# LAB 8 - Cogo Point by Traverse

This lab demonstrates the use of the Traverse command to establish the West ¼ corner from Cogo point 105. Development of the right of way for the project requires the establishment of the West ¼ 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

1. **Open** the MicroStation design file
   C:\Projects\12345\ROW_Survey\Drawings\Reference_Files\12345ROW_Model.dgn

2. **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 ¼ 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
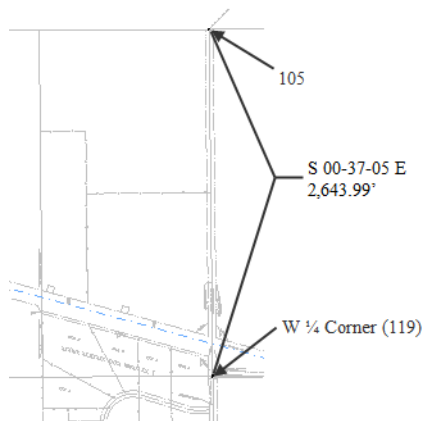
4. From the pull down menu select **Geometry > Traverse** the Traverse dialog will appear.
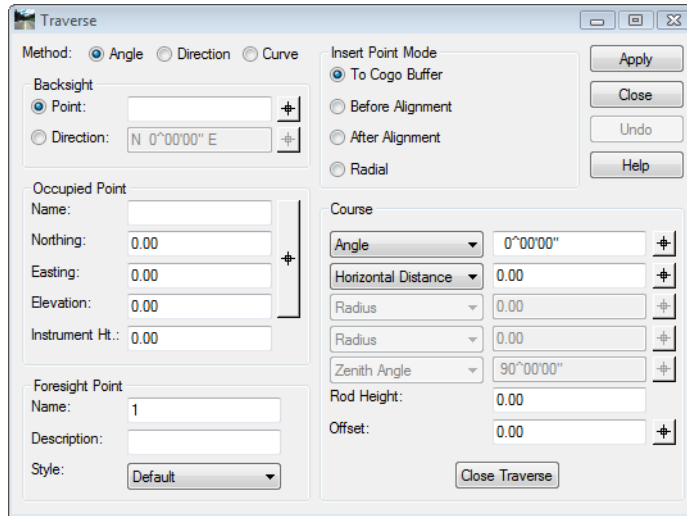
5. From the *Method* radio button select **Direction**.

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:* **S 0 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.
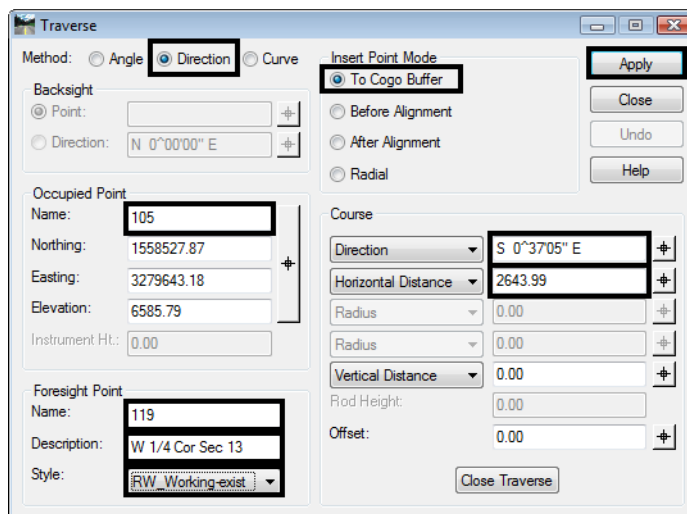
13. **<D>** the **Apply** button the point 119 will be created and become the occupied point. The foresight point will automatically increment to the next available number.

    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.

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**.