## LAB 11 - Creating a Closed Alignment

## **Chapter Objectives:**

- Create Cogo points through various Intersection Commands
- Generate Alignments from Cogo Points

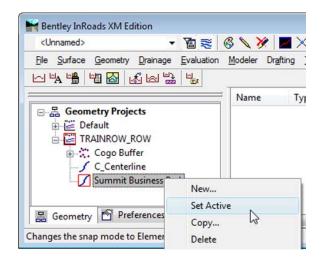
The plat of Summit Business Park has the 4 corners defined by Cogo points. Creating a closed alignment using the PI Method to represent the boundary of the plat will facilitate right of way creation.

Create a new horizontal alignment named Summit Business Park.

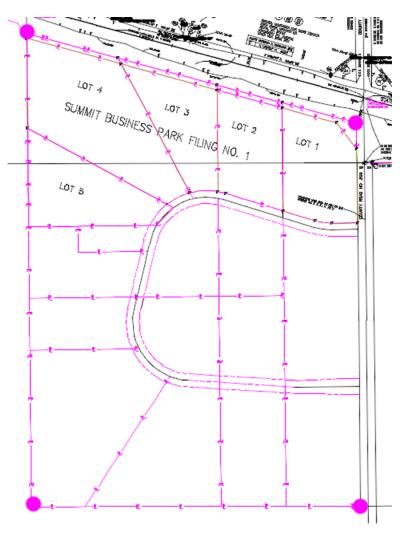
- 1. Select File > New > [Geometry]
- 2. Type: Horizontal Alignment
- 3. Name: Summit Business Park
- 4. Description: SW of int. of RL & CR 303
- 5. Style: RW\_Property-Bndry-Line\_ex
- 6. Curve Definition: Arc
- 7. **<D> Apply**

ype: ame:	Horizontal Alignment		pply
	Summit Business Pa		lelp
escription:	SW of int. of RL & C	R 303	
tyle:	ALG_EXISTING	•	
urve Definition:	Arc	▼]	
Name	Description	Style	
_Centerline	Reference Line	ALG_PRO	

8. Set the active horizontal alignment: Summit Business Park



- 9. Select Geometry > Horizontal Curve Set > Add PI
- 10. You are Prompted to: Identify Alignment End



11. Toggle *On* the geometry Point snap



- 12. Select the plat corners in a counter-clockwise direction
- 13. **<D>** near the *SW* corner of the plat (defines the POB)
- 14. **<D>** near the *SE* corner of the plat
- 15. **<D>** near the *NE* corner of the plat
- 16. **<D>** near the *NW* corner of the Plat
- 17. **<D>** near the *SW* corner of the plat (defines the POE)
- 18. <R> to cancel point selection, <R> to terminate the command
- 19. Toggle *Off* the geometry point snap
- 20. Select Geometry > Review Horizontal to verify the contents of the alignment.

Review Horizontal	Alignment				- • •
ieometry Project: Iorizontal Alignment:	12345_ROW       Summit Business Par ▼	Mode	Alignment 🔘 Eleme	nt	Close Save As
	Project Name: 123 Description: ignment Name: Sum Description: SW ( Style: RW_)	- mit Business Park of Int. RL & CR 30 Property-Bndry-Lir	ie_ex		Append Display
		STATION	NORTHING	EASTING	Help
Tang	ar OB ( ) PI ( ) ent Direction: angent Length:	0+00.00 12+66.63 N 89^55'41" E 1266.63	1554560.77 1554562.36	3278389.12 3279655.75	Select
I Element: Line	2	1266.63			First
	PI ( ) PI ( ) ent Direction:	12+66.63 27+42.21 N 0^36'37"W	1554562.36 1556037.86	3279655.75 3279640.04	< Previous
Ť	angent Length:	1475.58			Next >
Tang	ar PI ( ) PI ( ) ent Direction: angent Length:	27+42.21 40+57.41 N 74^45'59" W 1315.20	1556037.86 1556383.43	3279640.04 3278371.05	Last
F Tang	ar PI ( ) OE ( ) ent Direction: angent Length:	40+57.41 58+80.16 S 0^34'05" E 1822.75	1556383.43 1554560.77	3278371.05 3278389.12	
Area: 20878	10.46 sq.feet	47.9295 acres	]		
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Note: Notice the lack of point names (or Cogo numbers) in the parentheses. Also note the parcel area information is displayed.

olerances	Factors A	obreviations Rail				
Precision	General	Units and Form	Geometry			
Plotting Heigh	ht:	0.00	Help			
Seed Alignme	ent Name:	1				
Seed Point Name:		300				
Curve Defin	nition					
		Alway	vs Confirm			
Horizontal:	Arc	•				
Vertical:	Parabolic	•				
Measure:	Along Arc	Along Chord				
Degree of C	Curve Length:	100.00				
Unit Station	Length:	100.00				
Define Transi	tions By:	Length	Constant			
Spiral Definiti	on:	Clothoid	-			
ICS Coordina	ate Sequence:	Northing/Easting -				
Vertical Angle	e Reference:	Zenith				
Angular Mode	e:	Bearings				
Point Names	During Edits:	Do Not Assign	Do Not Assign			
Default Acc	cess Modes	Do Not Assign				
		Rez Assign				
Horizontal A	Vignments:	0	0			
Cogo Buffer	r:	0	۲			

The population of the name/number field is contingent on the settings under **Tools** > **Options** > **[Geometry]** at time of geometry creation.

## **Geometry Verification**

As seen above, the Cogo points selected to define the alignment are not necessarily a part of the definition of the alignment. To rectify this, 2 possible solutions exist. Firstly, the Create/Edit Alignment by Cogo Points command could have been used to generate the alignment initially. Secondly, this same command can be used to assign and verify the alignment.

1. Select Geometry > Utilities > Create/Edit Alignment by Cogo Points



2. **<D>Yes** 

Name:	Summit Business Park SW of Int. RL & CR 303 RW_Property-Bndry-Line_e		< •	+	-	Apply	
Description:			03	Close		Close	e
Style:			Line_e 🔹	•		Help	
Alignment De	finition:						
Graphical I	nputStart		5	ŝtop		lear	-
Graphical I	Start	Po				<b>Jear</b> pint Rigl	ht

The alignment is associated with the selected Cogo Points.

- 3. Edit points as necessary.
- 4. **<D> Apply** verify results by reviewing the alignment.

🚔 Review Horizontal Alignment	- • •
Geometry Project: 12345_ROW   Mode  Curve Sets  Alignment  Element	Close
Horizontal Alignment: Summit Business Par	Save As
Project Name: 12345_ROW Description:	Append
Horizontal Alignment Name: Summit Business Park Description: SV of Int. RL & CR 303	Display
Style: RW_Property-Bndry-Line_ex STATION NORTHING EAST1	ING Print
Element: Linear	E Help
POB ( 304) 0+00.00 1554560.77 3278389 PI ( 305) 12+66.63 1554562.36 3279655. Tangent Direction: N 89755'41" E	
Tangent Direction: N 89 <sup>55</sup> '41" E Tangent Length: 1266.63	First
Element: Linear FI ( 305) 12+66.63 1554562.36 3279655	
PI ( 301) 27+42.21 1556037.86 3279640. Tangent Direction: N 0^36'37" W	
Tangent Length: 1475.58	▼ Last
	•