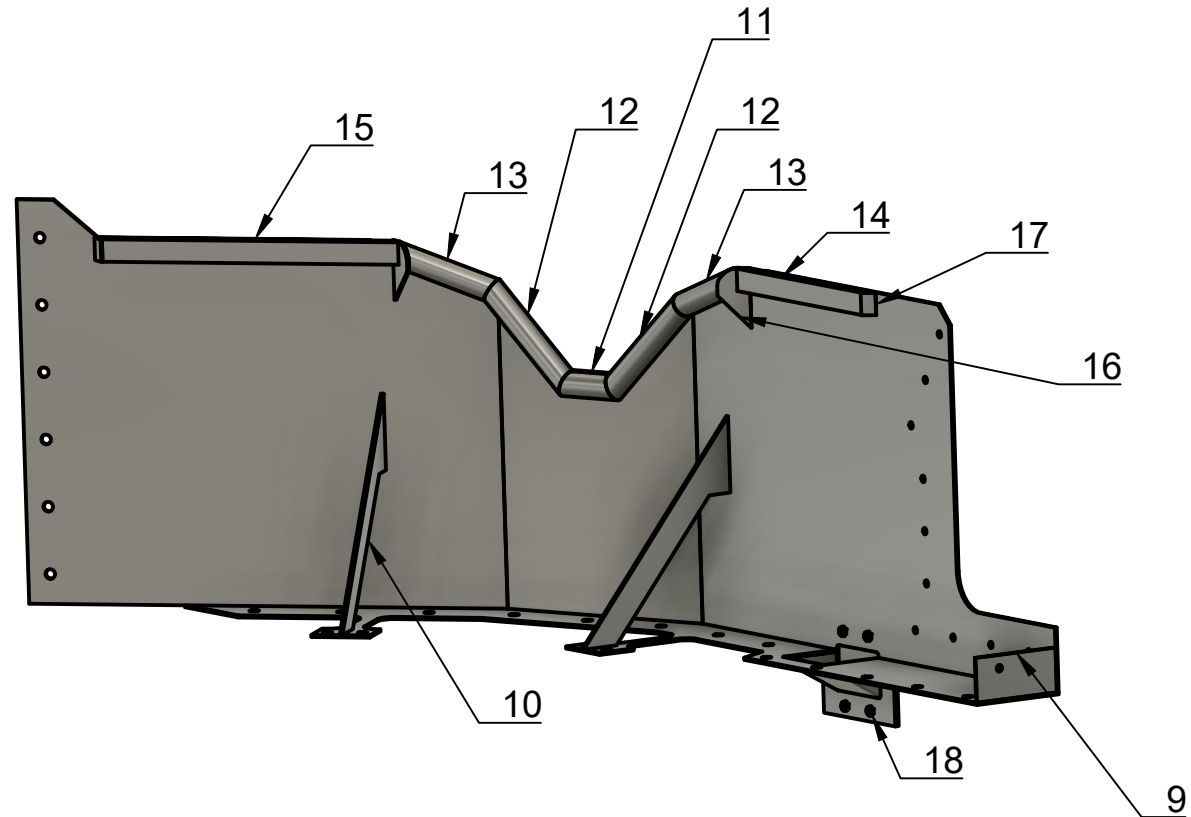
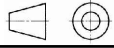


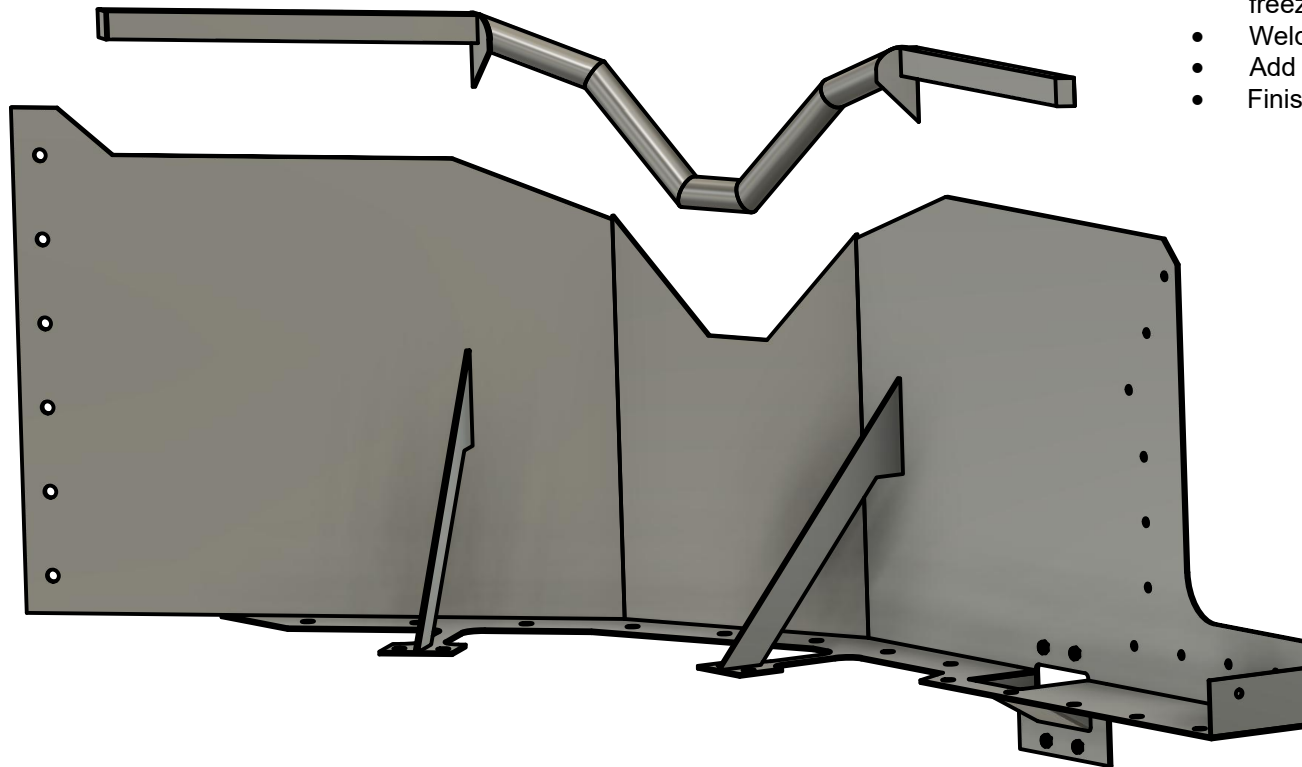
Basin wall parts	
1	Wall 1
2	Wall 2
3	Wall 3
4	Base flange
5	Snout
6	Snout sides (2)
7	Drain cover
8	Drain chute

Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
Material: 304L stainless		Drawing No. HyR_210323a		Paper size A4	
Thickness:		Designer: Dr. R.W.Moss		Default scale 1:12	
Required: 1-off	Sheet 1 of 20	Sheet title General arrangement		Units: mm	Revision date 23/03/2021
		Rev. 0			



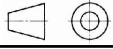
Basin wall parts	
9	Flange end plate
10	Web (2)
11	Edging tube A
12	Edging tube B (2)
13	Edging tube C (2)
14	Edging tube D
15	Edging tube E
16	Tube jointing plate (2)
17	Tube end plate (2)
18	M6 weld nuts (6)

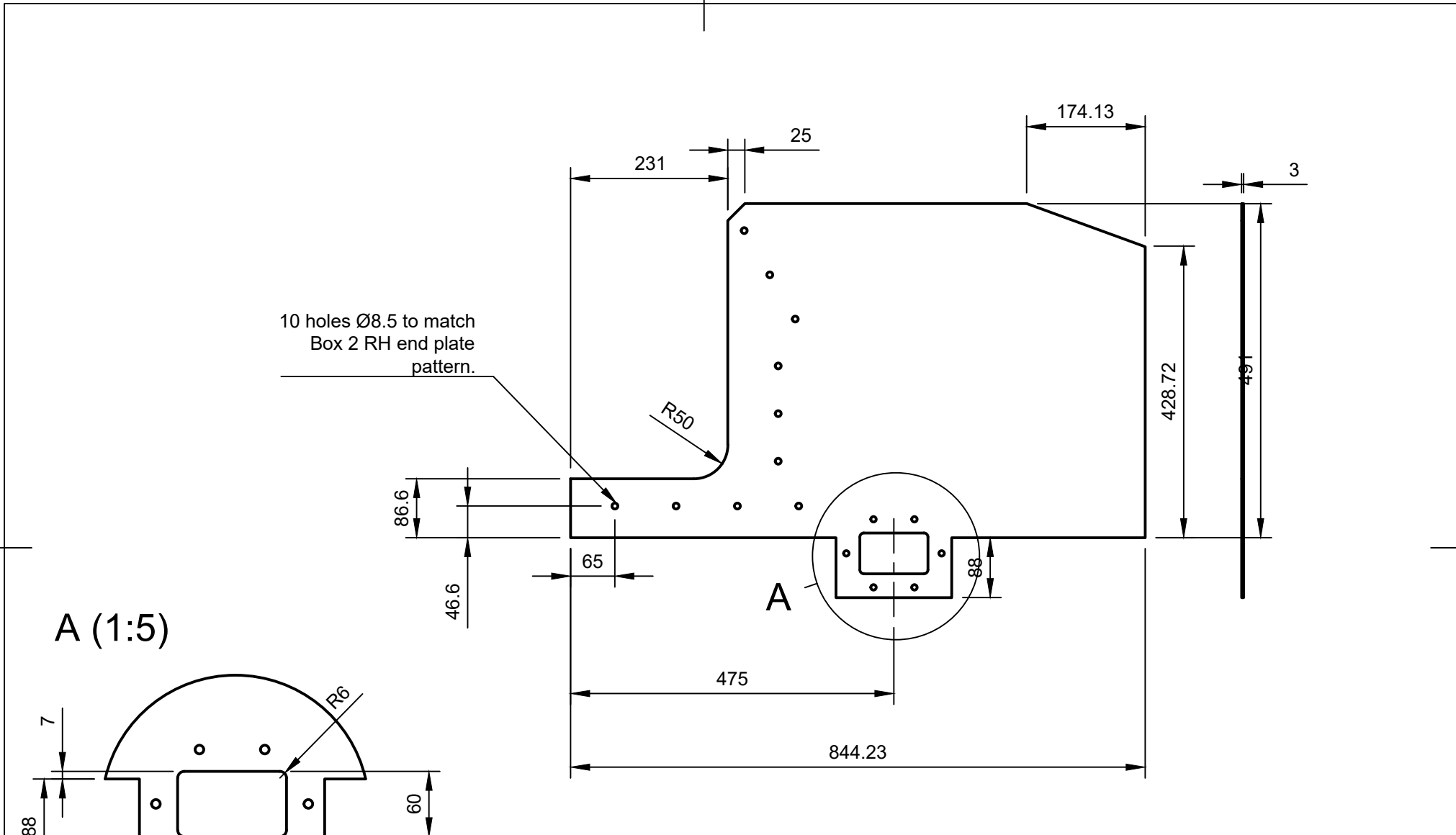
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Material:		Units: mm		Default scale 1:10	
Thickness:	Required: 1-off	Sheet 2 of 20	Sheet title General arrangement	Rev. 0	Revision date 23/03/2021



Suggested welding order:

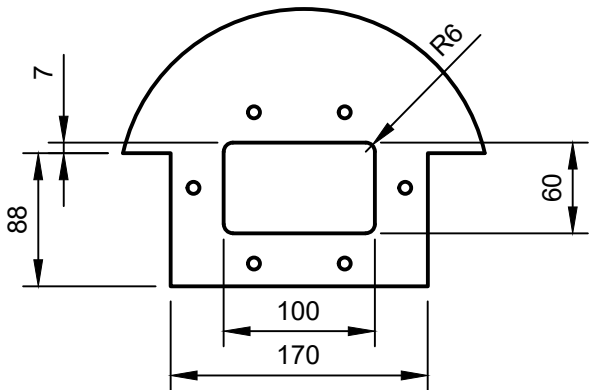
- Tack base flange, walls and webs
- Use walls as a jig for tacking pipe sub-assembly
- Fully weld pipes (sealed to avoid water freezing inside)
- Weld pipe assembly to walls
- Add snout
- Finish welding

		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Material:		Sheet 3 of 20		Units: mm		Default scale 1:8	
Thickness:	Required: 1-off	Sheet title Welding order		Rev. 0	Revision date 23/03/2021		



10 holes Ø8.5 to match
Box 2 RH end plate
pattern.

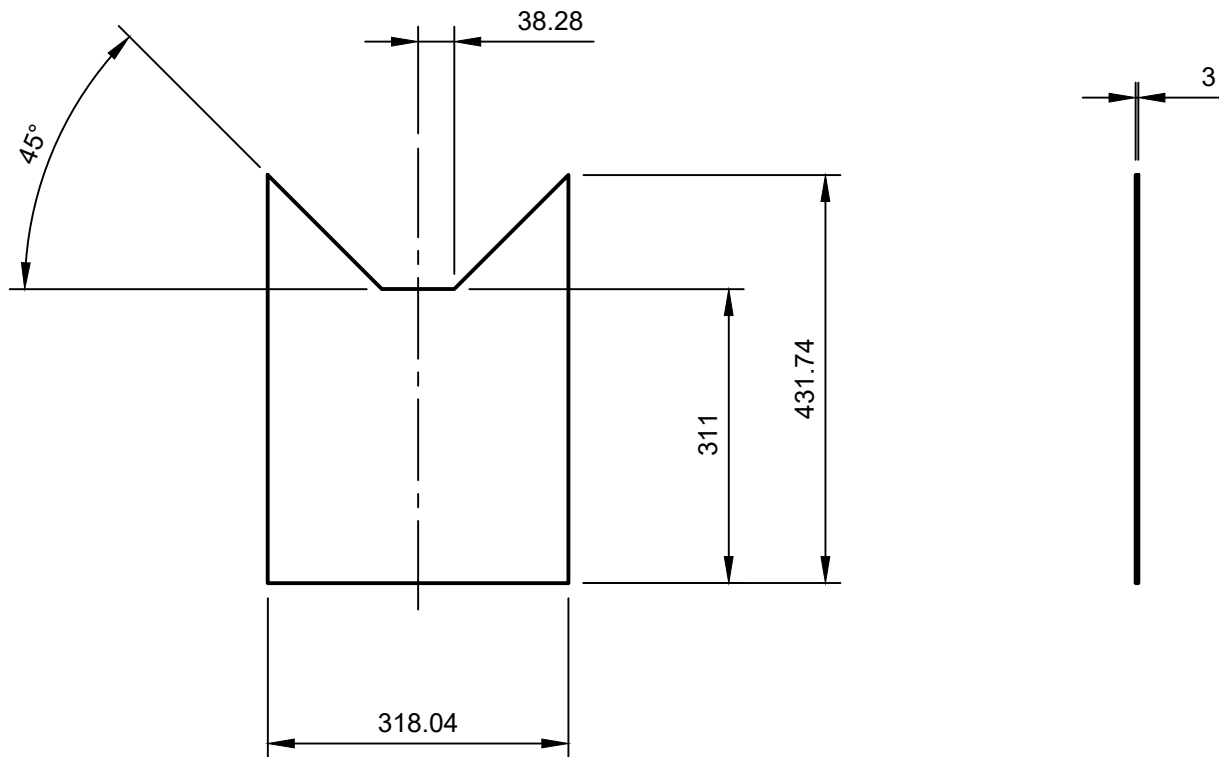
A (1:5)

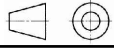


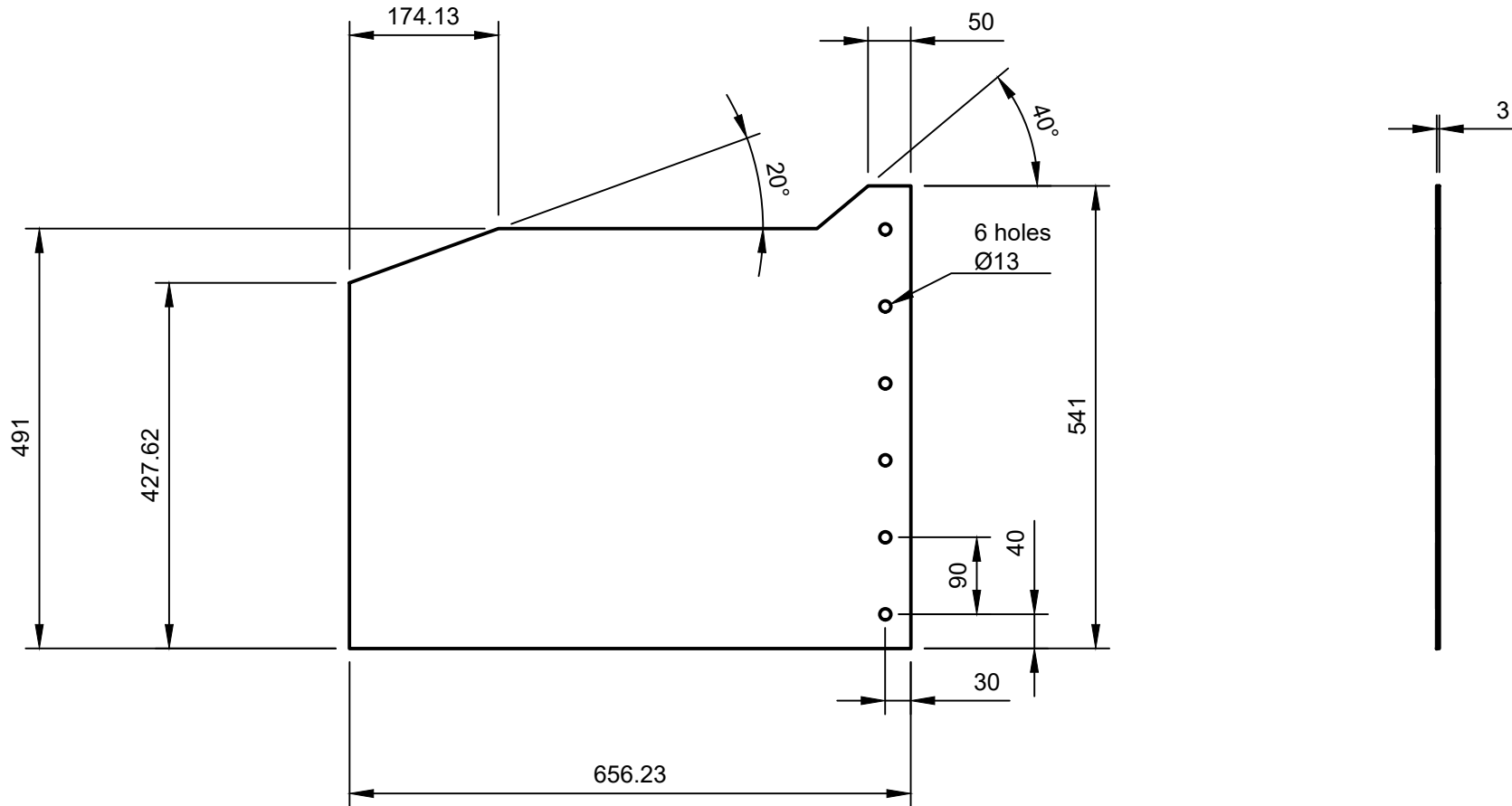
6 holes Ø 8 mm to
match drain cover
plate (item 8).

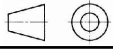
Weld 9418A500
M6 weld nuts on
basin-internal side.

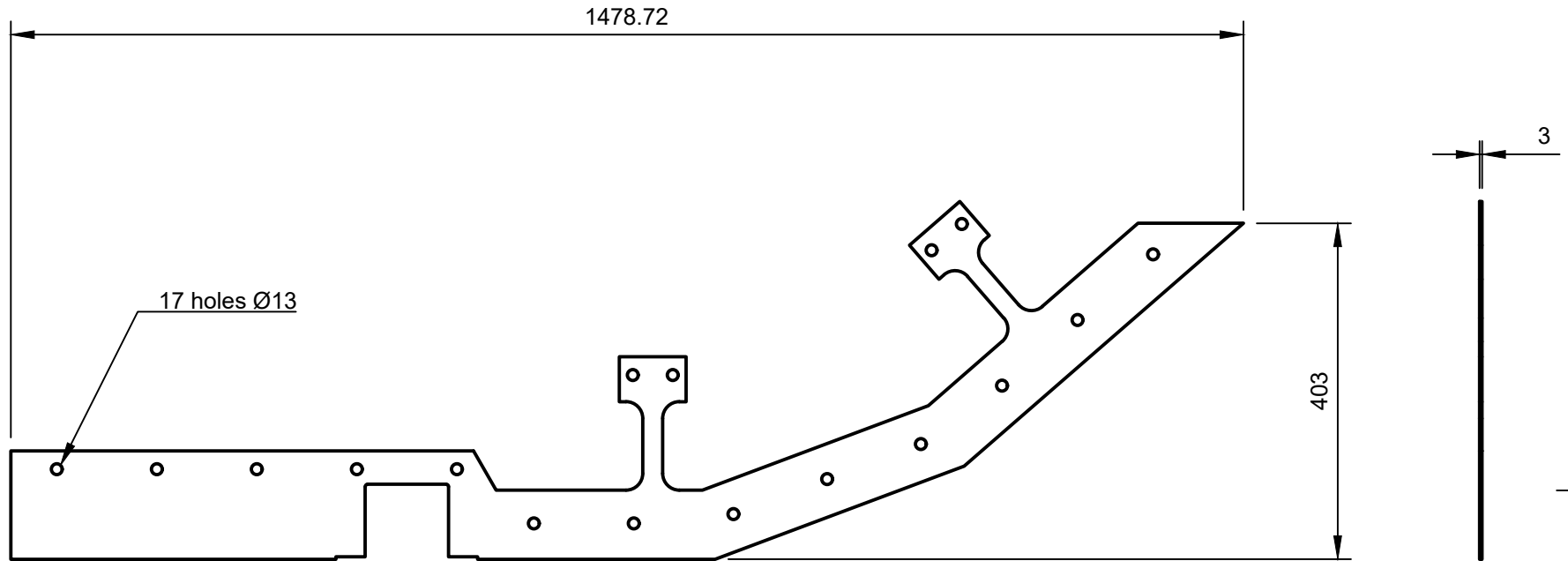
Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
Thickness:		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Required:	1-off	Sheet 4 of 20	Sheet title Item 1 (Wall 1) plus Item 9 (weld nuts)		Units: mm	Default scale 1:8	
			Rev. 0	Revision date 23/03/2021			



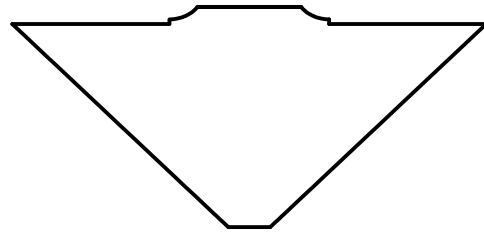
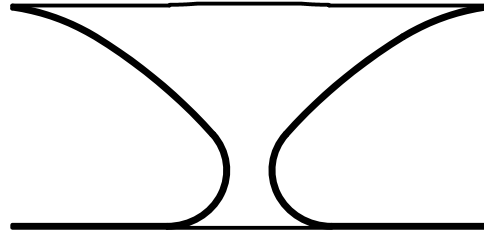
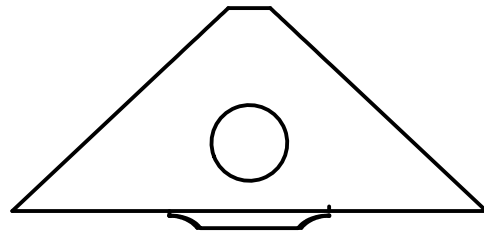
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 
Drawing No. HyR_210323a		Designer: Dr. R.W.Moss	Units: mm	Paper size A4
Material:	Sheet 5 of 20	Sheet title Wall 2	Rev. 0	Default scale 1:8
Thickness:	Required: 1-off	Revision date 23/03/2021		



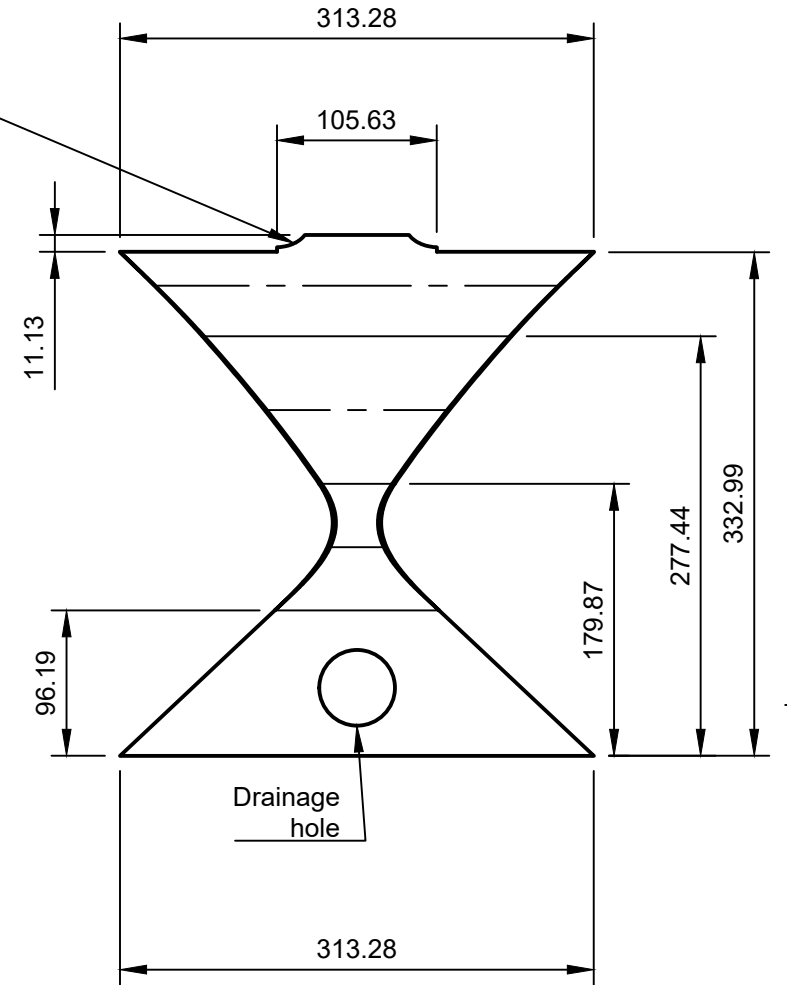
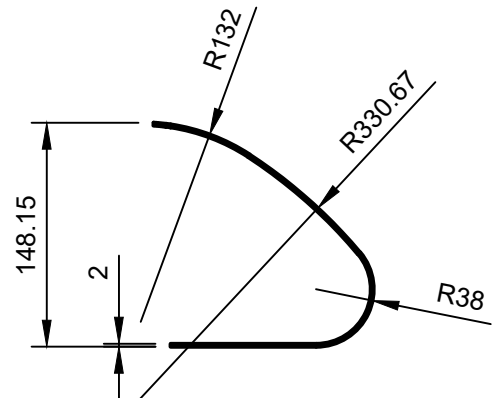
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 
Material:		Drawing No. HyR_210323a		Paper size A4
Thickness:	Required: 1-off	Sheet 6 of 20	Designer: Dr. R.W.Moss	Units: mm
		Sheet title Item3: Wall 3	Rev. 0	Default scale 1:8
				Revision date 23/03/2021



		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Material:		Sheet 7 of 20		Rev. 0		Default scale 1:8	
Thickness:	Required: 1-off	Sheet title Item 4: Base flange		Revision date 23/03/2021			

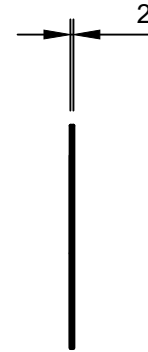
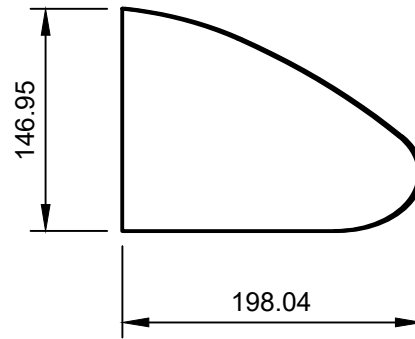


Cut after rolling (bandsaw) to overhang wall and fit against edging tube A

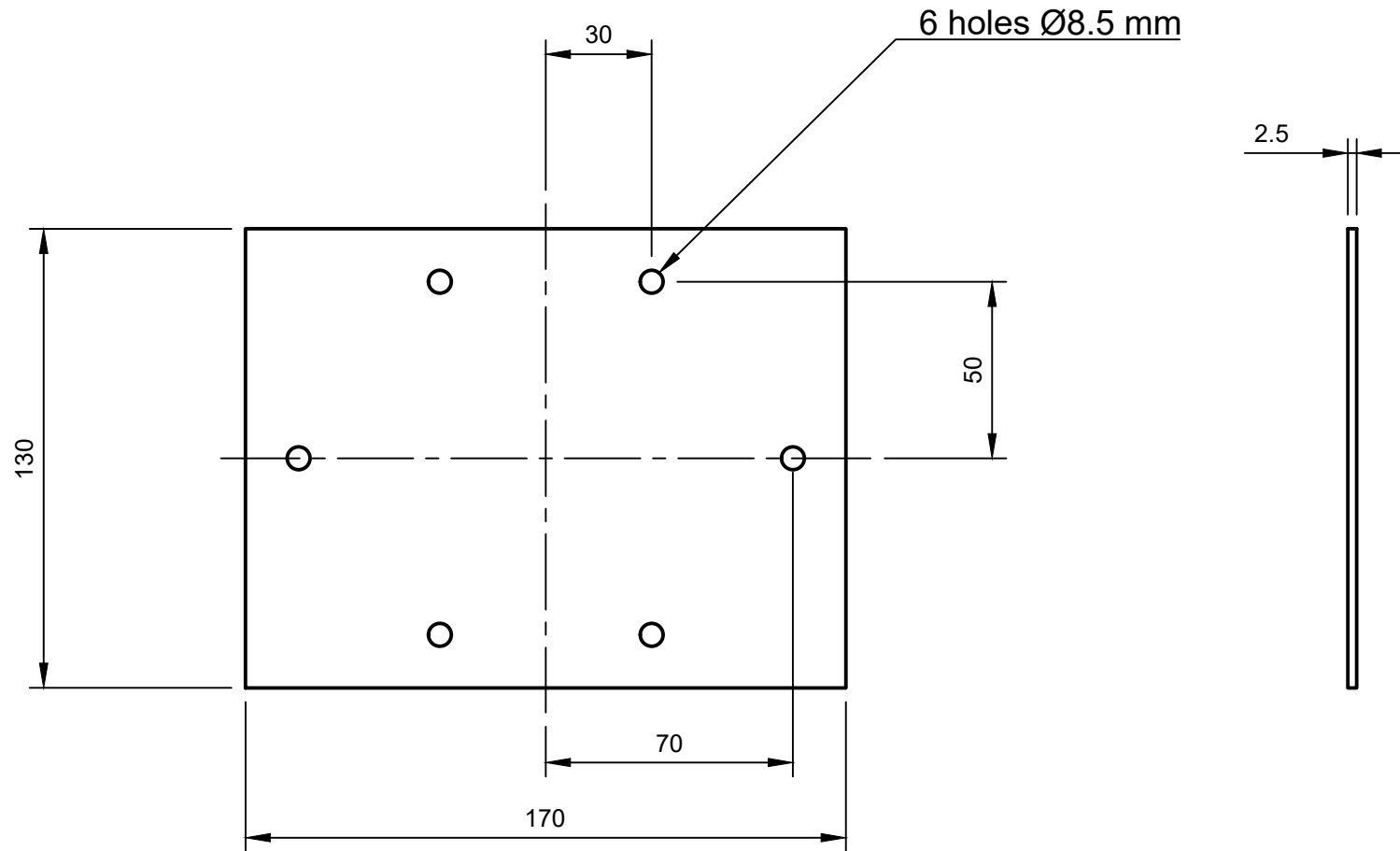


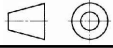
This assists fish jumping up into the basin. Exact profile not critical.

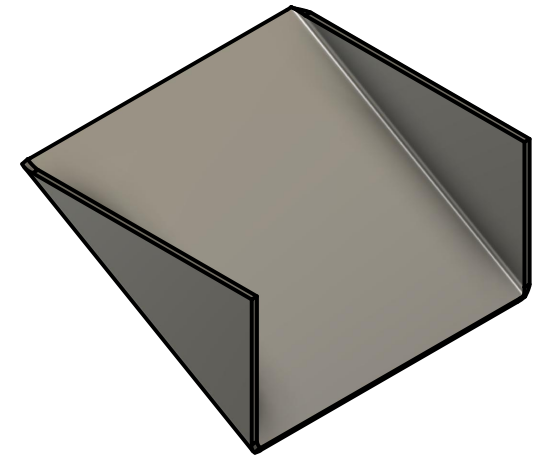
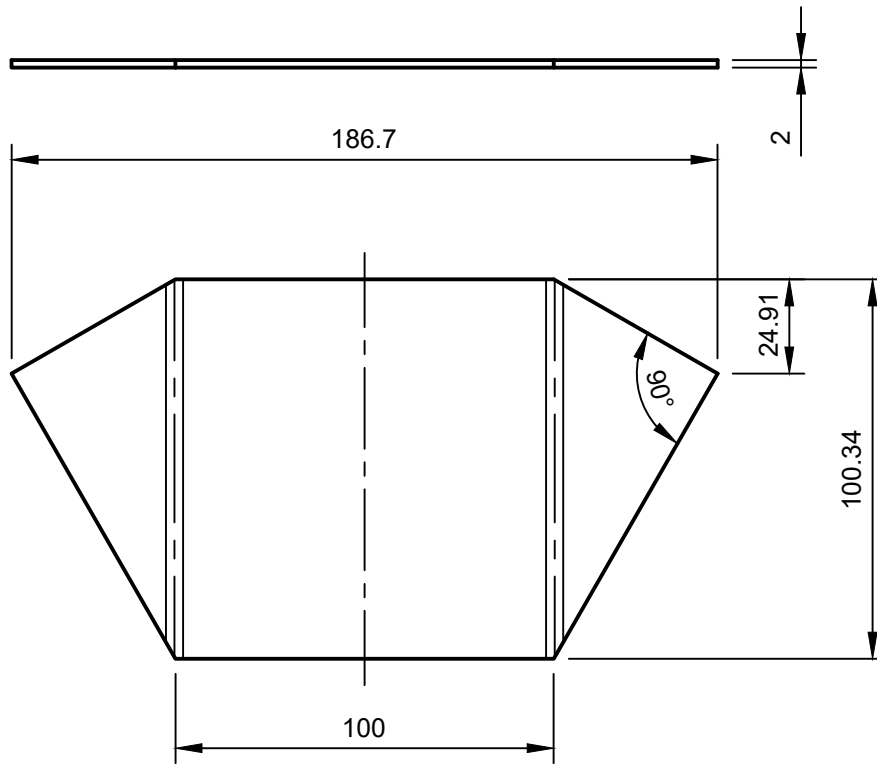
Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Thickness:	Required: 1-off	Sheet 8 of 20	Sheet title Item 5: Snout		Units: mm	Default scale 1:5	
				Rev. 0	Revision date 23/03/2021		




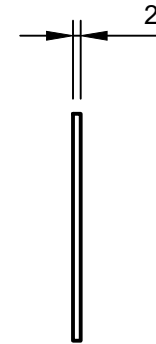
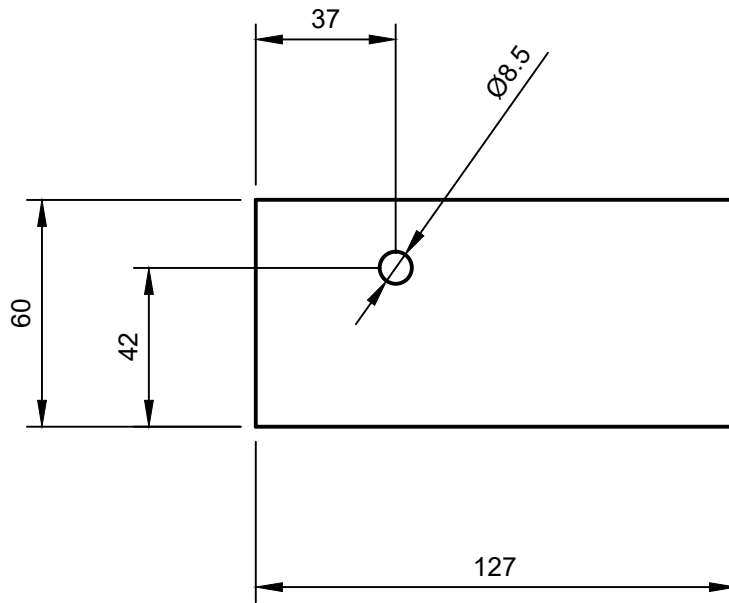
Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 			
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4			
Thickness:		Required: 2-off		Sheet 9 of 20		Units: mm		Default scale 1:5	
				Sheet title Item 6: Snout side		Rev. 0		Revision date 23/03/2021	



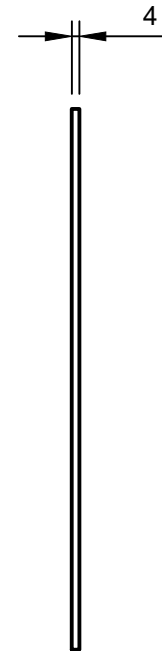
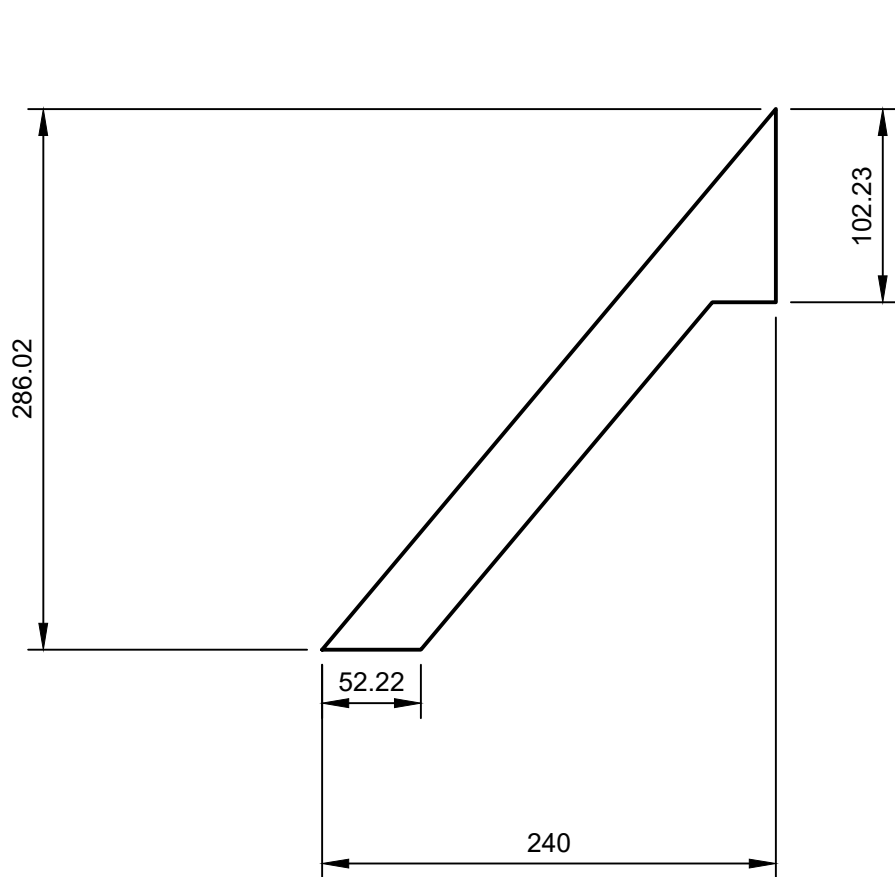
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 
Material:		Drawing No. HyR_210323a		Paper size A4
Thickness:	Required: 1-off	Sheet 10 of 20	Designer: Dr. R.W.Moss	Units: mm
		Sheet title Item 7: Drain cover	Rev. 0	Default scale 1:2
		Revision date 23/03/2021		



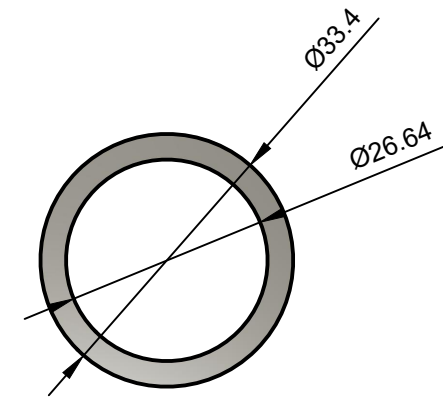
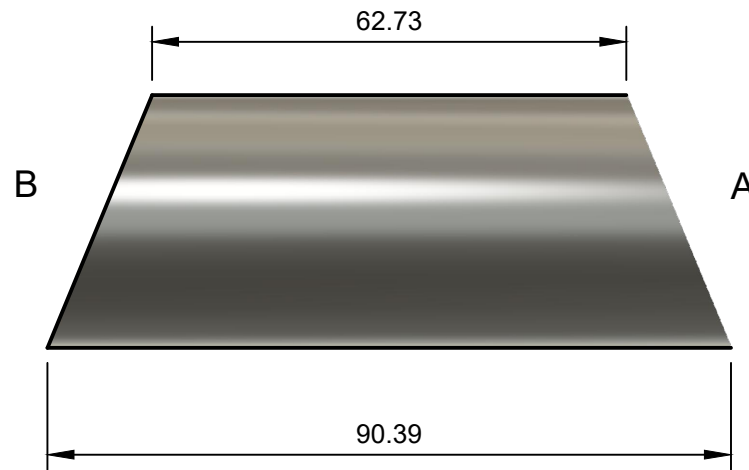
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 
Drawing No. HyR_210323a		Designer: Dr. R.W.Moss	Units: mm	Paper size A4
Material:	Sheet 11 of 20	Sheet title Item 8: Drain chute	Rev. 0	Default scale 1:2
Thickness:	Required: 1-off			Revision date 23/03/2021



Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall			Projection 					
					Paper size A4					
Material:		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Units: mm		Default scale 1:2		
Thickness:	Required: 1-off	Sheet 12 of 20		Sheet title Item 9: Flange end plate			Rev. 0		Revision date 23/03/2021	



Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection
Material:		Drawing No. HyR_210323a		Paper size A4
Thickness:	Required: 2-off	Sheet 13 of 20	Designer: Dr. R.W.Moss	Units: mm
		Sheet title Item 10: Webs	Rev. 0	Default scale 1:4
		Revision date 23/03/2021		



Chop-saw cutting details

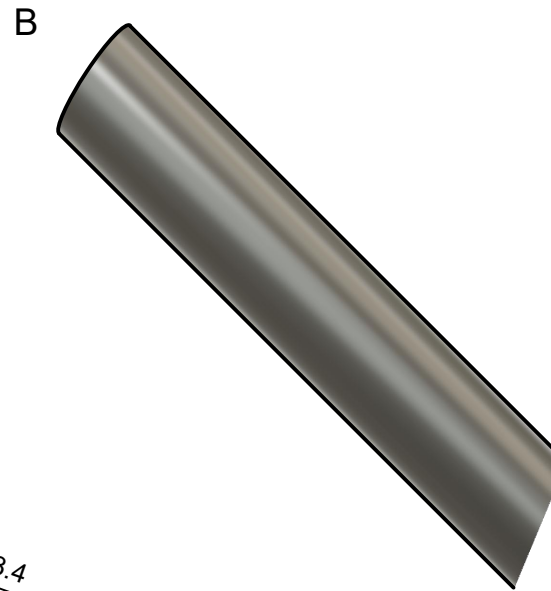
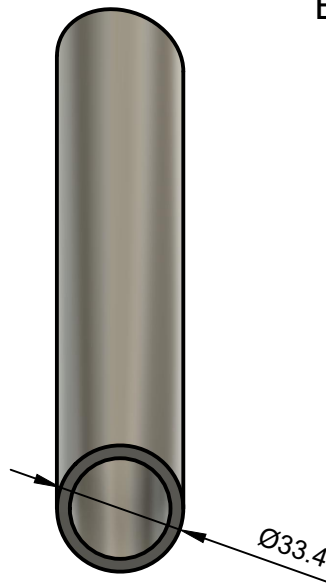
→ Draw a "top side" marker along the pipe and rings around it indicating centreline lengths.

Set end "A" cutting angle (to centreline):	67.5°
Set end "A" twist angle about centre line (+ve clockwise looking from A to B), then cut A through top of ring-mark :	90°
Set end "B" cutting angle (same definition as A):	67.5°
Slide or flip, then set new twist angle:	-90°
Set centreline length, then cut B :	76.56
Finished overall length (mm, ref only)	90.39

n.b. "Top side" lines align when welding

Cutting angles are complementary to the "centreline to face perpendicular" angle.

Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall components		Projection
Drawing No. HyR_210323a		Designer: Dr. R.W.Moss	Units: mm	Paper size A4
Material:	Sheet 14 of 20	Sheet title Item 11: Edging tube A	Rev. 0	Default scale 1:4
Thickness:	Required: 1-off		Revision date 23/03/2021	



Chop-saw cutting details

→ Draw a "top side" marker along the pipe and rings around it indicating centreline lengths.

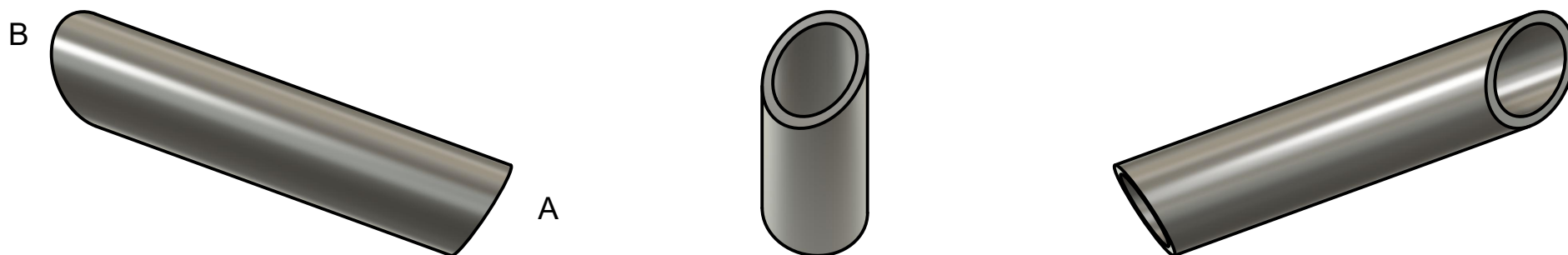
Set end "A" cutting angle (to centreline):	67.5°
Set end "A" twist angle about centre line (+ve clockwise looking from A to B), then cut A through top of ring-mark :	90°
Set end "B" cutting angle (same definition as A):	74.9°
Slide or flip, then set new twist angle:	-90±40.9°
Set centreline length, then cut B :	166.48
Finished overall length (mm, ref only)	177.9

n.b. "Top side" lines align when welding

Cutting angles are complementary to the "centreline to face perpendicular" angle.

The ±40.9° makes a right and left-handed pair of tubes.

Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection
Material:		Drawing No. HyR_210323a		Paper size A4
Thickness:	Required: 2-off	Designer: Dr. R.W.Moss	Units: mm	Default scale 1:2
Sheet 15 of 20	Sheet title Item 12: Edging tube B	Rev. 0	Revision date 23/03/2021	



Chop-saw cutting details

—▷ Draw a "top side" marker along the pipe and rings around it indicating centreline lengths.

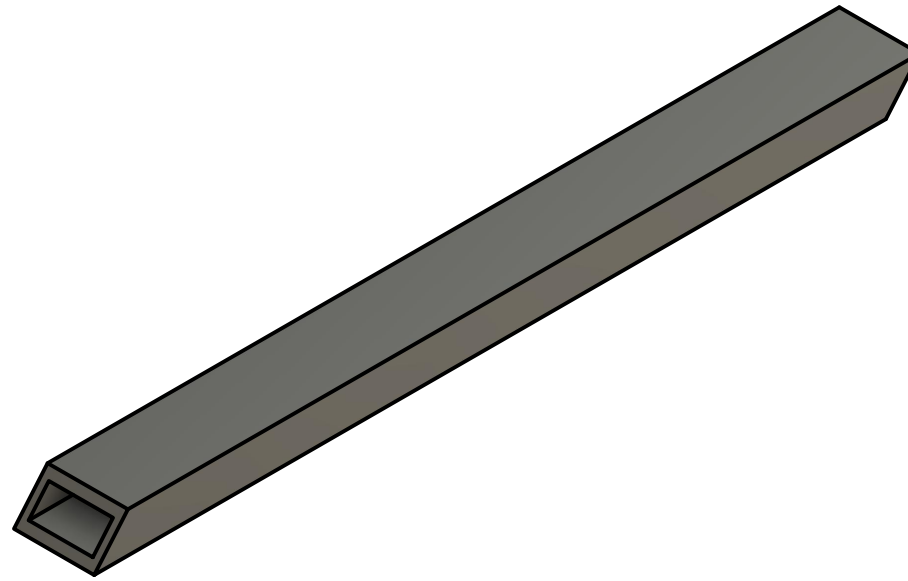
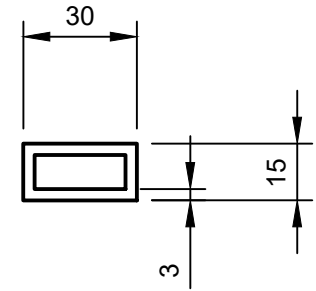
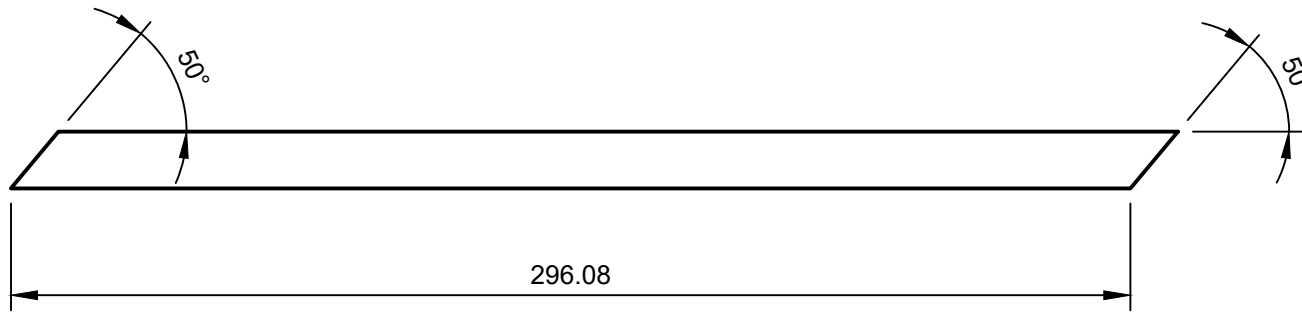
Set end "A" cutting angle (to centreline):	74.9°
Set end "A" twist angle about centre line (+ve clockwise looking from A to B), then cut A through top of ring-mark :	-90±29.5°
Set end "B" cutting angle (same definition as A):	46°
Slide or flip, then set new twist angle:	90±67.8°
Set centreline length, then cut B :	130.1
Finished overall length (mm, ref only)	150.7

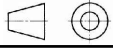
n.b. "Top side" lines align when welding

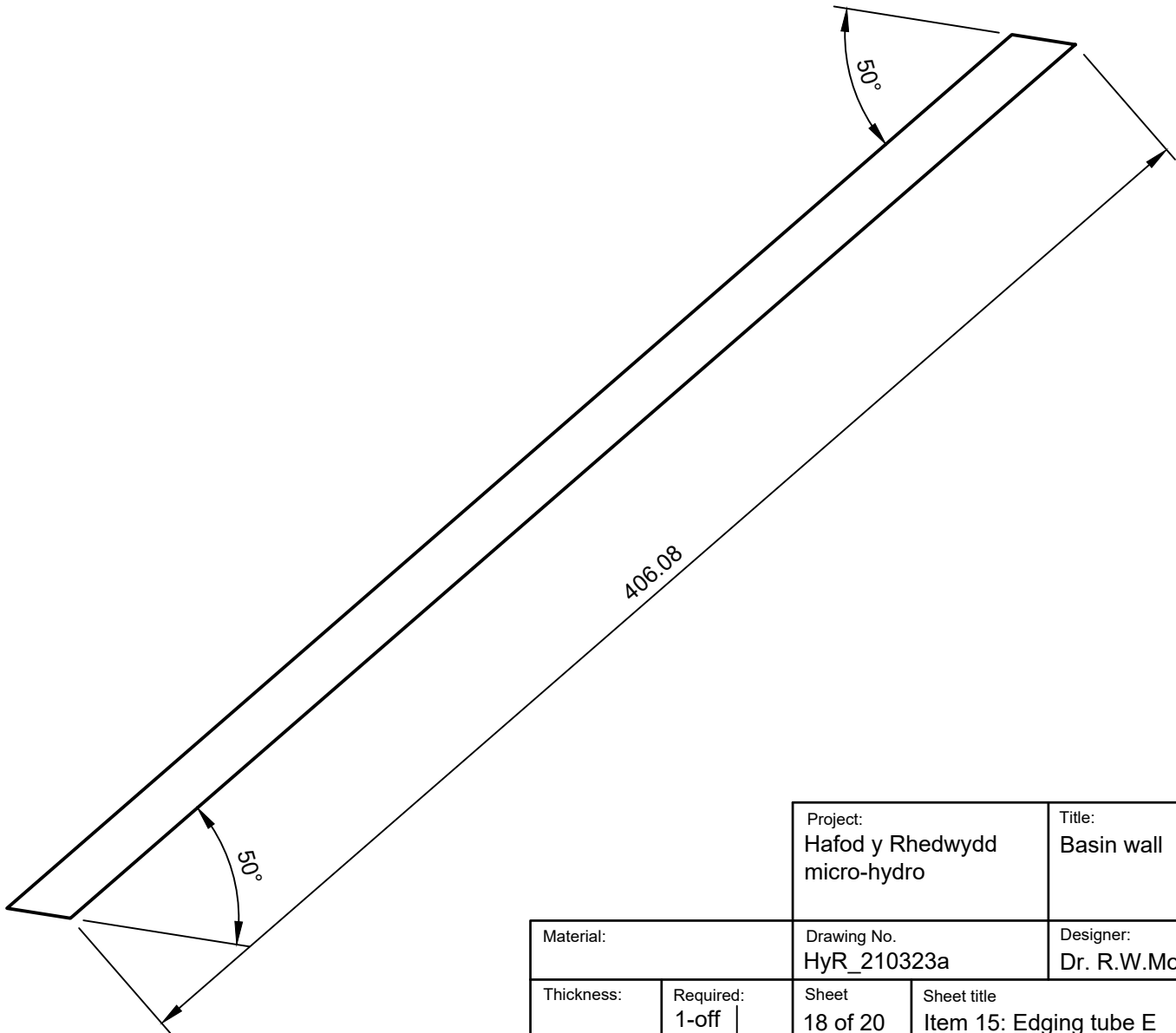
Cutting angles are complementary to the "centreline to face perpendicular" angle.

The ±29.5 and 67.8° twist angles make a right and left-handed pair of tubes with a ±38.3° twist between the face normals (looking along the axis).

Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection
Material:		Drawing No. HyR_210323a		Paper size A4
Thickness:	Required: 2-off	Designer: Dr. R.W.Moss	Units: mm	Default scale 1:2
Sheet 16 of 20	Sheet title Item 13: Edging tube C	Rev. 0	Revision date 23/03/2021	



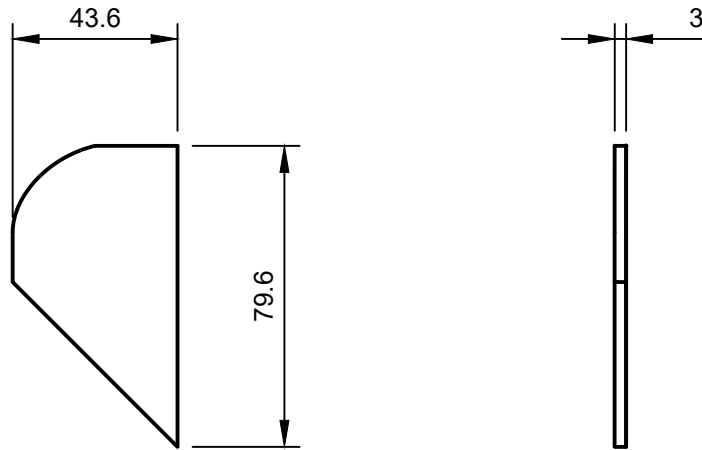
Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Thickness:	Required: 1-off	Sheet 17 of 20	Sheet title Item 14: Edging tube D		Units: mm	Default scale 1:2	
					Rev. 0	Revision date 23/03/2021	



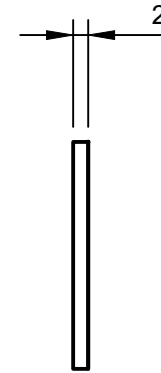
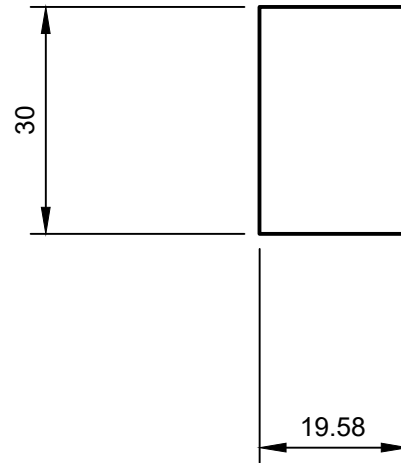
Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection
Drawing No. HyR_210323a		Designer: Dr. R.W.Moss	Units: mm	Paper size A4
Material:	Sheet 18 of 20	Sheet title Item 15: Edging tube E	Rev. 0	Default scale 1:1
Thickness:	Required: 1-off			Revision date 23/03/2021

These sit between the chamfered ends of the round and rectangular tubes.

Tube assembly to be fully welded to prevent water ingress.



Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Thickness:		Required: 2-off		Sheet 19 of 20		Sheet title Item 16: Tube jointing plate	
		Rev. 0		Revision date 23/03/2021		Default scale 1:2	



Material:		Project: Hafod y Rhedwydd micro-hydro		Title: Basin wall		Projection 	
		Drawing No. HyR_210323a		Designer: Dr. R.W.Moss		Paper size A4	
Thickness:		Required: 2-off		Sheet 20 of 20		Units: mm	
		Sheet title Item 17: Tube end plates		Rev. 0		Default scale 1:2	
				Revision date 23/03/2021			