View from Top side

View from Top side

View from Bottom side

5Vraspi
5Vusb
ADR LED
GND

ADR_LED
LEDCon

C10
IC10
C1

R10
R11
R12
R4
R5
R6
R1

PA5
PA5
3.3V
GND
PA6
PA6
3.3V
GND
PA7
PA7
GND
5Vusb

GPIOCons

5Vraspi
P1
C4   C3

IC1

C8
C2

D1

C7

C9   IC2   C4

I2CCon

IMU

SDA
SCL
GND
3.3V

Duckiebot Hut V1.1
june 2018   2018D

5Vraspi
R8

P3 5Vusb

5Vusb
R7

5Vusb in
5V_EXT_USB

A1 A2 GND B2 B1

MOTA
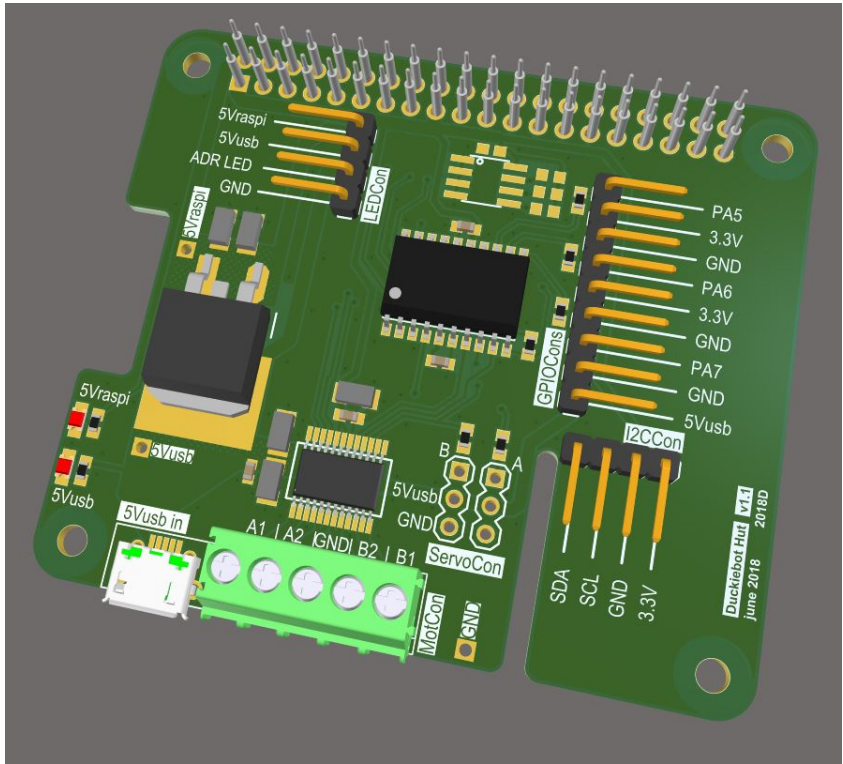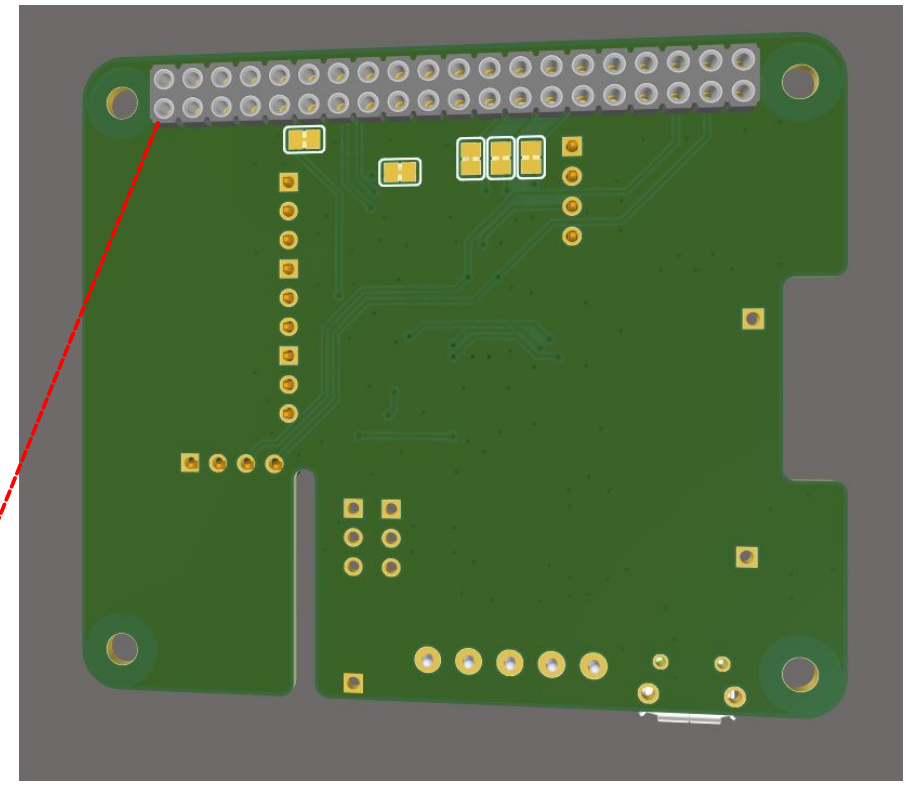
MotCon   GND
P2

B   R3   R2   A
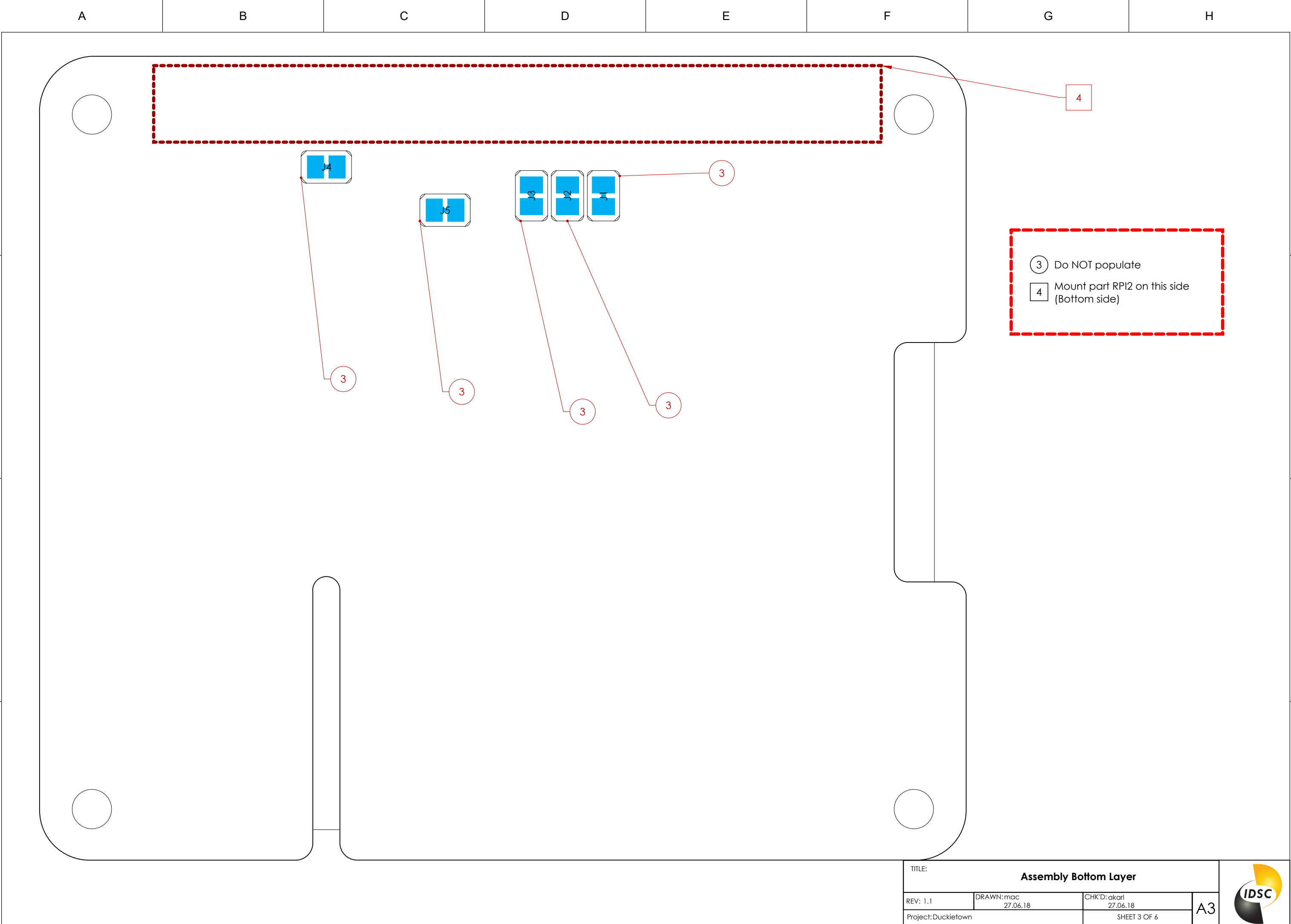
SER_B   SER_A

5Vusb
GND

ServoCon

49mm
57mm

58mm
65mm

Important note: Part RPI2 needs to be mounted on the bottom side. Pick and Place file may be wrong. See pictures.
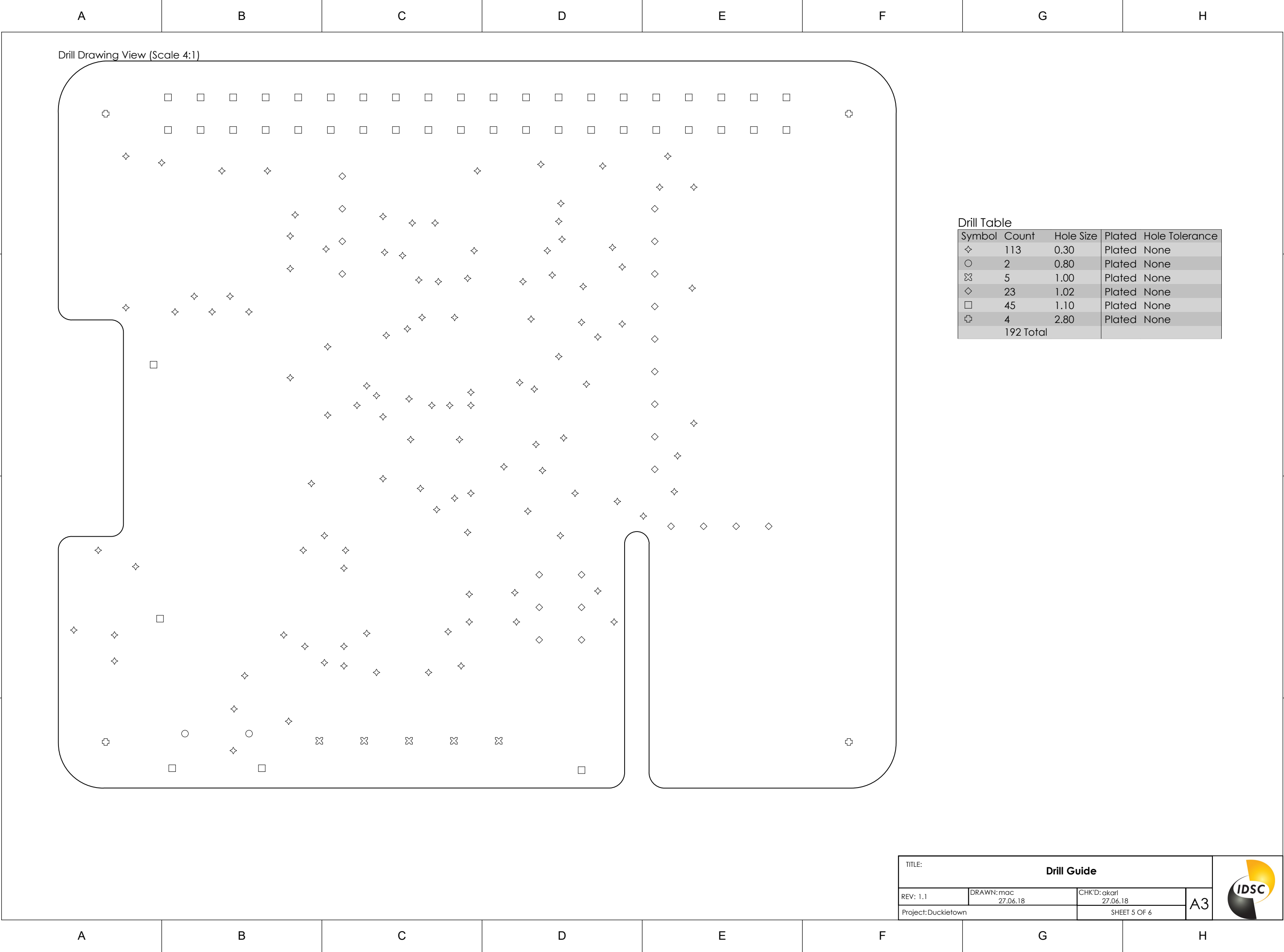
Duckiebot Hut v1.1 2018D

TITLE:	PCB and Mounting Holes Dimensions			
REV: 1.1	DRAW mac 27.06.18	CHK'D akarl 27.06.18		A3
Project:Duckietown		SHEET 1 OF 6		

IDSC

Notes:
① Do NOT populate
② Part NOT on Top side, mount part on bottom side

Reference	Value

ADR_LED
C10
R10
R11
R12
IC10
R4
PA5
C1
R5
C4
C3
R6
P1
IC1
PA6
R1
D1
PA7
C8
C2
R3
R2
IMU
C7
SER_B
SER_A
C6
C9
IC2
R8
R7
P3
5V_EXT_USB
MOTA
P2

J4

J5

3 2 1

4

3

3

3

3

3

3

4

3 Do NOT populate

4 Mount part RPI2 on this side
(Bottom side)

TITLE:

Assembly Bottom Layer

REV: 1.1

DRAWN: mac
27.06.18

CHK'D: akarl
27.06.18

A3

Project: Duckietown

SHEET 3 OF 6

IDSC

Bill Of Materials

Line #	Designator	Quantity	Comment	Footprint	Supplier	Supplier Part Number	note
1	5V_EXT_USB	1	MICROUSBCON	MICROUSBCON	mouser	649-10118194-0001LF	THM
2	ADR_LED	1	M04PTH	1X04	mouser	855-M20-9750446	THM
3	C1, C2, C10	3	0.1uF	C0603	mouser, [NoValue]	77-VJ0603V104ZXXCBC, [NoValue]	[NoParam], do not populate
4	C3, C4, C7, C8, C9	5	22uF	CAP_1206i_3216m -n	mouser	963-EMK316BB7226ML-T	
5	C5, C6	2	0.1uF	CAP_0603i_1608m -N, CAP_0603i_1608m -L	mouser	77-VJ0603V104ZXXCBC	
6	D1	1	SM74611KTTR	TO263-3L_DIODE	mouser	595-SM74611KTTR	
7	IC1	1	ATTINY861V-10SU	SO20L	mouser	556-ATTINY861V10SU	
8	IC2	1	TB6612FNG	SSOP24	mouser	757-TB6612FNGC8EL	
9	IC10	1	CAT24C32	SOIC8_150MIL			do not populate
10	IMU	1	I2C_IMU_L3GD20H+LSM303	1X04			do not populate
11	J1, J2, J3, J4	4	SOLDERJUMPER_CLOSED	SOLDERJUMPER_CLOSEDWIRE			do not populate
12	J5	1	WP	SOLDERJUMPER_CLOSEDWIRE			do not populate
13	LED1	1	Green 5V EXT USB	CHIPLED_0805_NOOUTLINE	mouser	749-SM0805GCL	
14	LED2	1	Green 5V RPI	CHIPLED_0805_NOOUTLINE	mouser	749-SM0805GCL	
15	MOTA	1	1X5	1X05-3.5MM	mouser	651-1984646	THM
16	P1, P2, P3	3	Pad	PIN1 style 2			do not populate
17	PA5, PA6, PA7	3	M03PTH	1X03	mouser	855-M20-9750346	THM
18	R1	1	10K	R0603	mouser	667-ERJ-PA3J103V	
19	R2, R3, R4, R5, R6	5	220	R0603	mouser	755-ESR03EZPJ221	
20	R7, R8	2	1.8K	R0603	mouser	667-ERJPA3J182V	
21	R10, R11, R12	3	3.9K	R0603			do not populate
22	RPI2	1	RASPBERRYPI_BPLUS_HATSLOTS	PI_HAT_SLOTS	mouser	485-2223	THM
23	SER_A, SER_B	2	M03PTHx	1X03_no3D			THM, do not populate

Drill Drawing View (Scale 4:1)

Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
✧	113	0.30	Plated	None
○	2	0.80	Plated	None
⊠	5	1.00	Plated	None
◇	23	1.02	Plated	None
☐	45	1.10	Plated	None
✛	4	2.80	Plated	None
	192 Total			

Top (Scale 3:1, top view)

Bottom (Scale 3:1, bottom view)

Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Paste			Paste Mask	GTP
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.010mm	Solder Resist	Solder Mask	GTS
Copper	**Top**	**0.018mm**		**Signal**	**GTL**
Core		*1.550mm*	*FR-4*	*Dielectric*	
Copper	**Bottom**	**0.018mm**		**Signal**	**GBL**
Surface Material	Bottom Solder	0.010mm	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
	Bottom Paste			Paste Mask	GBP

Total thickness: 1.606mm