

**OREGON
DEPARTMENT
OF
TRANSPORTATION**



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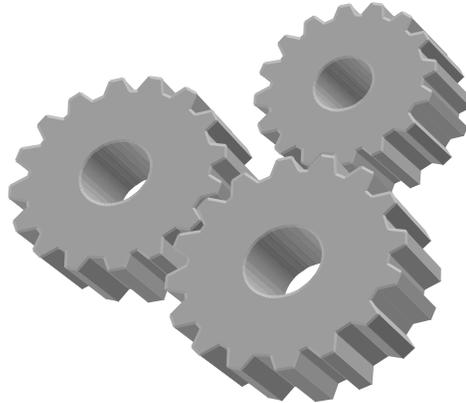
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User Tip

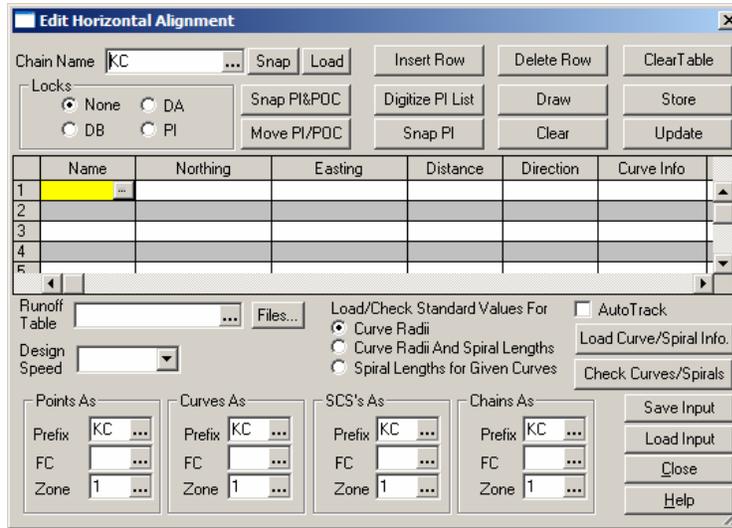
Title	Alignments
Product	Caice
Version	10 sp2
Date	March 23, 2004
Author	Bill Dye
Overview Import, export, and creation of alignments.	

Introduction

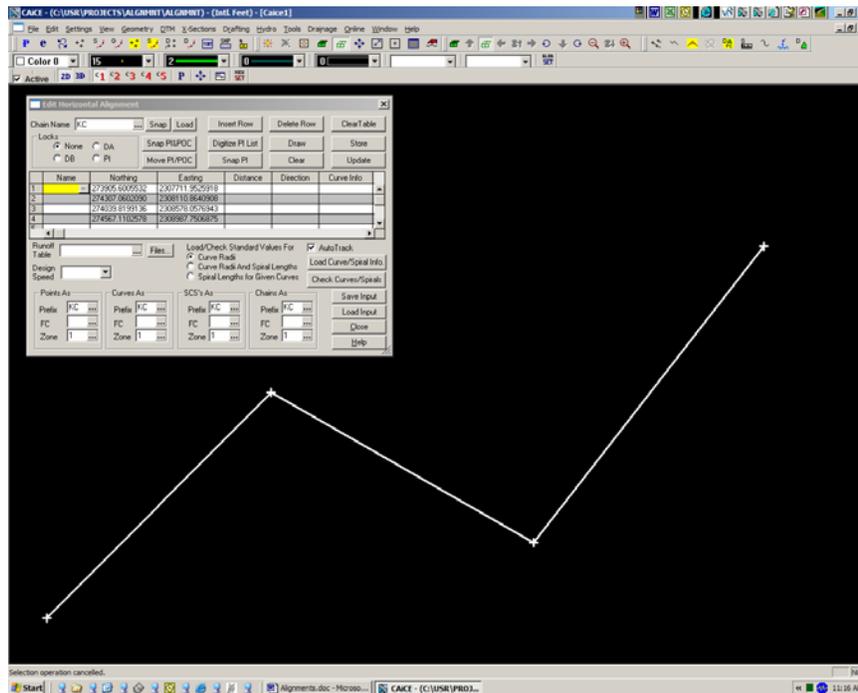
The intent of this document is to demonstrate the following for alignments: creation by graphics, creation by manual input of values, annotating, import from Inroads, export to Inroads, export to GSI, and output of reports.

Creation by Graphics

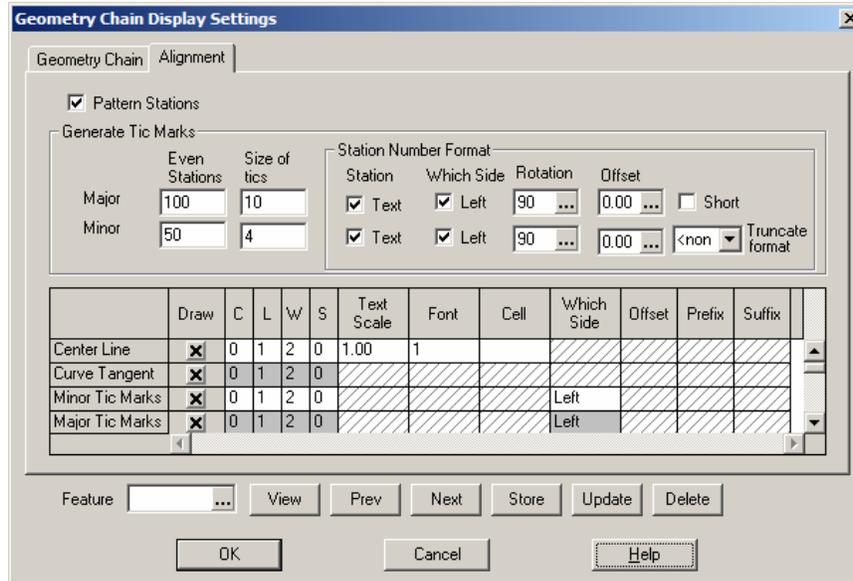
- Go to **Geometry> Geometry Chains> Edit Horizontal Alignment> Digitize PI List>**



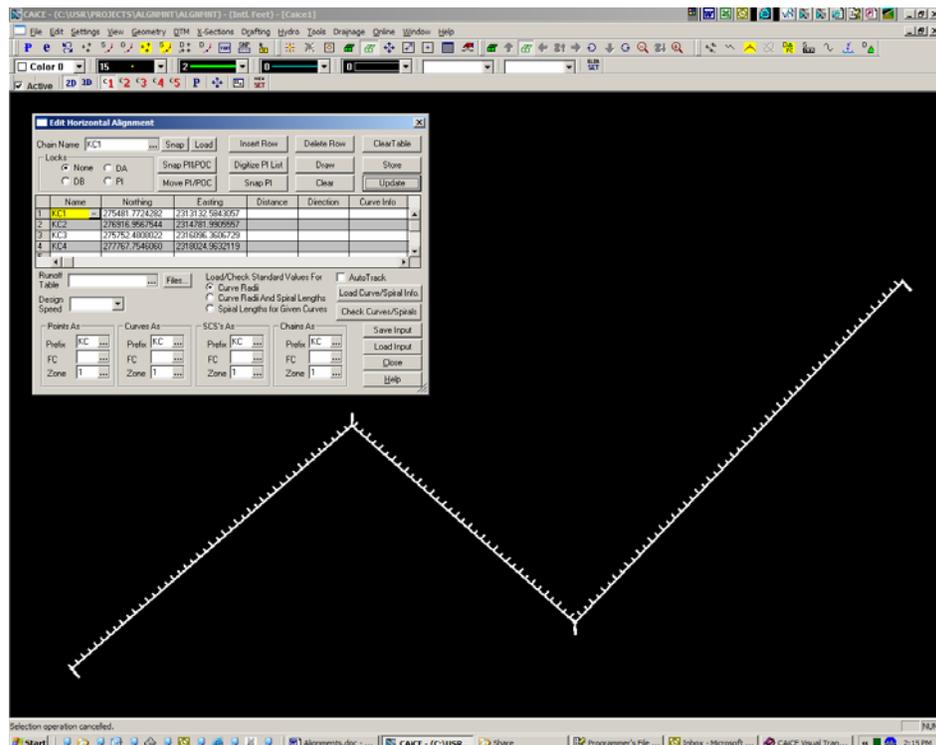
- Snap on the screen to locate your PI's then **Store>**.



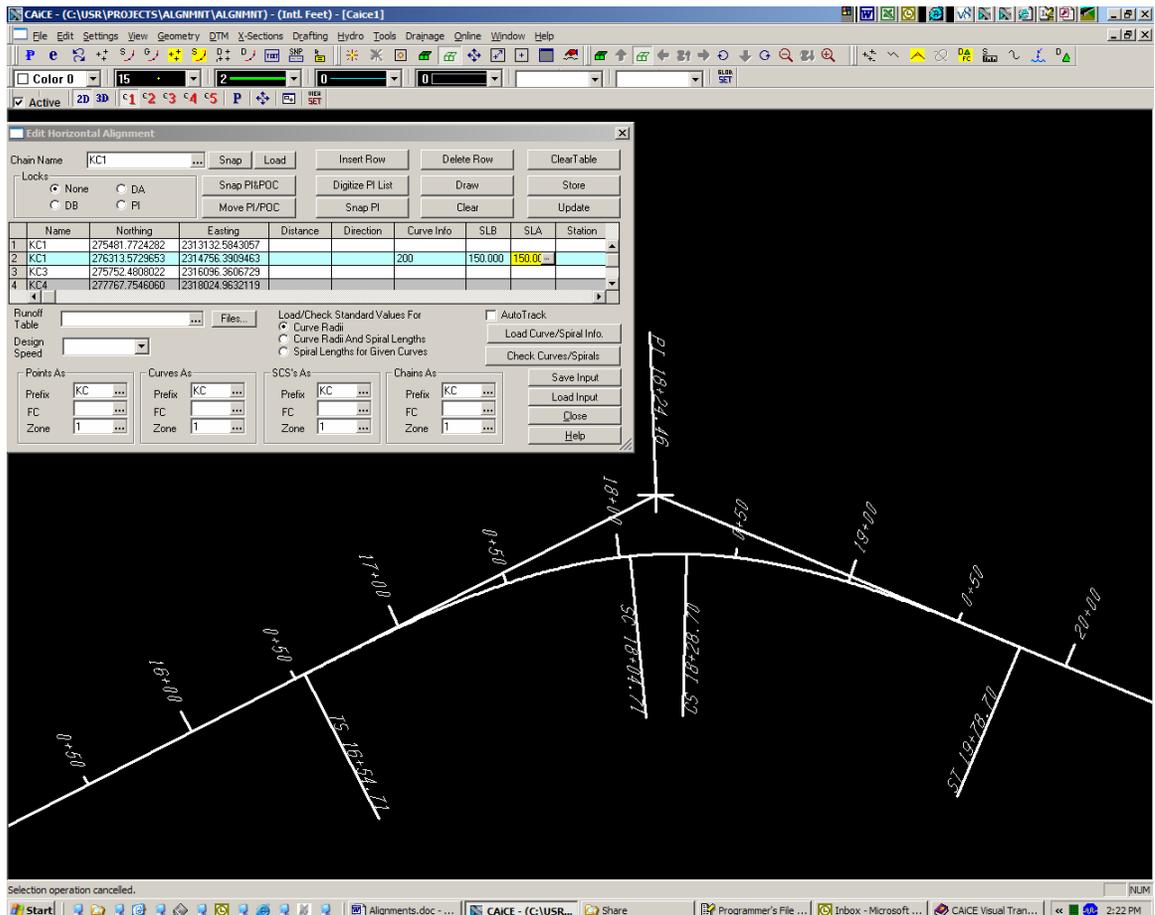
- To display stationing go **View> Geometry Chains> Object Display Settings> Alignment>**
- Select the desired options then **OK> & OK>**. All alignments will display with these attributes using **View> Geometry Chains>**, if Pattern Stations box is checked.



- To load an alignment for editing go to **Geometry> Geometry Chains> Edit Horizontal Alignment> Snap>** then snap on the alignment to activate it. If the options for Chain Name under the Picker (...) are used the **Load>** command must be used.



- With the alignment loaded, add curve and spirals for any PI by a left click on the spread sheet under Curve Info (Radius), SLB (Spiral length back), and SLA (Spiral length ahead), key in data, then **Update>**.
- When entering data in the Curve Info Field if you prefer to use the degree of curve instead of the radius just add spaces to separate degrees, minutes and seconds (2 20 30).

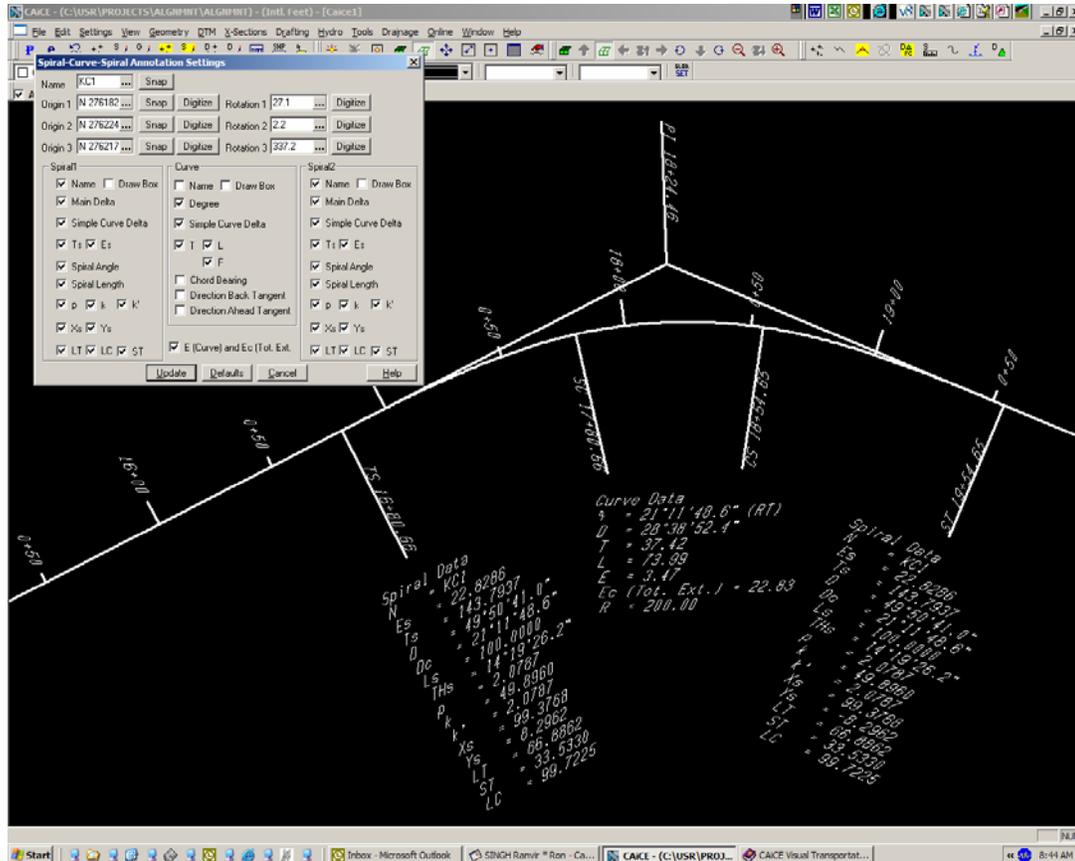


Entering alignments as shown on plans.

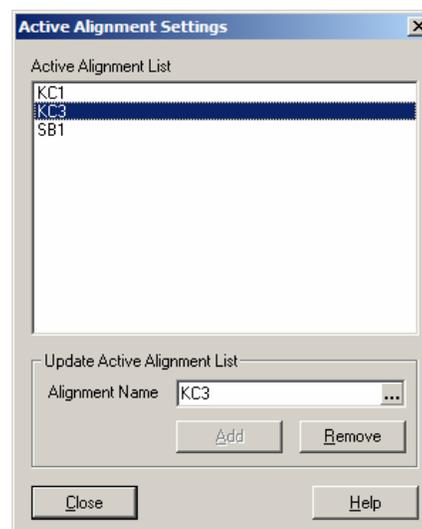
- To create PI's use **Geometry> Geometry Chains> Edit Horizontal Alignment>**
- Then enter PI Northings and Eastings on the spread sheet and **Store>**, or add coordinates by Snapping to some existing points in the file.
- Also use **Geometry> Geometry Chains> Edit Horizontal Alignment>**, to add the curve(s), and edit the beginning station.
- To change the direction for stationing use **Geometry> Geometry Chains> Store/Edit> Transpose>**

Displaying Curve Data

- To display curve data go to **View> Geometry> Spiral Curve Spirals> All>**, then **Geometry> Spiral Curve Spirals> Annotate>**, and **Snap>** to your alignment. This will enable you to control what you display, where it's placed, and how it's oriented.

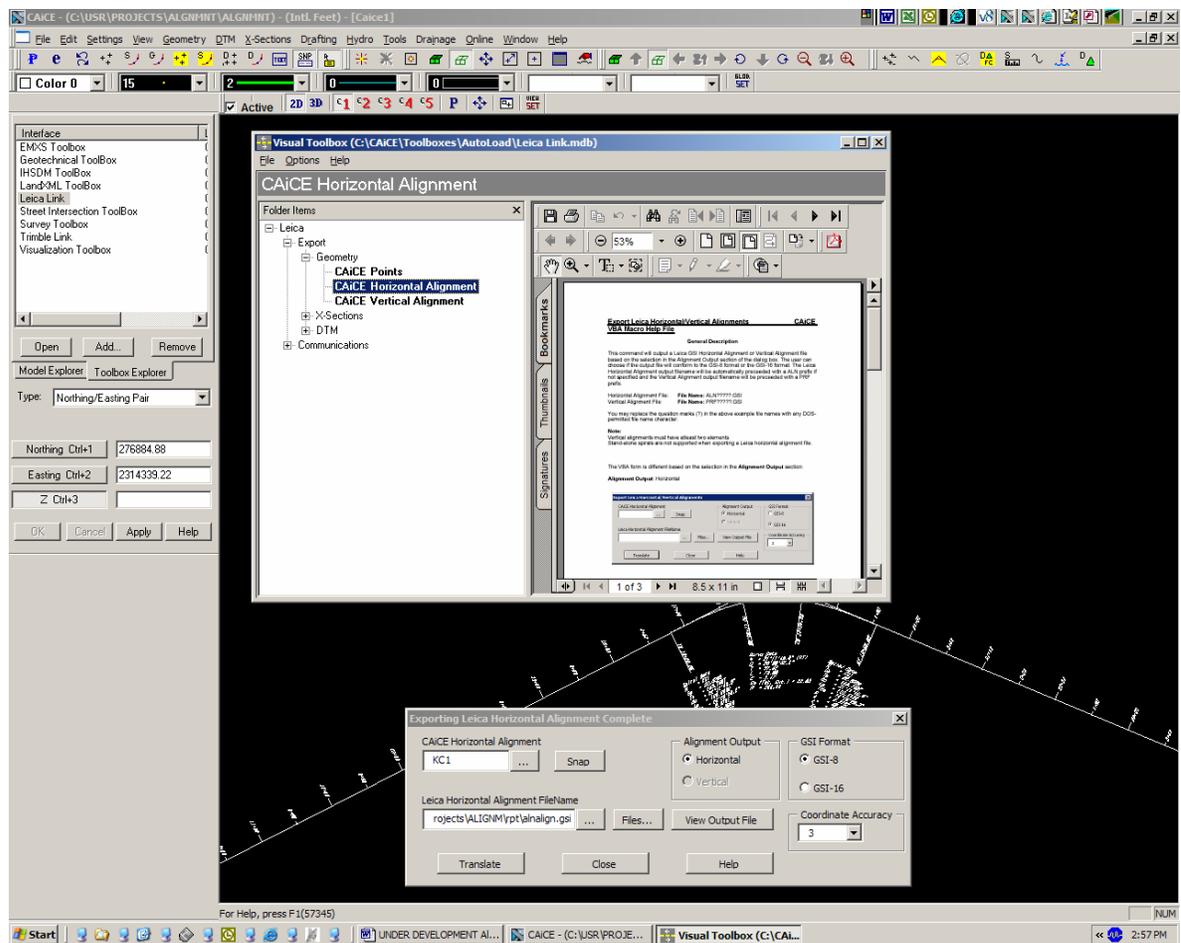


- To add an alignment to the Active Alignment List go to **Settings> Active Alignments...>**
- Now to activate your alignment go to the "Pull Down" on your Toolbar, and select it.
- With your alignment active and Toggle Data Tips on hovering over a point will display Station and offset.



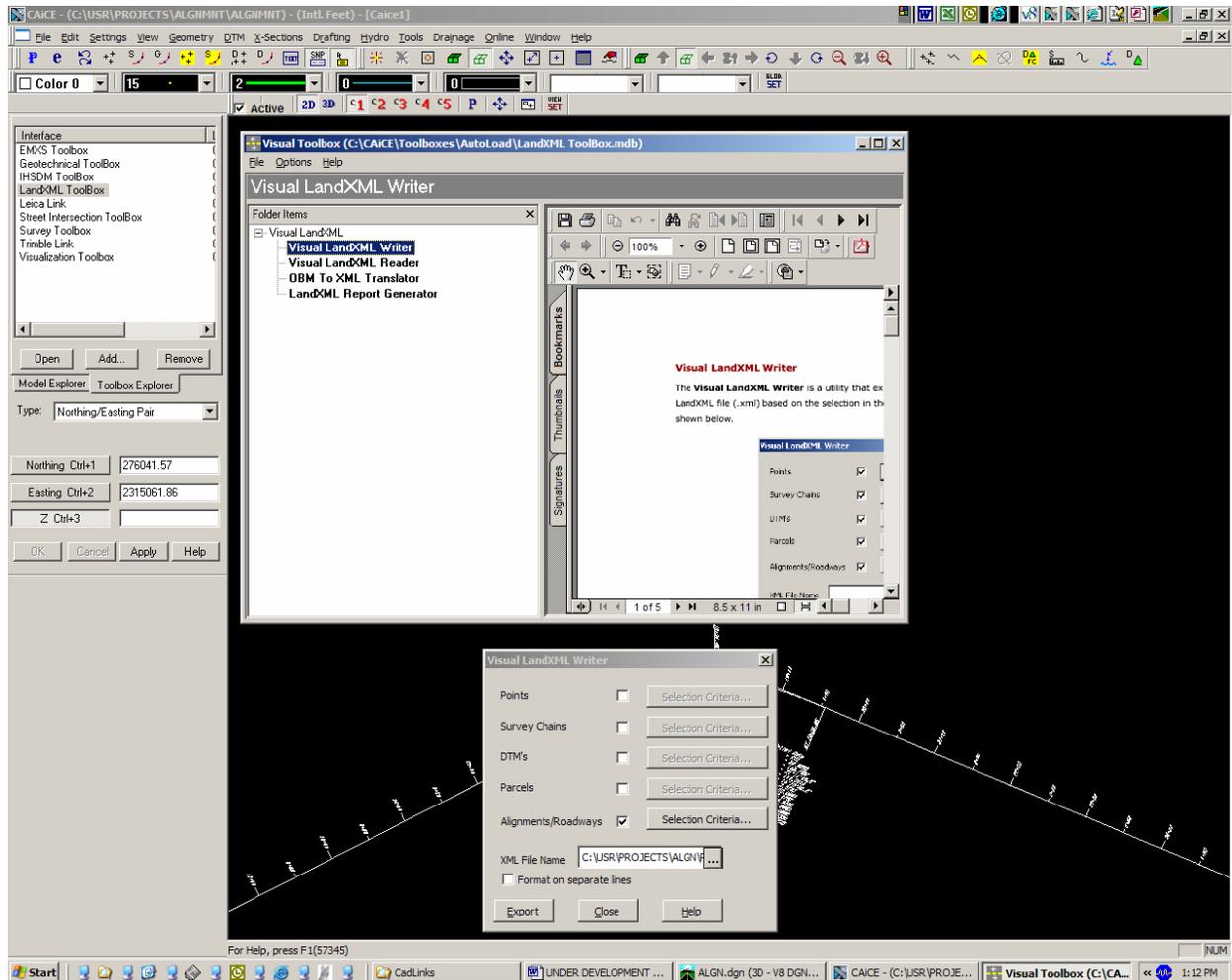
Exporting Caice Alignments to Gsi Format

- In Caice go to **Window> Explorer Center/Snap Bar> Toolbox Explorer>**
- **Leica Link> Leica> Export> Geometry> CAICE Horizontal Alignment>**
- Snap to your alignment
- Select your desired parameters enter a file name (max of 5 characters) then **Translate>**.



Exporting Caice Alignments to Inroads using LandXML

- In Caice go to **Window> Explorer Center/Snap Bar> LandXML Tool Box> Visual LandXML> Visual LandXML Writer>**
- If there is only have one alignment in your Caice Database just enter a XML File Name, and **Export>**.
- If you have more than one alignment in Caice go to **Selection Criteria>**, under **Objects ?>** select your Geometry Chain, then **Export>**.

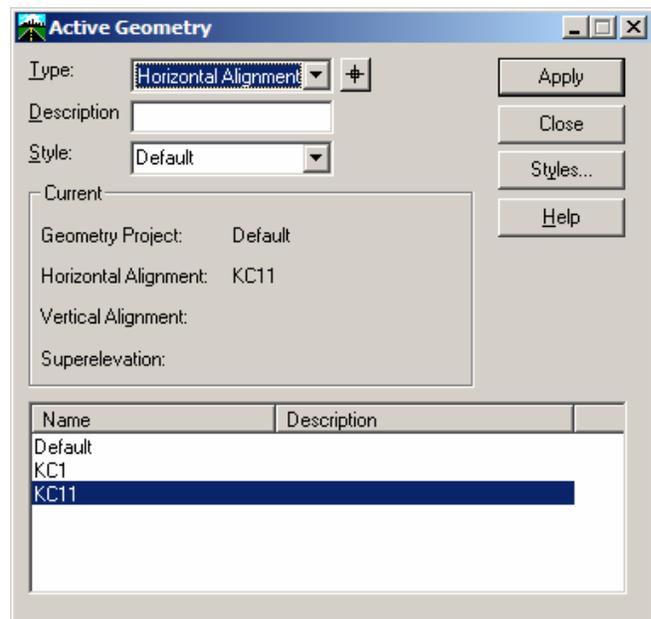
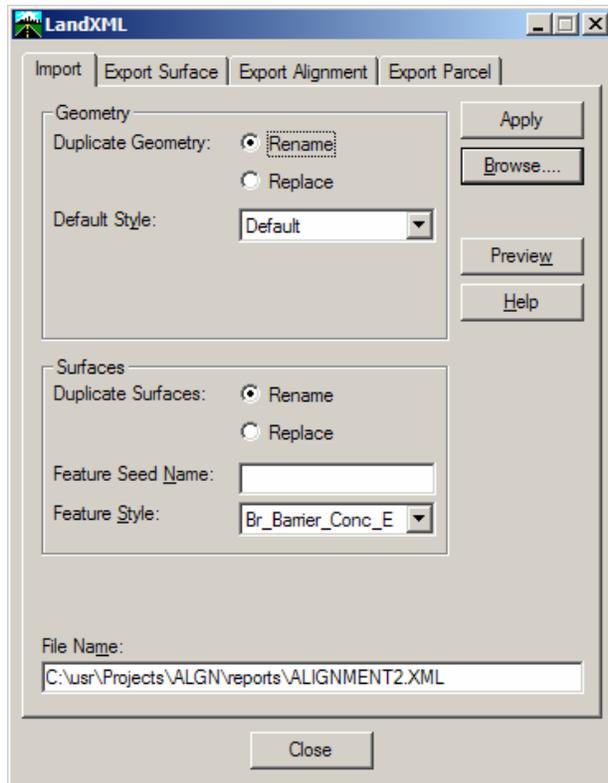


Note:

Format on separate lines: select this box if this XML file will be read with another LandXML Reader. If this is not selected and the XML file is attempted to be read with another LandXML Reader, it will be unreadable. If using only the CAiCE LandXML Reader to view this file, the box can be selected or de-selected; either way will not affect viewing the file in the CAiCE LandXML Reader.

Importing Caice LandXML Alignment files to Inroads

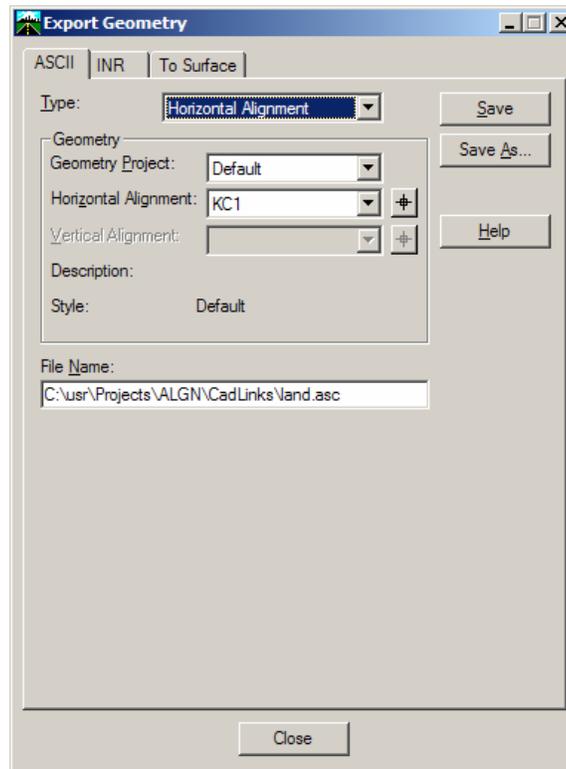
- Within Inroads go to **File> Translators> LandXML Translators> Import>**, then **Browse>** to your file and **Open> Apply>**.



- To make your alignment active go **Geometry> Active Geometry>**, for Type: select Horizontal Alignment, highlight alignment name, and **Apply>**.
- For viewing go to **Geometry> View Geometry> Active Horizontal>**.
- To display stationing go **Geometry> View Geometry> Stationing>**

Exporting Inroads Alignments to Caice

- The file format used for importing alignments to Caice is the short ASCII version created in Inroads by going **File> Export> Geometry> ASCII> Save>**, for the current active horizontal alignment.



- Example of ASCII format shown below.

* BENTLEY HORIZONTAL ALIGNMENT TO ASCII

*

* Alignment name: KC1

* Alignment description:

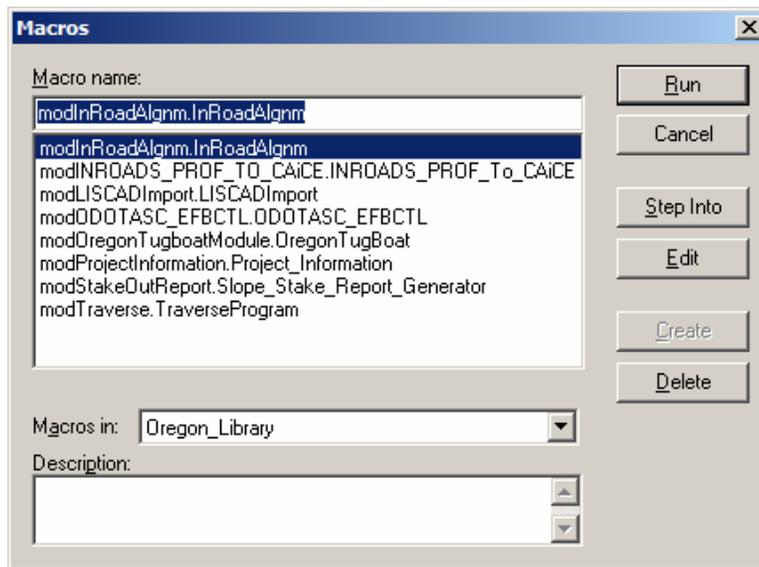
* Alignment style: Default

* Input Factor: 1.00

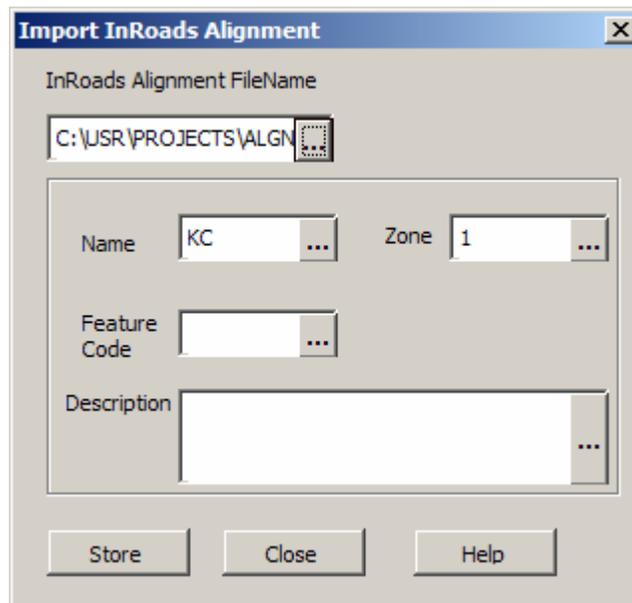
*

```
{ TYPE STATION RADIUS X_CRD Y_CRD DIRECTION SPI_LENGTH
LIN 0+00.00 0.00 2313132.58 275481.77 62^52'34" 0.00
SPI 16+80.66 0.00 2314628.41 276248.01 62^52'34" 100.00
CIR 17+80.66 200.00 2314720.64 276285.94 77^12'00" 0.00
SPI 18+54.65 0.00 2314794.16 276288.76 98^23'49" 100.00
LIN 19+54.65 0.00 2314889.03 276258.03 112^43'15" 0.00
LIN 32+63.56 0.00 2316096.36 275752.48 43^44'28" 0.00
LIN 60+52.98 0.00 2318024.96 277767.75 43^44'28" 0.00
```

- In Caice go to **Tools> Macros> VBA Macros>**, select Oregon_Library in the Macros in: window, highlight modInRoadAlgnm.InRoadAlgnm, and **Run>**.



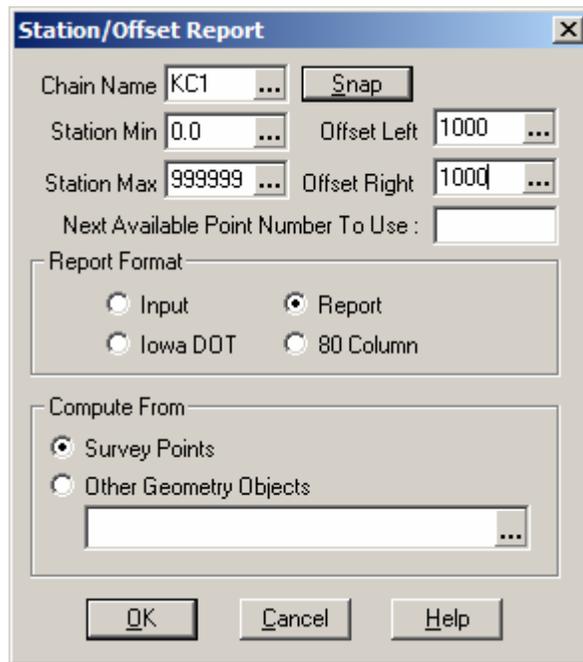
- Navigate to your ASCII Alignment file with Picker, and **Store>**.



- Go to **View> Geometry Chains>** to display the imported alignment.

Reports

- One example of a useful report can be accessed in Caice by going to **Geometry> Miscellaneous Reports> Station-Offset; Points to Chain>**.



- Example of report

CAICE
STATION & OFFSET REPORT FROM CHAIN KC1

```

0+00.00      0.00' EL -99999.990 CHAIN KC1 N 275481.77 E 2313132.58
            FEATURE: PD:          KC1
14+67.61     -128.76' EL -99999.900 CHAIN KC1 N 276265.48 E 2314380.09
            FEATURE: PD:          KC5
15+66.36      70.27' EL -99999.900 CHAIN KC1 N 276133.36 E 2314558.72
            FEATURE: PD:          KC7
16+97.45     -124.88' EL -99999.900 CHAIN KC1 N 276367.18 E 2314587.22
            FEATURE: PD:          KC6
18+29.47     -626.22' EL -99999.990 CHAIN KC1 N 276916.96 E 2314781.99
            FEATURE: PD:          KC2
20+04.05     -89.55' EL -99999.900 CHAIN KC1 N 276321.56 E 2314969.18
            FEATURE: PD:          KC9
21+31.23     103.47' EL -99999.900 CHAIN KC1 N 276094.39 E 2315011.93
            FEATURE: PD:          KC8
32+63.56      0.00' EL -99999.990 CHAIN KC1 N 275752.48 E 2316096.36

```