

Build Plate Assembly



Created by:
Joshua Vasquez

last edited:
1/14/2020

SCALE: 1:2

SHEET 1 OF 9

2

1

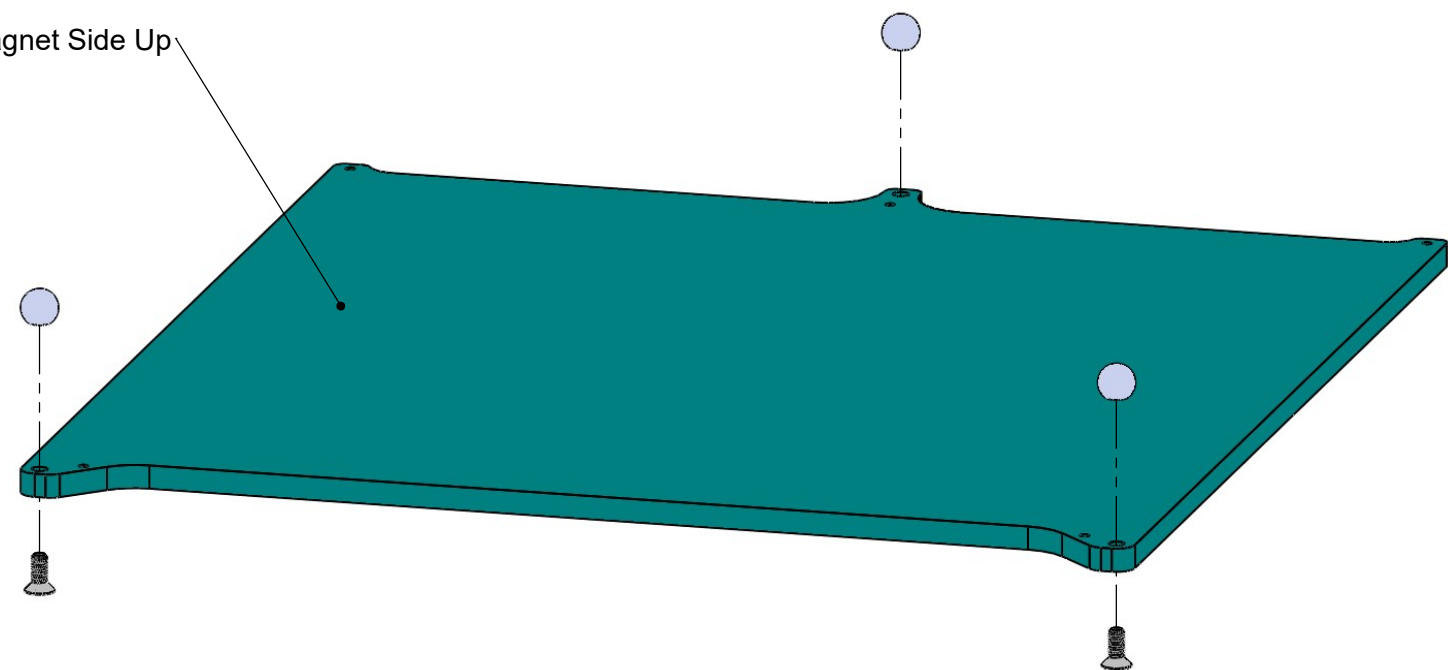
Note: the aluminum bed plate is delicate and very very flat! For the next few steps, work with the bed plate on top of a piece of cardboard to prevent it from resting directly on a table.

Note: the aluminum bed plate also contains an array of high-strength high-temperature magnets. Keep small magnetic objects like screws and screwdrivers away from these magnets during assembly.

B

B


Magnet Side Up



A

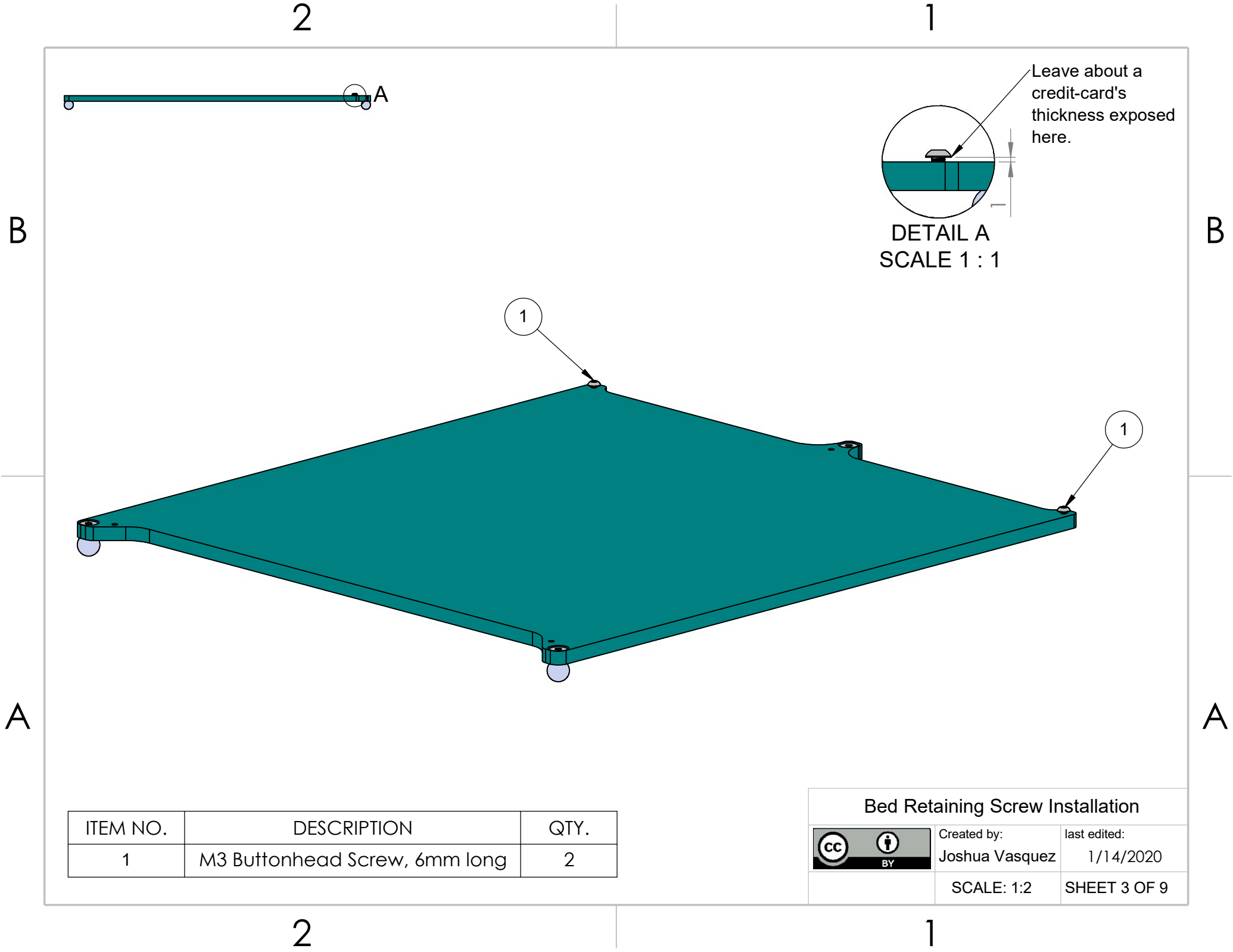
A

ITEM NO.	DESCRIPTION	QTY.
1	Bed Plate	1
2	10mm steel balls with M4 threads	3
3	M4 Flathead screw, 10mm long	3

Kinematic Ball Installation		
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2

1



ITEM NO.	DESCRIPTION	QTY.
1	M3 Buttonhead Screw, 6mm long	2

Bed Retaining Screw Installation		
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2

1

Grip a Solder Terminal Lug firmly with pliers at about the halfway point. Then bend it about 90 degrees with your finger. Make 3 pieces.

B




B

A

A

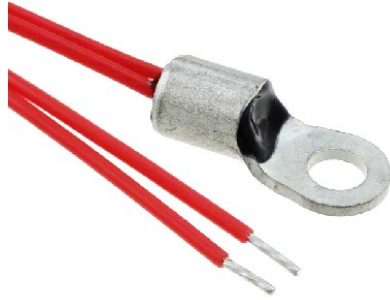
2

1

Spring Anchor Creation		
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We recommend that you use the NTC Ring Lug Thermistor for measuring bed temperature instead of the Heated Pad's built-in thermistor. We will reuse the wires from the heated pad, however.

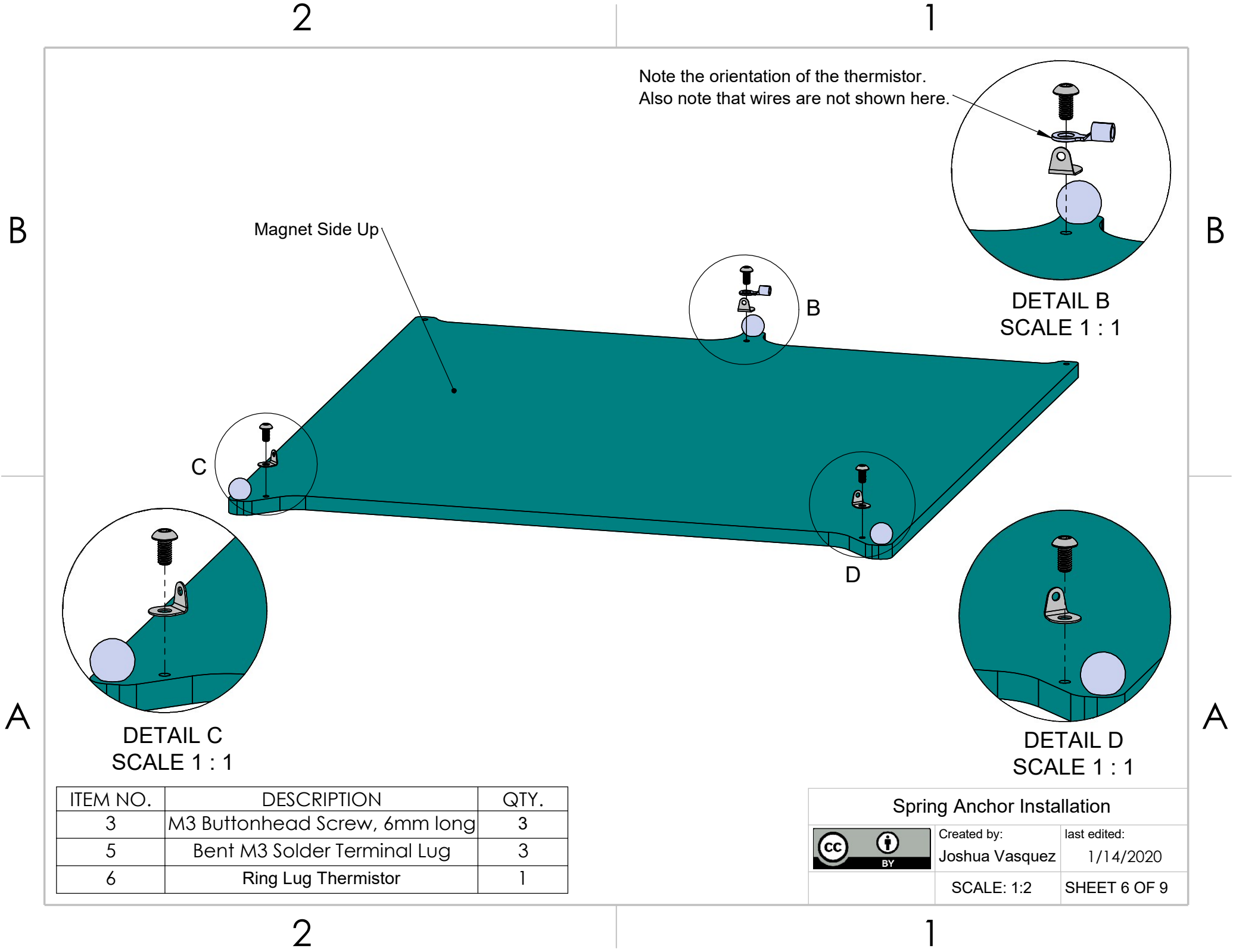
First cut the two thin red wires from the Heated Pad at the tip of the bed. Then solder them to the two exposed leads of the Ring Lug Thermistor. Insulate the connections with heat shrink tubing.



This Ring Lug Thermistor will be screwed into the bed in the next step.

Image Credit: Digikey

Thermistor Wiring		
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Note the orientation of the thermistor.
Also note that wires are not shown here.

Magnet Side Up

DETAIL B
SCALE 1 : 1

DETAIL C
SCALE 1 : 1

DETAIL D
SCALE 1 : 1

ITEM NO.	DESCRIPTION	QTY.
3	M3 Buttonhead Screw, 6mm long	3
5	Bent M3 Solder Terminal Lug	3
6	Ring Lug Thermistor	1

Spring Anchor Installation		
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2

1

Install the Heated Pad by peeling away the sticky layer and placing it on top of the magnet side.

Note the orientation of the plate! The wires will stick out from the side. Also note that there will be a border on all sides since the pad is 300x300mm and the plate is 305x305mm.



Shroud the set of four wires into a cable sleeve.

(In this image the built-in thermistor was used.)

Heated Pad Installation



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2

1

Create 3 Springs from the spring stock by cutting it to length and folding over the first loop with pliers. These springs should measure between 16 and 18mm center-loop-to-center-loop



Note: this extension spring stock is not to be confused with the Spring Guide, which has a smaller diameter.

ITEM NO.	DESCRIPTION	QTY.
1	Extension Spring Stock (McMaster-Carr: 9665K12)	60mm

Bed Spring Fabrication



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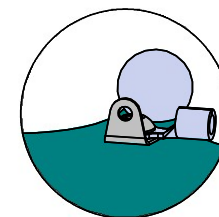
SCALE: 1:2

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2

1

Loop one end of each spring through the exposed hoop of each spring anchor.
Feel free to squeeze the loop closed with a set of pliers such that it doesn't fall out.



DETAIL E
SCALE 1 : 1



E

F

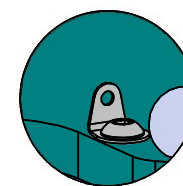


DETAIL F
SCALE 1 : 1

The bed is complete! Set it aside for now.



G



DETAIL G
SCALE 1 : 1

B

A

2

1

Bed Spring Installation



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