

Laser Cutting 101

What do we have?

- 2 machines
 - Universal PLS 150 - Blue
 - Universal X660 – Gray



What can we cut?

- Chipboard, Plexiglass, plywood, museum board- list on door and website



What CAN'T we cut?

- Polycarbonate, styrene, PETG, anything that contains Vinyl.



How to set up a file

- Software Choices

- Rhino
- Illustrator
- AutoCAD

- Download Templates off SOA website

- <http://soa.syr.edu/resources/technology/digital-fabrication/laser-cutting.php>

Template Basics

- Information for reminder at the top of the template
- Cut- BLUE
- Score- RED
- Fold- YELLOW
- Gray Hashed Line- Bleed area no cutting – leave $\frac{1}{4}$ " on edge

Using our laser Lab

- You must have a SOA login in order to use the laser machines.
- All students are encourage to reserve their 1 hour laser slot. 1 per day.
- Drop in laser use is fine. If someone is 10 mins late to a reservation you can use the machine.
- Laser 4 is a day of sign up machine. Paper product only machine NO PLASTICS!
- Remember to clean up after yourselves.
- Any questions please ask the monitor.

Start the UPC



1. Once you have logged in you must start the UPC first.
2. The laser will not respond until you have done this.

- 18x32" material on cutting bed
– real cutting area 17.5x31.5"
- Put material on shelf under the laser cutter

Do not put any materials on top of any laser or equipment

*** not a work/storage space***



Setting the Z-height



Focus Tool



Push Button 1 Time



Focus Tool in position

Setting the Z-height

Focus tool in CORRECT position.

YES!



Setting the Z-height

NO!!! WRONG!!!



Setting the Z-height



Screen change



Use Right arrow to
Shift sensitivity-

***Note check under number



Use Right arrow to
Shift sensitivity-

***Note check under number

Setting the Z-height



Use UP arrow to bring
table UP. ^^^^



Use DOWN arrow to
bring table DOWN. vvvv

Setting the Z-height

The Laser has a specific focal length. If you do not adjust the bed height with your material on it, the laser will not operate properly.

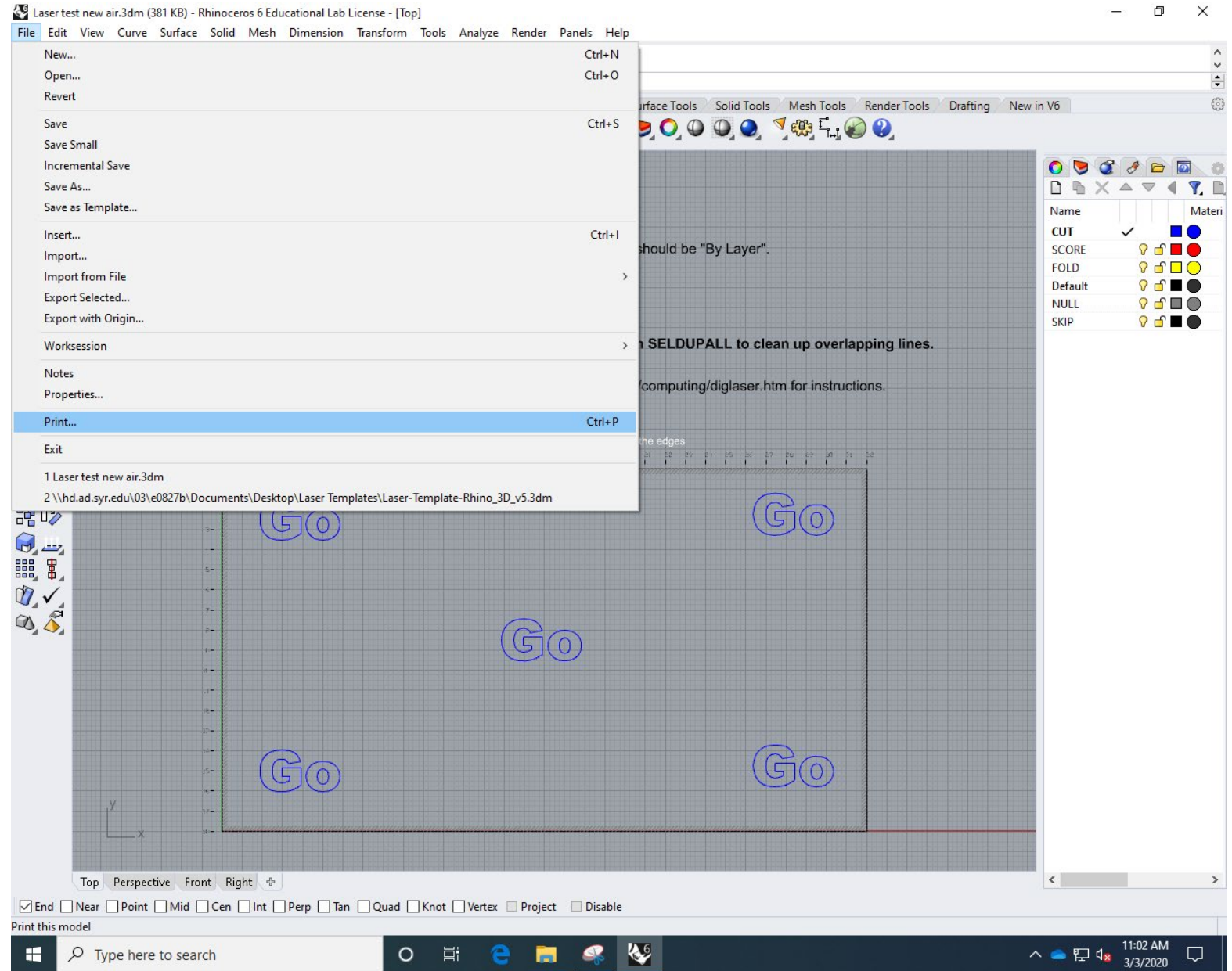
The notch in the focus tool should just push off the bottom of the carriage.



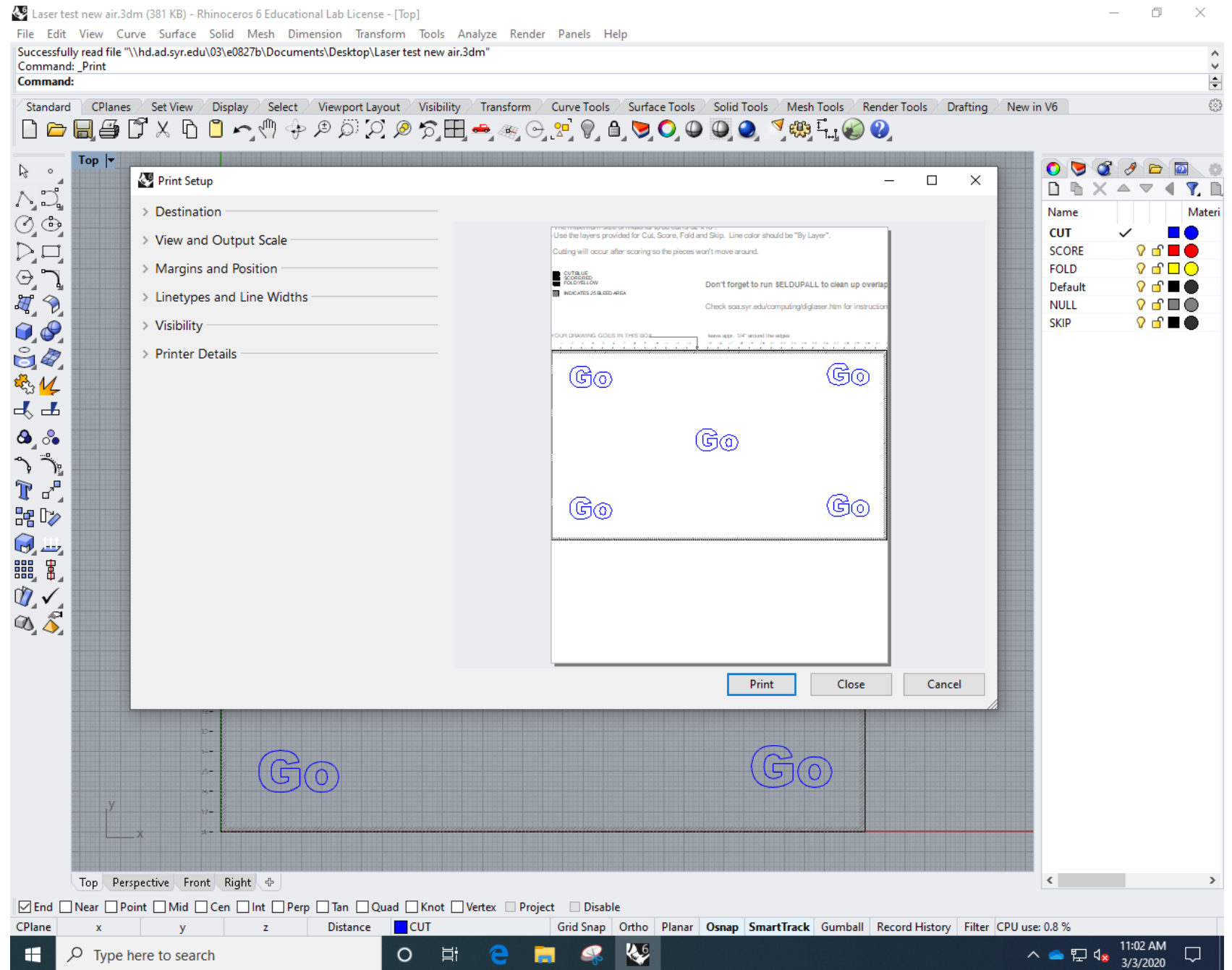
Cutting

File

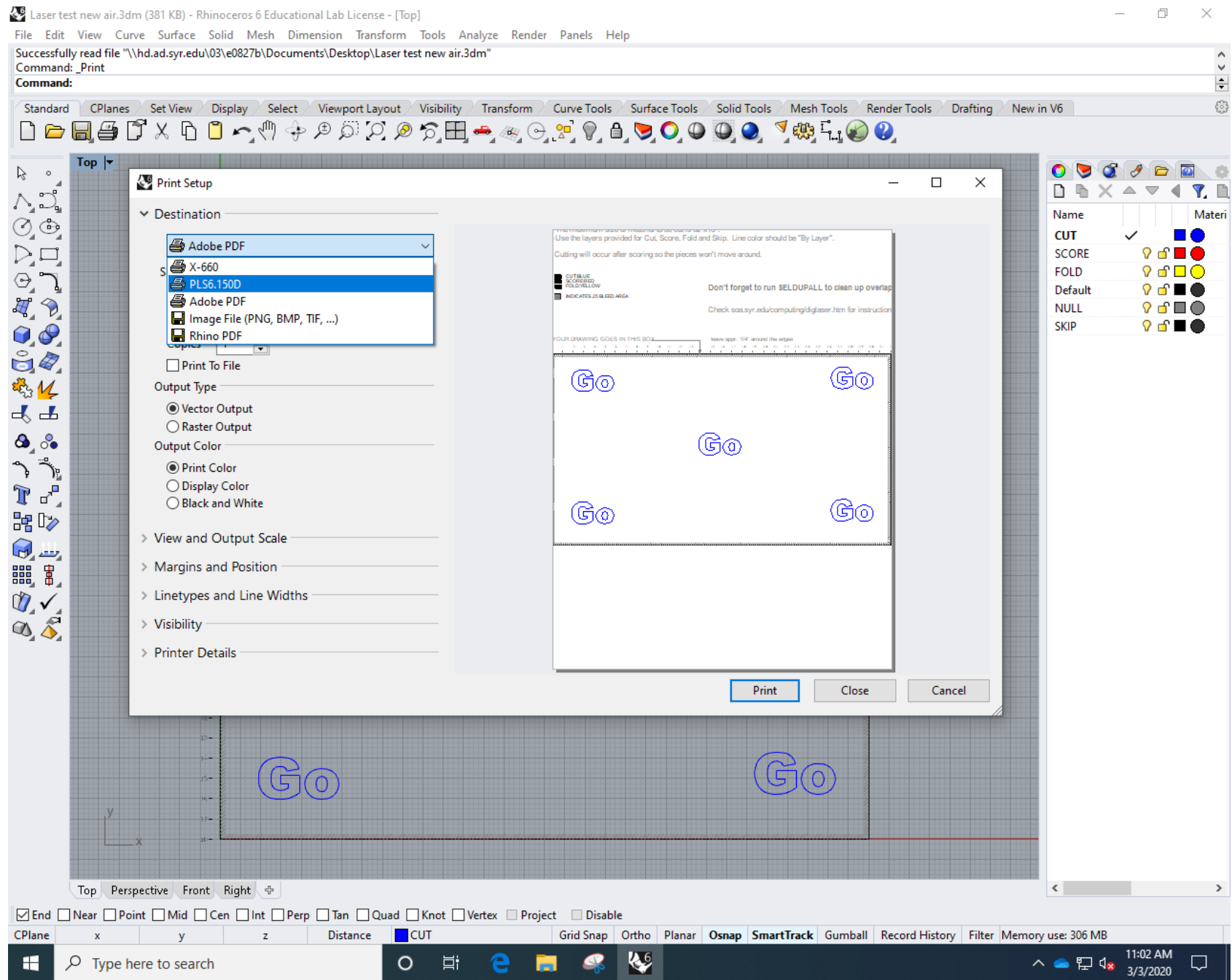
-PRINT

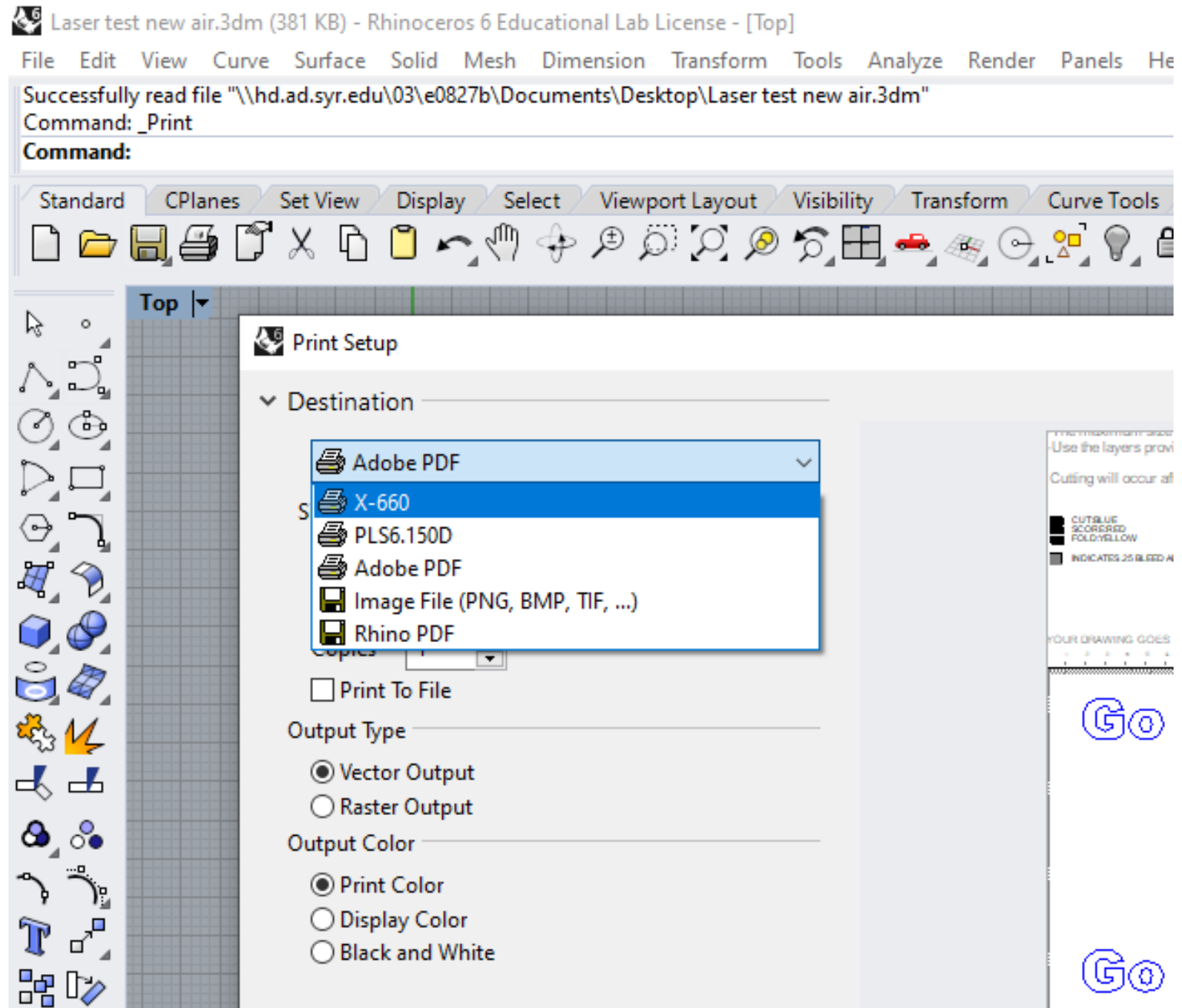


Cutting Print Setup -Destination



Cutting
Print Setup
-Destination
PLS6.150D
Or
X-660
Select for Machine





Cutting

Print Setup

-Destination

PLS6.150D

Or

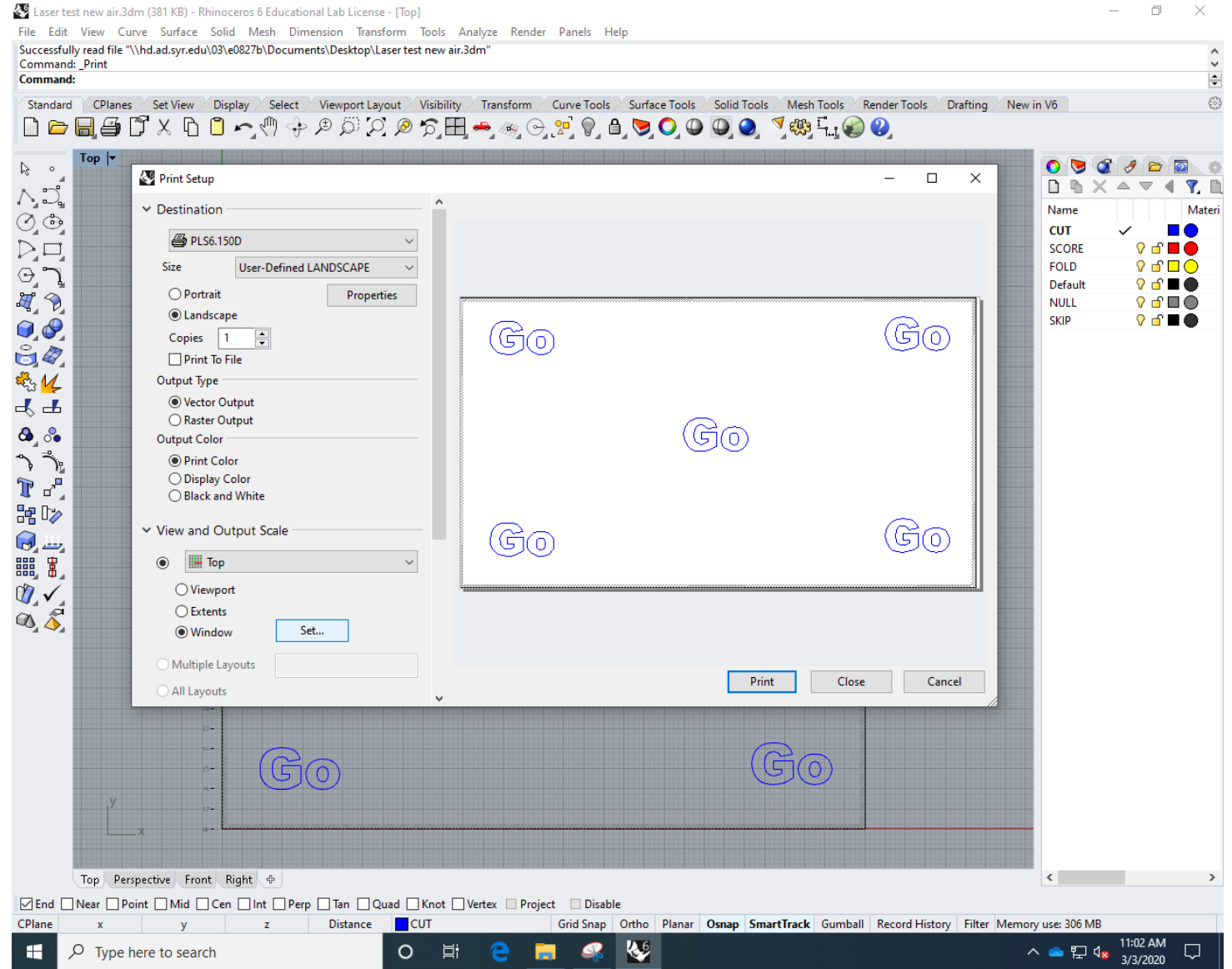
X-660

Select for Machine

Cutting

Print Setup

-View and Output Scale

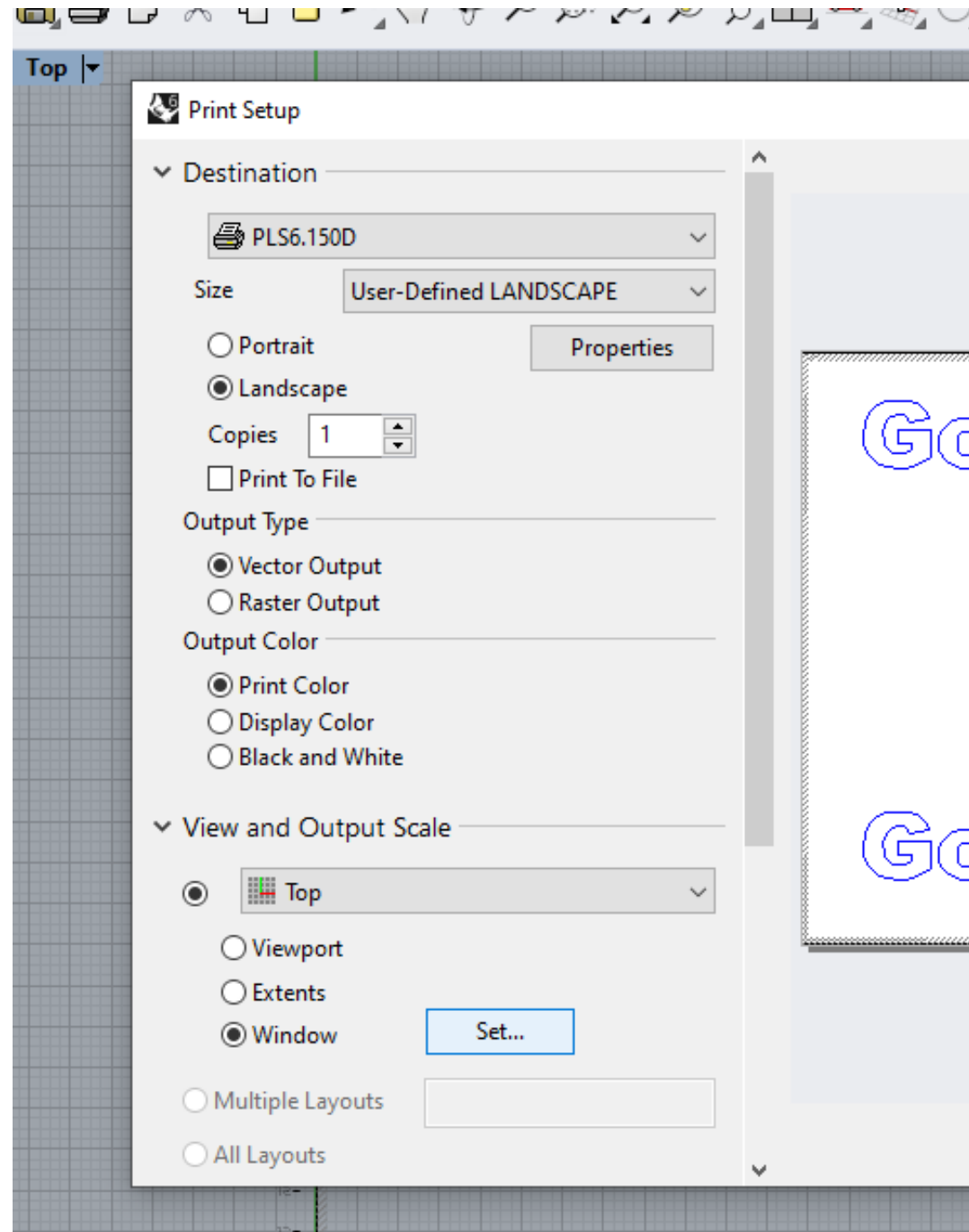


Cutting

Print Setup

-View and Output Scale

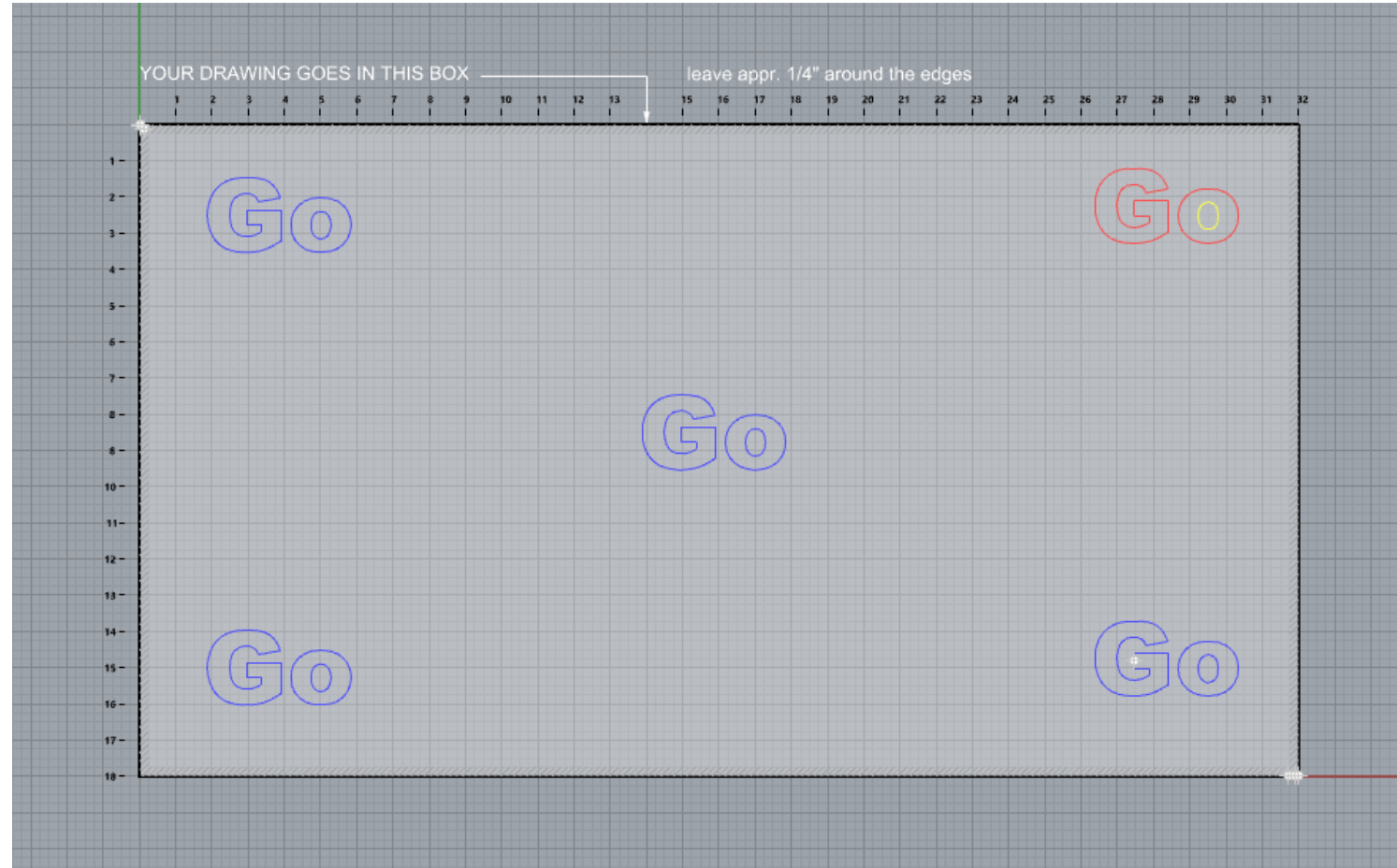
-Window
Set...



Cutting

Print Setup

- drag “gray” window across template work area
- Hit ENTER when done.



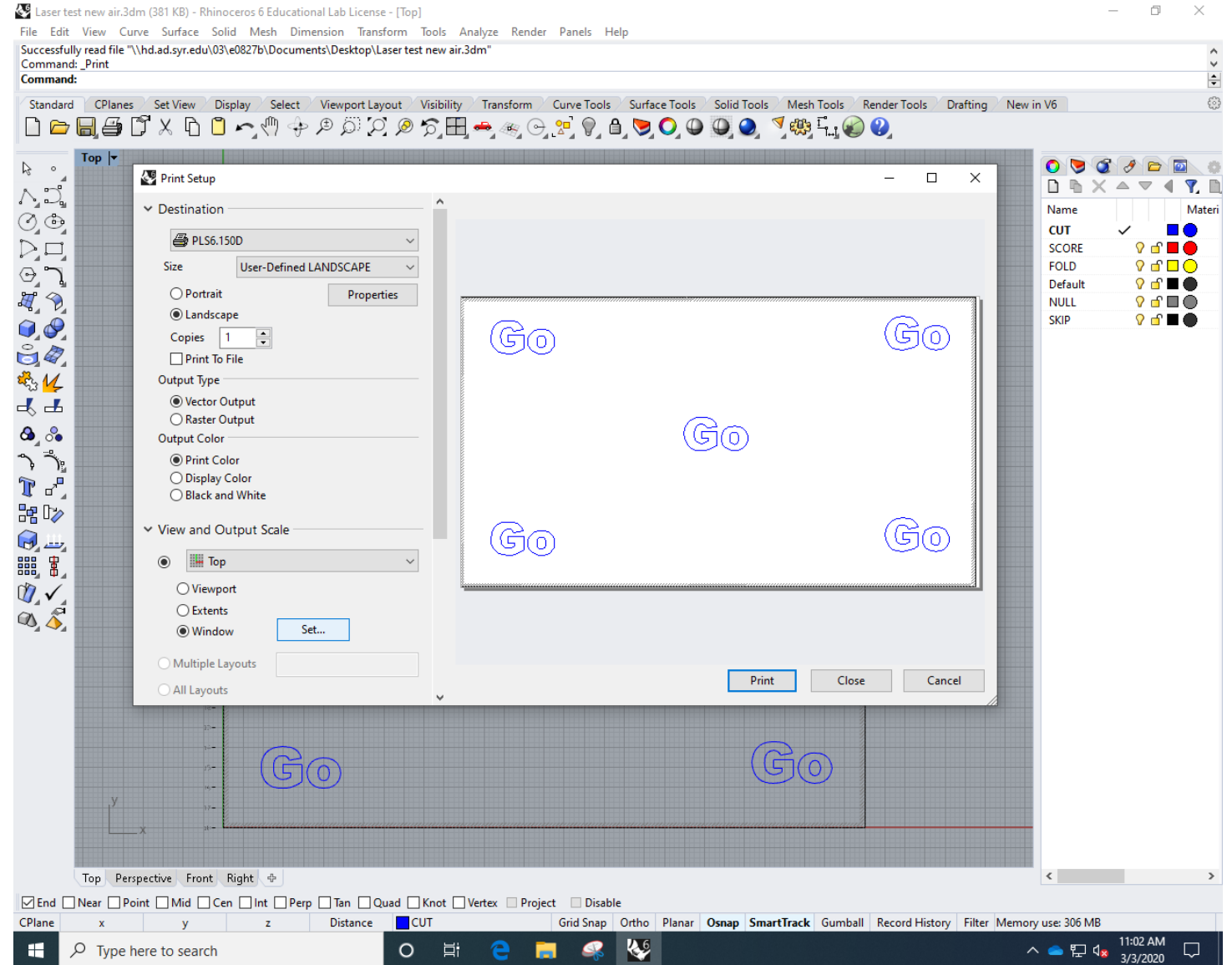
Cutting

Print Setup

-View and Output Scale

-Window
Set...

-PRINT



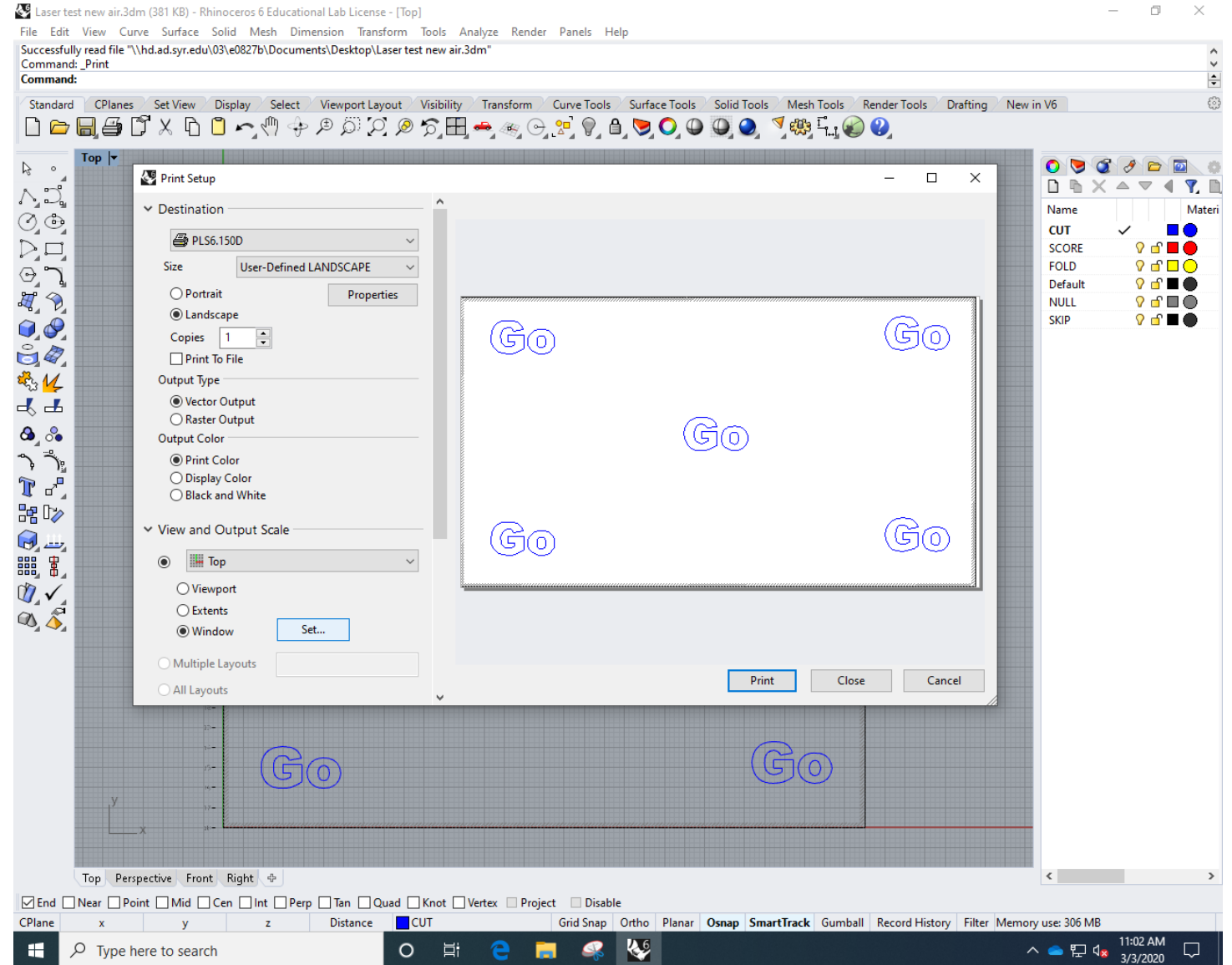
Cutting

Print Setup

-Destination

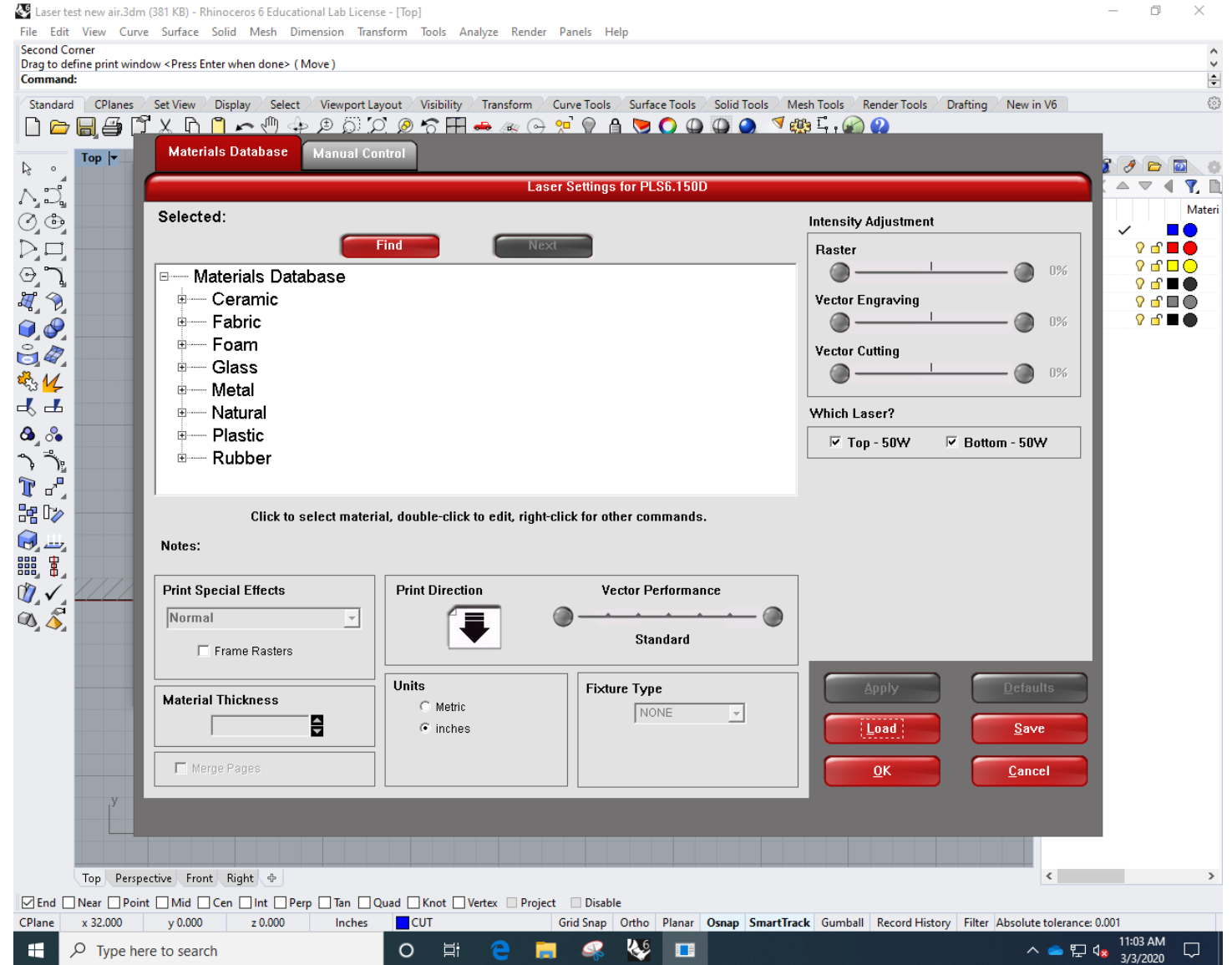
-Properties

-UCP Interface



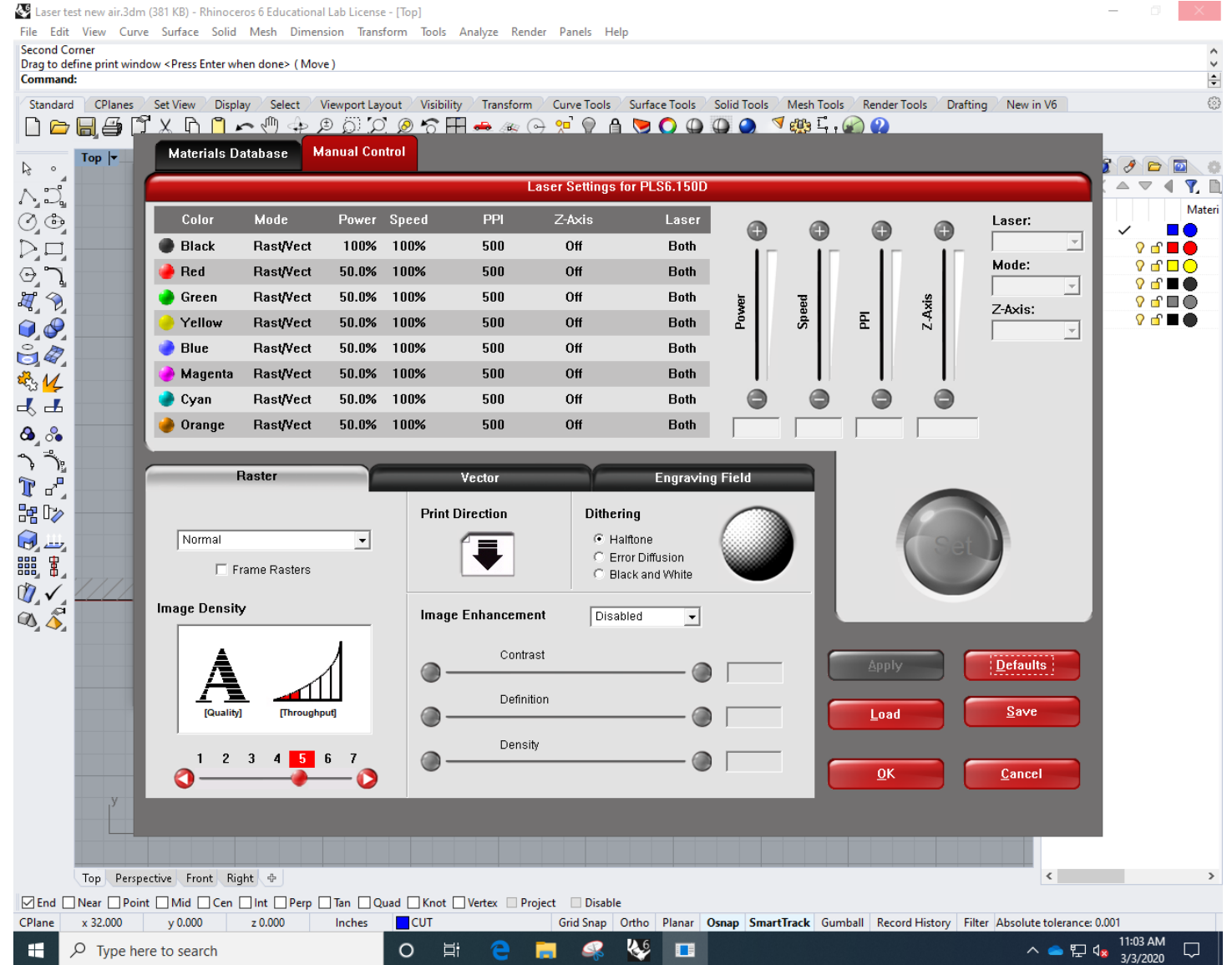
Cutting

UCP Control Interface -Manual Control



Cutting

UCP control interface
-Manual Control
-LOAD



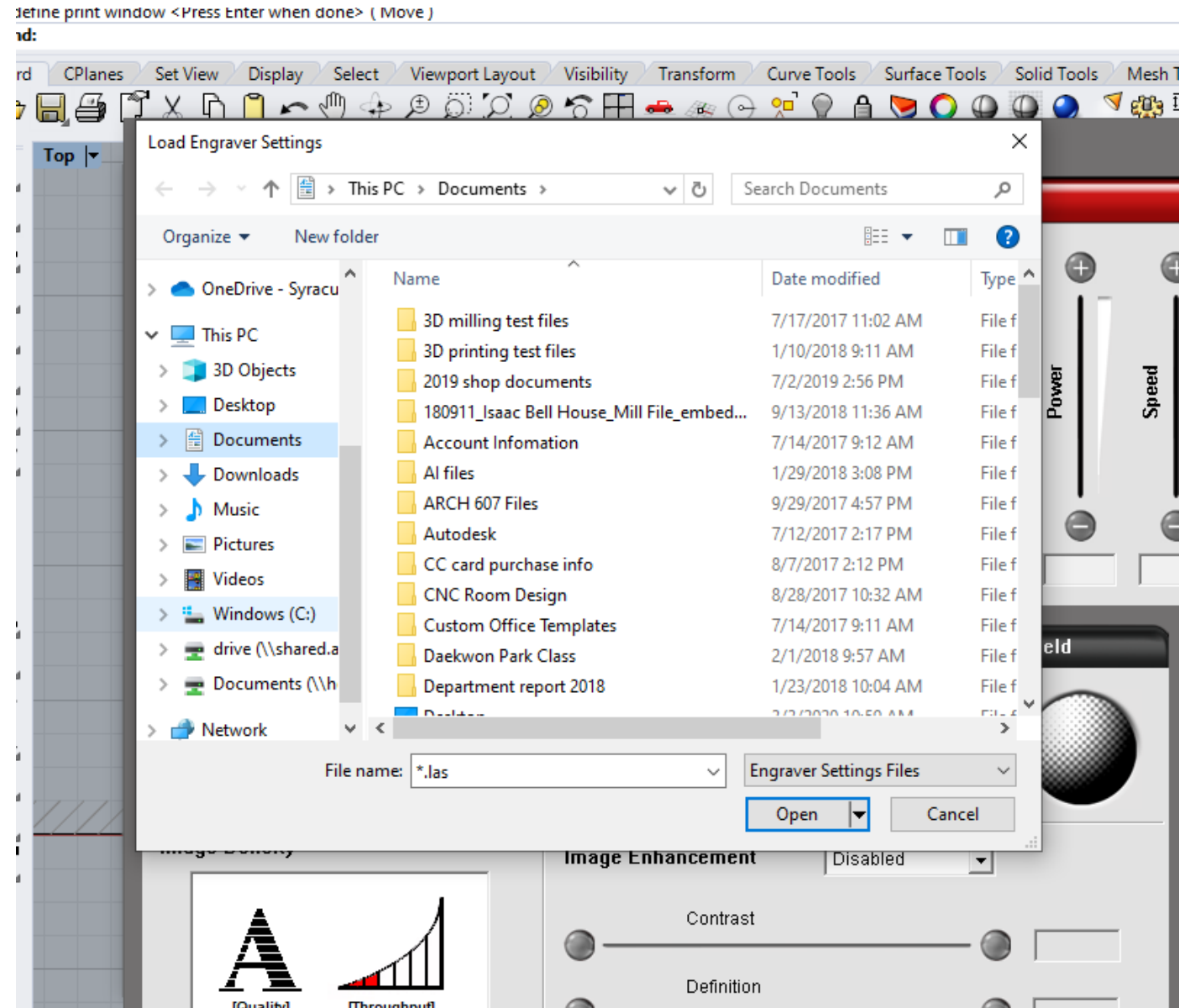
Cutting

UCP control interface

-Manual Control

-LOAD

-Windows (C) drive



Cutting

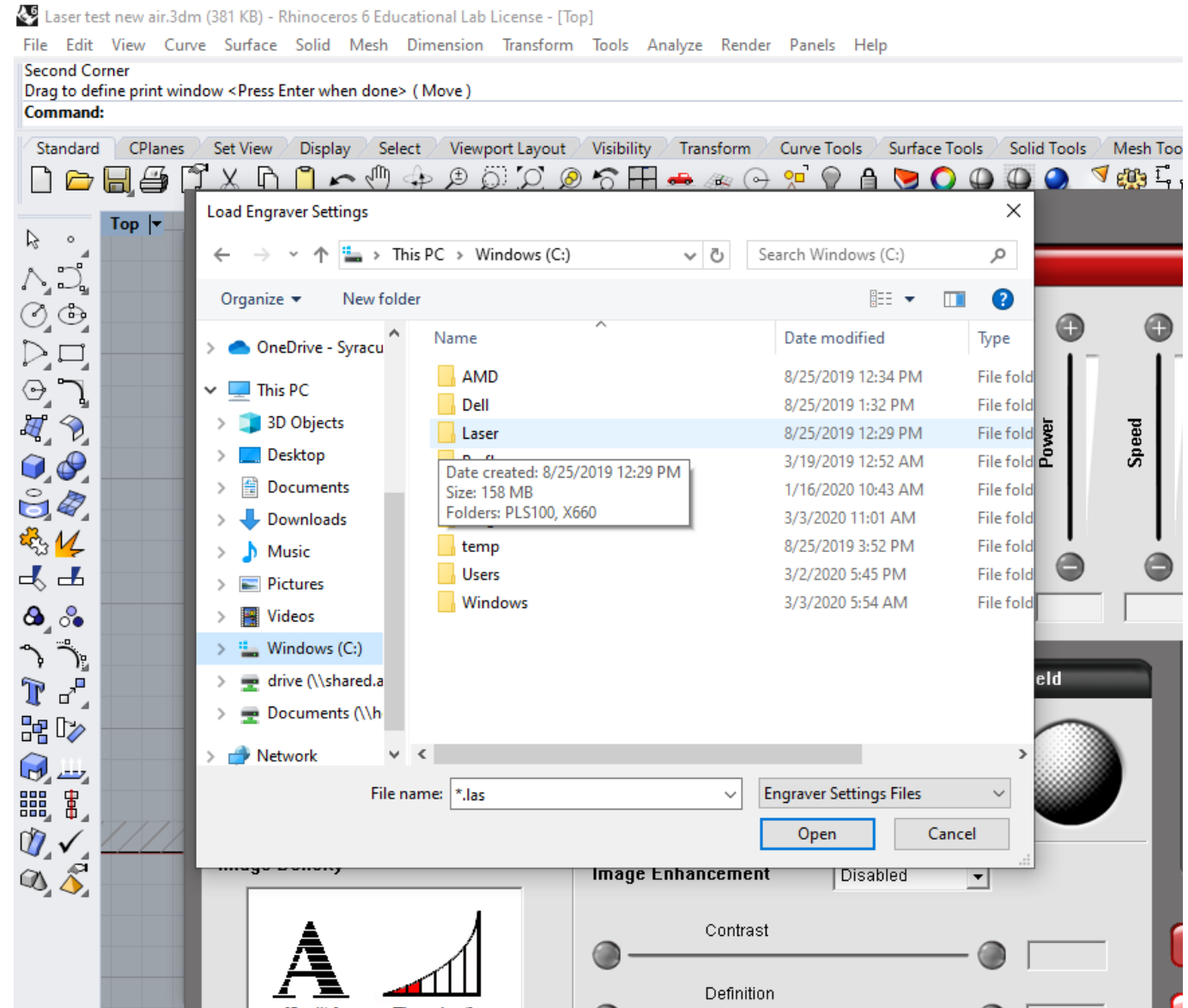
UCP control interface

-Manual Control

-LOAD

-Windows (C) drive

-Laser



Cutting

UCP control interface

-Manual Control

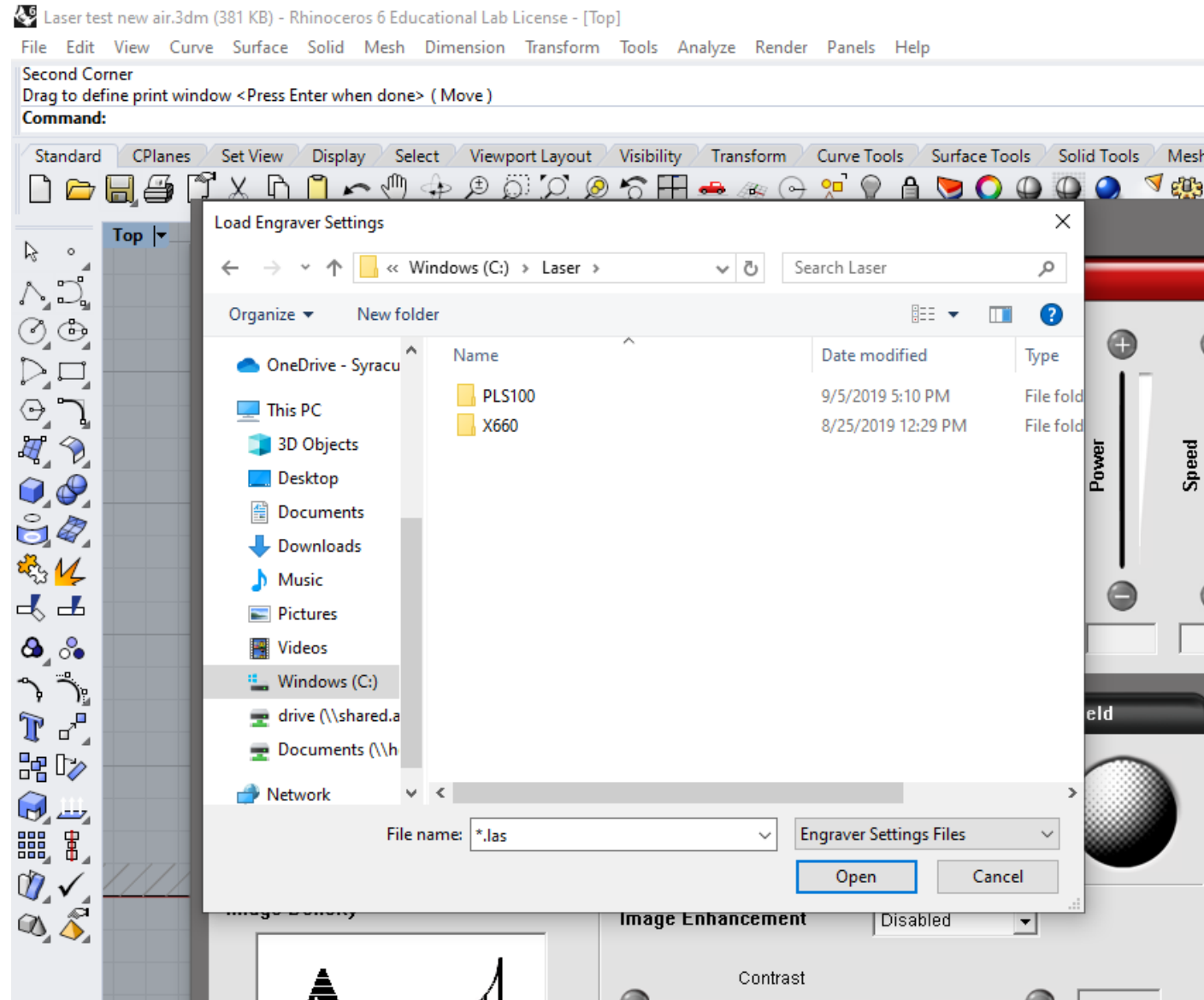
-LOAD

-Windows (C) drive

-Laser

-Select your Machine

PLS100 or X660



Cutting

UCP control interface

-Manual Control

-LOAD

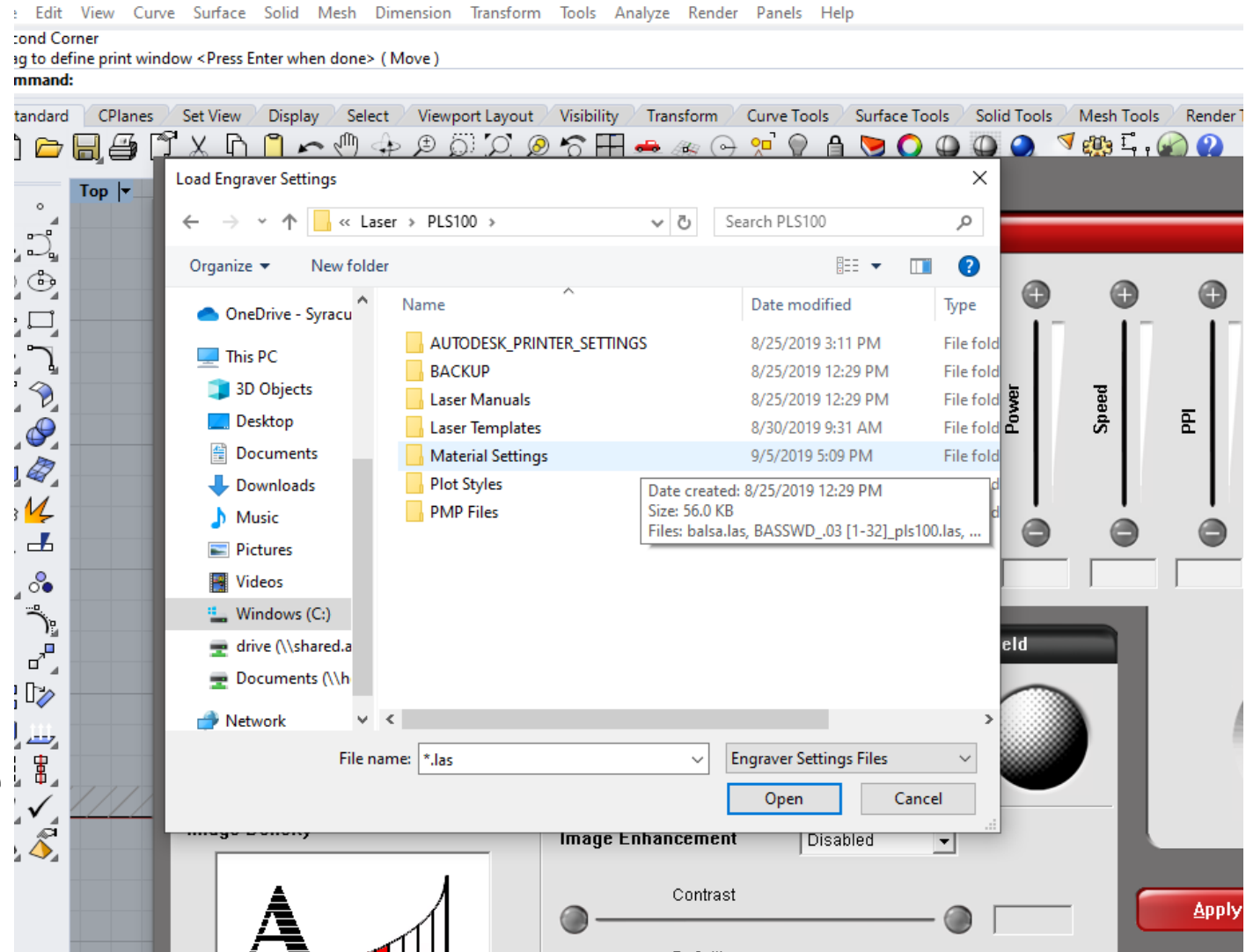
-Windows (C) drive

-Laser

-Select your Machine

PLS100 or X660

-Material Settings



Cutting

UCP control interface

-Manual Control

-LOAD

-Windows (C) drive

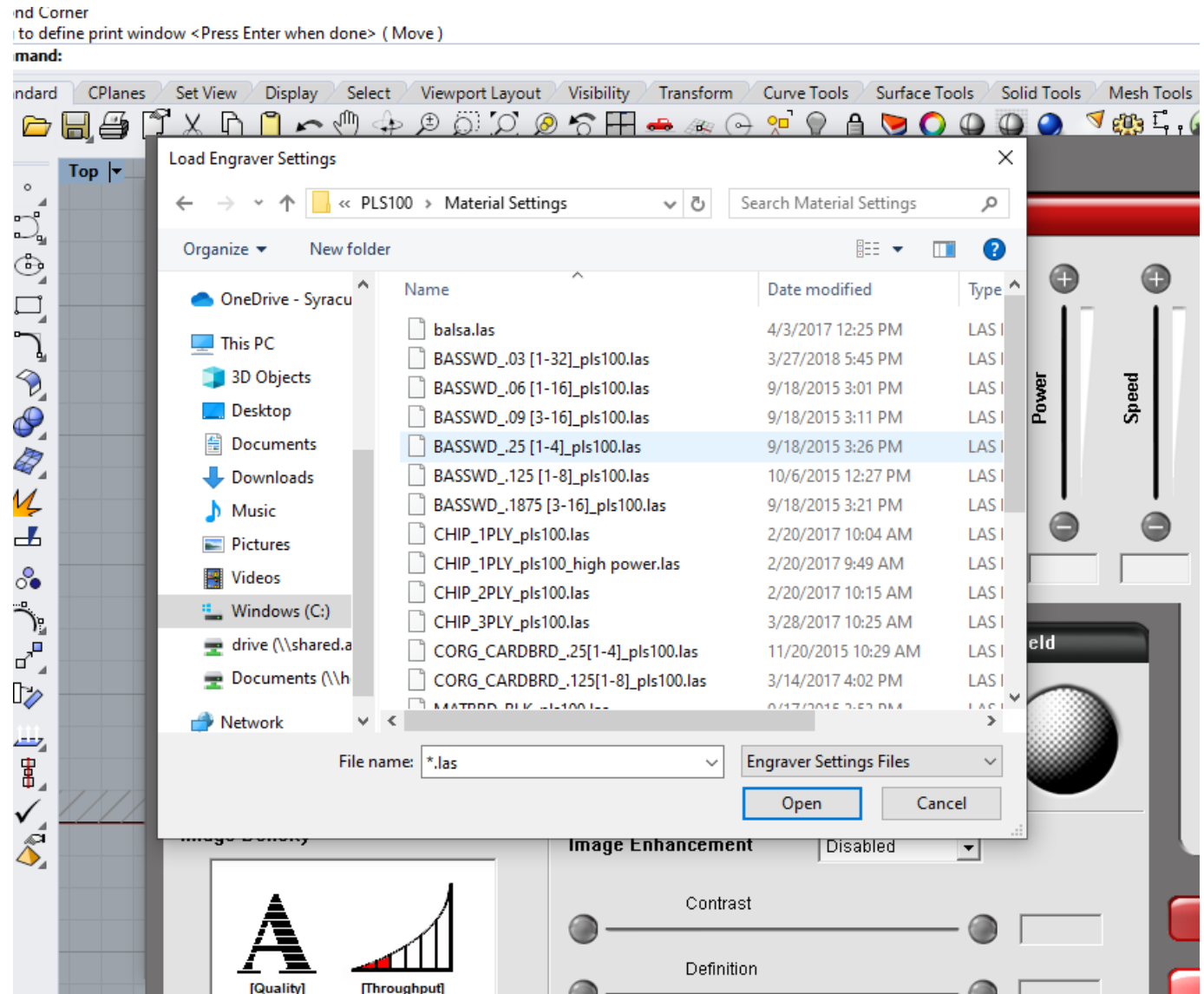
-Laser

-Select your Machine

PLS100 or X660

-Material Settings

-SELECT MATERIAL - open

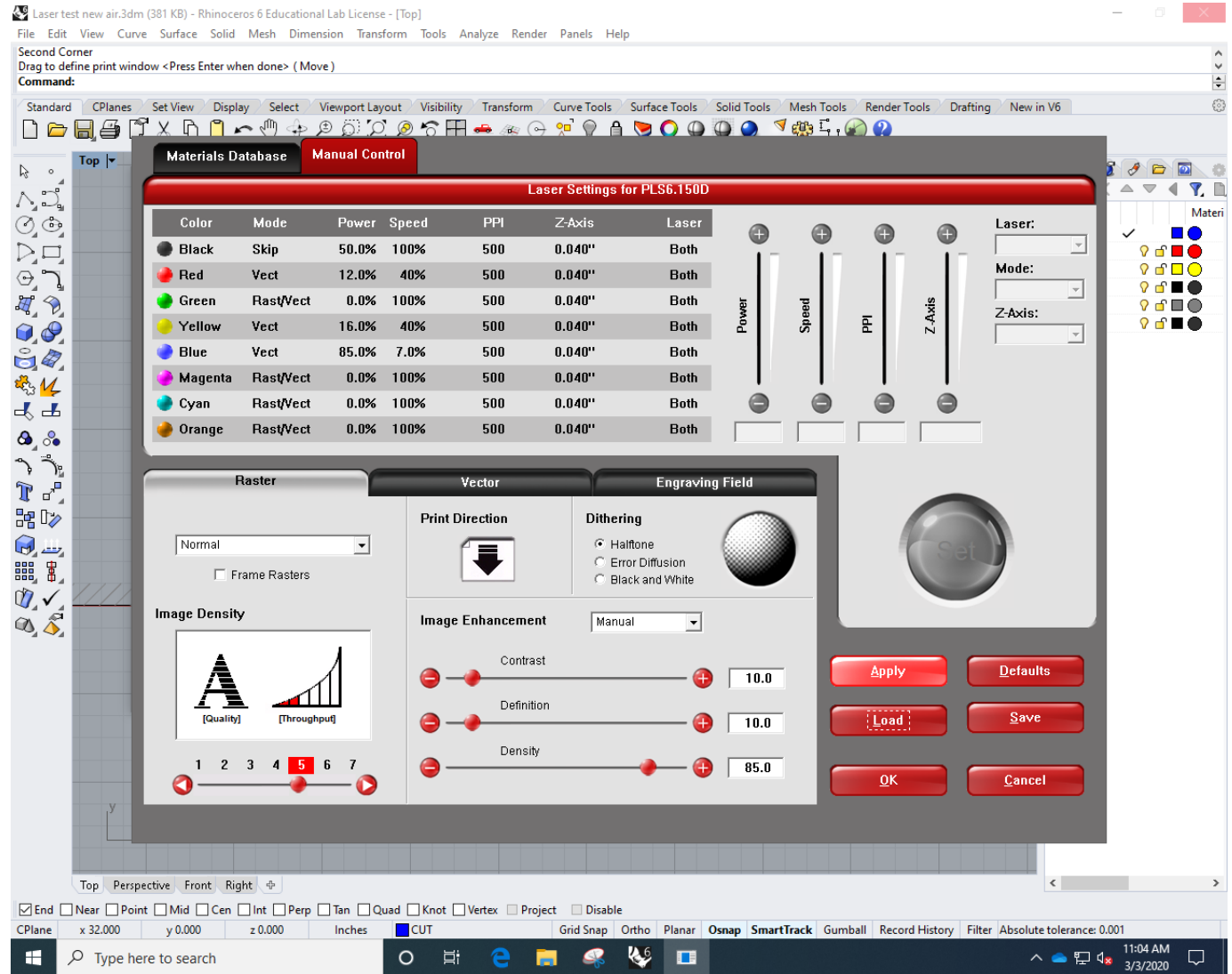


Cutting

UCP control interface

-APPLY

-OK

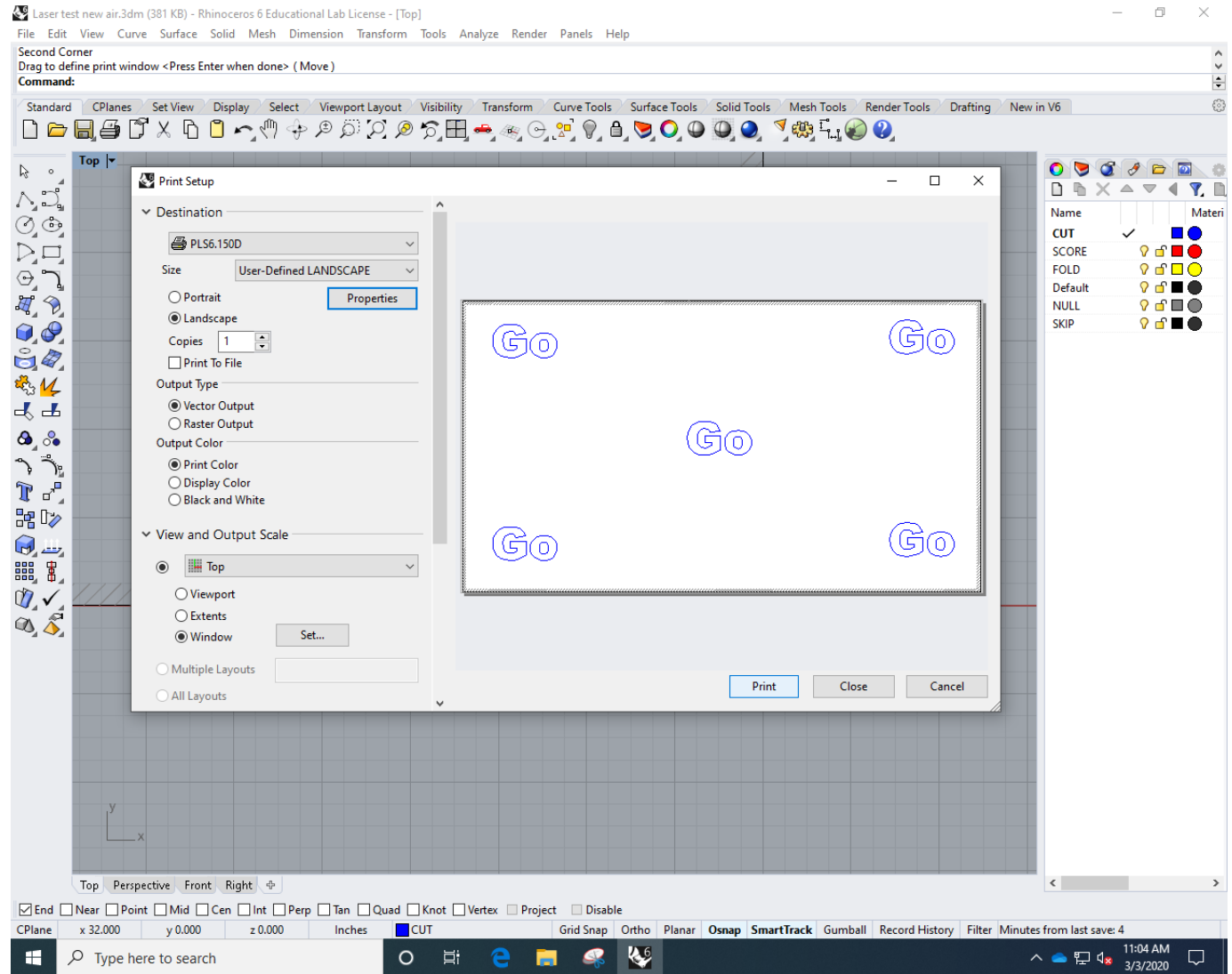


Cutting

UCP control interface

-APPLY

-PRINT



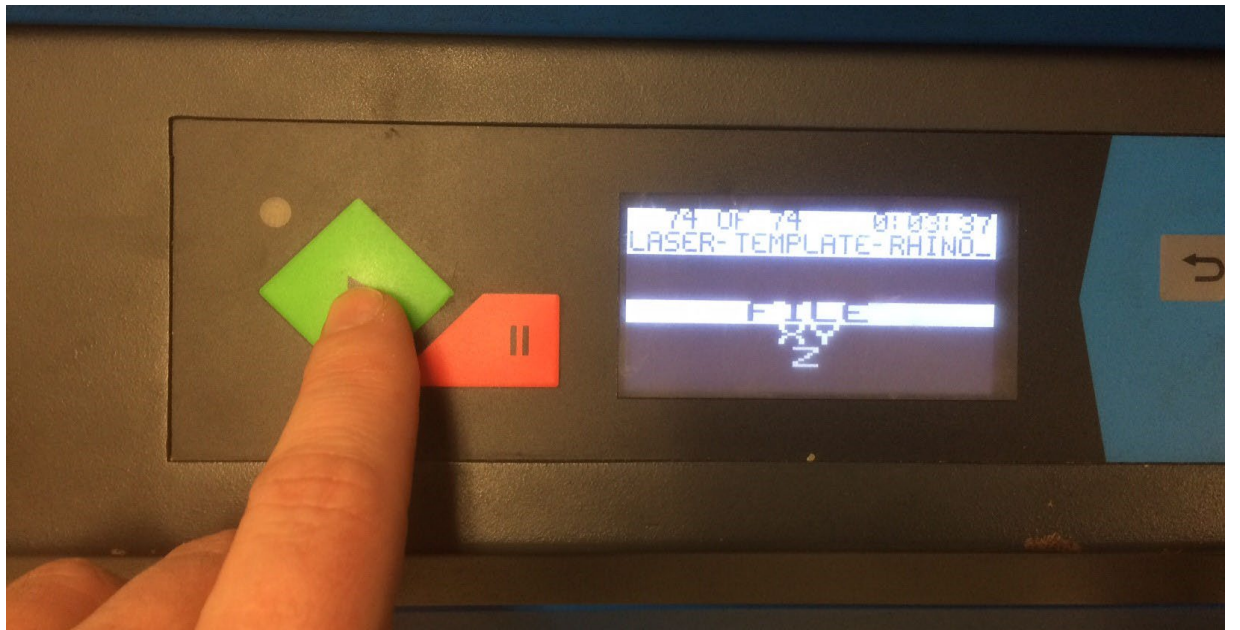
Cutting

Machine Display

File Name On Display

-big green “play” Button

-PUSH to PRINT



WARNINGS

NEVER LEAVE YOUR MACHINE RUNNING

- pause machine, call your partner, etc.

DO NOT WATCH THE LASER

- it is very tempting to watch the machine work
the light is damaging to your eyes!
- Comparable to the SUN!

QUESTIONS

Contact info:

Michael Giannattasio

Office 007

Email: Mgiannat@syr.edu

Let's go take a look...