

Specification report

DNB311 ID Studio 7 - Capstone
Assessment 2 Final Design



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SAFE - TRAY



PRODUCT LOGO



Primary logo

Product logo encompasses the product as its own company with the possibility to expand into other safe hospitality design solutions with the simple changing of the word "tray" to alternate options in the future.

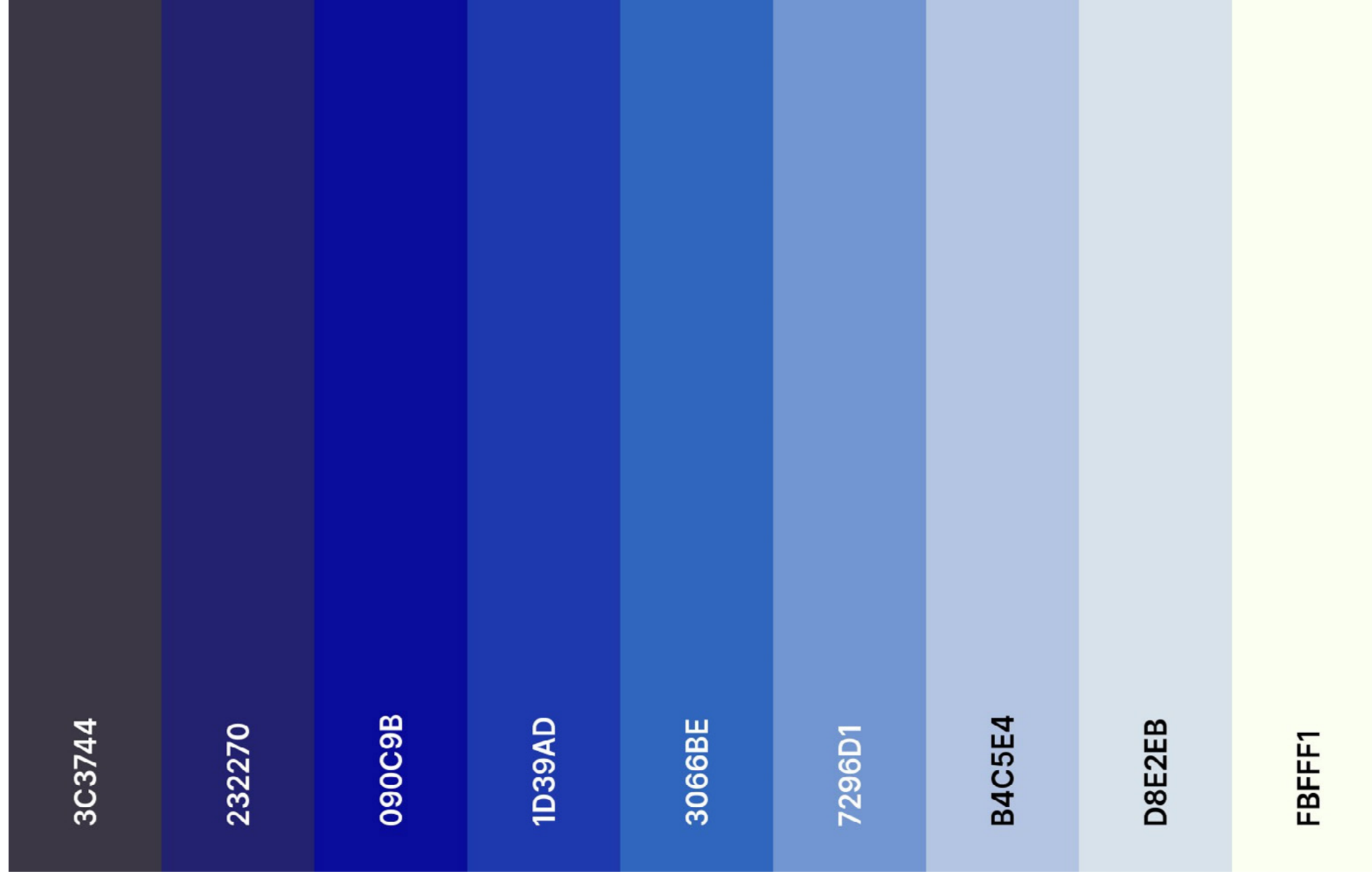


Submark and variations

Submark can be used universally across all safe hospitality designs created as it has no correspondence with the word tray just safe and would be used as logo options where full logo could not fit.



COLOUR PALLETE





FONT GUIDE

LOGO FONT

Poppins Bold

**ABCDEFGHIJKLM-
NOPQRSTUVWXYZ**

**abcdefghijklm-
nopqrstuvwxyz**

HEADING

Poppins Semi-bold

**ABCDEFGHIJKLM-
NOPQRSTUVWXYZ**

**abcdefghijklm-
nopqrstuvwxyz**

SUB-HEADING

Poppins Medium

**ABCDEFGHIJKLM-
NOPQRSTUVWXYZ**

**abcdefghijklm-
nopqrstuvwxyz**

BODY COPY

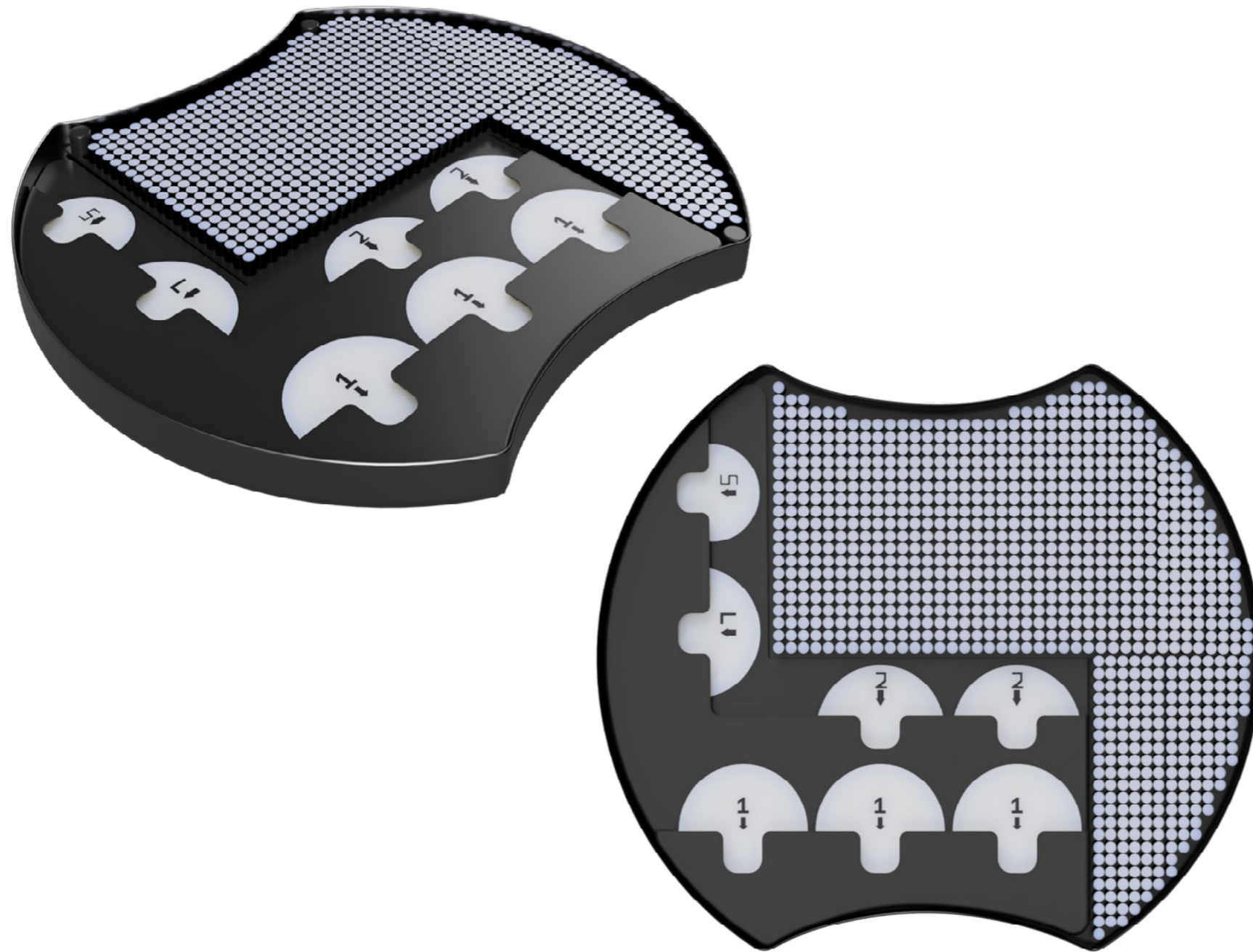
Poppins Light

**ABCDEFGHIJKLM-
NOPQRSTUVWXYZ**

**abcdefghijklm-
nopqrstuvwxyz**



PRODUCT DESIGN AND OVERVIEW

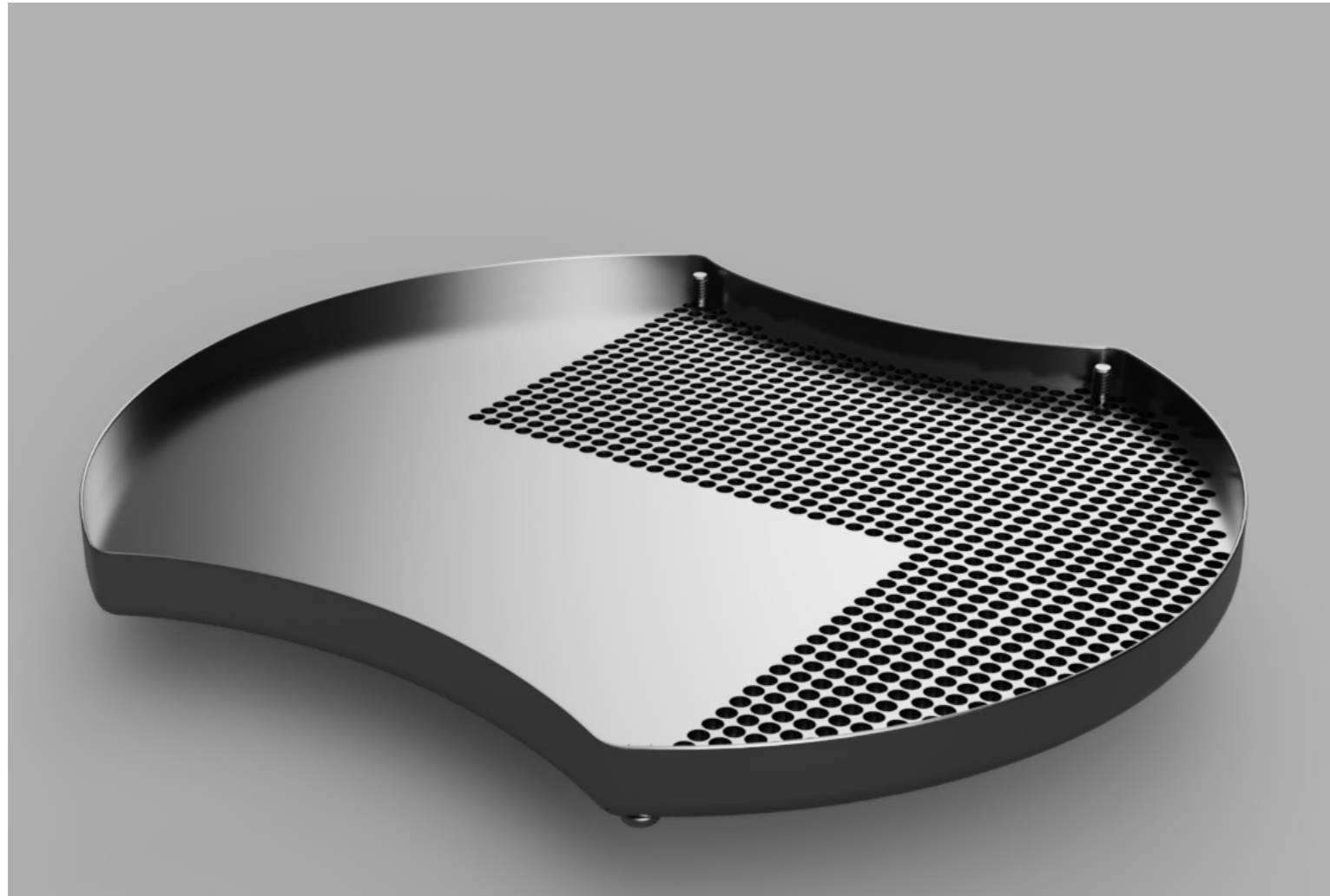


Within hospitality glass breakages are common due to the use of trays which are hard to master and one wrong move can cause a whole tray of glasses to be smashed upon the ground, not to mention being bumped by guests or co-workers in busy areas of service.

The Safe - Tray is designed to combat silly error and bad judgement by implementing cost effective ways of reducing glass breakages into the design of the tray. The tray is firstly designed with ergonomic shaping allowing the user to hold it closer to ones body as its shapes wraps around the user, keeping their centre of gravity more stable. Secondly on one side of the tray are racks that allow wine glass to slide into and hold them firmly within it stopping falling and sliding of glasses. While on the other side are circular pins which are spring loaded underneath allowing rounded glasses such as water glasses, stemless wine glasses and beer bottles to be placed on-top of and creating their own custom sized divets stopping them from falling and sliding around the tray when moments of mis-judgment do come around.



MANUFACTURING DETAILS – BASE



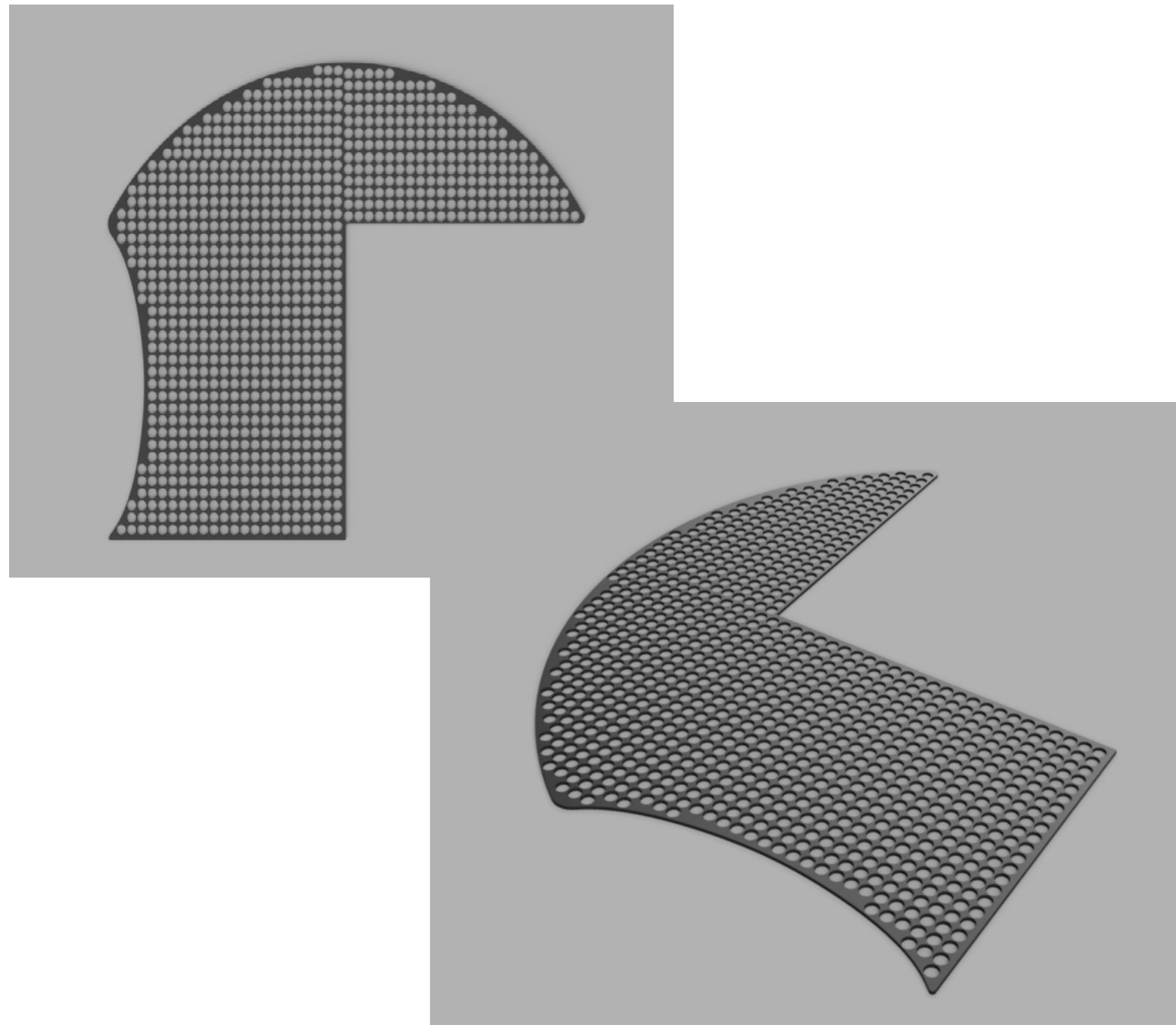
Material: The base of the tray is made out of high density polypropelene (HDPE). This material choice gives it high durability, heat resistance (Hot liquids), light weight, easily cleanable and flexibility. These are all required in the design of the trays base making a suitable material option.

Manufacturing: The manufacturing method that will be used for this part is injection moulding as due to the parts thin walls it will be very cost effective and quick process. Injection moulding is also the best way to achieve this custom bespoke shape that is required for the design of the tray.

Finish: Black Glossy finish.



MANUFACTURING DETAILS – PIN SIDE



Material: The Pin side top part of the tray will also be made from high density polypropelene (HDPE) for the same reasons that it is highly durable, light weight, has flexibilty, easily cleanable and heat resistance.

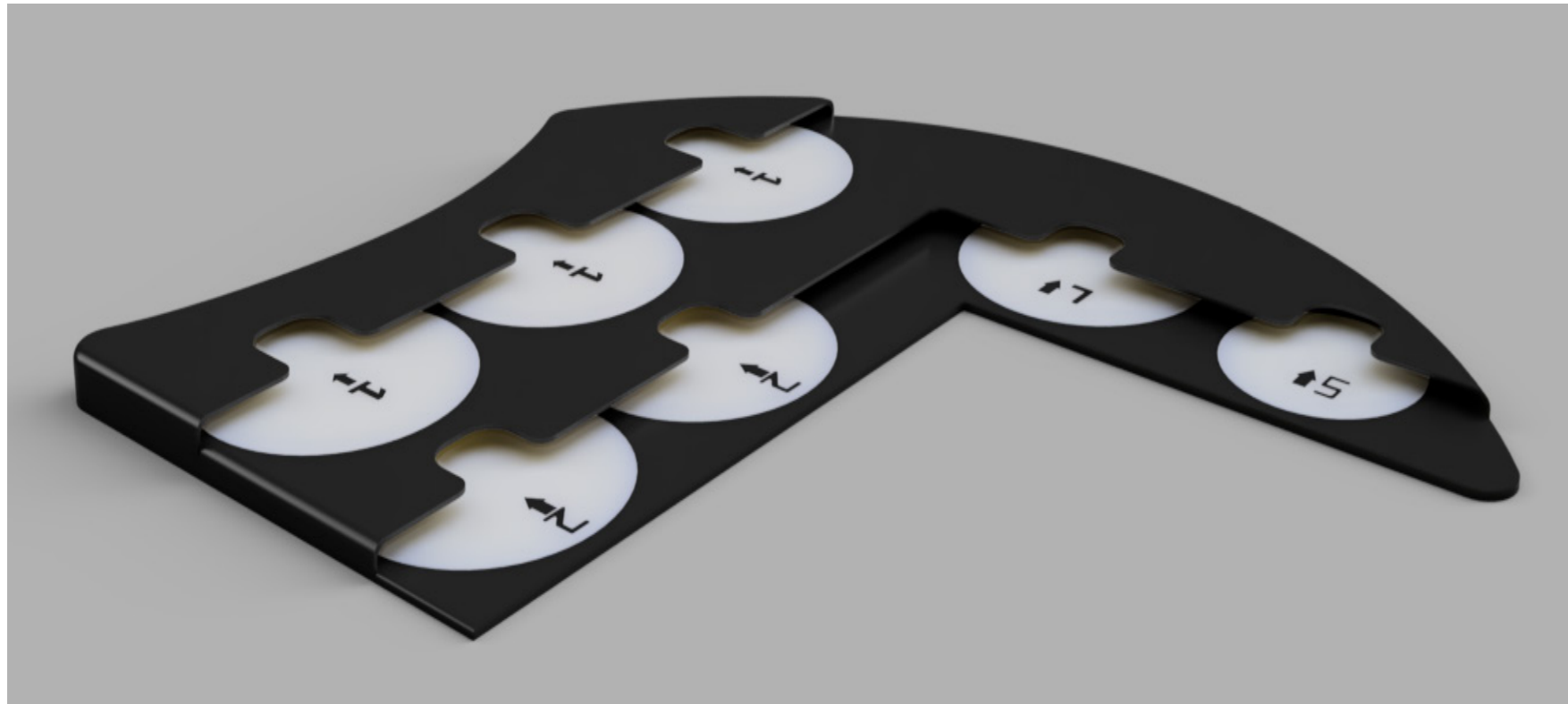
Manufacturing: Manufacturing method for this peice in large volumes would be by injection moulding due to the cheap nature and custom shaping possibilities it has. This part is also very thin approx 1 - 2 mm in thickness allowing it to be manufactured with injection moulding very quickly and cheaply.

Alternatively, this part can be manufactured with 3d printing however, this would only be suitable in small volumes.

Finish: Black Glossy finish.



MANUFACTURING DETAILS – WINE SIDE



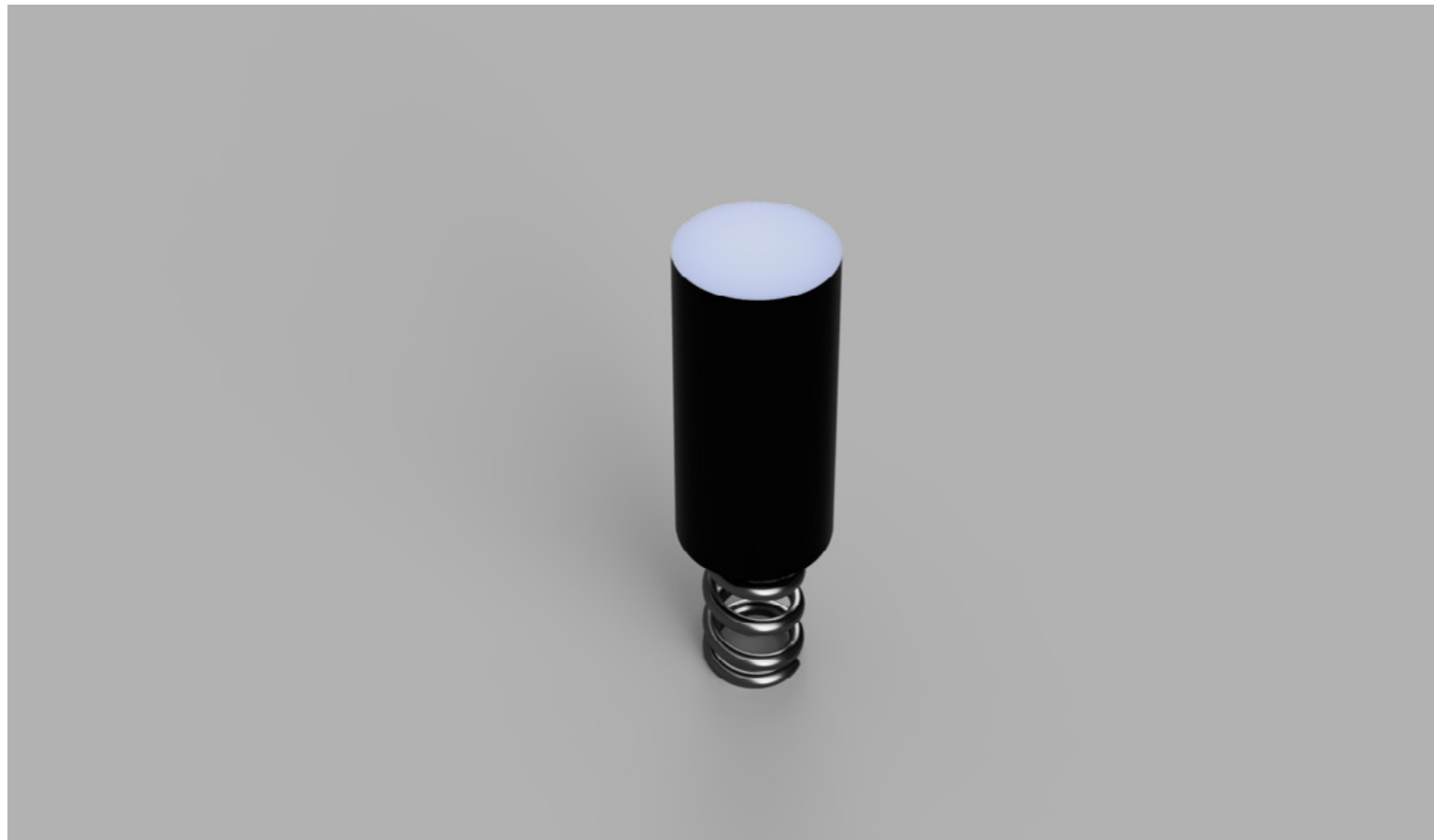
Material: The wine side top part of the tray will also be made from high density polypropelene (HDPE) for the same reasons that it is highly durable, light weight, flexible, easily cleanable and heat resistance. flexibility is especially important with this part.

Manufacturing: Manufacturing method for this peice in large volumes would be by injection moulding due as it would be more cost efficient and custom shaping possibilities. This part is also very thin approx 1 - 2 mm in thickness allowing it to be manufactured with injection moulding very quickly and cheaply.

Finish: Black Glossy finish primarily. Indicators White Matte finish.



MANUFACTURING DETAILS – PINS



Material: The Pins on top of the tray will be made from silicone as it will give them a slightly grippy texture which will help stop glasses from sliding around while also being heat resistant, durable and easily cleanable.

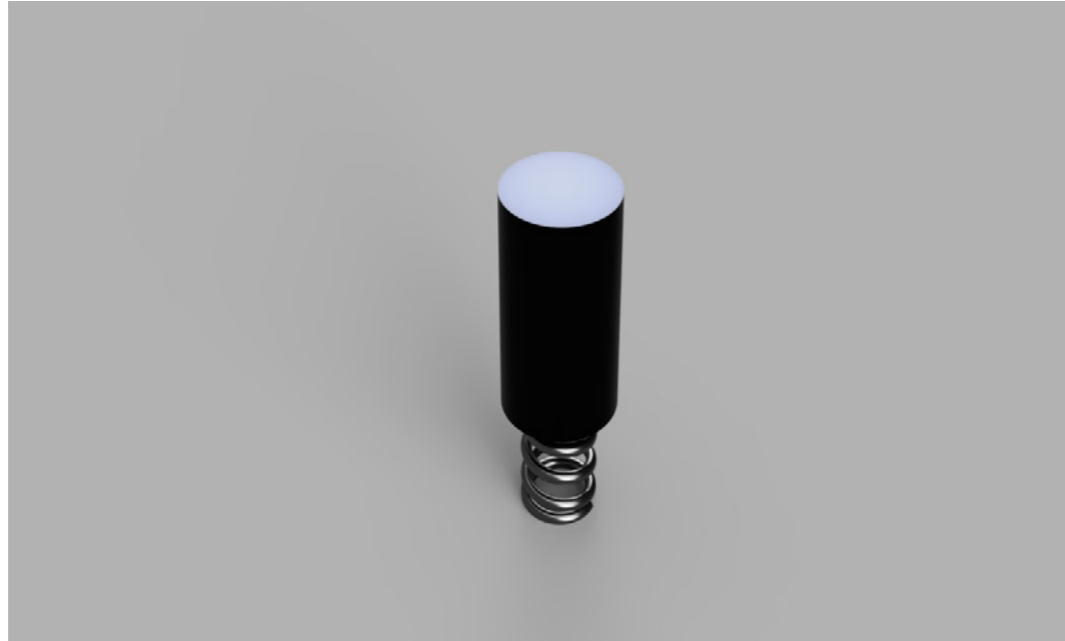
Manufacturing: Manufacturing method for this piece in large volumes would be by injection moulding due to the cheap nature and custom shaping possibilities it has. This part is also very thin approx 1 - 2 mm in wall thickness allowing it to be manufactured with injection moulding very quickly and cheaply. This part is small enough that it would allow it to be injection moulded in large volumes at once, approx 10 - 20 per mould.

3d printing is possible but would be far too slow as one tray requires 931 pins in total.

Finish: White Matte finish top.
Matte black sides.



MANUFACTURING DETAILS – SPRINGS



The pins are comprised of an internal compression spring which allow them to compress and uncompress depending on when a glass is placed on top.

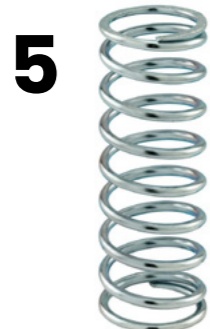
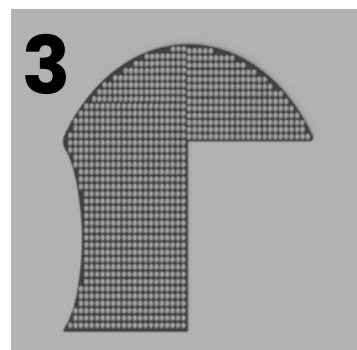
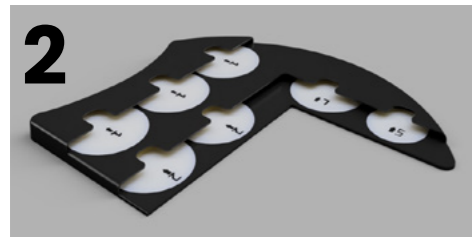
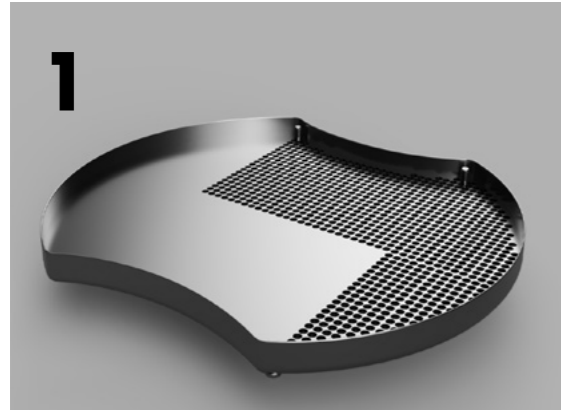
Material: Springs would be made from stainless steel as this gives them durability, heat resistance and the ability to be easily cleaned within a washing machine due to corrosion resistance.

Manufacturing: These compression springs would have to be custom made as the required tension needed for this design would have to be very low to achieve the ideal compression from a glass.

Manufacturing method required for the springs would be coiling and they would have to be coiled to an extremely low tensile strength.



MANUFACTURING DETAILS – ASSEMBLY



The assembly of the tray will now be outlined to give a better understanding on how all peices go together.

1. Firstly the **(2)** wine glass side of the tray is weld-ed into the **(1)** base of the tray using a plastic welding technique.

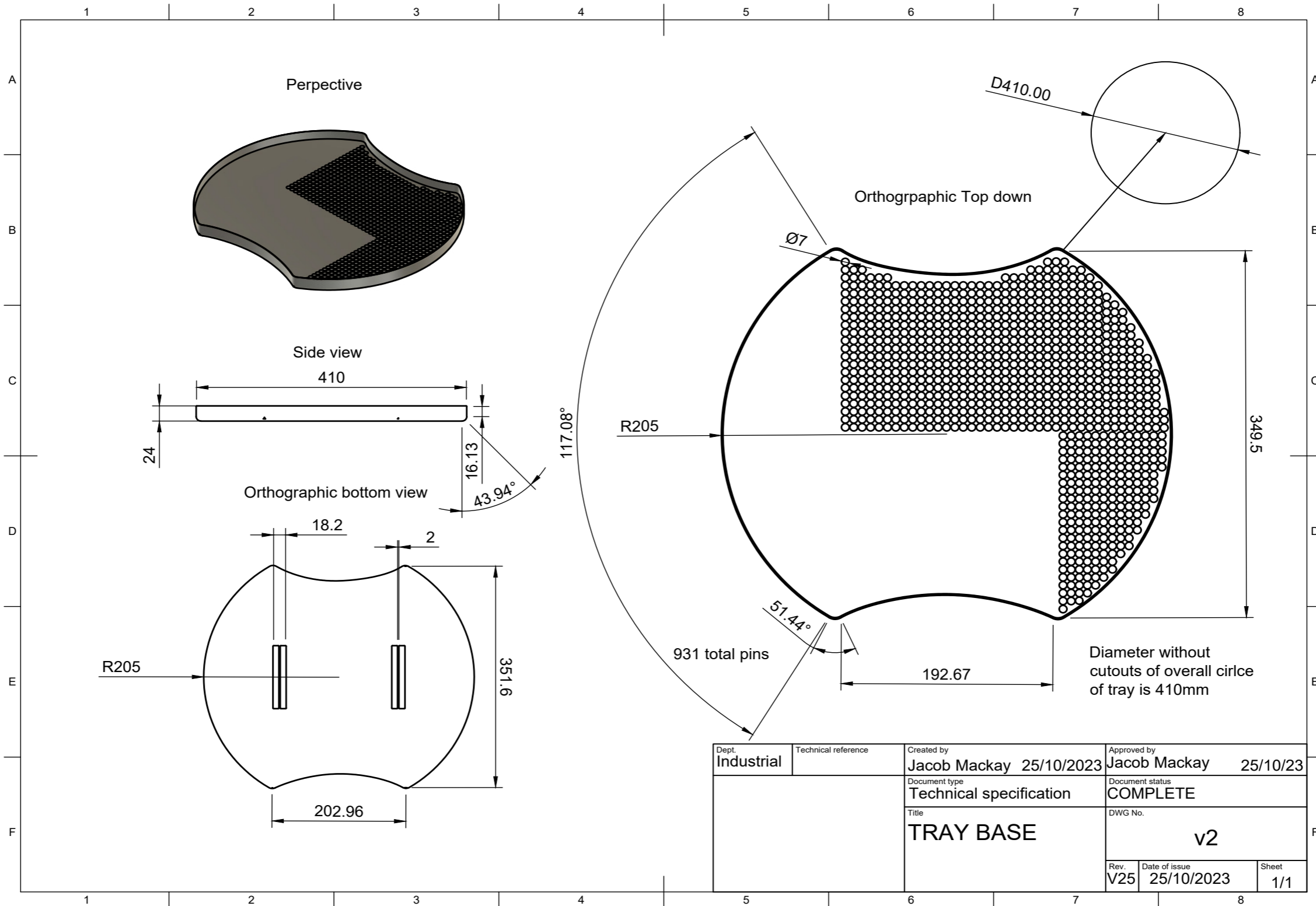
2. All **(5)** springs are then to be welded/soldered into **(4)** pins using once again a plastic welding technique.

3. **(4)** Pins are then welded/soldered into **(1)** tray base into holes using a palstic welding technique.

4. Finnally the **(3)** pin side top is carefully weld in the area **(1, 4)** left ontop of pins, slotting all pins into the holes.

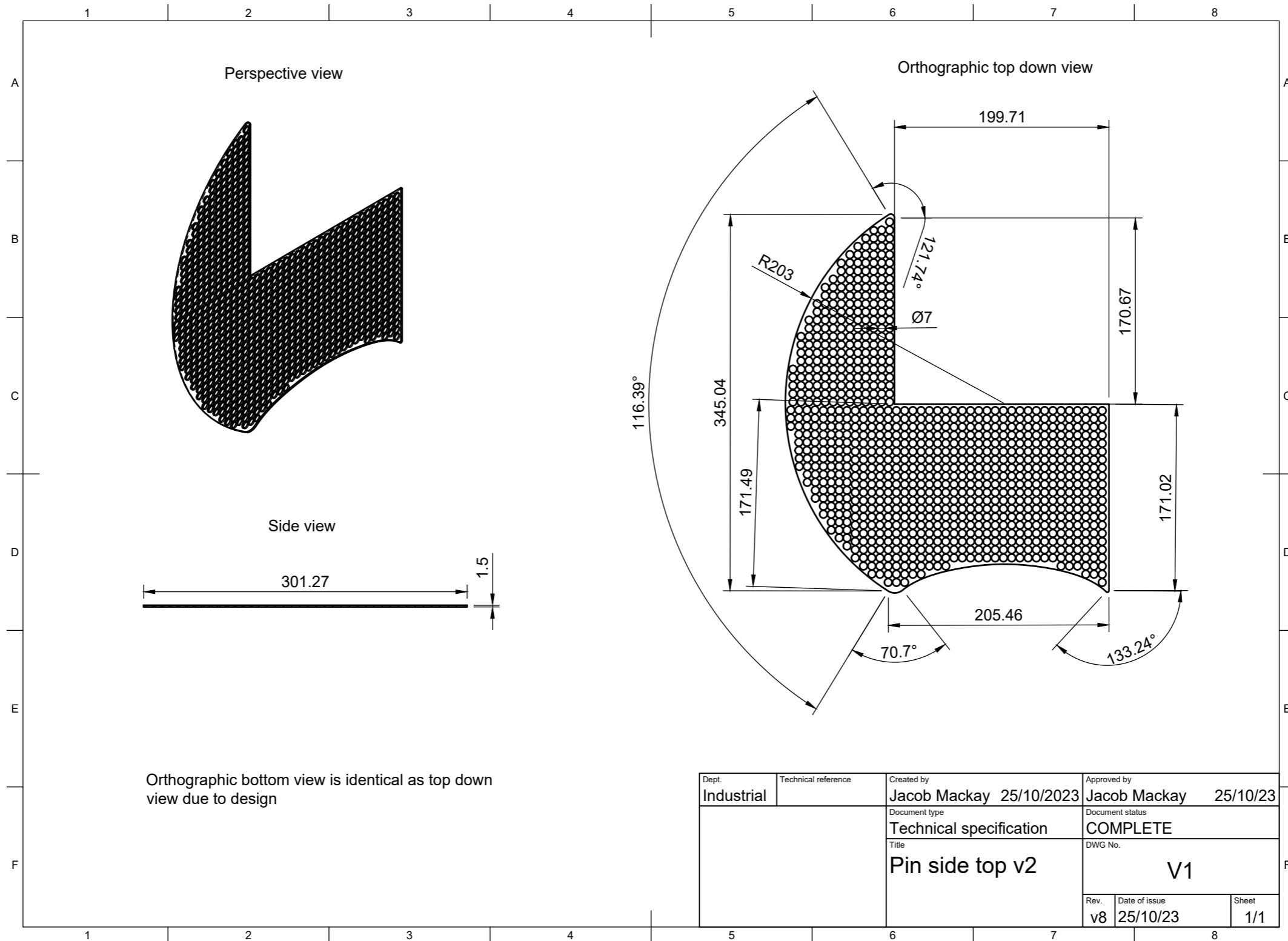


TECHNICAL DRAWING – TRAY BASE



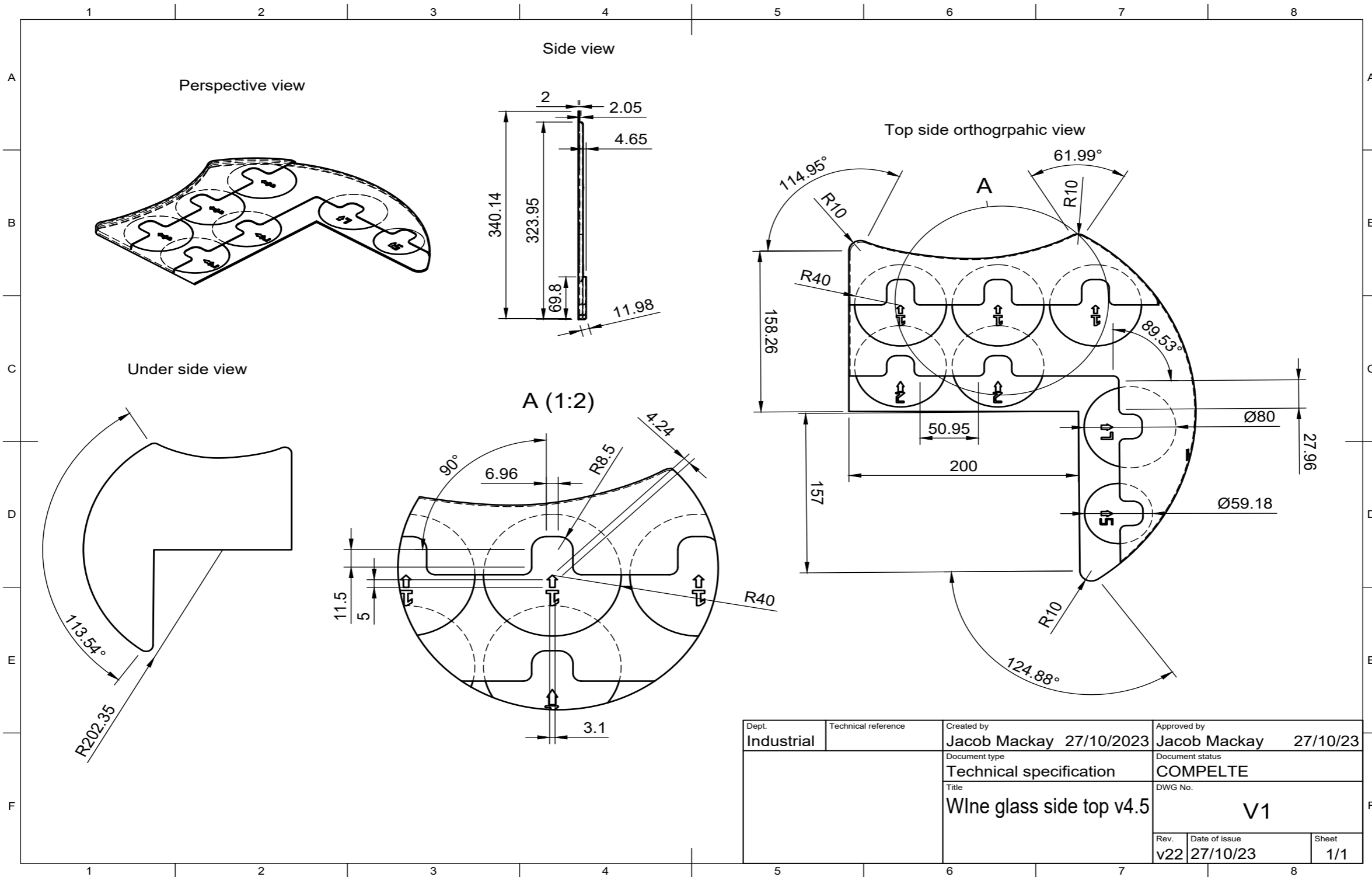


TECHNICAL DRAWING – PIN SIDE TOP



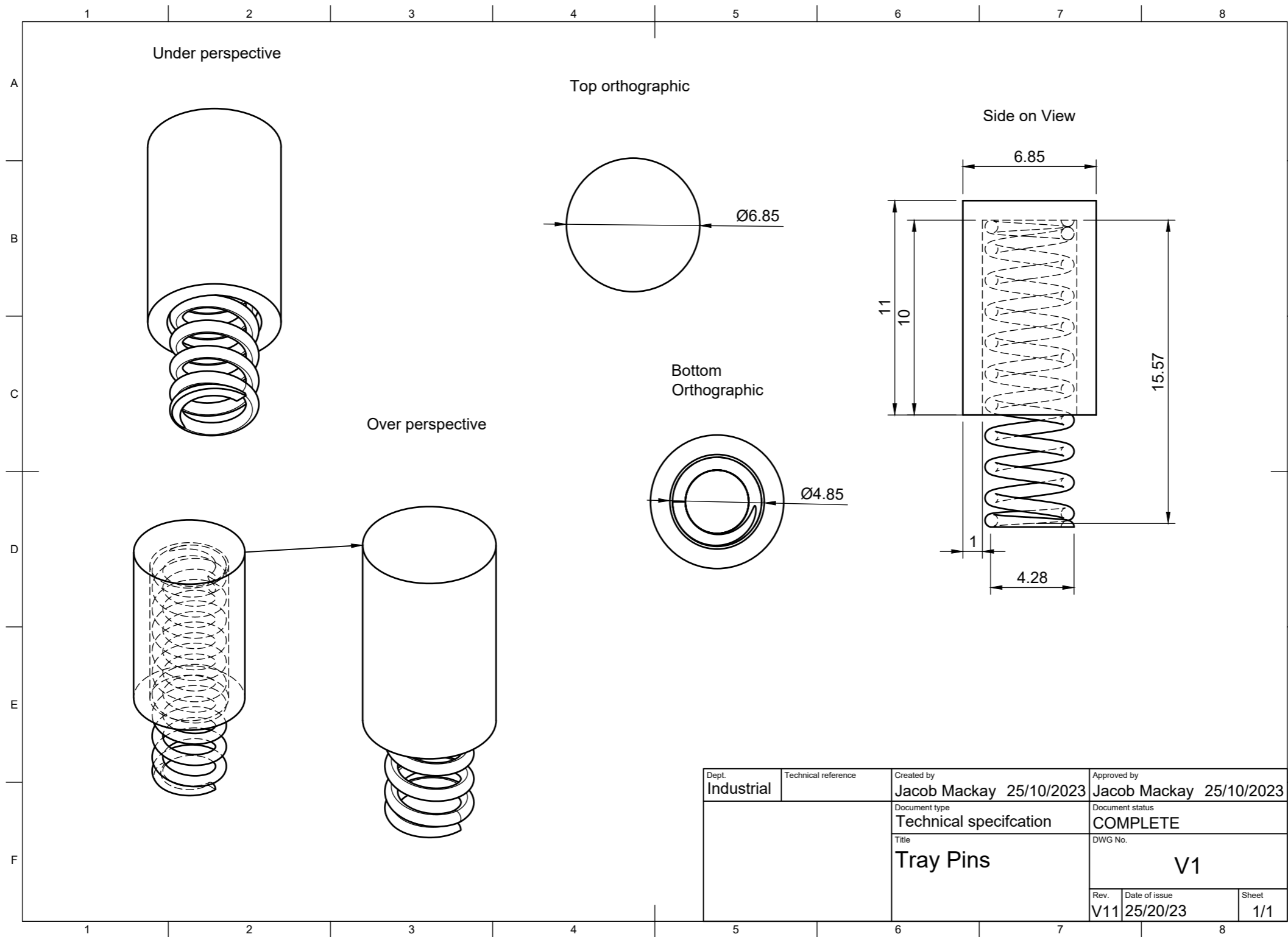


TECHNICAL DRAWING – WINE SIDE TOP



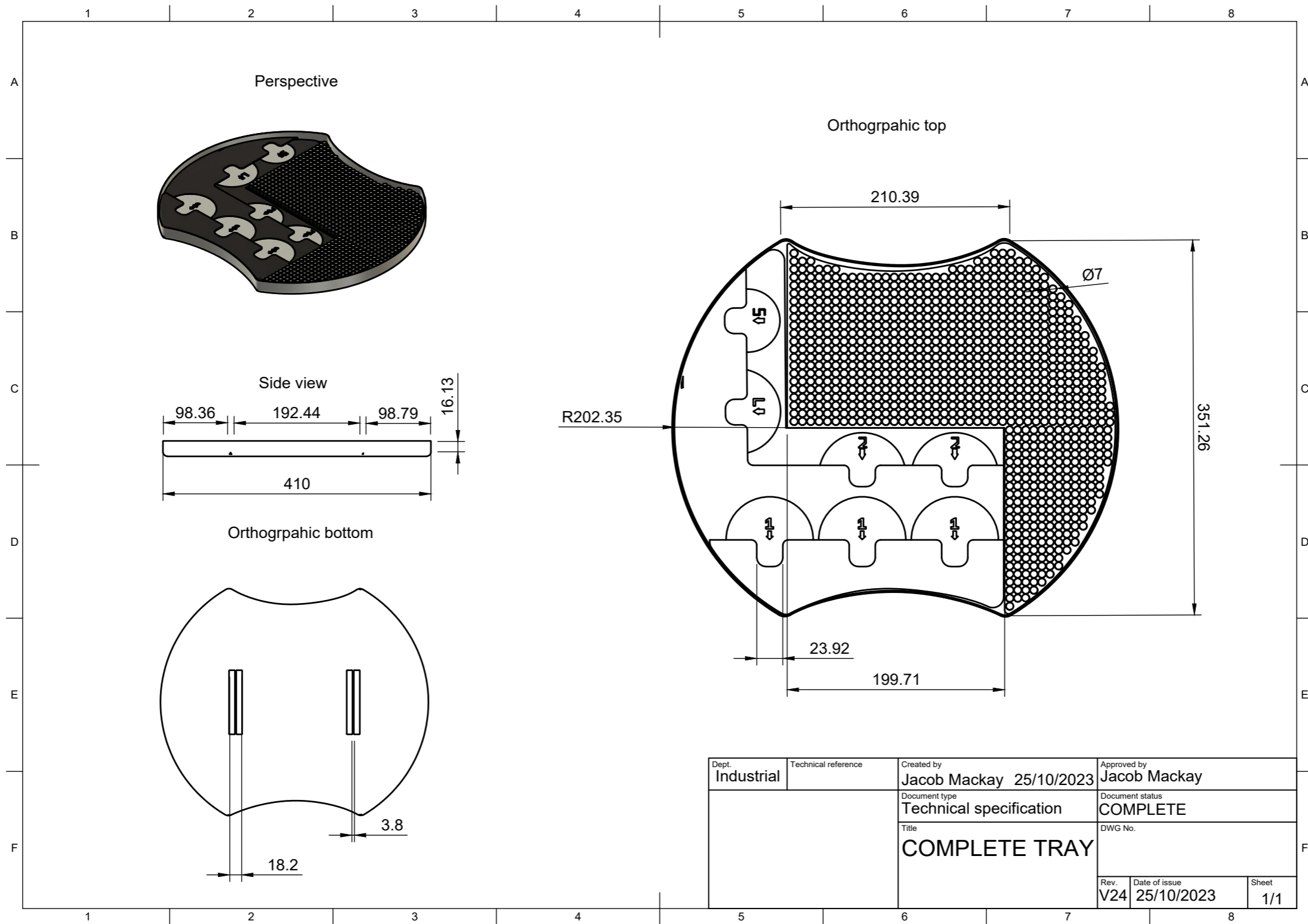


TECHNICAL DRAWING – PINS





TECHNICAL DRAWING – COMPLETE TRAY





SAFE - TRAY