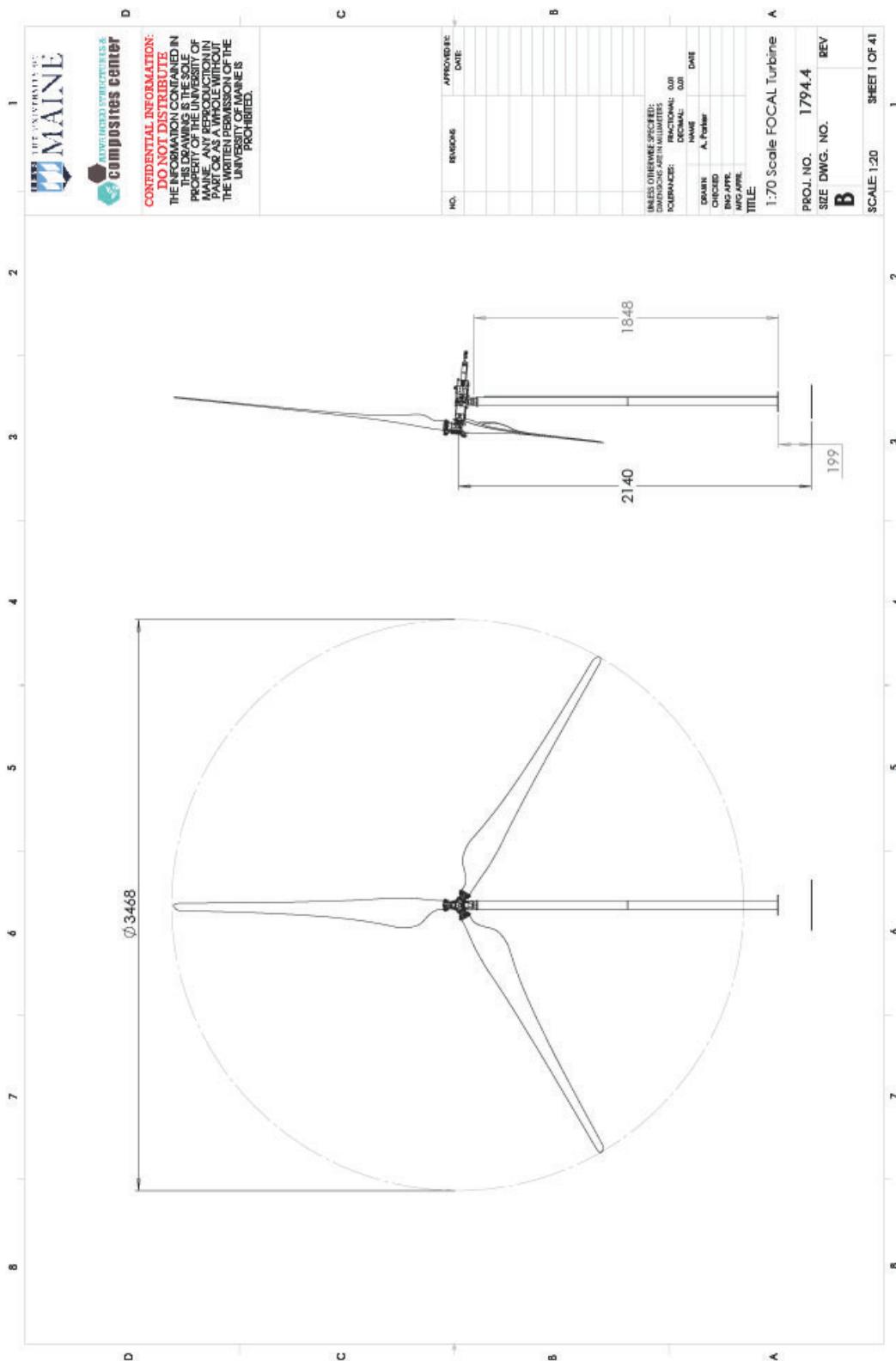


APPENDIX A: SHOP DRAWINGS OF THE FOCAL TURBINE ASSEMBLY



ITEM NO.	PART NUMBER	QTY.
1	FN_FOCAL Nacelle	1
2	R_Rotor Assembly	1
3	TW_Tower assembly	1
4	Water line	1

C D E F

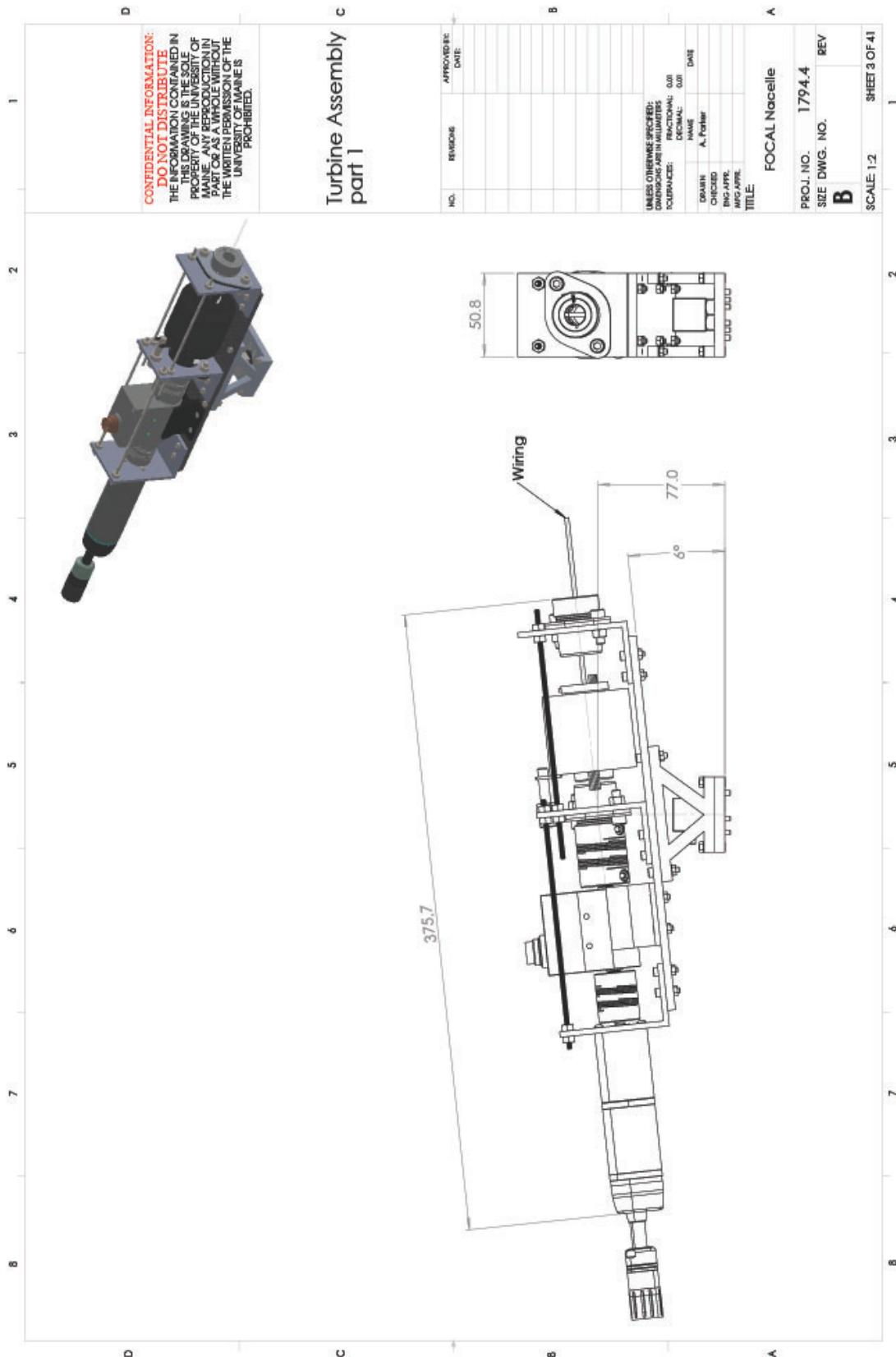
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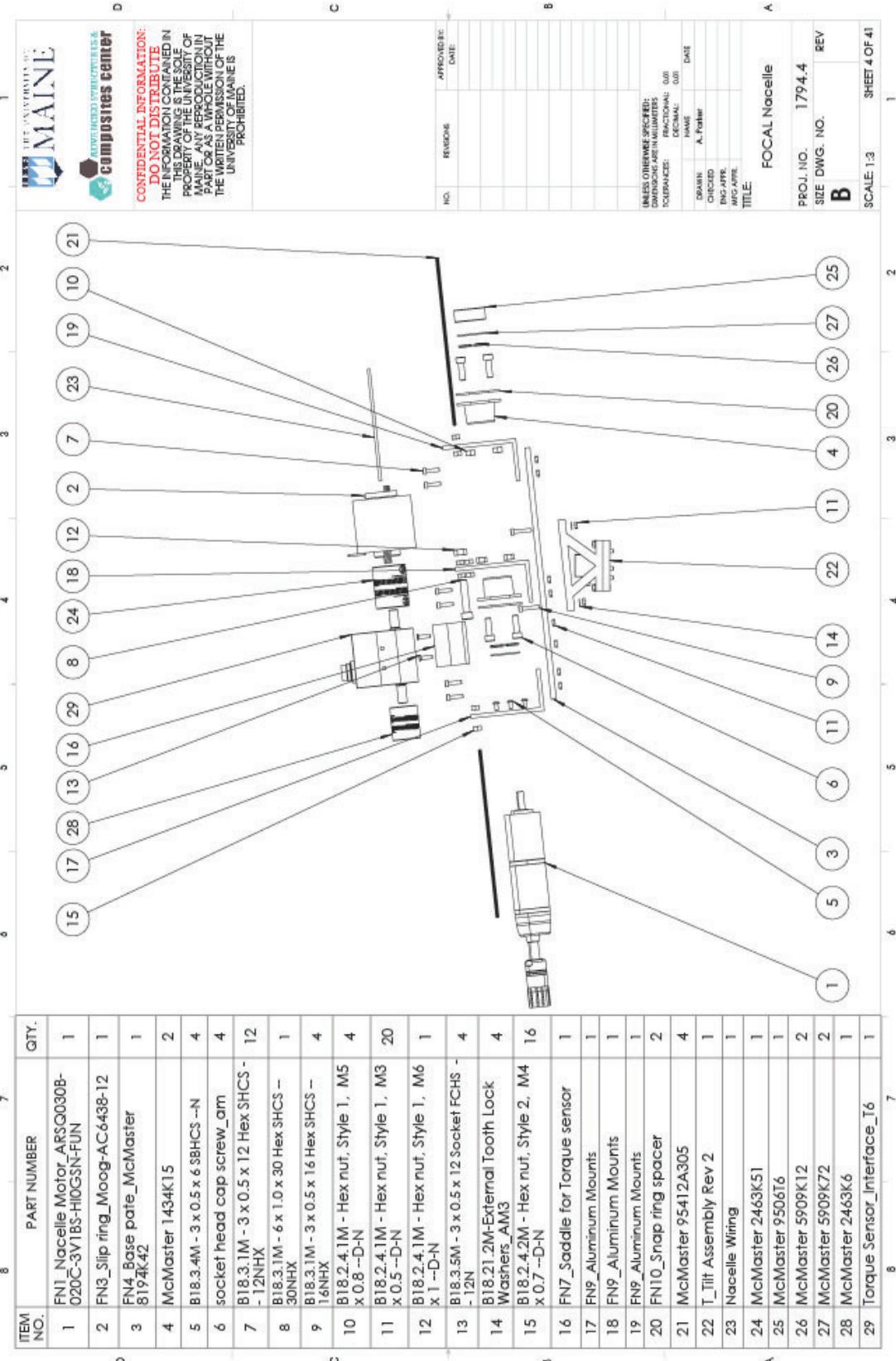
NO. PERIOD APPROVED BY
DATE
DRAWN BY
CHANGED BY
MFG APPROV.
TITLE
1:70 Scale FOCAL Turbine

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TOLERANCES: FRACTIONAL: .000
DECIMAL: .000
NAME DATE
A. Parker

PROJ. NO. 1704.4
SIZE DWG. NO. REV
B

A
SHEET 2 OF 41
SCALE 1:16



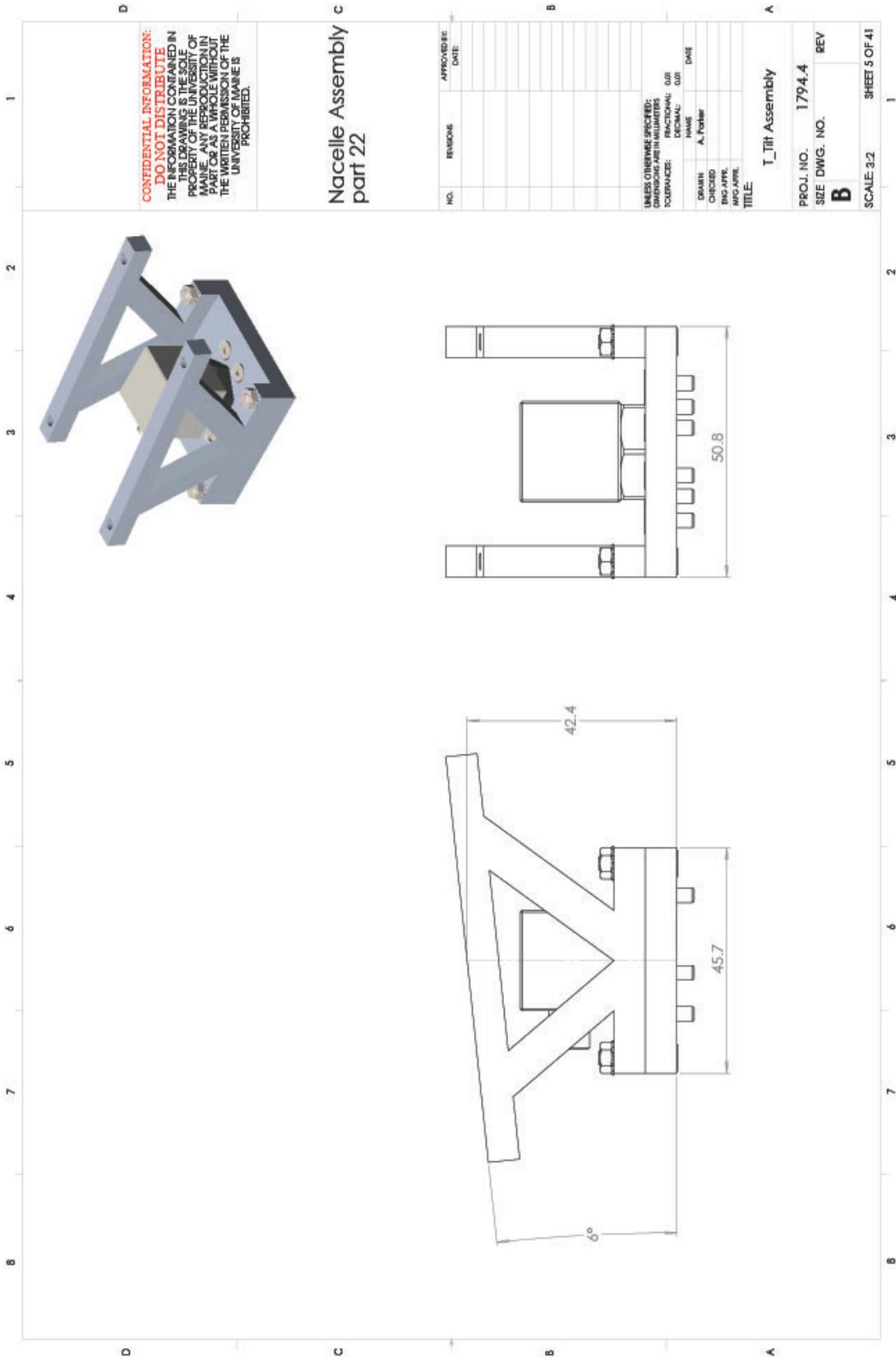


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ITEM NO.	PART NUMBER	QTY.
1	FN1_Nacelle_Motor_ARSG030B-020C-3V1Bs-HDGSN-FUN	1
2	FN3_Slip ring_Moog-AC6438-12	1
D	FN4_Base plate_McMaster 8194k42	1
4	McMaster 1434K15	2
5	B18.3.4M - 3 x 0.5 x 6 SBHCS -N	4
6	Socket head cap screw_#m	4
7	B18.3.1M - 3 x 0.5 x 12 Hex SHCS -12 -12NHX	12
8	B18.3.1M - 6 x 1.0 x 30 Hex SHCS -30NHX	1
9	B18.3.1M - 3 x 0.5 x 16 Hex SHCS -16NHX	4
C	B18.2.4.1M - Hex nut, Style 1, M5 x 0.8 -D-N	4
11	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 -D-N	20
12	B18.2.4.1M - Hex nut, Style 1, M6 x 1 -D-N	1
13	B18.3.5M - 3 x 0.5 x 12 Socket FCHS -12 -12N	4
14	B18.21.2M-External Tooth Lock Washers_AM3	4
15	B18.2.4.2M - Hex nut, Style 2, M4 x 0.7 -D-N	16
B	FN7_Saddle for Torque sensor	1
17	FN9_Aluminum Mounts	1
18	FN9_Aluminum Mounts	1
19	FN9_Aluminum Mounts	1
20	FN10_Snap ring spacer	2
21	McMaster 95412A305	4
22	Tilt Assembly Rev 2	1
23	Nacelle Wiring	1
24	McMaster 2463K51	1
A	McMaster 9506T6	1
26	McMaster 5909K12	2
27	McMaster 5909K72	2
28	McMaster 2463K6	1
29	Torque Sensor_Interface_T6	1

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 DECIMAL: 0.000
 DRAWN BY: A. Parker
 CHECKED BY: REV: B
 TITLE: FOCA1 Nacelle
 PROJ. NO. 1704.4
 SIZE DWG. NO. REV
 B
 SCALE 1:3 SHEET 4 OF 41



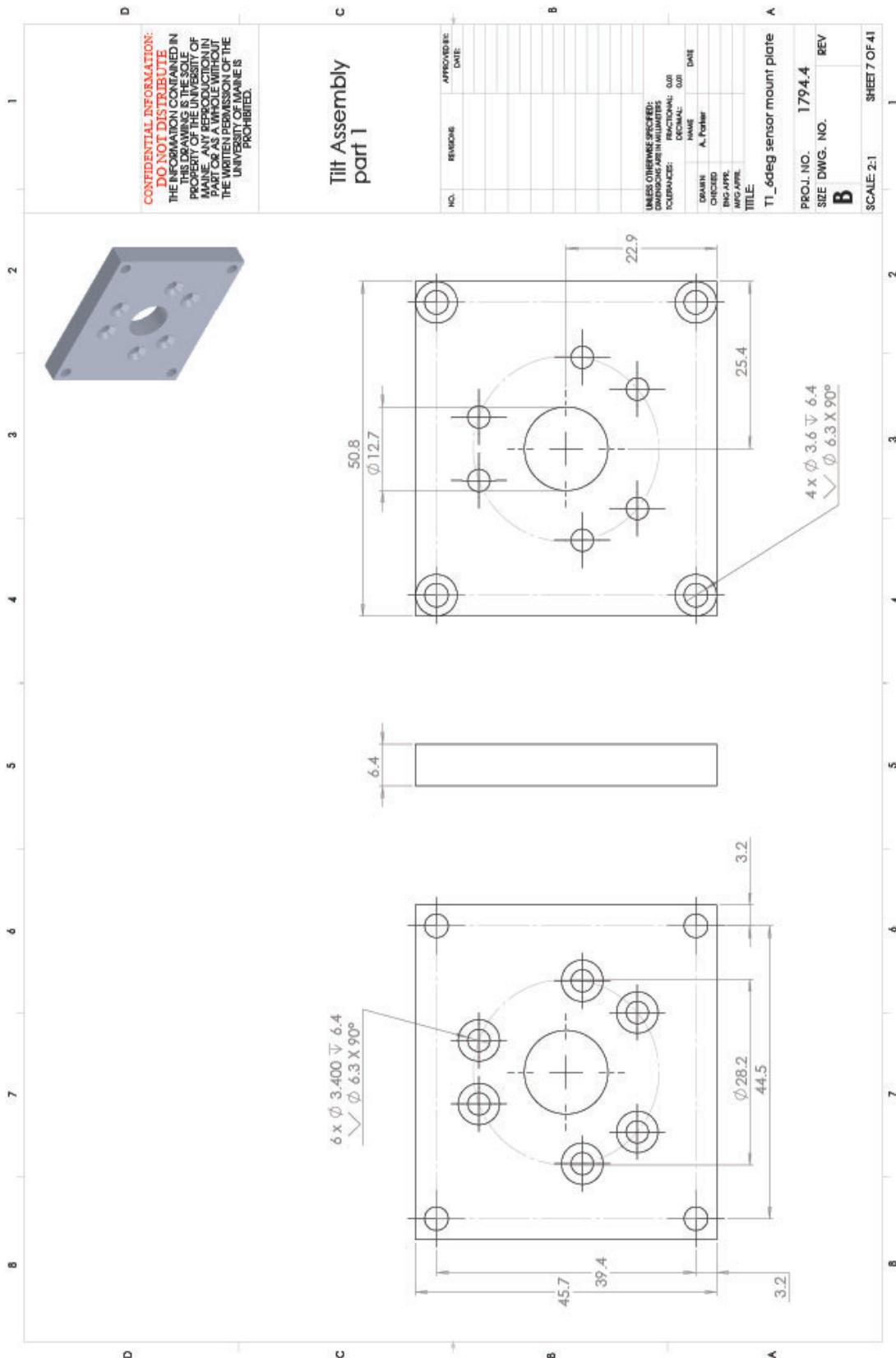
ITEM NO.	PART NUMBER	QTY.	
1	T1_6deg Force sensor mount Rev.2	1	
D	2	ASME B18.21.1 - 0.129 M3 x 0.5 -D-N	4
	3	B18.24.1M - Hex nut, Style 1, M3 x 0.5 -D-N	4
	4	B18.3.5M - 3 x 0.5 x 16 Socket FCHS - 16N	4
	5	B18.3.5M - 3 x 0.5 x 10 Socket FCHS - 10N	6
C	6	T2_6deg mounting wedge	2
	7	PCB 080A12	1
	8	PCB 081B05	1
	9	PCB Accelerometer_3713F 112G	1

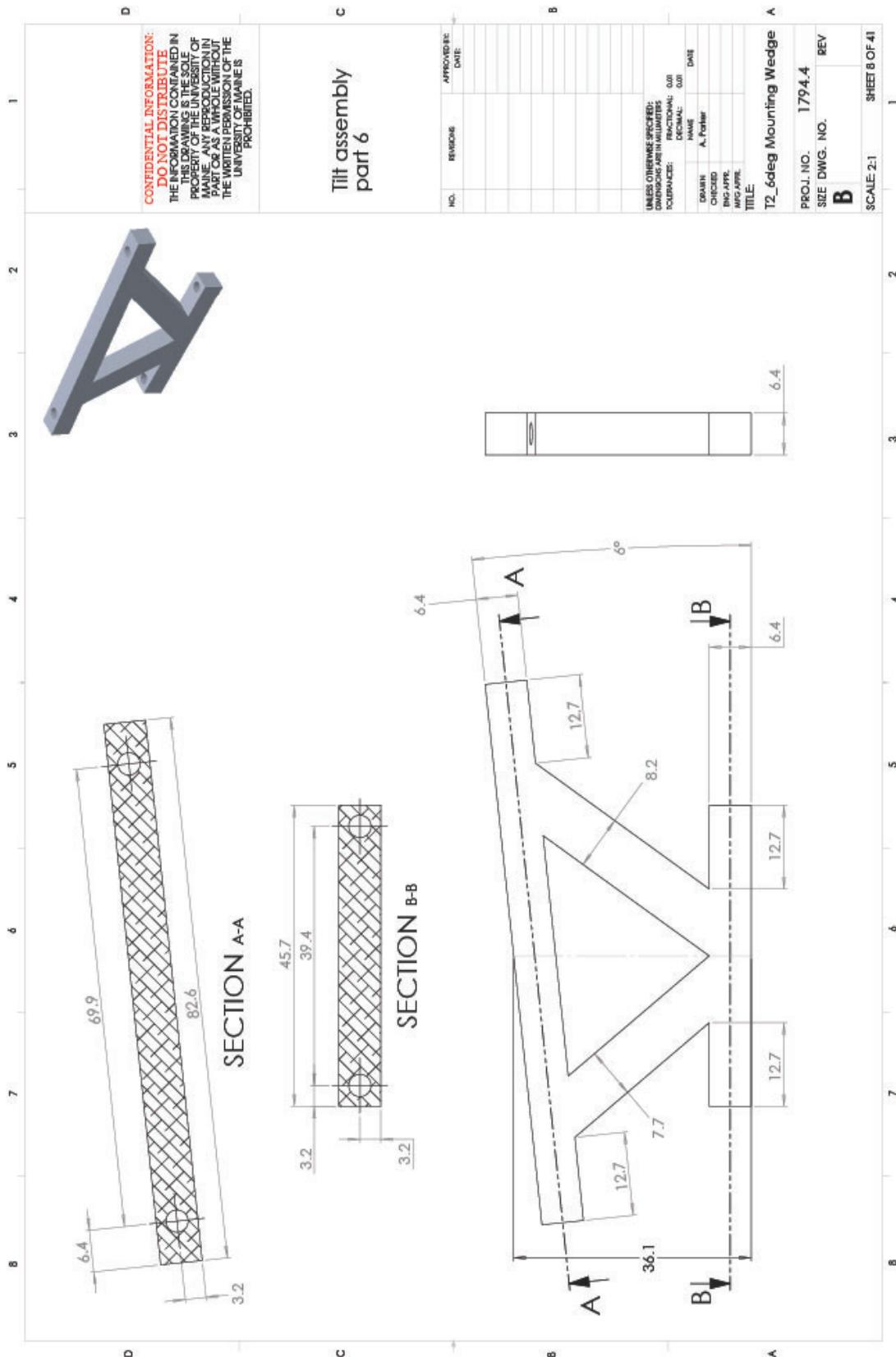
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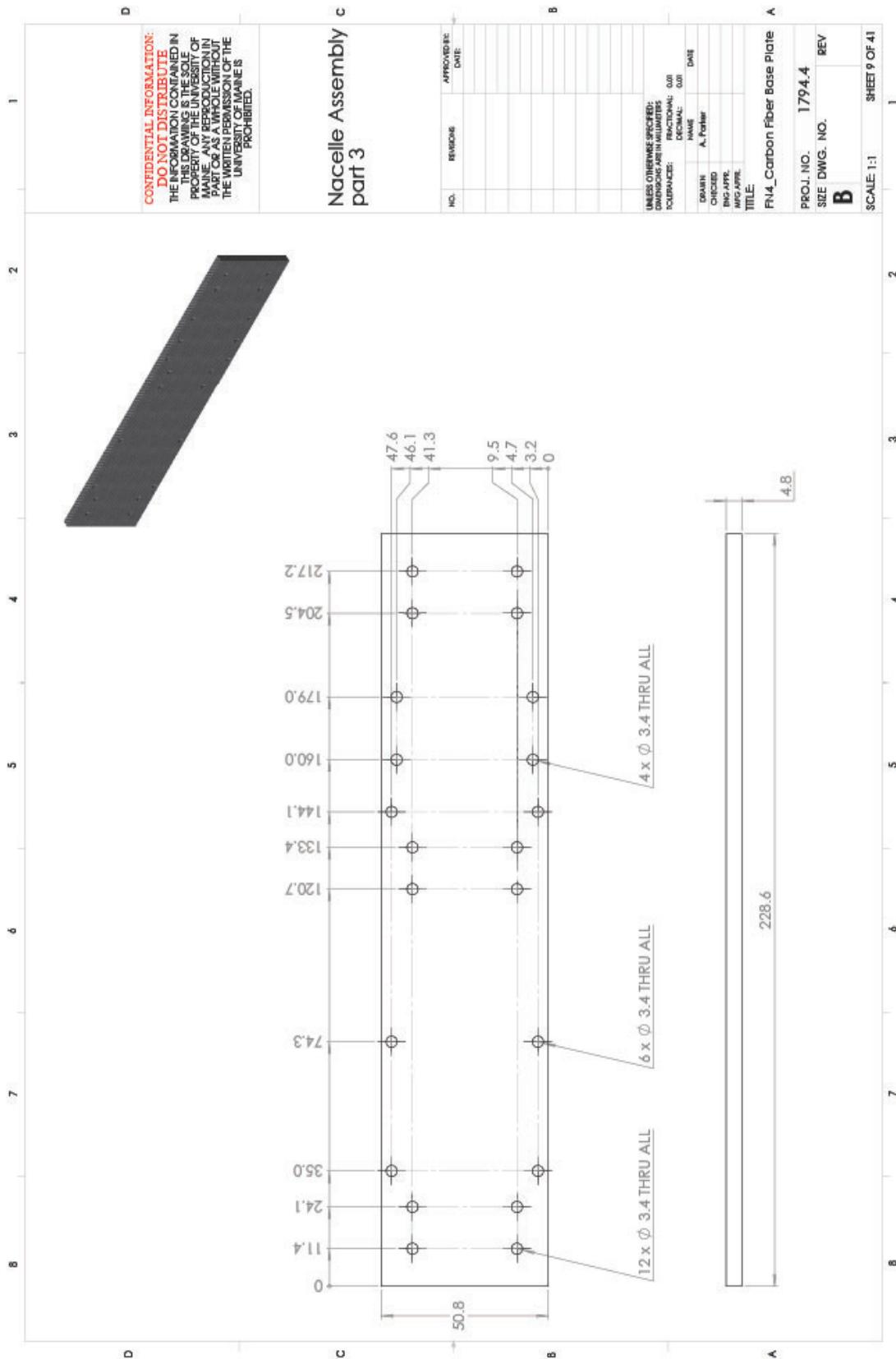
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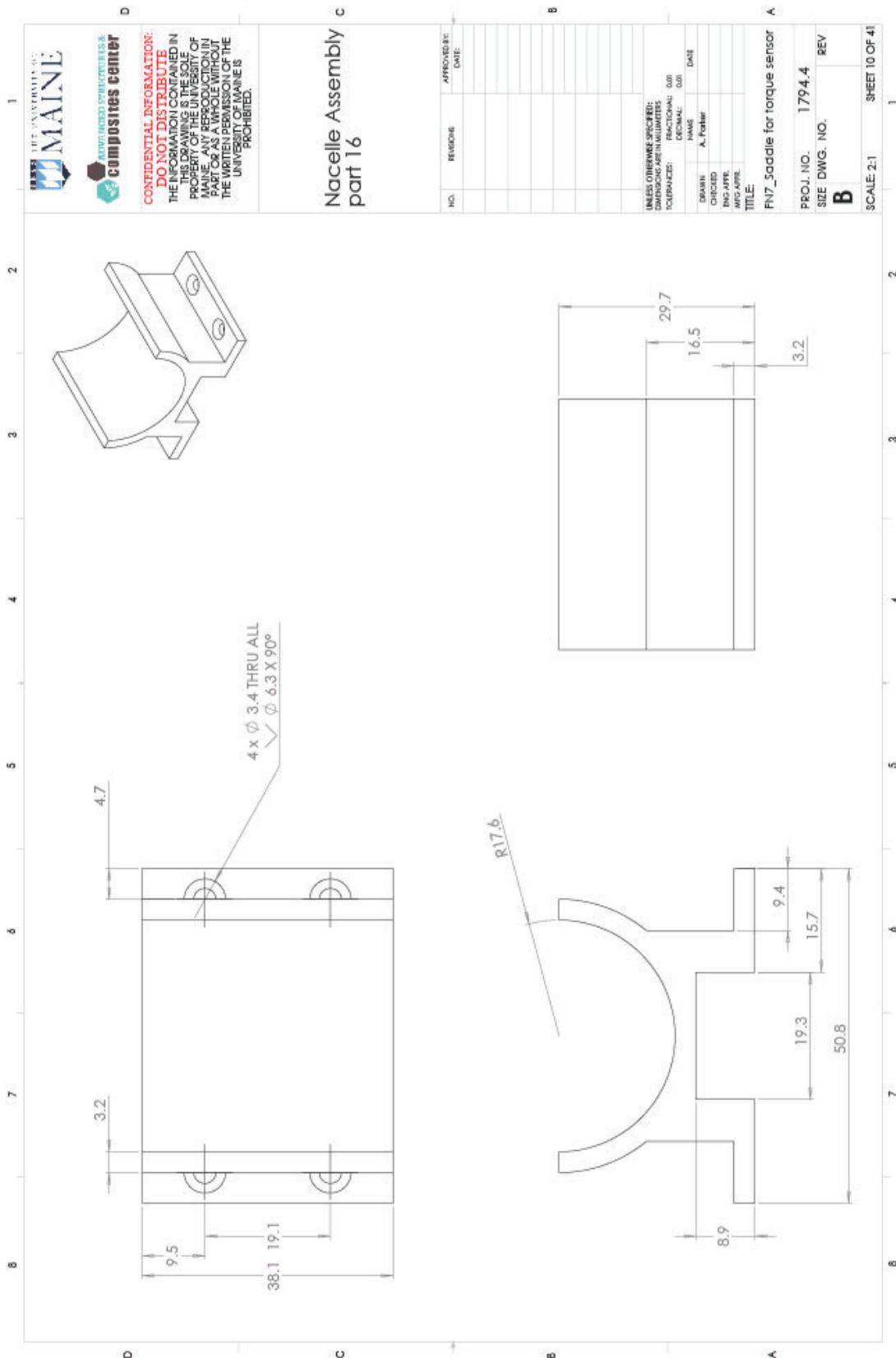
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 DECIMAL: 0.00
 NAME: DATE:
 DRAWN BY: A. Parker
 CHECKED BY: REV:
 MFG APP: TITLE:
 T_Tilt Assembly

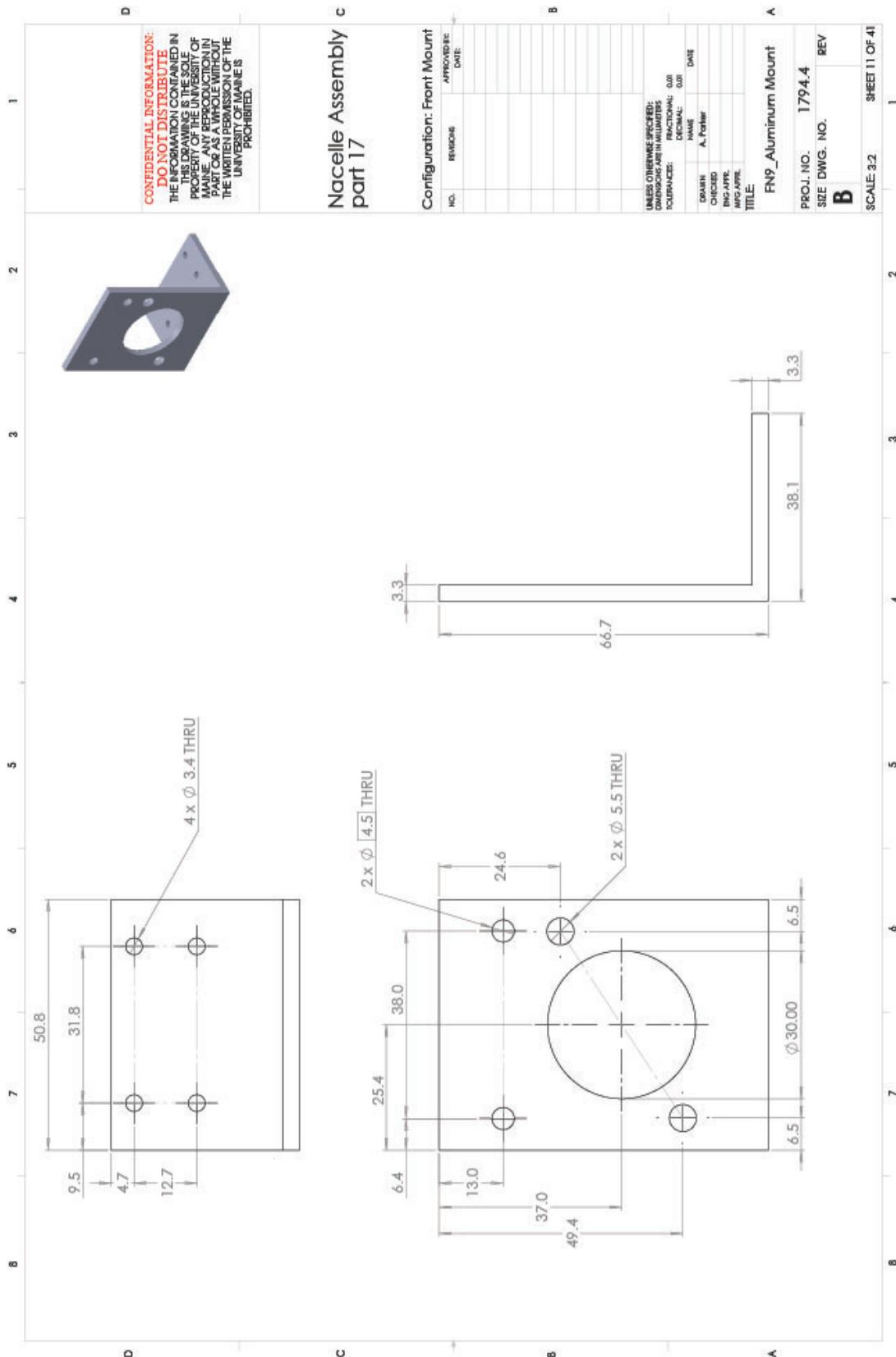
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 SIZE DWG. NO. B REV
 SHEET 6 OF 41
 SCALE: 3:2

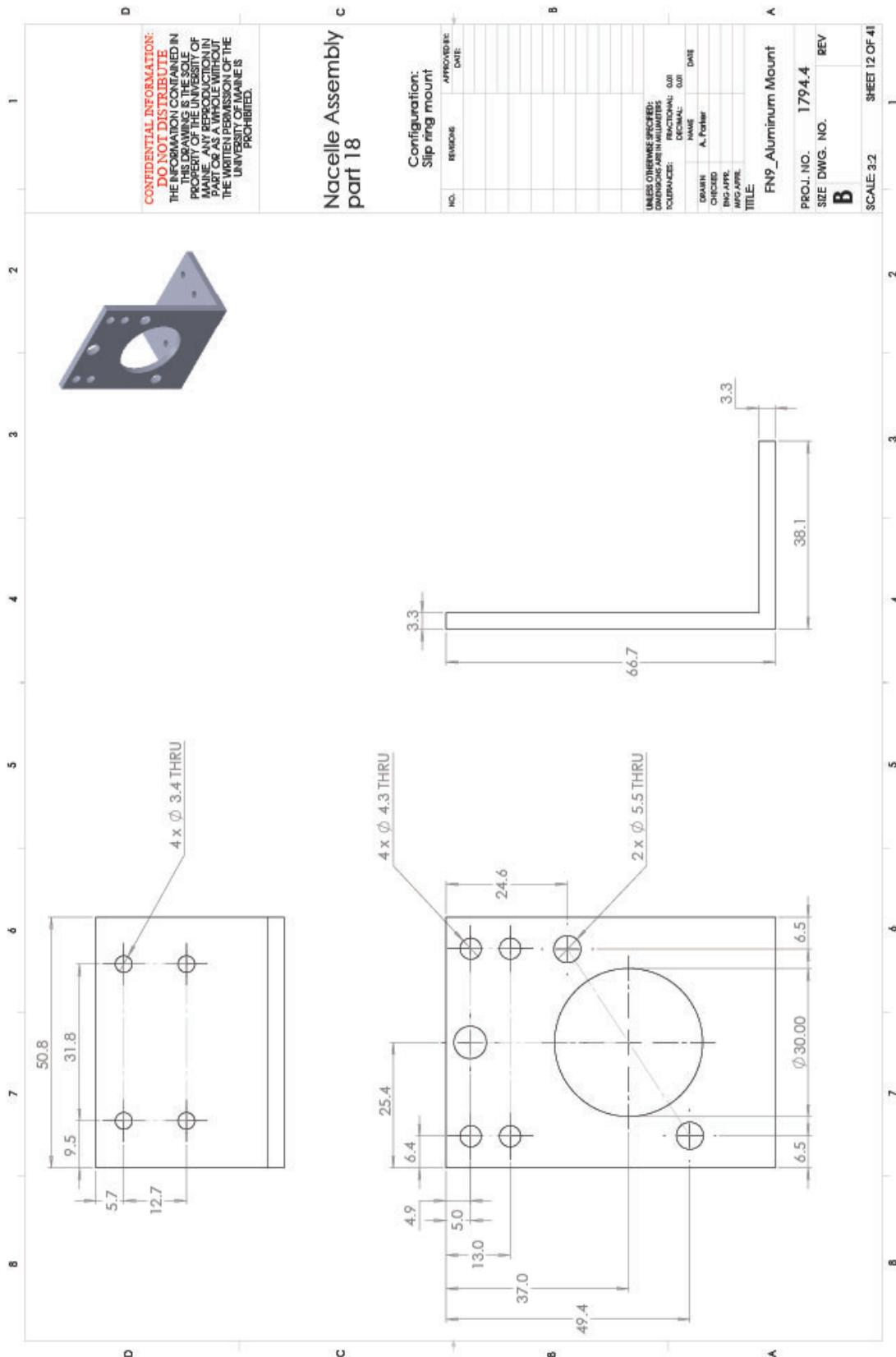


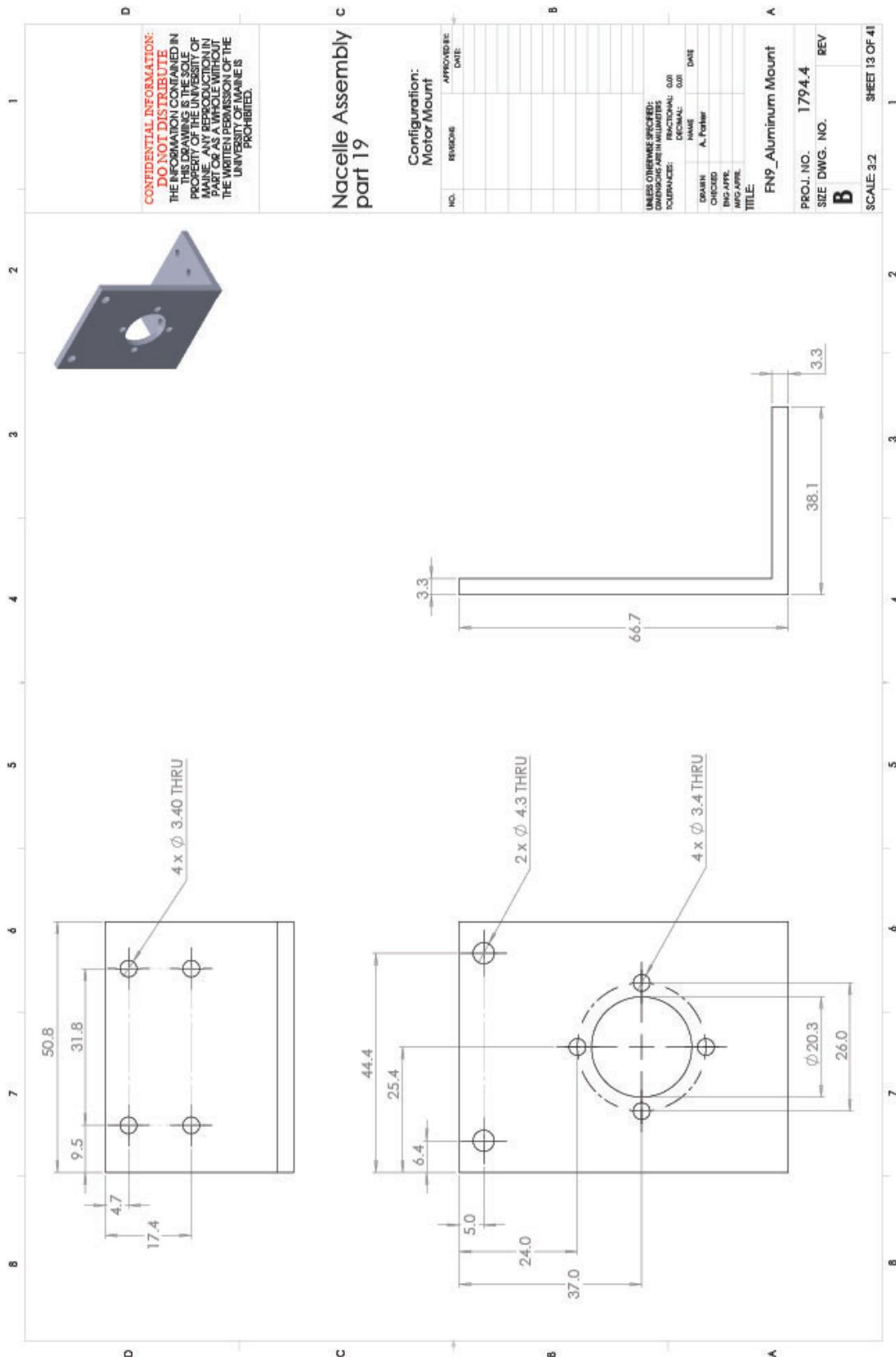


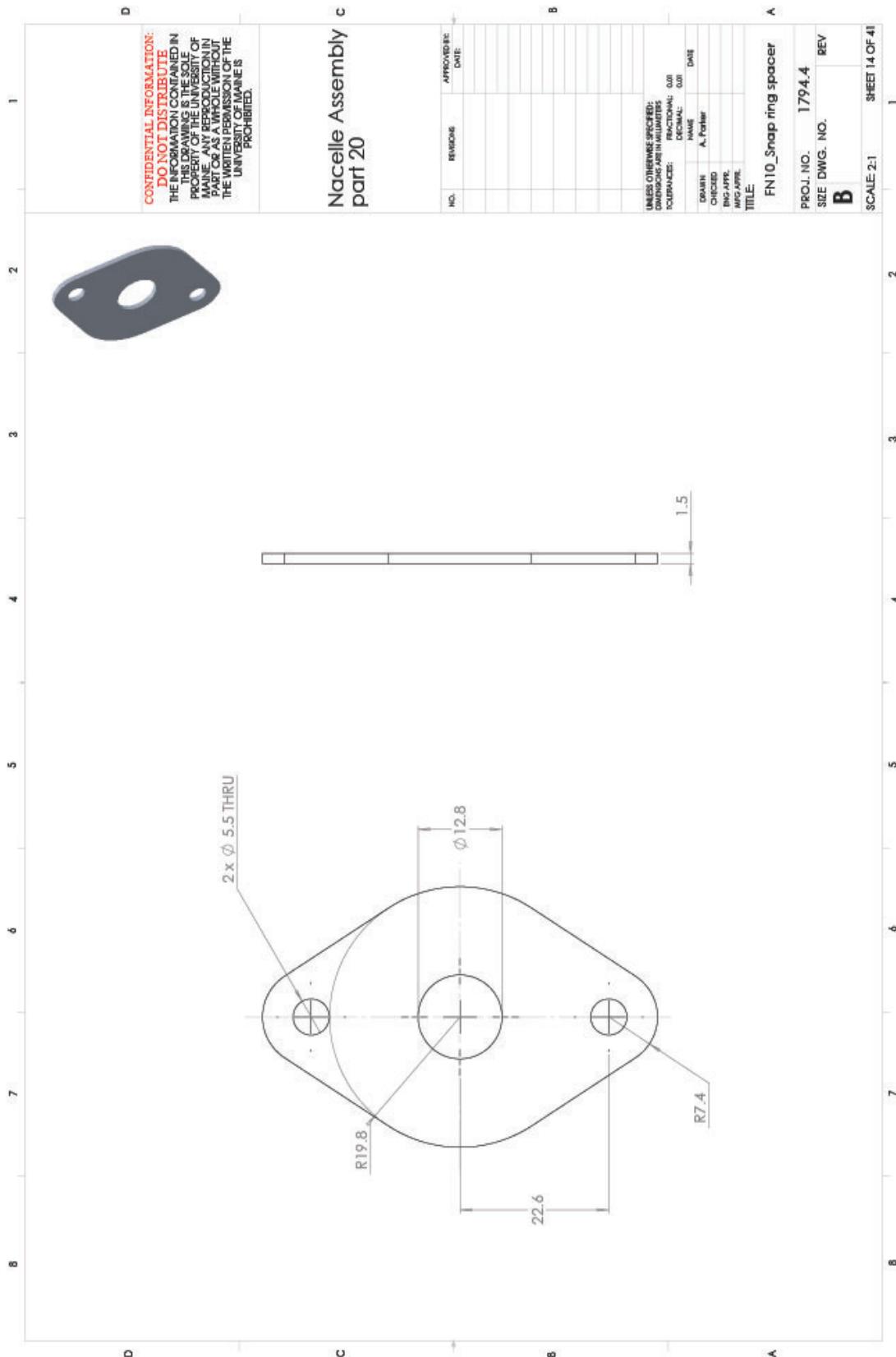


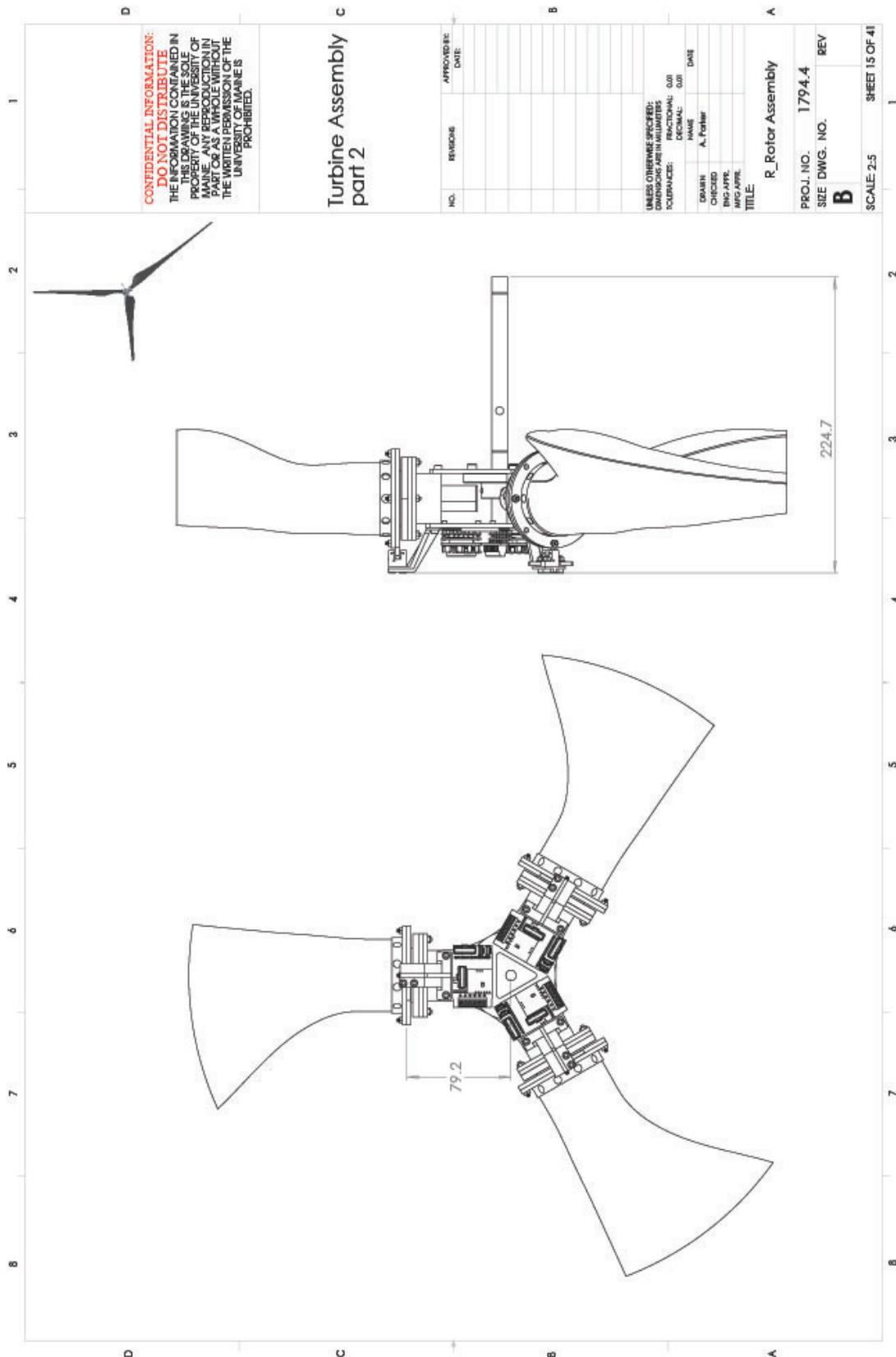












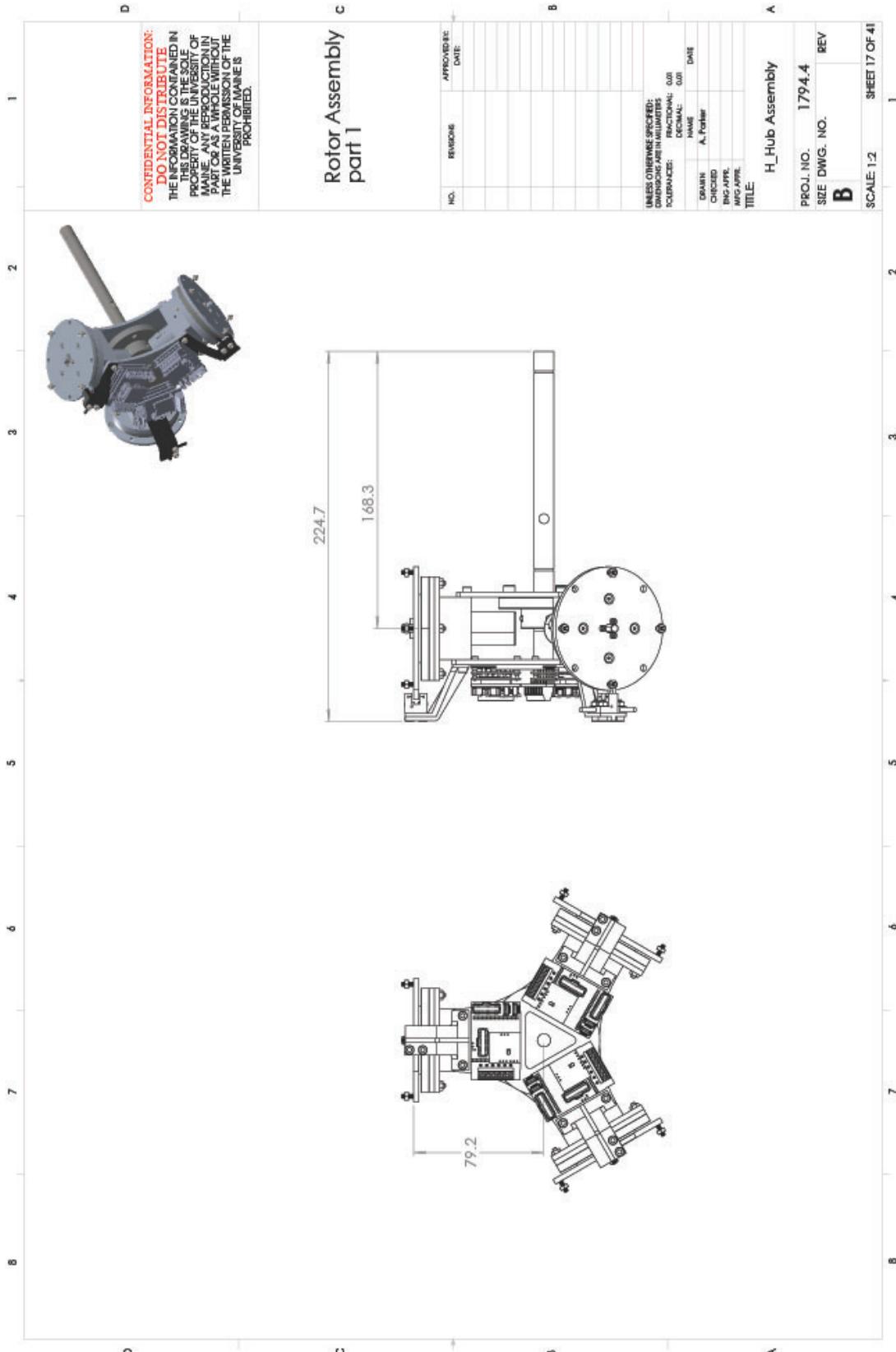
ITEM NO.	PART NUMBER	QTY.	
1	H_Hub Assembly	1	
D	2	Blade Assembly Average	3

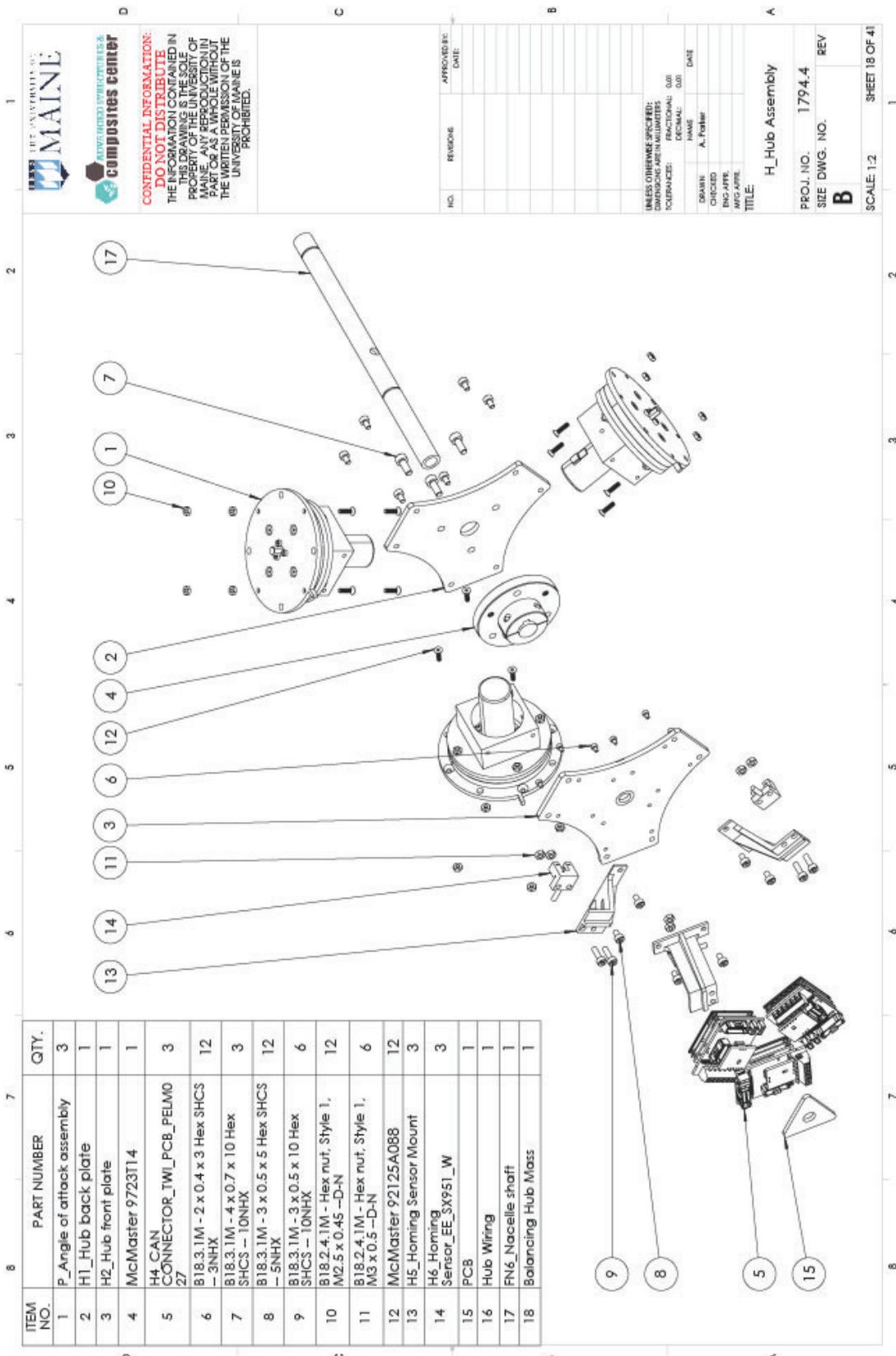
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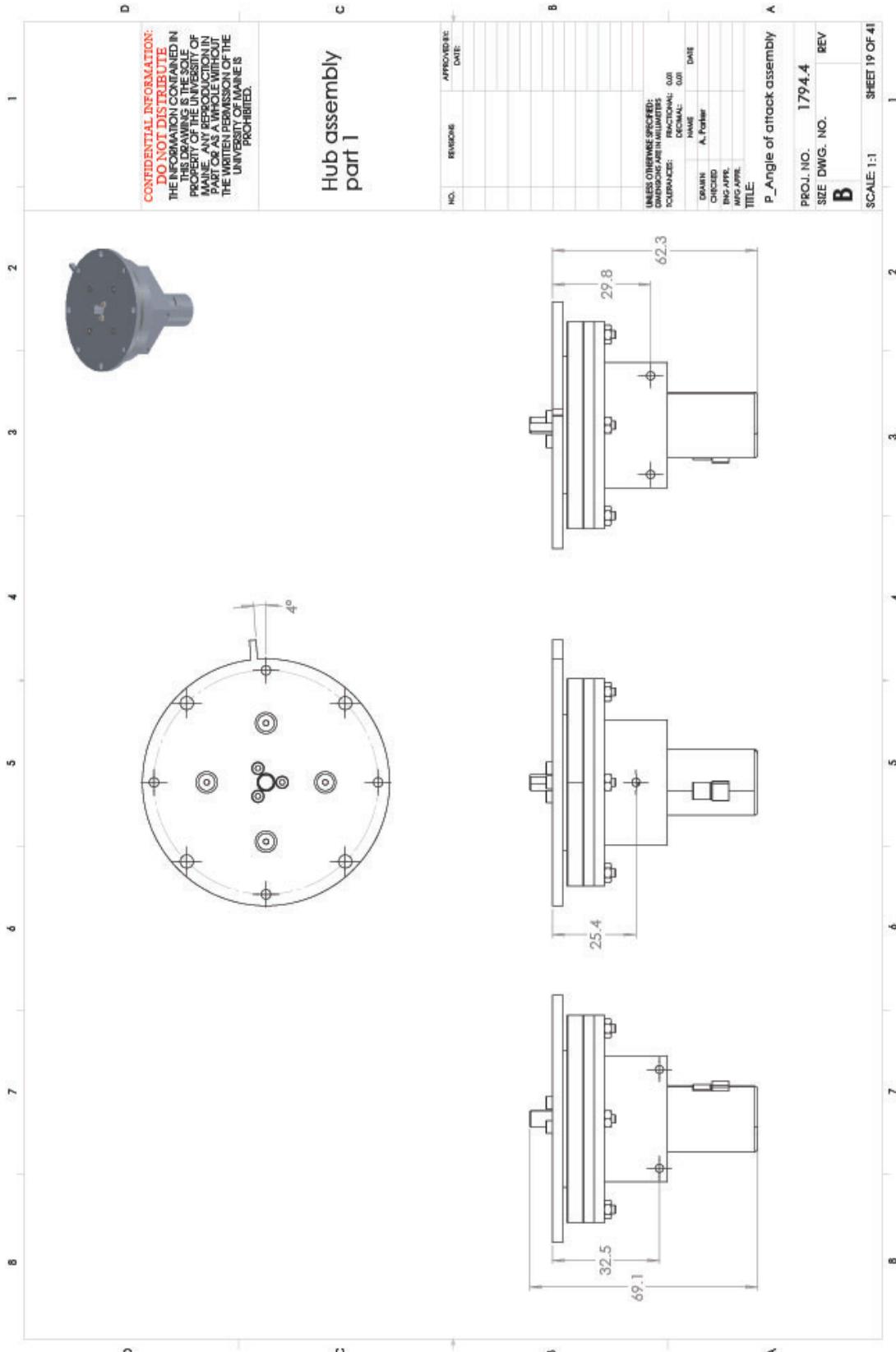
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TOLERANCES: FRACTIONAL: 0.00
DECIMAL: 0.00
NAME: DATE:
DRAWN BY: A. Parker
CHECKED BY: REV:
MFG APP: TITLE:
R_Rotor Assembly

PROJ. NO. 1704.4
SIZE DWG. NO. B REV:
SCALE 1:2 SHEET 16 OF 41







ITEM NO.	PART NUMBER	QTY.
1	P1_Pitch Transducer_RSF-5B-XXX-US050-BIC	1
D 2	P2_Bearing_CRBTF305AT	1
3	McMaster 92125A008	6
4	B18.3.1M - 2.5 x 0.45 x 12 Hex SHCS - 12NHX	4
5	B18.3.1M - 2 x 0.4 x 12 Hex SHCS - 12NHX	2
6	B18.3.1M - 2 x 0.4 x 3 Hex SHCS - 3NHX	3
C 7	B18.2.4.1M - Hex nut, Style 1, M2 x M2.5 x 0.45 -D_N	4
8	B18.2.4.1M - Hex nut, Style 1, M2 x 0.4 -D_N	2
9	P3_Mounting block	1
10	P4_Bearing mount 2	1
11	P5_Bearing mount 3	1
B 12	P6_Attachment hub 2	1
13	P7_Attachment hub 3	1

1 2 3 4 5 6 7 8 9 10 11 12 13

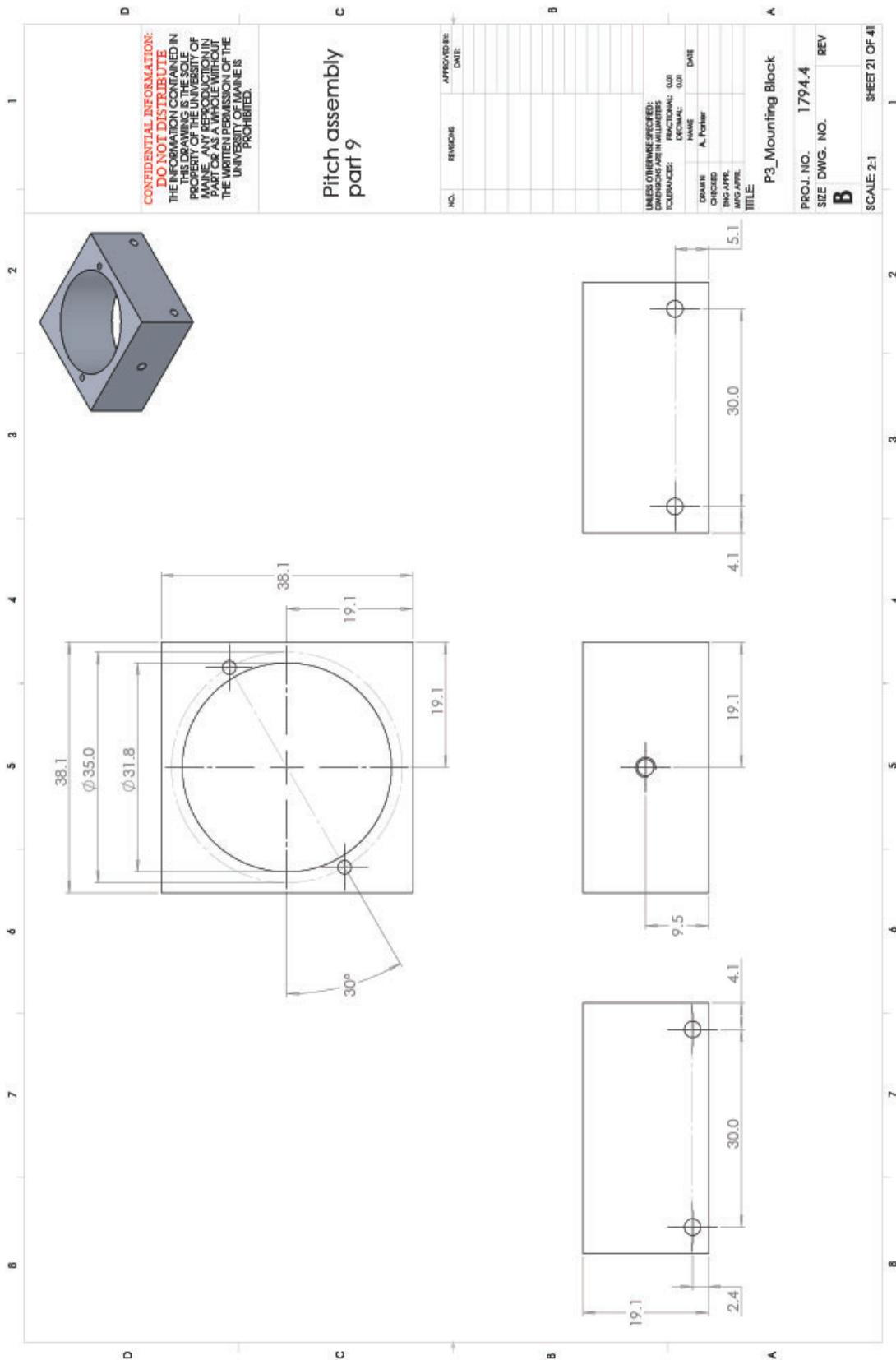
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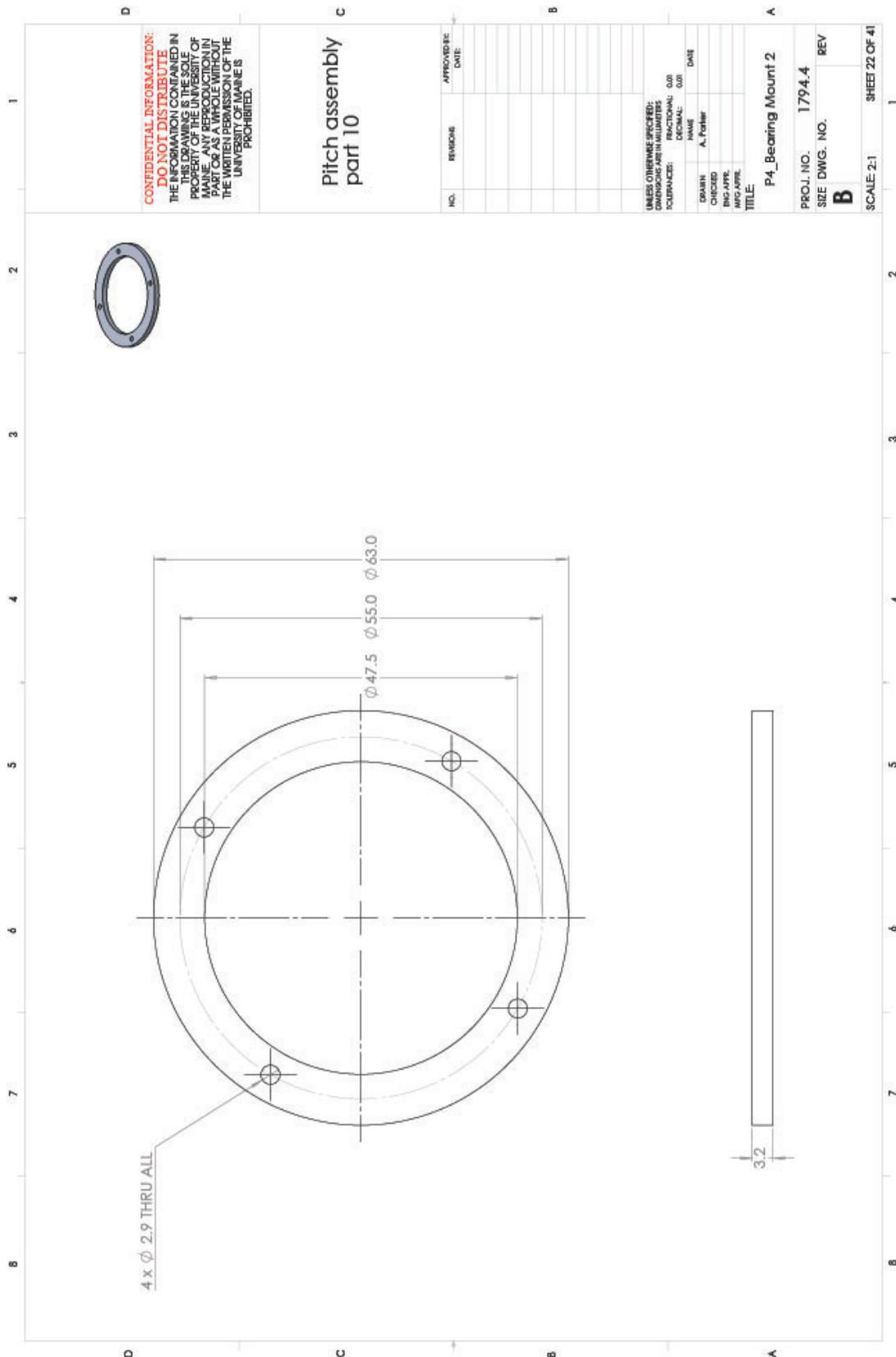
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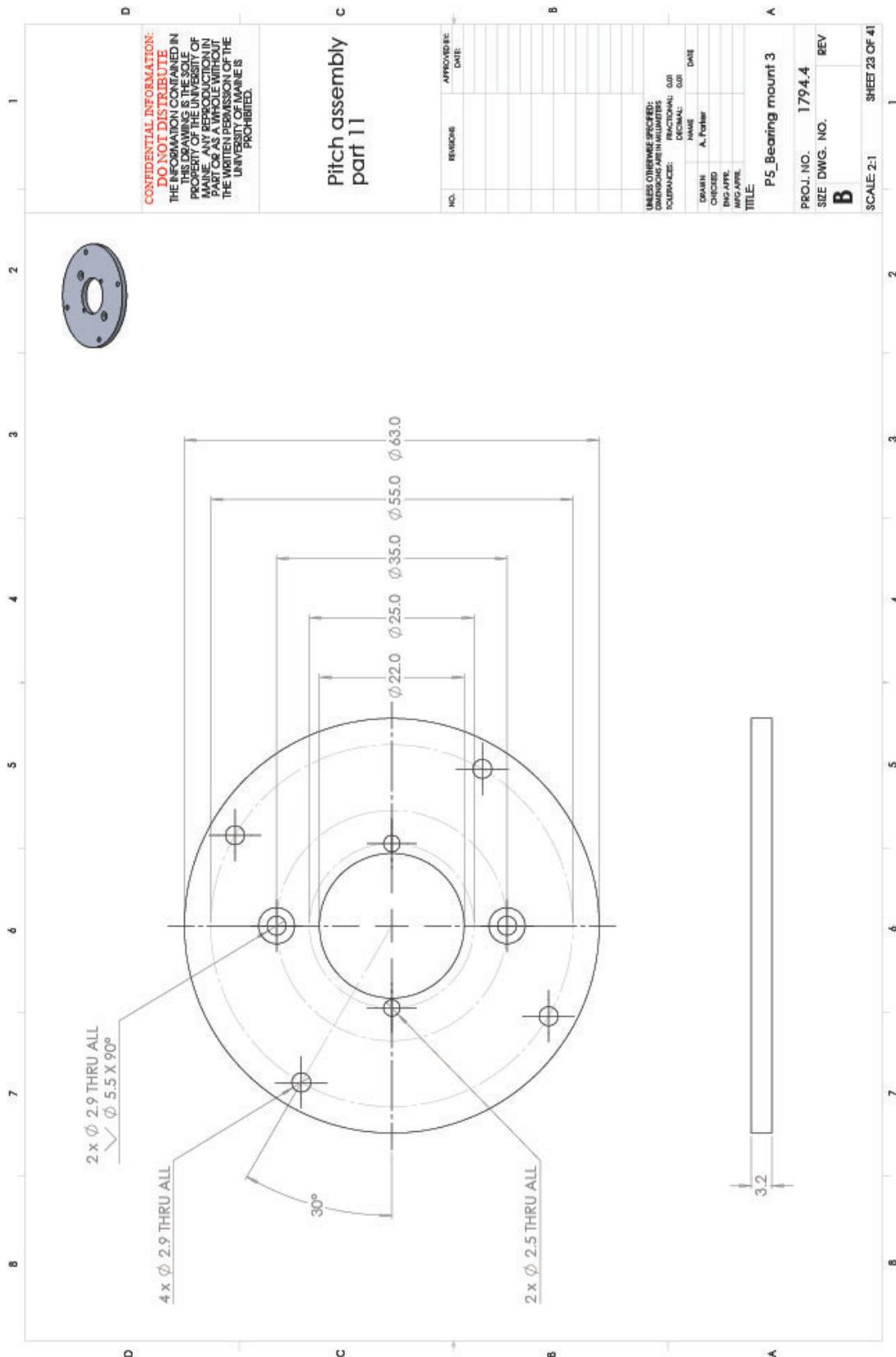
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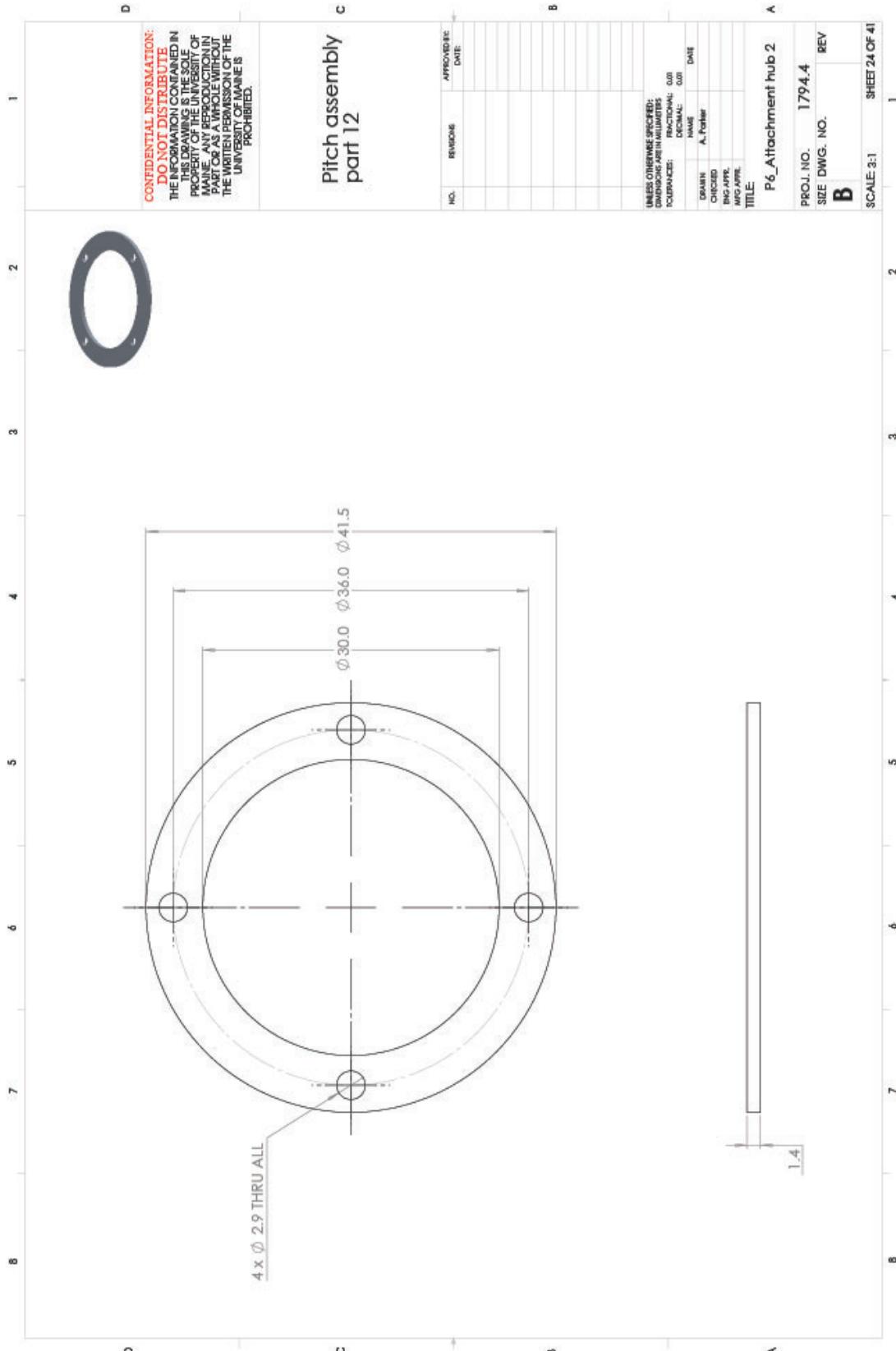
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TOLERANCES: FRACTIONAL: 0.00
DECIMAL: 0.00
NAME: DATE:
DRAWN BY: A. Parker
CHECKED BY: REV:
THG APP: WIG APP:
TITLE: P_Angle of attack assembly A

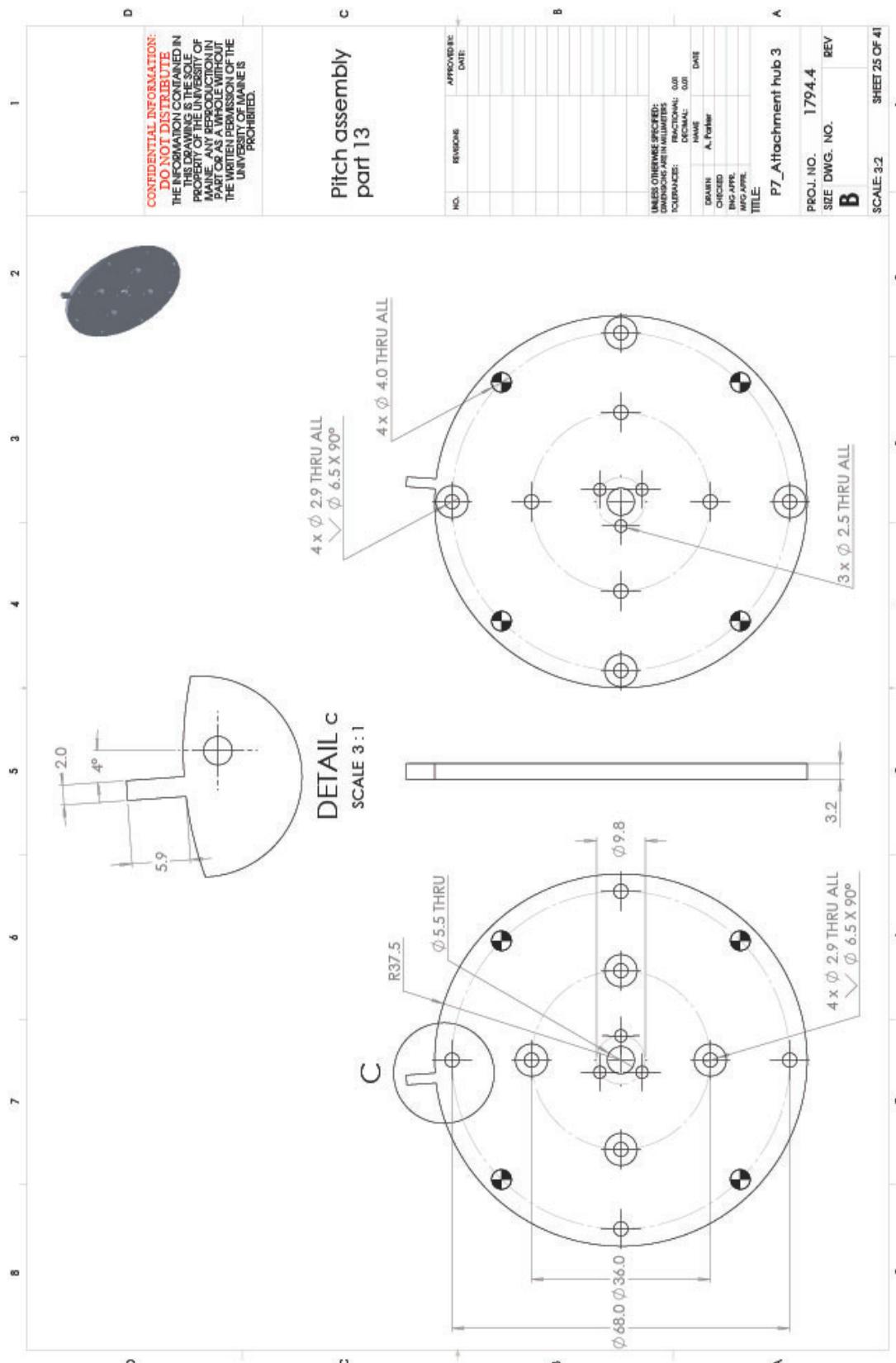
PROJ. NO. 1704.4
SHEET DWG. NO. B
REV: 1
SCALE: 1:1 SHEET 20 OF 41

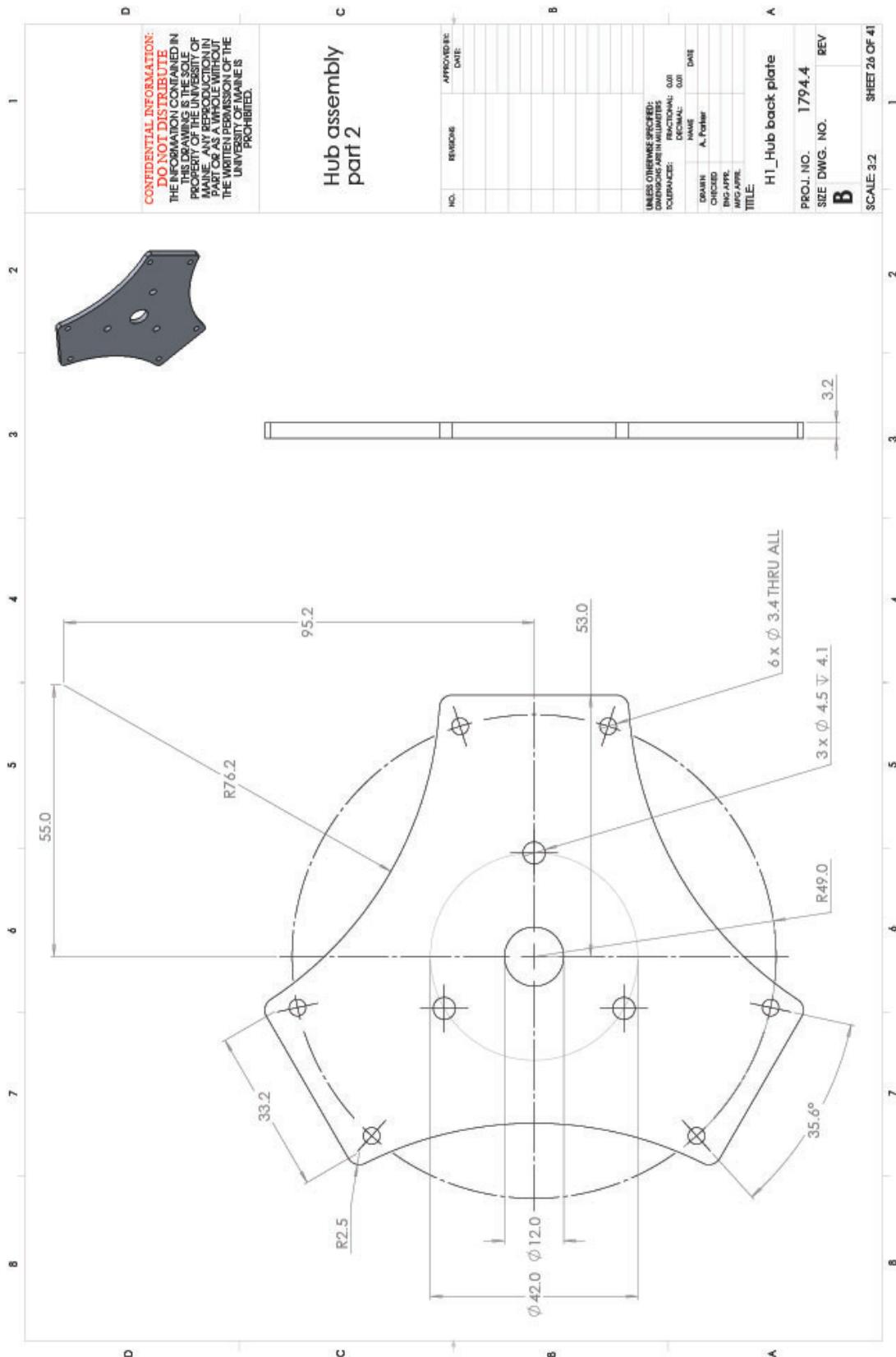


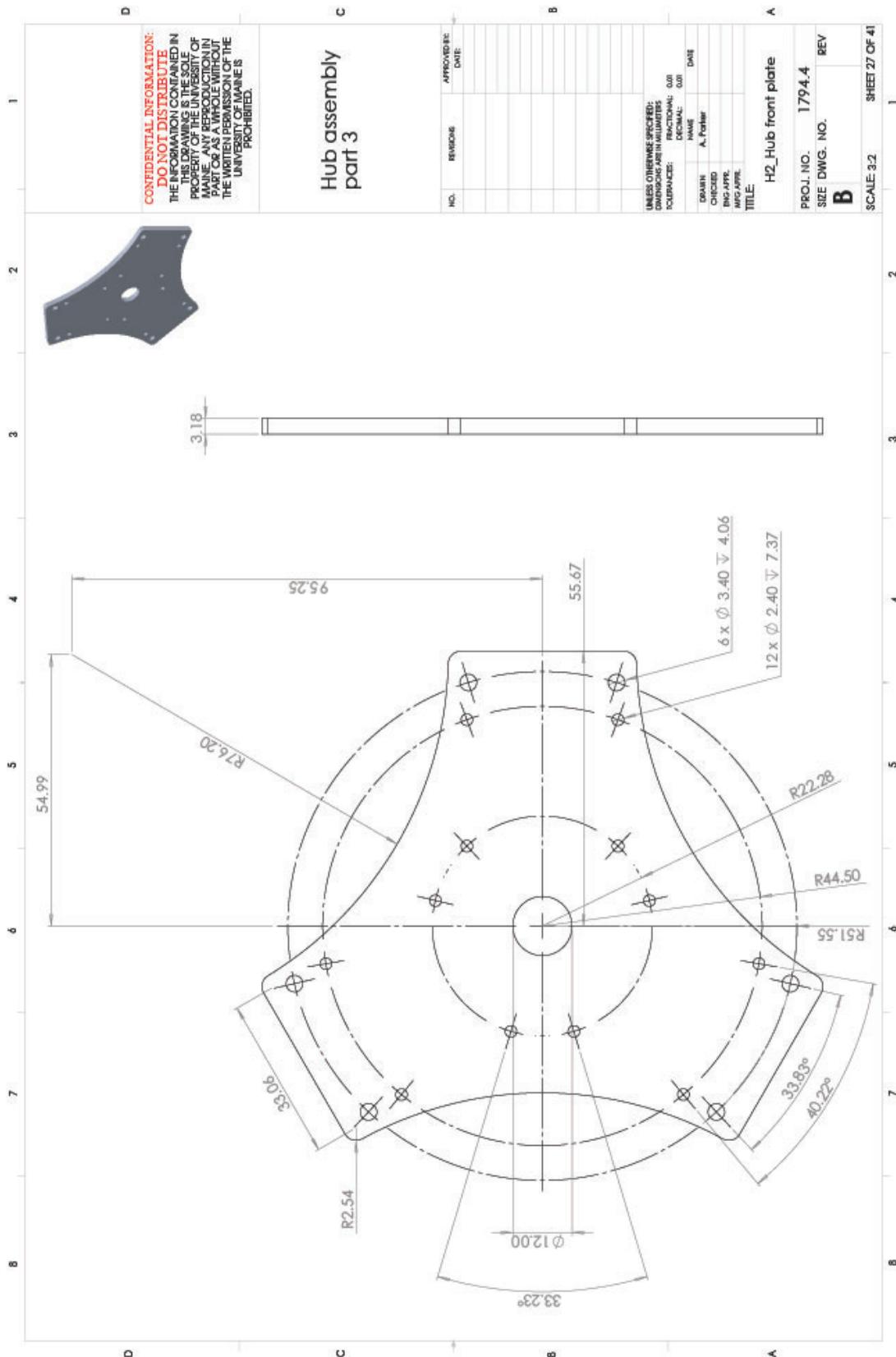


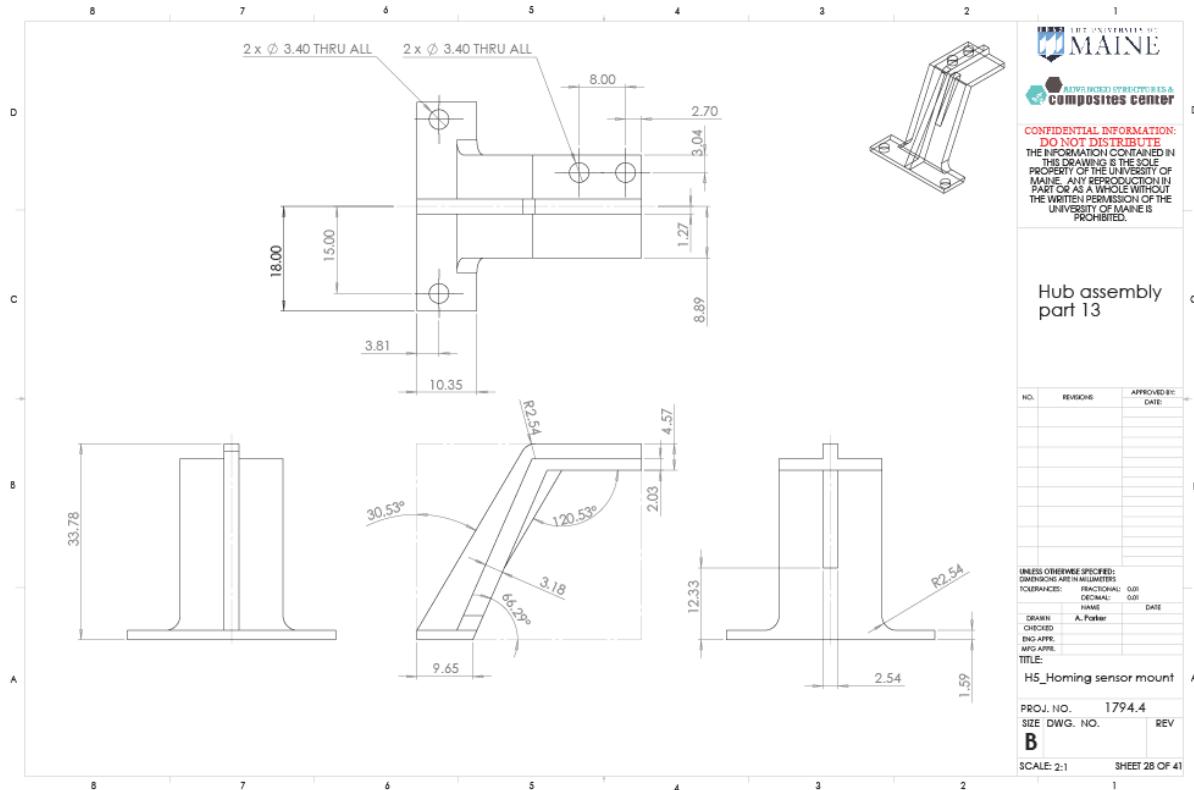


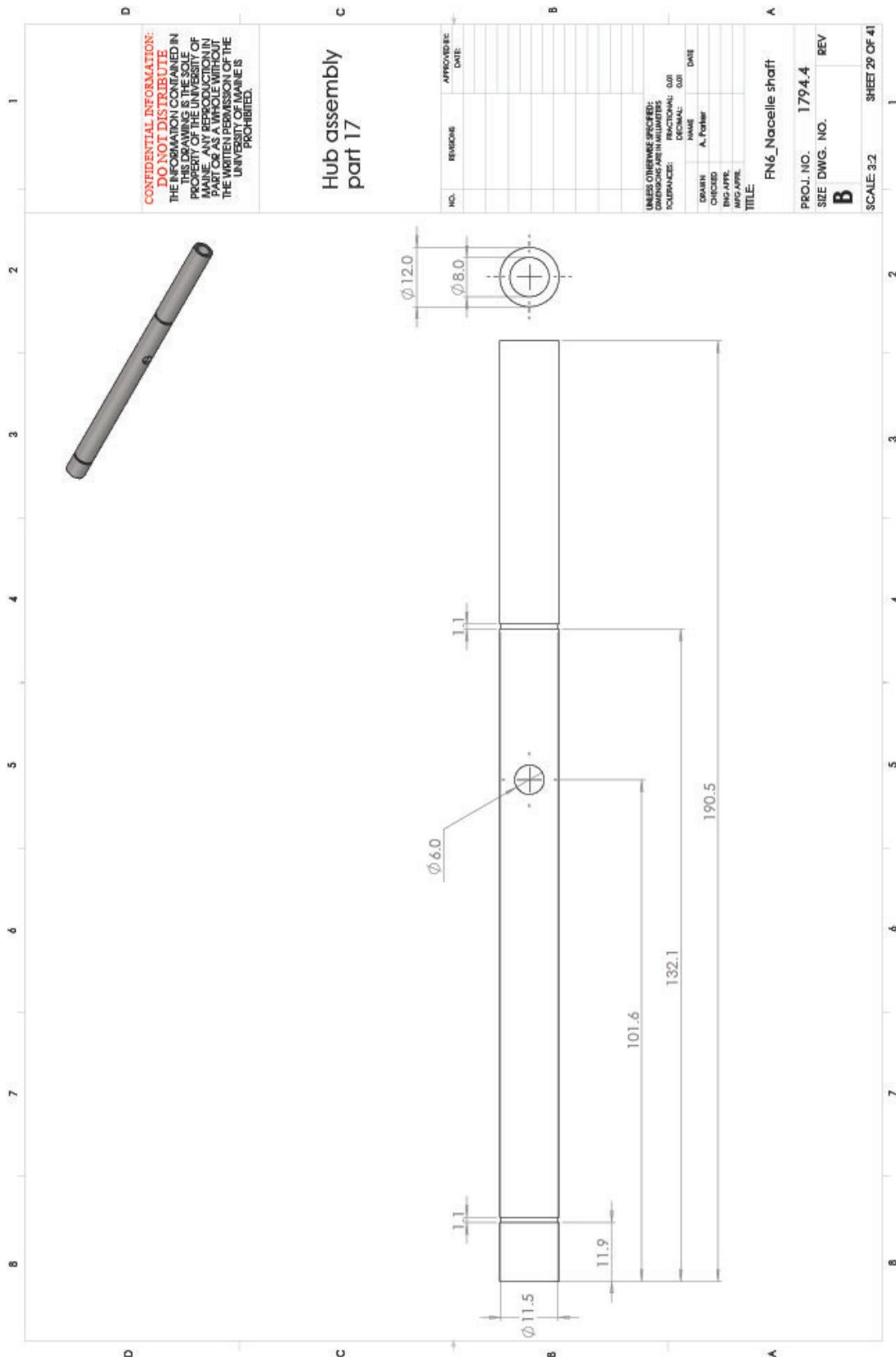


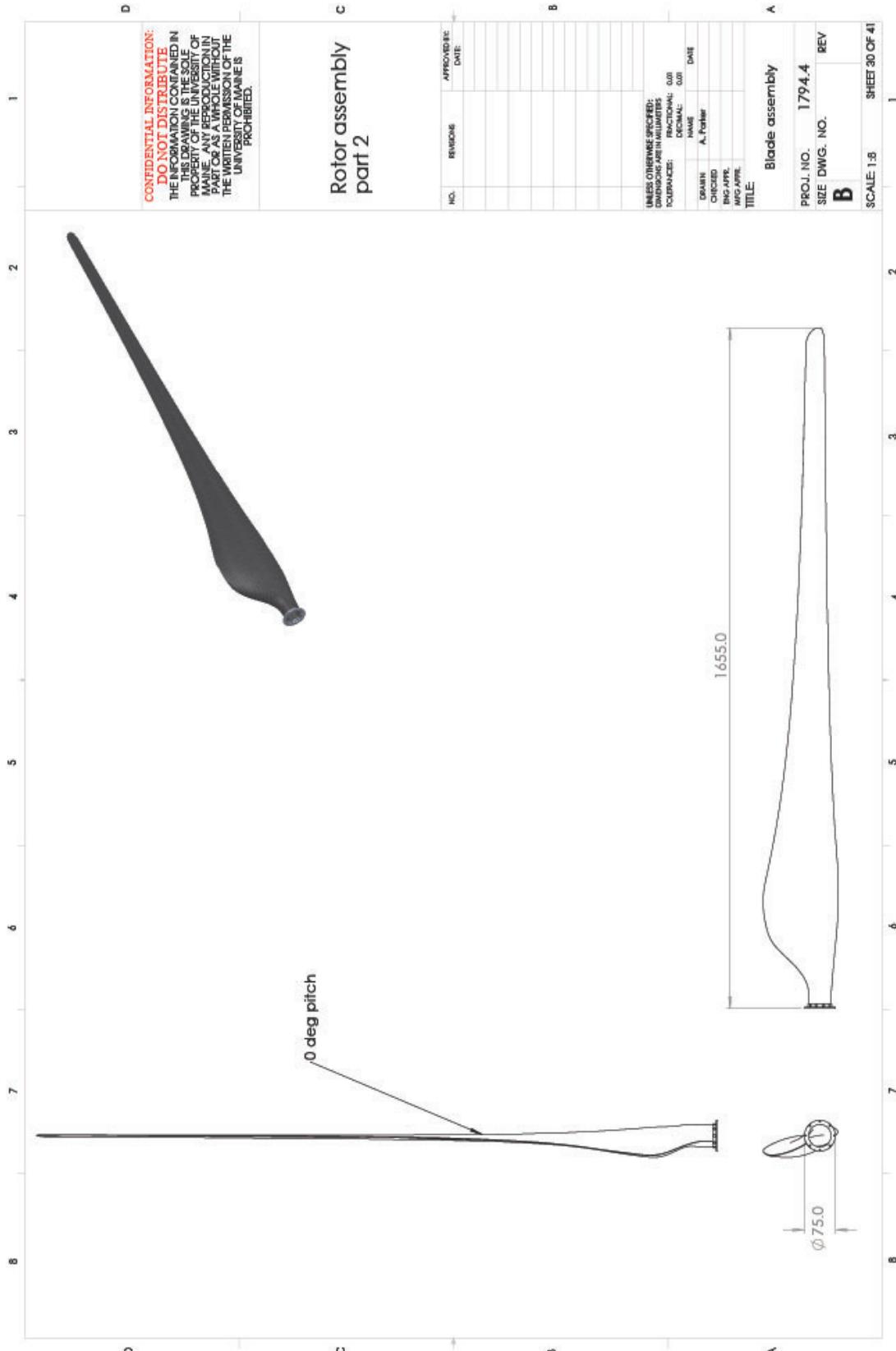




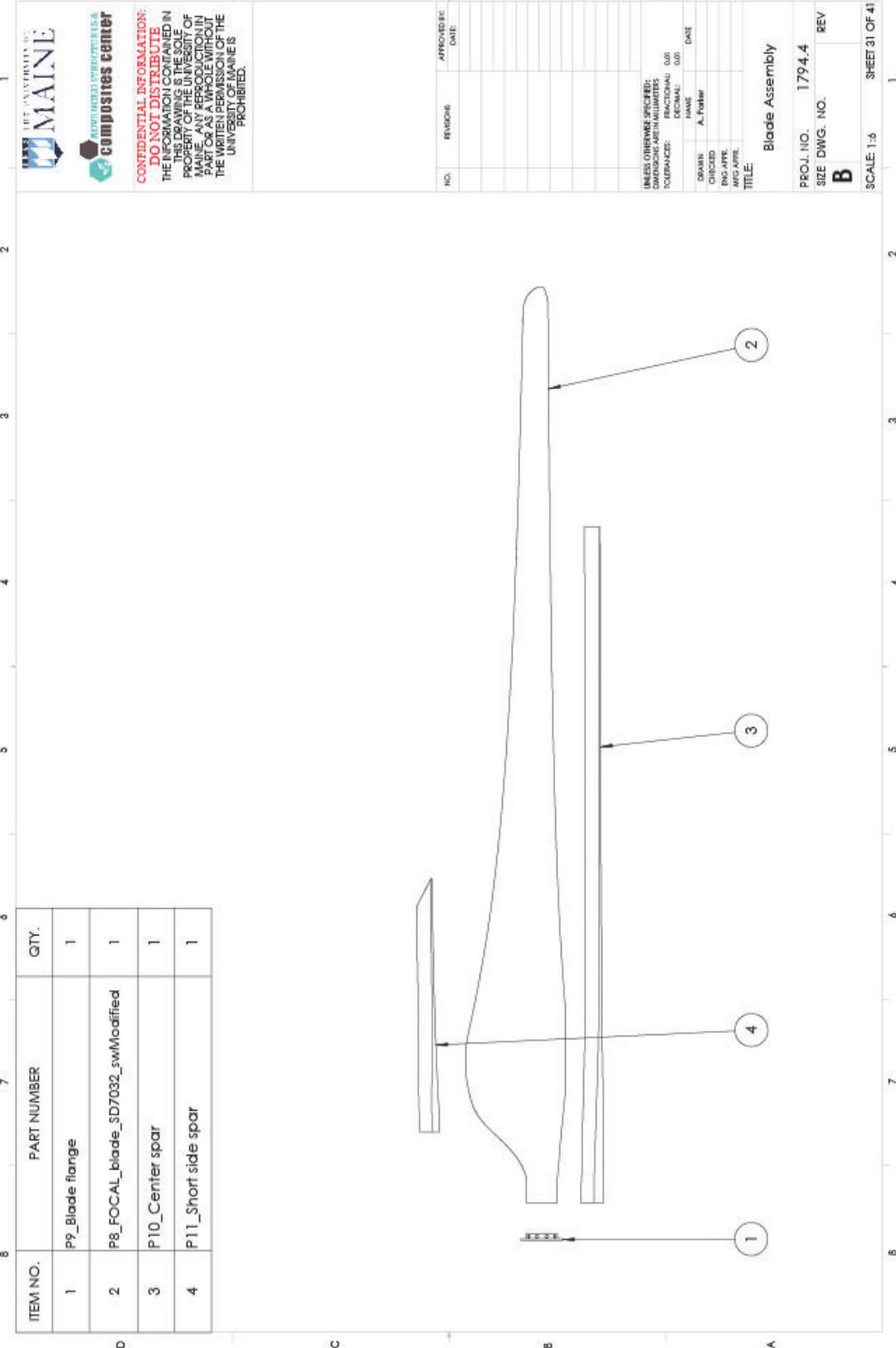


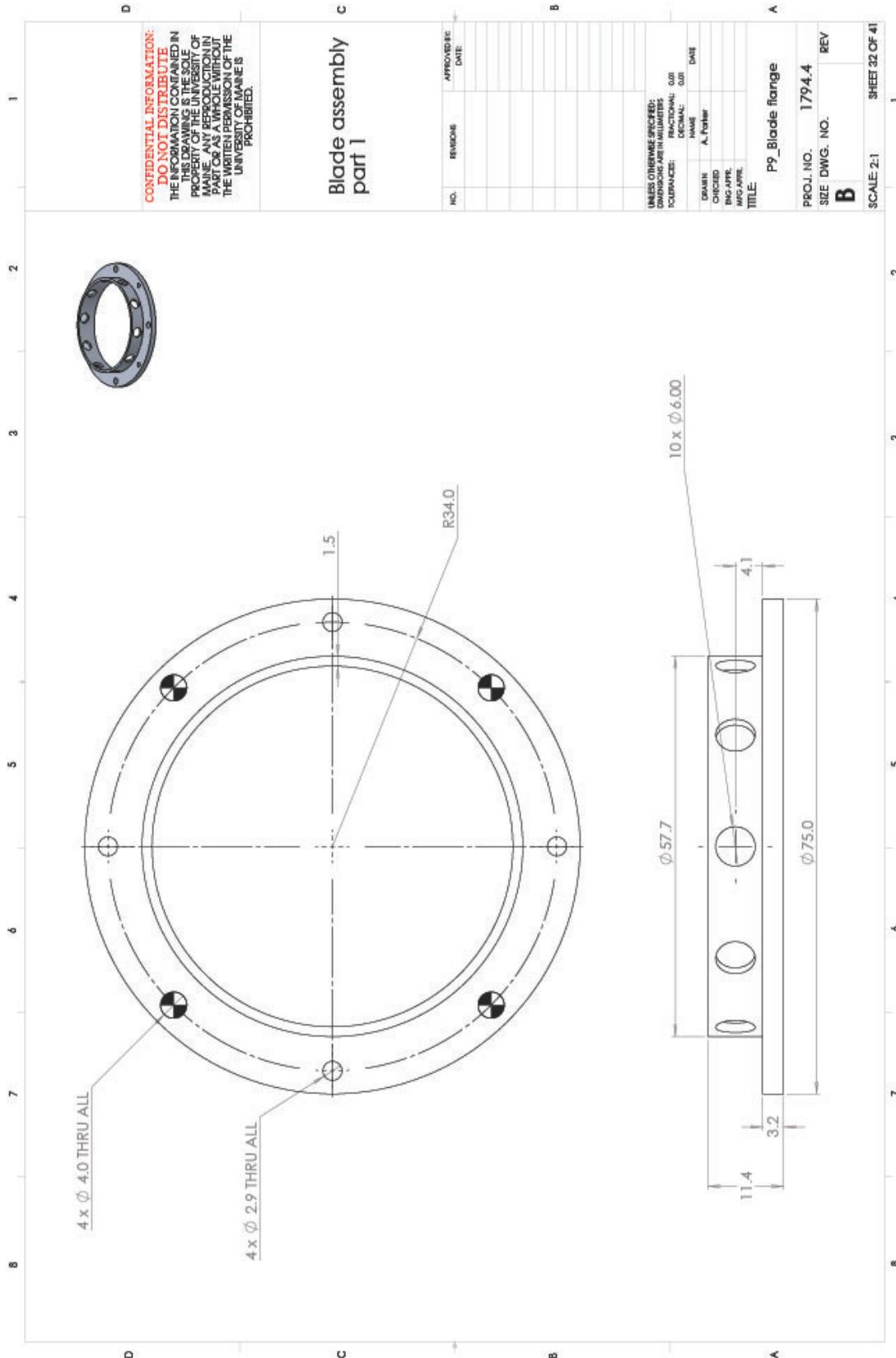


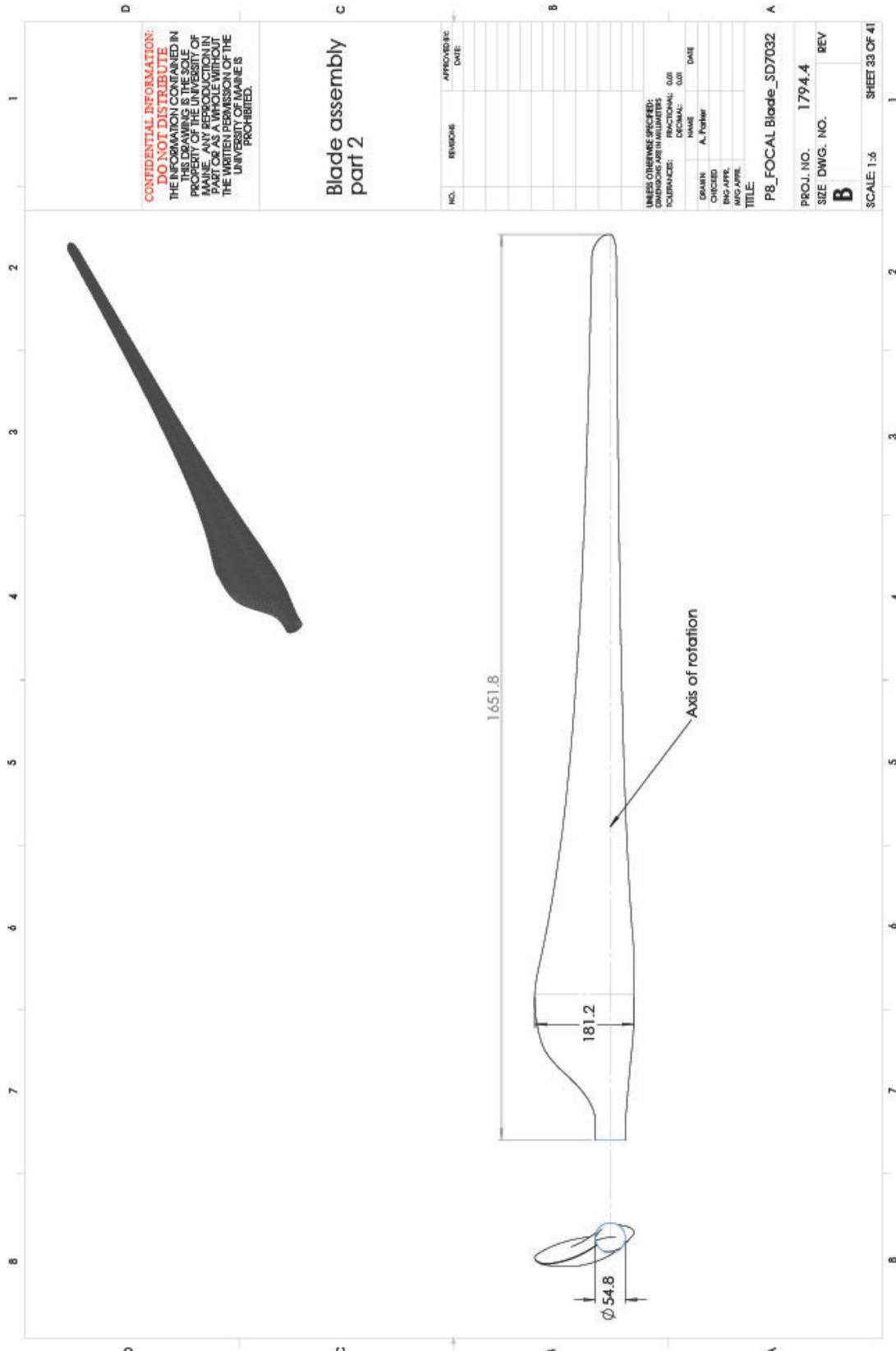


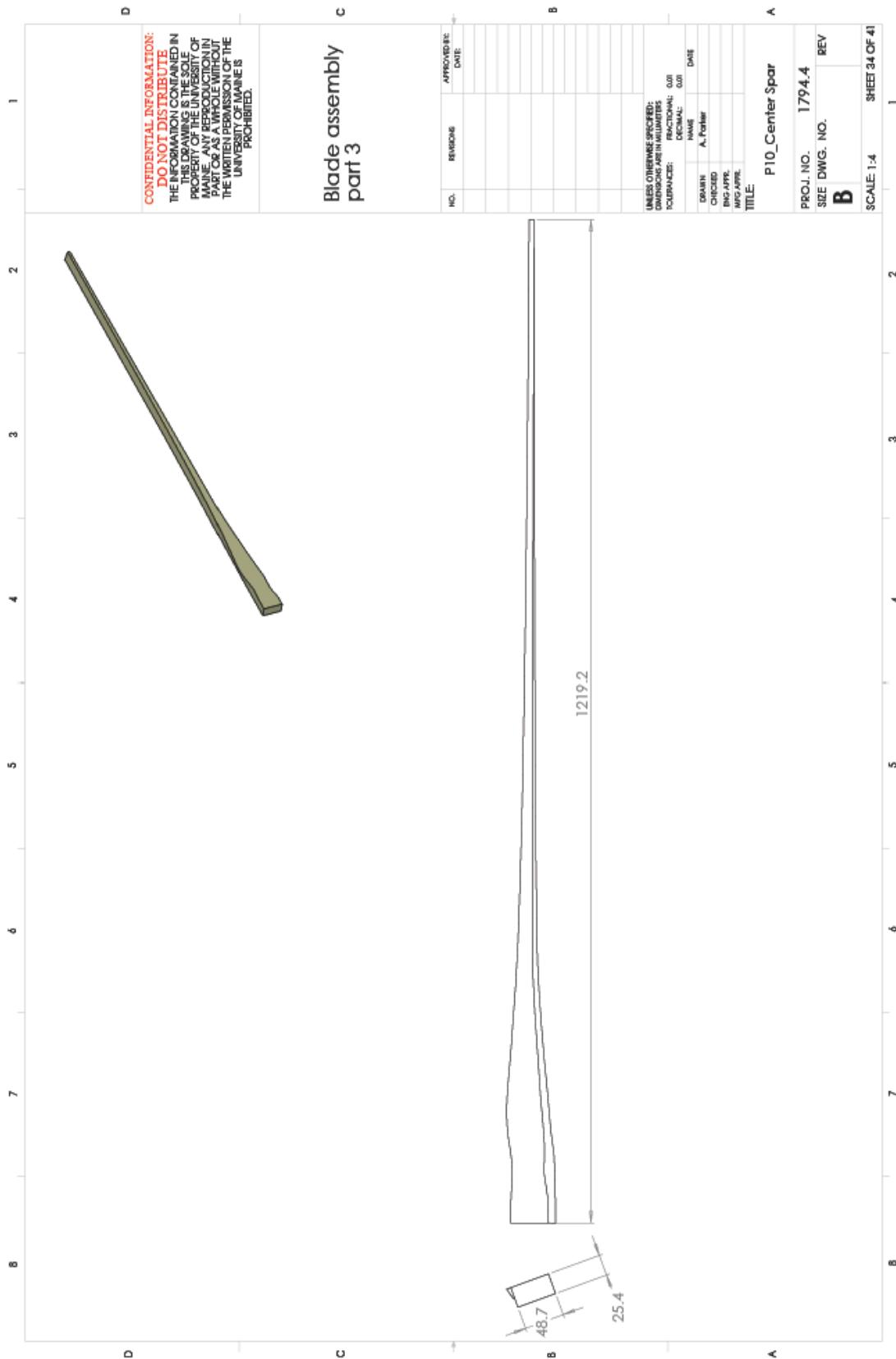


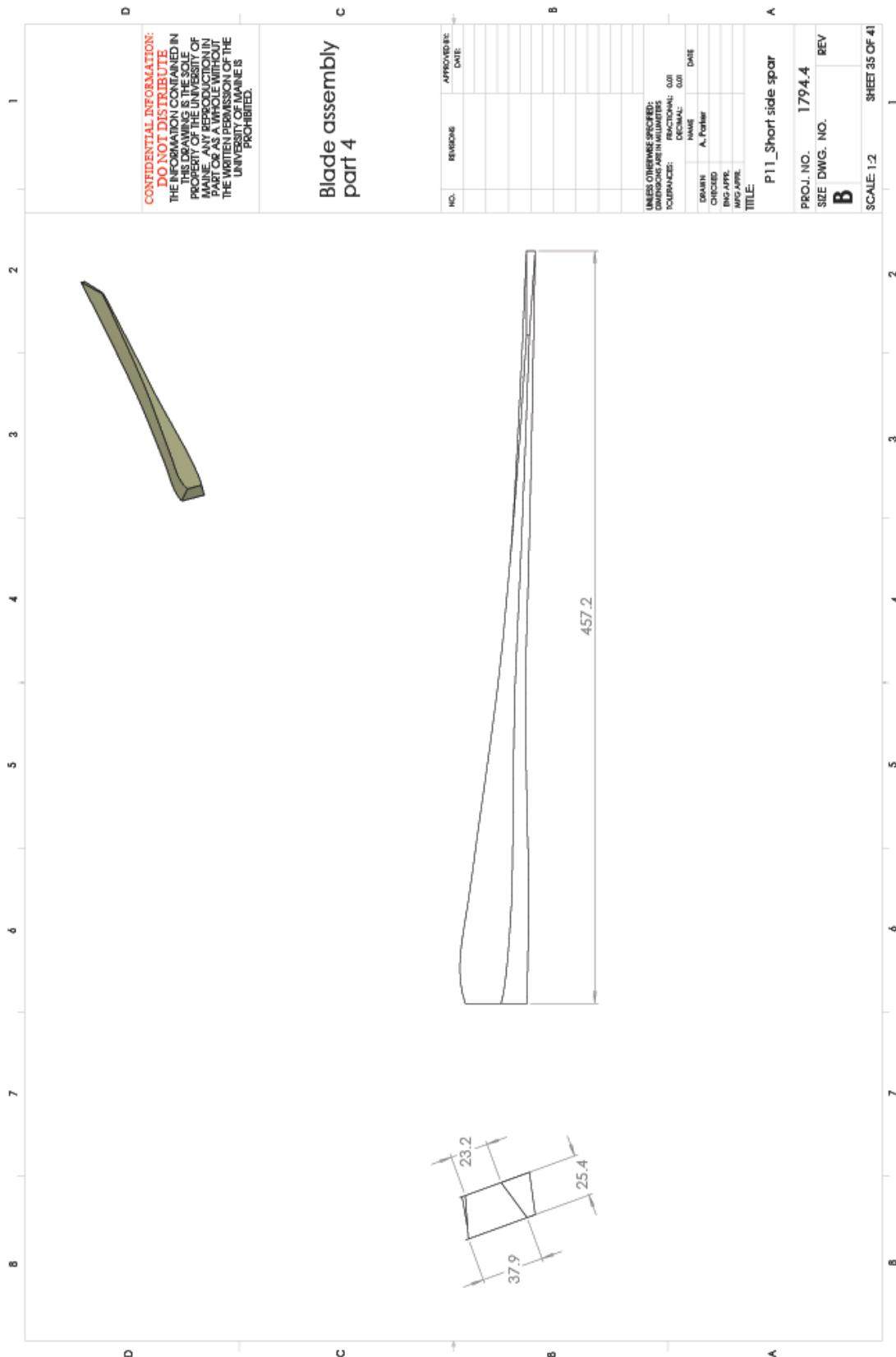
ITEM NO.	PART NUMBER	QTY.
1	P9_Blade flange	1
2	P8_FOCAL_blade_SD7032_swModified	1
3	P10_Center spar	1
4	P11_Short side spar	1

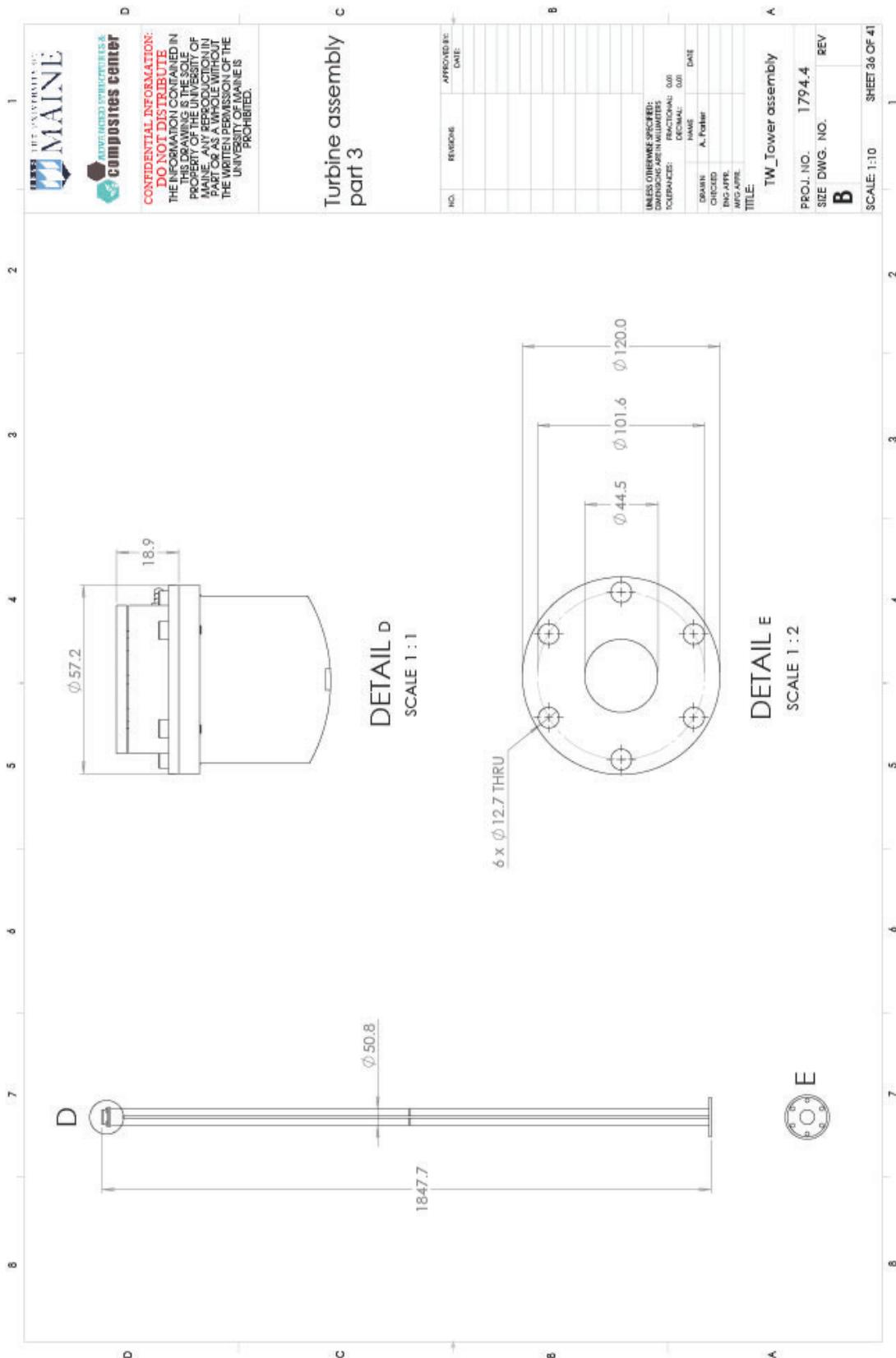












ITEM NO.	PART NUMBER	QTY.
1	TW1_Tower base plate	1
D 2	TW2_Tower	1
3	TW3_Top tower plate	1
4	TW4_Force Sensor Mount Tower	1
5	B18.3.5M - 3 x 0.5 x 10 Socket PCHS - 10N	6
6	TW5_AT1-9105-TW-MINI45-R	1
C 7	B18.3.1M - 3 x 0.5 x 10 Hex SHCS -- 10NHX	5
8	Tower Added Mass	1
9	Tower Wire Tail	1

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DECIMAL: 0.00
DRAWN BY: A. Parker
CHECKED BY: B.
MFG APP: C.
TITLE: TW_Tower assembly

NO. PENDING APPROVED BY: DATE:

PROJ. NO. 1704.4
SIZE DWG. NO. REV
B

SCALE 1:2 SHEET 37 OF 41

