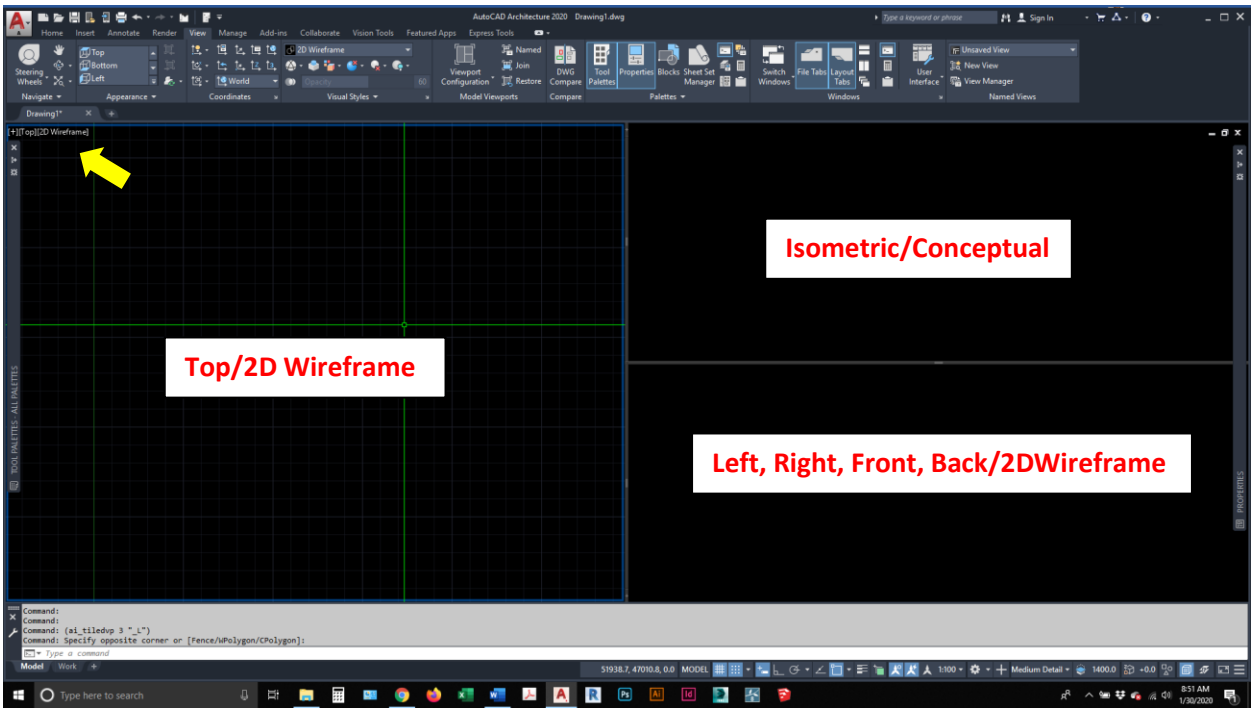
CAD Notes: The commands will be typed on the Command line located near the bottom of the workspace, and then press the Spacebar or Enter. You can also use the right-click key on the mouse to enter a command. If you right-click and go down to Recent Input, you can activate a previous command used.

Setting up Views – **3D Model Building**

First things first, you must set up the screen in order to draw and see in 3D. Click the "View" Menu, and find "Viewport Configuration" Icon, toggle down and click on "Three Left." This should split your screen into three sections. Each section is a different viewport in order to see your 3D objects properly. While clicking in a viewport in order to activate it, in the upper left corner you will see the actual name of the view and the appearance of that view (see yellow arrow). Left-click on the name of the view in order to change it. Likewise, left-click on the name of the appearance in order to change it. Below is a "suggested" layout, but set up your screen in a way that best helps you draw.



It is also suggested that when drawing in order to get results in 3D, draw specifically with the Polyline (PL) command. Being able to see in multiple views will make it much easier to draw and build in 3D. You must also draw inside of the proper viewports in order to get the correct orientation you desire your objects to be seen.

1. **Spline (SPL)** – This command is used to create a smooth curved line. Type (SPL) > Enter > Click on the screen and begin draw the line. With every click, the curve of the line will be contained within the position of each click > Right-click and press Enter
2. **BPoly** – This command is used to create a closed boundary or an easy way to make a closed polygon. Type (Bpoly) > Enter > Click the "Pick Points" button > Click inside of the grouping of lines and arcs on the screen. If done properly, you will see the highlighted shape or boundary appear in a blueish color. > Press Enter to complete the command

3. **Extrude (EXT)** – This command is used to create a 3D Solid of an enclosed area. Type (EXT) > Enter > Click the closed polylines that you want to turn into a solid > Enter > Type the height of the solid > Enter
4. **Presspull (PRESS)** – This command will dynamically modify a 2D closed polygon or area, and a 3D Solid that has already been extruded, by either adding to it or subtracting from it. Type (PRESS) > Enter > Within the Isometric Viewport, click once within the closed area or on the face of the 3D solid and literally press and pull on the face. If you know the exact distance, you can type it in and it will presspull the distance accurately.
5. **Subtract (SUB)** – This command will create or modify 3D solids that overlap one another. Type (SUB) > Enter > Make certain that the 3D Solids overlap one another > Click first on the solid that you want to keep > Enter > Now click on the solid that you want to subtract. If done properly, you will remove one 3D Solid from another successfully.
6. **Sweep (SW)** – This command is used to create a 3D solid or surface by sweeping a 2D object along an open or closed path. Type (SW) > Enter > Click on the 2D Object that you want to sweep > Enter > Click the path in which you want to sweep that object in order to create the 3D solid or surface.
7. **Revolve (REV)** – This command is used to create a 3D solid or surface by sweeping a 2D Object around an axis. Type (REV) > Enter > Click on the 2D object that you want to revolve > Enter > Click on the first end point of the axis you are revolving the 2D object around, then click the second end point > Specify the angle of revolution 1-360° > Enter
8. **Union** – This command combines two or more 3D solids, surfaces into a single composite 3D solid. Type (UNION) > Enter > select the 3D solids that you want to combine > Enter
9. **Regen3 (REV)** – This command is used to regenerate the views in a drawing to repair any issues displayed on all 3D solids and surfaces.