LAB 8 - Cogo Point by Traverse

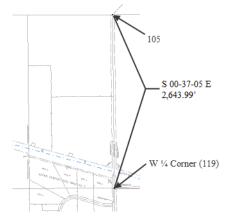
This lab demonstrates the use of the Traverse command to establish the West ¹/₄ corner from Cogo point 105. Development of the right of way for the project requires the establishment of the West ¹/₄ corner for Section 13 which lies South of the project reference line near the Northeast corner of the Summit Business Park development.

Chapter Objectives:

- Create Cogo points using direction and bearings key-ins
- Open the MicroStation design file C:\Projects\12345\ROW_Survey\Drawings\Reference_Files\12345ROW_Model.dgn
- Open the Geometry Project C:\Projects\12345\ROW_Survey\InRoads\Geometry\12345_ROW.alg that was created in the earlier lab.
- 3. From the Geometry Workspace pane <**R**> on the Geometry Project name *12345_ROW* and select **Set Active** from the fly-out menu.

The West ¹/₄ corner has been determined to lie south of the NW corner of section 13 (Cogo point 105) at:

- ◆ S 00-37-05 E
- ◆ 2,643.99 feet



4. From the pull down menu select **Geometry** > **Traverse** the Traverse dialog will appear.

Traverse			
Method: Angle Direction Curve	Insert Point Mode		Apply
Backsight	To Cogo Buffer		Close
Point: -+	Before Alignment		Ciuse
⑦ Direction: N 0^00'00'' E -+-	O After Alignment	l	Undo
	Radial		Help
Occupied Point			
Name:	Course		
Northing: 0.00	Angle 🔹	0^00'00''	+
Easting: 0.00	Horizontal Distance 💌	0.00	- 4 -
Elevation: 0.00	Radius 💌	0.00	
Instrument Ht.: 0.00	Radius 💌	0.00	
Foresight Point	Zenith Angle 🔹	90^00'00''	- ф -
Name: 1	Rod Height:	0.00	
Description:	Offset:	0.00	+
Style: Default 💌	Clos	e Traverse	

- 5. From the *Method* radio button select Direction.
- 6. From the Insert Point Mode radio button select To Cogo Buffer
- 7. In the *Occupied Point* section of the dialog key-in the *Name:* **105** then **Tab** key. The coordinates for point 105 will display.
- 8. In the *Course* section of the dialog key-in the *Direction:* **SO 37 05 E**
- 9. In the *Course* section of the dialog key-in the *Horizontal Distance: 2643.99*
- 10. In the Foresight Point section of the dialog key-in the Name: 119
- 11. In the Foresight Point section of the dialog key-in the Description: W 1/4 Cor Sec 13
- 12. In the *Foresight Point* section of the dialog select the *Style* RW_Working-exist from the drop down list.

Traverse				_	, • 🔀
Method: 🔘 A	Angle O Direction	Curve	Insert Point Mode		Apply
Backsight			To Cogo Buffer		Close
Point:		+	Before Alignment		Close
O Direction:	N 0^00'00'' E	+	O After Alignment		Undo
			Radial		Help
Occupied Poi	int	_			
Name:	105		Course		
Northing:	1558527.87	+	Direction	S 0^37'05" E	+
Easting:	3279643.18] "	Horizontal Distance	2643.99	-
Elevation:	6585.79		Radius	r 0.00	
Instrument Ht.	: 0.00		Radius	r 0.00	
Forestald Date			Vertical Distance	• 0.00	-+-
-Foresight Poir Name:	π 119		Rod Height:	0.00	
Description:	W 1/4 Cor Sec 13		Offset:	0.00	-+-
Style:			G	ose Traverse	
	RW_Working-exist	<u> </u>	Ľ	use maverse	

- 13. **<D>** the **Apply** button the point 119 will be created and become the occupied point. The foresight point will automatically increment to the next available number.
 - **Note:** If point 119 would have already existed, the next available point number would be used and 119 would not have been overwritten.

From the newly created point 119, traverse to the east establishing point 121 on the South right-of-way line of S.H. No. 86. Said point lying at N $89^12'18''$ E, a distance of 30' (RW width) + 660.53' (ROW length).

- 14. From the *Method* radio button select Direction.
- 15. From the Insert Point Mode radio button select To Cogo Buffer
- 16. Verify the *Occupied Point* is the *Name: 119*.
- 17. In the *Course* section of the dialog key-in the *Direction:* **N 89 12 18 E**
- 18. In the Course section of the dialog key-in the Horizontal Distance: 30+660.53 < Tab>
- 19. Verify the *Foresight Point* is the *Name: 121*
- 20. In the Foresight Point section of the dialog key-in the Description: South ROW point
- 21. In the *Foresight Point* section of the dialog select the *Style* RW_Working-exist from the drop down list.

Traverse						- (• ×
Method: O A Backsight O Point: Direction:	ngle Direction	+	Insert Point Mode To Cogo Buffer Before Alignment After Alignment 				oply ose ndo
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Northing: Easting:	115 1556815.09 3277607.55] +	Direction Horizontal Distance	•	N 89^12'18" E 30 + 660.53		+ +
Elevation: Instrument Ht.:	6628.14 0.00		Radius Length	•	0.00		+ +
Foresight Poin Name: Description:	t 121 South ROW point		Vertical Distance Rod Height: Offset:	•	0.00		+
Style:	RW_Working-exist	•		Clos	e Traverse		

- 22. **<D>** the **Apply** button the point 121 will be created and become the occupied point.
 - **Note:** Notice the previous foresight point has become the occupied point. Also note math operations can be used in the input fields. Once you [tab] from the field, the math operation computes. Experiment using +, -, *, /
- 23. Close traverse dialog box.
- 24. **<R>** on the Geometry Project name **12345_ROW** from the pop up menu **<D> Save**.