



Boosting Engineering, Science & Technology™

**Blade Runner
2014 Field Drawings Package
Version 1.0
August 8, 2014**

2014 Blade Runner Drawing Package v1.0

List of Drawing Pages

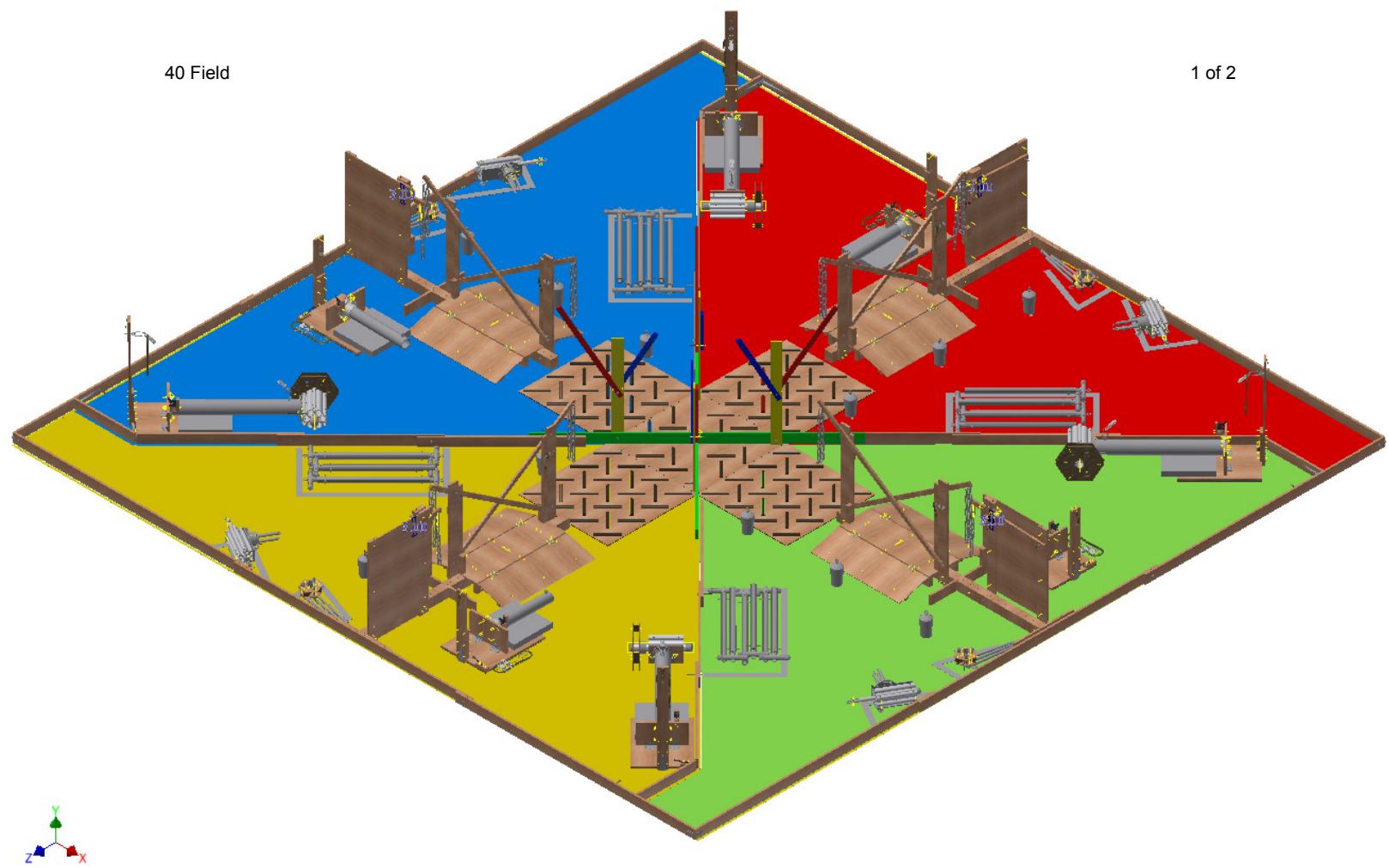
08/08/2014

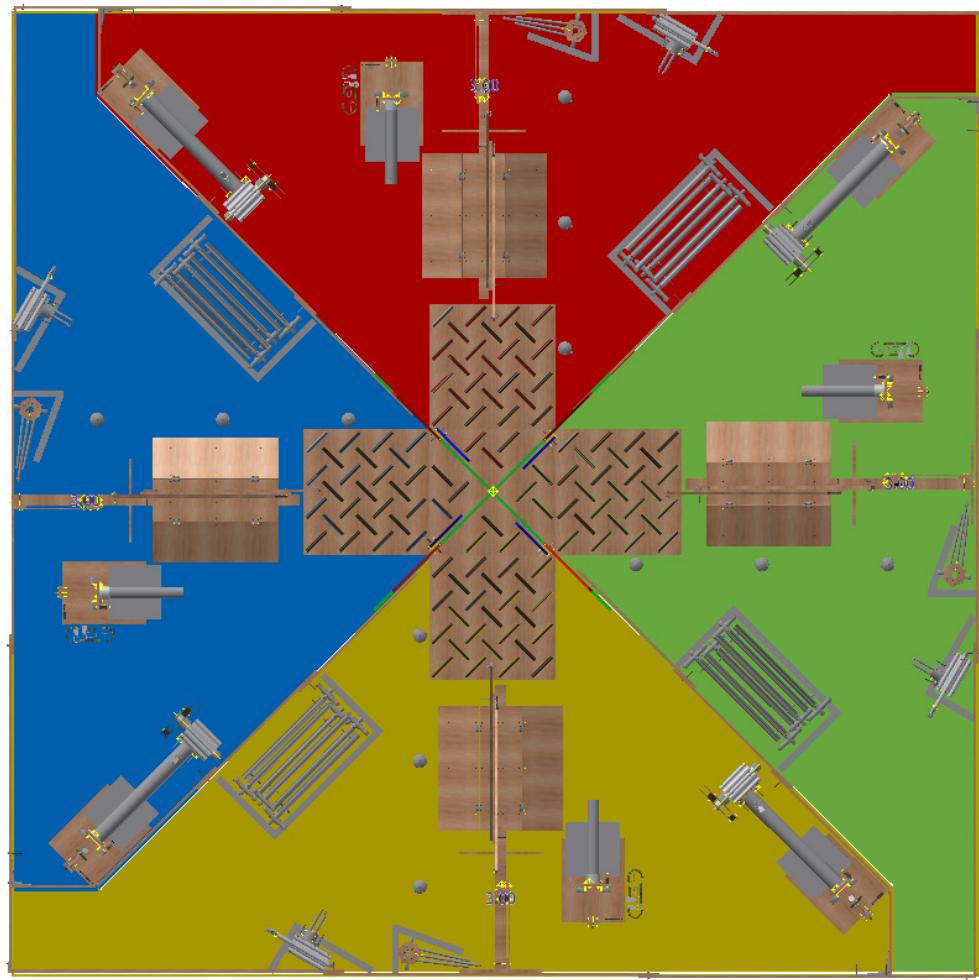
Cutsheets

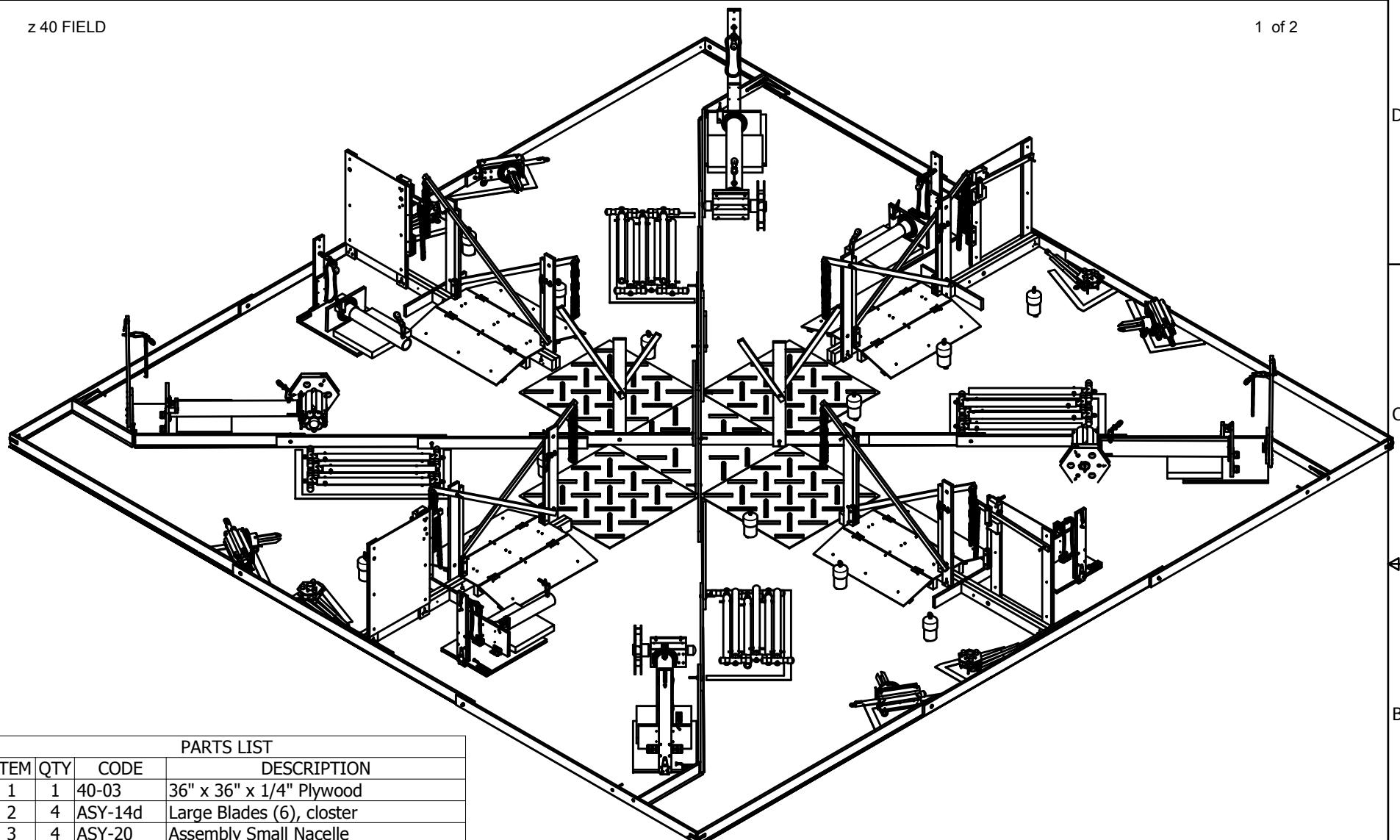
	Total Pages
23/32 plywood cutsheets	1
1/4 plywood cutsheets	6
2x4 cutsheets	3
1x4 cutsheets	2
2x2 and quarter round cutsheets	1
1x2 cutsheets	2
PVC cutsheets	6

Assembly

	Drawing #	Total Pages
Field 3D View	40	2
Large Turbine Nacelle	10	8
Large Nacelle Hexagon	12	6
Large Blades	14	3
Towers and Bases	16, 26	10
Small Turbine Nacelle	20	11
Small Nacelle Hexagon and Blades	22	8
Overweight/Overlength Tie-Breaker	30	13
Bad Road	40	2
Barriers	42	11
Prairie Chicken	44	2
Bridge	50	8







PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	1	40-03	36" x 36" x 1/4" Plywood
2	4	ASY-14d	Large Blades (6), closter
3	4	ASY-20	Assembly Small Nacelle
4	4	ASY-22d	Small Turbine, blades together
5	4	ASY-26d	Small Base on ground
6	4	ASY-30	Over weight over length
7	4	ASY-36d	Large Tower, with Nacelle, down
8	4	ASY-40	Bad Road
9	4	ASY-42C	Cactus
10	4	ASY-42D	Field Divider
11	1	ASY-42P	Field Perimeter
12	1	ASY-42X	Field Center
13	12	ASY-44	Prairie Chicken
14	4	ASY-50	50 Bridge

DRAWN
Ishturman

CHECKED

BLADE RUNNER SUMMER 2014

QA

MFG

APPROVED

TITLE

FIELD

SIZE

C

DWG NO

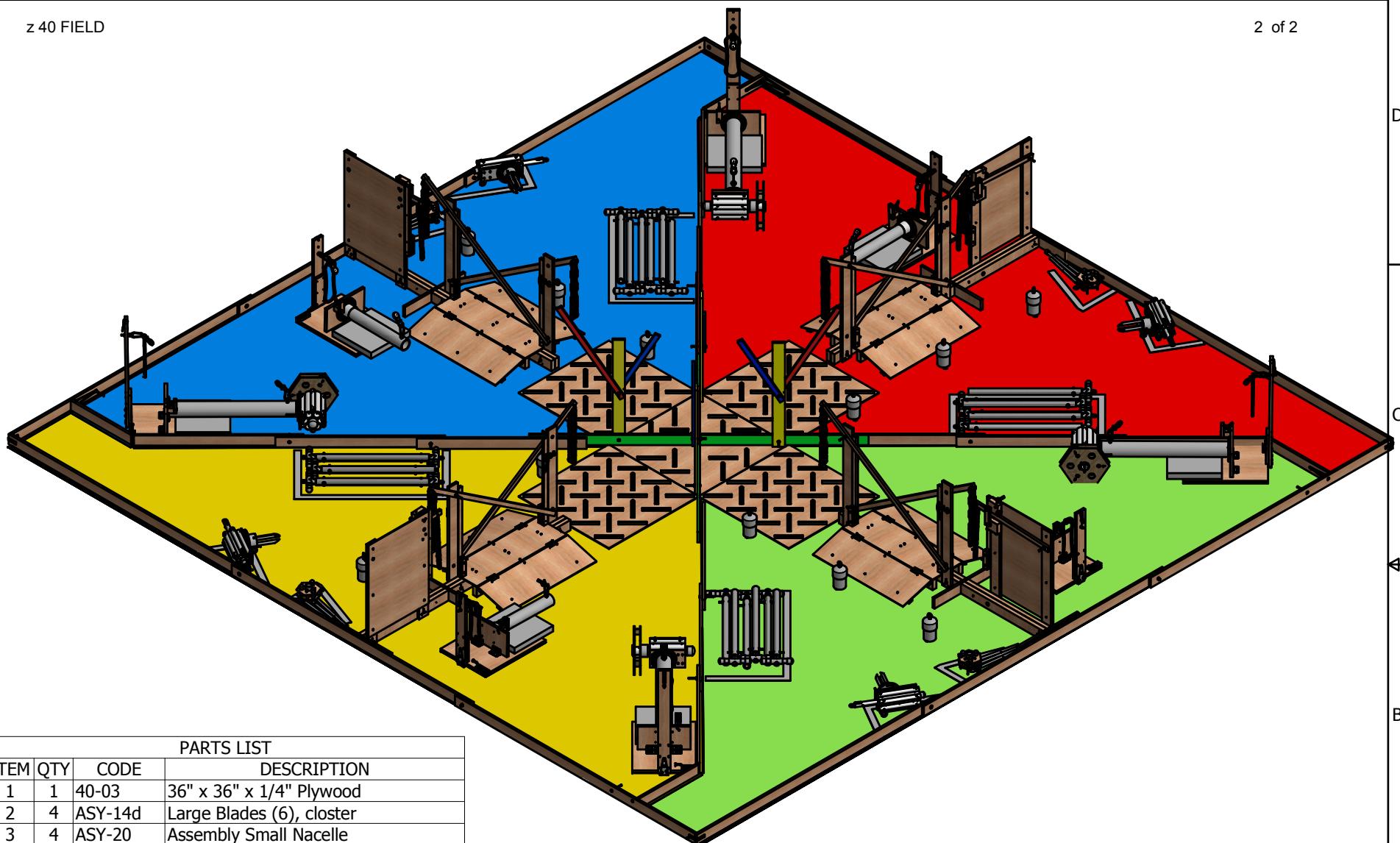
z 40 FIELD

REV

0805

SCALE

SHEET 1 OF 1



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	1	40-03	36" x 36" x 1/4" Plywood
2	4	ASY-14d	Large Blades (6), closter
3	4	ASY-20	Assembly Small Nacelle
4	4	ASY-22d	Small Turbine, blades together
5	4	ASY-26d	Small Base on ground
6	4	ASY-30	Over weight over length
7	4	ASY-36d	Large Tower, with Nacelle, down
8	4	ASY-40	Bad Road
9	4	ASY-42C	Cactus
10	4	ASY-42D	Field Divider
11	1	ASY-42P	Field Perimeter
12	1	ASY-42X	Field Center
13	12	ASY-44	Prairie Chicken
14	4	ASY-50	50 Bridge

DRAWN
Ishturman

CHECKED

BLADE RUNNER SUMMER 2014

QA

MFG

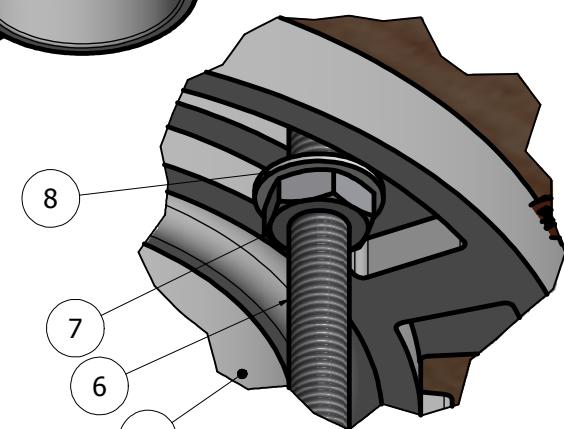
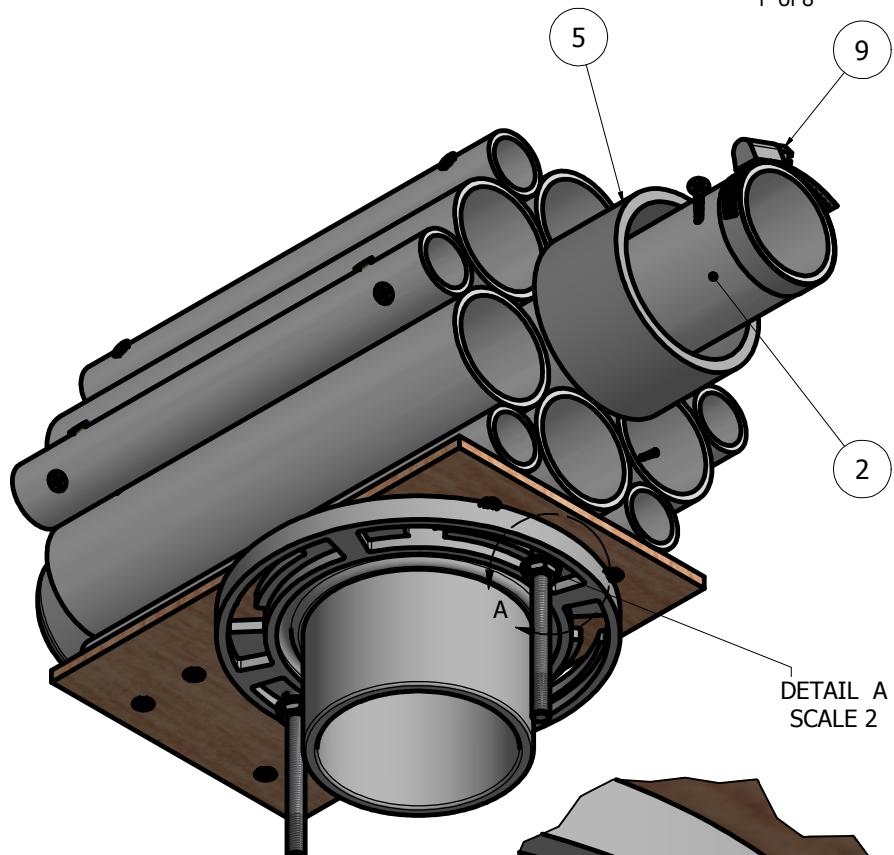
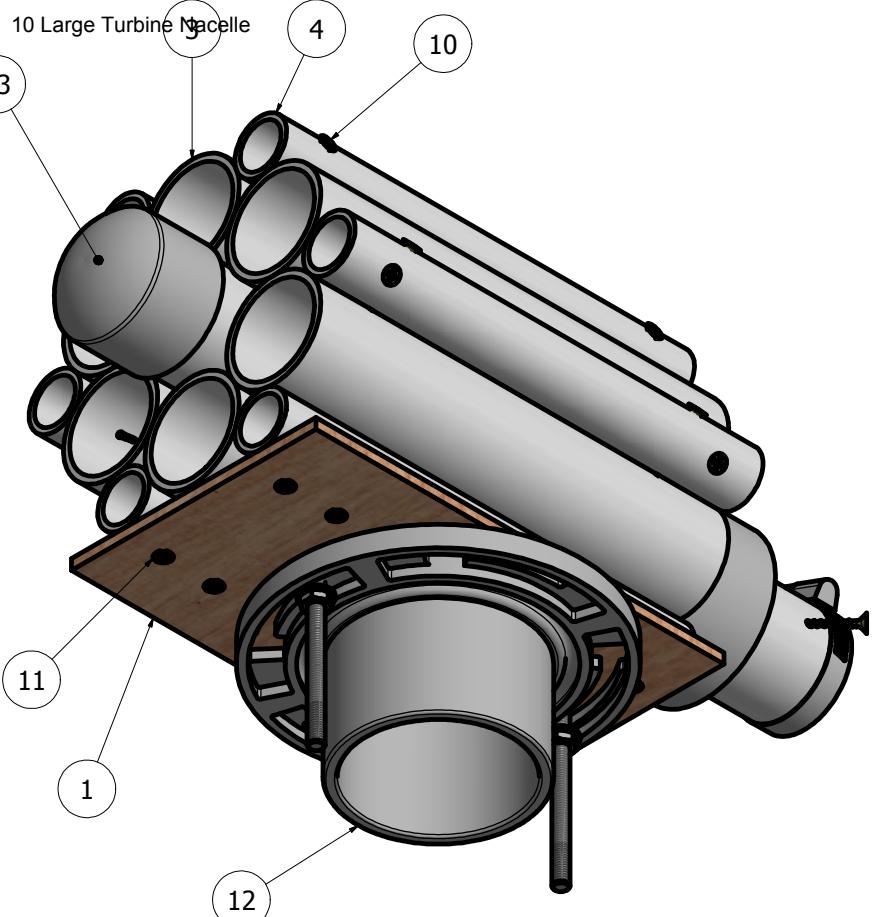
APPROVED

TITLE

FIELD

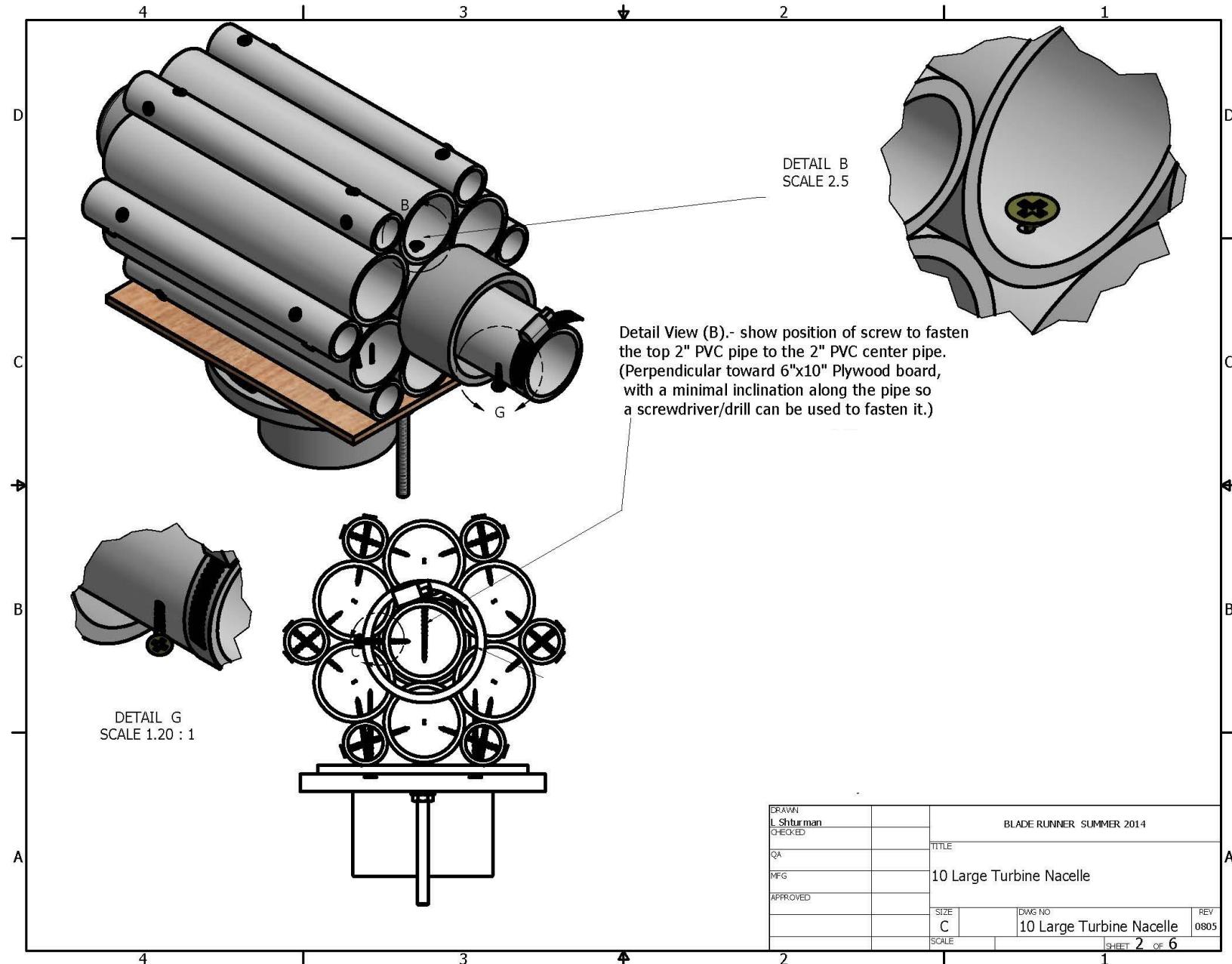
SIZE C DWG NO 0805
z 40 FIELD

SCALE SHEET 1 OF 1



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	10-01	6" x 10" x 1/4" Plywood
2	1	10-41	2" Schedule 40 PVC x17" long
3	6	10-42	2" Schedule 40 PVC x10" long
4	6	10-43	1" Schedule 40 PVC x10" long w/ 4 holes
5	1	10-44	3" Schedule 40 PVC x2" long
6	2	HW-01	5/16"x4" Carriage Bolt
7	2	HW-02	5/16" Nut
8	2	HW-03	5/16" Flat Washer
9	1	HW-09	2 1/2" Hose Clamp
10	26	HW-12	2" Drywall Screw
11	12	HW-13	2 1/2" Drywall Screw
12	1	HW-70	3"-4" Schedule 40 PVC Flange
13	1	HW-72	2" Schedule 40 PVC End Cap

DRAWN L Shurman	CHECKED	TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		10 Large Turbine Nacelle	
APPROVED			
SIZE C		DWG NO 10 Large Turbine Nacelle	REV 0805
SCALE		SHEET 1 OF 6	



D

C

B

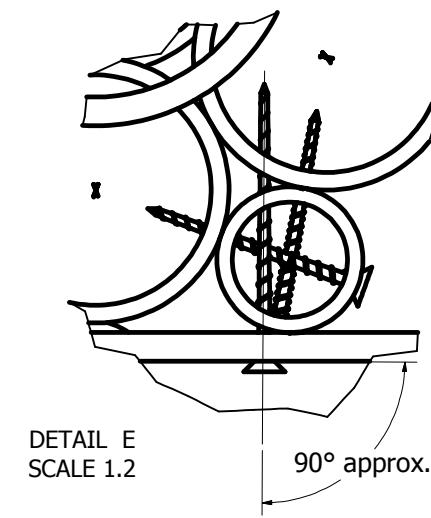
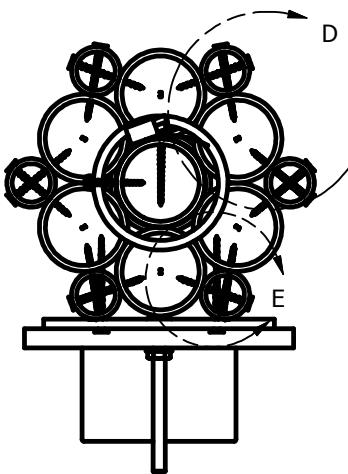
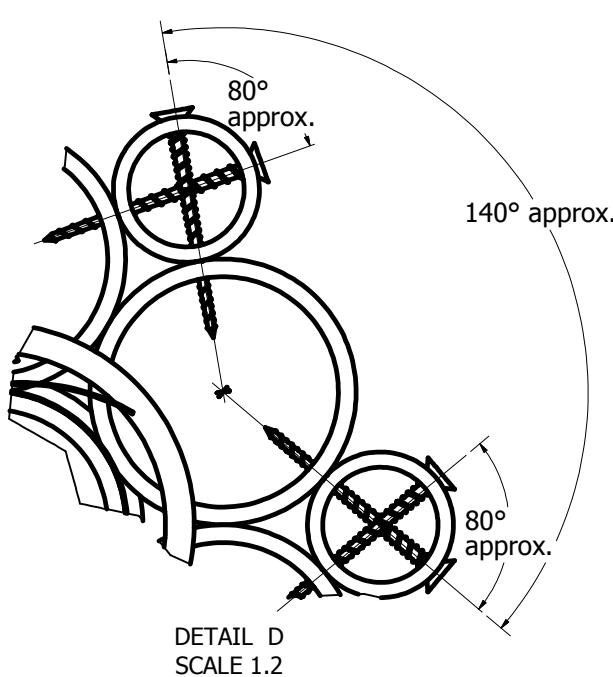
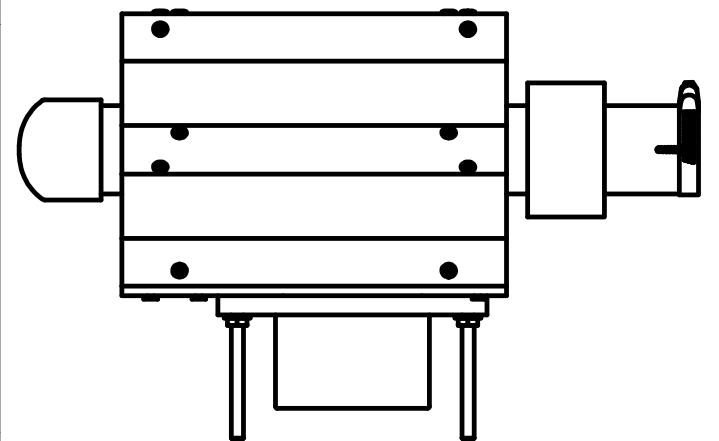
A

D

C

B

A

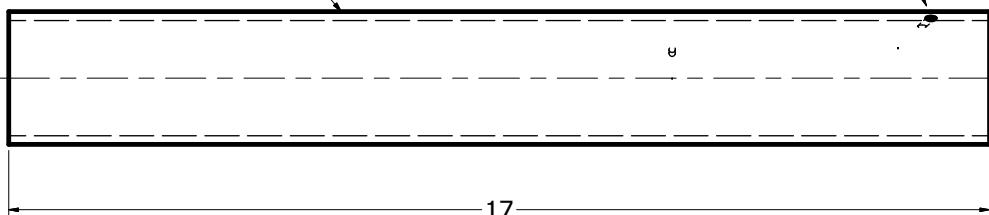


DRAWN L Shturnman		BLADE RUNNER SUMMER 2014		
CHECKED				
QA		TITLE		
MFG		10 Large Turbine Nacelle		
APPROVED		SIZE C	DWG NO 10 Large Turbine Nacelle	REV 0805
		SCALE		SHEET 3 OF 6

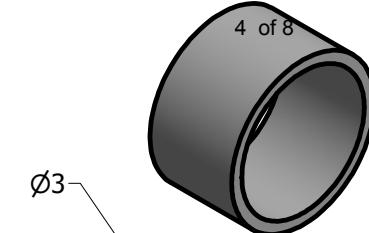
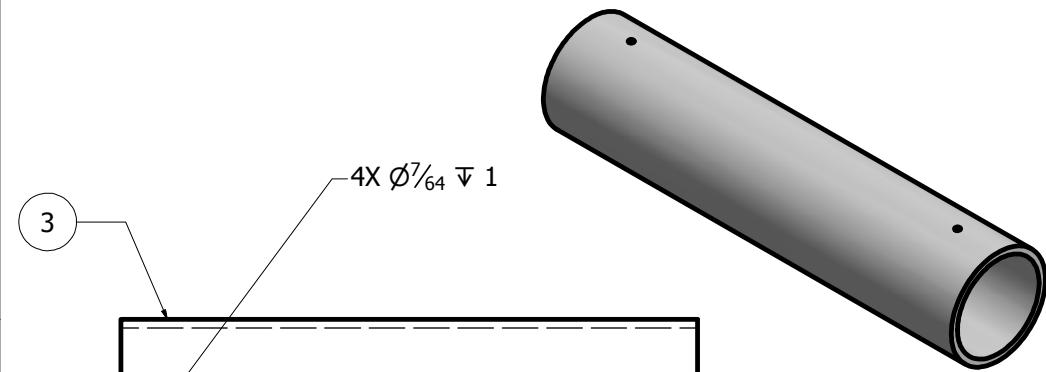
10 Large Turbine Nacelle

2

This hole will be created with drywall screw
when hub is inserted and "pinned" to
avoid rotation of the hub.

 $\phi 2$

5

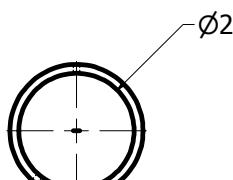
 $\phi 3$ 

1

1

1½

10



4

4X $\phi 7/64$ THRU

1

1

1½

10

4 of 8

 $\phi 1$

PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
2	1	10-41	2" Schedule 40 PVC x17" long
3	6	10-42	2" Schedule 40 PVC x10" long
4	6	10-43	1" Schedule 40 PVC x10" long w/ 4 holes
5	1	10-44	3" Schedule 40 PVC x2" long

DRAWN
L Shurman
CHECKED

QA

MFG

APPROVED

BLADE RUNNER SUMMER 2014

TITLE

10 Large Turbine Nacelle

SIZE C DWG NO 10 Large Turbine Nacelle REV 0805

SCALE SHEET 4 OF 6

D

D

C

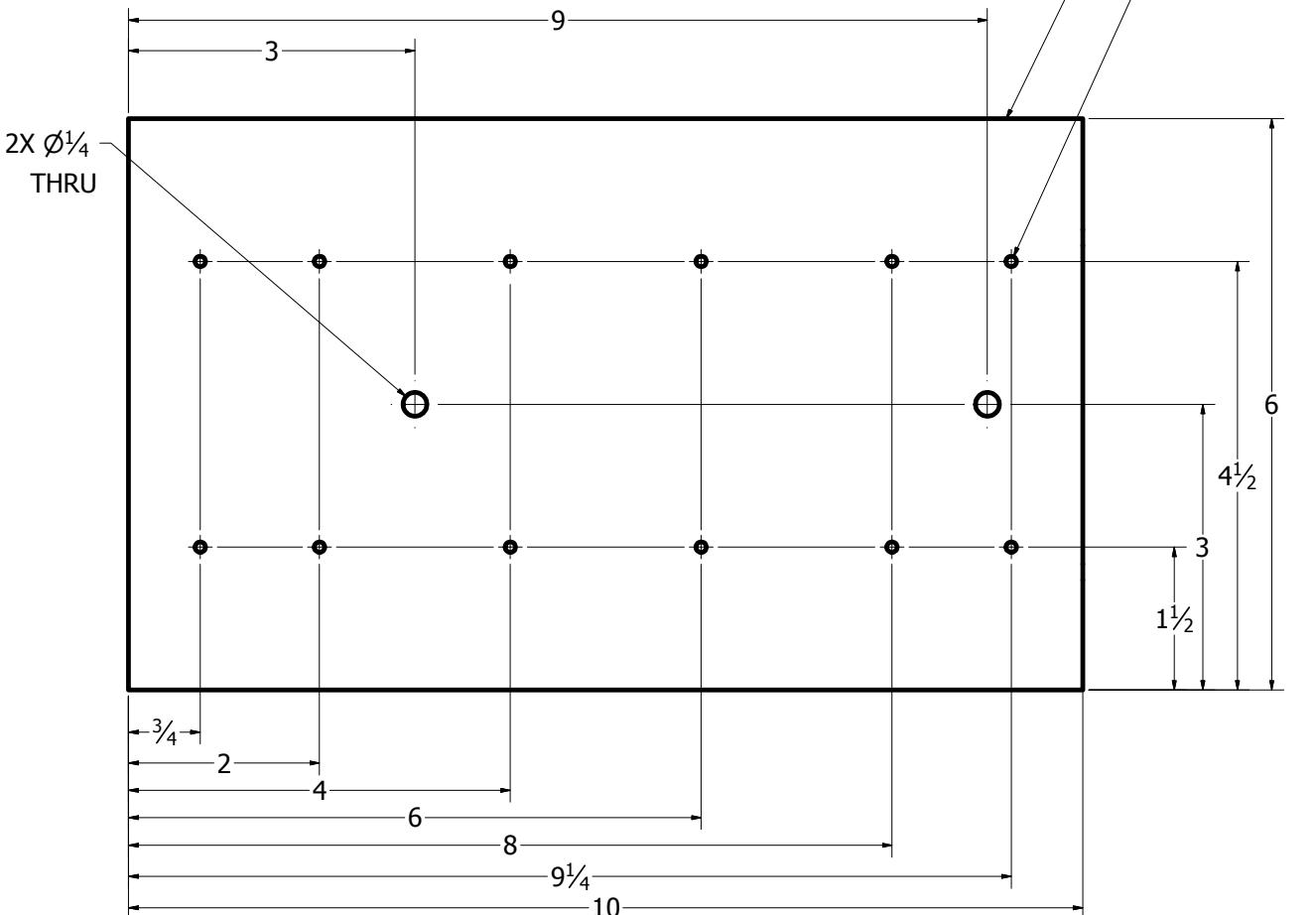
C

B

B

A

A

DRAWN
L Shurman

CHECKED

QA

MFG

APPROVED

BLADE RUNNER SUMMER 2014

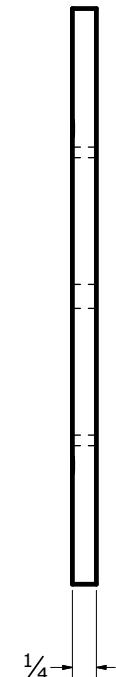
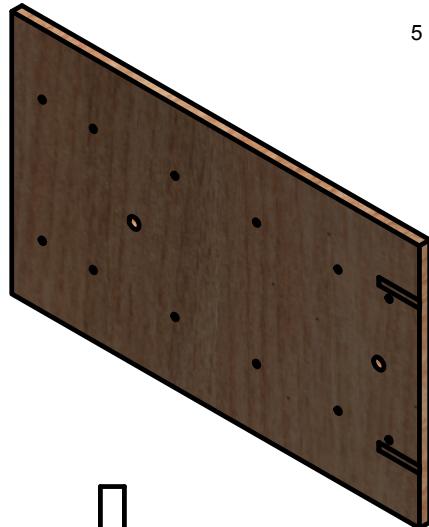
TITLE

10 Large Turbine Nacelle

SIZE C DWG NO 10 Large Turbine Nacelle REV 0805

SCALE SHEET 5 OF 6

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	10-01	6" x 10" x 1/4" Plywood



10 Large Turbine Nacelle

D

4

3

2

1

C

B

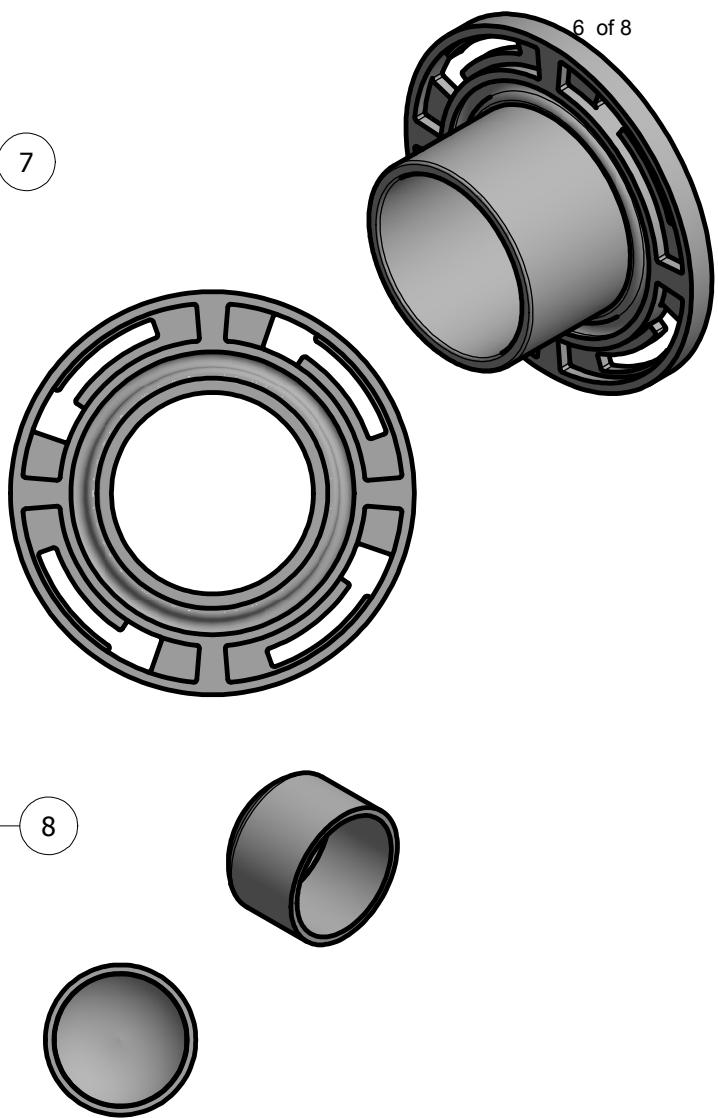
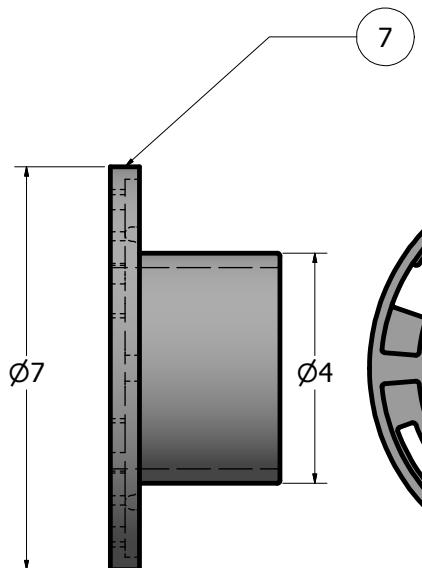
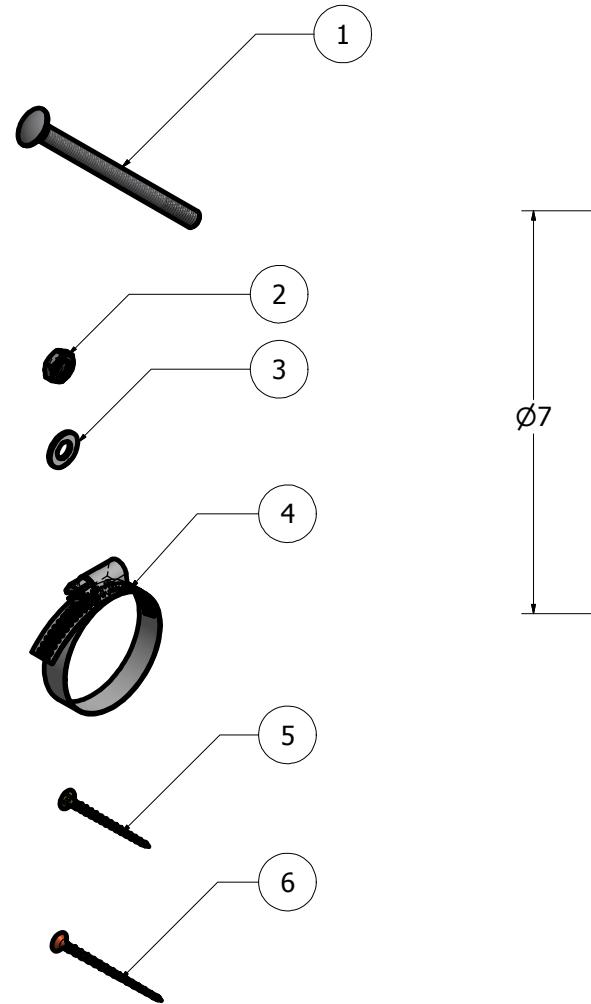
A

D

C

B

A



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
6	2	HW-01	5/16"x4" Carriage Bolt
7	2	HW-02	5/16" Nut
8	2	HW-03	5/16" Flat Washer
9	1	HW-09	2 1/2" Hose Clamp
10	26	HW-12	2" Drywall Screw
11	12	HW-13	2 1/2" Drywall Screw
12	1	HW-70	3"-4" Schedule 40 PVC Flange
13	1	HW-72	2" Schedule 40 PVC End Cap

DRAWN L Shurman	CHECKED	TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		10 Large Turbine Nacelle	
APPROVED		SIZE C	DWG NO 10 Large Turbine Nacelle
		REV 0805	
SCALE		SHEET 6 OF 6	

4

3

2

1

4

3

2

1

10 Large Turbine Nacelle

7 of 8

D

C

B

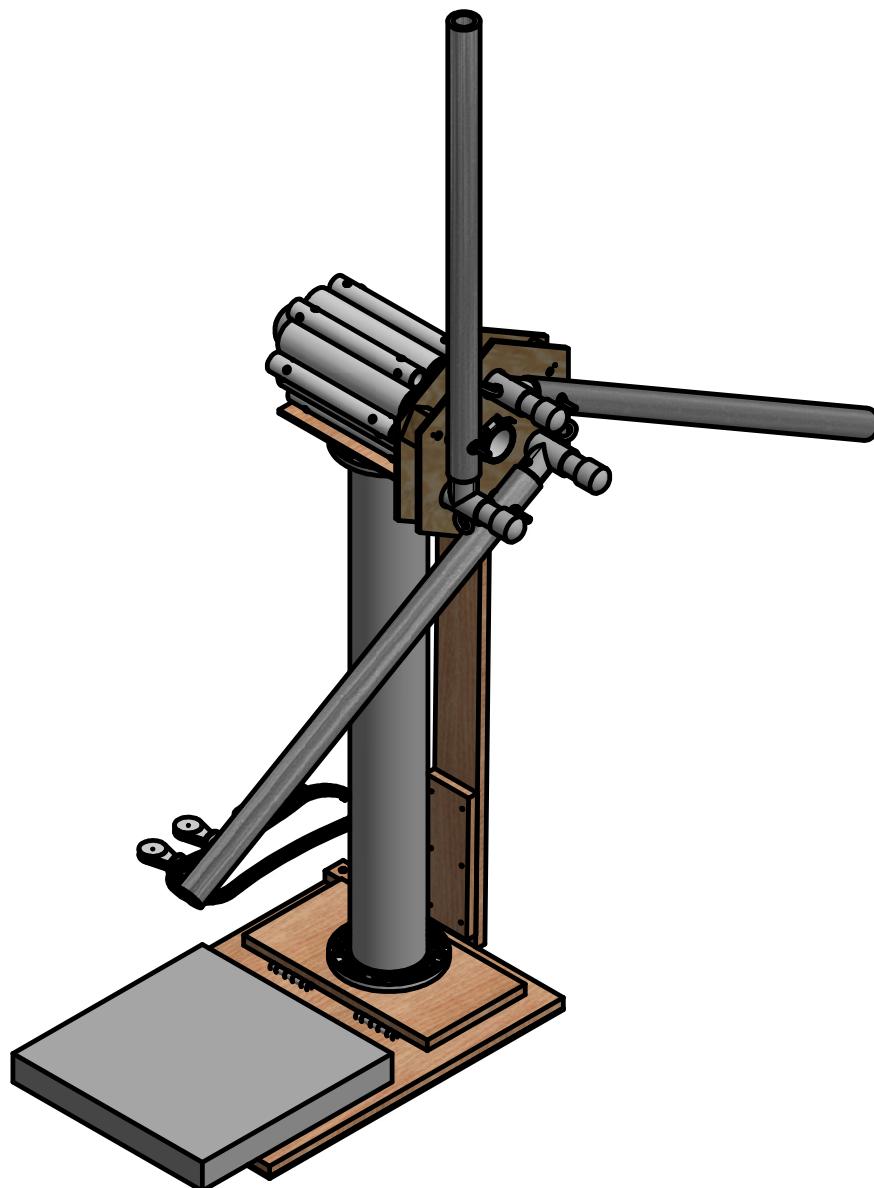
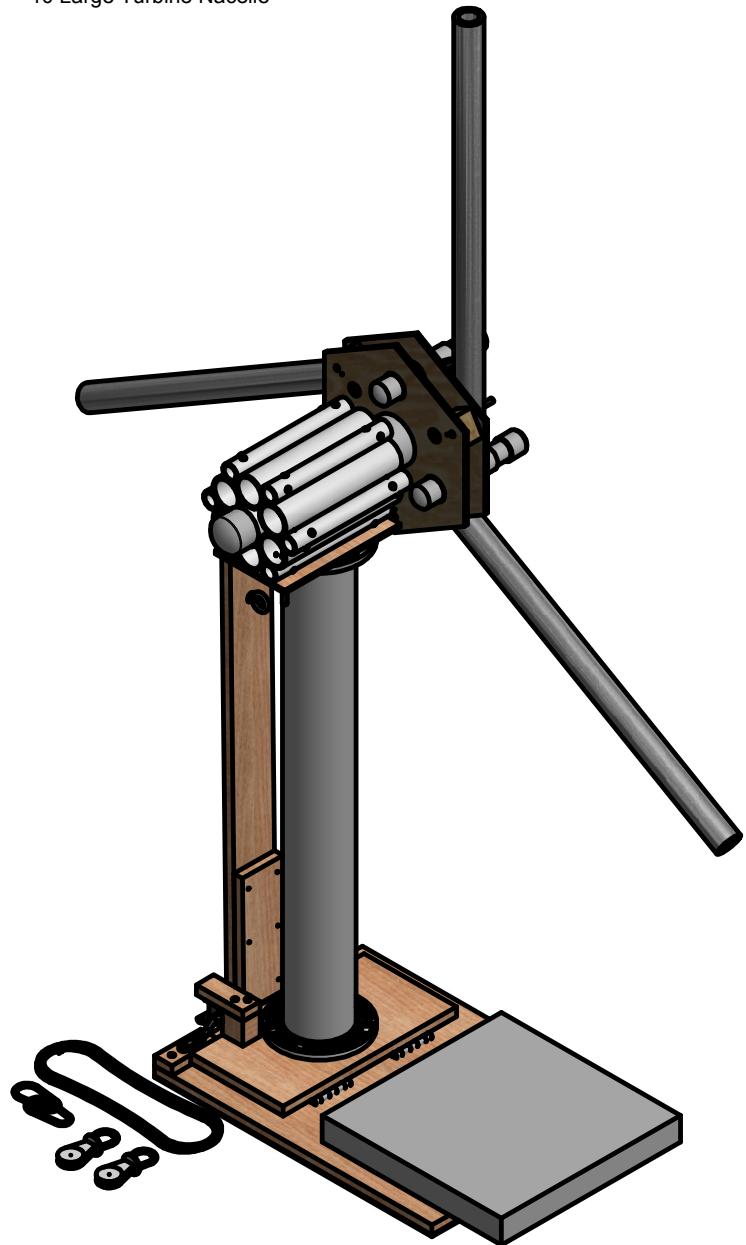
A

D

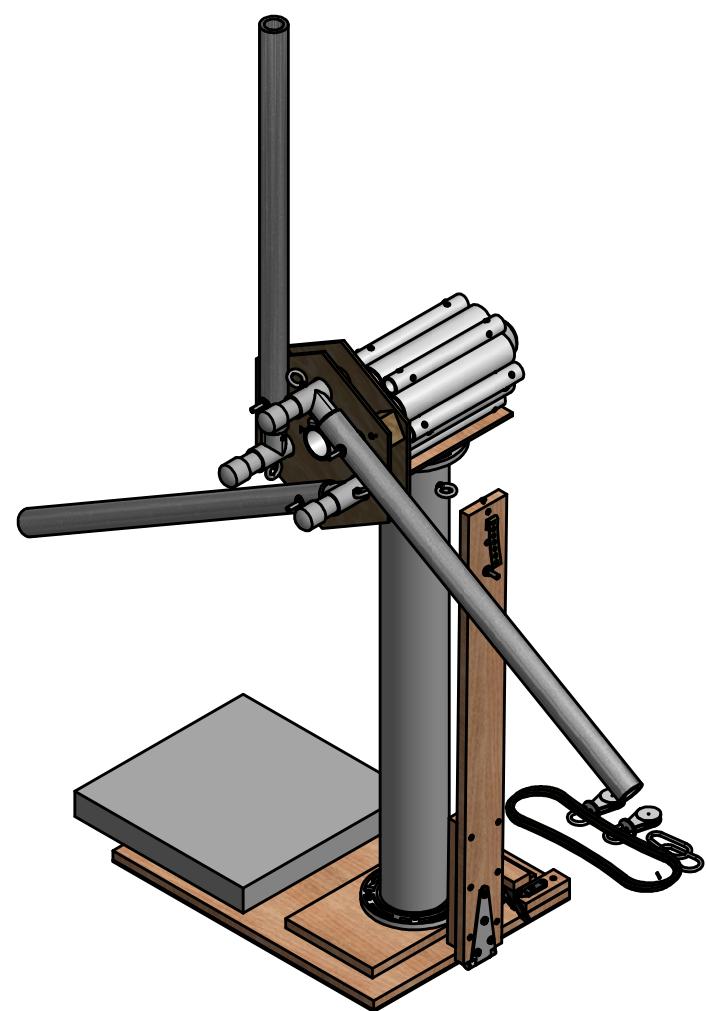
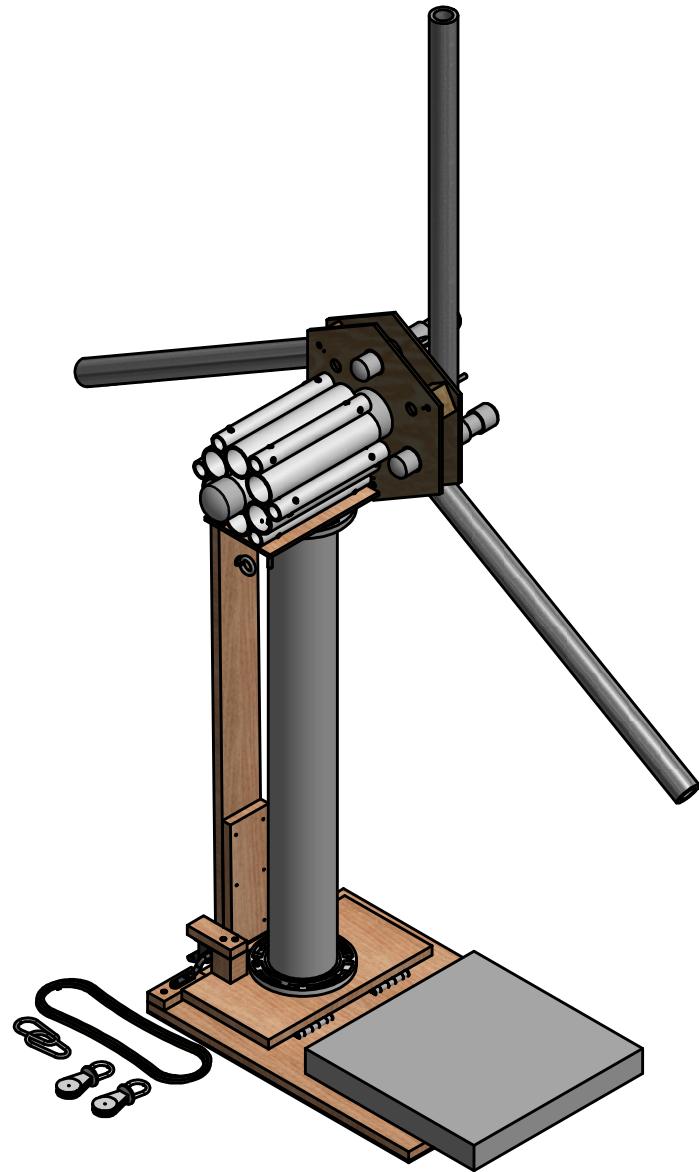
C

B

A



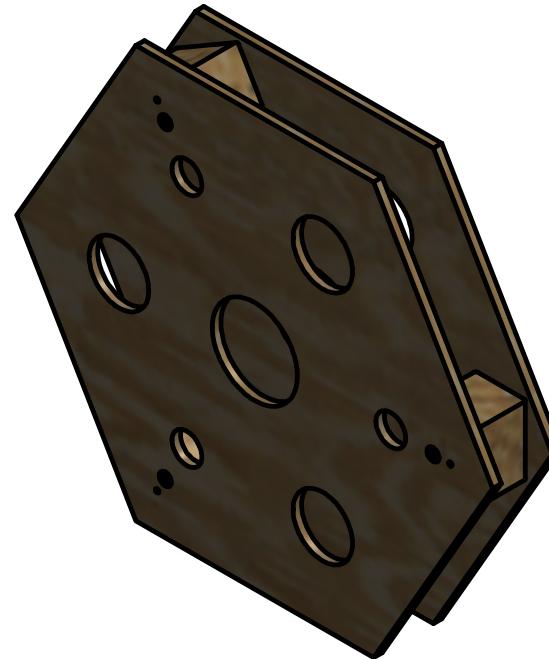
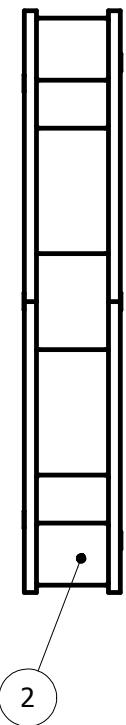
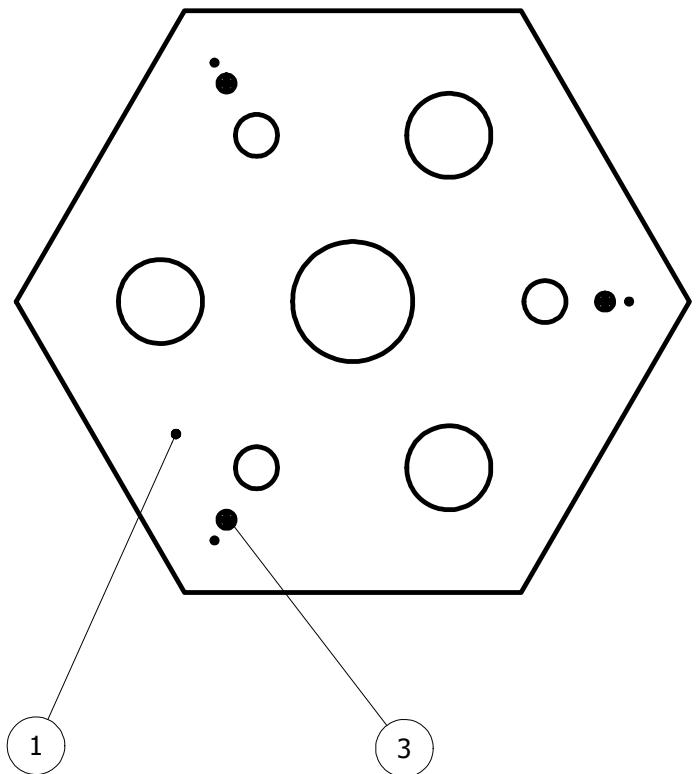
DRAWN Ishturma		TITLE		
CHECKED		BLADE RUNNER SUMMER 2014		
QA				
MFG		10 Large Turbine Nacelle (Complete)		
APPROVED		SIZE C	DWG NO 10 Large Nacelle w T H B	REV 0805
		SCALE	SHEET 1 OF 1	



DRAWN Ishturman	6/27/2014	TITLE	
CHECKED		10 Large Turbine Nacelle (Complete)	
QA			
MFG			
APPROVED		SIZE C	DWG NO 10s Large Turbine Nacelle w/BS
		SCALE	REV B
		SHEET 1 OF 1	

12 Nacelle Hexagon and blades

1 of 6



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	2	12-01	Hexagon 14" DIA on 1/4" Plywood
2	3	12-02	2x2 x 2" spacer block
3	6	HW-10	1 1/4" Drywall screw

DRAWN
Ishturman
CHECKED

QA

MFG

APPROVED

BLADE RUNNER SUMMER 2014

TITLE

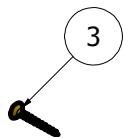
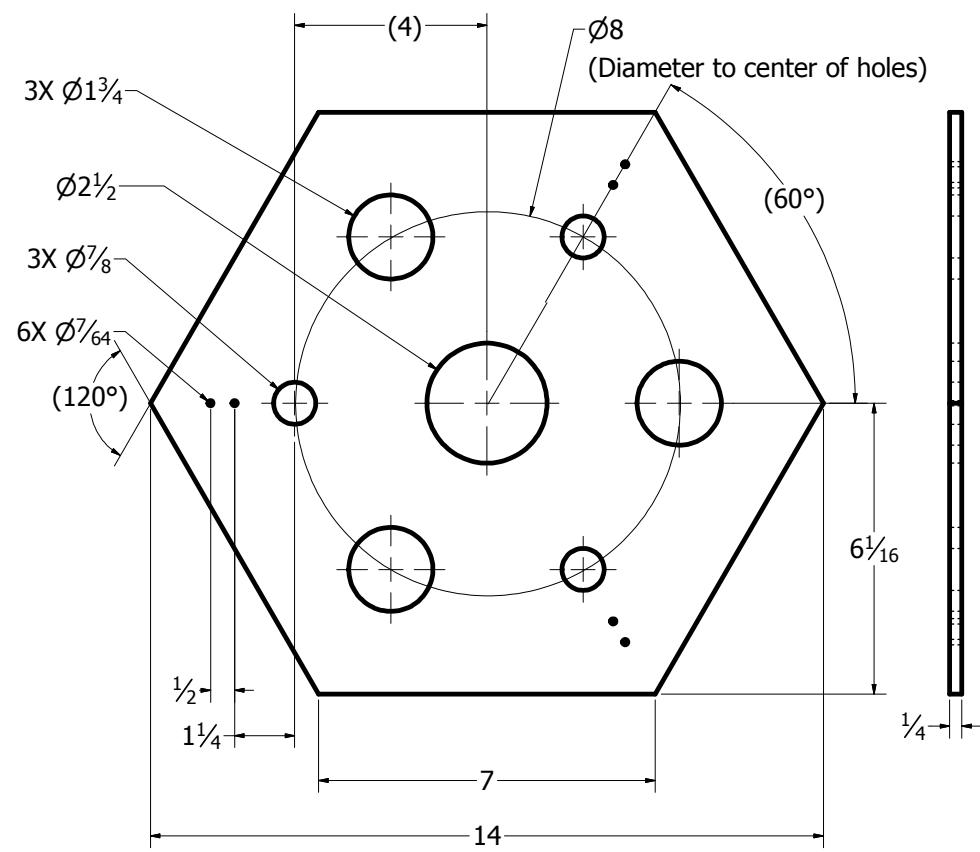
12 Large Nacelle Parts

SIZE C DWG NO 12 Nacelle Hexagon and blades REV A

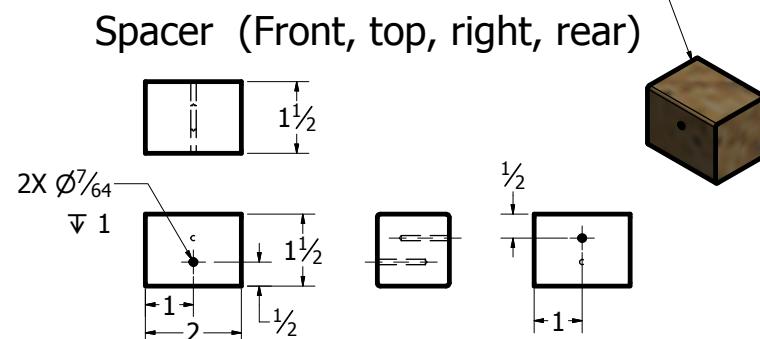
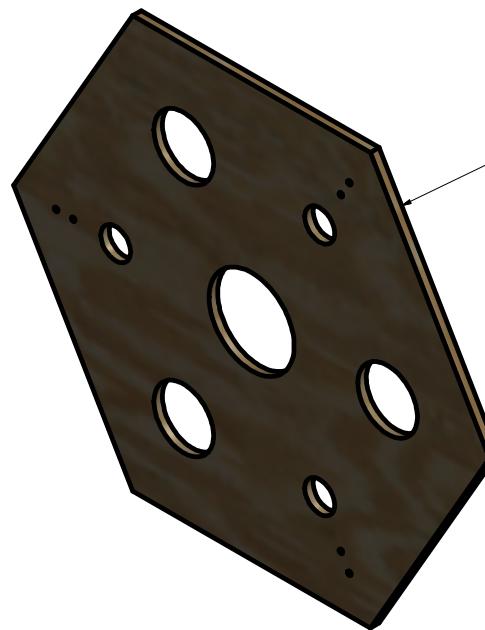
SCALE SHEET 1 OF 6

12 Nacelle Hexagon and blades

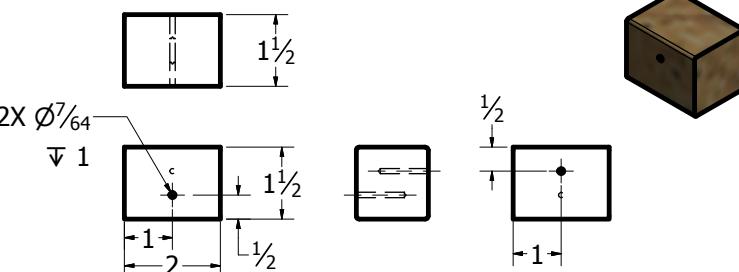
2 of 6



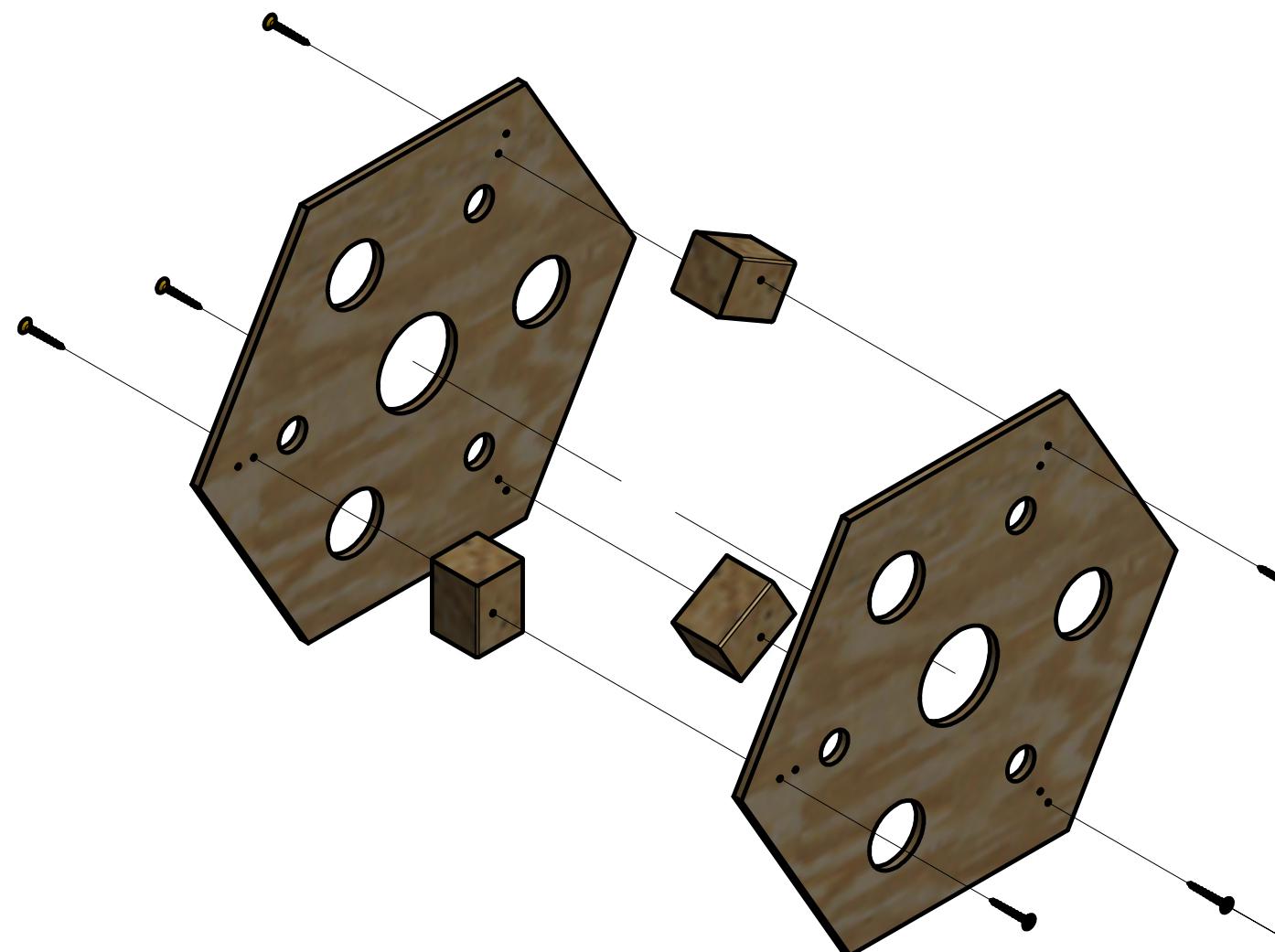
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	2	12-01	Hexagon 14" DIA on 1/4" Plywood
2	3	12-02	2x2 x2" spacer block
3	6	HW-10	1 1/4" Drywall screw



Spacer (Front, top, right, rear)



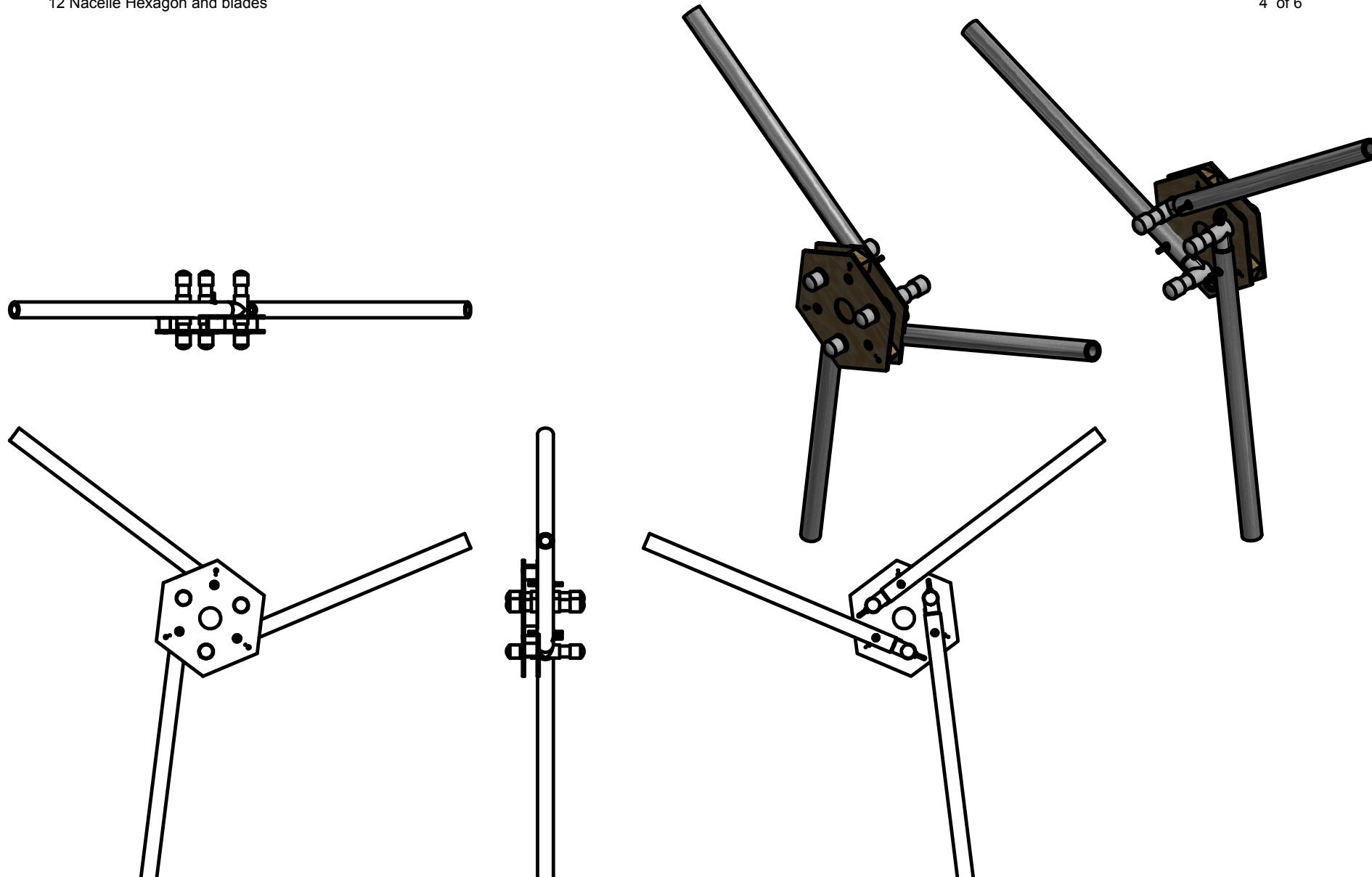
DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	TITLE 12 Large Nacelle Parts		
APPROVED				
		SIZE C		
		DWG NO 12 Nacelle Hexagon and blades	REV A	
SCALE				
		SHEET 2 OF 6		



DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	12 Large Nacelle Parts		
APPROVED				
		SIZE C	DWG NO 12 Nacelle Hexagon and blades	REV A
		SCALE		SHEET 3 OF 6

12 Nacelle Hexagon and blades

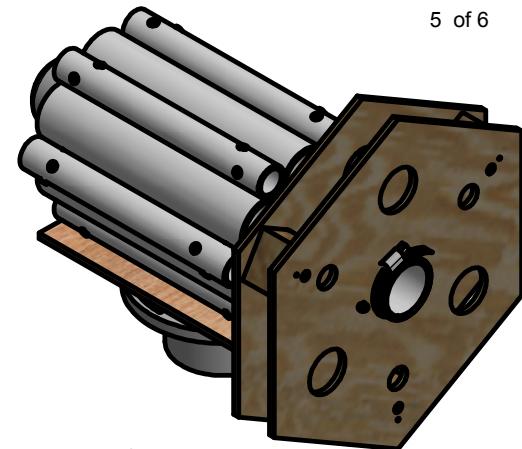
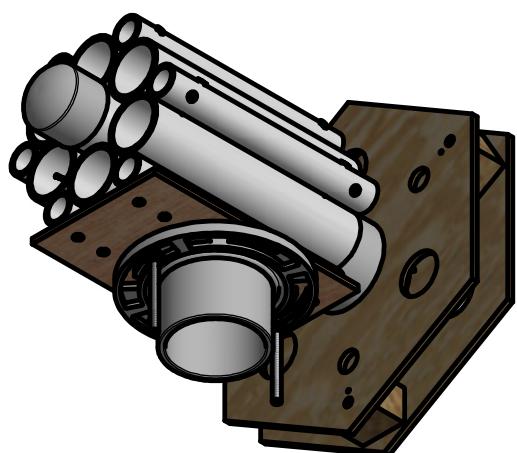
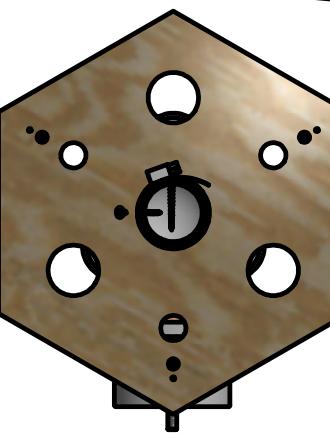
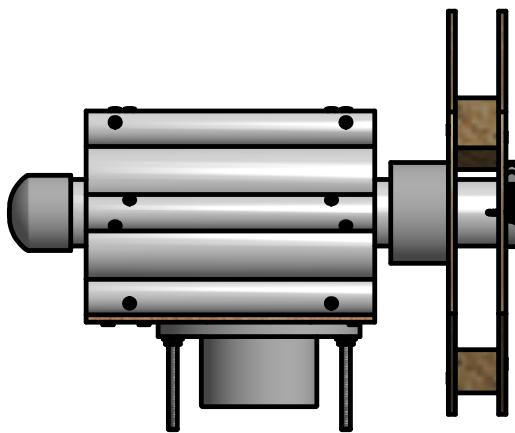
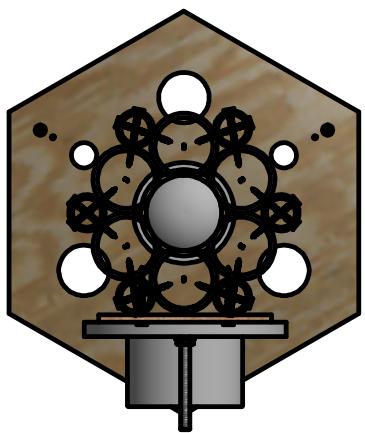
4 of 6

D
C
B
AD
C
B
A

DRAWN		BLADE RUNNER SUMMER 2014	
CHECKED		TITLE	
QA		12 Large Nacelle Parts	
MFG			
APPROVED			
	SIZE	DWG NO	REV
	C	12 Nacelle Hexagon and blades	B
	SCALE		
		SHEET 4 OF 6	

12 Nacelle Hexagon and blades

5 of 6



DRAWN Ishturman		TITLE BLADE RUNNER SUMMER 2014	
CHECKED			
QA			
MFG		12 Large Nacelle Parts	
APPROVED		SIZE C	DWG NO 12 Nacelle Hexagon and blades
		SCALE	REV A
			SHEET 5 OF 6

4

3

2

1

12 Nacelle Hexagon and blades

6 of 6

D

C

B

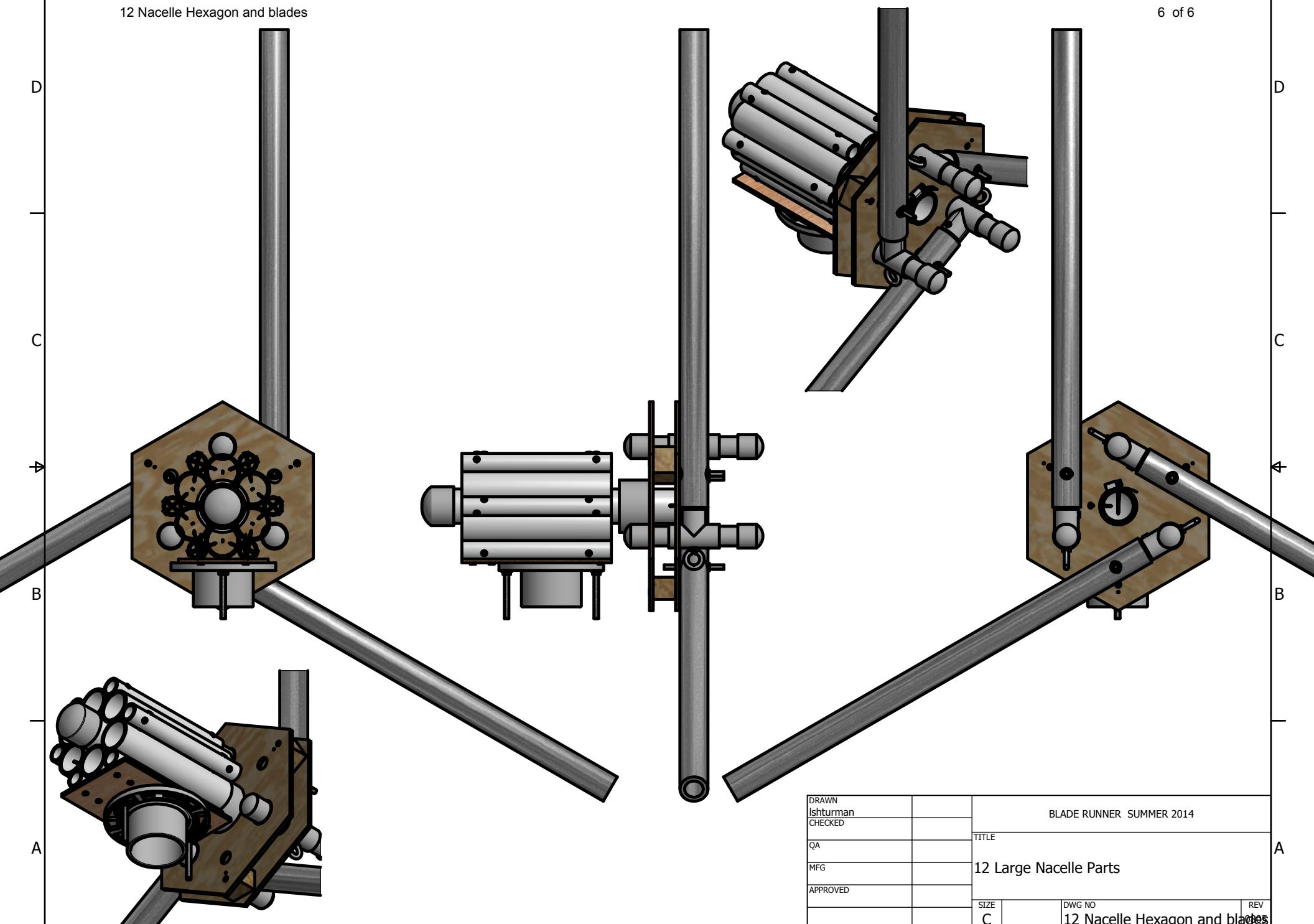
A

D

C

B

A



DRAWN
Ishturman
CHECKED

QA

MFG

APPROVED

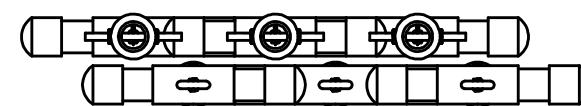
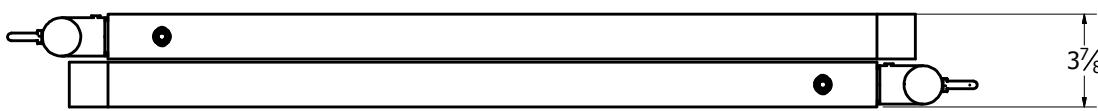
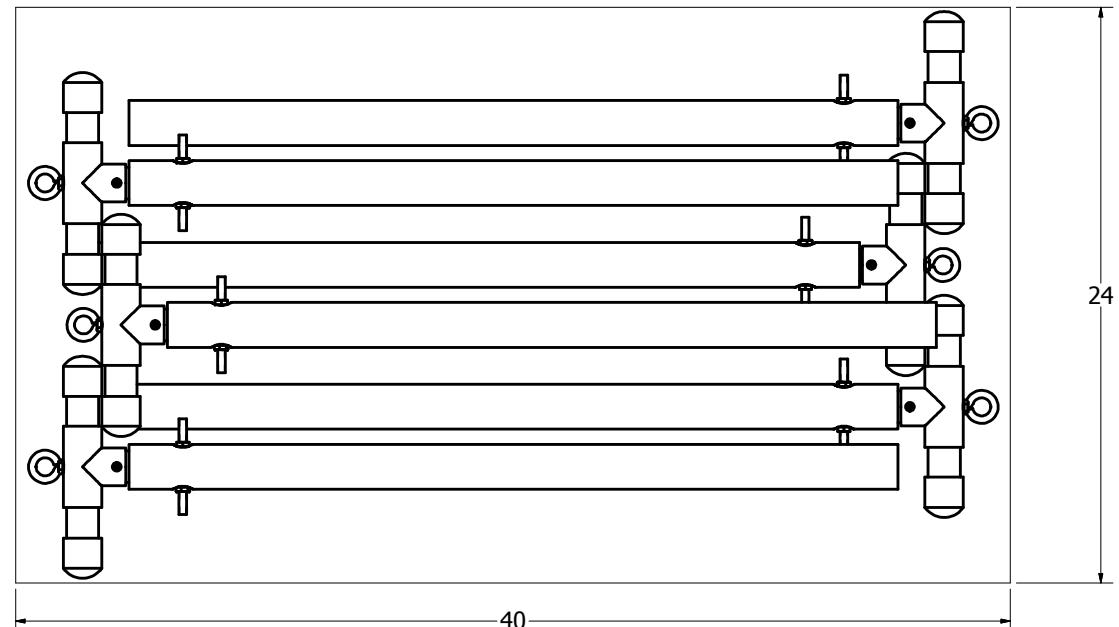
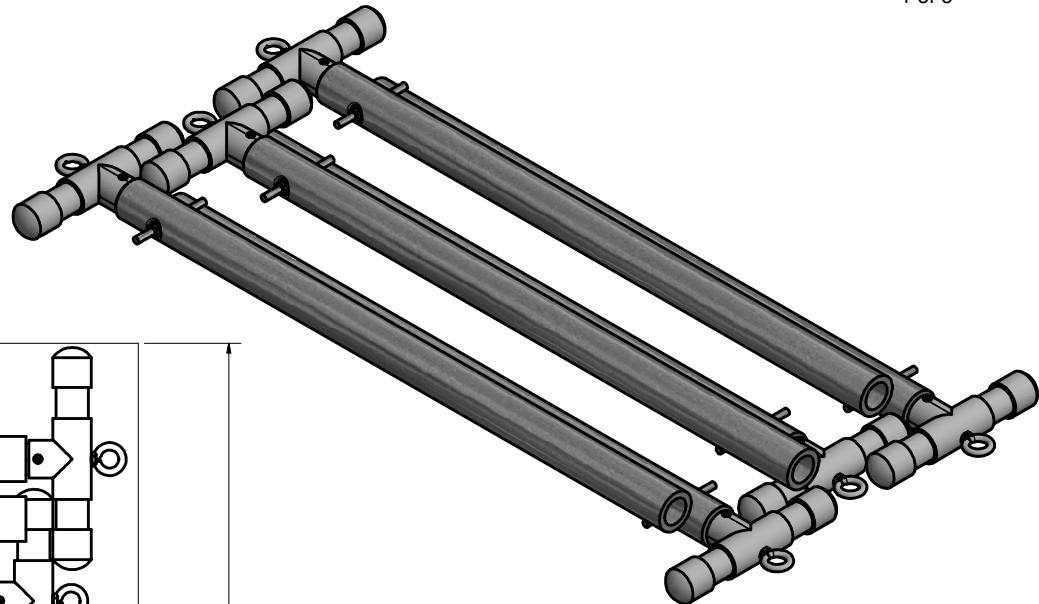
BLADE RUNNER SUMMER 2014

TITLE
12 Large Nacelle PartsSIZE C DWG NO REV
12 Nacelle Hexagon and blades 5

SCALE SHEET 6 OF 6

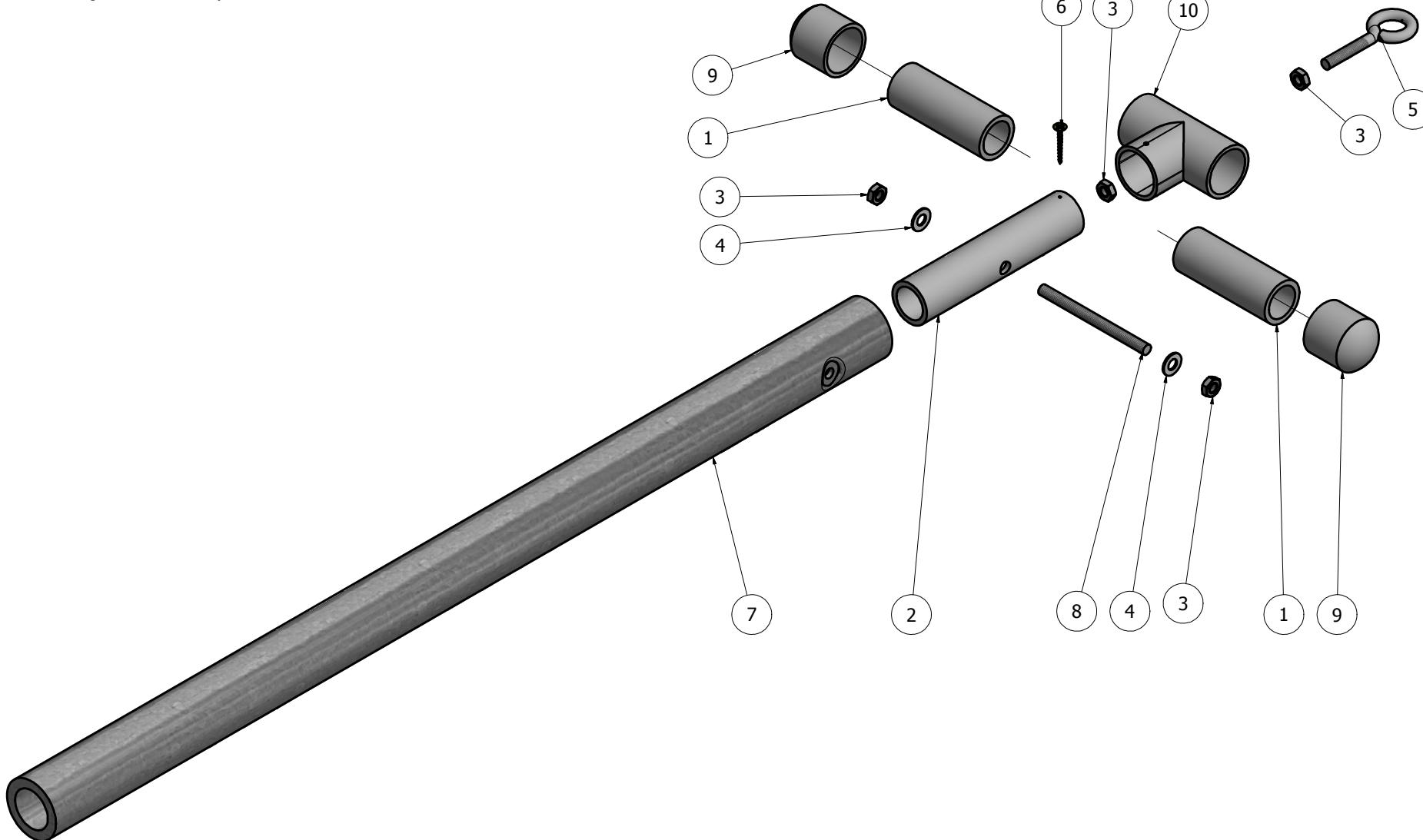
14 large blade assembly

1 of 3



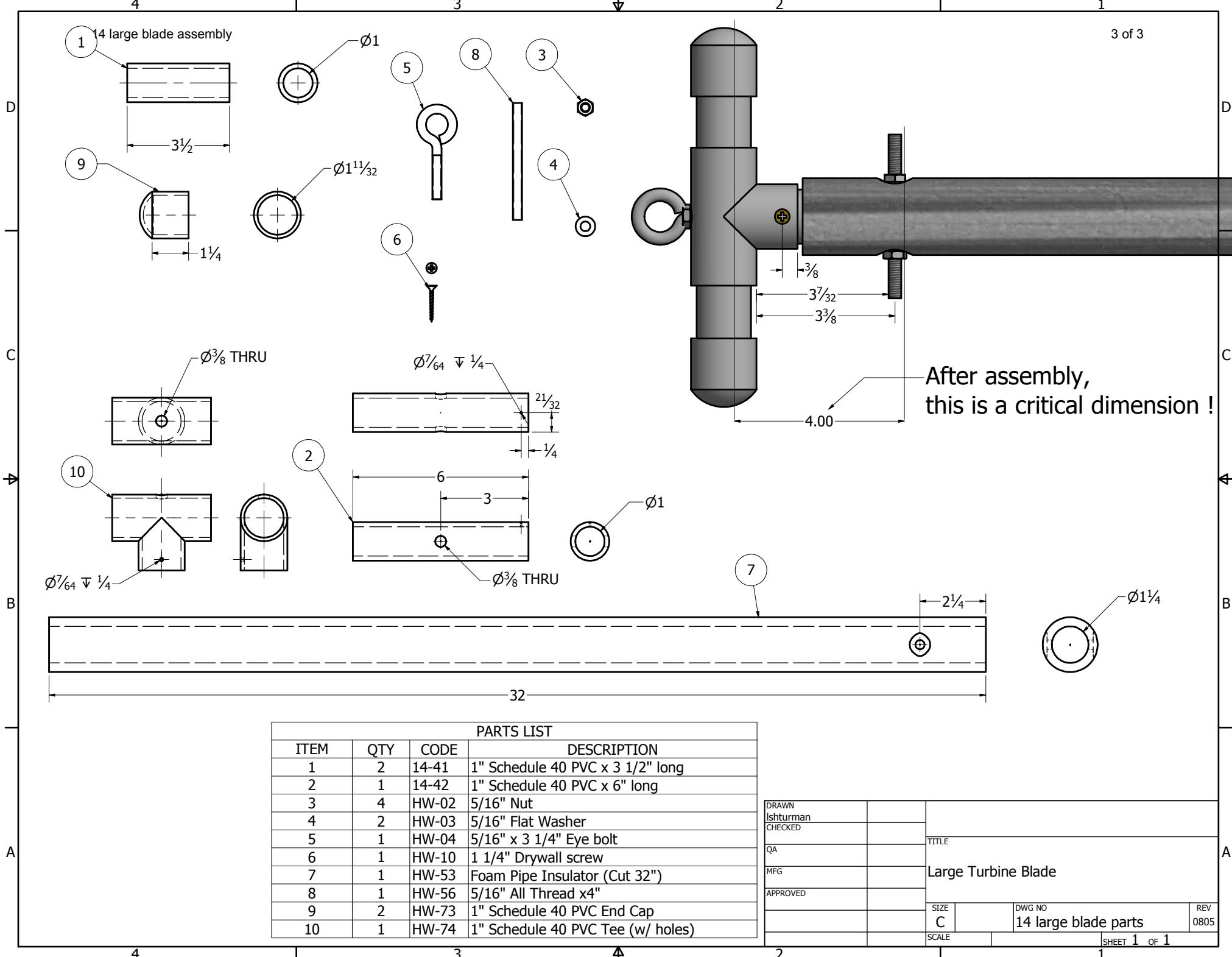
DRAWN Ishturman	CHECKED	TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		Large Blades on the ground	
APPROVED		SIZE C	DWG NO 14 large blade assembly 6 down
		SCALE	REV 100m
			SHEET 1 OF 1

14 large blade assembly



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	2	14-41	1" Schedule 40 PVC x 3 1/2" long
2	1	14-42	1" Schedule 40 PVC x6" long
3	4	HW-02	5/16" Nut
4	2	HW-03	5/16" Flat Washer
5	1	HW-04	5/16" x 3 1/4" Eye bolt
6	1	HW-10	1 1/4" Drywall screw
7	1	HW-53	Foam Pipe Insulator (Cut 32")
8	1	HW-56	5/16" All Thread x4"
9	2	HW-73	1" Schedule 40 PVC End Cap
10	1	HW-74	1" Schedule 40 PVC Tee (w/ holes)

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA		TITLE Large Turbine Blade (exploded)		
MFG				
APPROVED				
		SIZE C	DWG NO 14 large blade exploded	REV 0805
		SCALE	SHEET 1 OF 1	



4

3

2

1

1 of 10

16 and 26 Tower Base

D

D

C

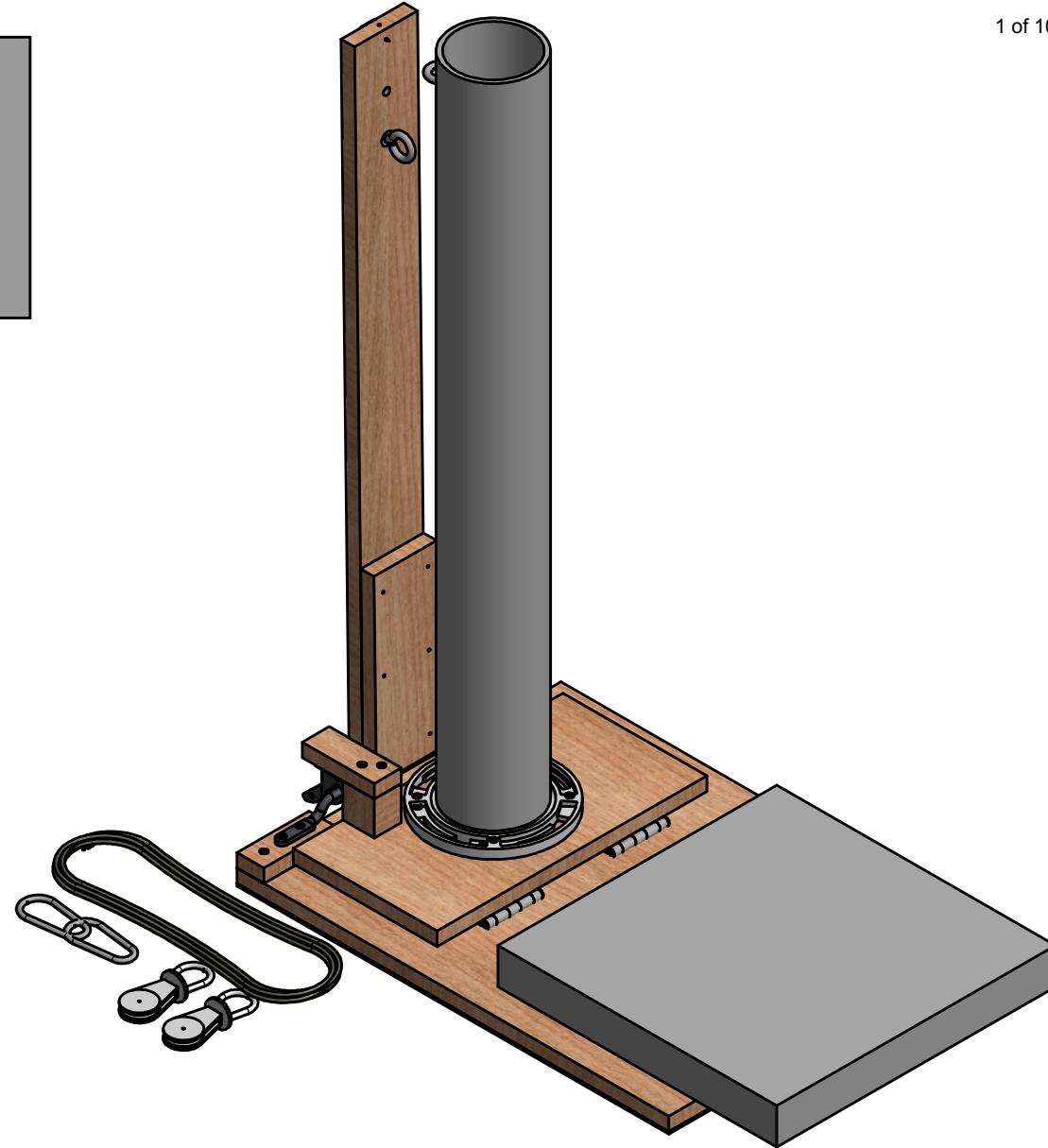
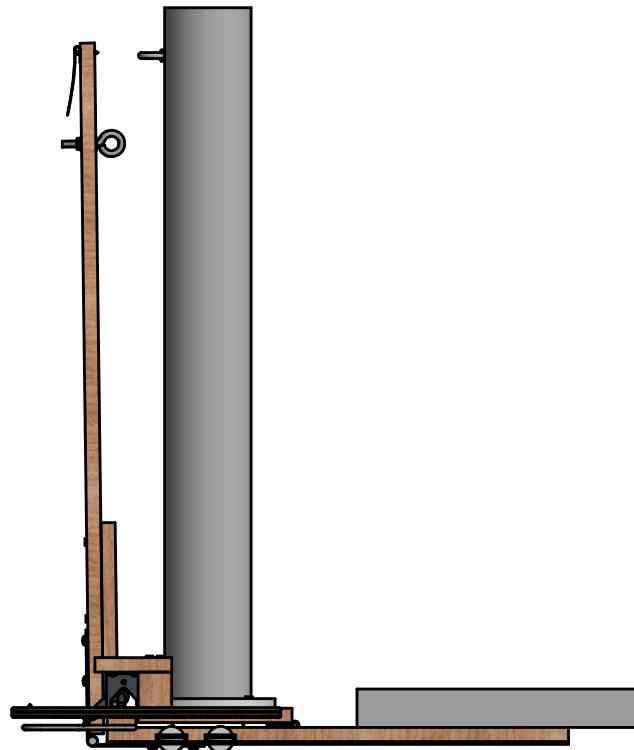
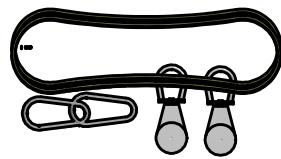
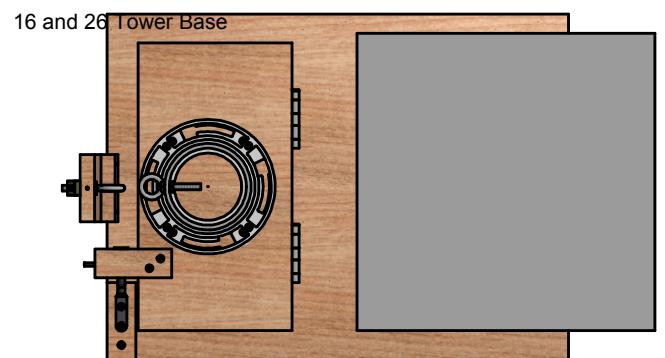
C

B

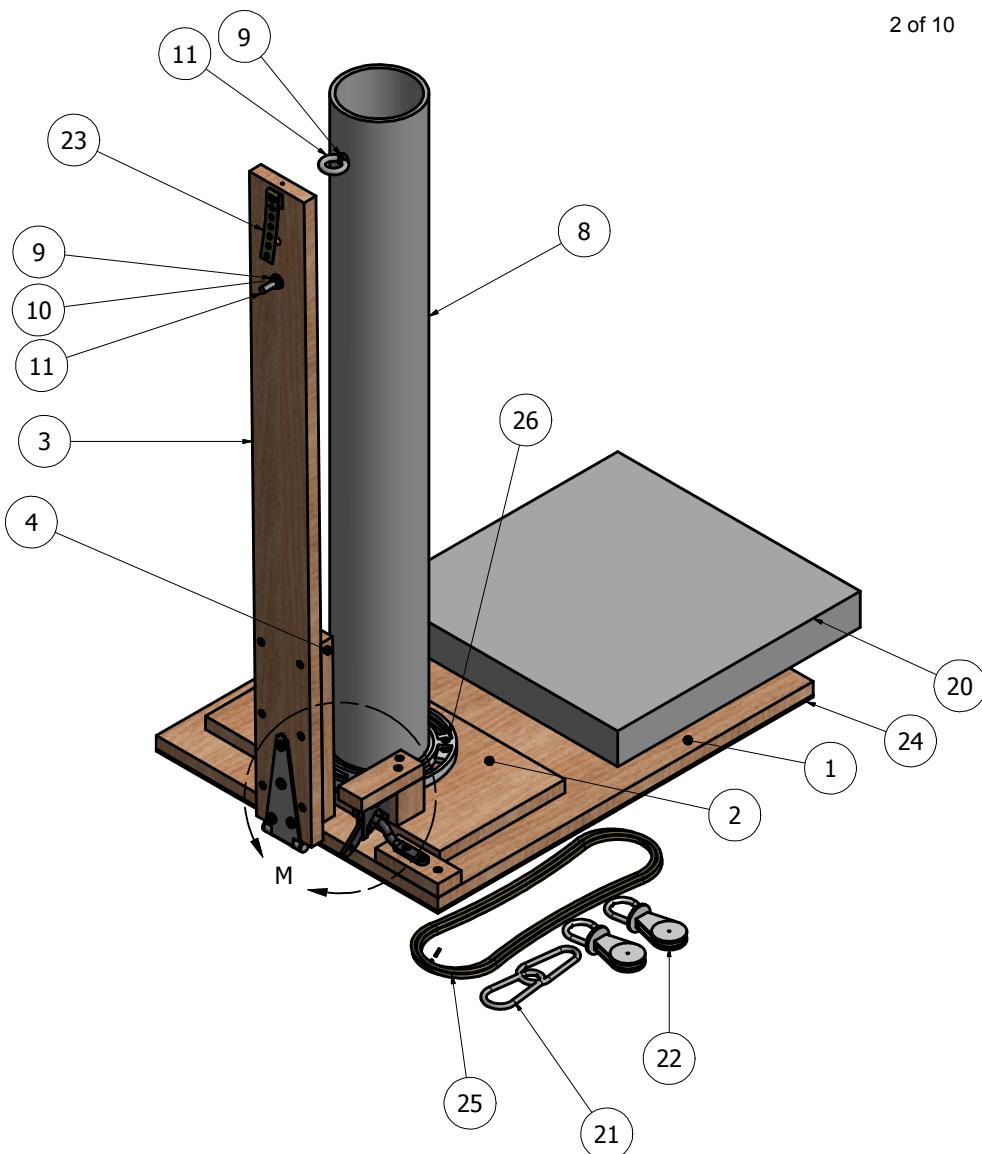
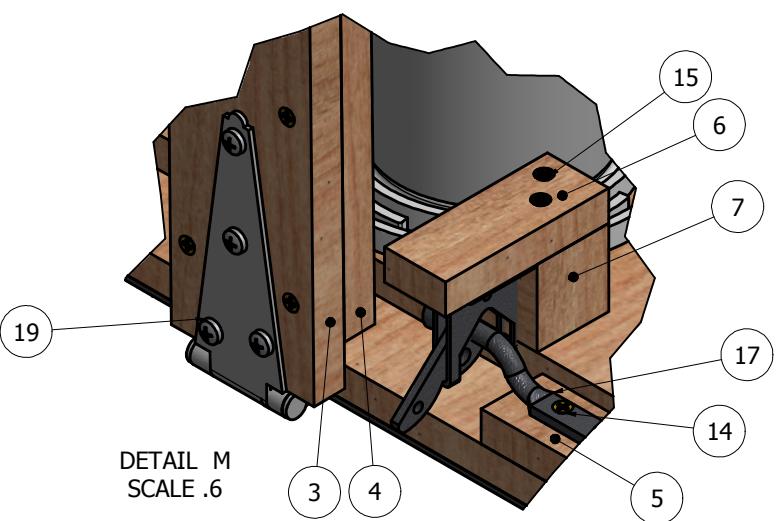
B

A

A



DRAWN Ishturman		TITLE	
CHECKED		BLADE RUNNER SUMMER 2014	
QA		16 and 26 Tower Base	
MFG			
APPROVED		SIZE C	DWG NO 0805
		SCALE	SHEET 1 OF 9



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	1	16-01	18" x 24" x 3/4" Plywood
2	1	16-02	8" x 15" x 3/4" Plywood
3	1	16-03	1x4 x36" Board
4	1	16-04	1x4 x10" Board
5	1	16-05	1x2 x4" long (4 Holes in line)
6	1	16-06	1x2 x4" long (6 holes)
7	1	16-07	2x 1 3/4" x 1 7/8" (made of 2x4 x1 7/8")
8	1	16-41	4" Schedule 40 PVC x 36" long
9	3	HW-02	5/16" Nut
10	2	HW-03	5/16" Flat Washer
11	2	HW-04	5/16" x 3 1/4" Eye bolt
12	2	HW-05	3"x1 1/2" Hinge (Assembly)
13	12	HW-06	Screw for 3" hinge. Supplied w/ hinge
14	19	HW-10	1 1/4" Drywall screw
15	4	HW-11	1 5/8" Drywall screw
16	1	HW-14	6" Heavy Strap Hinge
17	1	HW-15	Gate Latch
18	4	HW-16	Screw for latch. (Supplied with latch)
19	6	HW-18	Screw for 6" Hinge; Round head
20	1	HW-21	16x16 Gray Stone
21	2	HW-26	Spring Snap (Lowes348540)
22	2	HW-27	Swivel Pulley (for rope)
23	1	HW-54	Galvanized Pipe Hanger (Cut to fit)
24	1	HW-55	18" x 24" Liner (Cut to fit)
25	1	HW-57	3/16" Braided Poly. Rope (Cut to fit)
26	1	HW-70	3"-4" Schedule 40 PVC Flange (holes in place)

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	TITLE 16 and 26 Tower Base			A
MFG				
APPROVED				
SIZE C	DWG NO 16 and 26 Tower Base	REV 0805		
SCALE			SHEET 2 OF 9	

4

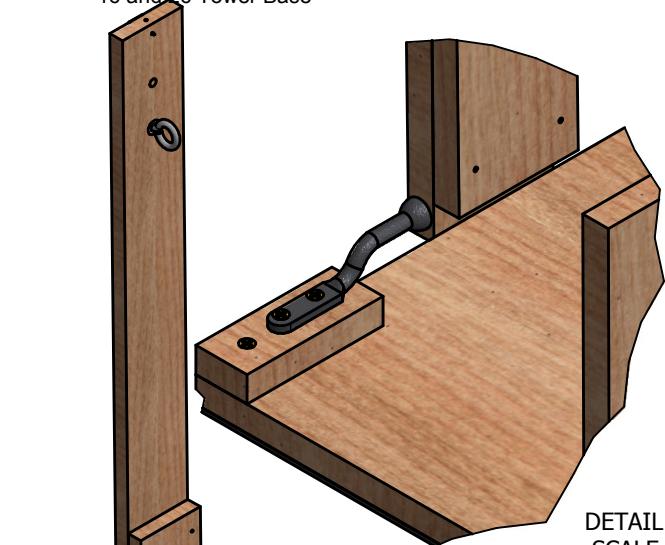
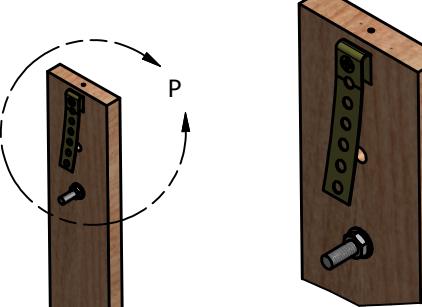
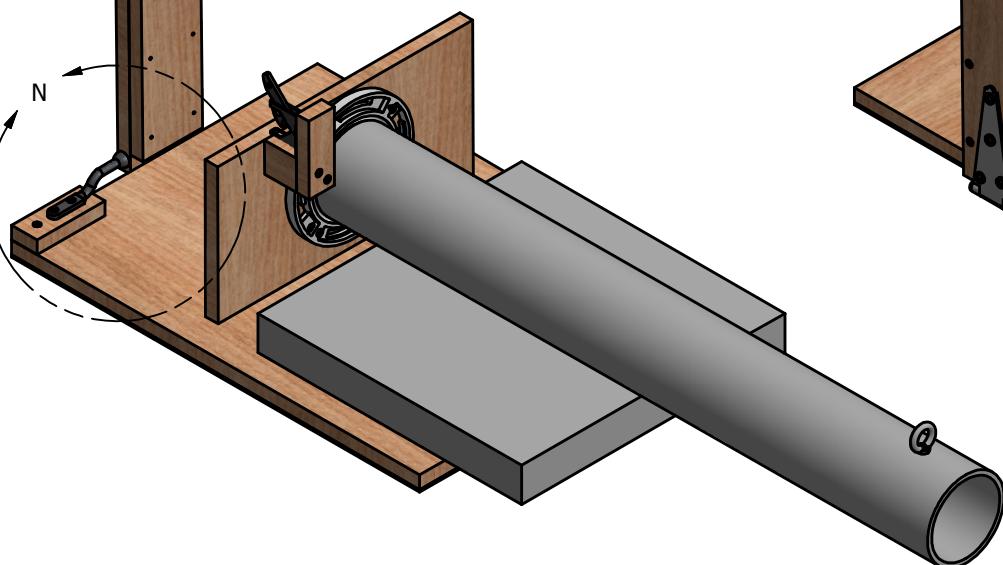
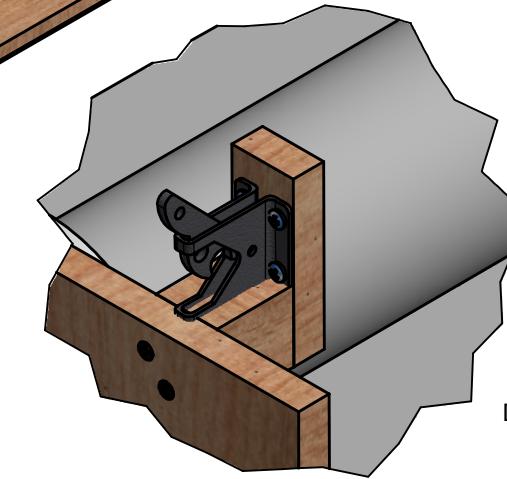
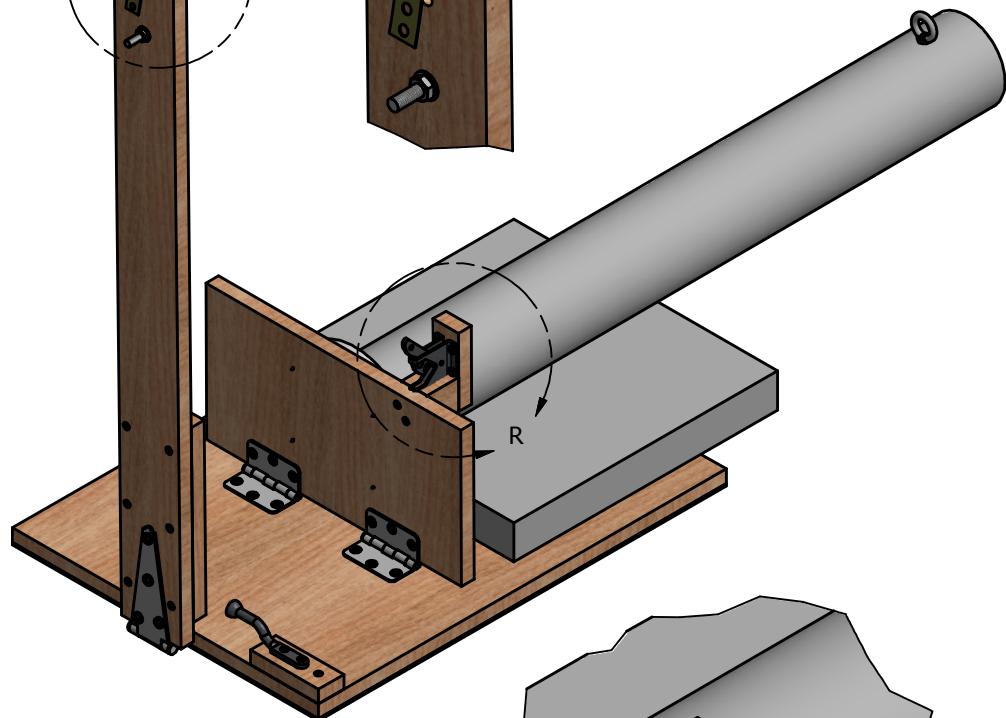
3

2

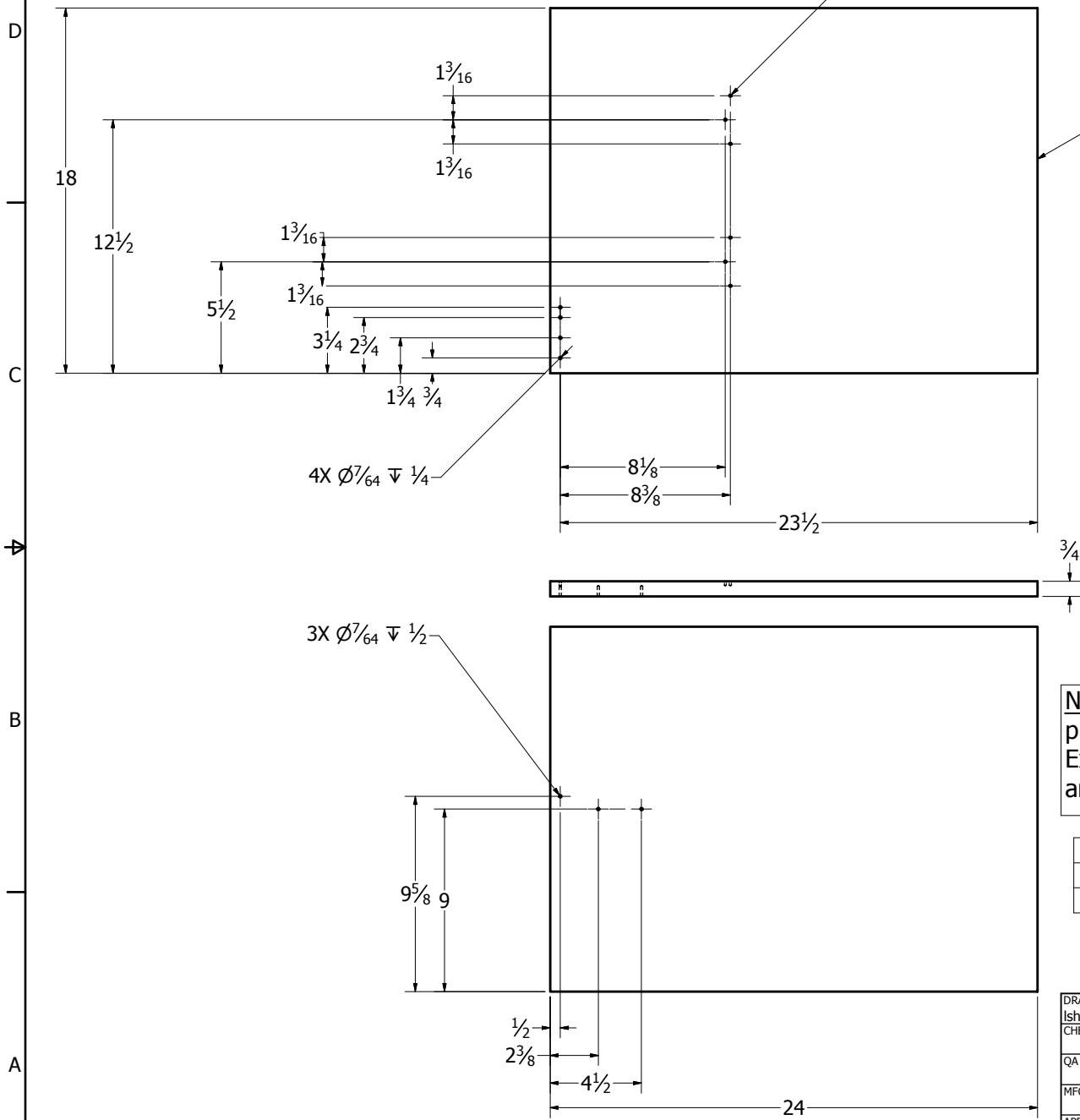
1

3 of 10

16 and 26 Tower Base

DETAIL N
SCALE .5DETAIL P
SCALE .5DETAIL R
SCALE .6

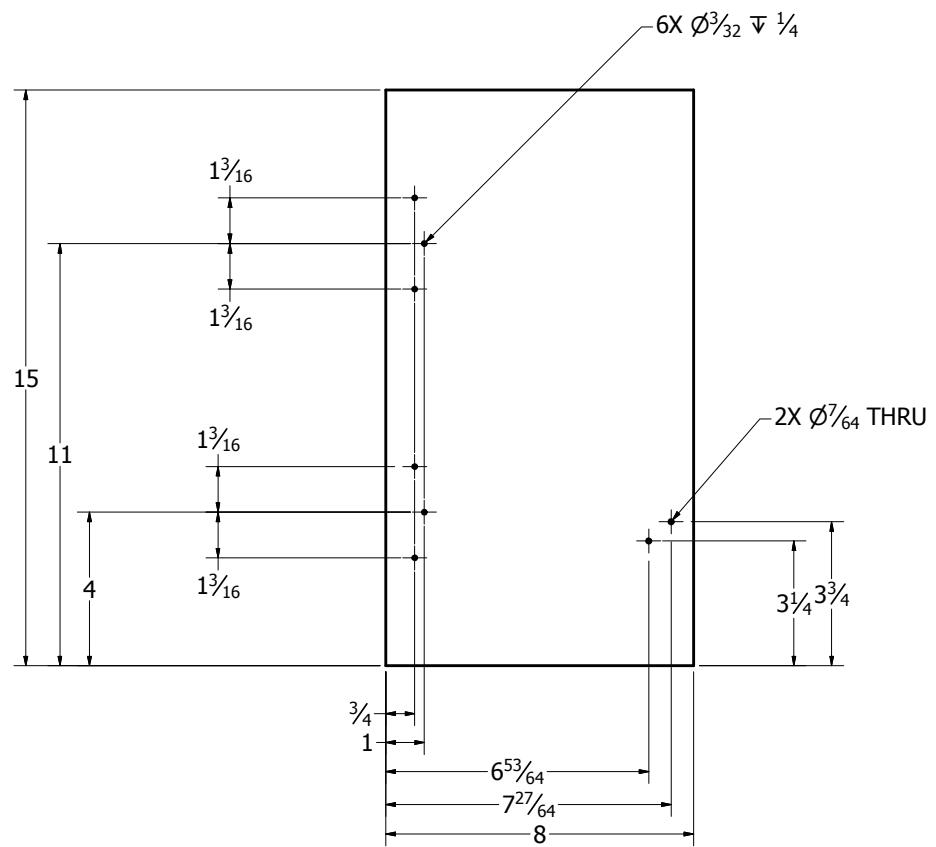
DRAWN Ishturman		TITLE	
CHECKED		BLADE RUNNER SUMMER 2014	
QA		16 and 26 Tower Base	
MFG			
APPROVED		SIZE C	DWG NO 0805
		SCALE	SHEET 3 OF 9



NOTE. - Parts for Tower Base 16 and 26 are the same;
please use these schematics to create both towers.
Exceptions are for two lenght of parts 16-03 vs 26-03
and 16-41 vs 26-41]

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	16-01	18" x 24" x 3/4" Plywood

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA		TITLE 16 and 26 Tower Base		
MFG				
APPROVED				
		SIZE C	DWG NO 16 and 26 Tower Base	REV 0805
		SCALE		SHEET 4 OF 9

Bottom side of board^o

Group of three holes are for 3" hinges.

Please read Note on prior page.

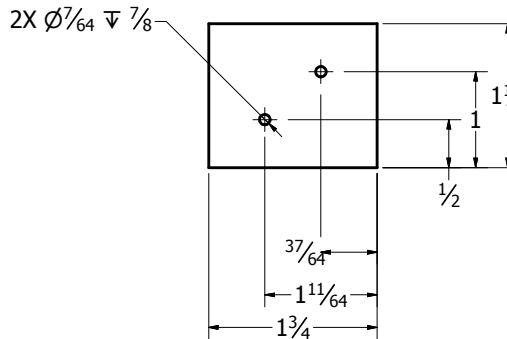
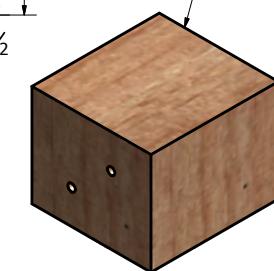
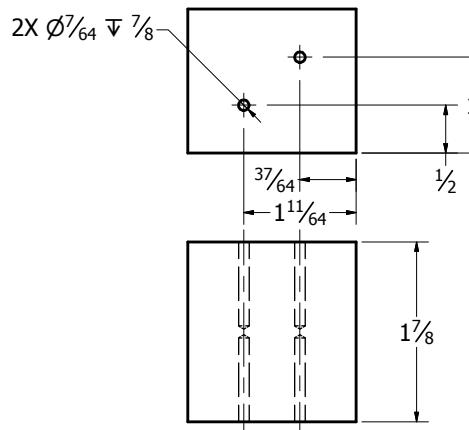
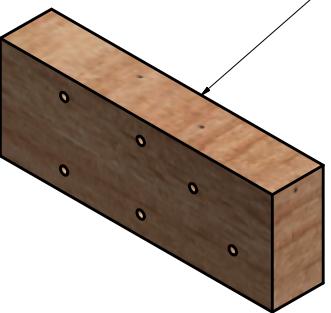
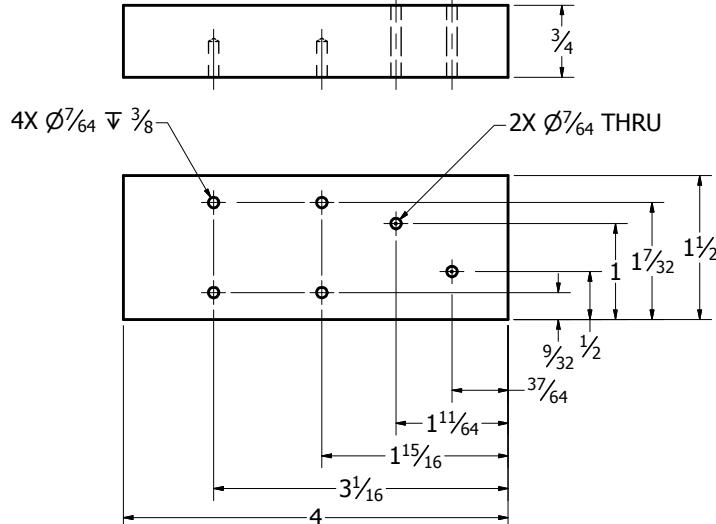
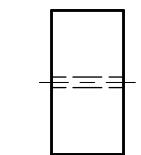
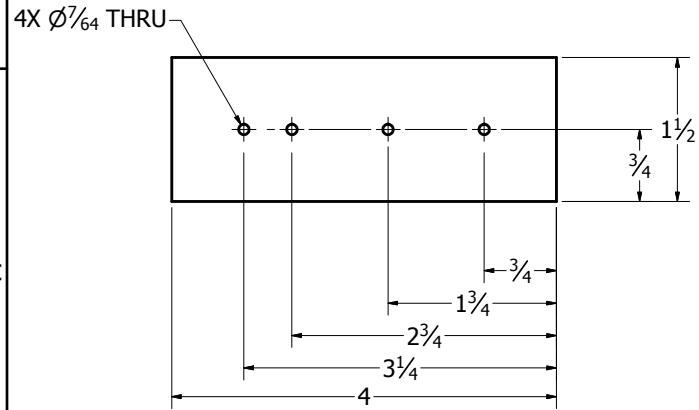
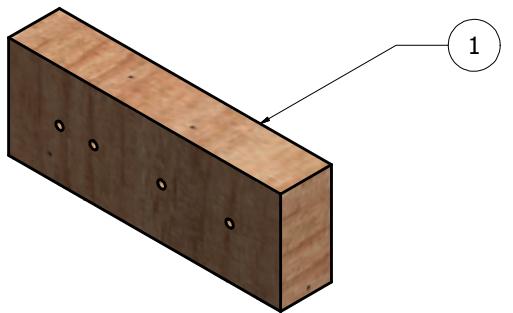
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	16 - Board 8x15	8" x 15" x 3/4" Plywood

Top side of board

Circle drawn is a reference for Flange that will sit in place.
Make eight holes with Flange in place.

DRAWN Ishturman	CHECKED	TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		16 and 26 Tower Base	
APPROVED			
		SIZE C	DWG NO 16 and 26 Tower Base
		SCALE	REV 0805
		SHEET 5 OF 9	

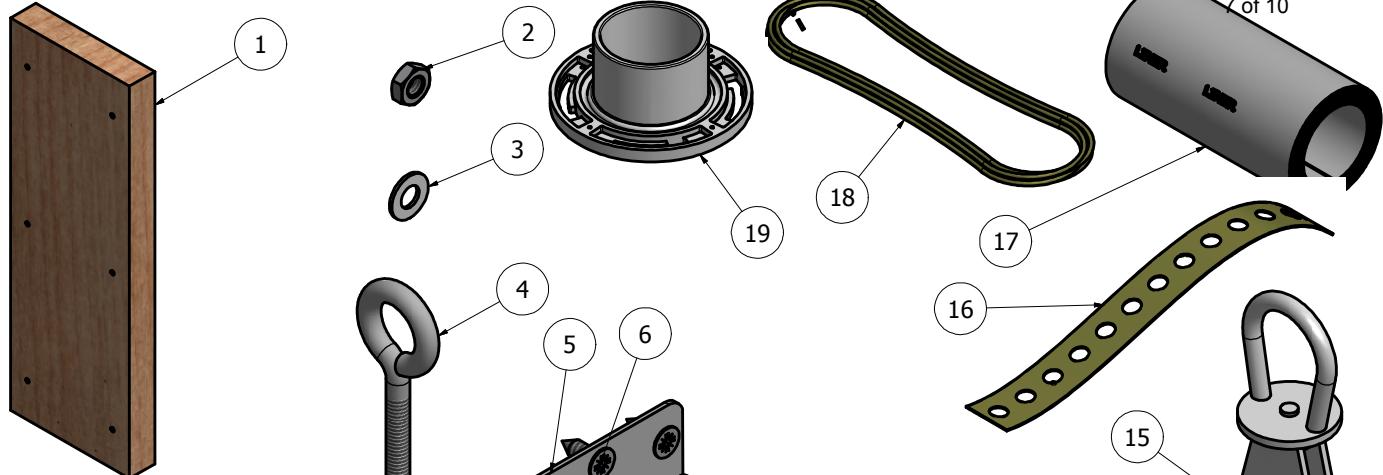
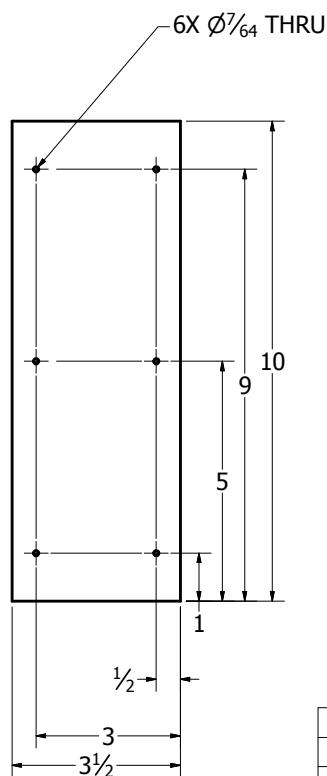
16 and 26 Tower Base



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	16-05	1x2 x4" long (4 Holes in line)
2	1	16-06	1x2 x4" long (6 holes)
3	1	16-07	2x 1 3/4" x 1 7/8" (made of 2x4 x1 7/8")

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	16 and 26 Tower Base (boards for Latch)	
APPROVED		SIZE C	DWG NO 0805
		SCALE	SHEET 6 OF 9

16 and 26 Tower Base

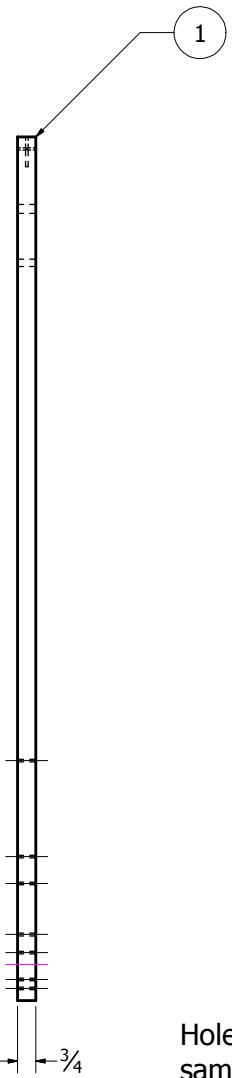
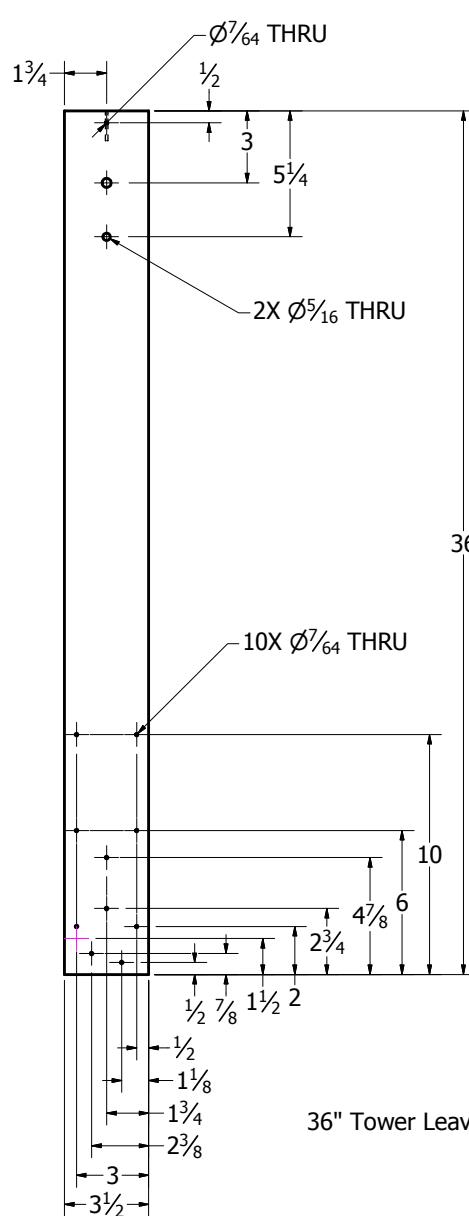


NOTE.- All the HW-xx items are used for each of the Towers (16 and 26)

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	26-04	1x4 x10" Board
2	3	HW-02	5/16" Nut
3	2	HW-03	5/16" Flat Washer
4	2	HW-04	5/16" x 3 1/4" Eye bolt
5	2	HW-05	3"x1 1/2" Hinge (Assembly)
6	12	HW-06	Screw for 3" hinge. Supplied w/ hinge
7	19	HW-10	1 1/4" Drywall screw
8	4	HW-11	1 5/8" Drywall screw
9	1	HW-14	6" Heavy Strap Hinge
10	1	HW-15	Gate Latch
11	4	HW-16	Screw for latch. (Supplied with latch)
12	7	HW-18	Screw for 6" Hinge; Round head
13	1	HW-21	16x16 Gray Stone
14	2	HW-26	Spring Snap (Lowes348540)
15	2	HW-27	Swivel Pulley (for rope)
16	1	HW-54	Galvanized Pipe Hanger (Cut to fit)
17	1	HW-55	18" x 24" Liner (Cut to fit)
18	1	HW-57	3/16" Braided Poly. Rope (Cut to fit)
19	1	HW-70	3"-4" Schedule 40 PVC Flange (holes in place)

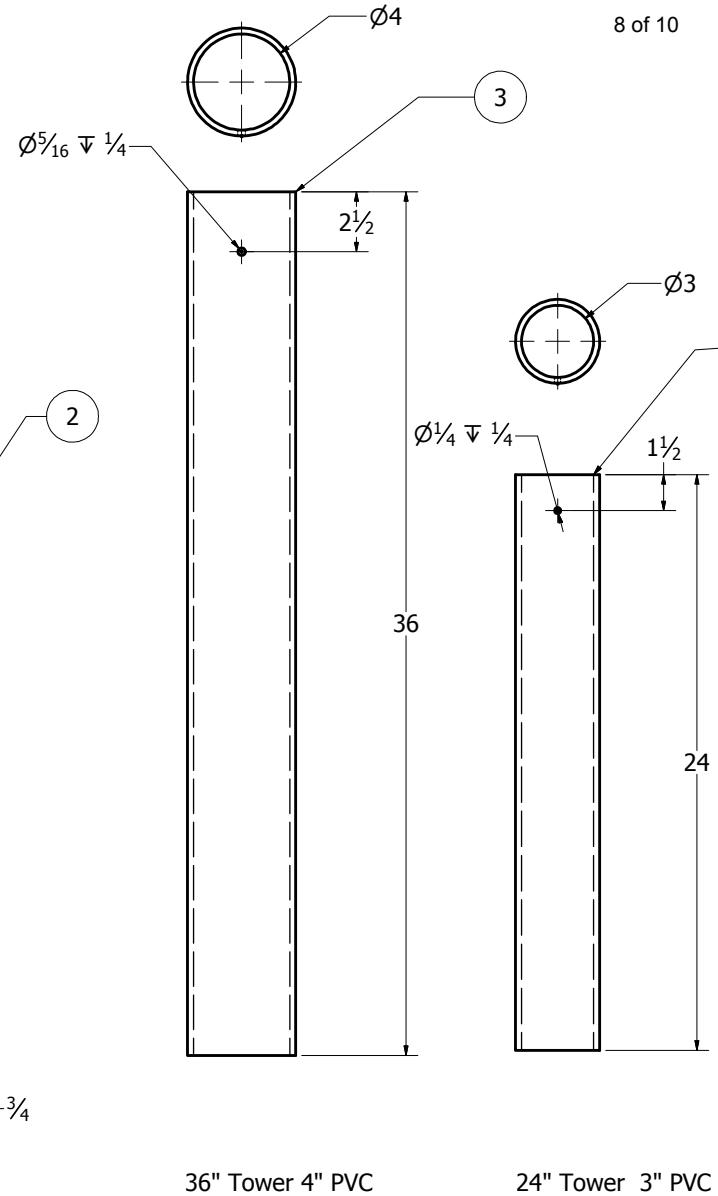
DRAWN Ishturman	CHECKED	TITLE	
QA		16 and 26 Tower Base	
MFG			
APPROVED		SIZE C	DWG NO 16 and 26 Tower Base
		REV 0805	
SCALE		SHEET 7 OF 9	

16 and 26 Tower Base

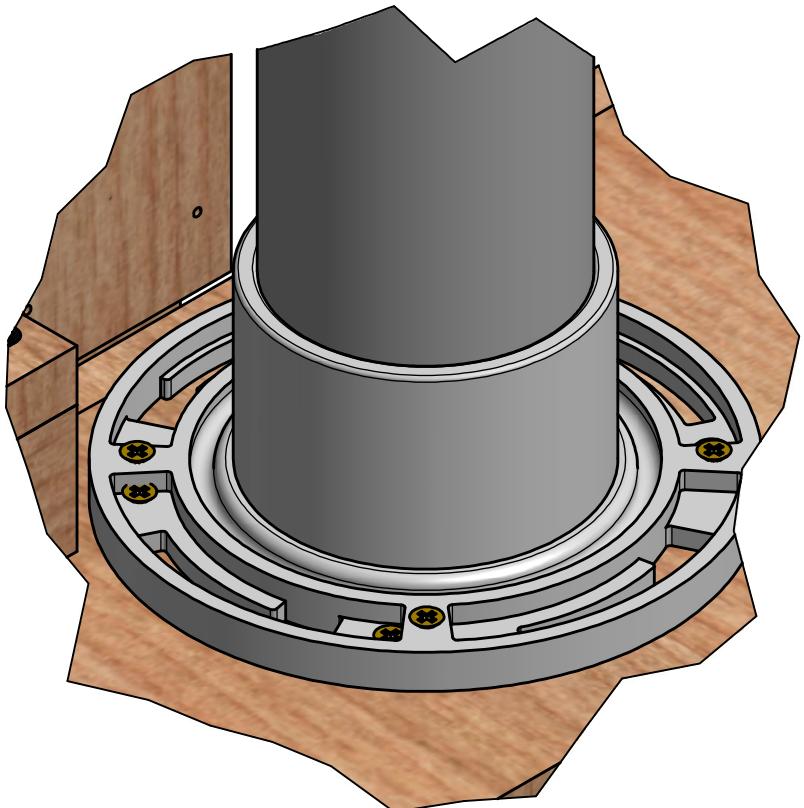


Hole dimensions are the same than part 16-03

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	16-03	1x4 x36" Board
2	1	16-41	4" Schedule 40 PVC x36" long
3	1	26-03	1x4 x24" Board
4	1	26-41	3" Schedule 40 PVC x24" long

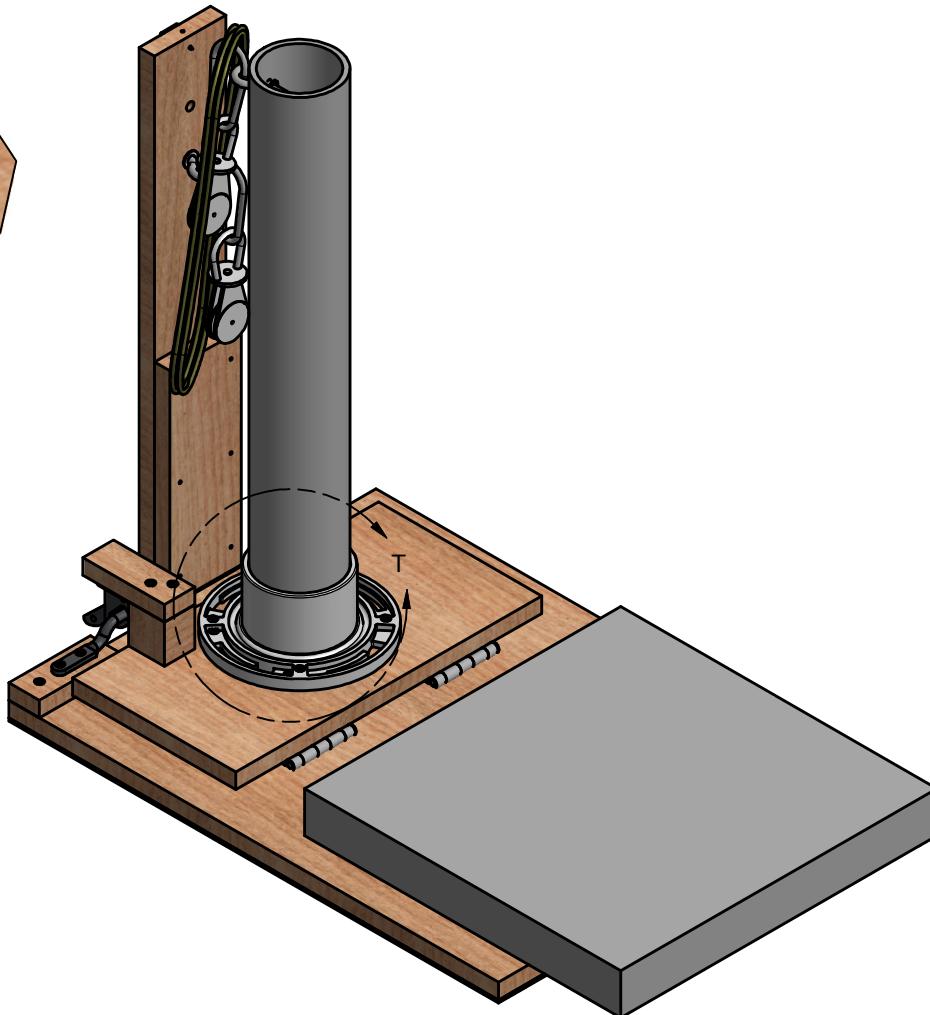


DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	TITLE 16 and 26 Tower Base		
APPROVED		SIZE DWG NO C 16 and 26 Tower Base		
		REV 0805		
SCALE		SHEET 8 OF 9		

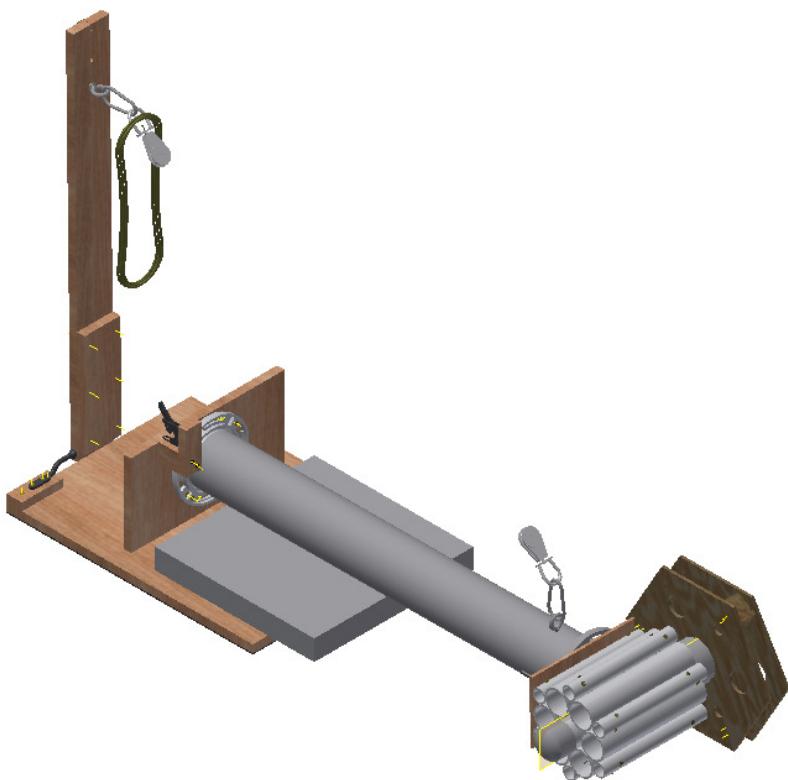


DETAIL T
SCALE 1

Detail of Flange attached to
8"x15" Plywood board with screws



DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA		TITLE 16 and 26 Tower Base		
MFG				
APPROVED				
		SIZE C	DWG NO 16 and 26 Tower Base	REV 0805
		SCALE		SHEET 9 OF 9



D

D

C

C

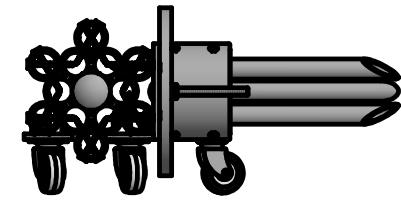
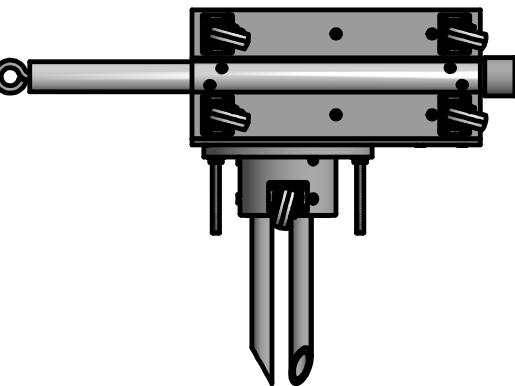
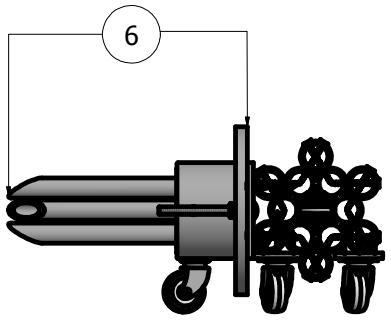
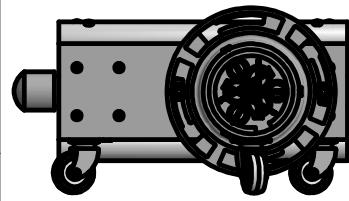
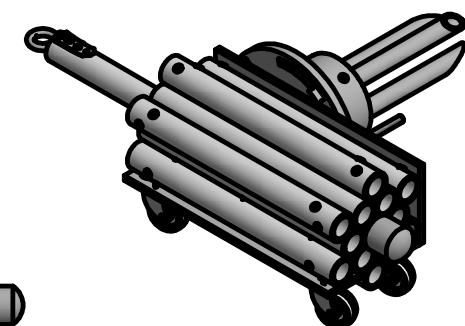
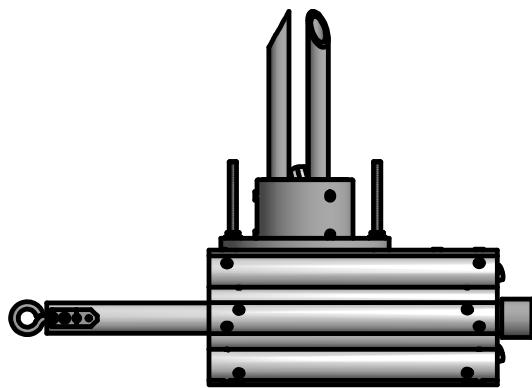
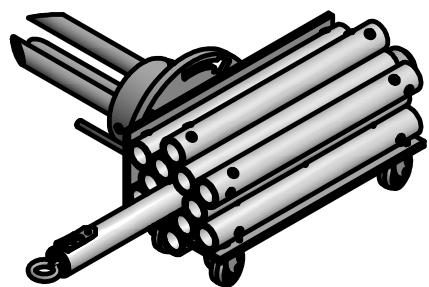
B

B

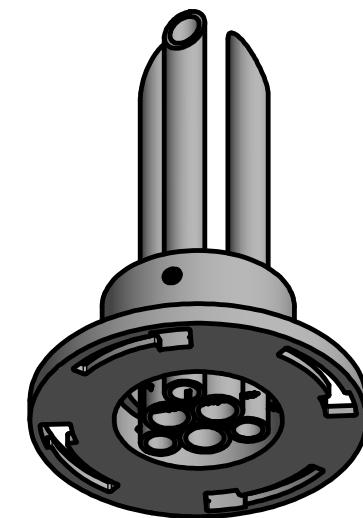
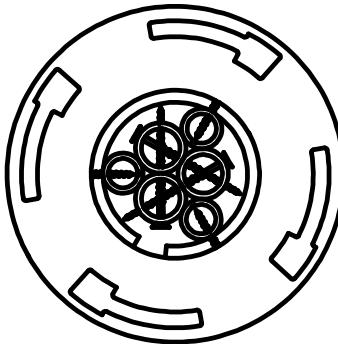
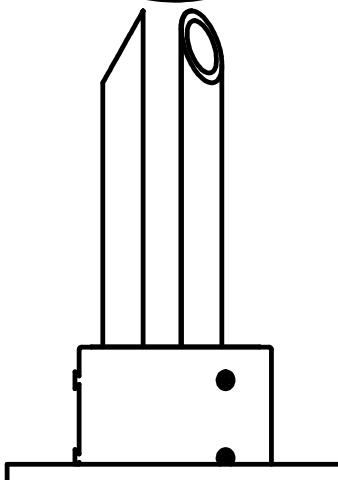
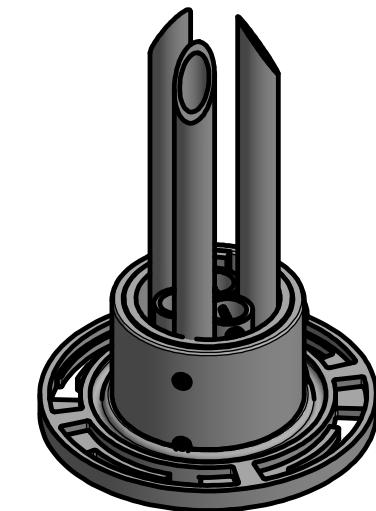
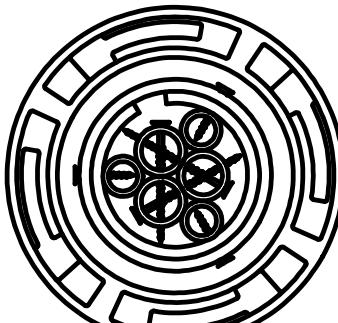
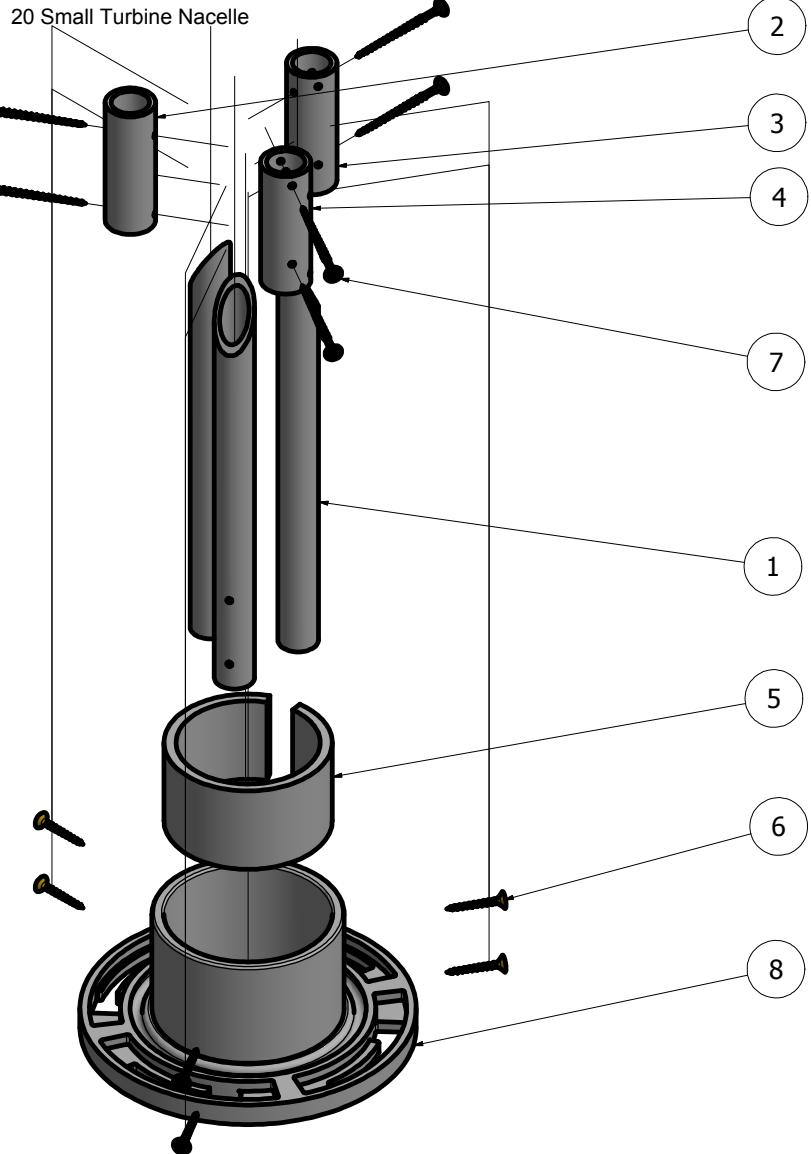
A

A

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	20-01	4" x 12" x 1/4" Plywood
2	2	20-02	2" x 12" x 1/4" Plywood
3	1	20-41	1" Schedule 40 PVC x20" (Center)
4	6	20-42	1" PVC Schedule 40 x12" (w/ 1 hole)
5	6	20-43	1" Schedule 40 PVC x12" (w/ 2holes)
6	1	ASY-21	Assembly 21, Flange w/ 3 slanted
7	2	HW-01	5/16"x4" Carriage Bolt
8	4	HW-02	5/16" Nut
9	3	HW-03	5/16" Flat Washer
10	1	HW-04	5/16" x 3 1/4" Eye bolt
11	10	HW-10	1 1/4" Drywall screw
12	40	HW-12	2" Drywall Screw
13	2	HW-23	3/8" Flat head screw
14	5	HW-31	1 5/8" Caster Wheel
15	1	HW-54	3" Galvanized Pipe Hanger (Cut/bend to fit)
16	1	HW-55	Liner (cut to fit) To center Eye Bolt
17	1	HW-73	1" Schedule 40 PVC End Cap



DRAWN Ishturman	CHECKED	TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		20 Small Turbine Nacelle	
APPROVED		SIZE C	DWG NO 0805
		20 Small Turbine Nacelle	
SCALE		SHEET 1 OF 10	



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	3	21-41	1/2" Schedule 40 PVC x10" long w/ slant
2	1	21-42	3/4" Schedule 40 PVC x3" long (holes a)
3	1	21-43	3/4" Schedule 40 PVC x3" long (holes b)
4	1	21-44	3/4" Schedule 40 PVC x3" long (holes c)
5	1	21-45	3" Schedule 40 PVC x2" long
6	6	HW-10	1 1/4" Drywall screw
7	6	HW-11	1 5/8" Drywall screw
8	1	HW-82	PVC Toilet Flange 3" - 4"

DRAWN
Ishturman
CHECKED

QA

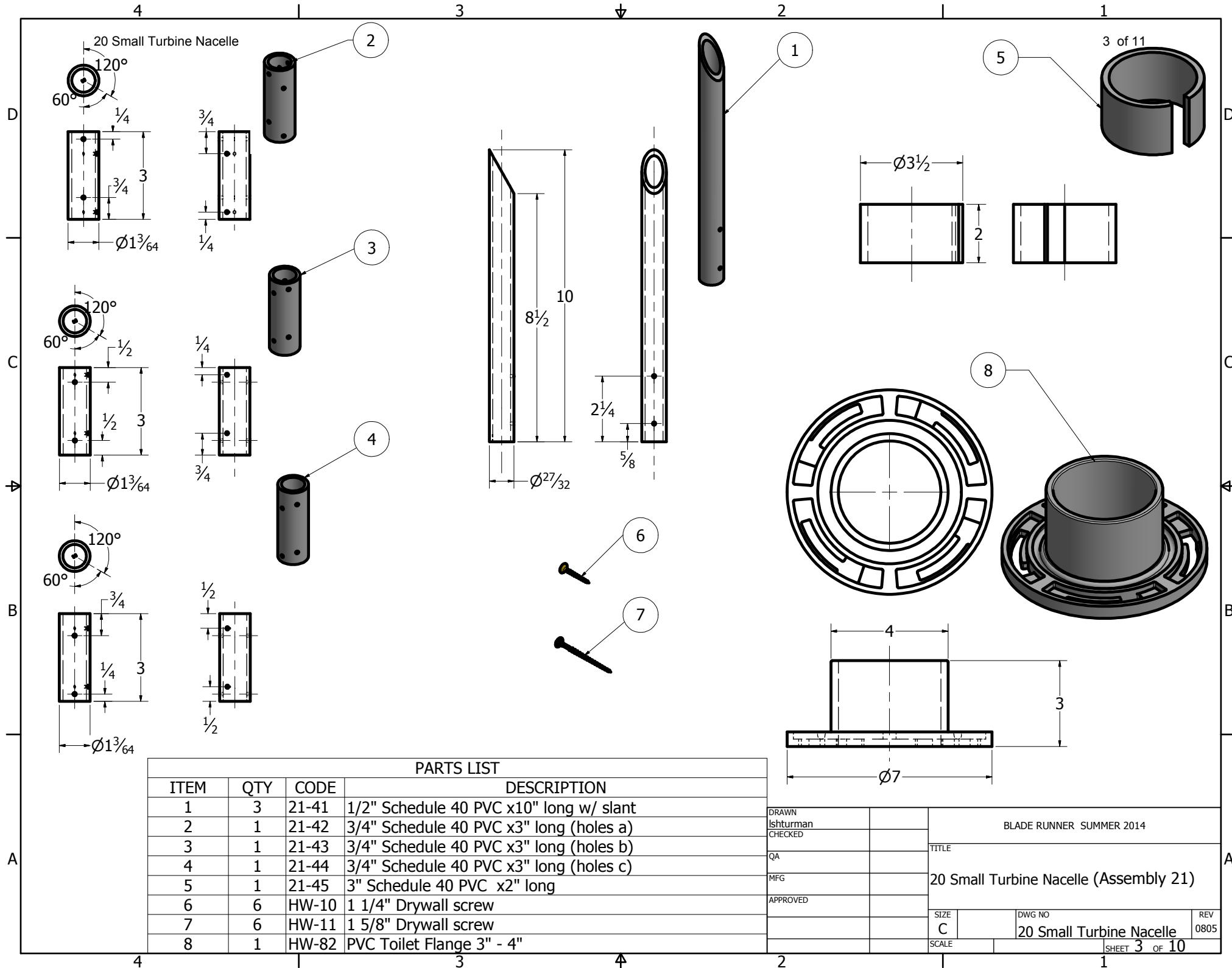
MFG

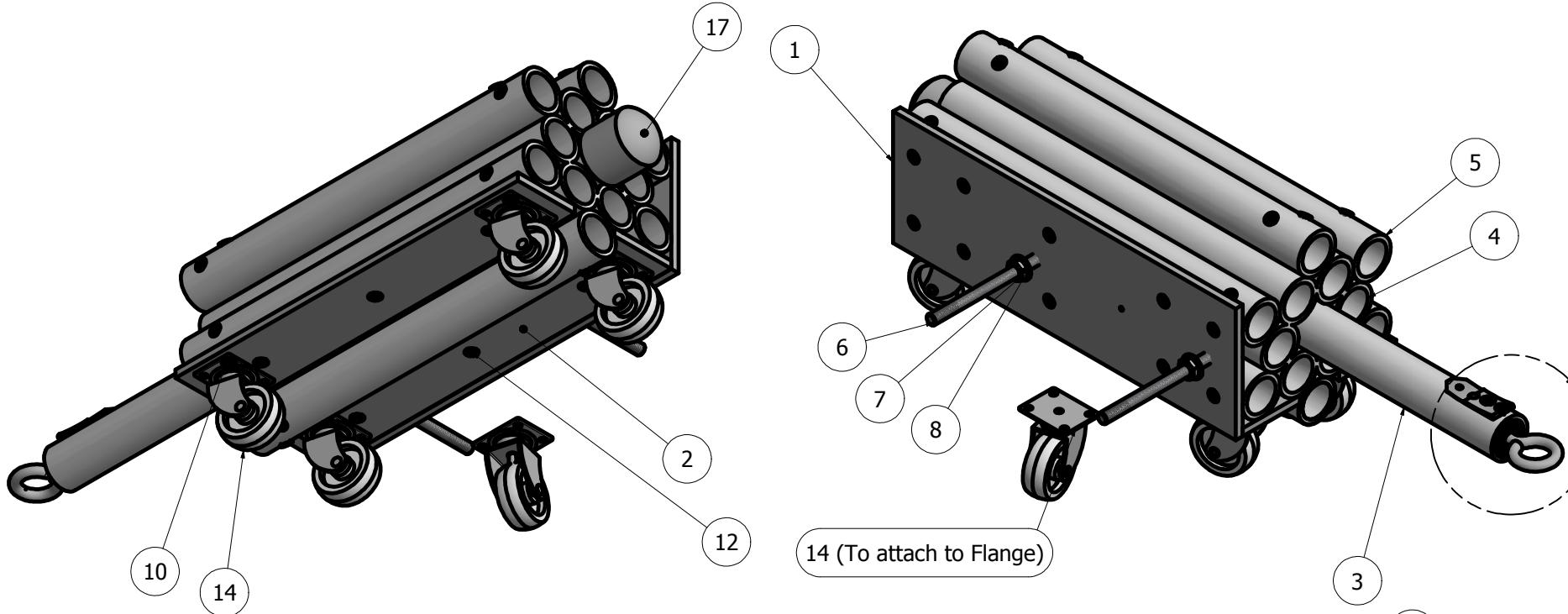
APPROVED

BLADE RUNNER SUMMER 2014

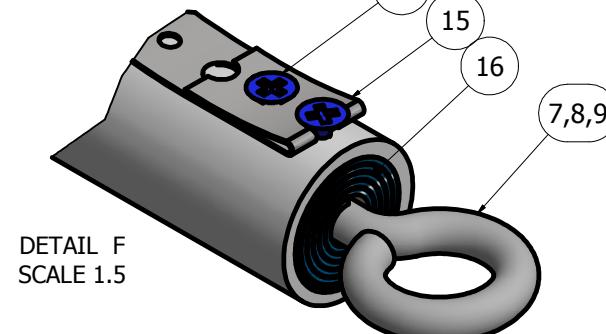
TITLE
20 Small Turbine Nacelle (Assembly 21)

SIZE	C	DWG NO	REV
		20 Small Turbine Nacelle	0805
SCALE			
SHEET	2	OF	10

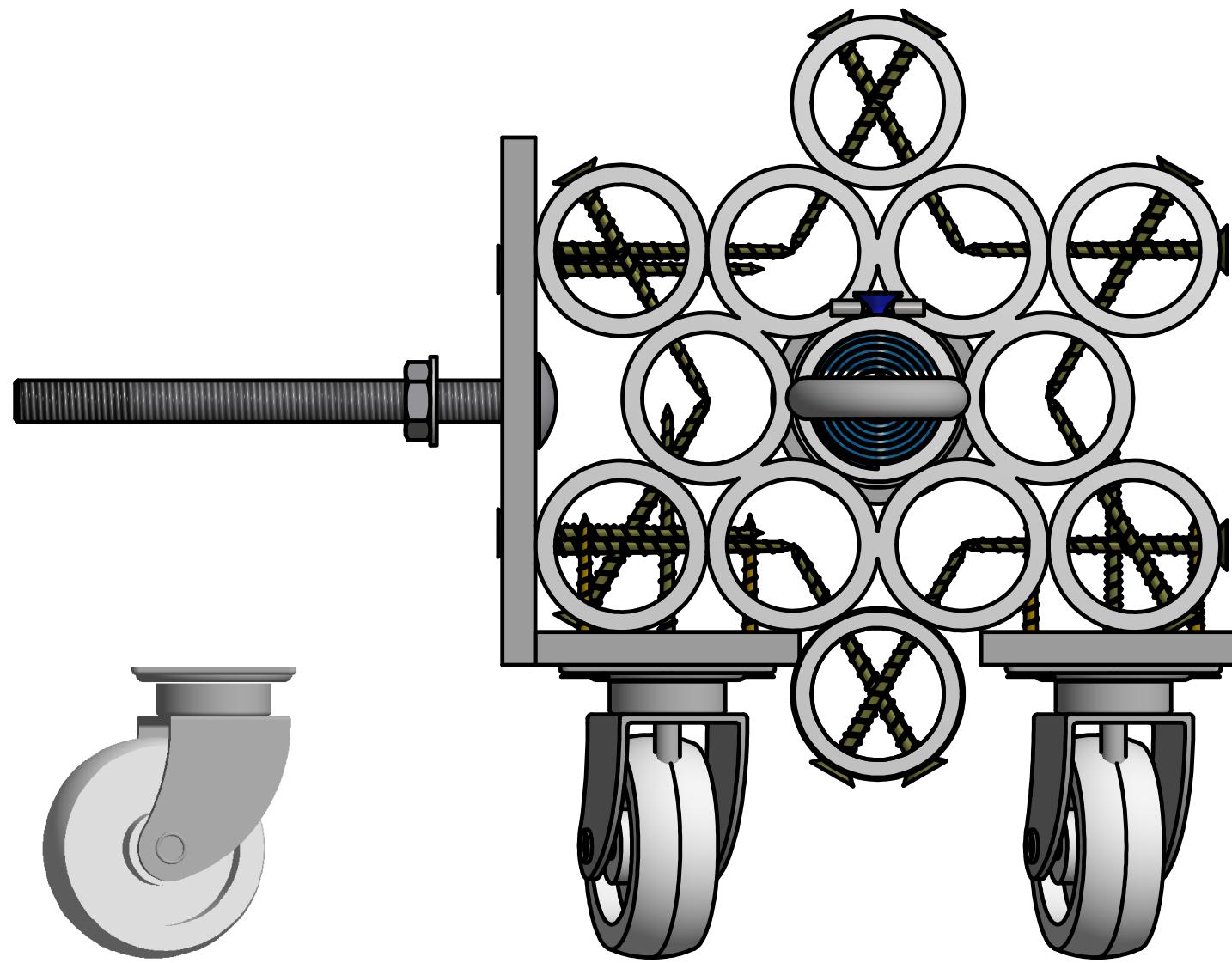




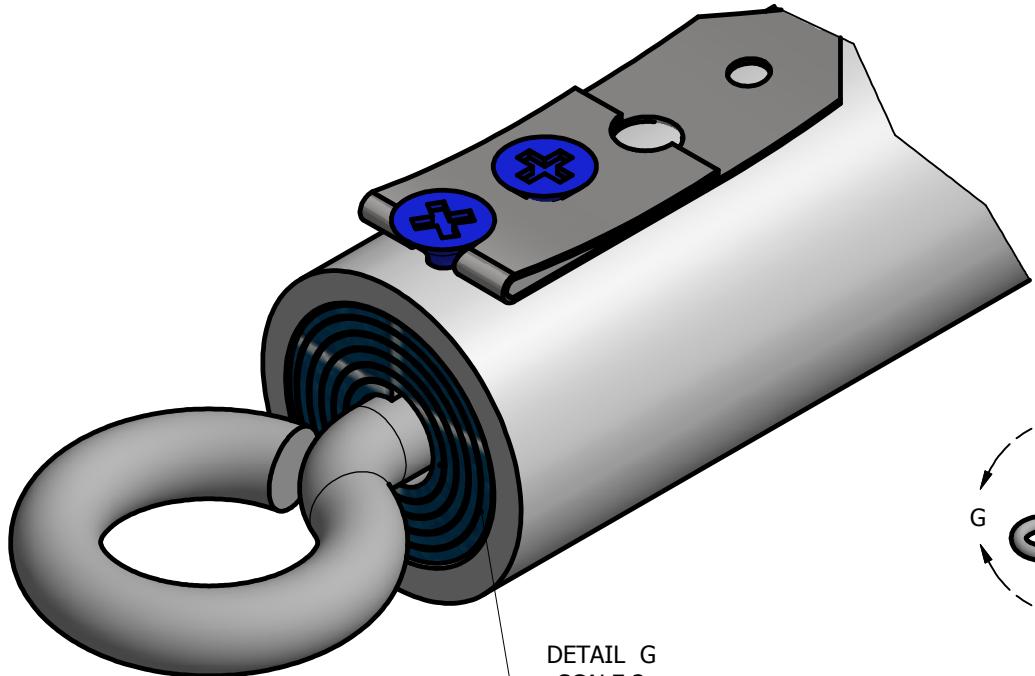
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	20-01	4" x 12" x 1/4" Plywood
2	2	20-02	2" x 12" x 1/4" Plywood
3	1	20-41	1" Schedule 40 PVC x20" (Center)
4	6	20-42	1" PVC Schedule 40 x12" (w/ 1 hole)
5	6	20-43	1" Schedule 40 PVC x12" (w/ 2holes)
6	2	HW-01	5/16"x4" Carriage Bolt
7	4	HW-02	5/16" Nut
8	3	HW-03	5/16" Flat Washer
9	1	HW-04	5/16" x 3 1/4" Eye bolt
10	16	HW-10	1 1/4" Drywall screw
11	6	HW-11	1 5/8" Drywall screw
12	40	HW-12	2" Drywall Screw
13	2	HW-23	3/8" Flat head screw
14	5	HW-31	1 5/8" Caster Wheel
15	1	HW-54	3" Galvanized Pipe Hanger (Cut/bend to fit)
16	1	HW-55	Liner (cut to fit) To center Eye Bolt
17	1	HW-73	1" Schedule 40 PVC End Cap



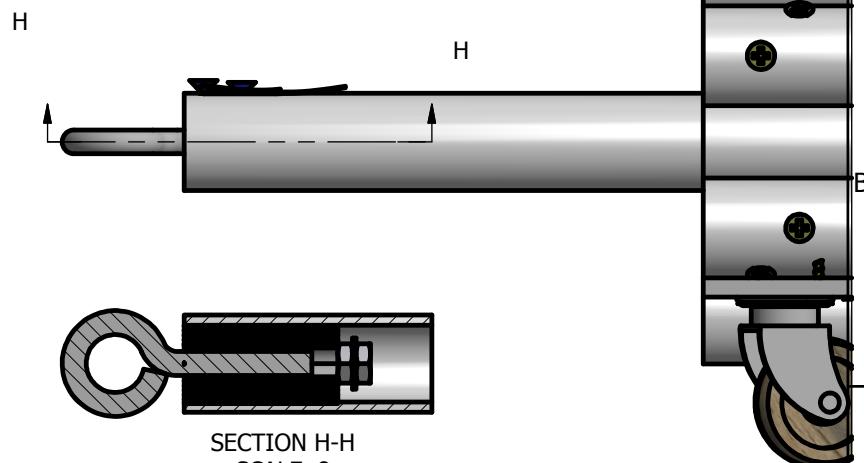
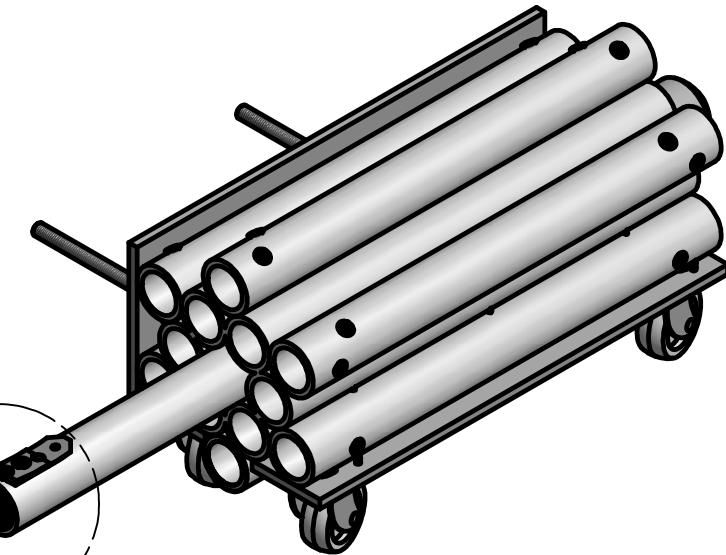
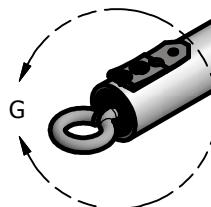
DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	20 Small Turbine Nacelle		
APPROVED	SIZE C DWG NO 0805 20 Small Turbine Nacelle			
SCALE	SHEET 4 OF 10			



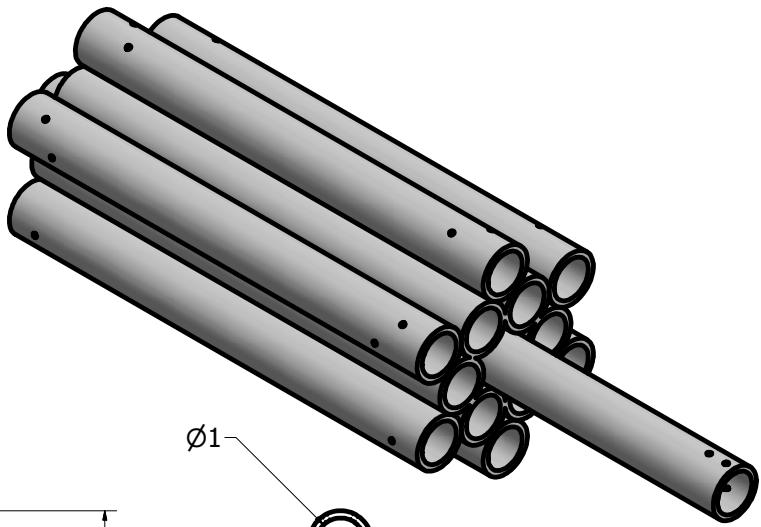
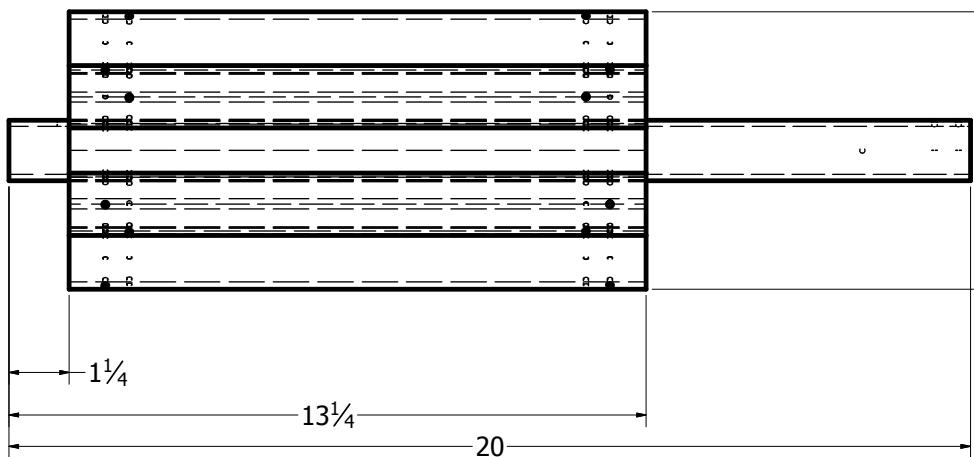
DRAWN Ishturman		TITLE	
CHECKED		BLADE RUNNER SUMMER 2014	
QA			
MFG	20 Small Turbine Nacelle		
APPROVED		SIZE C	DWG NO 0805
		SCALE	SHEET 5 OF 10

DETAIL G
SCALE 3

Liner material wrapped around eye bolt to create bulk for screws be able to secure it at center of PVC pipe.¹
(alternate method also explained with pictures and text, using pieces of liner inserted on eyebolt and then pushed into PVC pipe).

SECTION H-H
SCALE .8

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	TITLE 20 Small Turbine Nacelle		
APPROVED		SIZE C DWG NO 20 Small Turbine Nacelle		
		REV 0805		
SCALE		SHEET 6 OF 10		



Not a critical dimension

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	20 Small Turbine Nacelle		
APPROVED		SIZE C	DWG NO 20 Small Turbine Nacelle	REV 0805
		SCALE	SHEET 7 OF 10	

4

3

2

1

D

D

C

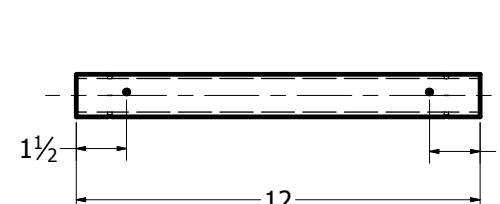
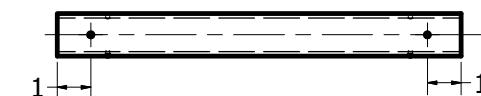
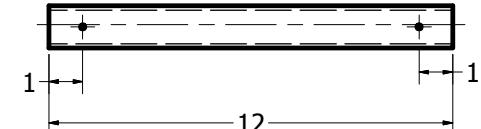
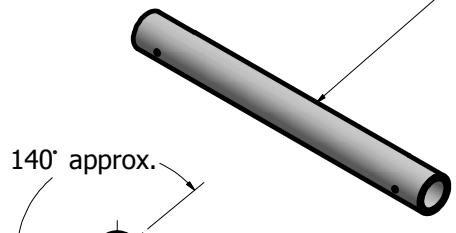
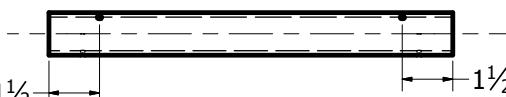
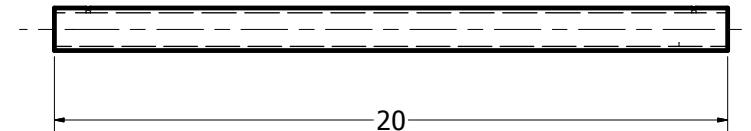
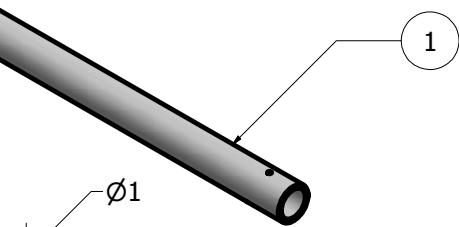
C

B

B

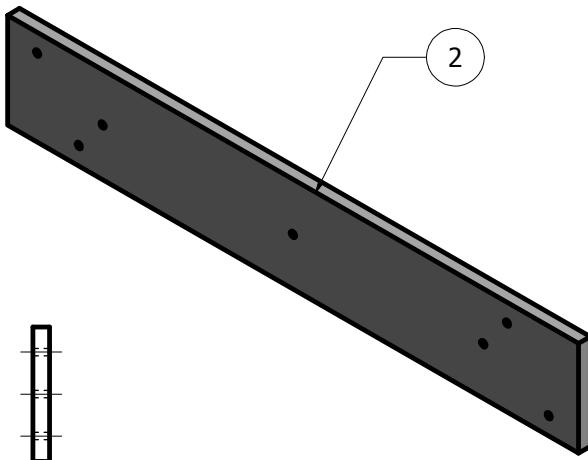
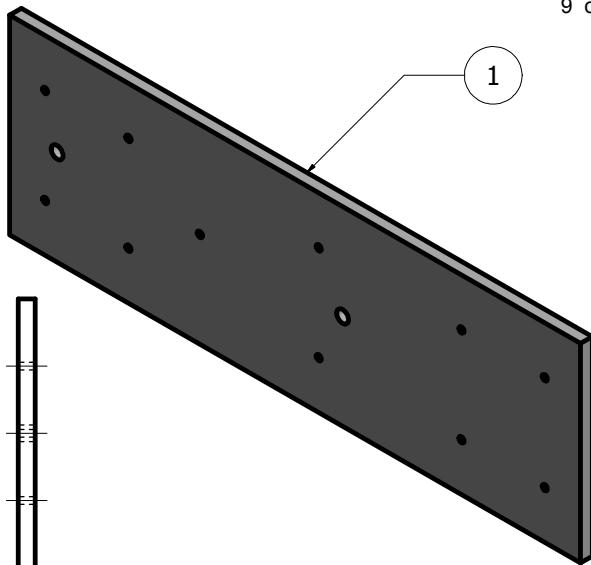
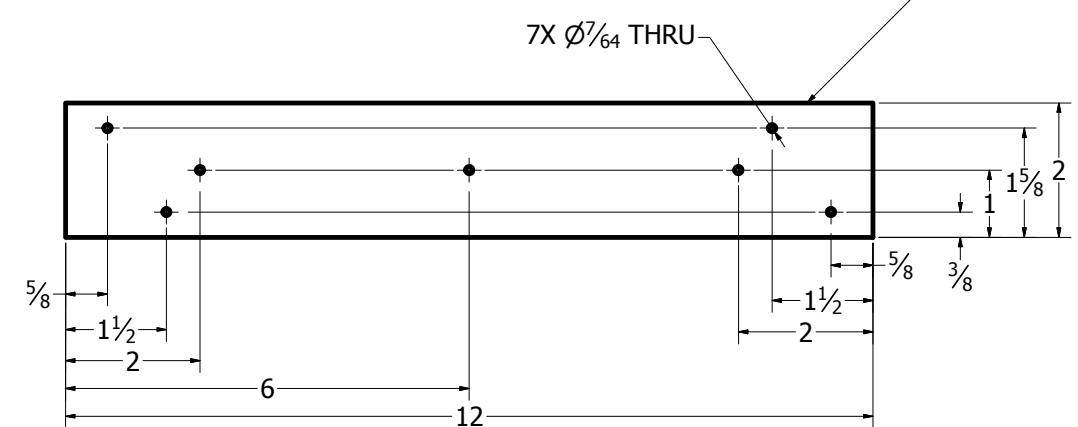
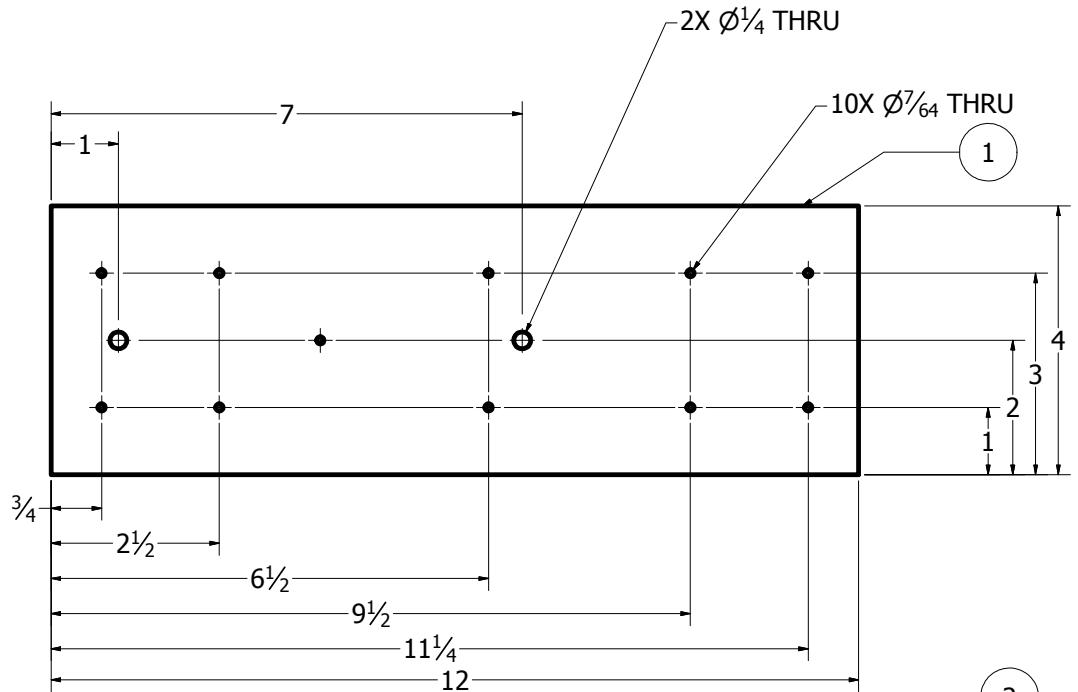
A

A



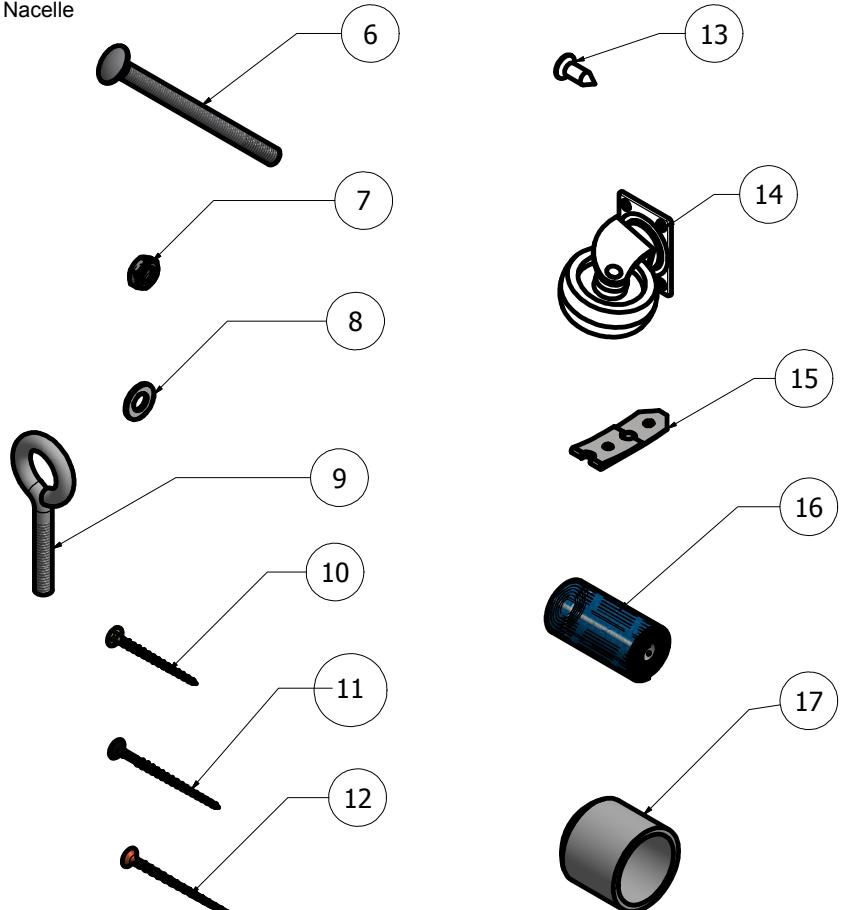
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	20-41	1" Schedule 40 PVC x20" (Center)
2	6	20-42	1" PVC Schedule 40 x12" (w/ 1 hole)
3	6	20-43	1" PVC Schedule 40 x12" (w/ 2 hole)

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	20 Small Turbine Nacelle	
APPROVED		SIZE C	DWG NO 0805
		SCALE	SHEET 8 OF 10



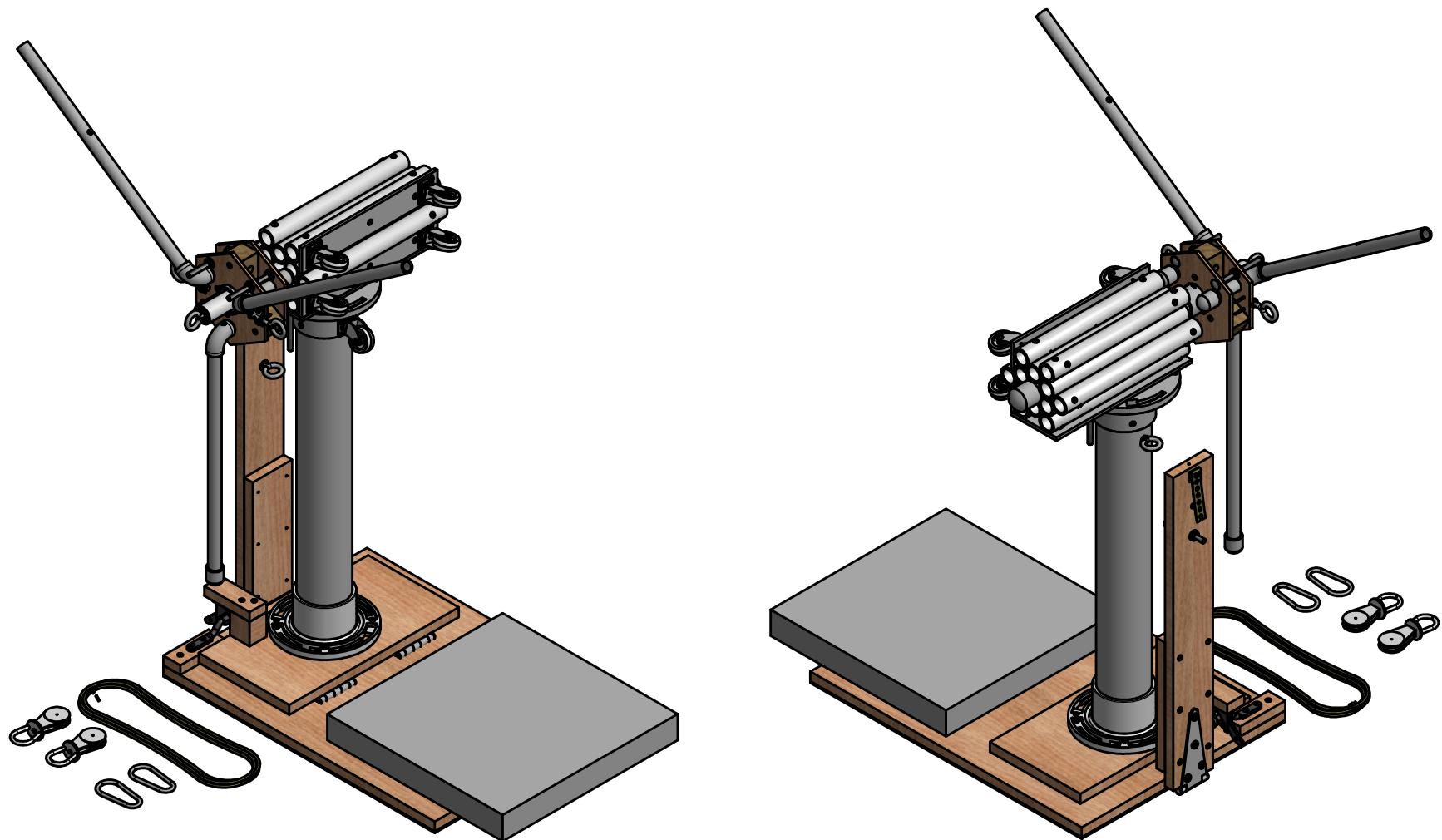
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	20-01	4" x 12" x 1/4" Plywood
2	2	20-02	2" x 12" x 1/4" Plywood

DRAWN Ishturman	CHECKED	TITLE	
QA	MFG	20 Small Turbine Nacelle	
APPROVED		SIZE C DWG NO 0805	
		SCALE	SHEET 9 OF 10



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
6	2	HW-01	5/16"x4" Carriage Bolt
7	4	HW-02	5/16" Nut
8	3	HW-03	5/16" Flat Washer
9	1	HW-04	5/16" x 3 1/4" Eye bolt
10	16	HW-10	1 1/4" Drywall screw
11	6	HW-11	1 5/8" Drywall screw
12	40	HW-12	2" Drywall Screw
13	2	HW-23	3/8" Flat head screw
14	5	HW-31	1 5/8" Caster Wheel
15	1	HW-54	3" Galvanized Pipe Hanger (Cut/bend to fit)
16	1	HW-55	Liner (cut to fit) To center Eye Bolt
17	1	HW-73	1" Schedule 40 PVC End Cap

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	20 Small Turbine Nacelle	
APPROVED		SIZE C	DWG NO 0805
		SCALE	REV 0805
		SHEET 10 OF 10	



DRAWN Ishturman	6/27/2014	TITLE	
CHECKED		20 Small Turbine Nacelle (Complete)	
QA			
MFG			
APPROVED		SIZE C	DWG NO 0005
		SCALE	REV B
			SHEET 1 OF 1

22 Small Nacelle Hexagon and blades

4

1

3

4

2

1

1 of 8

D

C

B

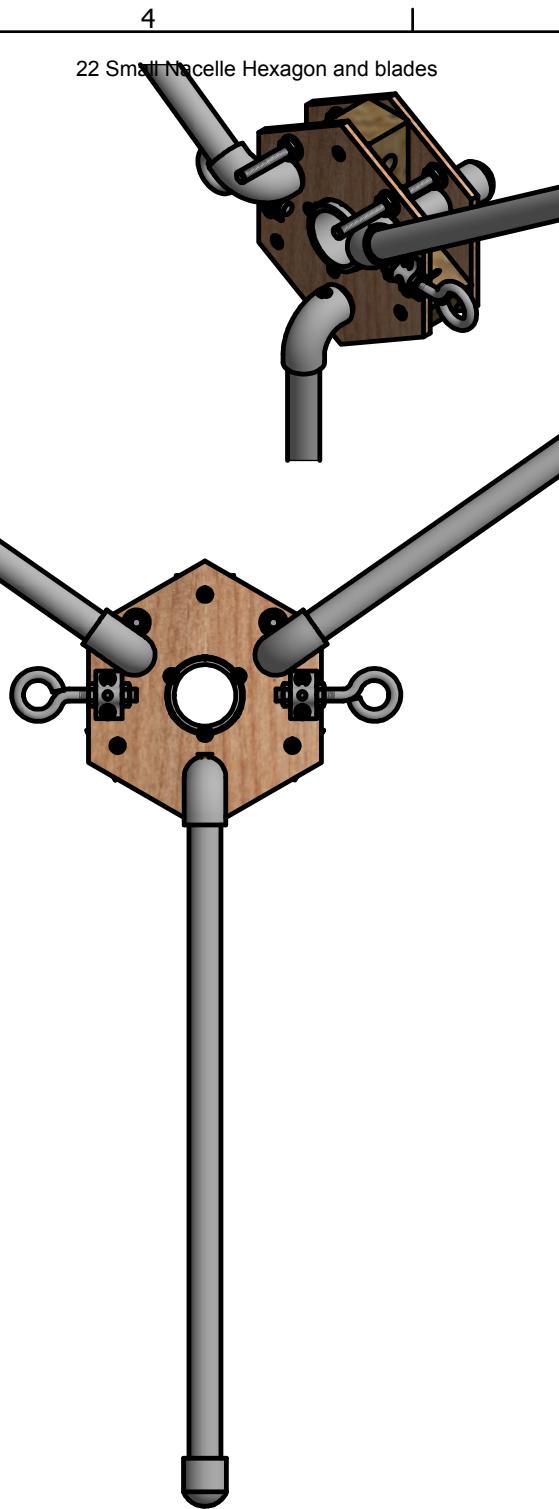
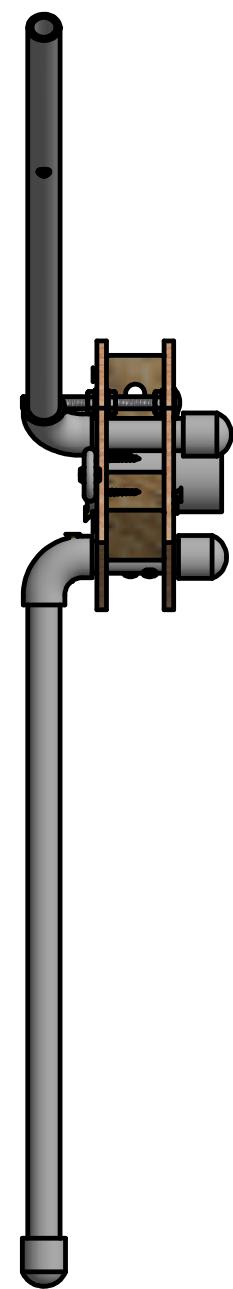
A

D

C

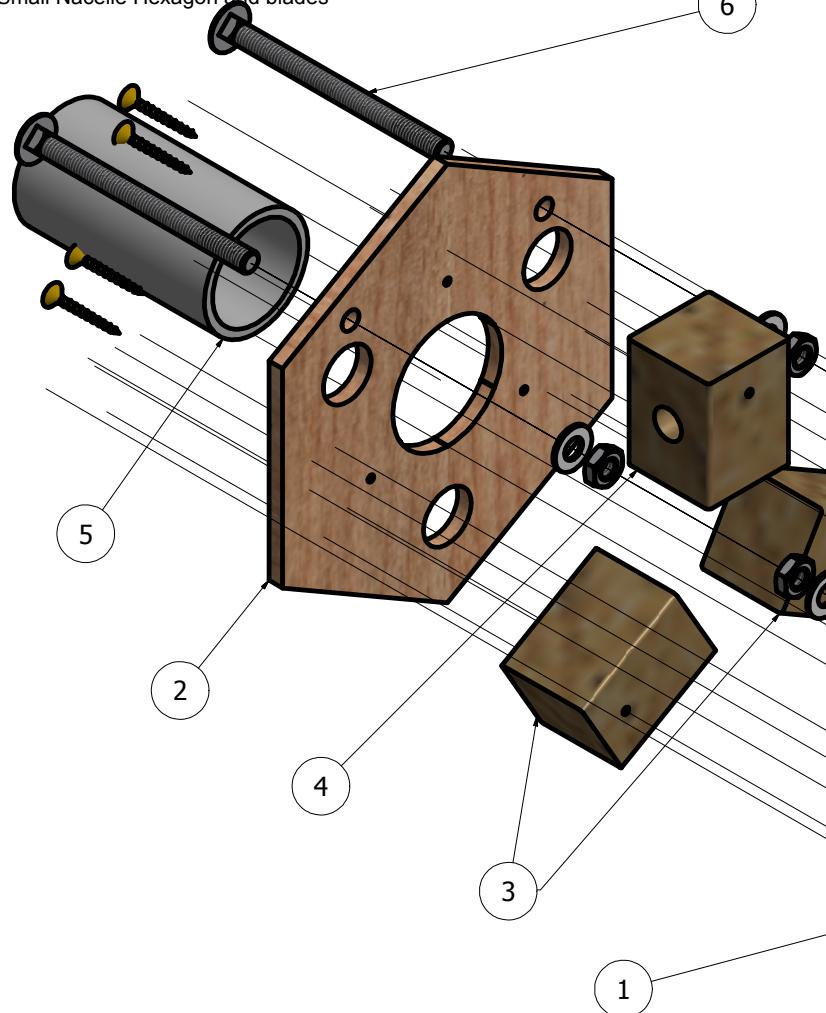
B

A

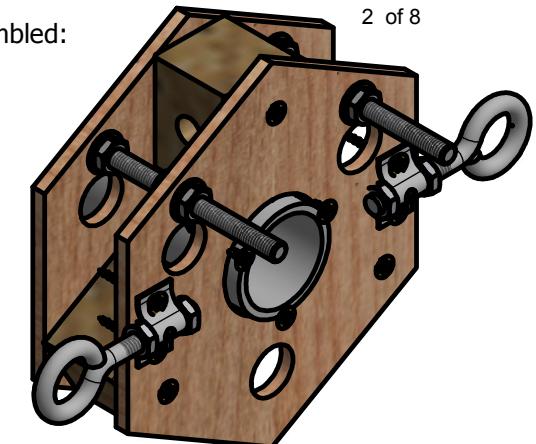


DRAWN		BLADE RUNNER SUMMER 2014	
CHECKED			
QA		TITLE	
MFG		22 Small Nacelle	
APPROVED			
	SIZE C	DWG NO 22 Small Nacelle Hexagon and blades	REV A
	SCALE		SHEET 1 OF 8

22 Small Nacelle Hexagon and blades



Assembled:



2 of 8

PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	1	22-01	Hexagon 7" DIA on 1/4" Plywood (Eye Bolt side)
2	1	22-02	Hexagon 7" DIA on 1/4" Plywood
3	2	22-03	2x2 x2"
4	1	22-04	2x2 x2" with Center hole for Top
5	1	22-41	1 1/2" Schedule 40 PVC x3 1/2"
6	2	HW-01	5/16"x4" Carriage Bolt
7	10	HW-02	5/16" Nut
8	6	HW-03	5/16" Flat Washer
9	2	HW-04	5/16" x 3 1/4" Eye bolt
10	16	HW-10	1 1/4" Drywall screw
11	2	HW-54	Galvanized Pipe Holder (cut to fit 1 1/2")
12	1	HW-58	Bungee Cord (cut to fit)

DRAWN
Ishturman
CHECKED

QA

MFG

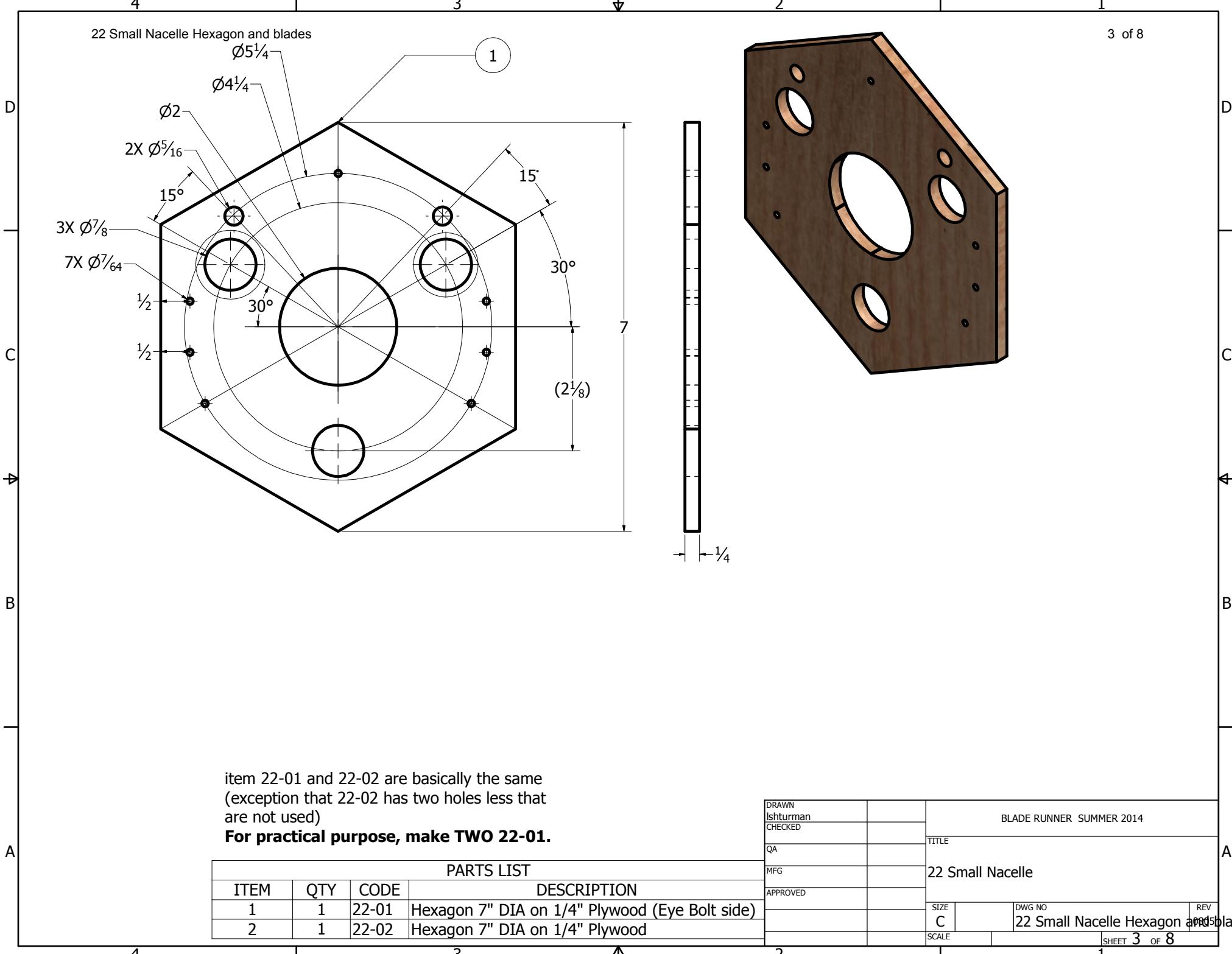
APPROVED

BLADE RUNNER SUMMER 2014

TITLE

22 Small Nacelle

SIZE	C	DWG NO	22 Small Nacelle Hexagon and blades	REV
SCALE				
SHEET	2	OF	8	



4

22 Small Nacelle Hexagon and blades

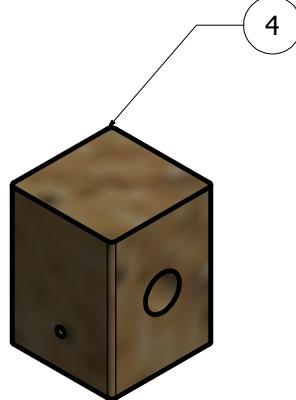
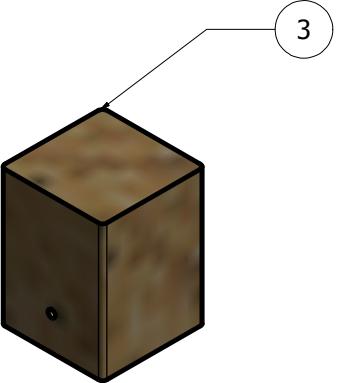
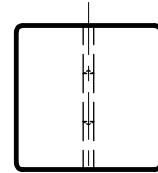
3

▽

2

1

4 of 8



D

D

C

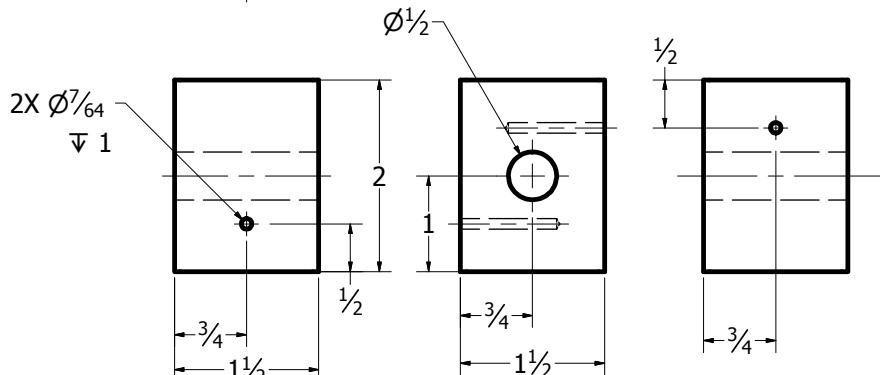
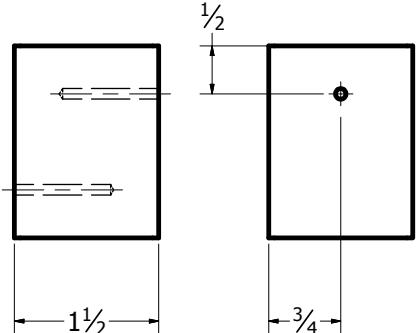
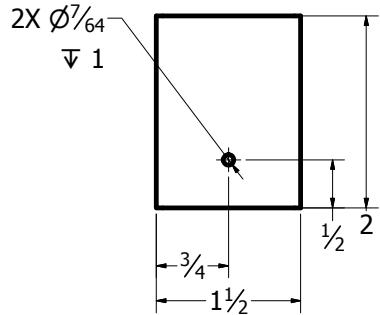
C

B

B

A

A



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
3	2	22-03	2x2 x2"
4	1	22-04	2x2 x2" with Center hole for Top

DRAWN
Ishturman
CHECKED

QA

MFG

APPROVED

BLADE RUNNER SUMMER 2014

TITLE
22 Small NacelleSIZE C DWG NO 22 Small Nacelle Hexagon and blades
SCALE SHEET 4 OF 8

4

3

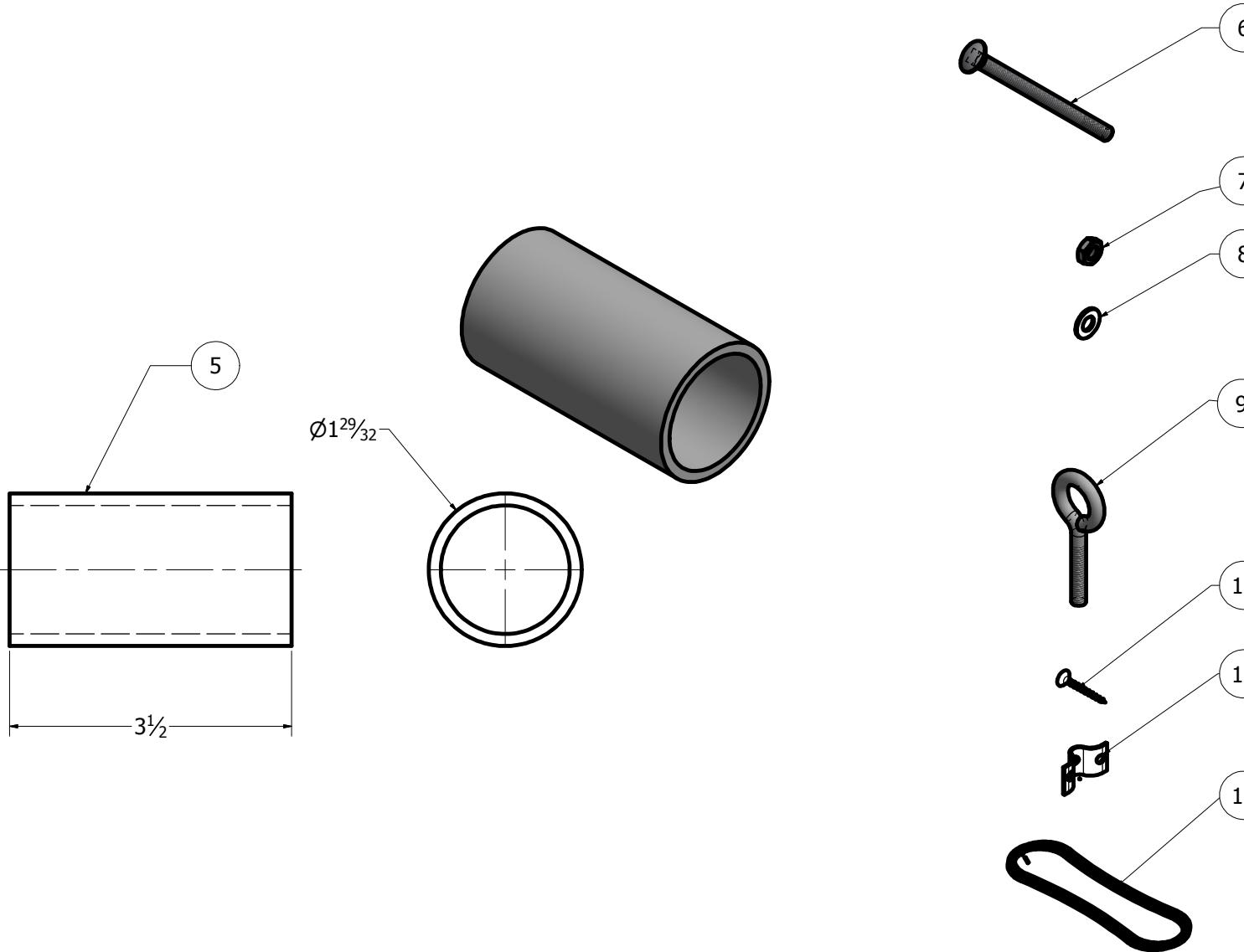
4

2

1

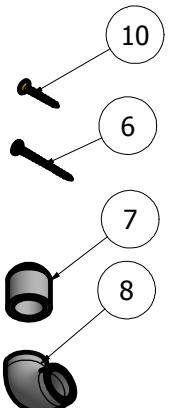
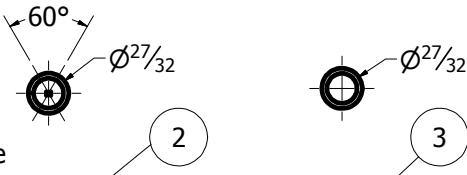
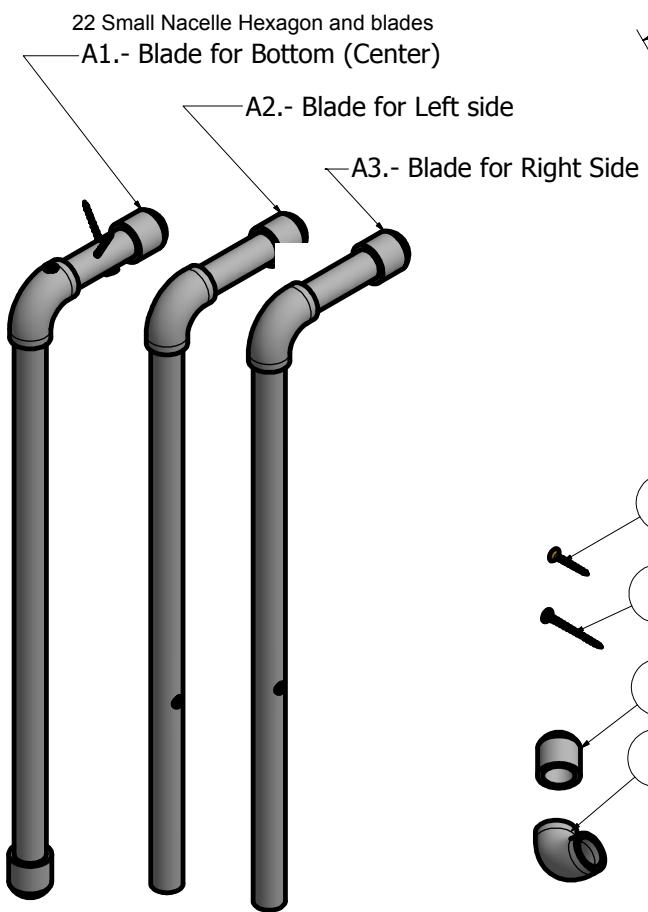
A

A



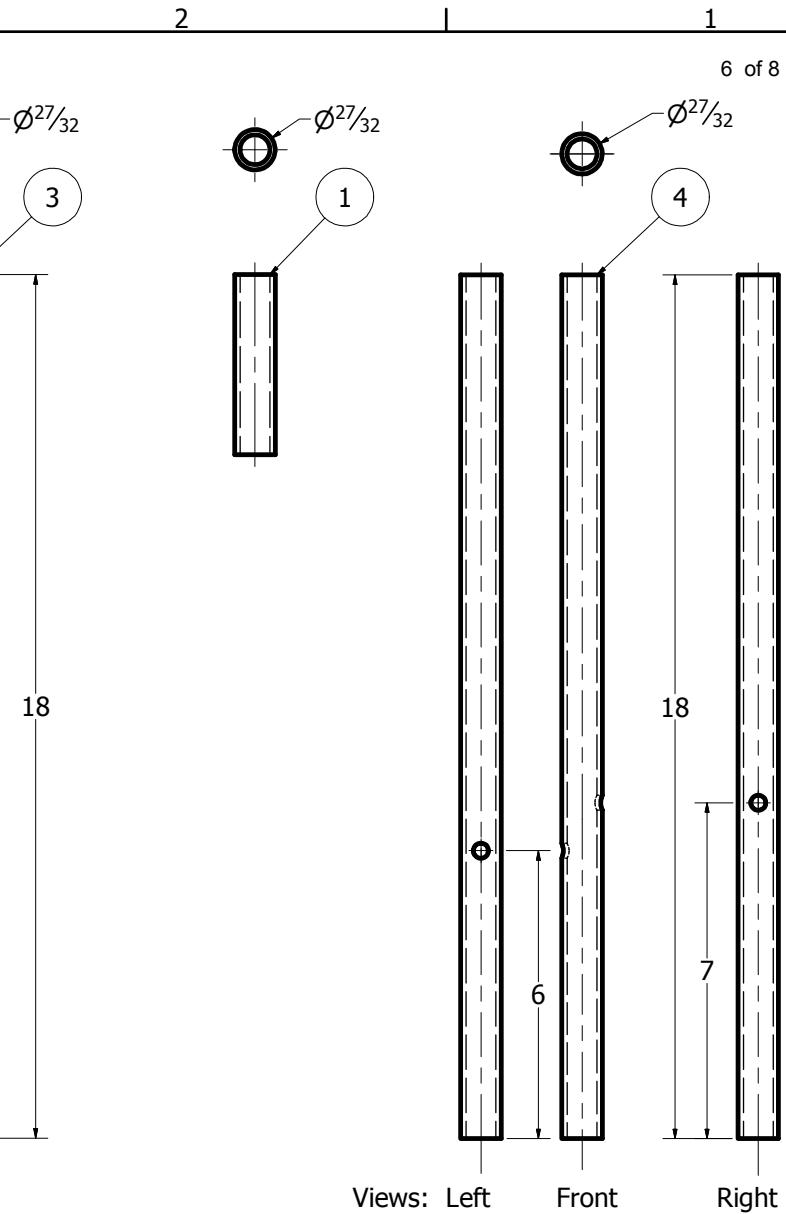
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
5	1	22-41	1 1/2" Schedule 40 PVC x3 1/2"
6	2	HW-01	5/16"x4" Carriage Bolt
7	10	HW-02	5/16" Nut
8	6	HW-03	5/16" Flat Washer
9	2	HW-04	5/16" x 3 1/4" Eye bolt
10	16	HW-10	1 1/4" Drywall screw
11	2	HW-54	Galvanized Pipe Holder (cut to fit 1 1/2")
12	1	HW-58	Bungy Cord (cut to fit)

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA		TITLE 22 Small Nacelle		
MFG		SIZE C		
APPROVED		DWG NO	22 Small Nacelle Hexagon and blades	
		SCALE	REV 5 OF 8	

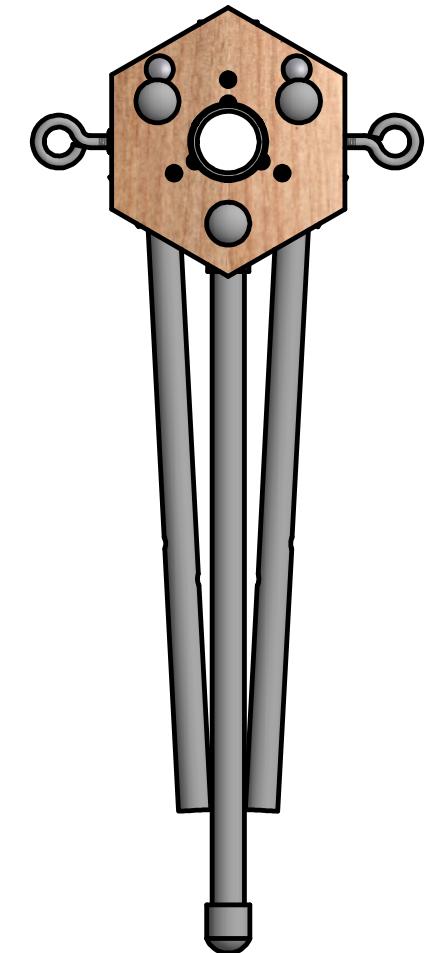
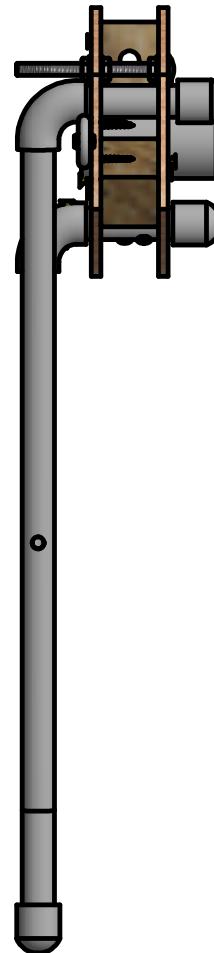
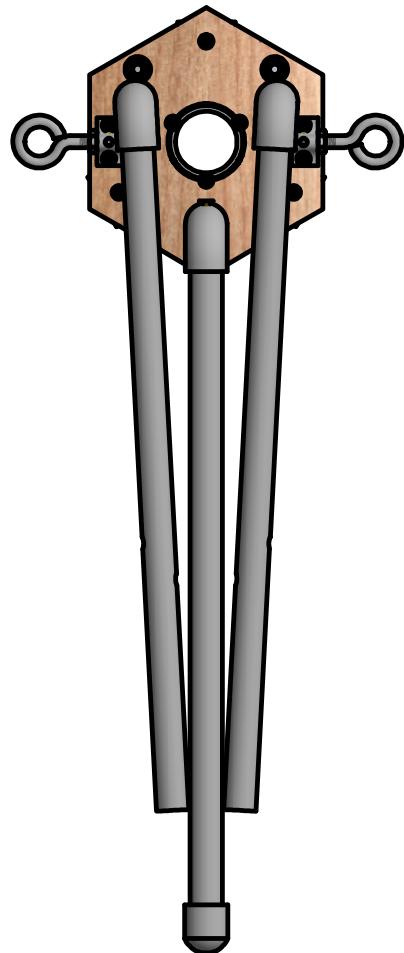
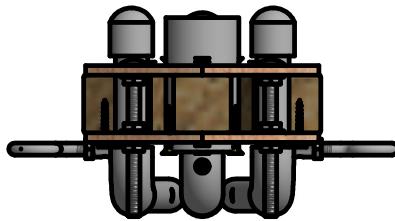
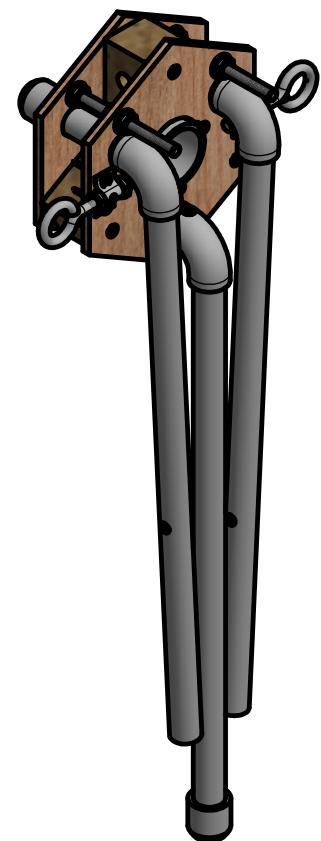


PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
A1	1	ASY-24B	Small turbine blade, Bottom
A2	1	ASY-24L	Small turbine blade, Left
A3	1	ASY-24R	Small turbine blade, Right

PARTS LIST FOR ALL THREE ASSEMBLIES			
ITEM	QTY	CODE	DESCRIPTION
1	2	24-01	1/2" Schedule 40 PVC x 3 3/4"
2	1	24-02	1/2" Schedule 40 PVC x 3 3/4" (holes in place)
3	1	24-03	1/2" Schedule 40 PVC x18" (no hole/ Bottom)
4	2	24-04	1/2" Schedule 40 PVC x18" (w/ hole for cord)
5	1	HW-10	1 1/4" Drywall screw
6	2	HW-12	2" Drywall Screw
7	4	HW-76	1/2" Schedule 40 PVC End Cap
8	3	HW-77	1/2" Schedule 40 PVC Elbow (w/ hole for Bottom)



DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	22 Small Nacelle	
APPROVED		SIZE C	DWG NO 22 Small Nacelle Hexagon and blades
SCALE		REV A	SHEET 6 OF 8



4

3

4

2

1

D

C

B

A

D

C

B

A

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA				
MFG		22 Small Nacelle		
APPROVED				
		SIZE C	DWG NO 22 Small Nacelle Hexagon and blades	REV A
		SCALE	SHEET 7 OF 8	

4

3

4

2

1

D

D

C

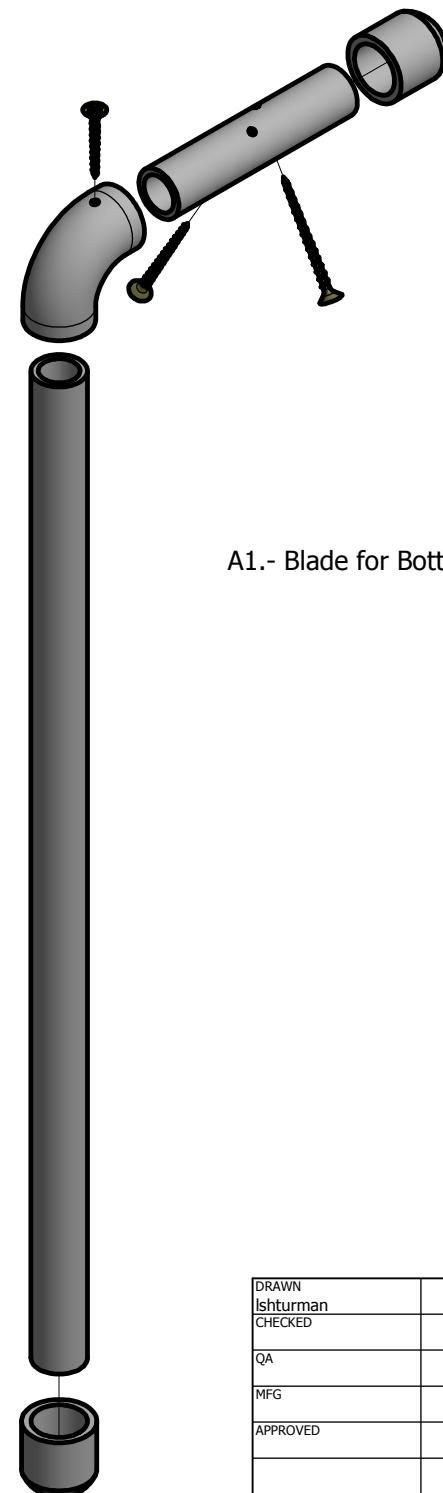
C

B

B

A

A



A1.- Blade for Bottom (Center)

DRAWN		BLADE RUNNER SUMMER 2014	
CHECKED			
QA		TITLE	
MFG		22 Small Nacelle	
APPROVED			
	SIZE C	DWG NO 22 Small Nacelle Hexagon and blades	REV A
	SCALE		
		SHEET 8 OF 8	

30 OWOL Tie Breaker

4

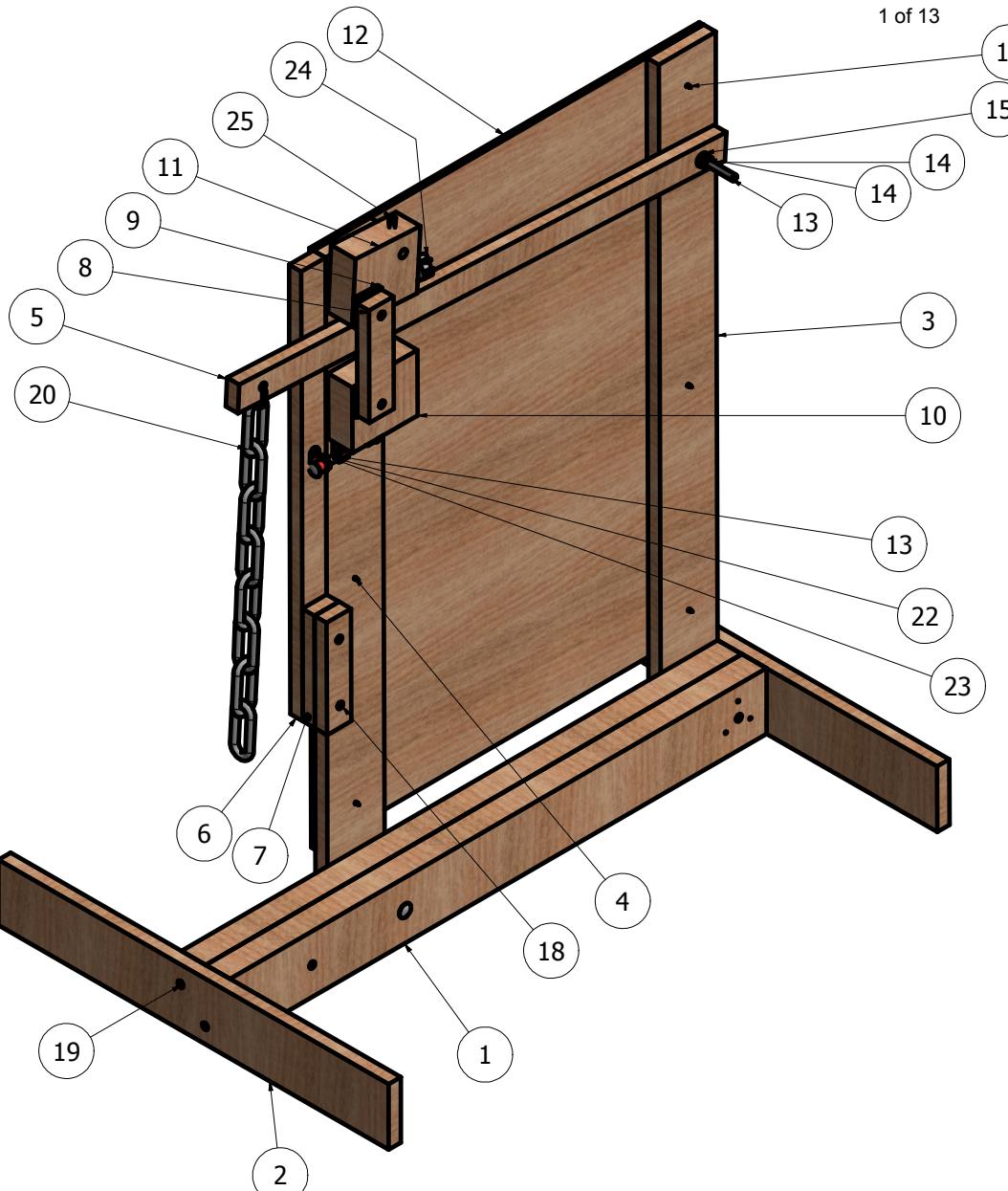
3

2

1

D

D



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	2	30-01	2x4 x36" Board
2	2	30-02	1x4 x24" Board (leg)
3	1	30-03	1x4 x36" Board (by foot)
4	1	30-04	1x4 x36" Board (for actuator)
5	1	30-05	1x2 x30" Board (chain holder)
6	1	30-06	1x2 x24" Board (swing)
7	2	30-07	1x2 x6" Board (counterweight)
8	1	30-08	1x2 x6" Board (Top)
9	2	30-09	1 1/2" x 1 1/2" x 1/4" Plywood
10	1	30-10	2x4 x4" Board (Bottom)
11	1	30-11	2x4 x4" Board (Top)
12	1	30-12	24" x 32" x 1/4" Plywood
13	3	HW-01	5/16 x 4" Carriage Bolt
14	9	HW-02	5/16" - 18 UNC nut
15	5	HW-03	Flat Washer 5/16"
16	6	HW-10	Drywall screw 1 1/4"
17	2	HW-11	Drywall screw 1 5/8"
18	6	HW-12	Deck Screw 2.0"
19	12	HW-13	Deck Screw 2.5"
20	1	HW-17	3/8" Welded Chain 12" long (8 links)
21	1	HW-20	5/16" x 1.5" Carriage Bolt
22	3	HW-28	#8 x 3/4" Wood screw
23	3	HW-29	Plastic wire fastener
24	1	HW-32	Microswitch
25	1	HW-33	LED light

DRAWN Ishturman	CHECKED	TITLE		
QA		BLADE RUNNER SUMMER 2014		
MFG		30 OW / OL Tie Breaker (Bill Board)		
APPROVED				
SIZE C		DWG NO 30 OW / OL	REV 0805	
SCALE		SHEET 1	OF 12	

4

3

2

1

30 OWOL Tie Breaker

2 of 13

D

C

B

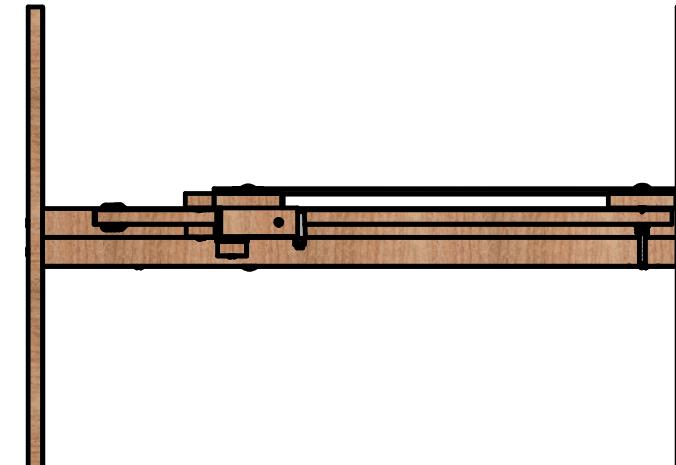
A

D

C

B

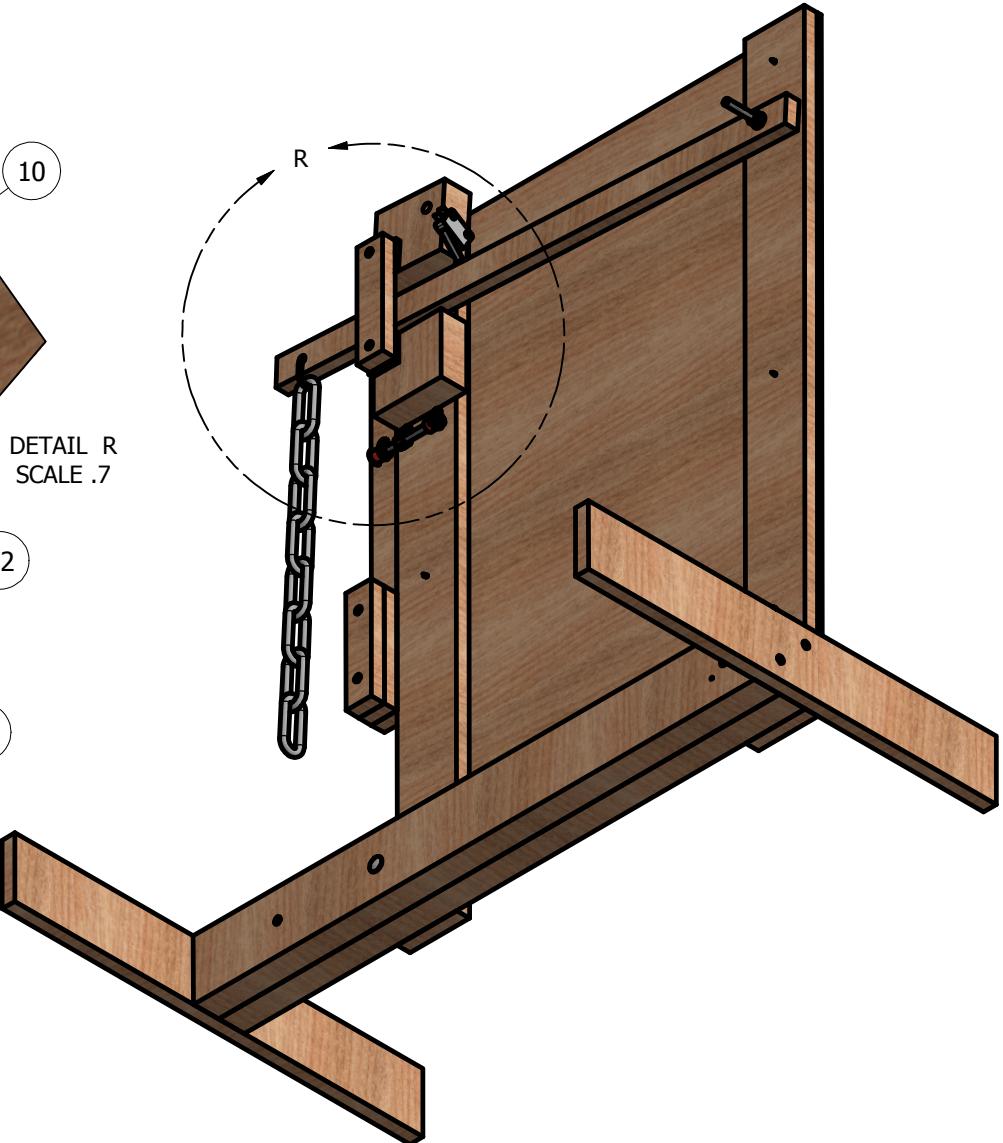
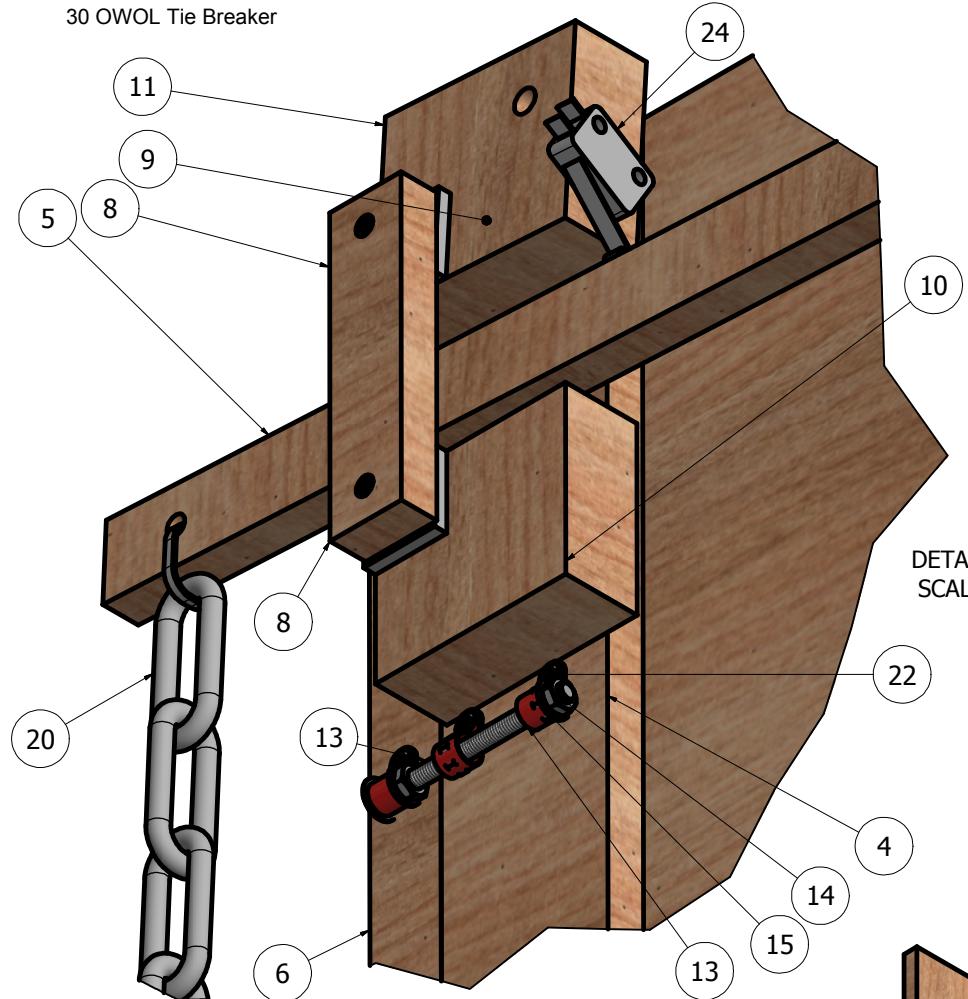
A



DRAWN Ishturman		TITLE BLADE RUNNER SUMMER 2014		
CHECKED				
QA				
MFG		30 OW / OL Tie Breaker (Bill Board)		
APPROVED		SIZE C	DWG NO 30 OW / OL	REV 0805
		SCALE		SHEET 2 OF 12

30 OWOL Tie Breaker

3 of 13

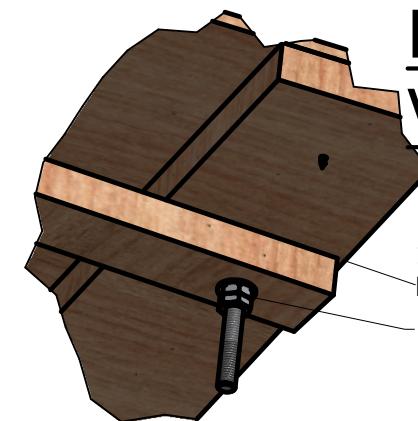
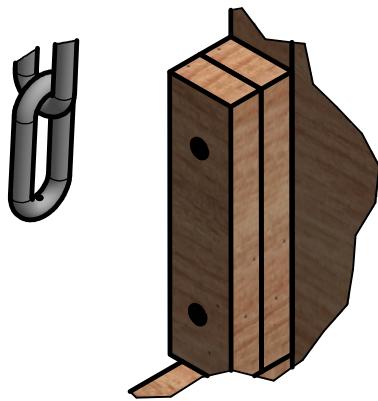
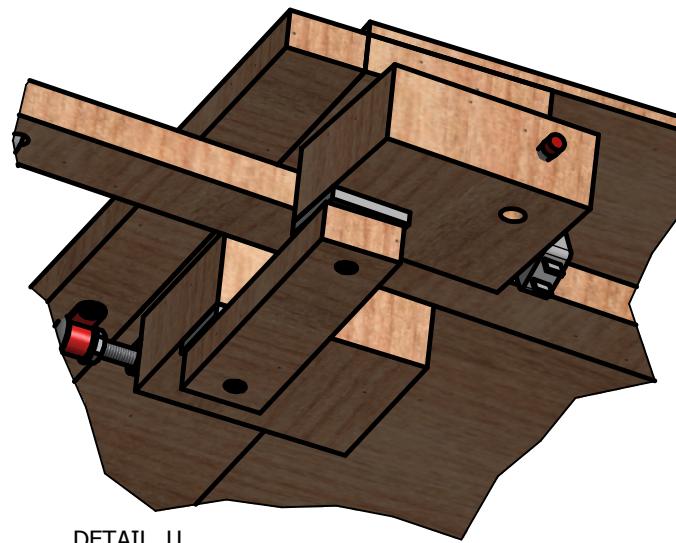
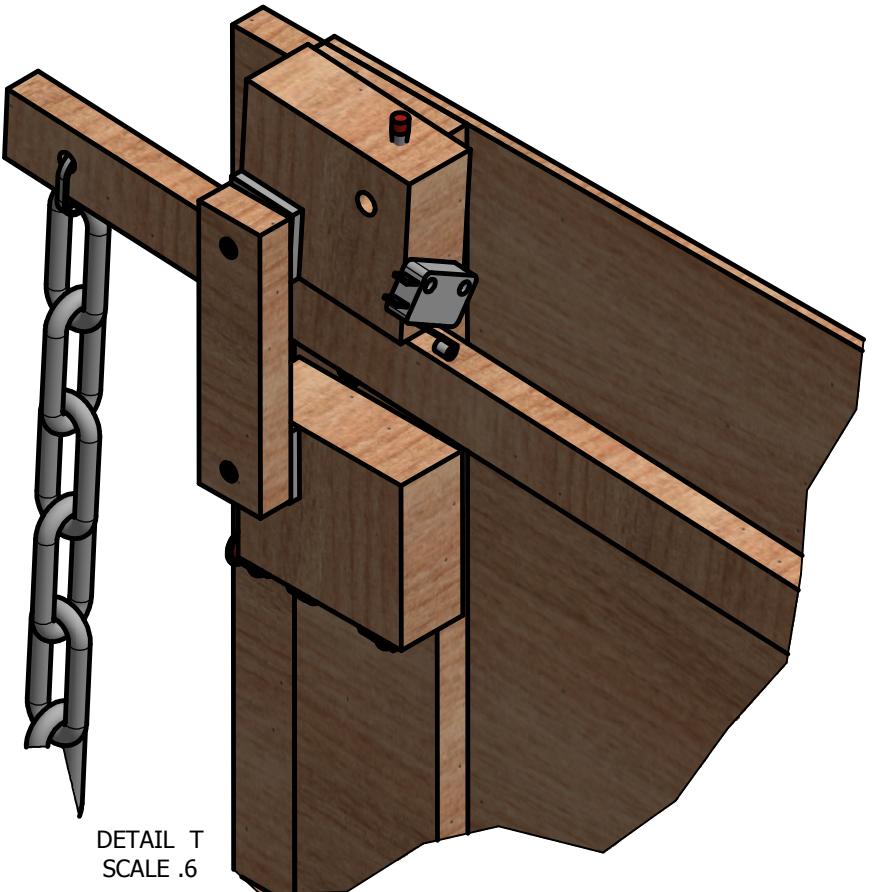


PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
4	1	30-04	1x4 x36" Board (for actuator)
5	1	30-05	1x2 x30" Board (chain holder)
6	1	30-06	1x2 x24" Board (swing)
8	1	30-08	1x2 x6" Board (Top)
9	2	30-09	1 1/2" x 1 1/2" x 1/4" Plywood
11	1	30-11	2x4 x4" Board (Top)
13	3	HW-01	5/16 x 4" Carriage Bolt
14	9	HW-02	5/16" - 18 UNC nut
15	5	HW-03	Flat Washer 5/16"
20	1	HW-17	3/8" Welded Chain 12" long (8 links)
22	3	HW-28	#8 x 3/4" Wood screw
23	3	HW-29	Plastic wire fastener
24	1	HW-32	Microswitch
25	1	HW-33	LED light

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	30 OW / OL Tie Breaker (Bill Board)	
APPROVED		SIZE C	DWG NO 30 OW / OL
		REV 0805	
SCALE		SHEET 3 OF 12	

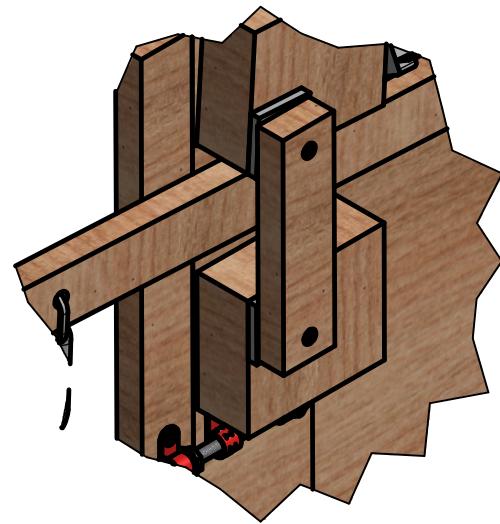
30 OWOL Tie Breaker



NOTE:
VERY IMPORTANT !!

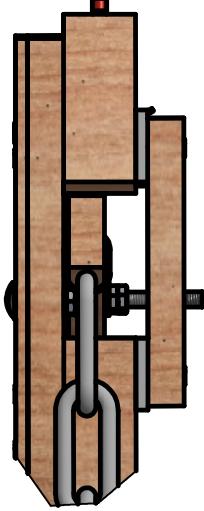
1x2 x30" board fastened to PIVOT at this point.
Leave 3/8" to 3/4" gap to allow free movement

DRAWN Ishturman		BLADE RUNNER SUMMER 2014	
CHECKED			
QA		TITLE	
MFG		30 OW / OL Tie Breaker (Bill Board)	
APPROVED		SIZE C	DWG NO 0805
		SCALE	REV 0805
			SHEET 4 OF 12

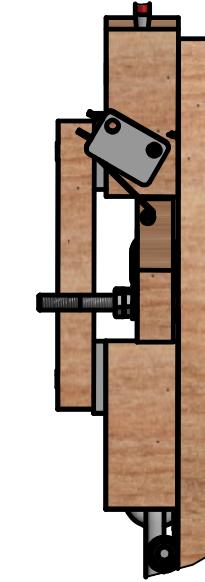


DETAIL Y
SCALE 1 / 2

Left side,
looking at actuator mechanism



DETAIL AA
SCALE 1 / 2



DETAIL AB
SCALE 1 / 2

Right side,
looking into Pivot mechanism

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA				
MFG		30 OW / OL Tie Breaker (Bill Board)		
APPROVED				
		SIZE C	DWG NO 30 OW / OL	REV 0805
		SCALE		SHEET 5 OF 12

4

3

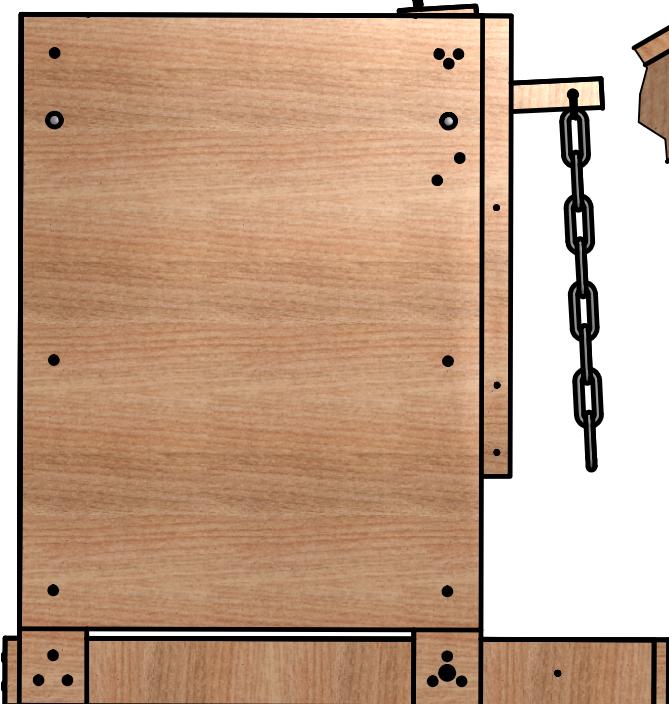
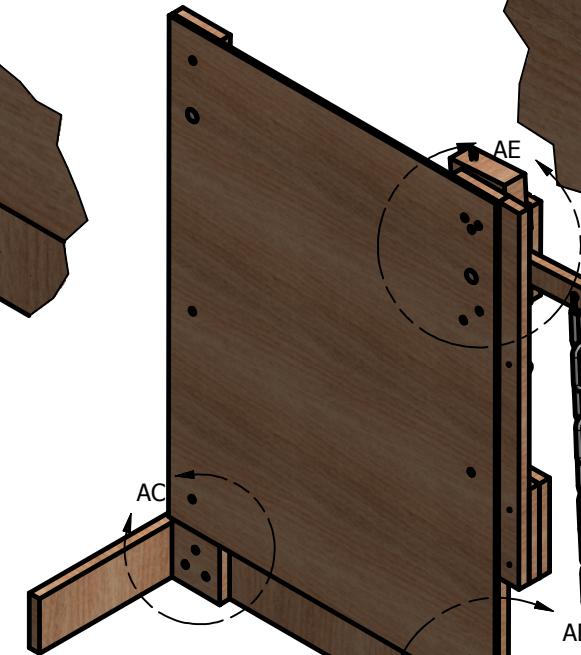
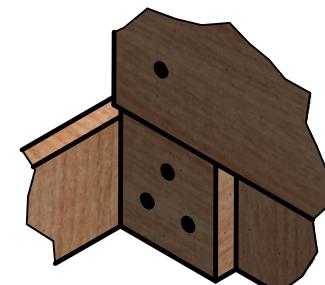
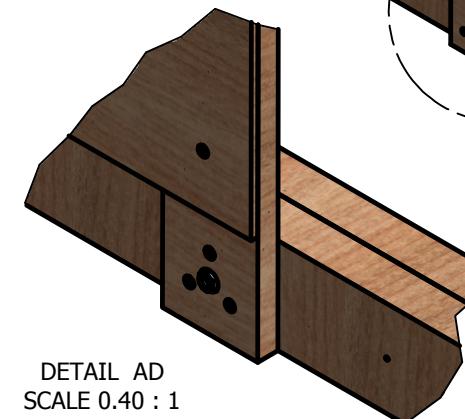
2

1

30 OWOL Tie Breaker

D

D

DETAIL AC
SCALE 0.40 : 1DETAIL AE
SCALE 0.40 : 1DETAIL AD
SCALE 0.40 : 1DETAIL AF
SCALE 0.40 : 1

DRAWN Ishturman		TITLE	
CHECKED		BLADE RUNNER SUMMER 2014	
QA		30 OW / OL Tie Breaker (Bill Board)	
MFG			
APPROVED		SIZE C	DWG NO 30 OW / OL
		REV 0805	
		SCALE	
			SHEET 6 OF 12

4

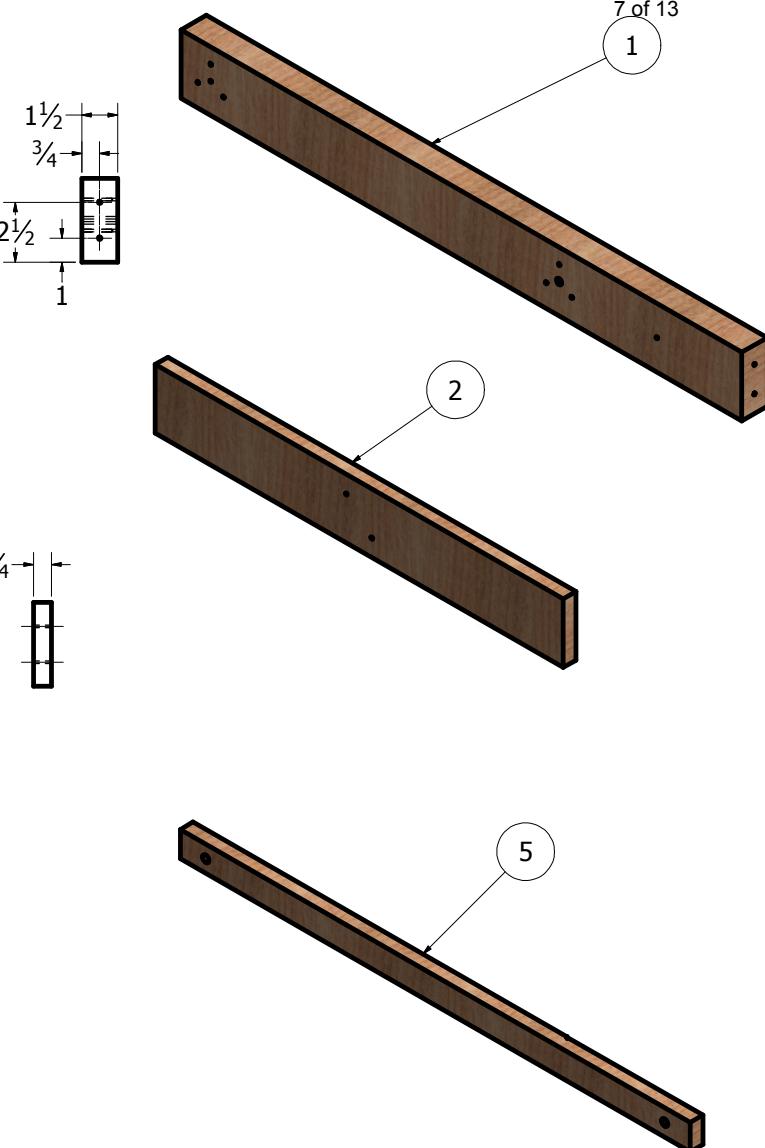
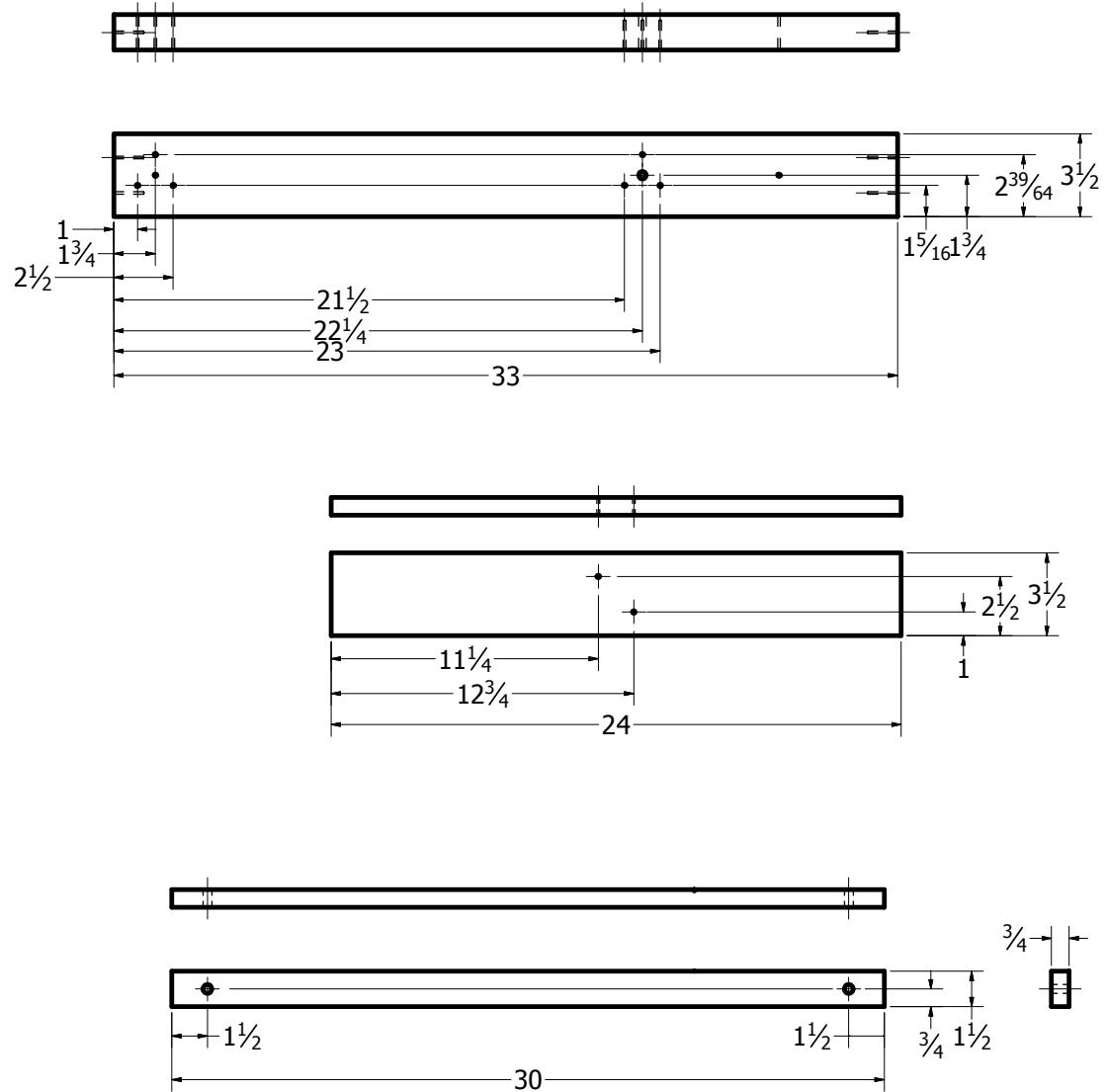
3

2

1

1

30 OWOL Tie Breaker



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	2	30-01	2x4 x36" Board
2	2	30-02	1x4 x24" Board (leg)
5	1	30-05	1x2 x30" Board (chain holder)

DRAWN Ishturman	CHECKED	TITLE		
QA	MFG	30 OW / OL Tie Breaker (Bill Board)		
APPROVED		SIZE C	DWG NO 30 OW / OL	REV 0805
		SCALE		
			SHEET 7 OF 12	

4

3

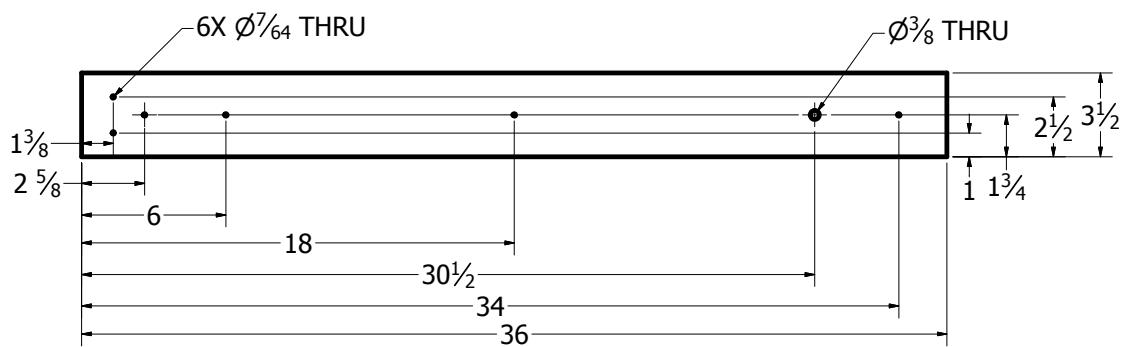
2

1

30 OWOL Tie Breaker

8 of 13

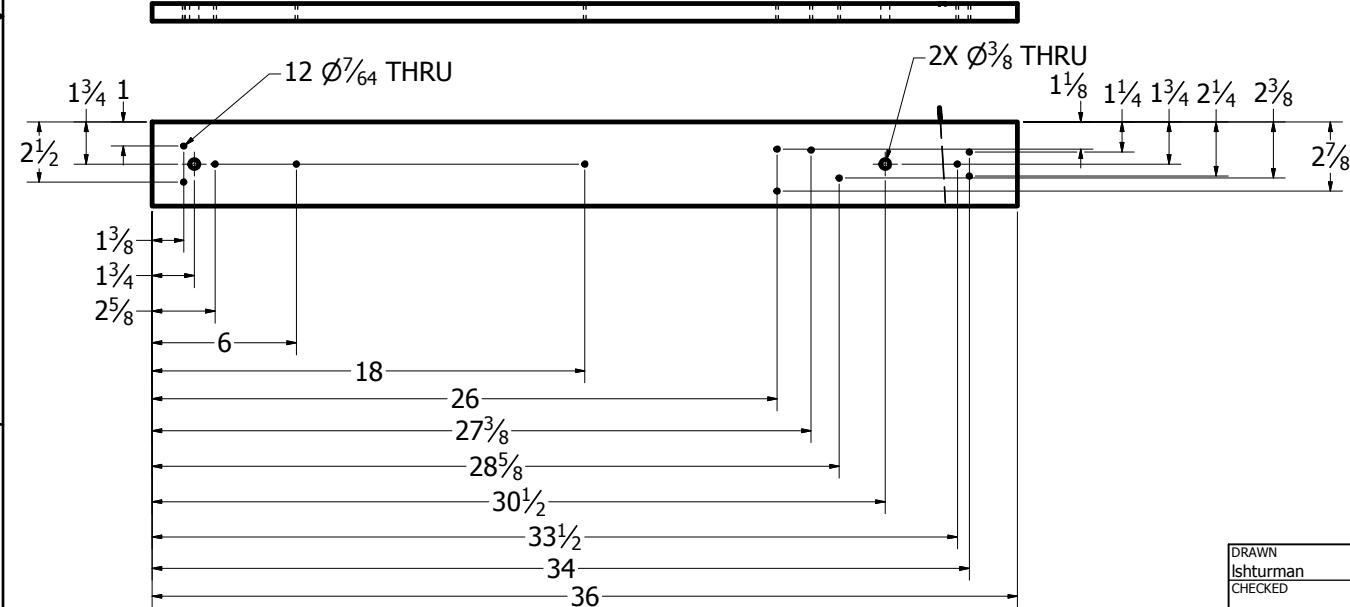
D



3/4

3

C



4

A

PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
3	1	30-03	1x4 x36" Board (by foot)
4	1	30-04	1x4 x36" Board (for actuator)

DRAWN
Ishturman
CHECKED

QA

MFG

APPROVED

TITLE

30 OW / OL Tie Breaker (Bill Board)

SIZE	C	DWG NO	REV
		30 OW / OL	0805
SCALE			
SHEET	8	OF	12

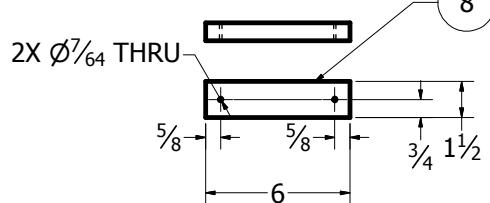
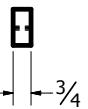
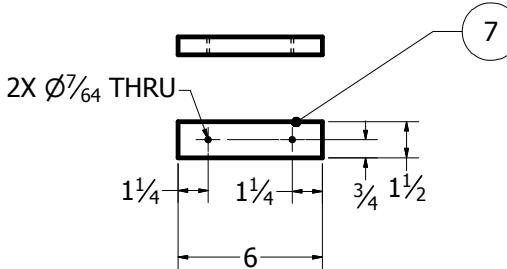
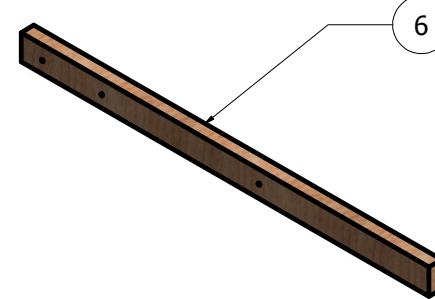
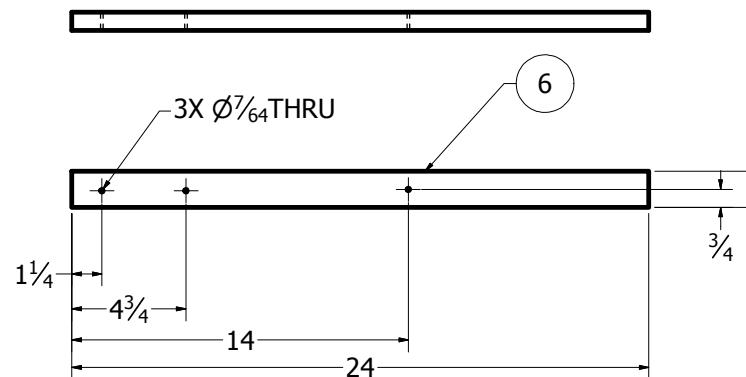
4

3

2

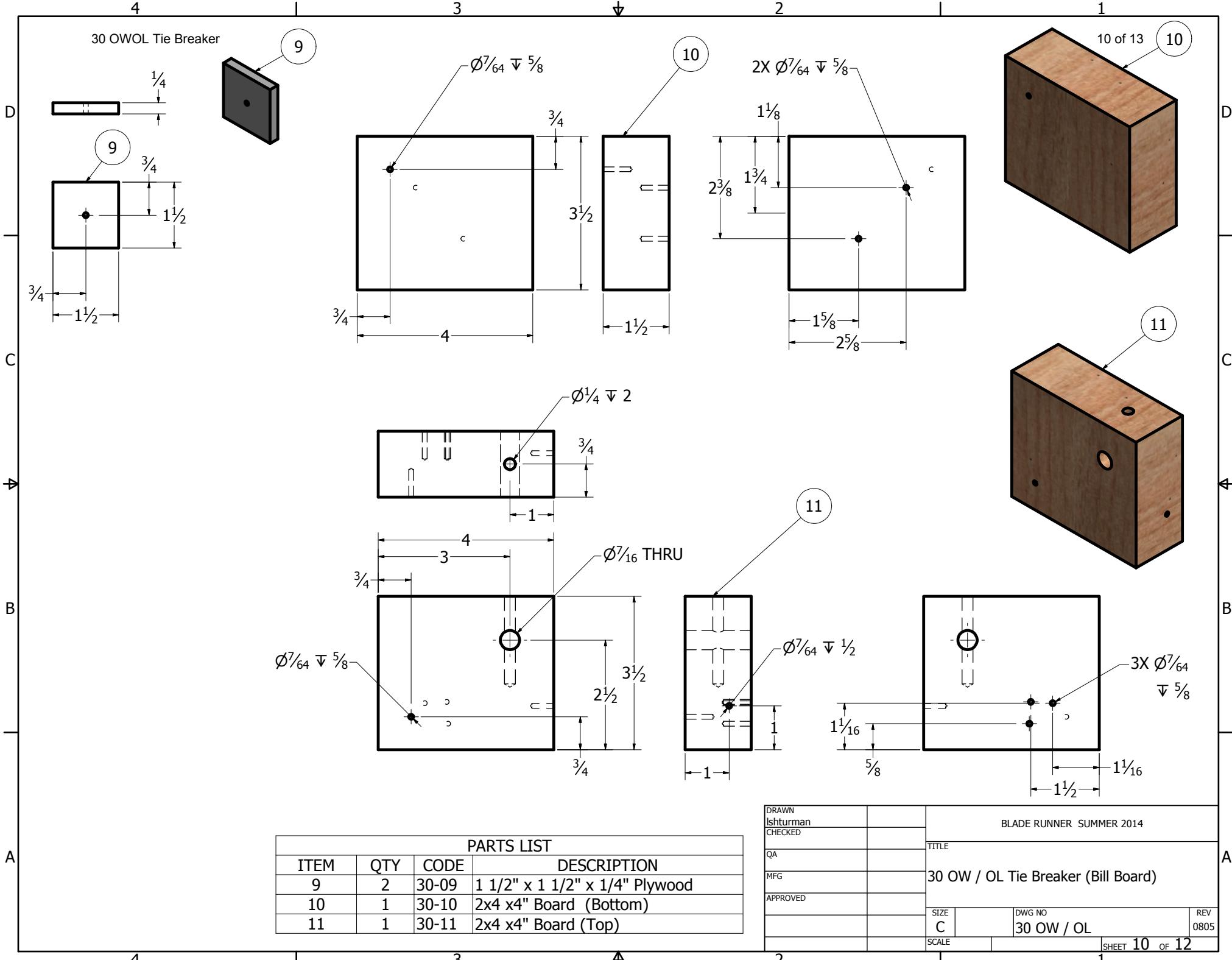
1

8 OF 12

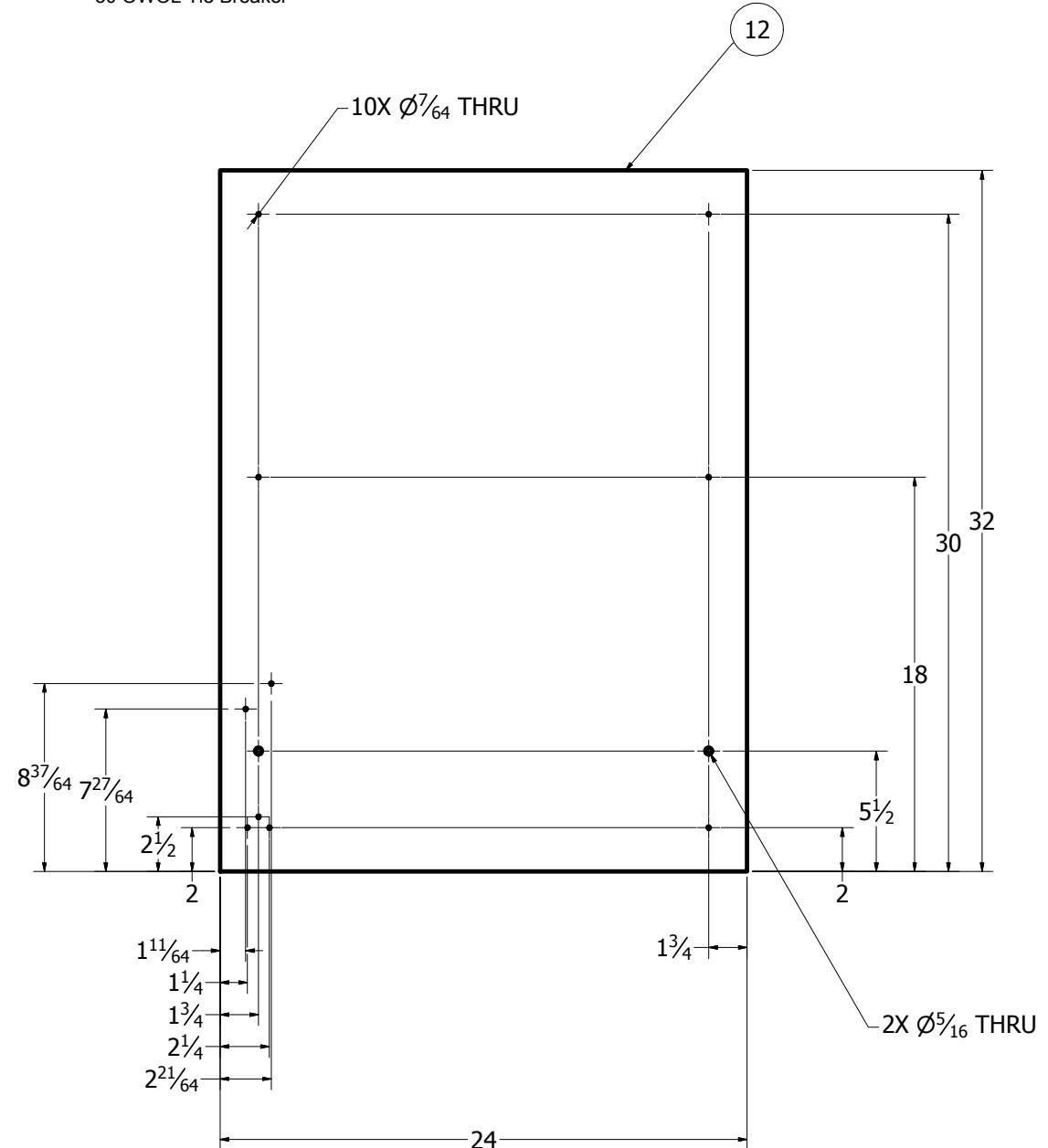


PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
6	1	30-06	1x2 x24" Board (swing)
7	2	30-07	1x2 x6" Board (counterweight)
8	1	30-08	1x2 x6" Board (Top)

DRAWN Ishturman	CHECKED	TITLE		
QA		30 OW / OL Tie Breaker (Bill Board)		
MFG				
APPROVED				
		SIZE C	DWG NO 30 OW / OL	REV 0805
		SCALE		SHEET 9 OF 12

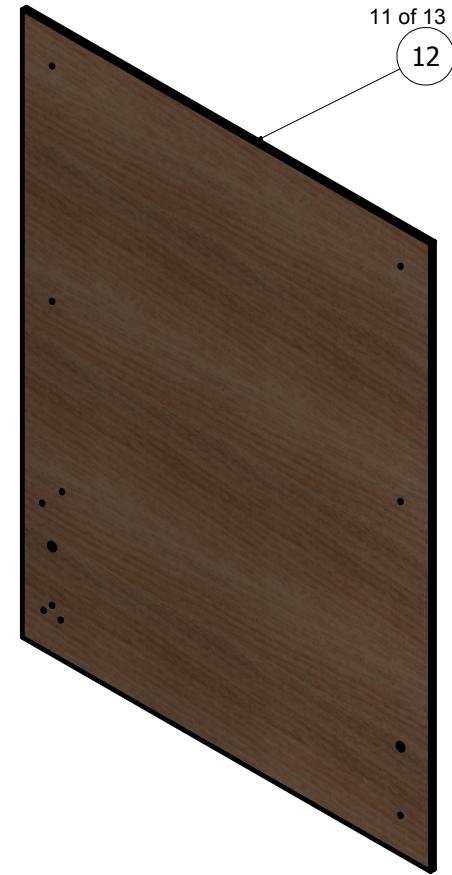


30 OWOL Tie Breaker



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
12	1	30-12	24" x 32" x 1/4" Plywood

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA				MFG
APPROVED	30 OW / OL Tie Breaker (Bill Board)			
				SIZE C DWG NO 30 OW / OL REV 0805
	SCALE			SHEET 11 OF 12



30 OWOL Tie Breaker

4

3

2

1

D

D

C

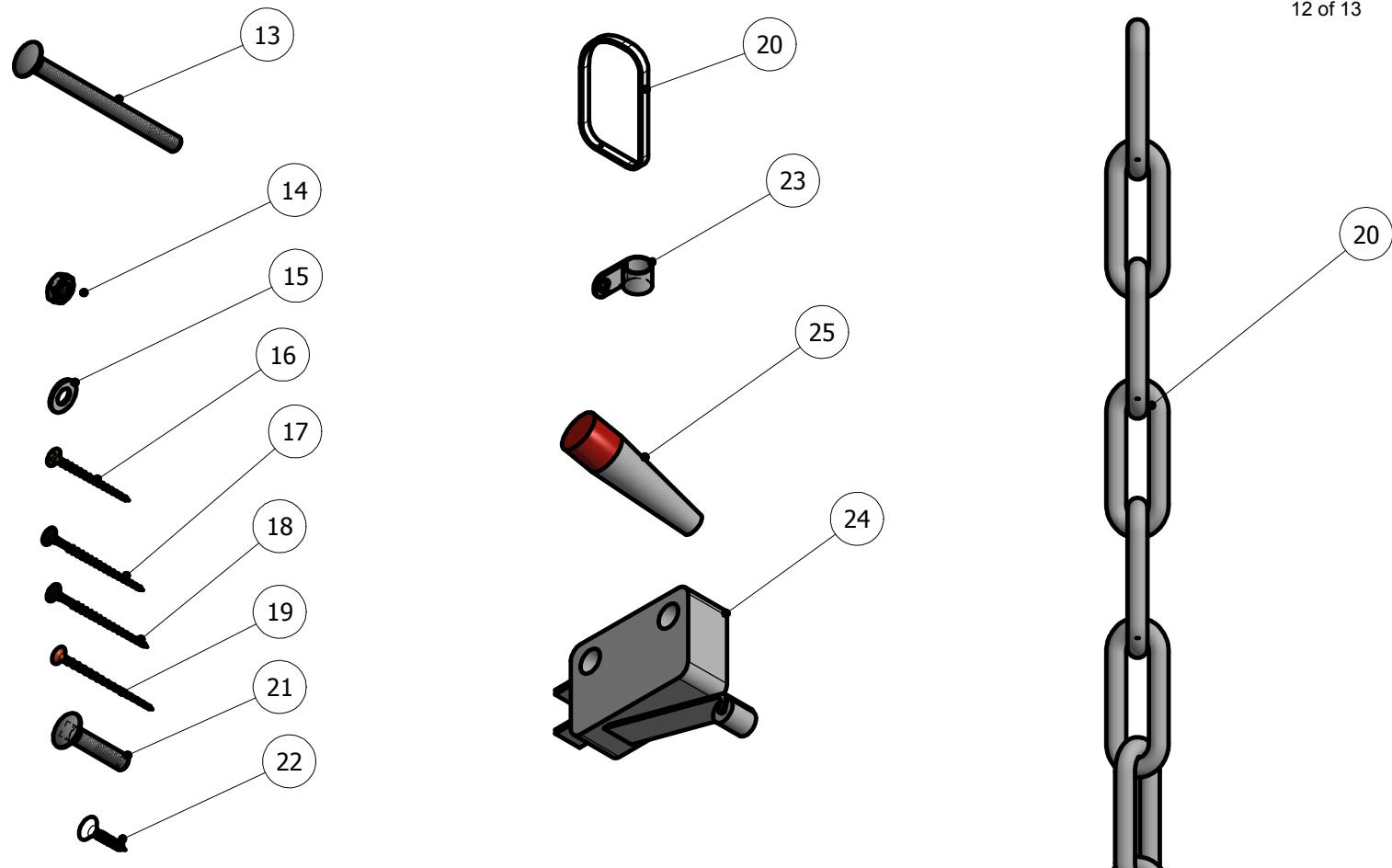
C

B

B

A

A



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
13	3	HW-01	5/16 x 4" Carriage Bolt
14	9	HW-02	5/16" - 18 UNC nut
15	5	HW-03	Flat Washer 5/16"
16	6	HW-10	Drywall screw 1 1/4"
17	2	HW-11	Drywall screw 1 5/8"
18	6	HW-12	Deck Screw 2.0"
19	12	HW-13	Deck Screw 2.5"
20	1	HW-17	3/8" Welded Chain 12" long (8 links)
21	1	HW-20	5/16" x 1.5" Carriage Bolt
22	3	HW-28	#8 x 3/4" Wood screw
23	3	HW-29	Plastic wire fastener
24	1	HW-32	Microswitch
25	1	HW-33	LED light

DRAWN
Ishturman

CHECKED

QA

MFG

APPROVED

BLADE RUNNER SUMMER 2014

TITLE

30 OW / OL Tie Breaker (Bill Board)

SIZE C DWG NO 30 OW / OL REV 0805

SCALE SHEET 12 OF 12

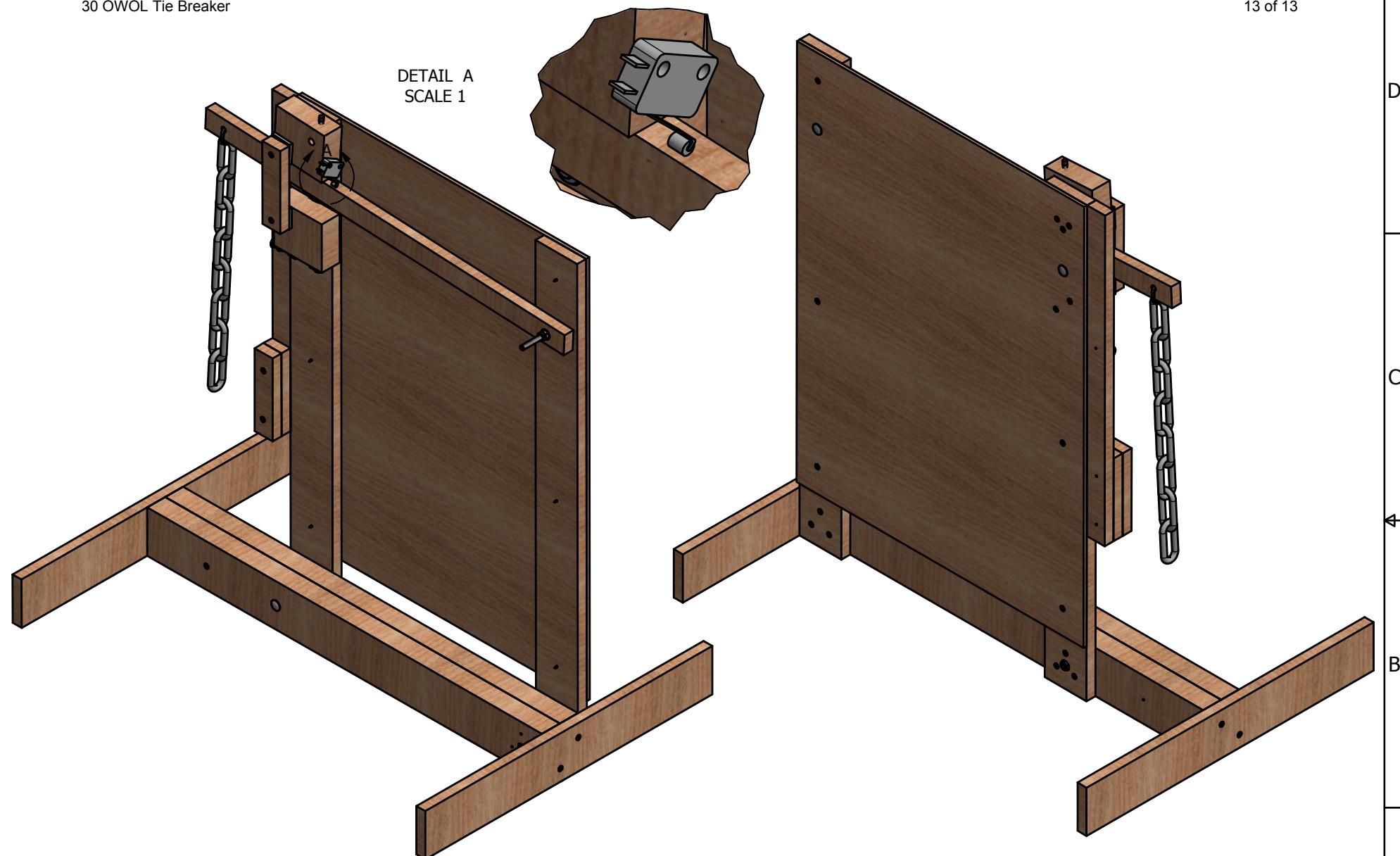
4

3

2

1

D



DRAWN Ishturman	8/7/2014	TITLE	
CHECKED		30 OWOL Tie Breaker (Isometric)	
QA			
MFG			
APPROVED		SIZE C	DWG NO 30s OWOL Tie Breaker Isometric
		SCALE	REV 005
		SHEET 1 OF 1	

40 Bad Road

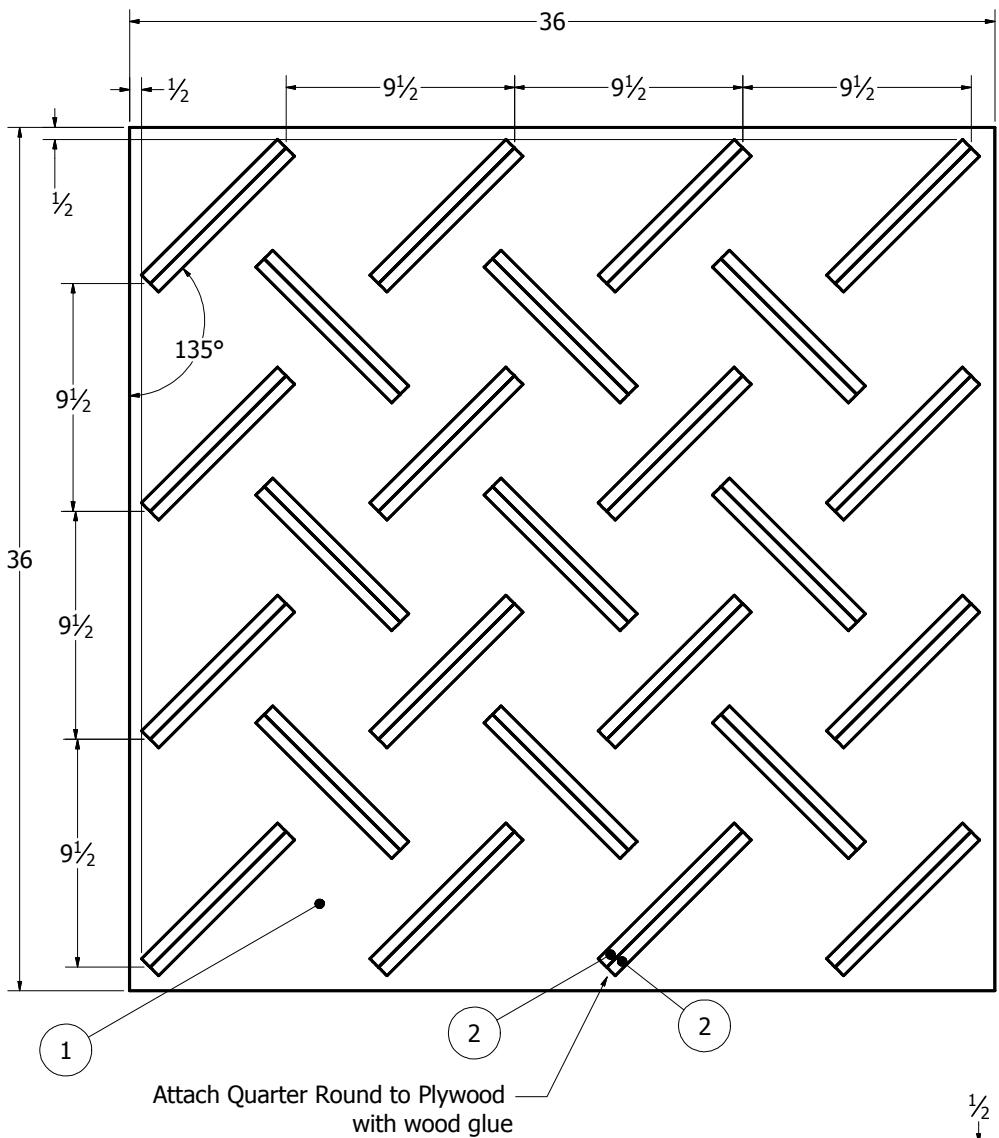
4

3

2

1

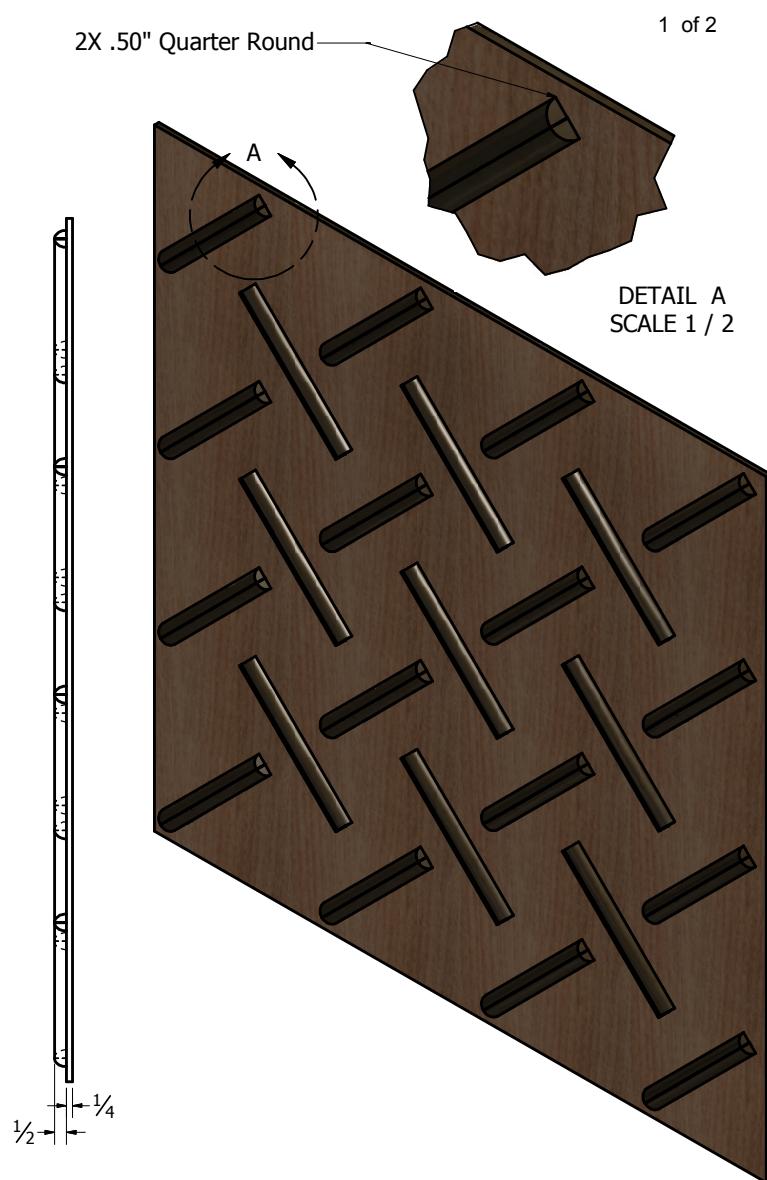
D



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	40-01	36" x 36" x 1/4" Plywood
2	50	40-02	1/2" x 1/2" x 8" Quarter Round Trim
3	1	HW-52	Wood Glue (as needed)

2X .50" Quarter Round

1 of 2

DRAWN
Ishturman

CHECKED

QA

MFG

APPROVED

TITLE

40 Bad Road

SIZE

C

DWG NO
40 Bad RoadREV
0805

SCALE

1

SHEET 1 OF 2

4

3

4

2

1

A

4

1

3

4

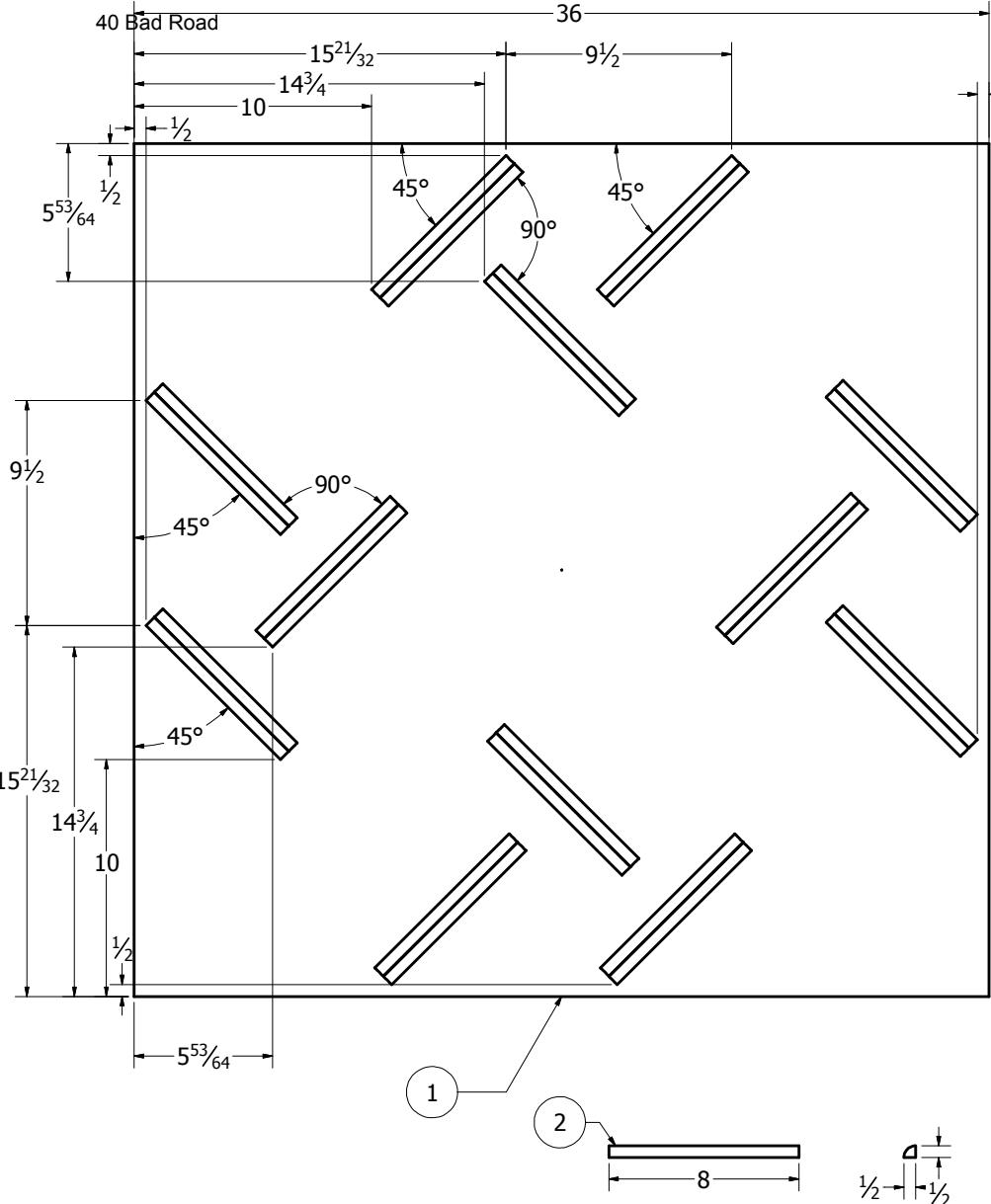
2

1

2 of 2

D

D



NOTE.- Construction of Center Bad Road board,
follow same dimensions than other boards,
with the exception of 24 pieces of quarter round trim.

Items not shown at same Scale PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	1	40-01	36" x 36" x 1/4" Plywood
2	24	40-02	1/2" x 1/2" x 8" Quarter Round Trim
3	1	HW-51	Wood Glue (as needed)

DRAWN
Ishturman
CHECKED

TITLE

40 Bad Road Center Board

QA

MFG

APPROVED

SIZE

C

DWG NO

40 Bad Road

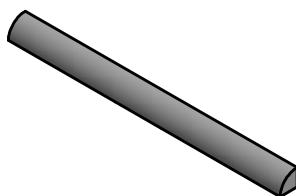
REV

0805

SCALE

1

SHEET 2 OF 2



A

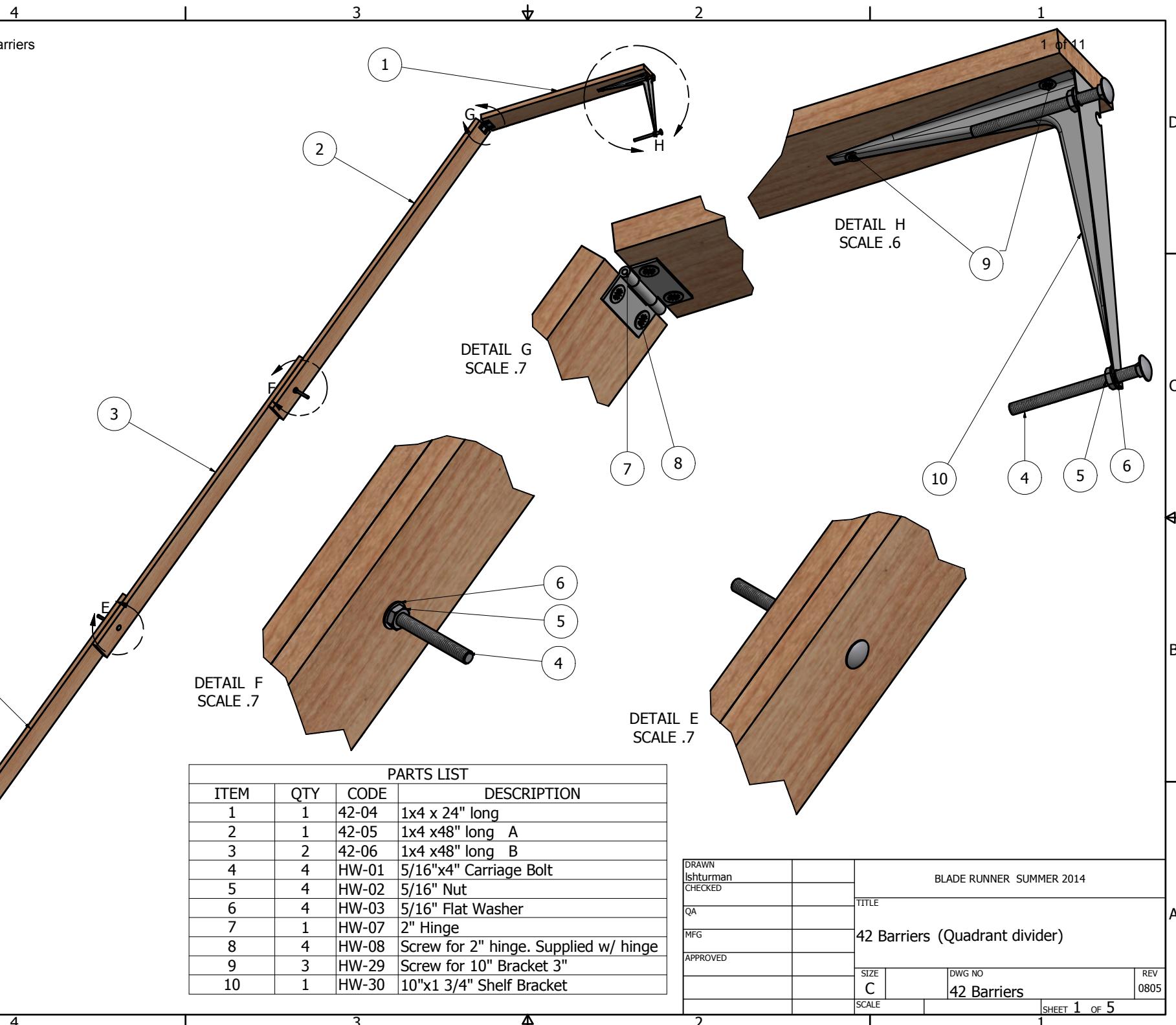
D

C

B

A

42 Barriers



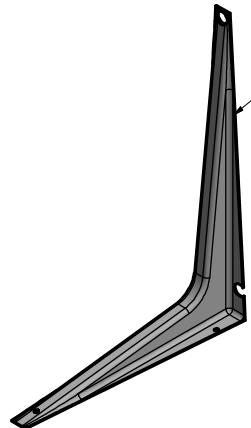
42 Barriers

4

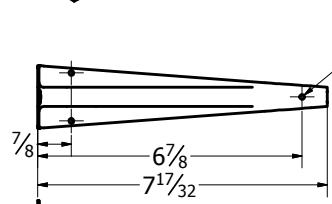
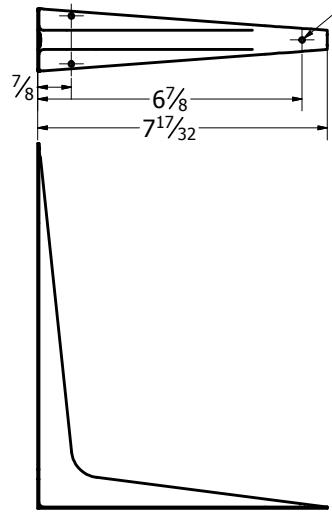
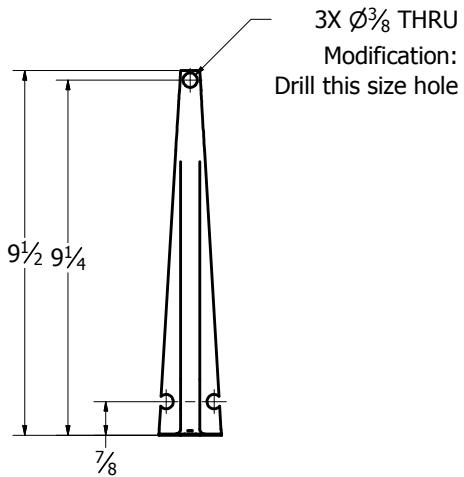
3

2

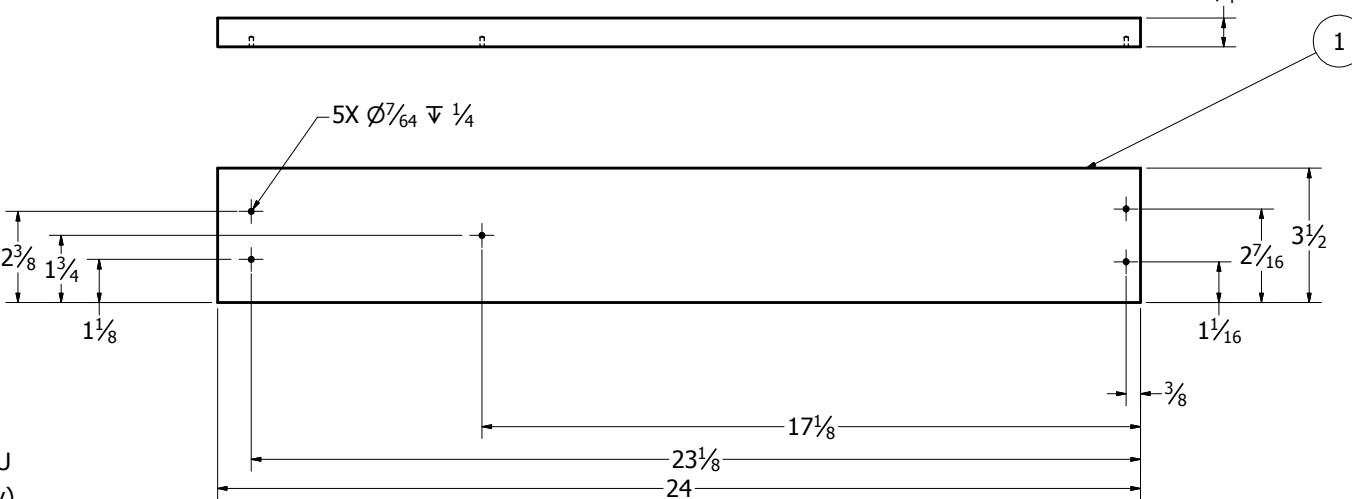
1



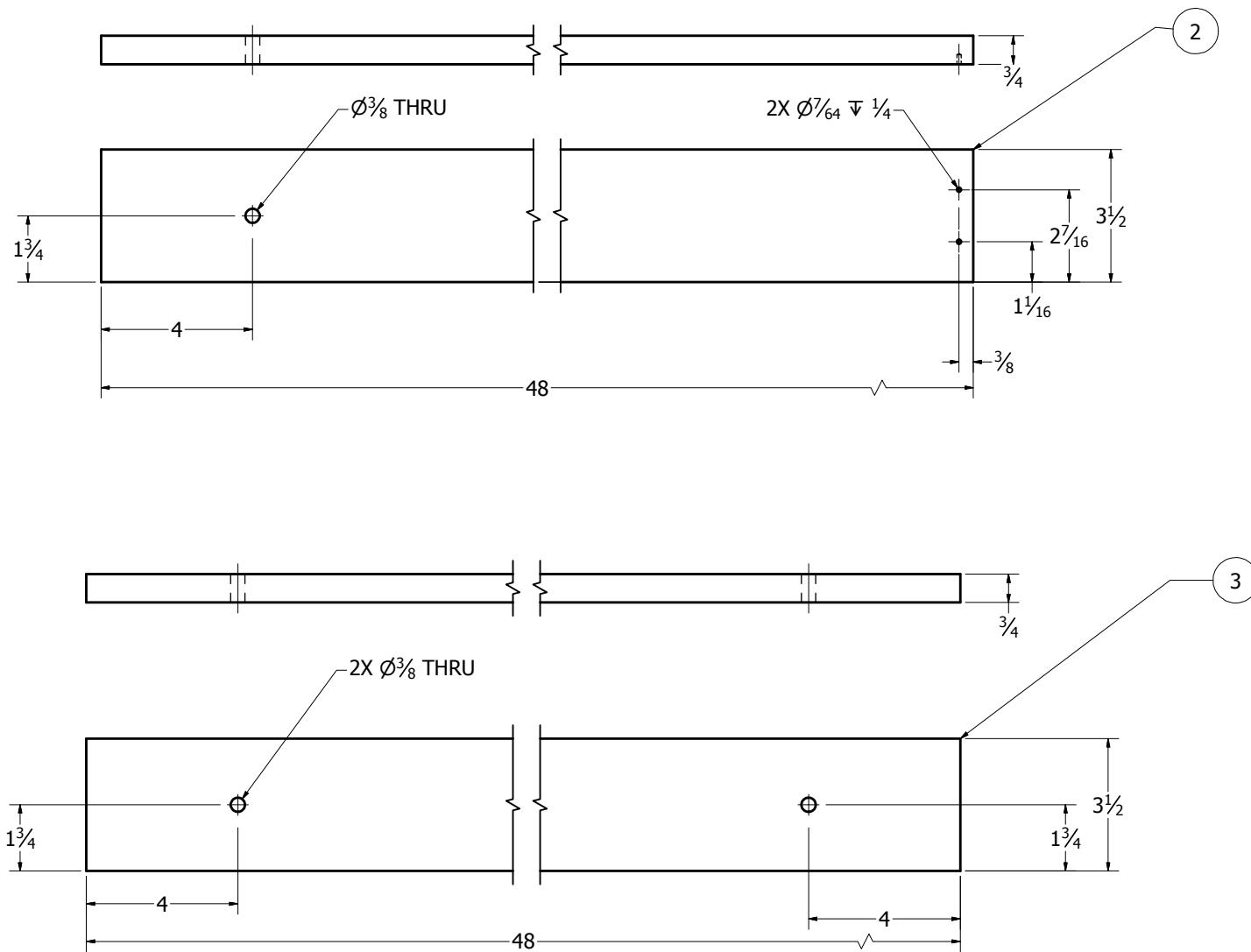
10

3X Ø $\frac{1}{8}$ THRU
(from factory)

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	42-04	1x4 x 24" long
4	4	HW-01	5/16"x4" Carriage Bolt
5	4	HW-02	5/16" Nut
6	4	HW-03	5/16" Flat Washer
7	1	HW-07	2" Hinge
8	4	HW-08	Screw for 2" hinge. Supplied w/ hinge
9	3	HW-29	Screw for 10" Bracket 3"
10	1	HW-30	10"x1 3/4" Shelf Bracket

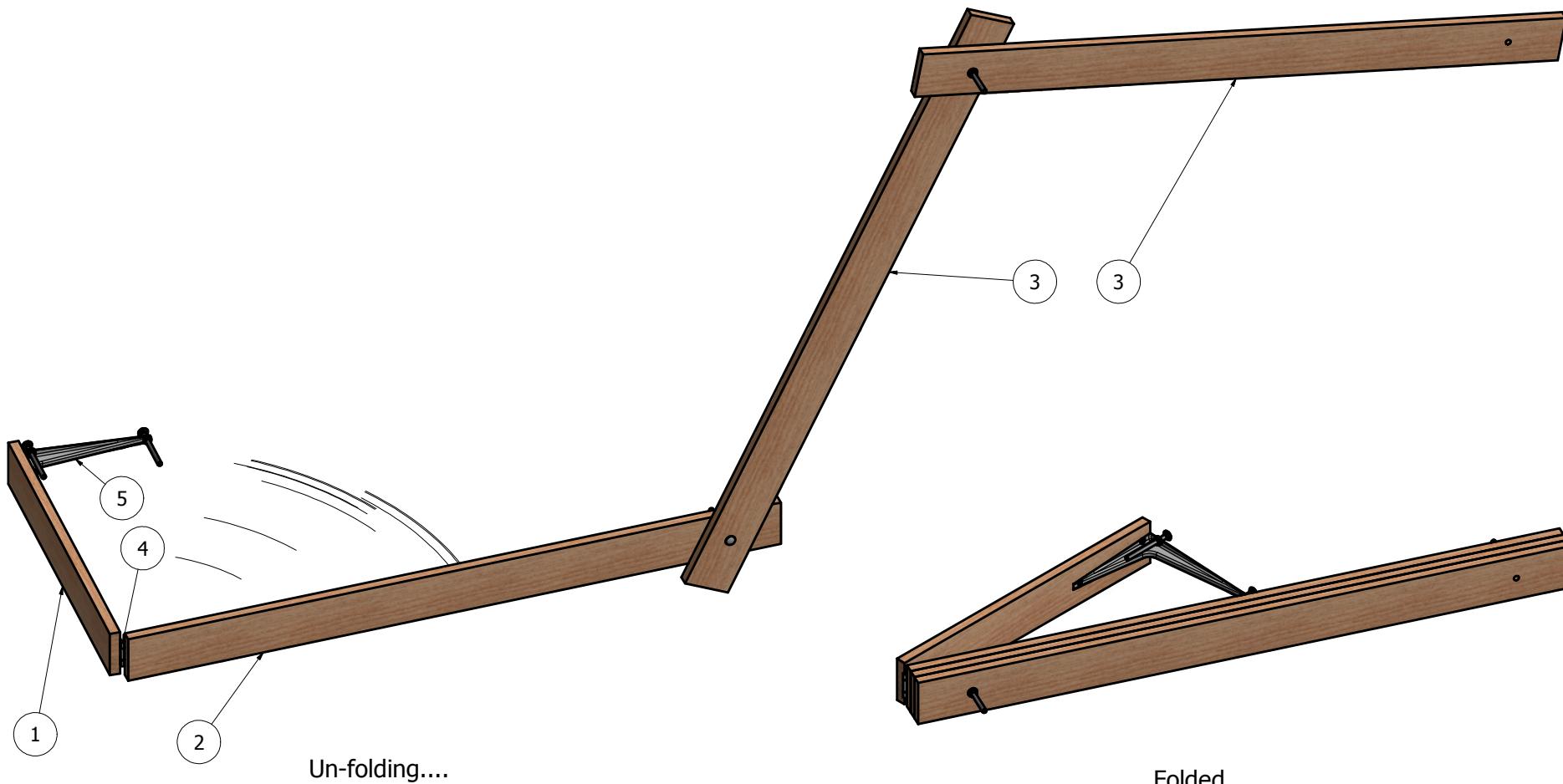


DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	42 Barriers (Quadrant divider)		
APPROVED		SIZE C	DWG NO 42 Barriers	REV 0805
		SCALE	SHEET 2 OF 5	



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
2	1	42 Board 1x4x48 A	1x4 x48" long A
3	2	42 Board 1x4x48 B	1x4 x48" long B

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	42 Barriers (Quadrant divider)		
APPROVED				
		SIZE C	DWG NO 42 Barriers	REV 0805
		SCALE		SHEET 3 OF 5



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	42-04	1x4 x 24" long
2	1	42-05	1x4 x 48" long A
3	2	42-06	1x4 x 48" long B
4	1	HW-07	2" Hinge
5	1	HW-30	10"x1 3/4" Shelf Bracket

DRAWN Ishturman CHECKED		TITLE 42 Barriers (Quadrant dividers)		
QA		SIZE C		
MFG		DWG NO 42 Barriers		REV 0805
APPROVED				
SCALE				
				SHEET 4 OF 5

4

3

2

1

42 Barriers

5 of 11

D

D

C

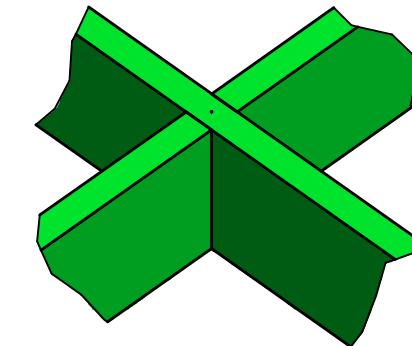
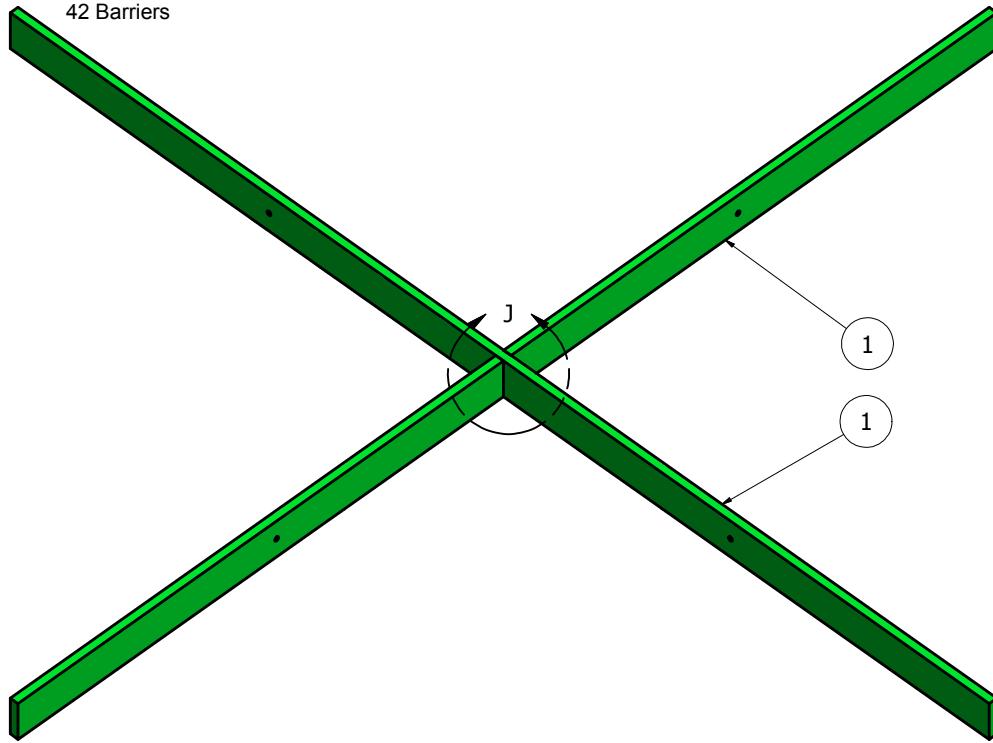
C

B

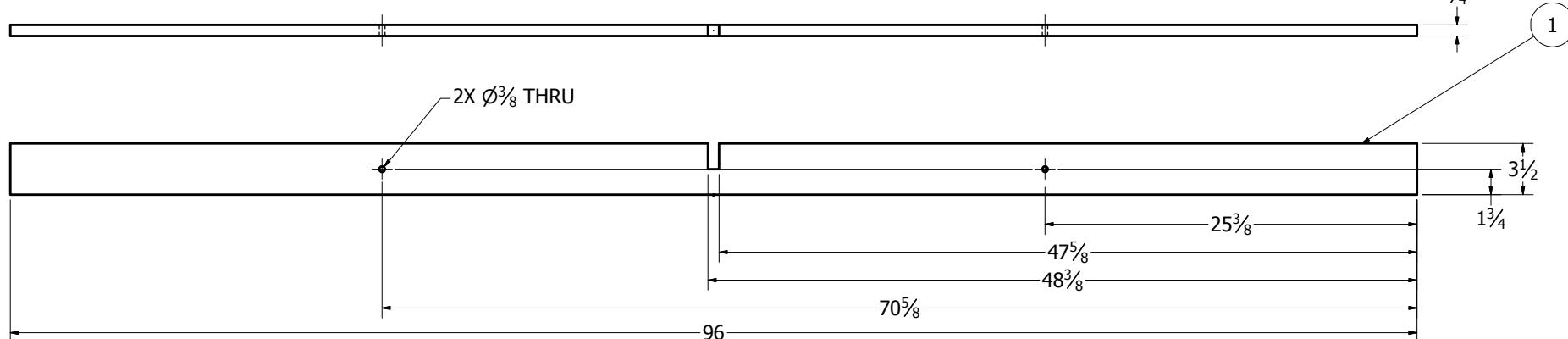
B

A

A



DETAIL J
SCALE .5



These boards will seat on top of the 'Bad Road', creating the center of the field

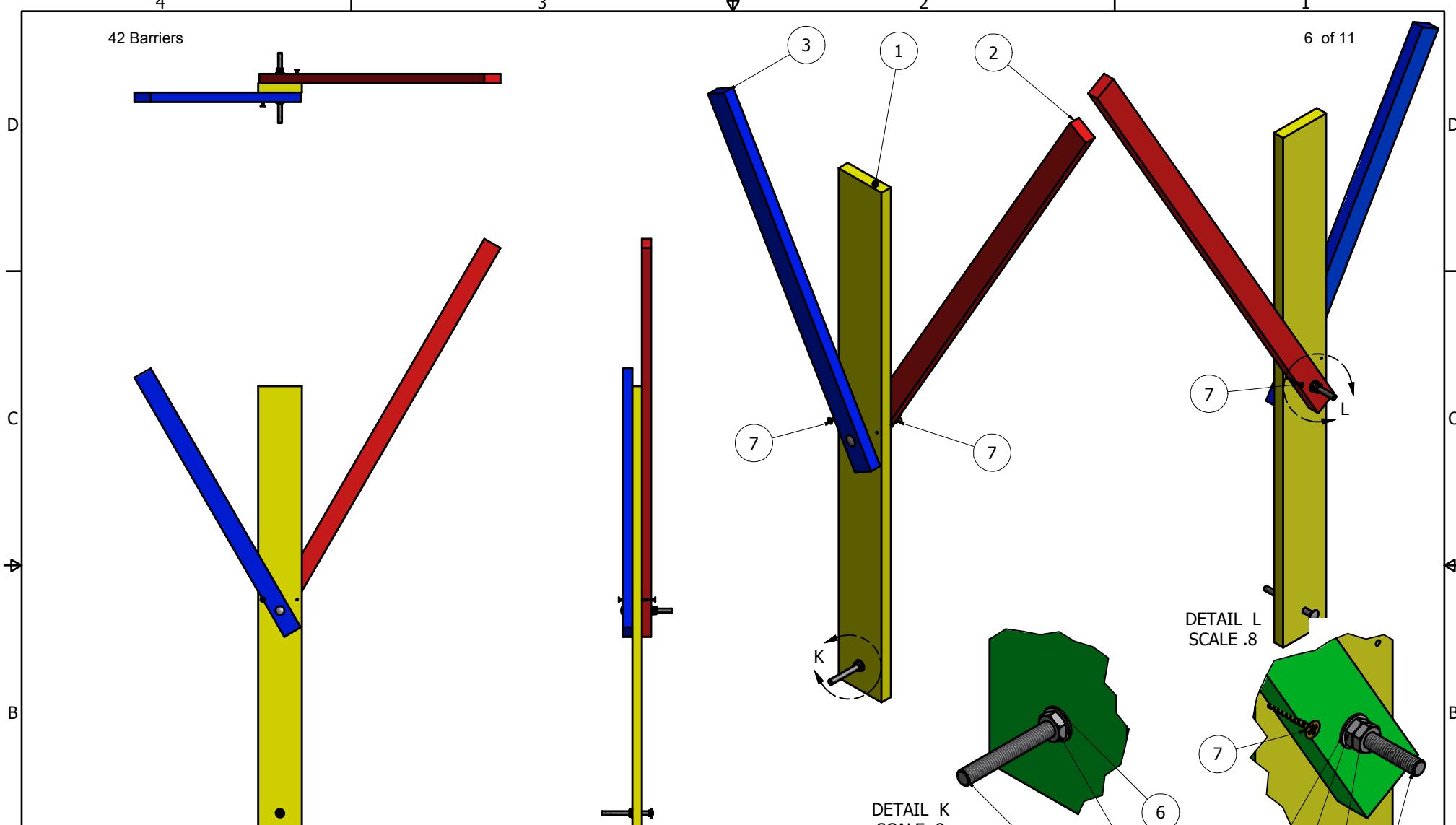
PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	2	42-07	1x4 x 96" long, board w/ notch

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA				
MFG	42 Barriers (Center)			
APPROVED				
SIZE C		DWG NO 42 Barriers	REV 0805	
SCALE		SHEET 5 OF 5		

42 Barriers

6 of 11



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	42-08	1x4 x36" Board (Yellow Cactus)
2	1	42-09	1x2 x36" Board (Red Cactus)
3	1	42-10	1x2 x24" Board (Blue Cactus)
4	2	HW-01	5/16"x4" Carriage Bolt
5	3	HW-02	5/16" Nut
6	2	HW-03	5/16" Flat Washer
7	2	HW-10	1 1/4" Drywall screw

DRAWN Ishturman	CHECKED	TITLE 42 Cacti		
QA	MFG			
APPROVED				
SIZE C		DWG NO 42 Cacti		REV 0805
SCALE				SHEET 1 OF 2

4

3

2

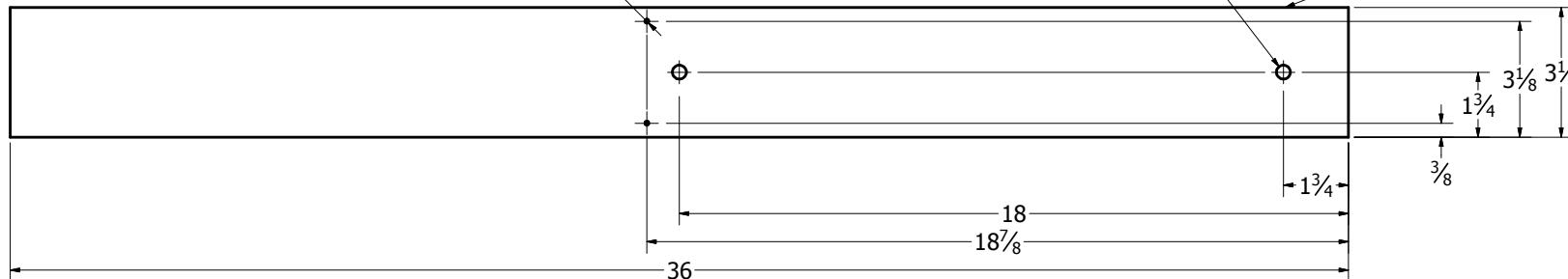
1

42 Barriers

7 of 11

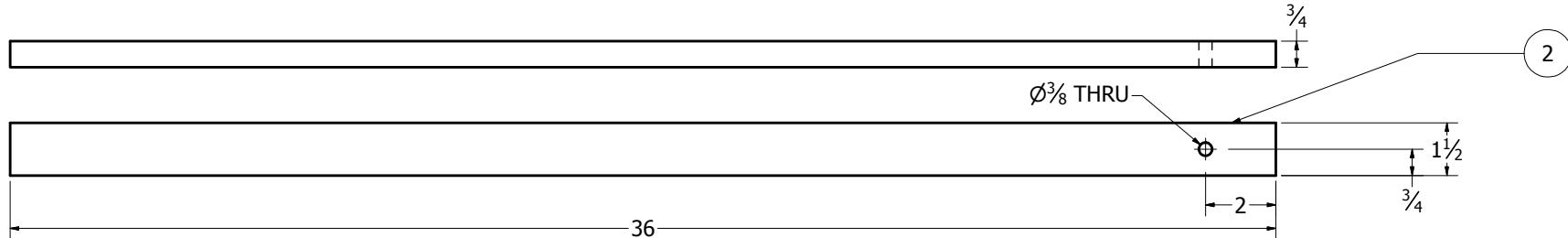
D

D



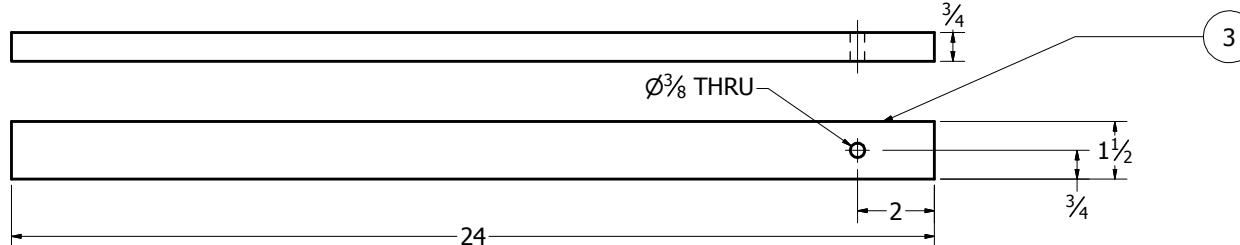
C

C



B

B



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	42-08	1x4 x36" Board (Yellow Cactus)
2	1	42-09	1x2 x36" Board (Red Cactus)
3	1	42-10	1x2 x24" Board (Blue Cactus)

DRAWN Ishturman	CHECKED	TITLE 42 Cacti		
QA				
MFG				
APPROVED				
SIZE C		DWG NO 42 Cacti		REV 0805
SCALE				
SHEET 2 OF 2				

4

3

2

1

42 Barriers

4

3

2

8 of 11

D

C

B

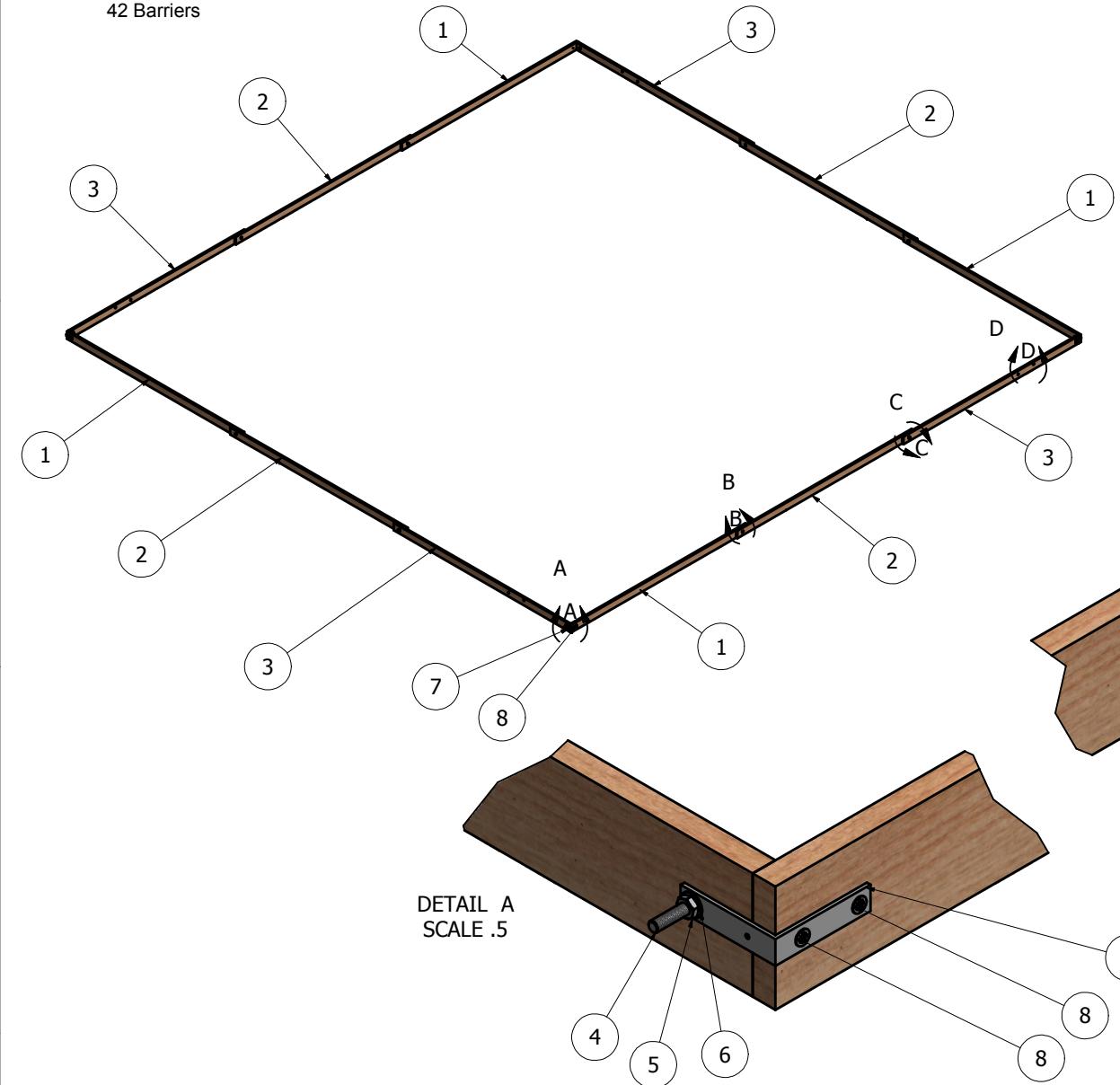
A

D

C

B

A



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
1	4	42-01	1x4 x96" long A
2	4	42-02	1x4 x96" long B
3	4	42-03	1x4 x96" long C
4	12	HW-01c	5/16"x4" Carriage Bolt (cut after installation)
5	20	HW-02	5/16" Nut
6	12	HW-03	5/16" Flat Washer
7	4	HW-24	3" x .75" Corner Brace (1 hole to 3/8")
8	8	HW-25	Corner Brace Screw, Supplied w/ brace

DRAWN

Ishturman

CHECKED

QA

MFG

APPROVED

TITLE

SIZE

SCALE

REV

0805

DWG NO

42 Perimeter

SHEET 1 OF 4

4

3

2

1

4

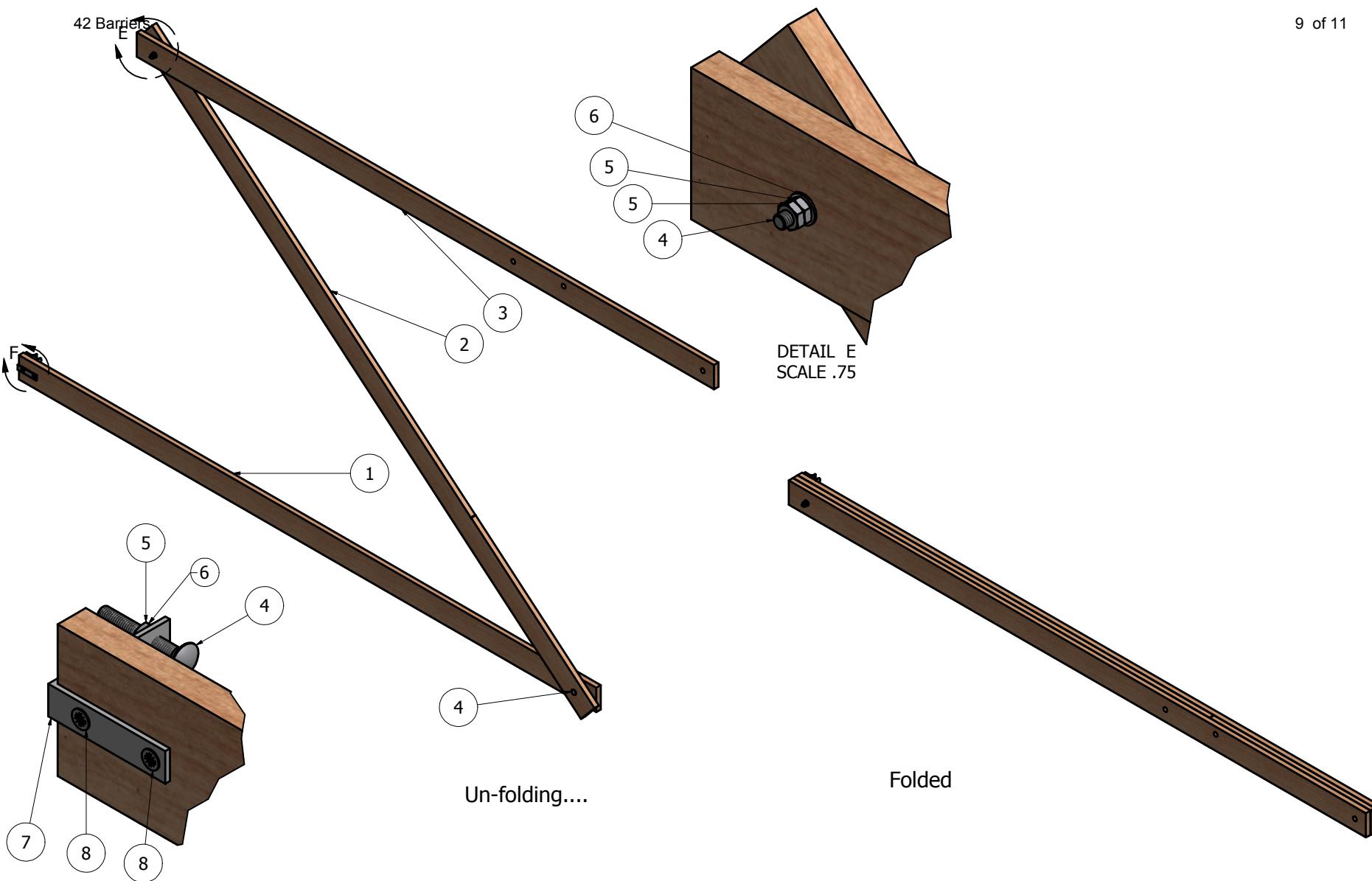
A

D

C

B

A

DETAIL F
SCALE .75

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	42-01	1x4 x96" long A
2	1	42-02	1x4 x96" long B
3	1	42-03	1x4 x96" long C
4	3	HW-01c	5/16"x4" Carriage Bolt (cut after installation)
5	5	HW-02	5/16" Nut
6	3	HW-03	5/16" Flat Washer
7	1	HW-24	3" x .75" Corner Brace (1 hole to 3/8")
8	2	HW-25	Corner Brace Screw, Supplied w/ brace

DRAWN Ishturman	CHECKED	TITLE 42 Perimeter		
QA	MFG			
APPROVED		SIZE C	DWG NO 42 Perimeter	REV 0805
		SCALE		SHEET 2 OF 4

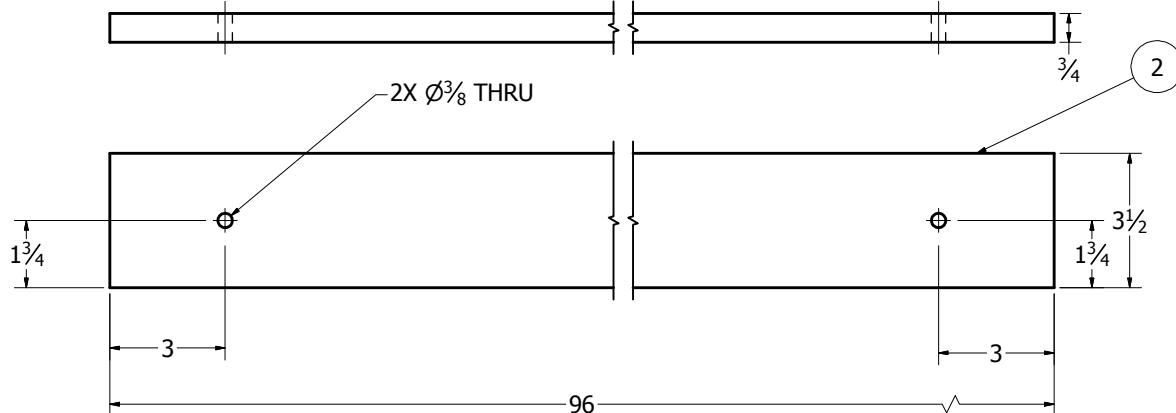
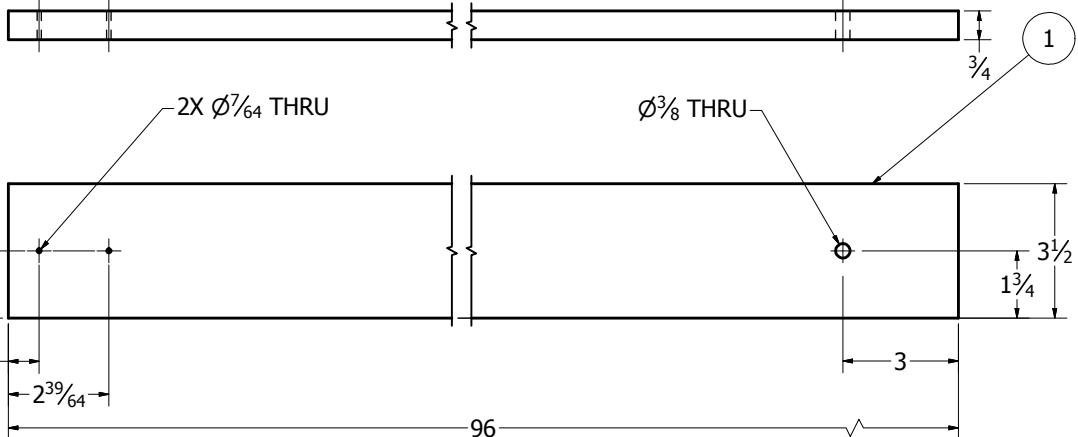
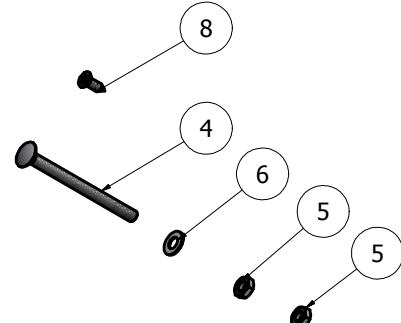
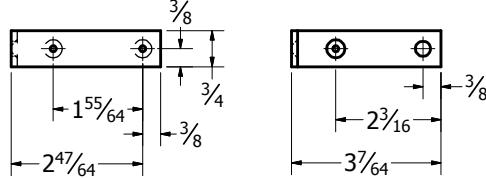
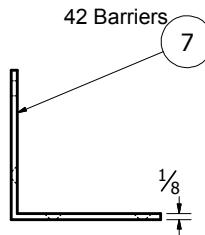
4

3

2

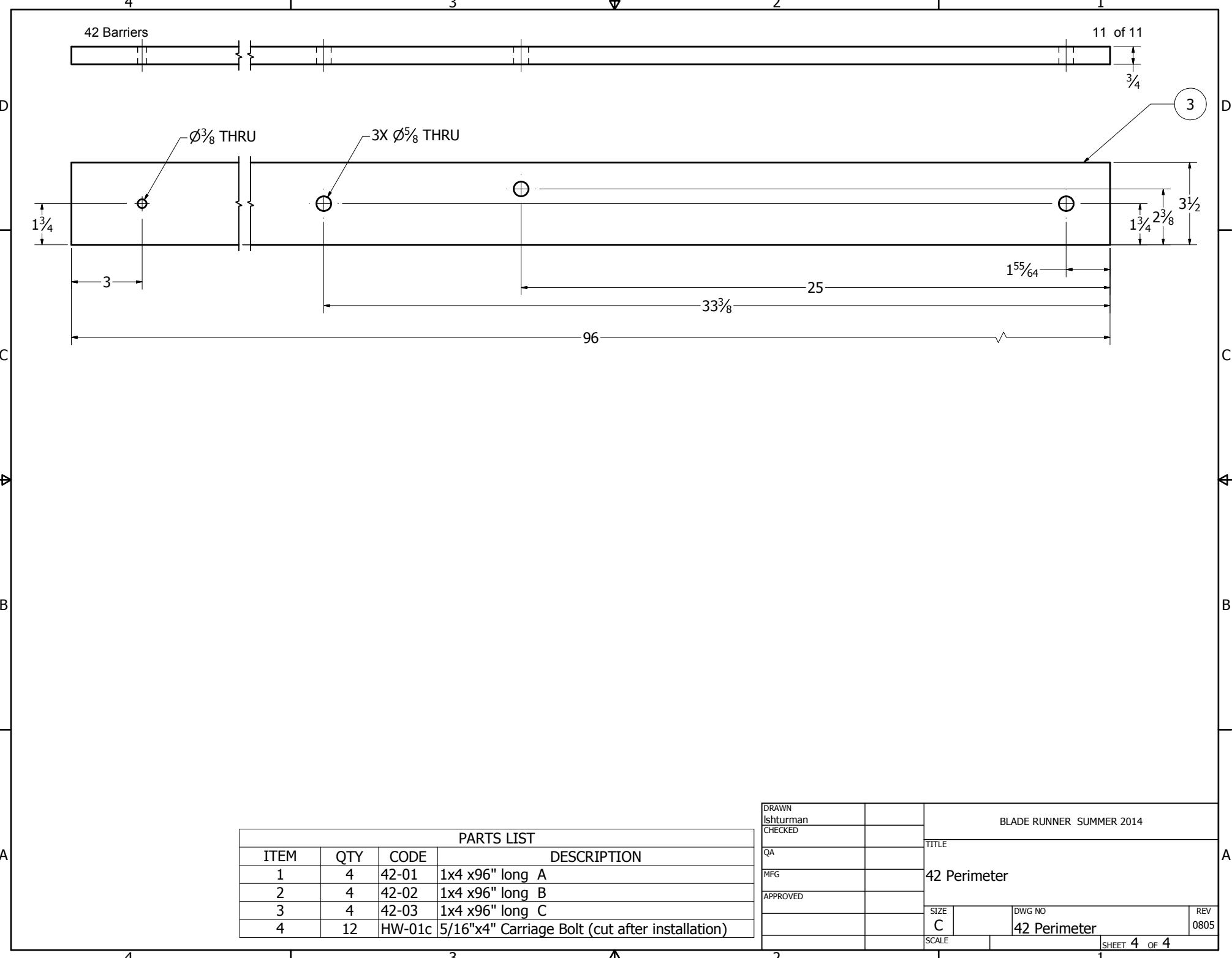
1

10 of 11



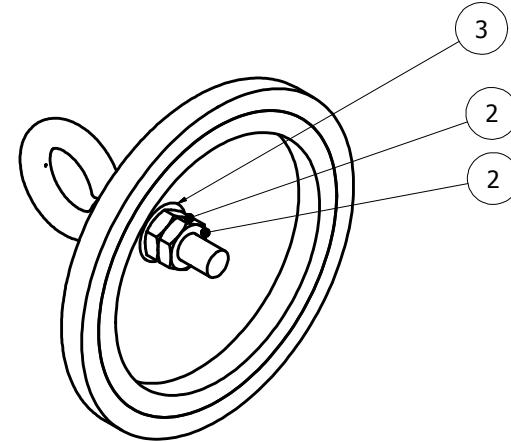
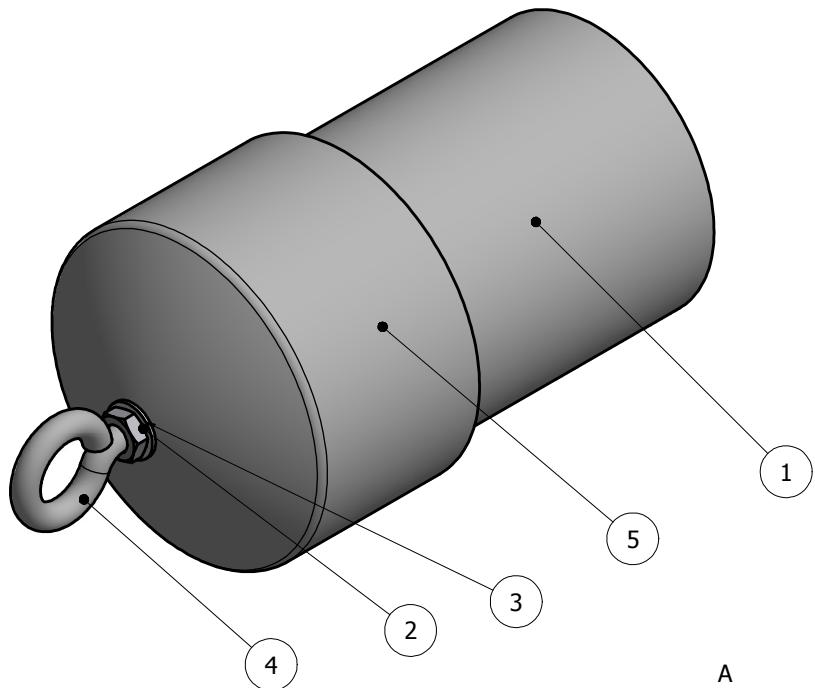
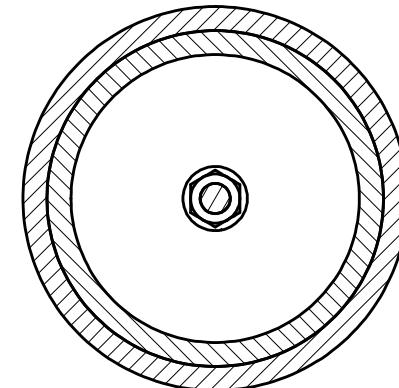
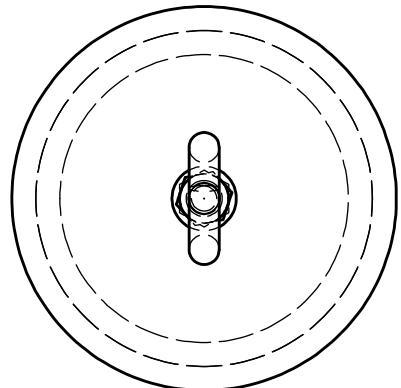
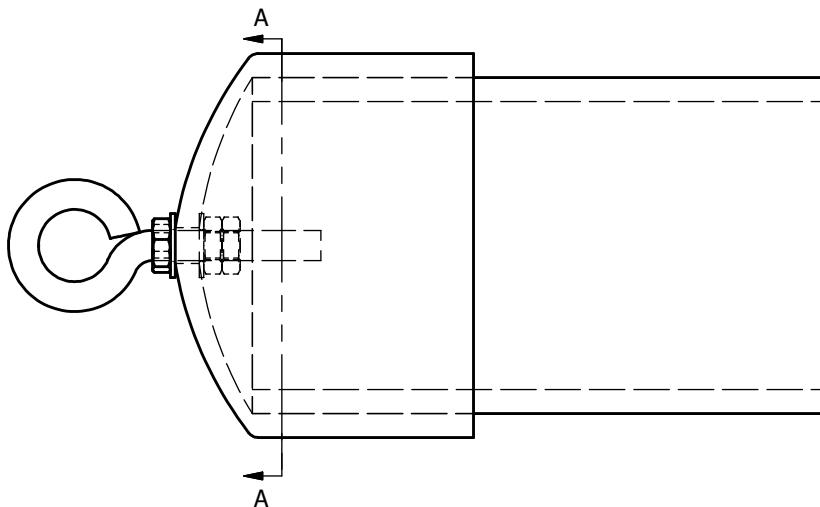
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	4	42-01	1x4 x96" long A
2	4	42-02	1x4 x96" long B
3	4	42-03	1x4 x96" long C
4	12	HW-01c	5/16"x4" Carriage Bolt (cut after installation)
5	20	HW-02	5/16" Nut
6	12	HW-03	5/16" Flat Washer
7	4	HW-24	3" x .75" Corner Brace (1 hole to 3/8")
8	8	HW-25	Corner Brace Screw, Supplied w/ brace

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	42 Perimeter		
APPROVED		SIZE C	DWG NO 42 Perimeter	REV 0805
		SCALE		SHEET 3 OF 4



44 Prairie Chicken

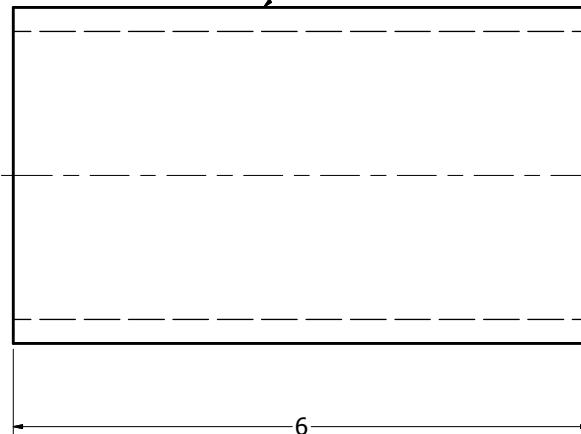
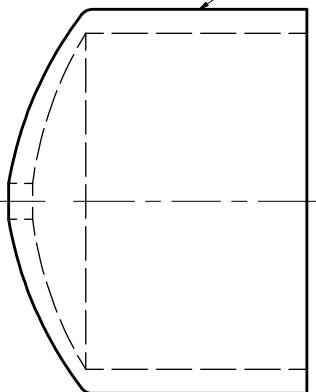
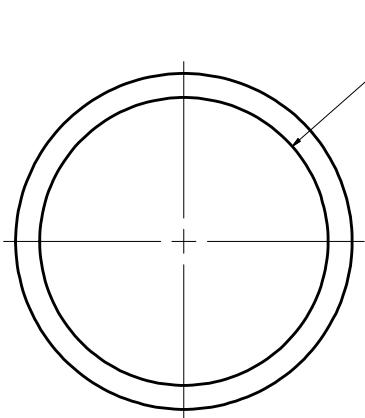
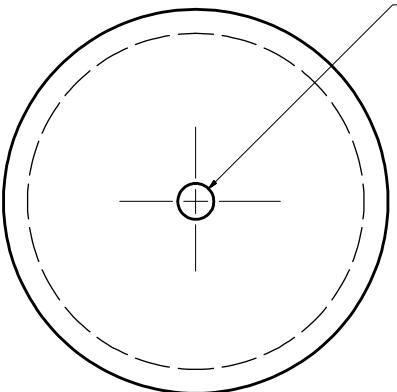
1 of 2

SECTION A-A
SCALE 1 : 1

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	44-41	3" Schedule 40 PVC x6" long
2	3	HW-02	5/16" Nut
3	2	HW-03	5/16" Flat Washer
4	1	HW-04	5/16" x 3 1/4" Eye bolt
5	1	HW-71	3" Schedule 40 PVC End Cap

DRAWN Ishturman CHECKED		TITLE	
QA		BLADE RUNNER SUMMER 2014	
MFG		44 Prairie Chicken	
APPROVED			
	SIZE C	DWG NO 44 Prairie Chicken	REV 0805
	SCALE		SHEET 1 OF 2

44 Prairie Chicken



3

1

2 of 2

4



3



2

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	44-41	3" Schedule 40 PVC x6" long
2	3	HW-02	5/16" Nut
3	2	HW-03	5/16" Flat Washer
4	1	HW-04	5/16" x 3 1/4" Eye bolt
5	1	HW-71	3" Schedule 40 PVC End Cap

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	TITLE 44 Prairie Chicken		
APPROVED		SIZE C		
		DWG NO	44 Prairie Chicken	REV 0805
		SCALE		SHEET 2 OF 2

4

3

2

1

4

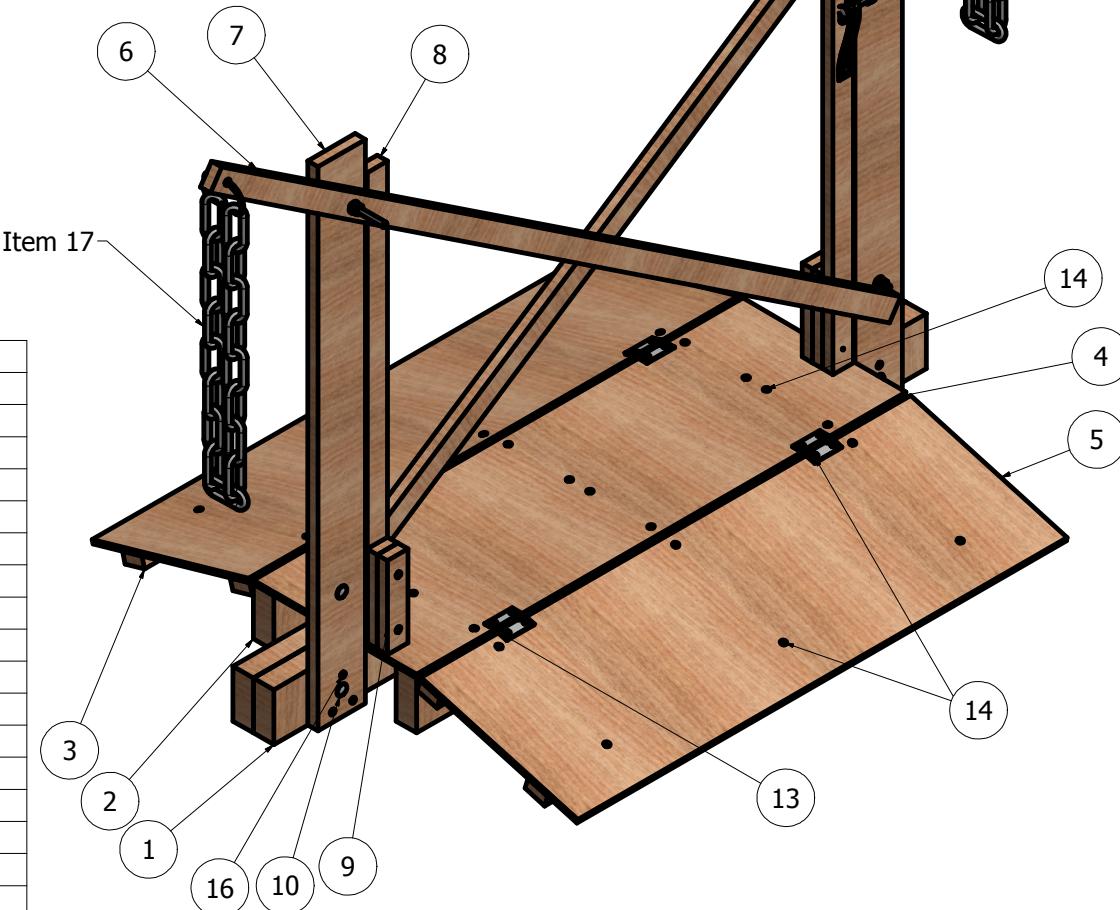
3

2

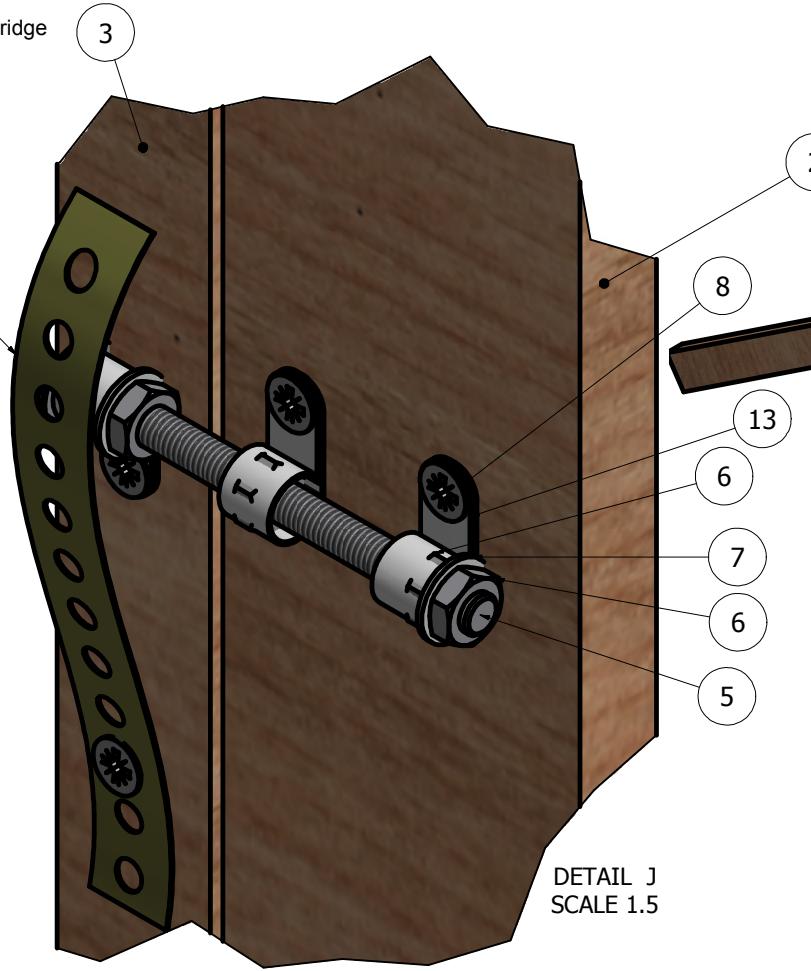
1

Some items of the parts list will be pointed to when zooming in into details.

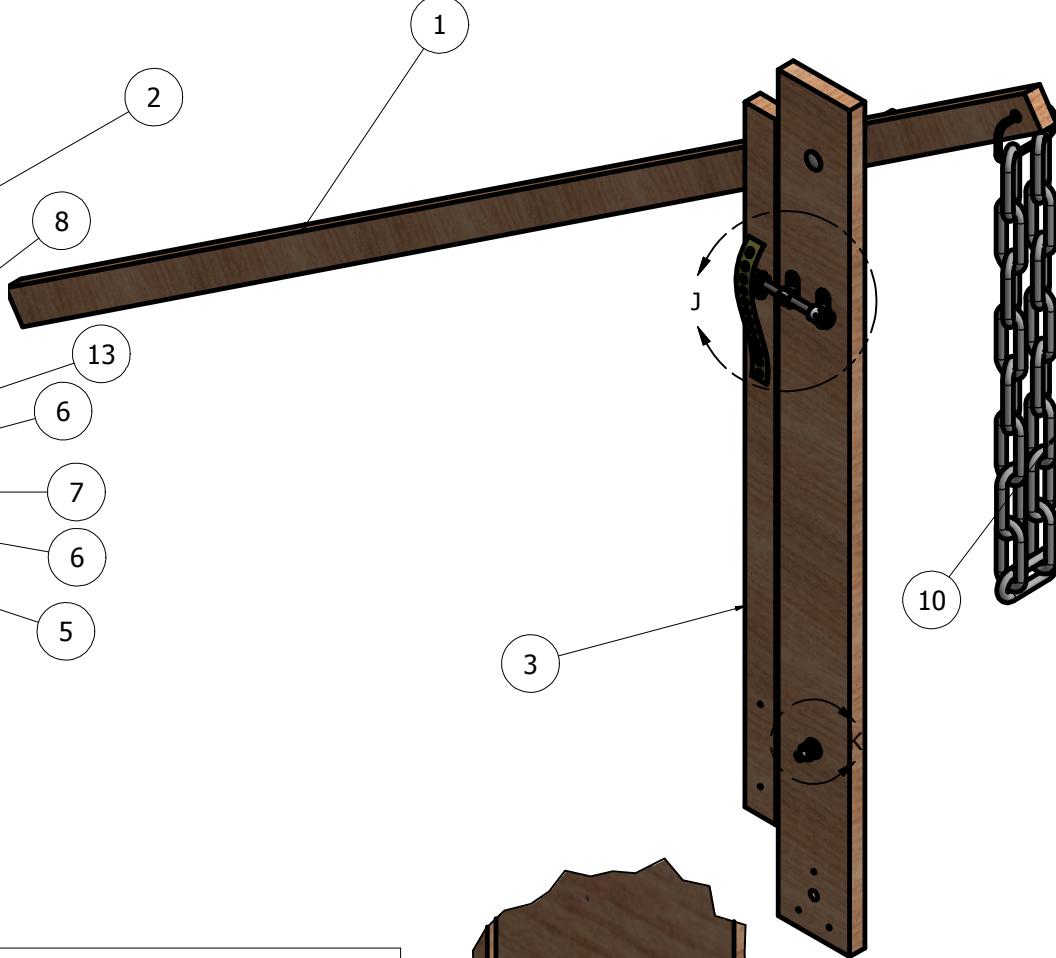
PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	2	50-01	2x4 x48"
2	2	50-02	2x4 x36"
3	4	50-03	1x2 x36"
4	1	50-04	12" x 36" x 1/4" Plywood (center)
5	2	50-05	12" x 36" x 1/4" Plywood (side)
6	2	50-06	1x2 x60"
7	2	50-07	1x4 x36"
8	2	50-08	1x2 x30"
9	4	50-09	1x2 x6"
10	8	HW-01	5/16"x4" Carriage Bolt
11	18	HW-02	5/16" Nut
12	10	HW-03	5/16" Flat Washer
13	4	HW-07	2" Hinge
14	48	HW-10	1 1/4" Drywall screw
15	4	HW-12	2" Deck Screw
16	8	HW-13	2 1/2" Drywall Screw
17	4	HW-17	3/8" Welded Chain (8 links)
18	2	HW-19	Plastic Strap
19	2	HW-20	5/16"x1.5" Carriage Bolt
20	6	HW-22	1/2" Wire Clamp
21	2	HW-54	Galvanized Pipe Hanger (Cut to fit)



DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014	
QA	MFG	50 Bridge	
APPROVED		SIZE C	DWG NO 50 Bridge
		REV 0805	
SCALE		SHEET 1 OF 7	



DETAIL J
SCALE 1.5



DETAIL K
SCALE 1

PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	50-06	1x2 x60"
2	1	50-07	1x4 x36"
3	1	50-08	1x2 x30"
4	2	50-09	1x2 x6"
5	2	HW-01	5/16"x4" Carriage Bolt
6	8	HW-02	5/16" Nut
7	4	HW-03	5/16" Flat Washer
8	4	HW-08	Screw for 3" hinge. Supplied w/ hinge
9	2	HW-12	2" Drywall Screw
10	2	HW-17	3/8" Welded Chain (8 links)
11	1	HW-19	Plastic Wire Strap
12	1	HW-01c	5/16"x4" Carriage Bolt (cut after installation)
13	3	HW-22	1/2" Wire Clamp
14	1	HW-54	Galvanized Pipe Hanger (Cut to fit)

DRAWN
Ishturman

CHECKED

QA

MEG

MFG

APPROVED

1

1

2

BLADE RUNNER SUMMER 2014

1

1

1

1

DWG NO
50 Bridge

— 1 —

REV
0805

OF 7

SHEET 2 OF 7

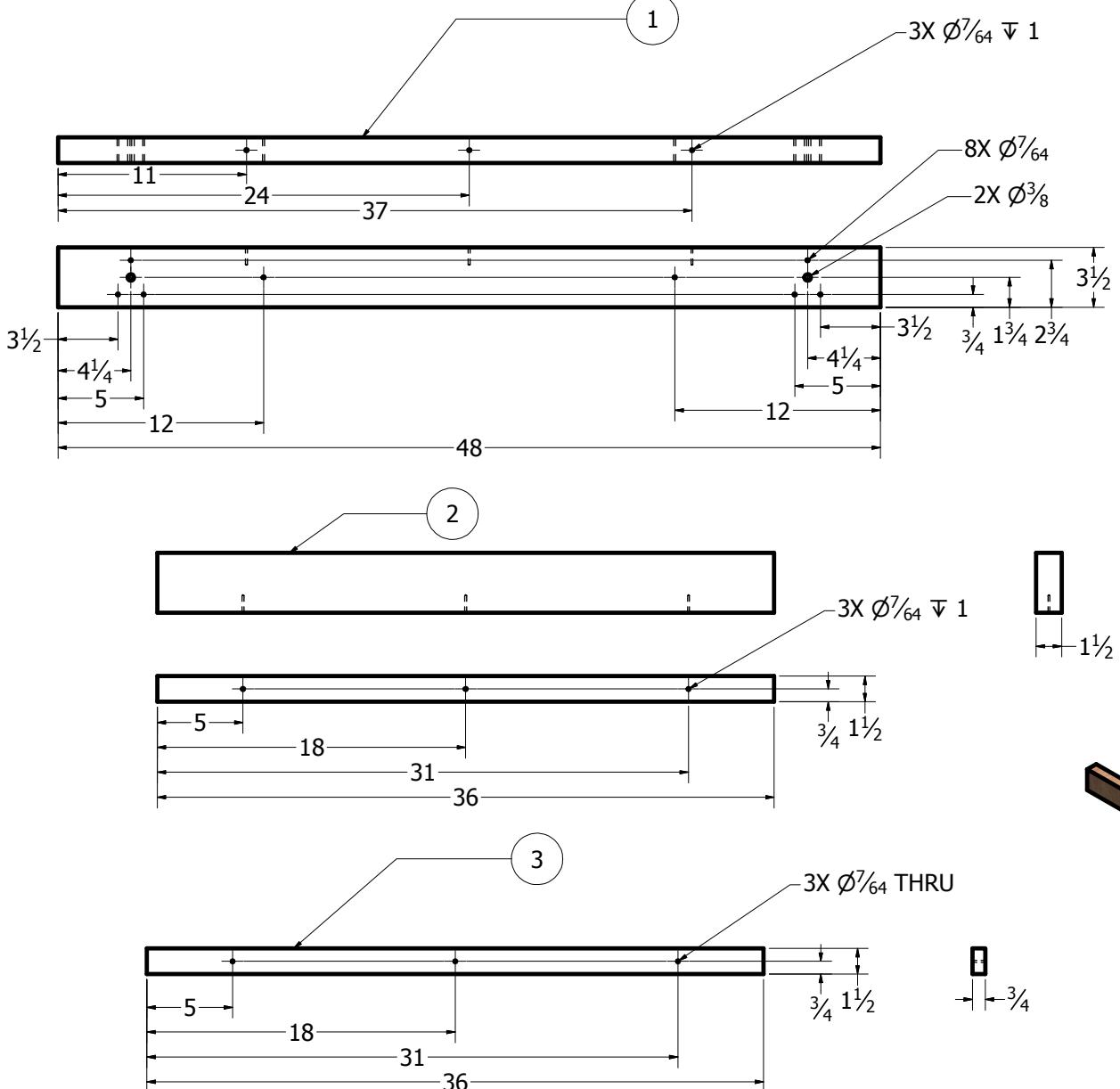
4

3

2

1

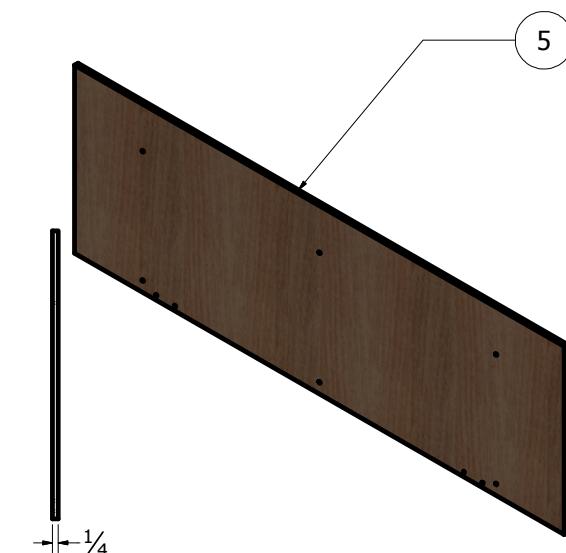
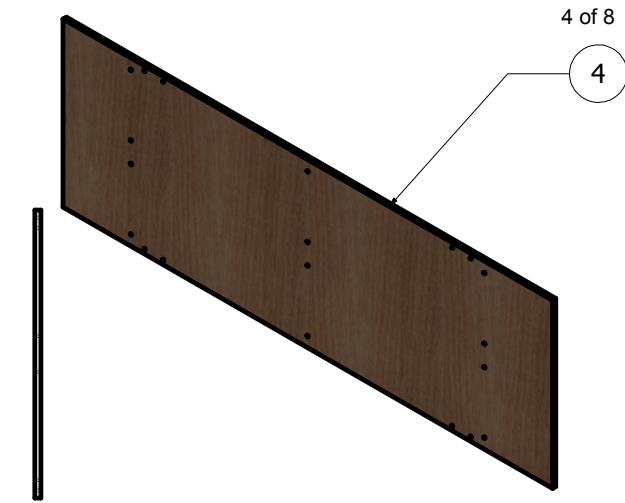
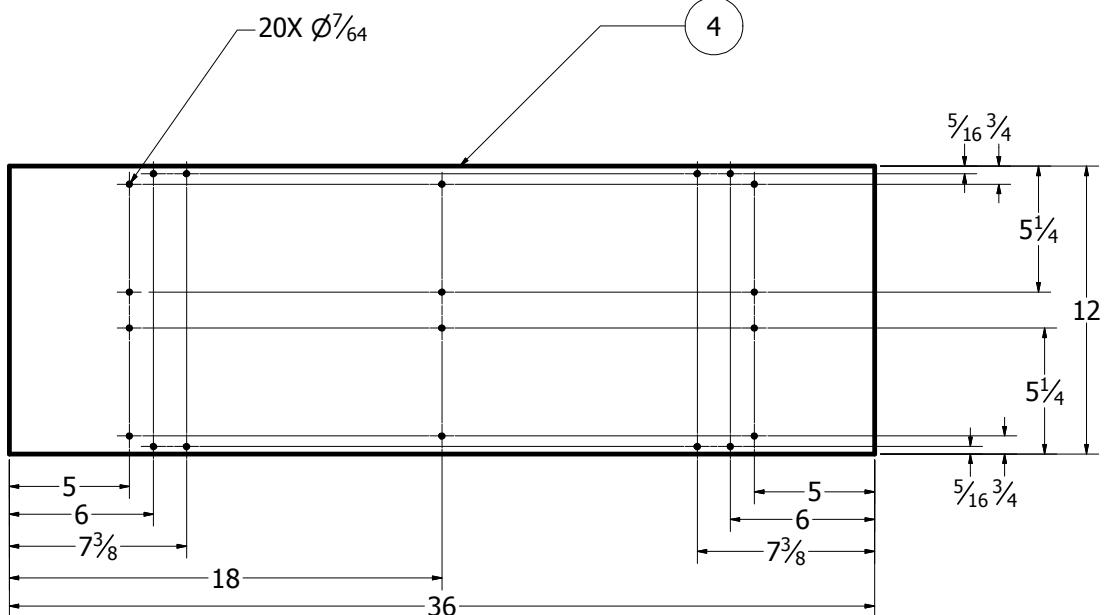
50 Bridge



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	2	50-01	2x4 x48"
2	2	50-02	2x4 x36"
3	4	50-03	1x2 x36"

DRAWN Ishturman		BLADE RUNNER SUMMER 2014		
CHECKED				
QA		TITLE 50 Bridge		
MFG				
APPROVED		SIZE	DWG NO	REV
	C	50 Bridge		0805
	SCALE			SHEET 3 OF 7

50 Bridge



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
4	1	50-04	12" x 36" x 1/4" Plywood (center)
5	2	50-05	12" x 36" x 1/4" Plywood (side)

DRAWN Ishturman	CHECKED	TITLE BLADE RUNNER SUMMER 2014		
QA	MFG	50 Bridge		
APPROVED				
SIZE C		DWG NO 50 Bridge	REV 0805	
SCALE		SHEET 4 OF 7		

50 Bridge

2X $\emptyset \frac{3}{8}$

1

12

60

6

 $\frac{3}{4}$
 $1\frac{3}{4}$
 $2\frac{3}{4}$

8

27 $\frac{1}{2}$

33

36

7

1
 $1\frac{1}{4}$
 $1\frac{3}{4}$
 $2\frac{1}{2}$
 $2\frac{3}{4}$ $1\frac{1}{2}$
 $\frac{3}{4}$

5 of 8

6

4X $\emptyset \frac{7}{64}$ 1 $\frac{1}{4}$ $4\frac{3}{4}$ 19 $\frac{53}{64}$ 22 $\frac{21}{64}$

30

 $\frac{3}{4}$
 $1\frac{1}{2}$ $\frac{3}{4}$

8

 $1\frac{1}{4}$
 $4\frac{3}{4}$
62X $\emptyset \frac{7}{64}$
 $\frac{3}{4}$
 $1\frac{1}{2}$

PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
6	2	50-06	1x2 x60"
7	2	50-07	1x4 x36"
8	2	50-08	1x2 x30"
9	4	50-09	1x2 x 6"

DRAWN
Ishturman
CHECKEDQA
MFG

APPROVED

BLADE RUNNER SUMMER 2014

TITLE

50 Bridge

SIZE C DWG NO 50 Bridge REV 0805

SCALE SHEET 5 OF 7

4

3

4

2

1

D

D

C

C

B

B

A

A

4

3

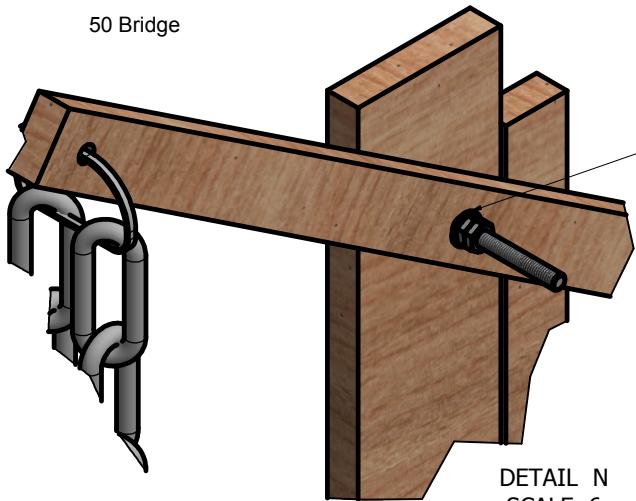
2

1

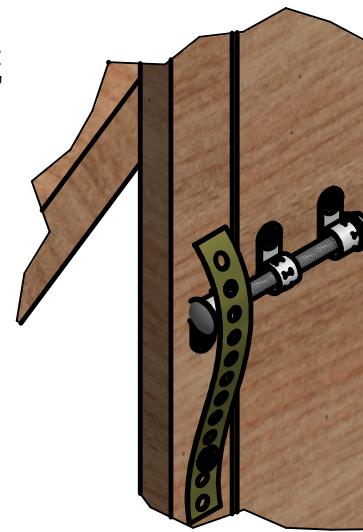
50 Bridge

6 of 8

D



Carriage bolt should NOT be tightened against the boards. Leave a gap of approximately 1/8" to allow 1x2 board to move freely.



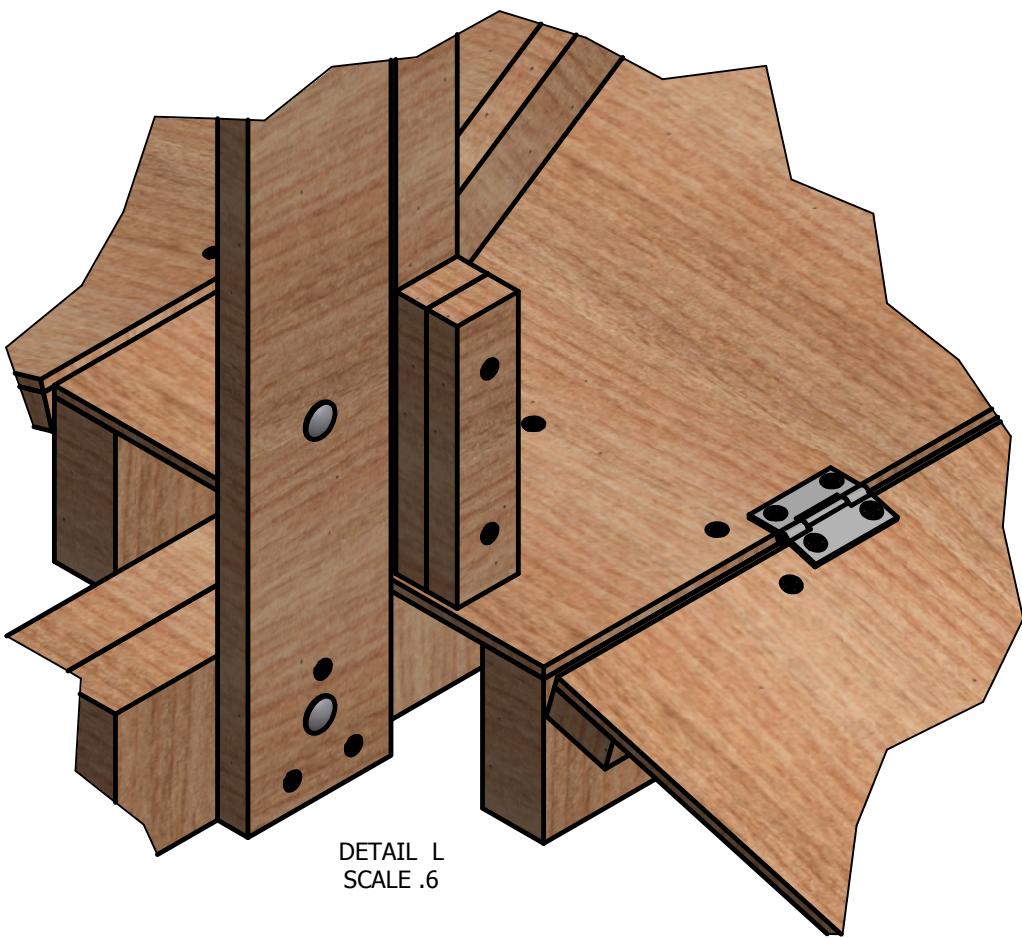
DETAIL P
SCALE .6

C

→

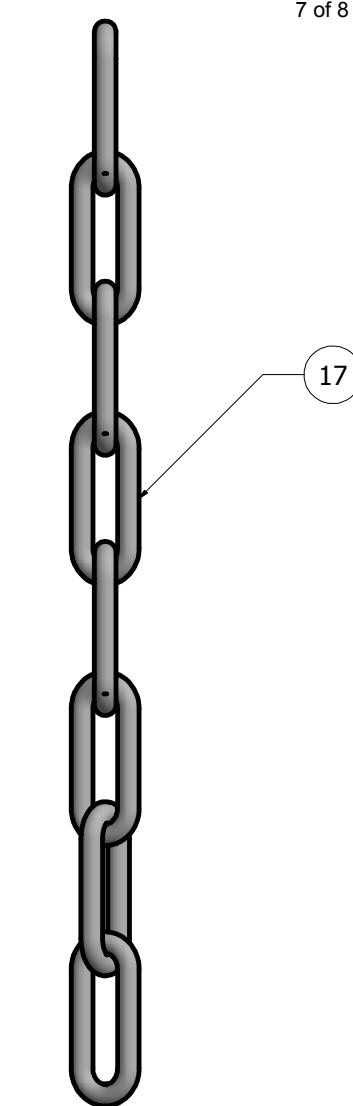
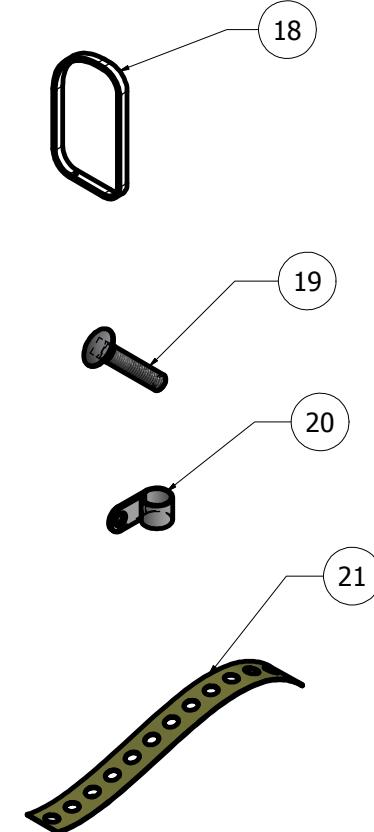
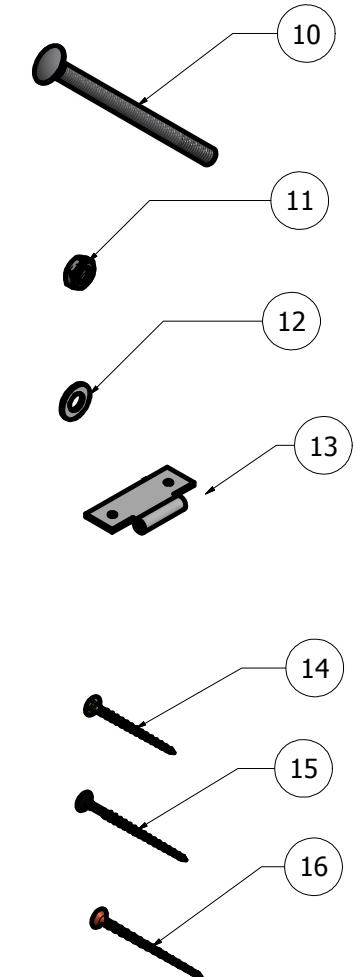
B

A



DETAIL L
SCALE .6

DRAWN		TITLE	
Ishturnman		BLADE RUNNER SUMMER 2014	
CHECKED		50 Bridge	
QA			
MFG		SIZE	DWG NO
APPROVED		C	50 Bridge
		REV	0805
		SCALE	
		SHEET	6 OF 7



PARTS LIST

ITEM	QTY	CODE	DESCRIPTION
10	8	HW-01	5/16"x4" Carriage Bolt
11	18	HW-02	5/16" Nut
12	10	HW-03	5/16" Flat Washer
13	4	HW-07	2" Hinge
14	48	HW-10	1 1/4" Drywall screw
15	4	HW-12	2" Deck Screw
16	8	HW-13	2 1/2" Drywall Screw
17	4	HW-17	3/8" Welded Chain (8 links)
18	2	HW-19	Plastic Strap
19	2	HW-20	5/16"x1.5" Carriage Bolt
20	6	HW-22	1/2" Wire Clamp
21	2	HW-54	Galvanized Pipe Hanger (Cut to fit)

DRAWN
Ishturman

CHECKED

QA

MFG

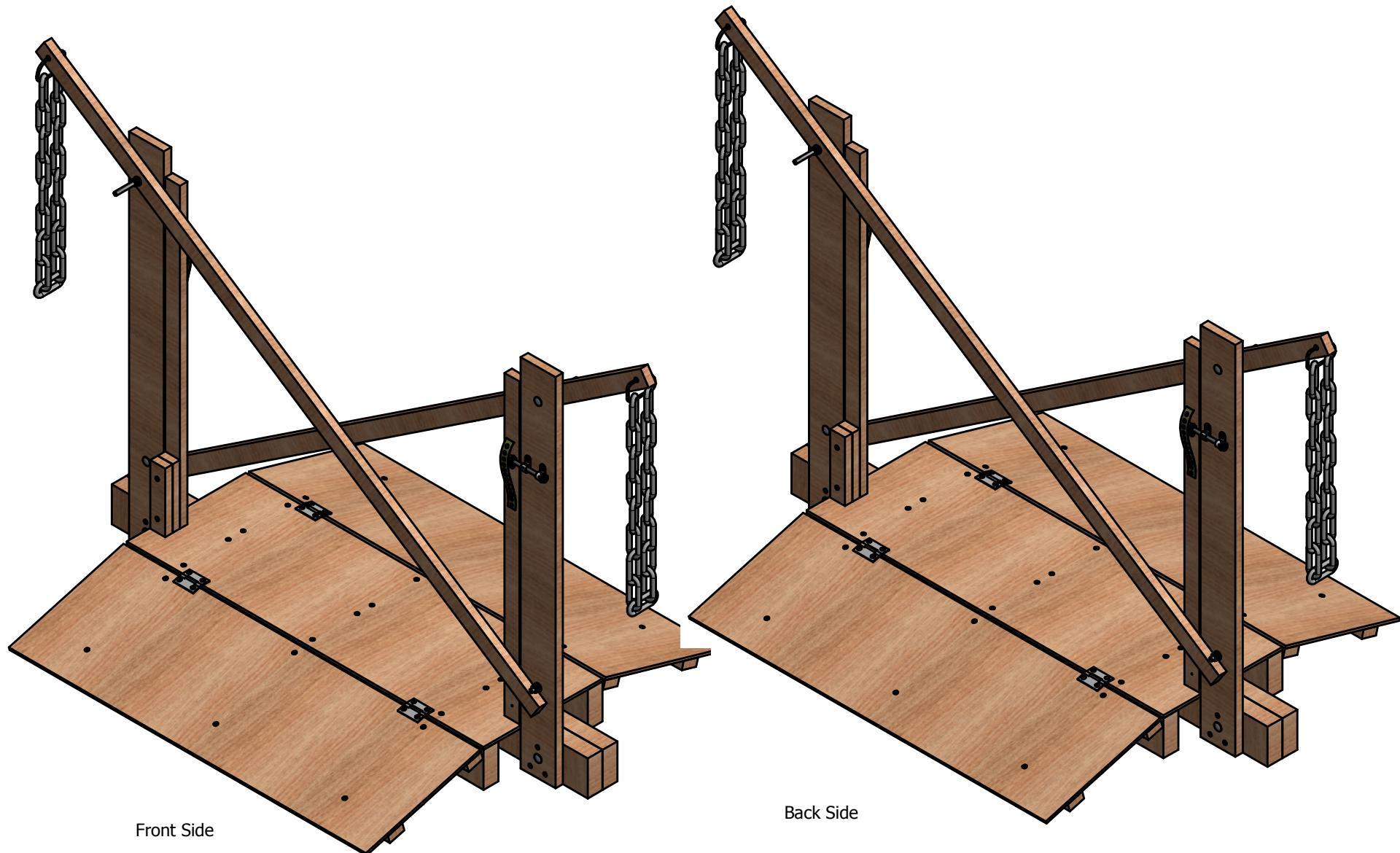
APPROVED

TITLE
BLADE RUNNER SUMMER 2014

50 Bridge

SIZE C DWG NO 50 Bridge REV 0805

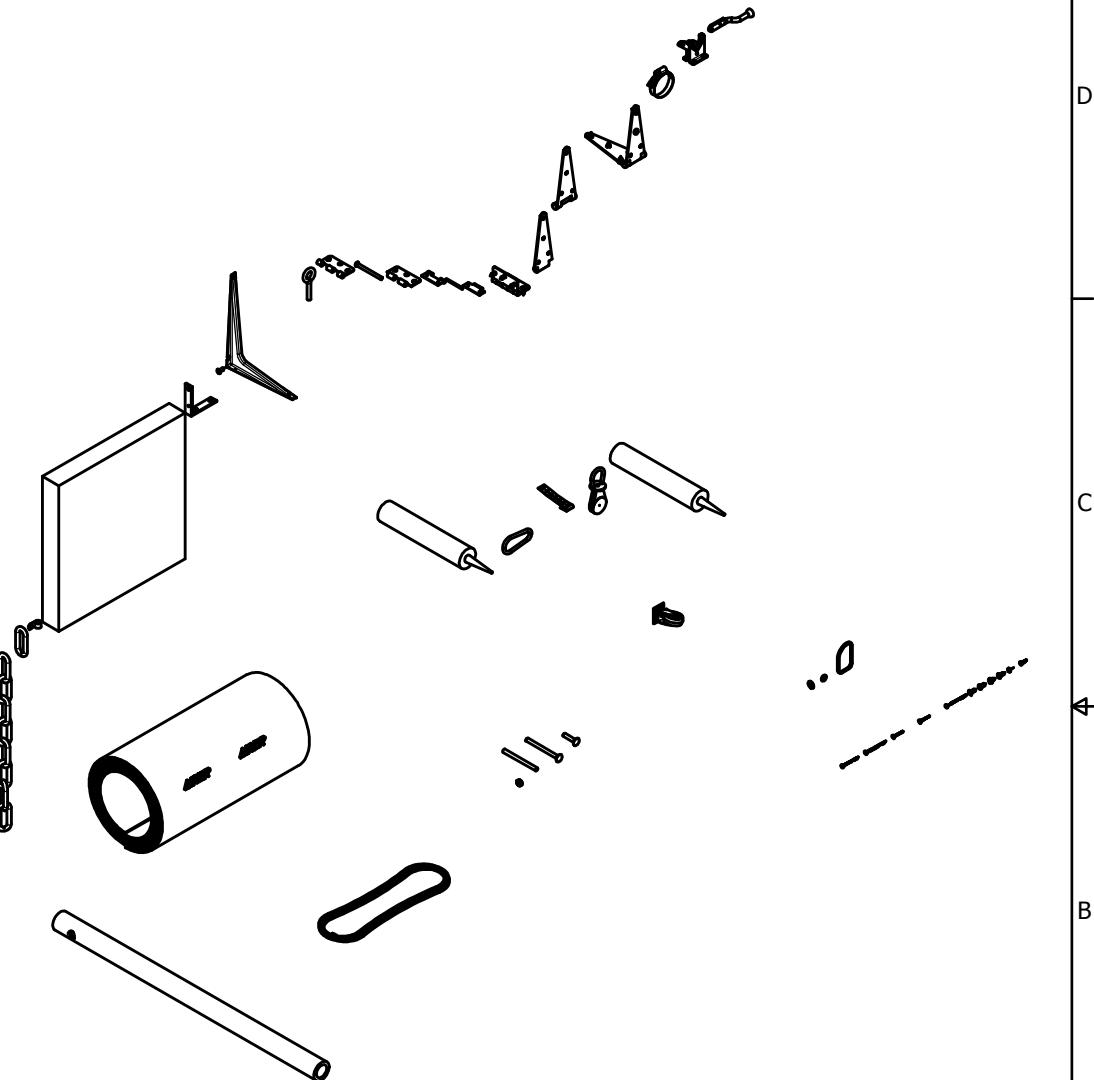
SCALE SHEET 7 OF 7



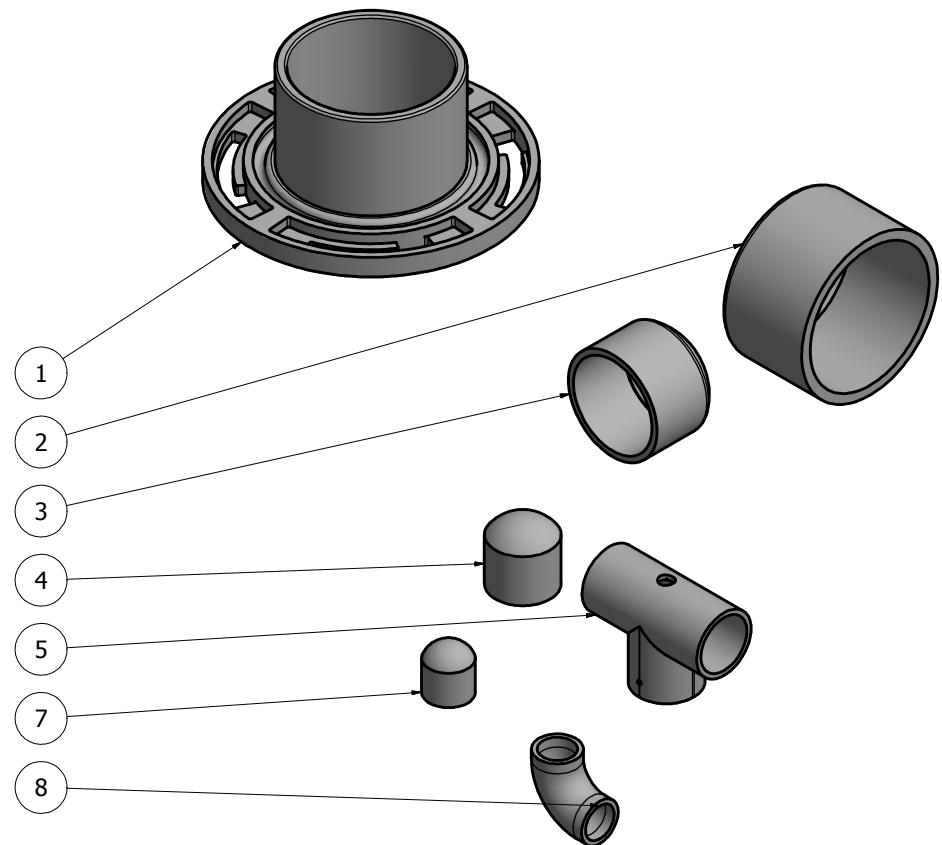
Note:
Front and Back are identical :)

DRAWN Ishturman	6/27/2014	TITLE		
CHECKED		50 Bridge (complete)		
QA				
MFG				
APPROVED		SIZE C	DWG NO 50 Bridge	REV 0805
		SCALE		SHEET 1 OF 1

z all HW parts				PARTS LIST
ITEM	QTY	CODE	DESCRIPTION	
1	1	HW-01	5/16"x4" Carriage Bolt	
2	1	HW-02	5/16" Nut	
3	1	HW-03	5/16" Flat Washer	
4	1	HW-04	5/16" x 3 1/4" Eye bolt	
5	1	HW-05	3"x1 1/2" Hinge (Assembly)	
6	1	HW-06	Screw for 3" hinge. Supplied w/ hinge	
7	1	HW-07	2" Hinge	
8	1	HW-08	Screw for 3" hinge. Supplied w/ hinge	
9	1	HW-09	2 1/2" Hose Clamp	
10	1	HW-10	1 1/4" Drywall screw	
11	1	HW-11	1 5/8" Drywall screw	
12	1	HW-12	2" Drywall Screw	
13	1	HW-13	2 1/2" Drywall Screw	
14	1	HW-14	6" Heavy Strap Hinge	
15	1	HW-15	Gate Latch	
16	1	HW-16	Screw for latch. (Supplied with latch)	
17	1	HW-17	3/8" Welded Chain (8 links)	
18	1	HW-18	Screw for 6" Hinge; Round head	
19	1	HW-19	Plastic Wire Strap	
20	1	HW-01c	5/16"x4" Carriage Bolt (cut after installation)	
21	1	HW-21	16x16 Gray Stone	
22	1	HW-22	1/2" Wire Clamp	
23	1	HW-23	3/8" Flat head screw	
24	1	HW-24	3" x .75" Corner Brace (1 hole to 3/8")	
25	1	HW-25	Corner Brace Screw, Supplied w/ brace	
26	1	HW-26	Spring Snap (Lowes348540)	
27	1	HW-27	Swivel Pulley (for rope)	
28	1	HW-28	#12 SAE Flat washer (1/4"id)	
29	1	HW-29	Screw for 10" Bracket 3"	
30	1	HW-30	10"x1 3/4" Shelf Bracket	
31	1	HW-31	1 5/8" Caster Wheel	
32	1	HW-51	Wood Glue (as needed)	
33	1	HW-52	Silicon (to cover exposed screw tips, as needed)	
34	1	HW-53	Foam Pipe Insulator (Cut to fit)	
35	1	HW-54	Galvanized Pipe Hanger (Cut to fit)	
36	1	HW-55	Roll of Linerl (Cut to fit)	
37	1	HW-56	5/16" All Thread x4"	
38	1	HW-57	3/16" Braided Poly. Rope (Cut to fit)	



DRAWN Ishturman	CHECKED	BLADE RUNNER SUMMER 2014		
QA	MFG	TITLE		
List of HardWare parts with CODE numbers [HW-xx]				
APPROVED	SIZE C	DWG NO z all HW parts	REV 0805	
SCALE	SHEET 1 OF 1			



PARTS LIST			
ITEM	QTY	CODE	DESCRIPTION
1	1	HW-70	3"-4" Schedule 40 PVC Flange
2	1	HW-71	3" Schedule 40 PVC End Cap
3	1	HW-72	2" Schedule 40 PVC End Cap
4	1	HW-73	1" Schedule 40 PVC End Cap
5	1	HW-74	1" Schedule 40 PVC Tee
6	1	HW-75	(Not used)
7	1	HW-76	1/2" Schedule 40 PVC End Cap
8	1	HW-77	1/2" Schedule 40 PVC Elbow

DRAWN Ishturman	CHECKED	TITLE List of PVC fittings with CODE numbers [HW-xx]	
QA	MFG	BLADE RUNNER	SUMMER 2014
APPROVED		SIZE C	DWG NO z all PVC fittings
		SCALE	REV 0805
		SHEET 1 OF 1	