Align Between Drawings

Align Between drawings is used to copy and align entities from one open drawing to another. It works by writing out a block from the source drawing, then inserting, rotating, scaling, and exploding it in the destination drawing.

In this example we have 2 drawing. 1 is a Control or "Base" drawing of the intersection. It was previously surveyed and contains all of the permanent features in the area, such as paint lines, curb lines and lamp posts. This will be used each time an accident occurs at this intersection. It saves time if permanent features don't need to be collected over and over.
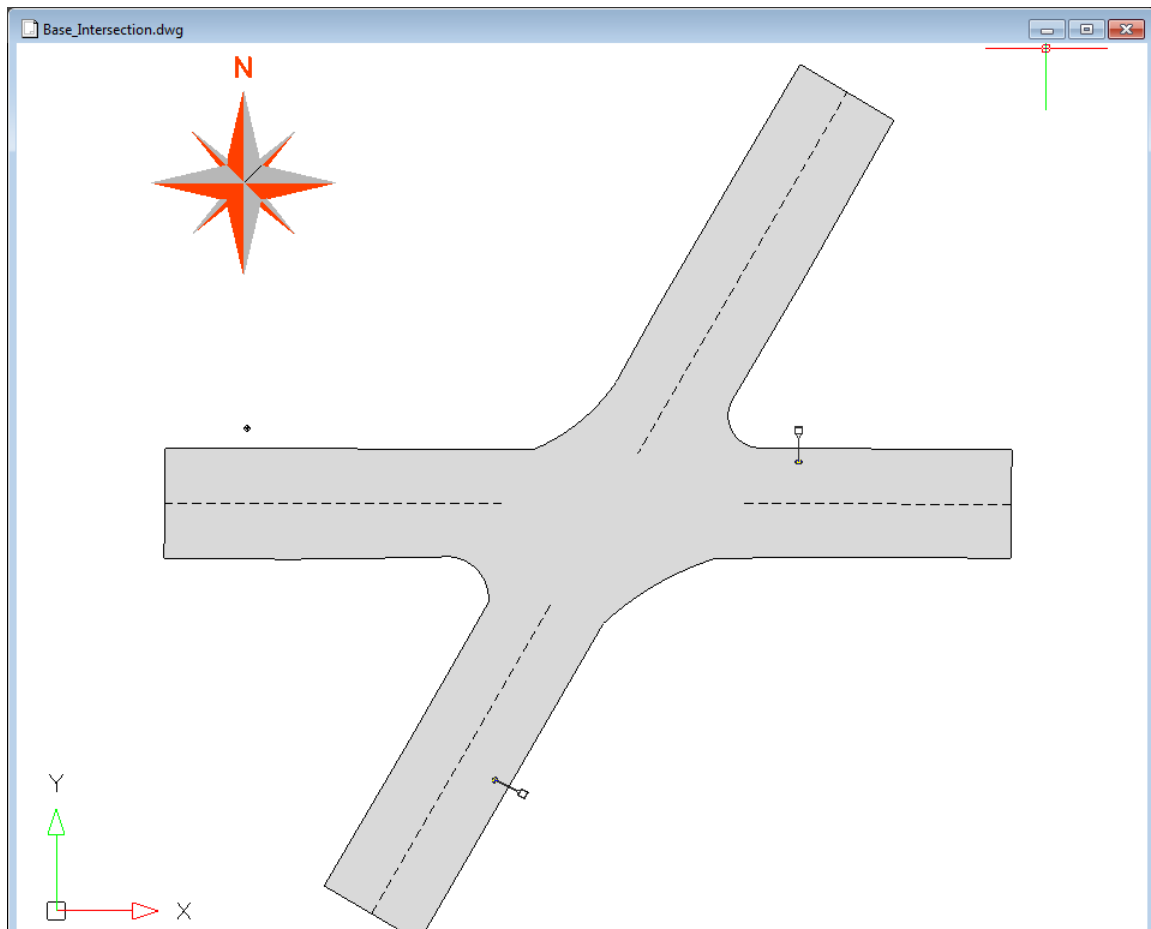

Fig 1. Control or "Base" drawing of the intersection

The second drawing contains the vehicle crash and another other new features in the area. The reconstruction team has collected various points around the scene including the vehicles, the ski marks and an oil spill. They don't need much else, as the Base drawing above contains other relevant information.

What is important is are points 500 and 501. These are the control points which will be used to complete the alignment. Each time the intersection is surveyed, the reconstruction team must re-measure these control points so we can match them to the same points in the Base drawings. In this example we will use the top nut on a fire hydrant and the corner of a lamp post. When choosing these points, careful consideration should be made that they will be permanent stable points and also have the ability to accurately re-measure the points overtime.
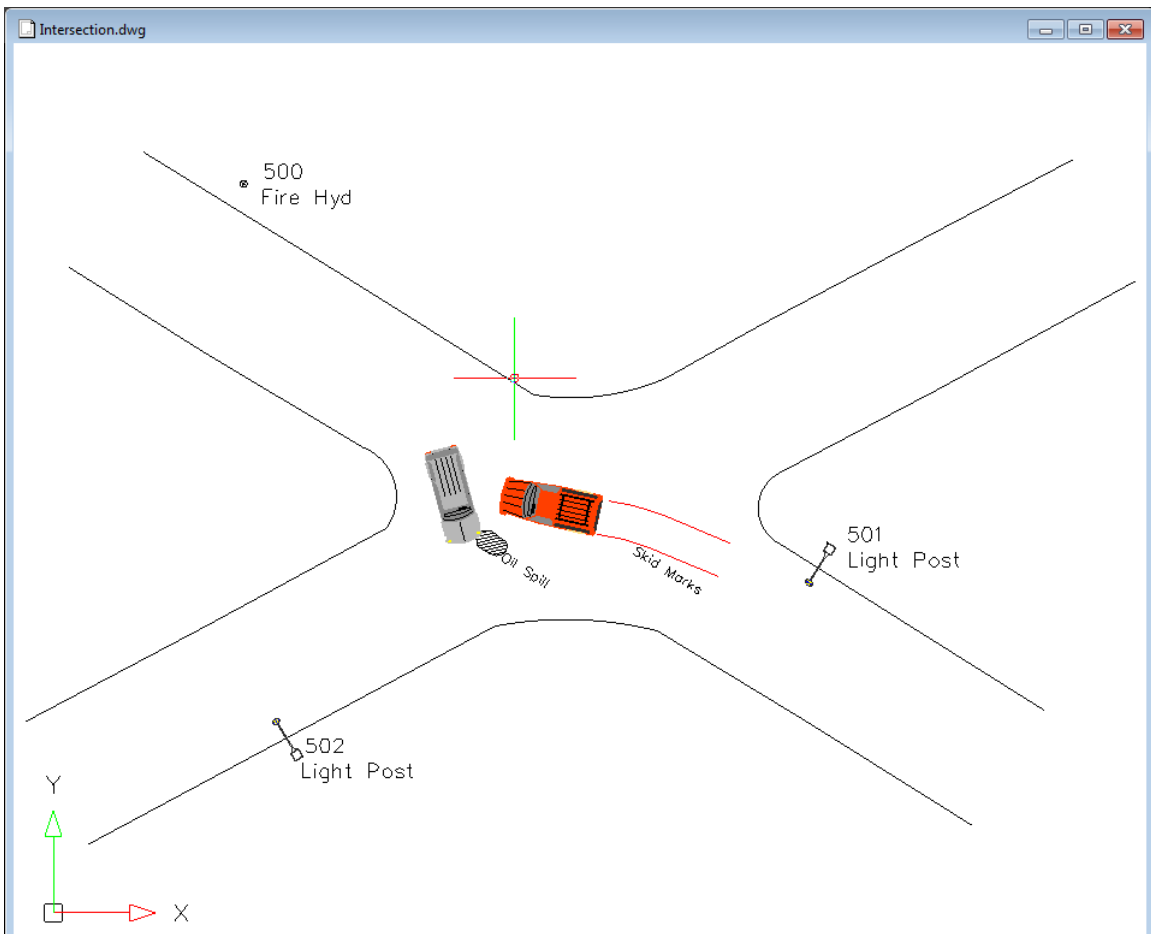
Fig 2. Crash scene

1. Before starting the align command we first want to have both drawings open and visible. To do this, go to the bottom right corner of the program and choose the Window button > Tile Vertically
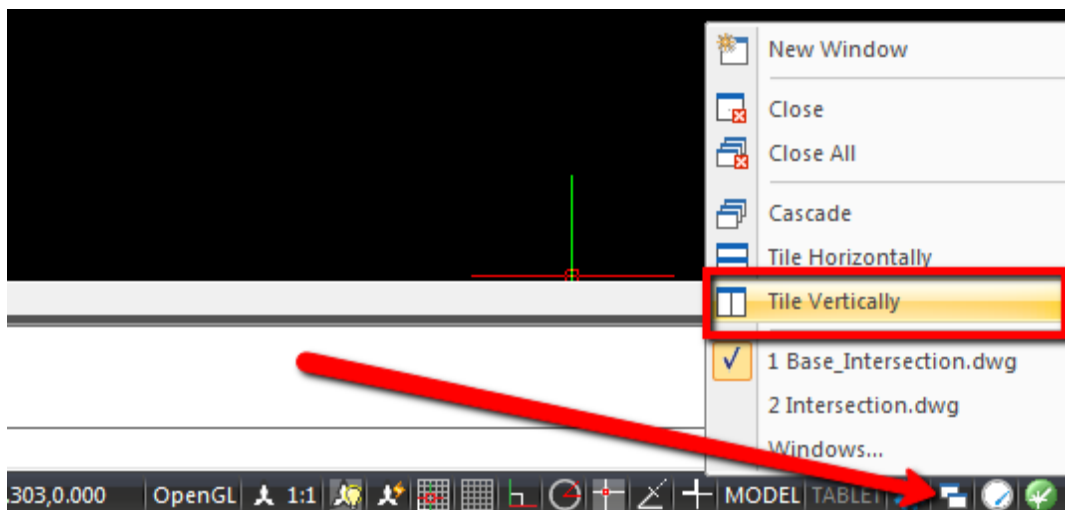

Fig 3. Tile Windows

2. The Result should look something like this. If extra drawings are visible, close them and re-do the previous step. Note that the crash scene is rotated – or misaligned – with the base drawing. The Align Between Drawings command can handle this situation.
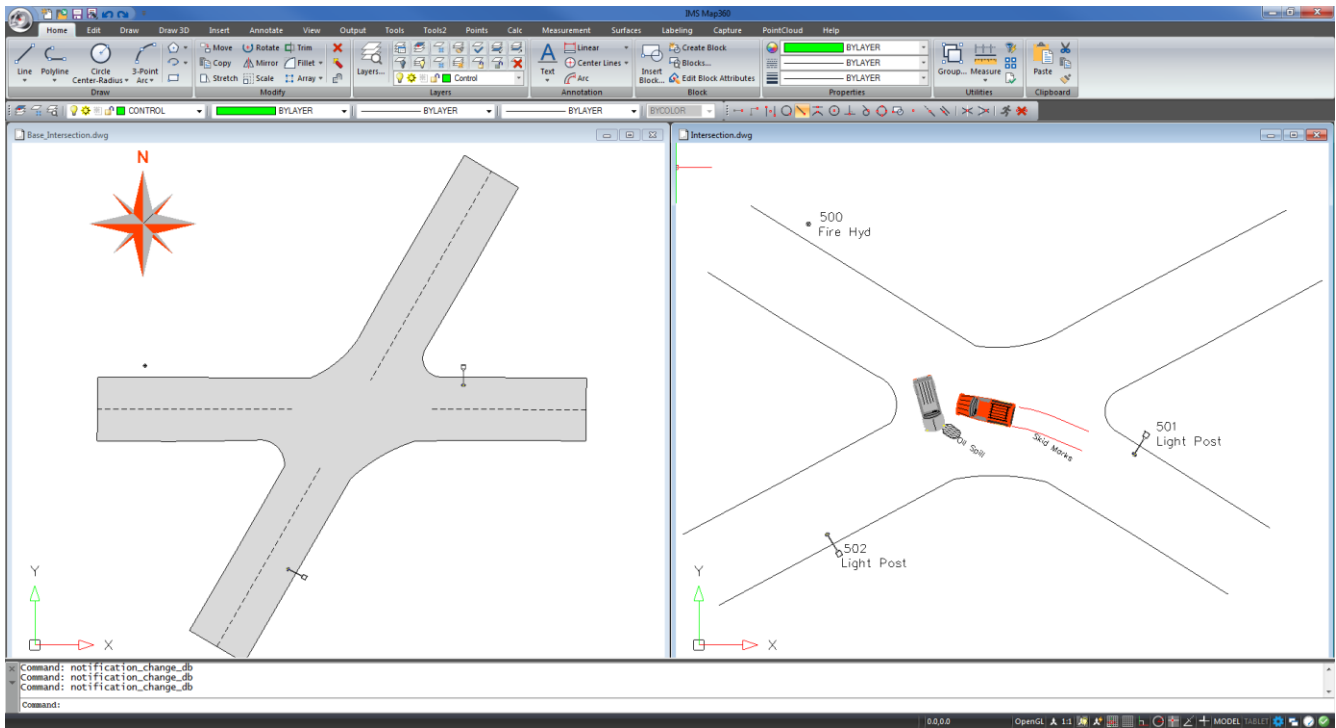

Fig 4. Vertically Tiled Windows

3. Make sure the source drawing (the drawing we want to move into the base drawing) is active or highlighted. Click inside the drawing to activate it. In this case, the drawing with the crash should be active.

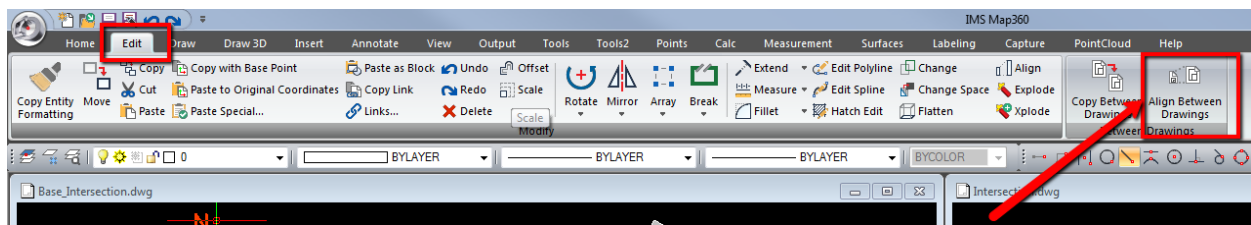Go to Edit > Align Between Drawings. Or, simply type the command MSALIGN

Fig 5. Align Between Drawings command in the Edit menu

4. Note you are now prompted in the command line to "Select Entities"
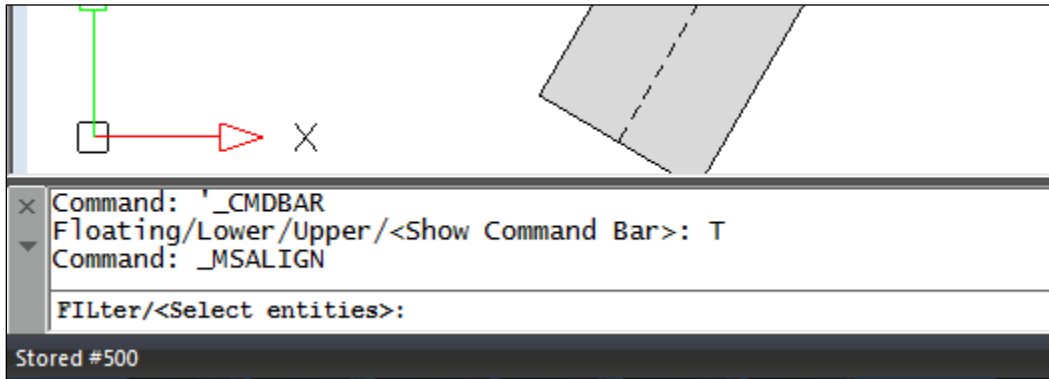

Fig 6. Command line instructions

5. In this example we only need to move the vehicles, skid marks and oil spill. The curbline and street lights are already included in the base drawing.
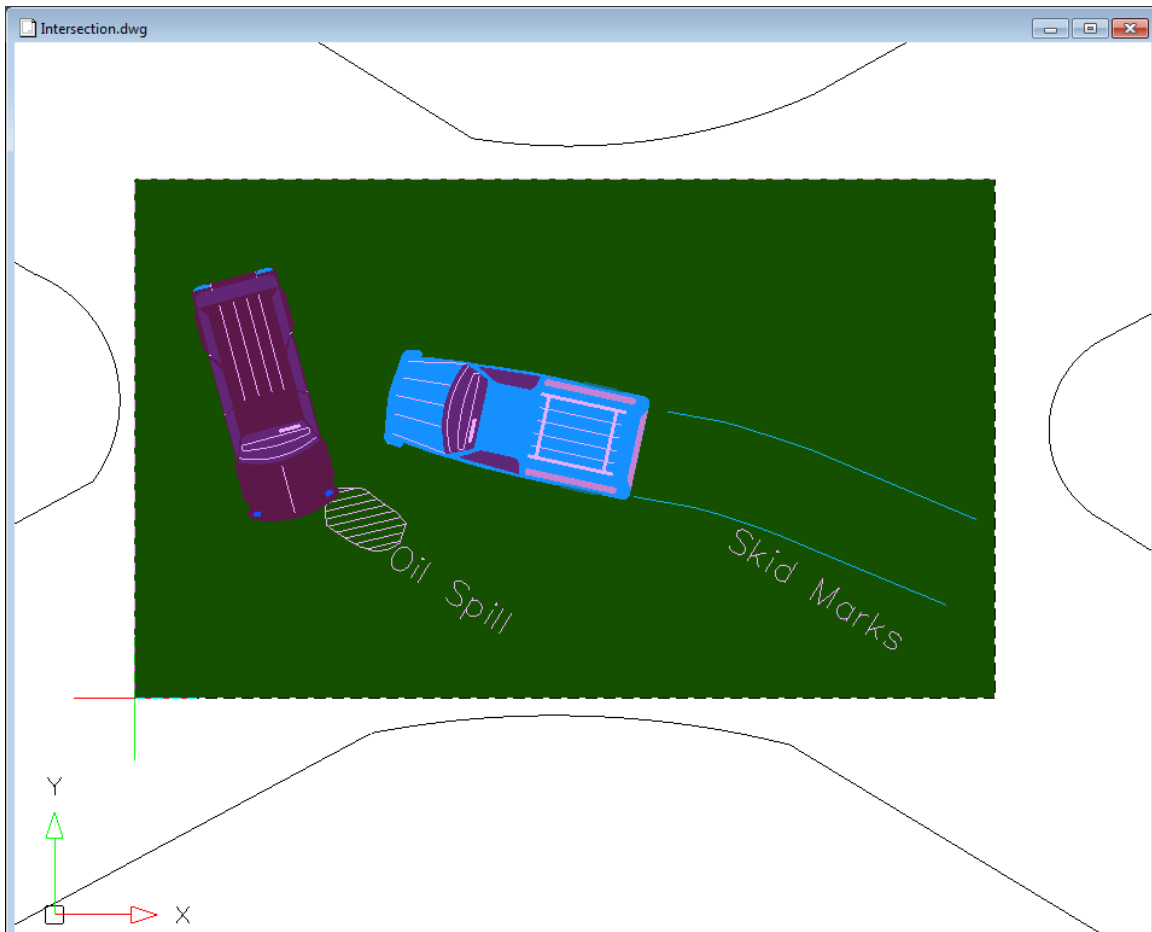

Fig 7. Select the entities your wish to align

6. The next command line prompt will be for the first "source point". In this example we will use the top nut of the fire hydrant (point 500). Snap directly to the point node.
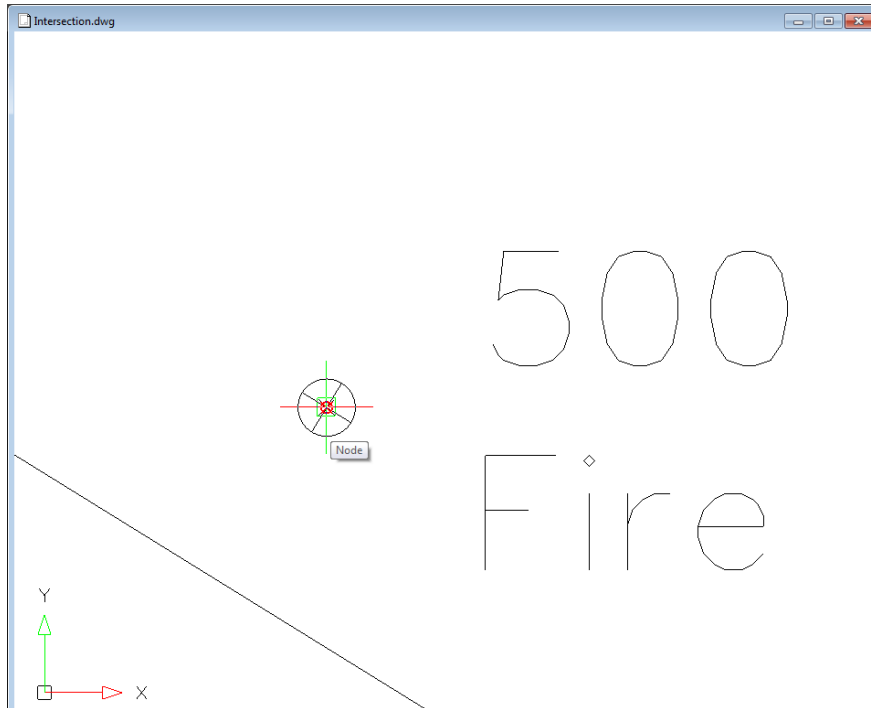

Fig 8. Snap to the first source point (Note: you can also use symbols and other objects as source points)

7. The second source point will be the Light post. Again, snap directly to the point node.
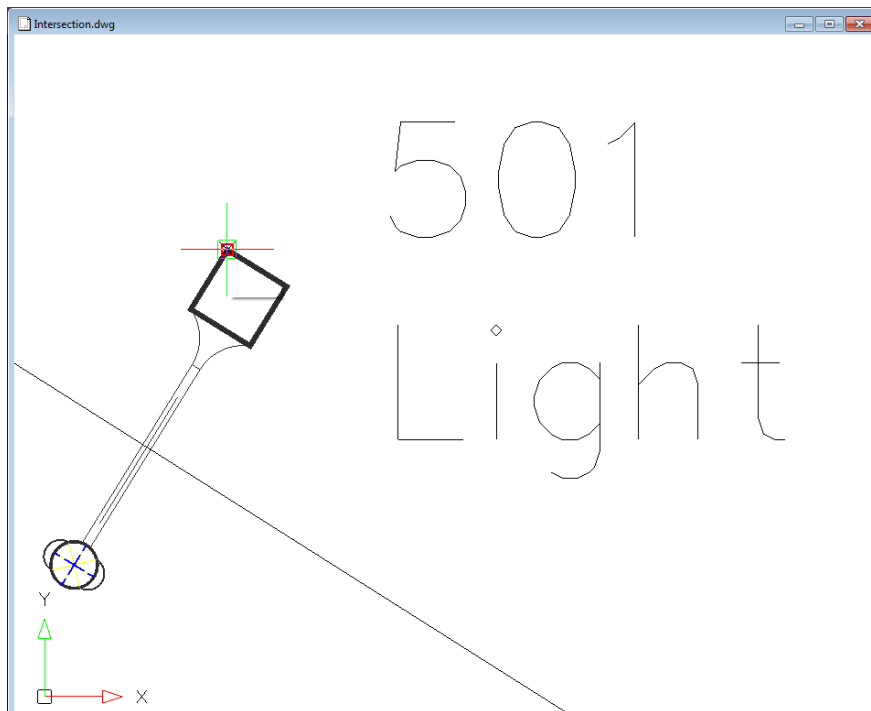

Fig 9. Snap to the second source point (Note: you can also use symbols and other objects as source points)

8. Now that we have picked both of our source points we will be prompted to activate the destination drawing (the base drawing)
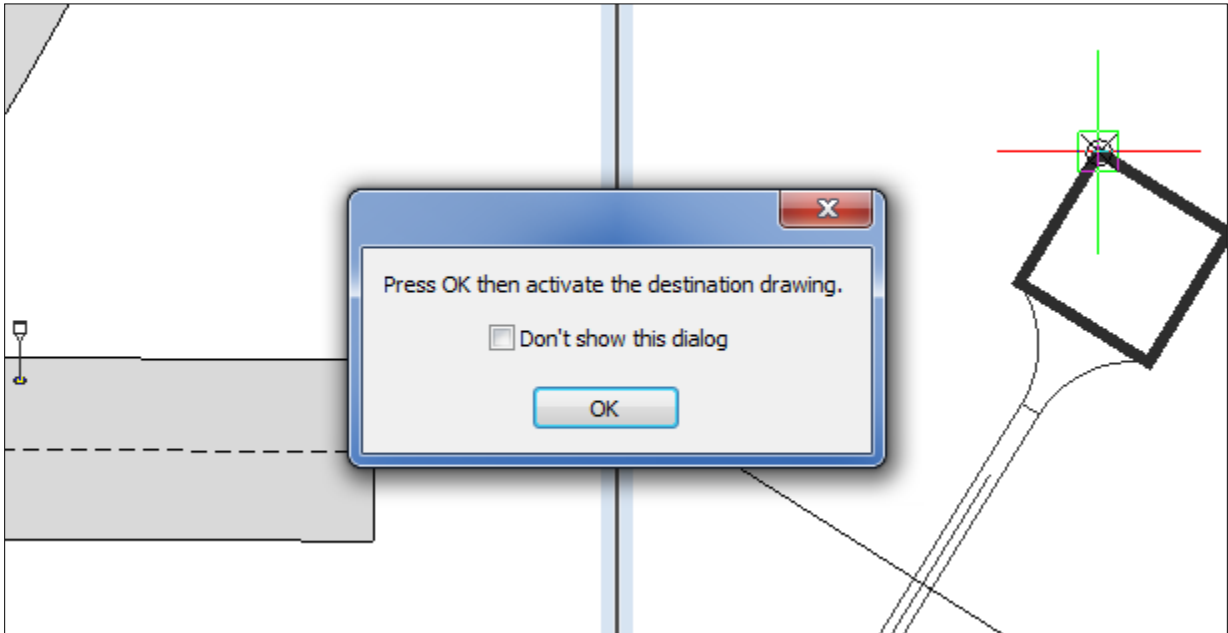

Fig 10. Activate the destination drawing

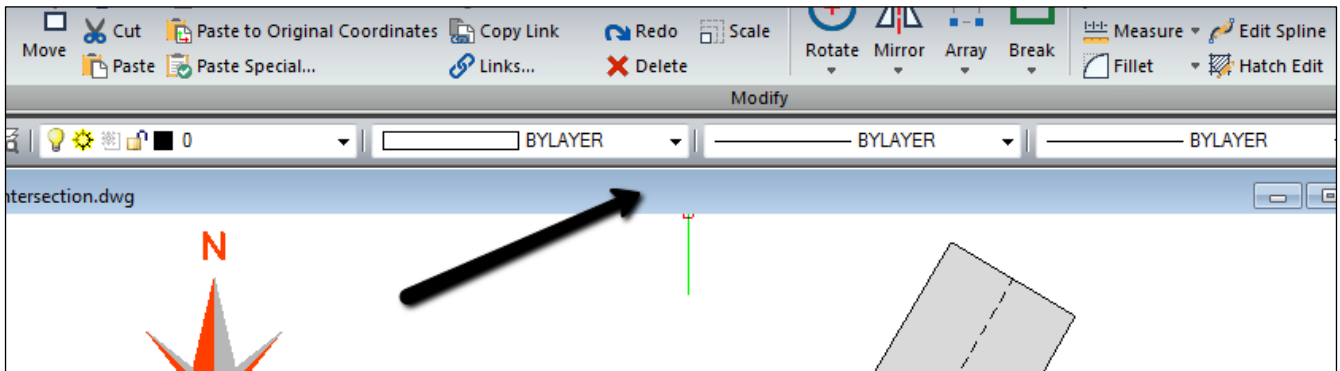9. Activate the destination drawing by picking on the window.

Fig 11. Activate the destination drawing by clicking on the top bar or clicking inside the drawing window

10. Now we want to pick the corresponding points in the destination drawing following the same order as the source drawing. First pick on the Fire Hydrant (destination point 1).
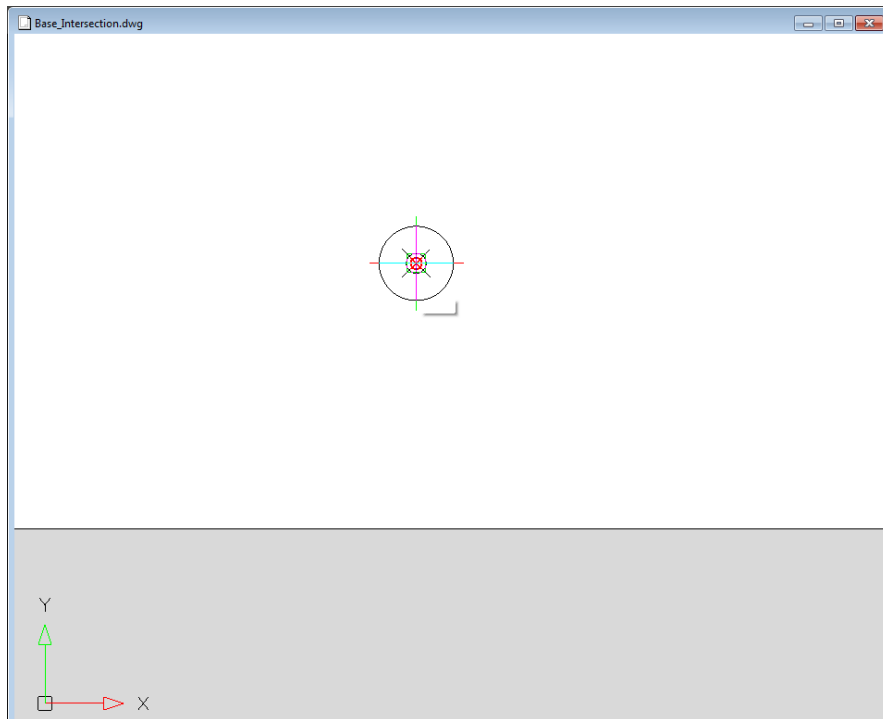

Fig 12. Choose the first destination point (the corresponding Fire Hydrant Point)

11. Then pick on the light post (destination point 2)
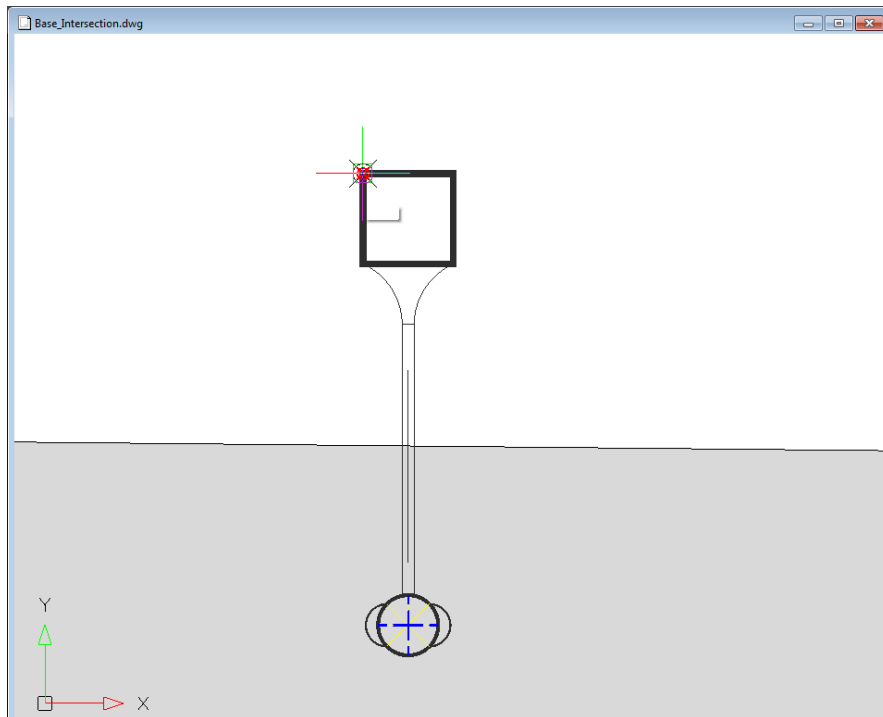

Fig 13. Choose the second destination point (the corresponding Light Post Point)

12. The entities we selected previously will be automatically moved into the base drawing. The command will shift, rotate and scale each entity to fit based on the control points we used. This is why it is very important to be as accurate as possible when choose your align points.
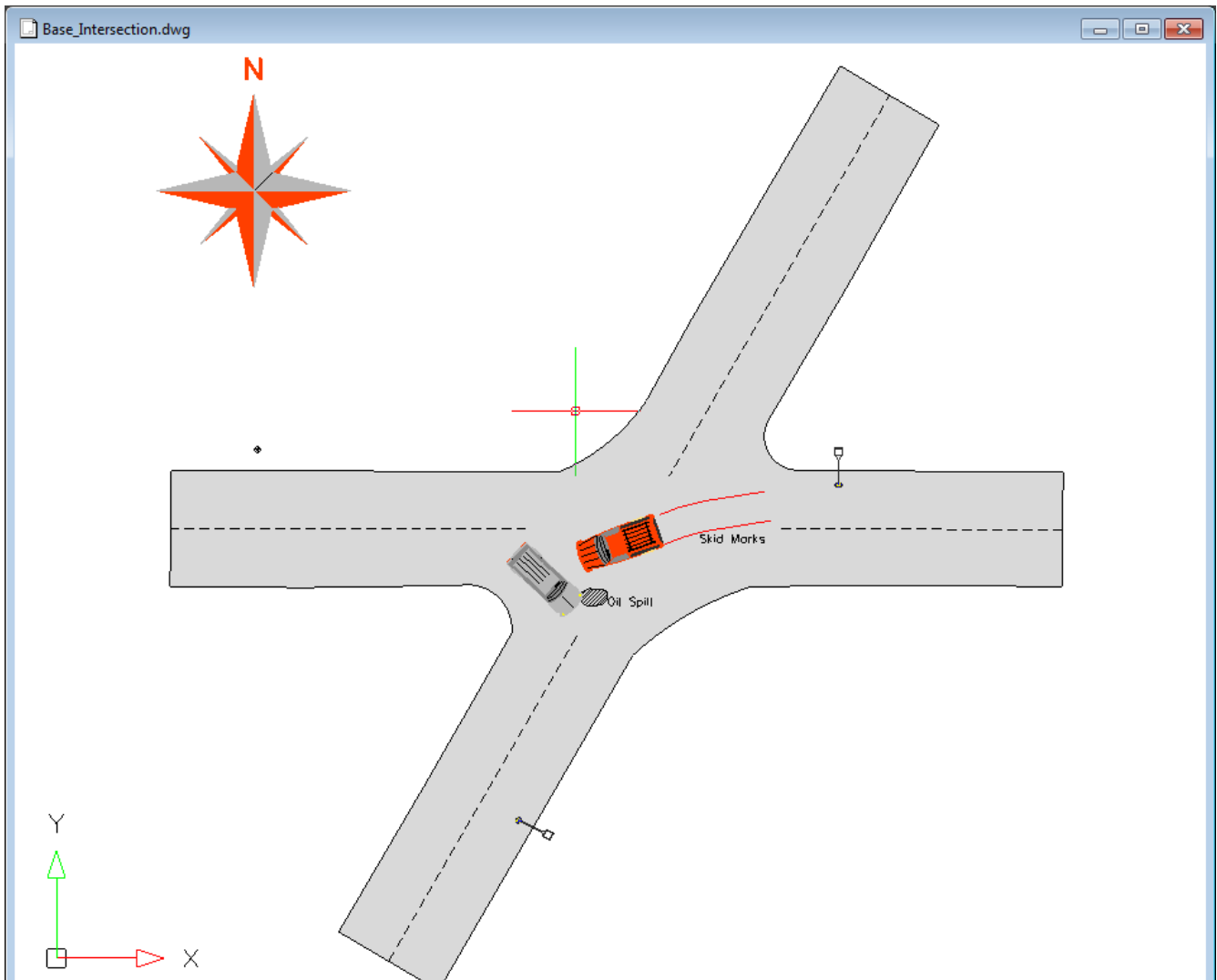

Fig 14. Align result