
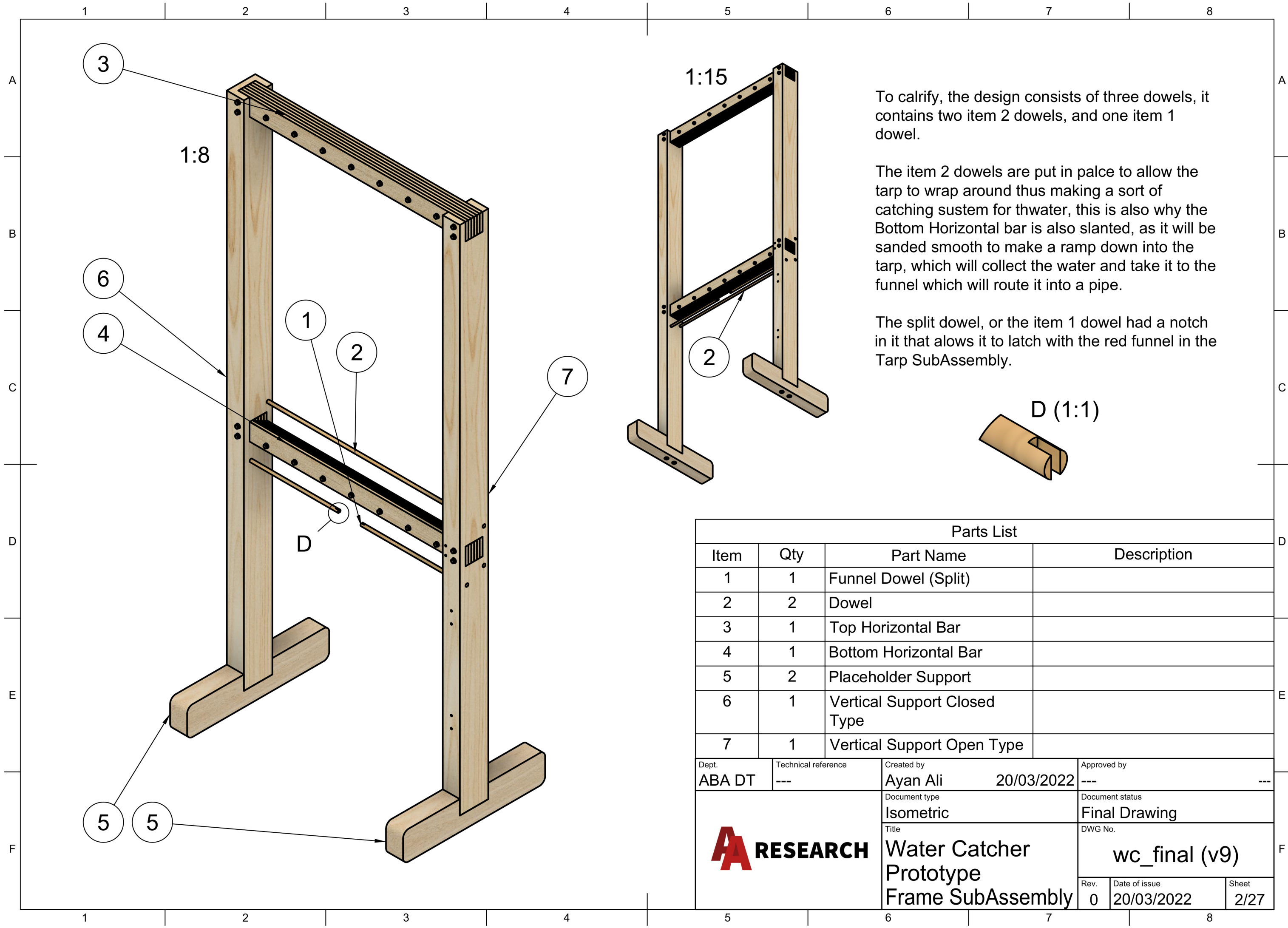


This is the final and complete Water Catcher Prototype. Some major improvements would be to instead use aluminium for its lower weight, cost at large quantities, durability, etc. another one would be to substitute the placeholder support legs with a proper system that digs into the ground, or bolts into concrete for strength.

We have not done these changes as:

- (1) We have ran out of time due to the pandemic reducing the manufacturing phase of the project, and thus some changes have been done to the design to reduce complexity.
- (2) We do not have the facilities available to weld, shape, drill, and cut aluminium, hence we have compromised with a wood frame.
- (3) The proper ground mounting system has been replaced with placeholders as the prototype would be too unwieldy and large with a proper ground mounting system, we also have no way of testing such a system as we do not have concrete mounting points nor suitable soil for digging the supports into the ground.

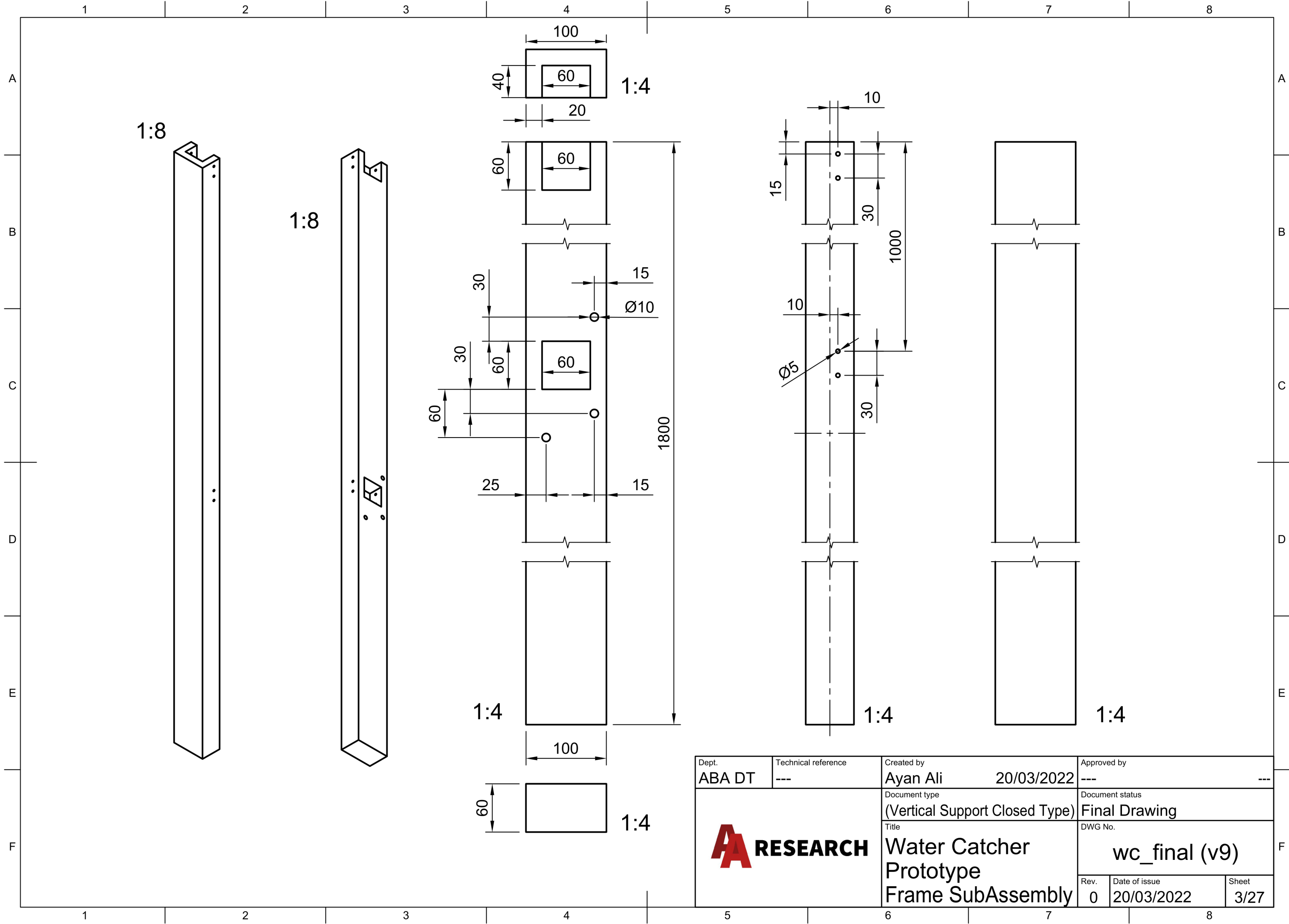
Parts List				
Item	Qty	Part Name	Description	
1	1	Frame Assembly		
2	1	Tarp Assembly		
3	1	Filter Assembly		
Dept. ABA DT	Technical reference ---	Created by Ayan Ali	20/03/2022	Approved by ---
		Document type Isometric	Document status Final Drawing	
		Title Water Catcher Prototype Main Assembly	DWG No. wc_final (v9)	
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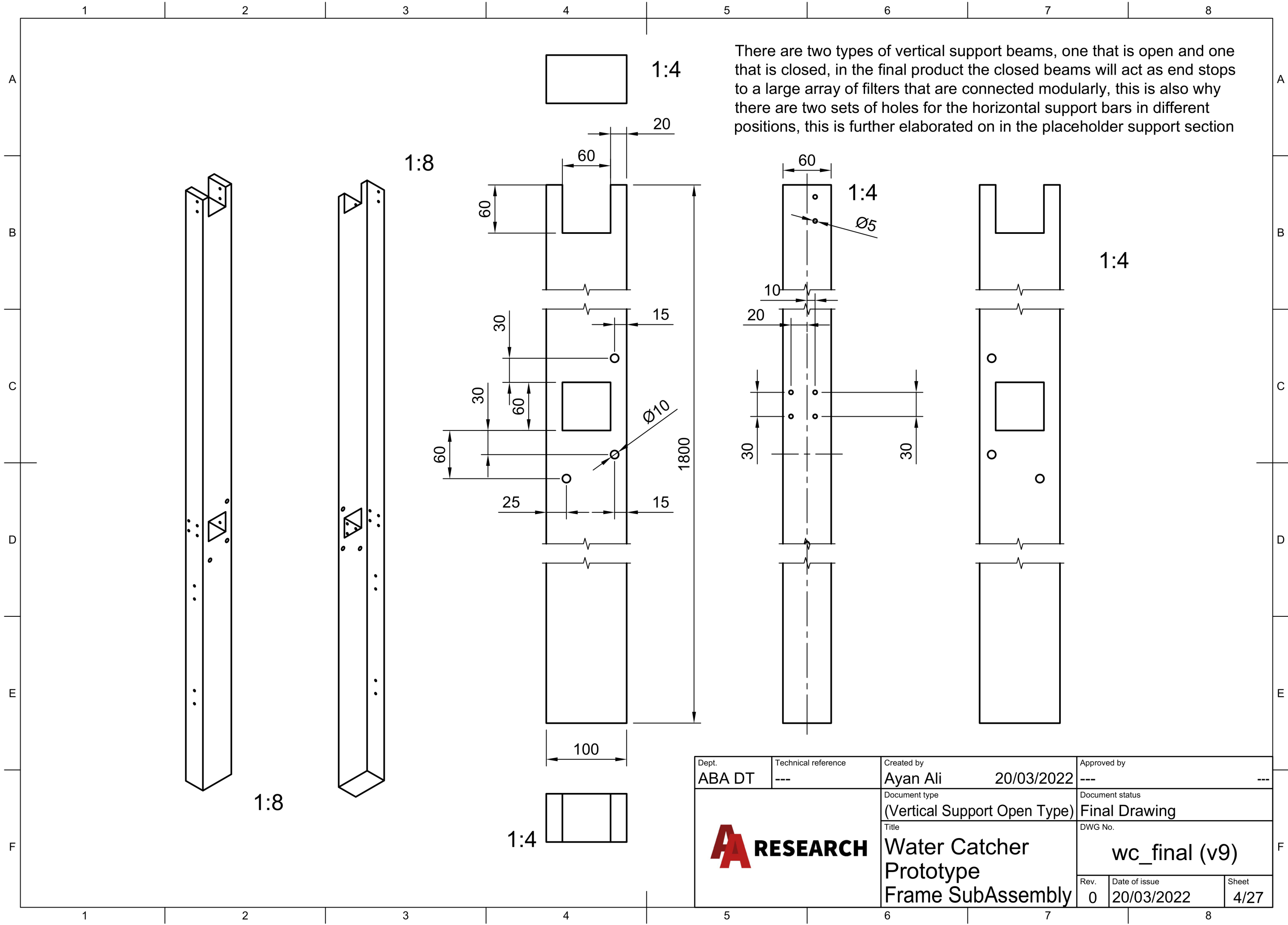


To calrify, the design consists of three dowels, it contains two item 2 dowels, and one item 1 dowel.

The item 2 dowels are put in palce to allow the tarp to wrap around thus making a sort of catching sustem for thwater, this is also why the Bottom Horizontal bar is also slanted, as it will be sanded smooth to make a ramp down into the tarp, which will collect the water and take it to the funnel which will route it into a pipe.

The split dowel, or the item 1 dowel had a notch in it that alows it to latch with the red funnel in the Tarp SubAssembly.



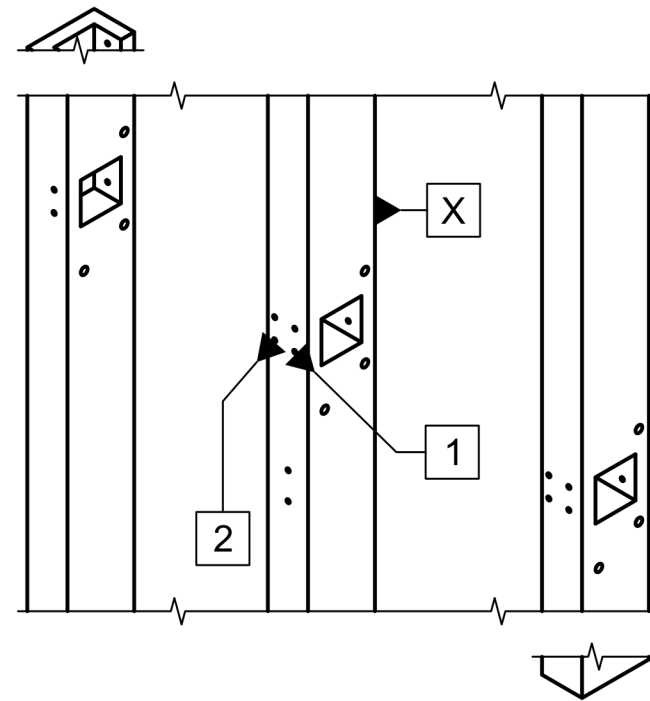


Elaboration of vertical support types:

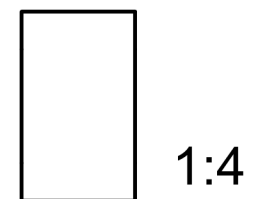
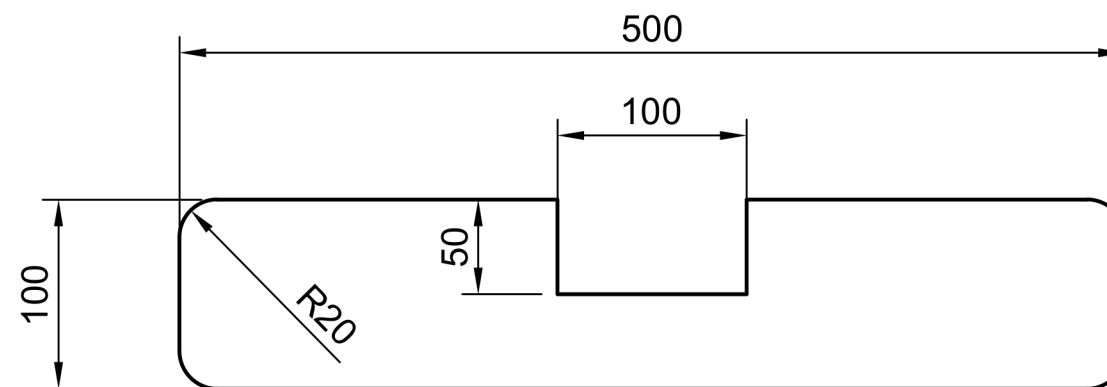
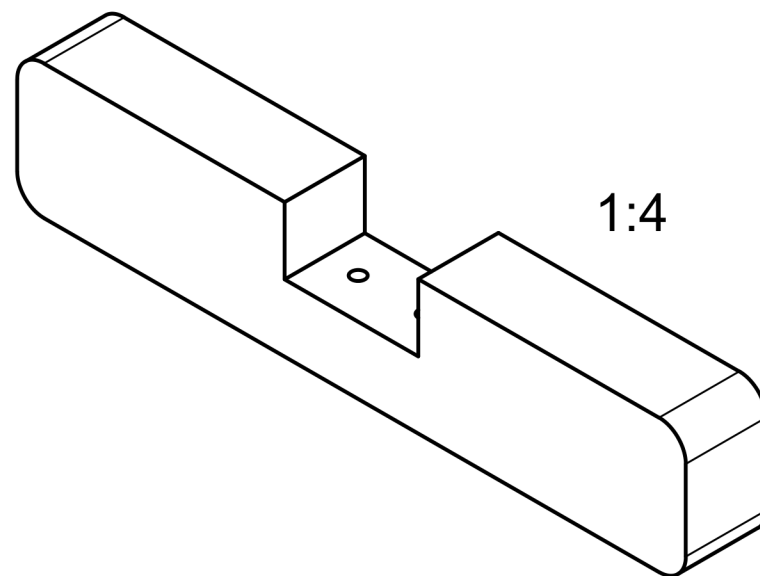
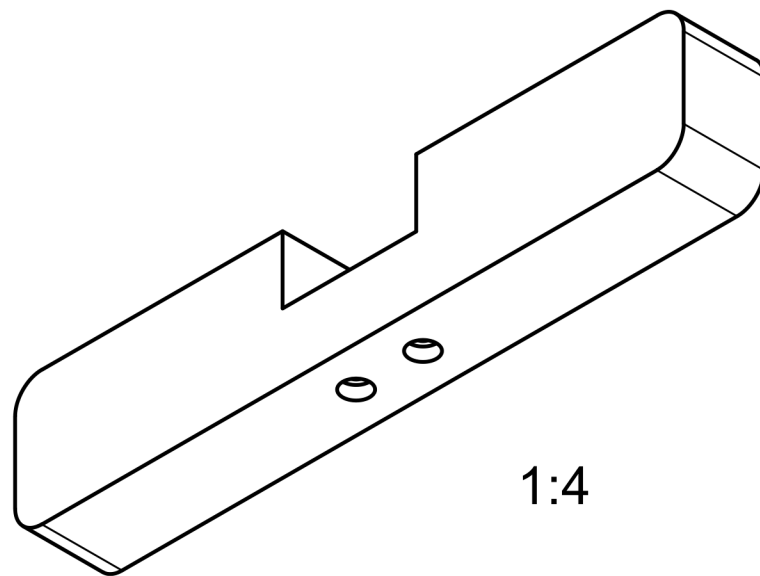
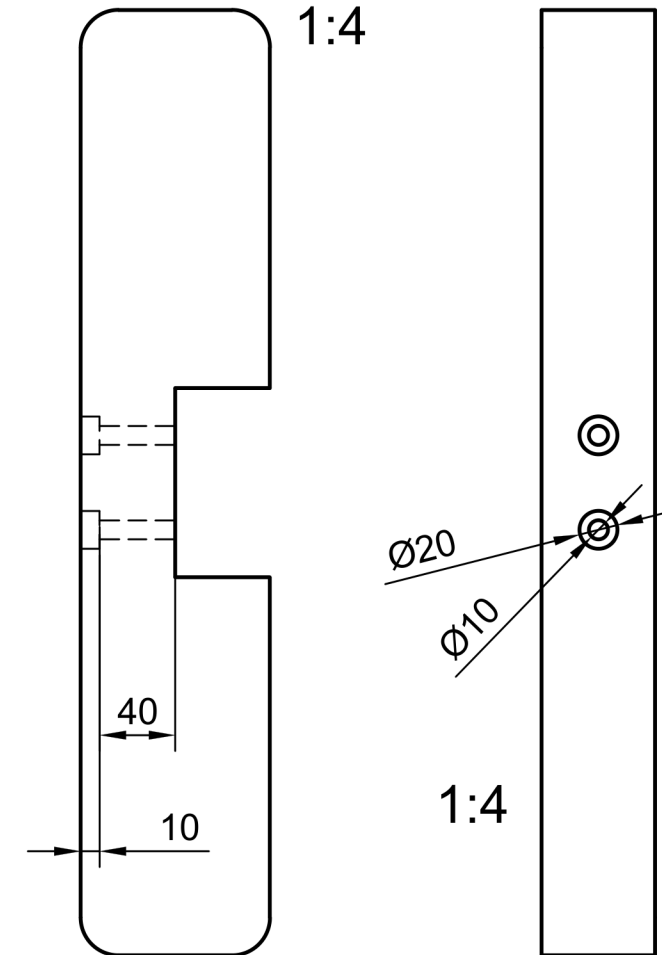
So for the device to be modular new vertical support beams can be added adacently to the already existing two beams thus increases the capacity of the water catcher.


There are two sets of holes in the open type vertical support, one is for a vertical beam that only has one horizontal bar, and the second hole for if there are two horizontal bars due to another module being added on adjacently to the vertical support bar.

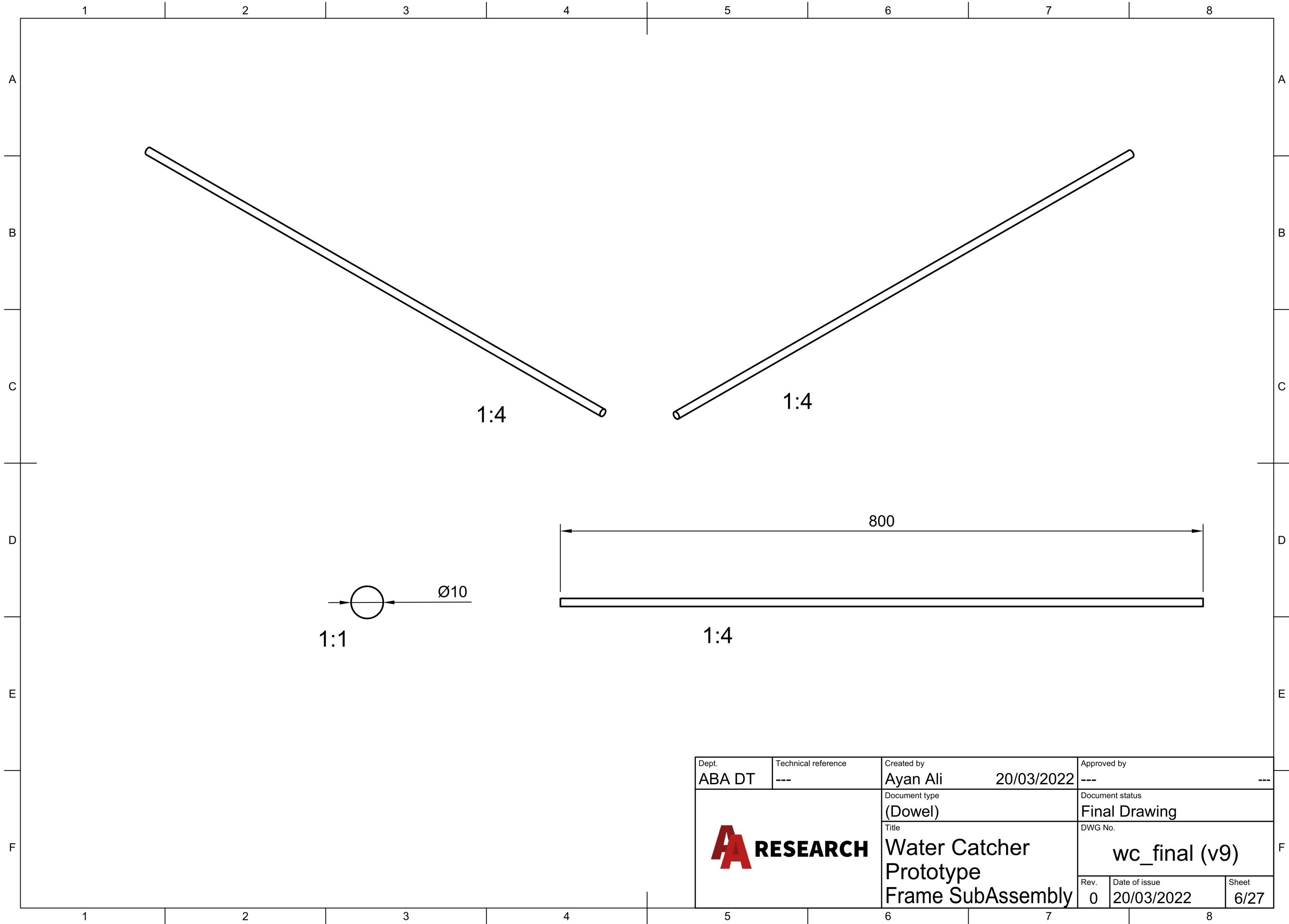
A diagram is shown on the right:

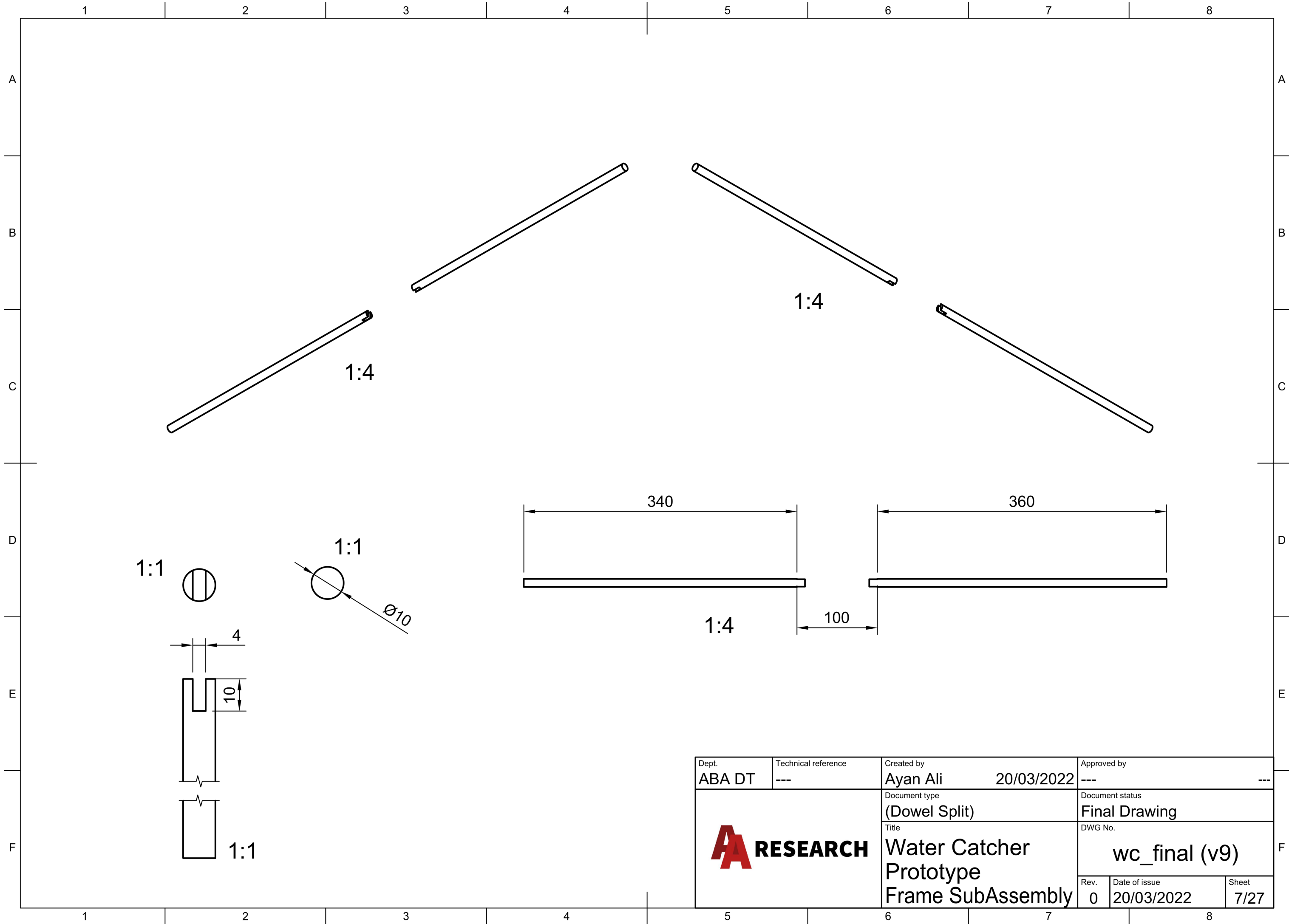


If the water catcher is used pwith only one module or net, then only holes 2 are used to bolt the singular horizontal bar, and the edge of the bar will be flush against X, however if two modules or more are used then only half of the horizontal bar will go through giving space for the other horizontal bar to go through too and each bar will be bolted to 1 and 2 respectively.



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		Document type (Placeholder Support)	Document status Final Drawing
		Title Water Catcher Prototype Frame SubAssembly	DWG No. wc_final (v9)
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There are six different sections of plank in the bottom horizontal bar, each with a different "cut" inside of them, there are:

- (1) Section 2.5cm Cut
- (2) Section 2.0cm Cut
- (3) Section 1.5cm Cut
- (4) Section 1.0cm Cut
- (5) Section 0.5cm Cut
- (6) Section No Cut

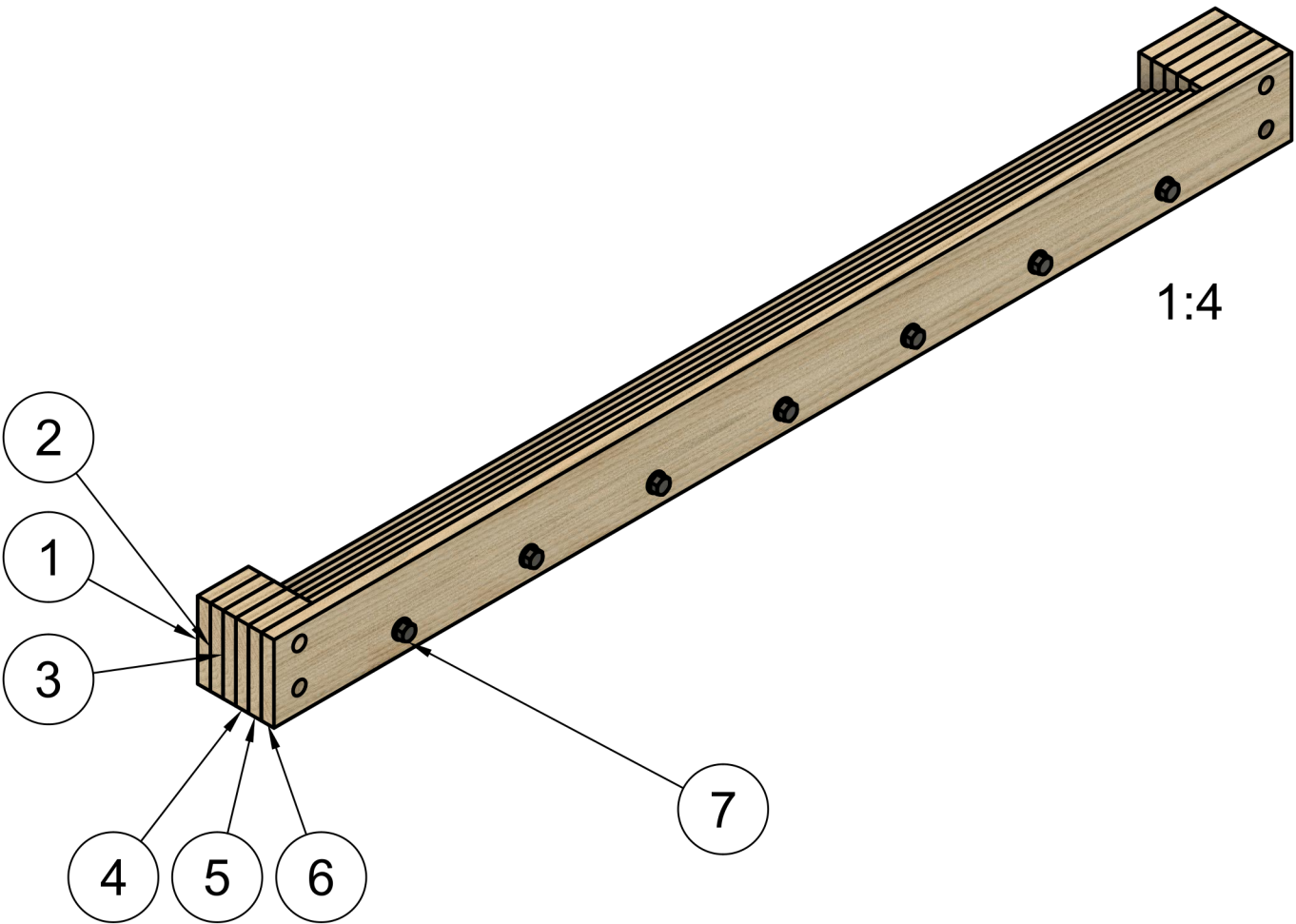
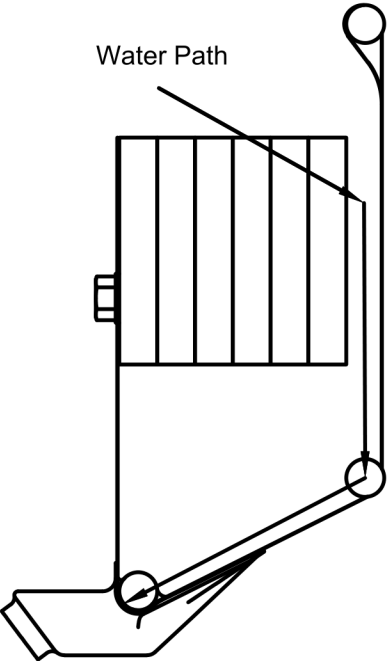
The six different sections form the horizontal support bar and they had two purposes, the firstly act as a structural piece between the two vertical support beams, and secondly they have holes inside of them that allow bolts to pass through which can tightly clamp 5 pieces of net between the six sections.


The bottom horizontal piece acts as the clamping part, while the top horizontal bar is adjustable as it is easier to get to. This allows the user to be able to get the exact tension in the net as needed.

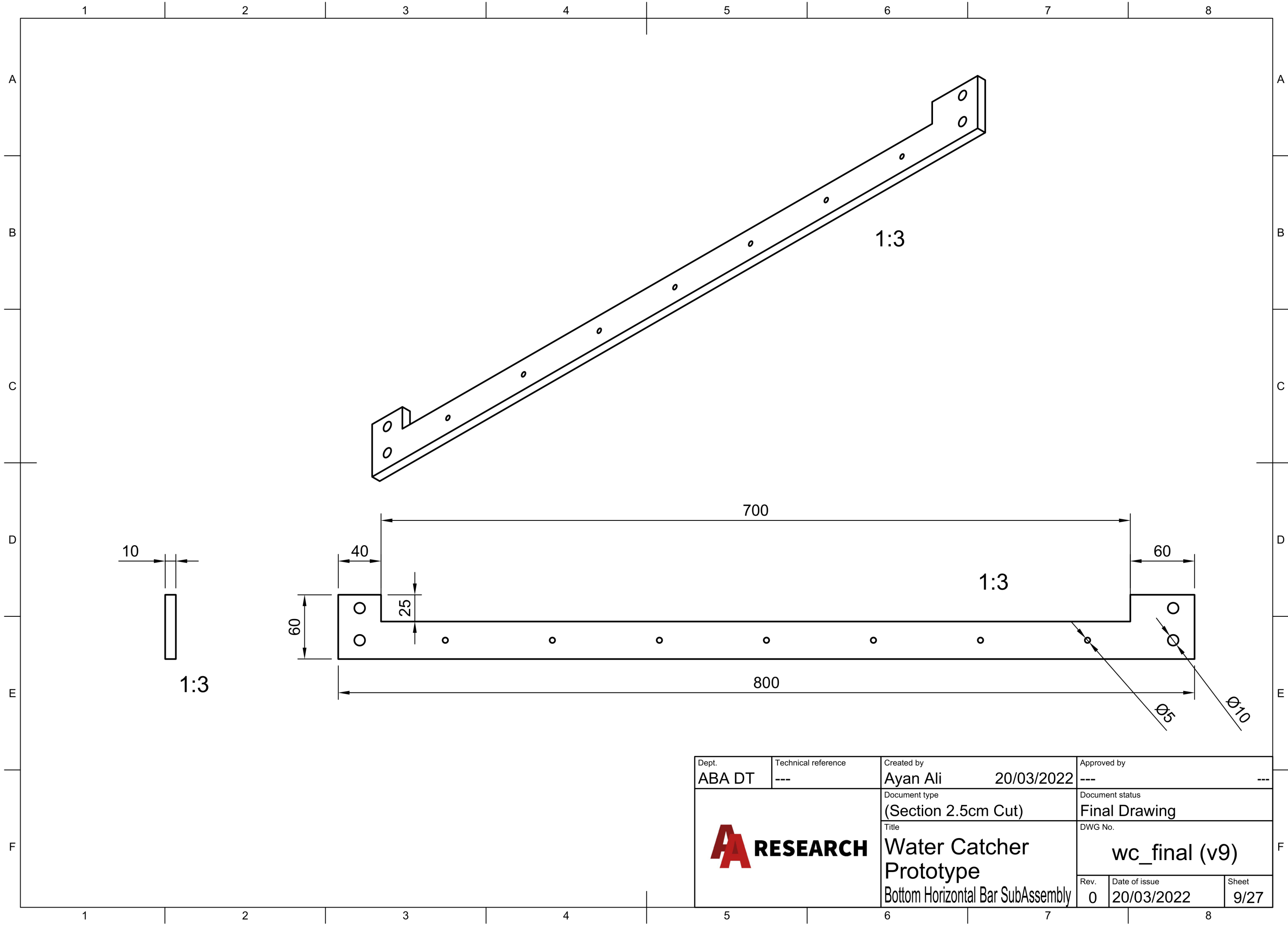
The bottom Horizontal piece has six different pieces as they form a sort of ramp to allow the water to roll down into the tarp, and then into a 3D printed funnel for collection.

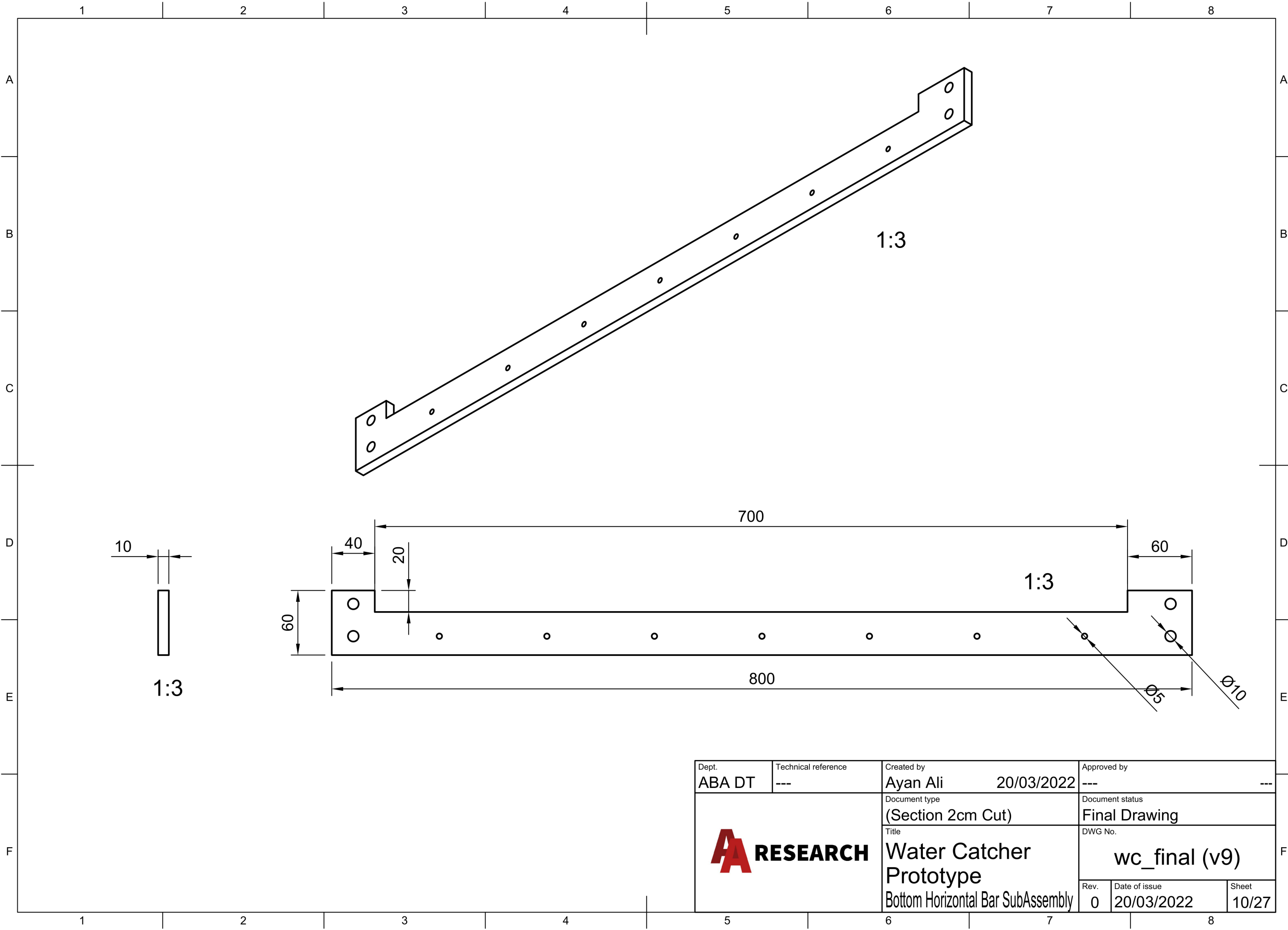
The path of the water is shown on the right:

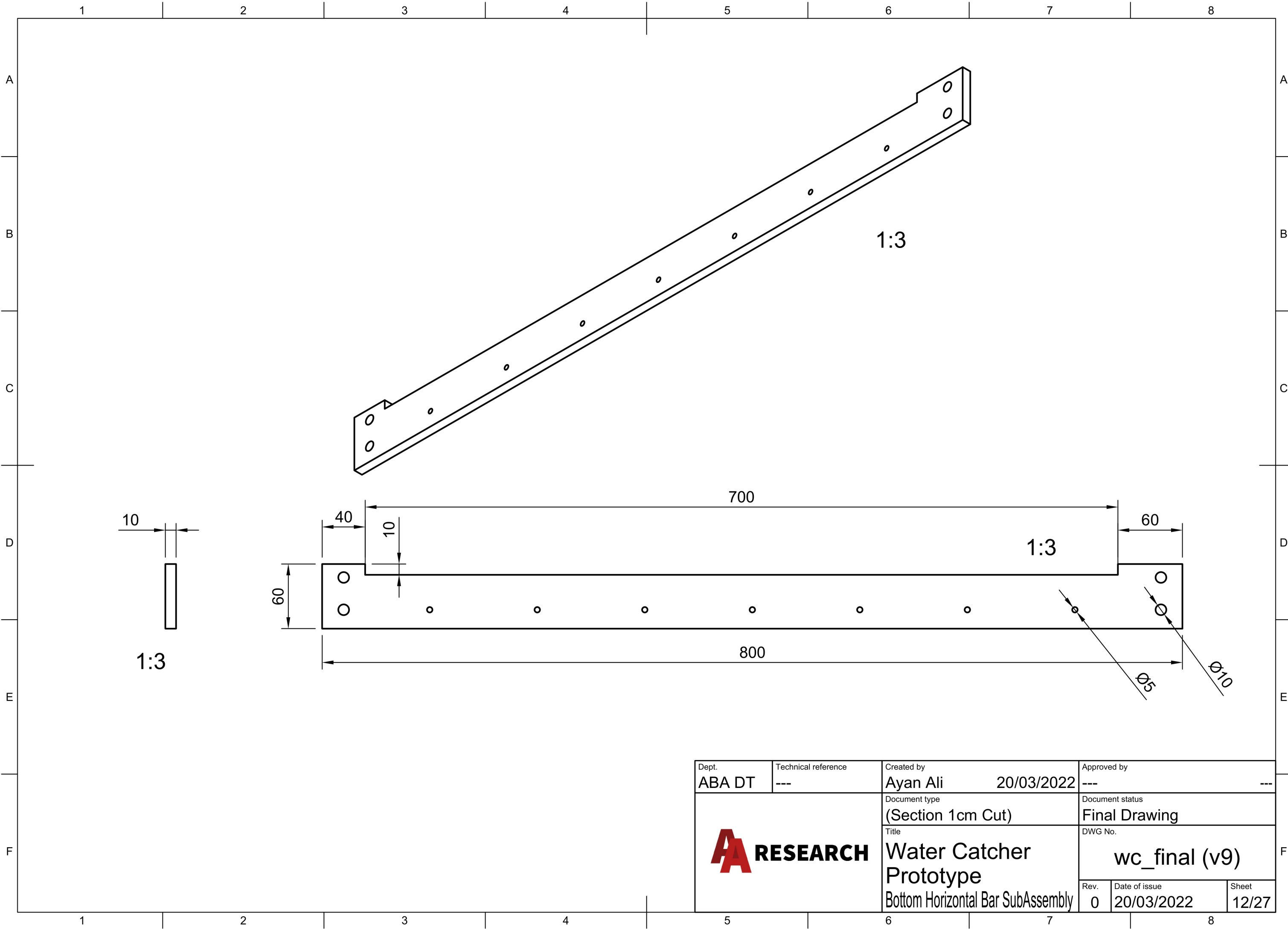
(The ramp is not shown, but the water goes in that direction)

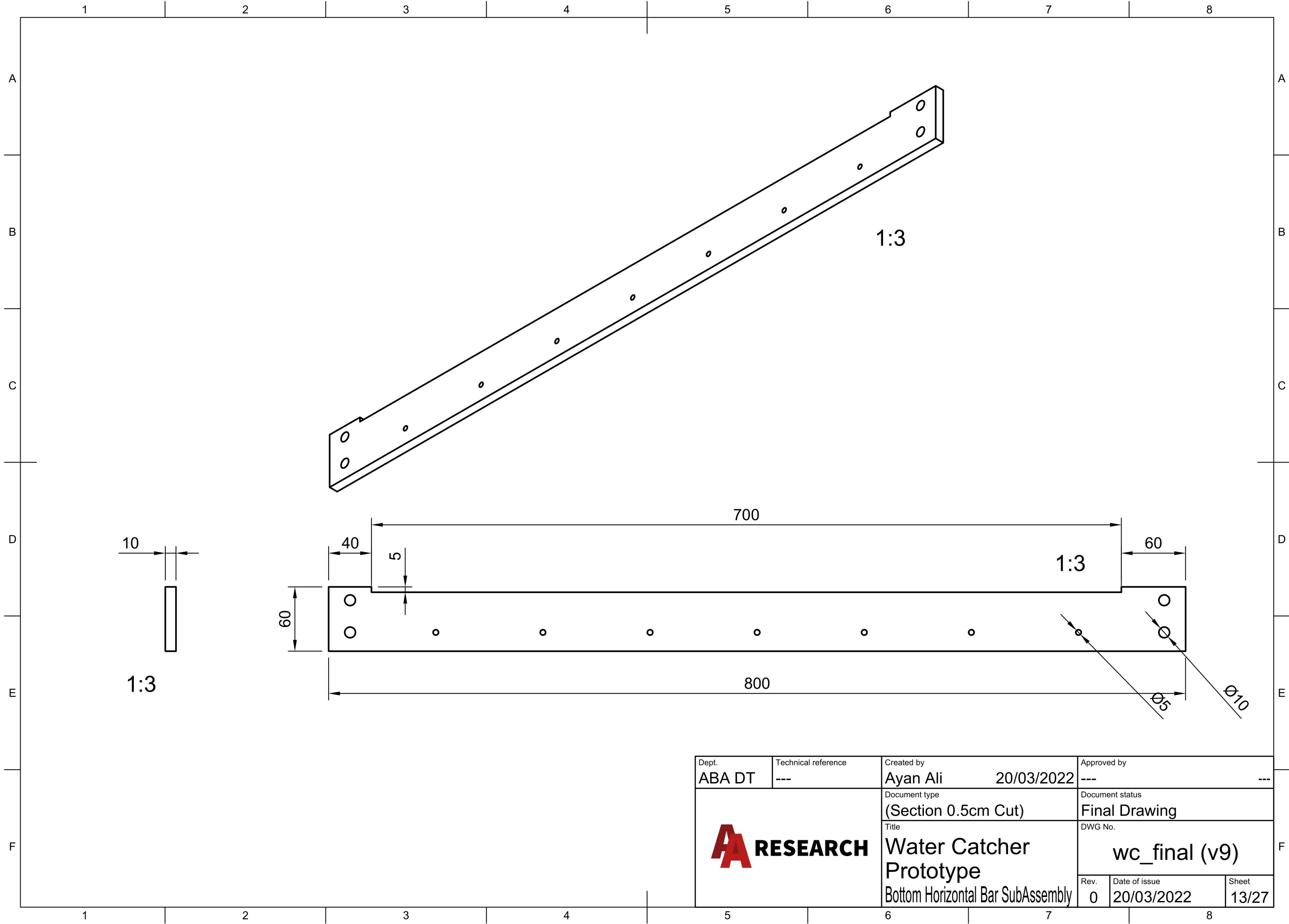


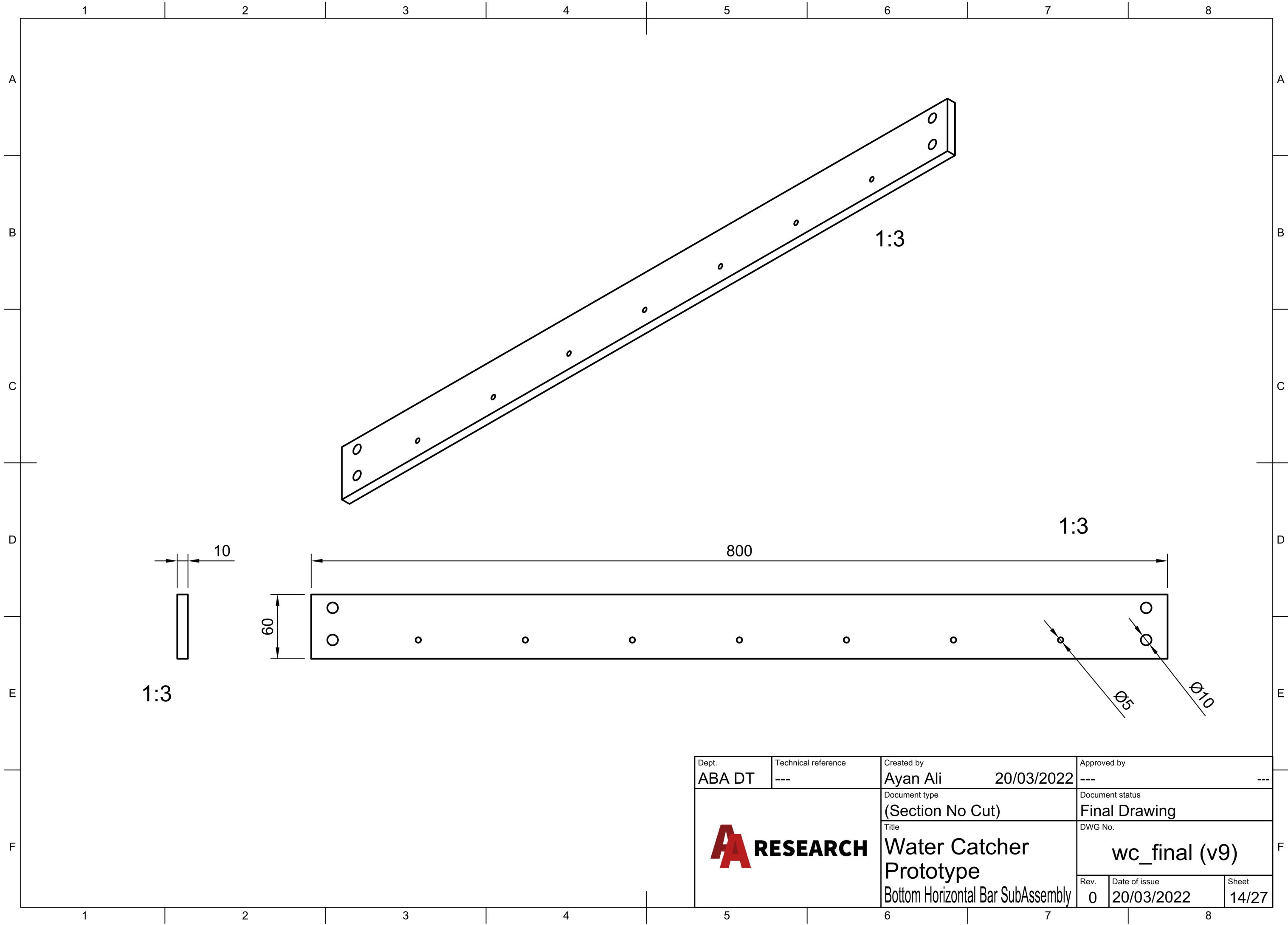
Parts List				
Item	Qty	Part Number		Description
1	1	Section (2.5cm cut)		
2	1	Section (2cm cut)		
3	1	Section (1.5cm cut)		
4	1	Section (1cm cut)		
5	1	Section (0.5cm cut)		
6	1	Section (No cut)		
7	7	Hex M6 6cm Cut Screw		
Dept. ABA DT		Technical reference ---		Created by Ayan Ali 20/03/2022
		Document type Isometric		Approved by ---
		Title Water Catcher Prototype		Document status Final Drawing
		Bottom Horizontal Bar SubAssembly		DWG No. wc_final (v9)
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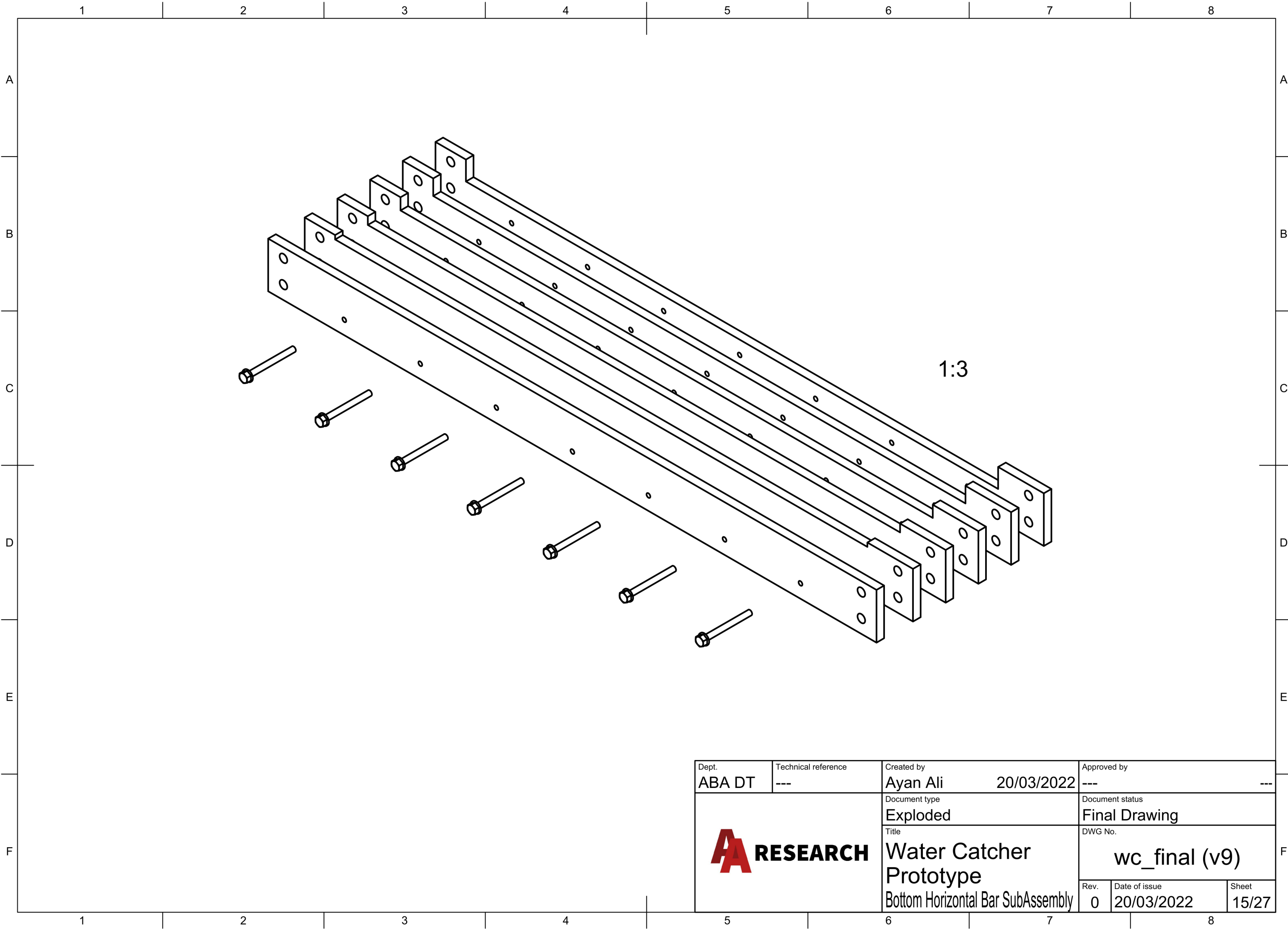





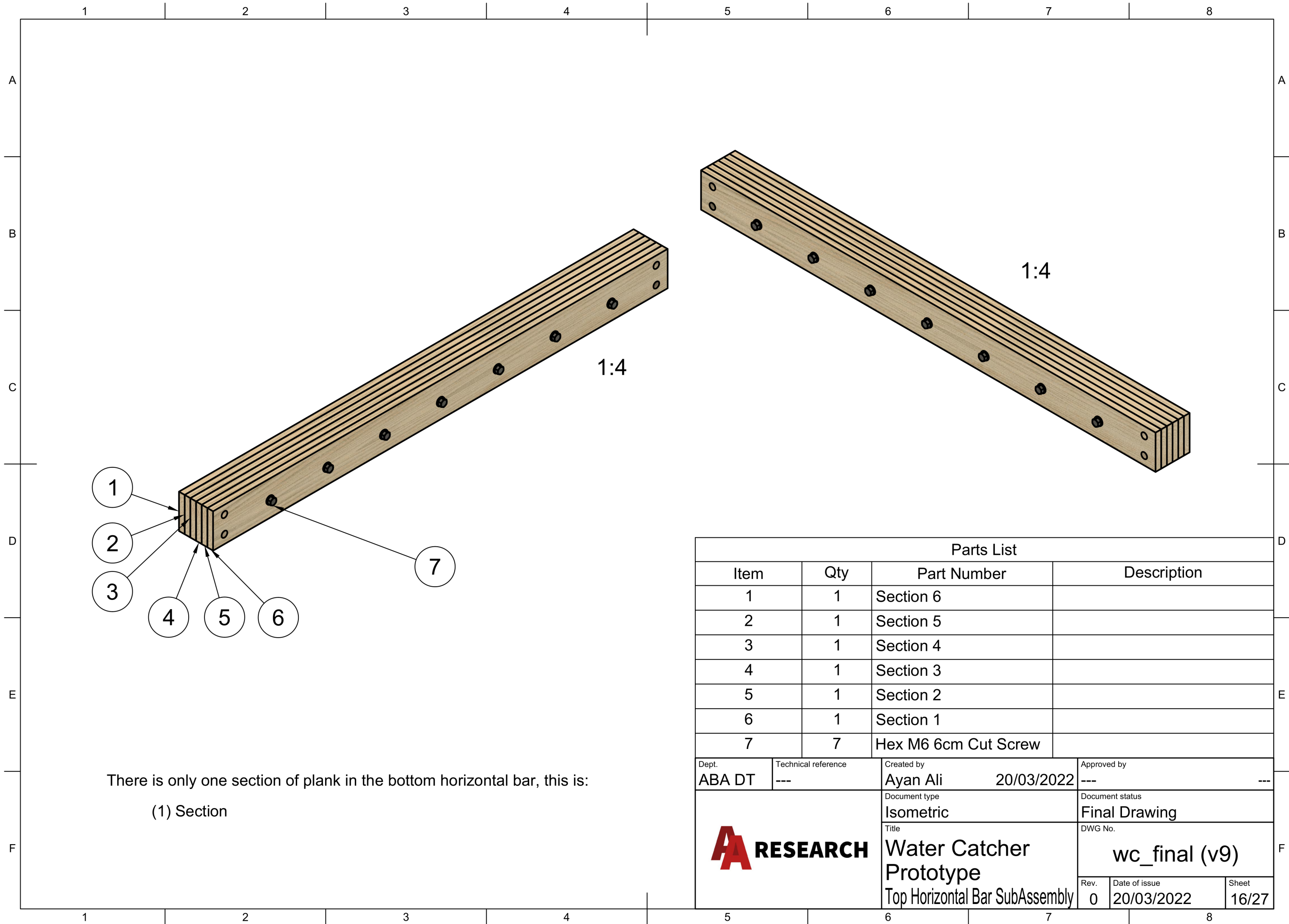





Dept. ABA DT	Technical reference ---	Created by Ayan Ali 20/03/2022	Approved by ---
		Document type (Section No Cut)	Document status Final Drawing
		Title Water Catcher Prototype Bottom Horizontal Bar SubAssembly	DWG No. wc_final (v9)
		Rev. 0	Date of issue 20/03/2022
		Sheet 14/27	

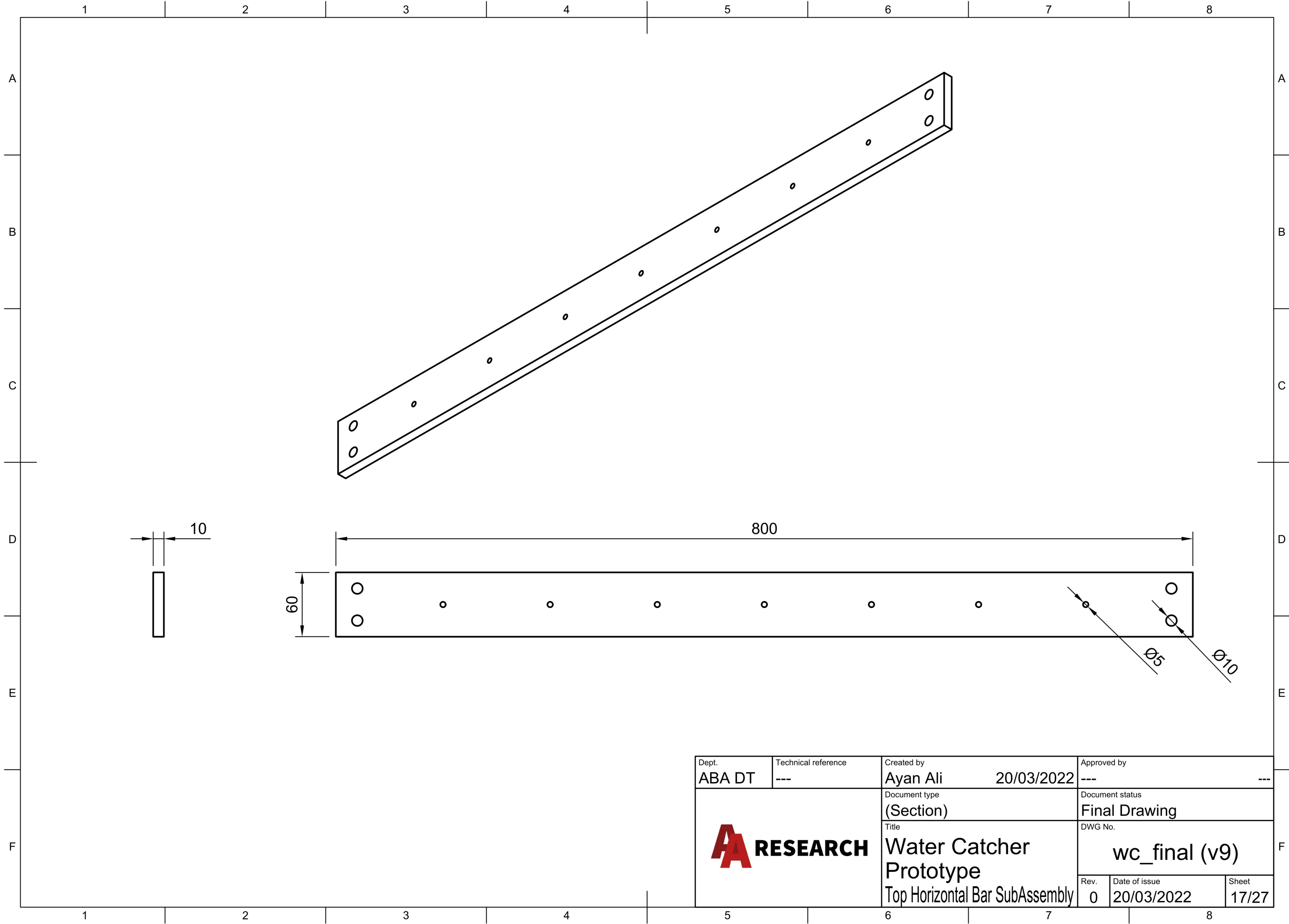



Dept. ABA DT	Technical reference ---	Created by Ayan Ali 20/03/2022	Approved by --- ---
		Document type Exploded	Document status Final Drawing
		Title Water Catcher Prototype Bottom Horizontal Bar SubAssembly	DWG No. wc_final (v9)
		Rev. 0	Date of issue 20/03/2022
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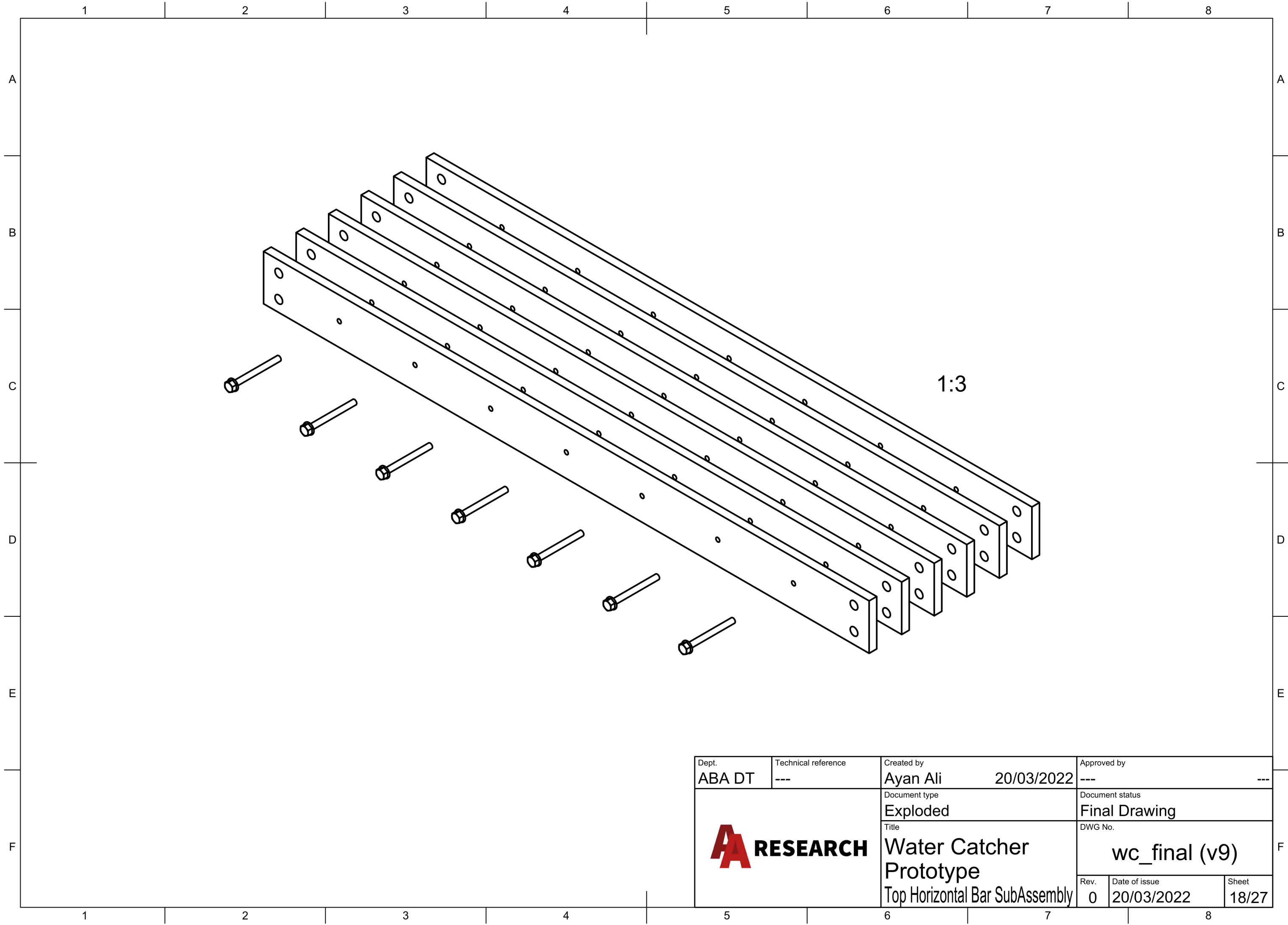



There is only one section of plank in the bottom horizontal bar, this is:
(1) Section

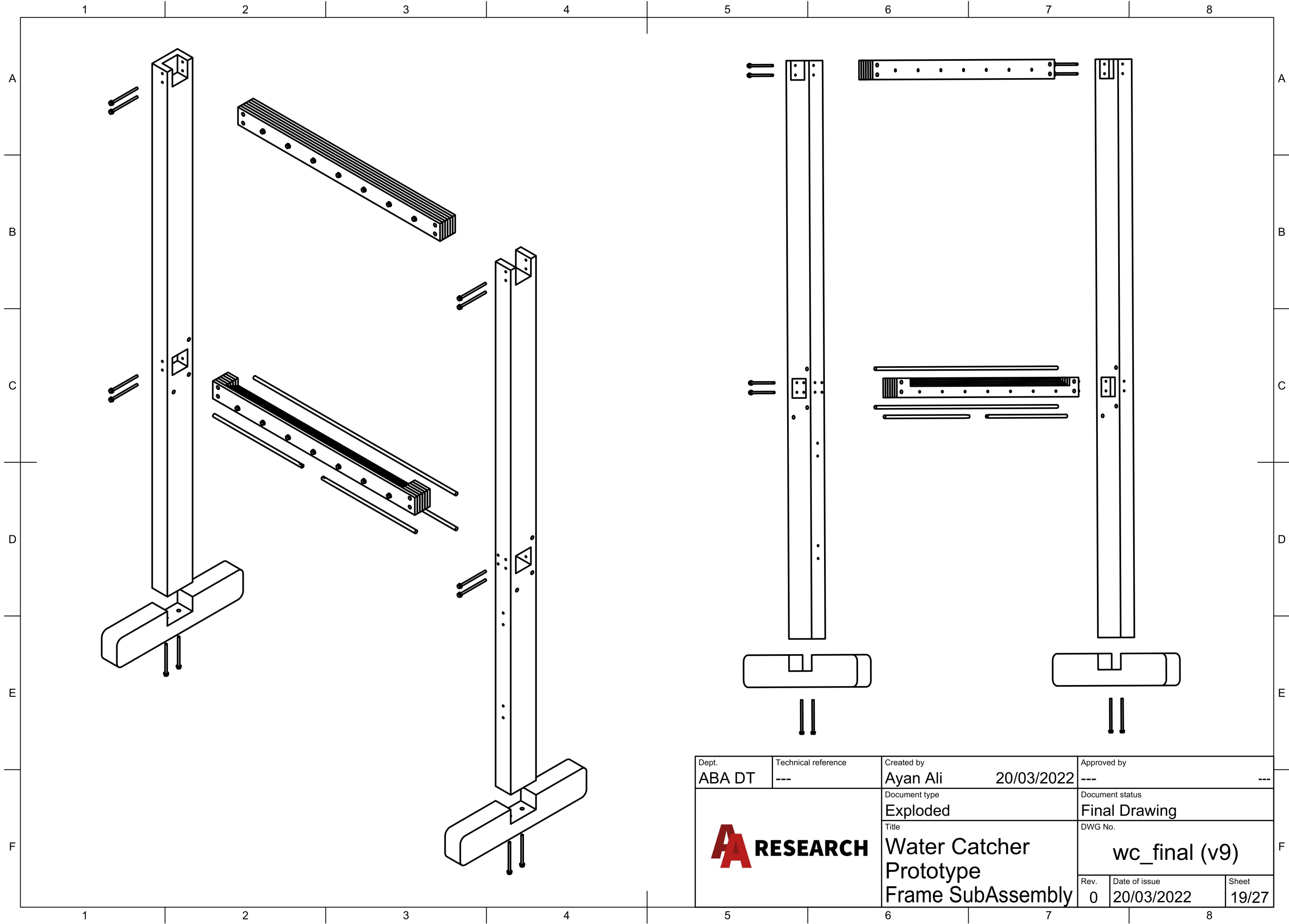
Parts List					
Item	Qty	Part Number		Description	
1	1	Section 6			
2	1	Section 5			
3	1	Section 4			
4	1	Section 3			
5	1	Section 2			
6	1	Section 1			
7	7	Hex M6 6cm Cut Screw			
Dept. ABA DT		Technical reference ---		Created by Ayan Ali 20/03/2022	
		Approved by ---		Document status Final Drawing	
		Document type Isometric		Document status Final Drawing	
		Title Water Catcher Prototype Top Horizontal Bar SubAssembly		DWG No. wc_final (v9)	
Rev.		Date of issue		Sheet	
0		20/03/2022		16/27	




Dept. ABA DT	Technical reference ---	Created by Ayan Ali	20/03/2022	Approved by ---	---
		Document type (Section)	Document status Final Drawing		
		Title Water Catcher Prototype Top Horizontal Bar SubAssembly	DWG No. wc_final (v9)		
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Dept. ABA DT	Technical reference ---	Created by Ayan Ali	20/03/2022	Approved by ---	---
		Document type Exploded	Document status Final Drawing		
		Title Water Catcher Prototype Top Horizontal Bar SubAssembly	DWG No. wc_final (v9)		
			Rev. 0	Date of issue 20/03/2022	Sheet 18/27



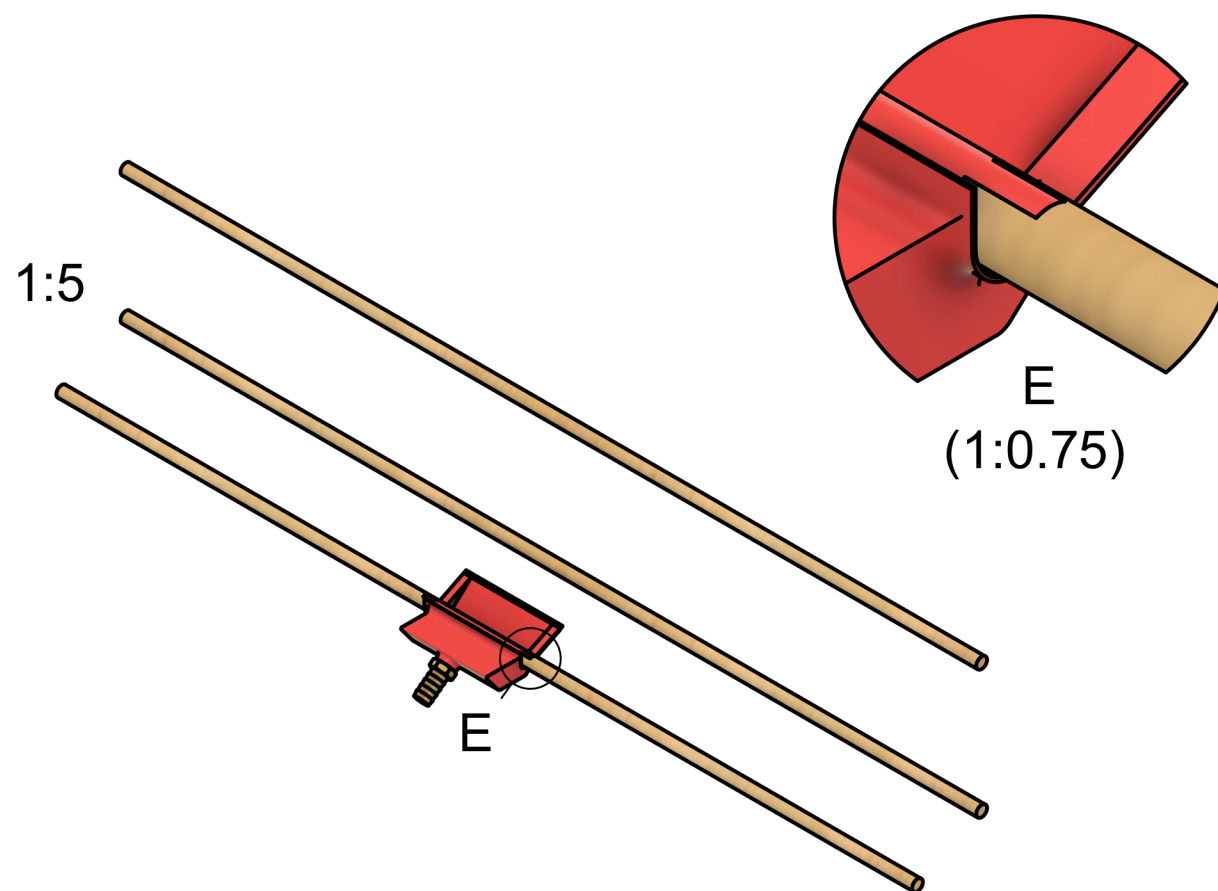
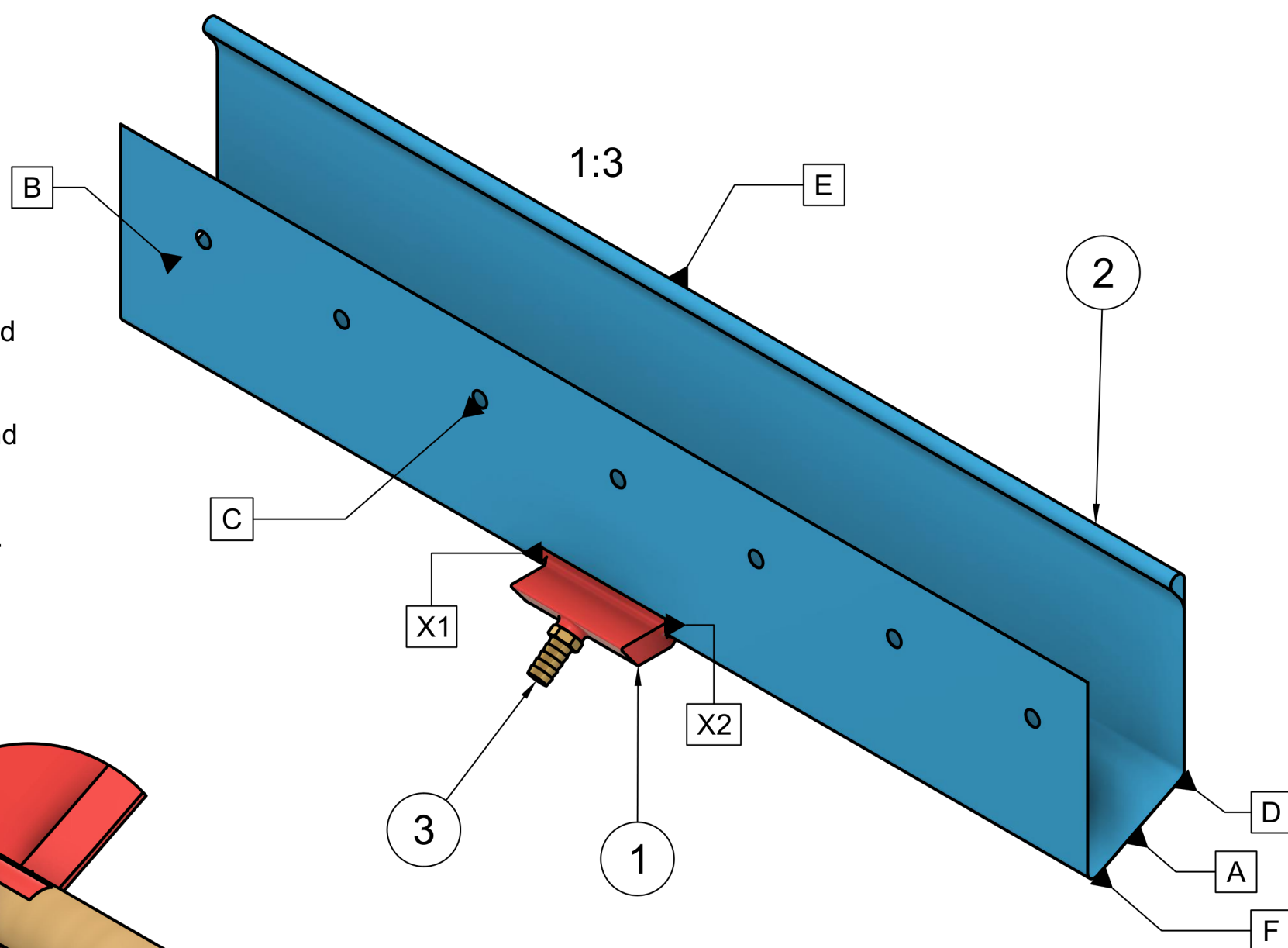
Dept. ABA DT	Technical reference ---	Created by Ayan Ali 20/03/2022	Approved by ---
		Document type Exploded	Document status Final Drawing
		Title Water Catcher Prototype Frame SubAssembly	DWG No. wc_final (v9)
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The blue tarp here is made from tarpaulin fabric, although it cannot hold water for more than 2-3 hours it is water resistant meaning none can get through, and it is very light meaning package weight is reduced. This means it is the perfect fabric for acting as a sort of large funnel that will guide the water into the red plastic funnel so that it can be collected.

The tarp will have 5 bend, and 3 stitch lines, with extra fabric being folded and stitched on each side to prevent run off on either side (not modled in the isometric for simplicity, but marked with A and B).

The red plastic funnel will slot into the split dowel at point X1 and X2, also shown in the detail view of E.

The tarp will bend around the three dowels at point F, D, and E. It will be bolted to the Bottom Horizontal Bar through the holes at C, the same bolts are also used to clamp the net into the Bottom Horizontal Bar (shown later), this is done to prevent excess screws and thus reduce cost.



Parts List				
Item	Qty	Part Name	Description	
1	1	Funnel		
2	1	Tarpaulin		
3	1	Brass M10 12mm Hose Fitting		
Dept. ABA DT		Technical reference ---	Created by Ayan Ali 20/03/2022	Approved by ---
		Document type Isometric	Document status Final Drawing	
		Title Water Catcher Prototype Tarp SubAssembly	DWG No. wc_final (v9)	
		Rev. 0	Date of issue 20/03/2022	Sheet 20/27

