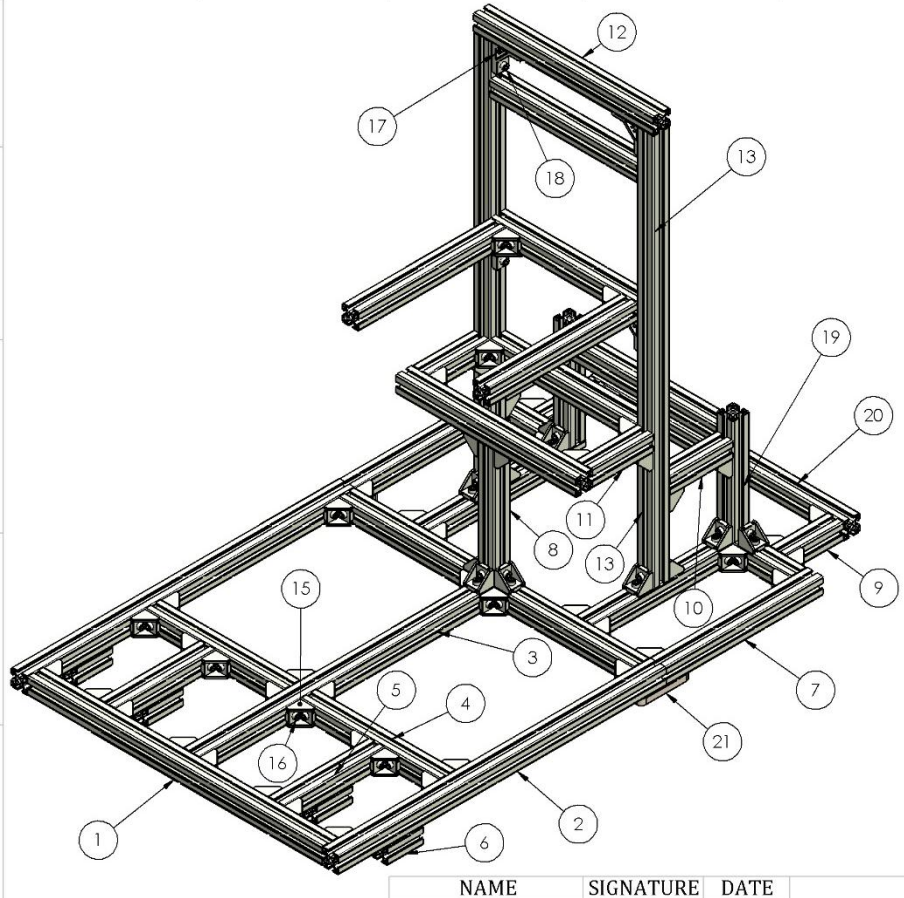
ภาคผนวก ค

Drawing โครงสร้างและชิ้นส่วนทางกล ของหุ่นยนต์เคลื่อนที่ด้วยล้อ แบบ 3 ล้อ

ควบคุมการเคลื่อนที่โดยใช้โค้ดคำสั่ง



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Aluminum profile_1	HFSY6 - HFSY6 30mm Square Aluminum Length 540 mm.	2
2	Aluminum profile_2	HFSY6 - HFSY6 30mm Square Aluminum Length 600 mm.	2
3	Aluminum profile_3	HFSY6 - HFSY6 30mm Square Aluminum Length 433 mm.	1
4	Aluminum profile_4	HFSY6 - HFSY6 30mm Square Aluminum Length 225 mm.	2
5	Aluminum profile_5	HFSY6 - HFSY6 30mm Square Aluminum Length 185 mm.	2
6	Aluminum profile_6	HFSY6 - HFSY6 30mm Square Aluminum Length 65 mm.	4
7	Aluminum profile_7	HFSY6 - HFSY6 30mm Square Aluminum Length 288 mm.	4
8	Aluminum profile_8	HFSY6 - HFSY6 30mm Square Aluminum Length 160 mm.	1
9	Aluminum profile_9	HFSY6 - HFSY6 30mm Square Aluminum Length 105 mm.	4
10	Aluminum profile_10	HFSY6 - HFSY6 30mm Square Aluminum Length 146 mm.	2
11	Aluminum profile_11	HFSY6 - HFSY6 30mm Square Aluminum Length 112 mm.	2
12	Aluminum profile_12	HFSY6 - HFSY6 30mm Square Aluminum Length 330 mm.	2
13	Aluminum profile_13	HFSY6 - HFSY6 30mm Square Aluminum Length 720 mm.	2
14	Aluminum profile_14	HFSY6 - HFSY6 30mm Square Aluminum Length 270 mm.	6
15	Aluminum profile brackets 30 X 30 mm. (1)		67
16	Socket cap screw M6X12 + T-nut M6 (1)		138
17	Aluminum profile brackets 30 X 30 mm. (2)		4
18	Socket cap screw M6X16 + T-nut M6 (2)		8
19	Aluminum profile_15	HFSY6 - HFSY6 30mm Square Aluminum Length 134 mm.	2
20	Aluminum profile_16	HFSY6 - HFSY6 30mm Square Aluminum Length 465 mm.	1
21	ตัวต่อตาม Aluminum profile		2

NAME	SIGNATURE	DATE

โครงสร้างของหุ่นยนต์

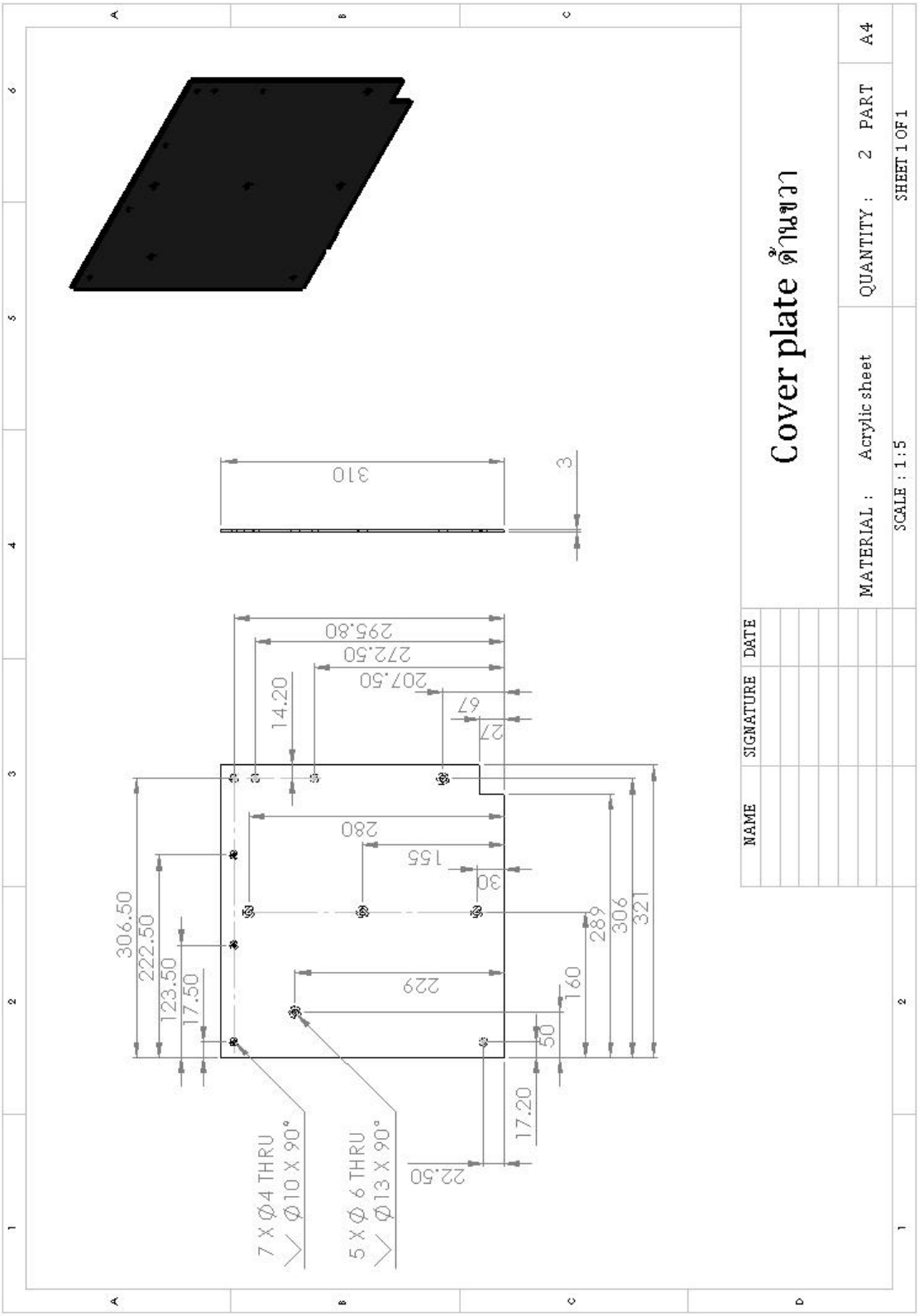
MATERIAL :

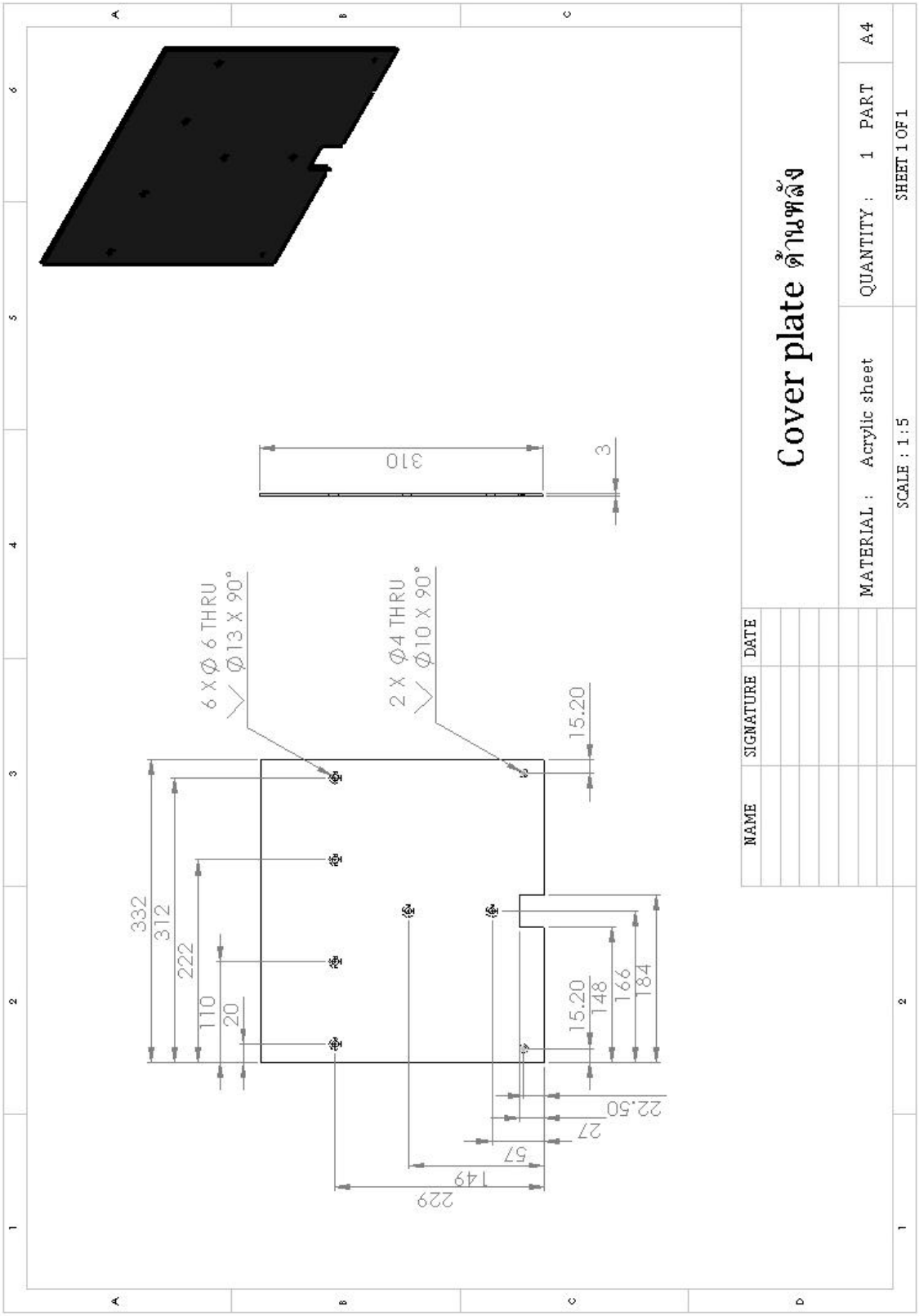
QUANTITY : PART

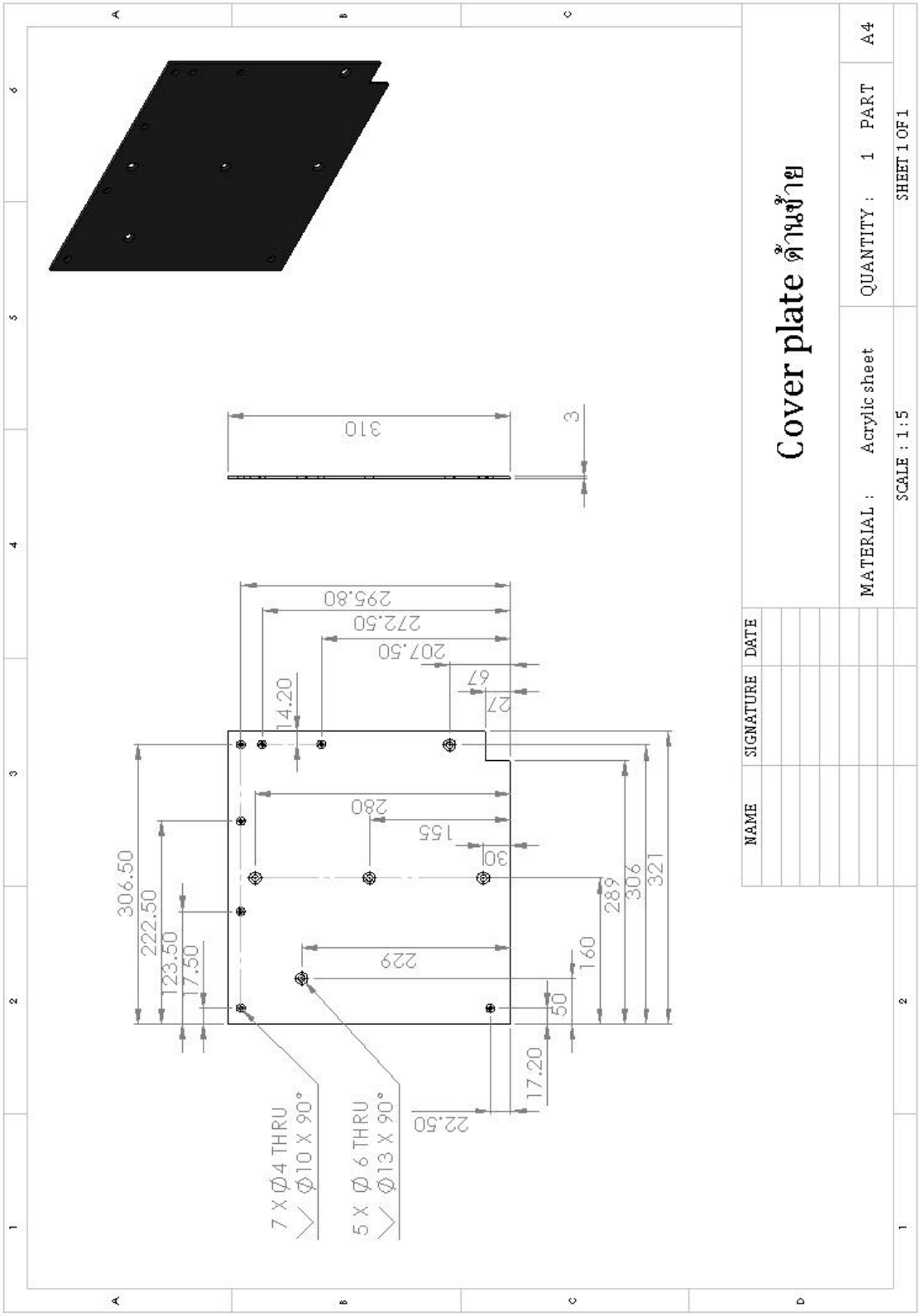
A3

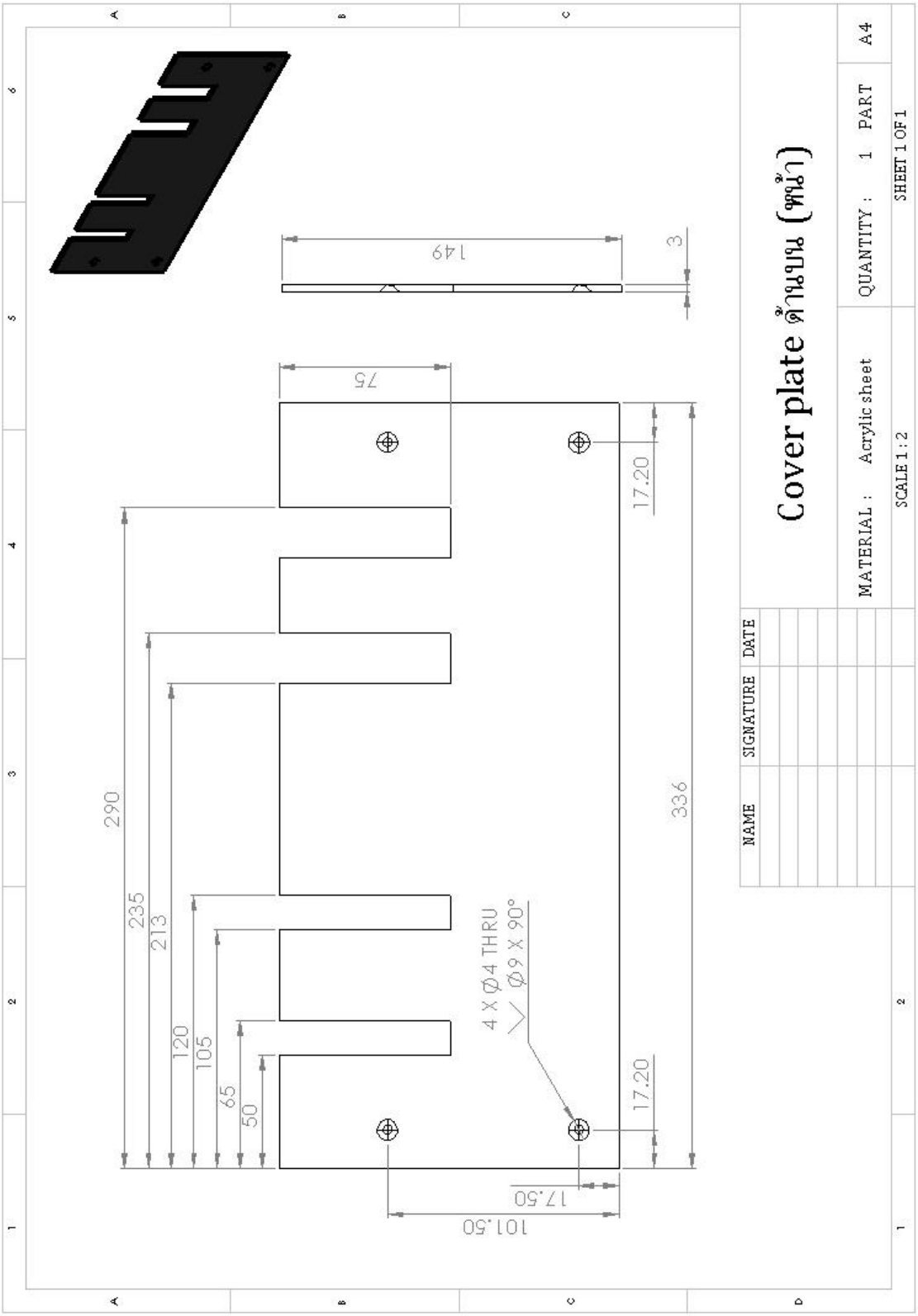
SCALE : 1 : 5

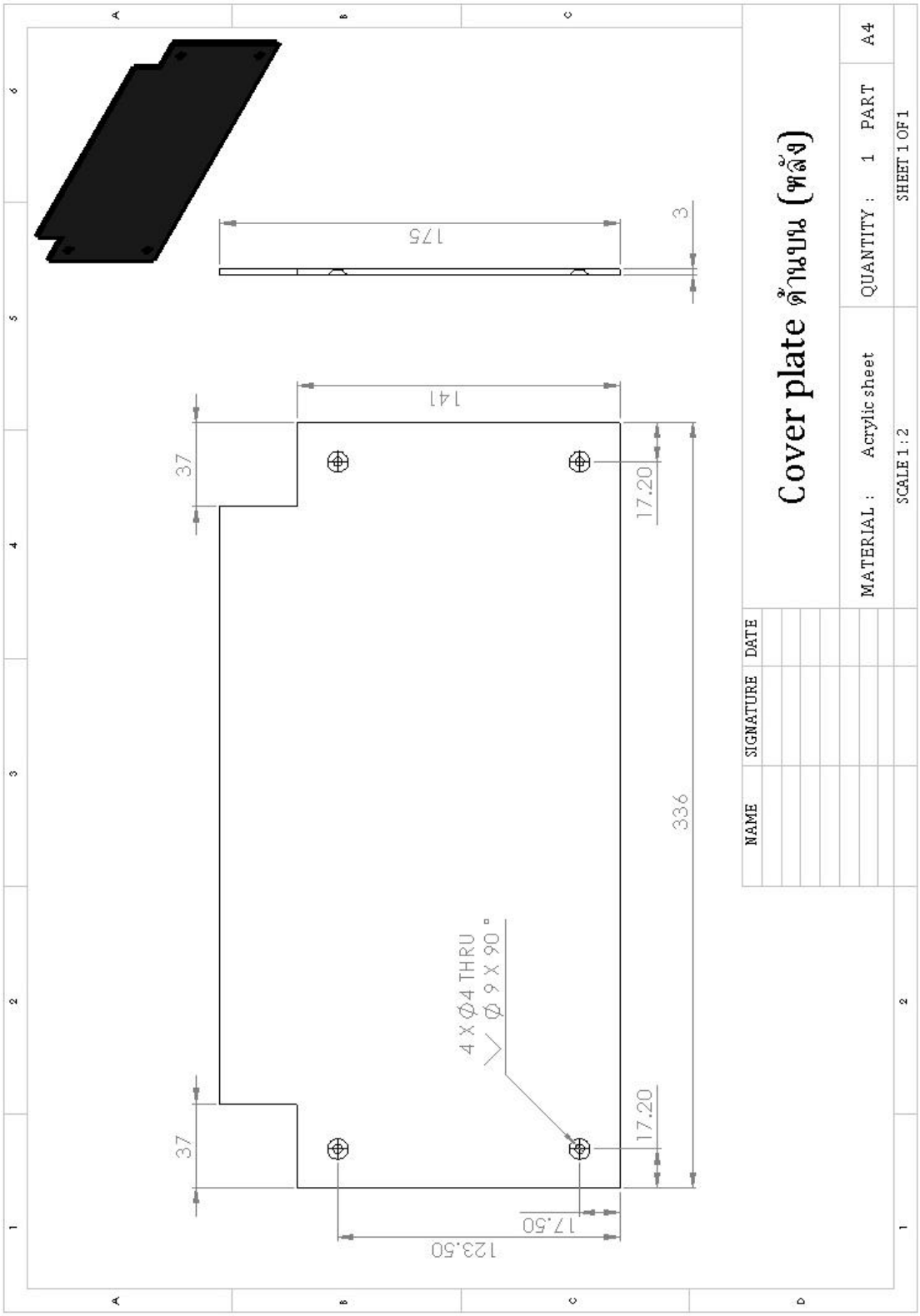
SHEET 1 OF 1

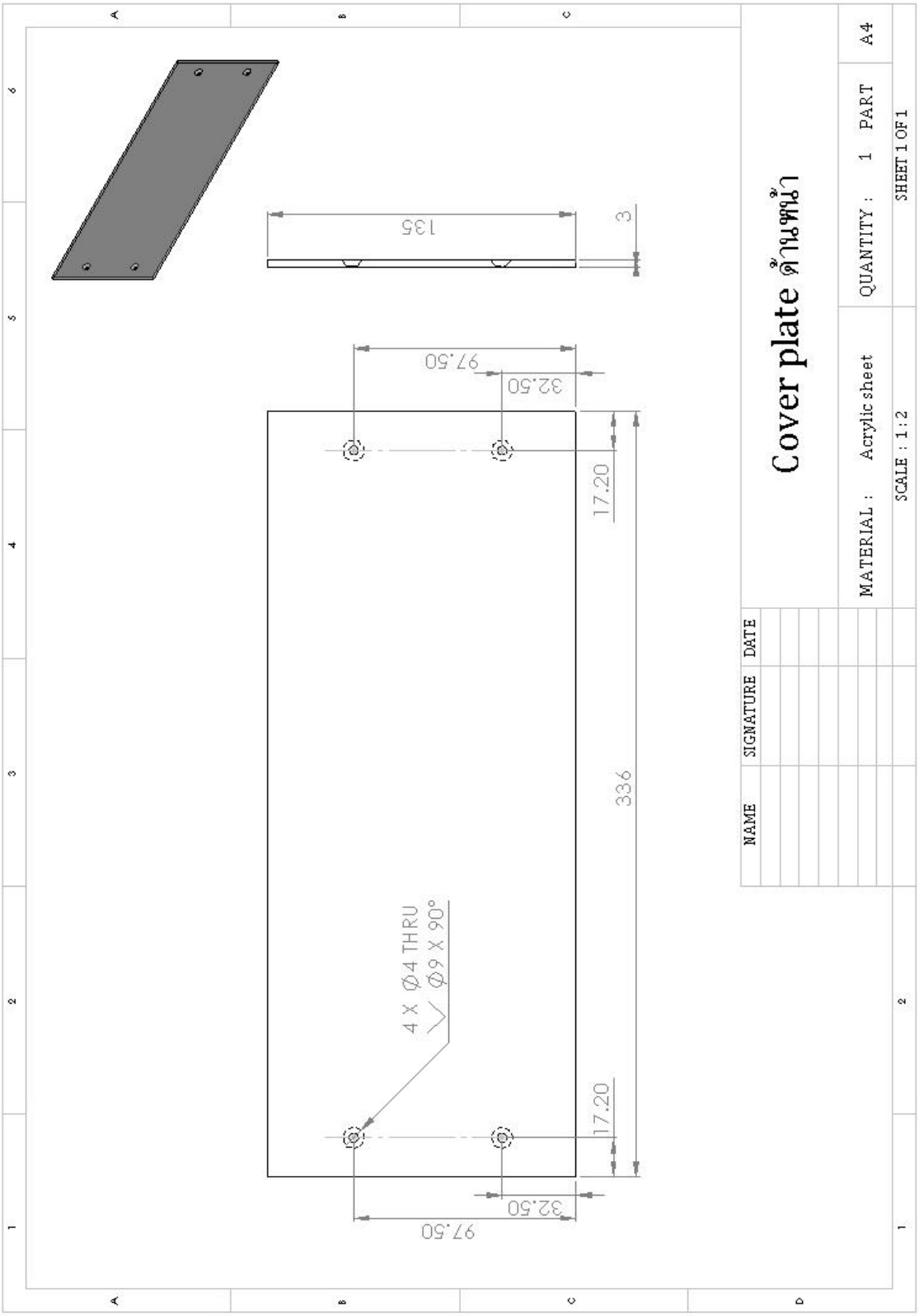

Cover plate ด้านขวา
MATERIAL : Acrylic sheet
QUANTITY : 2 PART
A4
SCALE : 1:5
SHEET 1 OF 1
NAME
SIGNATURE
DATE
310
3
295.80
272.50
207.50
14.20
67
27
280
155
30
306.50
222.50
123.50
17.50
229
160
50
289
306
321
17.20
22.50
7 X Ø4 THRU
Ø10 X 90°
5 X Ø 6 THRU
Ø13 X 90°

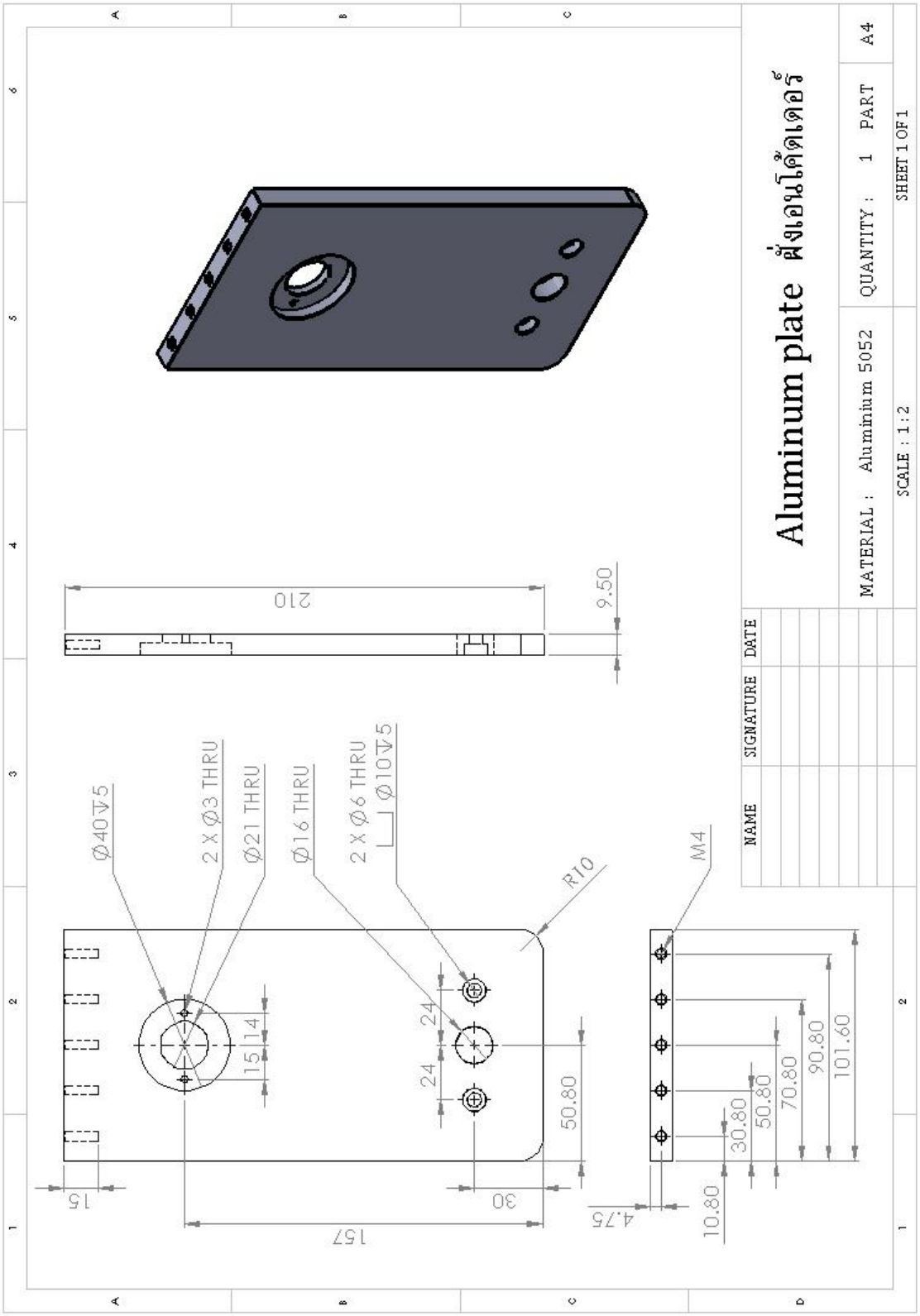

6 X Ø 6 THRU
Ø13 X 90°
2 X Ø4 THRU
Ø10 X 90°
310
3
15.20
332
312
222
110
20
15.20
148
166
184
22.50
27
57
149
229
Cover plate ฝาครอบ
NAME
SIGNATURE
DATE
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE : 1:5
SHEET 1 OF 1

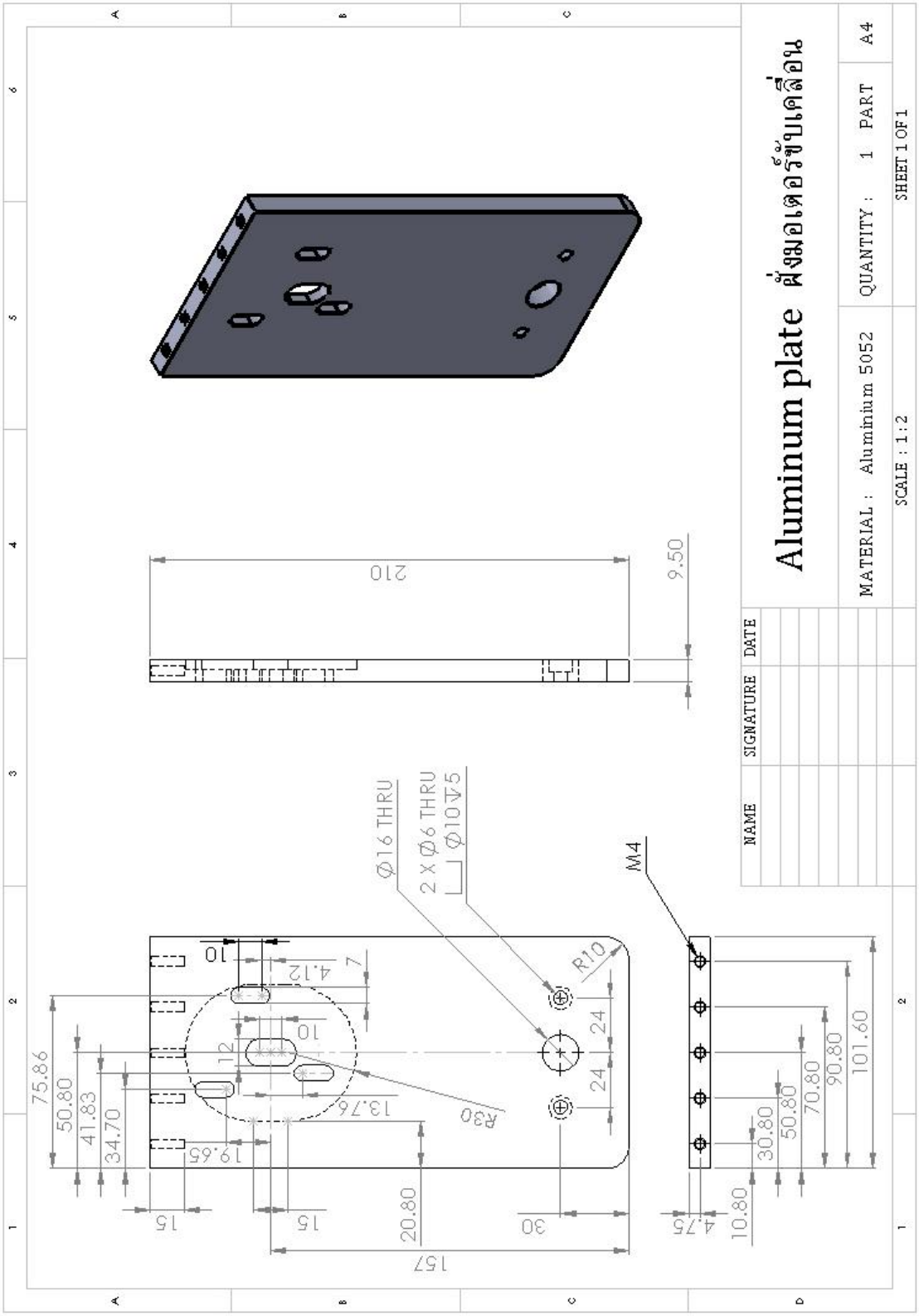

Cover plate ด้านข้าง
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE : 1:5
SHEET 1 OF 1
NAME
SIGNATURE
DATE
310
3
295.80
272.50
207.50
67
27
14.20
280
155
30
306.50
222.50
123.50
17.50
229
160
50
17.20
22.50
289
306
321
7 X Ø4 THRU
Ø10 X 90°
5 X Ø 6 THRU
Ø13 X 90°

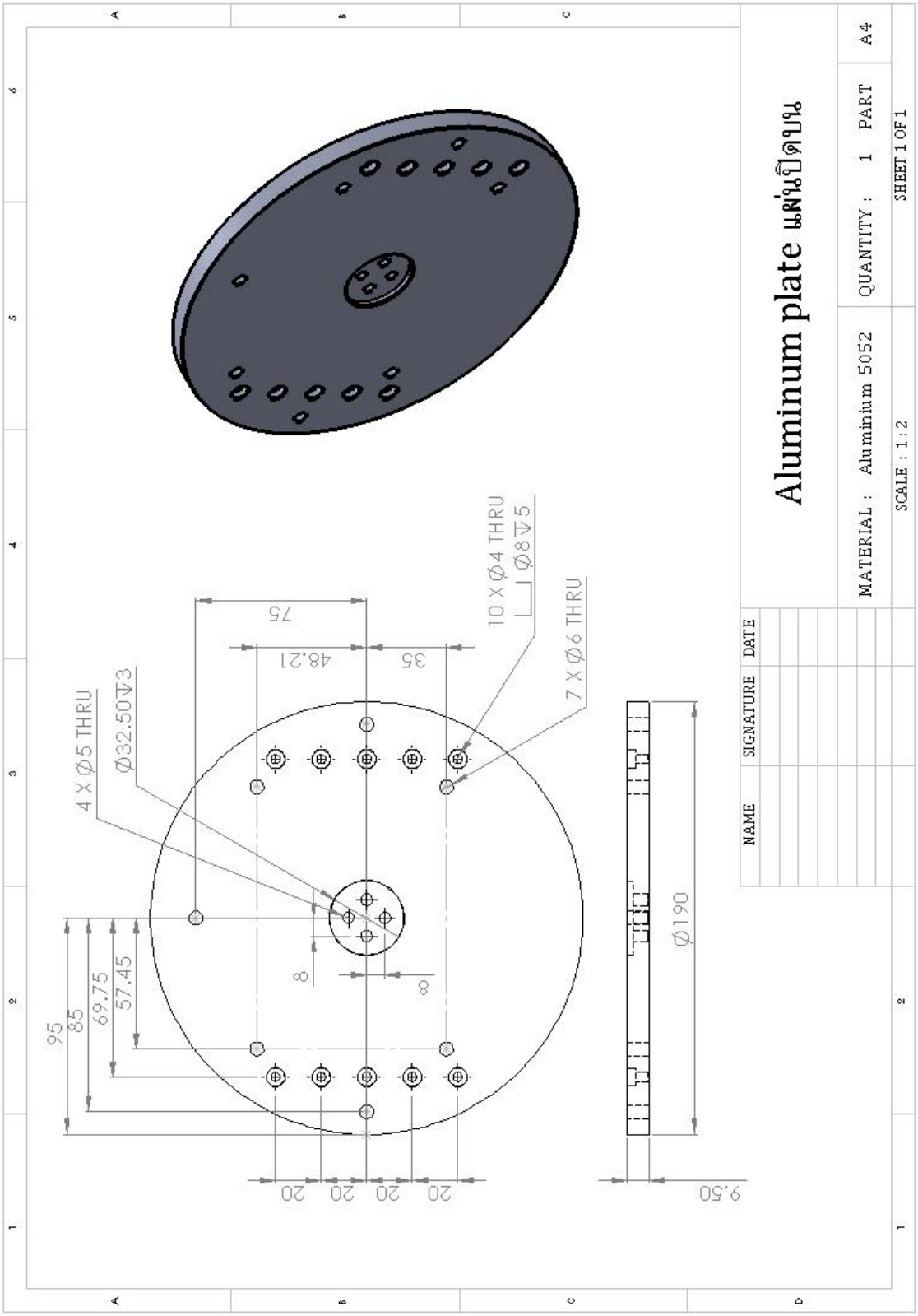

149
3
75
17.20
290
235
213
120
105
65
50
4 X Ø4 THRU
Ø9 X 90°
336
17.20
17.50
101.50
Cover plate ฝาครอบ (หนา)
NAME
SIGNATURE
DATE
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE 1 : 2
SHEET 1 OF 1

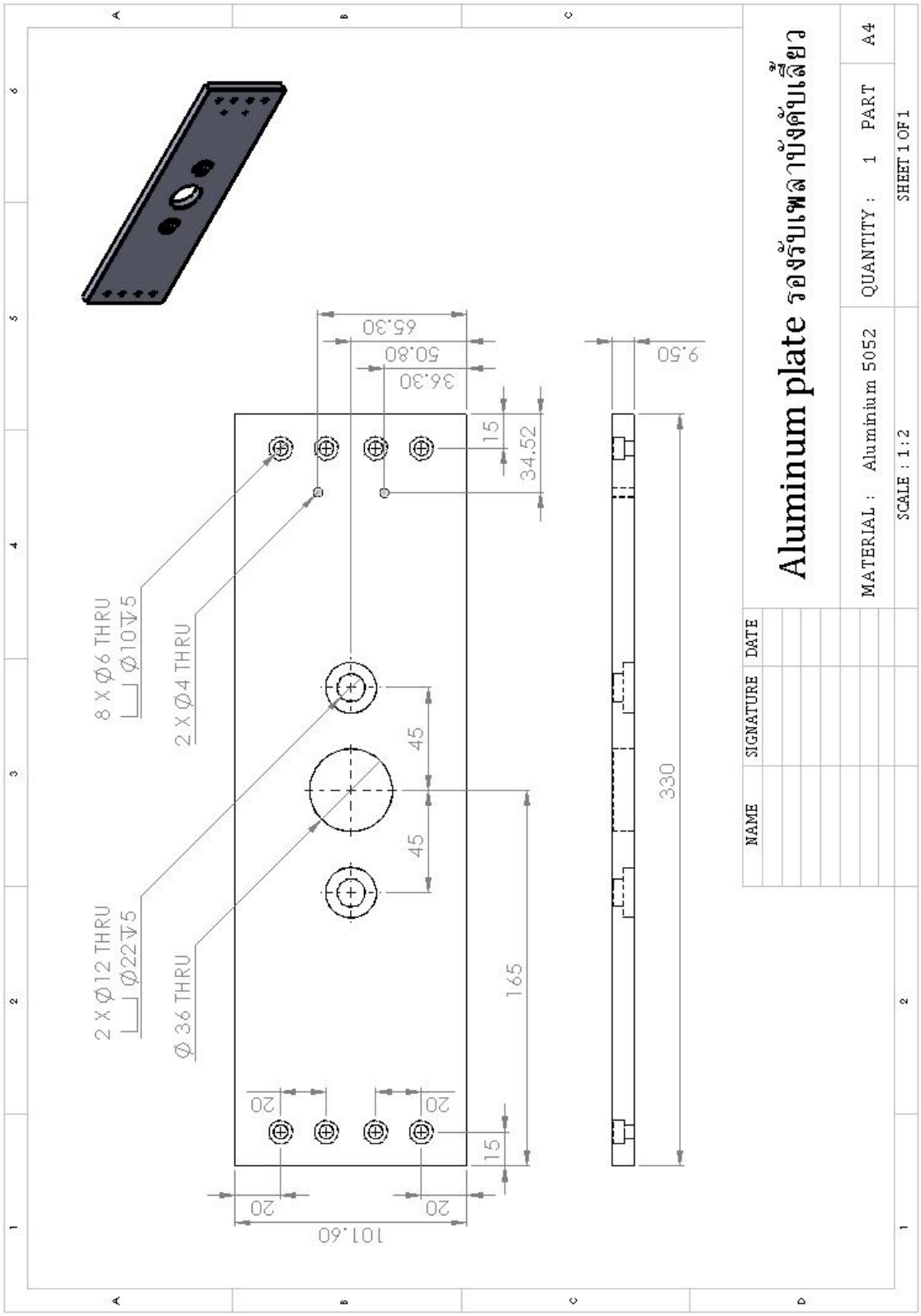

Cover plate ด้านบน (หลัง)
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE 1 : 2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
175
3
141
37
17.20
336
4 X Ø4 THRU
Ø 9 X 90 °
17.50
123.50

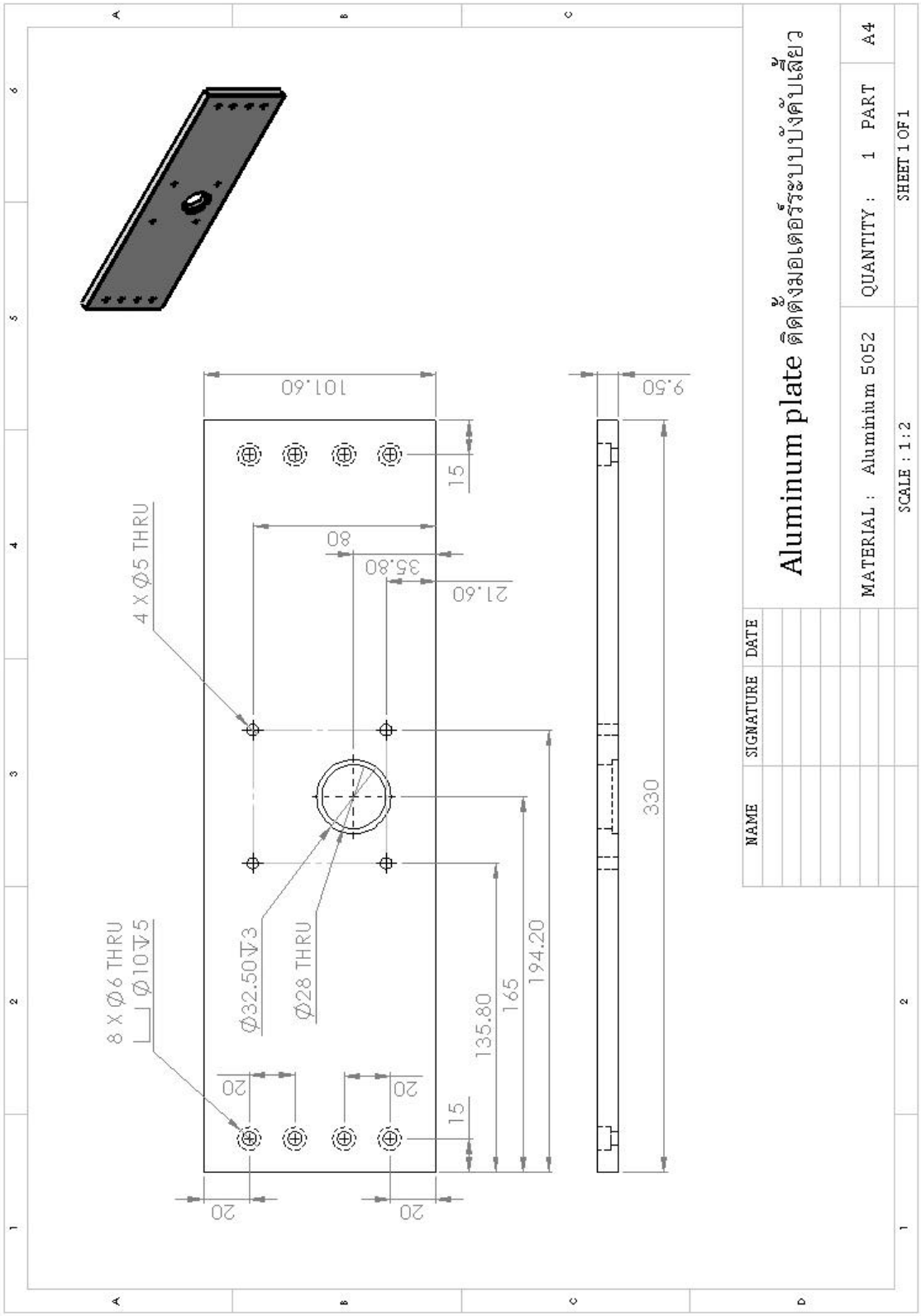

135
3
97.50
32.50
17.20
336
4 X Ø4 THRU
Ø9 X 90°
17.20
32.50
97.50
Cover plate ด้านหน้า
NAME
SIGNATURE
DATE
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE : 1 : 2
SHEET 1 OF 1

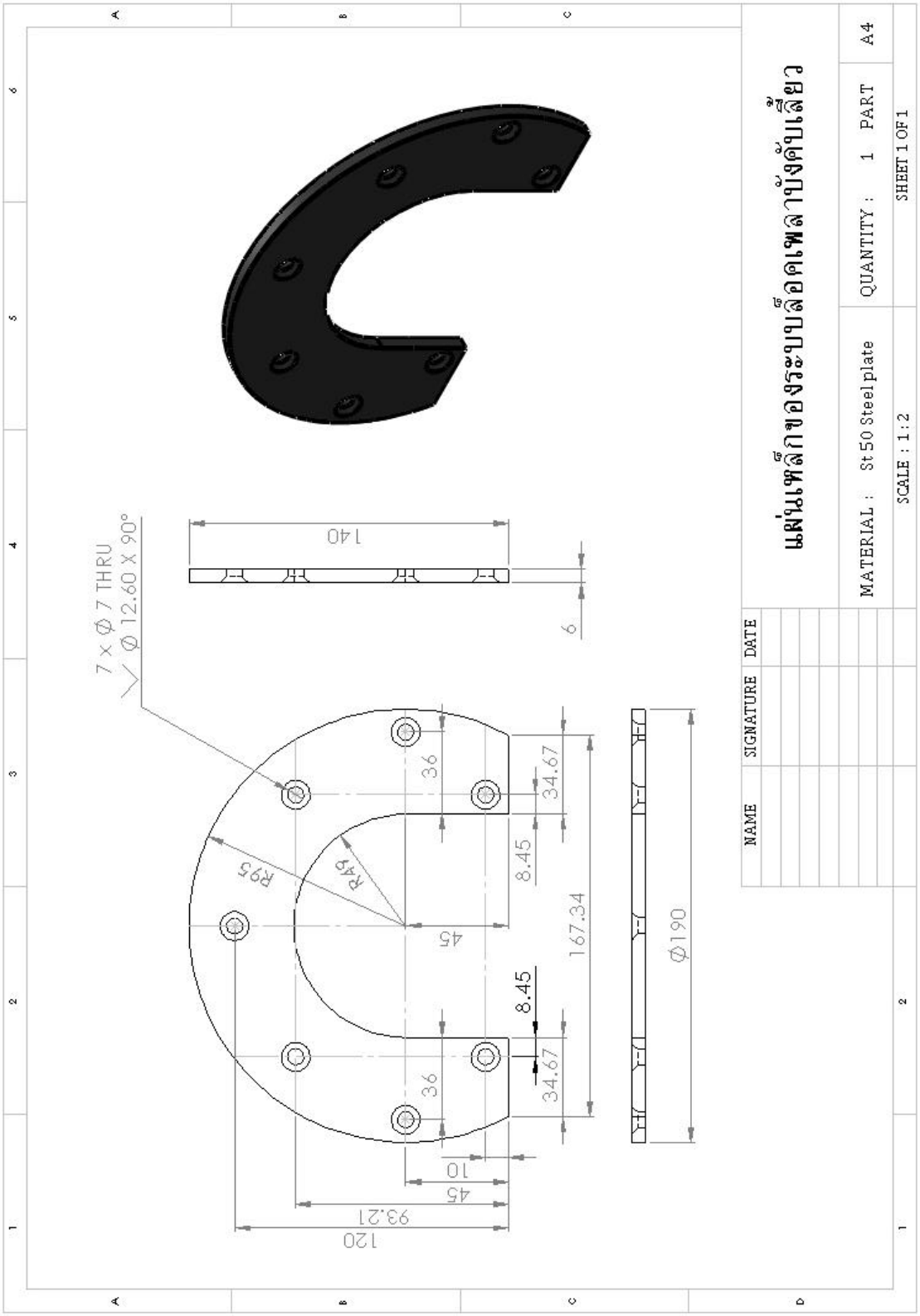

Aluminum plate ฝั่งอนโค้ดเดอร์
MATERIAL : Aluminium 5052
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
210
9.50
Ø40↧5
2 X Ø3 THRU
Ø21 THRU
Ø16 THRU
2 X Ø6 THRU
Ø10↧5
R10
M4
15
14
24
24
50.80
15
30
157
4.75
10.80
30.80
50.80
70.80
90.80
101.60

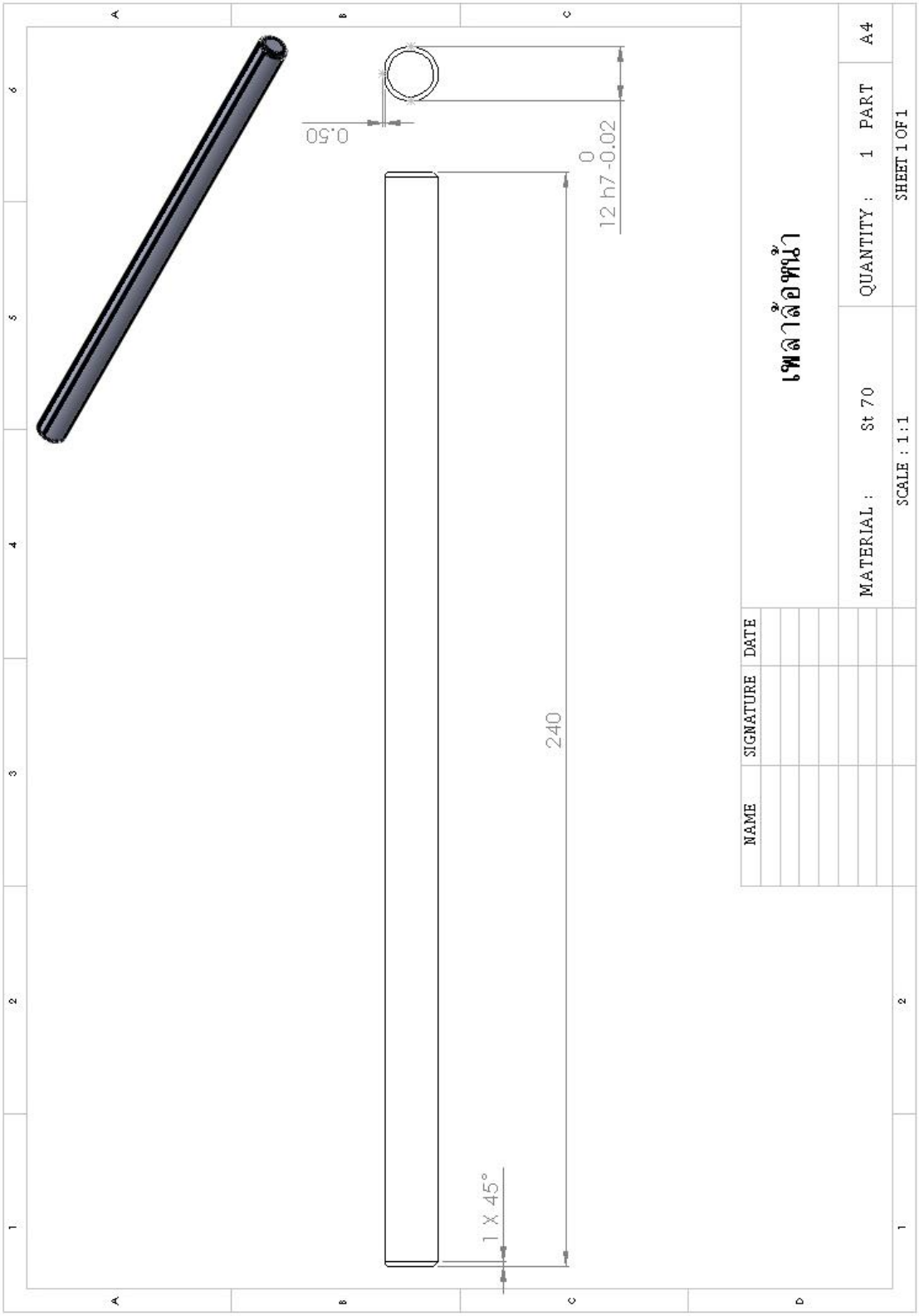

Aluminum plate
MATERIAL : Aluminum 5052
QUANTITY : 1 PART
SCALE : 1:2
SHEET 1 OF 1
A4
NAME
SIGNATURE
DATE
210
9.50
Ø16 THRU
2 X Ø6 THRU
Ø10 ↧5
M4
R10
R30
157
75.86
50.80
41.83
34.70
101.60
90.80
70.80
50.80
30.80
10.80
4.75
20.80
30
24
24
15
15
19.65
13.76
12
10
4.12
7
10

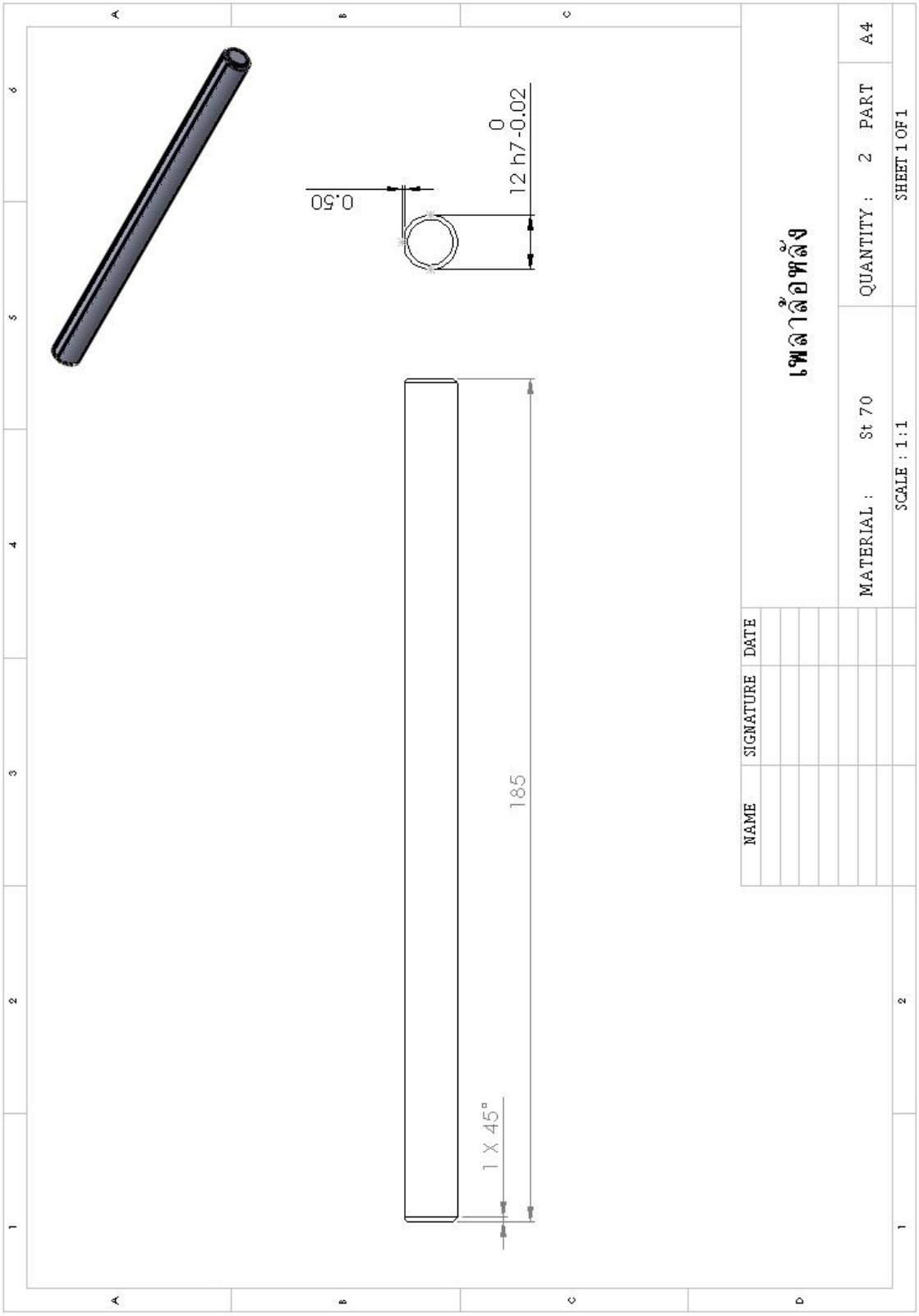

Aluminum plate แผ่นปิดบน
MATERIAL : Aluminum 5052
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
4 X Ø5 THRU
Ø32.50↧3
10 X Ø4 THRU
⌴ Ø8↧5
7 X Ø6 THRU
95
85
69.75
57.45
75
48.21
35
8
8
20
20
20
20
Ø190
9.50

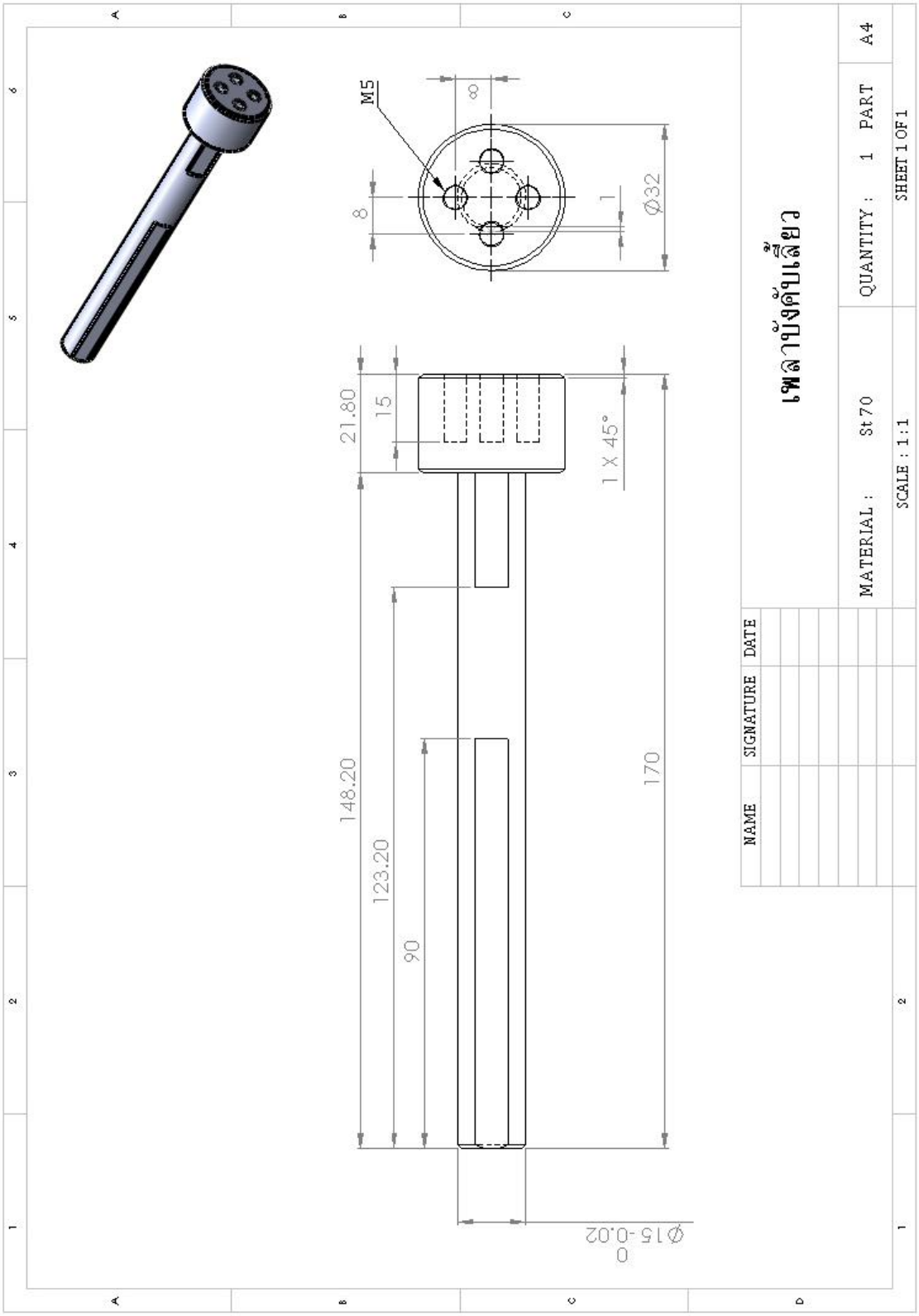

8 X Ø6 THRU
Ø10 ↧5
2 X Ø4 THRU
2 X Ø12 THRU
Ø22 ↧5
Ø 36 THRU
65.30
50.80
36.30
15
34.52
45
45
165
20
20
15
20
20
101.60
9.50
330
Aluminum plate รองรับแผ่นกั้นด้านเสียง
NAME
SIGNATURE
DATE
MATERIAL : Aluminium 5052
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1

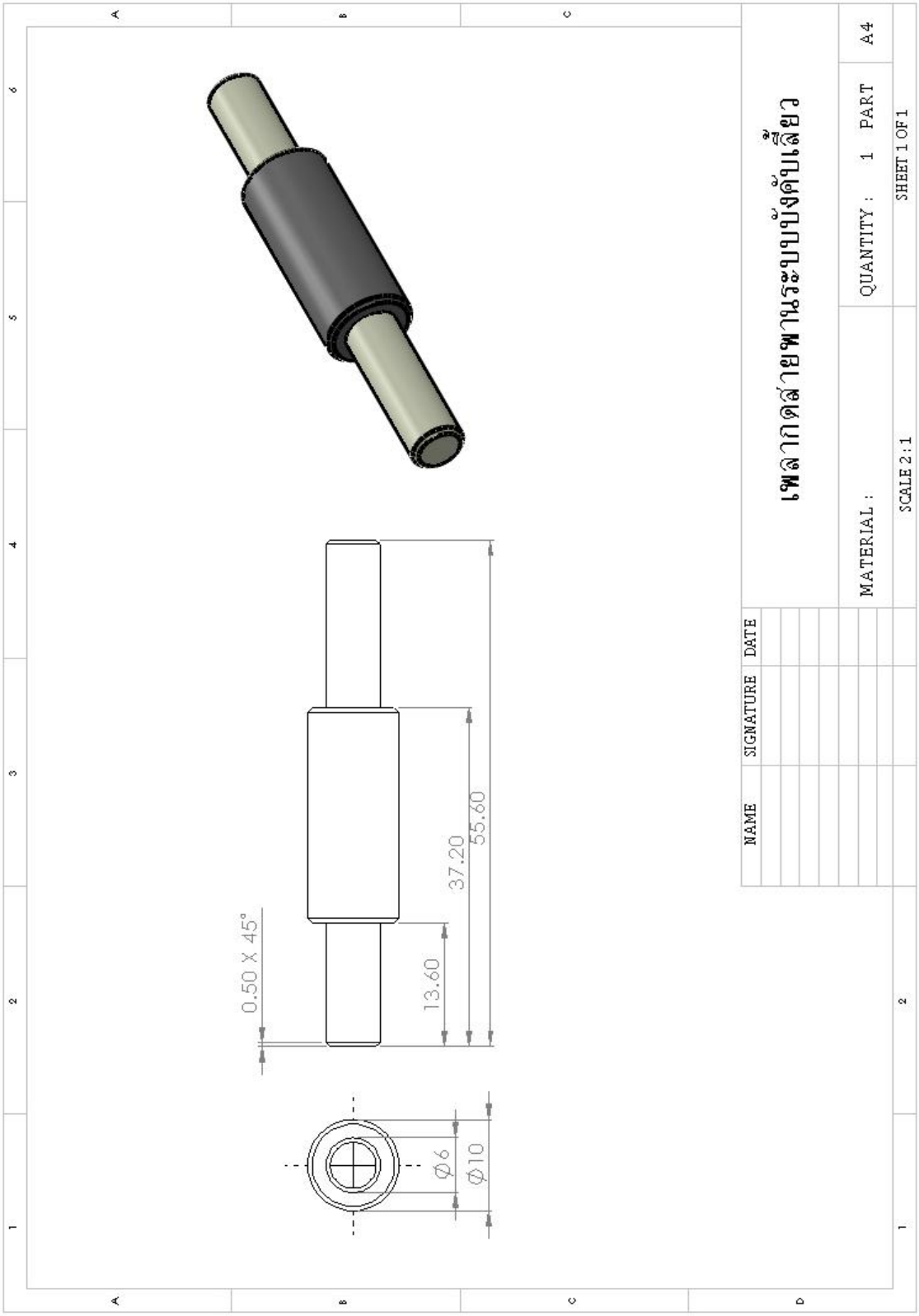

Aluminum plate ติดตั้งมอเตอร์ระบบขับเคลื่อน
MATERIAL : Aluminum 5052
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
4 X Ø5 THRU
8 X Ø6 THRU
⌴ Ø10 ↧5
Ø32.50 ↧3
Ø28 THRU
101.60
9.50
15
80
35.80
21.60
135.80
165
194.20
330
20
20
20
20
15

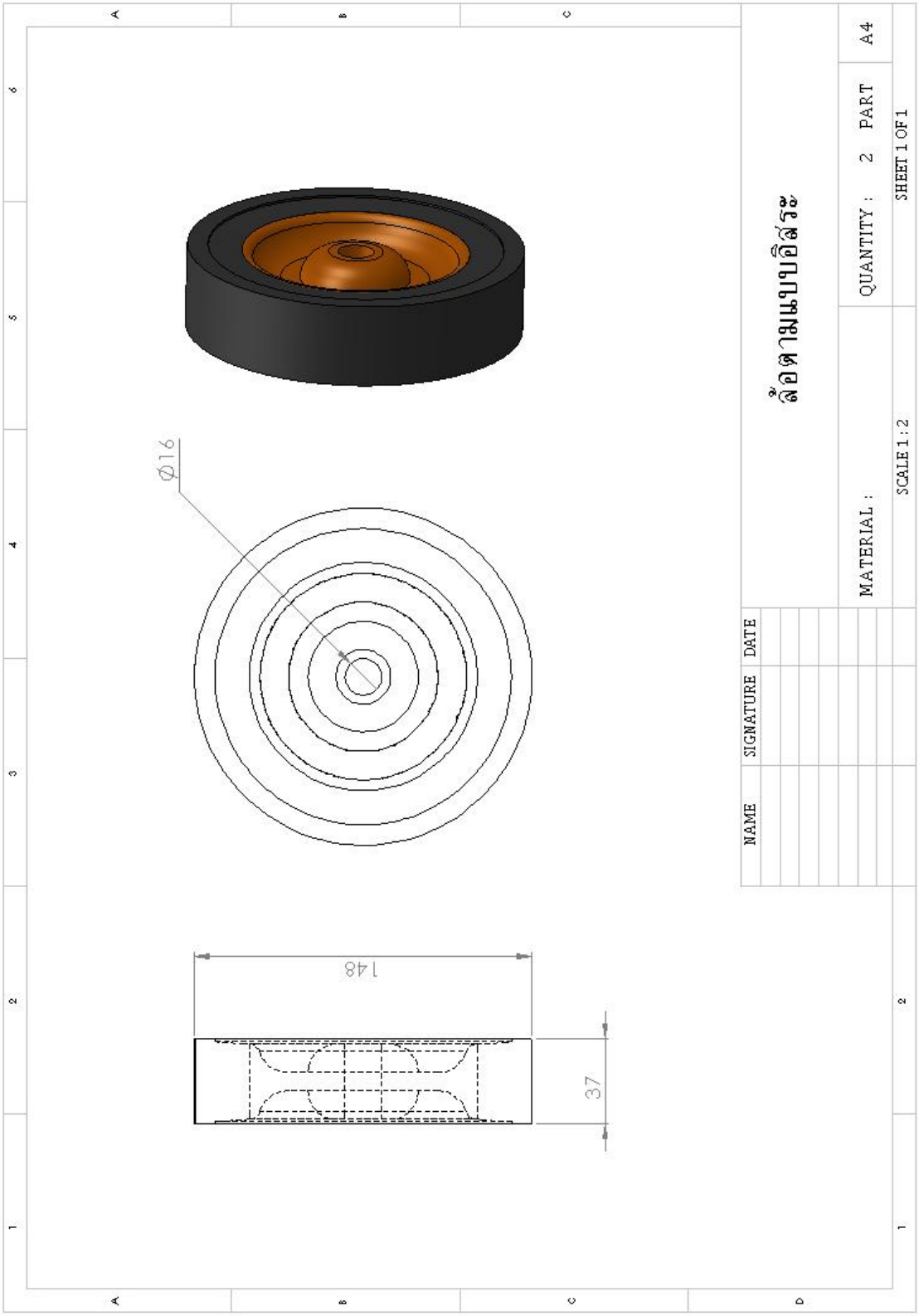

แผ่นเหล็กสกัดของระบบล็อคเพลาปั๊มดูดปูนเสียว
7 × Ø 7 THRU
Ø 12.60 X 90°
140
6
36
34.67
8.45
R95
R49
45
167.34
8.45
34.67
36
10
45
93.21
120
Ø190
NAME
SIGNATURE
DATE
MATERIAL : St 50 Steel plate
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1

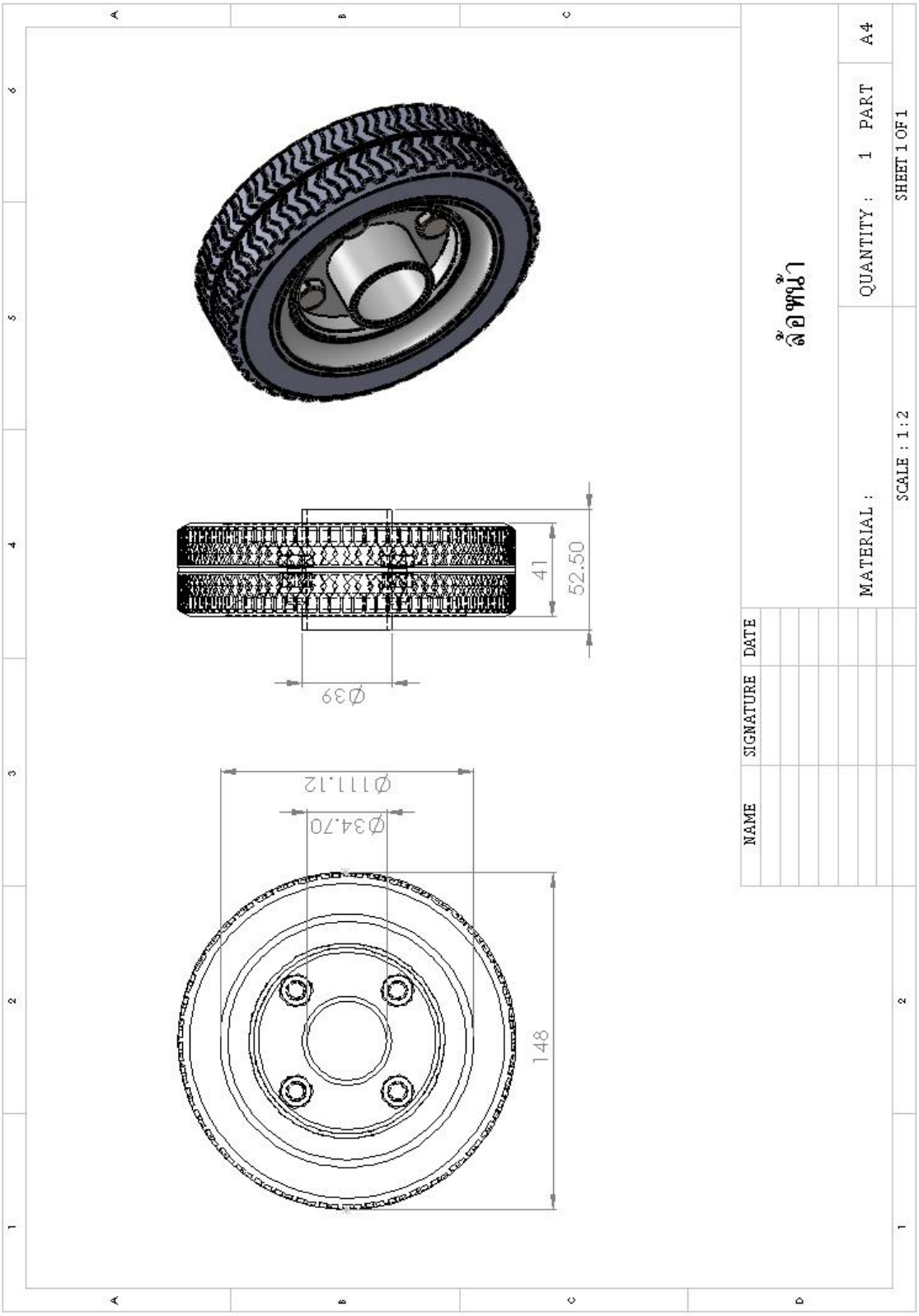

0.50
12 h7 -0.02
0
240
1 X 45°
เพลาใช้อหน้า
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 1 PART
A4
SCALE : 1:1
SHEET 1 OF 1

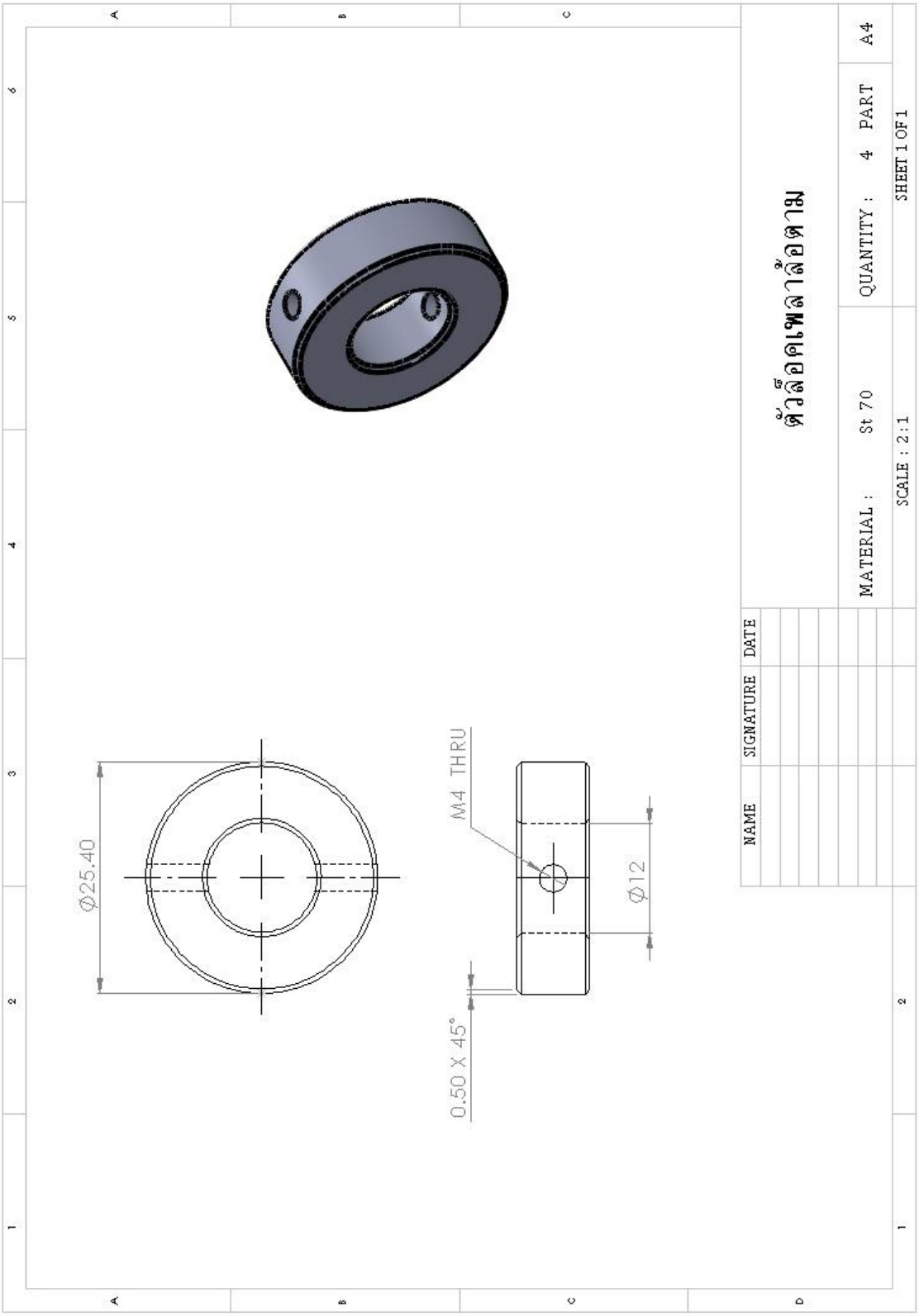

0.50
0
12 h7 -0.02
185
1 X 45°
เพลาเลื่อนพลัง
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 2 PART
A4
SCALE : 1:1
SHEET 1 OF 1

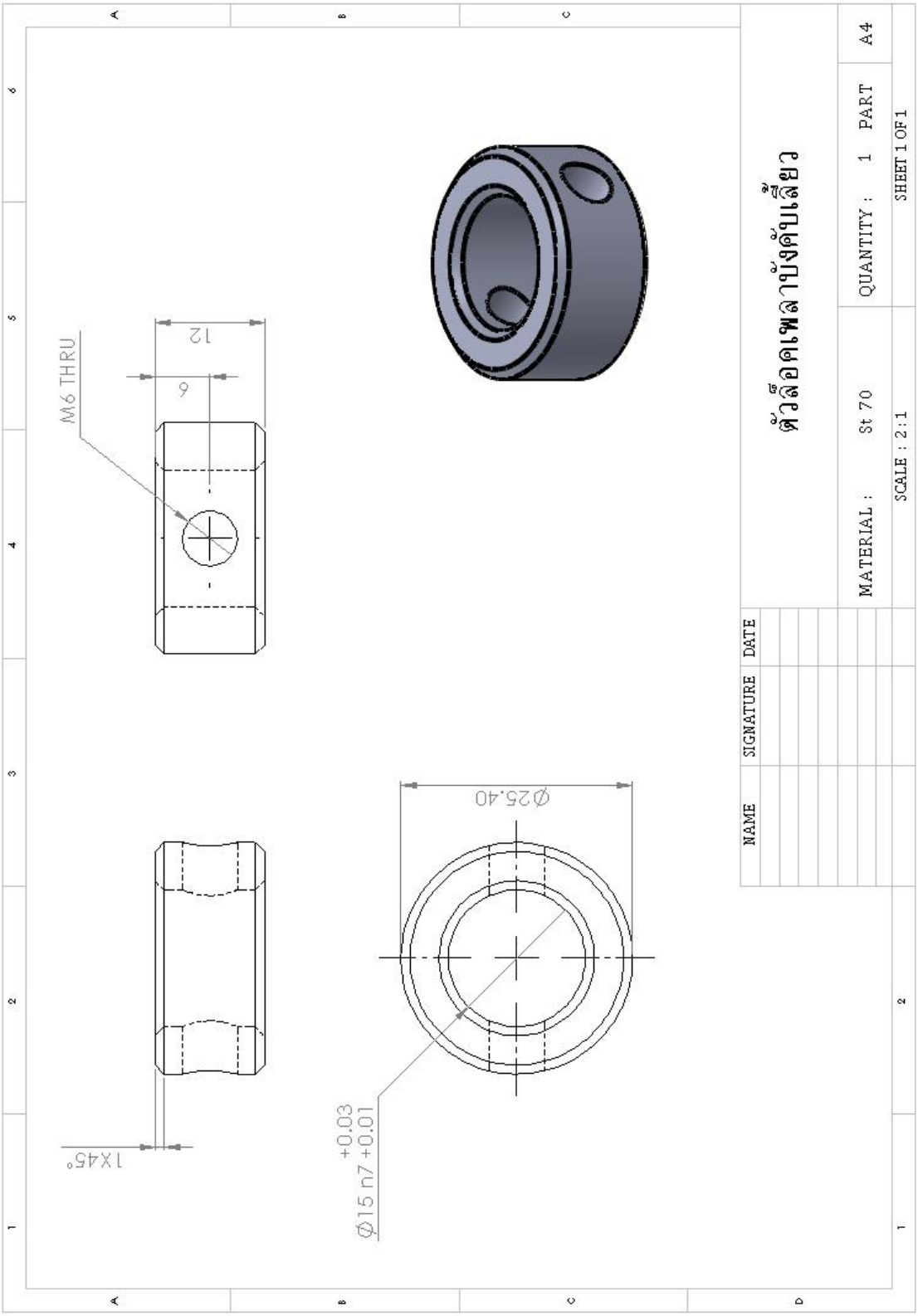

M5
8
8
1
Ø32
21.80
15
1 X 45°
148.20
123.20
90
170
Ø15 -0.02 0
เพลาปั๊มดอกเสียบ
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 1 PART
SCALE : 1:1
SHEET 1 OF 1
A4

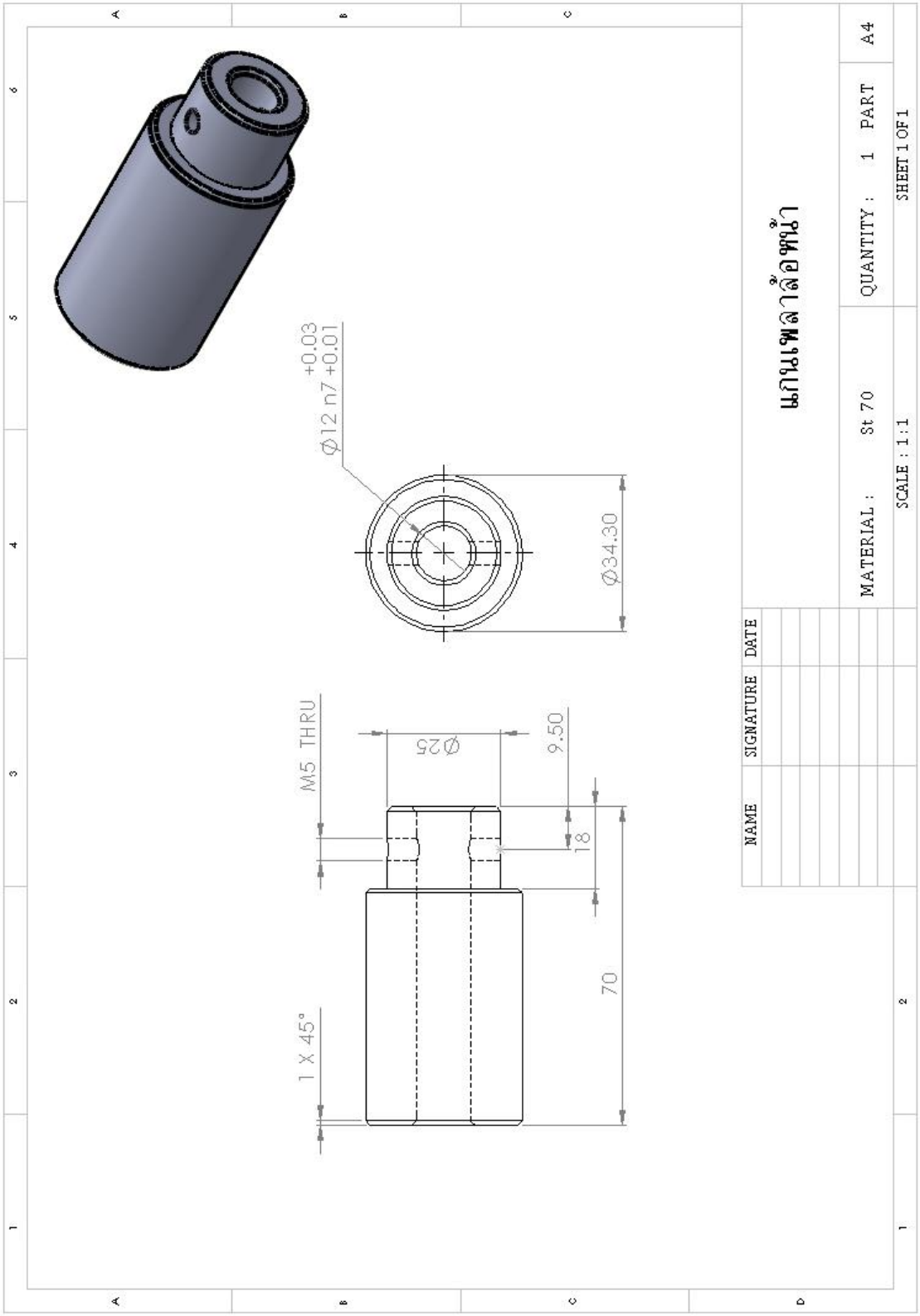

เพลากดสายพานระบบขับเคลื่อน
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 1 PART
A4
SCALE 2:1
SHEET 1 OF 1
0.50 X 45°
13.60
37.20
55.60
Ø6
Ø10

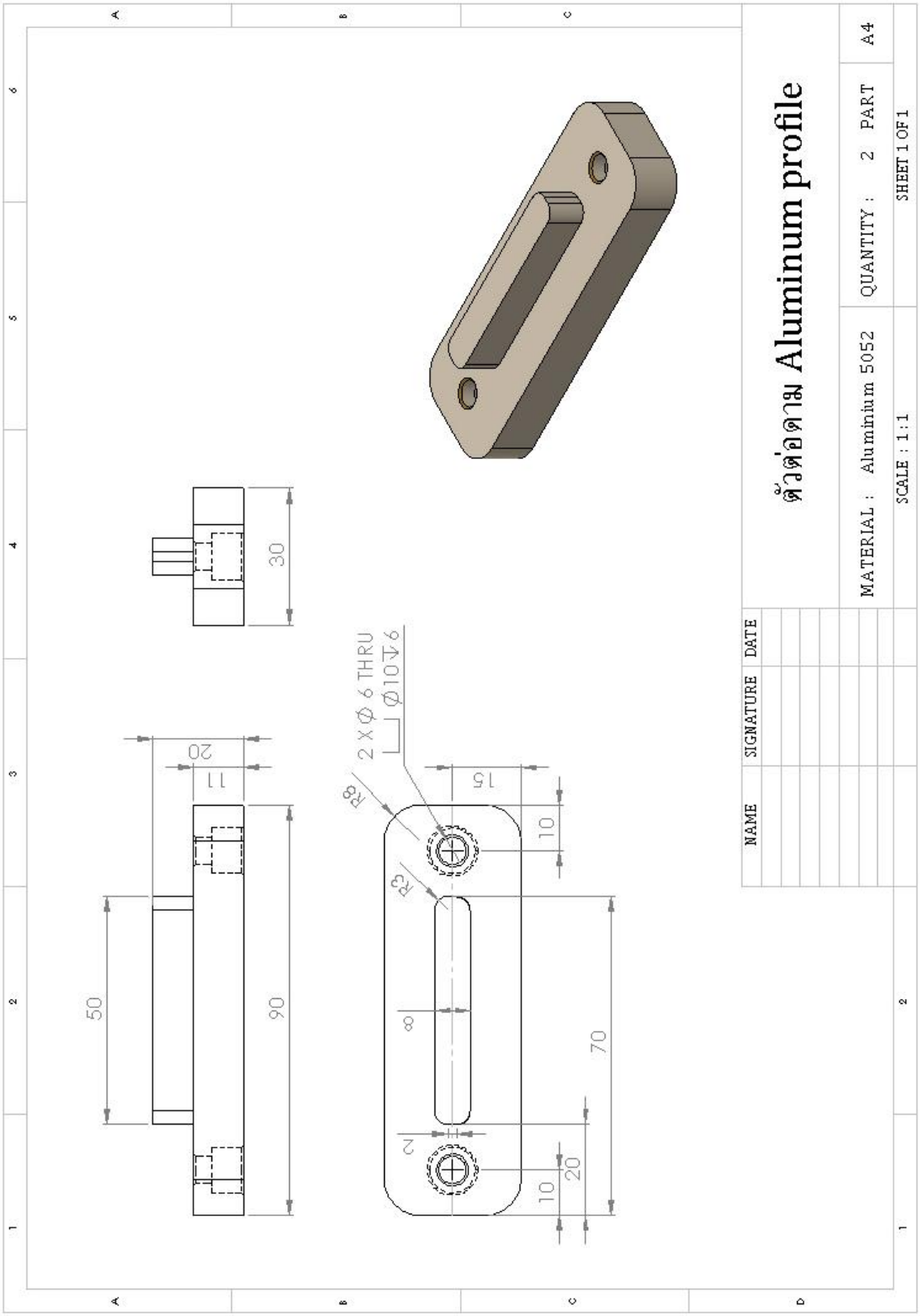

Ø16
148
37
ลิ้อศาสนาปิศิร
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 2 PART
A4
SCALE 1 : 2
SHEET 1 OF 1

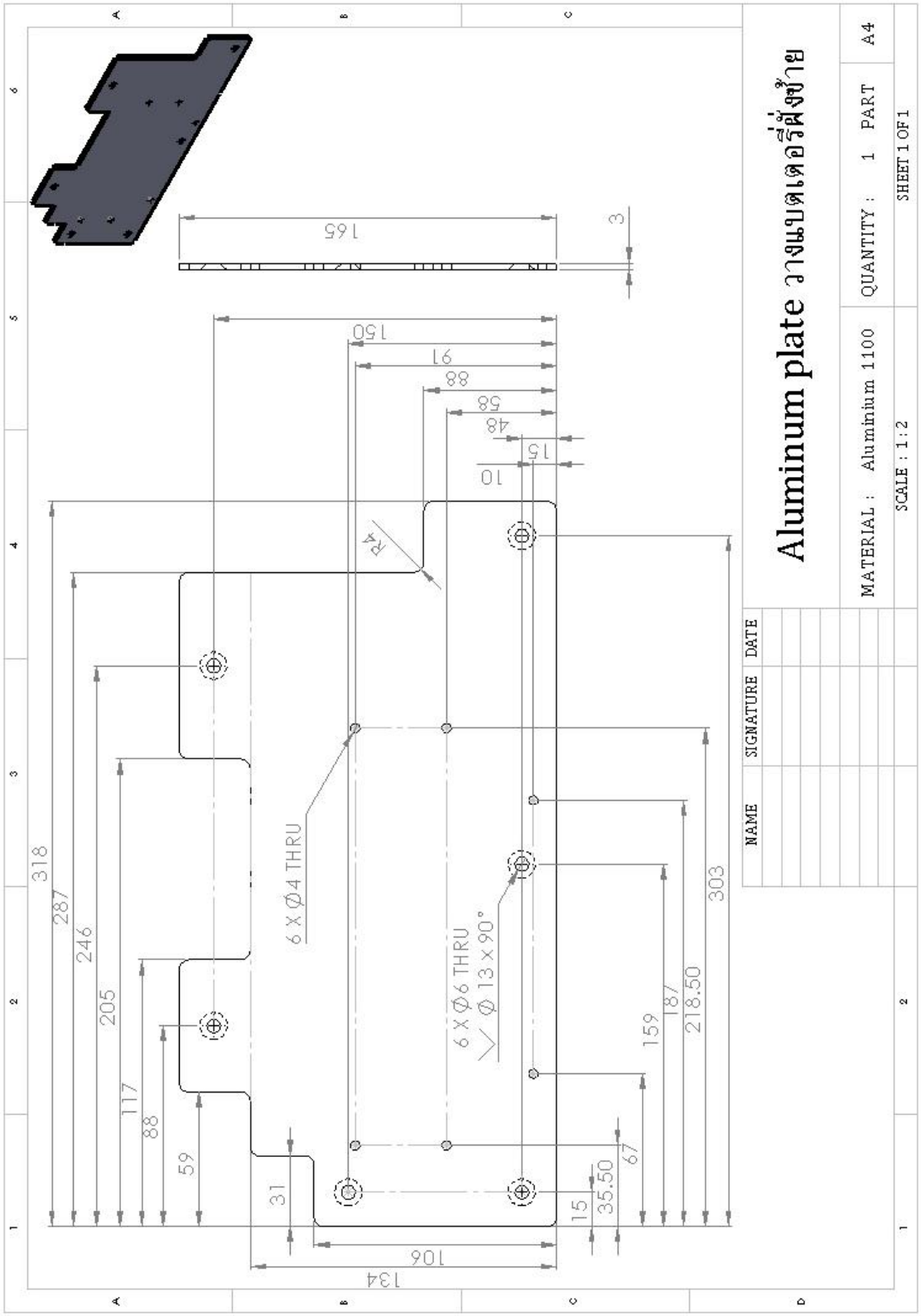

Ø39
41
52.50
Ø111.12
Ø34.70
148
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1

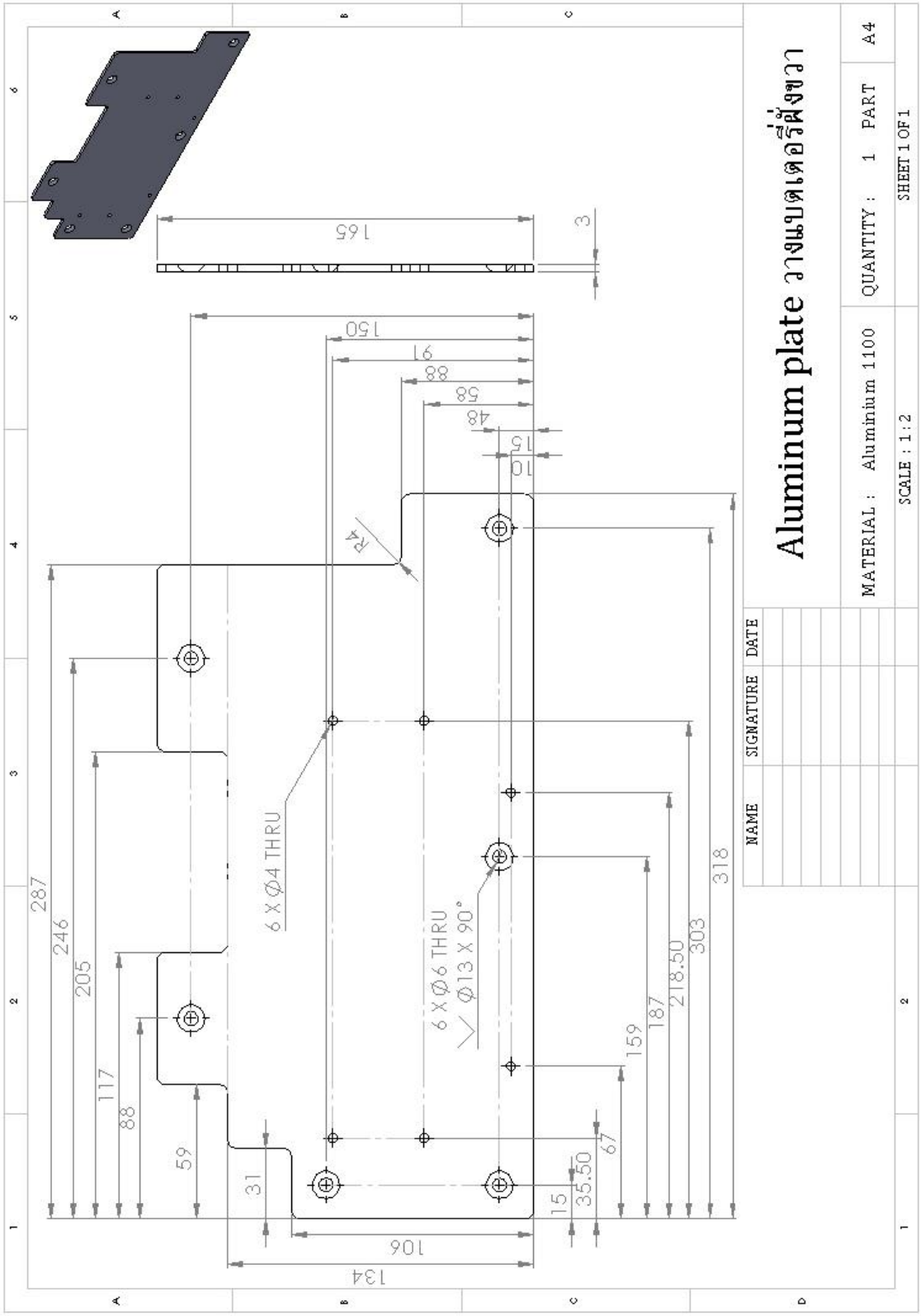

Ø25.40
M4 THRU
Ø12
0.50 X 45°
ตัวล็อคเพลาล้อหาม
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 4 PART
A4
SCALE : 2:1
SHEET 1 OF 1

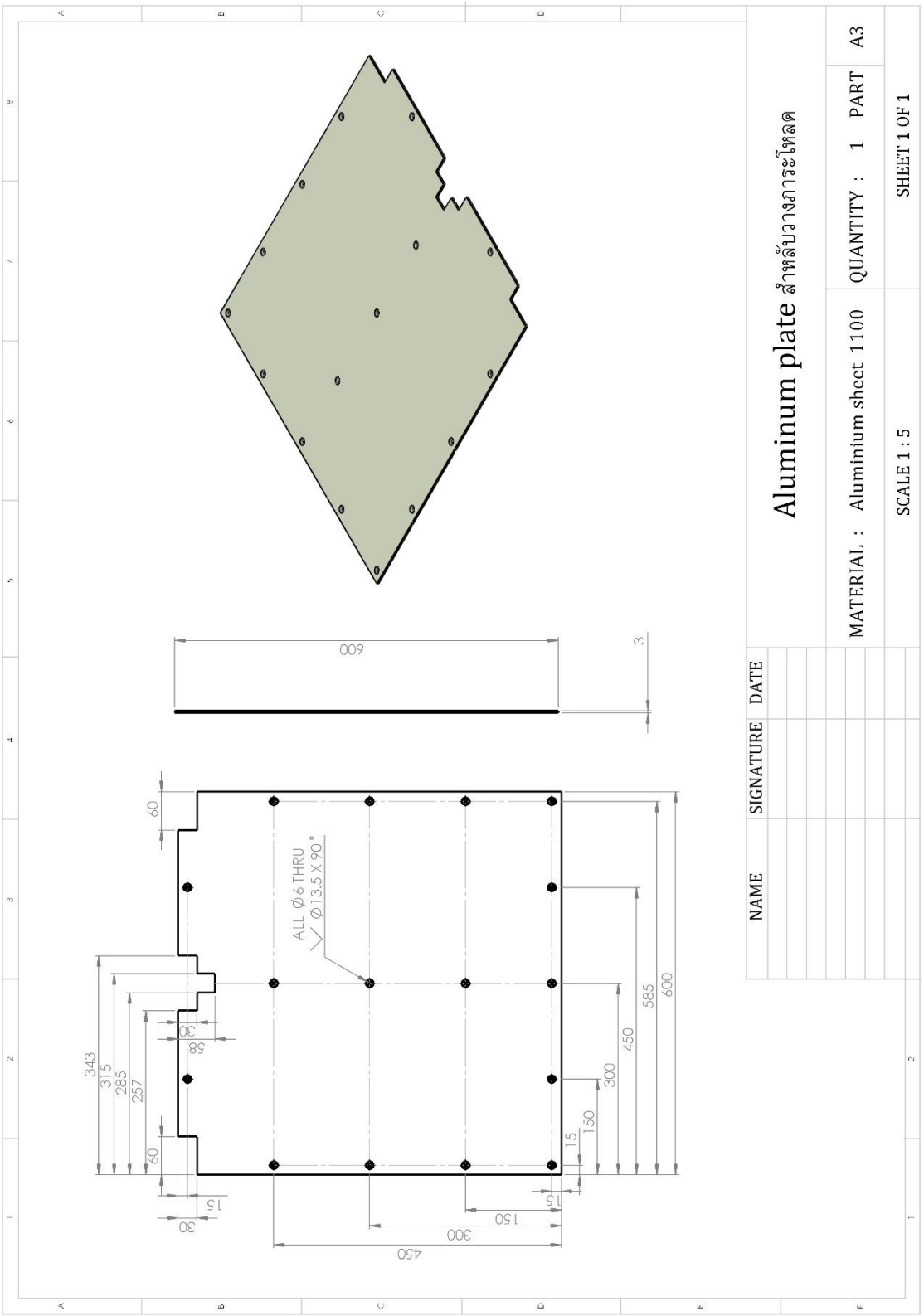

M6 THRU
12
6
1X45°
Ø25.40
Ø15 n7 +0.03 +0.01
หัวล็อคเพลาปั๊มดูดเลี้ยง
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 1 PART
A4
SCALE : 2:1
SHEET 1 OF 1

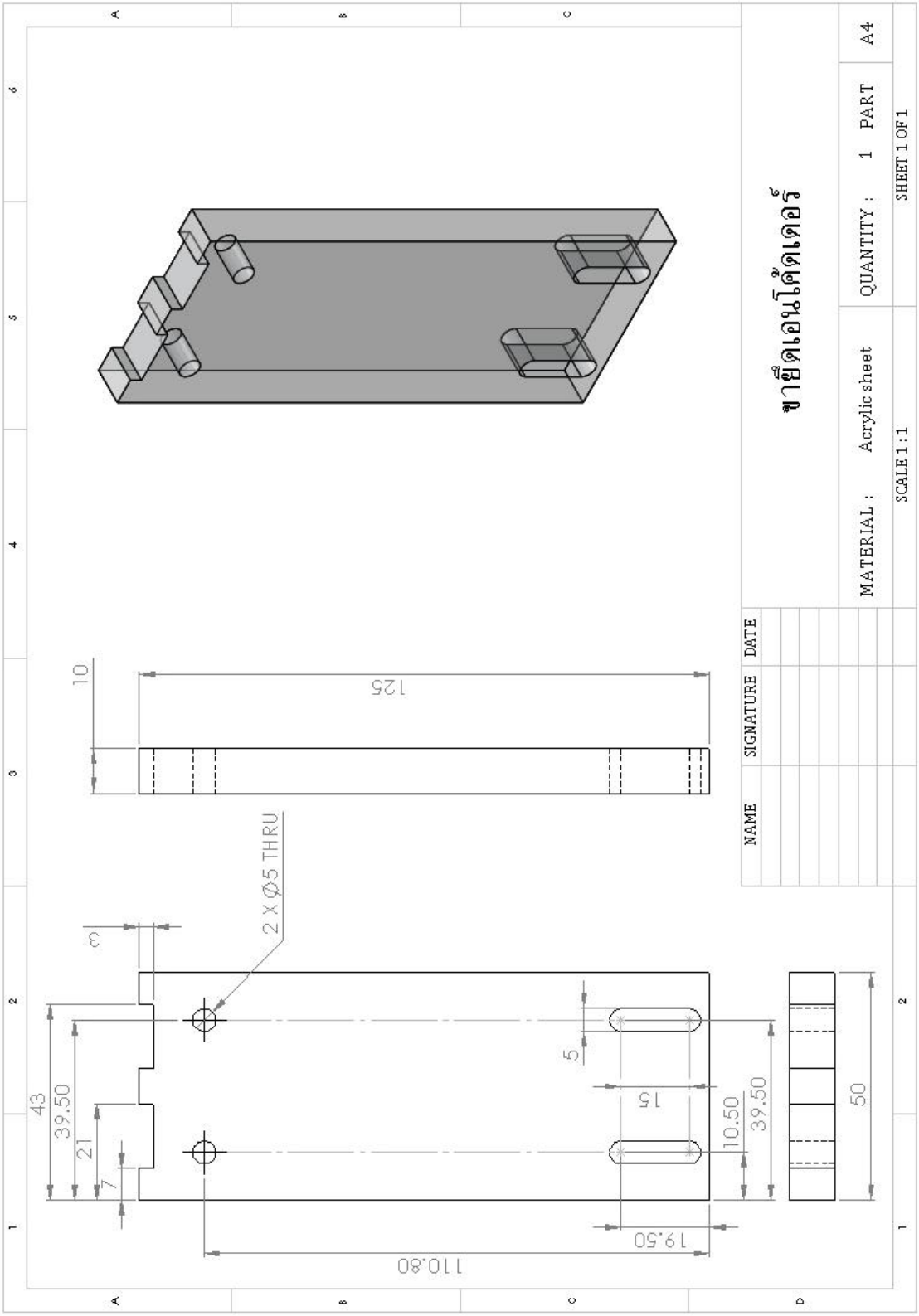

Ø12 n7 +0.03 +0.01
Ø34.30
M5 THRU
Ø25
9.50
18
70
1 X 45°
NAME
SIGNATURE
DATE
MATERIAL : St 70
QUANTITY : 1 PART
A4
SCALE : 1:1
SHEET 1 OF 1

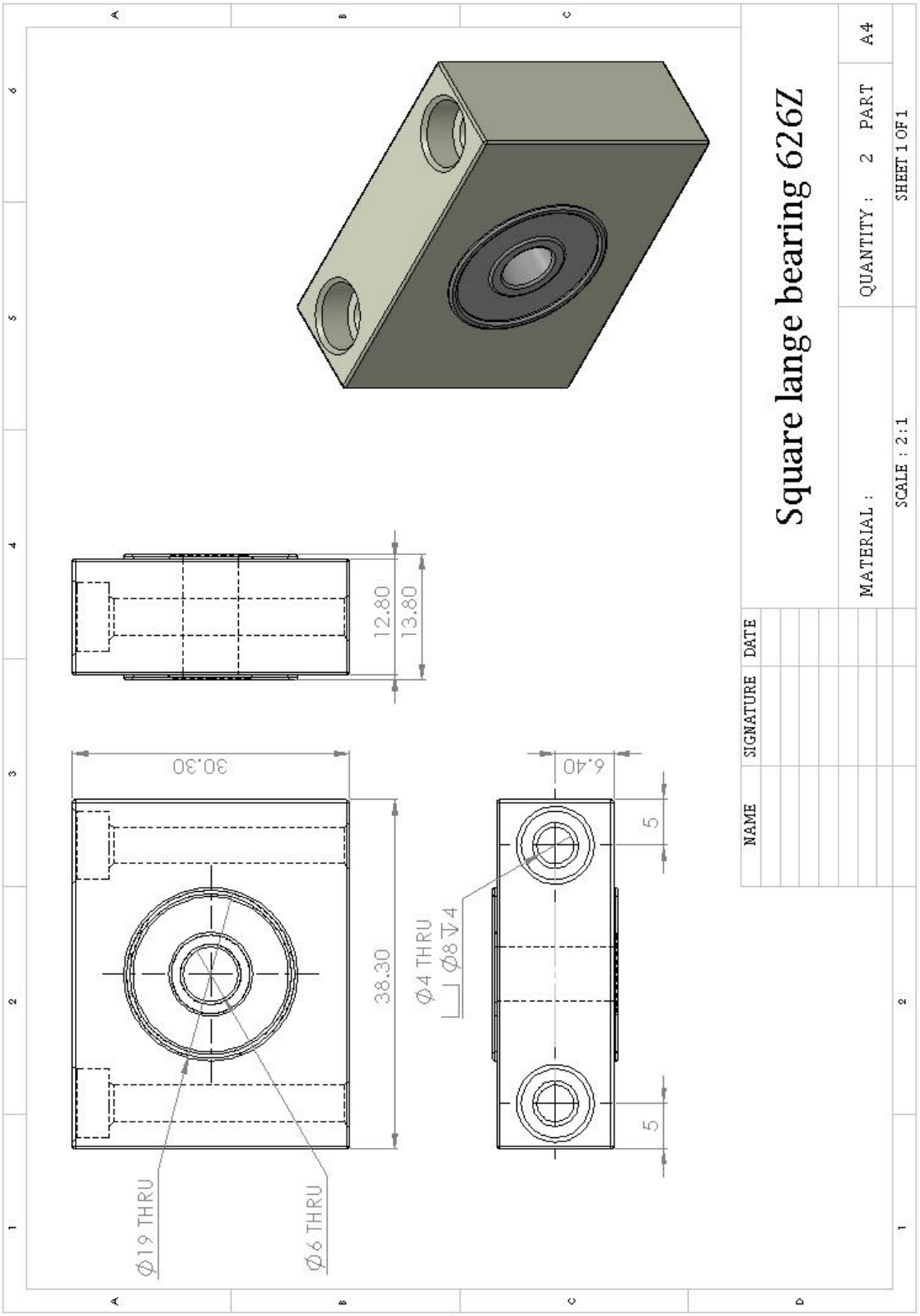

ตัวต่อราง Aluminum profile
MATERIAL : Aluminum 5052
QUANTITY : 2 PART
A4
SCALE : 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
30
20
11
50
90
2 X Ø 6 THRU
⌴ Ø10 ↧ 6
R8
R3
15
10
8
2
70
20
10

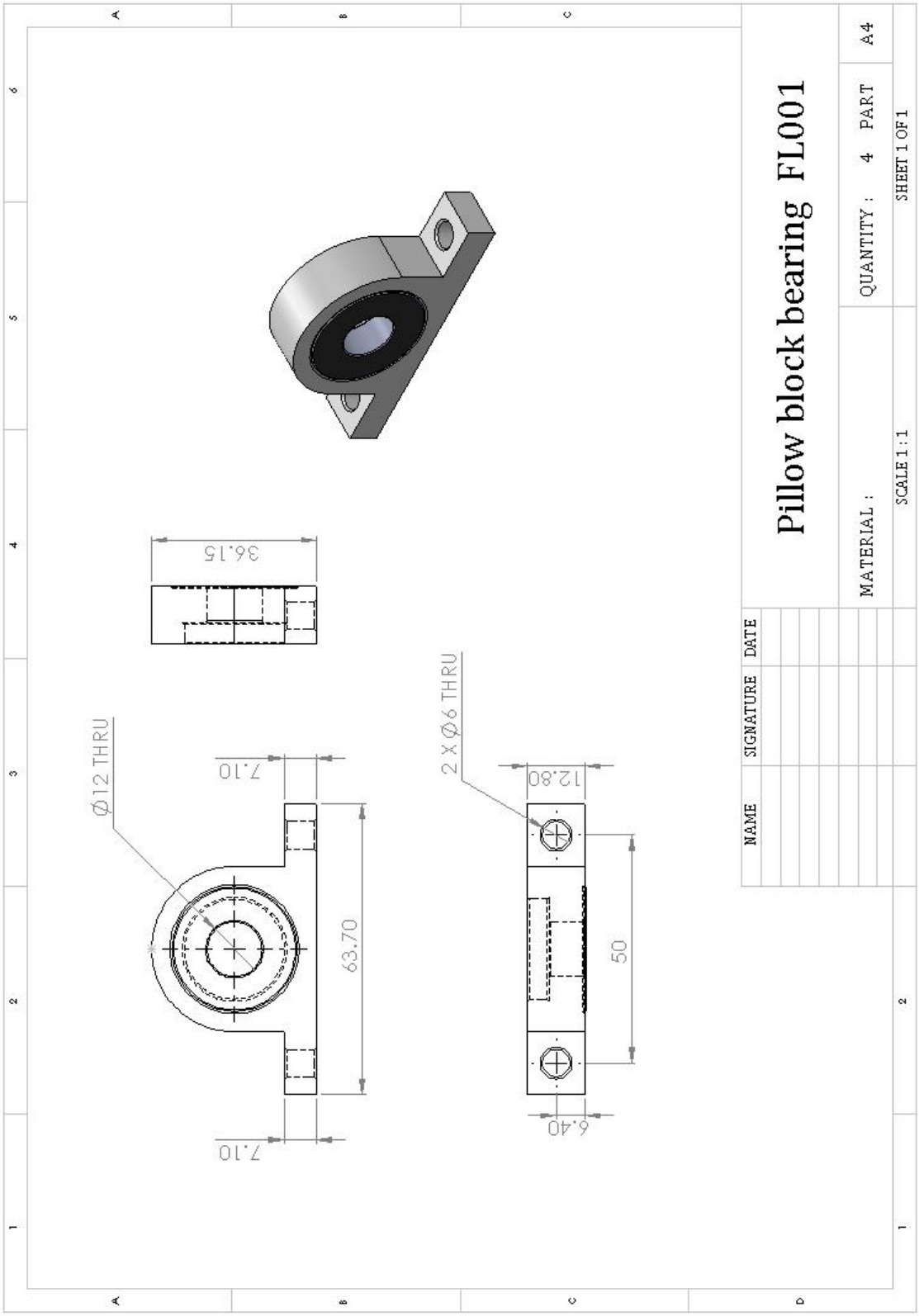

Aluminum plate วางชนบดเจอร์ฝั่งซ้าย
MATERIAL : Aluminium 1100
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
6 X Ø4 THRU
6 X Ø6 THRU
Ø 13 x 90°
R4
318
287
246
205
117
88
59
31
106
134
15
35.50
67
159
187
218.50
303
150
91
88
58
48
15
10
165
3

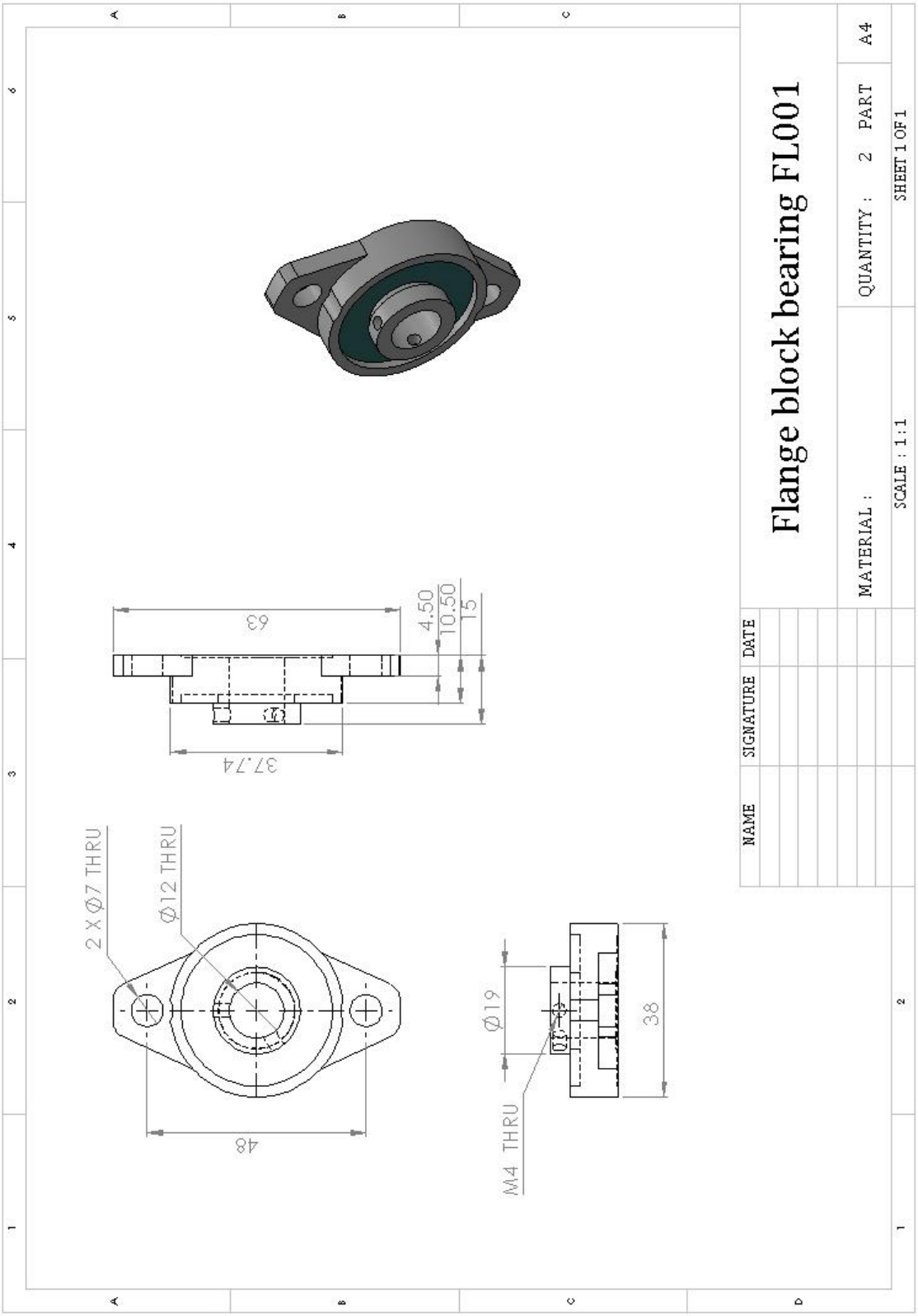

Aluminum plate วางชนปลายด้านขวา
MATERIAL : Aluminium 1100
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
6 X Ø4 THRU
6 X Ø6 THRU
Ø13 X 90°
4R
165
3
150
91
88
58
48
10
5
287
246
205
117
88
59
31
106
134
15
35.50
67
159
187
218.50
303
318

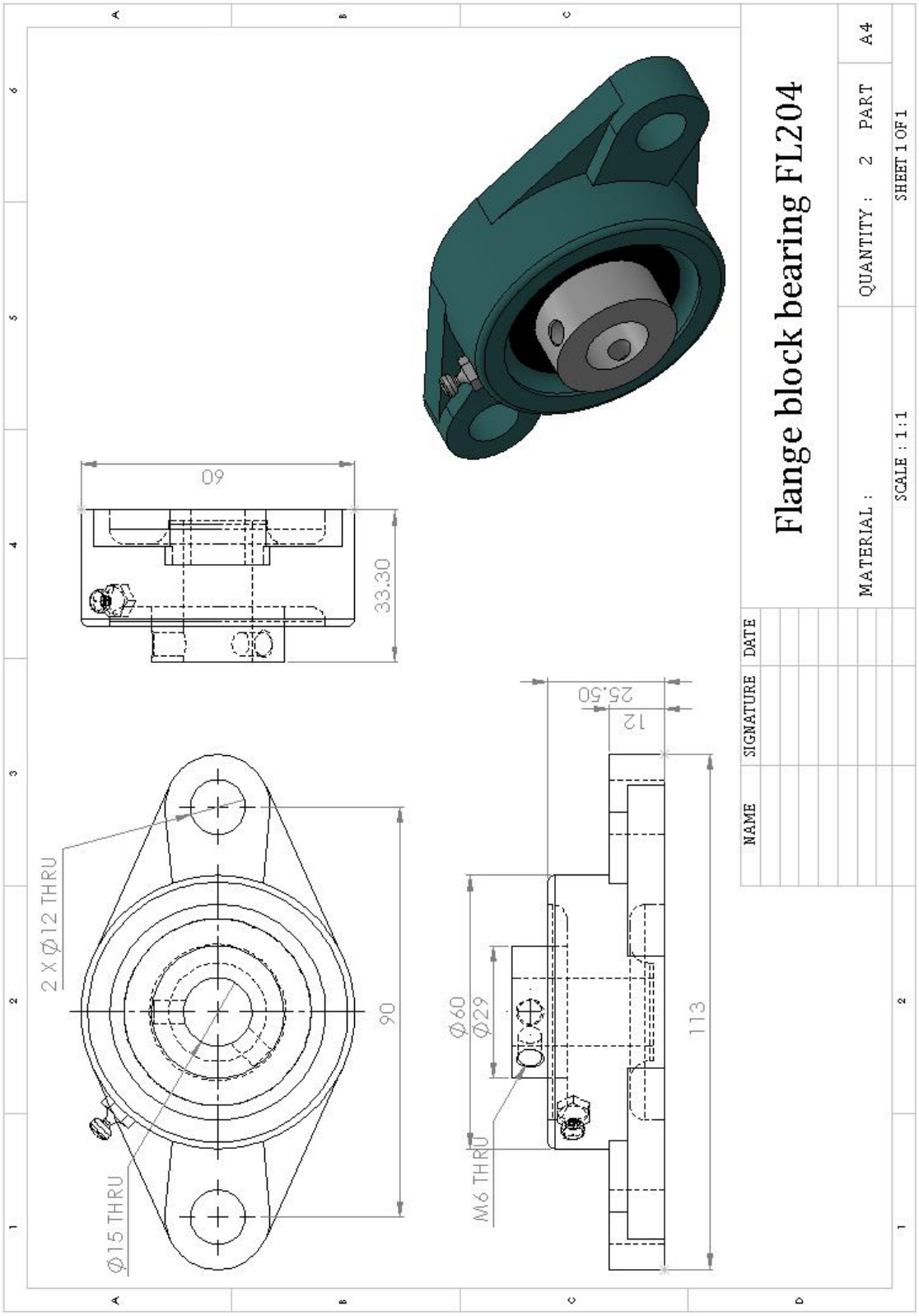

Aluminum plate ตำหลังบางสาระโหลด
MATERIAL : Aluminium sheet 1100
QUANTITY : 1 PART
A3
SCALE 1 : 5
SHEET 1 OF 1
NAME
SIGNATURE
DATE
ALL Ø6 THRU
Ø13.5 X 90°
600
3
60
343
315
285
257
58
30
15
450
300
150
5
585
450
300
150
15
5

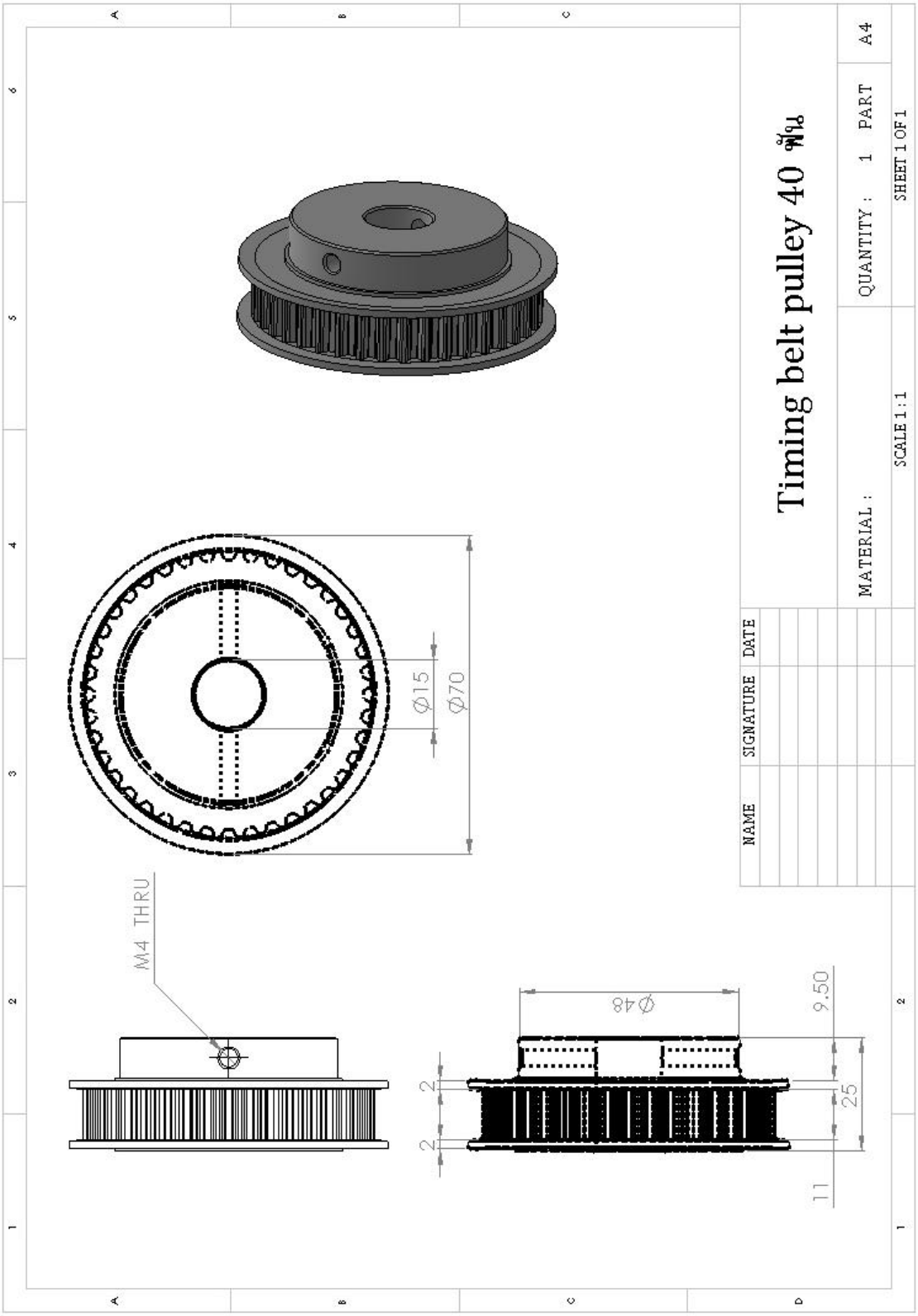

ขายึดเอนโค้ดเดอร์
MATERIAL : Acrylic sheet
QUANTITY : 1 PART
A4
SCALE 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
125
10
2 X Ø5 THRU
3
43
39.50
21
7
5
15
10.50
39.50
50
19.50
110.80

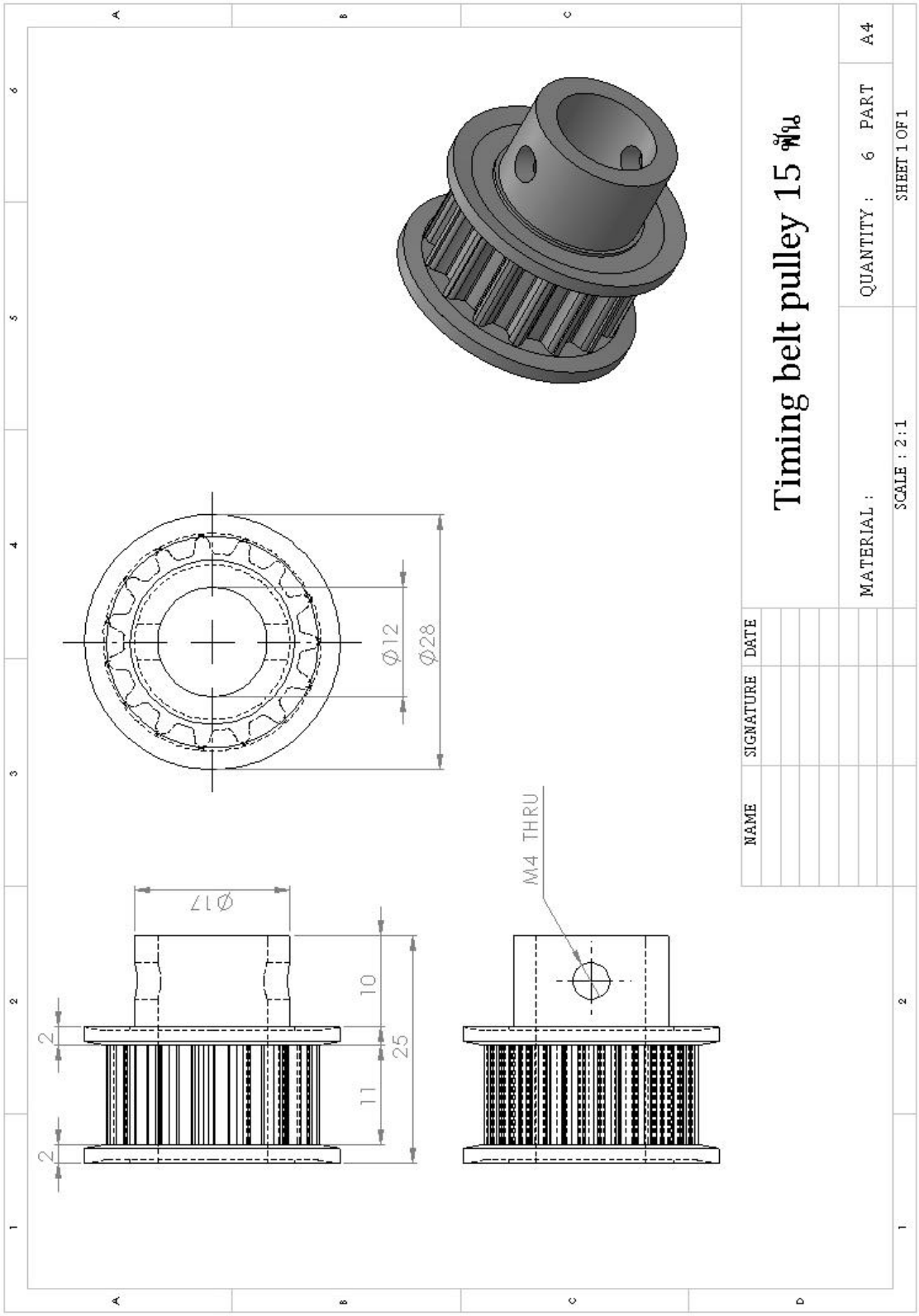

Square lange bearing 626Z
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 2 PART
A4
SCALE : 2:1
SHEET 1 OF 1
12.80
13.80
30.30
38.30
6.40
5
5
Ø4 THRU
⌴ Ø8 ↧4
Ø19 THRU
Ø6 THRU

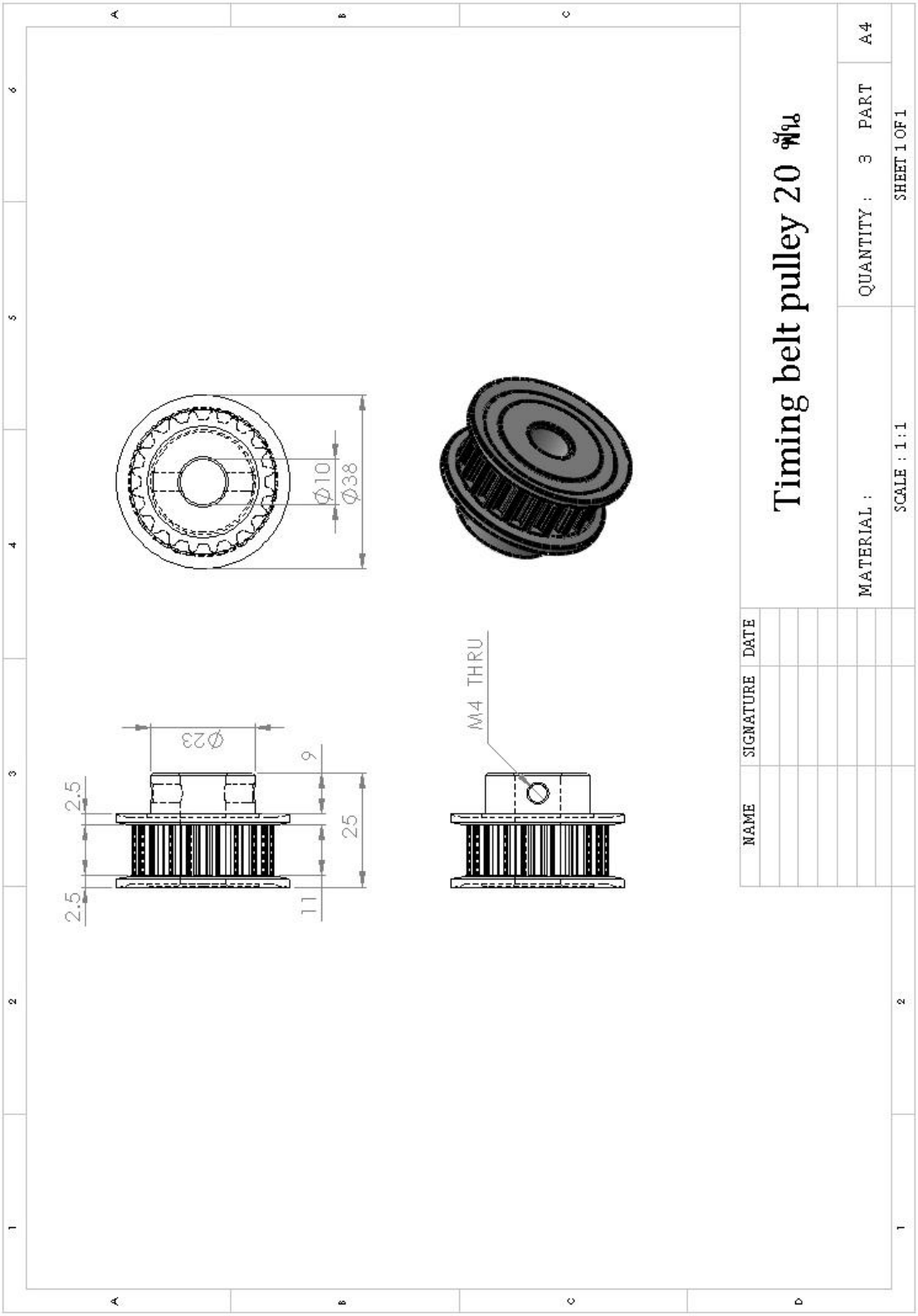

Pillow block bearing FL001
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 4 PART
A4
SCALE 1 : 1
SHEET 1 OF 1
36.15
Ø12 THRU
7.10
63.70
7.10
2 X Ø6 THRU
12.80
50
6.40

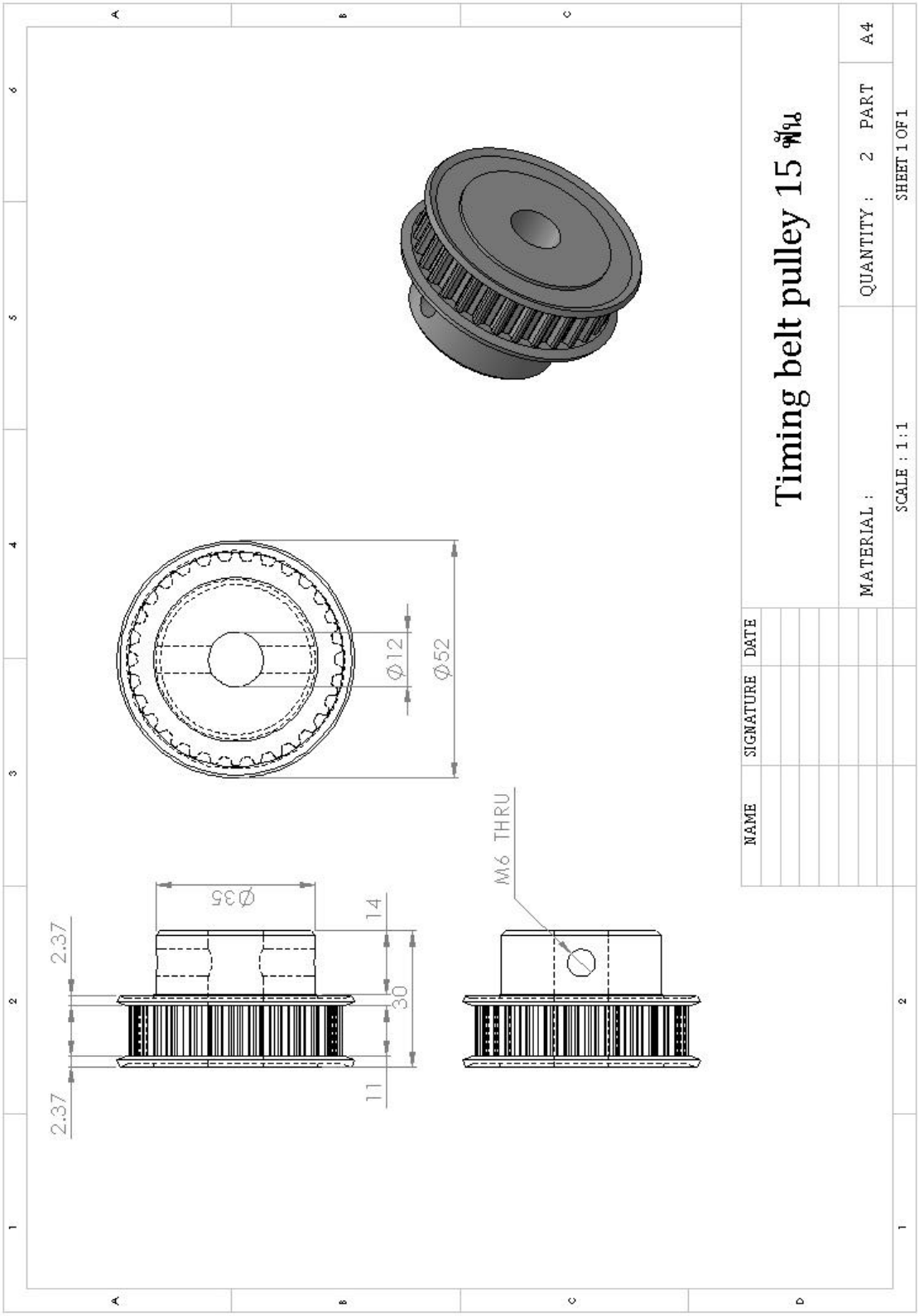

Flange block bearing FL001
MATERIAL :
QUANTITY : 2 PART
A4
SCALE : 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
63
4.50
10.50
15
37.74
2 X Ø7 THRU
Ø12 THRU
48
Ø19
38
M4 THRU

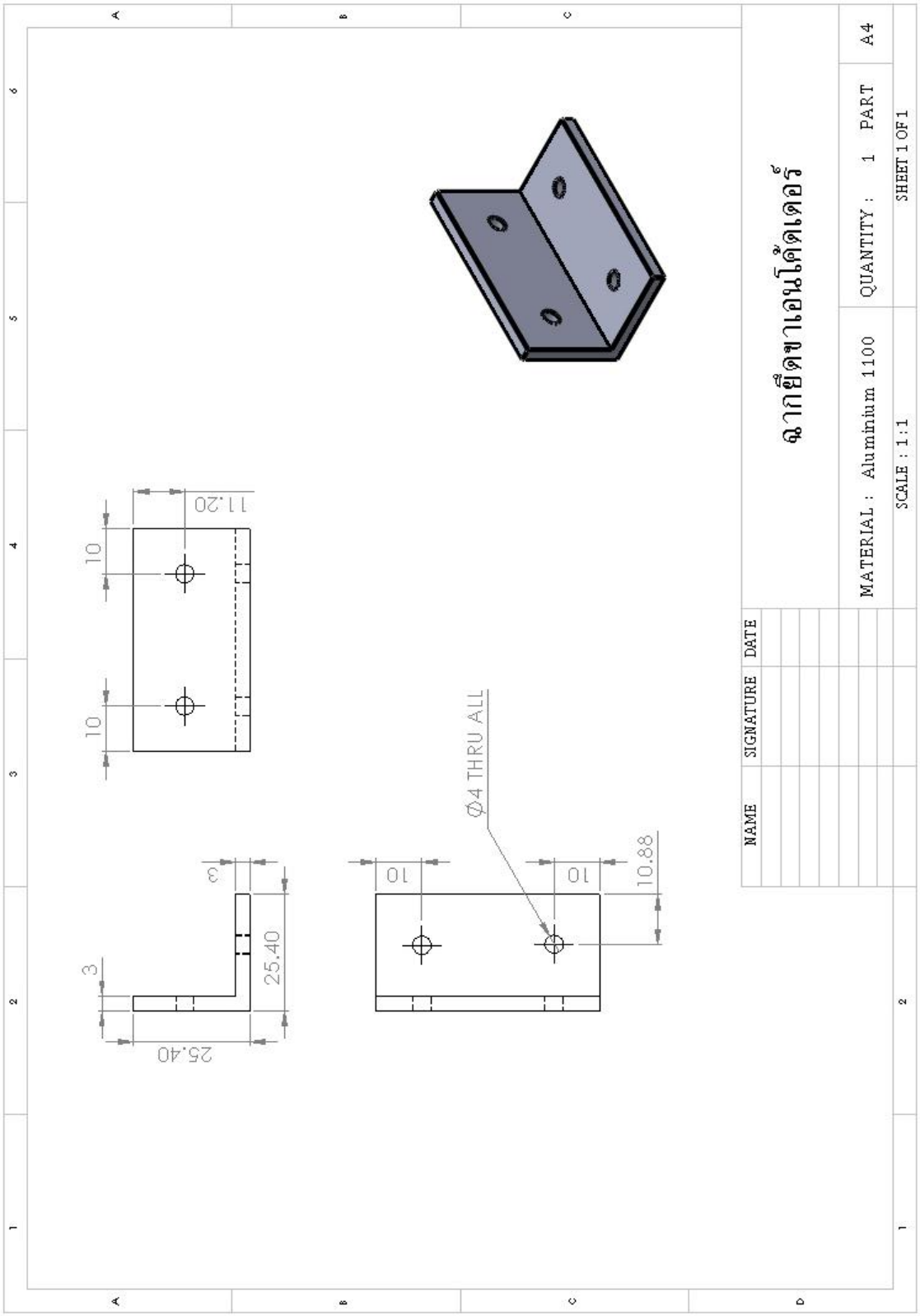

Flange block bearing FL204
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 2 PART
A4
SCALE : 1:1
SHEET 1 OF 1
60
33.30
2 X Ø12 THRU
Ø15 THRU
90
25.50
12
Ø60
Ø29
M6 THRU
113

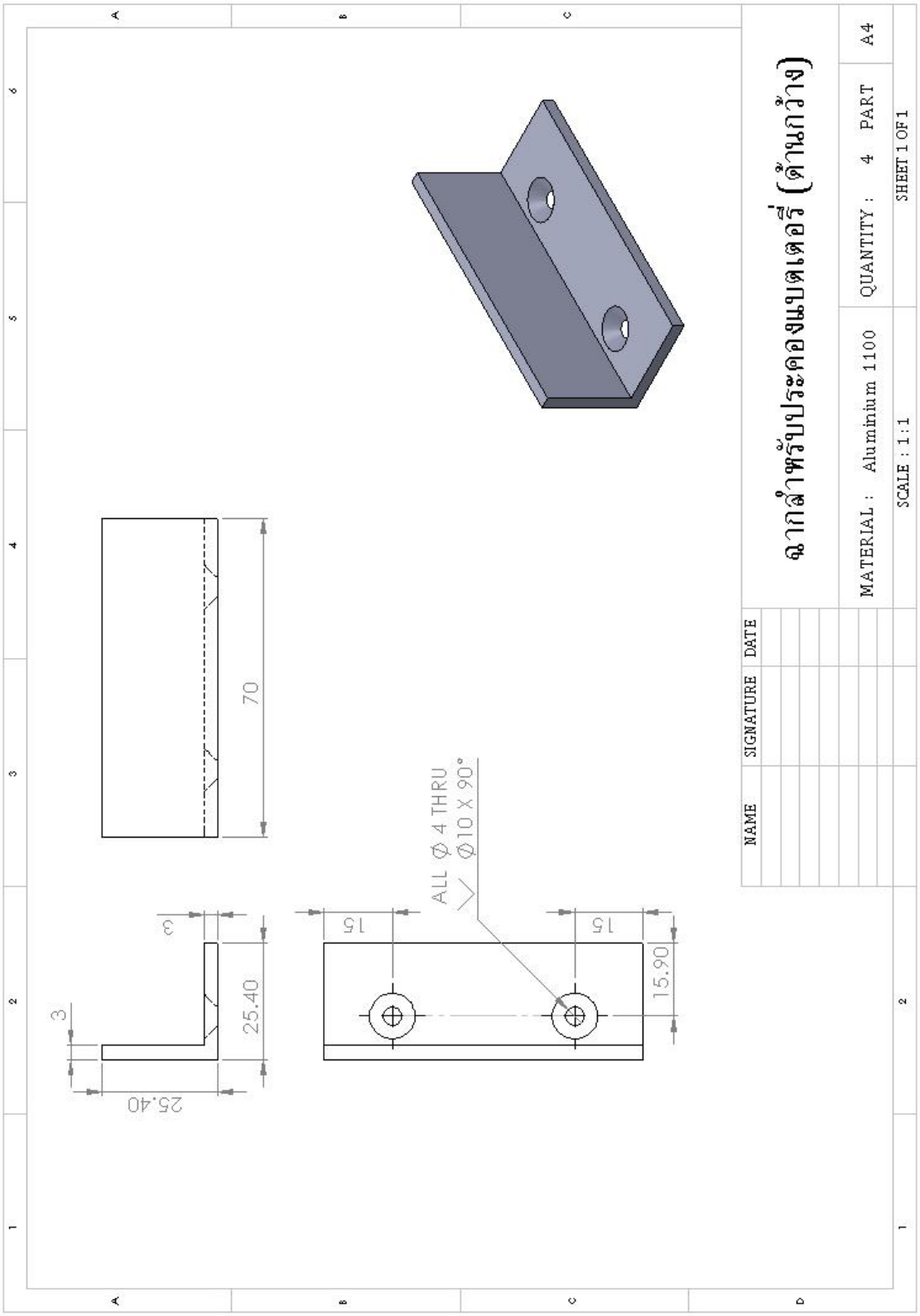

Timing belt pulley 40 ฟัน
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 1 PART
A4
SCALE 1:1
SHEET 1 OF 1
M4 THRU
Ø15
Ø70
Ø48
2
2
9.50
25
11

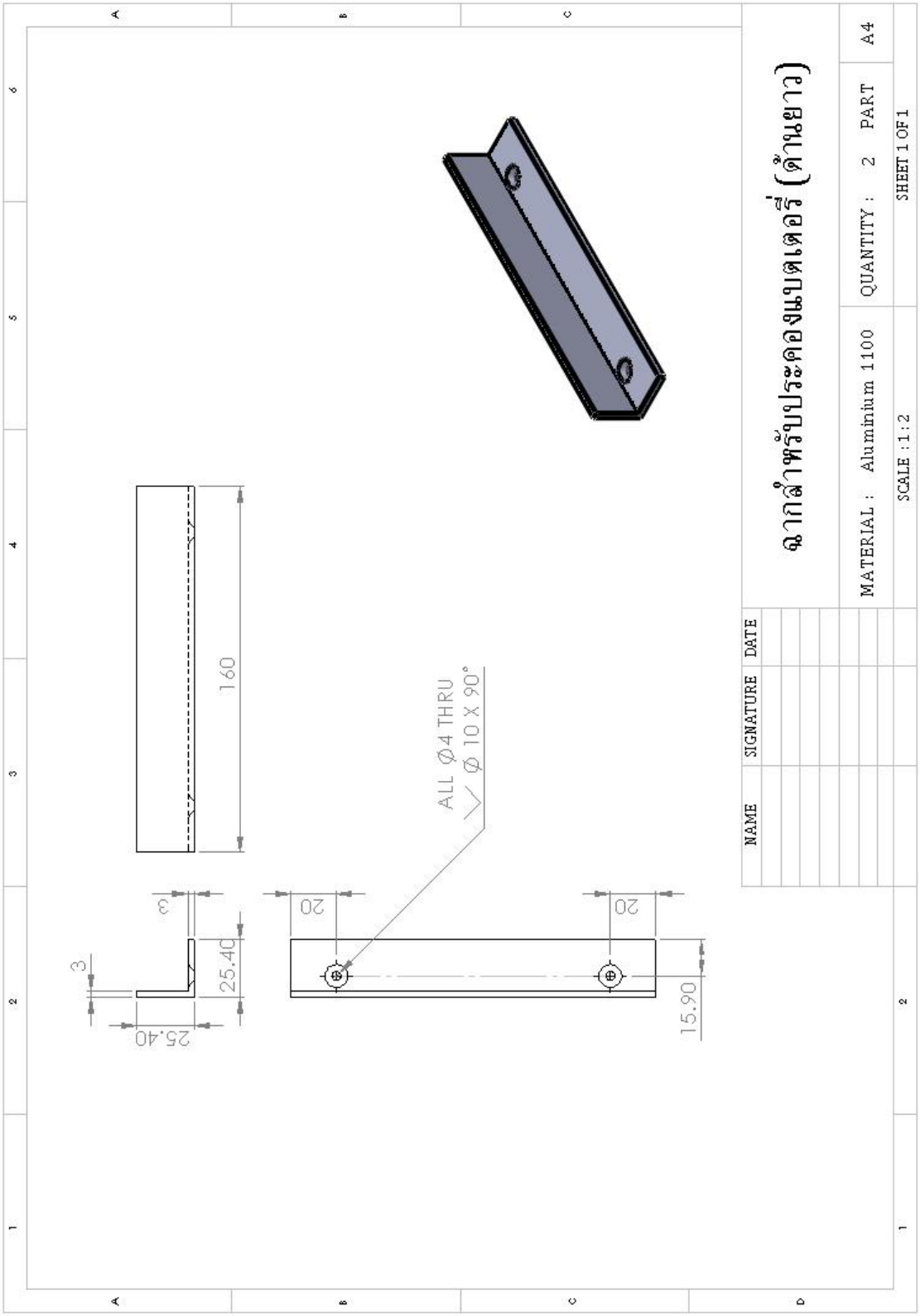

Timing belt pulley 15 ฟัน
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 6 PART
A4
SCALE : 2:1
SHEET 1 OF 1
Ø12
Ø28
Ø17
M4 THRU
2
2
10
25
11

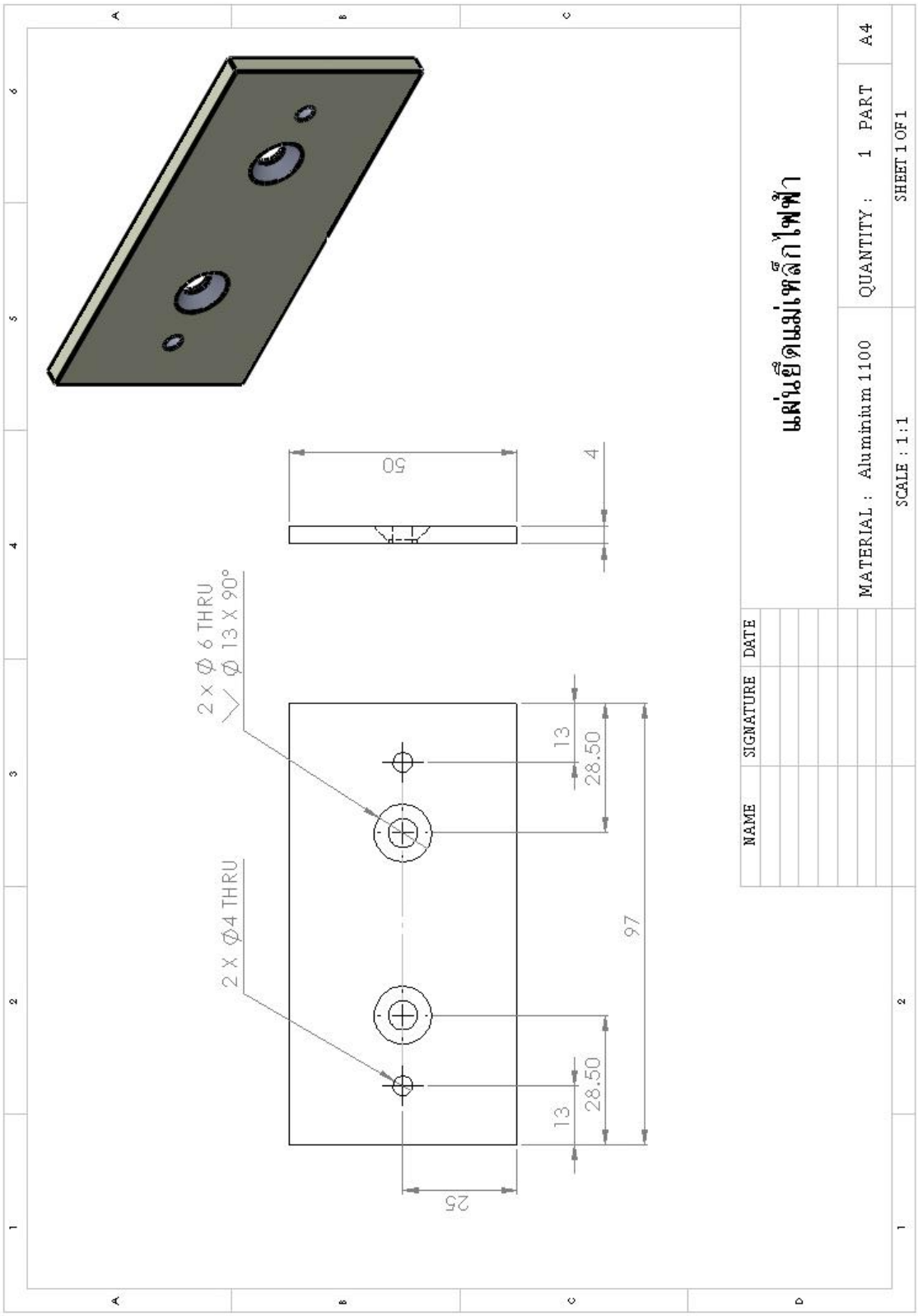

Timing belt pulley 20 ฟัน
Ø10
Ø38
Ø23
2.5
2.5
9
25
11
M4 THRU
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 3 PART
A4
SCALE : 1:1
SHEET 1 OF 1

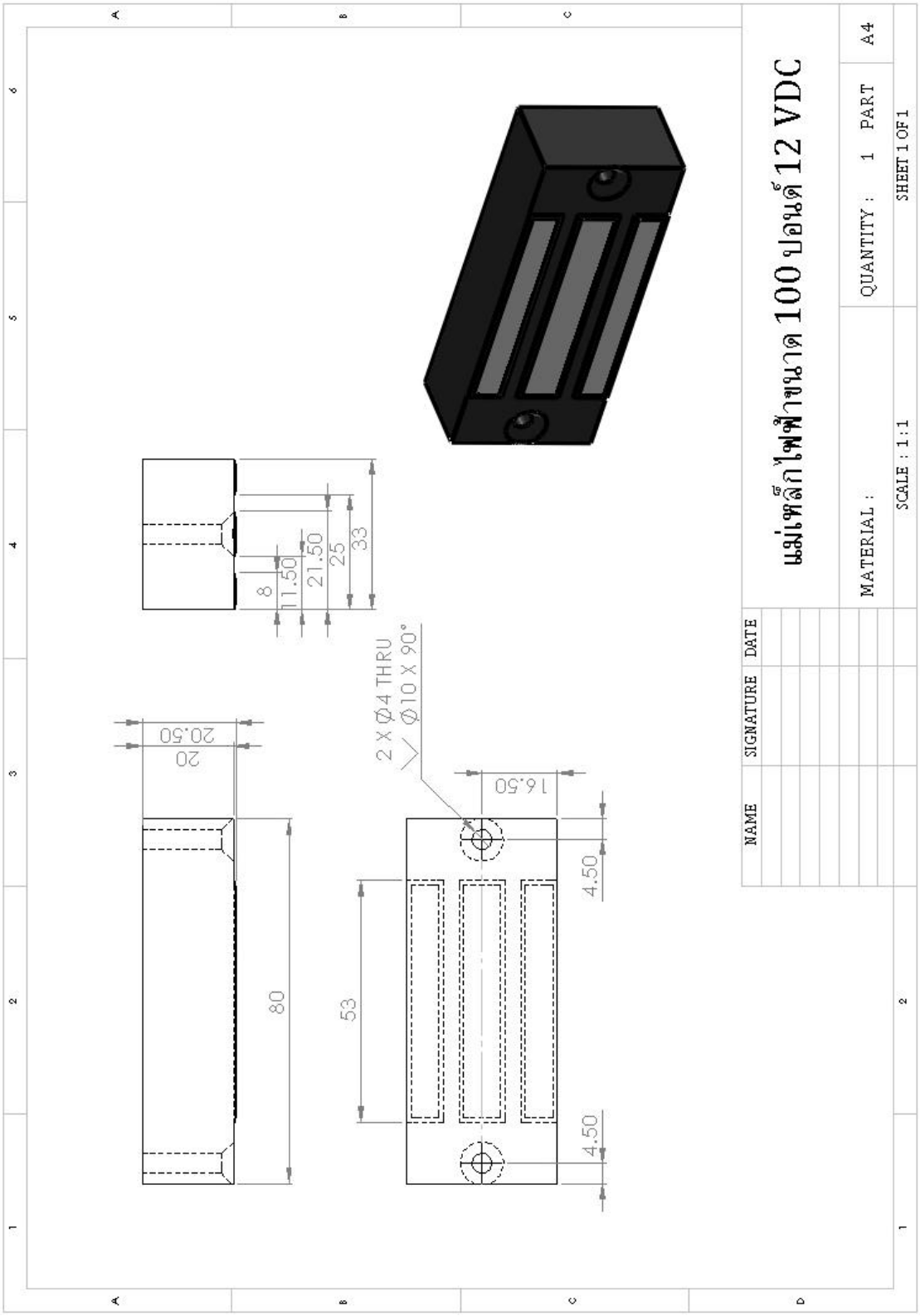

Timing belt pulley 15 ฟัน
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 2 PART
A4
SCALE : 1:1
SHEET 1 OF 1
Ø12
Ø52
Ø35
2.37
2.37
14
30
11
M6 THRU

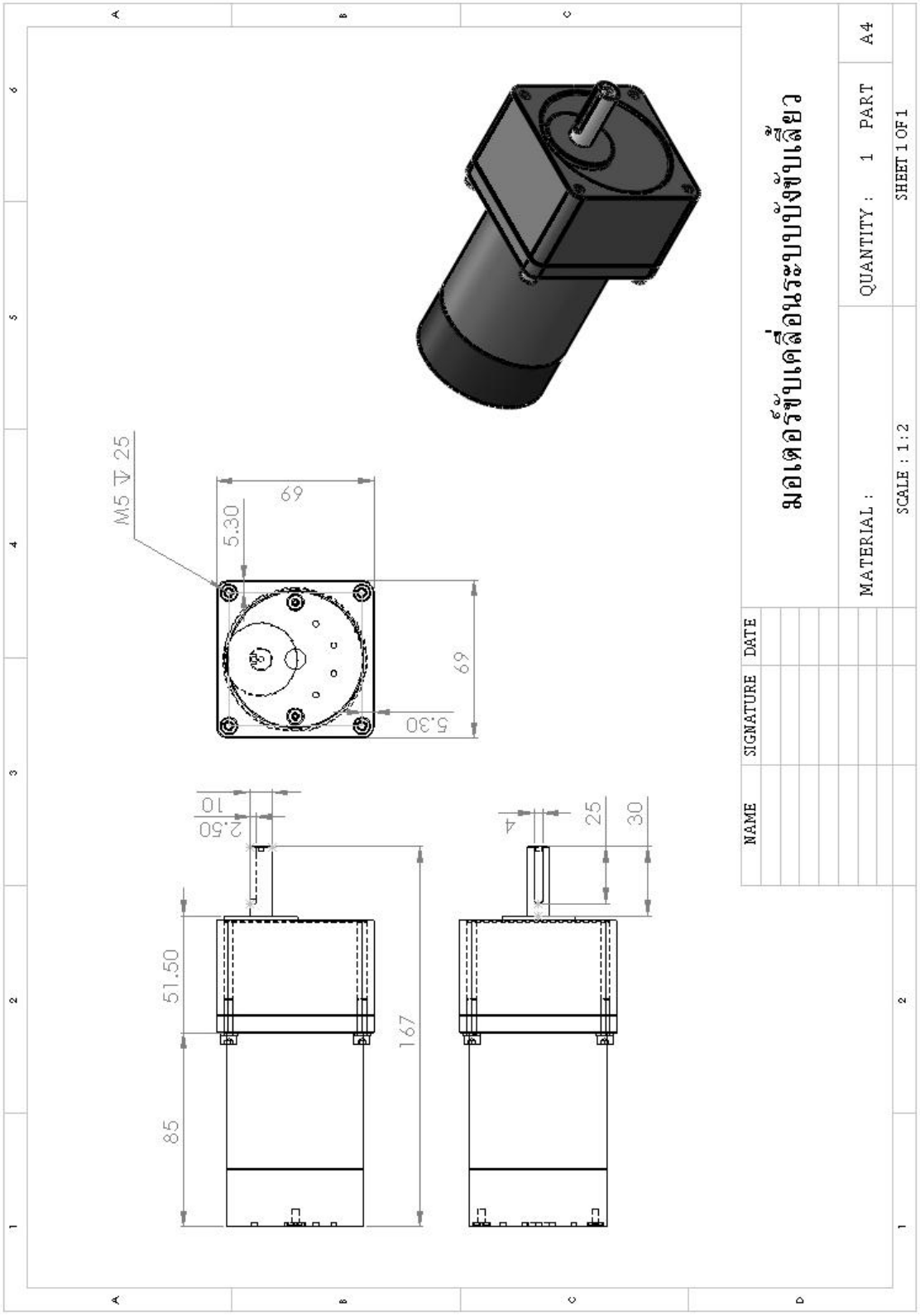

ฉากยึดขาเอนโค้ดเดอร์
MATERIAL : Aluminium 1100
QUANTITY : 1 PART
A4
SCALE : 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
11.20
10
10
Ø4 THRU ALL
10
10
10.88
3
3
25.40
25.40

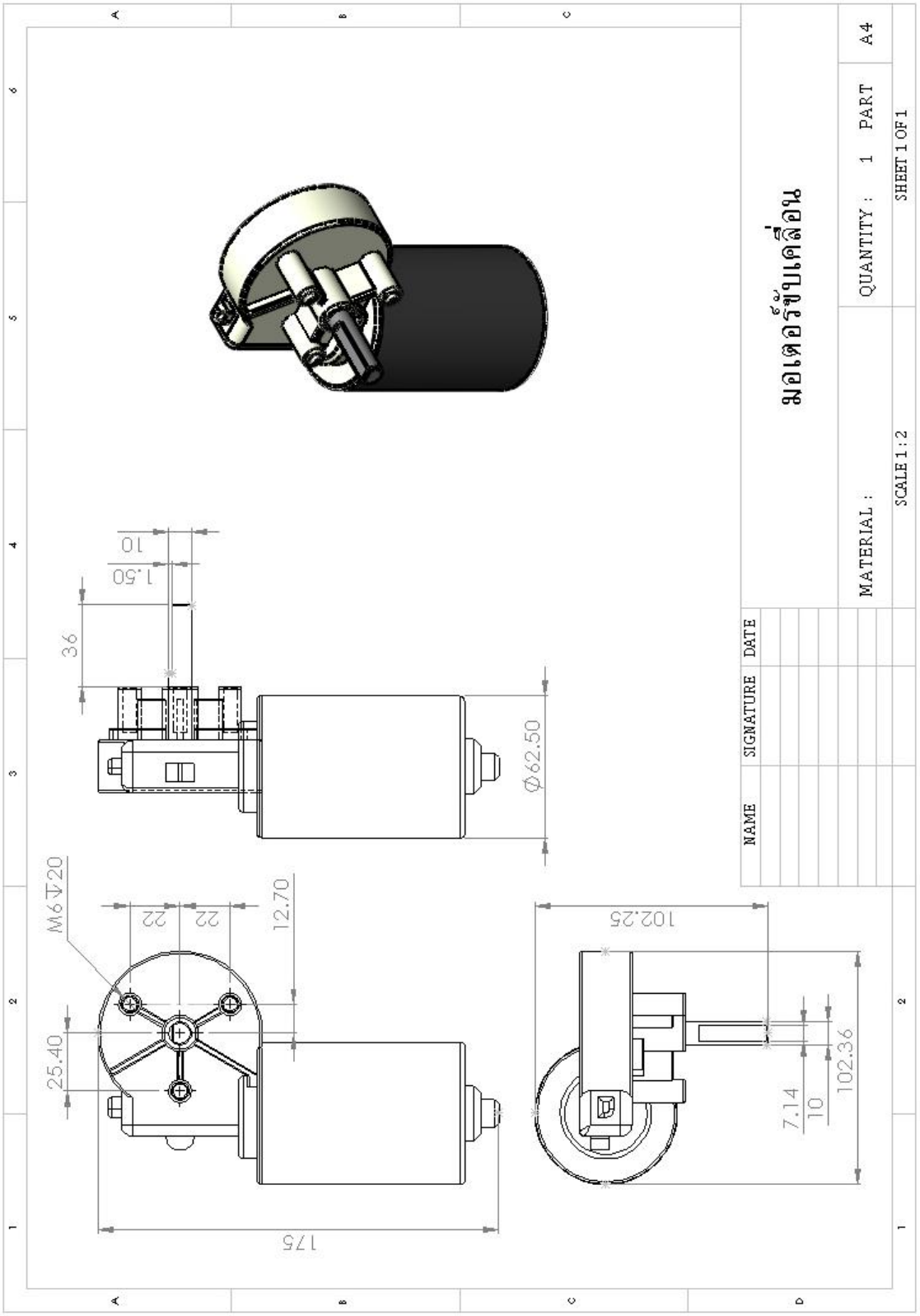

ฉากสำหรับประกอบมุมเครื่อง (ด้านกว้าง)
NAME
SIGNATURE
DATE
MATERIAL : Aluminium 1100
QUANTITY : 4 PART
A4
SCALE : 1:1
SHEET 1 OF 1
70
ALL Ø 4 THRU
Ø10 X 90°
15
15
15.90
3
25.40
3
25.40

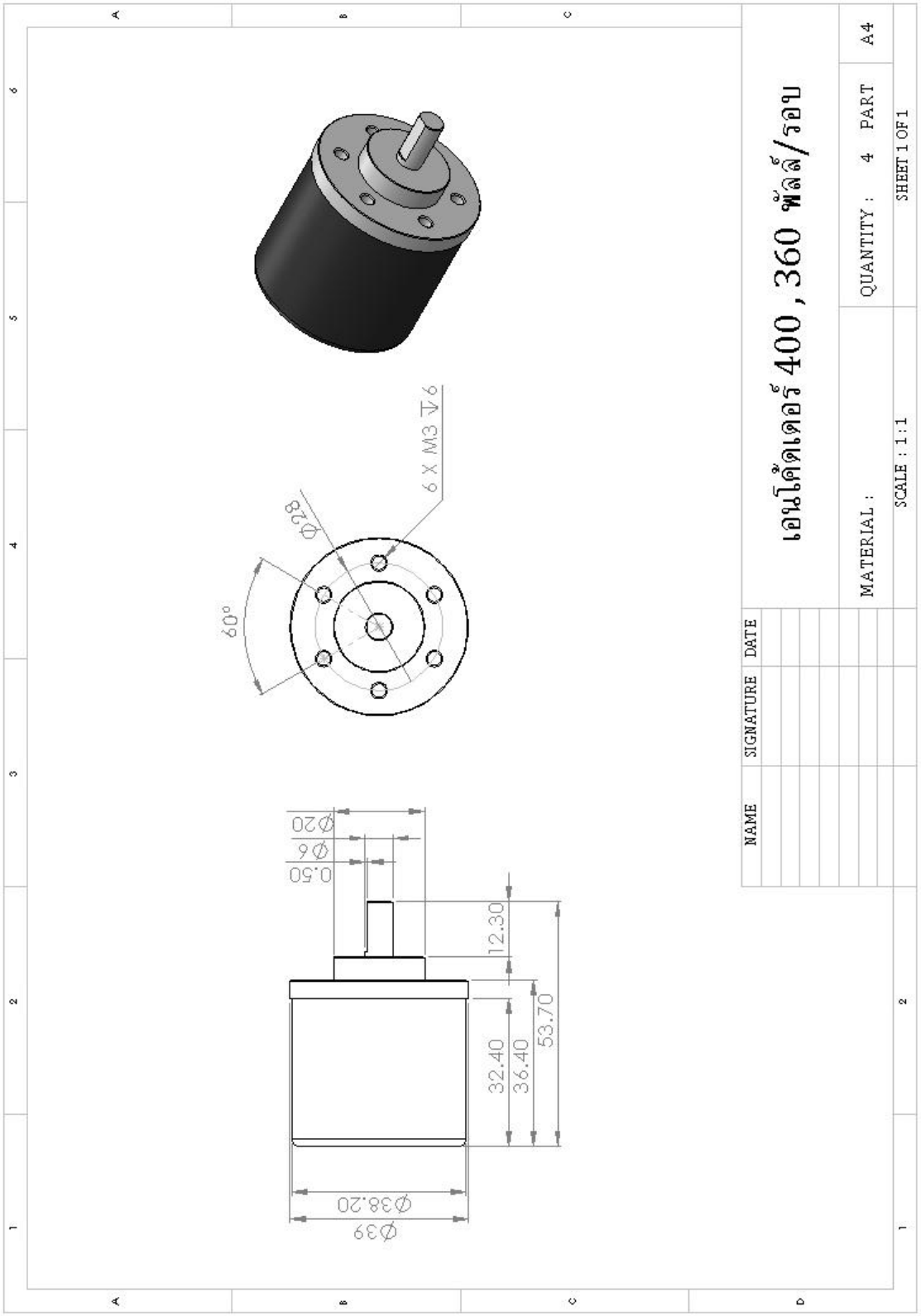

ฉากสำหรับประคองมบดเดอรี่ (ด้านยาว)
MATERIAL : Aluminium 1100
QUANTITY : 2 PART
A4
SCALE : 1:2
SHEET 1 OF 1
NAME
SIGNATURE
DATE
160
ALL Ø4 THRU
Ø 10 X 90°
20
20
15.90
3
25.40
3
25.40

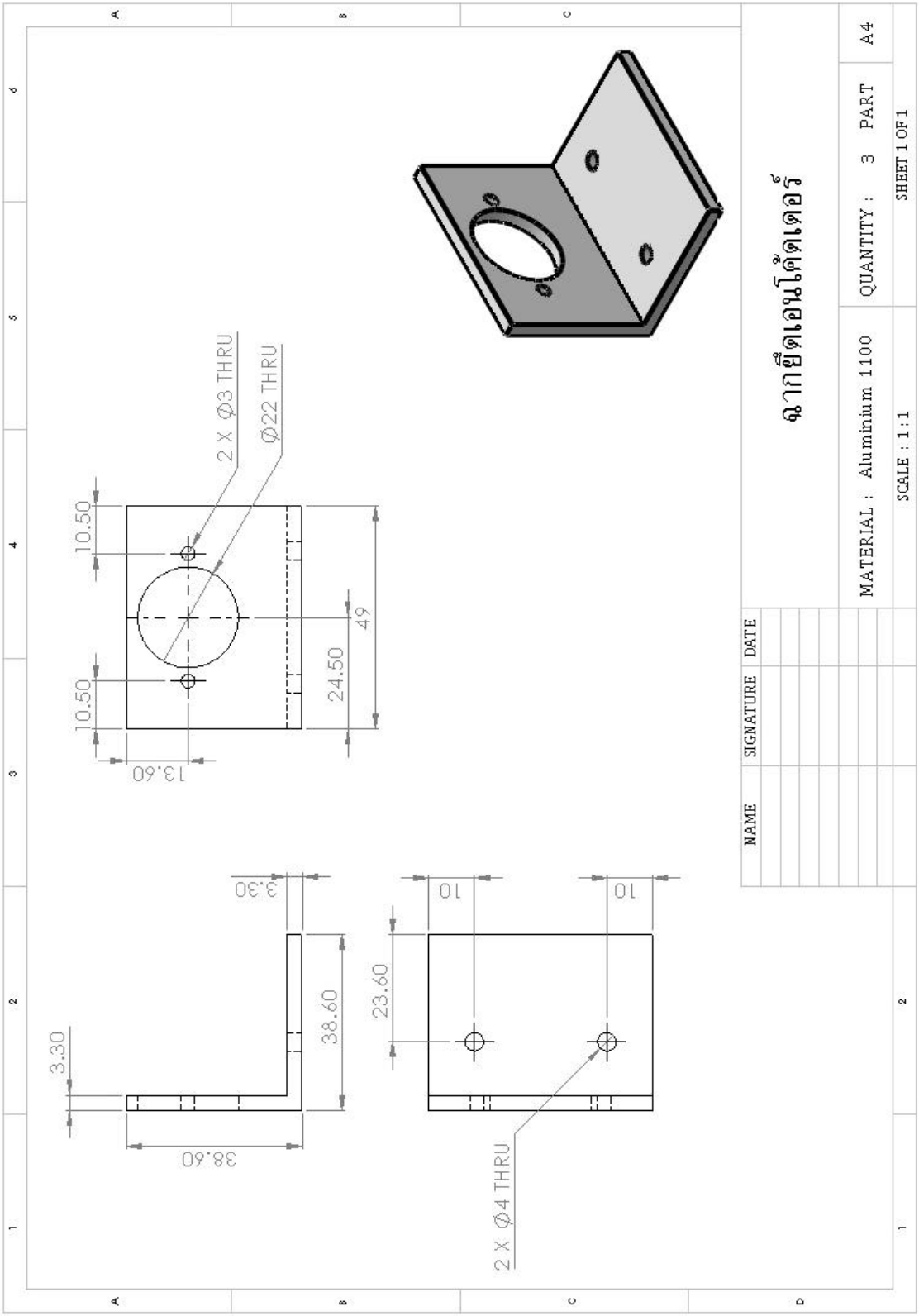

แผ่นยึดแม่เหล็กไฟฟ้า
2 X Ø4 THRU
2 X Ø 6 THRU
Ø 13 X 90°
50
4
25
13
28.50
97
13
28.50
NAME
SIGNATURE
DATE
MATERIAL : Aluminium 1100
QUANTITY : 1 PART
A4
SCALE : 1:1
SHEET 1 OF 1

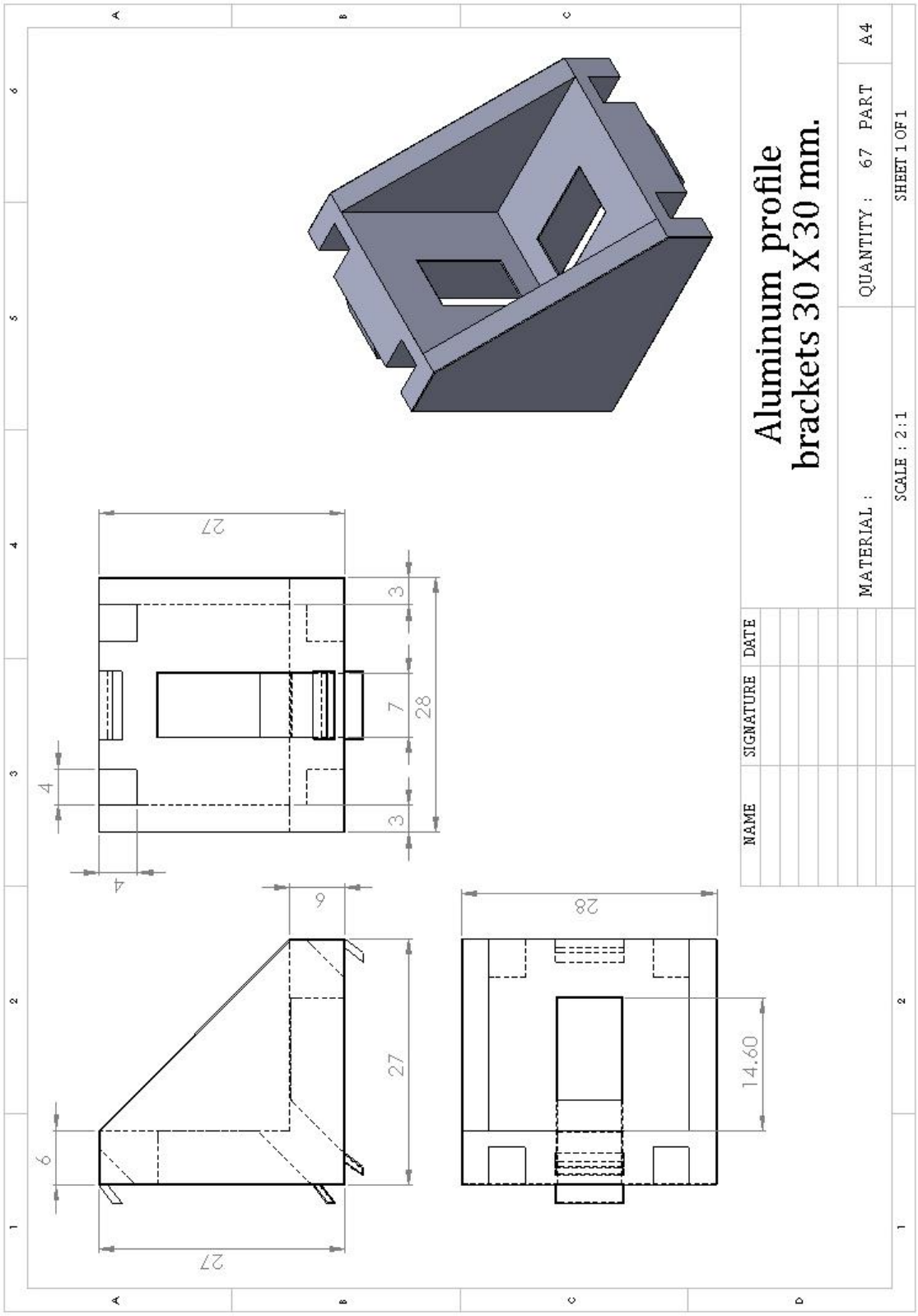

แม่เหล็กไฟฟ้าขนาด 100 ปอนด์ 12 VDC
MATERIAL :
QUANTITY : 1 PART
SCALE : 1:1
SHEET 1 OF 1
A4
NAME
SIGNATURE
DATE
2 X Ø4 THRU
Ø10 X 90°
20
20.50
80
53
16.50
4.50
4.50
8
11.50
21.50
25
33

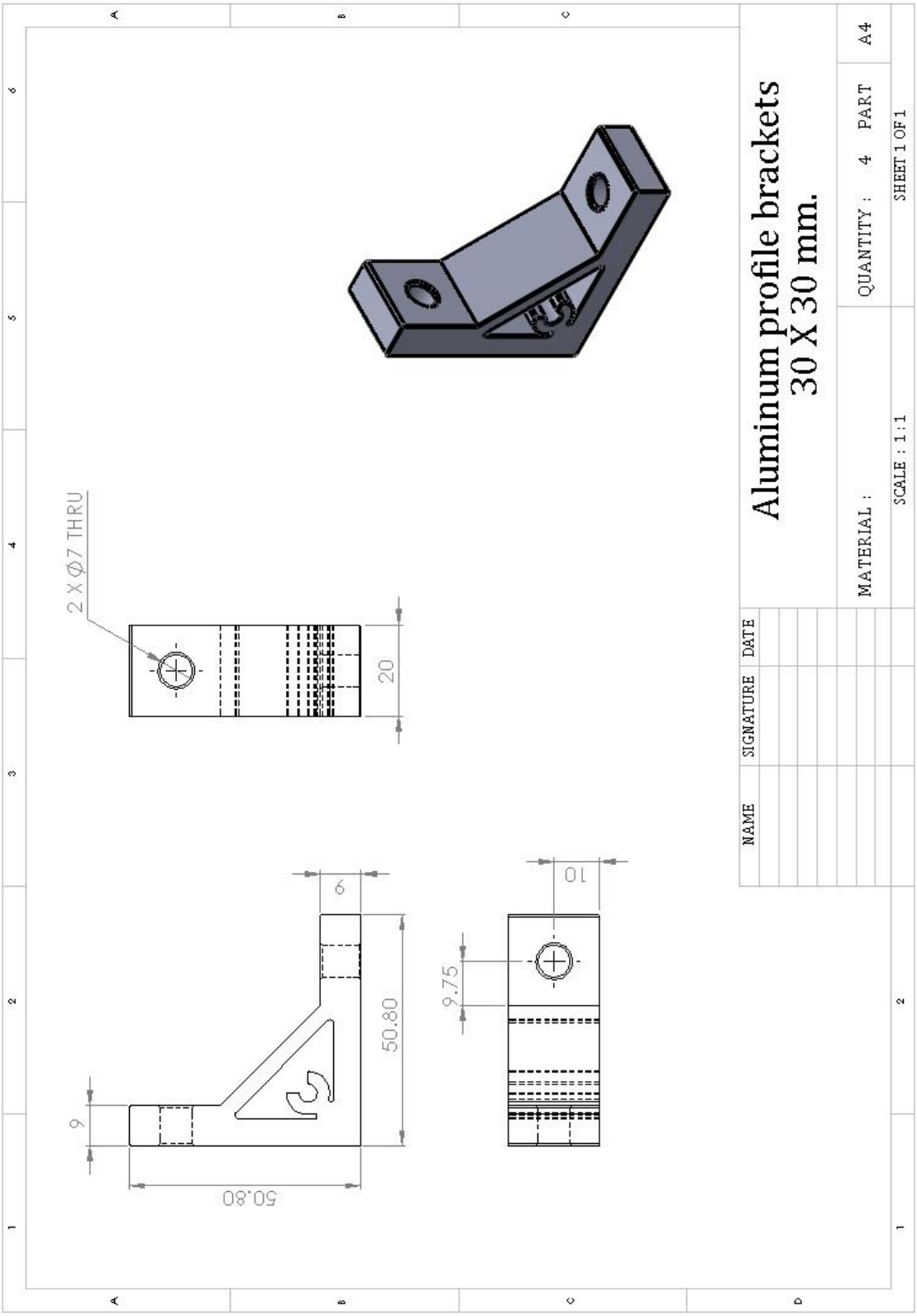

มอเตอร์ขับเคลื่อนระบบปั๊มขับเลี้ยว
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 1 PART
A4
SCALE : 1:2
SHEET 1 OF 1
M5 ↧ 25
69
5.30
69
5.30
10
2.50
51.50
85
167
4
25
30

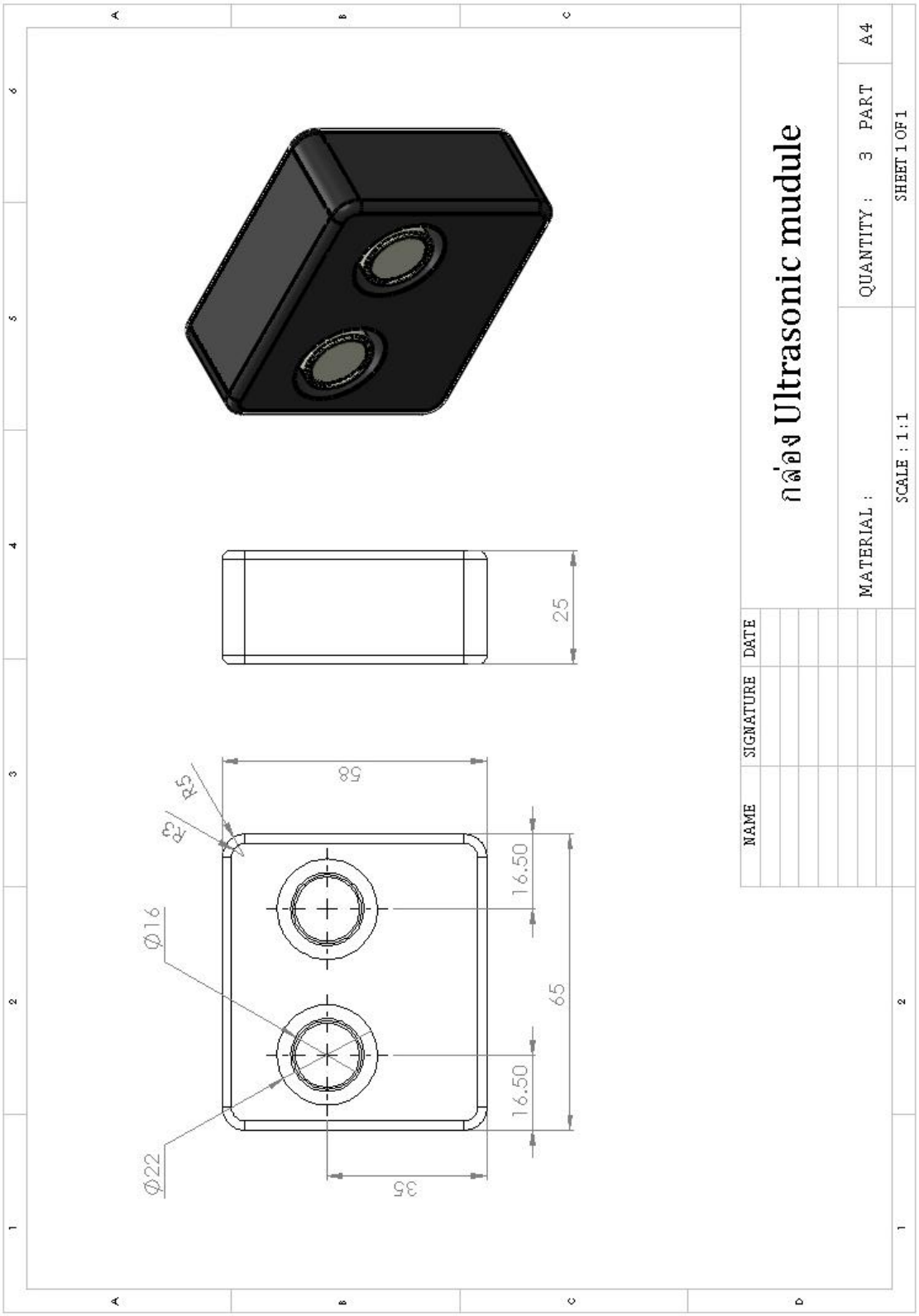

มอเตอร์ขับเคลื่อน
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 1 PART
A4
SCALE 1 : 2
SHEET 1 OF 1
M6 ↧20
25.40
22
22
12.70
175
36
1.50
10
Ø62.50
102.25
102.36
7.14
10


เอนโค้ดเดอร์ 400 , 360 พัลส์/รอบ
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 4 PART
A4
SCALE : 1:1
SHEET 1 OF 1
6 X M3 ↧ 6
Ø28
60°
Ø20
Ø6
0.50
12.30
32.40
36.40
53.70
Ø38.20
Ø39


ฉากยึดเอนโค้ดเดอร์
MATERIAL : Aluminium 1100
QUANTITY : 3 PART
A4
SCALE : 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
2 X Ø3 THRU
Ø22 THRU
10.50
10.50
13.60
24.50
49
3.30
38.60
38.60
3.30
23.60
10
10
2 X Ø4 THRU


Aluminum profile
brackets 30 X 30 mm.
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 67 PART
A4
SCALE : 2:1
SHEET 1 OF 1
27
3
7
28
3
4
4
6
27
6
27
28
14.60


Aluminum profile brackets
30 X 30 mm.
MATERIAL :
QUANTITY : 4 PART
A4
SCALE : 1:1
SHEET 1 OF 1
NAME
SIGNATURE
DATE
2 X Ø7 THRU
20
6
50.80
9
50.80
10
9.75


กล่อง Ultrasonic mudule
NAME
SIGNATURE
DATE
MATERIAL :
QUANTITY : 3 PART
A4
SCALE : 1:1
SHEET 1 OF 1
25
58
R5
R2
Ø16
Ø22
16.50
65
16.50
35