Holographic Display

Requested supplies:

1. 1/2 in. x 2 ft. x 4 ft. PureBond Cherry Plywood Project Panel $17.50 / each
   http://m.homedepot.com/p/1-2-in-x-2-ft-x-4-ft-PureBond-Cherry-Plywood-Project-Panel-1680/203552847

2. 6-32 Pan slotted machine screws, 1-1/4 in in Length $4.16 / pkg. of 100
   https://www.grainger.com/product/GRAINGER-APPROVED-Mach-Screw-1MU18?s_pp=false&picUrl=//static.grainger.com/rp/s/is/image/Grainger/6HY71_AL01?$smthumb$

3. Clear UV Protection Window Film 30" Wide x 6.5 ft. Roll $30.00 / roll
   http://www.amazon.com/Clear-Protection-Window-Film-Wide/dp/B004JAW3KW

3 Options:

A. Pyramid: TV on the bottom.
B. Pyramid: TV on the top.
C. Snell's Law: 45 degree screen.

Quick Notes:

- Using the Citrix version of SolidWorks, I was unable to get the proper screw to display.
  A pan slotted machine screw, with thread size #6-32, driver size 2 and length of 1-1/4" seems to be a readily available option. The pilot holes would be 1/8in, but I would like confirmation on this. There may already be sufficient quantity of appropriate screws in the DfX Lab.

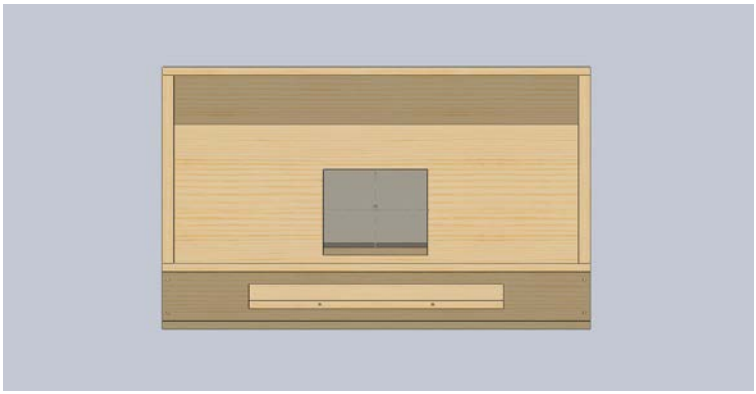
- There are different pyramid angles to make the image appear at different heights. I would make a set of popular angle sets to see which was preferred, in practice. Having the roll of film means there are options for different set ups, and also for repair.

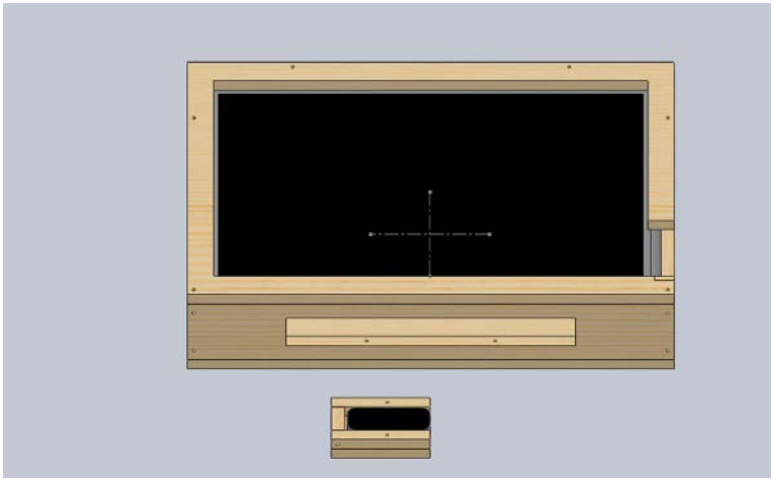
- The wires will go in the back – I have the plate in the front, because until an option is selected there is question about cord lengths.

- PDFs attached of all the components and assemblies. Acrylic is being intentionally avoided.

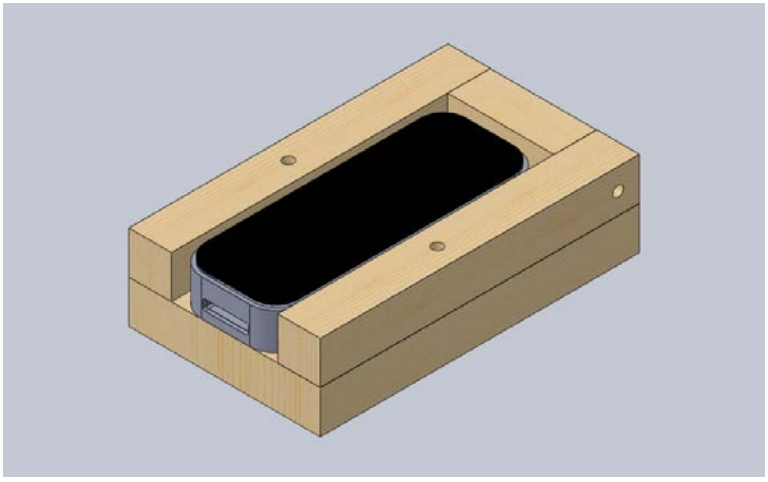
Common to all three options:

1. The TV encasement





2. The Leap Motion Encasement:

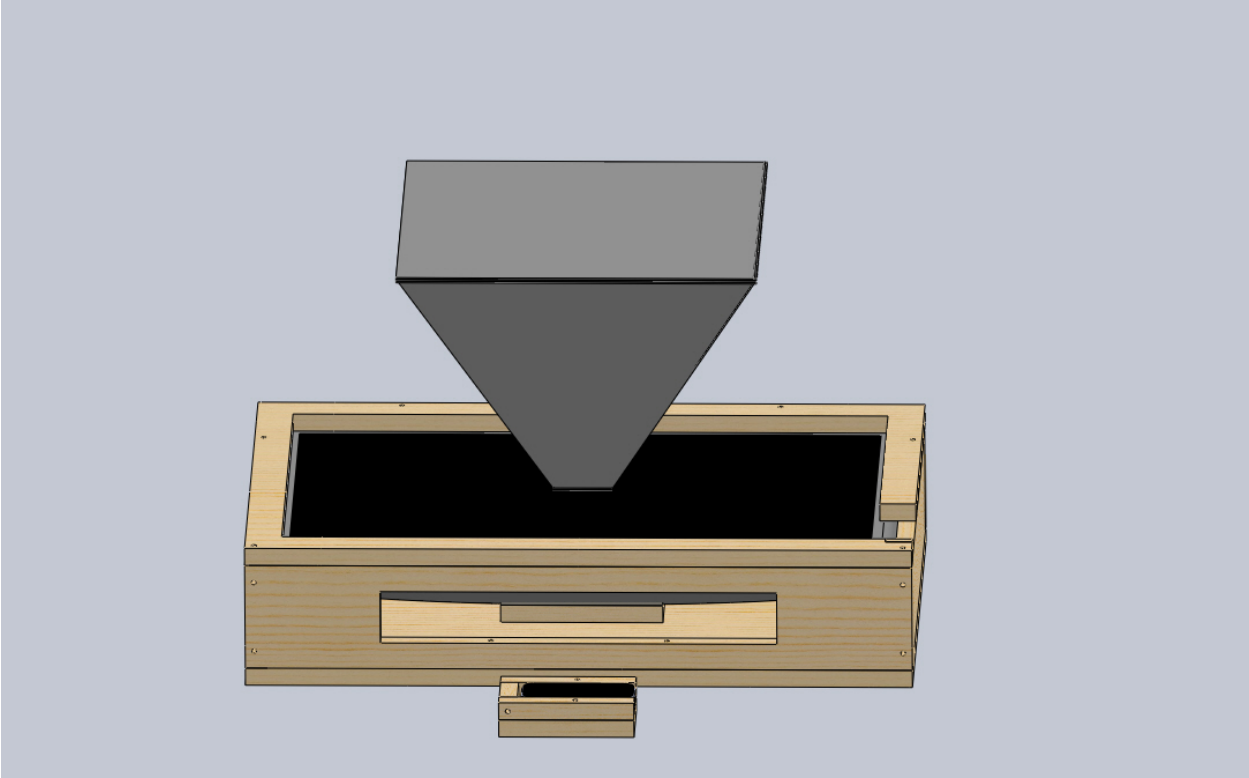


Options:

A. **Pyramid: TV on the Bottom**
Simplest option, but it is not the most aesthetic.

Pros: Easy to assemble, disassemble and modify.

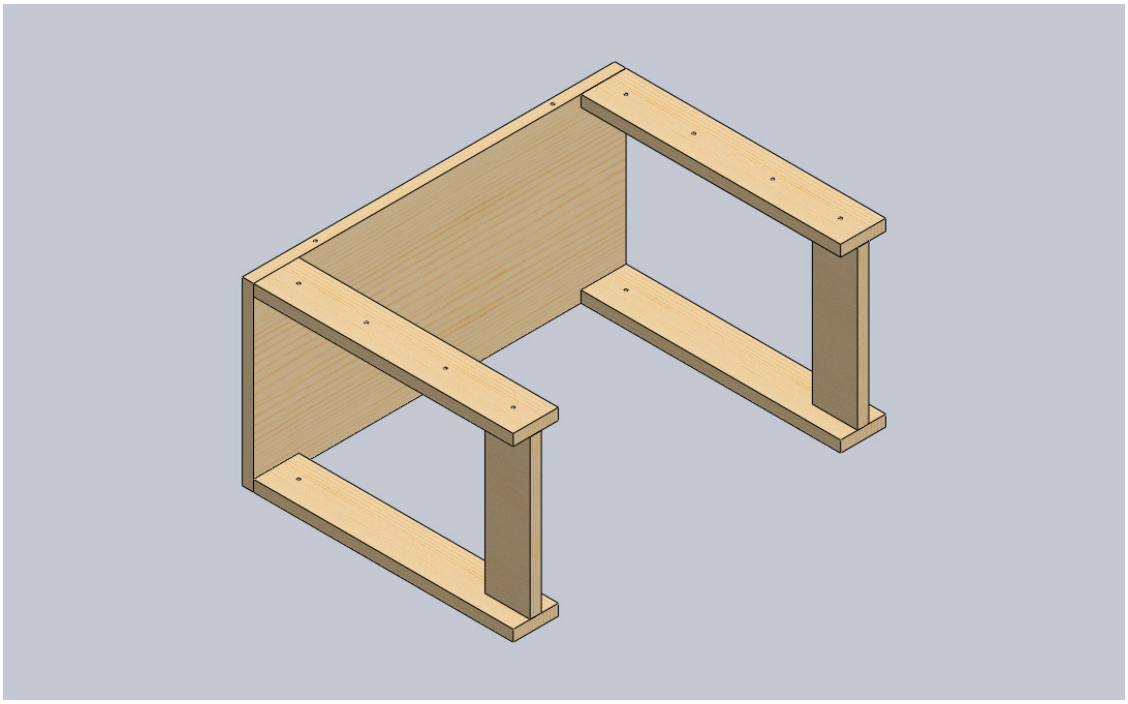
Cons: Can see the TV display images, the pyramid may be easily taken/handled.

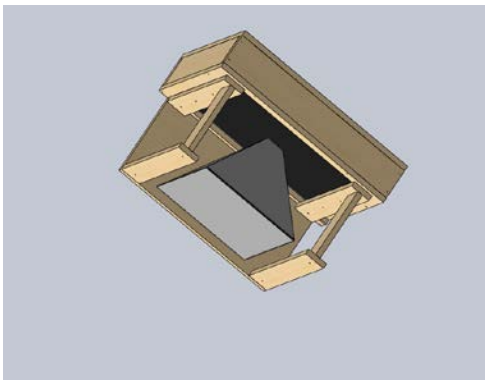


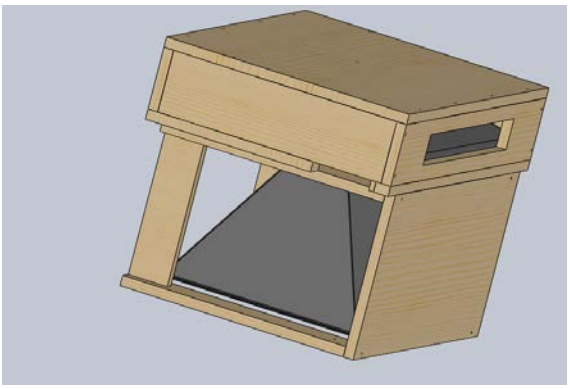
- **The "Tall" Pyramid is a place holder** – max height (61 degrees); 51.5 & 54 will also be available.
- **Acrylic is being avoided** – because of the cost and the double image it produces.
- **The UV film is easy to cut with scissors** – and with minimal tape, new pyramids emerge.
- Please note: in this configuration, the section open to display wires will be toward the back, **however the length of the LeapMotion cord is a concern**.
    - **Will this system be connected to a computer? Or used by USB/Leap into the TV?**

B. **Pyramid: TV on the Top**
Fancier option; would need a frame to support the weight.

Pros: Hides the display images, easier to hide wires, more impressive.
Cons: Will be top heavy, uses more material, may need longer cords, may need to duck to see.







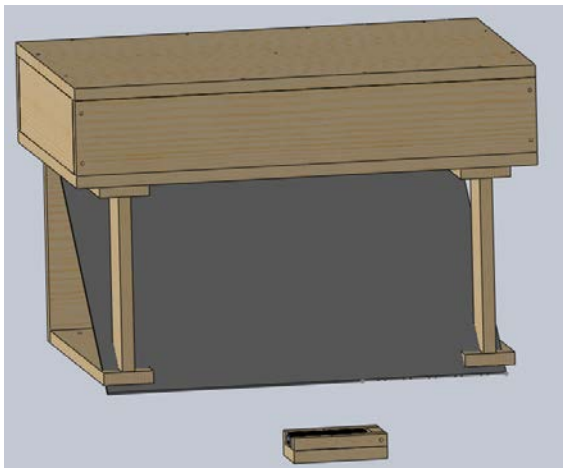
- **The Leap Motion will be in the front** - while the wires will be to up and back.

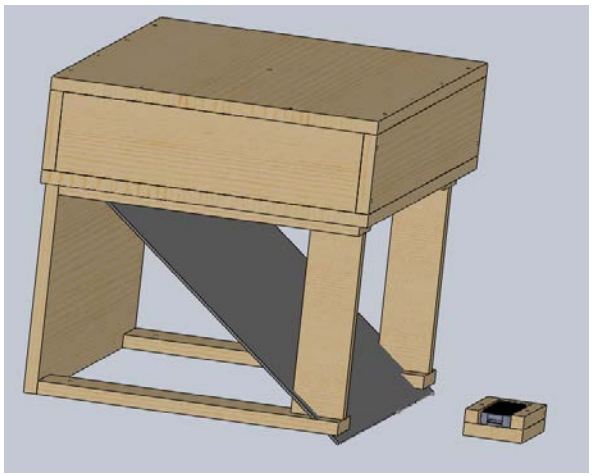
- **Won't need to purchase extra wood** – if the material requested, or equivalent, is approved.

C. **Snell's Law: 45 degree Option**
Personal favorite, but lacks 3D aspect.

Pros: Uses more of the screen, can be larger, doesn't need specialized software to split the images, can work with either set up, can exist as an accessory to others, may be easiest to use in conjunction with LeapMotion.

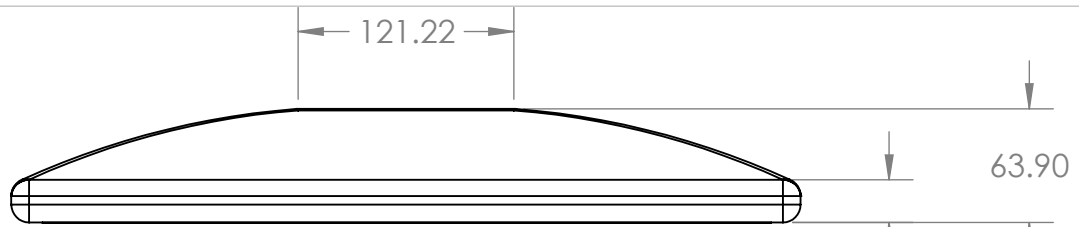
Cons: Doesn't give the 3D feel, except when looking straight on.

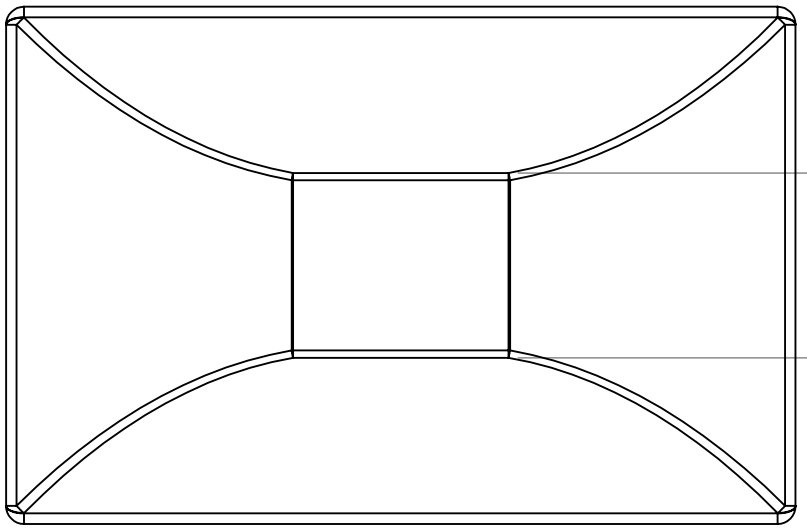


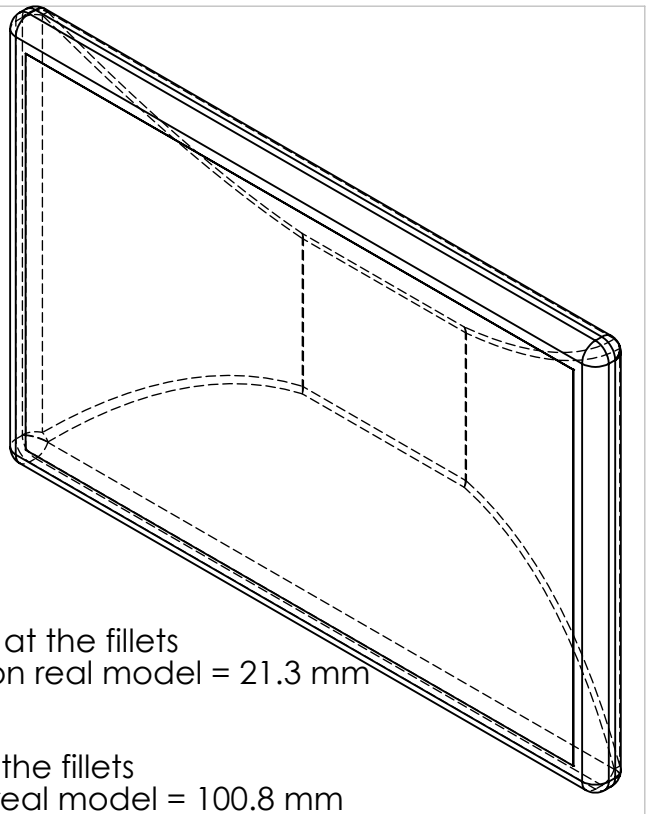


- The film can be cut with scissors – which is why the model is accurate only in the 45 degrees.

Please see the following documentation:

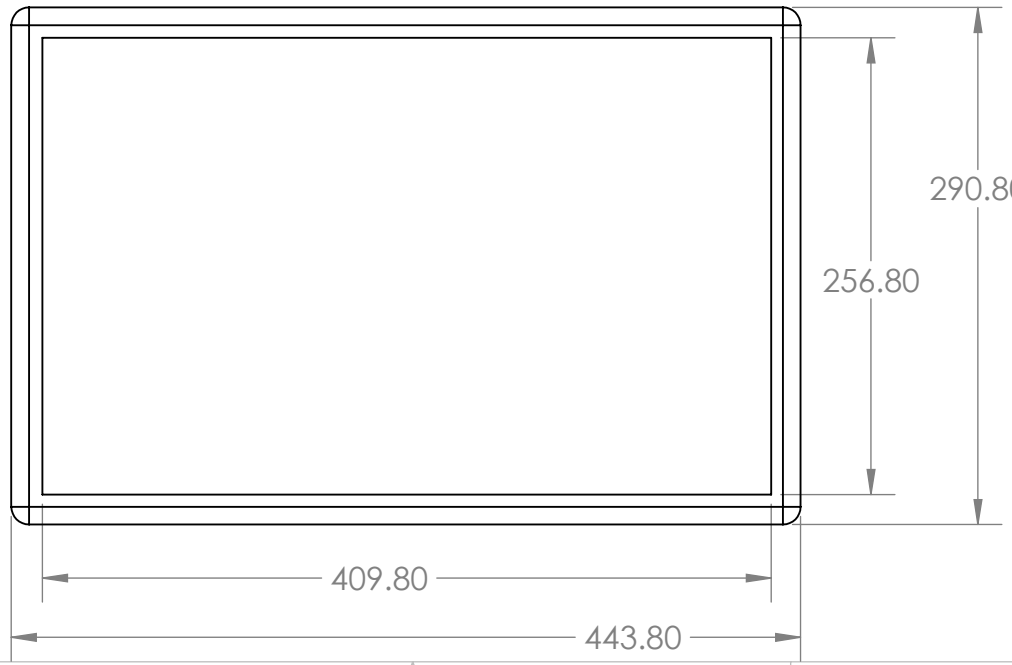


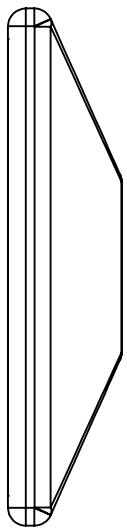




Took a guess at the fillets
this number on real model = 21.3 mm

Took a guess at the fillets
this number on real model = 100.8 mm





First Draft

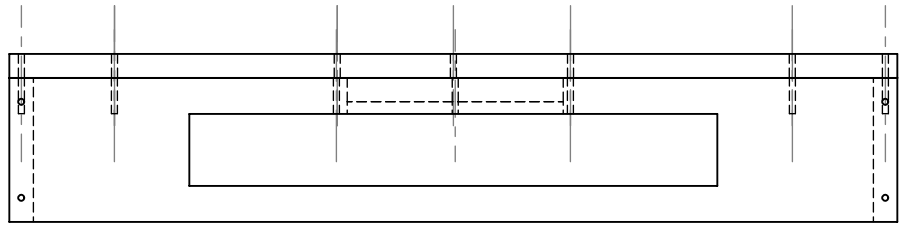
TITLE:

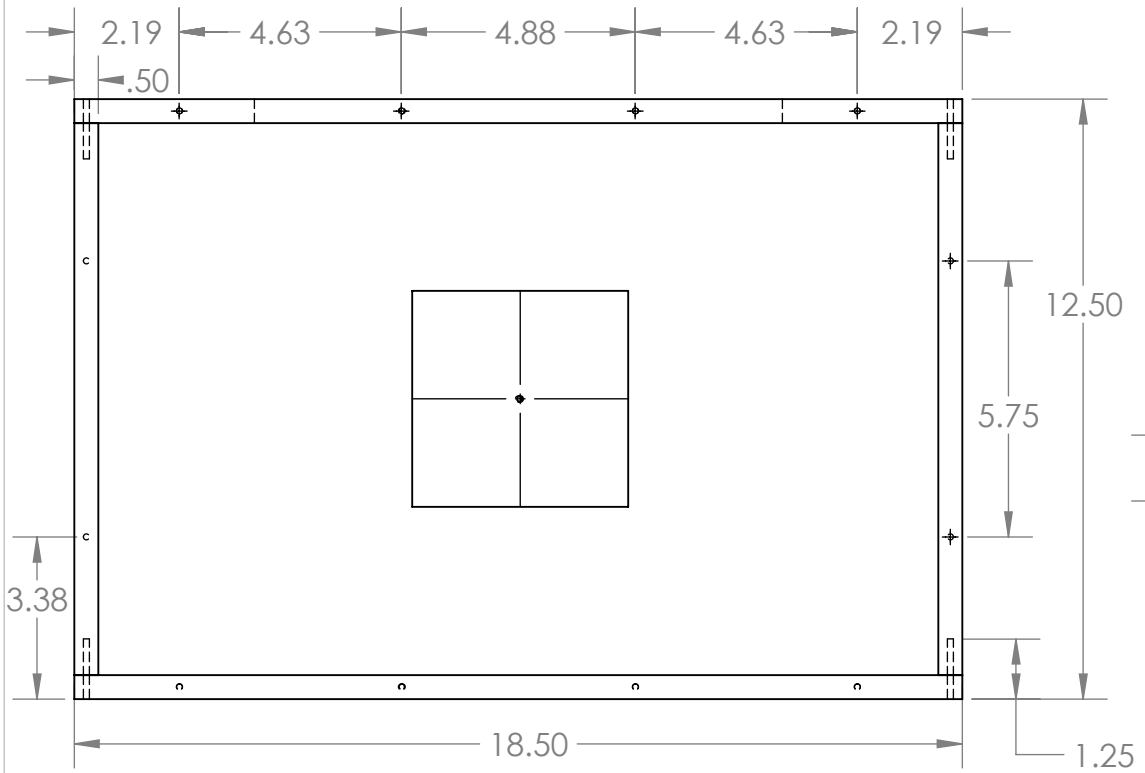
DfX VR Project Set

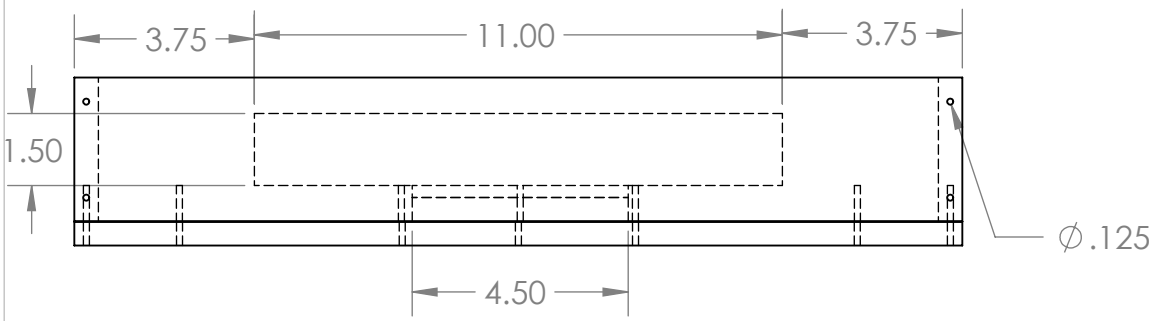
SIZE	DWG. NO.	REV
A	tv	

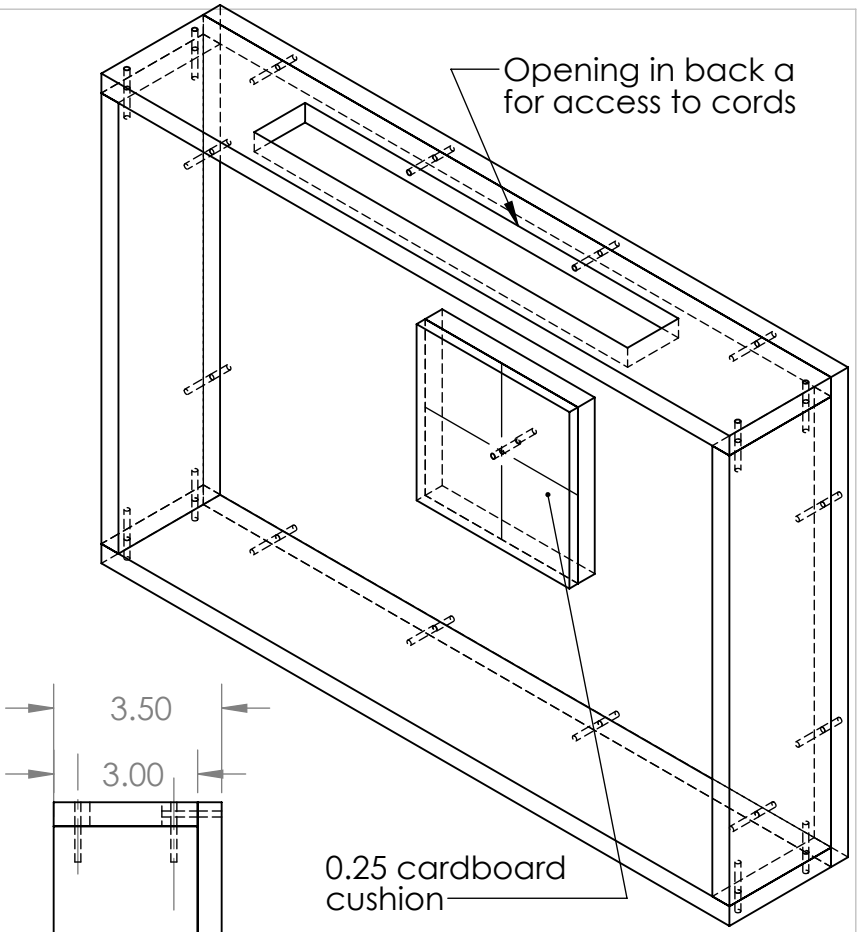
SCALE: 1:25 WEIGHT: SHEET 1 OF 1

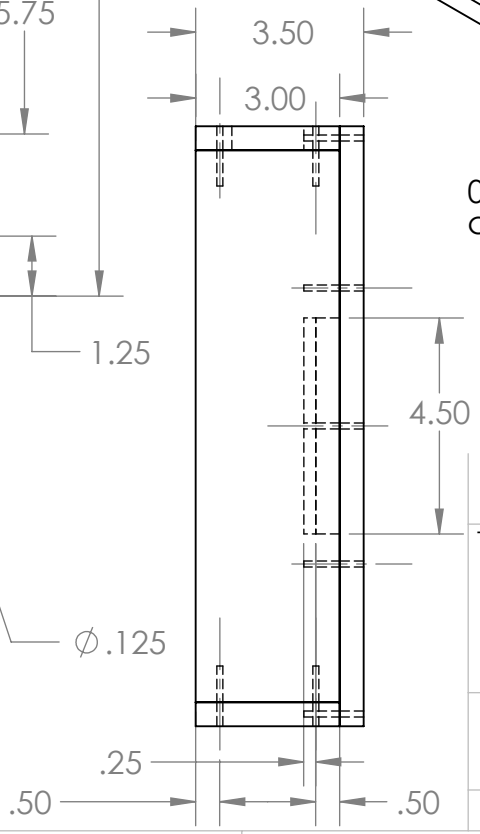
5 4 3 2 1











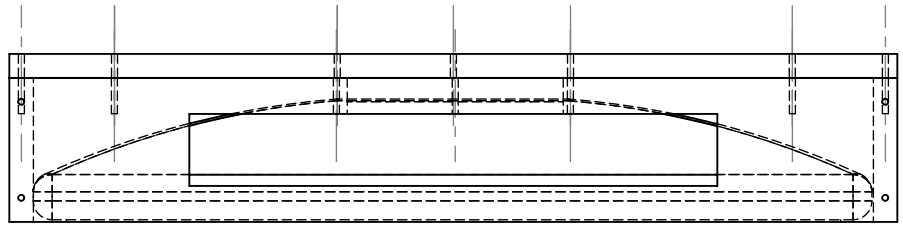
All holes are 0.125 in diameter

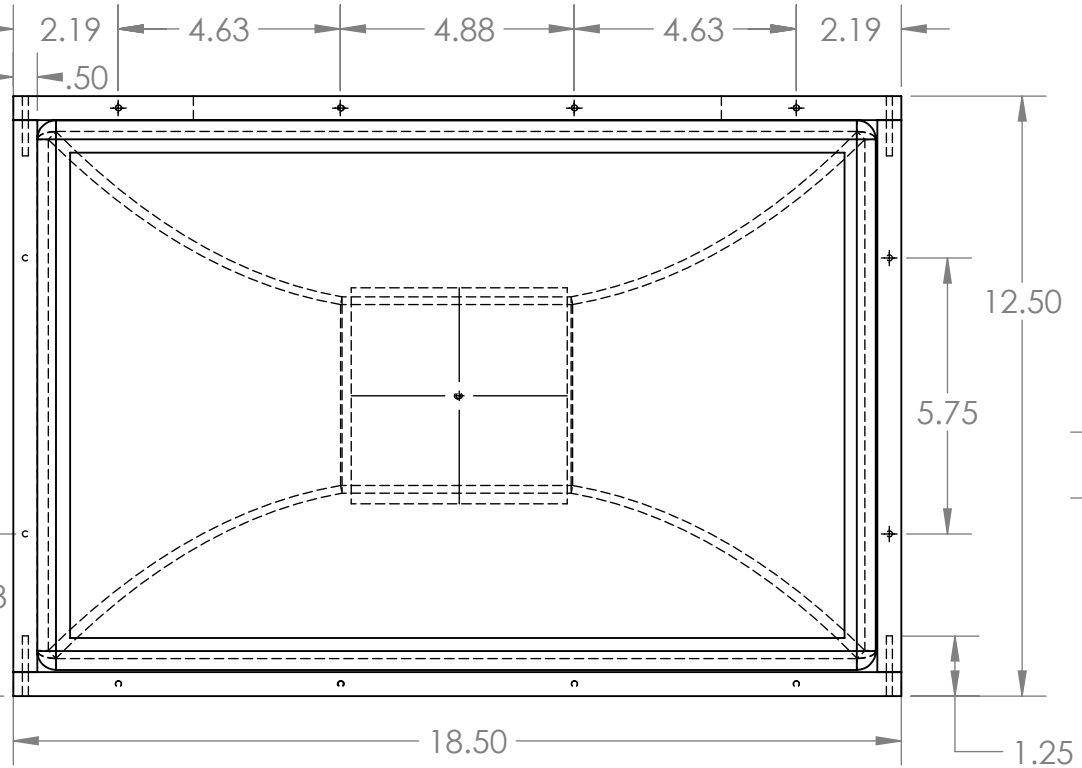
Screw: 6-32 Pan slotted machine screws, 1-1/4 in in Length

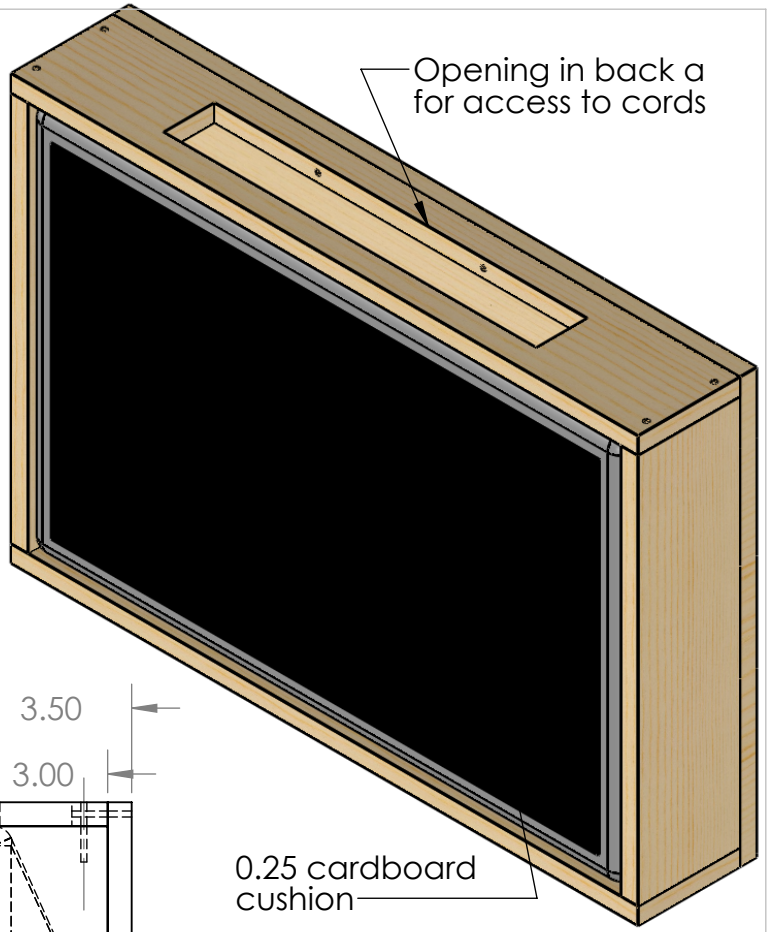
TITLE:

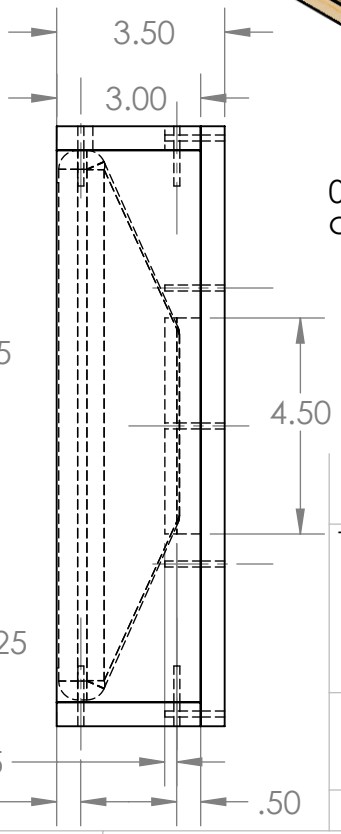
SIZE	DWG. NO.	REV
A	box and tv	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

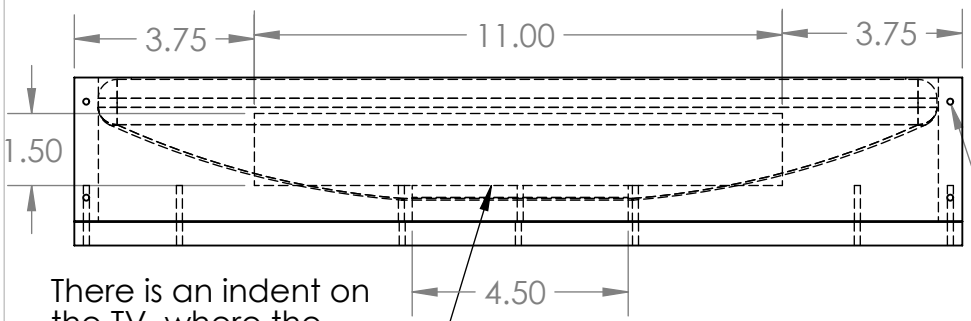
5 4 3 2 1











There is an indent on the TV, where the carboard will fit.

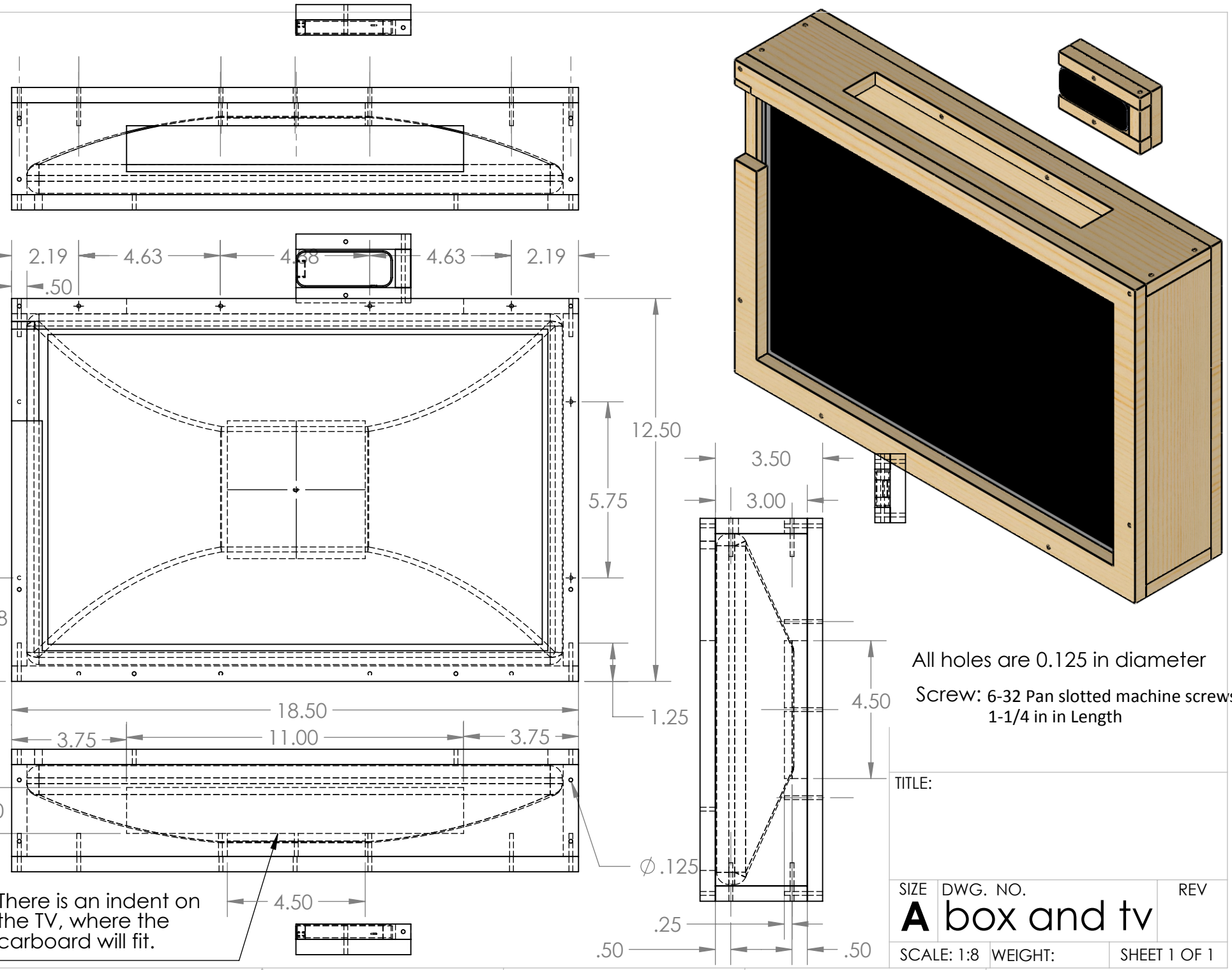
All holes are 0.125 in diameter

Screw: 6-32 Pan slotted machine screws, 1-1/4 in in Length

TITLE:

SIZE	DWG. NO.	REV
A	box and tv	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1



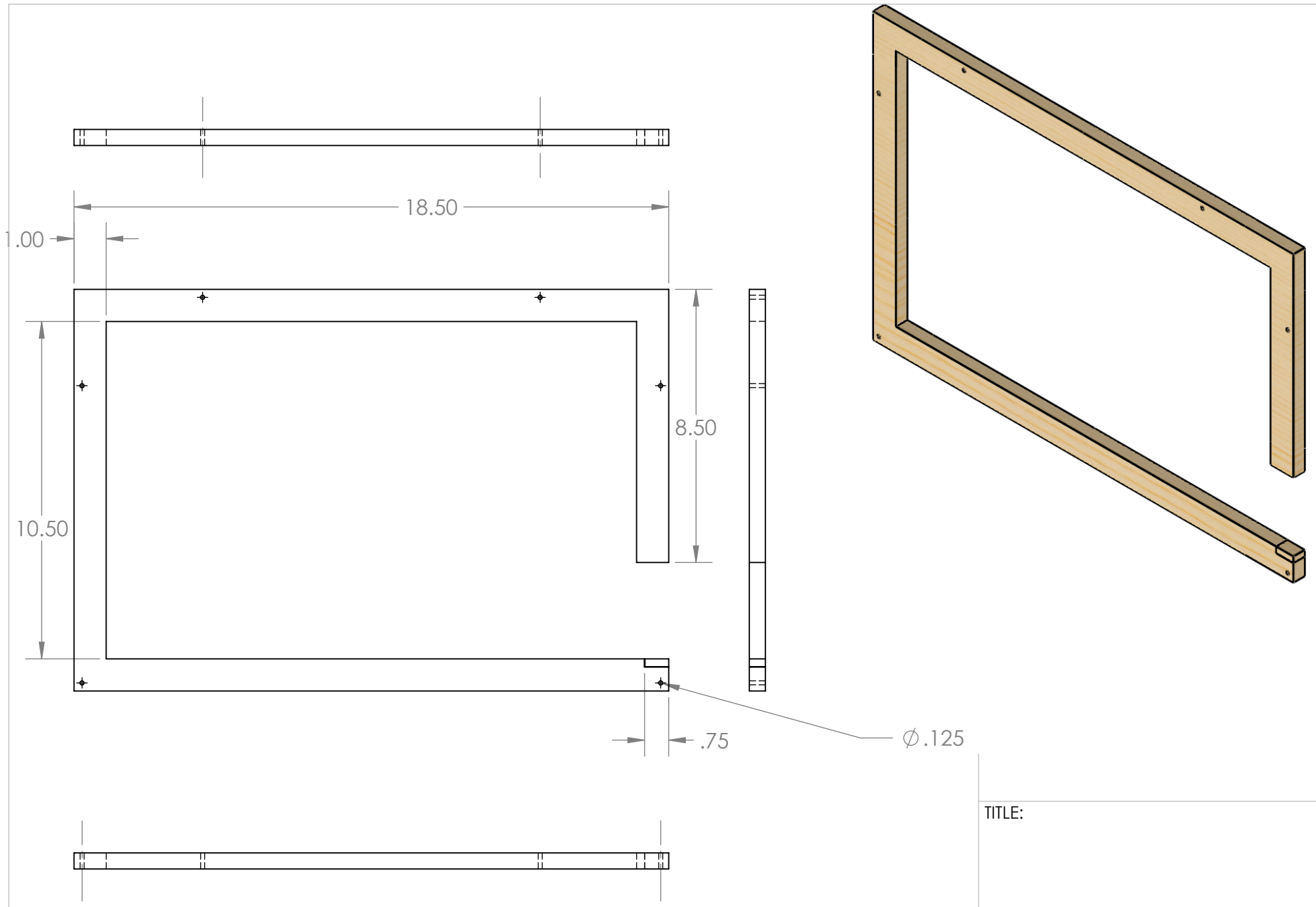
All holes are 0.125 in diameter

Screw: 6-32 Pan slotted machine screws, 1-1/4 in in Length

TITLE:

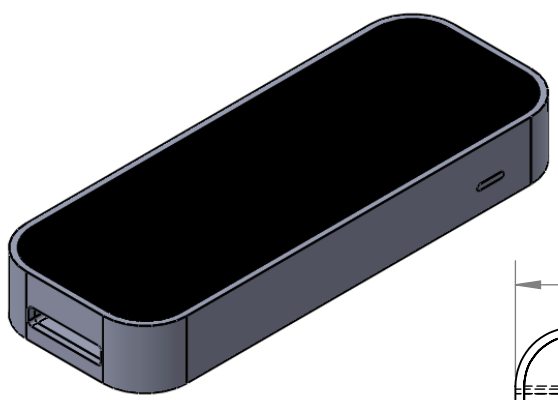
SIZE	DWG. NO.	REV
A	box and tv	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

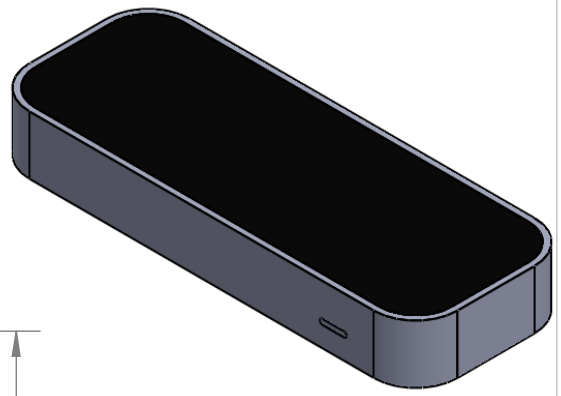
5 4 3 2 1

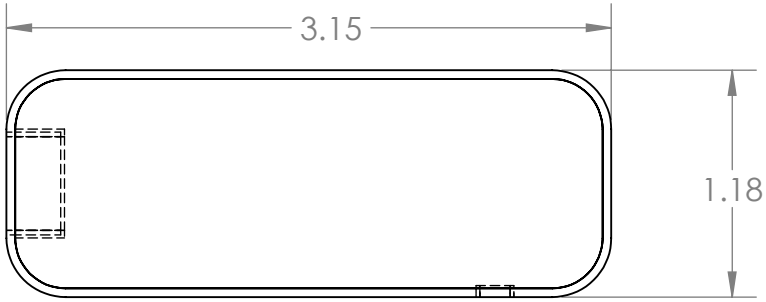


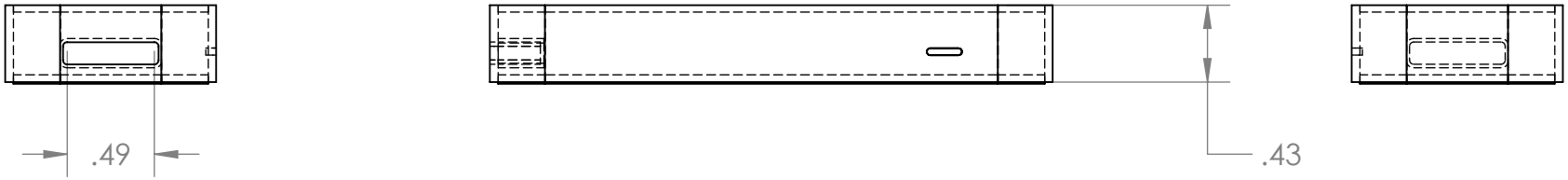
TITLE:		
SIZE **A**	DWG. NO. facepiece	REV
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1









DATE

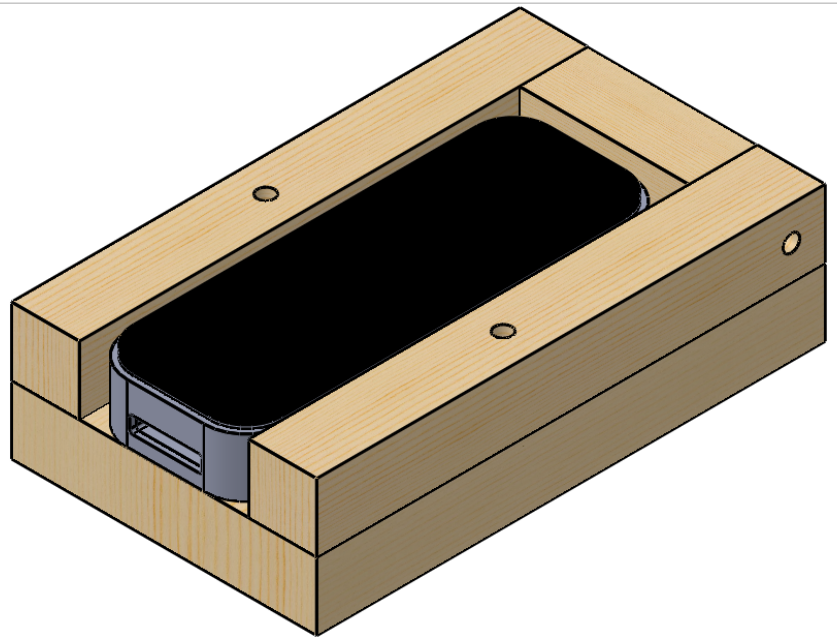
TITLE:

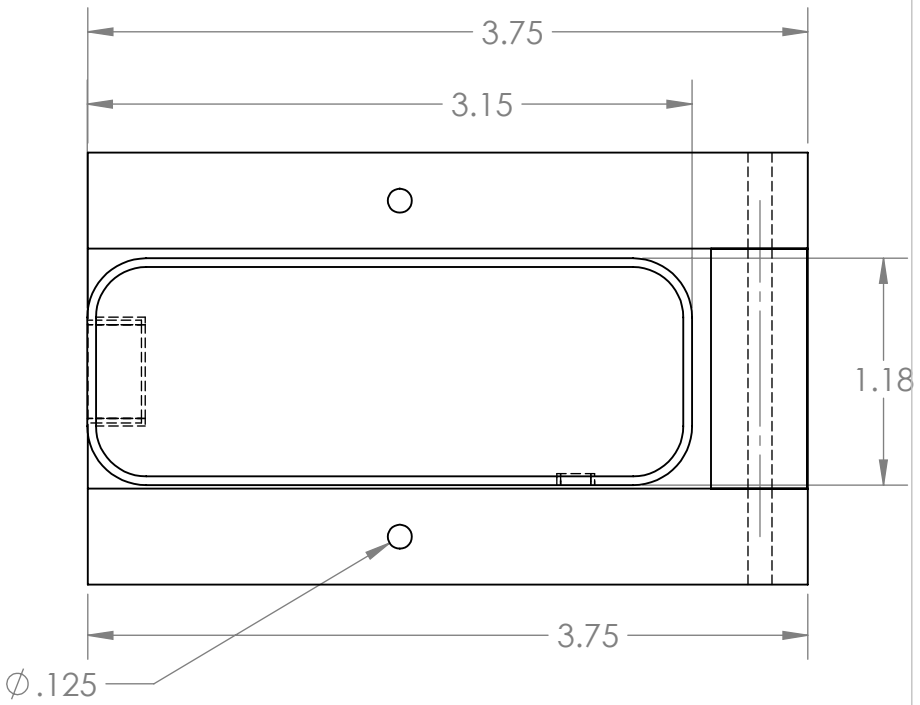
SIZE | DWG. NO. | REV

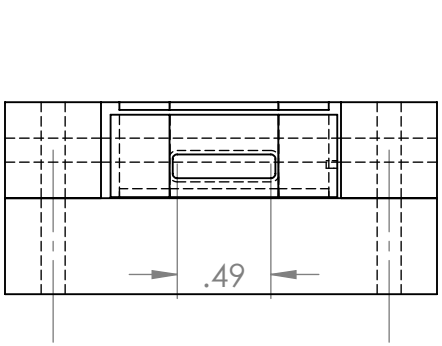
A LeapMotion

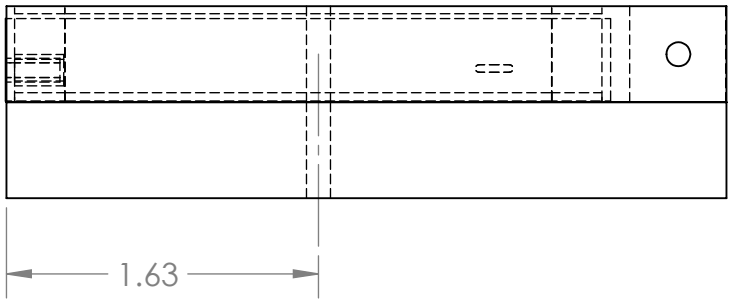
SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

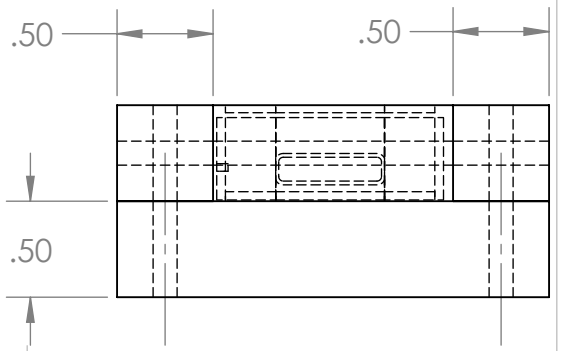
5 4 3 2 1











DATE

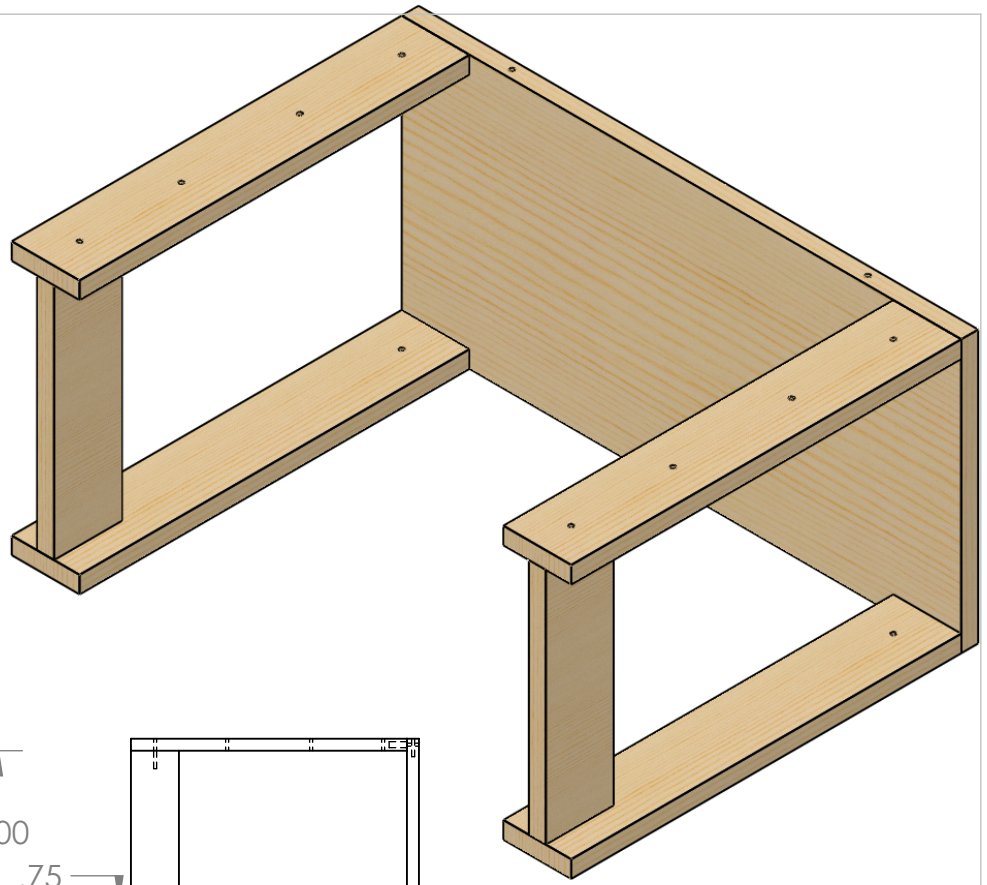
TITLE:

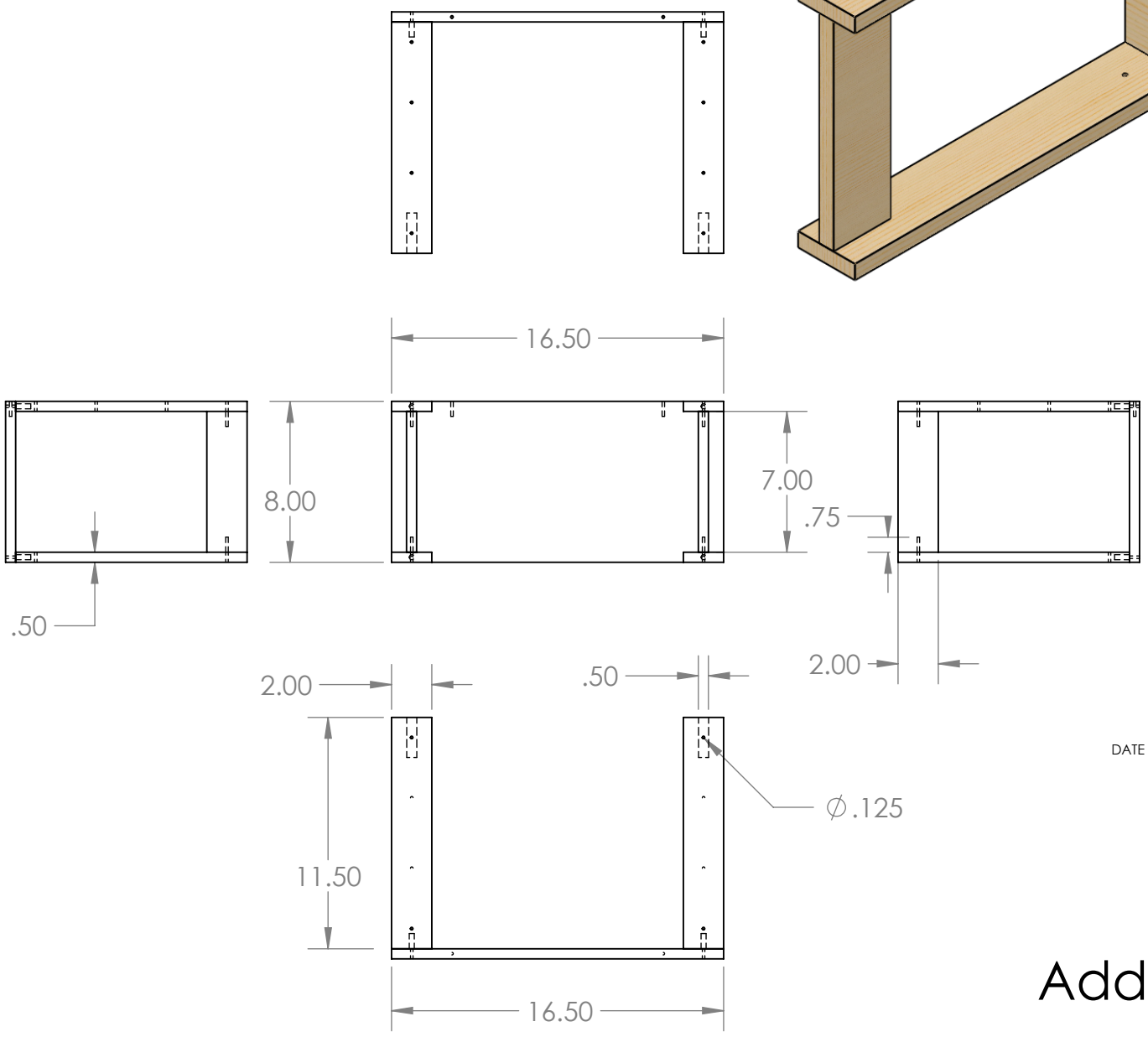
SIZE | DWG. NO. | REV

ALeapMotion

SCALE: 1:1 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1



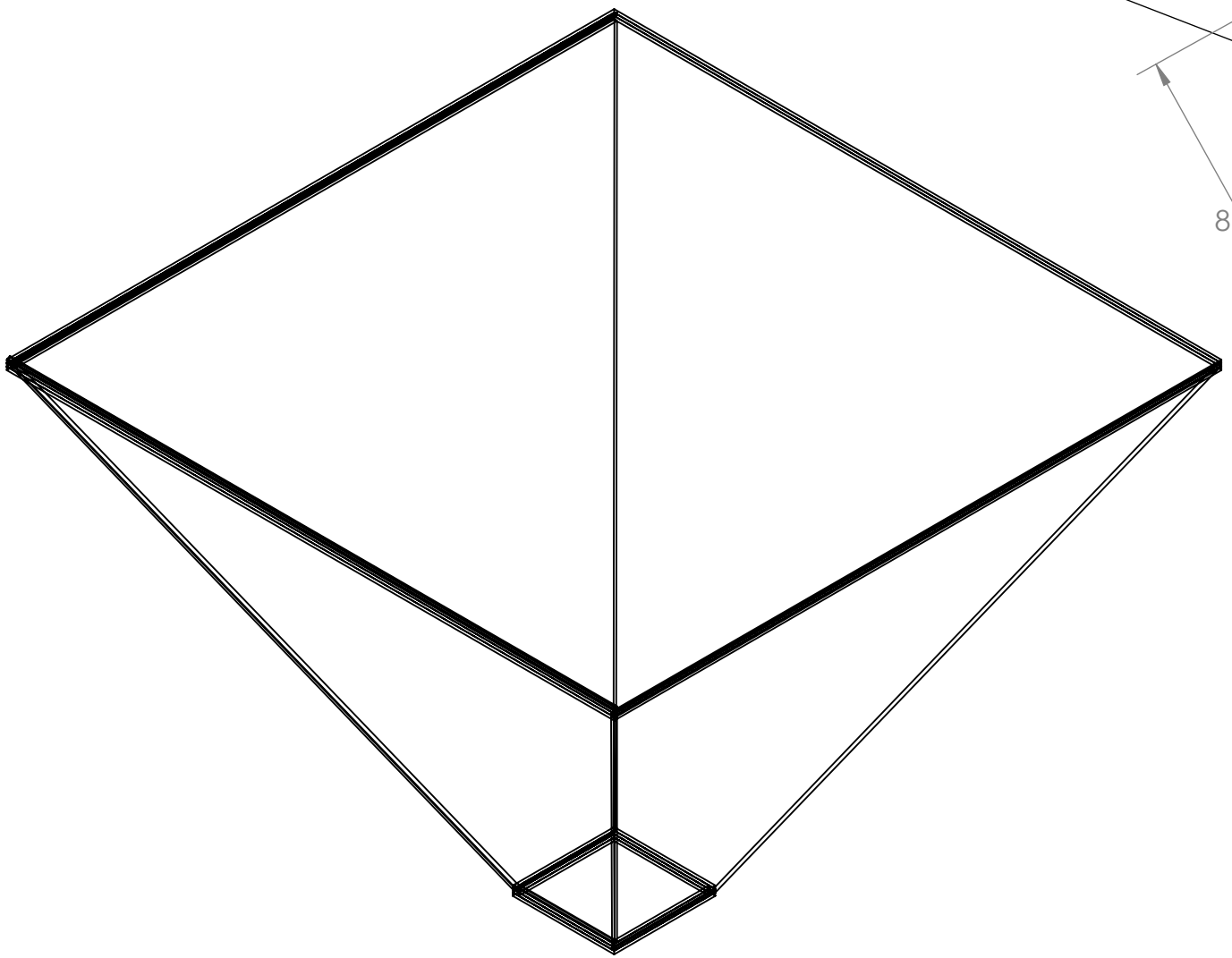


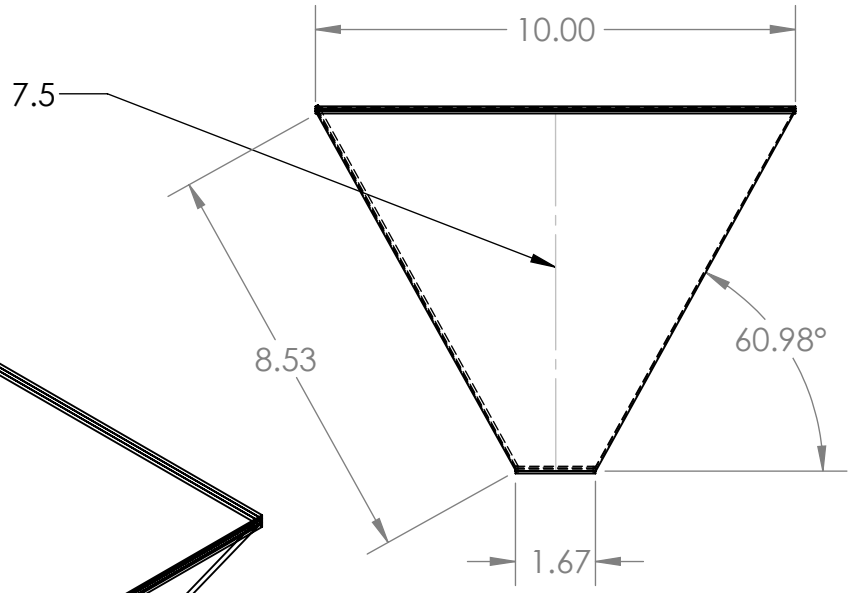
DATE

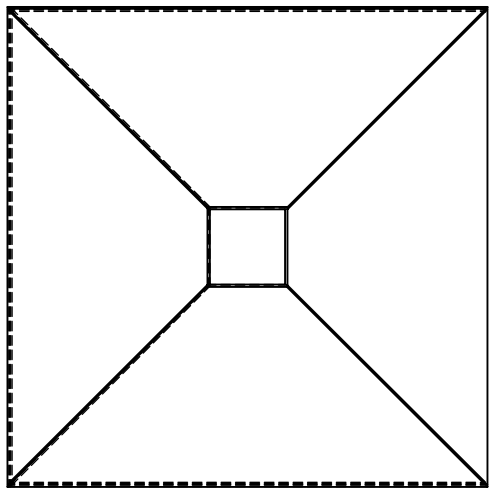
TITLE:

SIZE	DWG. NO.	REV
A	Additional frame assemb	
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

5 4 3 2 1







TITLE:

SIZE | DWG. NO. | REV

A tall pyramid

SCALE: 1:4 | WEIGHT: | SHEET 1 OF 1

5 4 3 2 1