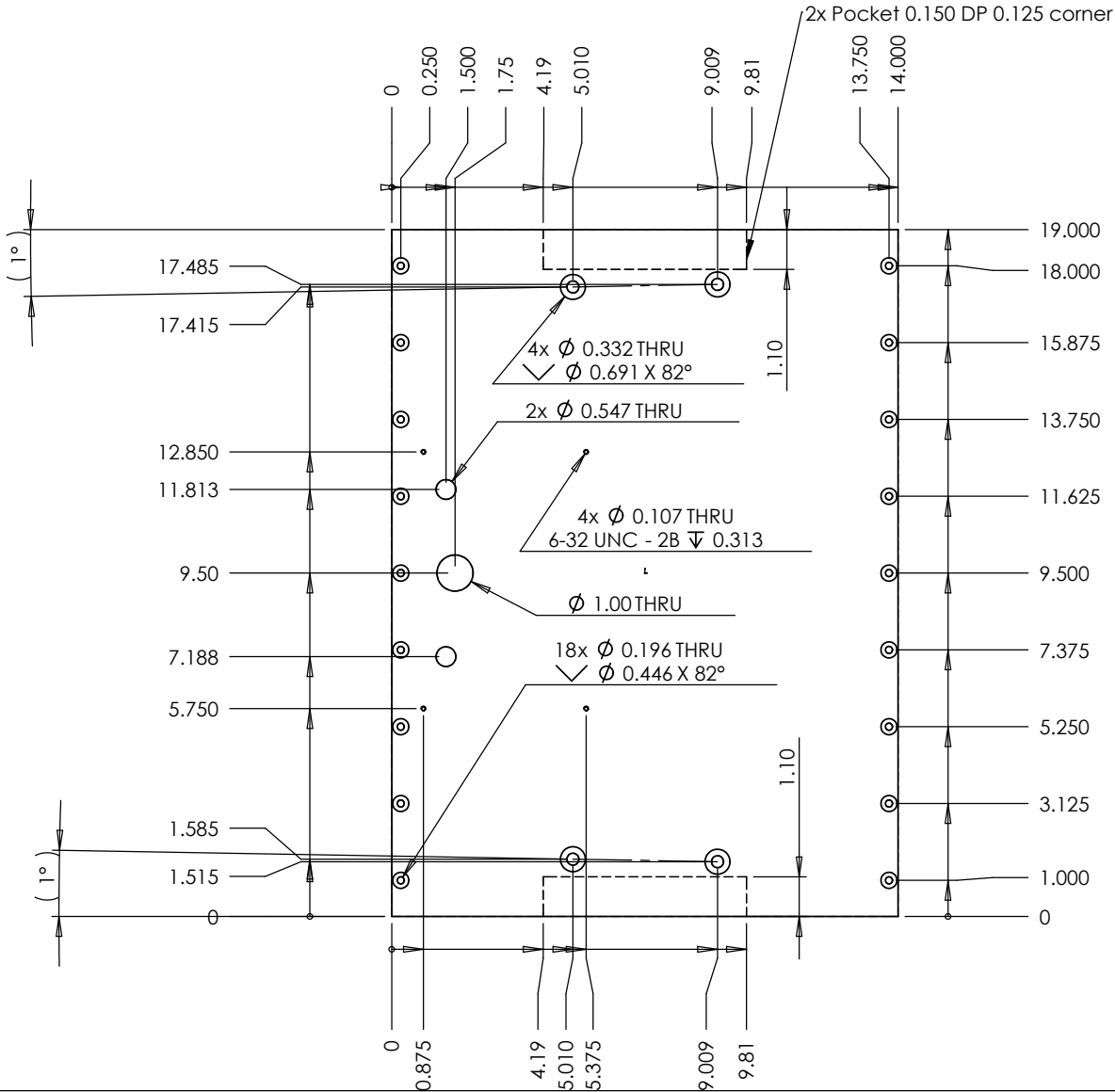
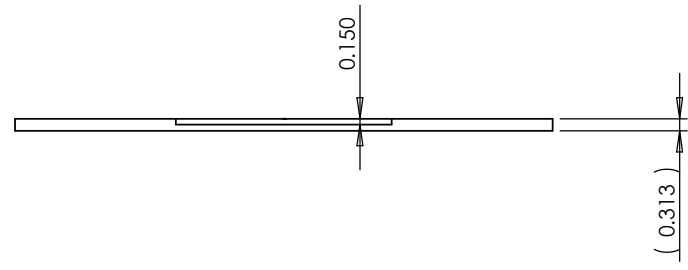


DIMENSIONS ARE IN INCHES
 TOLERANCES:
 TWO PLACE DECIMAL ±0.050
 THREE PLACE DECIMAL ±0.005

MATERIAL

SCALE:1:5

SHEET 2 OF 6



DIMENSIONS ARE IN INCHES
 TOLERANCES:
 TWO PLACE DECIMAL ±0.050
 THREE PLACE DECIMAL ±0.005

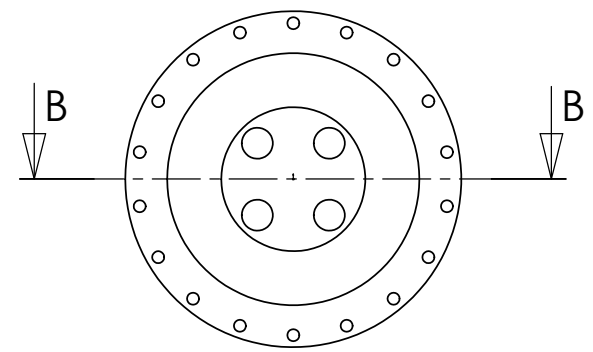
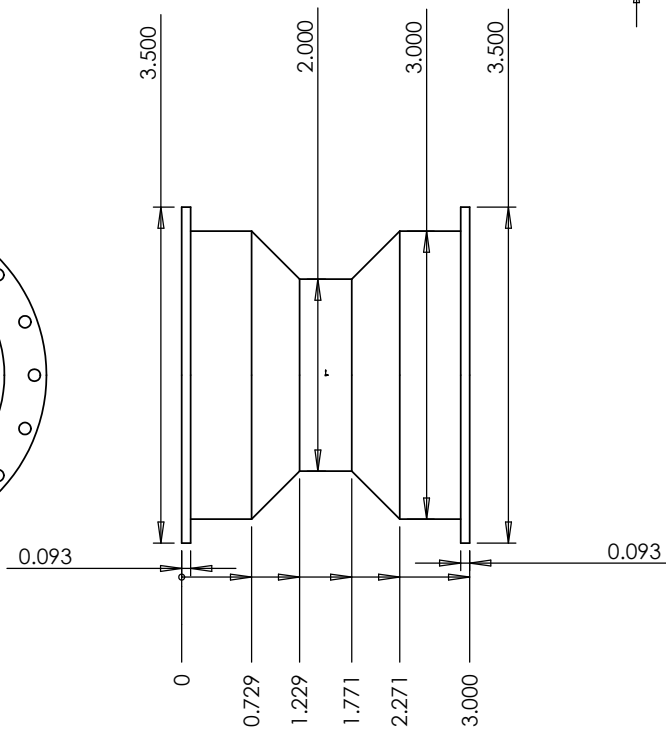
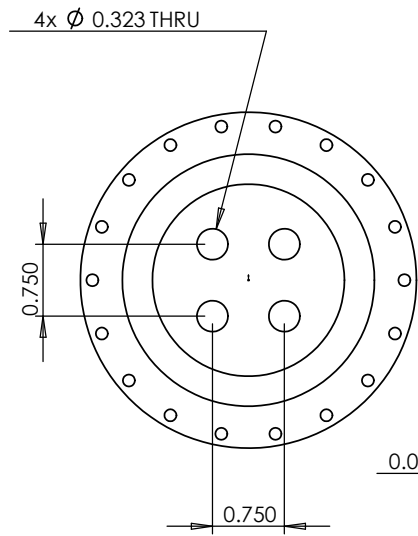
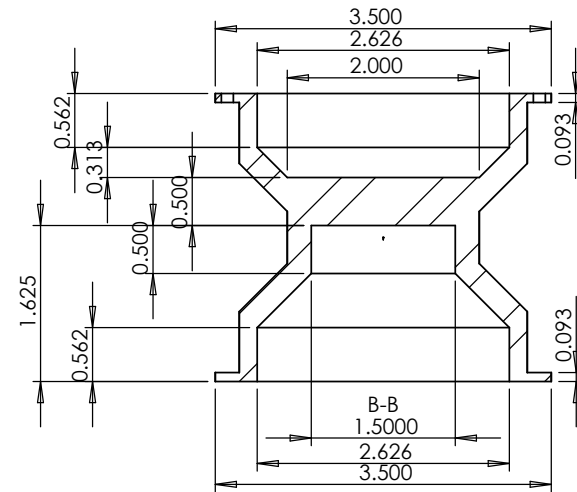
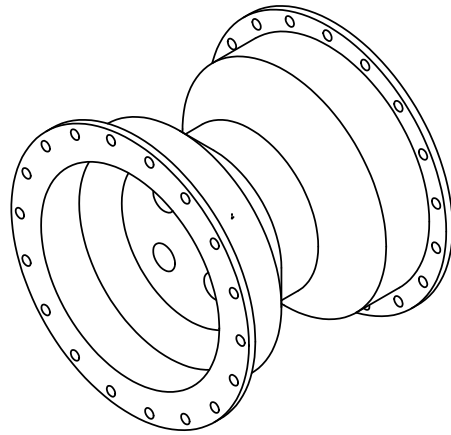
Umbrella Research

Spoked Wheel Hub

MATERIAL

SCALE:1:2

SHEET 3 OF 6

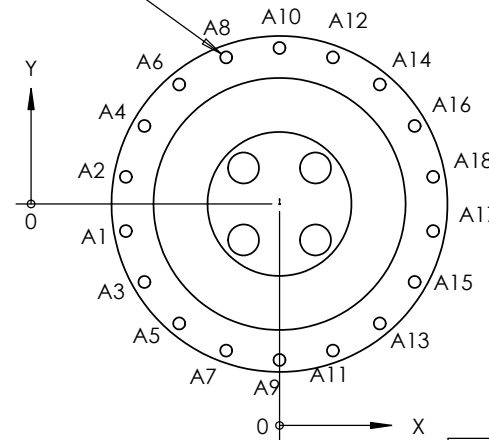
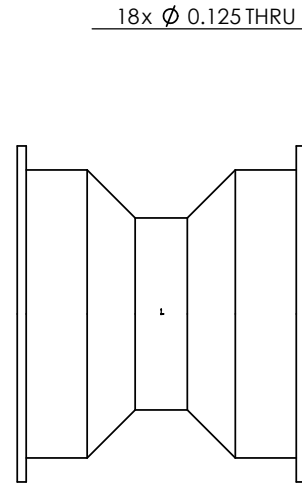
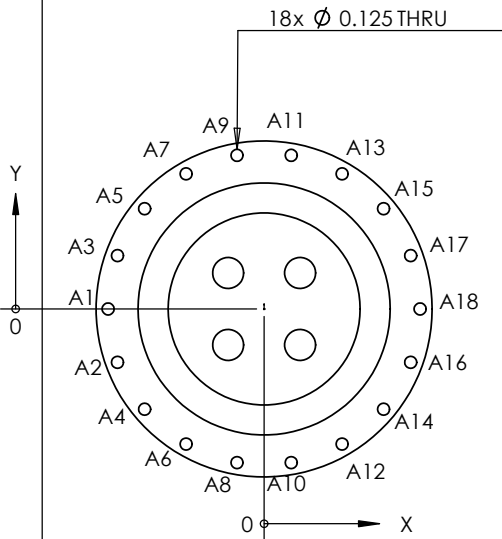


DIMENSIONS ARE IN INCHES
 TOLERANCES:
 TWO PLACE DECIMAL ±0.050
 THREE PLACE DECIMAL ±0.005

MATERIAL

SCALE:1:2

SHEET 4 OF 6



TAG	X LOC	Y LOC	SIZE
A1	-1.625	0.000	Ø 0.125 THRU
A2	-1.527	-0.556	Ø 0.125 THRU
A3	-1.527	0.556	Ø 0.125 THRU
A4	-1.245	-1.045	Ø 0.125 THRU
A5	-1.245	1.045	Ø 0.125 THRU
A6	-0.812	-1.407	Ø 0.125 THRU
A7	-0.812	1.407	Ø 0.125 THRU
A8	-0.282	-1.600	Ø 0.125 THRU
A9	-0.282	1.600	Ø 0.125 THRU
A10	0.282	-1.600	Ø 0.125 THRU
A11	0.282	1.600	Ø 0.125 THRU
A12	0.813	-1.407	Ø 0.125 THRU
A13	0.813	1.407	Ø 0.125 THRU
A14	1.245	-1.045	Ø 0.125 THRU
A15	1.245	1.045	Ø 0.125 THRU
A16	1.527	-0.556	Ø 0.125 THRU
A17	1.527	0.556	Ø 0.125 THRU
A18	1.625	0.000	Ø 0.125 THRU

Each side has 18 holes, evenly spaced at 20 degree increments. The two sides are offset by 10 degrees to give 36 evenly spaced holes

The best way to machine it is to make a jig with 1.4995 OD and the 4 mounting holes and clamp it so the holes are aligned with the mill vise. You can bolt the hub to it, machine one side, flip it over and machine the other side and the holes will be correctly aligned between the two sides.

TAG	X LOC	Y LOC	SIZE
A1	-1.60	-0.28	Ø 0.125 THRU
A2	-1.60	0.28	Ø 0.125 THRU
A3	-1.41	-0.81	Ø 0.125 THRU
A4	-1.41	0.81	Ø 0.125 THRU
A5	-1.04	-1.24	Ø 0.125 THRU
A6	-1.04	1.24	Ø 0.125 THRU
A7	-0.56	-1.53	Ø 0.125 THRU
A8	-0.56	1.53	Ø 0.125 THRU
A9	0.00	-1.62	Ø 0.125 THRU
A10	0.00	1.63	Ø 0.125 THRU
A11	0.56	-1.53	Ø 0.125 THRU
A12	0.56	1.53	Ø 0.125 THRU
A13	1.04	-1.24	Ø 0.125 THRU
A14	1.04	1.24	Ø 0.125 THRU
A15	1.41	-0.81	Ø 0.125 THRU
A16	1.41	0.81	Ø 0.125 THRU
A17	1.60	-0.28	Ø 0.125 THRU
A18	1.60	0.28	Ø 0.125 THRU

DIMENSIONS ARE IN INCHES
TOLERANCES:
TWO PLACE DECIMAL ±0.050
THREE PLACE DECIMAL ±0.005

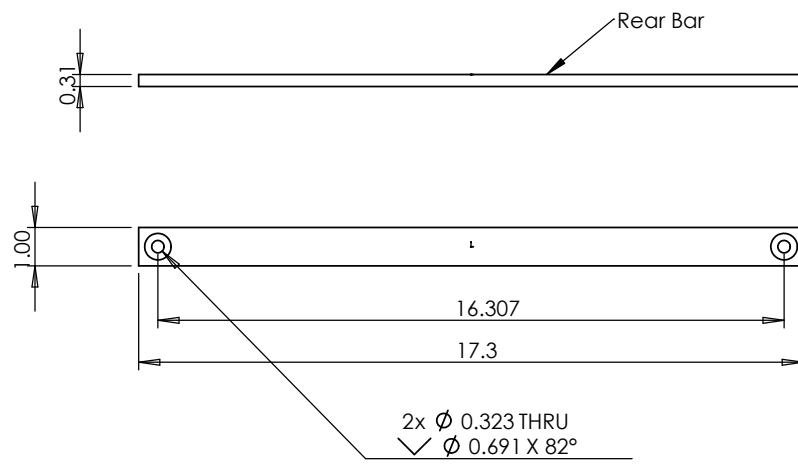
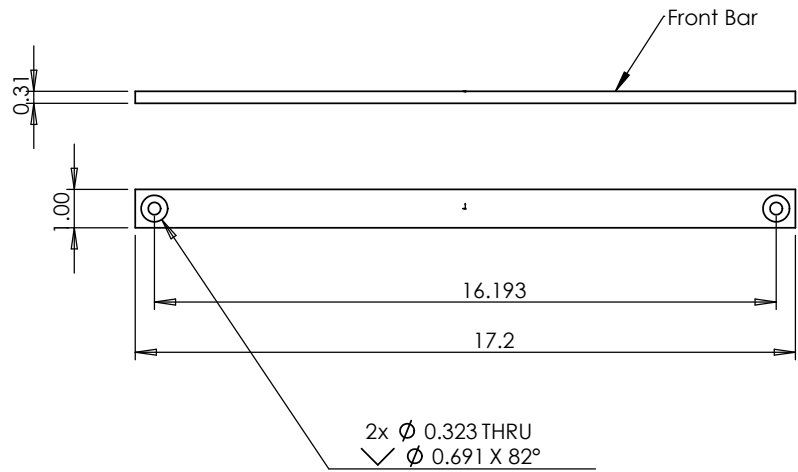
Umbrella Research

Scooter Bottom Bar Rear

MATERIAL

SCALE:1:5

SHEET 5 OF 6



DIMENSIONS ARE IN INCHES
TOLERANCES:
TWO PLACE DECIMAL ±0.050
THREE PLACE DECIMAL ±0.005

Umbrella Research

Scooter Front Stiffener

MATERIAL

SCALE:1:2

SHEET 6 OF 6

