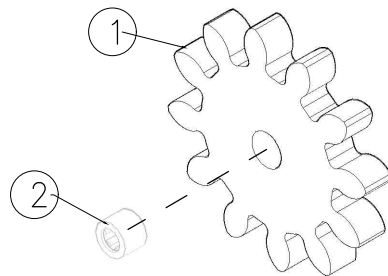
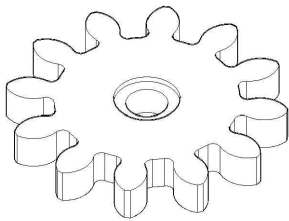


Hardware

Description

Description	McMaster Carr P/N	
Brass Bar 5/8 x 5/8 x 12	8951K73	1x
Brass R 1/8 x 6 x 6	8948K14	1x
B Tube 9/32" (Brass 0.253 ID)	8859K25	26"
S Tube 1/4" (Stainless Steel 0.120 ID)	89495K395	30"
S Tube 1/2" (Stainless Steel 0.26 ID)	89495K9	
A Tube 1/4" (Aluminum 0.120 ID)	4568T11	34"
Rod 1/16" (Stainless Steel)	8908K64	26"
Rod 1/8" (Stainless Steel)	8984K2	18"
Bearing 1/4ID x 7/16OD X 5/16 LG	5905K21	13x
Bearing 1/2ID x 11/16OD x 3/8 LG	5905K334	2x
LSHCS, 8-32x 1/4" (Low Socket Head Cap Screw)	93615A317	23x
LSHCS, 8-32x 1/2" (Low Socket Head Cap Screw)	93615A320	15x
LSHCS, 8-32x 3/4" (Low Socket Head Cap Screw)	93615A323	3x
Flat Head 8-32 x 1/4		1x
Washer, #8	90107A010	3x
Screw #2 x 1/2" (Pan Head)	92470A098	14x
Screw #2 x 3/4" (Pan Head)	92470A103	24x
Set Screw 8-32 x 1/4"	92311A190	8x
Set Screw 8-32 x 1/2"	92311A190	5x
Escapement Hub Shaft (S Standoff 1/20D x 1 1/2)	92320A671	1x
Nut 8-32		2x
Nut 1/4		1x
Threaded Rod 1/4 x 10 1/4		1x
18-8 SS cable 7x19, 1/16 OD, 3/32 OD with coating	8930T34	18 feet

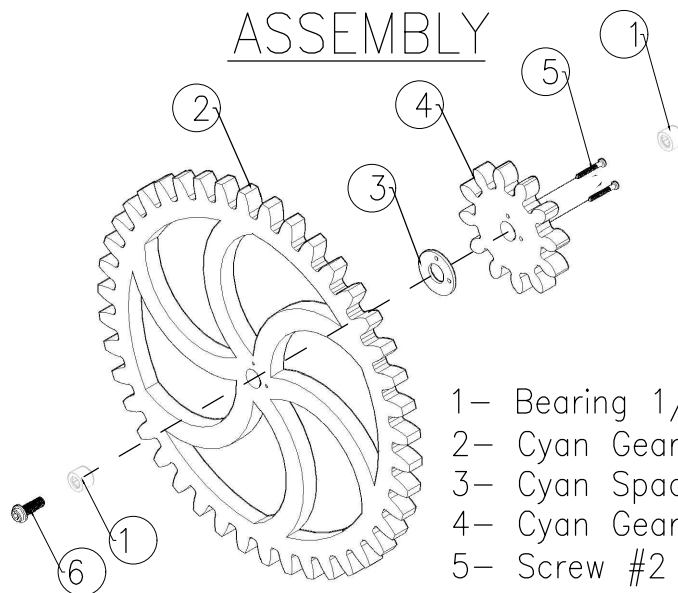
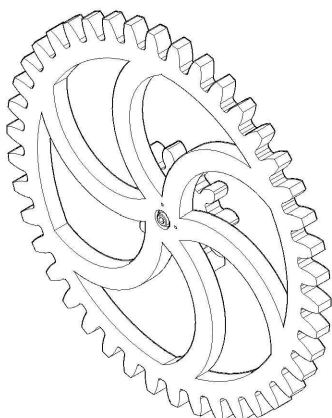
Parts are from www.mcmaster.com



- 1- White Gear 12T 1x
- 2- Bearing 1/4 ID 1x

White Gear 12T

ASSEMBLY



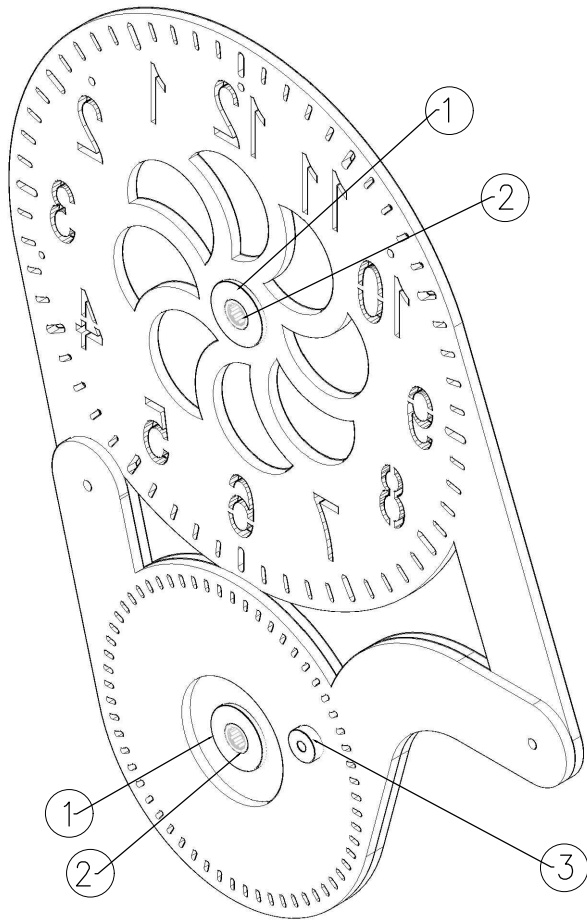
- 1- Bearing 1/4 ID 2x
- 2- Cyan Gear 42T 1x
- 3- Cyan Spacer 1x
- 4- Cyan Gear 12T 1x
- 5- Screw #2 x 3/4 2x
- 6- LSHCS, 8-32x 1/2 1x

Cyan Gear 42T + 12T

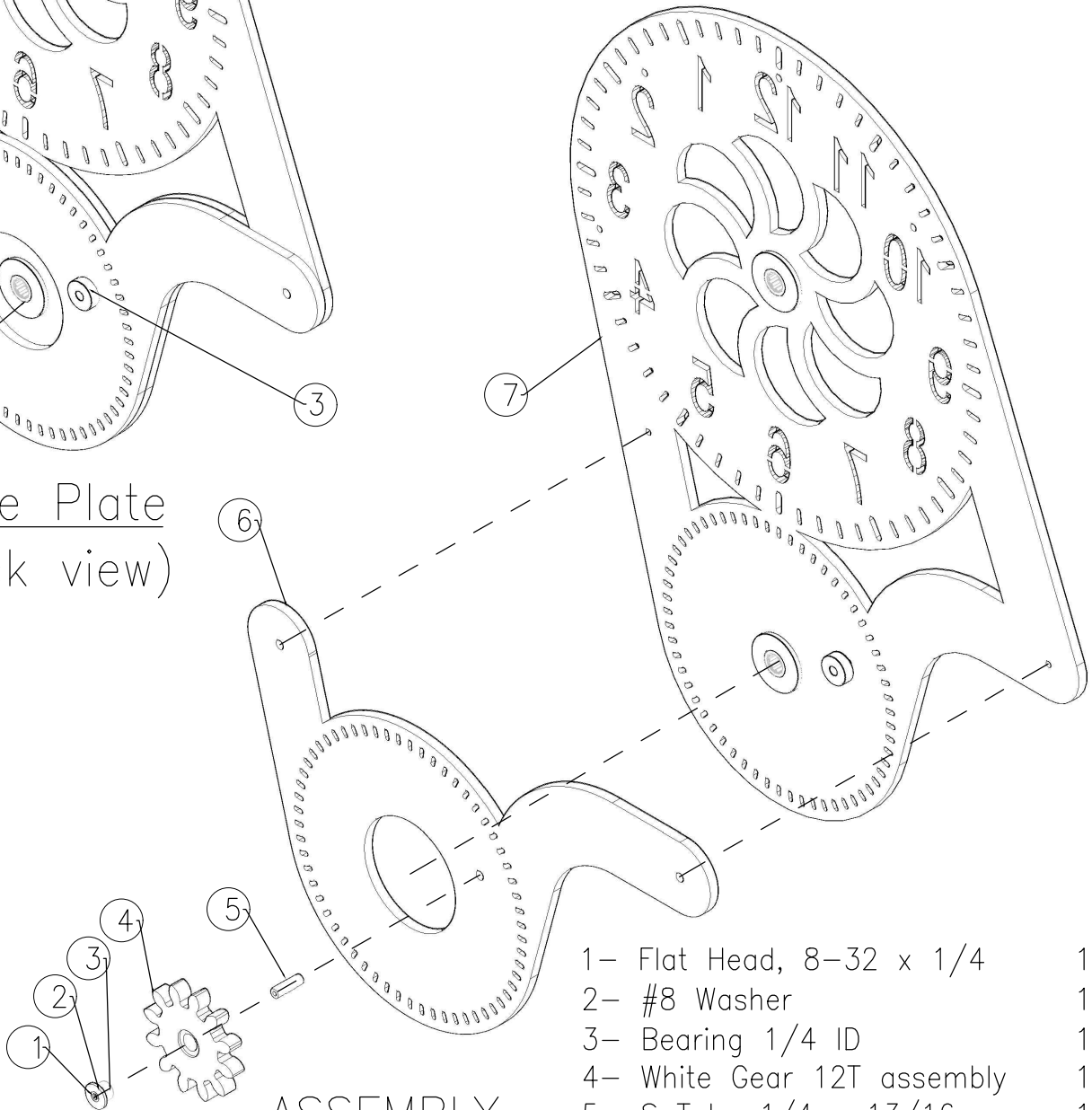
ASSEMBLY

- 1- Face plate washer large 2x
- 2- Bearing 1/2 ID 2x
- 3- Face plate washer small 1x

Glue Face plate Washers to Face plate.



Face Plate
(Back view)

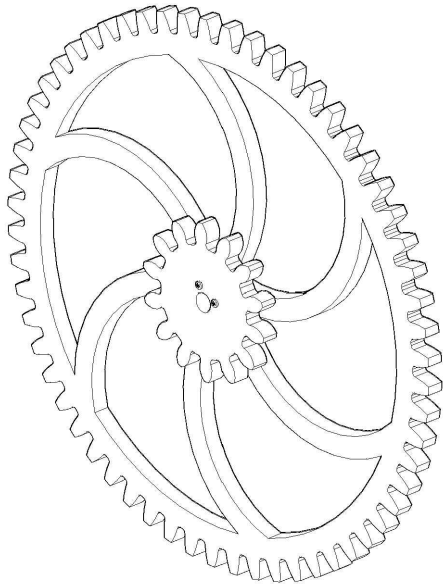


ASSEMBLY

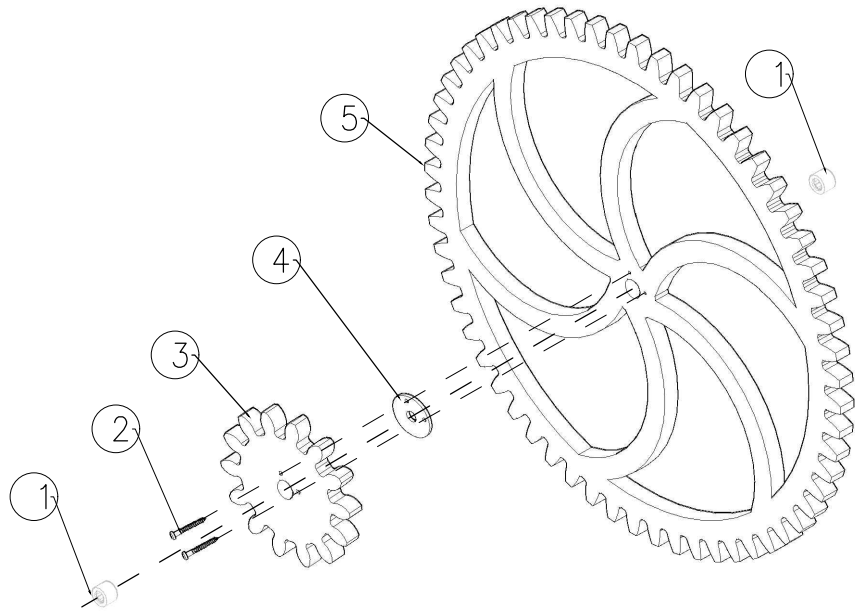
- 1- Flat Head, 8-32 x 1/4 1x
- 2- #8 Washer 1x
- 3- Bearing 1/4 ID 1x
- 4- White Gear 12T assembly 1x
- 5- S Tube 1/4 x 13/16 1x
- 6- Face plate back 1x
- 7- Face plate. 1x

Drill both ends of S Tube 9/64 and tap for #8-32 x 3/8

Glue White Spacer to Face plate back.
Glue Face plate back to Face plate

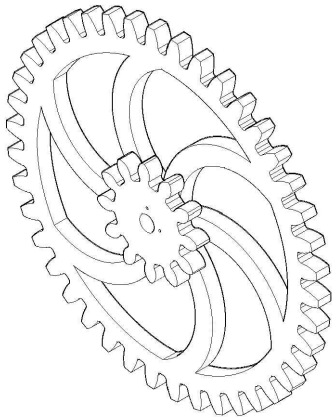


Blue Gear 60T + 14T

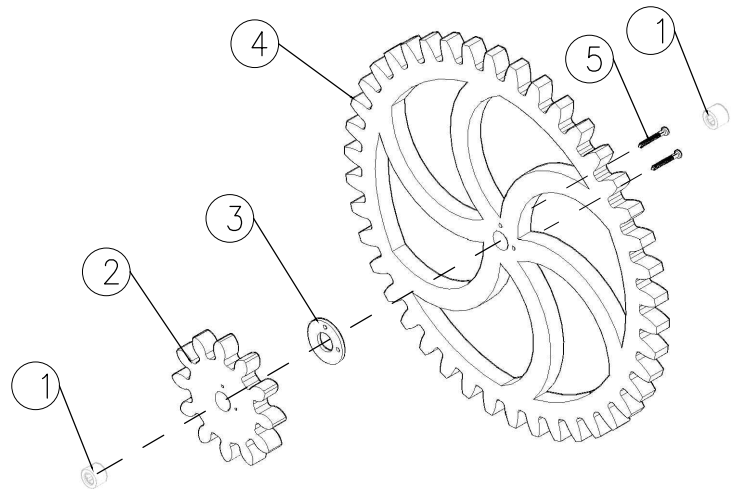


ASSEMBLY

- | | |
|-------------------|----|
| 1- Bearing 1/4 ID | 2x |
| 2- Screw #2 x 3/4 | 2x |
| 3- Blue Gear 14T | 1x |
| 4- Blue Spacer | 1x |
| 5- Blue Gear 60T | 1x |

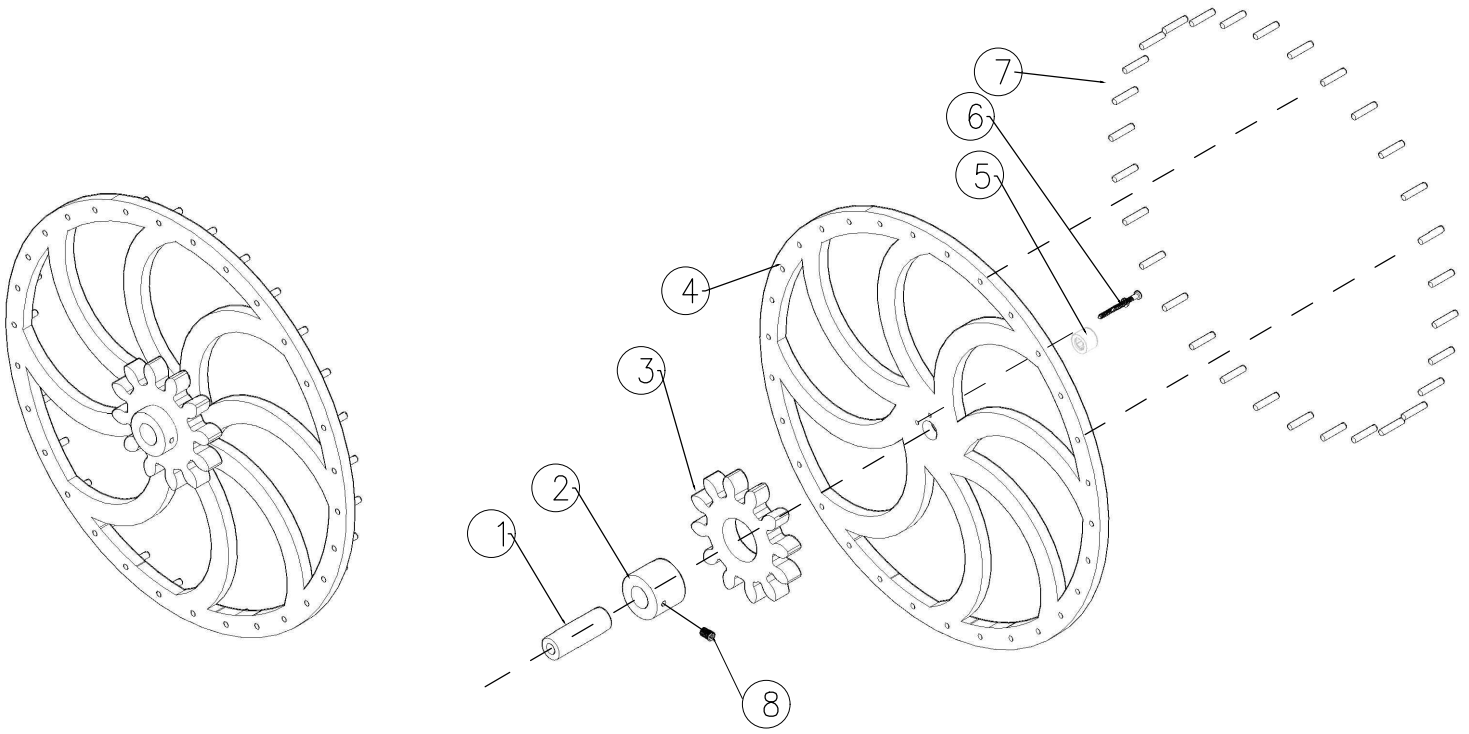


Magenta Gear 42T + 12T



ASSEMBLY

- | | |
|-----------------------|----|
| 1- Bearing 1/4 ID | 2x |
| 2- Magenta Gear 12T | 1x |
| 3- Magenta Mid Spacer | 1x |
| 4- Magenta Gear 42T | 1 |
| 5- Screw #2 x 3/4 | 2x |

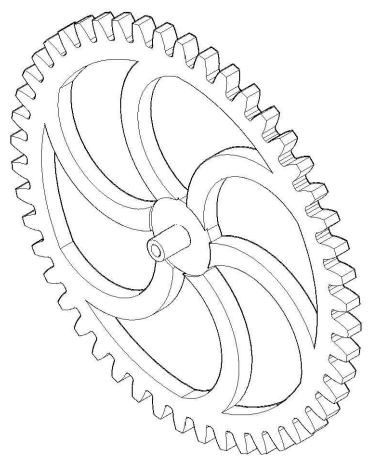


Escapement Wheel + 12T

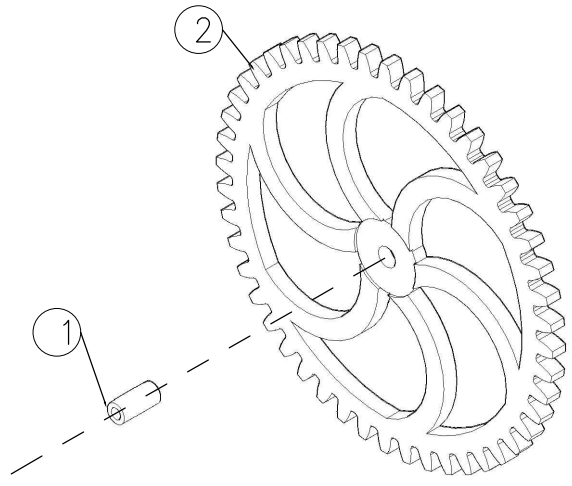
S Rod 1/8 x 5/8 are flush with the front of the Escapement Wheel and extend 3/8 from the back.

ASSEMBLY

- | | |
|-------------------------|-----|
| 1- Escapement Hub Shaft | 1x |
| 2- Escapement Hub | 1x |
| 3- Escapement Gear 12T | 1x |
| 4- Escapement Wheel | 1x |
| 5- Bearing 1/4 ID | 1x |
| 6- Screw #2 x 3/4 | 2x |
| 7- S Rod 1/8 x 5/8 | 30x |
| 8- Set Screw 8-32 x 1/4 | 1x |

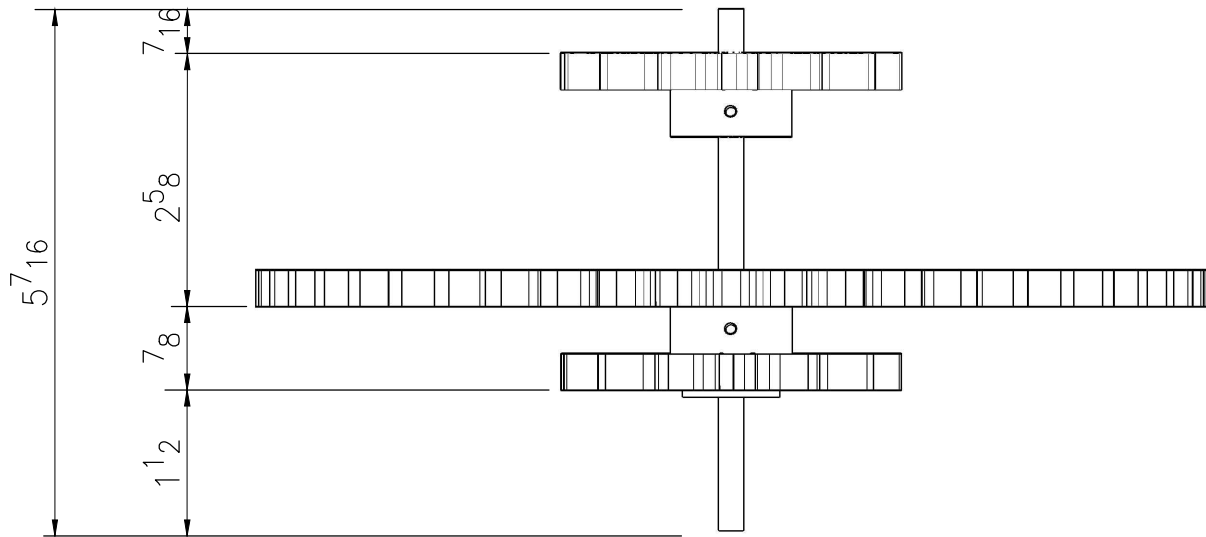


Orange Gear 48T

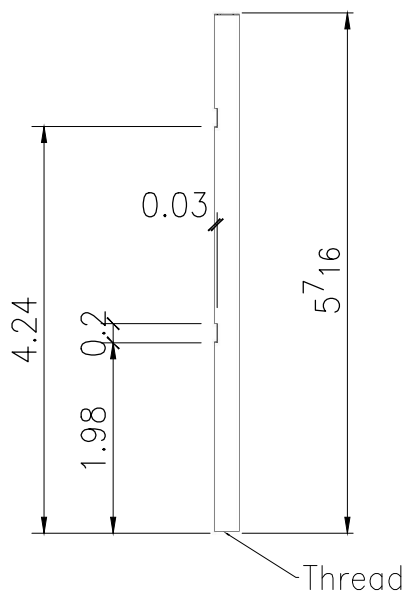


ASSEMBLY

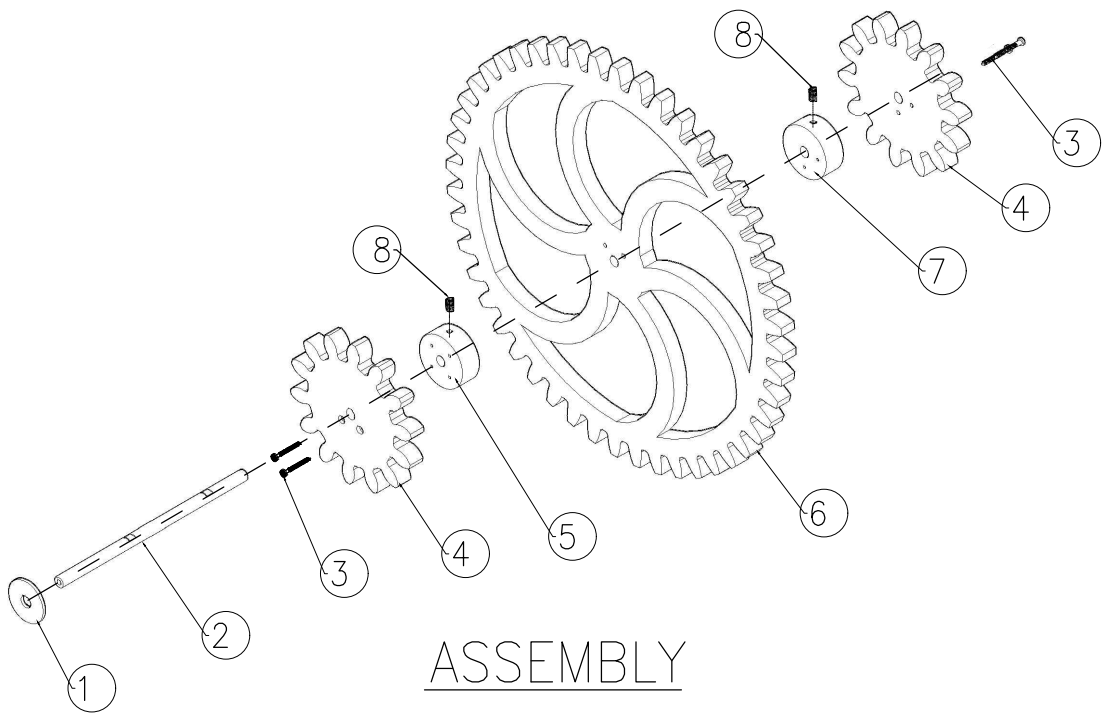
- | | |
|--------------------|----|
| 1- Orange Gear hub | 1x |
| 2- Orange Gear 48T | 1x |



Green Gear 14T + 48T + 14T



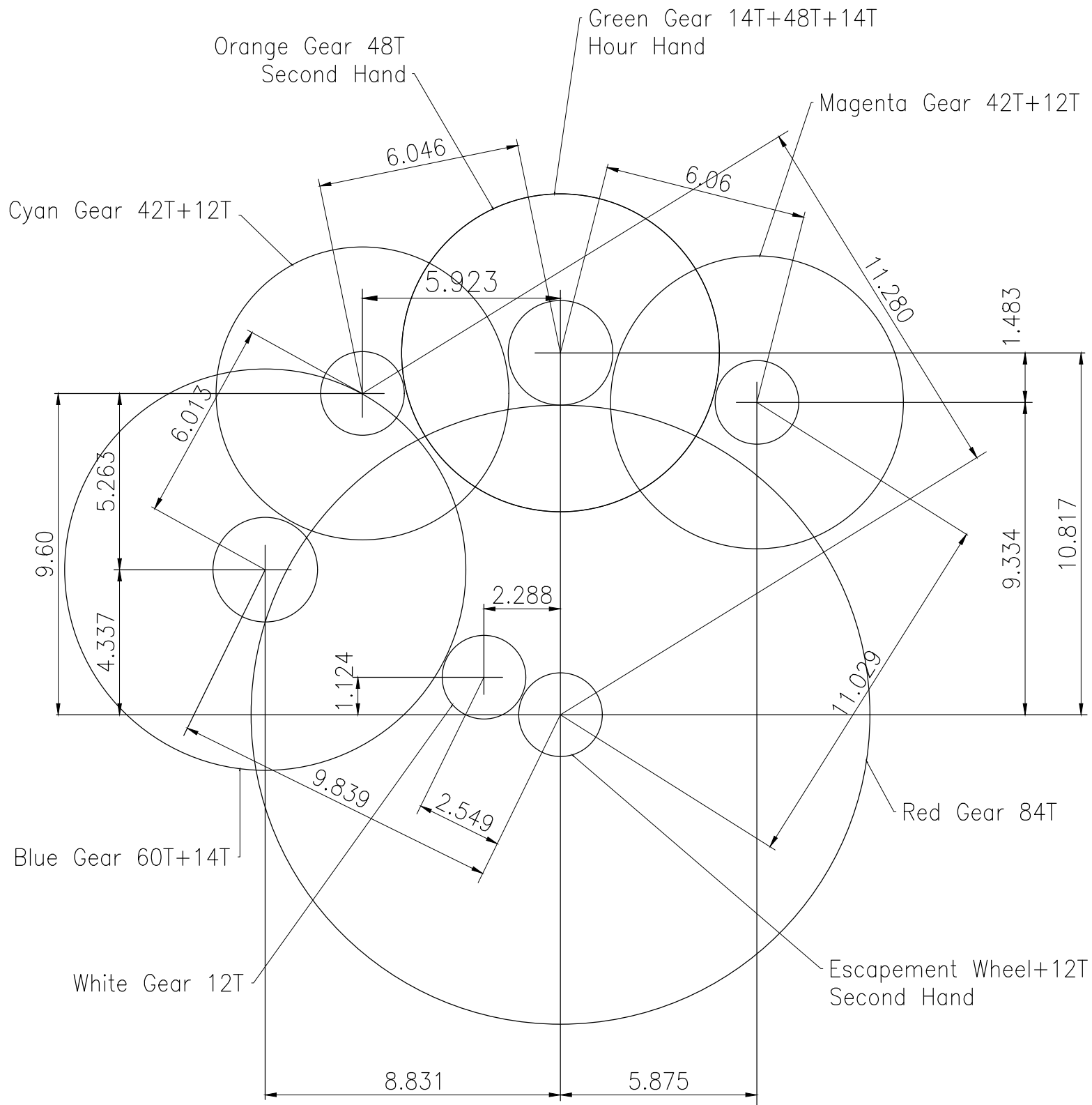
S Tube 1/4 x 5-7/16

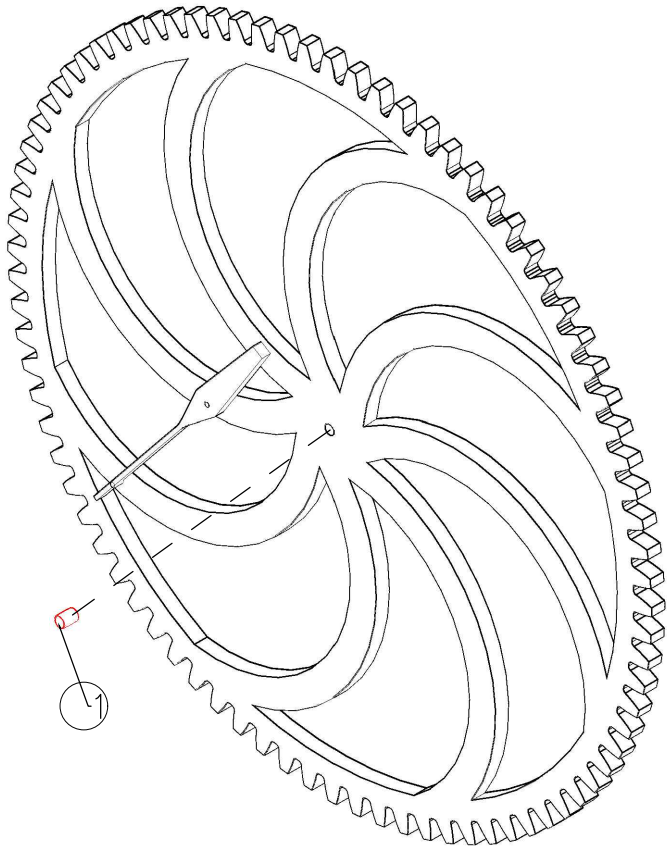


ASSEMBLY

- | | |
|-------------------------|----|
| 1- Green Washer | 1x |
| 2- S Tube 1/4 x 5-7/16 | 1x |
| 3- Screws #2 x 3/4 | 4x |
| 4- Green Gear 14T | 2x |
| 5- Green Hub Front | 1x |
| 6- Green Gear 48T | 1x |
| 7- Green Hub Back | 1x |
| 8- Set Screw 8-32 x 1/2 | 2x |

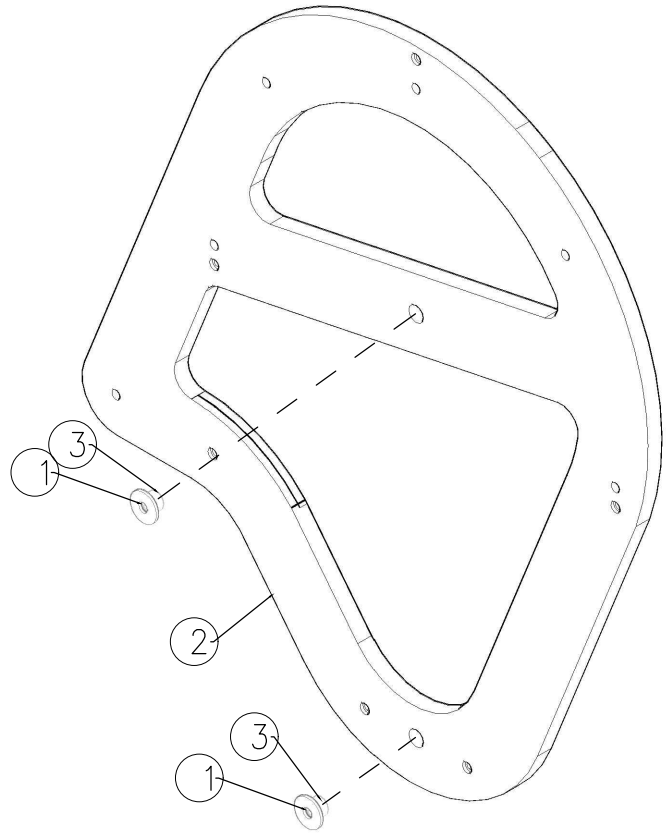
Drill front end of S Tube 9/64 and tap for #8-32 x 3/8





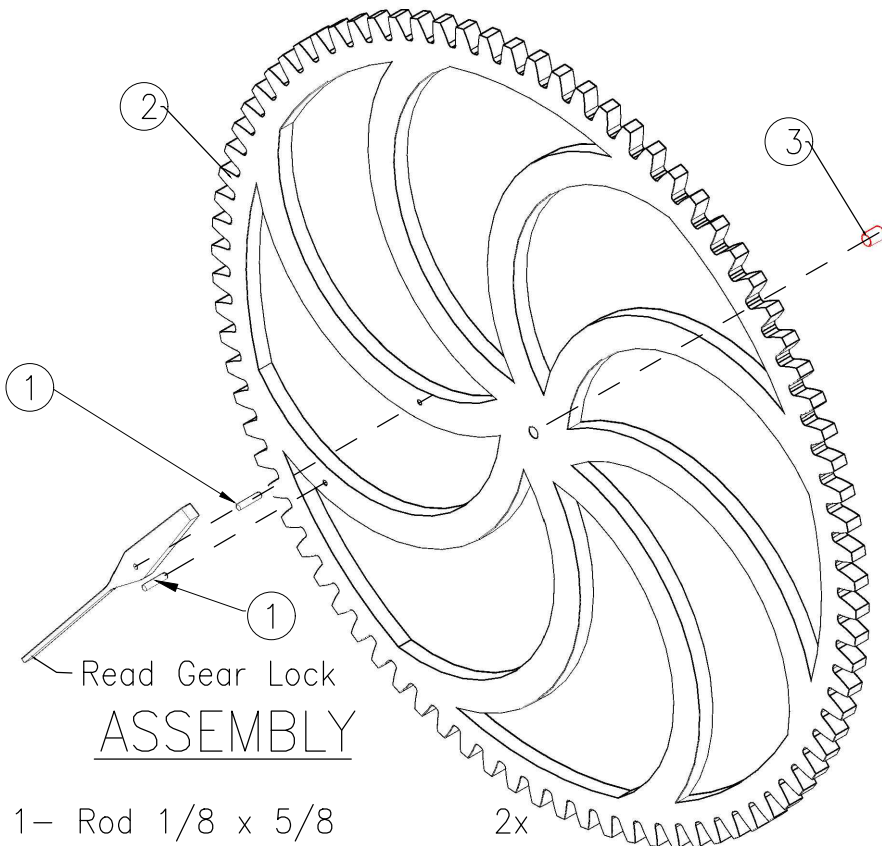
Red Gear 84T

1- B Tube 9/32 x 3/8 1x



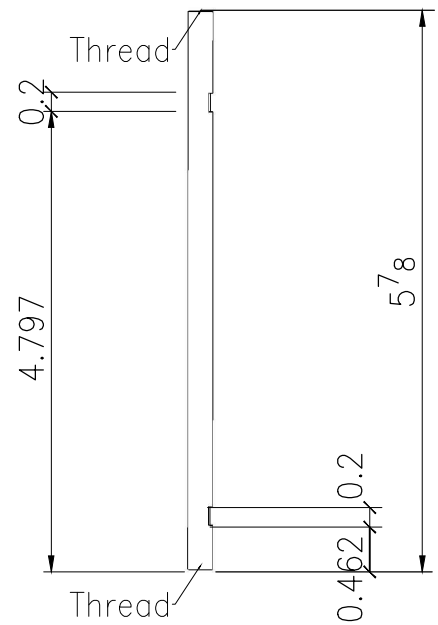
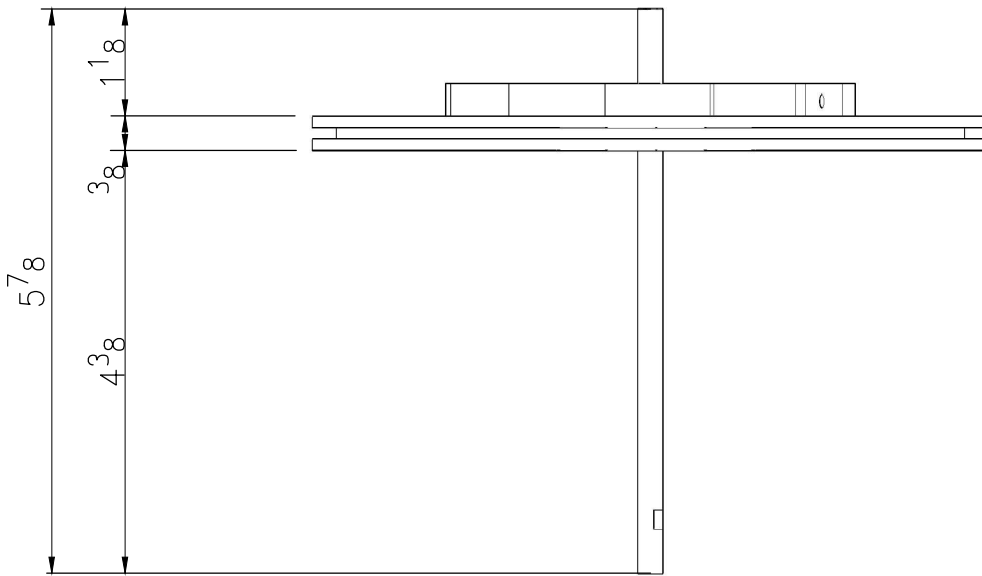
Back Plate Asm

1- Back Plate Washer 2x
 2- Back Plate 1x
 3- Bearing 1/4 ID 2x

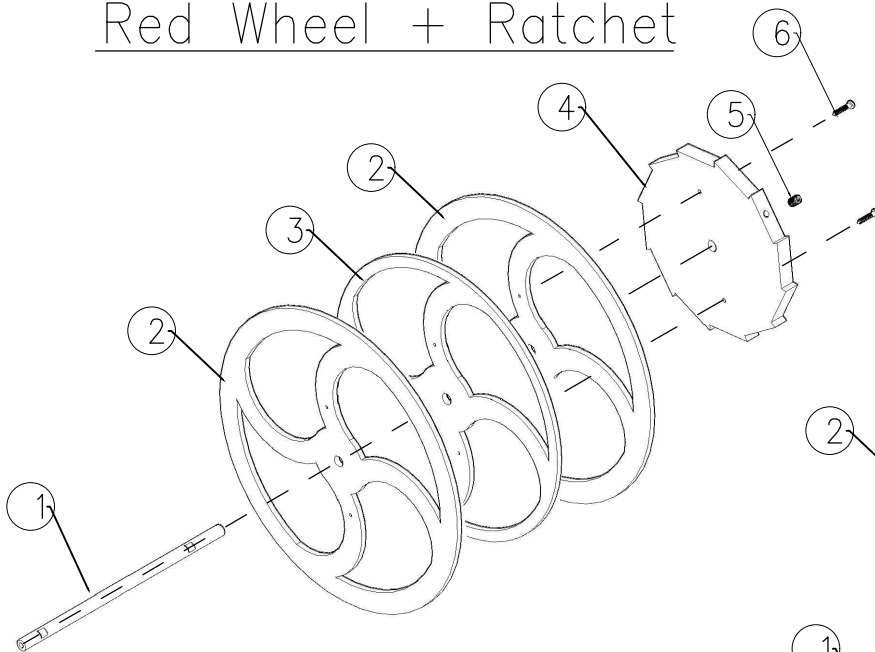


Red Gear Lock ASSEMBLY

1- Rod 1/8 x 5/8 2x
 2- Red Gear 84T 1x
 3- Bearing 1/4 ID 1x



Red Wheel + Ratchet



ASSEMBLY

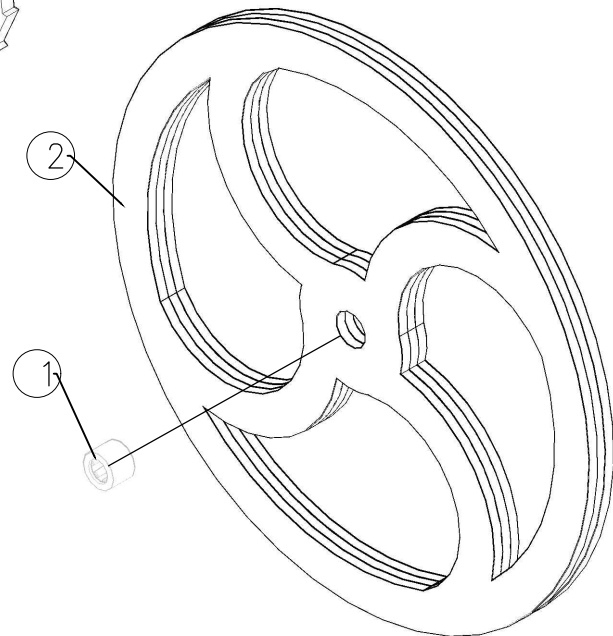
- | | |
|-------------------------|----|
| 1- S Tube 1/4 x 5-7/8 | 1x |
| 2- Red Wheel Outer | 2x |
| 3- Red Wheel Inner | 1x |
| 4- Red Ratchet | 1x |
| 5- Set Screw 8-32 x 1/2 | 1x |
| 6- Screw #2 x 1/2 | 2x |

Drill pilot hole in center of parts #2 and #3.

Glue #2 and #3 together

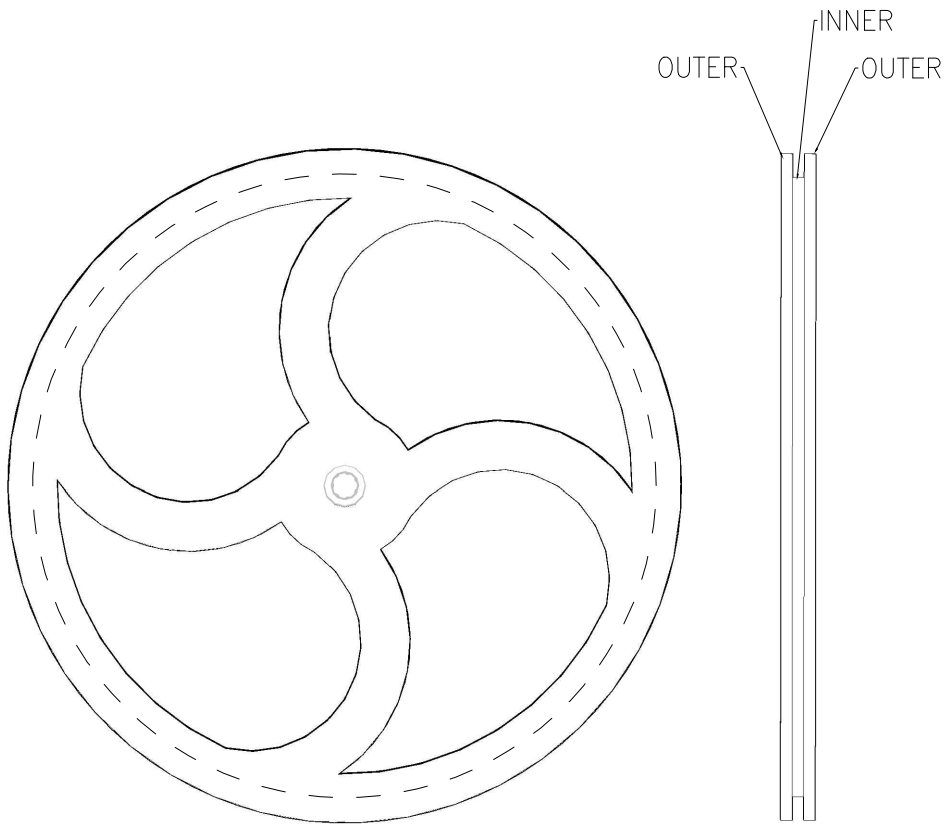
Cut spokes out and drill center hole to finish size.

S Tube 1/4 x 5-7/8
Drill both ends of S Tube 9/64 and tap for #8-32 x 3/8

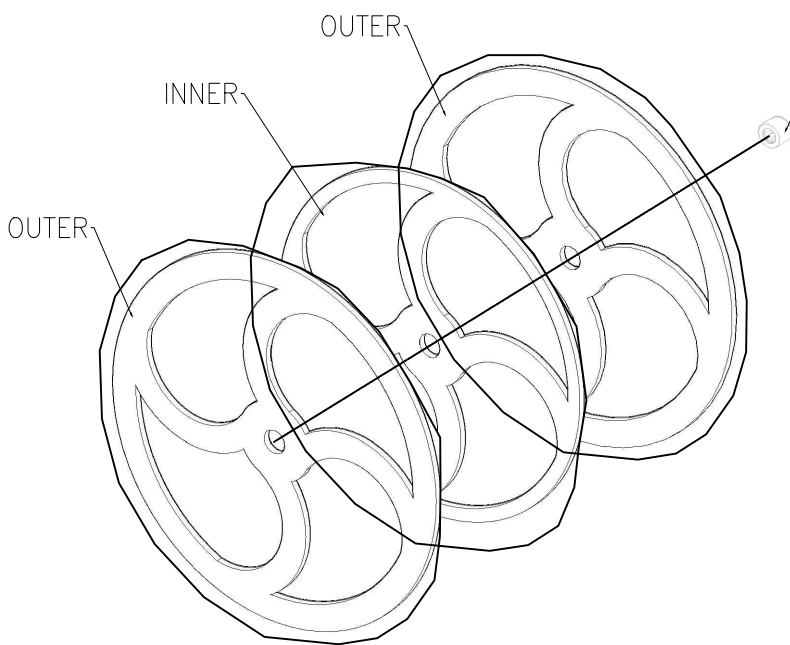


Red Pulley ONE

- | | |
|-------------------|----|
| 1- Bearing 1/4 ID | 1x |
| 2- Red Pulley | 1x |
- Place bearing flush with front of pulley



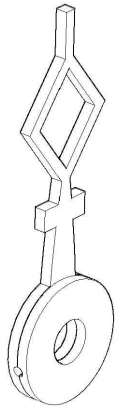
Weight Pulley
2



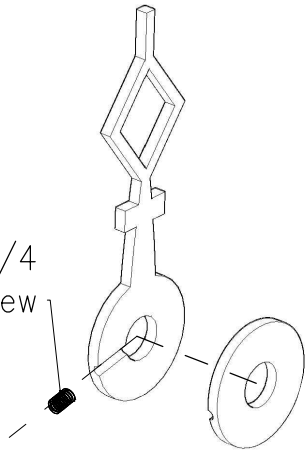
Bearing

Drill pilot hole in center of inner and outer parts.
Glue parts together
Cut spokes out and drill center hole to finish size.

ASSEMBLY

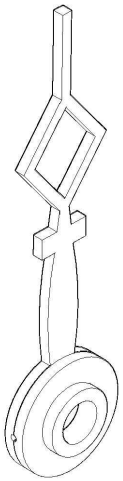


8-32x1/4
Set screw

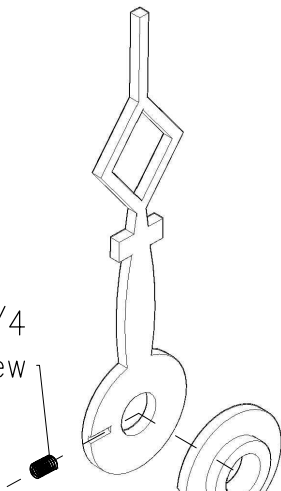


Second Hand

ASSEMBLY

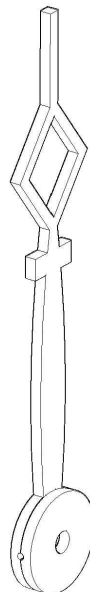


8-32x1/4
Set screw

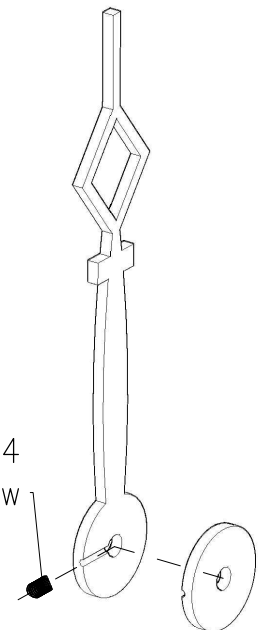


Hour Hand

ASSEMBLY

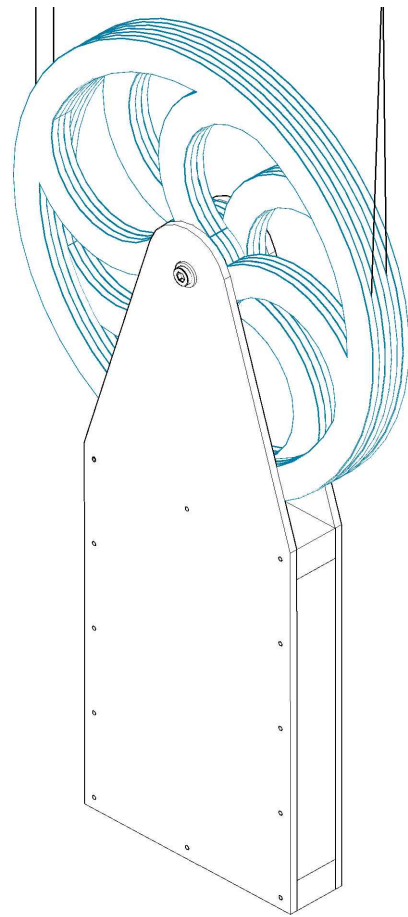
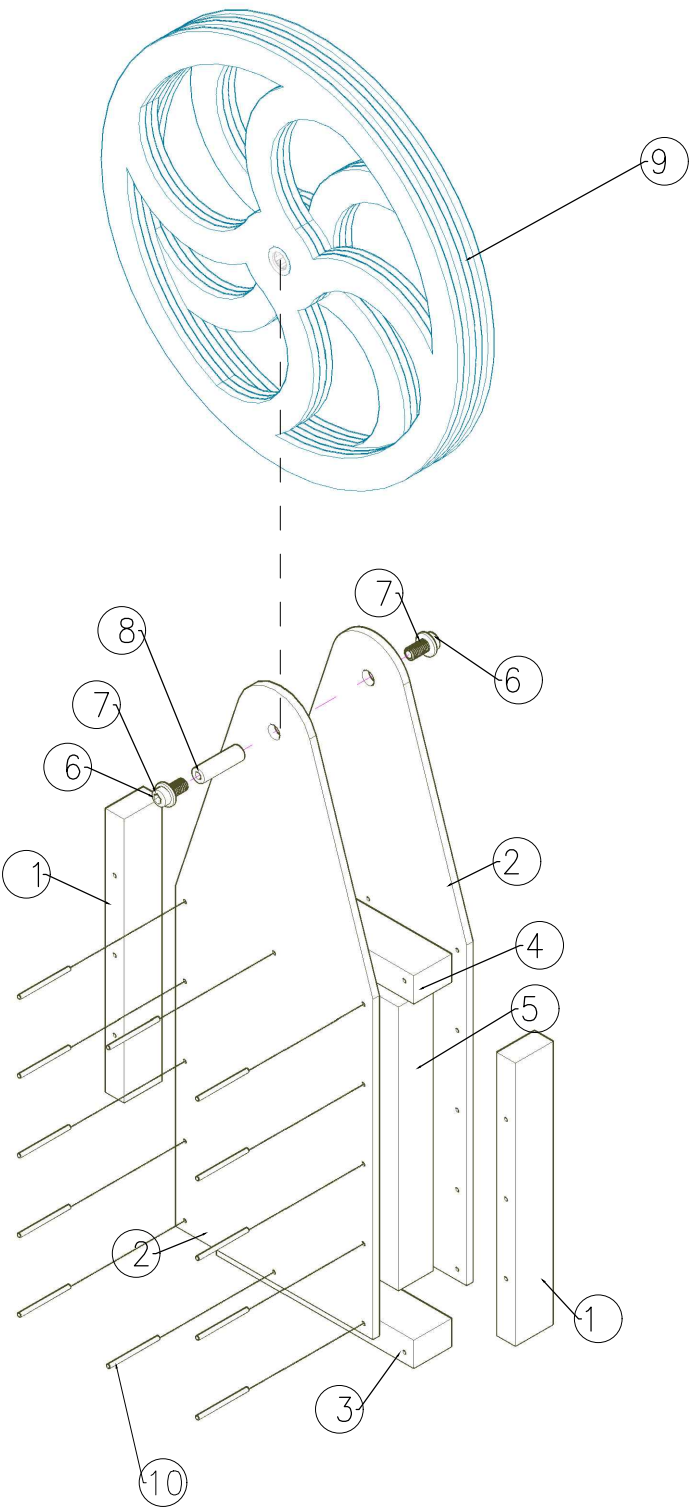


8-32x1/4
Set screw



Minute Hand

ASSEMBLY

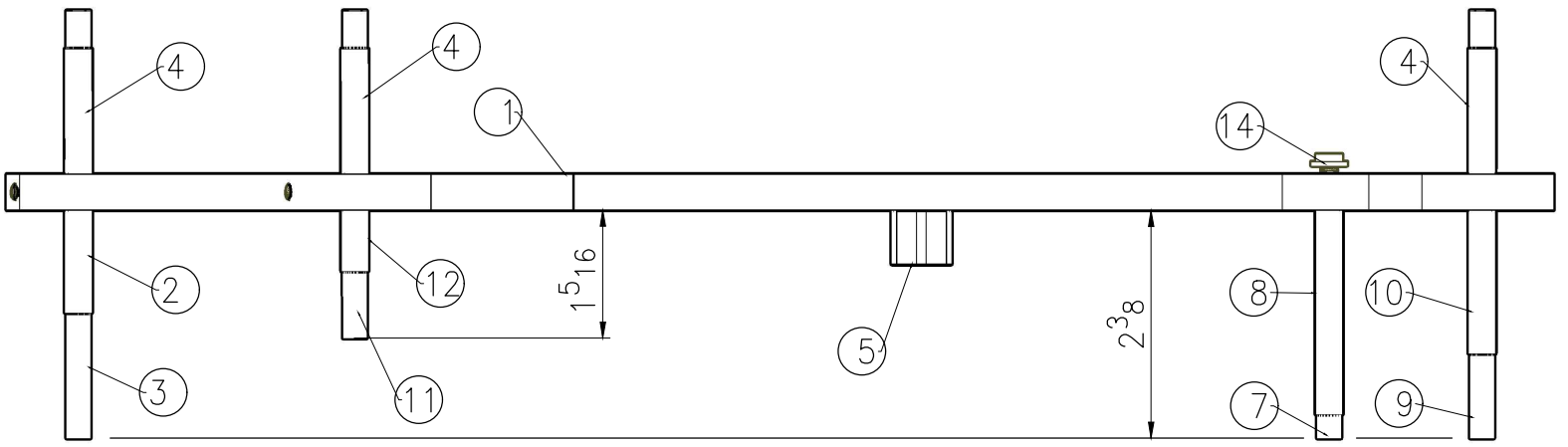


Weight

ASSEMBLY

1- Weight Edge	2x
2- Weight Side	2x
3- Weight Bottom	1x
4- Weight Top	1x
5- Steel 3/4 x 3-1/4 x 5-1/2	1x
6 -LSHCS 8-32 x 1/4	2x
7- #8 washer	2x
8- S Tube 1/4 x 13/16	1x
9- Weight pulley	2x
10- S Rod 1/16 x 1	12x

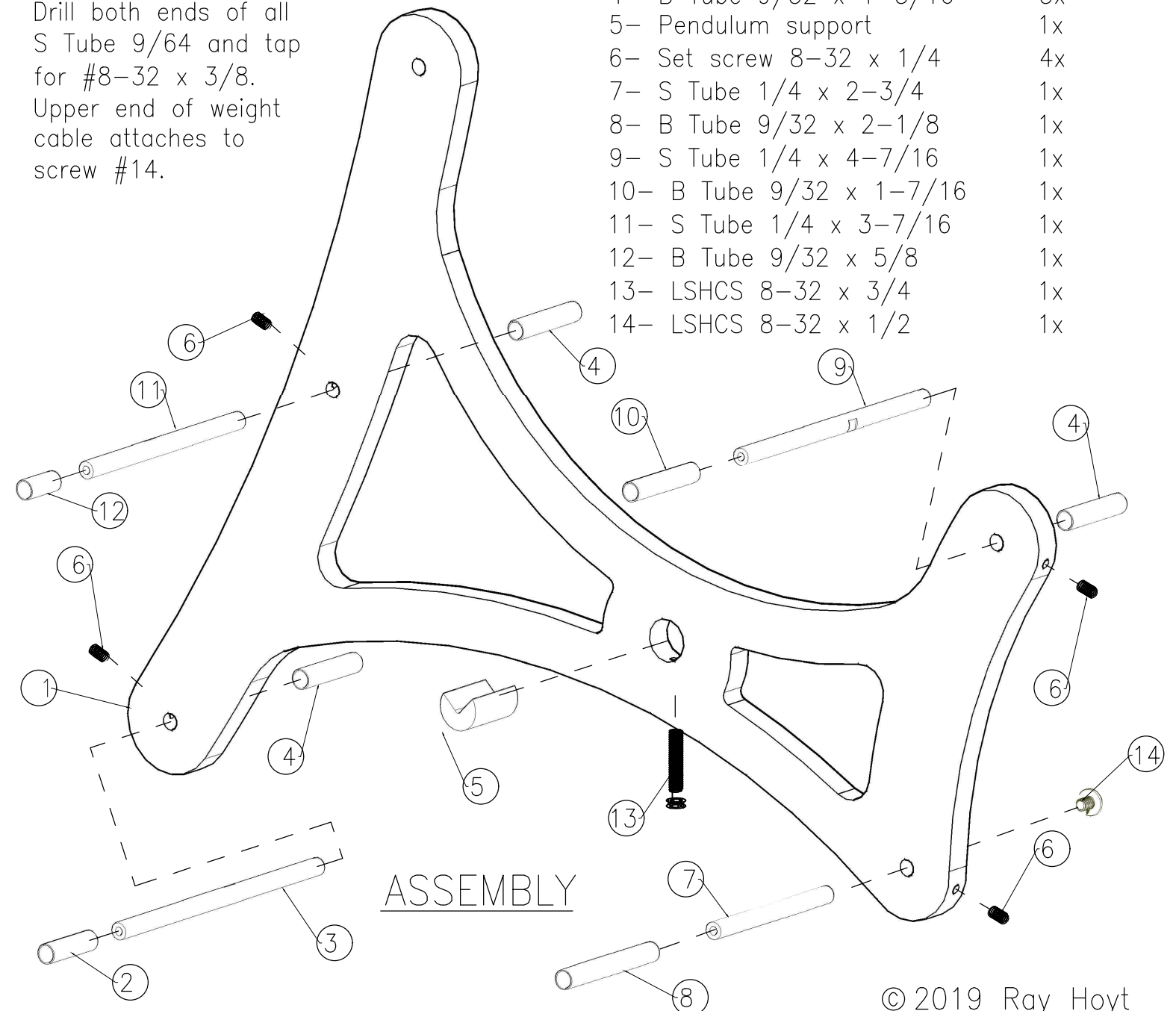
Drill both ends of S Tube 9/64 and tap for #8-32 x 3/8

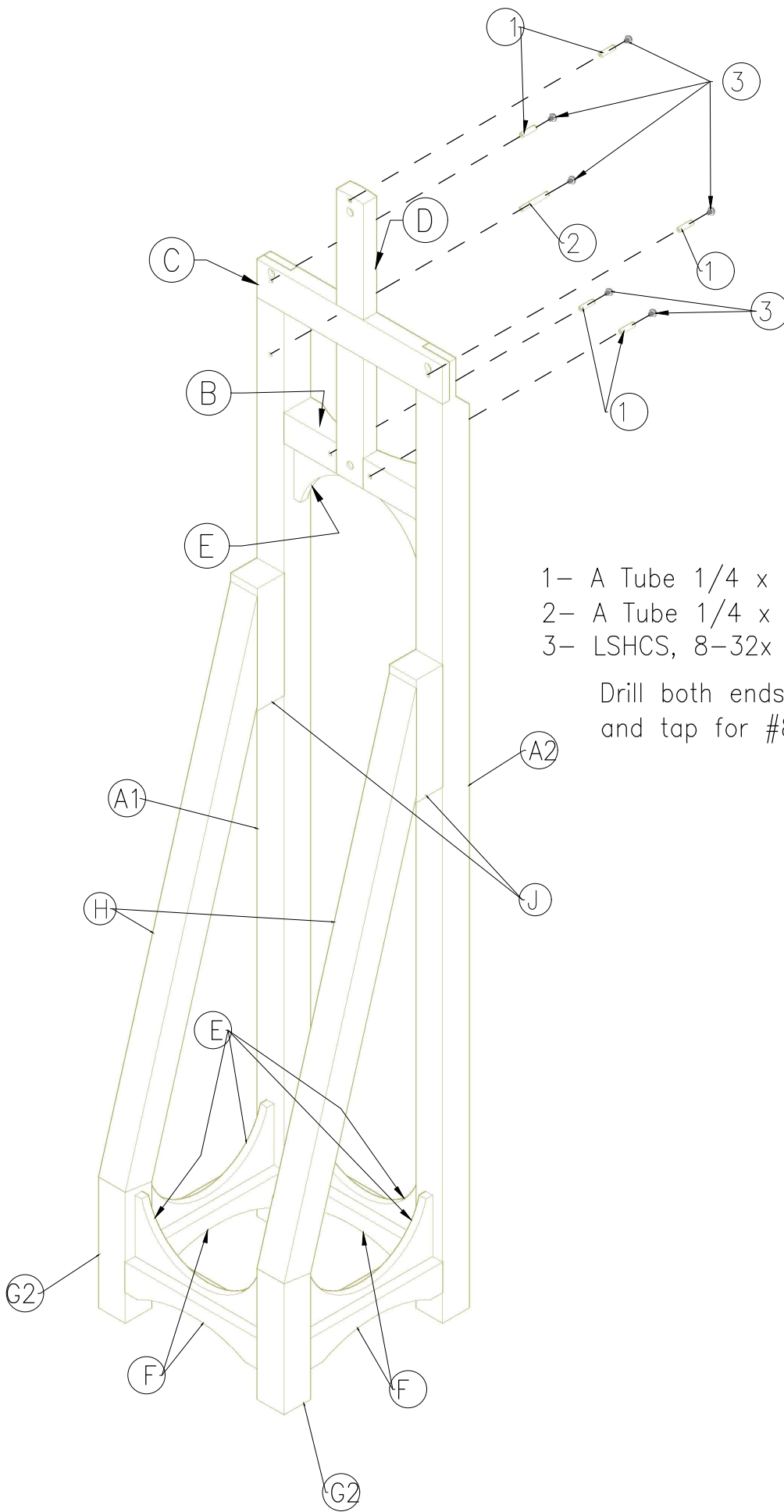


Middle Plate

Drill both ends of all S Tube 9/64 and tap for #8-32 x 3/8. Upper end of weight cable attaches to screw #14.

- | | |
|--------------------------|----|
| 1- Middle Plate | 1x |
| 2- B Tube 9/32 x 1-1/16 | 1x |
| 3- S Tube 1/4 x 4-7/16 | 1x |
| 4- B Tube 9/32 x 1-5/16 | 3x |
| 5- Pendulum support | 1x |
| 6- Set screw 8-32 x 1/4 | 4x |
| 7- S Tube 1/4 x 2-3/4 | 1x |
| 8- B Tube 9/32 x 2-1/8 | 1x |
| 9- S Tube 1/4 x 4-7/16 | 1x |
| 10- B Tube 9/32 x 1-7/16 | 1x |
| 11- S Tube 1/4 x 3-7/16 | 1x |
| 12- B Tube 9/32 x 5/8 | 1x |
| 13- LSHCS 8-32 x 3/4 | 1x |
| 14- LSHCS 8-32 x 1/2 | 1x |

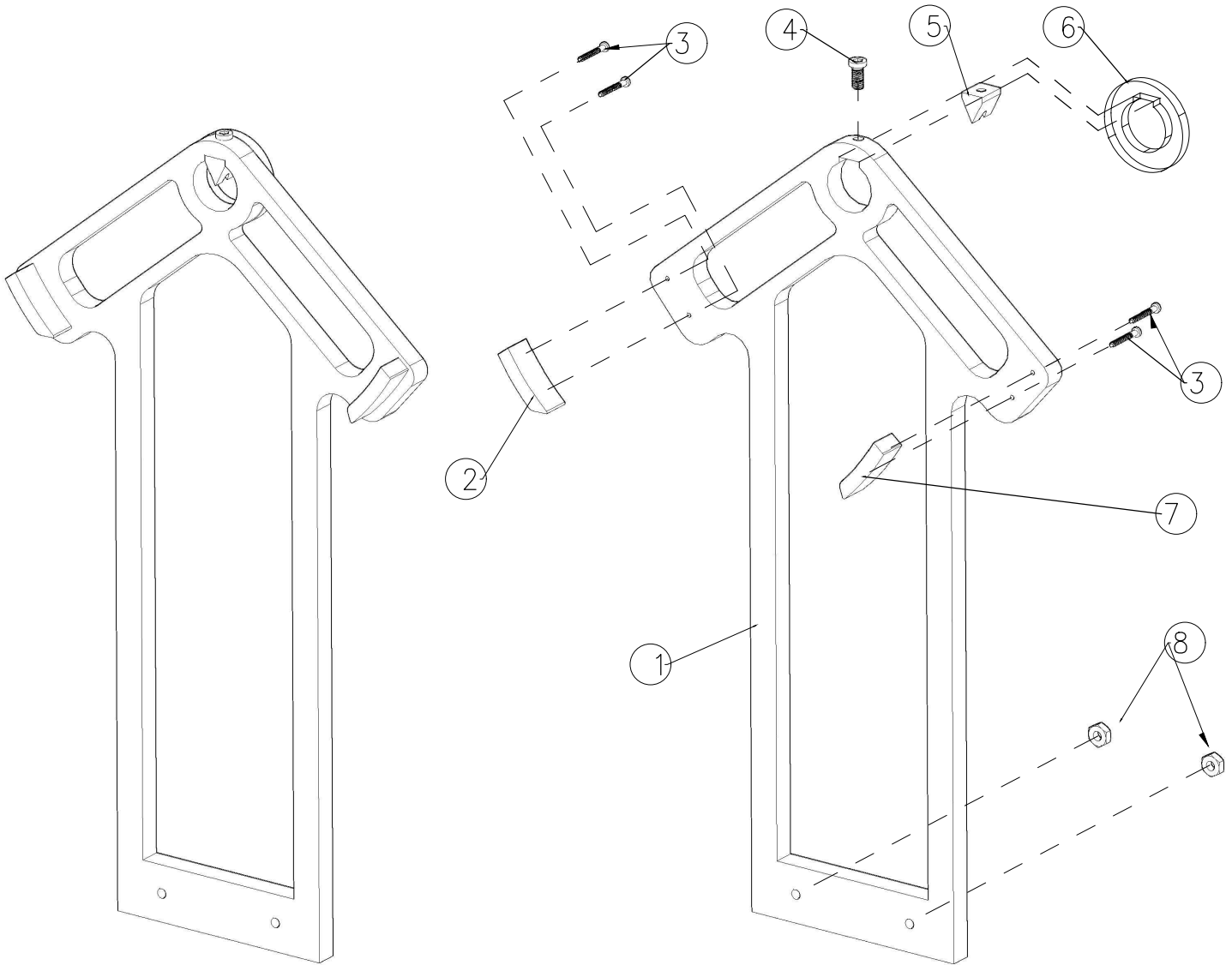




- 1- A Tube 1/4 x 1 5x
- 2- A Tube 1/4 x 2 1x
- 3- LSHCS, 8-32x 1/4 W/washer 6x

Drill both ends of A Tube 9/64
and tap for #8-32 x 3/8

Stand



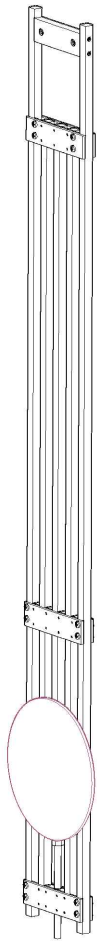
Pendulum Top

ASSEMBLY

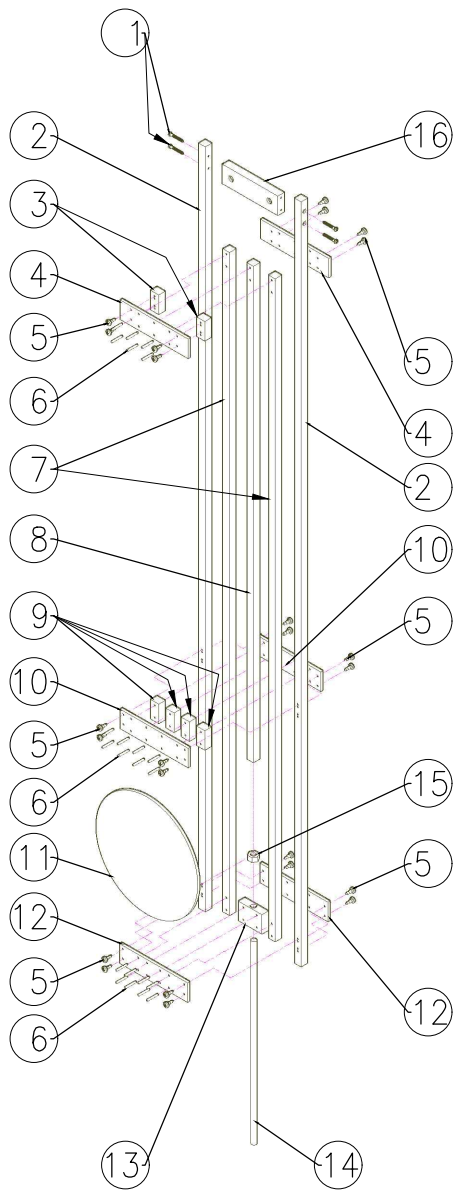
- | | |
|----------------------|----|
| 1- Pendulum Top | 1x |
| 2- Entry Pallet | 1x |
| 3- Screw #2 x 3/4 | 4x |
| 4- LSHCS, 8-32 x 1/2 | 1x |
| 5- Pendulum Pivot | 1x |
| 6- Pendulum Washer | 1x |
| 7- Exit Pallet | 1x |
| 8- 8-32 nut | 2x |

Glue Pendulum Washer to Pendulum Top

Assemble Pendulum Pivot to top of hole in Pendulum Top flush with front.

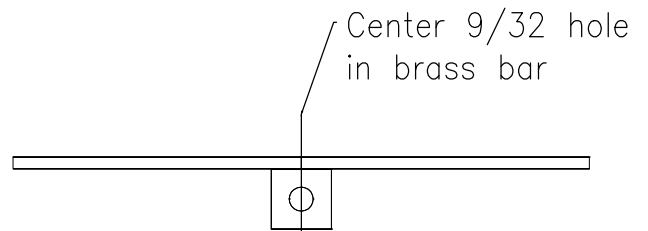


Pendulum

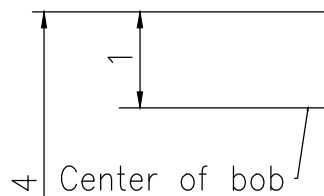


- 1- Screw #2 x 3/4 4x
- 2- Pendulum Rod Long 2x
- 3- Pendulum Top Spacer 2x
- 4- Pendulum Top plate 2x
- 5- Screw #2 x 1/2 12x
- 6- S Rod 1/16 x 5/8 22x
- 7- Pendulum Rod Medium 2x
- 8- Pendulum Rod Short 1x
- 9- Pendulum Mid Spacer 4x
- 10- Pendulum Mid plate 2x
- 11- Pendulum Bob 1x
- 12- Pendulum Bottom plate 2x
- 13- Pendulum Bottom Spacer 1x
- 14- Threaded Rod 1/4 x 10-1/4 1x
- 15- Nut 1/4 1x
- 16- Pendulum Plate 1x

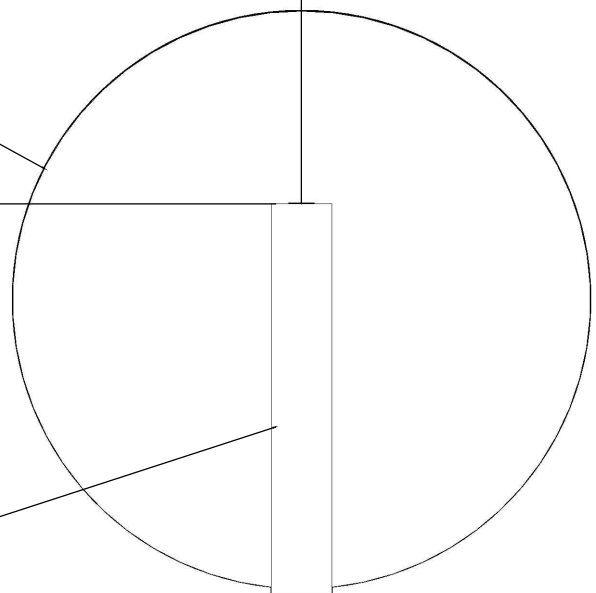
Adjust bob weight until center of gravity is 38-15/16 below pivot point of pendulum.



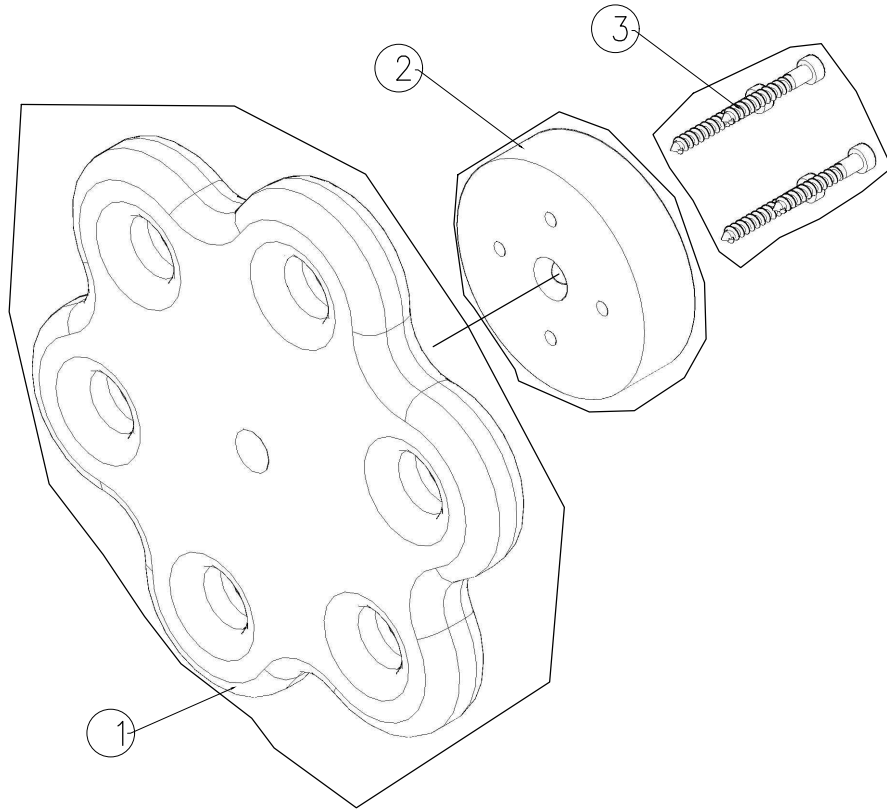
Brass 1/8 x 6 x 6



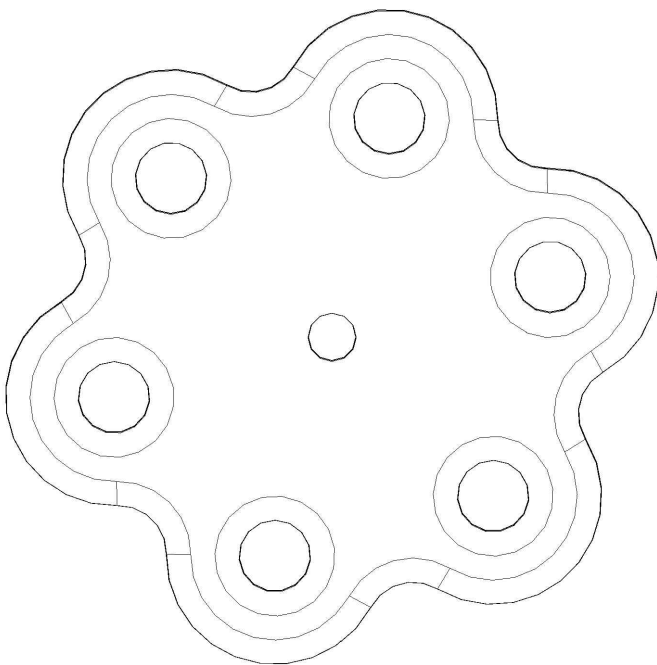
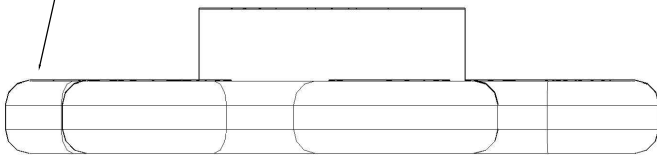
Brass 5/8 x 5/8



Pendulum Bob

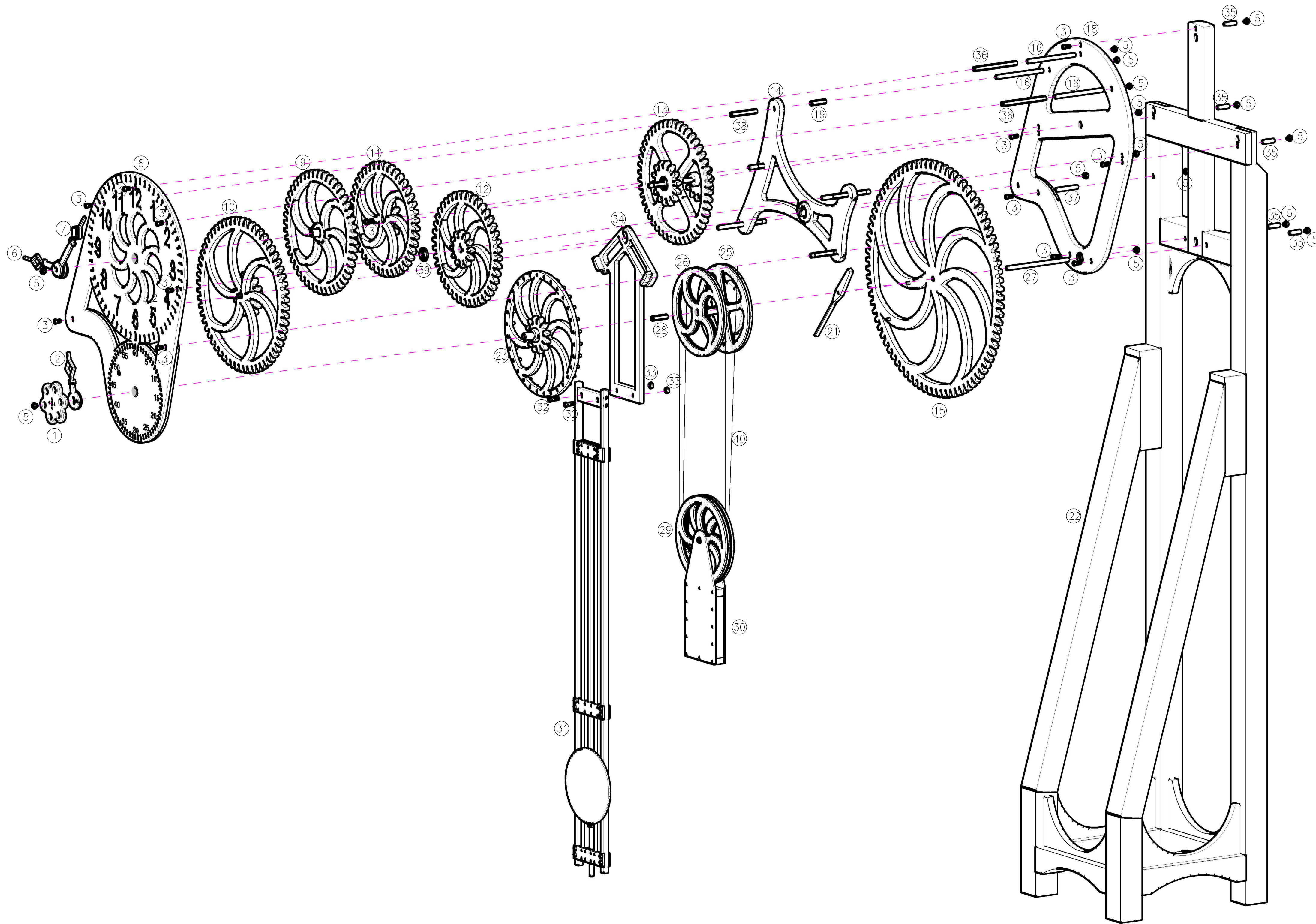


RADIUS ALL
EDGES 1/8



- | | |
|-------------------------------------|----|
| 1- Red Knob | 1x |
| 2- Red Knob Hub | 1x |
| 3- Screw #2 x 3/4 | 4x |
| Grind down #2x3/4 screw to 5/8 long | |
| 4- Set Screw 8-32 x 1/2 | 2x |

Red Knob

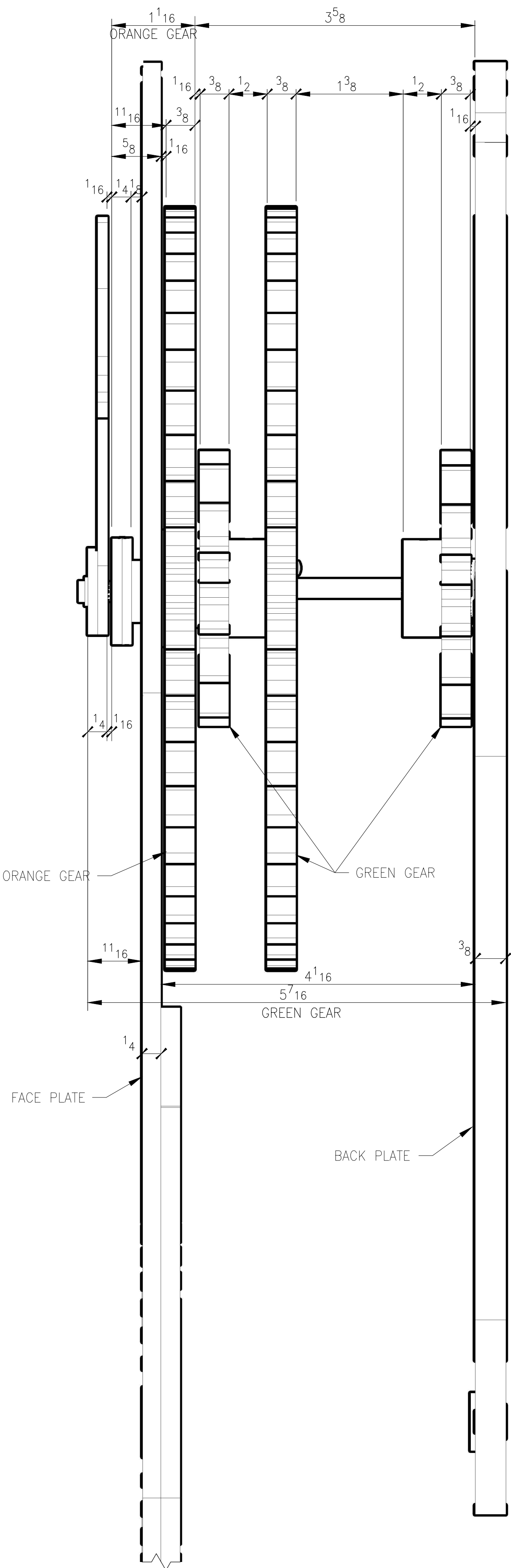


- | | |
|----------------------------------|-----|
| 1. Red Knob | 1x |
| 2. Second Hand | 1x |
| 3. LSHCS, 8-32x 1/2 | 13x |
| 4. Flat head, 8-32x 1/4 W/washer | 1x |
| 5. LSHCS, 8-32x 1/4 W/washer | 15x |
| 6. Hour Hand | 1x |
| 7. Minute Hand | 1x |
| 8. Face Plate | 1x |
| 9. Orange Gear 48T | 1x |
| 10. Blue Gear 60T+14T | 1x |
| 11. Cyan Gear 42T+12T | 1x |
| 12. Magenta Gear 42T+12T | 1x |
| 13. Green Gear 14T+48T+14T | 1x |
| 14. Middle Plate | 1x |
| 15. Red Gear 84T | 1x |
| 16. A Tube 1/4 x 4 7/16 | 3x |
| 17. Green Spacer | 1x |
| 18. Back Plate | 1x |
| 19. B Tube 9/32 x 1 5/16 | 1x |
| 20. White Gear 12T | 1x |
| 21. Lock | 1x |
| 22. Stand | 1x |
| 23. Escapement Wheel | 1x |
| 24. B Tube 9/32 x 1/4 | 1x |
| 25. Red Ratchet + Red Wheel | 1x |
| 26. Red Pulley | 1x |
| 27. A Tube 1/4 x 5 7/8 | 1x |
| 28. B Tube 9/32 x 1 3/8 | 1x |
| 29. Weight Pulley | 2x |
| 30. Weight | 1x |
| 31. Pendulum | 1x |
| 32. LSHCS, 8-32x 3/4 | 2x |
| 33. Nut 8-32 | 2x |
| 34. Pendulum Top | 1x |
| 35. A Tube 1/4 x 1 | 5x |
| 36. B Tube 9/32 x 4 1/16 | 2x |
| 37. A Tube 1/4 x 2 | 1x |
| 38. B Tube 9/32 x 2 3/8 | 1x |
| 39. Magenta Front Spacer | 1x |
| 40. SS Cable 3/320D x 18 feet | 1x |

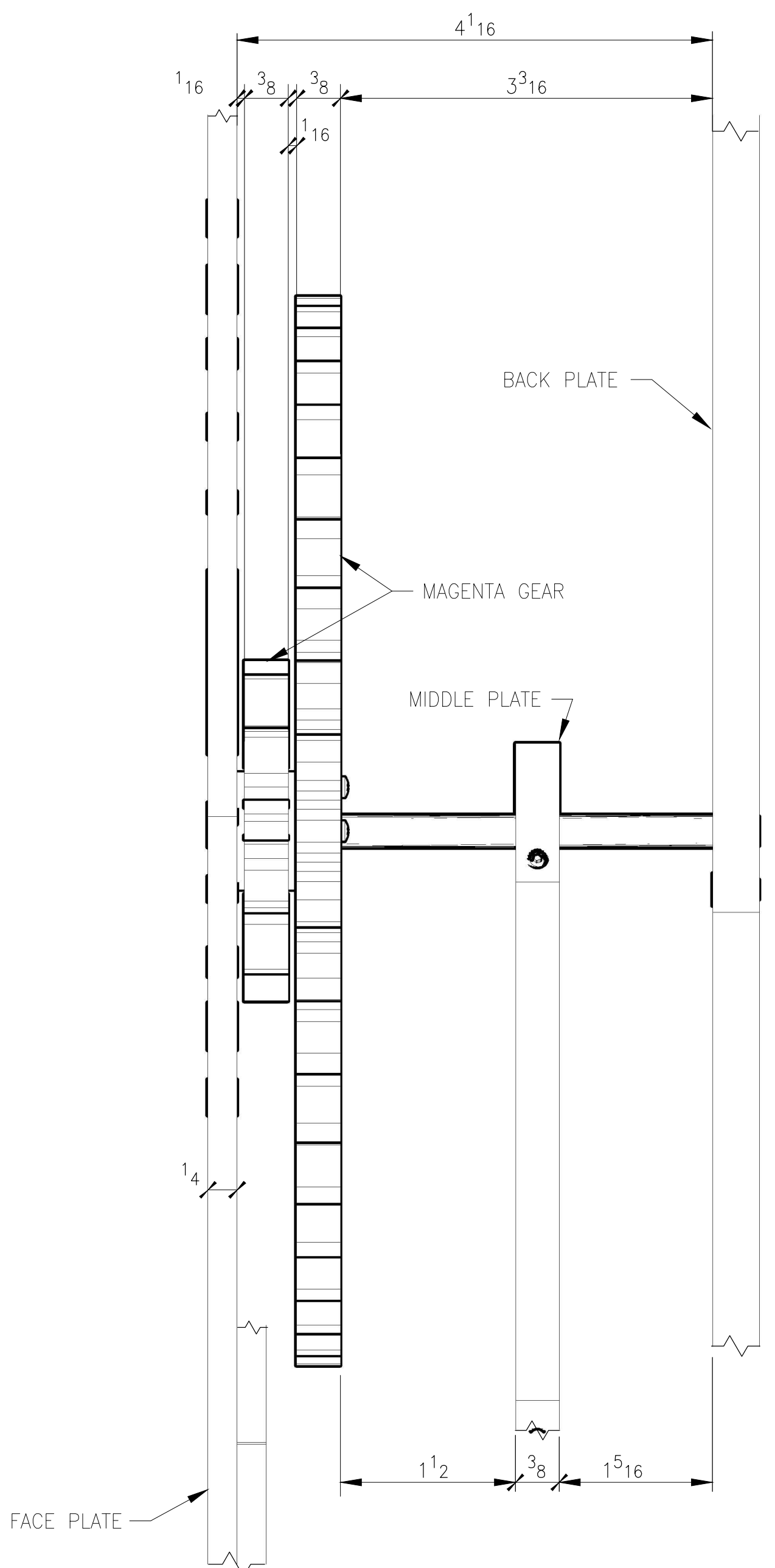
Tie one end of the cable thru the hole in the tube in the (14) Middle Plate and the other end thru the hole in (25) Red Wheel.

EXPLODED VIEW

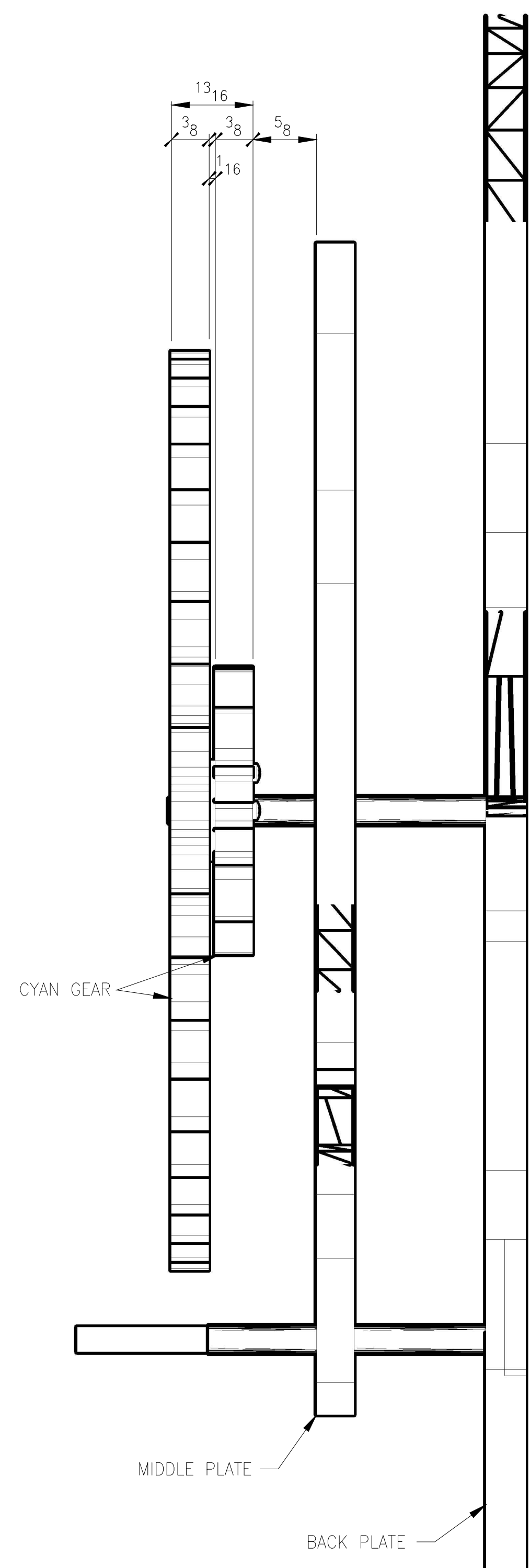
Use Baltic Birch for all parts 1/8, 1/4, 3/8 and 1/2 thick.
Do NOT paint or stain contact areas of moving parts.



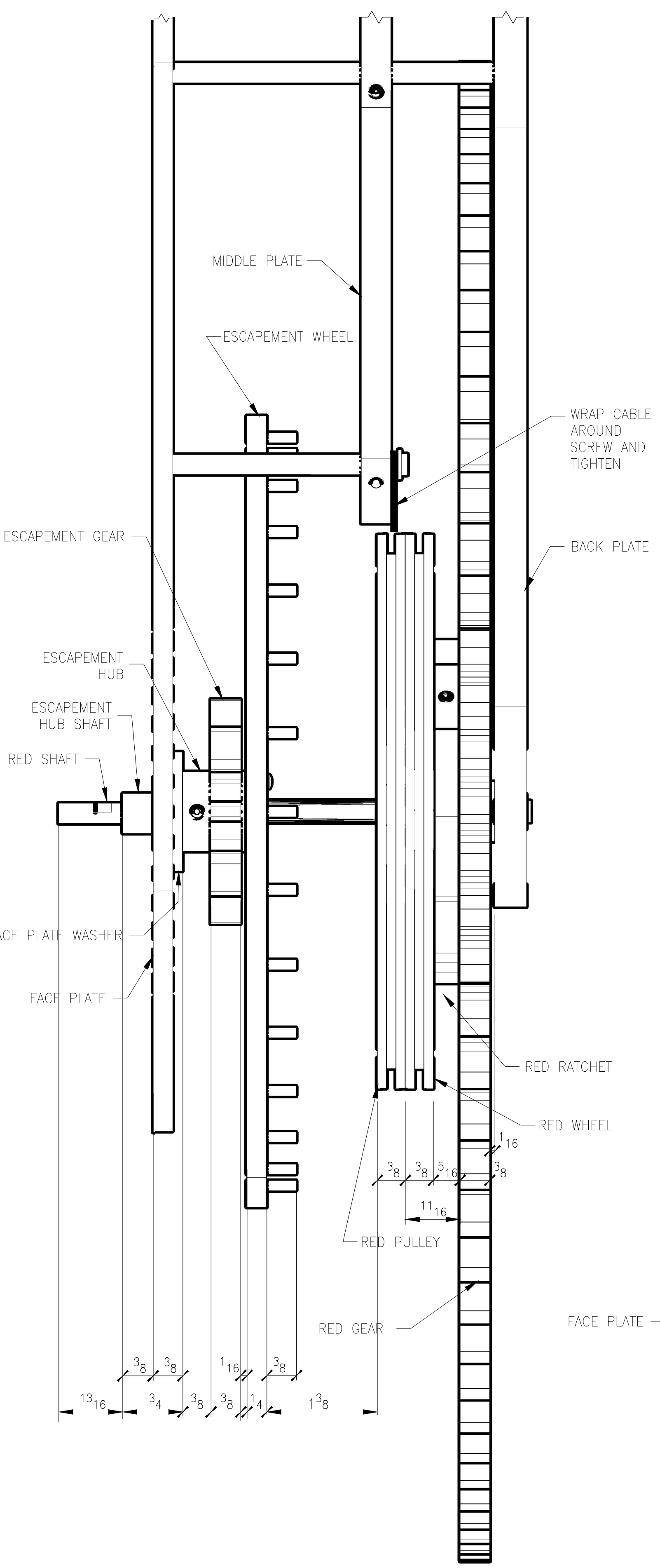
ORANGE & GREEN GEAR



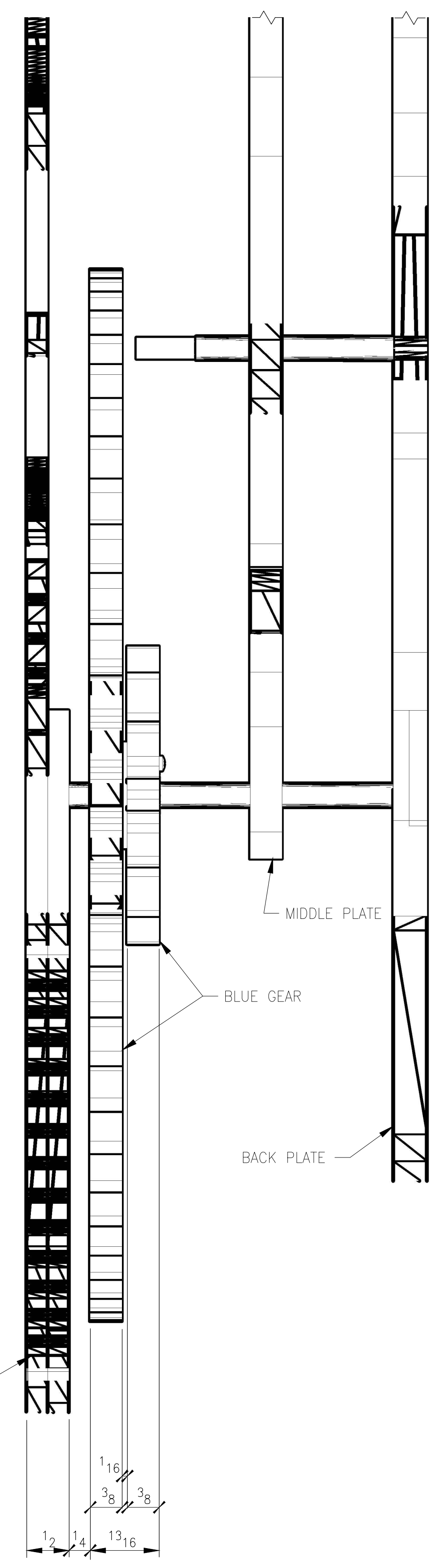
MAGENTA GEAR & MIDDLE PLATE



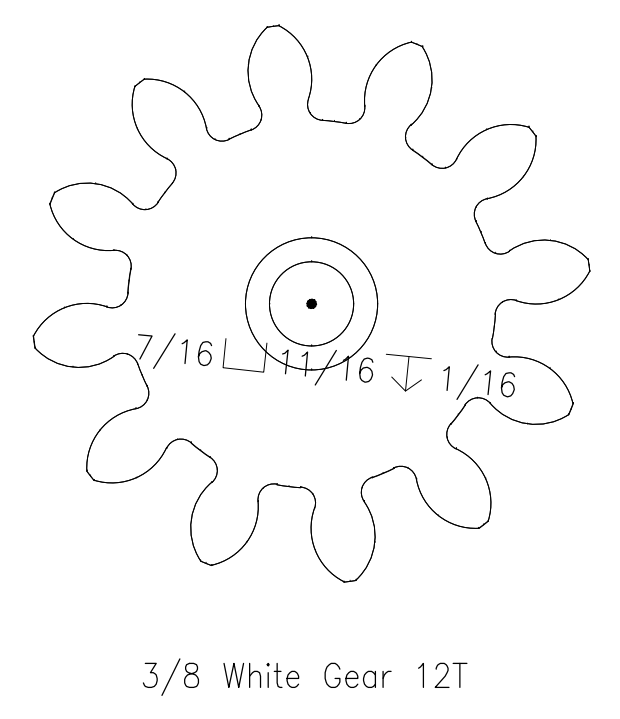
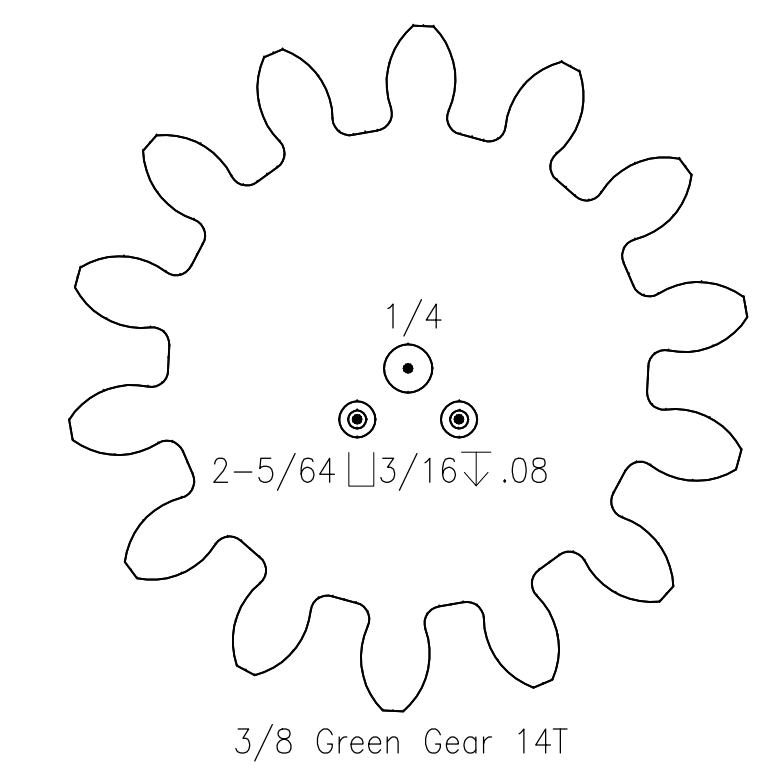
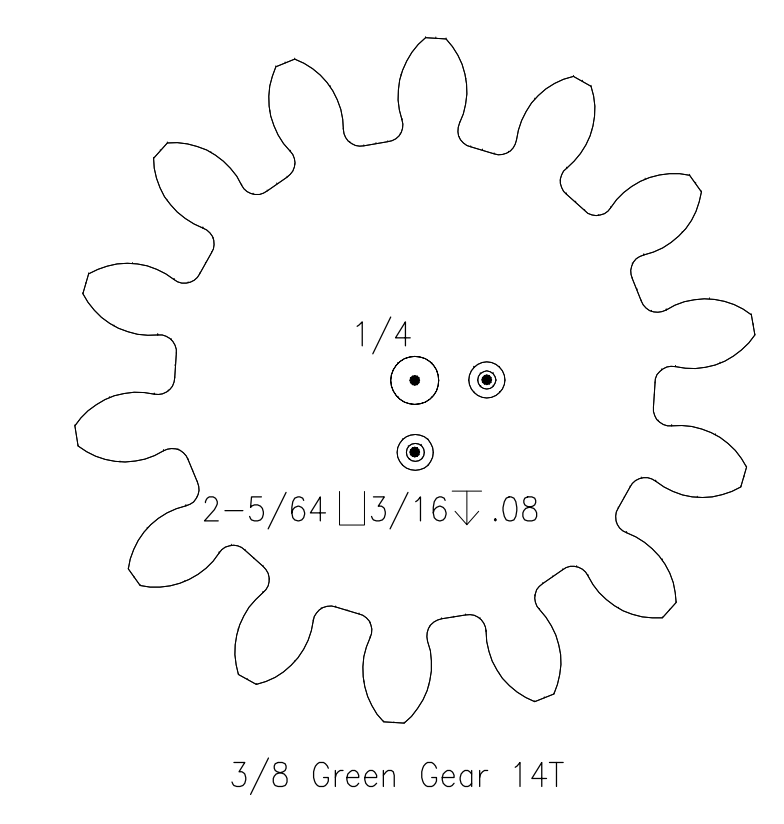
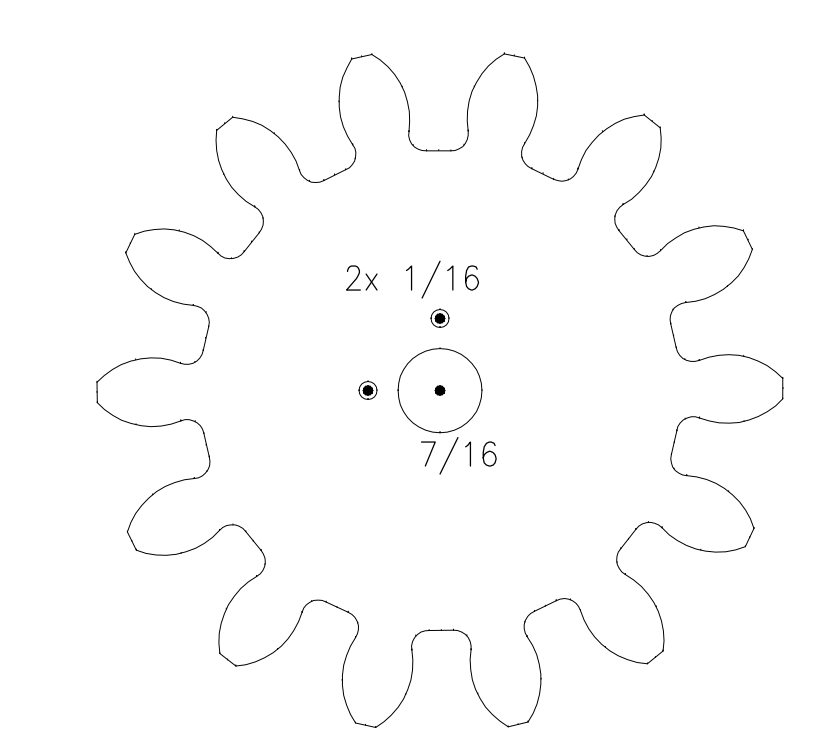
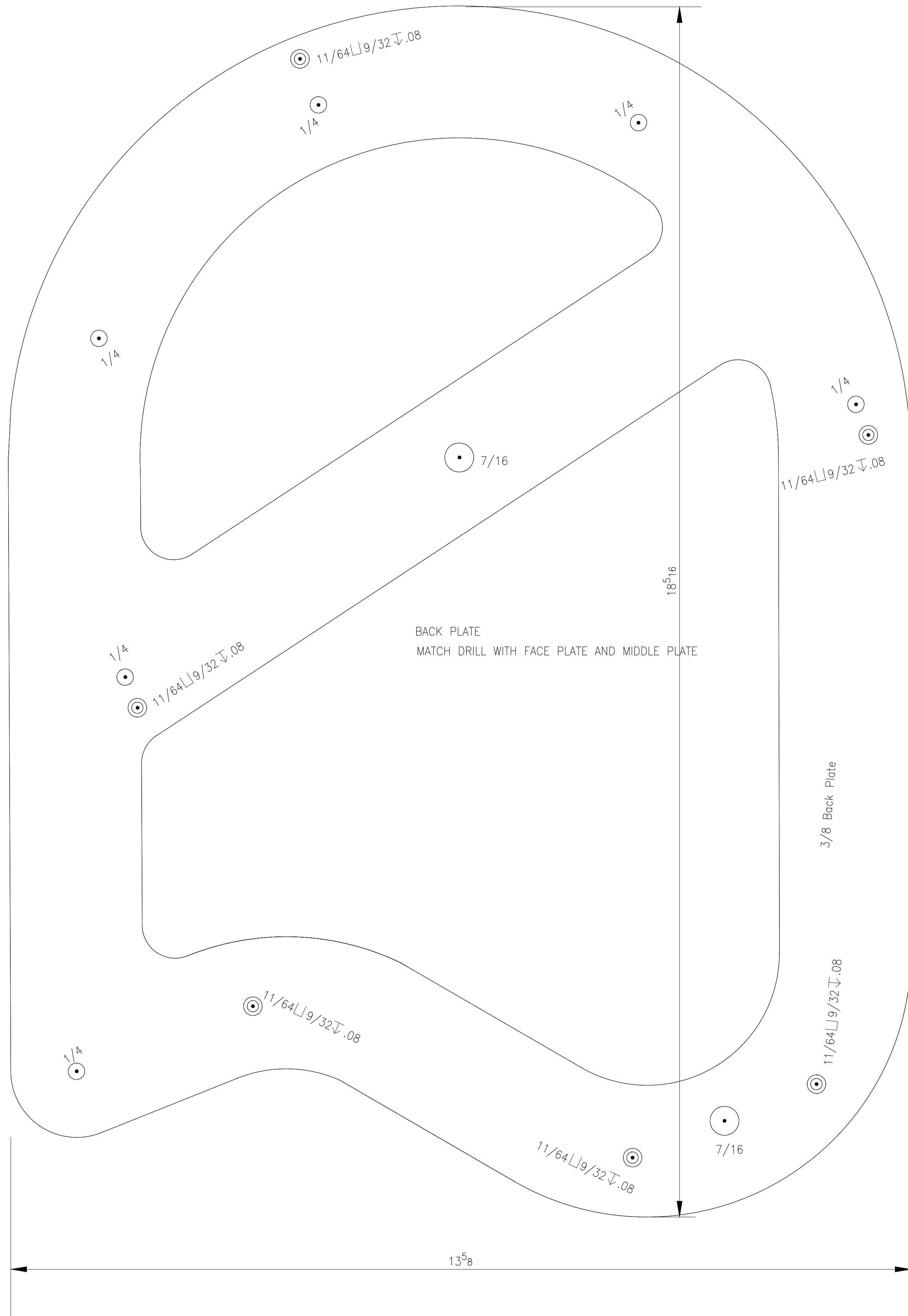
CYAN GEAR



ESCAPEMENT WHEEL, RED GEAR & RED PULLEY



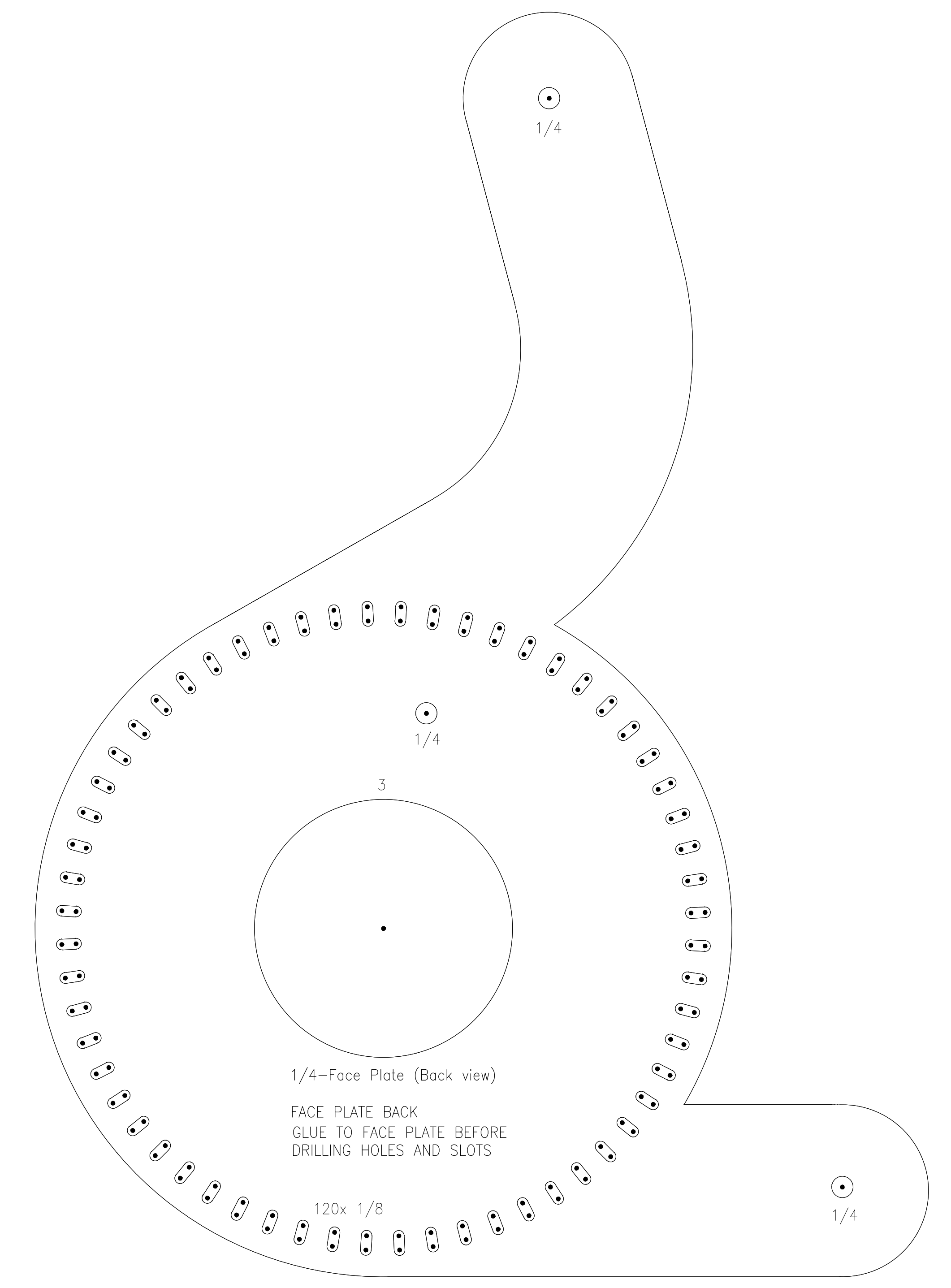
BLUE GEAR

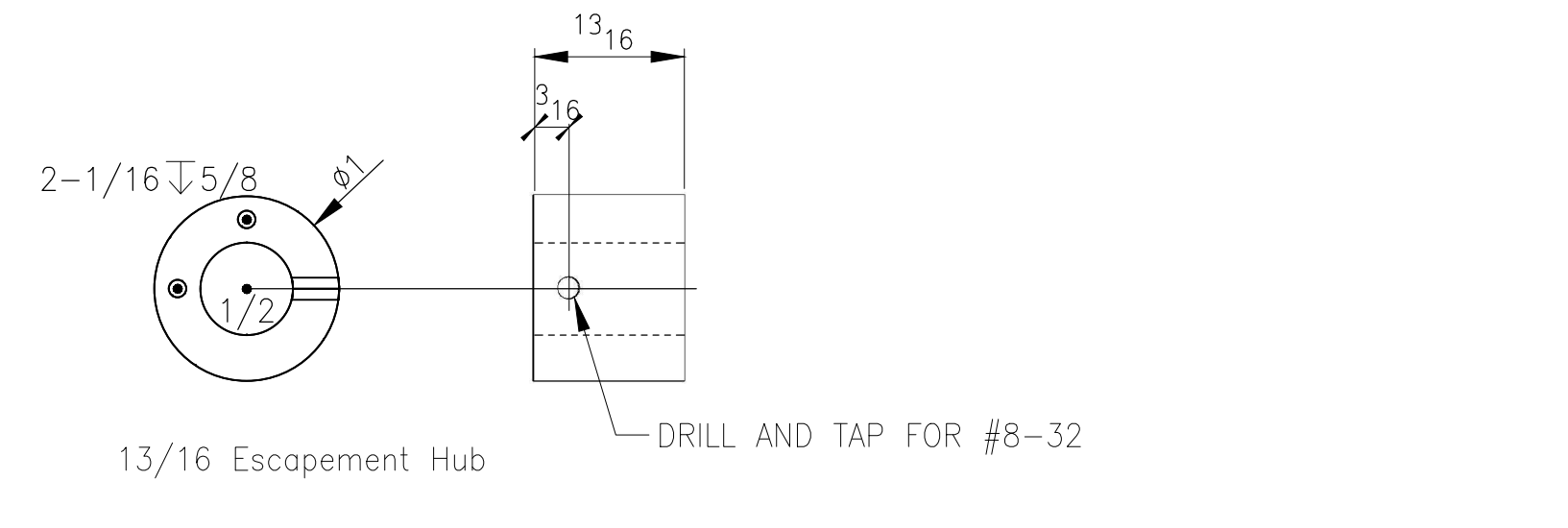
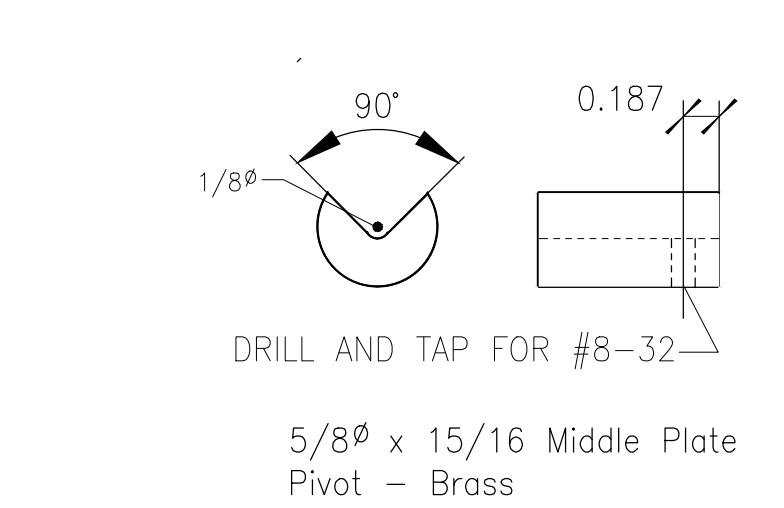
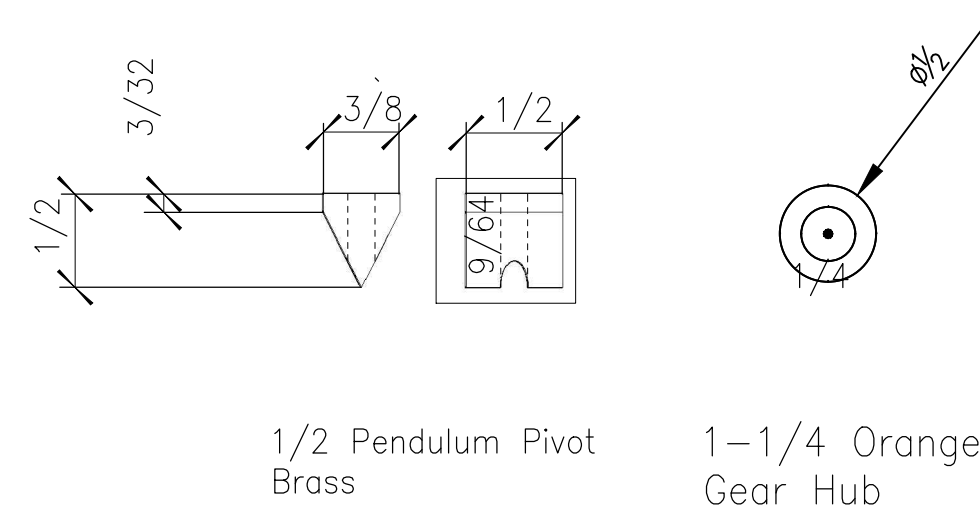
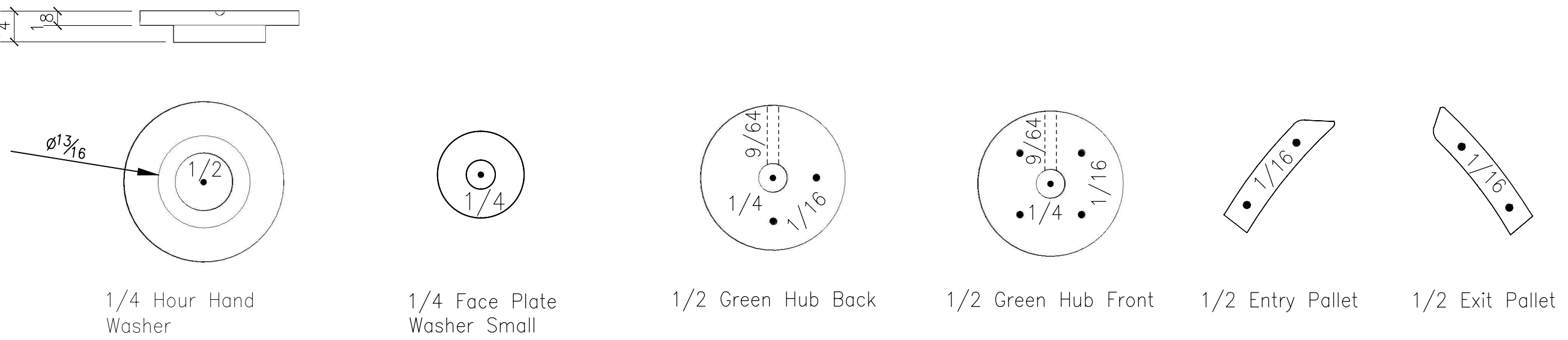
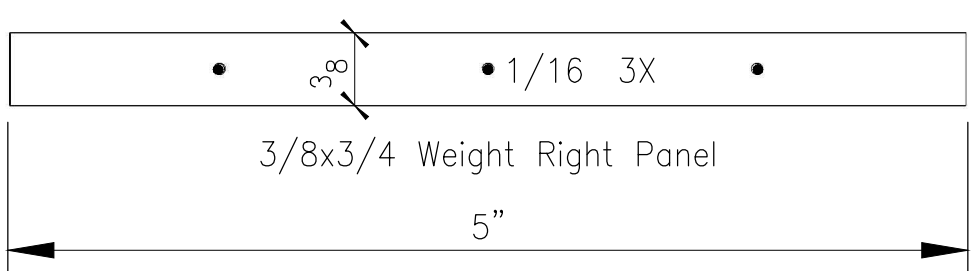
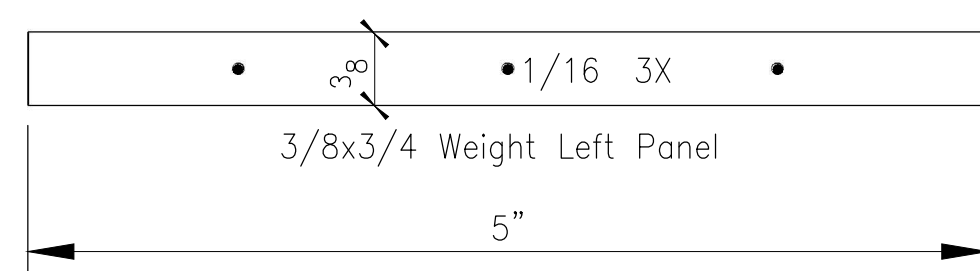
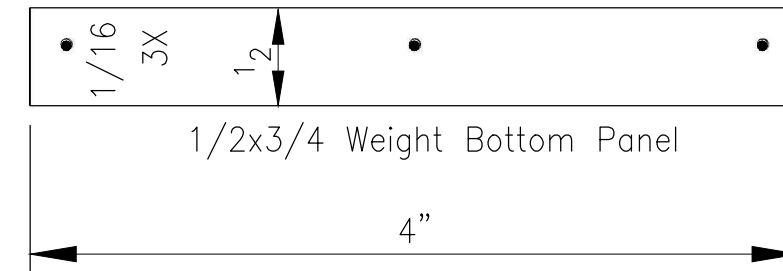
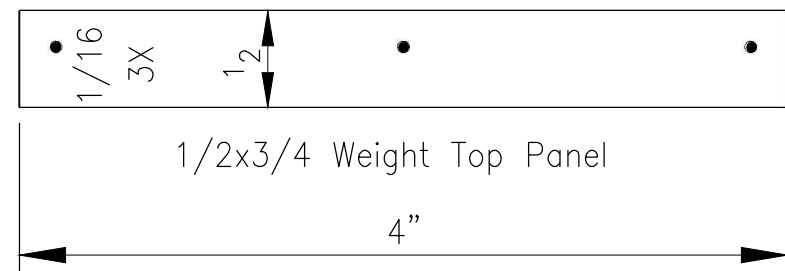
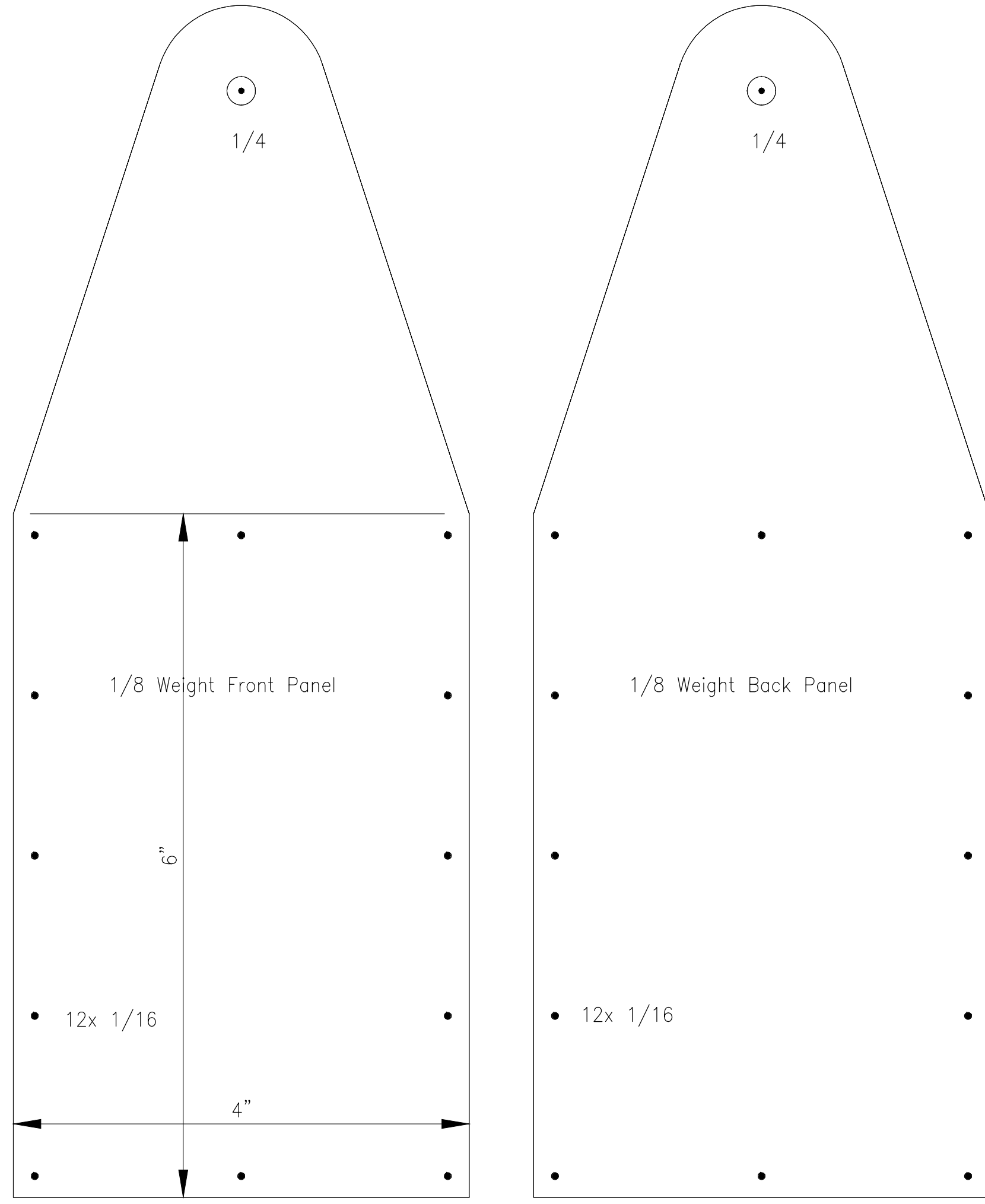
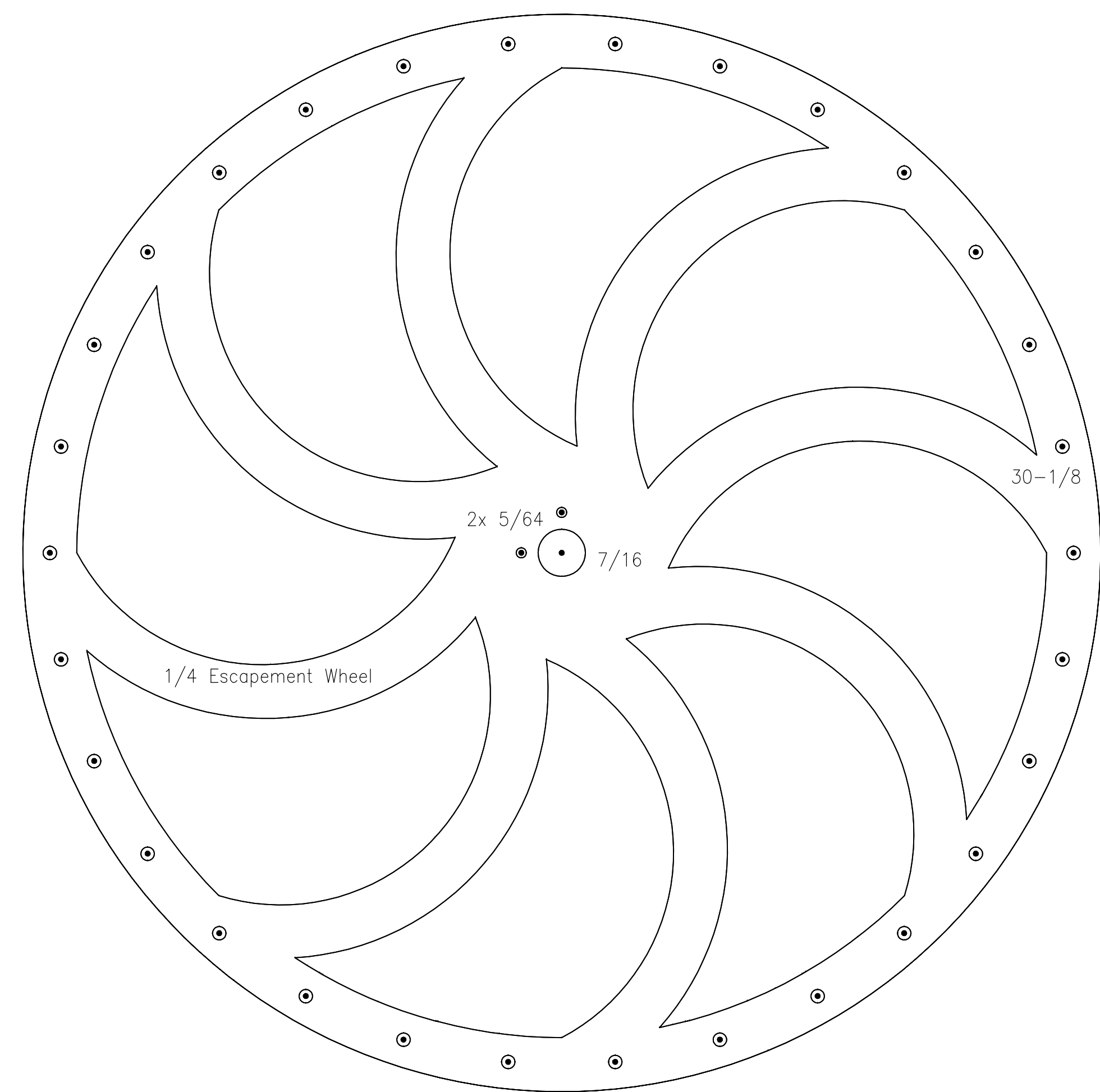
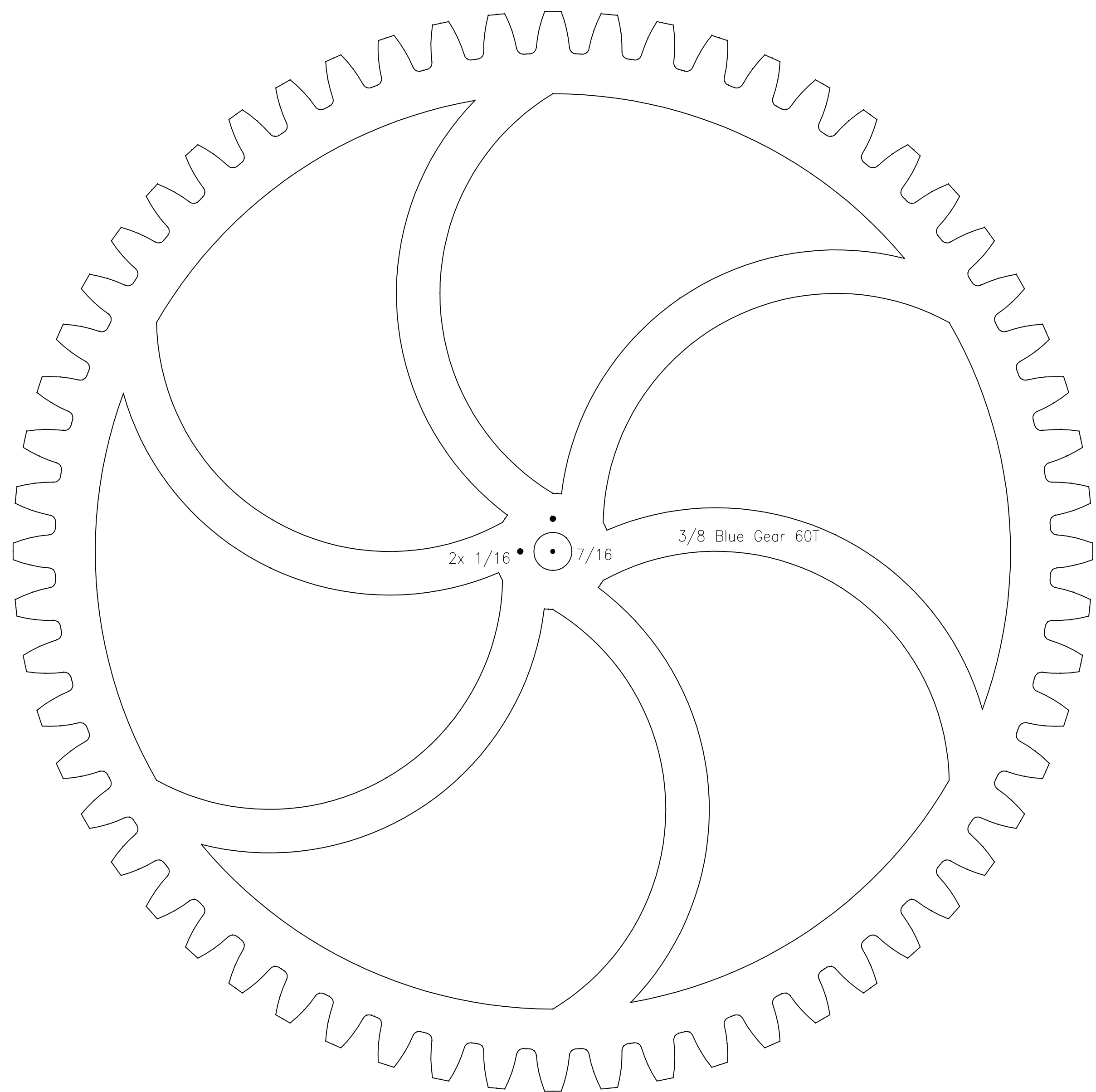


9/32 \square 13/32 ∇ .11
Indicates a 9/32 hole to be drilled thru with a 13/32 counter bore drilled .11 deep.

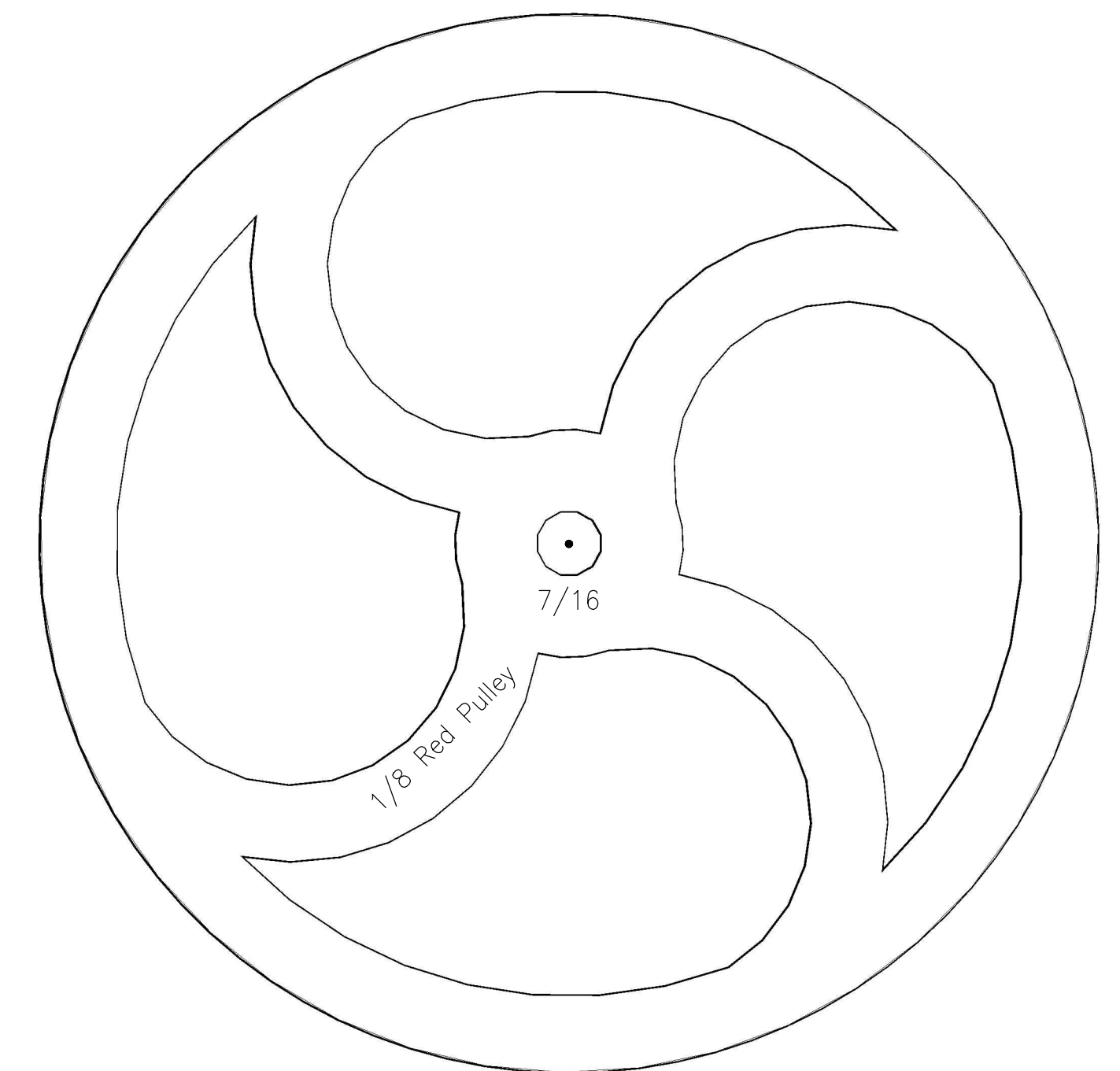
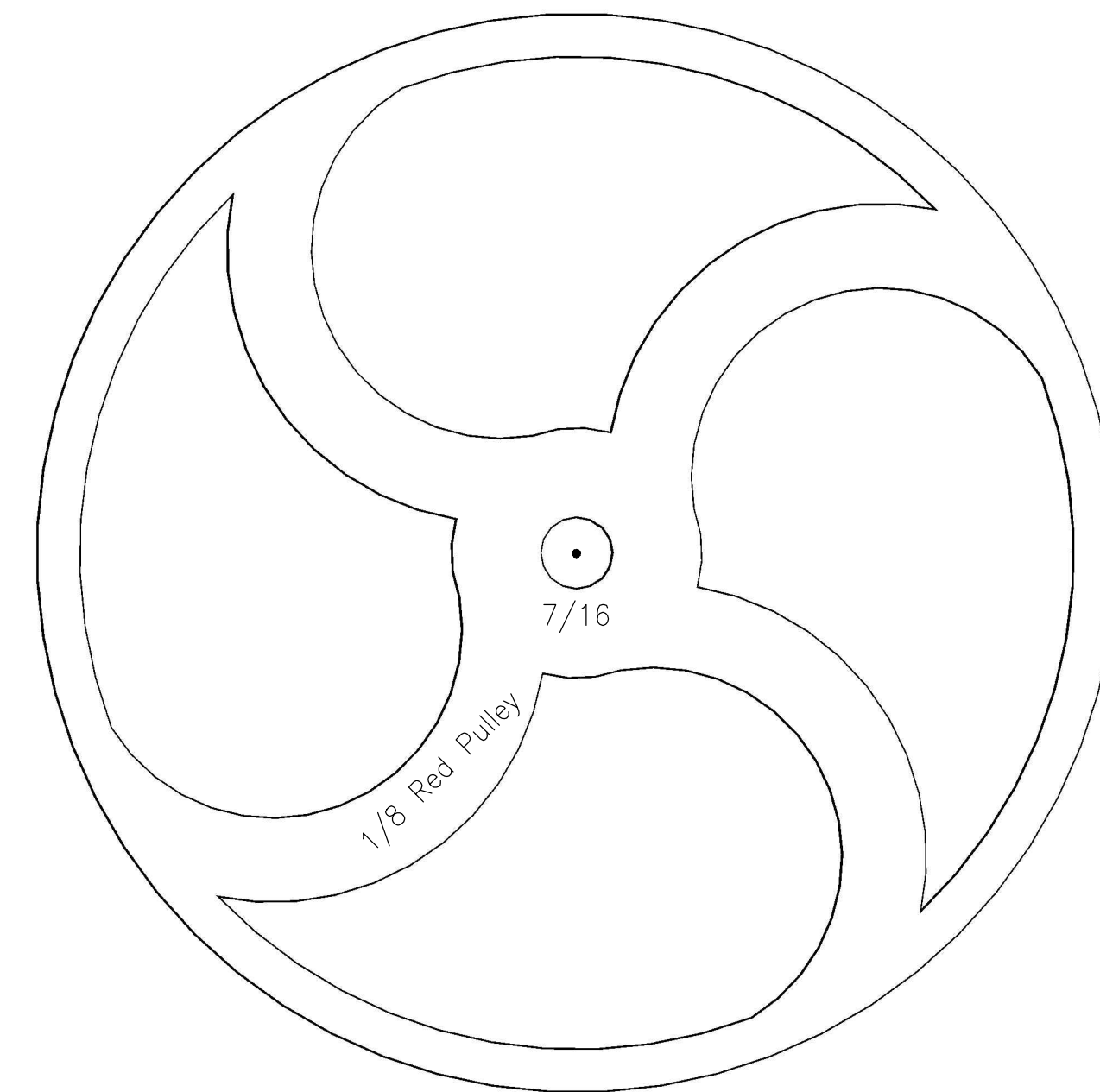
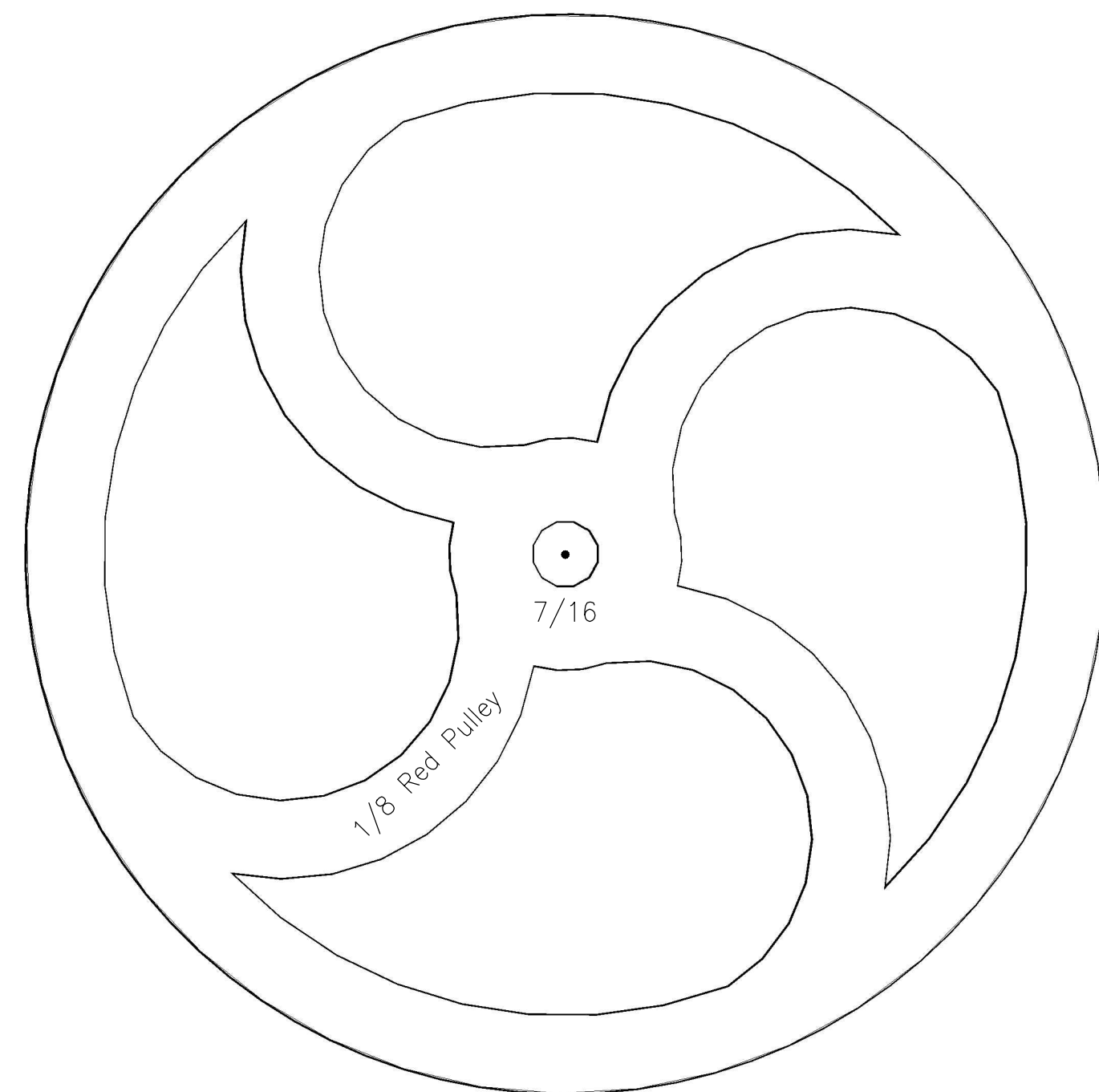
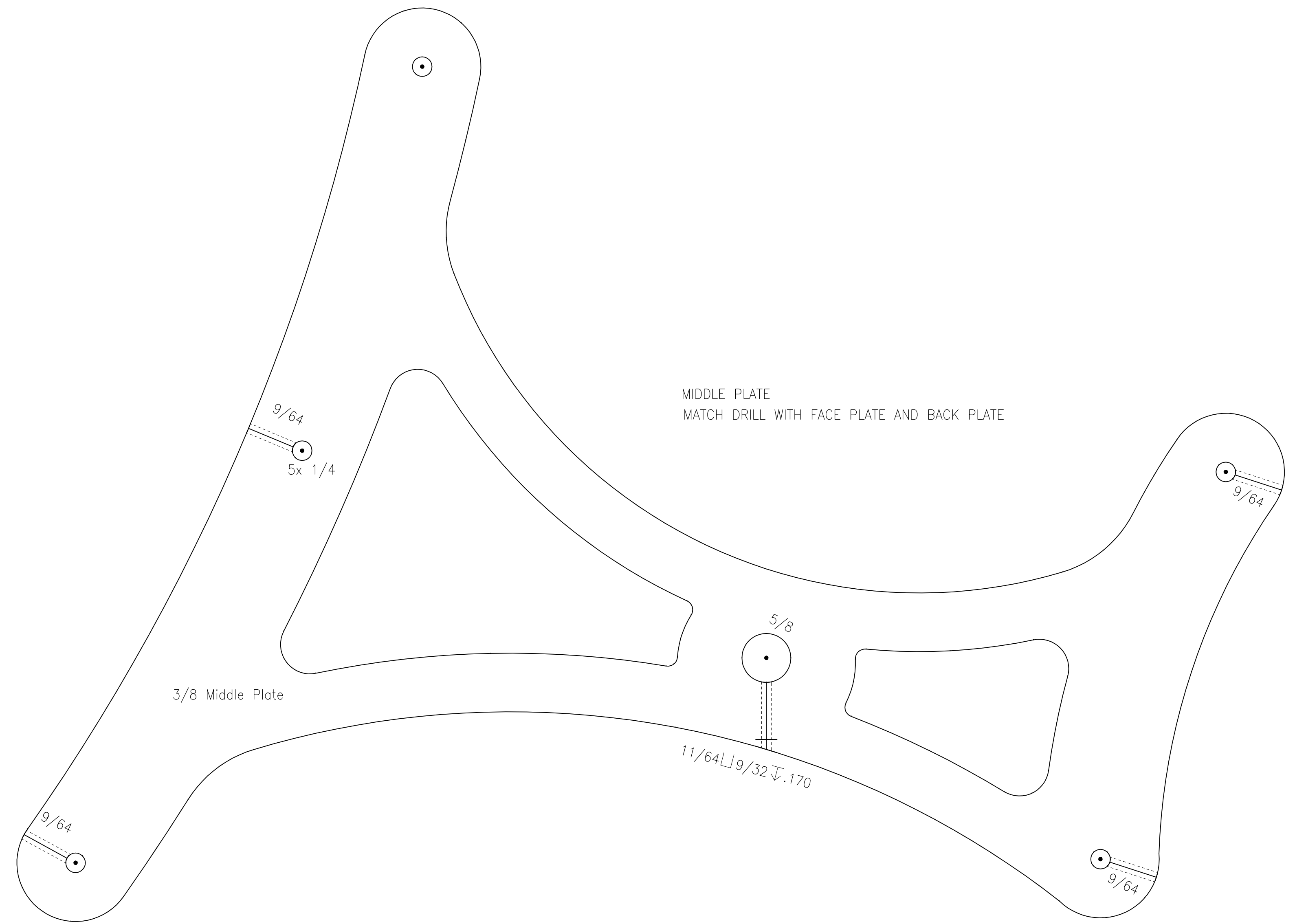
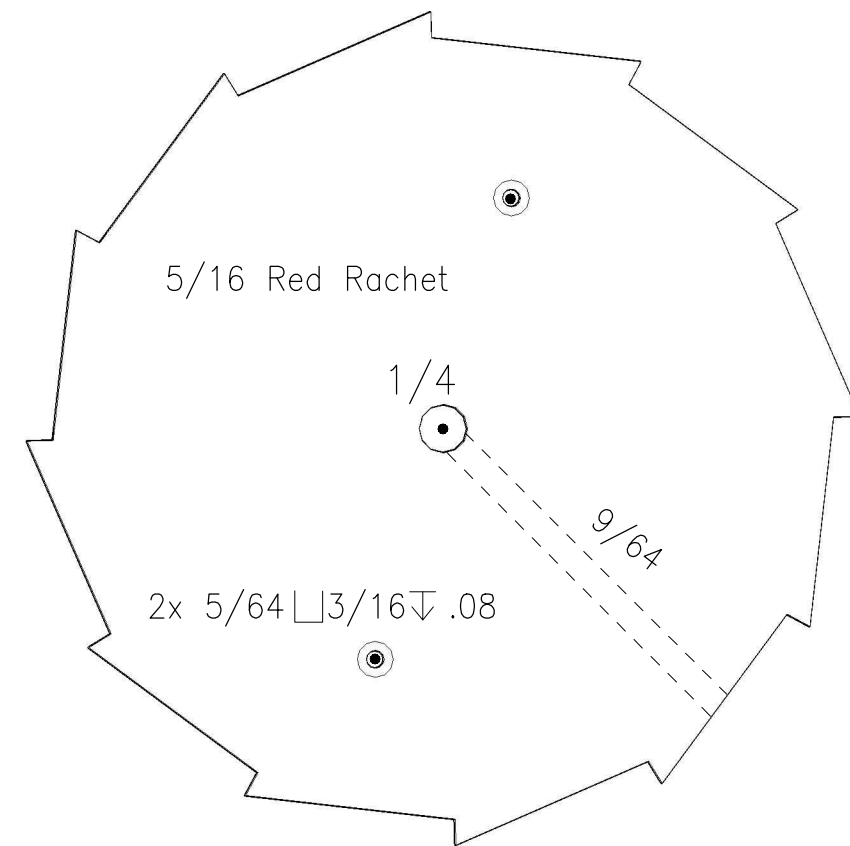
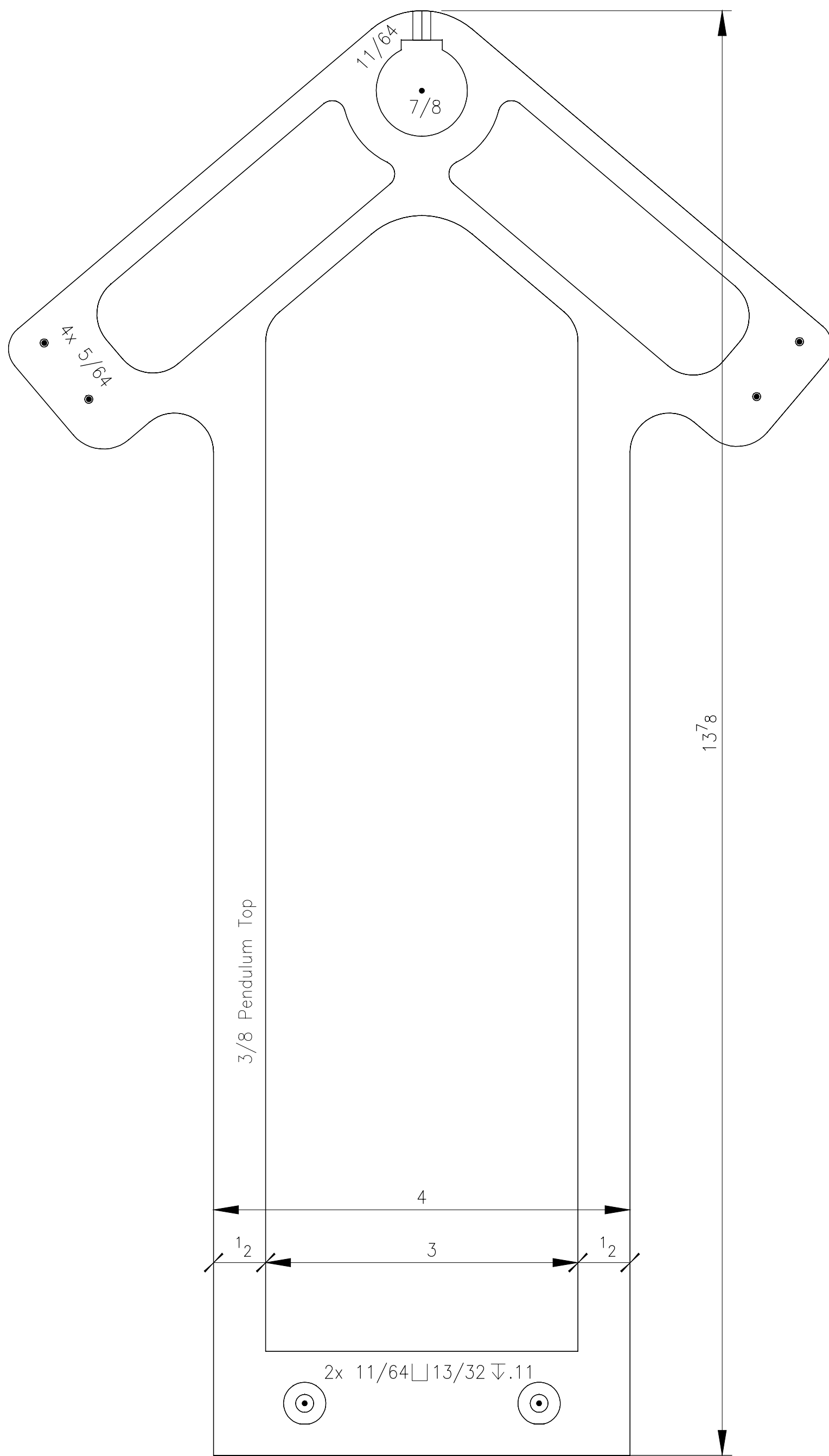
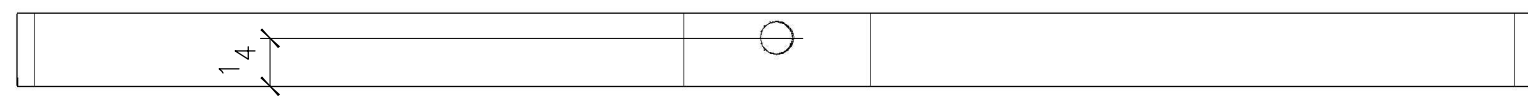
3/8 White Gear 12T
3/8 Indicates the thickness of the part.

Gears are designed with zero clearance, therefore it is advised to place the side of the blade on the inside of the lines when cutting the gear teeth. This will give a clearance of two kerfs.

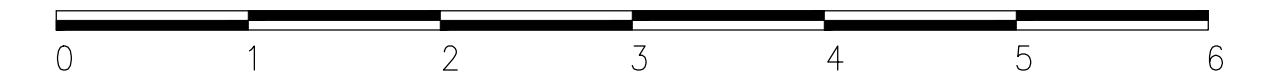


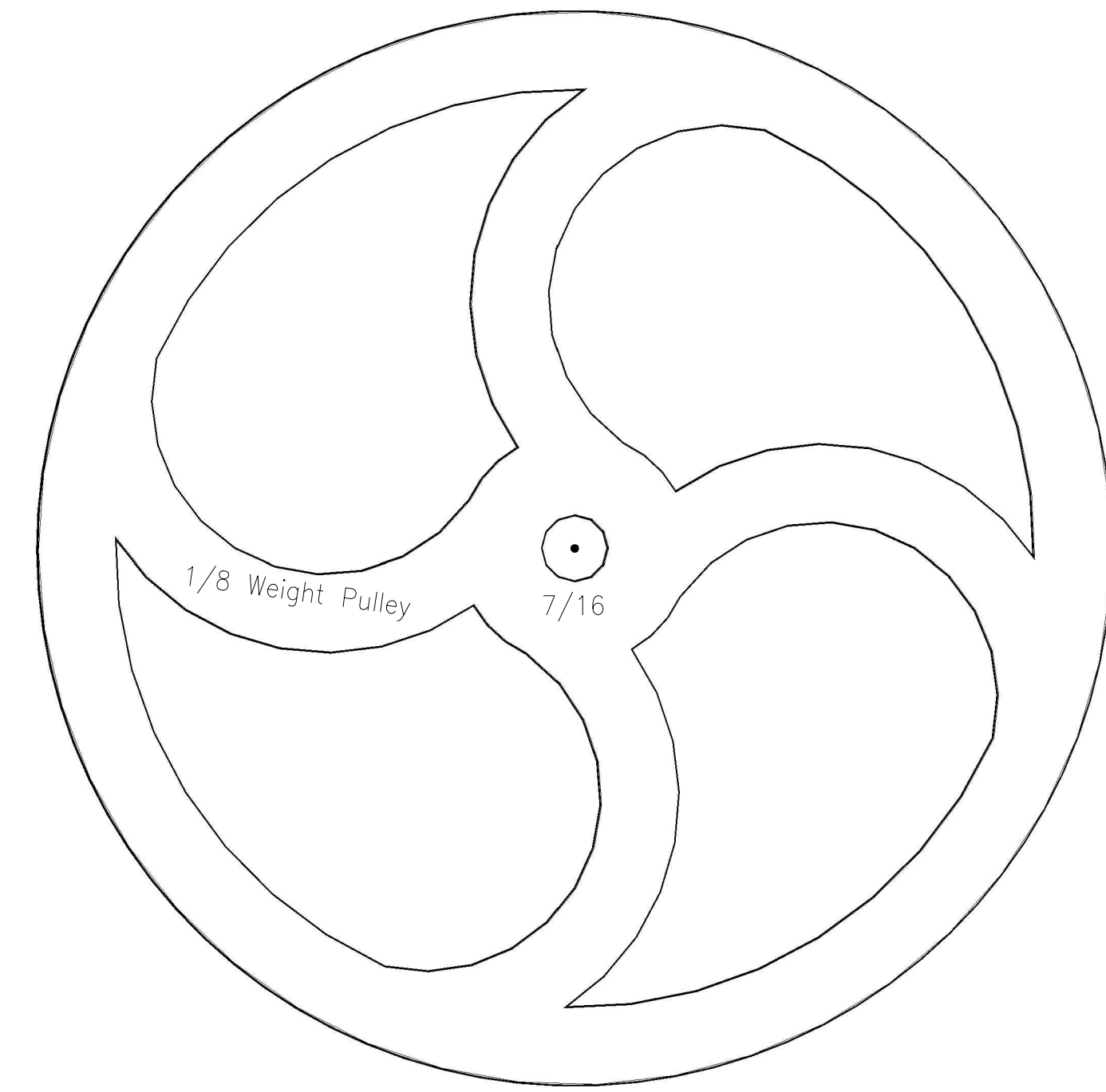
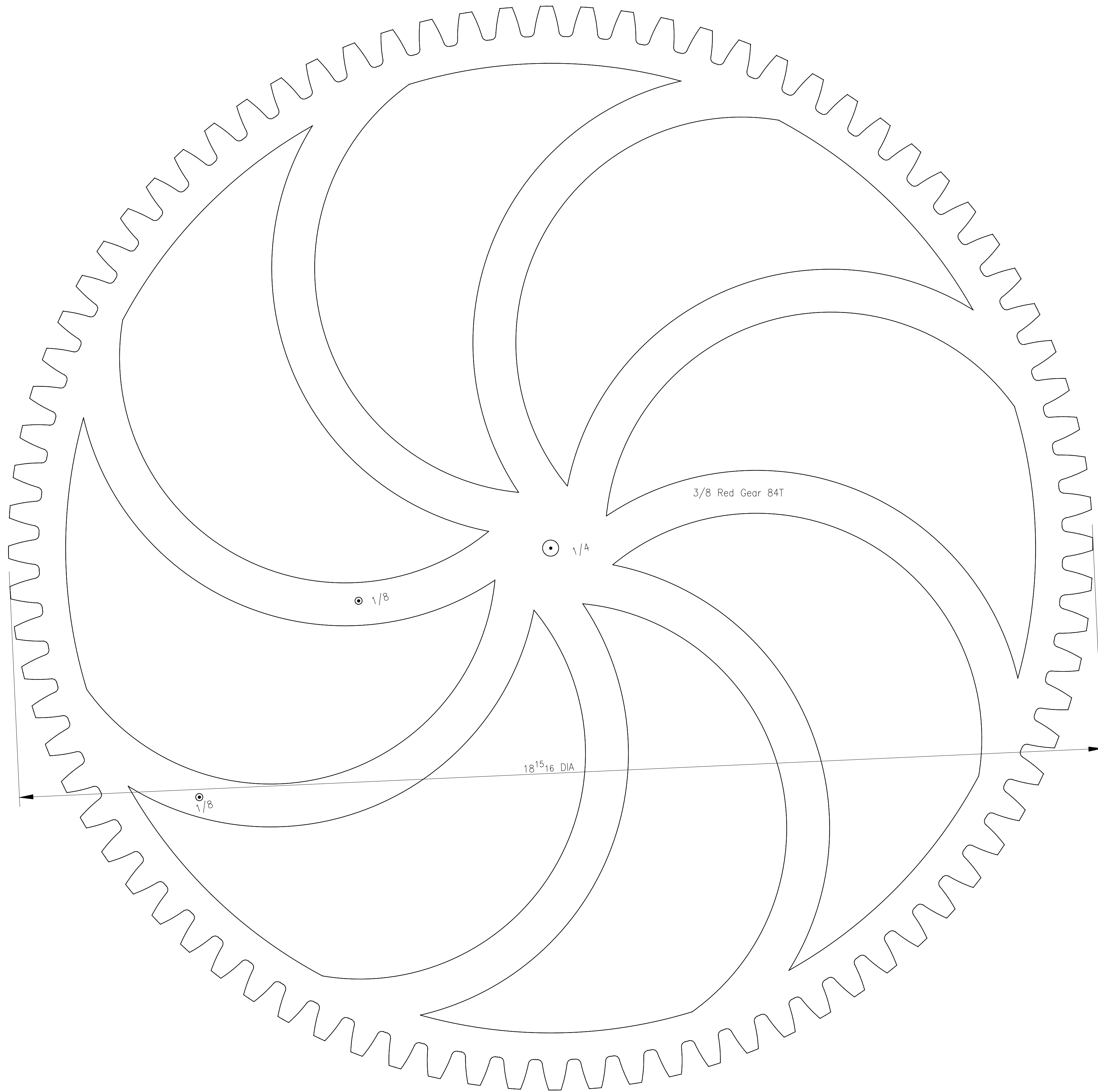


PRINT THIS DRAWING 22X34. SCALE: 1"=1'-0"




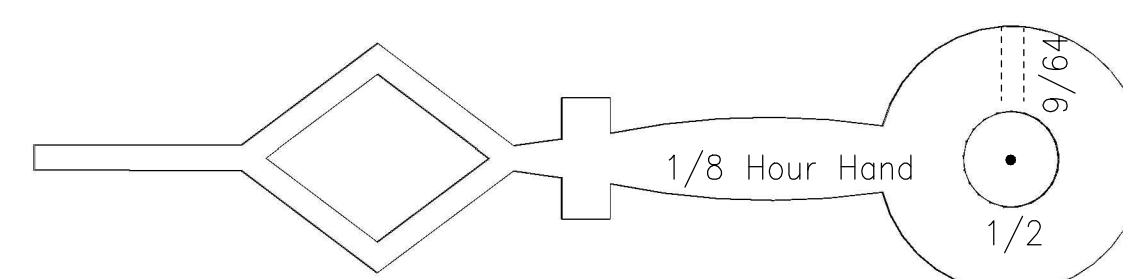
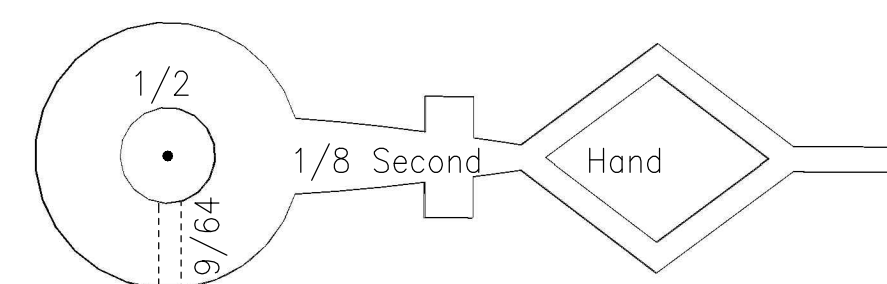
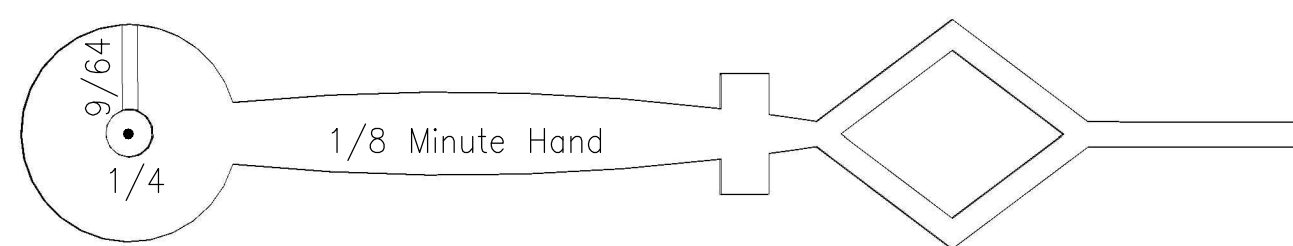
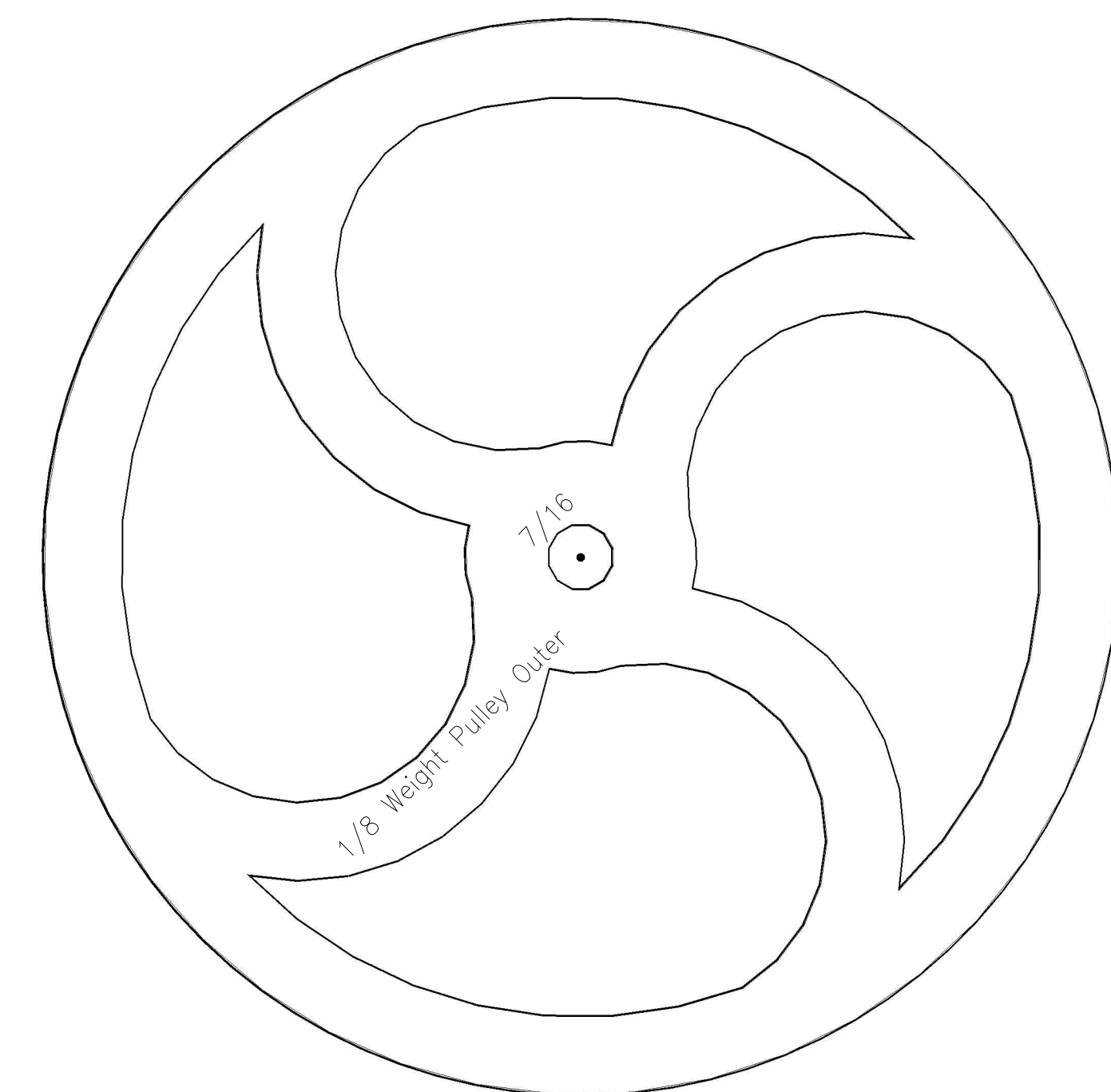
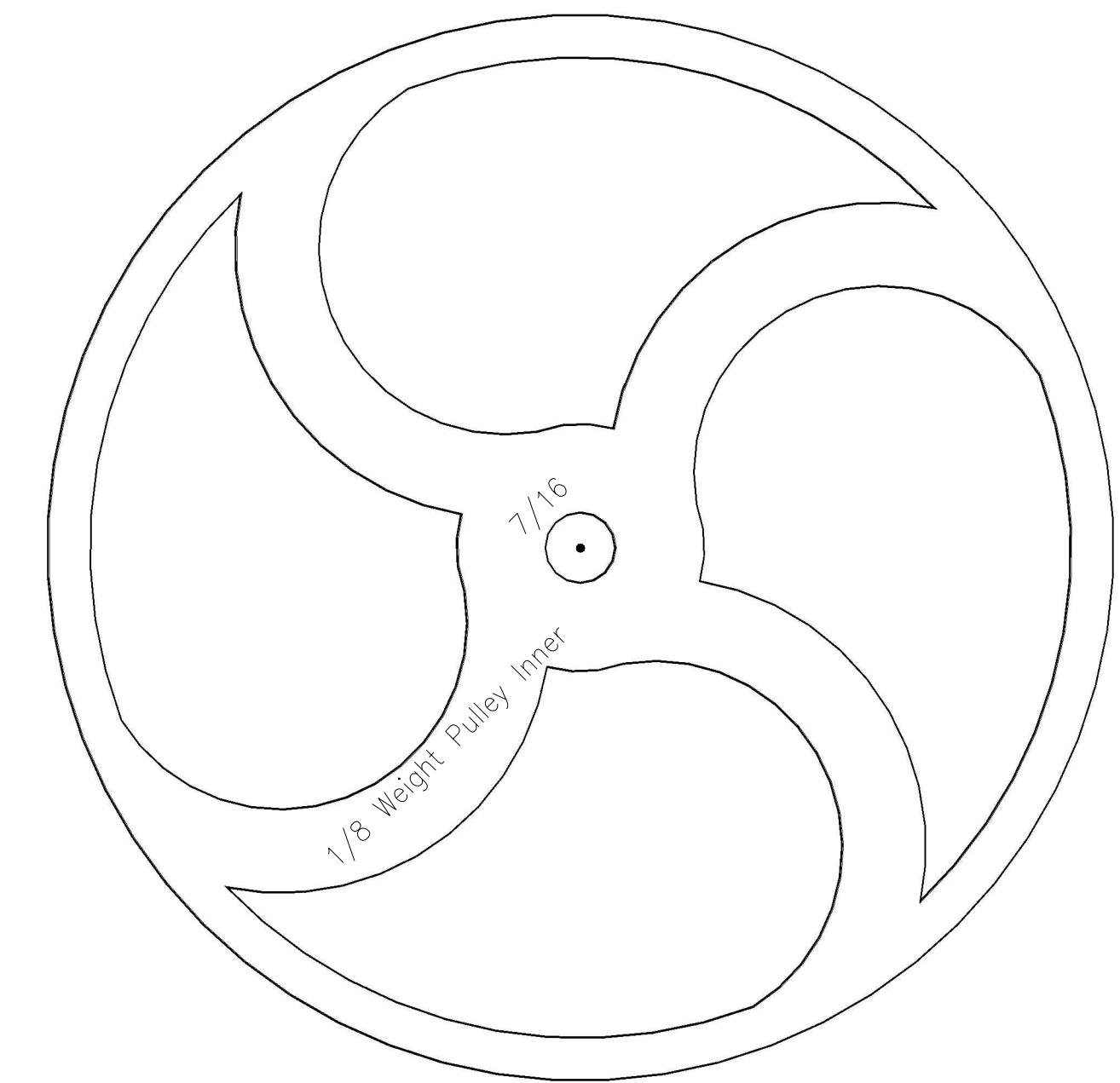
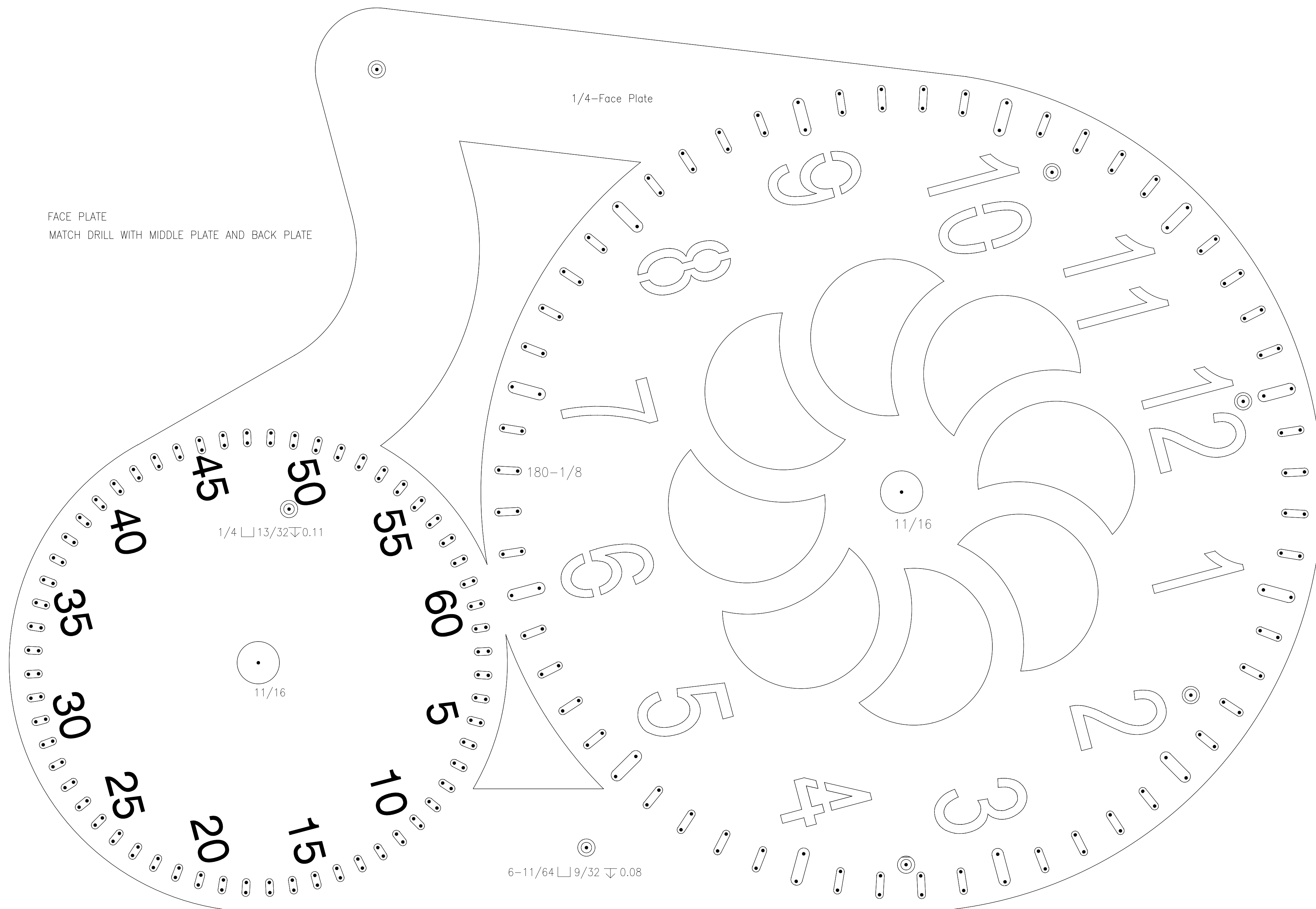
PRINT THIS DRAWING 22X34. SCALE: 1"=1'-0"



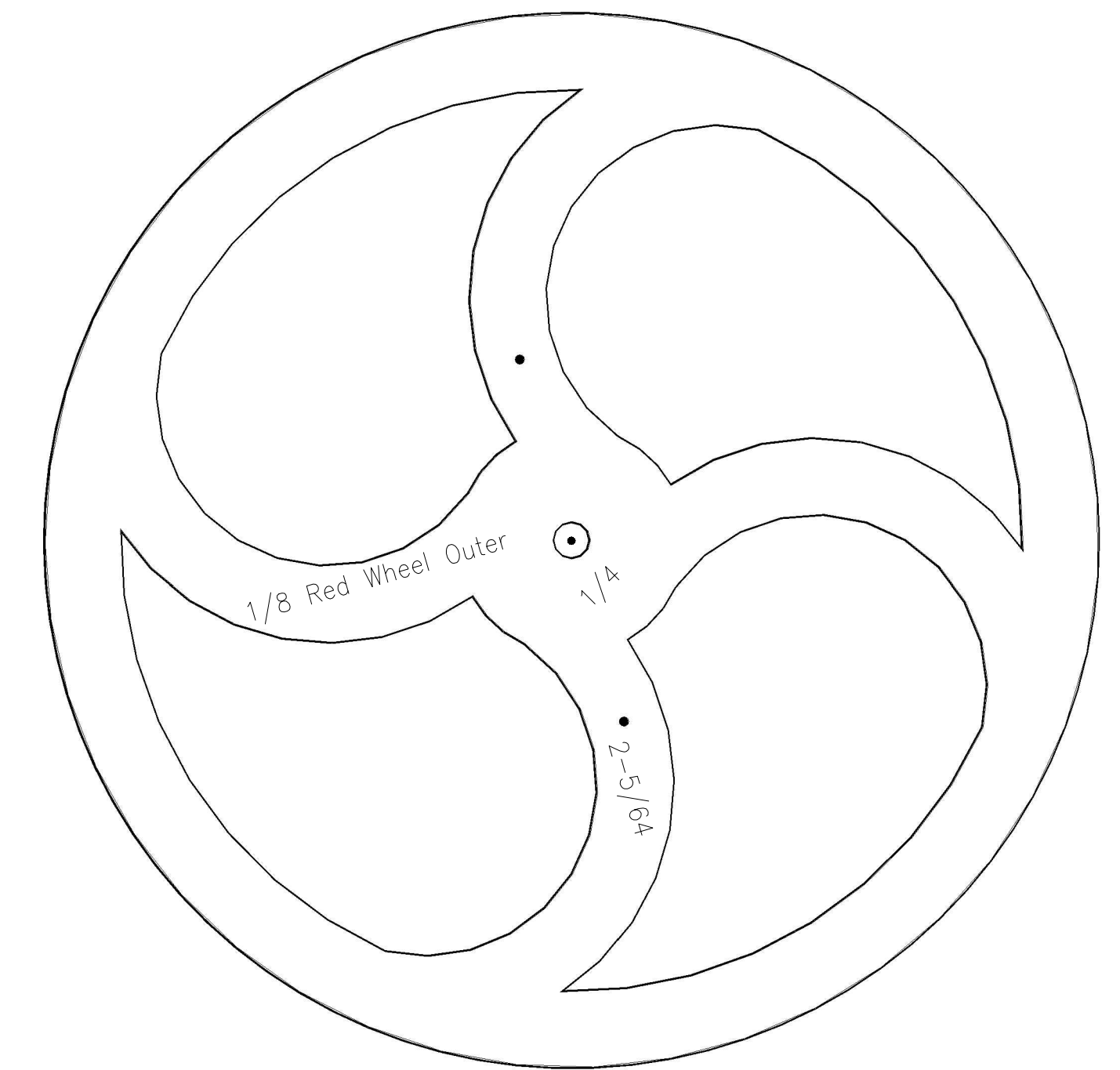
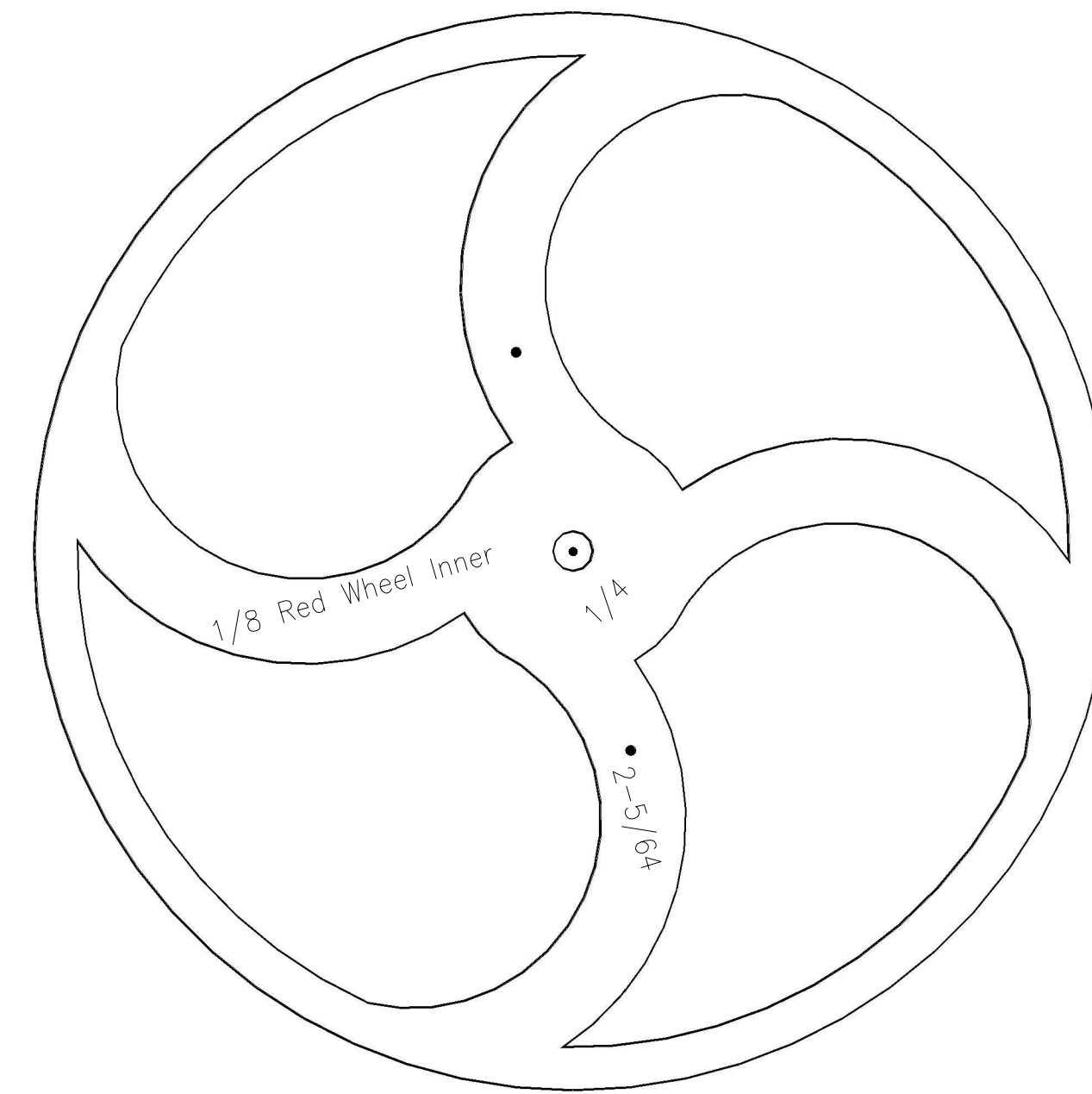
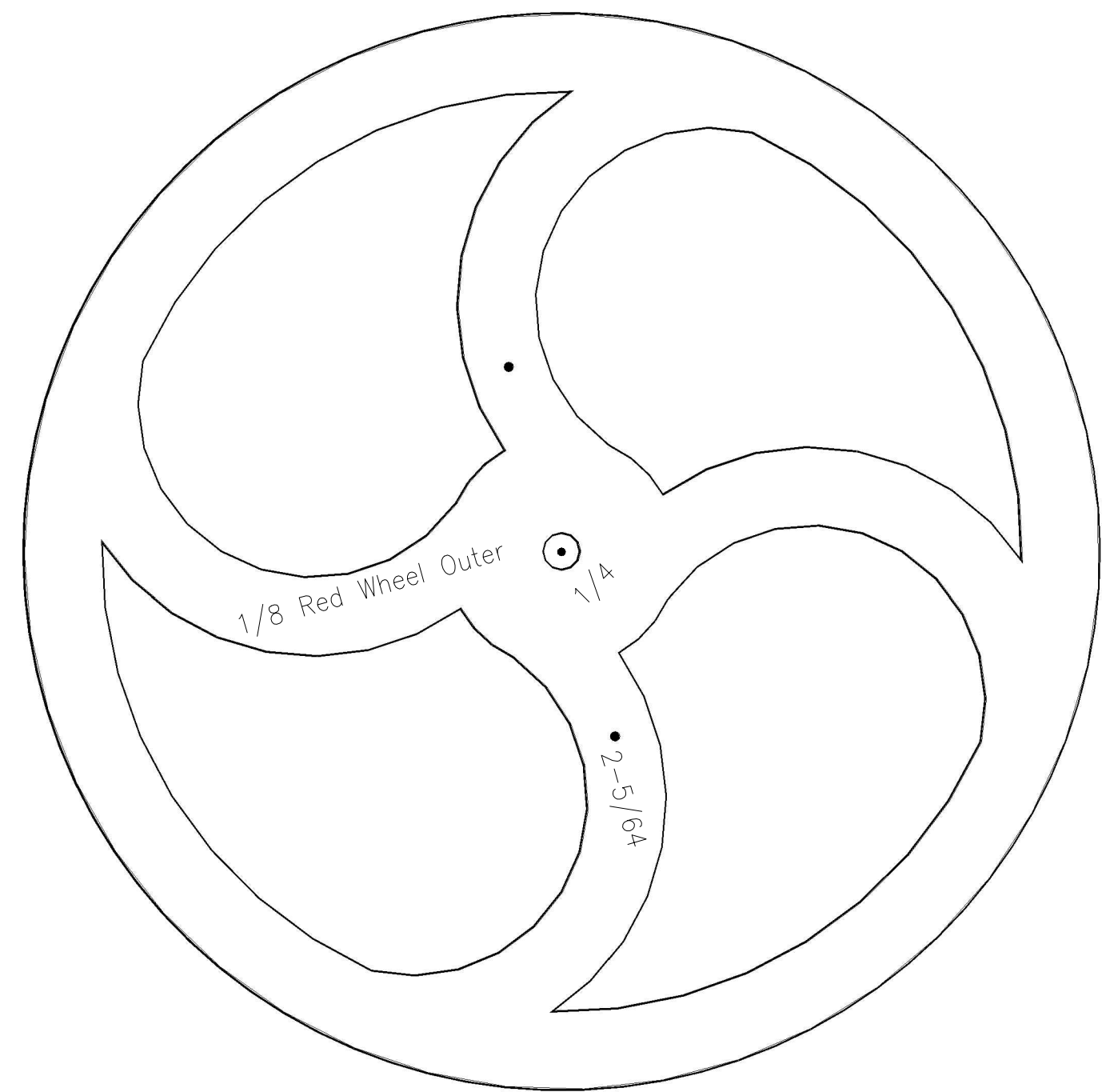
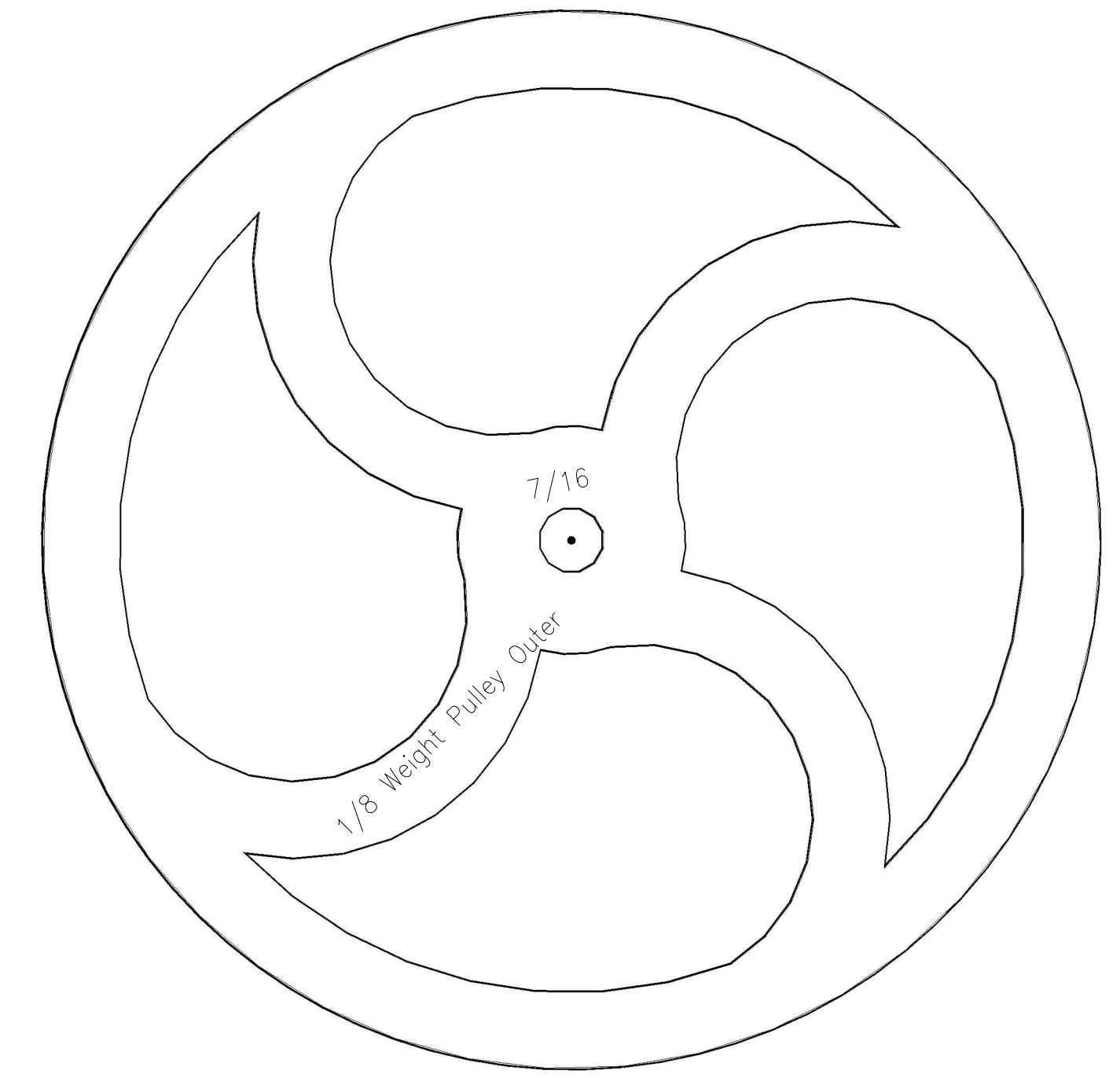
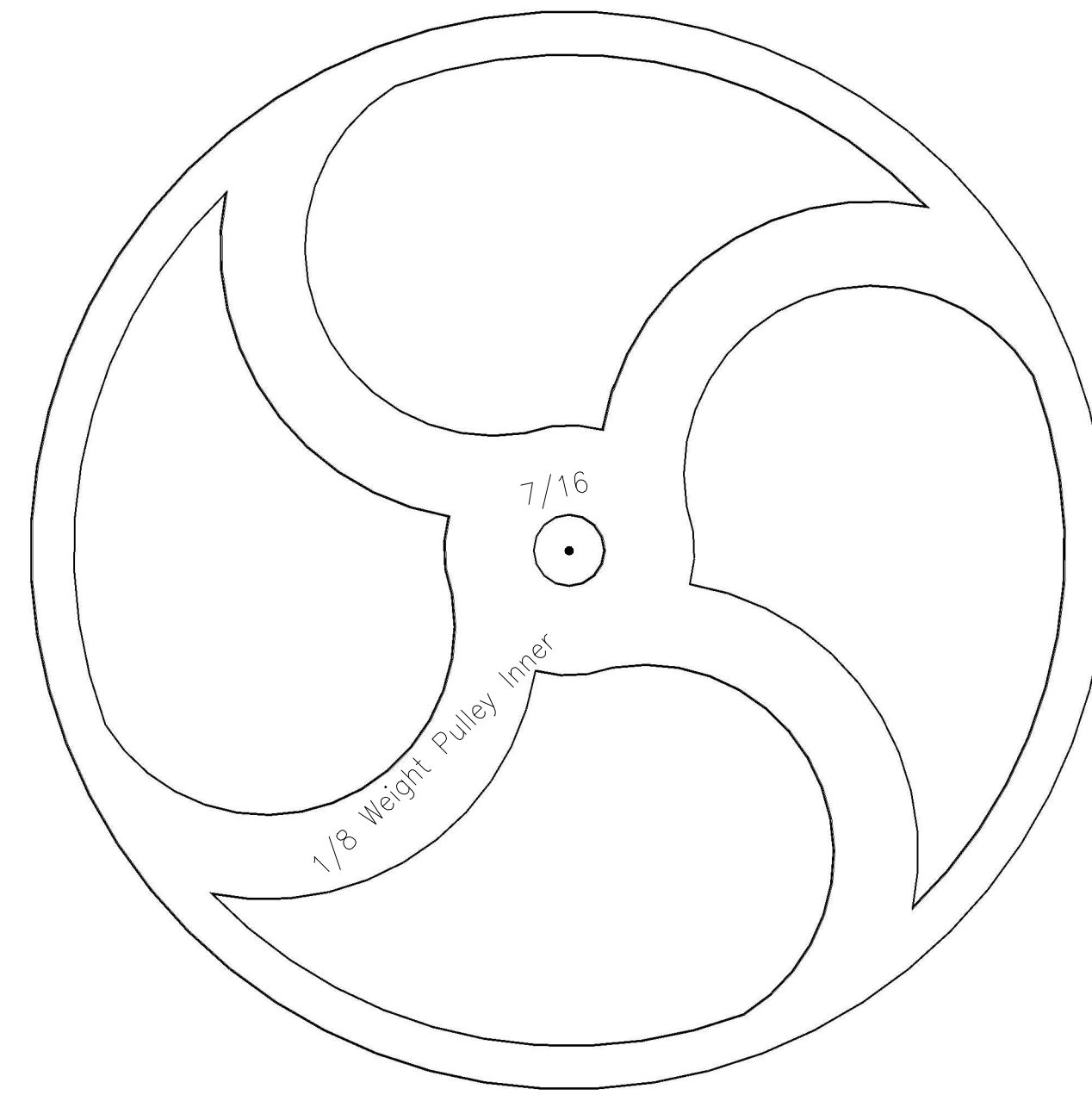
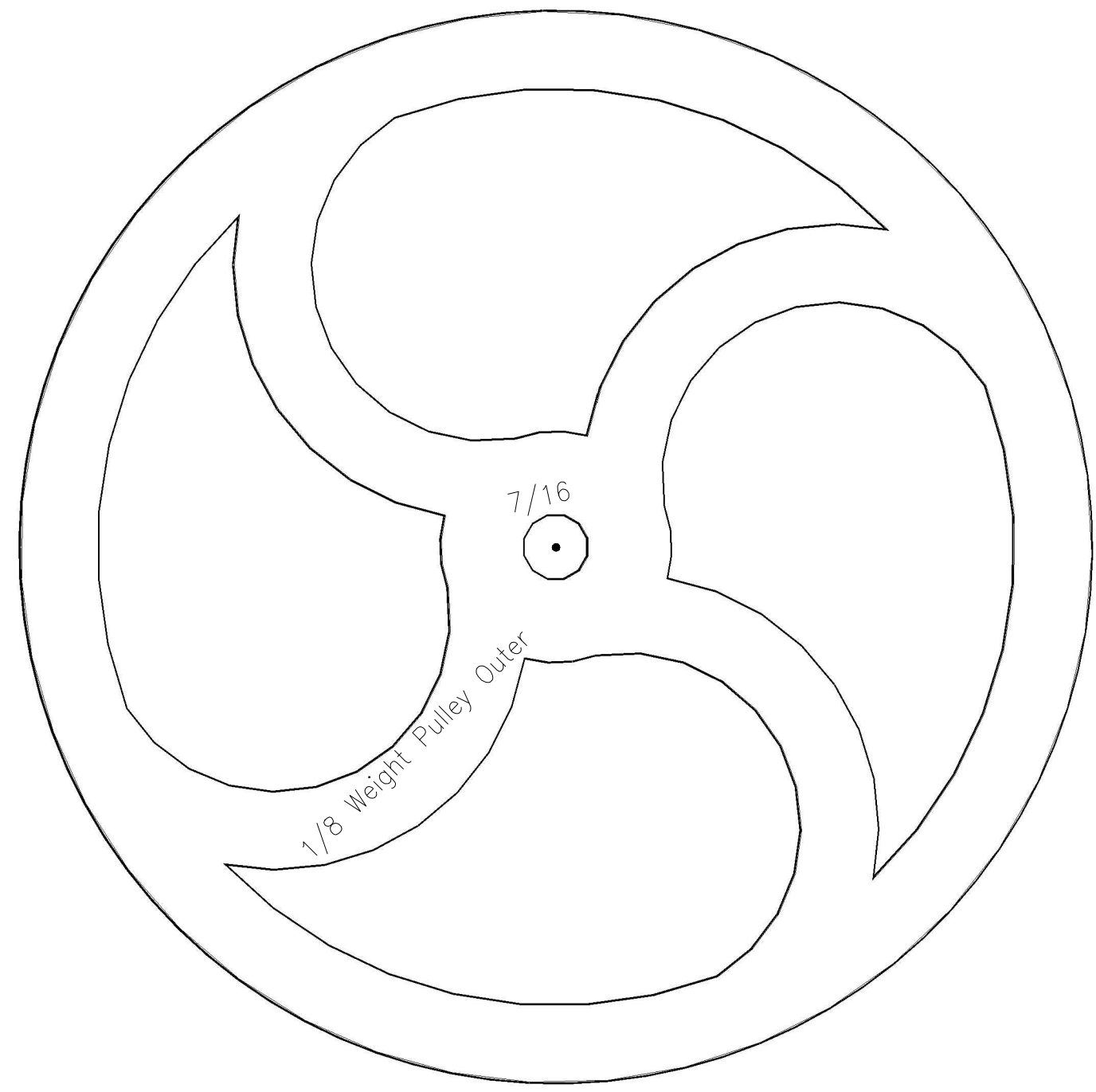


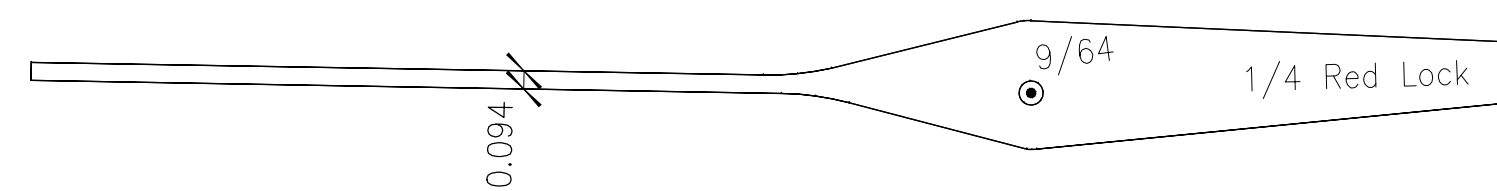
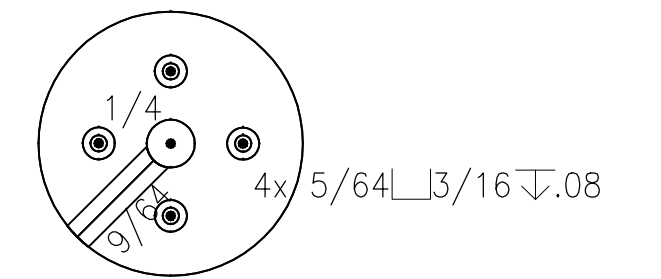
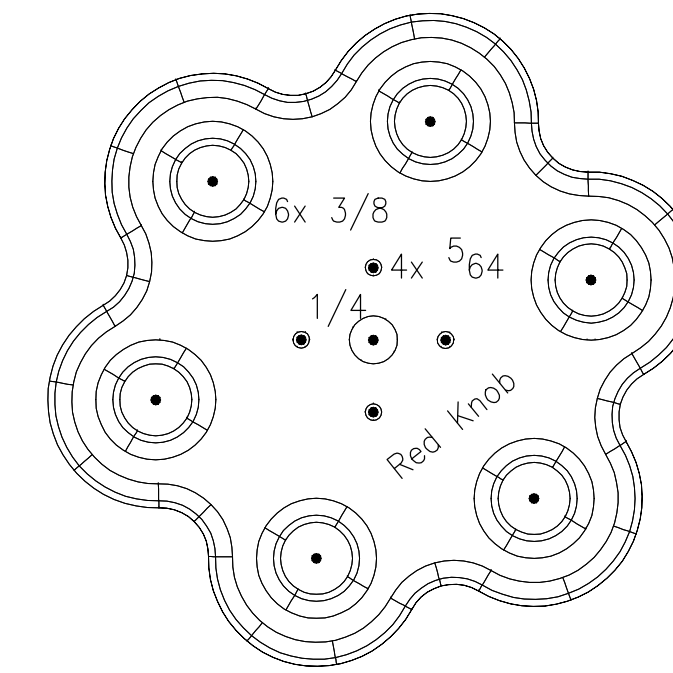
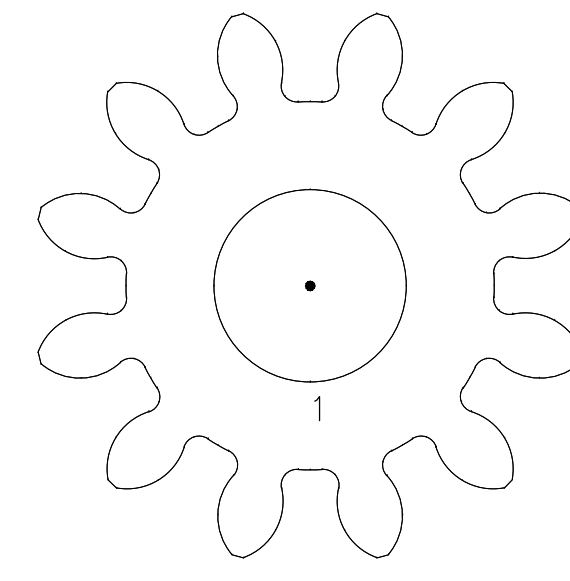
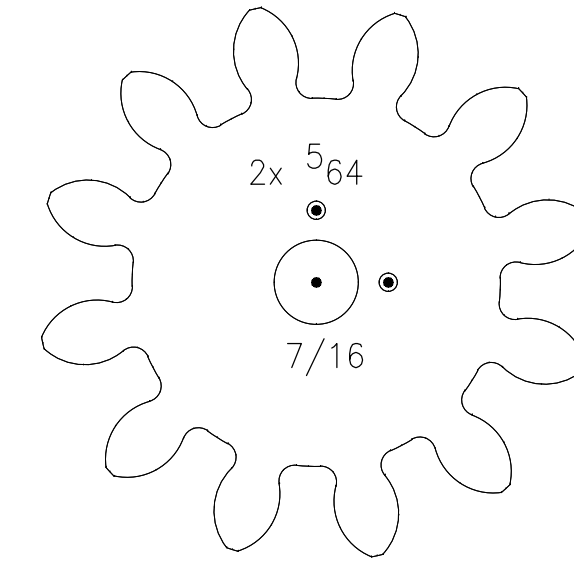
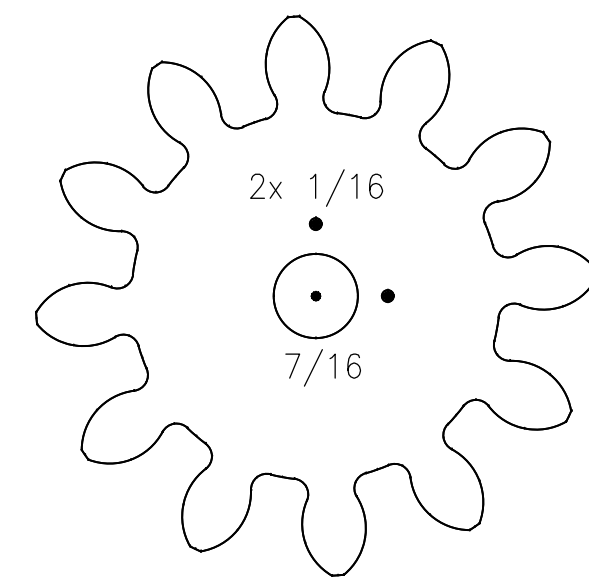
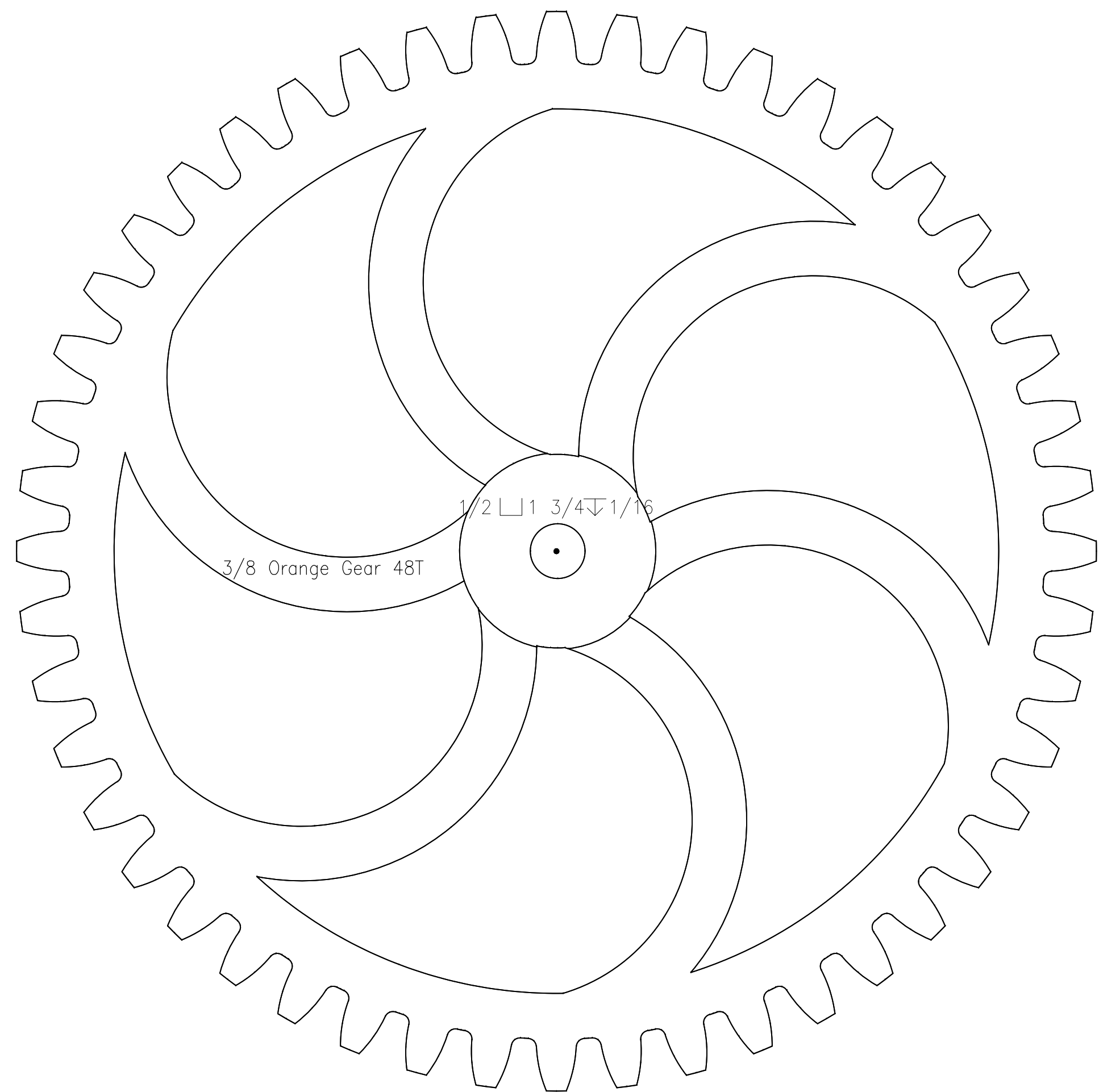
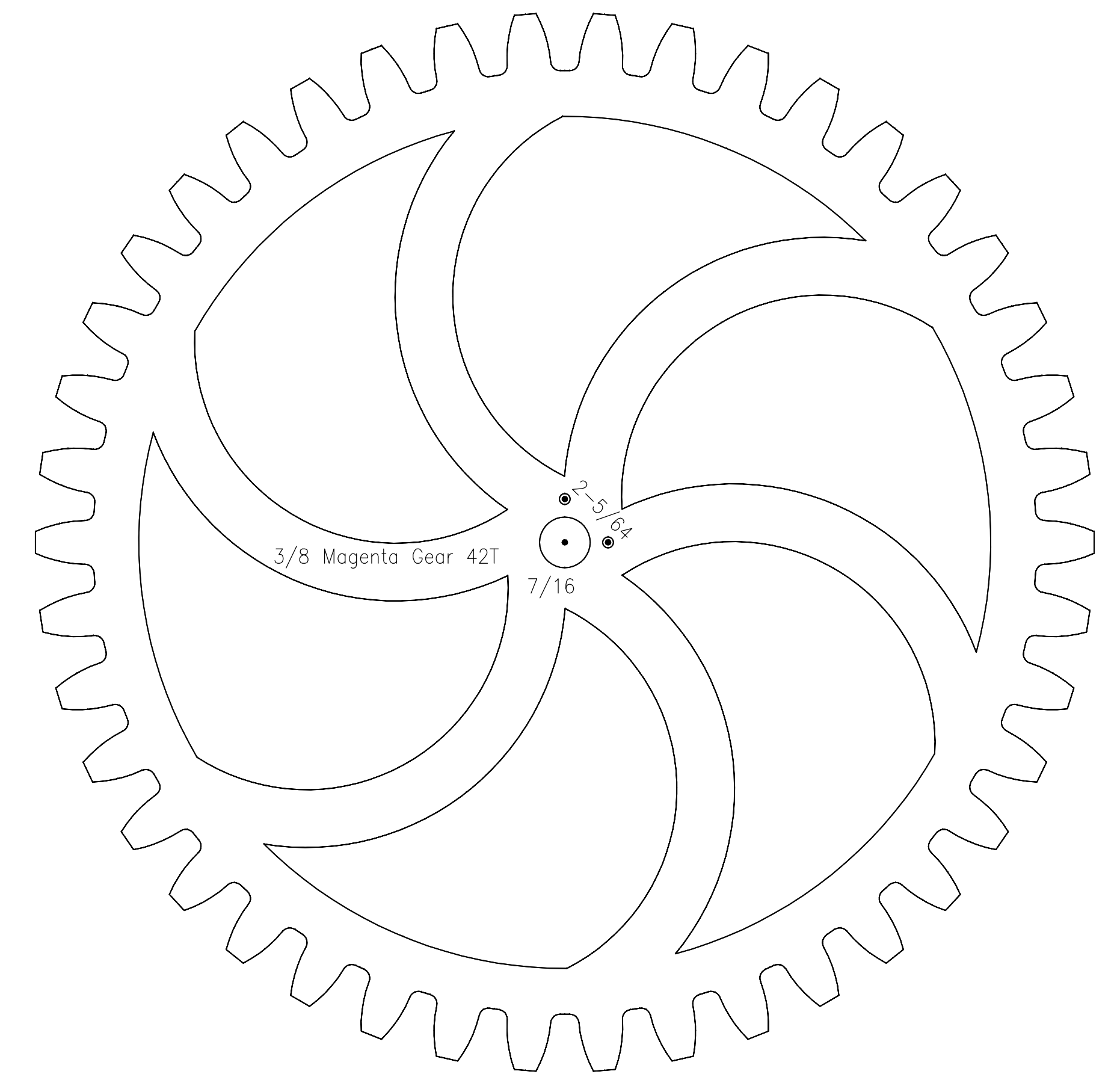
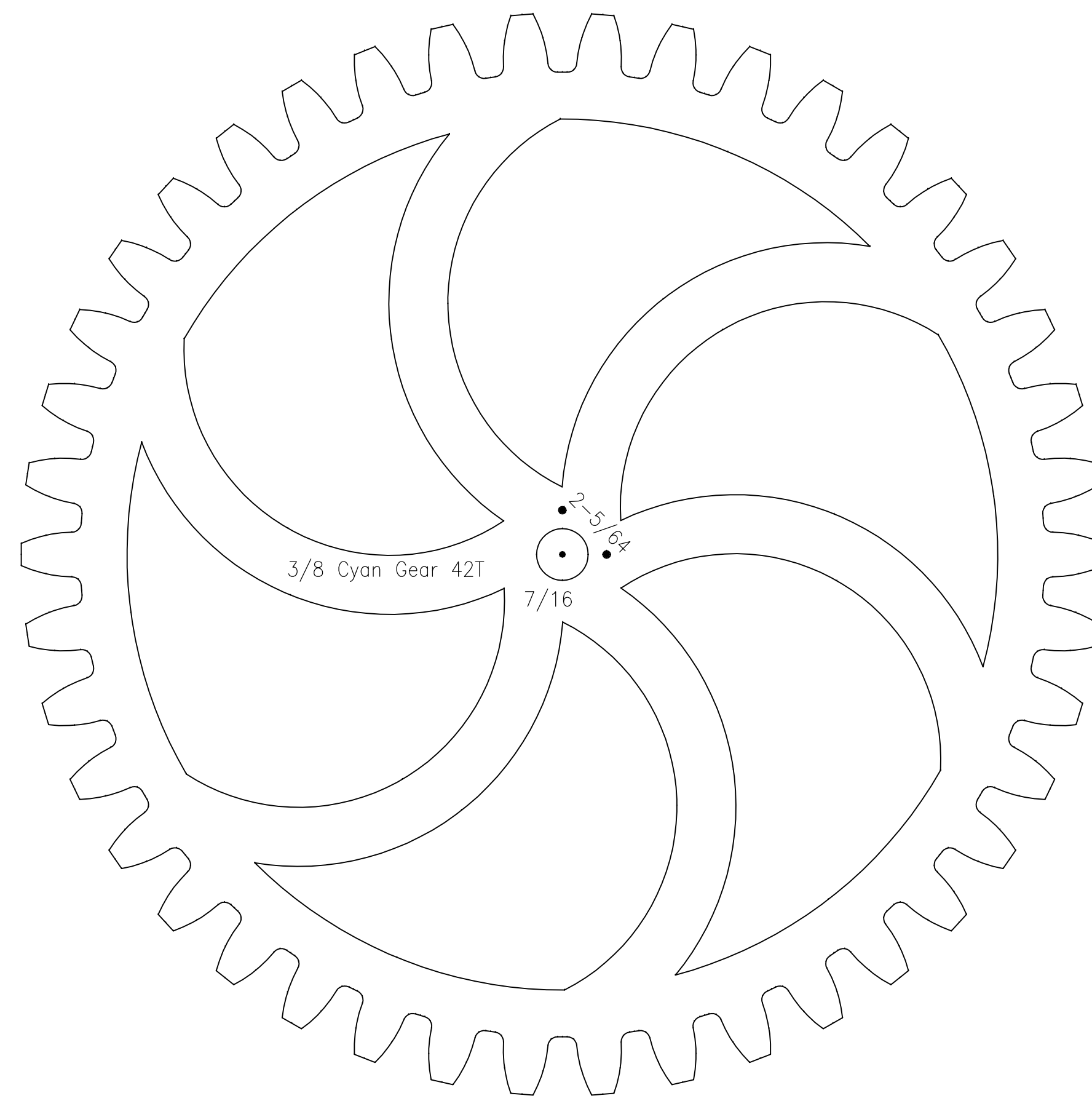
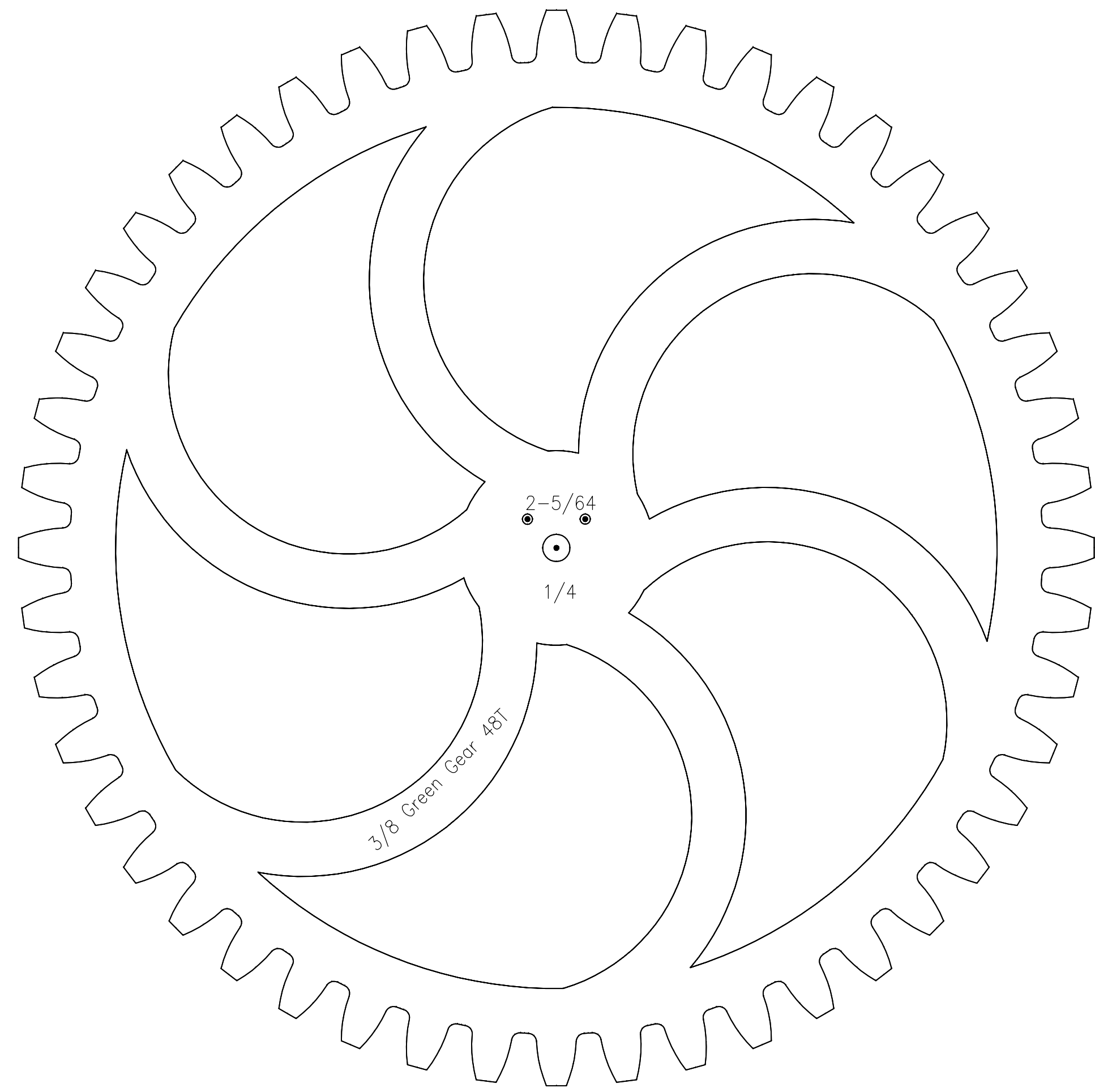
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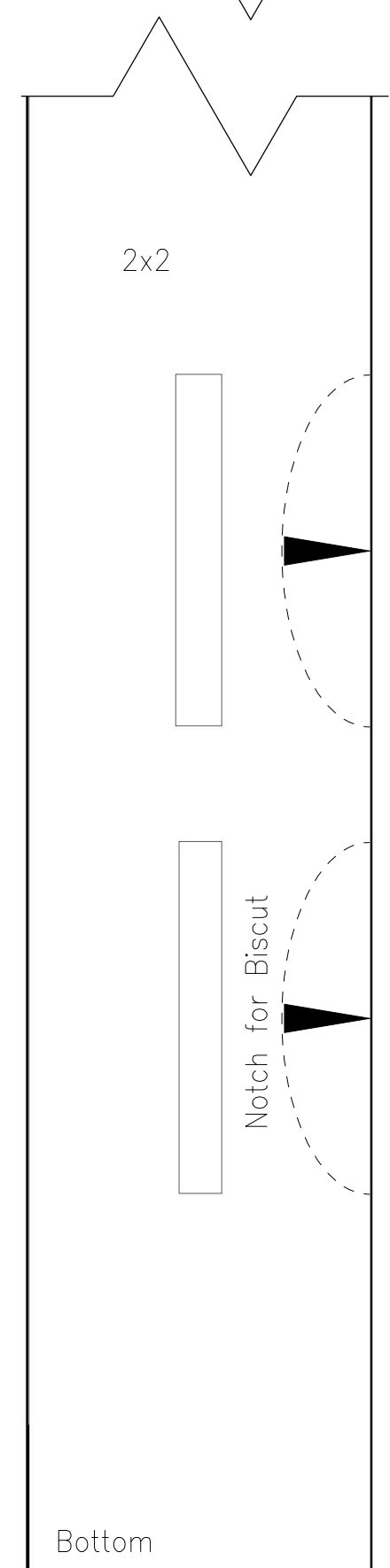
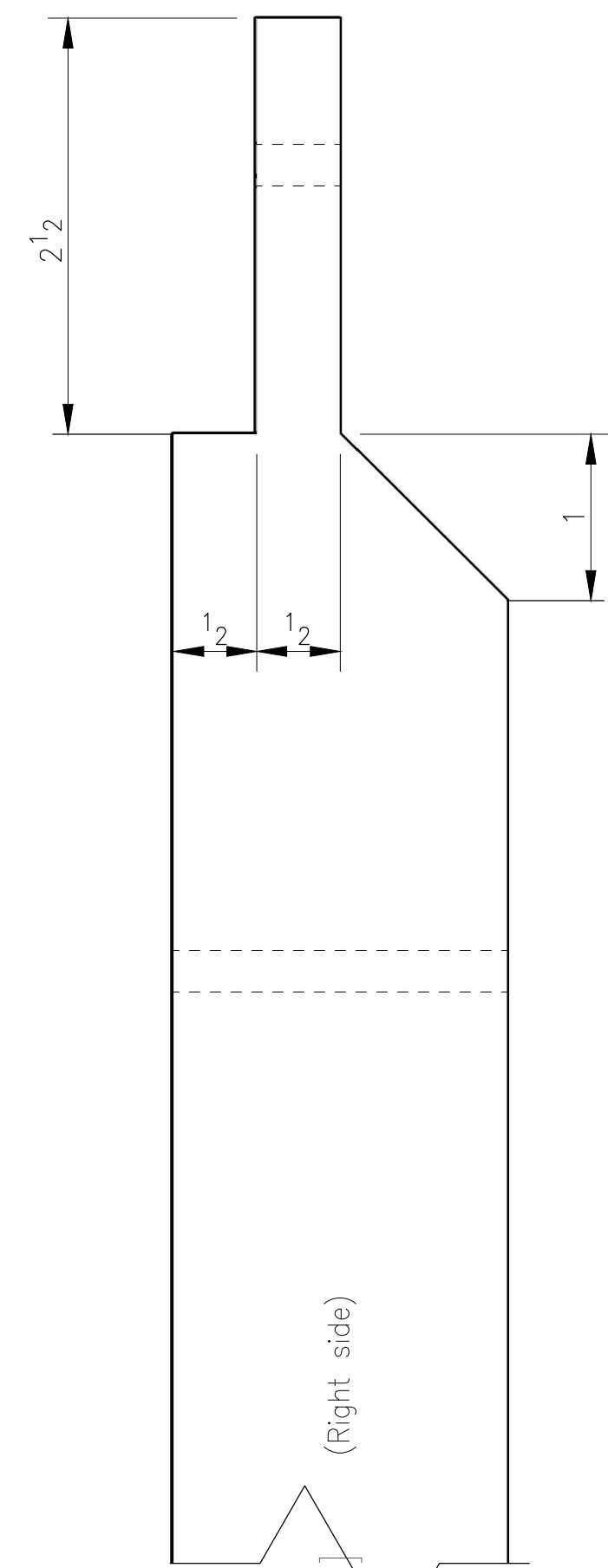
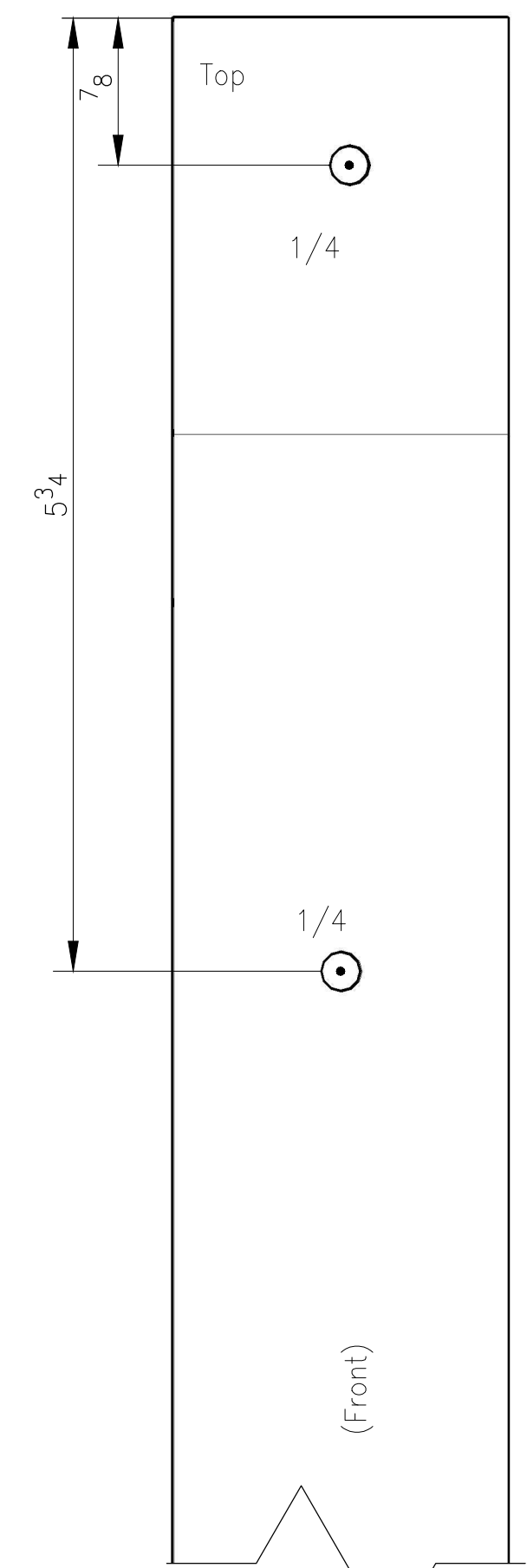
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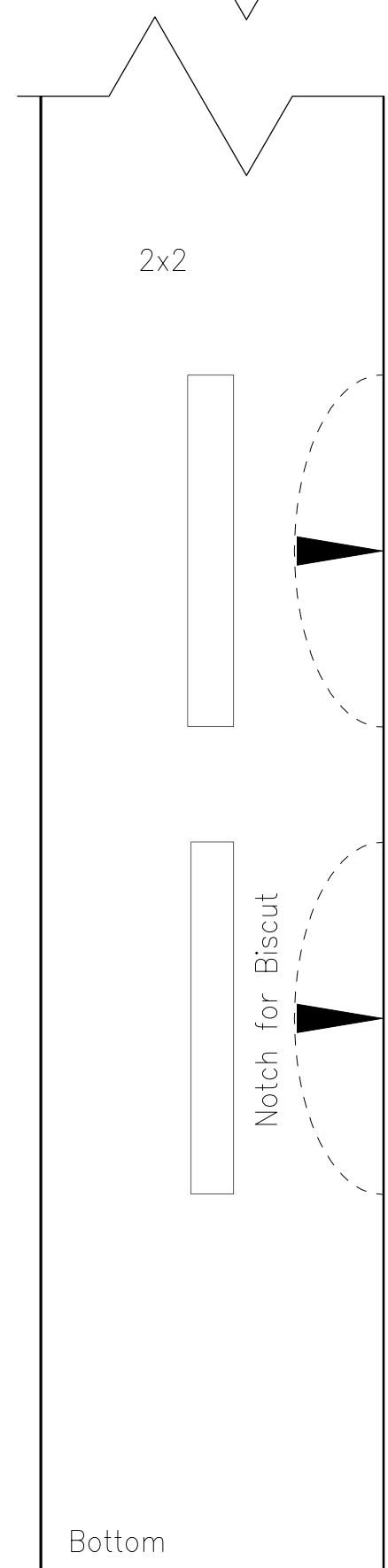
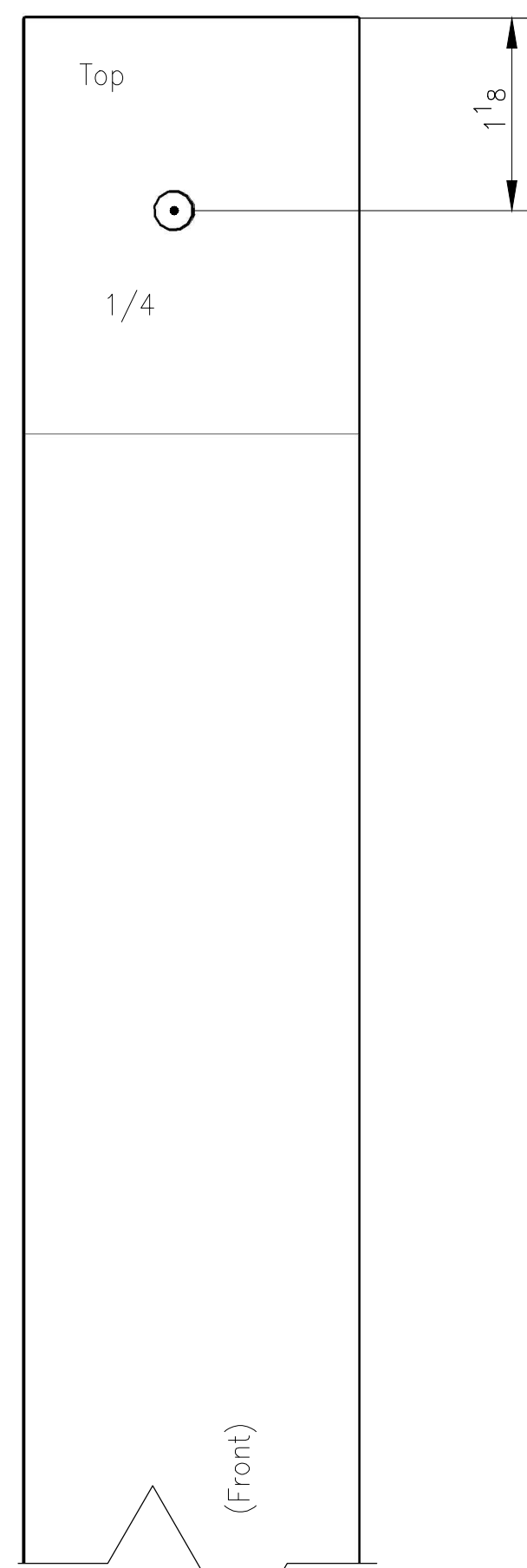
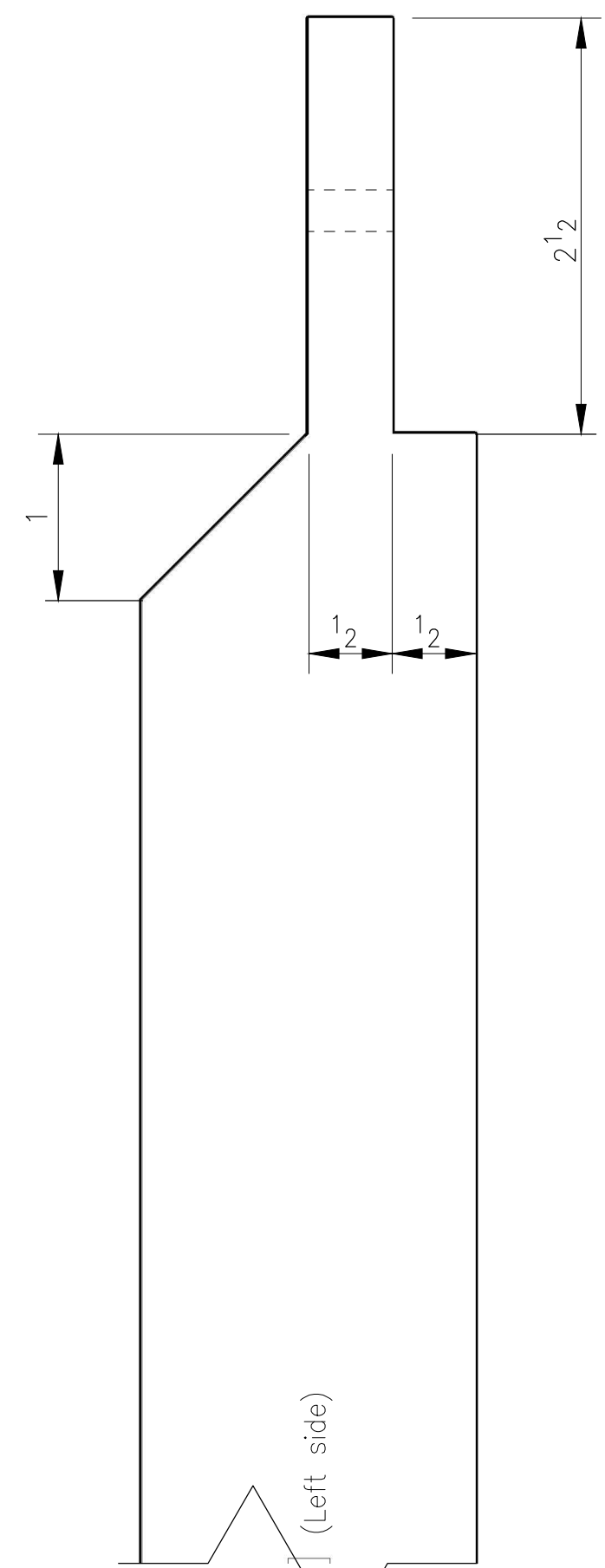


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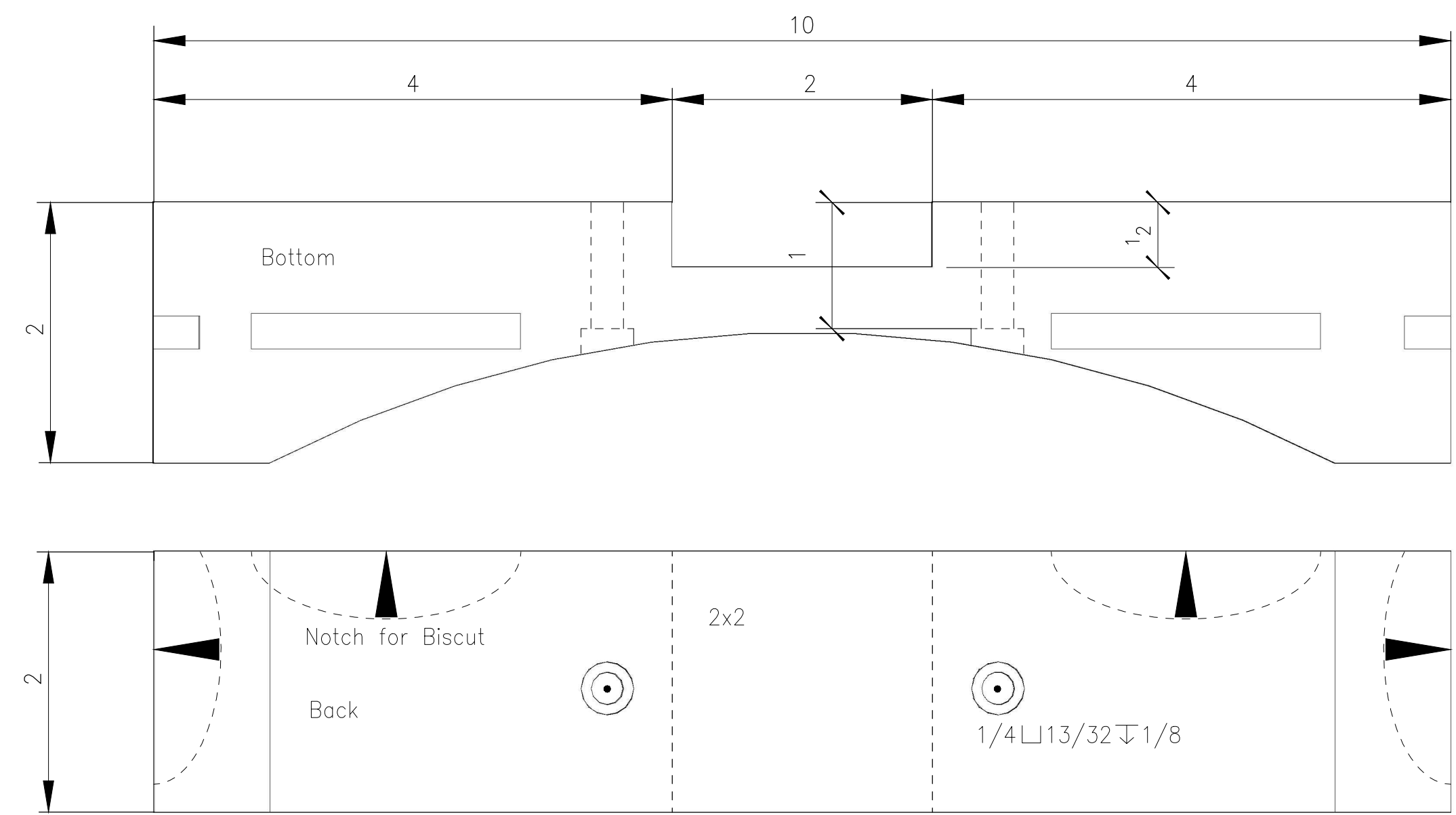




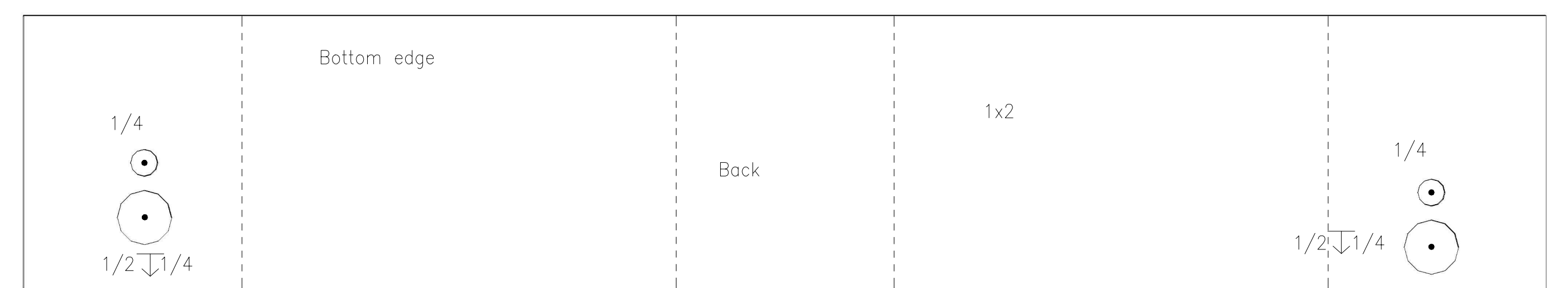
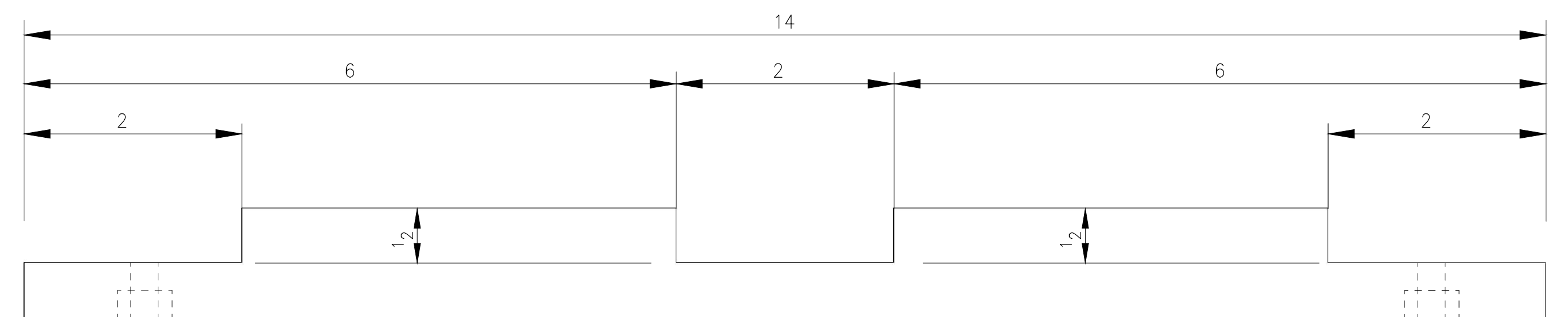
STAND A1



STAND A2

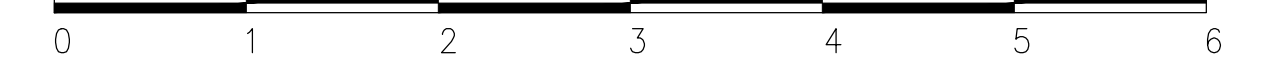


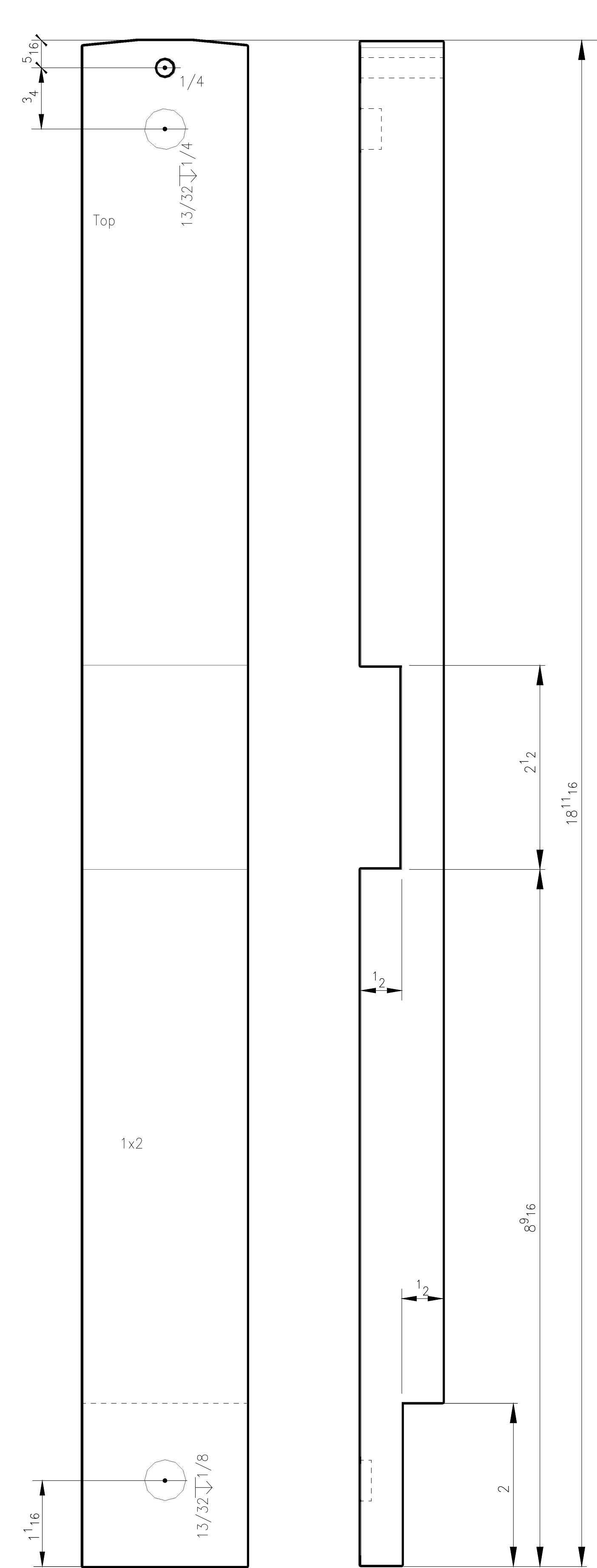
STAND B



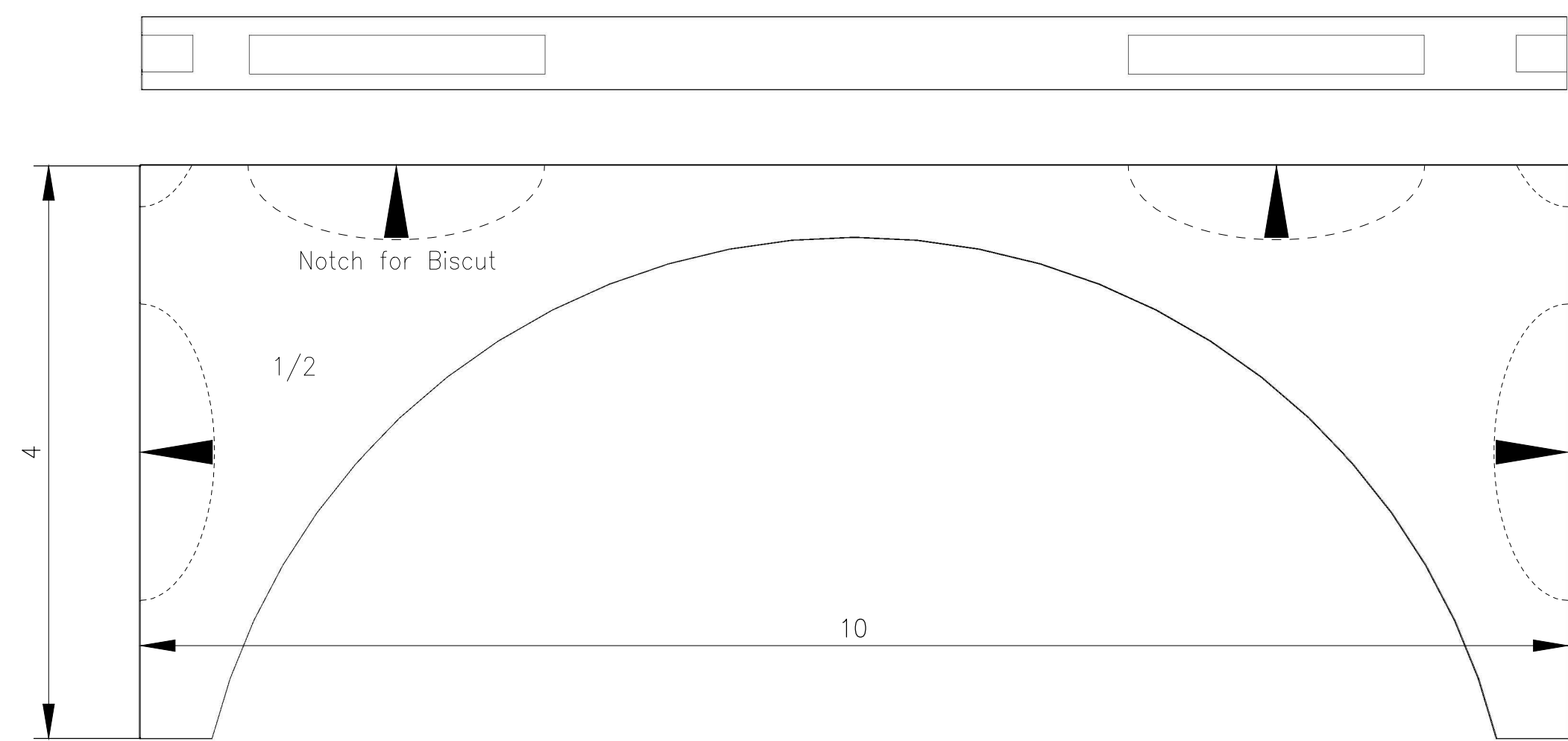
STAND C

PRINT THIS DRAWING 22X34. SCALE: 1"=1'-0"

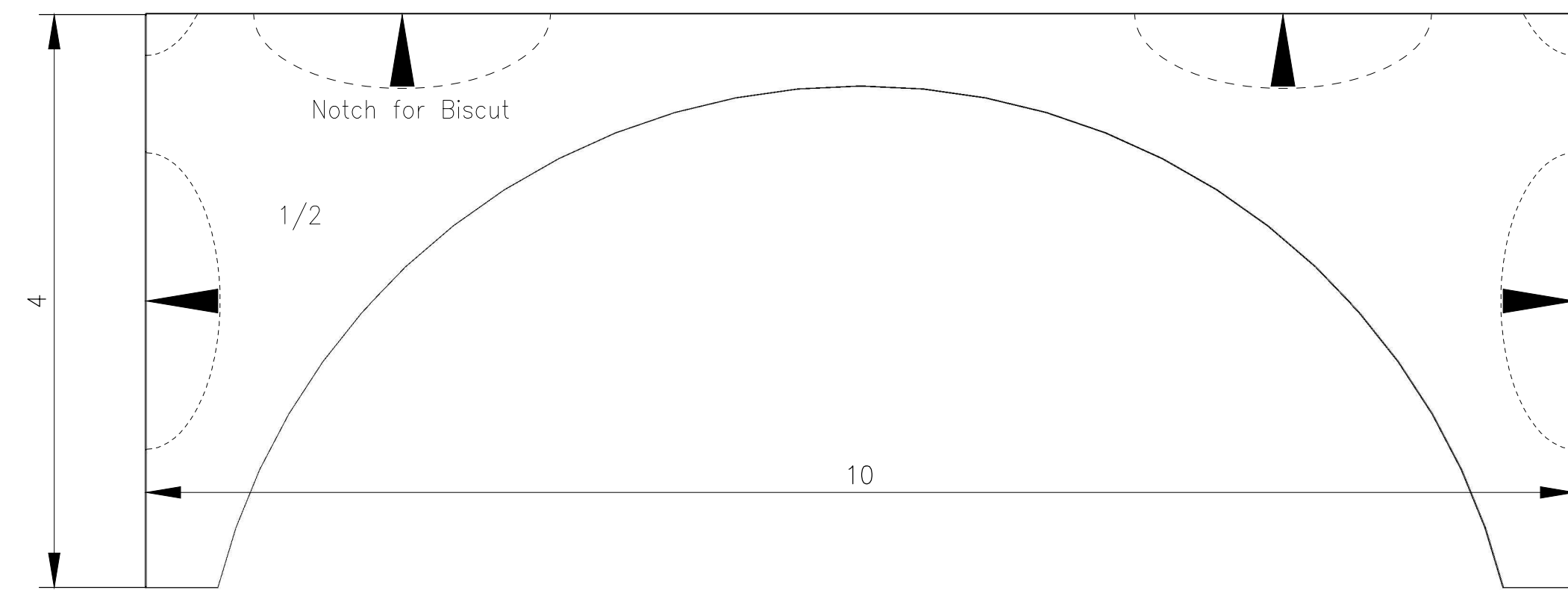




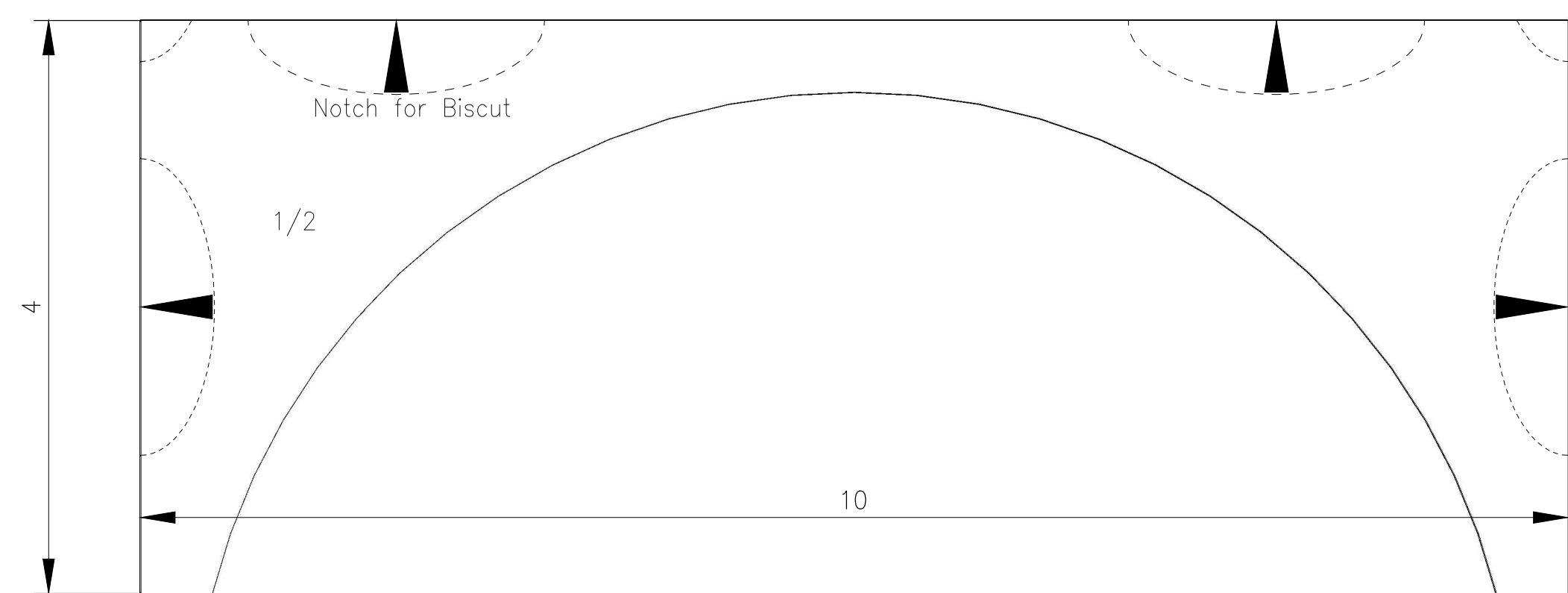
STAND D



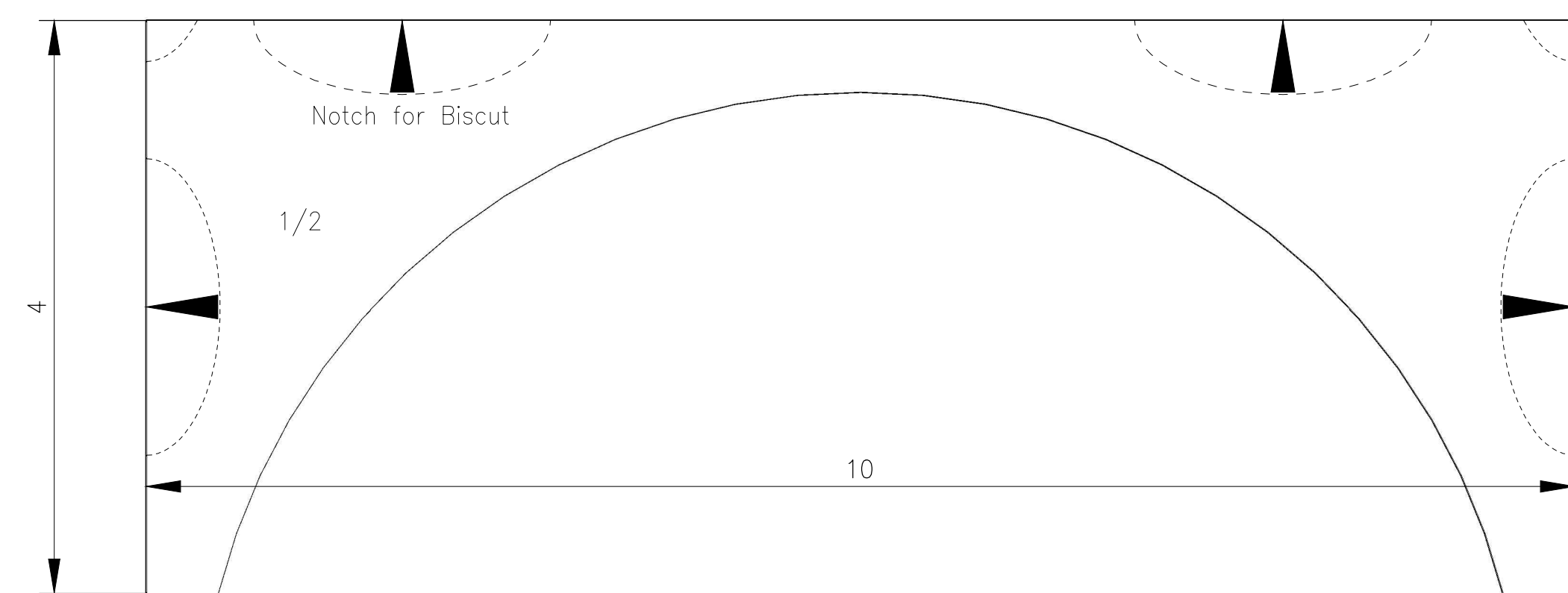
STAND E



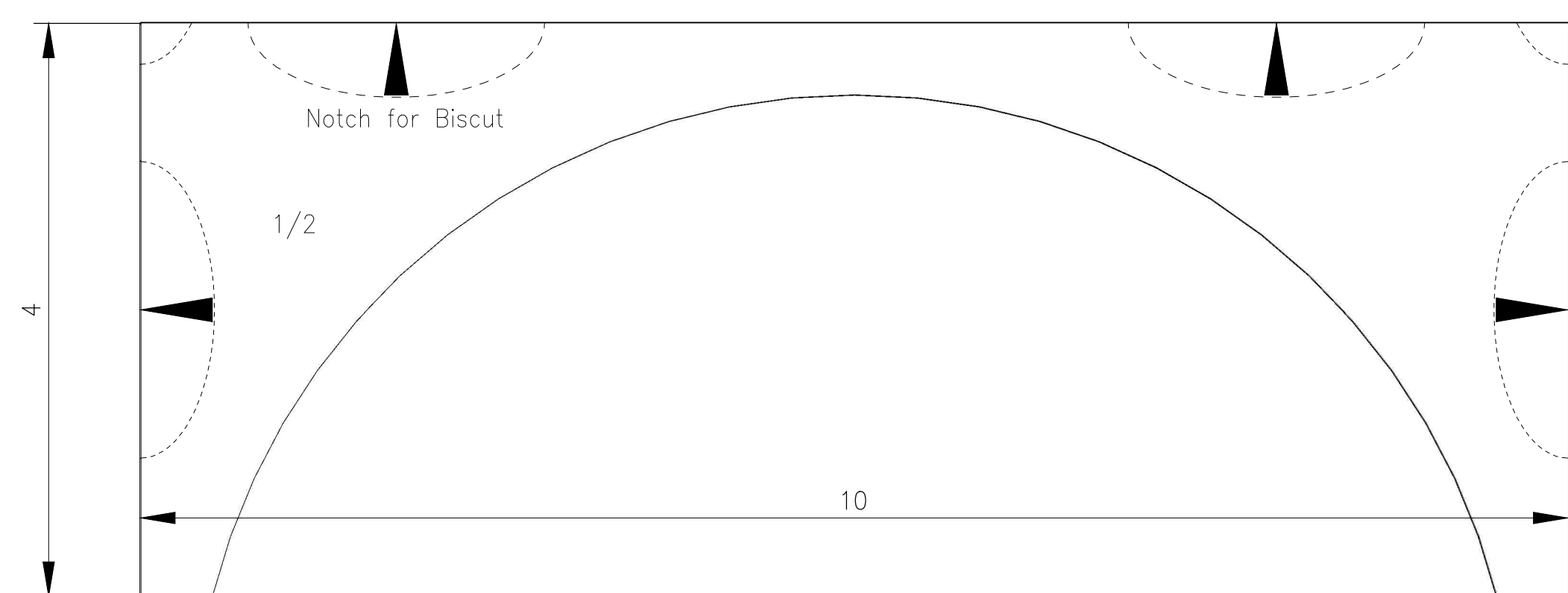
STAND E



STAND E

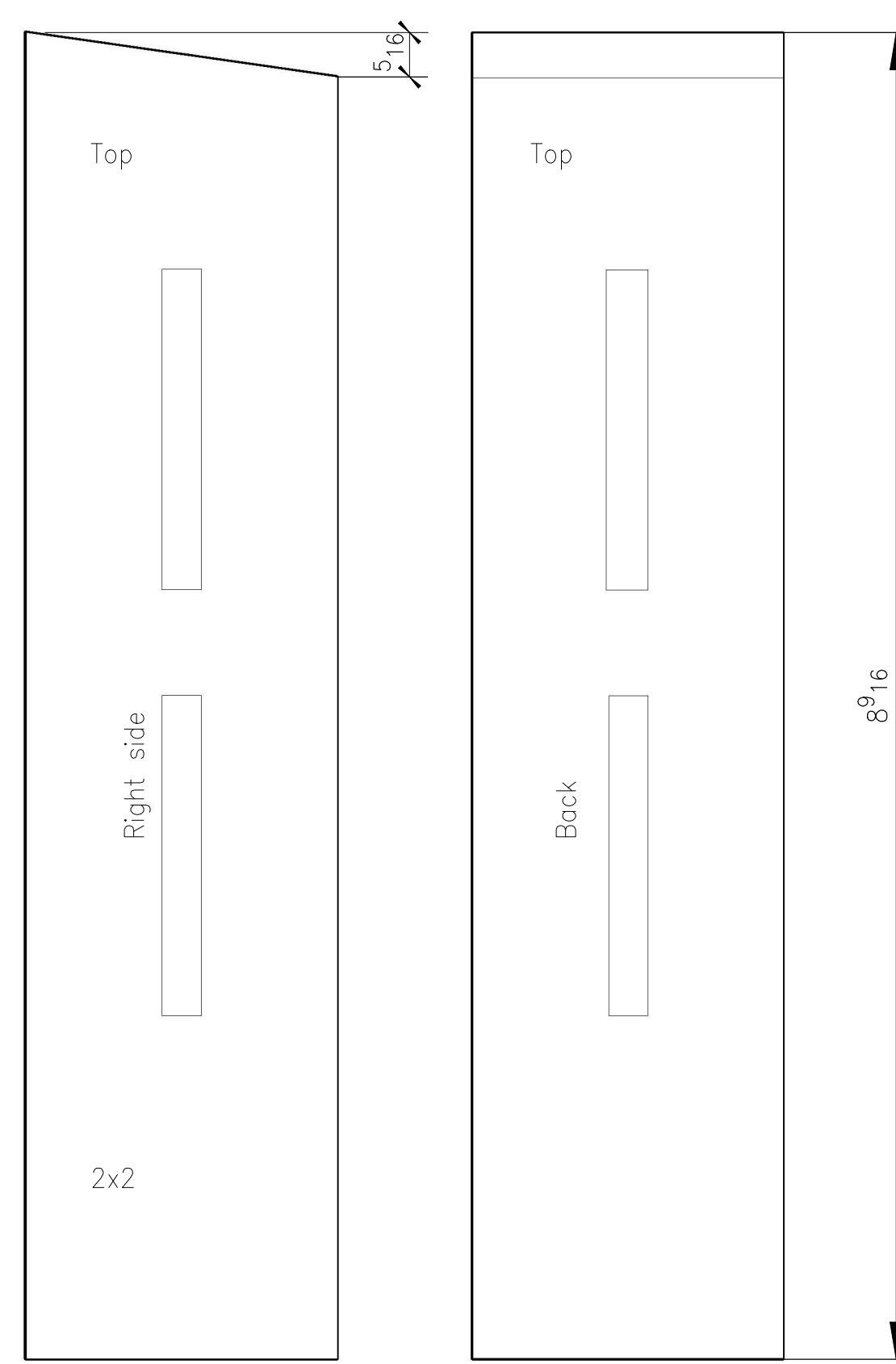
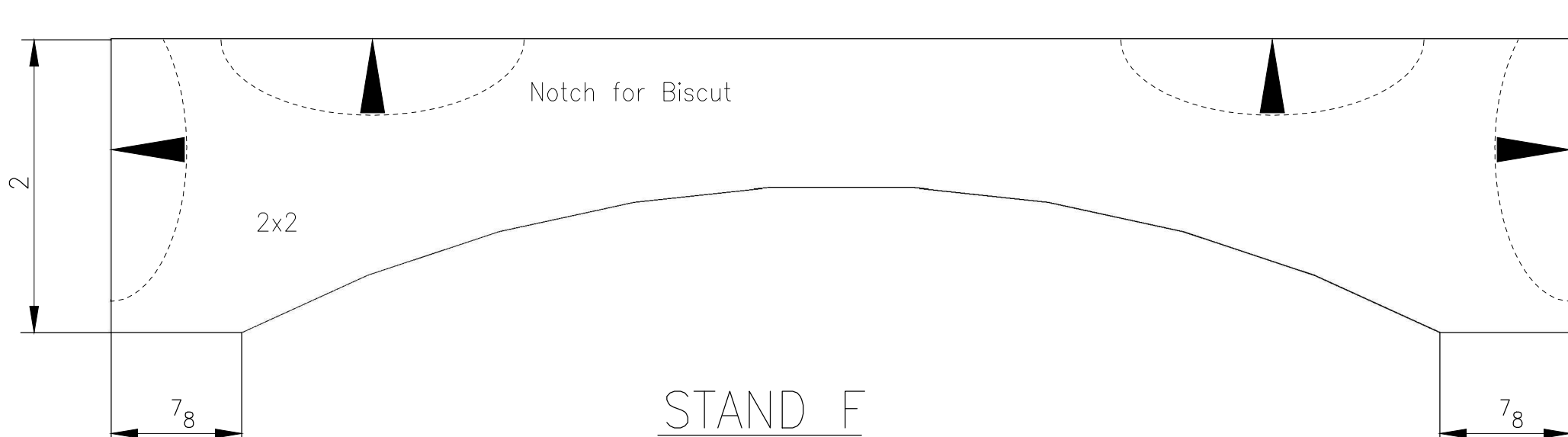
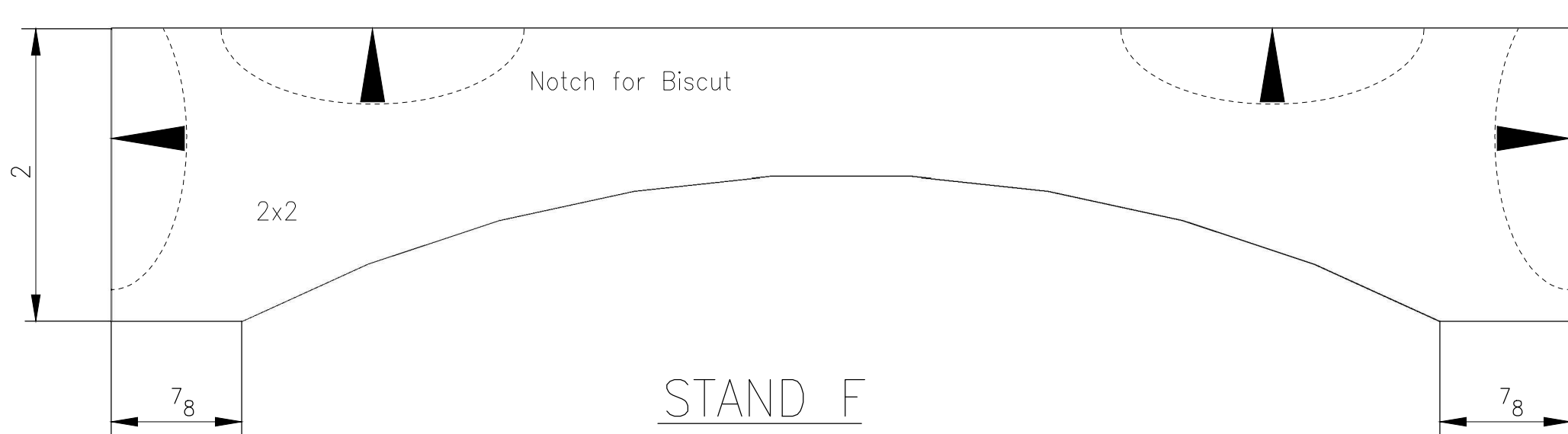
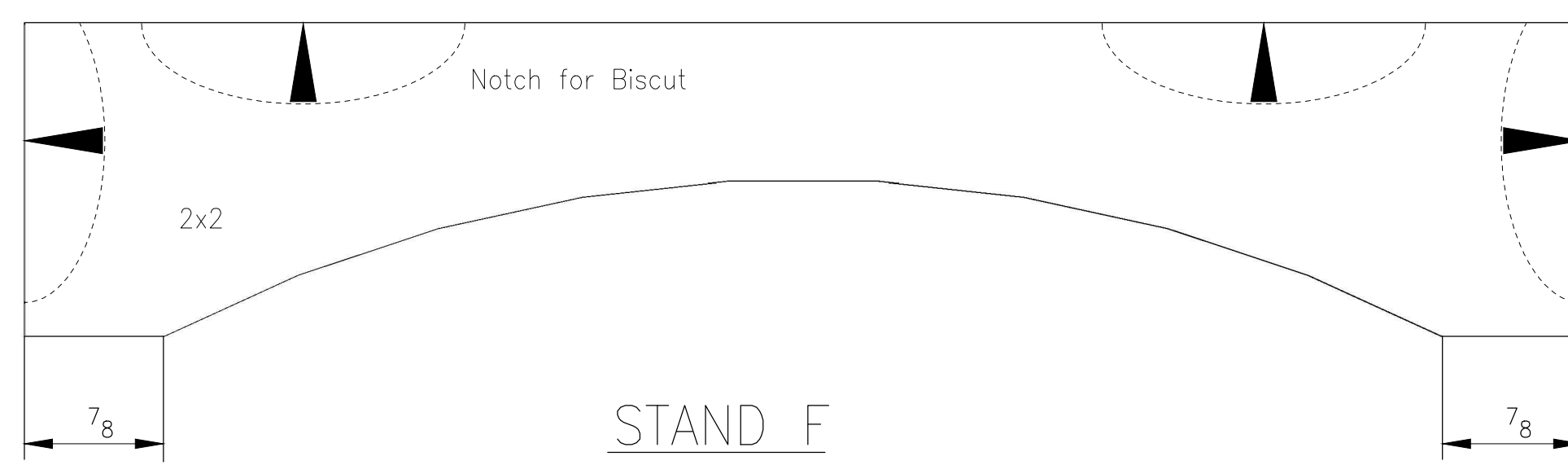
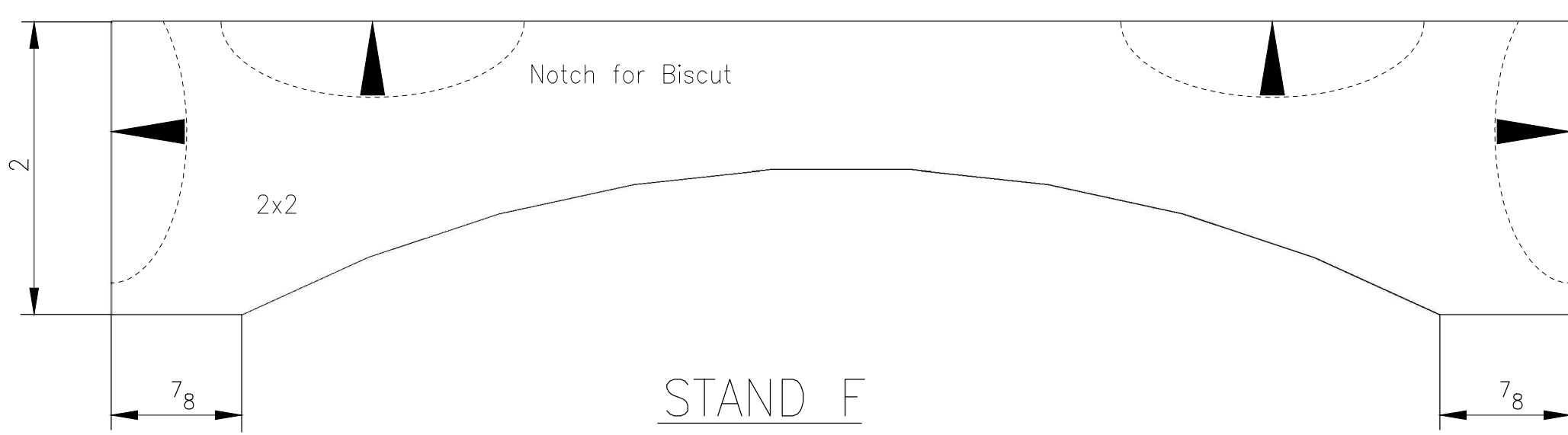
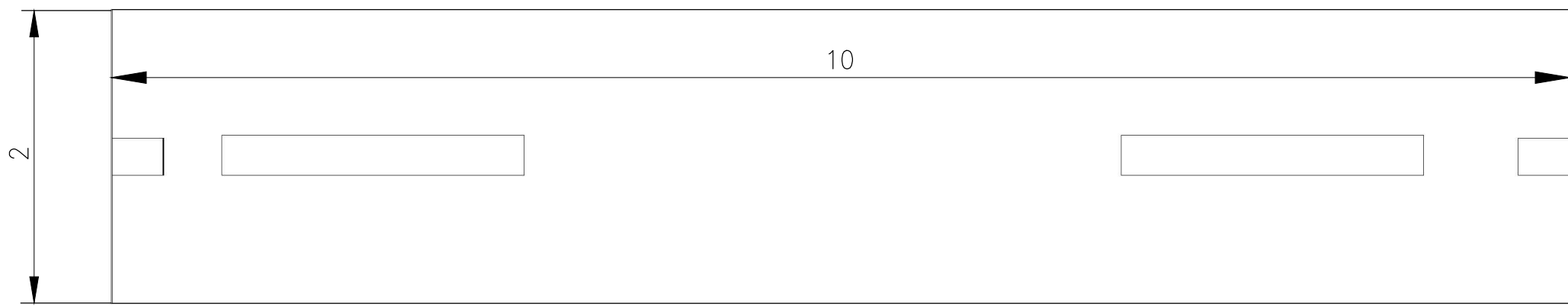


STAND E

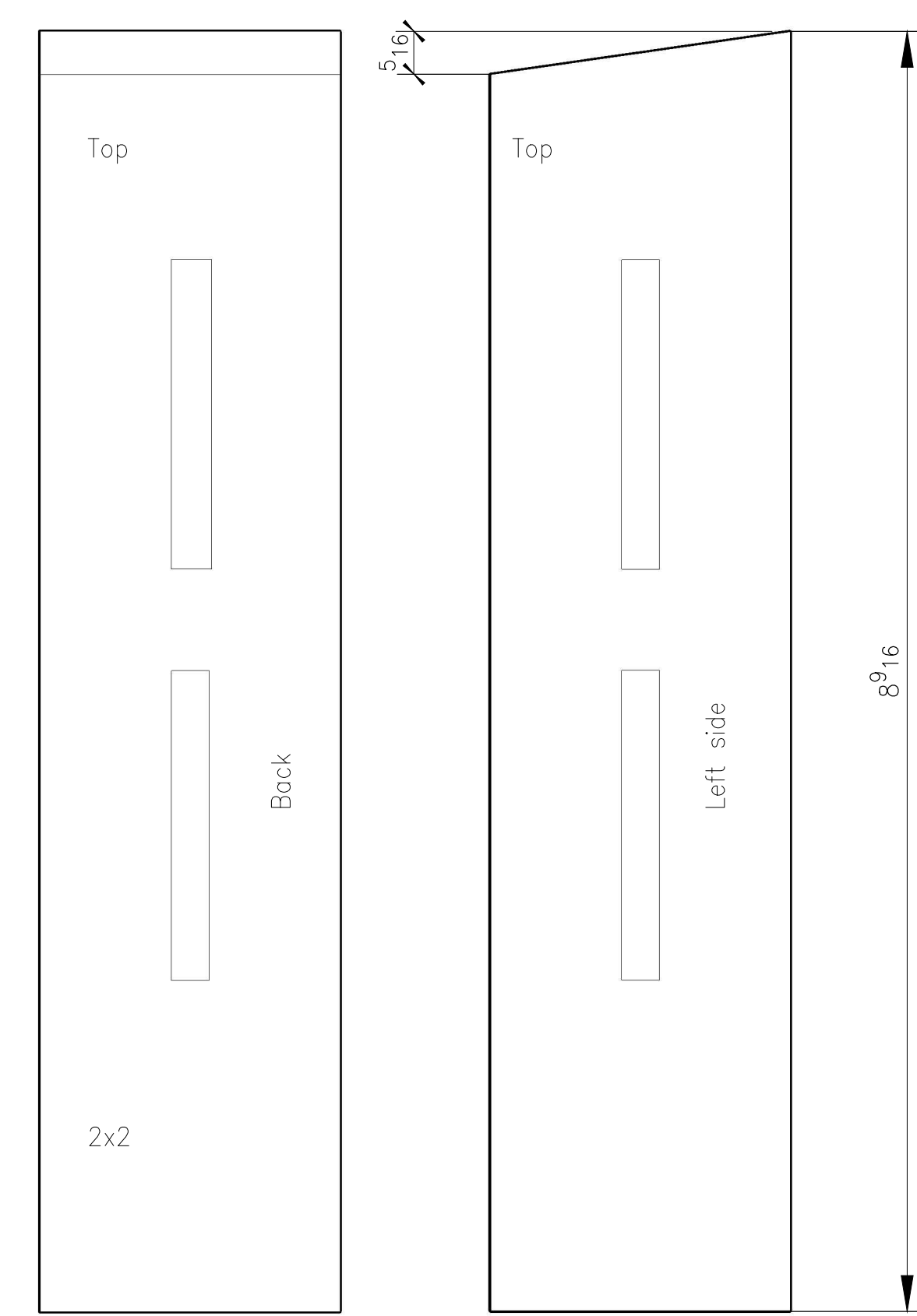


STAND E



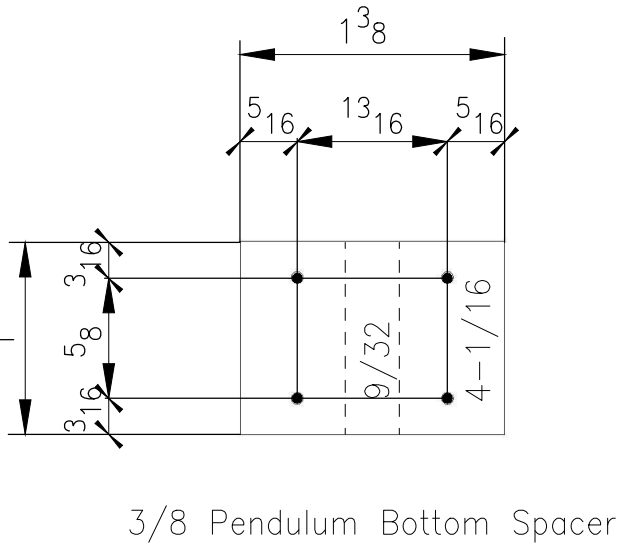
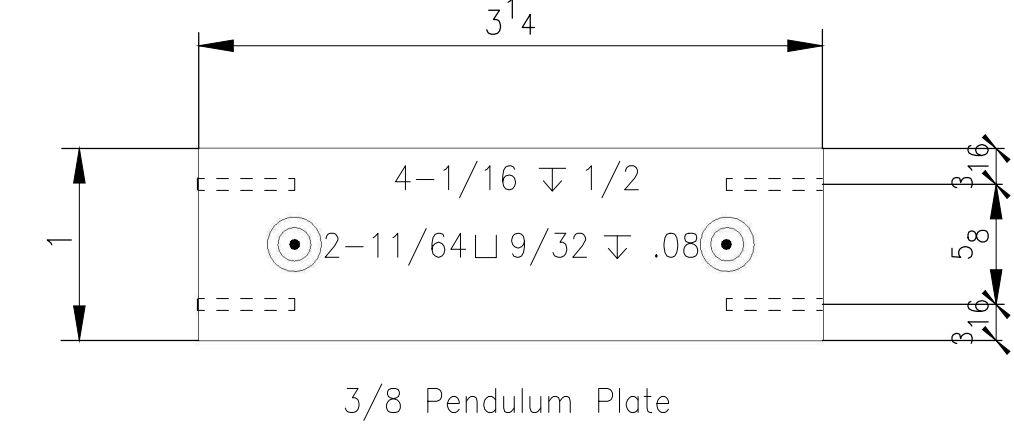
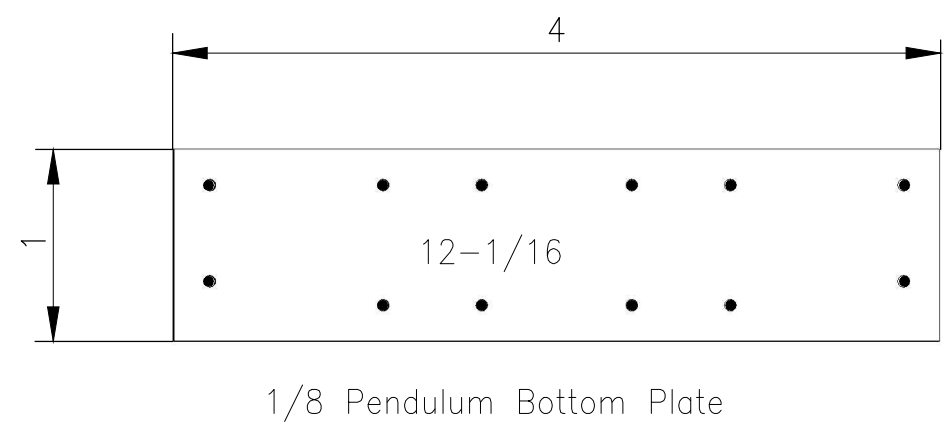
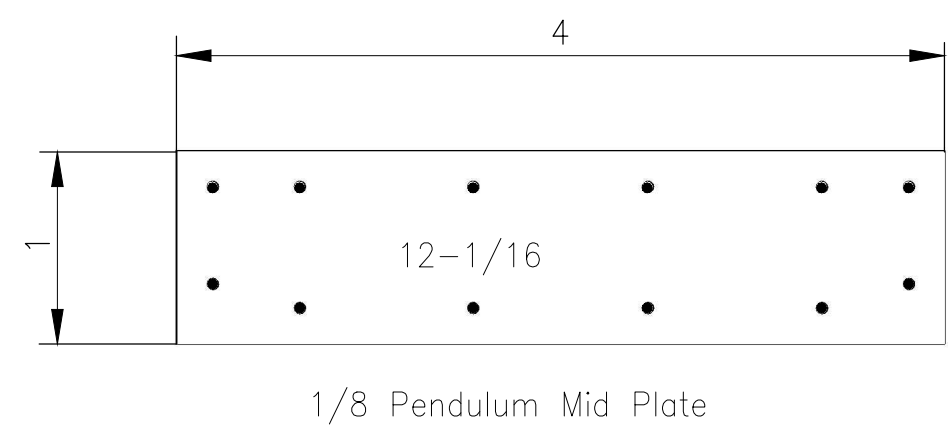
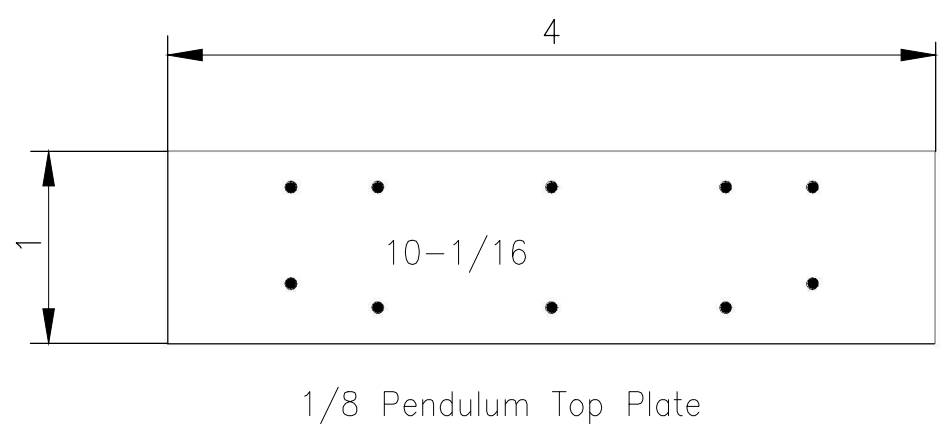
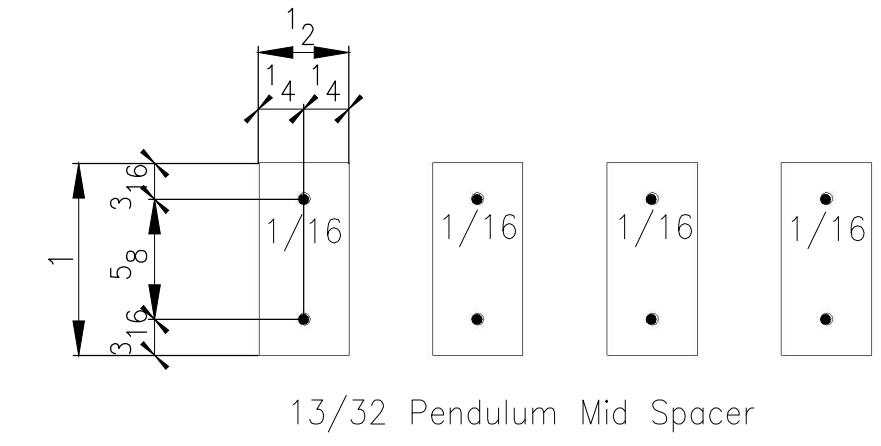
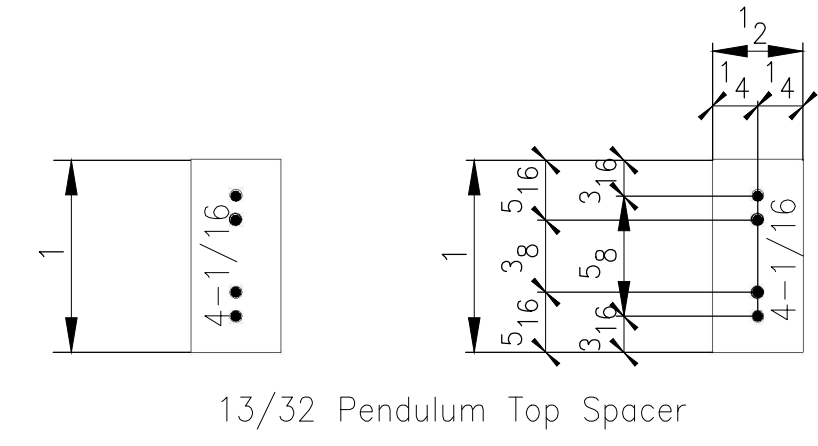
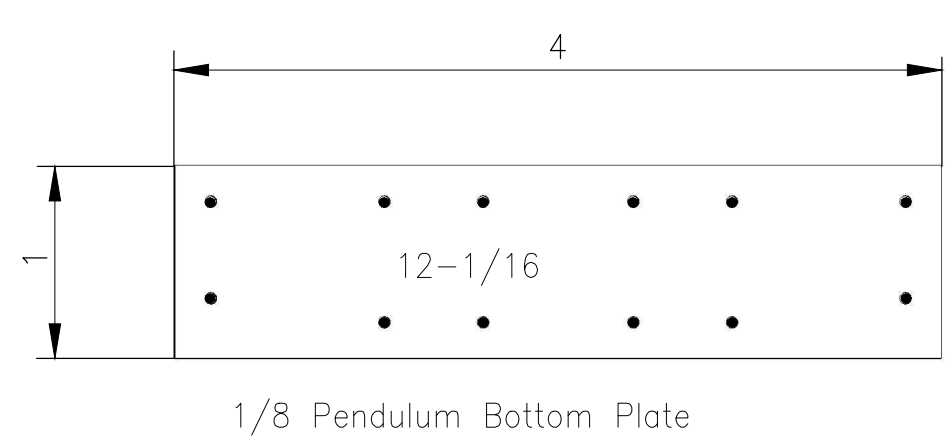
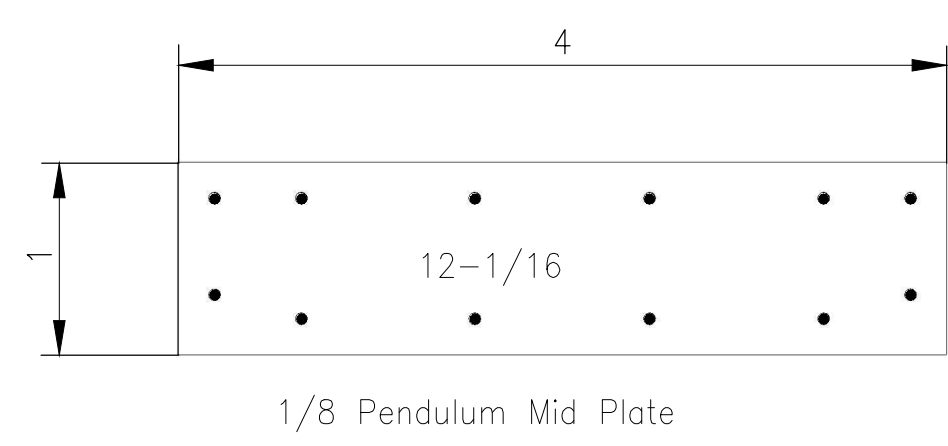
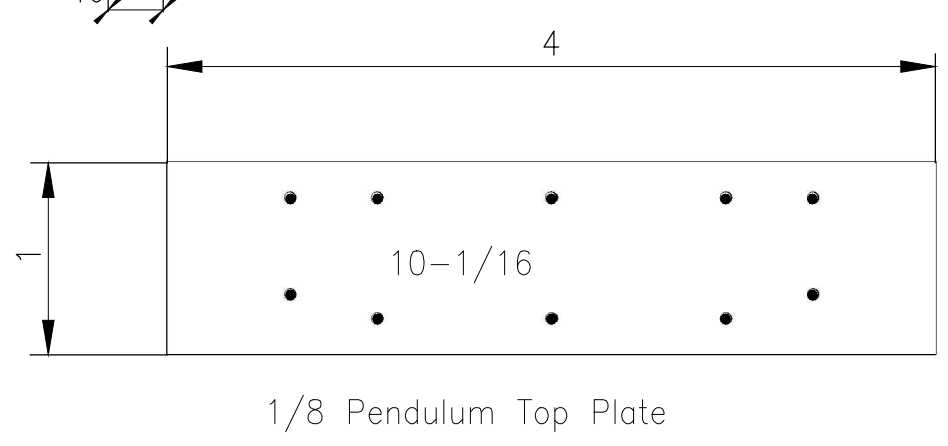
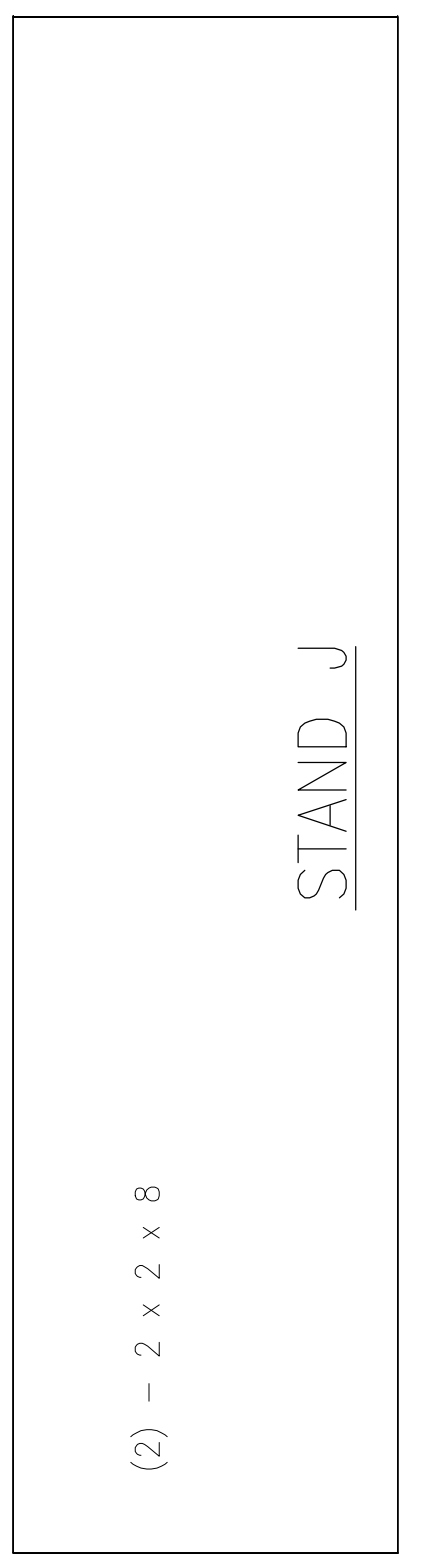
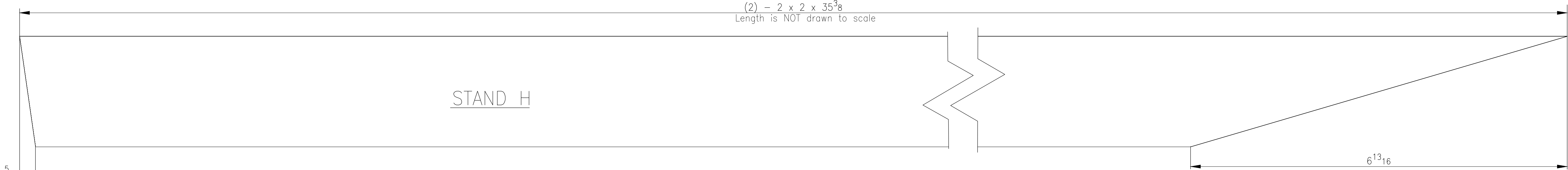
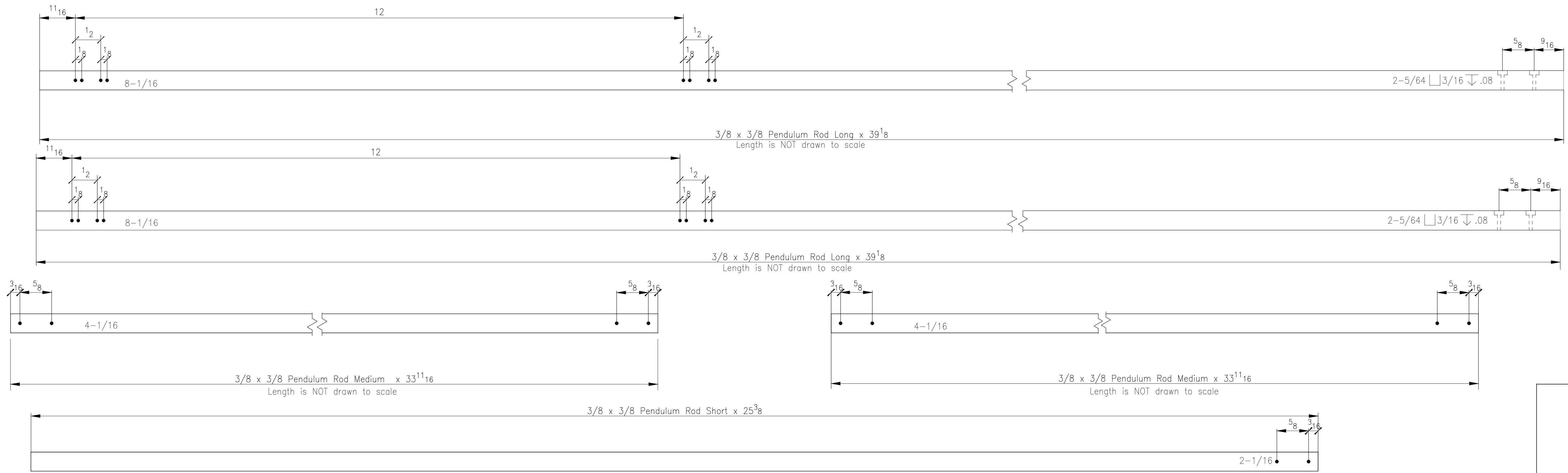


STAND G1



STAND G2

PRINT THIS DRAWING 22X34. SCALE: 1"=1'-0"



PRINT THIS DRAWING 22X34. SCALE: 1"=1'-0"