HOLOGATE
Installation Manual

Installation Manual

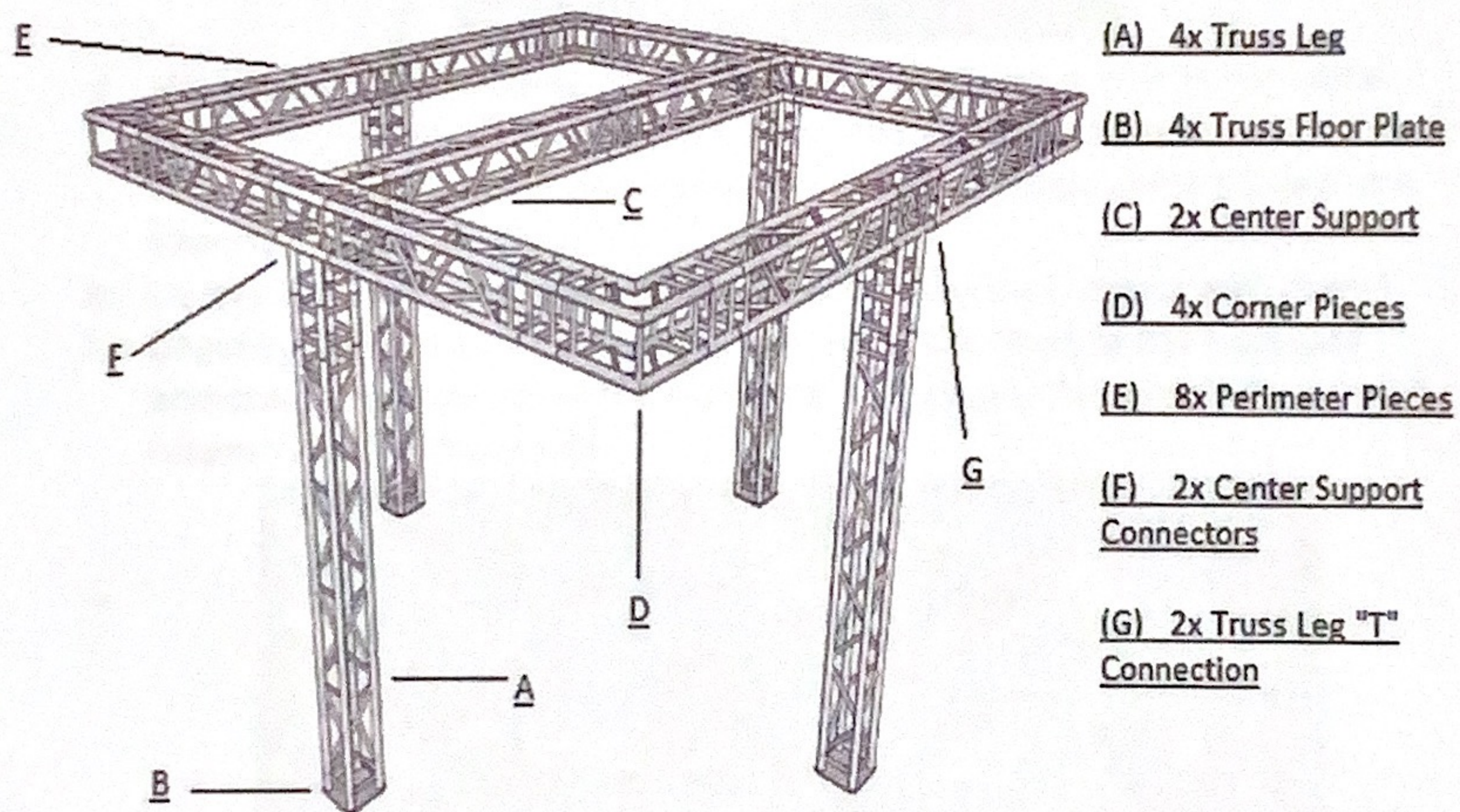(Truss and VR System)

V2.0

Client Name/Contact: _____

Site / Location Name: _____

Introduction: In this installation guide, you will be walked through on how to install a full four player version of the Hologate Virtual Reality attraction. (**Some steps may deviate slightly from those listed here as the truss system may vary by manufacturer**) (TAF VS. Global Truss)

IMPORTANT

Once you have unloaded the crate or vehicle, please locate the "Netbox", it will be located with the rest of the PC's and the server (box typically is labled "N", it is the PC case that has several network cables and PC power cables coming out of the PC case). This needs to be connected to the sites network before the installation of the truss system begins so we may ensure that the VPN/Internet connection to the Hologate has been set up correctly by the site. If it is not, then we need to ensure the VPN connection is good before we leave the site.

(A) 4x Truss Leg

(B) 4x Truss Floor Plate

(C) 2x Center Support

(D) 4x Corner Pieces

(E) 8x Perimeter Pieces

(F) 2x Center Support Connectors

(G) 2x Truss Leg "T" Connection

1. Organize your work area, ensure all truss pieces are together, all electronic pieces are together, trash, etc. (This will aid you in the install process to ensure no small or loose pieces get lost or thrown away by accident, some sites will have someone come by and get rid of trash for you. You should have a trash box for loose plastic and wrapping materials to keep separate from other small items.)

a. Begin by opening all truss related pieces (should all be contained on one pallet) and match up, as best as possible, to the above list to ensure you have received all pieces of the truss system.

b. You will have a couple of boxes with cotter pins, connectors and tapered pins, set these aside as these will connect your truss pieces together. *(**NOTE:** The truss and truss connectors all have tapered holes, so there is only one direction that the tapered pin will insert through the truss and truss connector, if it does not appear that the pin "fits", then rotate the truss connector 180 degrees and then re-insert the tapered pin, once inserted, insert cotter pin all the way through the tapered pin hole. The silver connectors do have a notch on the side where the pins are to slide through.)*
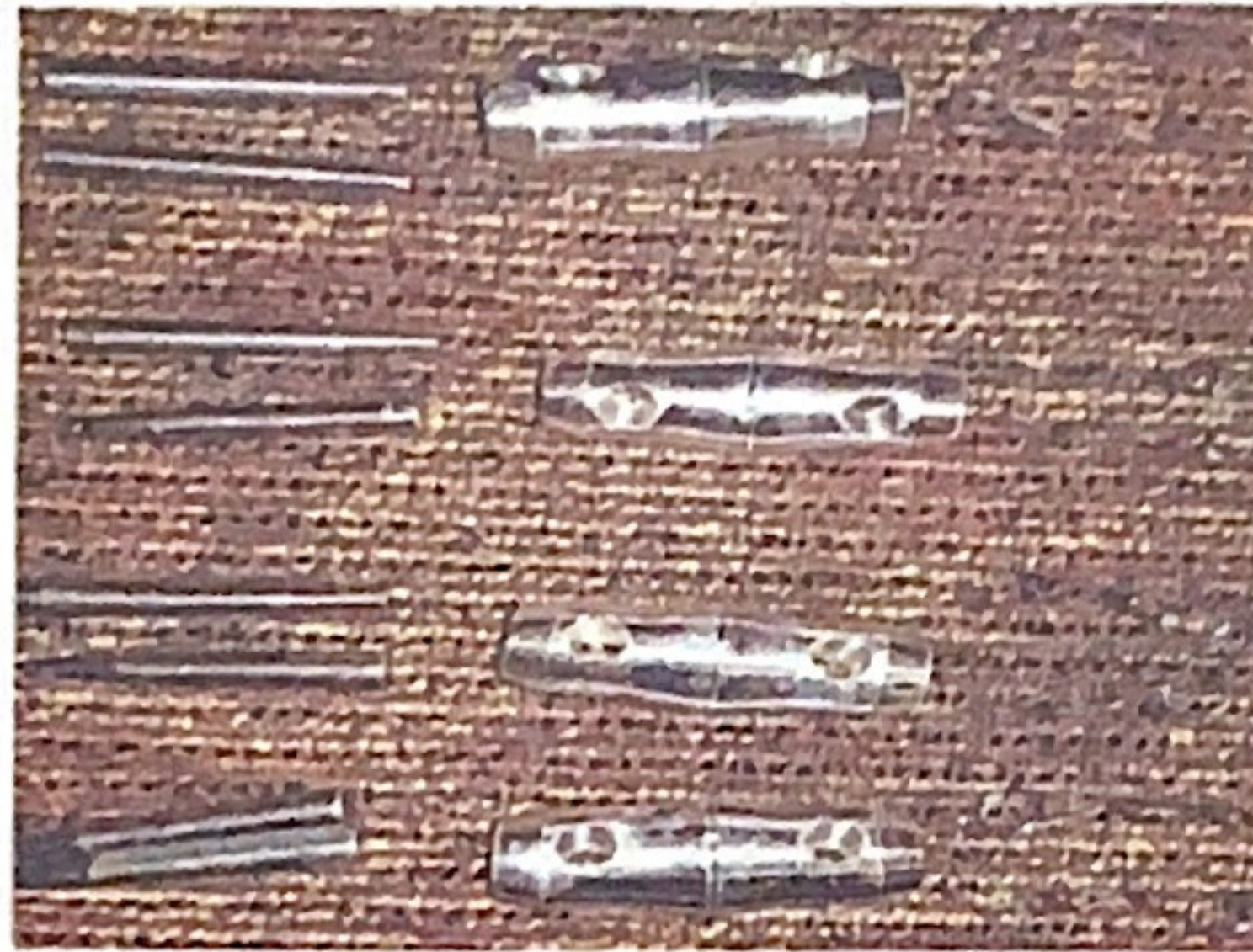
c.

d. We will begin by building the "I" section of the truss (ex. From an aerial view, the sections of the truss will resemble a capital letter "I"). Set your truss floor panels in the approximate location of where the truss legs are likely to be located. Roughly 17' apart.

e. Determine where the front of the attraction will be (discuss with client).

f. Begin by taking two truss legs (A), one being the front of the Hologate and one being the rear of the Hologate, and attach them to their respective floor planels (B).

g.

h. **Truss Socks:** Once you have attached the 4 truss legs to the 4 floor plates with 4 tapered pins and 4 cotter pins per floor plate, then you will want to locate the truss socks and place them on the 4 truss legs and ensure that they are the oriented the correct way (web address and logos)

i. Attach a truss center support connector (F) to the tops of two truss legs (A).

j.

k. Once you have completed the above step twice (**one for each leg**), take your two center support pieces (C) and connect the two legs together, shown below.

l.

m. Once you have your center support pieces in place, connecting the two legs of the truss, you should have a "U" shape, or an "I" when you stand it up (pictured in next step).

n.

o. Now take your other two truss legs (A) assemble with the floor plates (B) and affix the two truss leg "T" connections (G) (*G is pictured below*). This will assemble the two additional legs you will need to complete your truss.

p.

q. Once you have assembled the last two truss legs, we will begin to assemble the truss corner sections. You will need 1x (D) and 2x (E) (Refer to truss diagram to identify pieces, the two E pieces are much shorter straight sections and you will be able to differentiate between the truss legs, center supports and perimeter pieces. You will then take the assembled corner section and one truss leg and attach the corner section to the free standing "I" or "middle support section" and the free standing truss leg. Once finished, will look like image below, then attach your second corner section, opposite to the corner you just installed to ensure the truss does not fall over. Then follow same procedure to assemble the next two truss corners and your **Hologate truss is complete!**

r.

s. Next, we need to attach the PC tray to center support section of the Hologate truss. Attach four (4) black clamps to PC tray. The clamps will be located in the "tray" portion of the pan, whereas the nuts will be "underneath", the pc tray will mount to the underside of the truss system. *(Pro Tip: Do not fully tighten these clamps, tight enough to where the clamps will slide along the tray, due to the cross beams of the truss, the clamps may not line up precisely across from one another)*

t.

u. Attach the PC tray to where the two truss sections (F) meet, this will be the middle of the truss system using the four (4) black clamps. Use the two ratchet straps provided to hook into the innermost holes on the PC tray and will go over the top of the truss to provide additional support for the PC setup. *(Pro Tip: Do NOT over tighten the ratchet straps as this will cause the aluminum tray to bend and look "sloppy")*


v.

w.

Section 2: Power, PC's, Server and "Netbox"

2. You should be provided with two circuits, one dedicated to the four PC's, the server and the "netbox". In most cases, power and data will drop down directly above the PC tray. With the orientation in mind, plug in a 10' extension cord and run from the PC tray to the top of the first leg (front, where the touch screen will attach). Plug APC directly into the other circuit as well, resting the APC on top of the actual truss. At the top of the leg, attach a 6 way power strip, then run a 25' extension cord (that is plugged into that 6 way you just installed) through the truss section of quadrant 4, around the corner and to the next truss leg, you will then add another 6 way, then plug in another 25' extension cord into this 6 way and repeat this process for each truss leg until you reach the last leg, which will solely be a 6 way. Use the below wiring diagram for a visual reference:
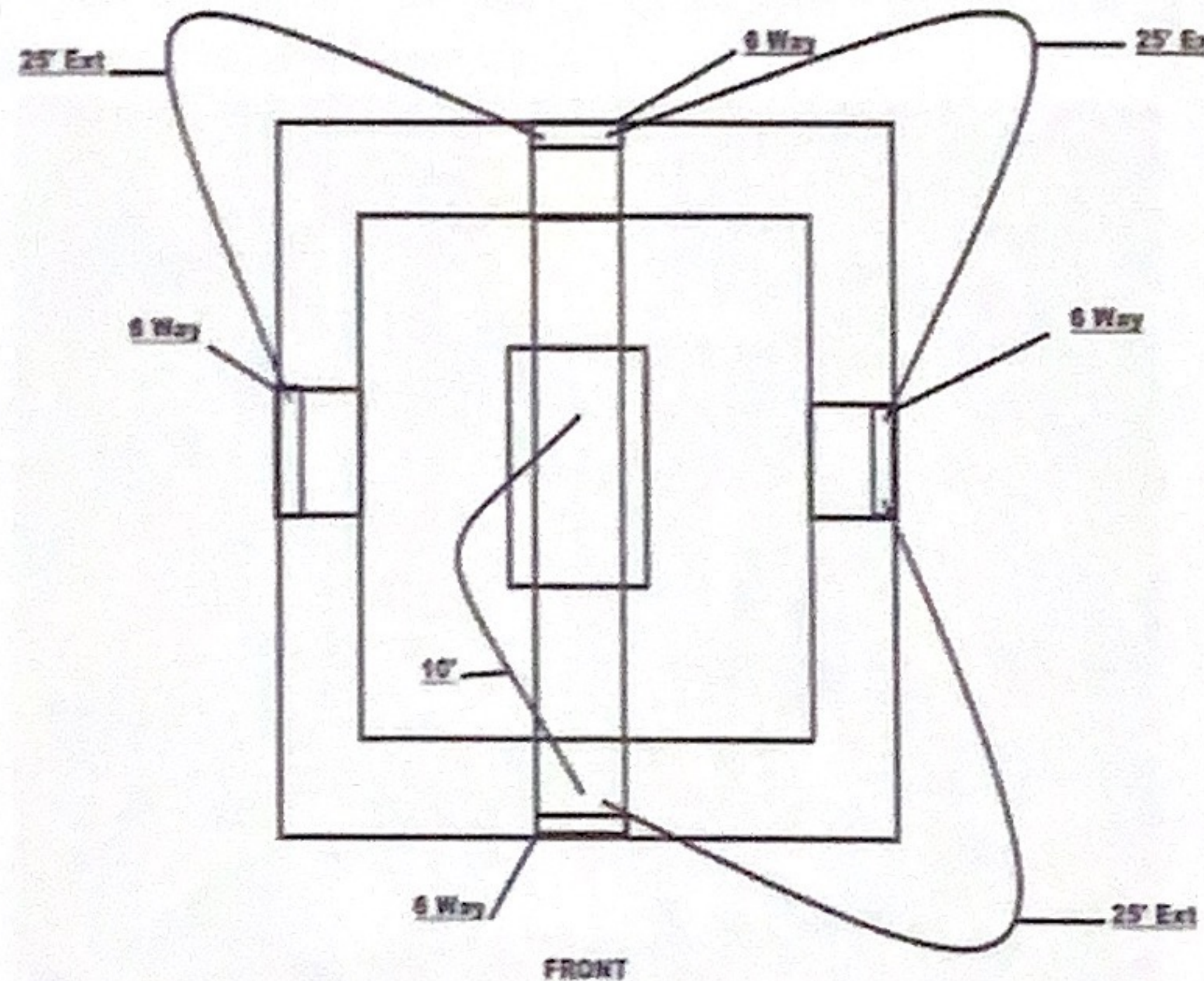

a.

   b. Once you have completed running power for the Hologate, place the PC's on the PC tray as follows (S = Server, I = Netbox, Number = Client PC):
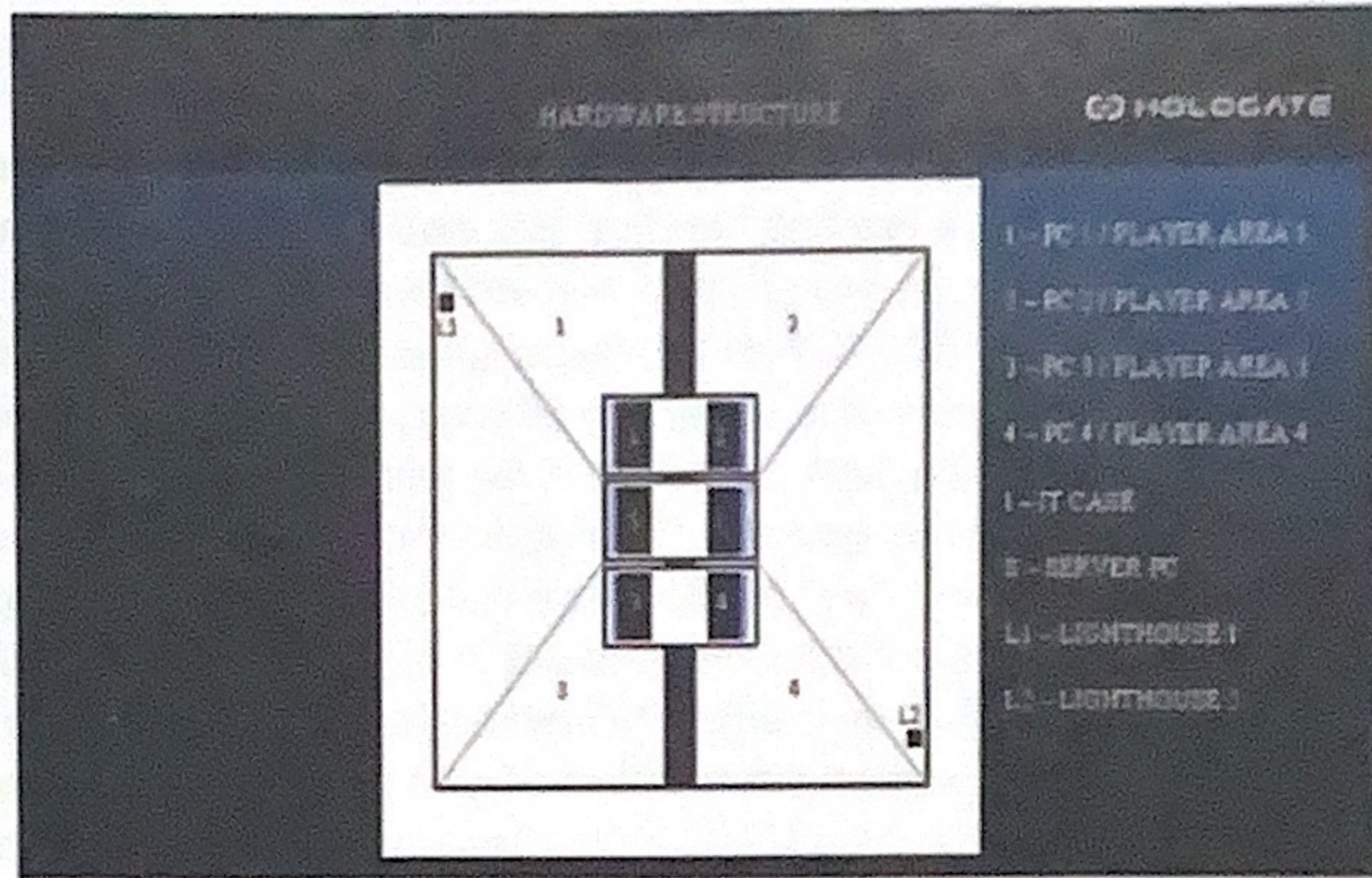
c.

d. Include space between each box to allow plenty of ventilation between the systems, position server on PC tray, on the left side, approximately center (if you are facing the Hologate). The server should sit between PC's number one (1) and three (3).

e. Place "netbox" on PC tray in the middle of the right side, between the two ratchet straps and the additional APC battery will sit on top of the truss and plug into the main APC unit. Plug HDMI cable into back of server (use the HDMI cable that comes with the Touchscreen as you will use a longer HDMI cable for the Touchscreen later on), plug the other end of this cable into the "INPUT" on the HDMI splitter **(NOTE: HDMI splitter will not be used if client has fewer than 3 TV's)**, HDMI cables will come from the "OUTPUTS" and run to TV's located on the outside of the truss system as "In Game" views.
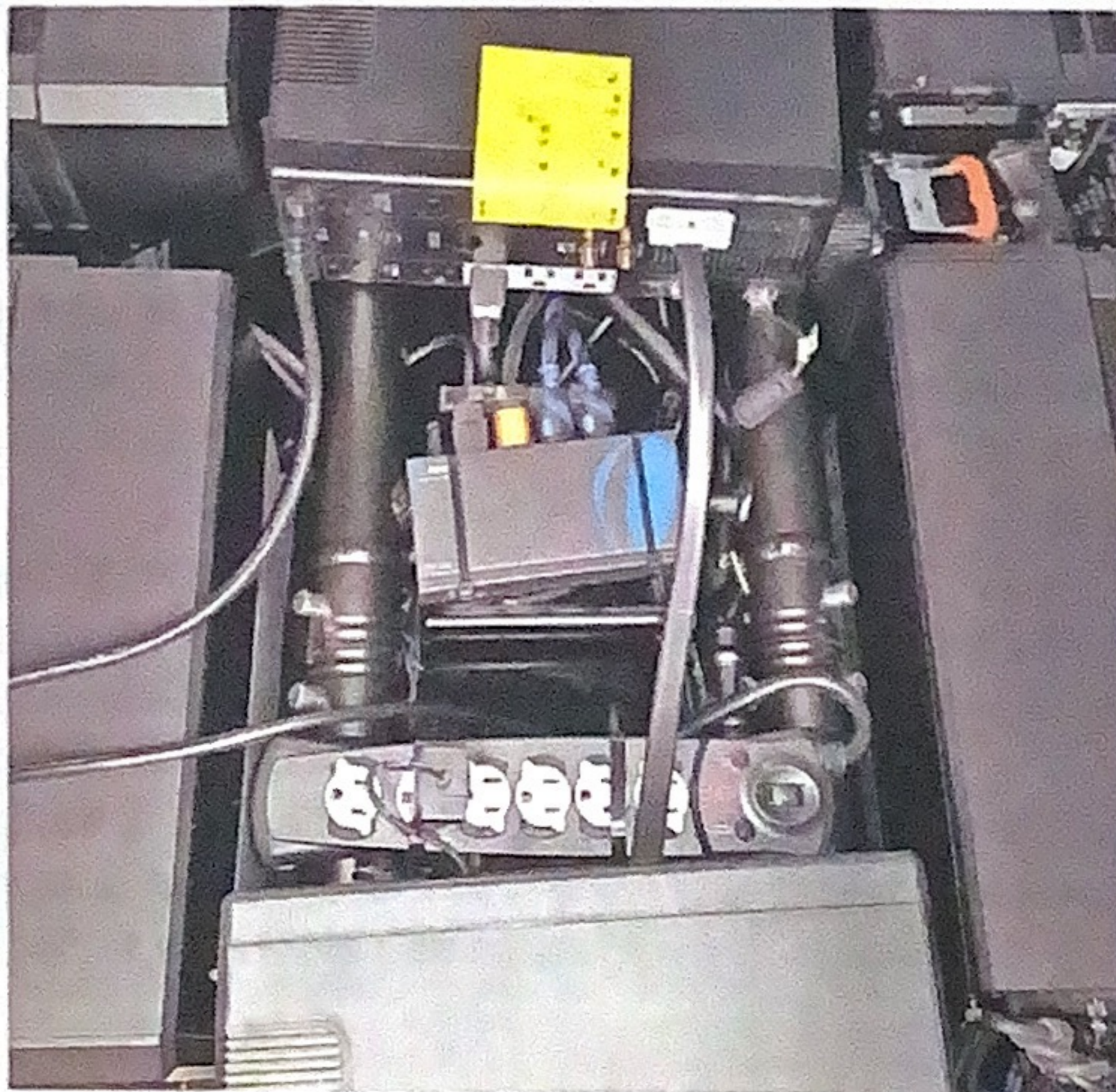
f.

g. Once you have all PC's, Server, Netbox and APC with battery pack on top of the Hologate, you will now have to connect the PC's via power and network cables. These all will come out of the "netbox". Take the two longest power cords, from the "netbox" and run those to client PC's 1 and 3. Do the same with the two longest network cables (CAT6 cables). You can take the remaining power cables (ICX cables) and plug those into the remaining PC's, this will be the Server and clients 2 and 4. Do the same with the remaining network cables. Now you should have all PC's connected to power and network. If you have not done so already, flip the power (rocker switches) from "off" to "on". You also need to run the site's network cable run to the coupler that is located in the netbox, this is a small silver box that comes out of the same hole in the netbox, in some cases, it may be pushed inside of the netbox as well. You then need to verify with someone at Creative Works, if the system is now viewable on the Hologate Gateway, do this by sending a message to the main support channel with the site name, system number and site location so the Gateway can be updated as well.
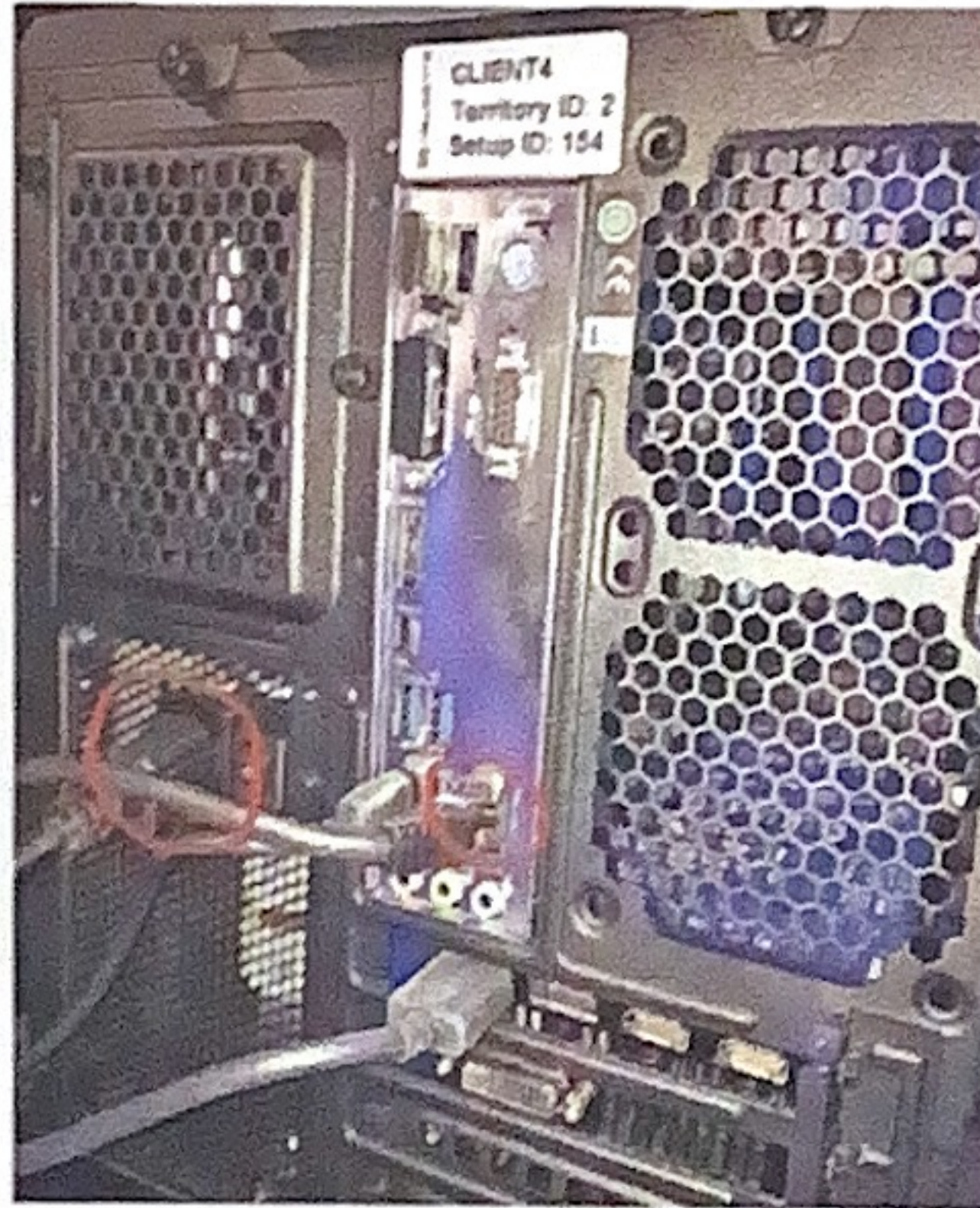
h.

i. I.e. **System 2-169 // The Asylum // Clarksville, IN.** "**can you please verify the VPN for me?**", this also means now we can begin remotely updating the system if necessary.

Section 3: _Headsets and Tether System_

3. Now we will begin installing the tether system and HTC Vive Pro Headsets.
   a. Using the silver clamps with eye bolt attached, you will need to connect the turnbuckle to this clamp using a "quick link"
   b. Run one piece of galvanized cable through eye bolt on the other end of the turnbuckle. Use a pair of vice grips to hold cable in the shape of a loop and secure with cable clamp (8mm socket, tighten with drill).
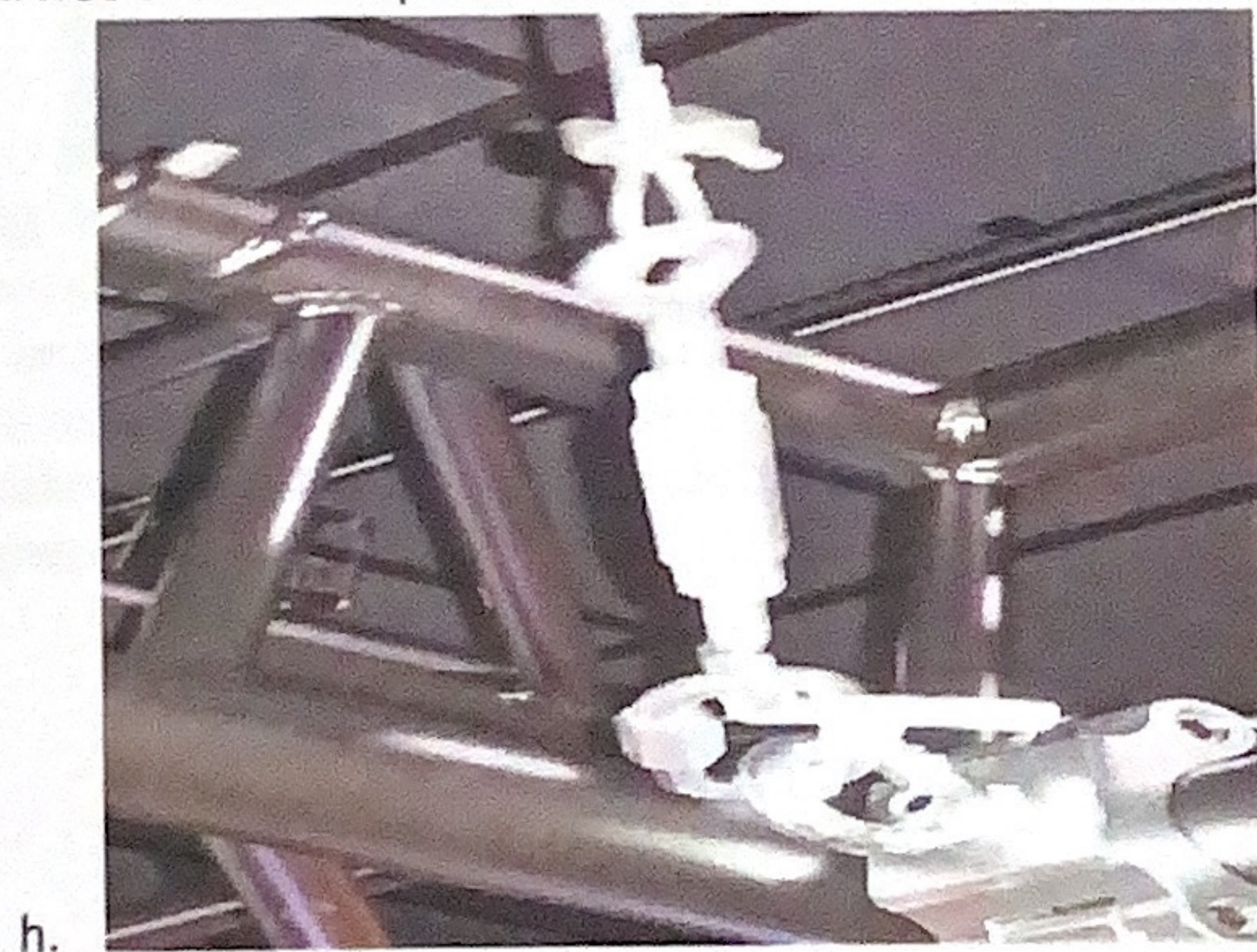
c.

d. Take the other end of the galvanized cable and loop through hole in PC tray, nearest to the quadrant you are working on. Cable clamp to tether and also tighten with a drill.
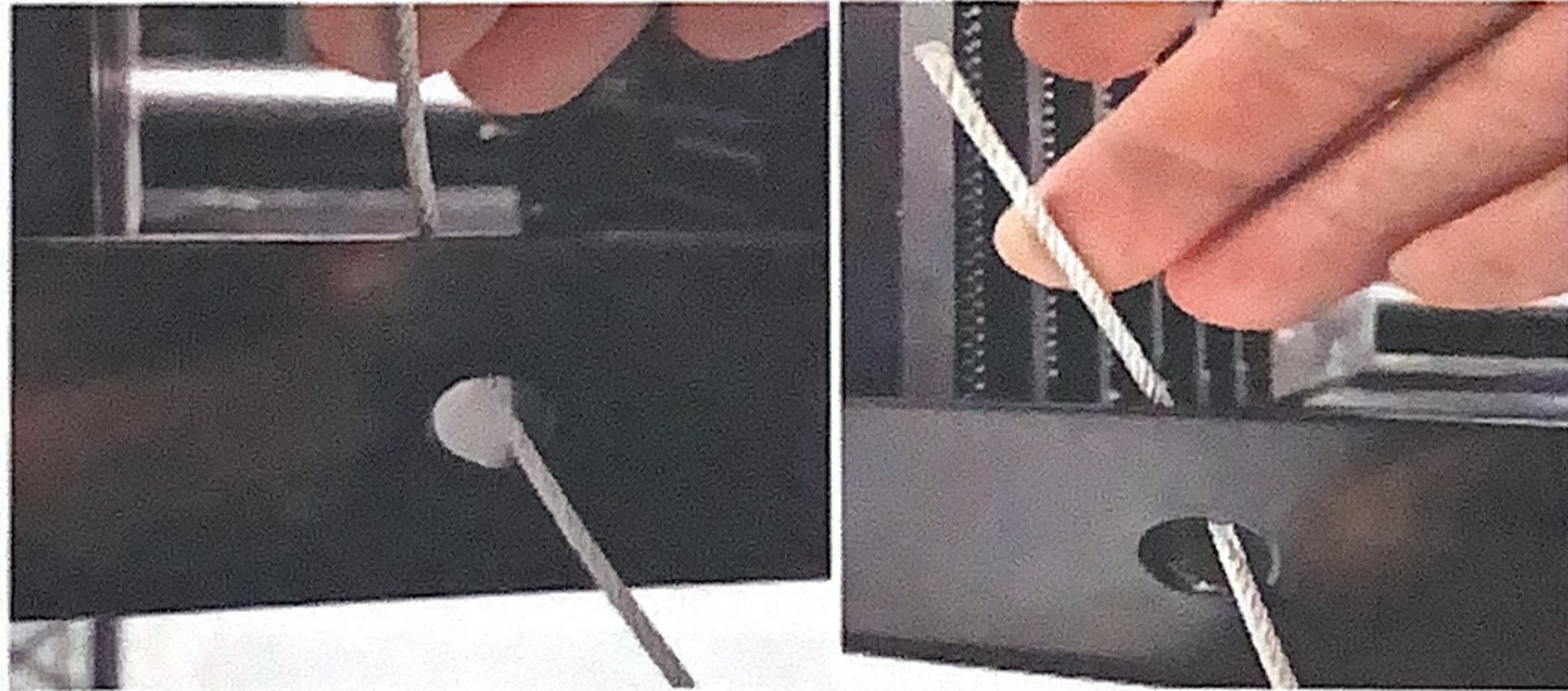
e.

f.

g. Rotate turnbuckle to add tension to the falvanized cable, however you must leave very little slack as over tightening the cable may cause cable to pull free of wire clamp over time.
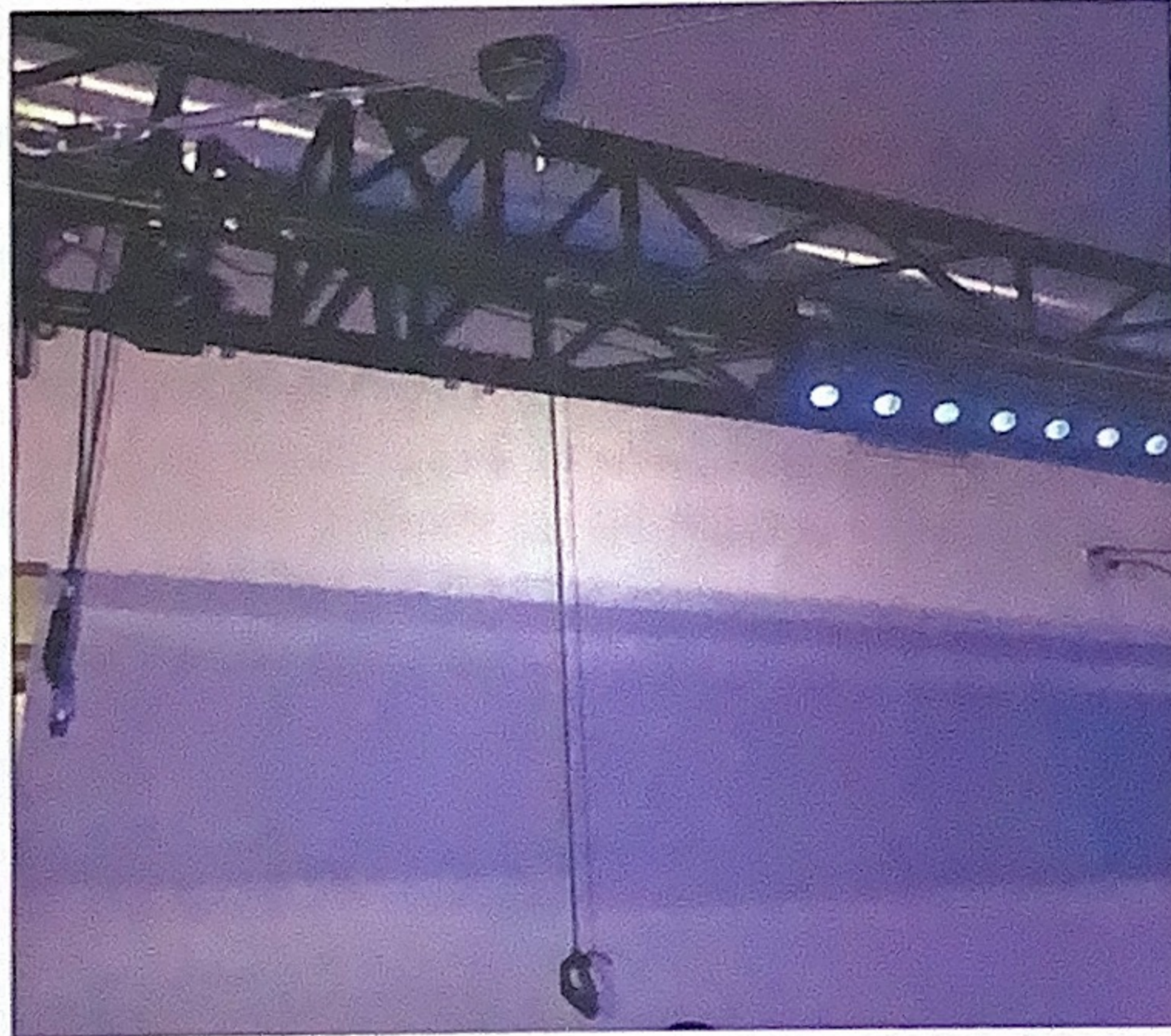

h.

i. Add three (3) Key Baks™ to galvanized cable using the belt clips. Make sure that the Key Bak™ with the long paracord extension, is closest to the players position, this will tie to a plastic D ring for the Vive Pro Headset
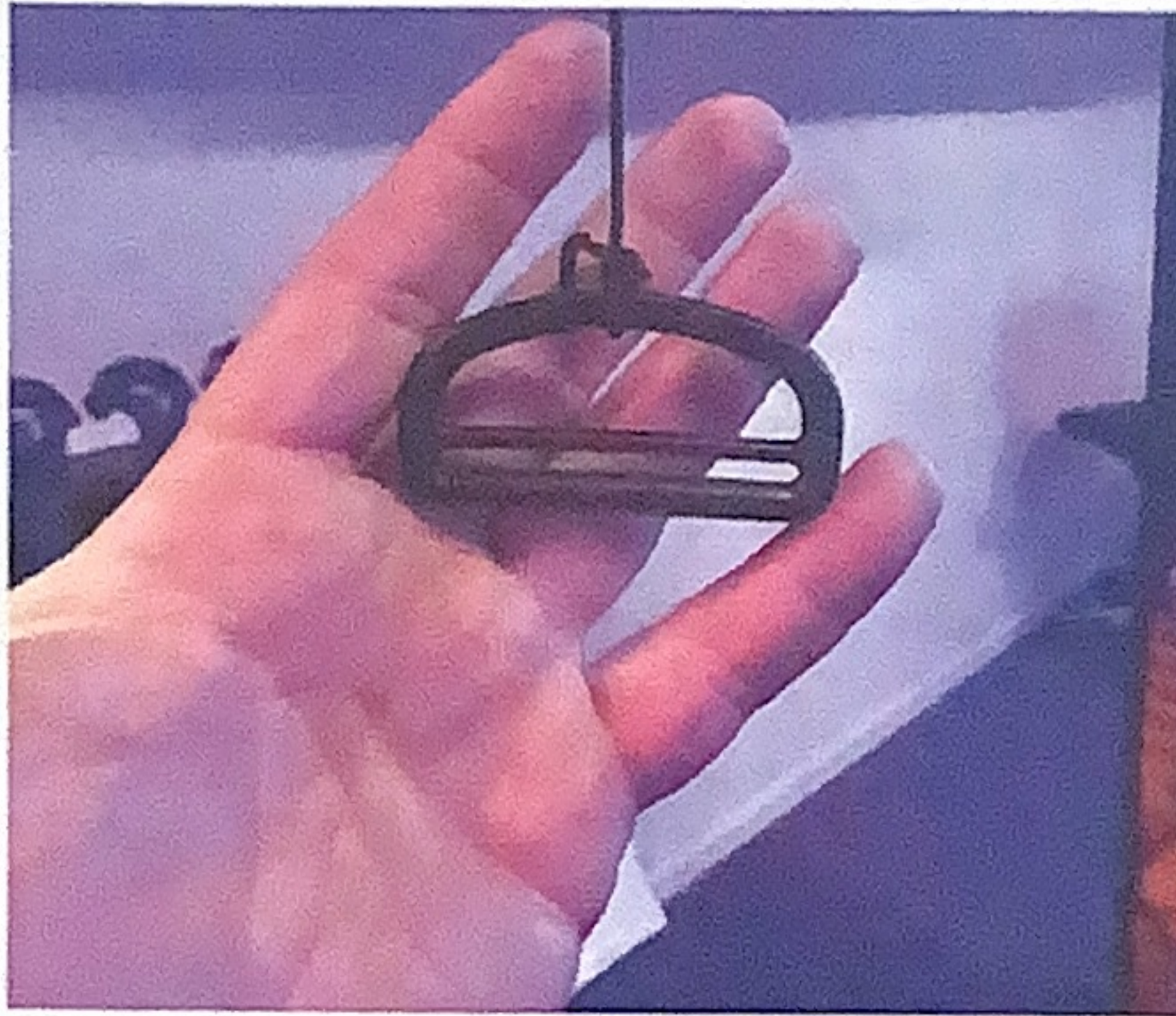
j.

k.

l. Repeat steps 3.a through 3.j for quadrants 2-4 and your tether system will be complete.

m. Now we will begin to install the HTC Vive Pros onto the tether setup as well as installing into their corresponding PCs.

n. First take your plastic D ring and tie the paracord extension to the D ring as shown:

o.

p. To ensure that the headsets stay "snug" on the D ring and to make sure the headsets do not hang facing the floor, insert a small piece of gaff tape around the bottom "bar" of the D ring. Then, you'll want to take the strap of the Vive Pro and insert it through the D ring and attach, with the Velcro, back onto itself. Then attach a small piece of gaff tape to the top and bottom of the paracord extension, around both the Vive Pro cable and the paracord extension as shown below. Then take about a 2' section of the Velcro wire loom and wrap around both the paracord extension and the Vive Pro cable. (*Process illustrated below*) **(*Pro Tip: You can take a lighter and melt the cut edges of the wire loom to prevent further fraying of the loom.*)**
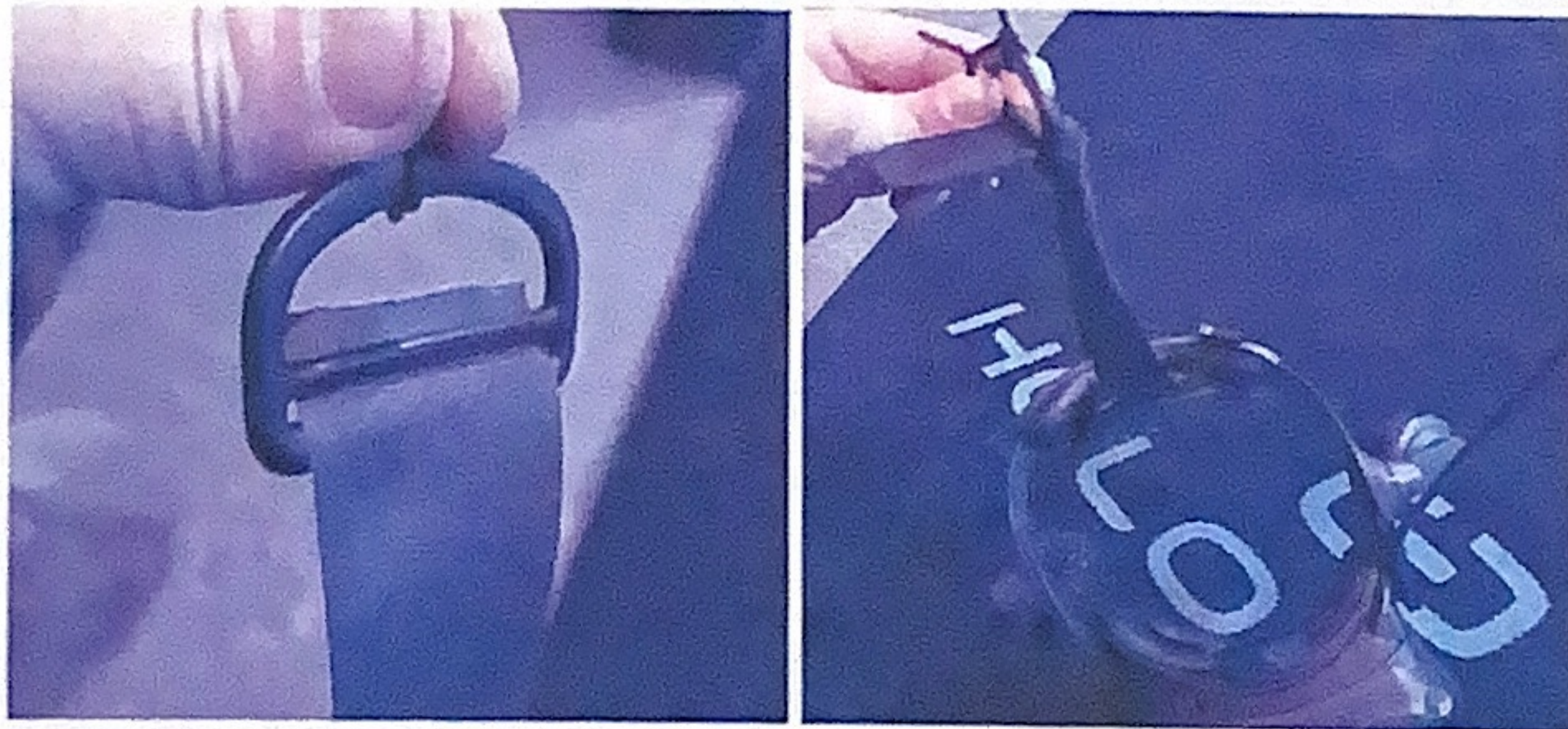

q.

r.
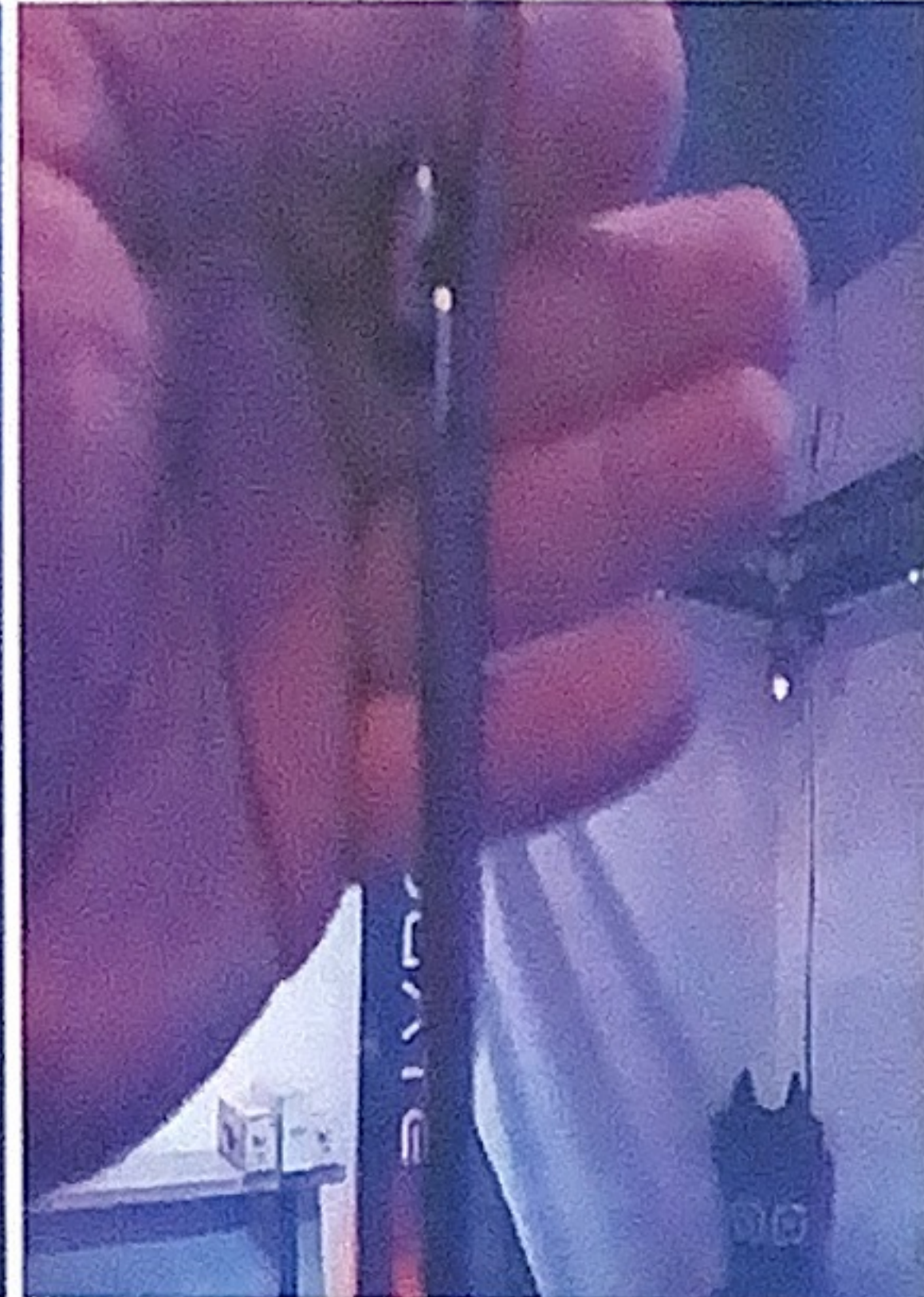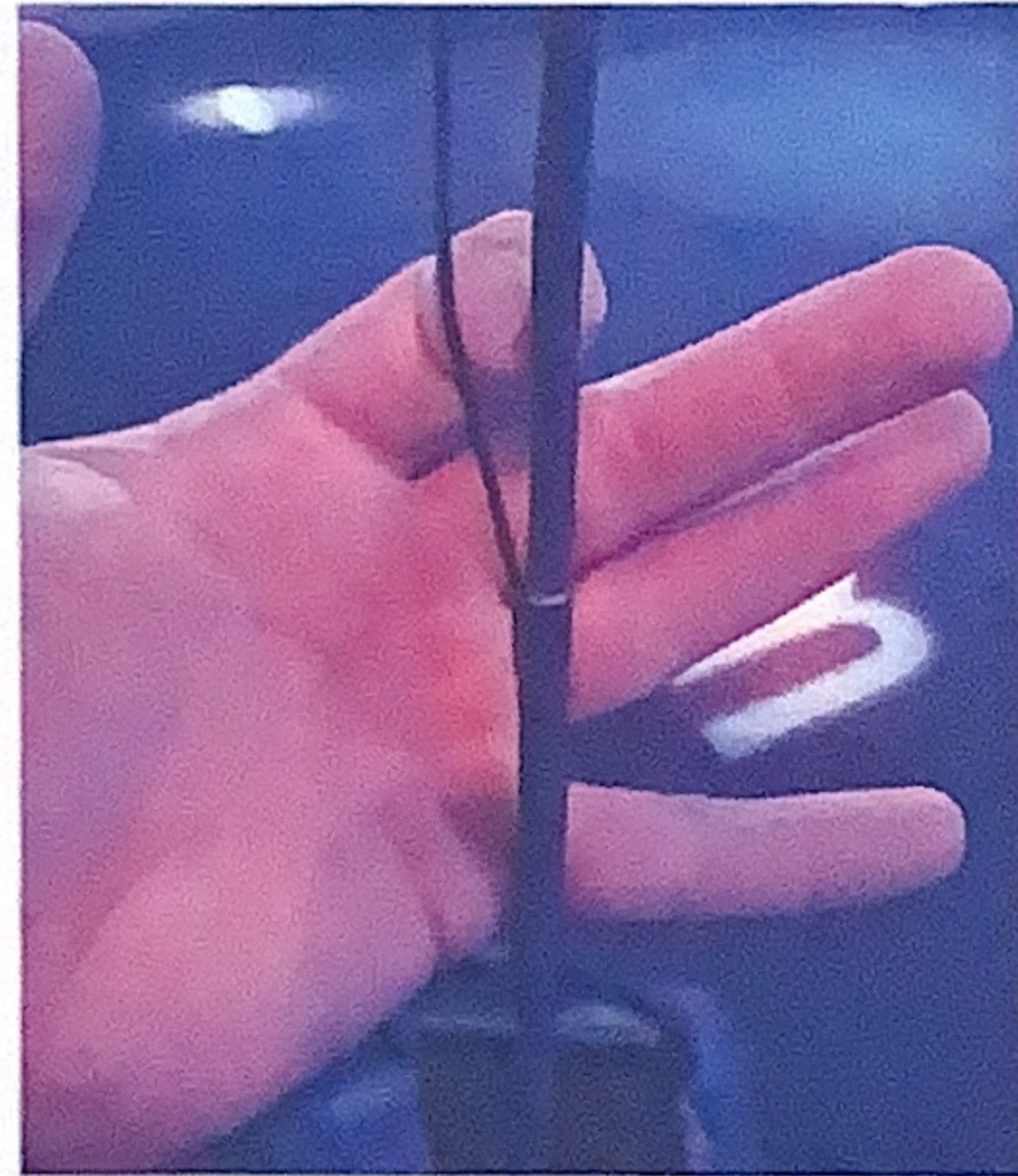
s.

t.

u. Next we are going to attach the Vive cable to the other two Key Baks™ that we have already hung on the galvanized cable. Onto each of the Key Baks™, make sure you attach Zipties around the bottom piece, this will

prevent the Key Bak™ from locking back into the main portion of the Key Bak™ (*illustrated below*). From there pull the next Key Bak™ (*key bak™ closest to headset*) and take one ziptie and secure cable to Key Bak™. Follow this process to the next Key Bak™, closest to PC tray, and attach Vive Pro cable to this Key Bak™ as well. The last Key Bak™ will remain retracted when attaching cable. Then you will plug the Vive Pro cable into it's respective linkbox (**use the same linkbox in the same box as the Vive Pro HMD**) (*HMD = Head Mounted Display*)
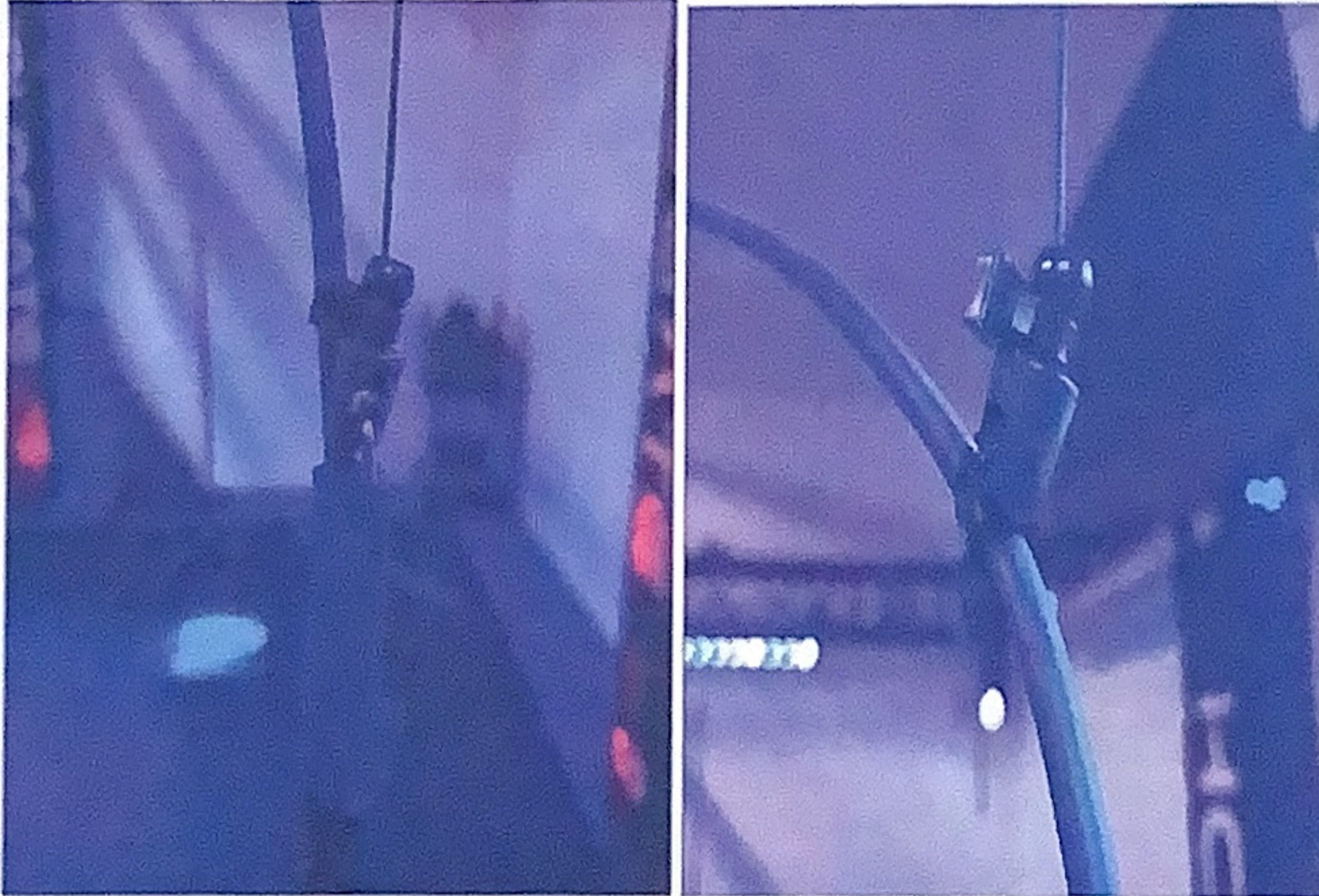

v.
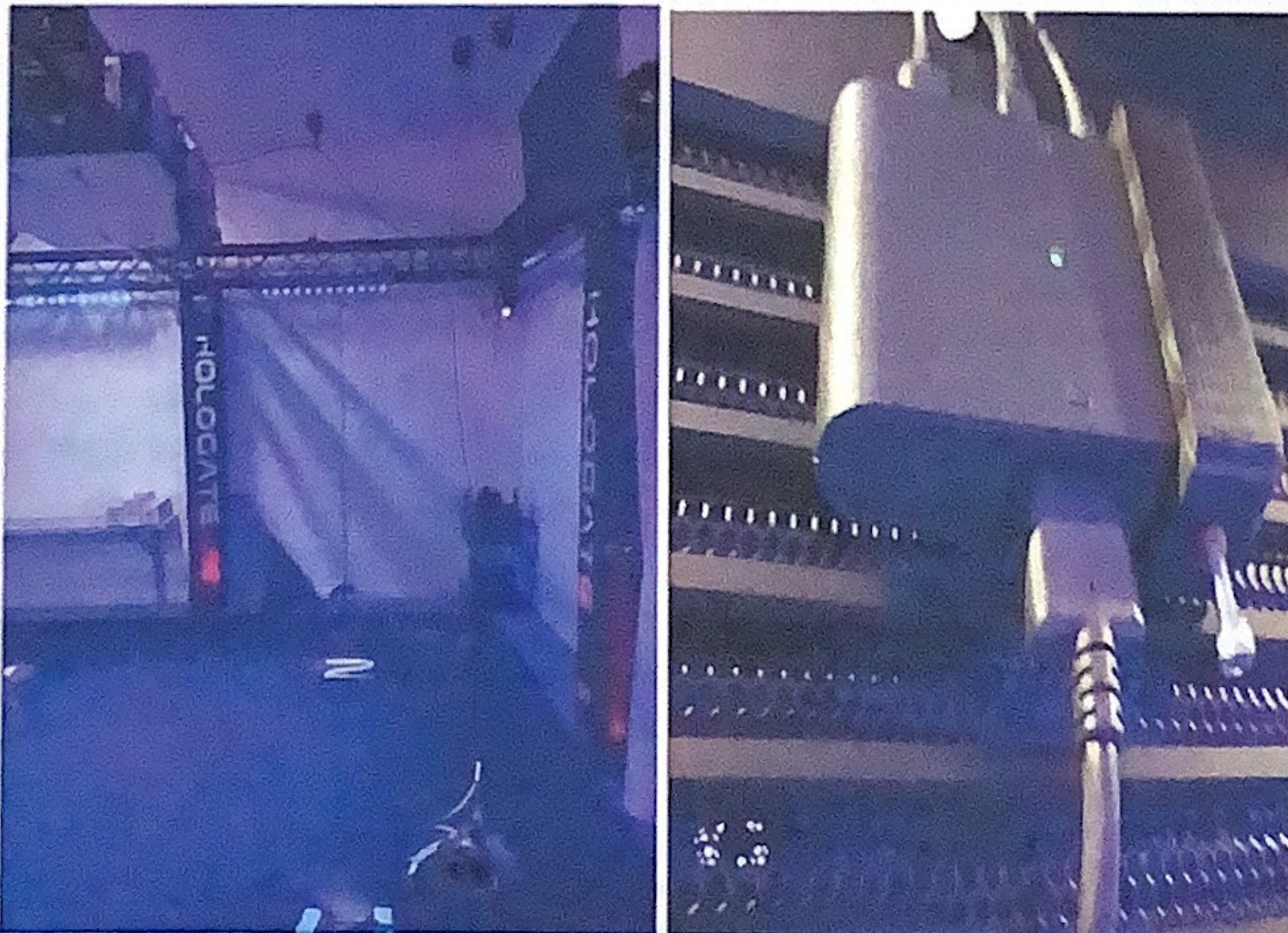
w.

x. Make sure that you also add the 3D printed clamp onto the linkbox, when the system shuts down, and power is lost to the HMD's, the linkbox shuts off. By adding the clamp to the linkbox, this permanently keeps the power button on the linkbox depressed, so it will not shut off. You can

also prevent this by placing the power strip for the HMD's on the same circuit as the PC's, however if for some reason, the site loses power and the battery backup shuts the system down, then the linkboxes will still shut off. We prefer to use the clamps at all times, however if we are out of stock, best practice is just to always place the HMD's on the same circuit as the PC's and to add the clamp.

y. From this point, we are going to finish connecting the linkboxes to the PC and power. Currently, the Vive Pro Cable should be plugged into the HMD side of the linkbox. Now you will take the display port cable and USB cable out of the box and plug them into the linkbox. Then you will take the other ends of those cables and plug them into the back of the PC. Make sure that the USB from the linkbox does plug into a 3.0 USB port (a blue USB port).

z.

aa. Next, we're going to install the Hologate Lighthouses using Manfrotto clamps. You'll take your Manfrotto clamp and open it up by unscrewing the T shaped handle on the back side of the clamp. Just unscrew it enough to allow for the brass pin to slide into place, then retighten. Once you have done this, attach the ball joint by screwing onto the brass pin you have just inserted. You can loosen the ball joint to be able to swivel the ball joint around to the position you need by using it's T handle as well. From this point, take your lighthouse and attach to the ball joint. Repeat this process three (3) more times and you will have assembled your lighthouses. Process is illustrated on next page. If applicable, aim laser tool, from lighthouses, to the center of the floor of the Hologate, if you do not have a laser, aim the screen of each lighthouse directly at center of floor of the Hologate. Plug the power supplies into lighthouses and run to nearest leg of truss and plug into 6 way.
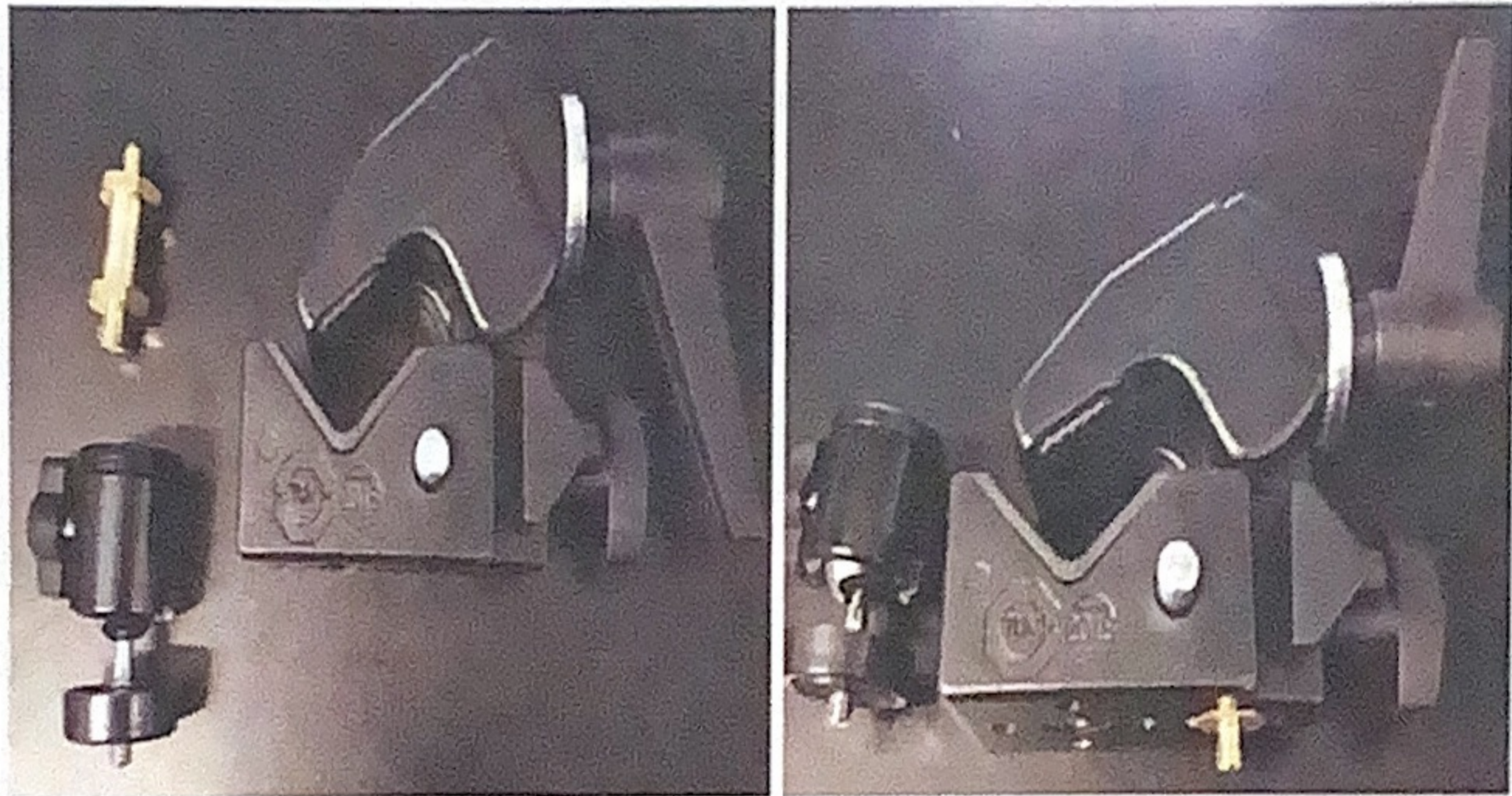
bb.
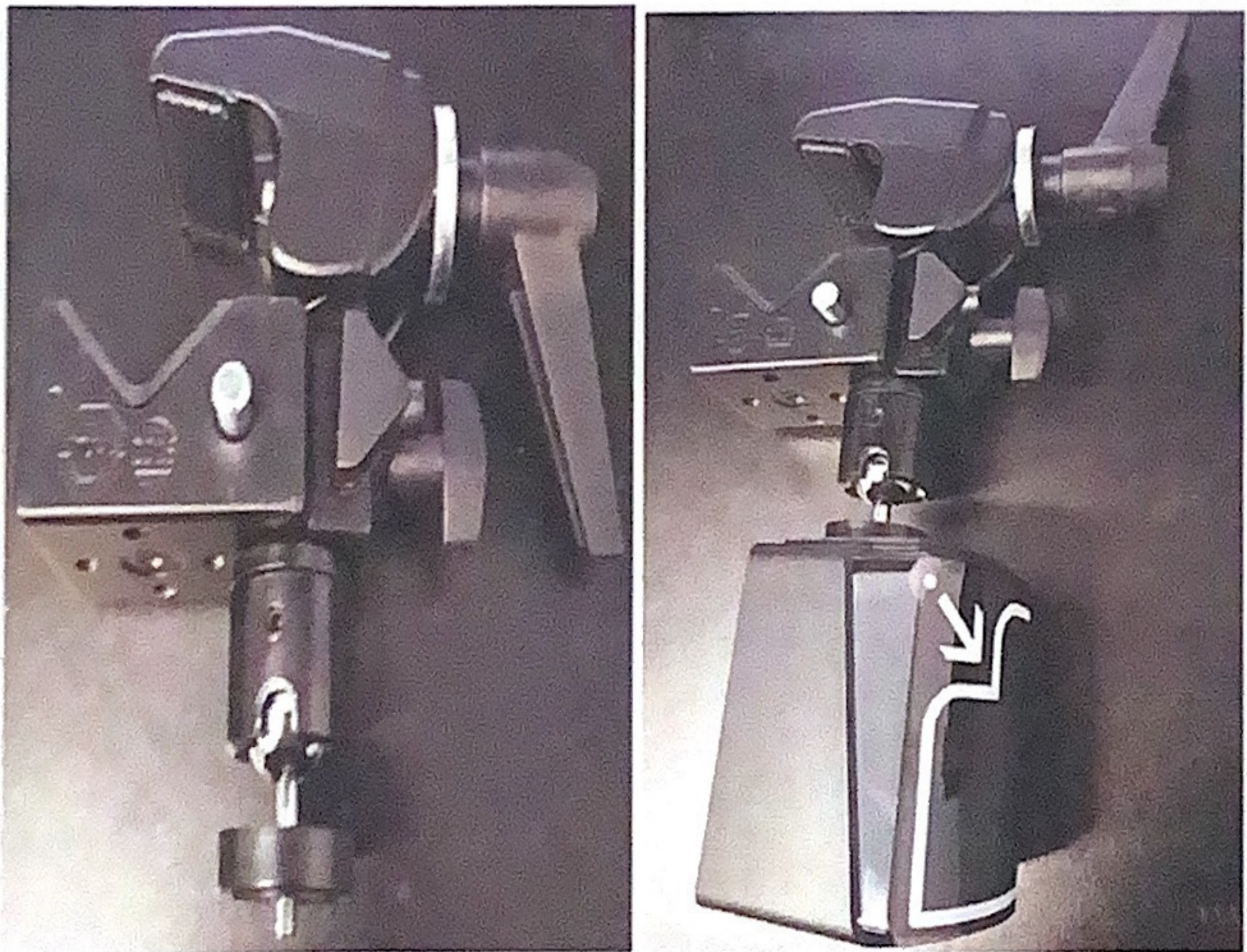
cc.

dd.

ee. To complete the HMD portion of our install, we now need to assemble the paracord and carabiner tether that will hold the HMD's when not being used. You'll want to loop the paracord through the key ring portion of the carabiner and complete assembly as follows:

ff.

gg.

hh. From this point, you will need to notify someone from our office to be able to log in and complete the software side of the system prep. This will involve updating games, SteamVR, Firmware on HMD's and controllers, etc. Also, if you have not done so already, you will need to plug in all controllers to ensure they are fully charged. You can charge the controllers and prepare them for updating by plugging them into each of their respective client PC's as well, this way firmware can be updated if necessary.

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Section 4: Touchscreen (A.K.A EVA) and Controller Rack Installation

4. Now we are going to install the touch screen mount, the touch screen and the truss mounted controller charging rack. We will start with the touch screen mount. You should have two longer bolts with washers and acorn nuts, locate these items in your box labeled "Hardware". You will then take two large clamps and disassemble the small bolt and nut from your two large clamps and insert your longer bolts into the large clamps and position on the truss. You will then pull the truss sock and position correctly over the bolts (make sure that you have the acorn nuts on the ends of the bots as not to tear the truss sock). Once you have the truss sock positioned correctly over the bolts, cut two small slits in the truss sock to allow the bolts to pass through. Cut another small slit into the truss sock, between the two bolts to allow an HDMI cable, power cable, micro USB cable and power supply for the LED's in the touch screen, to pass through as well. Attach the Touchscreen mount using the washers and acorn nuts provided. Then plug in a 15' HDMI cord, power cord and the micro USB cable into the back of the touch screen (pictured below), you will want to run these cables through the hole in the truss sock and out the front of the touch screen mount.


a.
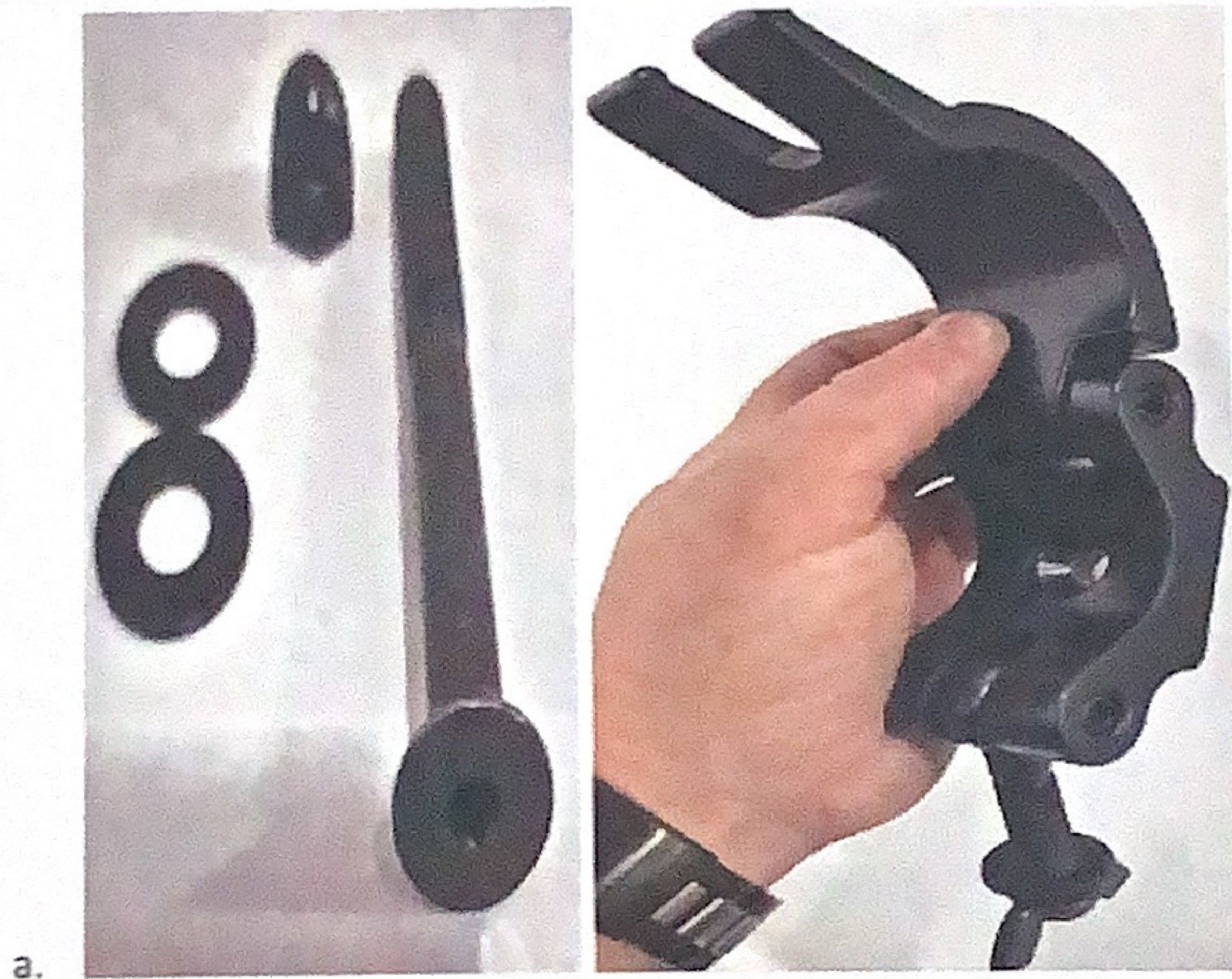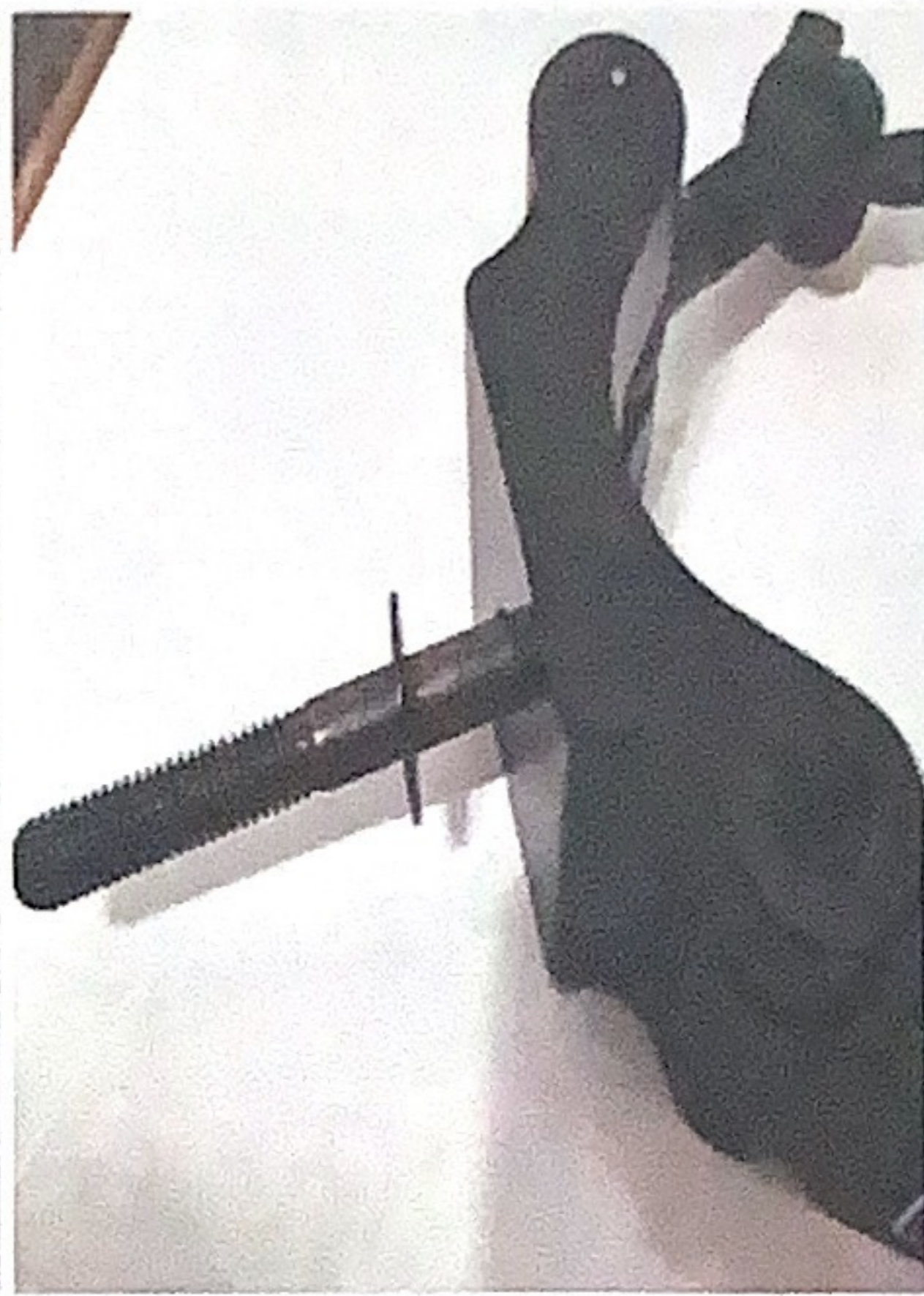
b.

c.

d.

e.

f. There are two small (very small) rubber pieces on the back of the touch screen, pull out these two small rubber pieces and secure the back of the touch screen to the touch screen mount using two vesa screws and two small washers. Once you have done that, take the black front piece of the touch screen mount and re-secure the front of the touch screen mount to the rest of the touch screen mount.
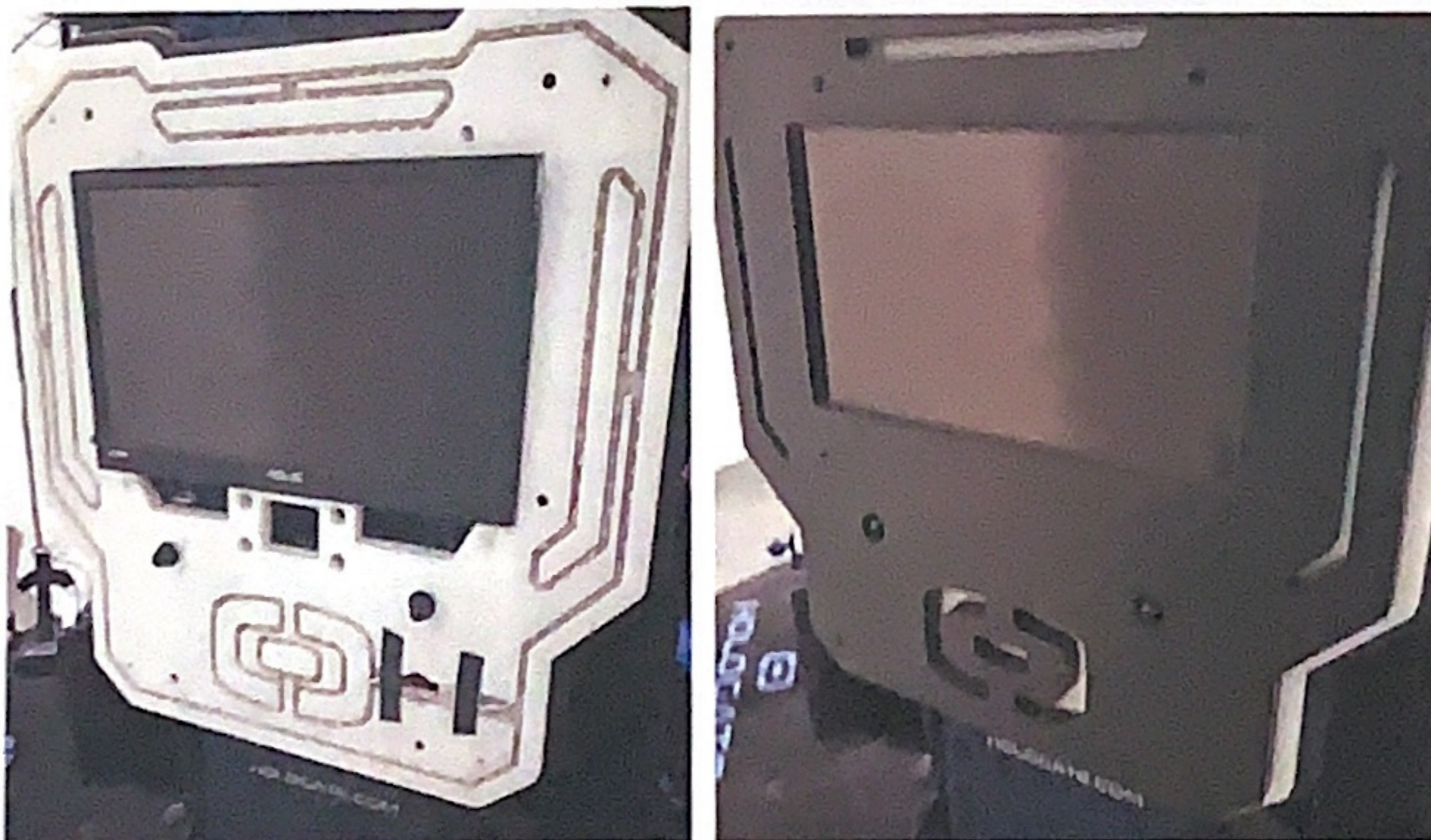
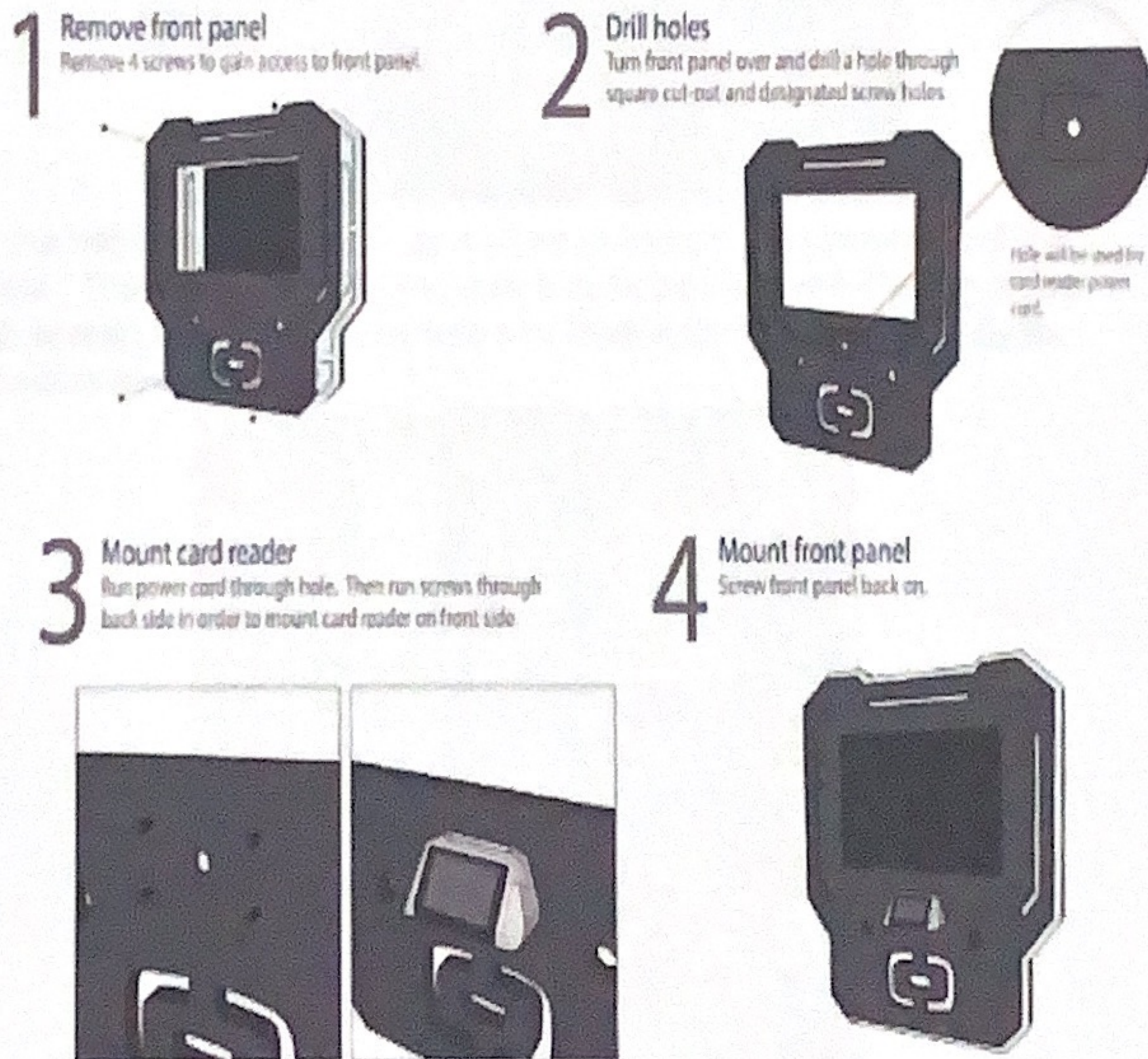
g.

h. Now, take your micro USB cable (located in the box for the touch screen), and plug into the USB extension cable (that will be located in your "cable" box). Take the USB extension cable and the HDMI cable and run up through the truss leg, through the center support truss section and to the netbox. Plug the HDMI cable and USB extension cable, into the NUC

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located in the netbox. Take the power cable for the touch screen and plug into the 6 way that should already be installed in this truss leg. At some point, you'll want to add an additional 6 way as well for additional components we will be installing later. Once you have done this, plug in the power supply for the touch screen LED strip as well. Now you should have a fully functioning touch screen. Once you power on the touch screen, you should not have to power the touch screen on again as the touch screen has "resume state" capabilities and will power on when the systems effects are powered on.

i.   If the site is wanting to attach a card reader onto the system, you may provide them with this information to do so. We do NOT install card swipes as this is not a component that we supply nor support. If we install a card swipe and it does not function properly, then we can end up accepting responsibility for a broken component.

Hologate Card Reader Installation Guide

1 Remove front panel
Remove 4 screws to gain access to front panel.

2 Drill holes
Turn front panel over and drill a hole through square cut-out and designated screw holes

Hole will be used for card reader power cord.

3 Mount card reader
Run power cord through hole. Then run screws through back side in order to mount card reader on front side

4 Mount front panel
Screw front panel back on.

j.

k.   Now we will go ahead and install the truss mounted controller charging rack. Prep four (4) large clamps with the long bolts that should be provided (⅜-16 x 3 ½). Find your acorn nuts or nylong locking washers to cap the bolts. (this portion will be similar to how we installed the touch screen mount, however with two (2) additional clamps.

l.

m. Use the back part of the rack as a guide to finalize the placement of the clamps. The top of the charging rack should be even with the top of the touch screen mount, so make sure you have a tape measure handy to take some measurements.

n.

o. Pull the truss sock over the clamps (keep the acorn nut or locking nut on to prevent tearing the truss sock) and get it into it's correct position.

p.

q. Cut four (4) small holes to allow the bolts to pass through. Also cut a small hole to allow the power supply for the LEDs to pass through as well as the power for the operator headset and the charging brick as well.

r.

s. Place a black washer on the bolt and then the assembled back piece. If you are by yourself, use the acorn nuts on the top bolts to keep it in place