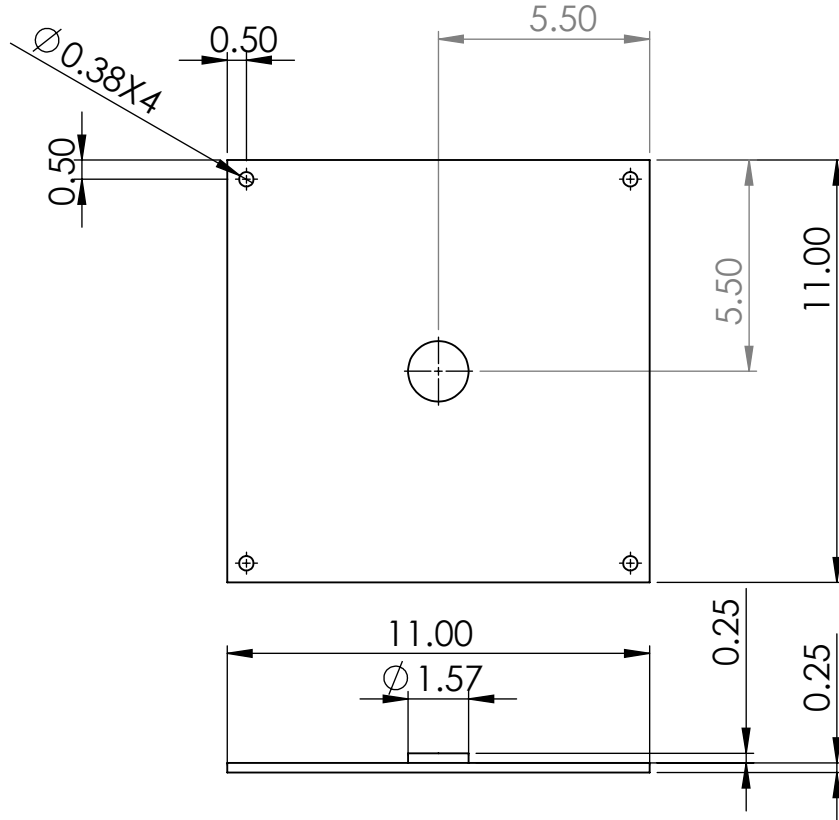
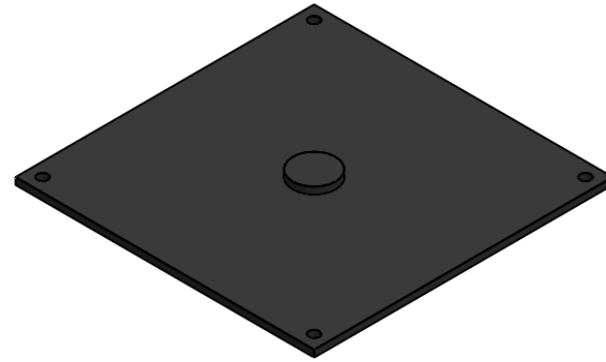


B



1 Drone Connection Plate

- WELDED TO FREE FLY ALTA 8 TO ALLOW FOR TRAFFIC LIGHT ATTACHMENTS
- 1 REQUIRED



B

A

Team: Team 6: NextDrone Technologies		
TITLE: Free Fly Alta 8		
Drawn By: Lucy Guo	DWG. NO. DRONE CONNECTION PLATE	Date: 11/20/17
ME 2212 SEC 1	SCALE: 1:5	SHEET 1 OF 18

2

1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Drone Connection Plate	ALUMINUM	1
2	Free Fly Alta 8	ALUMINUM AND CARBON FIBER	1



3 DRONE SUBASSEMBLY

- MODIFIED VERSION OF FREE FLY ALTA 8 WITH CONNECTION PLATE ATTACHMENT
- 1 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Free Fly Alta 8

Drawn By:
Lucy Guo

DWG. NO.
Drone
Subassembly

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1:7

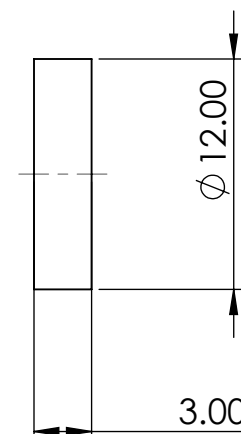
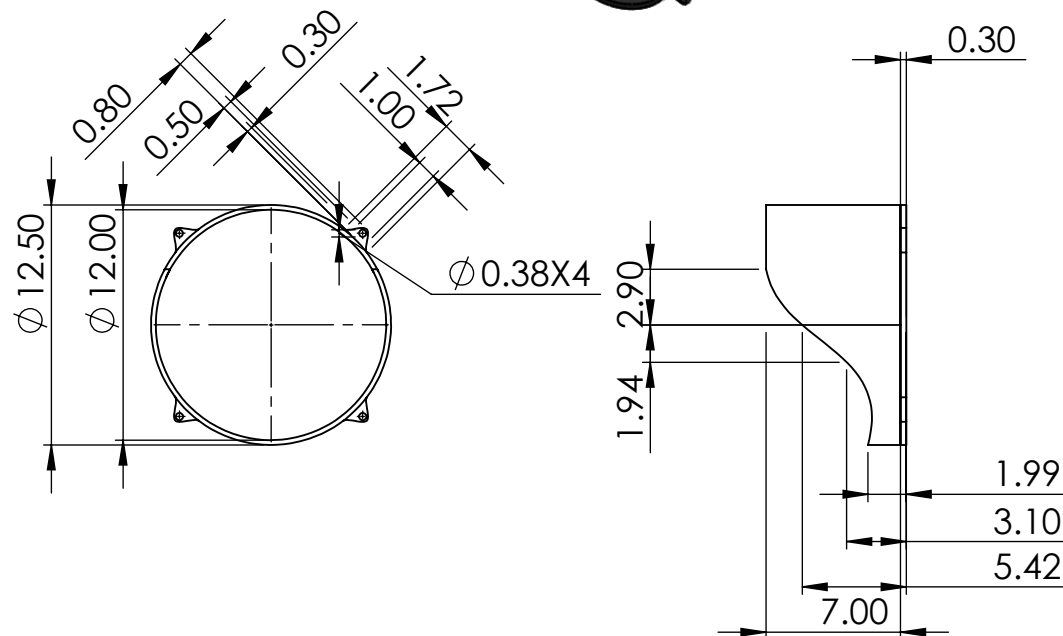
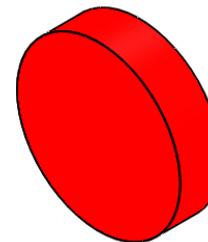
SHEET 2 OF 18

2

1

B

B



- 5 LED LIGHT
- INSERTED INSIDE LIGHT COVER
 - MANUFACTURED IN RED, YELLOW AND GREEN
 - 3 REQUIRED

A

A

4 LIGHT COVER

- EQUAL DISTANCE FOR ALL FOUR TABS AND HOLES
- 3 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:
Lucy Guo

DWG. NO.
Light Cover and
Lights

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1:10

SHEET 3 OF 18

2

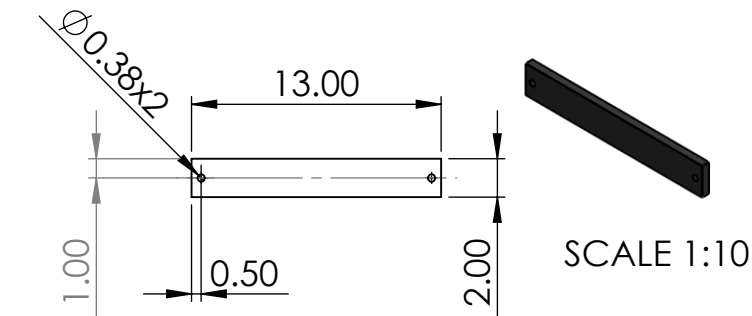
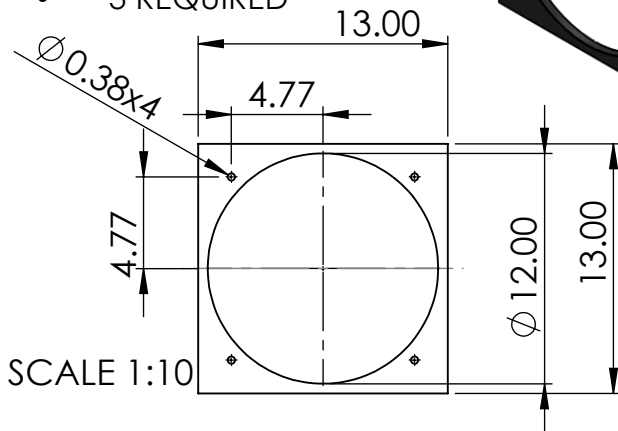
1

2

1

6 LIGHT BACK FRAME

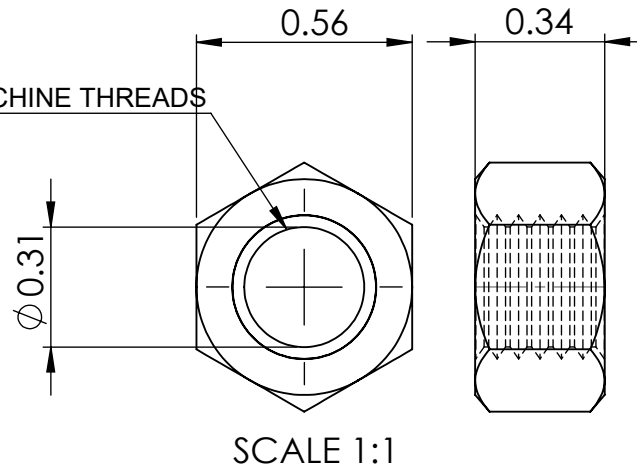
- ATTACHES TO LIGHT FRAME
- WELD 3 TOGETHER TO CREATE MAIN FRAME
- 0.5" THICKNESS
- 3 REQUIRED



7 LIGHT TOP CONNECTION PLATE

- WELDED TO TOP OF LIGHT BACK FRAME
- SERVES AS CONNECTION BETWEEN LIGHTS AND DRONE CONNECTION PLATE
- 0.5" THICKNESS
- 1 REQUIRED

3/8-16 MACHINE THREADS

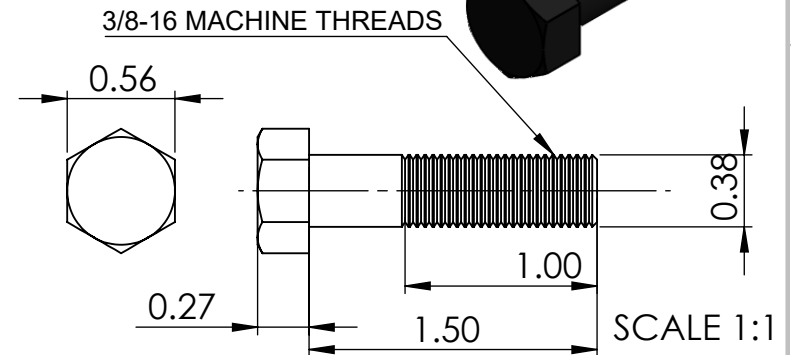


9 MAIN NUT

- HOLDS MAIN BOLTS IN PLACE
- 24 REQUIRED

8 MAIN SCREW

- CONNECTS ALL MAJOR PIECES TOGETHER
- 24 REQUIRED



Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:

Lucy Guo

DWG. NO.

Light Back Frame,
Light Top Connection
Plate, Screws and Nuts

Date:

11/20/17

ME 2212 SEC 1

SCALE VARIES

SHEET 4 OF 18

2

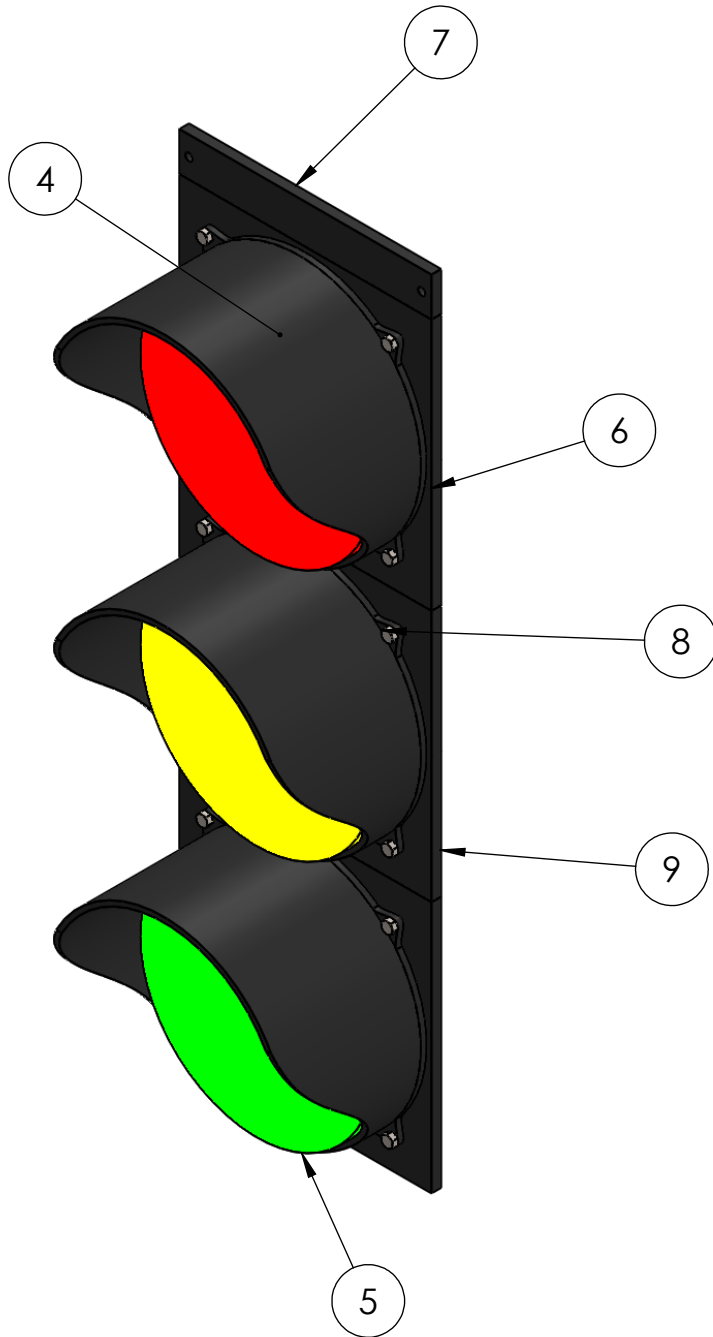
1

B

A

B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
4	Light Cover	POLYCARBONATE	3
5	LED Light	LEDs	3
6	Light Back Frame	POLYCARBONATE	3
7	Light Top Connection Plate	POLYCARBONATE	1
8	Main Screw	ALUMINUM	12
9	Main Nut	ALUMINUM	12

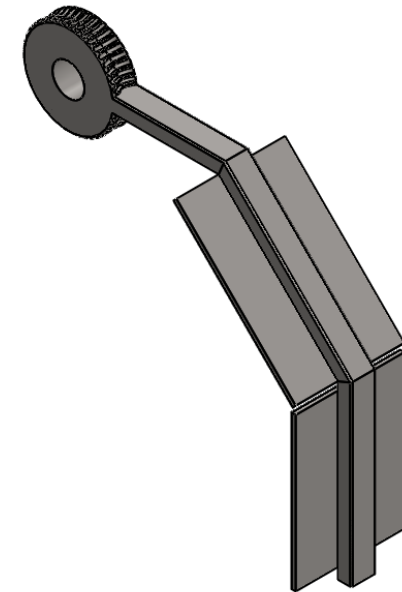
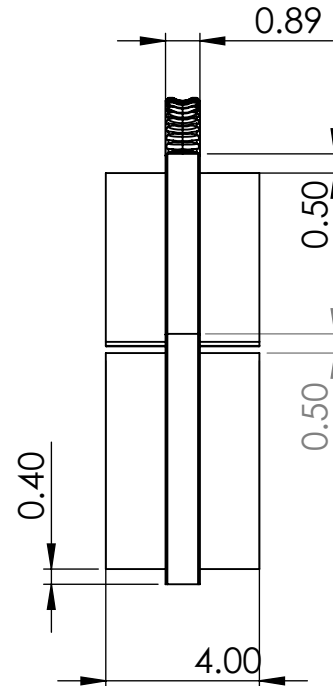
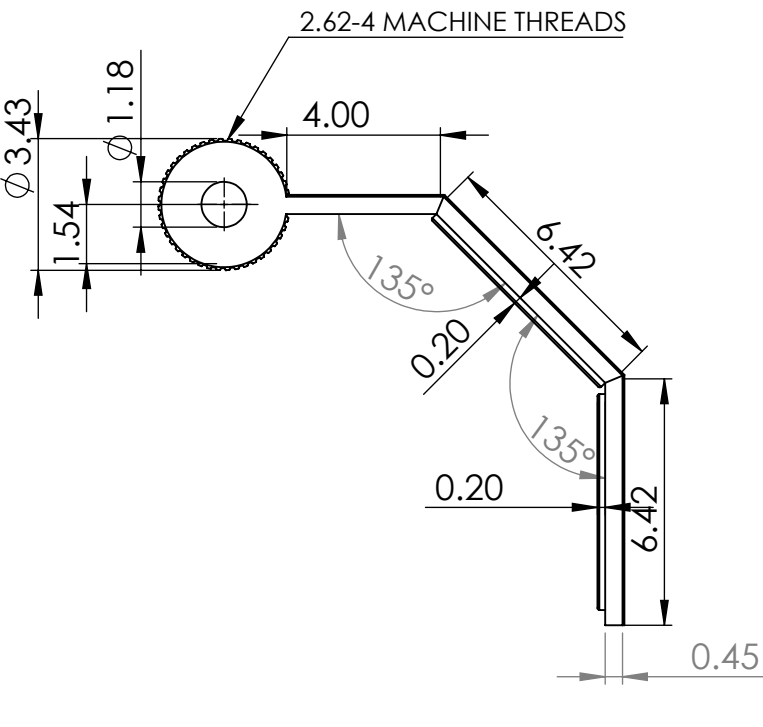
- 10 TRAFFIC LIGHT SUBASSEMBLY
- MAIN LIGHTING SYSTEM OF TRAFFIC LIGHT MAST ATTACHMENT
 - 1 REQUIRED

Team: Team 6: NextDrone Technologies		
TITLE: Traffic Light Mast Attachment		
Drawn By: Lucy Guo	DWG. NO. Light Subassembly	Date: 11/20/17
ME 2212 SEC 1		SHEET 5 OF 18

2

1

B



B

A

11 WORM GEAR CLAMP

- WORM GEAR WITH ATTACHED CLAMPING ARM
- EXTENDED CLAMPING PLATES ON ARM FOR MAXIMIZED SURFACE AREA WHEN CLAMPING TO MAST
- CLAMPING PLATES IDENTICAL
- 4 REQUIRED

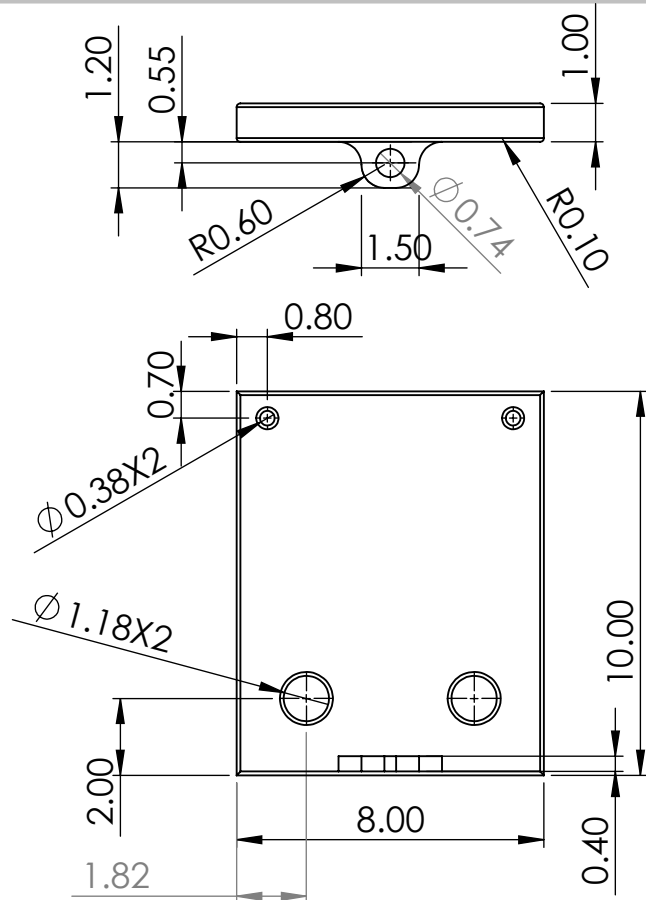
A

Team: Team 6: NextDrone Technologies		
TITLE: Traffic Light Mast Attachment		
Drawn By: Lucy Guo	DWG. NO. Worm Gear Clamp	Date: 11/20/17
ME 2212 SEC 1	SCALE:1:5	SHEET 6 OF 18

2

1

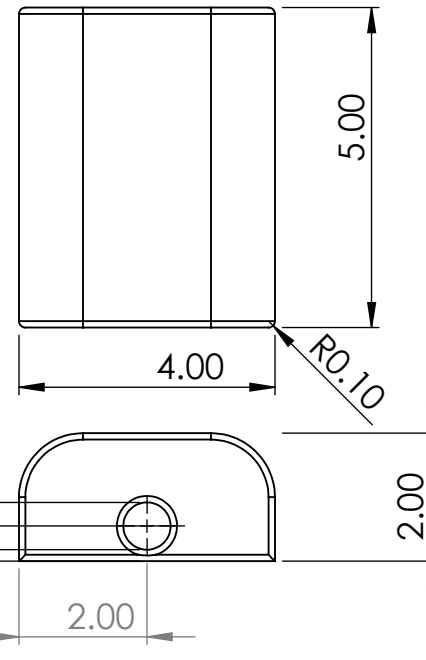
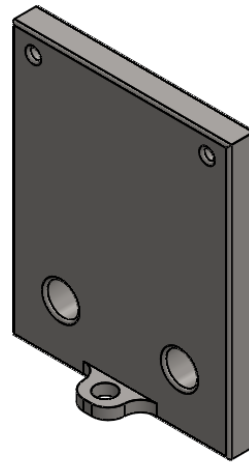
B



12 WORM GEAR MAIN BODY

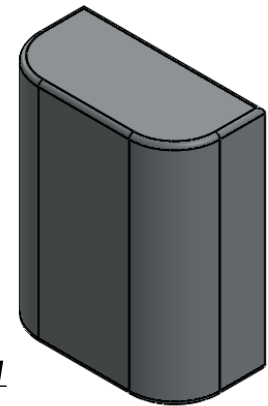
- TOP ATTACHES TO DRONE CONNECTION PLATE
- HOLDS WORM GEARS, ELECTIRC ENIGNE AND WORM GEAR CENTRAL SCREW IN PLACE
- 2 REQUIRED

SCALE: 1:5



13 ELECTRIC ENGINE

- ATTACHES TO MAIN BODY
- PROVIDES POWER TO DRIVE WORM GEAR CENTRAL SCREW
- 2 REQUIRED



SCALE: 1:3

B

A

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:
Lucy Guo

DWG. NO.
Main Body and
Engine

Date:
11/20/17

ME 2212 SEC 1

SCALE VARIES

SHEET 7 OF 18

2

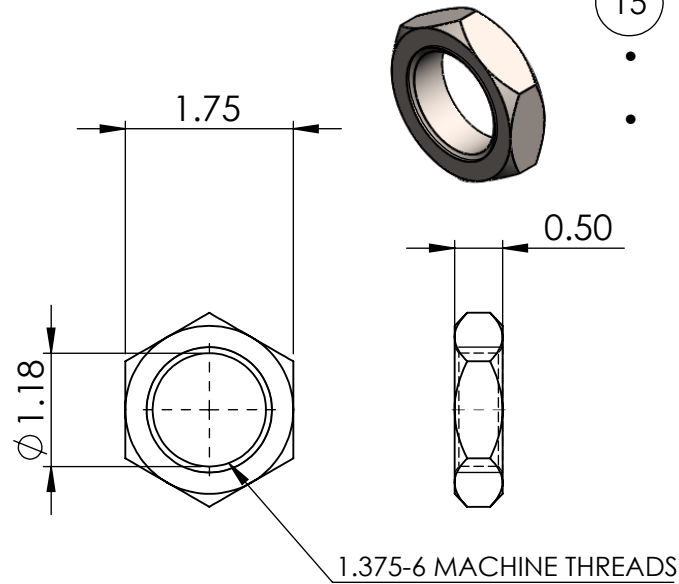
1

2

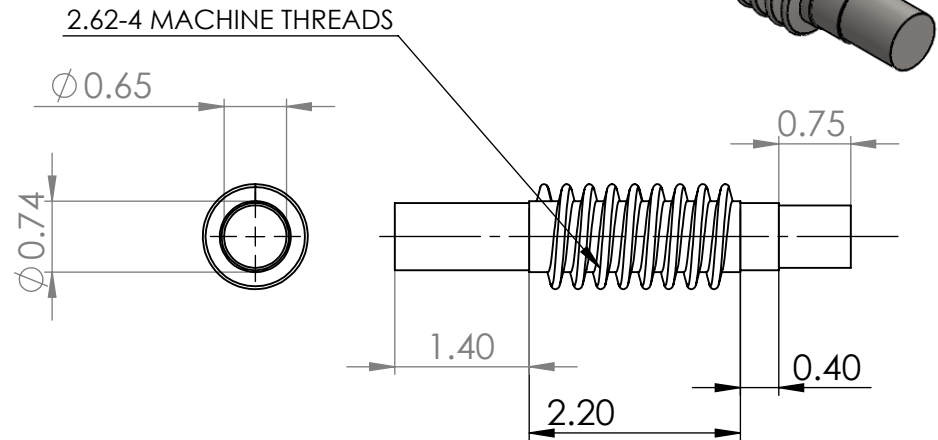
1

B

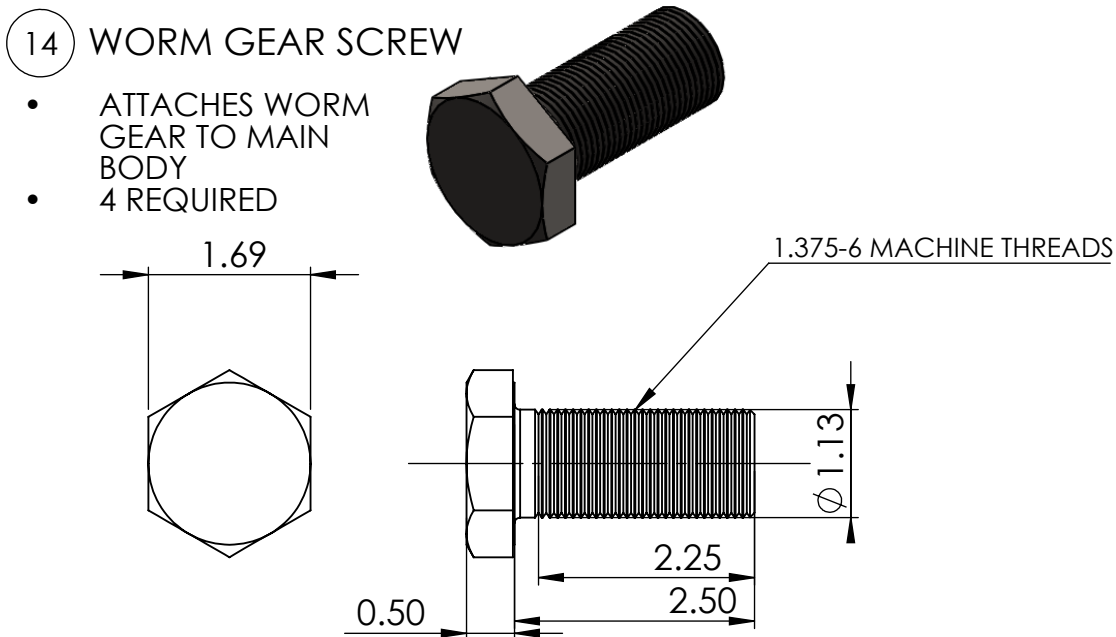
B



- 15 WORM GEAR NUT
- ATTACHES WORM GEAR TO MAIN BODY
 - 4 REQUIRED



- 16 WORM GEAR CENTRAL SCREW
- ATTACHED TO ELECTRIC ENGINE
 - ROTATES WORM GEARS TO PROVIDE CLAMPING MOTION
 - 2 REQUIRED



- 14 WORM GEAR SCREW
- ATTACHES WORM GEAR TO MAIN BODY
 - 4 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:
Lucy Guo

DWG. NO.
Screws and Nuts

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1:2

SHEET 8 OF 18

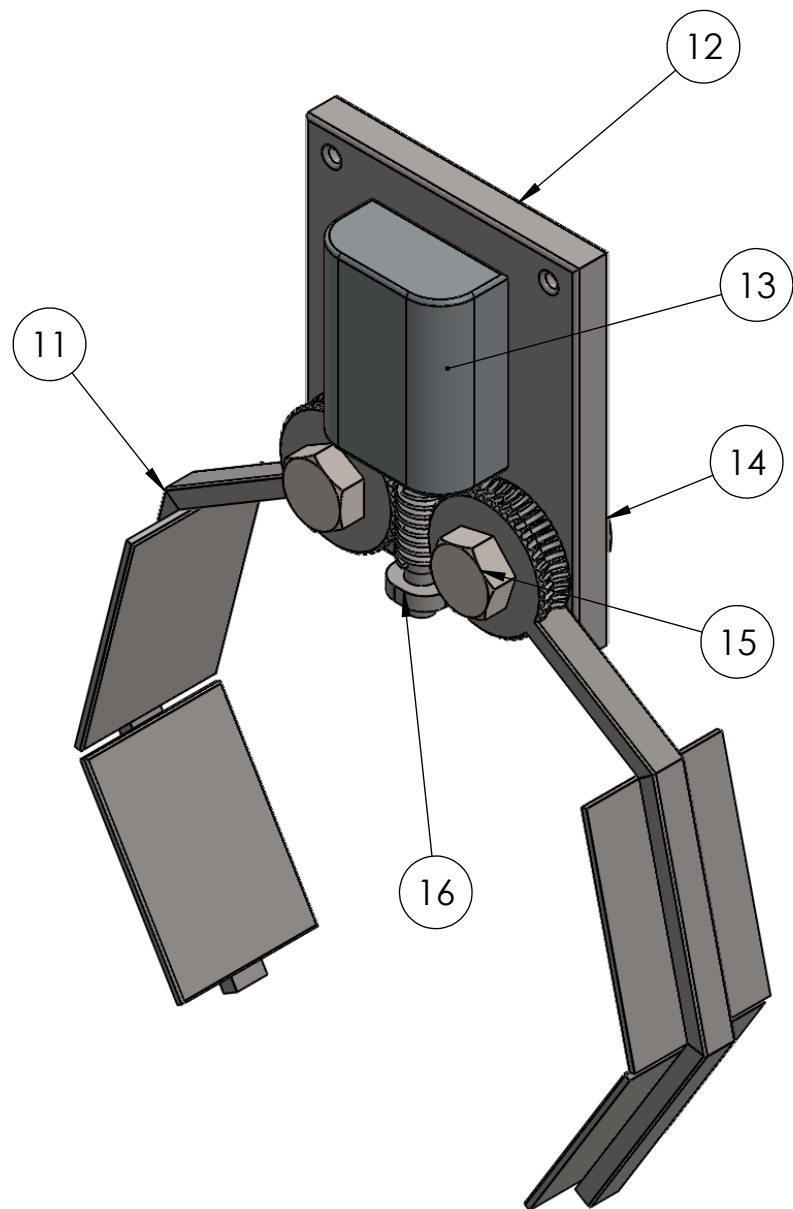
2

1

A

A

B



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
11	Worm Gear Clamp	ALUMINUM	2
12	Worm Gear Main Body	ALUMINUM	1
13	Electric Engine	ALUMINUM	1
14	Worm Gear Nut	ALUMINUM	2
15	Worm Gear Screw	ALUMINUM	2
16	Worm Gear Central Screw	ALUMINUM	1

- (17) WORM GEAR CLAMP SUBASSEMBLY
- MAIN CLAMPING SYSTEM OF TRAFFIC LIGHT MAST ATTACHEMENT
 - 2 REQUIRED

B

A

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By: Lucy Guo	DWG. NO. Worm Gear Clamp Subassembly	Date: 11/20/17
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ME 2212 SEC 1

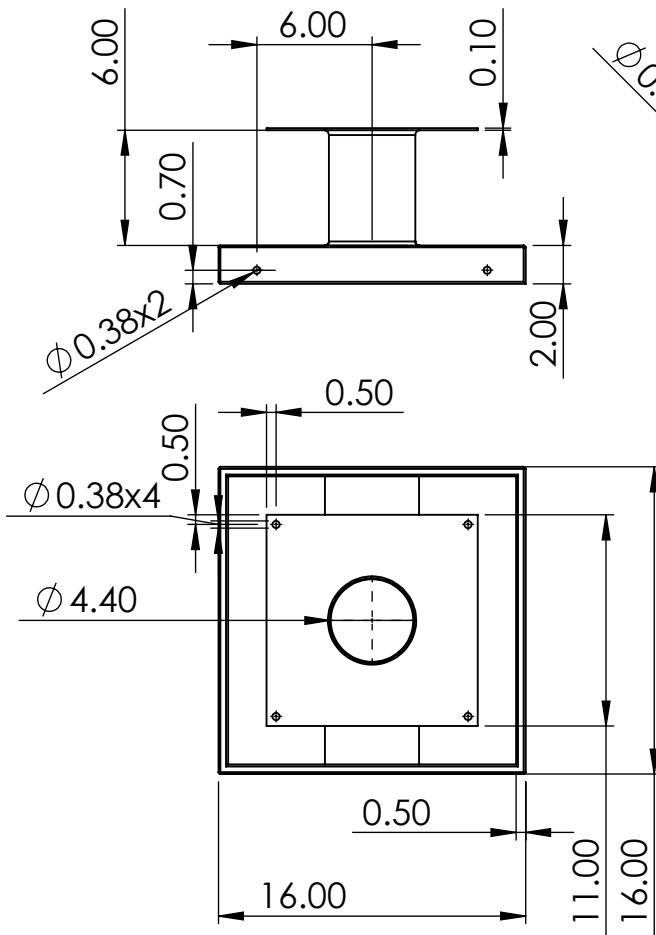
SCALE: 1:4

SHEET 9 OF 18

2

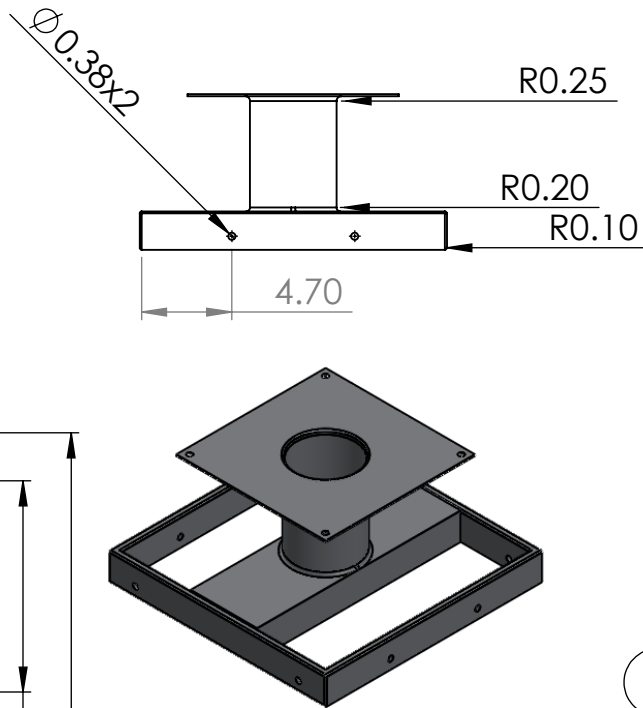
1

B



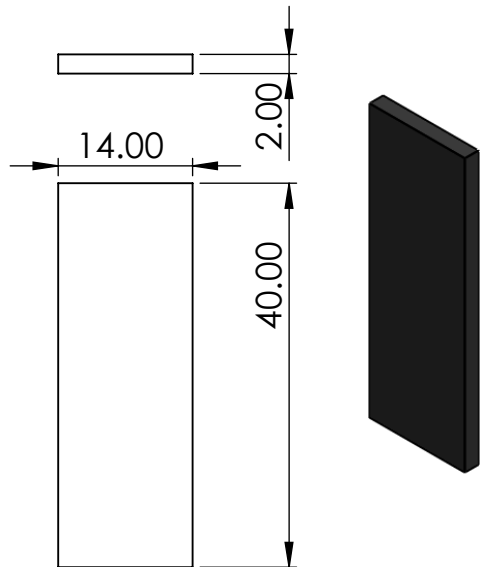
18 TRAFFIC TO DRONE CONNECTION PLATE

- ATTACHES TRAFFIC LIGHT SYSTEM AND CLAMPING SYSTEM TO DRONE
- SIDE HOLES AT SAME HEIGHT
- 1 REQUIRED



19 BATTERY PACK AND COUNTERBALANCE

- ATTACHES TO BACK OF CONNECTION PLATE
- ACTS AS BATTERY STORAGE SITE AND COUNTERBALANCE FOR LIGHTS IN FRONT
- 1 REQUIRED



B

A

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:
Lucy Guo

DWG. NO.
Connection plate
and Counterbalance

Date:
11/20/17

ME 2212 SEC 1

SCALE VARIES

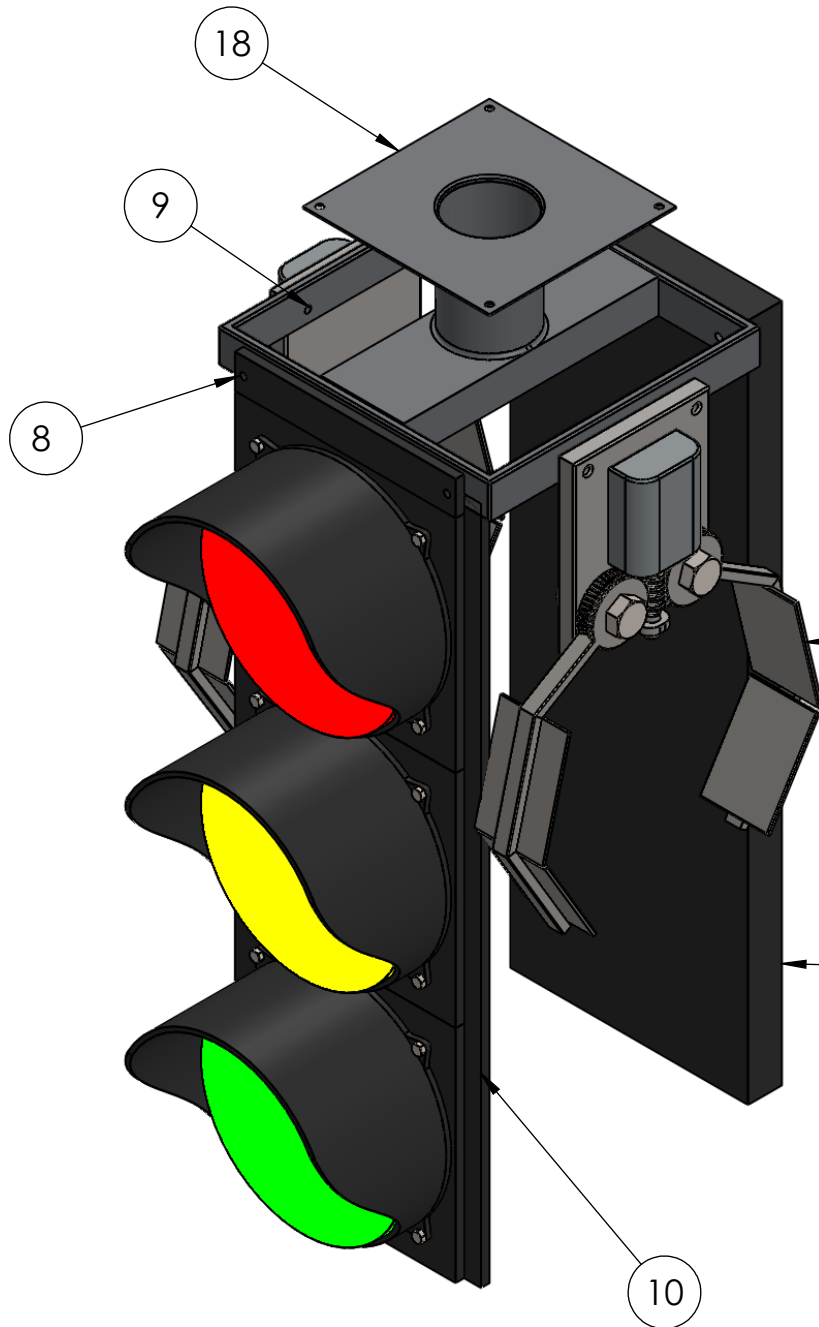
SHEET 10 OF 13

2

1

B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
18	Traffic to Drone Connection Plate	POLYCARBONATE	1
19	Battery Pack and Counterbalance	POLYCARBONATE	1
10	Traffic Light Subassembly	POLYCARBONATE/LEDs	1
17	Worm Gear Clamp Assembly	ALUMINUM	2
8	Main Screw	ALUMINUM	8
9	Main Nut	ALUMINUM	8

- 20 TRAFFIC LIGHT MAST ATTACHMENT MAIN ASSEMBLY
- COMBINES TRAFFIC LIGHT SUBASSEMBLY, 2 CLAMP SUBASSEMBLIES, AND CONNECTION PLATE AND COUNTERBALANCE 1 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By: Lucy Guo	DWG. NO. Light Mast Attachment Main Assembly	Date: 11/20/17
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ME 2212 SEC 1

SCALE: 1:8

SHEET 11 OF 18

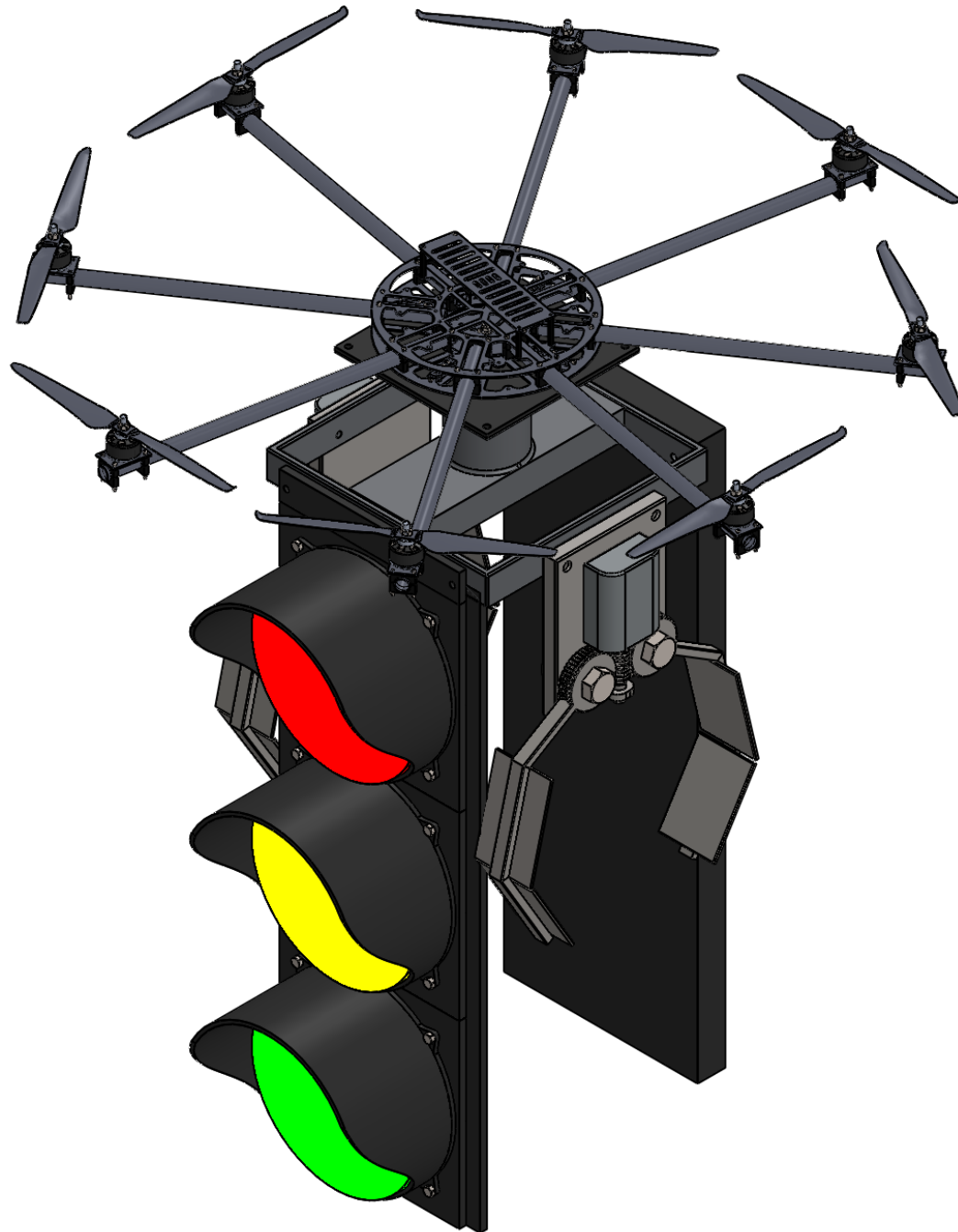
2

1

B

A

B



21 ASSEMBLY WITH ATTACHED DRONE

- ATTACHES TO DRONE VIA CONNECTION PLATES USING FOUR MAIN NUTS AND FOUR MAIN SCREWS

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Mast Attachment

Drawn By:	DWG. NO.	Date:
Lucy Guo	Light Mast Attachment Main Assembly	11/20/17

ME 2212 SEC 1

SCALE: 1:9

SHEET 12 OF 18

B

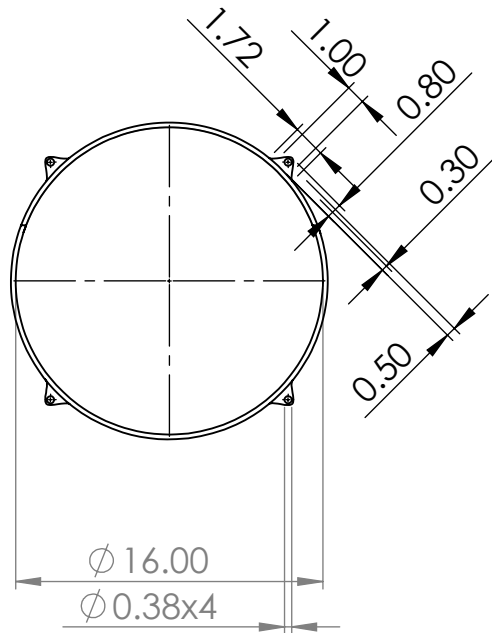
A

2

1

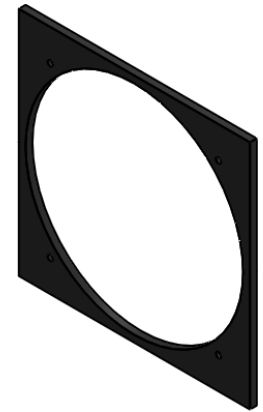
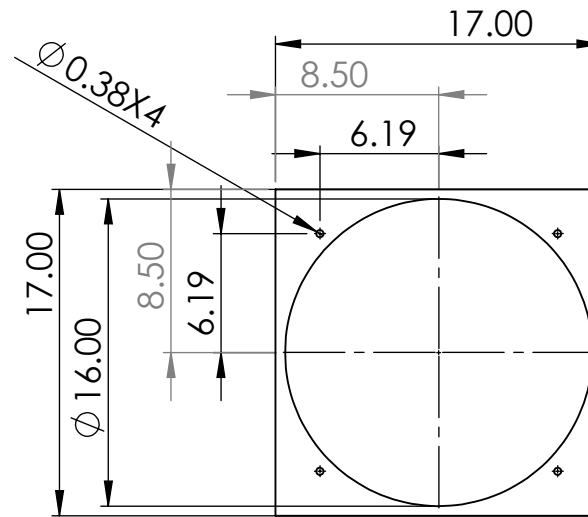
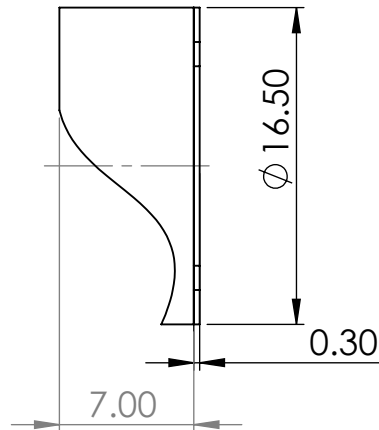
B

B



22 ENLARGED LIGHT COVER

- EQUAL DISTANCE FOR ALL FOUR TABS AND HOLES
- 4 REQUIRED



23 ENLARGED LIGHT BACK FRAME

- ATTACHES TO ENLARGED LIGHT COVER
- 0.5" THICKNESS
- 4 REQUIRED

A

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover Attachment

Drawn By:
Lucy Guo

DWG. NO.
Enlarged Light
Cover and Back

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1:10

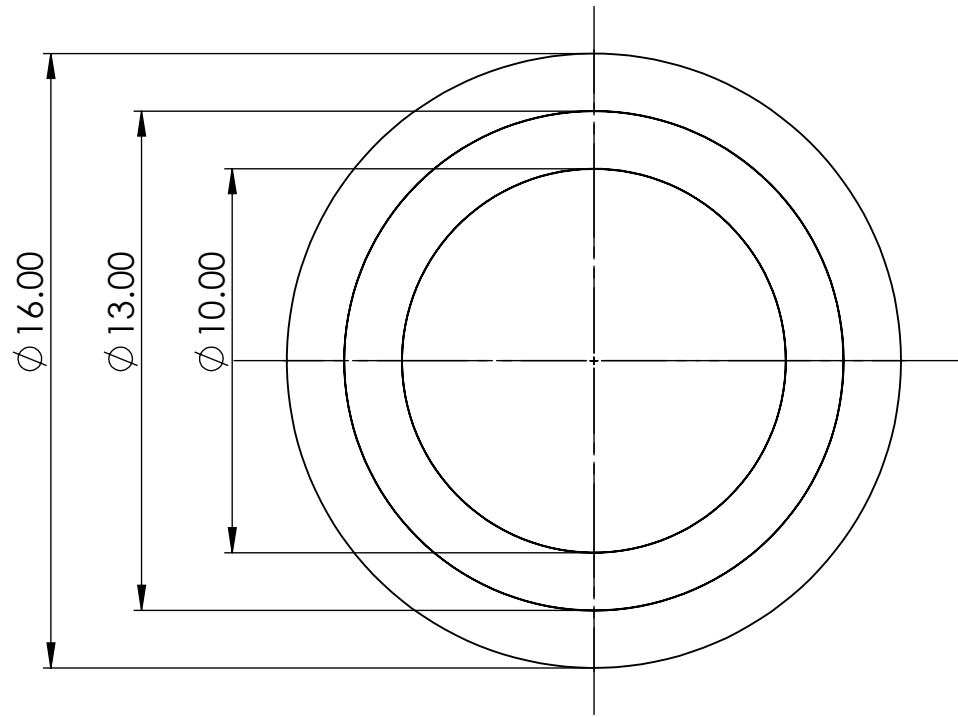
SHEET 13 OF 18

2

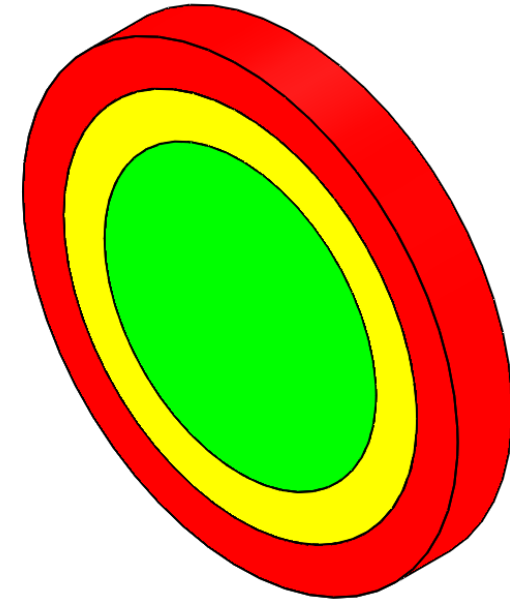
1

A

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1



B

A

24 ENLARGED CONCENTRIC LIGHT DESIGN

- MODIFIED SIZE WITH CORRESPONDING COLOR TO ACCOUNT FOR COLOR BLINDNESS
- 2" THICKNESS
- 4 REQUIRED

A

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover Attachment

Drawn By:
Lucy Guo

DWG. NO.
Concentric LED
Light Design

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1: 5

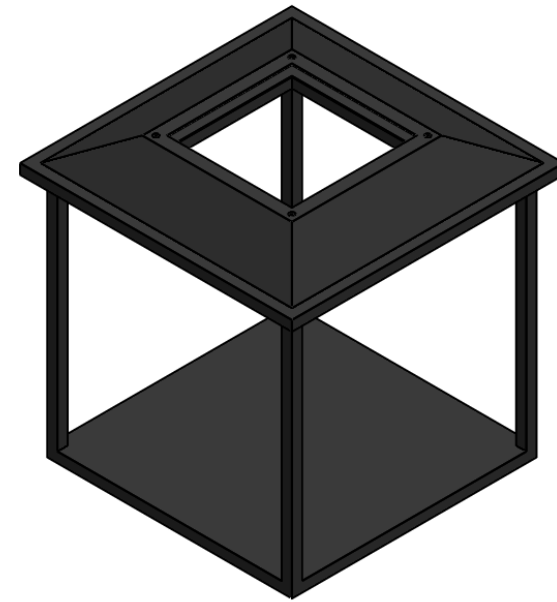
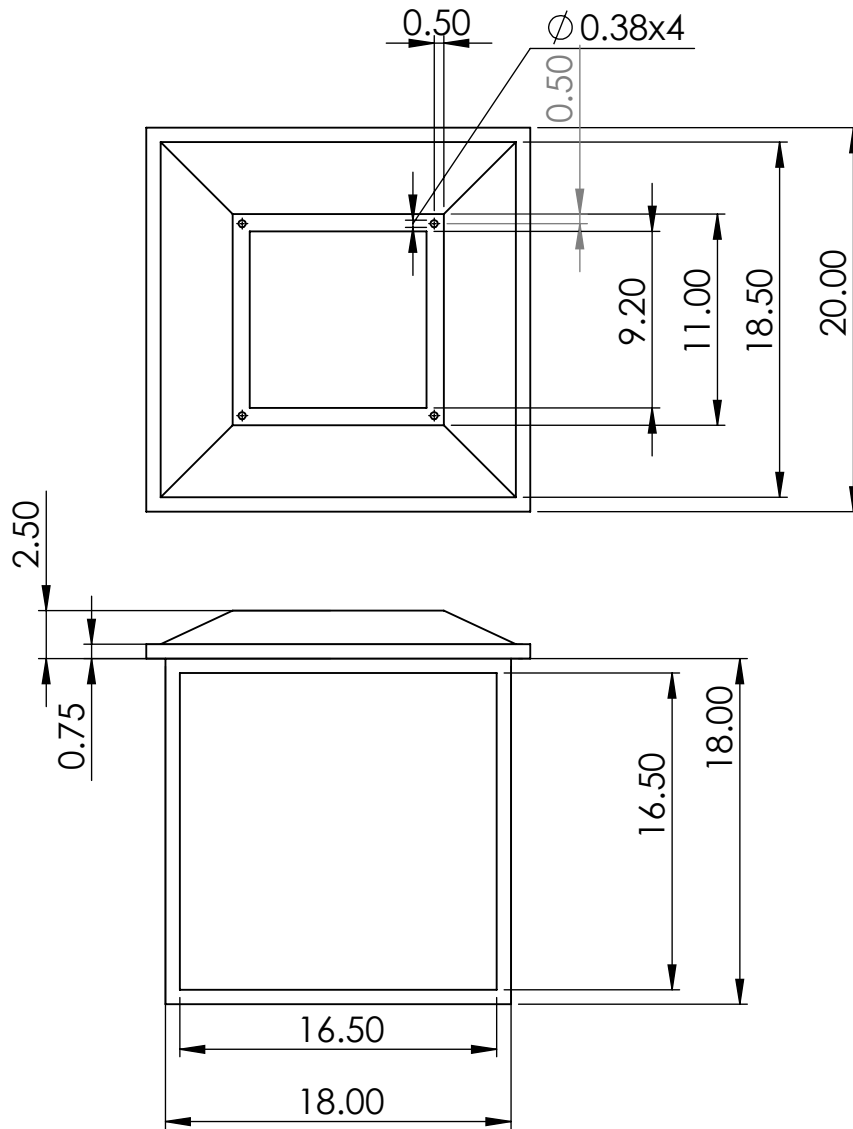
SHEET 14 OF 18

2

1

B

B



25

HOVER LIGHT MAIN FRAME

- HOUSES ENLARGED LIGHT COVER, BACK COVER, LED LIGHTS.
- 1 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover Attachment

Drawn By:
Lucy Guo

DWG. NO.
Hover Light Main
Frame

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1:10

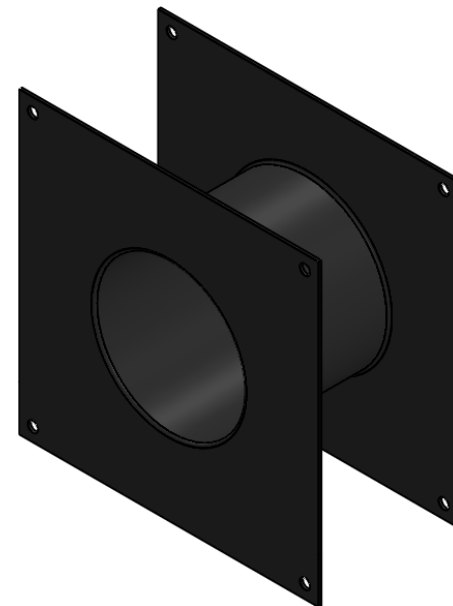
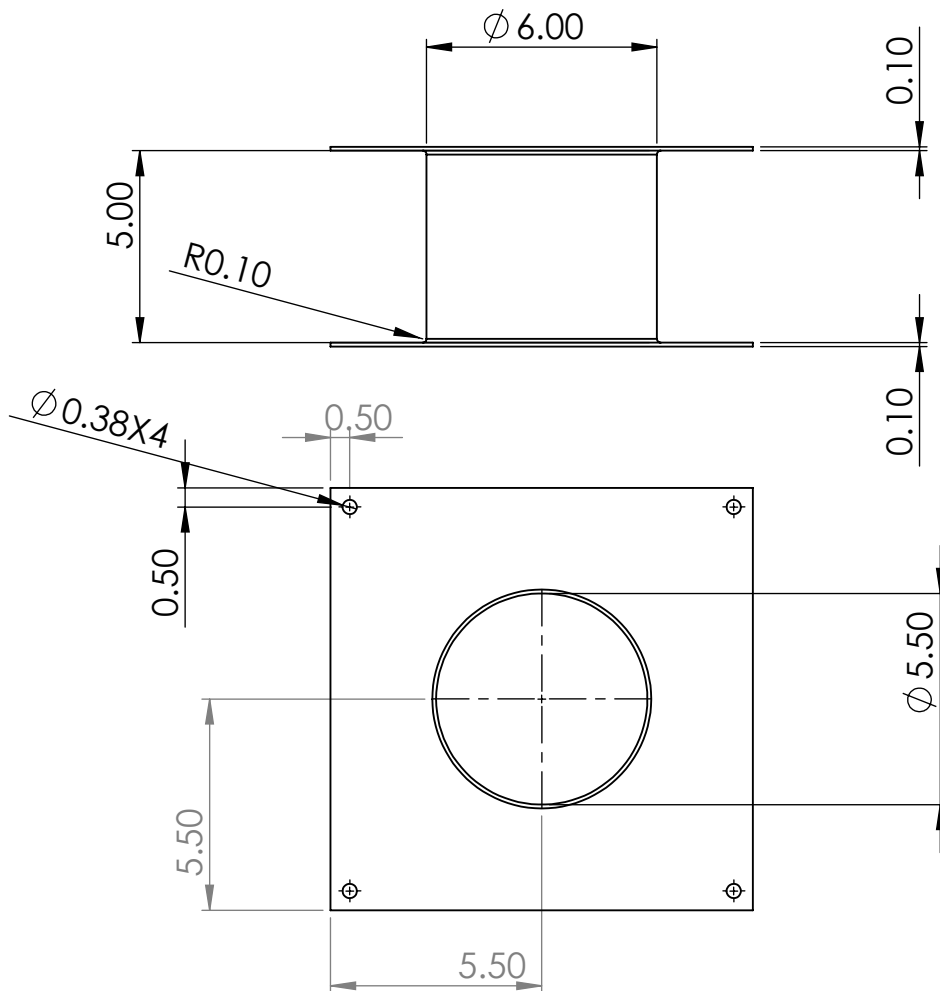
SHEET 15 OF 18

A

2

1

1



- 26 HOVER LIGHT TO DRONE
CONNECTION PLATE
- ATTACHES MAIN HOVER ASSEMBLY
TO DRONE
 - 1 REQUIRED

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover Attachment

Drawn By:
Lucy Guo

DWG. NO.
Hover to Drone
Connection Plate

Date:
11/20/17

ME 2212 SEC 1

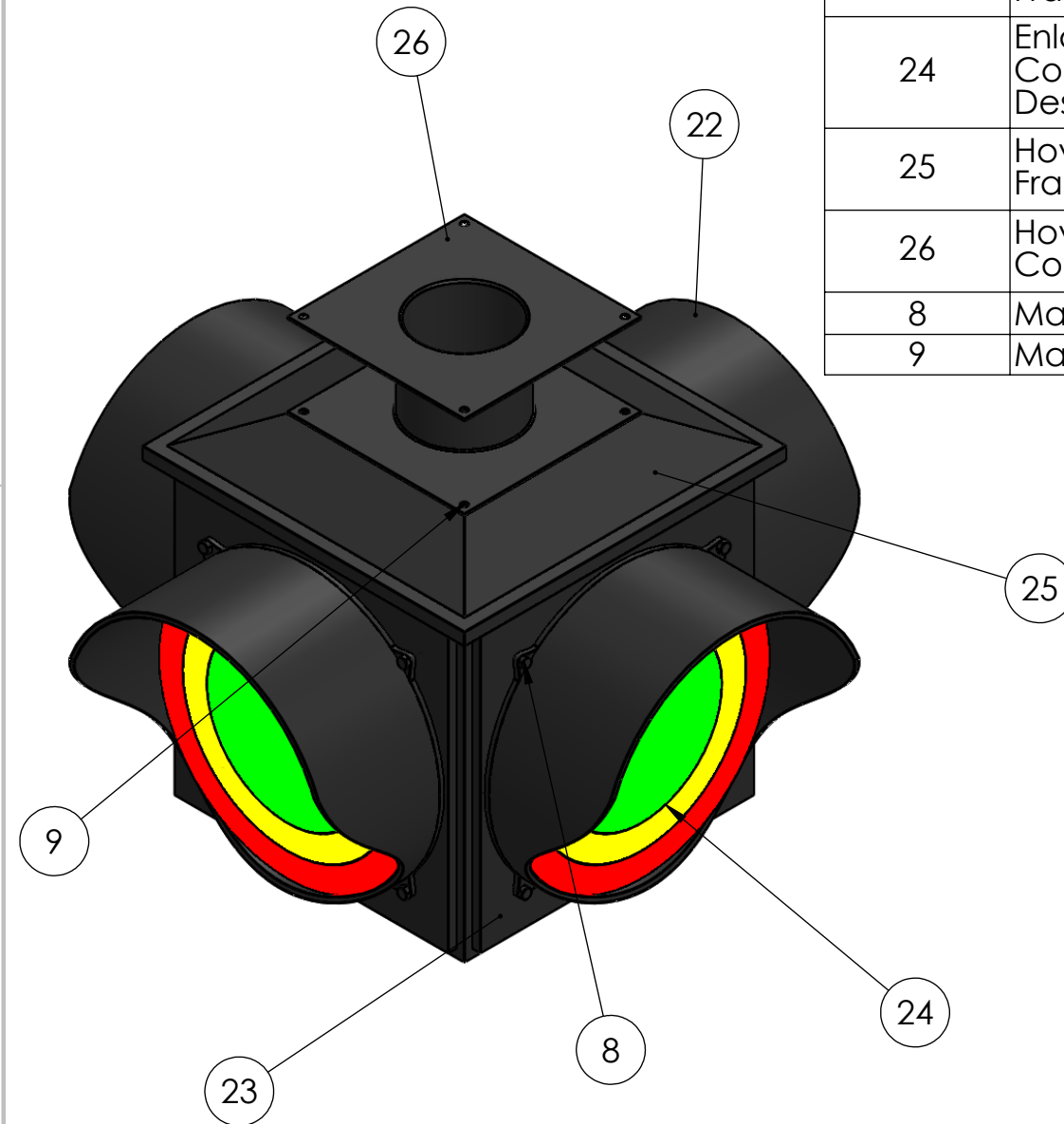
SCALE: 1:10

SHEET 16 OF 18

1

B

A



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
22	Enlarged Light Cover	POLYCARBONATE	4
23	Enlarged Light Back Frame	POLYCARBONATE	4
24	Enlarged Concentric Light Design	LEDs	4
25	Hover Light Main Frame	POLYCARBONATE	1
26	Hover Light to Drone Connection Plate	POLYCARBONATE	1
8	Main Screw	ALUMINUM	16
9	Main Nut	ALUMINUM	16

- 27 TRAFFIC LIGHT HOVER ATTACHMENT MAIN ASSEMBLY
- 4-WAY SINGLE LIGHT CONFIGURATION
 - UTILIZES FLY-BY-WIRE TO MAINTAIN FLIGHT FOR LONG DURATIONS

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover Attachment

Drawn By: Lucy Guo	DWG. NO. Hover Main Assembly	Date: 11/20/17
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ME 2212 SEC 1

SCALE: 1: 8

SHEET 17 OF 18

2

1



- 28 TRAFFIC LIGHT HOVER
ATTACHMENT MAIN ASSEMBLY
WITH DRONE ATTACHMENT
- HOVER TRAFFIC LIGHT ASSEMBLY
ATTACHES TO DRONE VIA
CONNECTION PLATES USING
FOUR MAIN NUTS AND FOUR
MAIN SCREWS
 - INCLUDE LOCKING LATCHES ON
SIDES AS WELL FOR ADDED
SECURITY

Team: Team 6: NextDrone Technologies

TITLE: Traffic Light Hover
Attachment

Drawn By:
Lucy Guo

DWG. NO.
Hover Main
Assembly

Date:
11/20/17

ME 2212 SEC 1

SCALE: 1: 8

SHEET 18 OF 18