DIY Beacon Bracket Plan

Free example project from **3volveD**

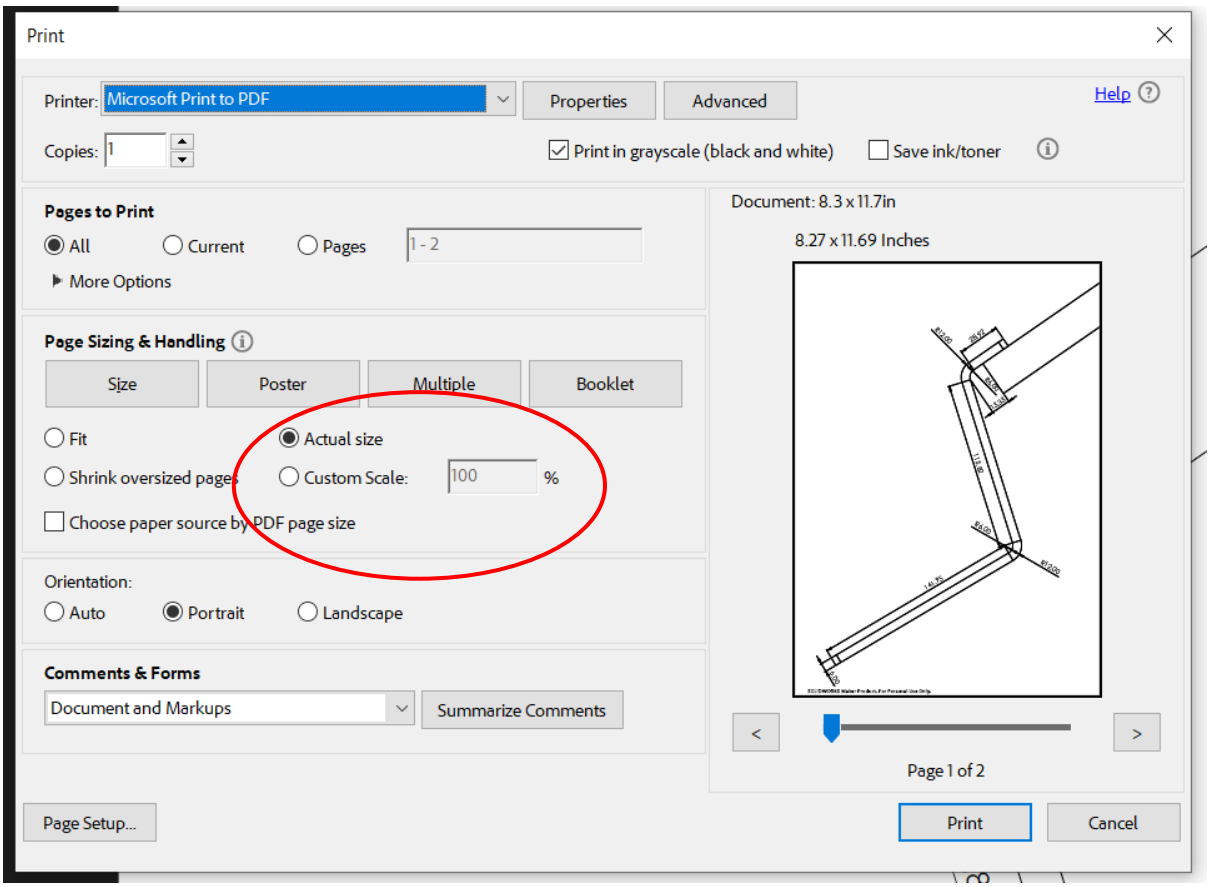
“Every good build starts with a good plan”



How to use these plans.

1. Printing the plans.

Why print the plans? If you print these plans at 100% scale or “Actual size”, you can use the plans as a visual template for the design rather than having to transfer measurements.



1. Open the PDF using Adobe Acrobat Reader or any PDF viewer that lets you set print scale.

2. In the print settings, find “Page Sizing & Handling.”

3. Select “Actual Size” or set “Custom Scale” to 100%.

4. Turn off “Fit to Page” or “Shrink to Printable Area.”

5. Print one test page and check a known measurement with a ruler. It should match exactly.

6. Once confirmed, print the rest.

How to use these plans.

2. Understanding the plans.

- These drawings are simplified on purpose to make them easy to read and use in a normal farm workshop. They show exactly what's needed to build the part without the clutter found on factory production drawings.

- All dimensions are in **millimetres (mm)**. You can measure straight from the paper or use the printed plan itself as a full-size template.

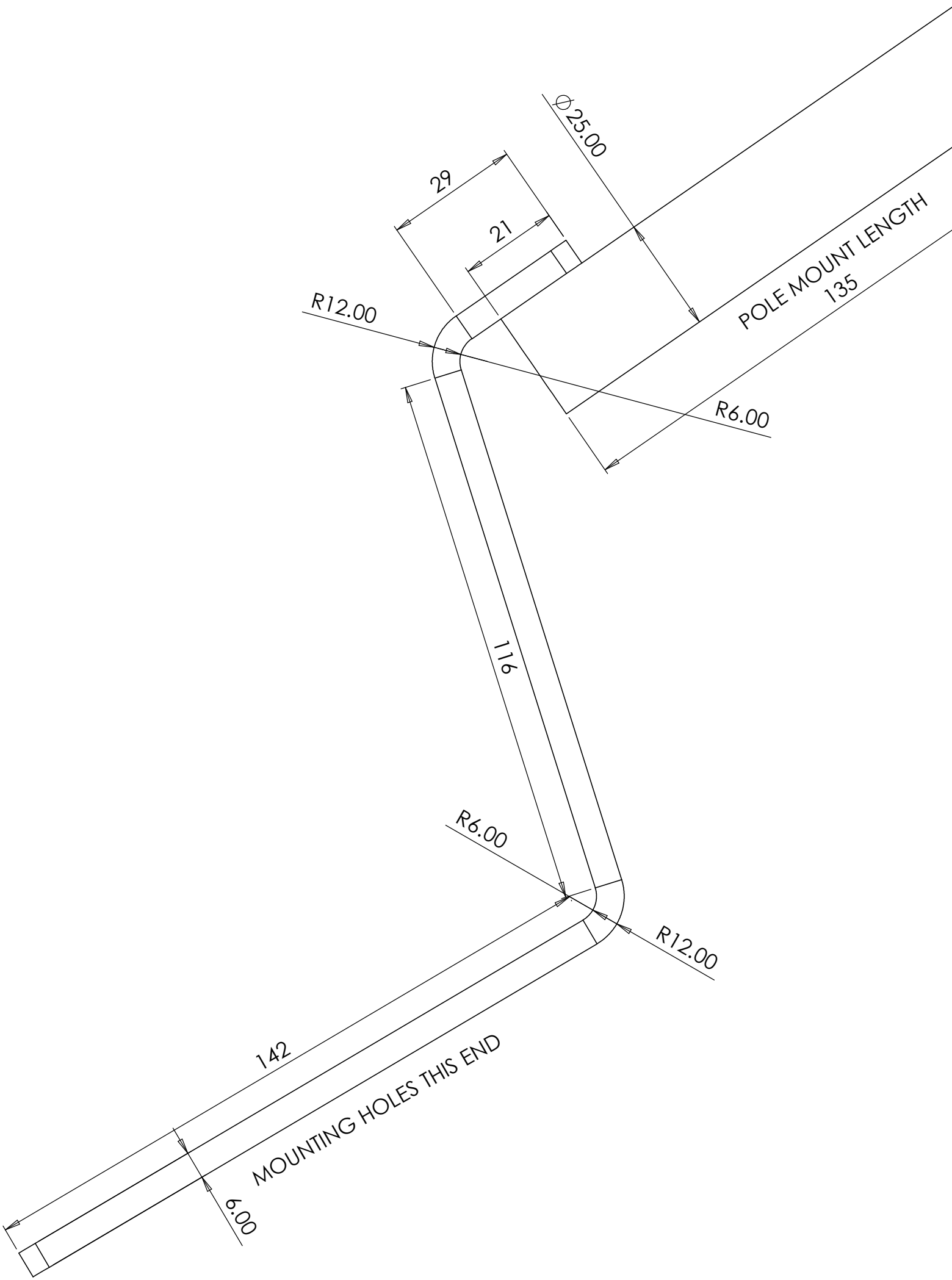
- The **Side View** shows the overall shape and bend angles and is great for checking you have the angle right without needing to measure it.

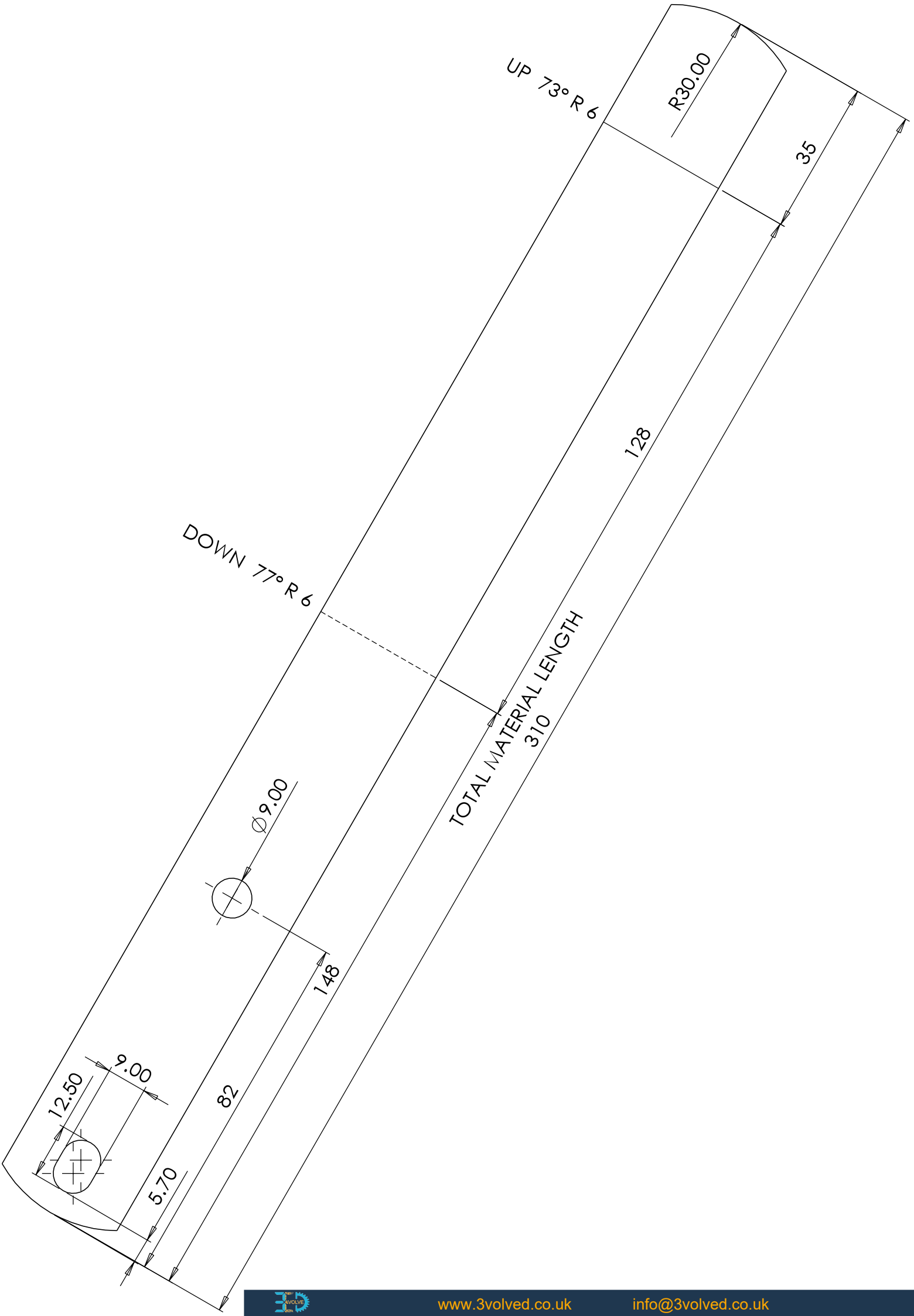
- The **Flat Pattern** shows the steel before bending. This helps when cutting the length and getting the holes drilled in the right place. You can glue the printout directly to the steel to use it as a cutting and drilling guide.

- Dimensions are kept straightforward enough for a solid fit but not over-complicated. The aim is to make it quick to cut, bend, and weld without needing precision tools.

- Small differences (a few millimeters either way) won't matter as long as the main fit points are right. Focus on the mounting holes and overall alignment.

- If you're new to reading drawings, this is a great place to start. The recommended order would be to cut the steel to length using the flat pattern, then drill the mounting holes (also located on the flat pattern), before finally matching the shape on the side view and welding on the light pole.


Ø25.00
29
21
R12.00
POLE MOUNT LENGTH
135
R6.00
116
R6.00
R12.00
142
MOUNTING HOLES THIS END
6.00


UP 73° R 6
R30.00
35
128
DOWN 77° R 6
TOTAL MATERIAL LENGTH
310
Ø9.00
148
12.50
9.00
82
5.70

Our Build.

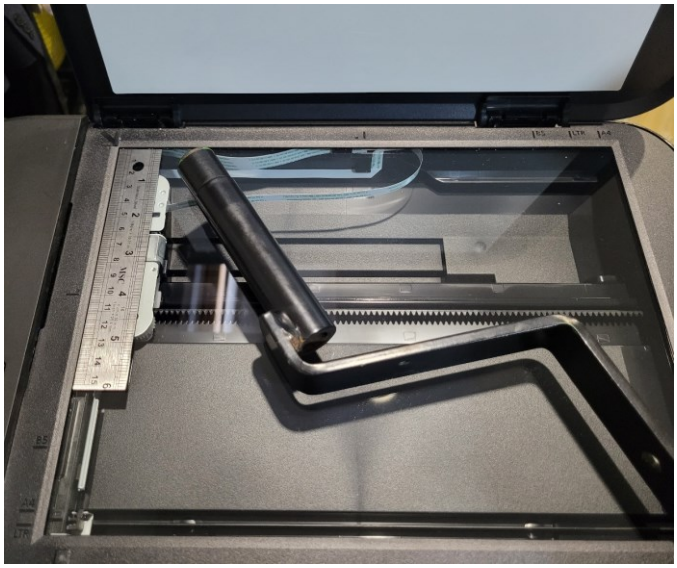
How we built the brackets and how we reverse-engineer the part.

1. The Design.



We started by taking a photo of the original part as flat-on as possible, with a clear size reference. This allowed us to import the image into the 3D modelling software (CAD) and trace around it accurately.

This process would normally be more accurate using a scanner, but at the time, that would have meant taking the roof off the tractor before we could even order the materials.



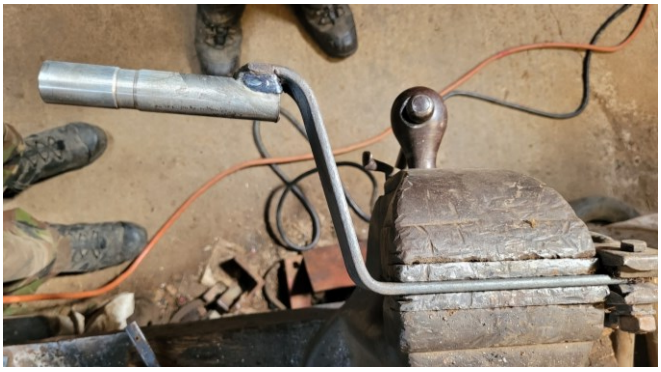
Our Build.

2. Manufacturing.



We used the engineering drawings to bend the flat bar to the correct shape. This was done by clamping the steel in a vice and using a pair of adjustable spanners to form it to the right angle and bend radius.

The beacon pole mount was welded in place to match the original part, then cleaned up and painted before fitting.





The same design was later fitted to a 6000-series tractor. The only difference was slightly different hole centres on the mounting holes, which were adjusted using the same plan.