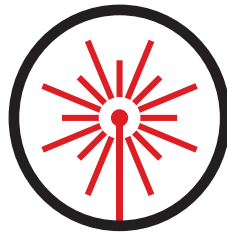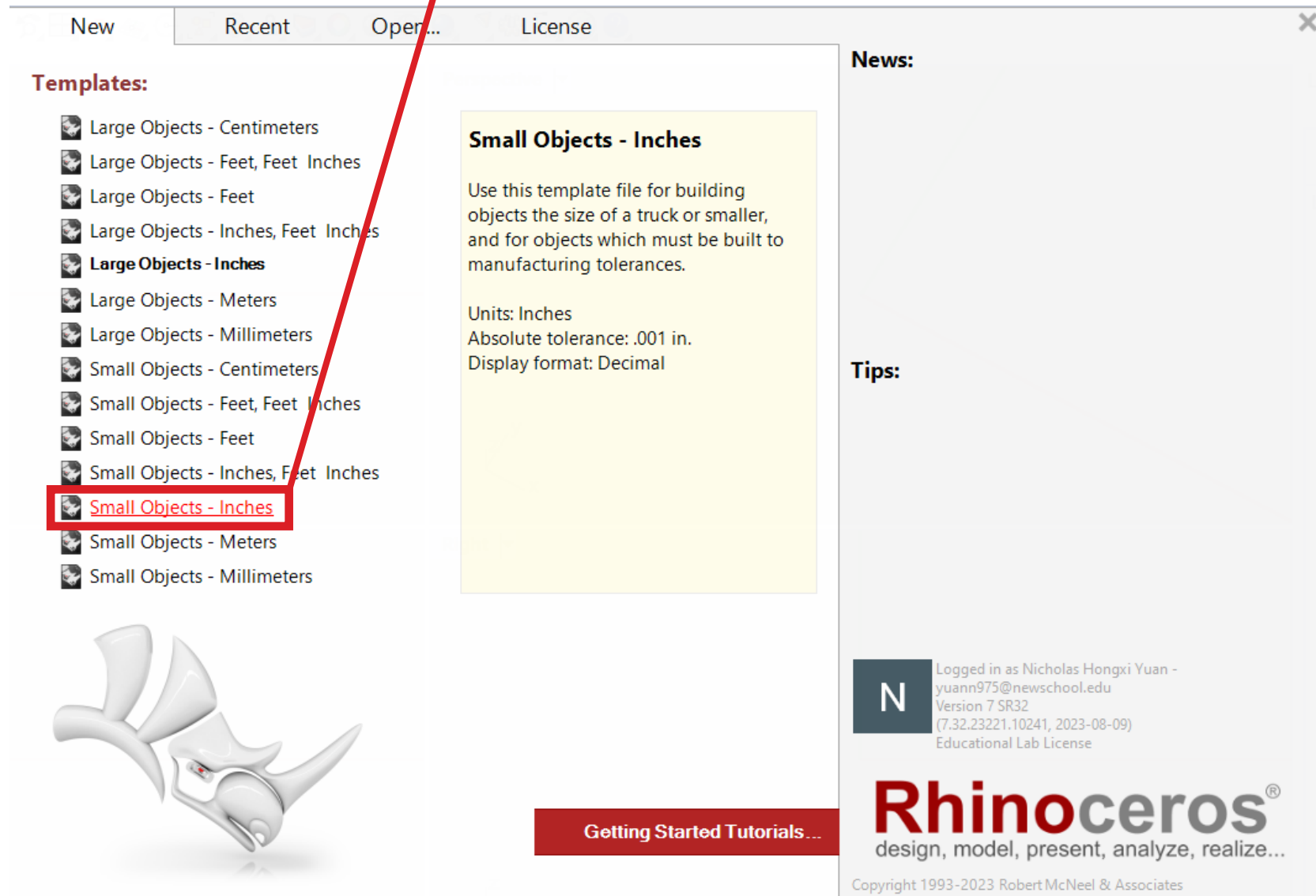# LASER CUTTING GUIDE
RHINO

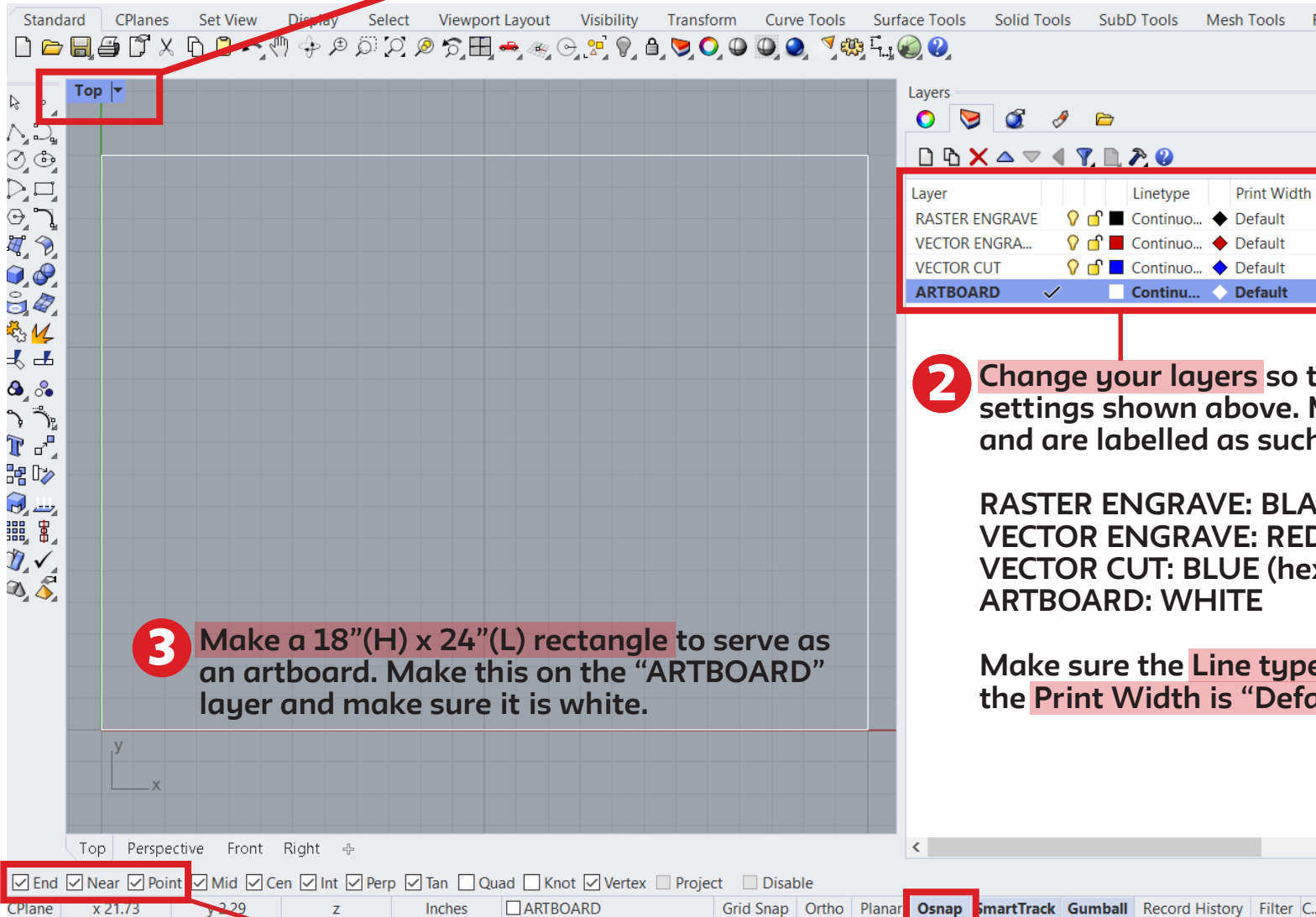# OPENING RHINO

1 After opening Rhino, it will prompt you to use a template. Make sure you select **"Small Objects - Inches"**

| New | Recent | Open... | License | ✕ |

Templates:

- Large Objects - Centimeters
- Large Objects - Feet, Feet Inches
- Large Objects - Feet
- Large Objects - Inches, Feet Inches
- **Large Objects - Inches**
- Large Objects - Meters
- Large Objects - Millimeters
- Small Objects - Centimeters
- Small Objects - Feet, Feet Inches
- Small Objects - Feet
- Small Objects - Inches, Feet Inches
- **Small Objects - Inches**
- Small Objects - Meters
- Small Objects - Millimeters

News:

Small Objects - Inches

Use this template file for building objects the size of a truck or smaller, and for objects which must be built to manufacturing tolerances.

Units: Inches
Absolute tolerance: .001 in.
Display format: Decimal

Tips:

N Logged in as Nicholas Hongxi Yuan - yuann975@newschool.edu
Version 7 SR32
(7.32.23221.10241, 2023-08-09)
Educational Lab License

Getting Started Tutorials...

Rhinoceros®
design, model, present, analyze, realize...

Copyright 1993-2023 Robert McNeel & Associates

SETTING UP YOUR FILE

1 Make sure you're in the "Top" viewport

2 Change your layers so that they match the settings shown above. Make sure the colors and are labelled as such:

RASTER ENGRAVE: BLACK (hex:#000000)
VECTOR ENGRAVE: RED (hex:#C80000)
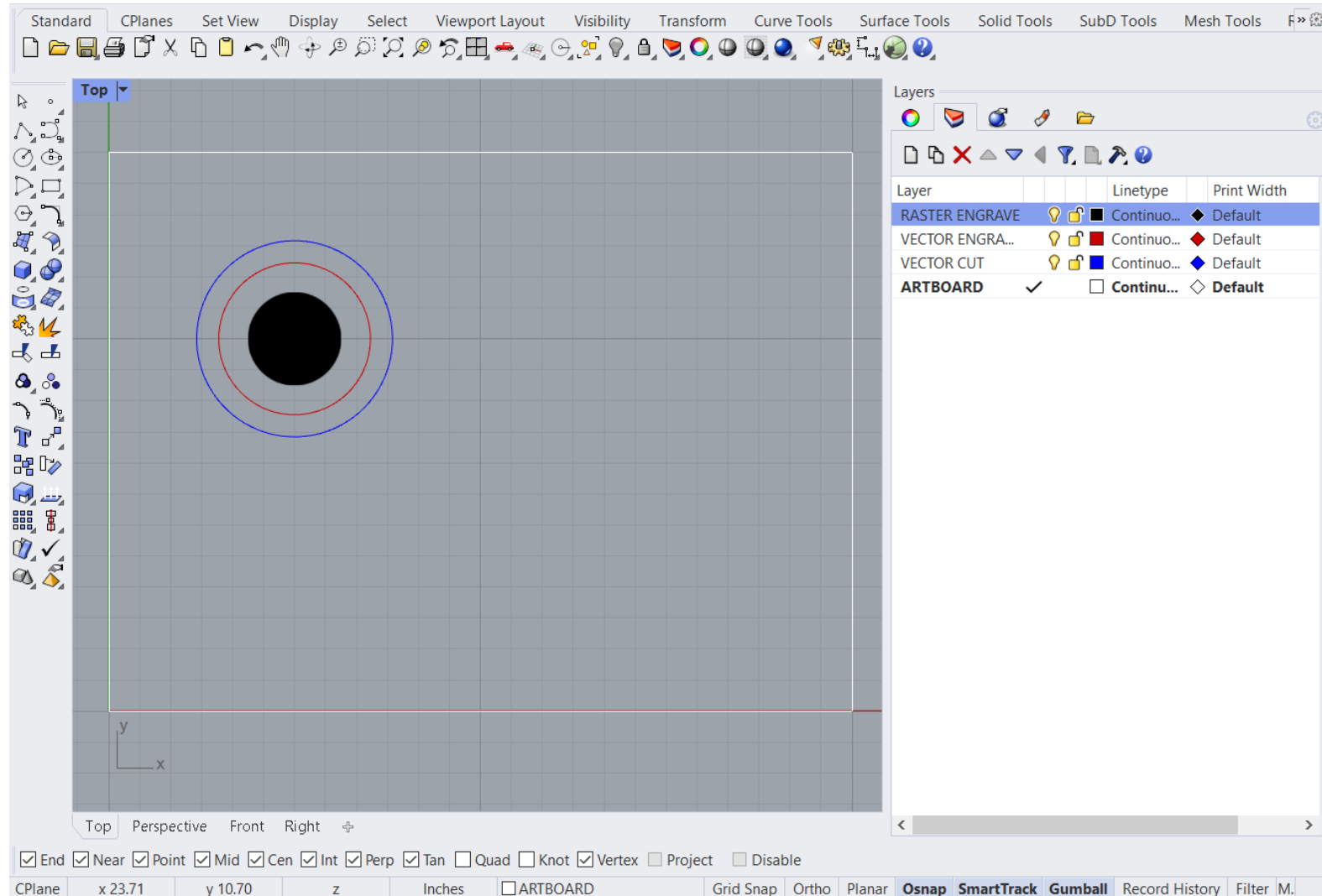VECTOR CUT: BLUE (hex:#0000FF)
ARTBOARD: WHITE

Make sure the Line type is "Continuous" and the Print Width is "Default".

3 Make a 18"(H) x 24"(L) rectangle to serve as an artboard. Make this on the "ARTBOARD" layer and make sure it is white.

4 Turn on Osnap. Change your Osnap settings so that at least "End", "Near", and "Point" are enabled. This is important for setting up the print settings later on.

DRAWING YOUR DESIGN

Rhino cannot print both raster and vector at the same time, so keep that in mind while drawing your file. When drawing your file, use the white artboard as a guideline as the size of the laser bed. If you know the dimensions of you material, draw a shape that represents those dimensions on the "ARTBOARD" layer as a guide to ensure your design will fit on the material when printed. Remember to have the vector cut, vector engrave, and raster engrave elements on the separate layers you've created for yourself.

SEND TO PRINT (RASTER)

If your design has no raster engraving, skip to the vector operations on the next page.

When cutting a file with raster and vector operations, do the raster engrave first. When printing your raster, make sure that the vector layers are off before printing. After selecting <u>File > Print</u>, follow the below instructions to ensure you have the correct print settings.
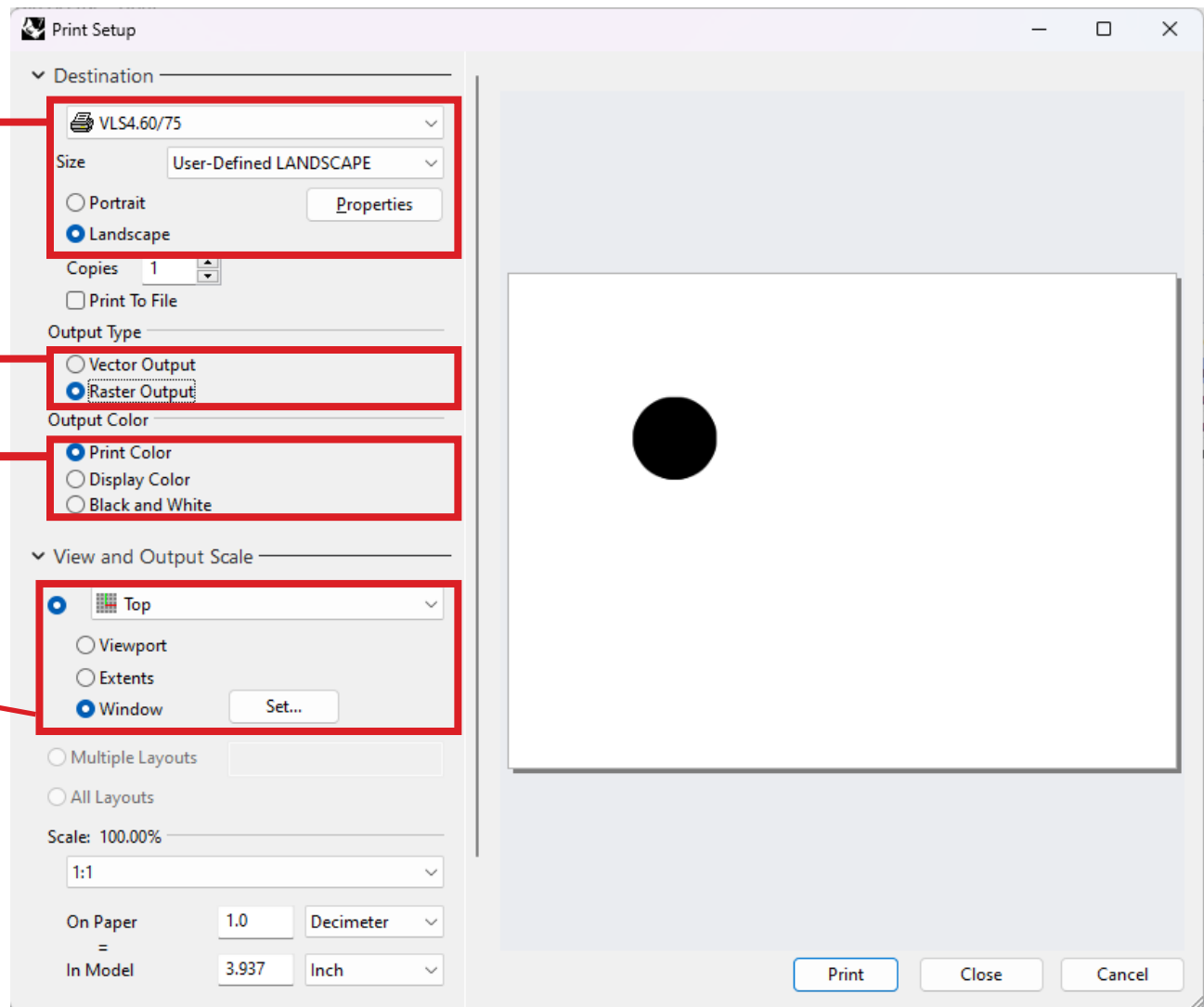
1 Select **"VLS4.60"** and **"User-Defined LANDSCAPE"**

2 Select **"Raster Output"**

3 Select **"Print Color"**

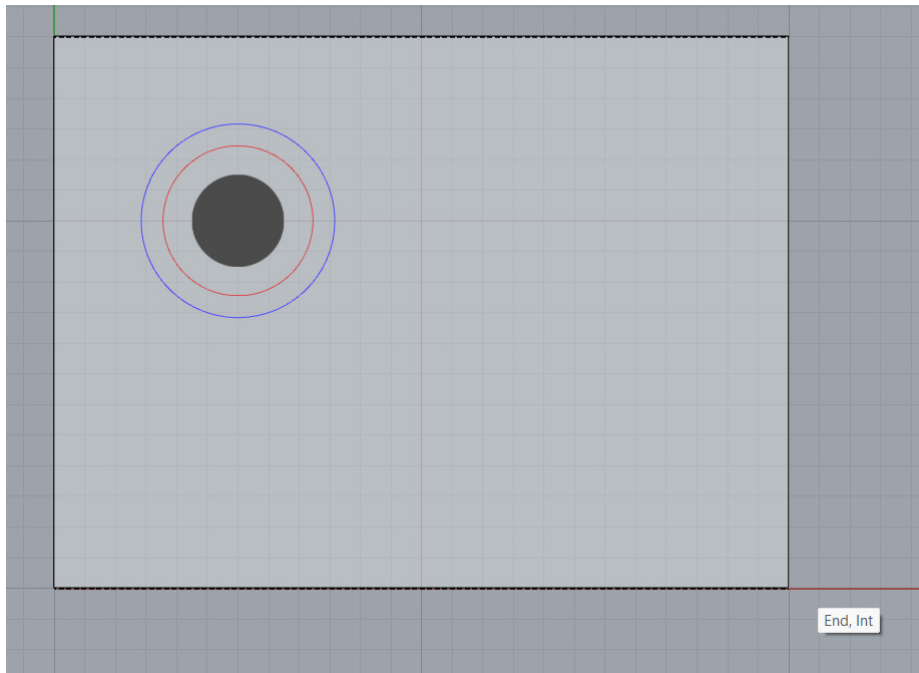**4** Select **"Top"** and make sure **"Window"** is selected.

Click "Set" after "Window" is selected. This will prompt a selection window. See the next page for instructions.
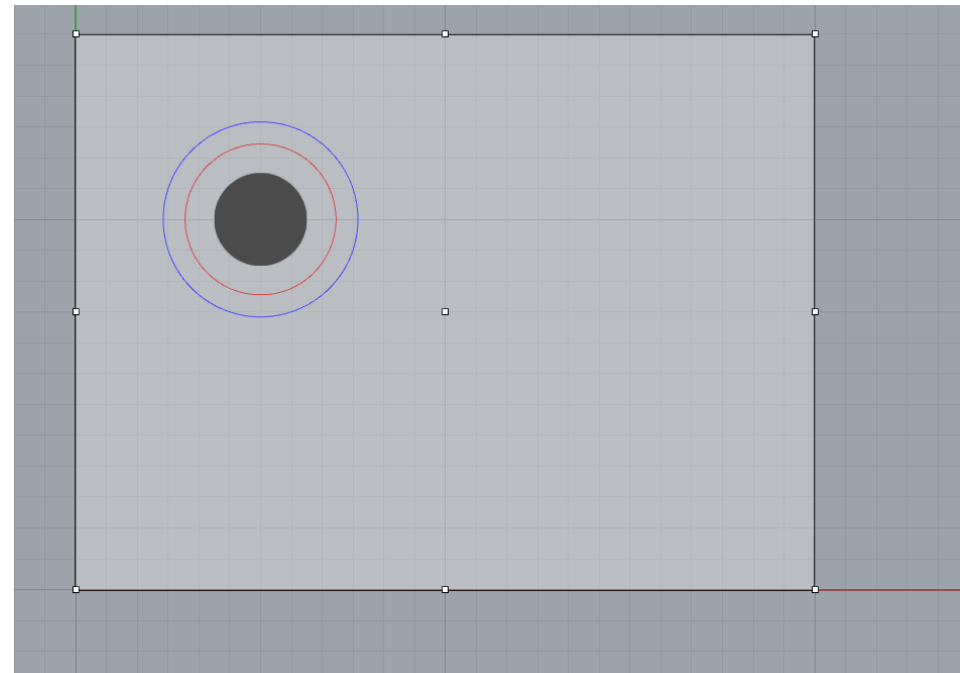
SETTING THE WINDOW

Click "Set" after "Window" is selected. This will prompt a selection window.

Drag the window selector from one corner to the opposite corner of your "ARTBOARD". If your document is set up properly, it should snap automatically to the artboard rectangle. It should say "End Int" if properly aligned.

Once confirmed, the window rectangle should look like this. Press enter or spacebar to return to the print menu.

End, Int

SEND TO PRINT (VECTOR)

If your design has raster engraving, please refer to the raster engraving page first.

When printing your vectors, make sure that the raster layers are off before printing. After selecting <u>File > Print</u>, follow the below instructions to ensure you have the correct print settings.

1 Select "VLS4.60" and "User-Defined LANDSCAPE"

2 Select "Vector Output"

2 Select "Print Color"

2 Select "Top" and make sure "Window" is selected.

Print Setup

Destination
VLS4.60/75
Size: User-Defined LANDSCAPE
○ Portrait   Properties
● Landscape
Copies 1
☐ Print To File

Output Type
● Vector Output
○ Raster Output

Output Color
● Print Color
○ Display Color
○ Black and White

View and Output Scale
● Top
○ Viewport
○ Extents
● Window   Set...
○ Multiple Layouts
○ All Layouts

Scale: 100.00%
1:1
On Paper 1.0 Decimeter
=
In Model 3.937 Inch

Print   Close   Cancel