

## **Mechanical Documentation**

Assembly Drawing

Laser Cut MDF Part Drawings

Sheet Metal Drawings

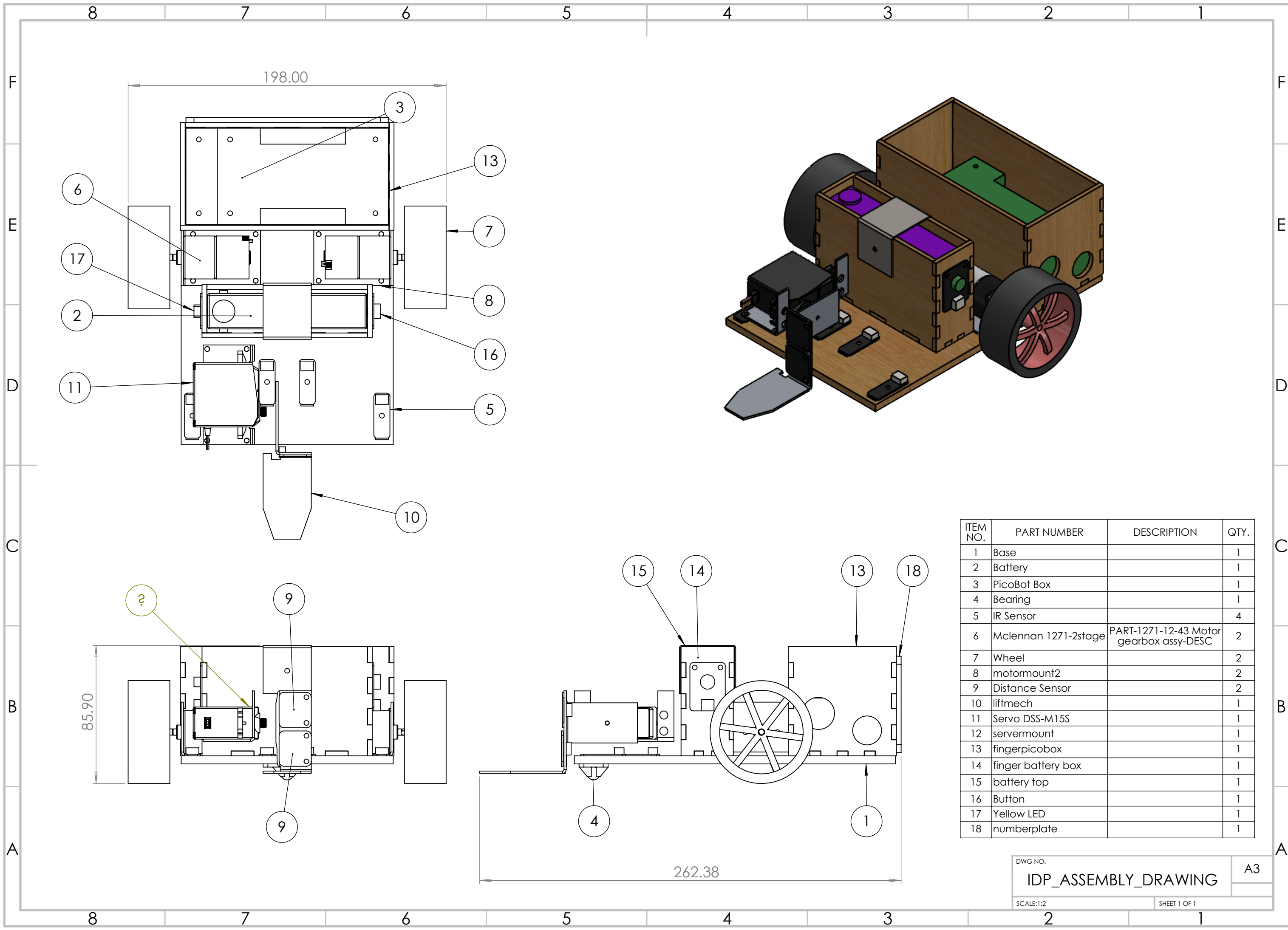
DFX Files Used for Laser Cutting

## **Material Choice**

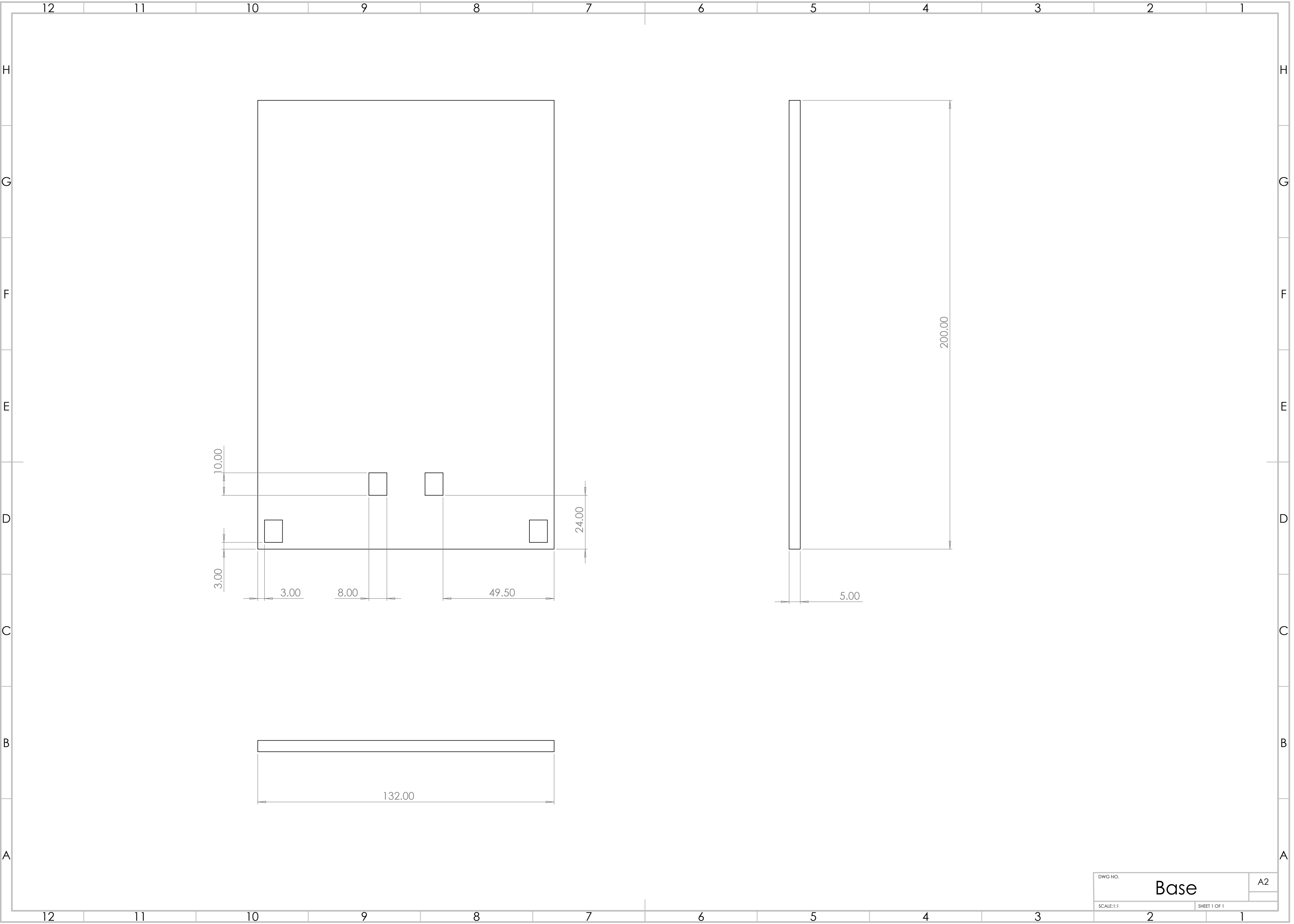
The two main materials in manufacturing were MDF and 1.4mm Aluminum plate. MDF was chosen over Plywood due to it being slightly stronger and less flexible, without really affecting the weight. Aluminum was chosen over Steel, as it was thicker for a similar weight and hence resulted in less bending and warping. We chose not to do any 3D printing as this is time consuming and didn't allow for rapid prototyping and modification.

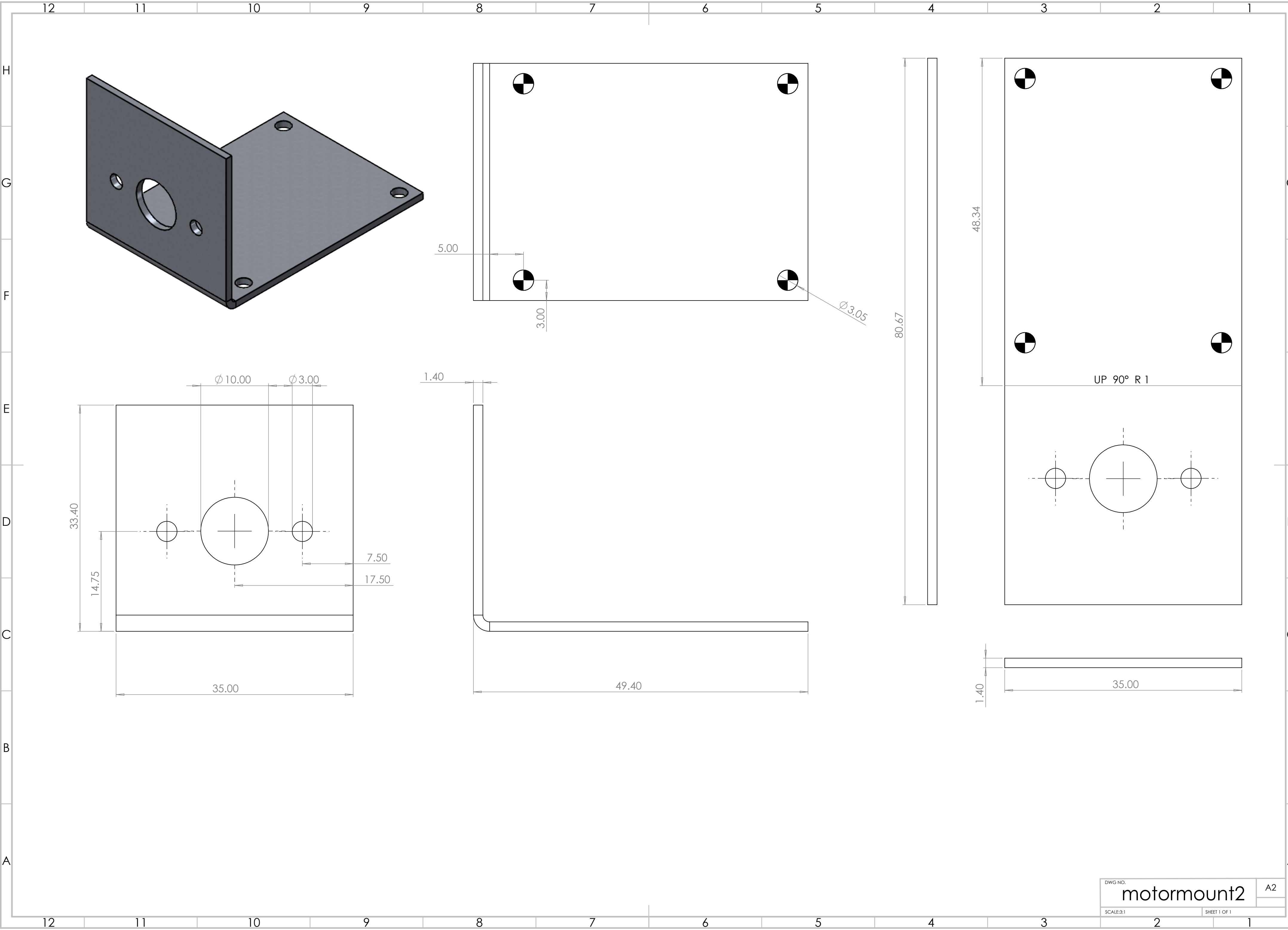
## **Assembly**

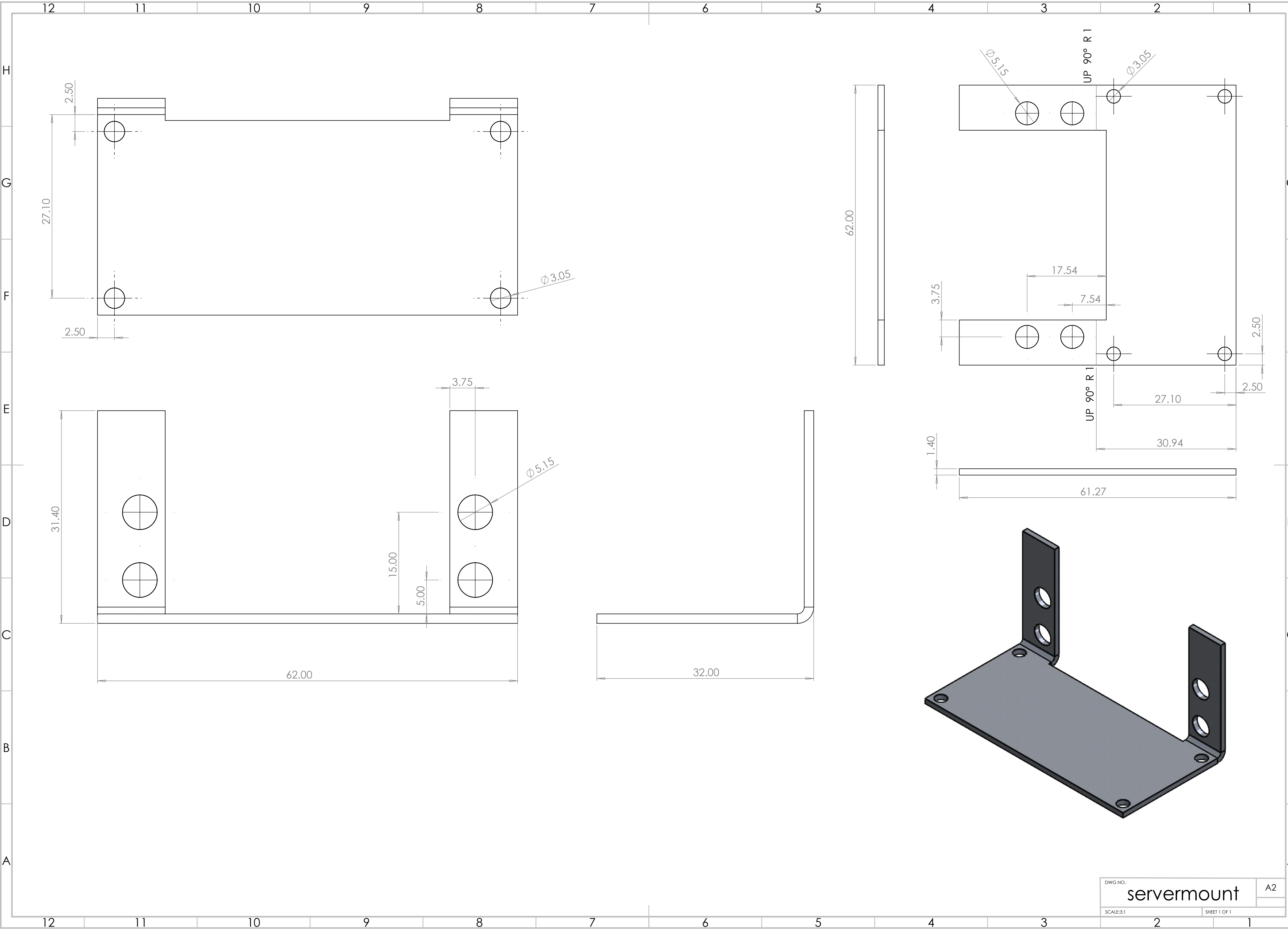
We preferred to use bolts when assembling as this allowed for easy deconstruction and modification. Wood glue was used to fit together the finger joint boxes for the Picobot and the Battery. We also sometimes had to make use of washers and bolts to offset pieces to the required position. Holes for bolts are marked on the sheet metal pieces in the drawing, although there are no holes marked on the drawings for wooden pieces as we found it easy to simply mark these holes with a pencil using the holes from the other pieces that were to be fitted, this allowed for the best positioning and alignment.

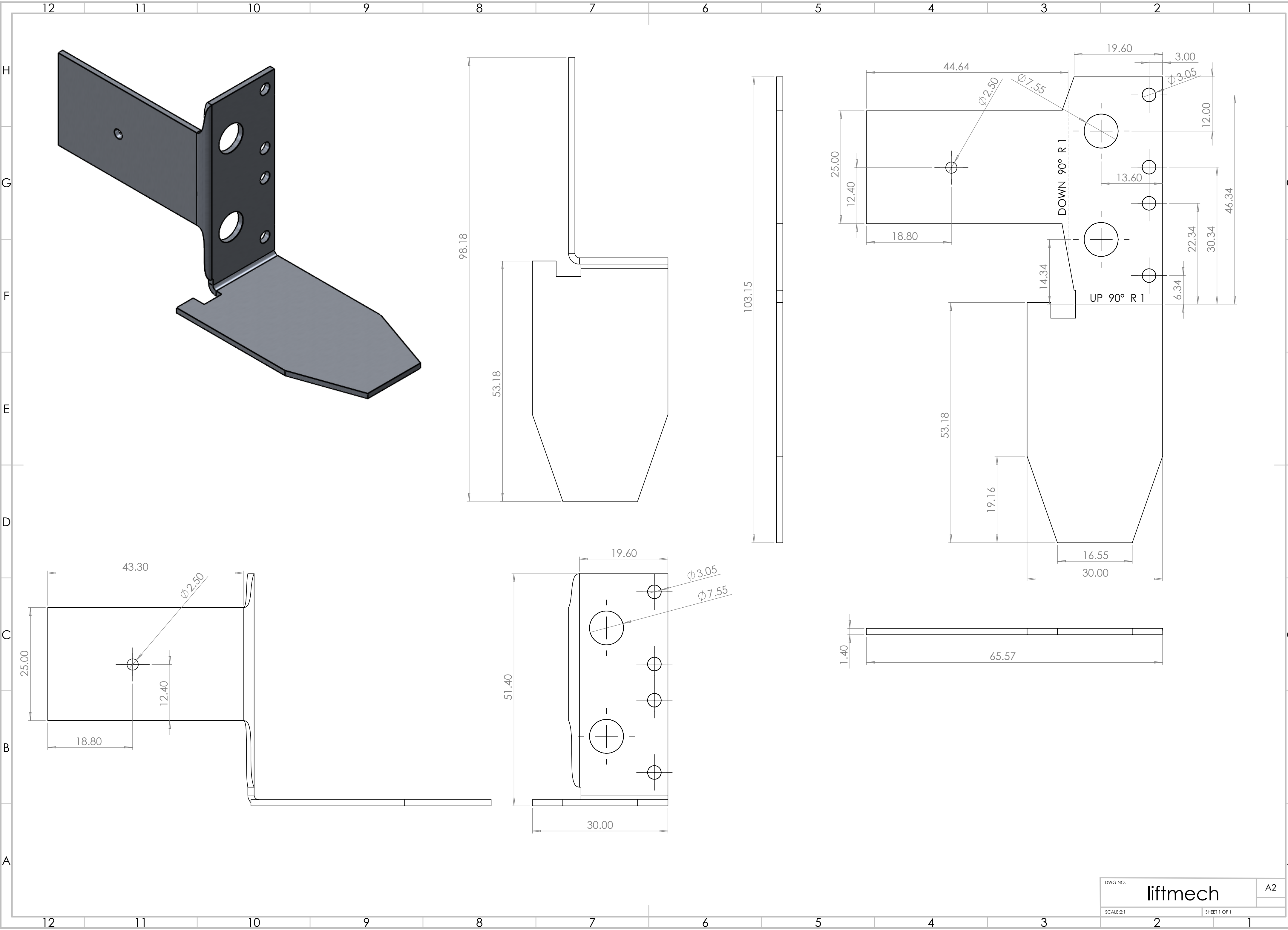


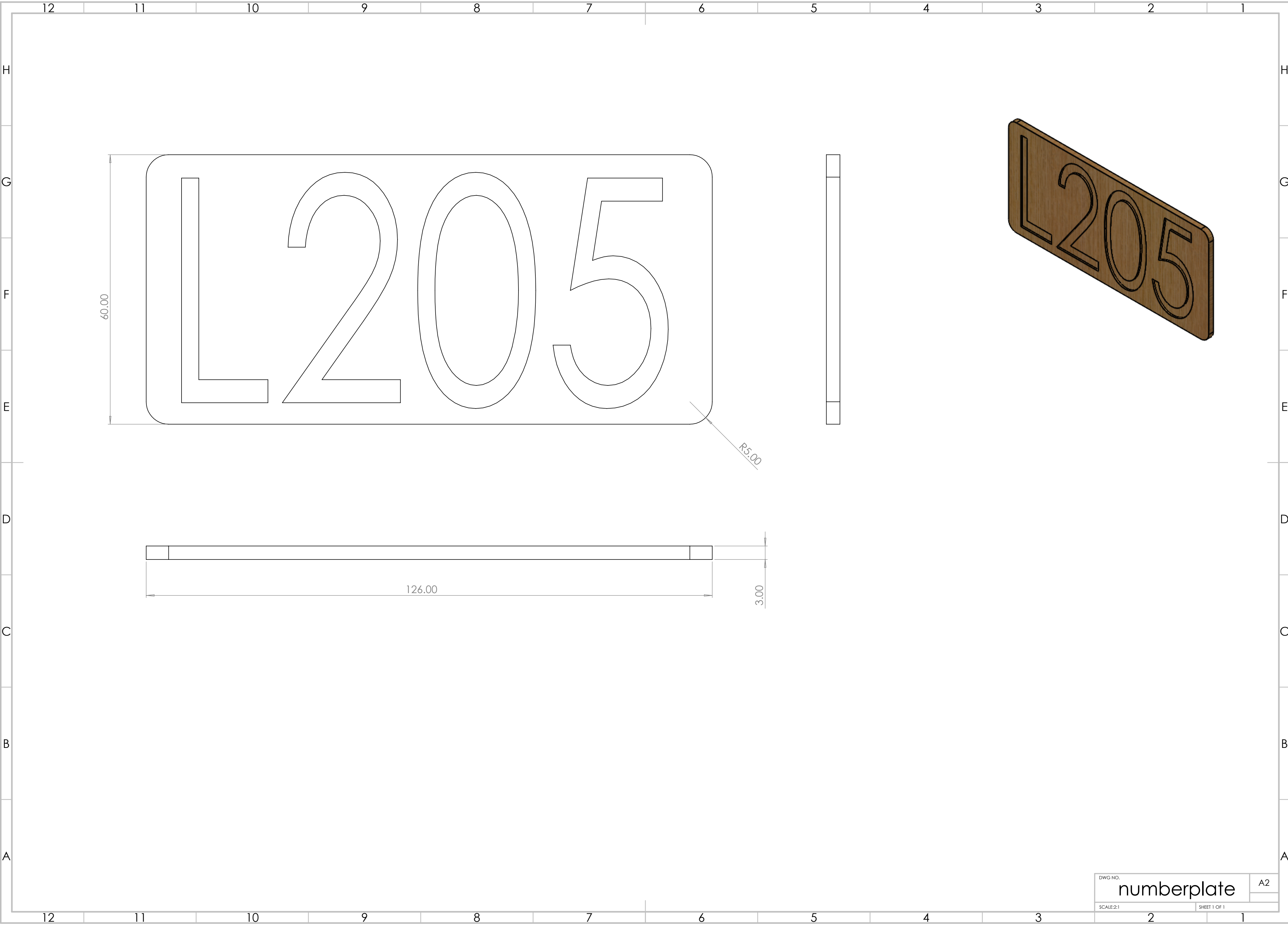
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Base		1
2	Battery		1
3	PicoBot Box		1
4	Bearing		1
5	IR Sensor		4
6	Mclennan 1271-2stage	PART-1271-12-43 Motor gearbox assy-DESC	2
7	Wheel		2
8	motormount2		2
9	Distance Sensor		2
10	liftmech		1
11	Servo DSS-M15S		1
12	servermount		1
13	fingerpicobox		1
14	finger battery box		1
15	battery top		1
16	Button		1
17	Yellow LED		1
18	numberplate		1



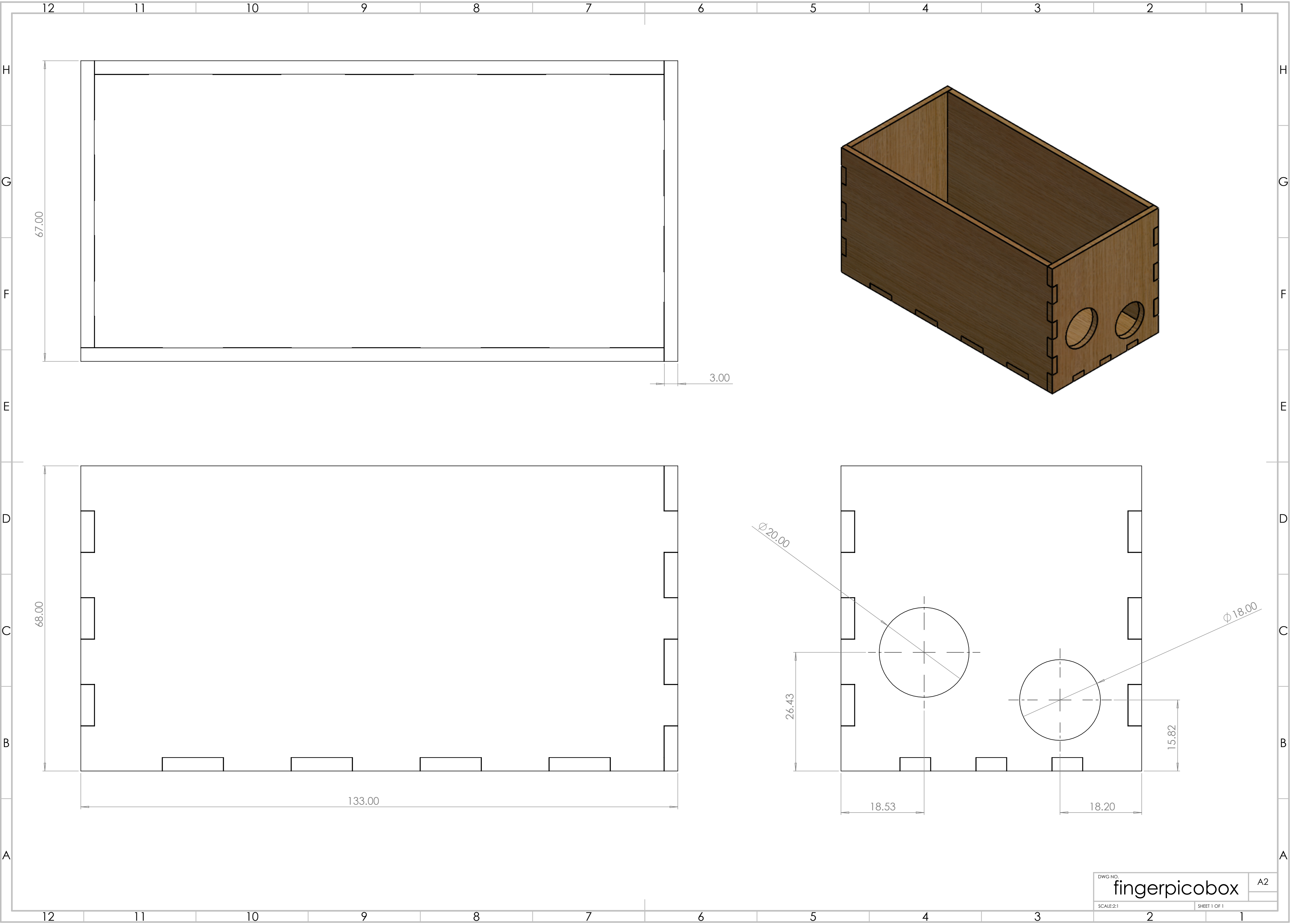




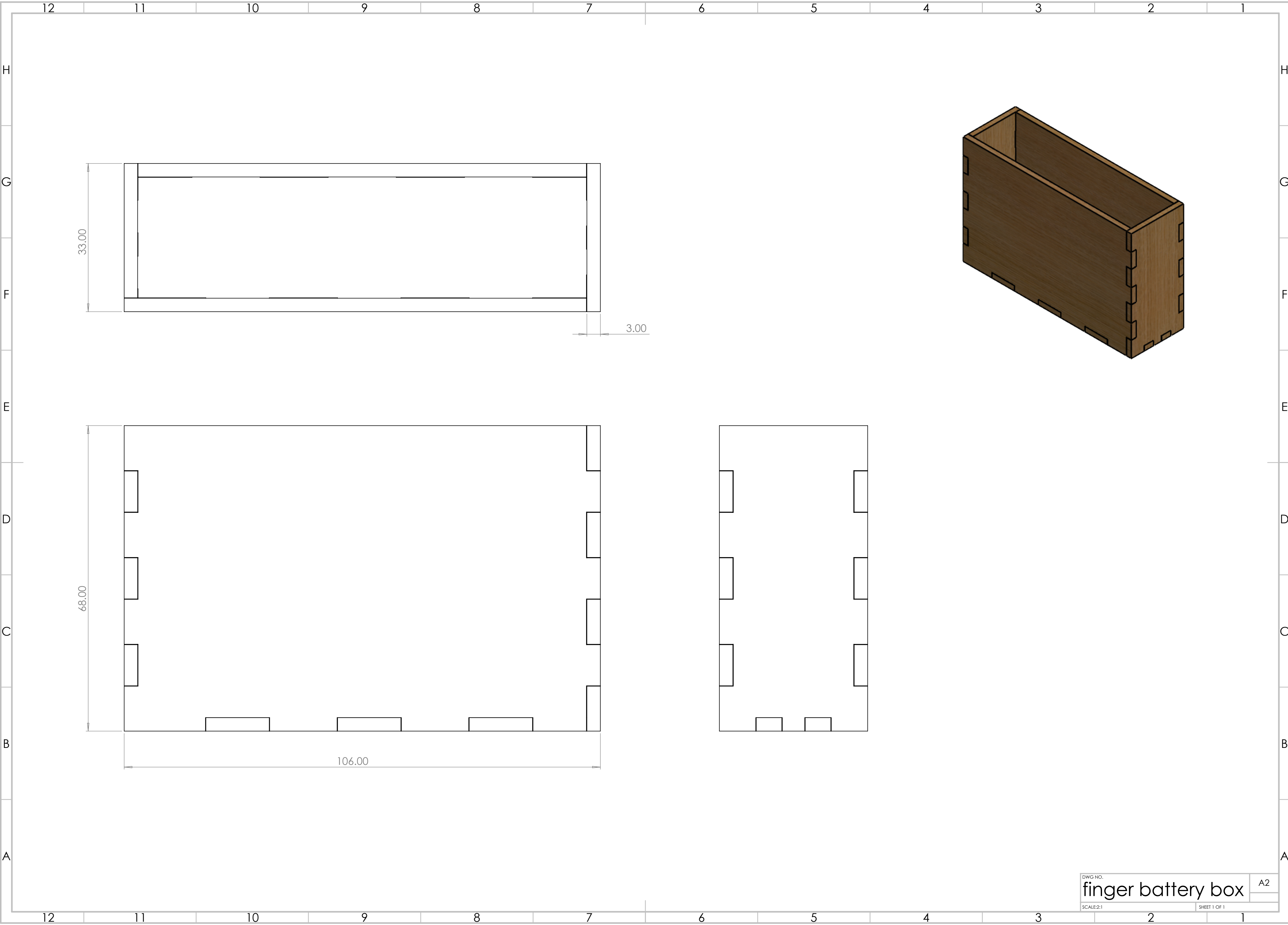


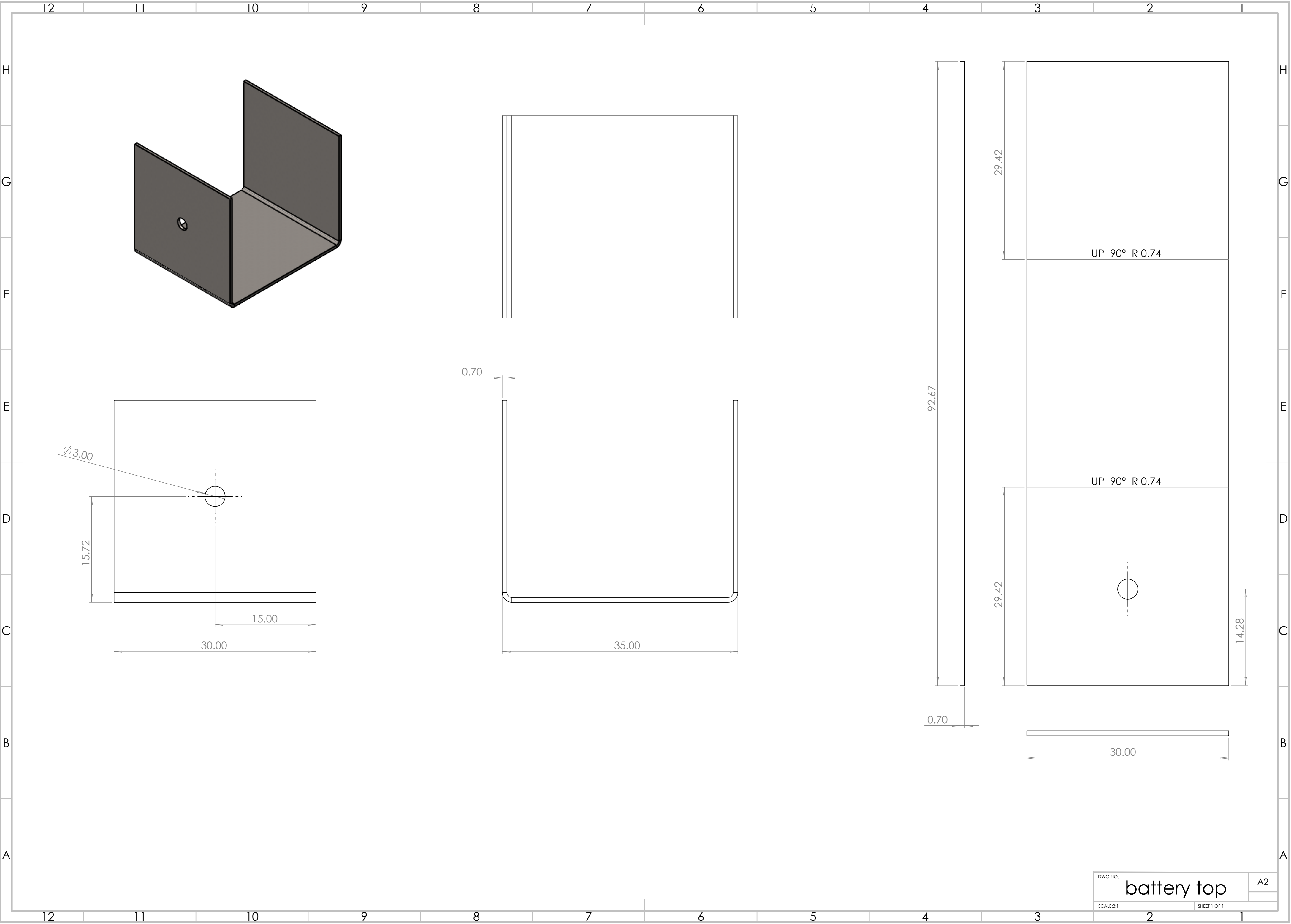


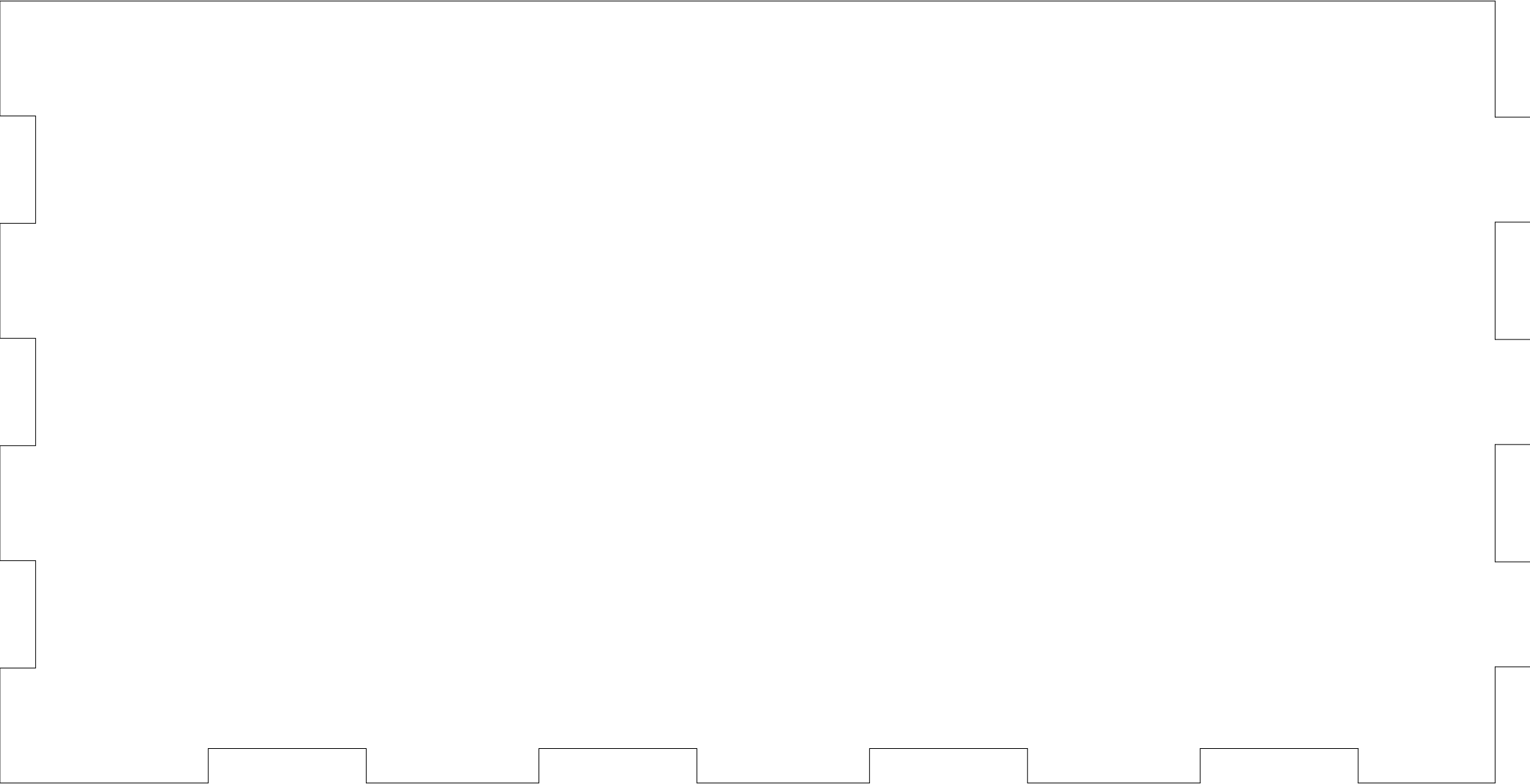


















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