Group Name</b>	This edit field displays the name of the surface model group being exported. The Group Name edit field can be left blank. When the Group Name is left blank, a Group Name of <Unnamed> is displayed in the LandXML Explorer on the Export LandXML (Figure 2-15 on page 31) dialog box. Group names must be unique within each element type; therefore, only one group can be added without entering a Group Name.

## New LandXML Surface Model Group Dialog Box Definitions

Option	Function
<b>Group Description</b>	Toggle this option on if you want to enter a description for the surface model group. The Group Description only displays in the LandXML file created when you export.
<b>Group State</b>	Toggle this option on if you want to select a state for the surface model group. This is in addition to the state that can be set for the project. The available states to select from are Abandoned, Destroyed, Existing, and Proposed. If the option is not toggled on, the Group State is "Not Specified." The Group State only displays in the LandXML file created when you export. Group states can be used in some software packages to limit the LandXML data that is imported.

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## Export SDMS/CAiCE Road Data

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT SDMS /CA ICE ROAD DATA


KEY-IN COMMAND: dt sdmsexp

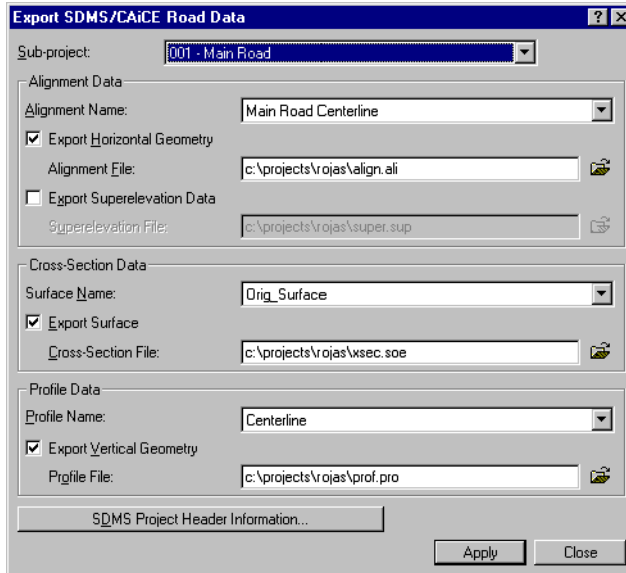
The Export SDMS Road Data command allows you to export alignment, superelevation, cross-section and profile data from a **RoadCalc** sub-project. Alignment, superelevation and profile data is exported in an SDMS format and cross-section data is exported in a Station, Offset, Elevation format. When the sub-project is selected, all alignment names, cross-section surfaces, and profile names are displayed, allowing you to export them. The superelevation data can only be exported for the centerline alignment (first alignment listed in the Alignment Name drop list).

The horizontal geometry can be exported for all alignments within the selected sub-project. Since the SDMS file can only contain one alignment, each alignment needs to be exported to a separate SDMS file with an extension of ALI (example: c:\export\align1.ali). When exporting the centerline alignment (first alignment listed in the Alignment Name drop list), the superelevation data can also be exported to an SDMS file with an extension of SUP (example: c:\export\super.sup). The station, offset, and elevation data can be exported for all cross-section surfaces within the current sub-project. Each surface should be exported to a separate ASCII file with an extension of SOE (example: c:\export\xsec1.soe). The vertical geometry can be exported for all profiles within the selected sub-project. Again, since the SDMS file can only contain one profile, each profile is exported to a separate SDMS file with an extension of PRO (example: c:\export\prof1.pro).

All three SDMS files contain header information at the beginning of the file. You can control what is written to the header by selecting the SDMS Project Header Information option. Once the information is changed in a project, every file exported from that project defaults to the same header information.

After toggling on the desired data and specifying the destination file names, select the Apply button to write the data out. A message box will display, stating the files have been successfully written. The Export SDMS/CAiCE Road Data dialog box remains open, allowing you to export additional road data.

 If a file already exists with the same name, you will be prompted to choose whether to replace the file.



**Figure 2-23 Export SDMS/CAiCE Road Data Dialog Box**

### Export SDMS/CAiCE Road Data Dialog Box Definitions

Option	Function
<b>Sub-project</b>	This drop list displays all of the <b>RoadCalc</b> sub-projects within the current project. Select the sub-project to export road data from. All alignments, cross-section surfaces, and design profiles for the selected sub-project are displayed so they can be exported.
<b>Alignment Name</b>	This drop list displays all of the horizontal alignments for the selected sub-project. The horizontal geometry for the alignment selected in the drop list will be exported to the alignment file specified when the Export Horizontal Geometry option is toggled on.
<b>Export Horizontal Geometry</b>	Toggle on this option to export the horizontal geometry for the alignment selected in the Alignment Name drop list. When this option is toggled on, the Alignment File edit control and Save As SDMS Alignment file icon are enabled.
<b>Alignment File</b>	Specify the alignment file to export the horizontal geometry for the selected alignment by entering the path and file name or clicking on the Save As SDMS Alignment file icon. The default extension on the file name is ALI (example: c:\export\align1.ali). This option is only available when the Export Horizontal Geometry option is toggled on.

## Export SDMS/CAiCE Road Data Dialog Box Definitions

Option	Function
<b>Export Superelevation Data</b>	Toggle on this option to export the superelevation data for the centerline alignment. When this option is toggled on, the Superelevation File edit control and Save As SDMS Superelevation file icon are enabled. The Export Superelevation Data option is only available when the Alignment Name drop list is set to the centerline alignment for the selected sub-project (first item in the drop list).
<b>Superelevation File</b>	Specify the superelevation file to export the superelevation data for the centerline alignment by entering the path and file name or clicking on the Save As SDMS Superelevation file icon. The default extension on the file name is SUP (example: c:\export\super.sup). This option is only available when the Export Superelevation Data option is toggled on.
<b>Surface Name</b>	This drop list displays all of the Original, Design, and Actual cross-section surface names for the selected sub-project. The station, offset, and elevation data for the selected surface will be exported to the cross-section file specified when the Export Surface option is toggled on.
<b>Export Surface</b>	Toggle on this option to export the cross-section surface data for the selected surface name. When this option is toggled on, the Cross-Section File edit control and Save As Station Offset Elevation file icon are enabled.
<b>Cross-Section File</b>	Specify the cross-section file to export the cross-section surface data for the selected surface name by entering the path and file name or clicking on the Save As Station Offset Elevation file icon. The default extension on the file name is SOE (example: c:\export\xsec1.soe). This option is only available when the Export Surface option is toggled on.
<b>Profile Name</b>	This drop list displays all of the vertical alignments for the selected sub-project. The vertical geometry for the profile selected in the drop list will be exported to the profile file specified when the Export Vertical Geometry option is toggled on.
<b>Export Vertical Geometry</b>	Toggle on this option to export the vertical geometry for the profile selected in the Profile Name drop list. When this option is toggled on, the Profile File edit control and Save As SDMS Profile file icon are enabled.
<b>Profile File</b>	Specify the profile file to export the vertical geometry for the selected profile by entering the path and file name or clicking on the Save As SDMS Profile file icon. The default extension on the file name is PRO (example: c:\export\prof1.pro). This option is only available when the Export Vertical Geometry option is toggled on.
<b>SDMS Project Header Information</b>	Select this option to enter the project header information written to the SDMS alignment, superelevation, and profile files. For more information, see <i>SDMS Project Header Information</i> on page 49.

## SDMS Project Header Information

DATA TRANSFER ⇨ TRANSFER ⇨ EXPORT SDMS /CAiCE ROAD DATA ⇨ SDMS PROJECT HEADER INFORMATION

The SDMS Project Header Information is written to alignment, superelevation, and profile SDMS files when exporting road data using the Export SDMS/CAiCE Road Data command. The first time the SDMS Project Header Information dialog box is displayed for the project, default values will display. The default values for the Unit Comment and Unit of Length are set according to the project units. When in an English project, the Unit Comment (CM:) will be ENGLISH and the Unit of Length (UL:) will be F. In a metric project, the Unit Comment (CM:) will be METRIC and the Unit of Length (UL:) will be M.

Any of the header information can be changed from the defaults provided, including leaving the information blank. Once the information is changed, the values are saved within the project. This way, all files within the project will be written with the same header information.

**Figure 2-24 SDMS Project Header Information Dialog Box**

### SDMS Project Header Information Dialog Box Definitions

Option	Function
<b>Unit Comment (CM)</b>	This comment added to the project header in the SDMS file displays the units the road data is exported with. This comment is automatically filled in with "ENGLISH" when in an English project or "METRIC" when in a metric project.
<b>Unit of Length (UL)</b>	This comment added to the project header in the SDMS file displays the unit of length the road data is exported with. This comment is automatically filled in with "F" for feet or "M" for meters.

## SDMS Project Header Information Dialog Box Definitions

Option	Function
<b>Horizontal Information Comment (CM)</b>	This comment added to the project header in the SDMS file displays information about the horizontal alignment. The default value displayed is "--HORIZONTAL INFORMATION--".
<b>Grid or Ground Comment (CM)</b>	This comment added to the project header in the SDMS file displays information about grid/ground information. The default value displayed is "(Select one)GRID or GROUND".
<b>Combination Factor (CF)</b>	This is added to the project header in the SDMS file and displays information about the combination factor. The default value displayed is "1.00000000".
<b>Horizontal Datum (HD)</b>	This is added to the project header in the SDMS file and displays information about the horizontal datum used. The default value displayed is "(Select one)NAD 83(91) or NAD 27".
<b>Coordinate System (CS)</b>	This is added to the project header in the SDMS file and displays information about the coordinate system used. The default value displayed is "(Value such as WSPCS, WCCS, ASSUMED)".
<b>Zone (ZN)</b>	This is added to the project header in the SDMS file and displays information about the zone used. The default value displayed is "(State 48## or County 92##)".
<b>Vertical Information Comment (CM)</b>	This comment added to the project header in the SDMS file displays information about the vertical information. The default value displayed is "--VERTICAL INFORMATION--".
<b>Vertical Datum (VD)</b>	This is added to the project header in the SDMS file and displays information about the vertical datum. The default value displayed is "(Select one)NGVD 29 or NAVD88".

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## Transfer Settings

DATA TRANSFER ⇨ TRANSFER ⇨ SETTINGS

KEY-IN COMMAND: dtset

ICON:

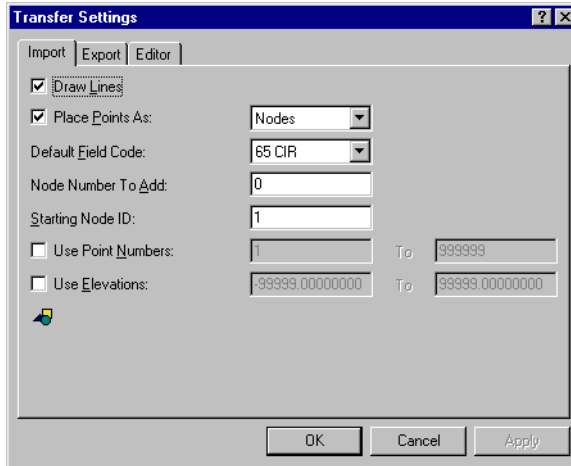


You may choose to modify how your information is imported or exported. You may also specify the editor to use when editing files. See *Transfer Settings – Import Tab* on page 51, *Transfer Settings – Export Tab* on page 52, and *Transfer Settings – Editor Tab* on page 54.

## Transfer Settings – Import Tab

DATA TRANSFER ⇨ TRANSFER ⇨ SETTINGS ⇨ IMPORT TAB

The Transfer Settings – Import Tab allows you to modify how the file information is imported. You have options for what points you want placed and how you want them placed in the project.





**Figure 2-25 Transfer Settings Dialog Box – Import Tab**

### Transfer Settings Dialog Box – Import Tab Definitions

Option	Icon	Function
<b>Draw Lines</b>		If you select a file format that is linework, you can toggle on this option to have lines drawn between the points imported into the CAD graphic.
<b>Place Points As</b>		<p>You may choose whether the information is imported as Eagle Point Nodes, points, characters, blocks (AutoCAD/BricsCad) or cells (MicroStation).</p> <ul style="list-style-type: none"> <li>➔ <b>Nodes:</b> A Node is a point object that contains a symbol and attributes for information such as ID (number), elevation, coordinates, description, and station/offset.</li> <li>➔ <b>Points:</b> These are point objects within the CAD graphic. They have coordinate and elevation values associated with them because of their location within the CAD graphic.</li> <li>➔ <b>Character:</b> A single character of text. Type the actual character you want to display the point as in the edit field.</li> <li>➔ <b>Cell/ Block:</b> You may place a cell (MicroStation) or a block (AutoCAD/BricsCad). Type the cell name (provided that it is loaded in the active cell library) or block name (provided that it is in the CAD search path.)</li> </ul>

## Transfer Settings Dialog Box – Import Tab Definitions

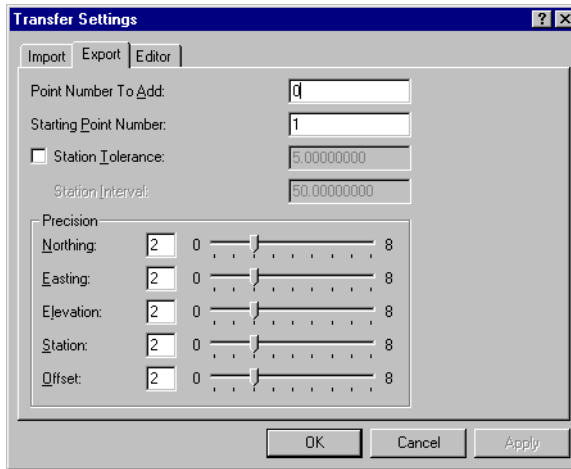
Option	Icon	Function
<b>Default Field Code</b>		<p>If you are importing the information as Nodes, you may choose which Field Code to use for the points as they are being transferred into the CAD graphic. This determines the symbol and attributes of the Nodes as they are placed.</p> <p> <i>Verify that the default Field Code selected has the Node ID attribute enabled, or the points using that Field Code will not import.</i></p>
<b>Node Number To Add</b>		<p>You may add a number to each Node being imported. For example, if the Node IDs 1, 2, and 3 exist in the CAD graphic or database and your Nodes being imported start with a value of 1, you can add 100 to the Nodes being imported so the new numbers would start with 101 and continue from there.</p>
<b>Starting Node ID</b>		<p>If the file you are importing does not contain point numbers and you want to place Nodes into the project, specify the Node ID that you want to start numbering the points with.</p>
<b>Use Point Numbers</b>		<p>You may import points only within a certain number range from the file. If the option is toggled off, all of the points transfer.</p>
<b>Use Elevations</b>		<p>You may import points only within a certain elevation range from the file. If the option is toggled off, all of the points transfer.</p>
<b>CAD Settings</b>		<p>This icon allows you to specify the layer/level and color for Nodes and points that are placed in CAD using the Import command.</p>

## Transfer Settings – Export Tab

DATA TRANSFER ⇨ TRANSFER ⇨ SETTINGS ⇨ EXPORT TAB

The Transfer Settings – Export Tab allows you to choose the precision of the points to be exported. You also have the option to add a Node ID to all of the exported points to help

avoid the occurrence of duplicate Nodes from those already in the file, and specify the starting point number when exporting a point to a format, including a point number.



**Figure 2-26 Transfer Settings Dialog Box – Export Tab**

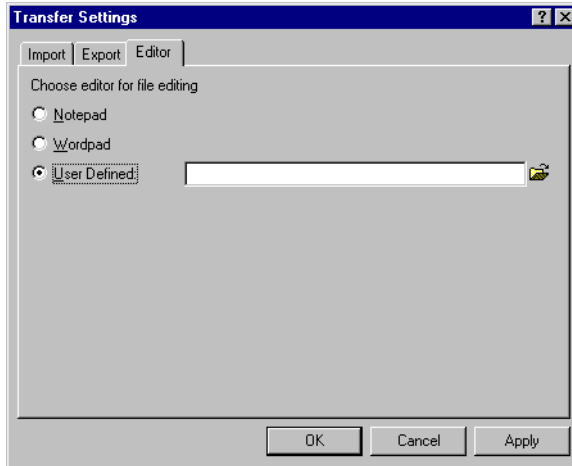
### Transfer Settings Dialog Box – Export Tab Definitions

Option	Function
<b>Point Number To Add</b>	You may type a Node ID value to add to each point to be exported. This value prevents duplicate Nodes from being written to the file.
<b>Starting Point Number</b>	This edit field allows you to specify a point number to start at when you are exporting points.
<b>Station Tolerance</b>	Toggle this option on if you want to force Nodes or points to fall on an exact station value. These points are assigned to an exact station value (determined by the station interval) when they fall within the tolerance specified.
<b>Station Interval</b>	This option is available when the Station Tolerance option is toggled on. This is used to determine what station values are available for which to assign Nodes or points. This should be set to the same interval that the Nodes or points are set at. The Station Interval is used as follows: If the alignment begins at station 10+42.33 and the interval specified is 50 the first station is 10+42.33, the next would be 10+50, then 11+00 and so on.
<b>Precision</b>	Use the slide bars to set the precision for the exported information or type a value from 0 to 8. If you have defined your own space-delimited format be sure you have indicated a large enough field width corresponding to the coordinates and precision set here.

## Transfer Settings – Editor Tab


DATA TRANSFER ⇨ TRANSFER ⇨ SETTINGS ⇨ EDITOR TAB


The Transfer Settings – Editor Tab allows you to select what editor to use when editing a file. You may choose Notepad or WordPad or type the path and name of the editor of your choice.



**Figure 2-27 Transfer Settings Dialog Box – Editor Tab**

### Transfer Settings Dialog Box – Editor Tab Definitions

Option	Icon	Function
<b>Notepad</b>		Turn this radio button on if you want to use Notepad as the editor when editing a file.
<b>Wordpad</b>		Turn this radio button on if you want to use WordPad as the editor when editing a file.
<b>User Defined</b>		Turn this radio button on if you want to choose which editor to use. Type the path and name of the editor that you choose to edit with. For example, you might type C:\DOS\EDIT for the DOS editor, or a different path to use Microsoft Word.

 If **Data Transfer** is unable to find WordPad on your computer, select User Defined and select WORDPAD.EXE from the Select User Defined Editor dialog box or type the path to WORDPAD.EXE.

✓ When using a user-defined editor, be sure to save the document as a text file (TXT) to prevent a header or footer from being written by the editor to the file.

# ***FORMATS***

In this chapter:

*Create User Formats* ..... 56

CHAPTER

3

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# Create User Formats

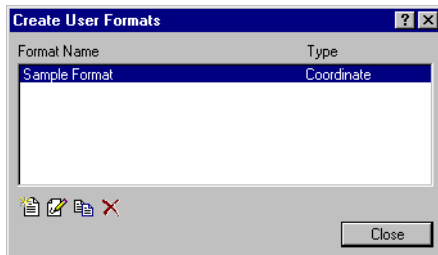
DATA TRANSFER ⇨ FORMATS ⇨ CREATE

KEY-IN COMMAND: createformat

ICON: 





You may create a new user format to handle the importing and exporting of data if the desired format does not already exist in the list of supported formats. This allows you the flexibility of being able to import or export points using any valid format.

You can create either a coordinate type format or a cross-sectional type format. You may also modify, copy, and delete highlighted format names from the list box. The entire list of user formats may be printed to a file or sent directly to the printer.



**Figure 3-1 Create User Formats Dialog Box**

## Create User Formats Dialog Box Definitions

Option	Icon	Function
<b>New User Format</b>		You can set up your own format for transferring files by adding a user format to the list. See <i>New User Format</i> on page 57 for more information.
<b>Modify User Format</b>		You can modify any user format that has already been created. See <i>New User Format</i> on page 57 for more information.
<b>Copy User Format</b>		You can create a new user format by copying an existing format. See <i>Copy User Format</i> on page 61 for more information.
<b>Delete User Format</b>		You can select a user format to delete.

## New User Format

DATA TRANSFER ⇨ FORMATS ⇨ CREATE ⇨ NEW USER FORMAT

You may create a new user format to handle the importing and exporting of data if a file format does not already exist in the list of supported formats. This allows you the flexibility of being able to import or export points using any valid format.

Create your format by using the single character buttons along with the specified field width, or type the characters directly in the field. When you use the buttons on the dialog box, the amount specified in the Field Width is used to enter that many of the character you selected. For example, if your field width for point numbers in your format should be limited to eight characters, enter 8 in the Field Width and select the P button. This inserts eight letter P's into the format.

You can create either a coordinate type format or a cross-sectional type format. The files are also classified as either being space-dependent or delimited file formats.

When creating a space-delimited format, the Field Width controls how many characters are allowed or specified in your file. Be sure to have a large enough field width to accommodate your coordinates and the amount of precision you desire.

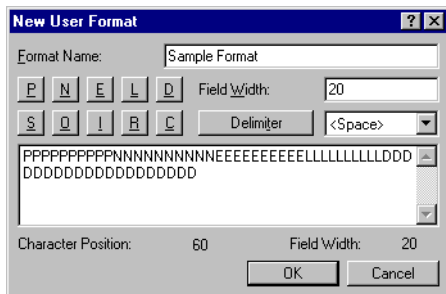




Figure 3-2 New User Format Dialog Box

### New User Format Dialog Box Definitions

Option	Function
<b>Format Name</b>	You must type a unique name for the format. A maximum of 32 characters can be entered for the name.
<b>P</b>	This is the field identifier for a point number or Node ID.
<b>N</b>	This is the field identifier for a Northing (Y) coordinate.
<b>E</b>	This is the field identifier for an Easting (X) coordinate.
<b>L</b>	This is the field identifier for an Elevation (Z) coordinate.
<b>D</b>	This is the field identifier for a description.
<b>S</b>	This is the field identifier for a station value.

## New User Format Dialog Box Definitions

Option	Function
O	This is the field identifier for an offset value.
I	This is the field identifier for an instrument height value.
R	This is the field identifier for a rod reading or height of target value.
C	This is the field identifier for a comment.  This option may be used to add additional notes in the file or any other information that is not a valid field identifier.
Field Width	For space-dependent files, type the width of the field in characters and select the field identifier. This places the field identifier as many times as set in the field width.  This may be used to create/modify file formats that are defined where the characters position themselves in the format, and not by a delimiter.
Delimiter	For delimited files, select the delimiter from the drop list of delimiters and click on the Delimiter button to place the delimiter in the format. Valid delimiters include SPACE, ;, [ ] { } \ / ^ and !.

## QuickSteps

To create a user-defined format, complete the following steps:

**1. Select Formats → Create.**

The Create User Format dialog box (Figure 3-1 on page 56) displays.

**2. Click on the New User Format icon.**

The New User Format dialog box (Figure 3-2 on page 57) displays.

**3. Type the format name.**

**4. Enter the field width for the field identifier. You can use only integer values in this field.**

**5. For a delimited format, select the field identifier and delimiter.**

**6. For a space-dependent file, select the field identifier.**

**7. Repeat steps 4, 5, and 6 until the format is complete.**

**8. If a mistake was made, you may place your cursor in the Format edit field and type the correct format.**

**9. Click on OK to save your format.**

## Examples

To create a space-dependent, cross-sectional format to read the following file sample, complete the steps that follow on page 59.

File sample:

```
200.87874120 9493.479000009596.91300000339.36800105.01143
205.11789996 9556.311865569541.02650082328.3463121.027502
210.30032604 9569.246000009535.56900000336.843007.9807169
```

Compatible format:

```
SSSSSSSSSSSS NNNNNNNNNNNNEEEEEEEEEEEEEELLLLLLLLLLOOOOOOOOO
```

1. **Select Formats → Create → New User Format.**
2. **Type the name of the file format.**

This is a sample cross-sectional format.

 *The format is determined automatically by what field identifiers are included in the format.*

3. **Type 12 in the Field Width edit field.**

This is the number of fields in length that the station value edit field is in the file sample.

4. **Click on the S button once to place the S twelve times in the Format edit field.**

You can set the field width to 1 and click on the S button twelve times to get the same result.

5. **Select SPACE from the Delimiter drop list and press the Delimiter button two times to place two spaces in the file format.**

6. **Type 13 in the Field Width edit field and click on the N button to place the fields to represent the Northing (Y) coordinate.**

7. **Click on the E button to place the fields to represent the Easting (X) coordinate.**

8. **Type 9 in the Field Width edit field and click on the L button to place the fields to represent the Elevation (Z) coordinate.**

9. **Click on the O button to place the fields to represent the Offset value.**

The file format has been created.

10. **Click on OK to add the format to the list of user formats.**

You may also type this format directly in the Format edit field.

To create a comma-delimited coordinate format to read the following file sample, complete the steps that follow:

File sample:

5,	9481.370,	6019.330,	66.480,X
6,	9481.830,	5685.150,	58.390,X
28,	9192.510,	6082.810,	58.060,LOTCOR
29,	9198.720,	6082.080,	57.820,

Compatible format:

P,N,E,L,D

- 1. Select Formats → Create → New User Format.**
- 2. Type the name of the file format.**  
This is a sample coordinate format.
- 3. Type 1 in the Field Width edit field.**
- 4. Click on the P button to place the field identifier for point number.**
- 5. Select , (comma) from the Delimiter drop list and click on the Delimiter button once to place a comma after the P.**
- 6. Repeat steps 4 and 5 for N, E, L, and D.**  
The file format has been created.
- 7. Click on OK to add the format to the list of user formats.**

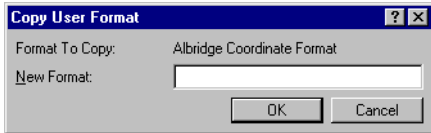
You may also type this format directly in the Format edit field.

# Copy User Format

DATA TRANSFER ⇨ FORMATS ⇨ CREATE ⇨ COPY USER FORMAT

You may create a new user format by copying an existing format and making modifications to the copied format.

You may be able to copy either a coordinate user format or a cross-sectional user format.



**Figure 3-3 Copy User Format Dialog Box**

## Copy User Format Dialog Box Definitions

Option	Function
<b>Format To Copy</b>	This is the highlighted format to copy from the Create User Formats dialog box (Figure 3-1 on page 56.)
<b>New Format</b>	You may type the new name of the copied format here.



# REPORT

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CHAPTER

4

# Report Nodes

DATA TRANSFER ⇨ REPORT ⇨ NODES

KEY-IN COMMAND: dtnode

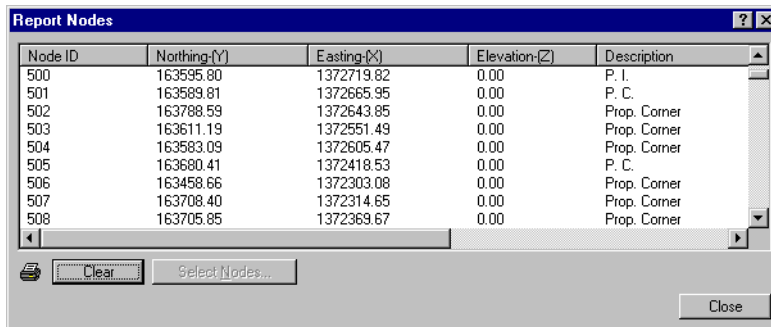
ICON:



The Report Nodes command may be used to build a report of selected Nodes from the project. You can use any of the standard methods of selecting Nodes from the CAD graphic or the database.

For more information, see *Select Nodes* on page 2.

The selected Nodes report information such as Node ID, Northing, Easting, elevation, description, layer/level, symbol, and Field Code. The report can then be printed in a user-definable format. You may choose the information and order in which the information should appear in the report. You are also able to save the printing options as a default setting.




**Figure 4-1 Report Nodes Dialog Box**

## Report Nodes Dialog Box Definitions

Option	Icon	Function
<b>Node ID</b>		This column displays the Node ID values.
<b>Northing-(Y)</b>		This column displays the Northing or Y-coordinate values of the Nodes.
<b>Easting-(X)</b>		This column displays the Easting or X-coordinate values of the Nodes.
<b>Elevation-(Z)</b>		This column displays the Elevation or Z-coordinate values of the Nodes.
<b>Description</b>		This column displays the description values.
<b>Layer/Level</b>		This column displays the layer (AutoCAD/BricsCad) or level (MicroStation) of each selected Node.

## Report Nodes Dialog Box Definitions

Option	Icon	Function
Symbol		This column displays the symbol name of each selected Node. This is either the name of the block (AutoCAD/BricsCad) or cell (MicroStation).
Field Code		This column displays the Field Code associated with each selected Node.
Report Options		You may select what Node information to print and in what order you want to print the report. These settings can be saved as the default for future reports. You may print the report to a file or the printer.  See <i>COGO Print Options</i> in the <b>COGO</b> manual.
Clear		You may clear the list of Nodes and reselect them from the project by clicking on this button.

## QuickSteps

To display the information about Nodes, complete the following steps:

**1. Select Report → Nodes.**

The Report Nodes dialog box (Figure 4-1 on page 64) displays.

**2. Choose the method by which you will select the Nodes to be included in the report.**

**3. Select the Nodes.**

The selected Nodes are listed in the Report Nodes dialog box with all the associated information.

**4. To clear the list of Nodes, click on the Clear button.**

**5. Click on the Print icon if you want to print the Nodes listed.**

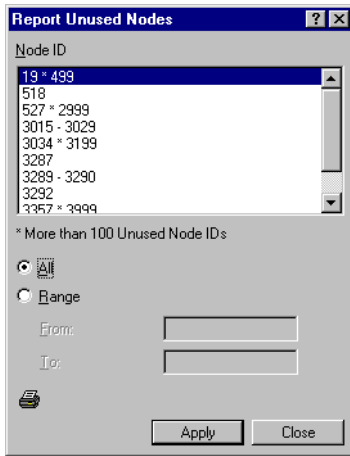
## Report Unused Nodes

DATA TRANSFER ⇨ REPORT ⇨ UNUSED NODES

KEY-IN COMMAND: dtunused


The Report Unused Nodes command may be used to see which Node IDs are currently not in use in the project. You can report the Node ID ranges available in the entire project

or check to see what Node IDs are not being used within a specified range of Node ID values.



**Figure 4-2 Report Unused Nodes Dialog Box**

### **Report Unused Nodes Dialog Box Definitions**

<b>Option</b>	<b>Icon</b>	<b>Function</b>
<b>Node ID</b>		This displays all of the Node IDs that have not been used in the project.
<b>All</b>		Turn this radio button on if you want to display all of the unused Nodes in the project.
<b>Range</b>		Turn this radio button on if you want to display all of the unused Nodes within the range specified. Enter the Node IDs that you want to search from and to in the From and To edit fields.
<b>Print Unused Nodes</b>		This allows you to print the unused Nodes that are listed according to the Print Setup in the <b>Eagle Point Menu</b> manual. For more information, see <i>Print Setup</i> in the <b>Eagle Point Menu</b> manual.

## **QuickSteps**

To display the unused Node IDs in your project, complete the following steps:

**1. Select Report → Unused Nodes.**

The Report Unused Nodes dialog box (above) displays. The Node IDs that have not been used in your project are displayed.

**2. Switch between All and Range to adjust the report as needed.**

**3. If you select the Range option, enter the Node ID range in the From and To edit fields and click on Apply.**


---

---

# Report Station/Offset

DATA TRANSFER ⇨ REPORT ⇨ STATION/OFFSET

KEY-IN COMMAND: dtstaoff

ICON: 

The Report Station/Offset command may be used to generate a station/offset report from any selected line, arc, spiral, complex object, or alignment.


You may select any line, arc, spiral, or complex object in the project to use as a basis for stationing. You may graphically select an alignment or choose one from the list of defined alignments in the project.


You can then select individual Nodes or points to report the station and offset values. The points/Nodes may be selected using any of the standard **COGO** selection methods available.

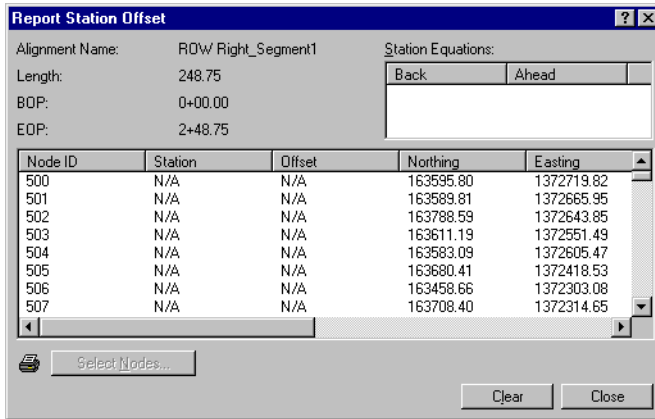
For more information on Node selection methods, see *Select Nodes* on page 2.

You may continue to build a selection set using different selection methods which update in the Report Station/Offset dialog box (Figure 4-3 on page 68). A corridor edge or maximum offset distance from the alignment may also be specified to further filter the selection set.

The report displays, if applicable, the Node ID, station, offset, Northing, Easting, elevation, description, CAD properties (layer/level), symbol, and Field Code for each point selected.

 *If the selected object is not an alignment, then a zero (0+00) station value is assumed at the nearest endpoint to where it was selected.*

 The printed report may be sorted by any value in the report, including station, offset, and Node ID.




**Figure 4-3 Report Station/Offset Dialog Box**

**Report Station/Offset Dialog Box Definitions**

Option	Icon	Function
<b>Alignment Name</b>		This displays the name of the selected alignment.
<b>Length</b>		This displays the overall length of the selected alignment or object.
<b>BOP</b>		This displays the beginning of project station value or the starting station of the selected alignment.
<b>EOP</b>		This displays the end of project station value or the ending station of the selected alignment.
<b>Station Equations</b>		This displays any station equations on the selected alignment.
<b>Node ID</b>		This column displays the Node ID values that have been selected.
<b>Station</b>		This column displays the reported station or distance along the selected alignment or object.
<b>Offset</b>		This column displays the reported offset or distance from the selected alignment or object.
<b>Northing</b>		This column displays the Northing or Y-coordinate values.
<b>Easting</b>		This column displays the Easting or X-coordinate values.
<b>Elevation</b>		This column displays the Elevation or Z-coordinate values.
<b>Description</b>		This column displays the description values for each Node selected.
<b>Layer/Level</b>		This column displays the layer (AutoCAD/BricsCad) or level (MicroStation) of each selected Node.
<b>Symbol</b>		This column displays the symbol name of each selected Node. This is either the name of the block (AutoCAD/BricsCad) or cell (MicroStation).
<b>Field Code</b>		This column displays the Field Code associated with each selected Node.

## Report Station/Offset Dialog Box Definitions

Option	Icon	Function
<b>Report Station Offset Print Options</b>		You may select what Node information and in what order you want to print the report. These settings can be saved as the default for future reports, if you toggle on that option. You may print the report to a file or to the printer.  For more information, see <i>COGO Print Options Dialog Box</i> in the <b>COGO</b> manual.
<b>Clear</b>		Use this option to clear the list of Nodes and reselect them from the project.

## QuickSteps

To report the station and offset values of Nodes or coordinates, complete the following steps:

### 1. Select Report → Station/Offset.

The Report Station/Offset dialog box (below) displays.

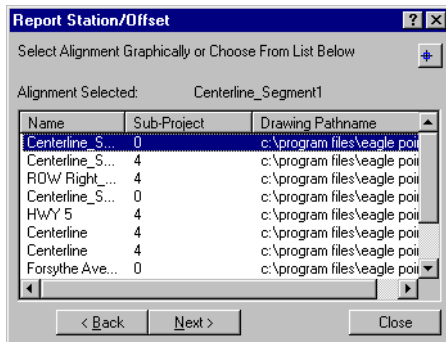
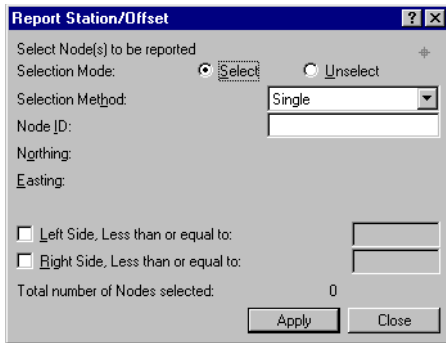


Figure 4-4 Report Station/Offset Dialog Box

### 2. Graphically select an alignment or object in CAD using the PIC button or highlight a defined alignment and click on Next.

The second screen of the Report Station/Offset dialog box (below) displays.



**Figure 4-5 Report Station /Offset Dialog Box**

**3. Choose the selection mode.**

The available options are Select and Unselect.

**4. Choose a selection method from the drop list.**

**5. Select the Nodes for which you want a station and offset report.**

**6. Specify a distance for the left and right corridor if desired.**

**7. Click on Apply.**

The Nodes display and the station/offset values are reported.

# Report Warnings

DATA TRANSFER ⇨ REPORT ⇨ WARNINGS

KEY-IN COMMAND: dterror


ICON: 

When importing data, the Report Warnings command lists any errors that occurred while processing the data file in the Report Warnings dialog box (below). General processing information may also be reported, depending on the data format selected.



**Figure 4-6 Report Warnings Dialog Box**

## Report Warnings Dialog Box Definitions

Option	Icon	Function
Print Warnings		This icon allows you to print the warnings to a printer or file. For more information on Print Setup, see <i>Print Setup</i> in the <i>Eagle Point Menu</i> manual.
Clear		Use this button to clear the current list of warnings in the dialog box.



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