

This info file is included.

14th Dec 2013

The TAPR License is included

The templates for the rotor and frame are included in the file.

Template overview pages to enable placement of main templates.

Tabletop Templates

This Machine has not been constructed, but has been planned as a 20% larger diameter version of the machine being built. There are 18 frame sections, each one much the same size as the 14 section motor being built. The frame is slightly wider as the rotor has been made 30mm wider and 5 mm thicker. It is now 180mm x 25mm. The number of ribs has been increased from 20 to 40. A skin section of 926mm will join at every 4th rib, and the joins on the reverse side will be offset 2 ribs. A slightly higher stiffener may be incorporated.

The rotor under construction is very strong, with just a little flexing. While the rotor is built like an aircraft wing it will not be subjected to the same stresses as it floats within the magnetic fields. A balance ring of 25mm diameter steel will be built into the structure. At 90% capacity (3.8L) it could hold 51.5Kg of Mercury. The same magnets are used, but quite a lot more of them. The same coils and drive magnets also used. The ratio is now 36 coils to 48 magnets. Two sets of 3 drive coils would be required. The drive magnets have a smaller gap between them, so will also need the dual Hall Sensor direct drive system for motor timing.

Centerline 800 RE Axial Magnets @ 1410 Radius

Rotor Ribs 40

Magnets per rib 20

Outer RE magnets 850 off

48 Drive magnets 160 long. Gap 12

6 Drive Coils

Centerline 22mm Ferrites 385 top 385 bottom

Outer Circumference Ferrites 416 off

Frame sections 18

Each step 57.3mm

Tabletop Templates for Table patterns.

10 patterns required for each layer. 2 layers .

Joins offset half pattern.

16mm whiteboard or similar.

Recommend fixed tabletop. Extra room allowed all round to support rotatable tools. Use half of a car trailer axle for center radius, with removable centering arms to enable easier working access inside.

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Version 1.0 (May 25, 2007)
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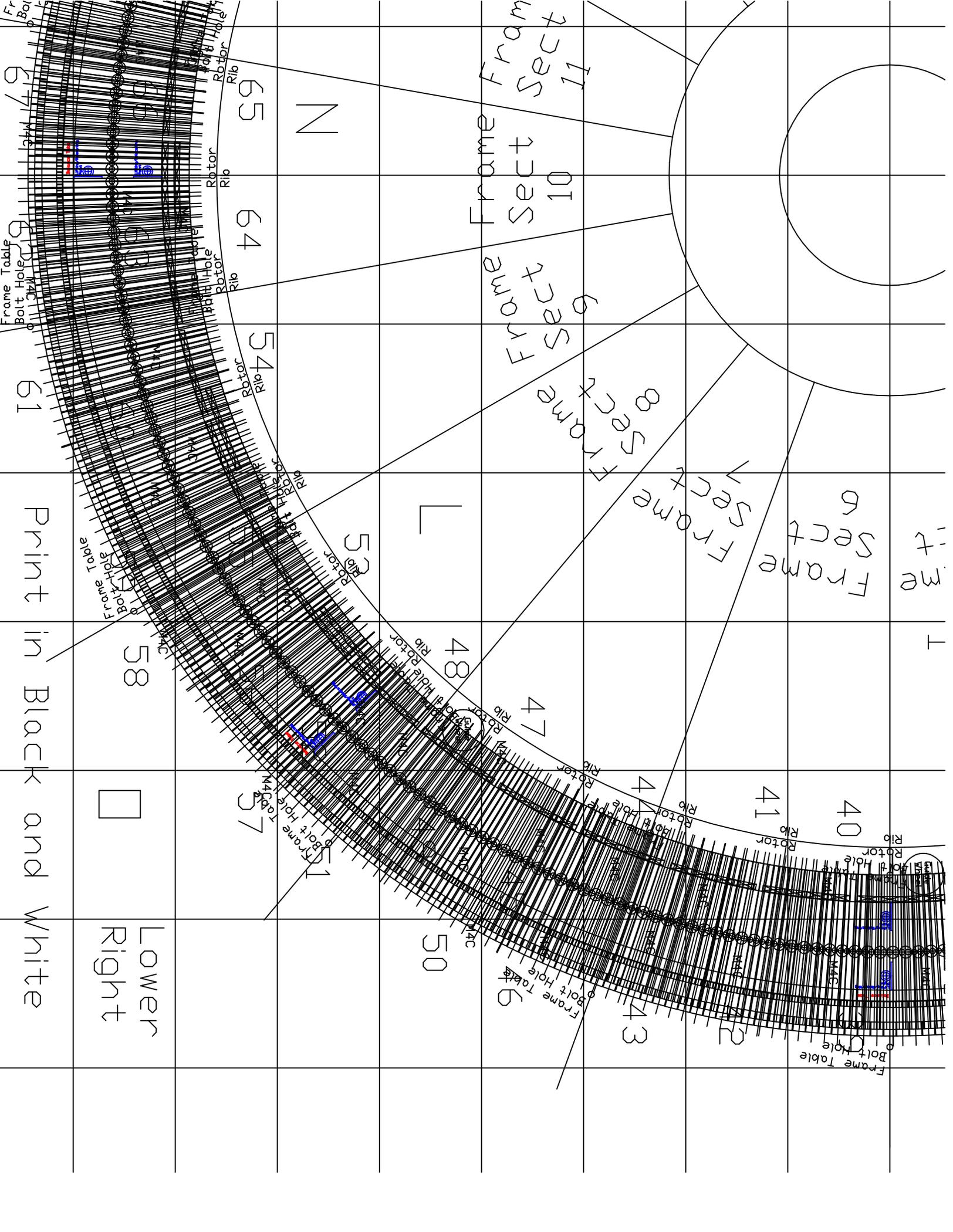
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Lower Right



Print in Black and White

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Frame Sect 9
Frame Sect 8
Frame Sect 7
Frame Sect 6
Frame Sect 5
Frame Sect 4
Frame Sect 3
Frame Sect 2
Frame Sect 1

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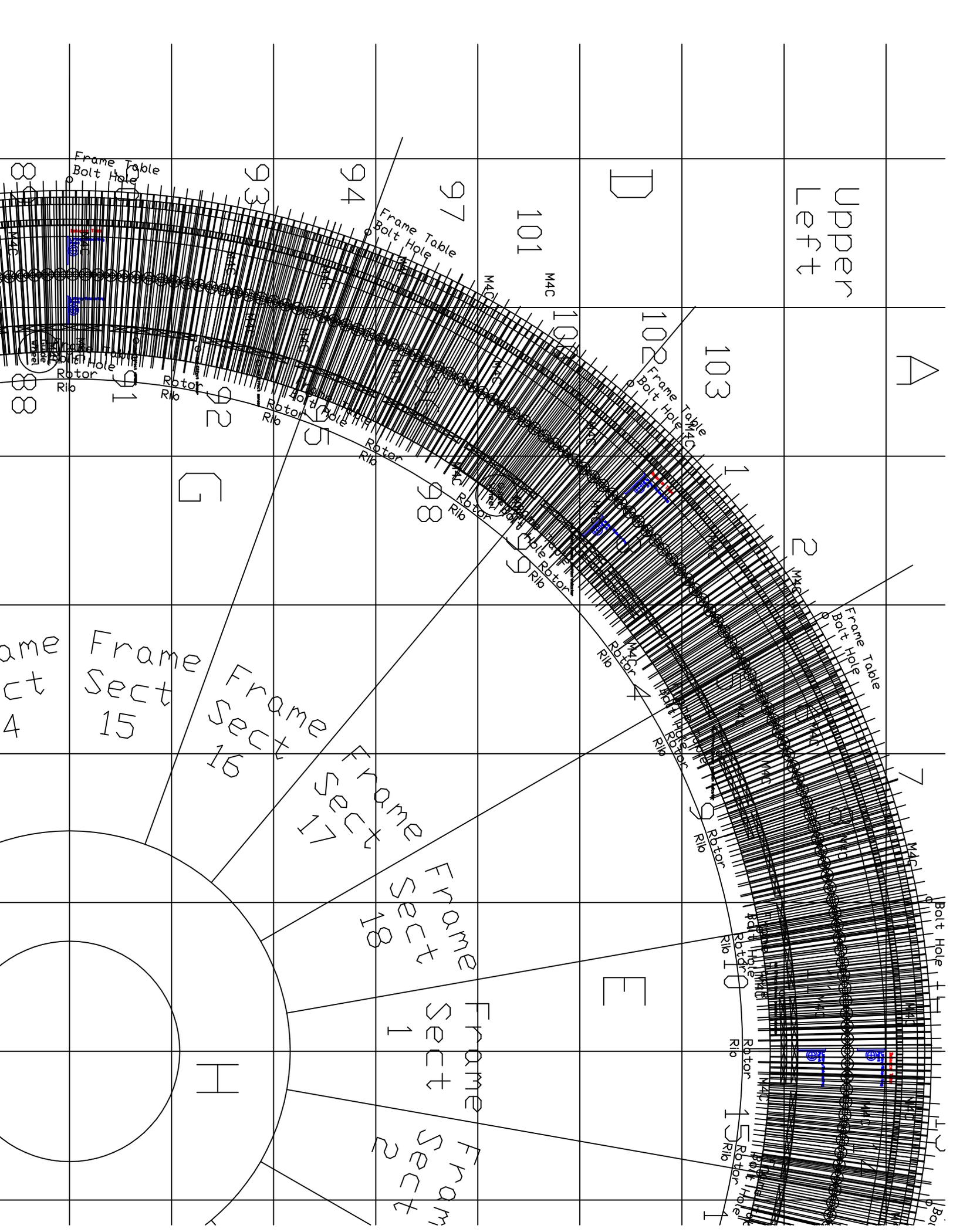
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Frame Table Bolt Hole

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Frame Table Bolt Hole

Frame Sect 4

Frame Sect 15

Frame Sect 16

Frame Sect 17

Frame Sect 18

Frame Sect 1

Frame Sect 2

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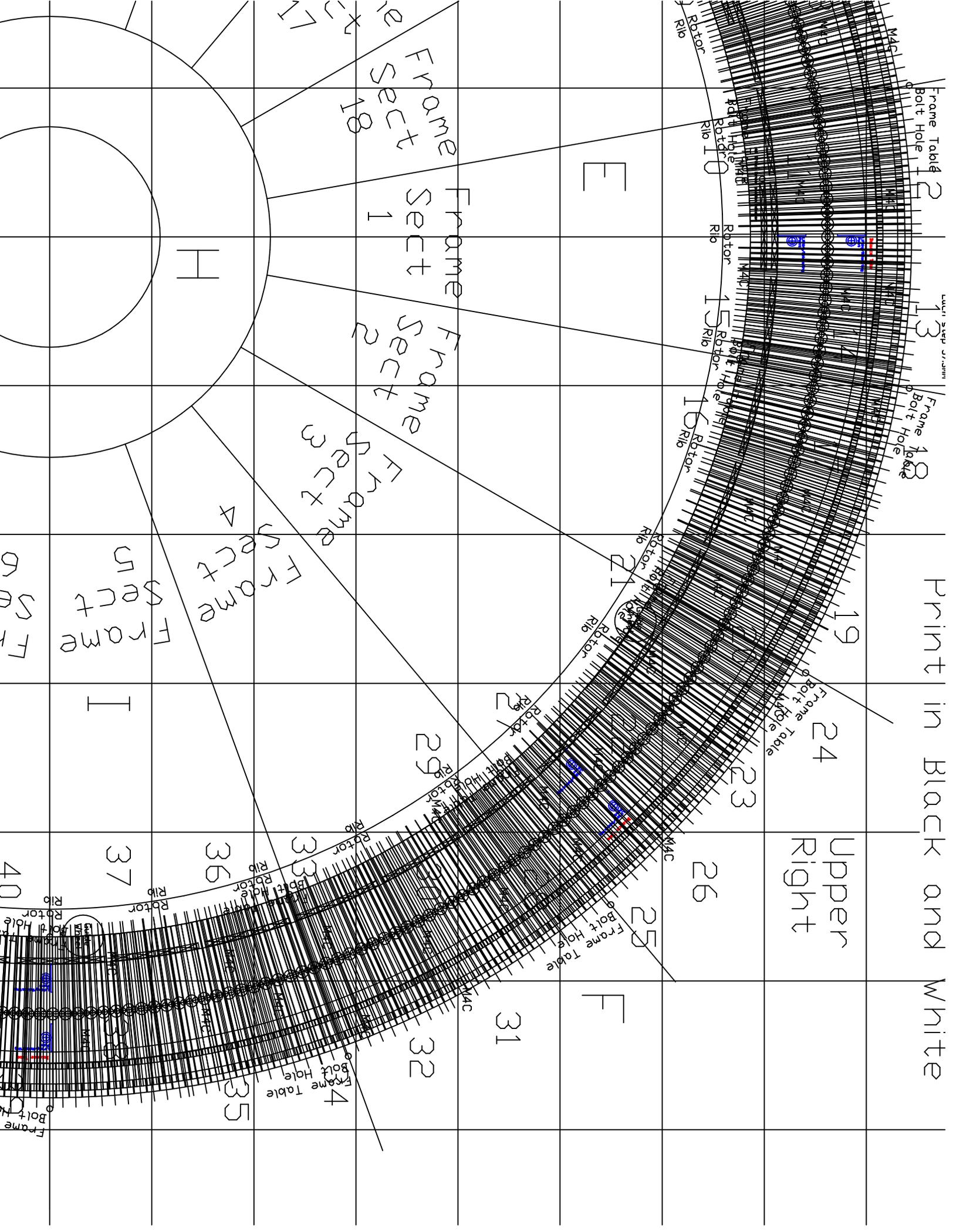
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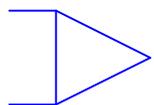
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Bolt Hole

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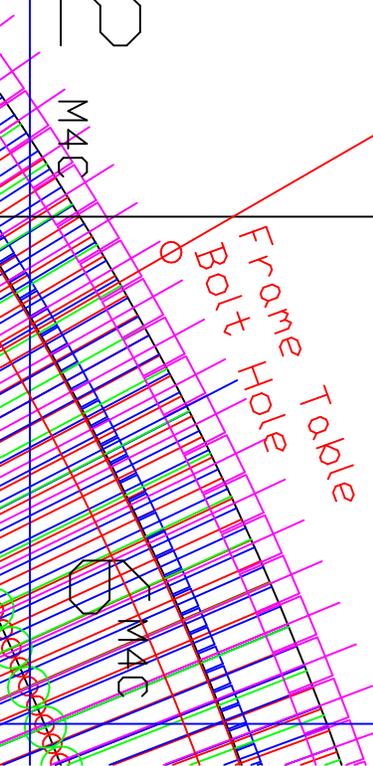


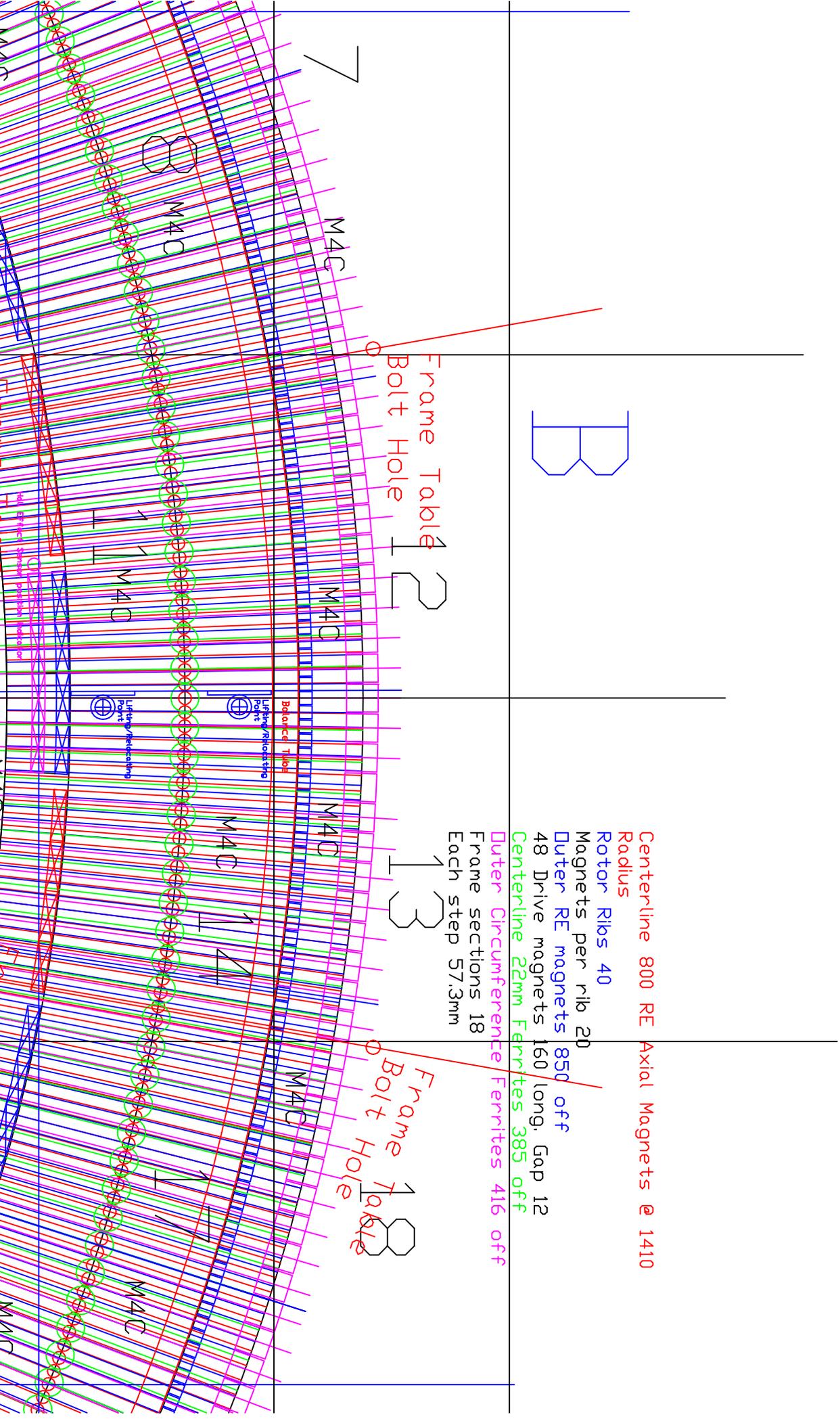
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M4C

Frame Hole Table

M4C





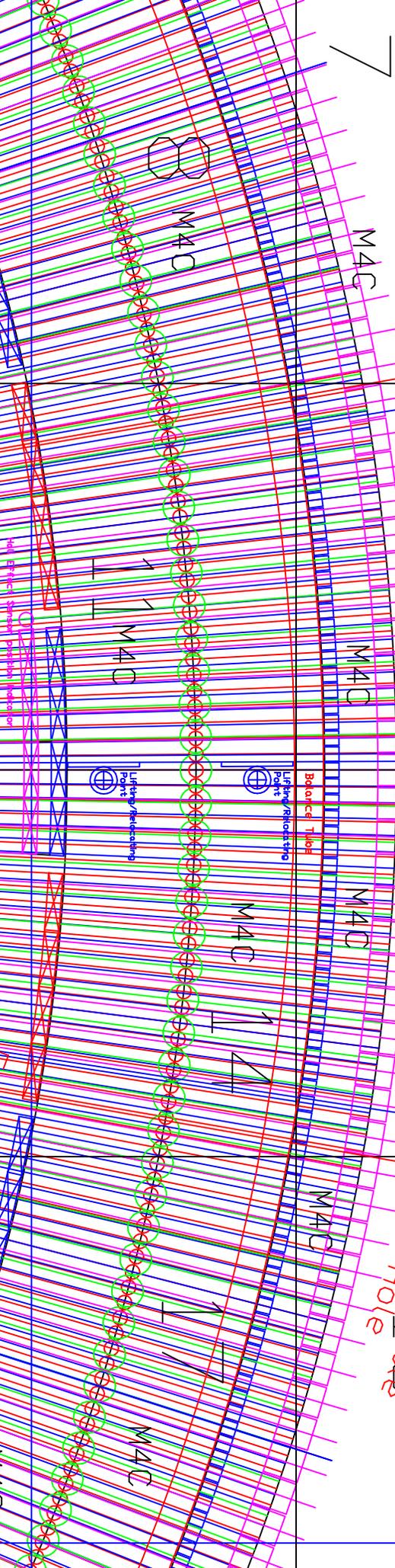
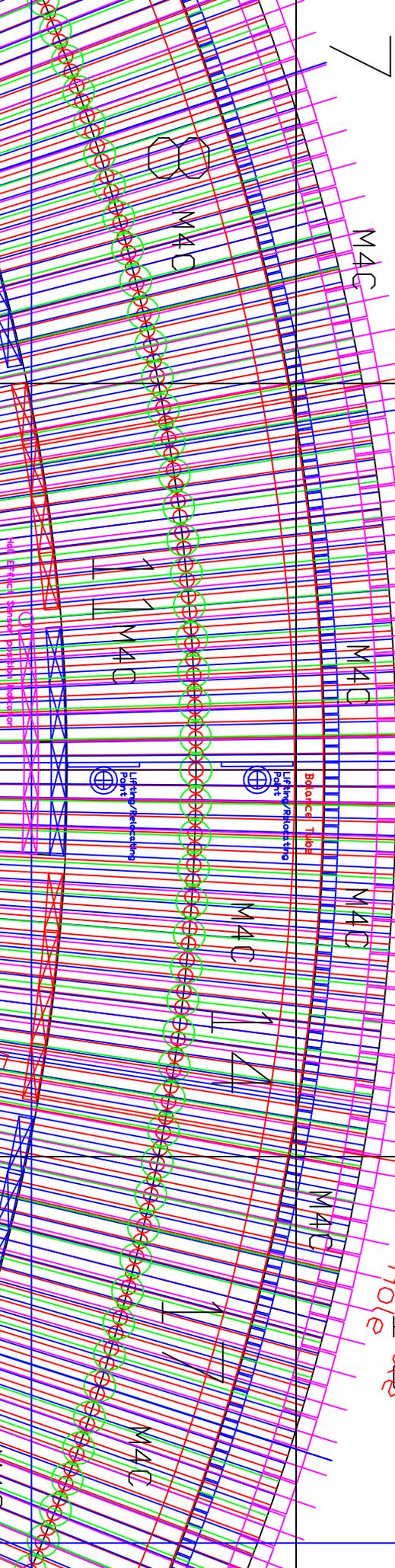
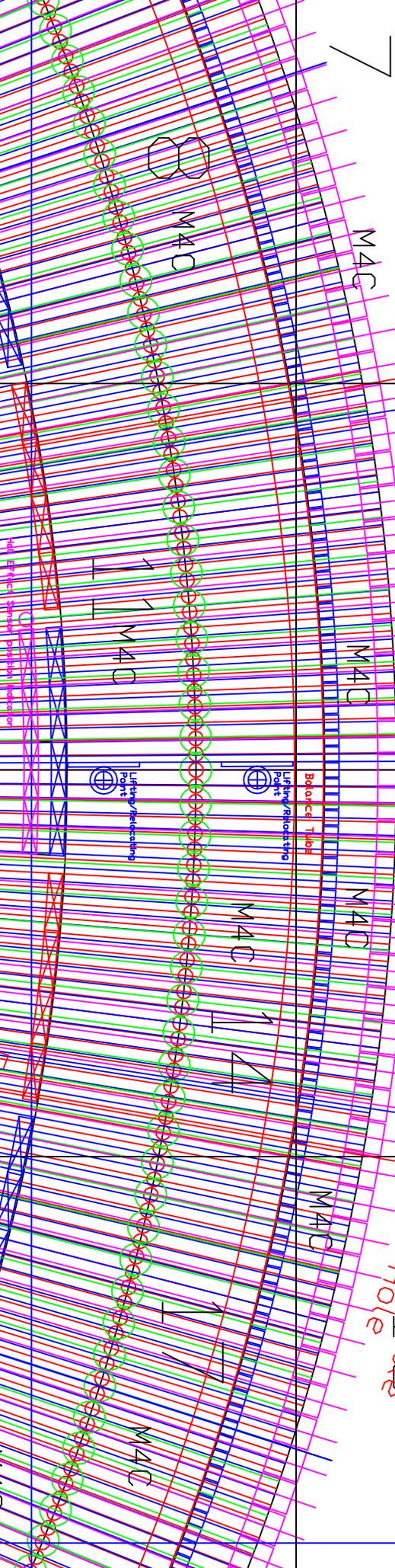
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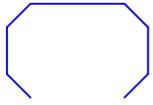
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Frame Table 1 8

- Centerline 800 RE Axial Magnets @ 1410 Radius
- Rotor Ribs 40
- Magnets per rib 20
- Outer RE magnets 850 off
- 48 Drive magnets 160 long, Gap 12
- Centerline 22mm Ferrites 385 off
- Outer Circumference Ferrites 416 off
- Frame sections 18
- Each step 57.3mm



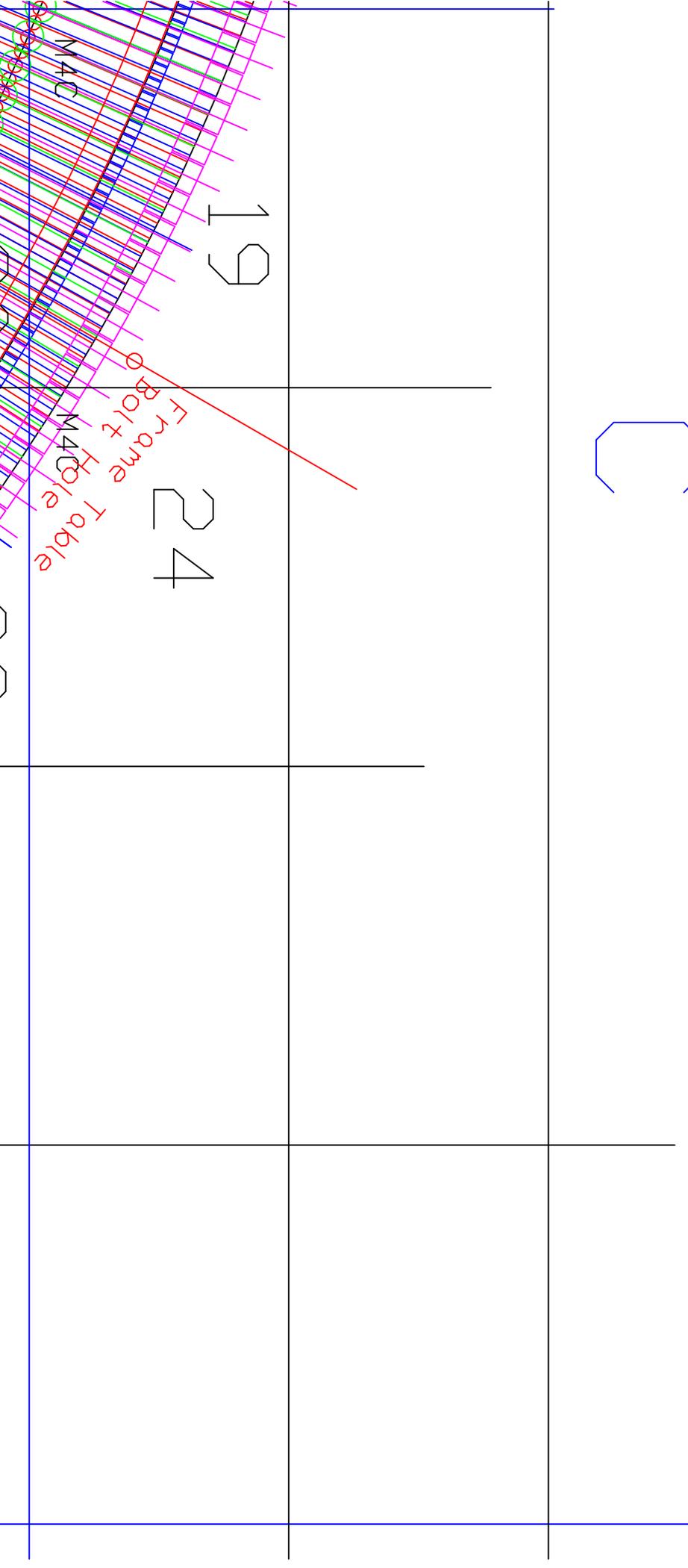


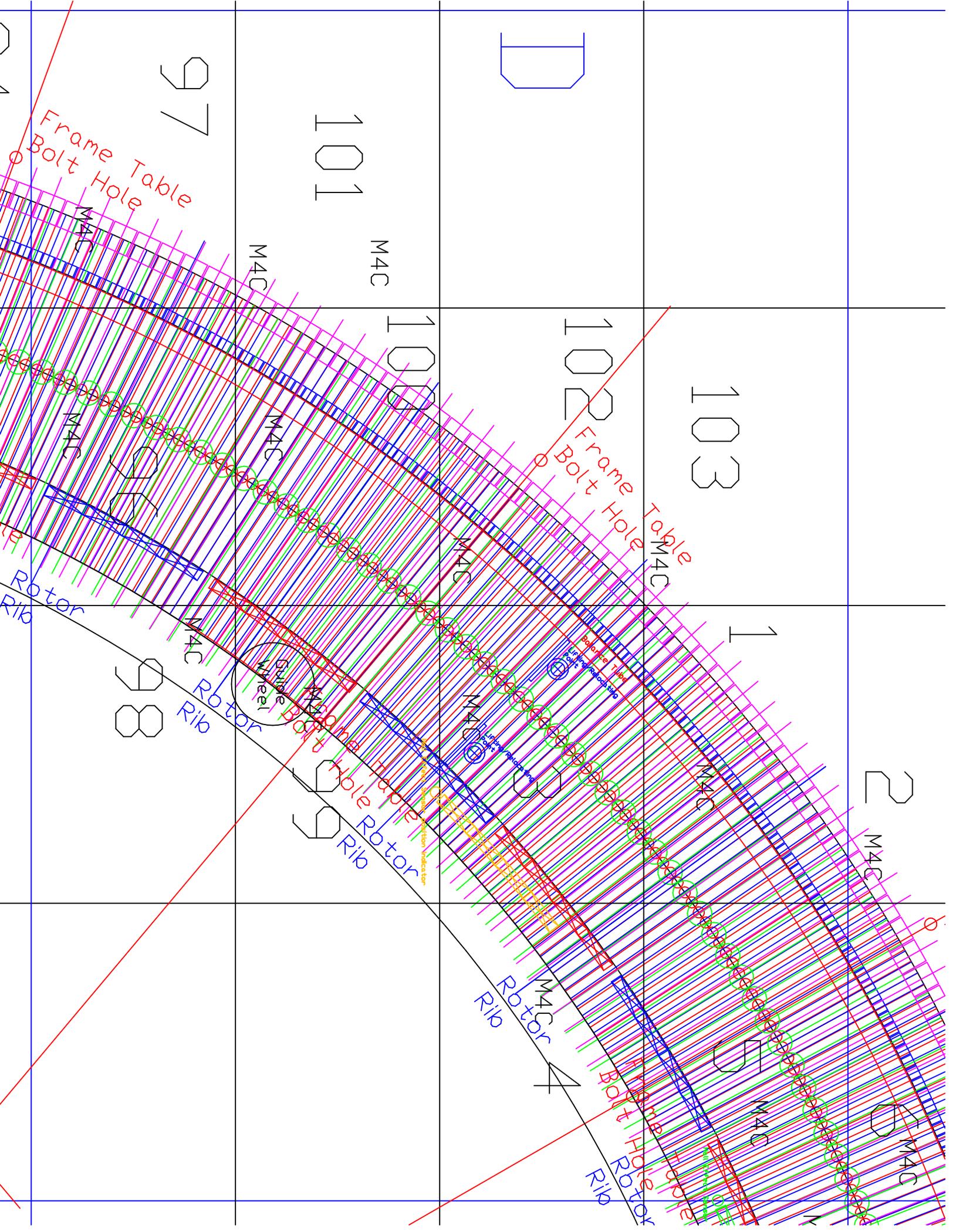
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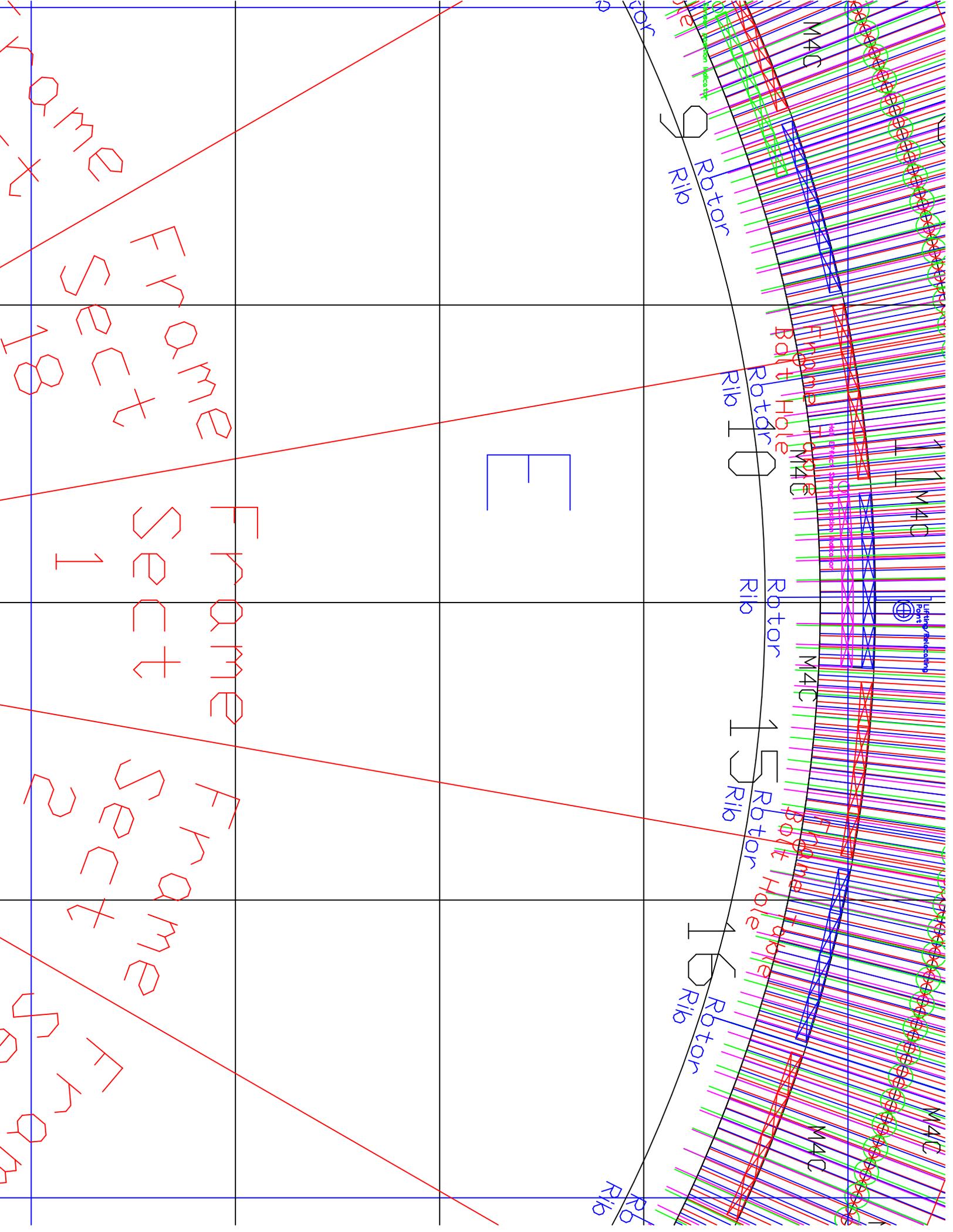
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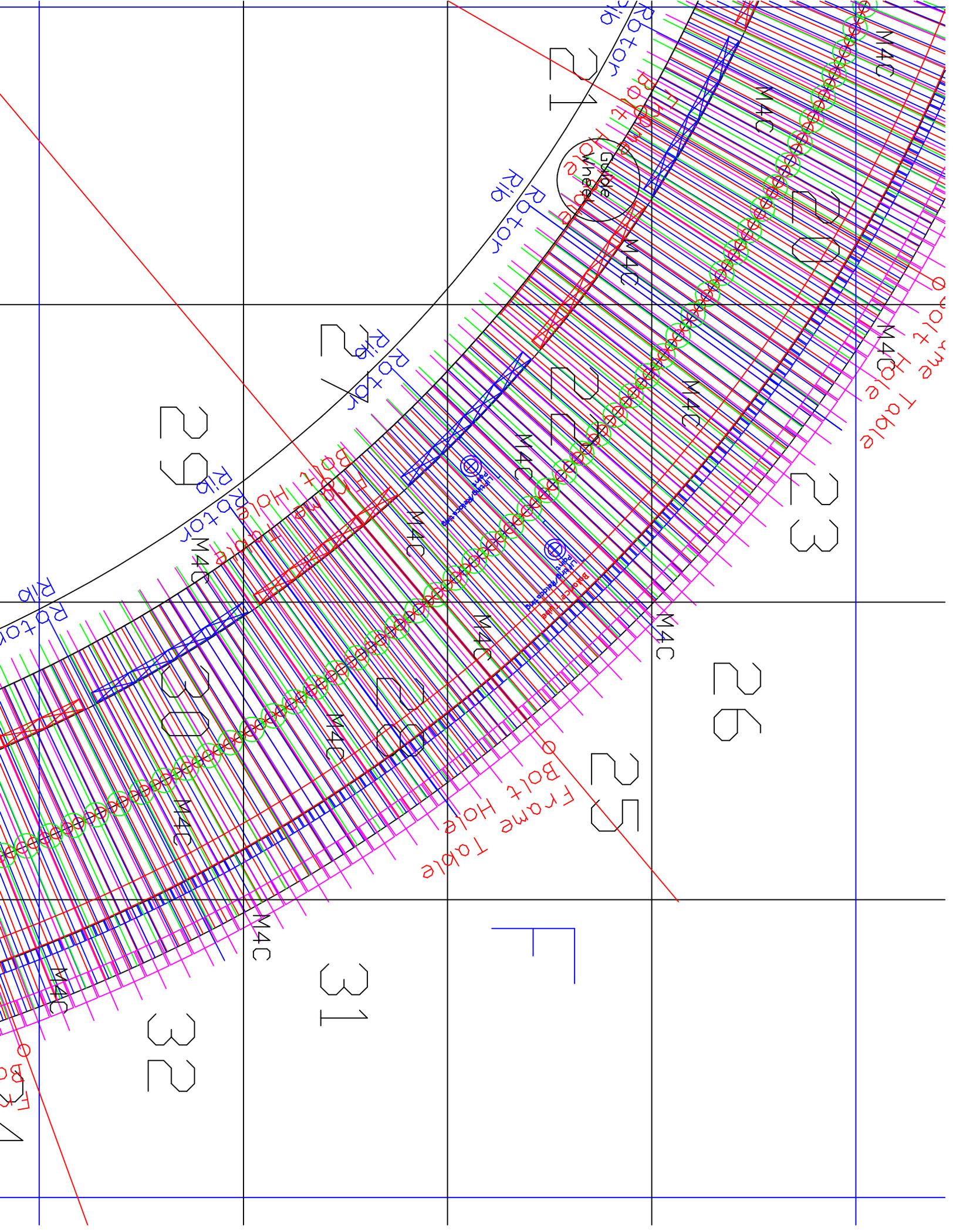
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Ø Bolt Hole
M4C

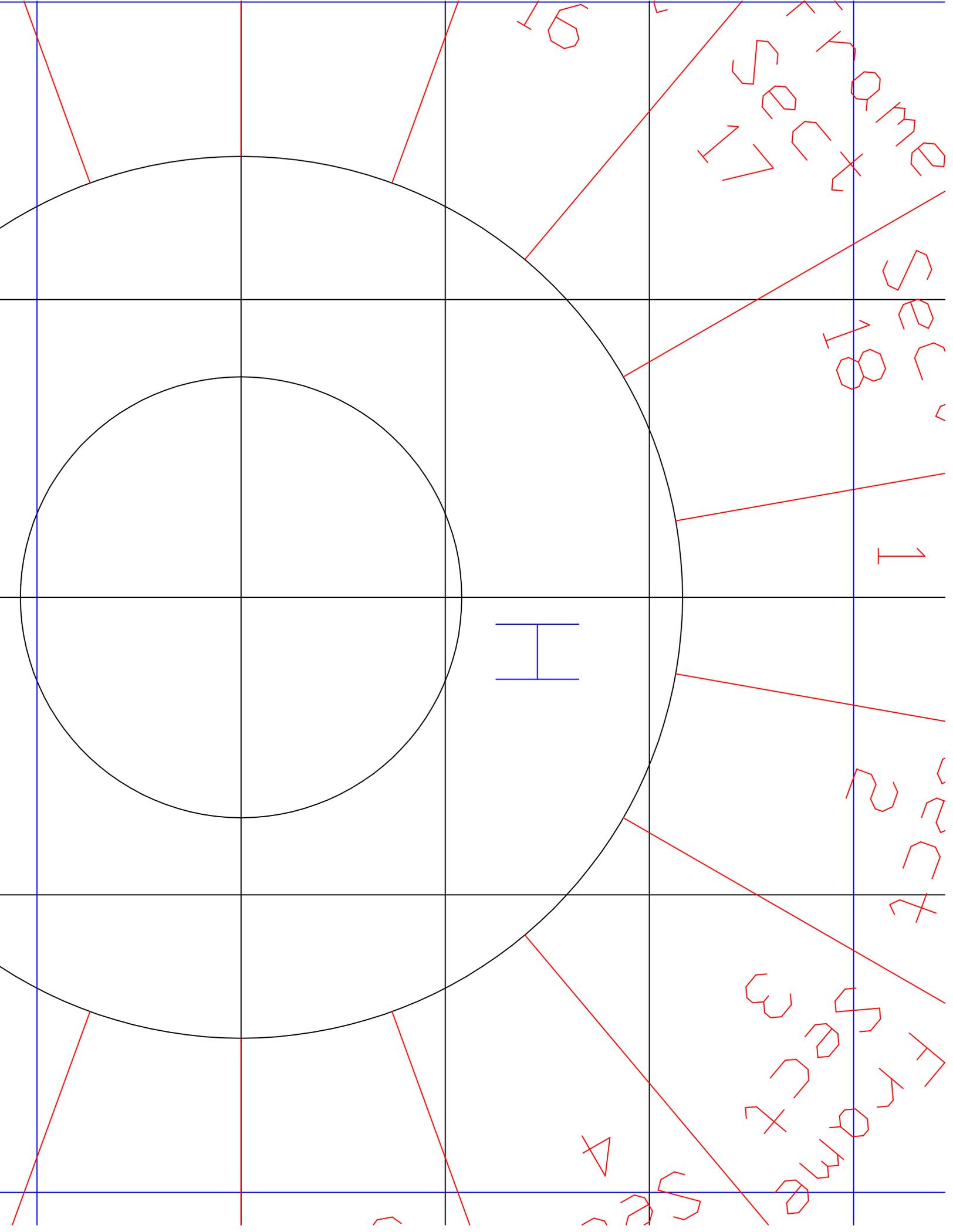
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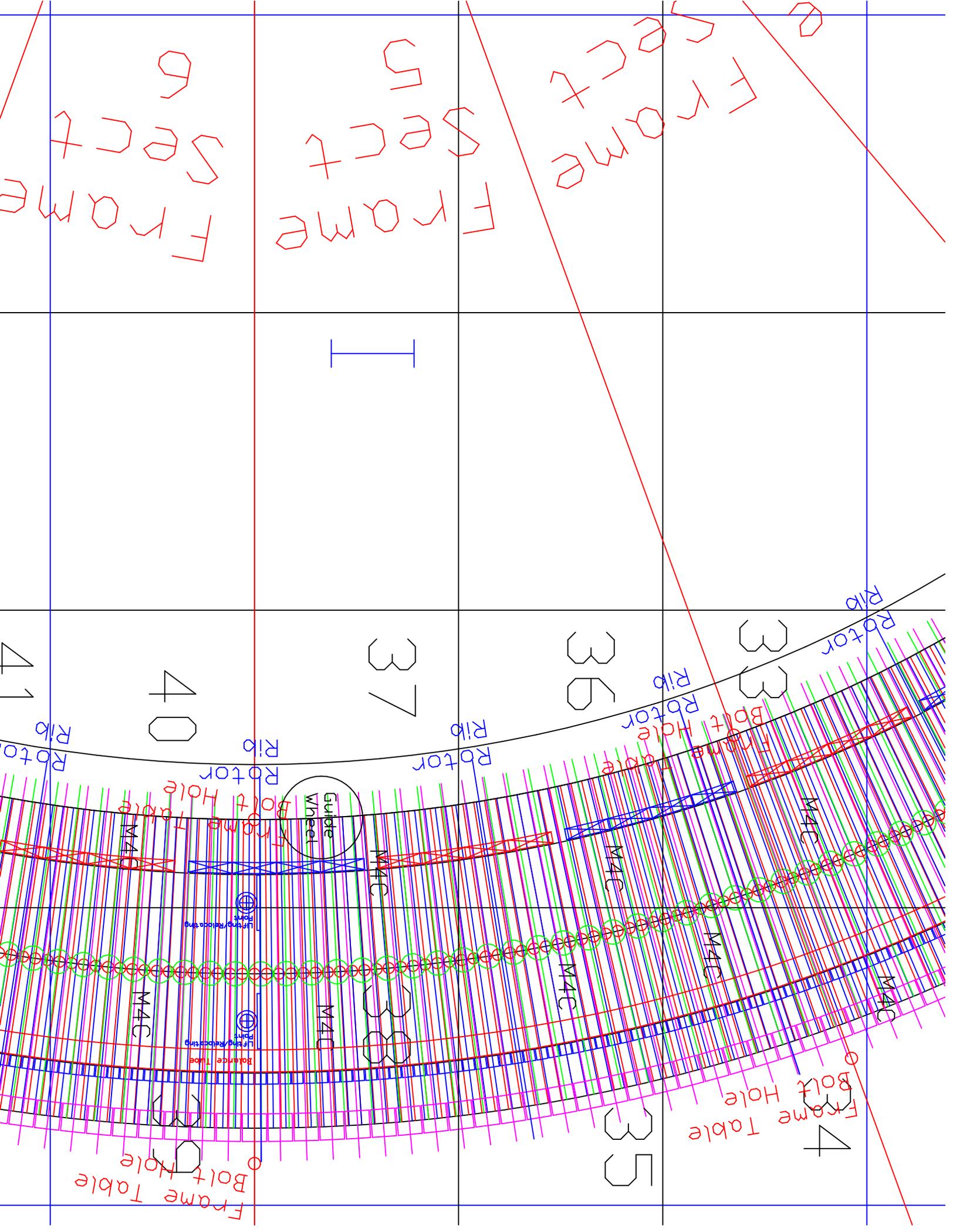


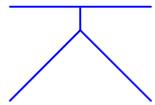












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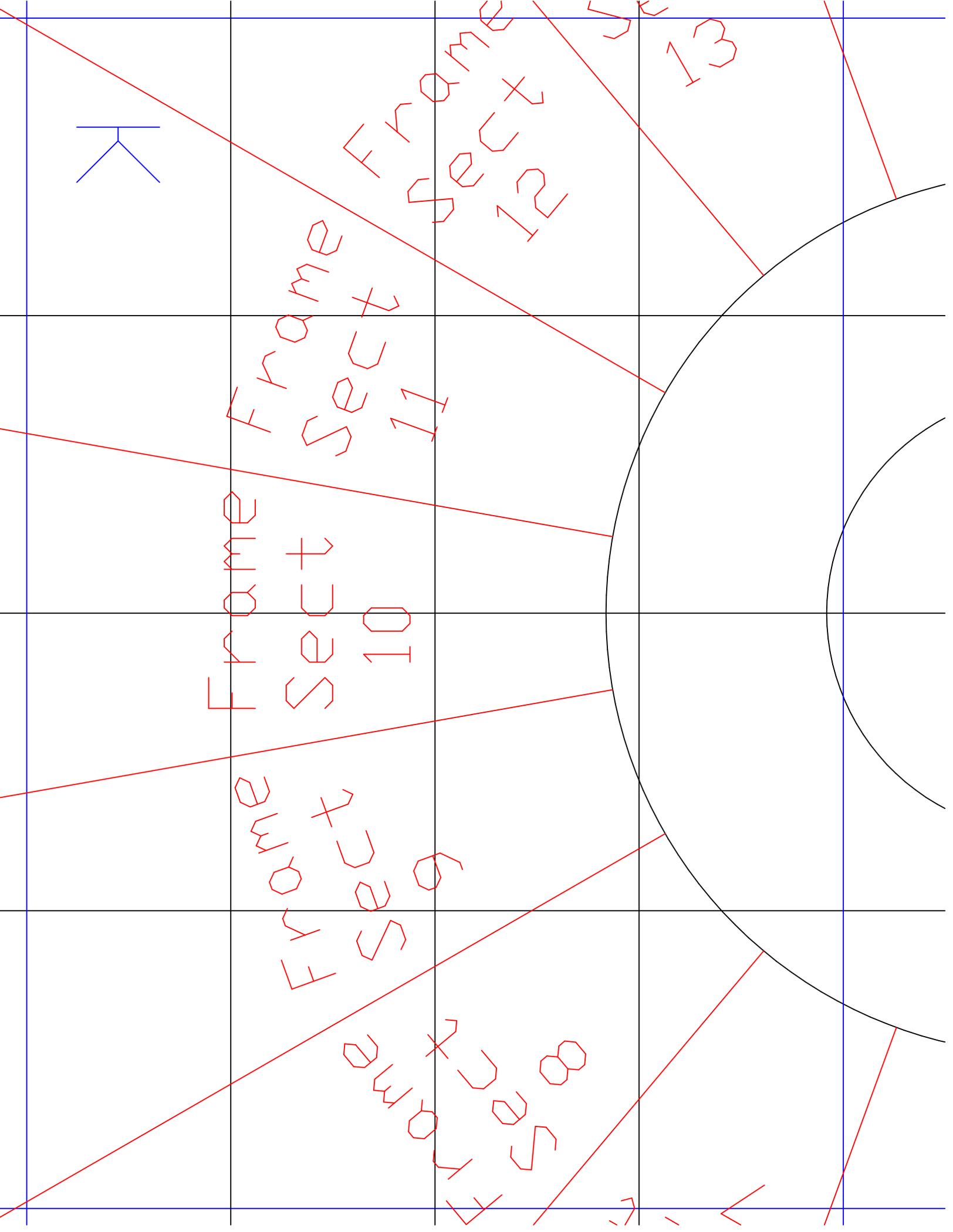
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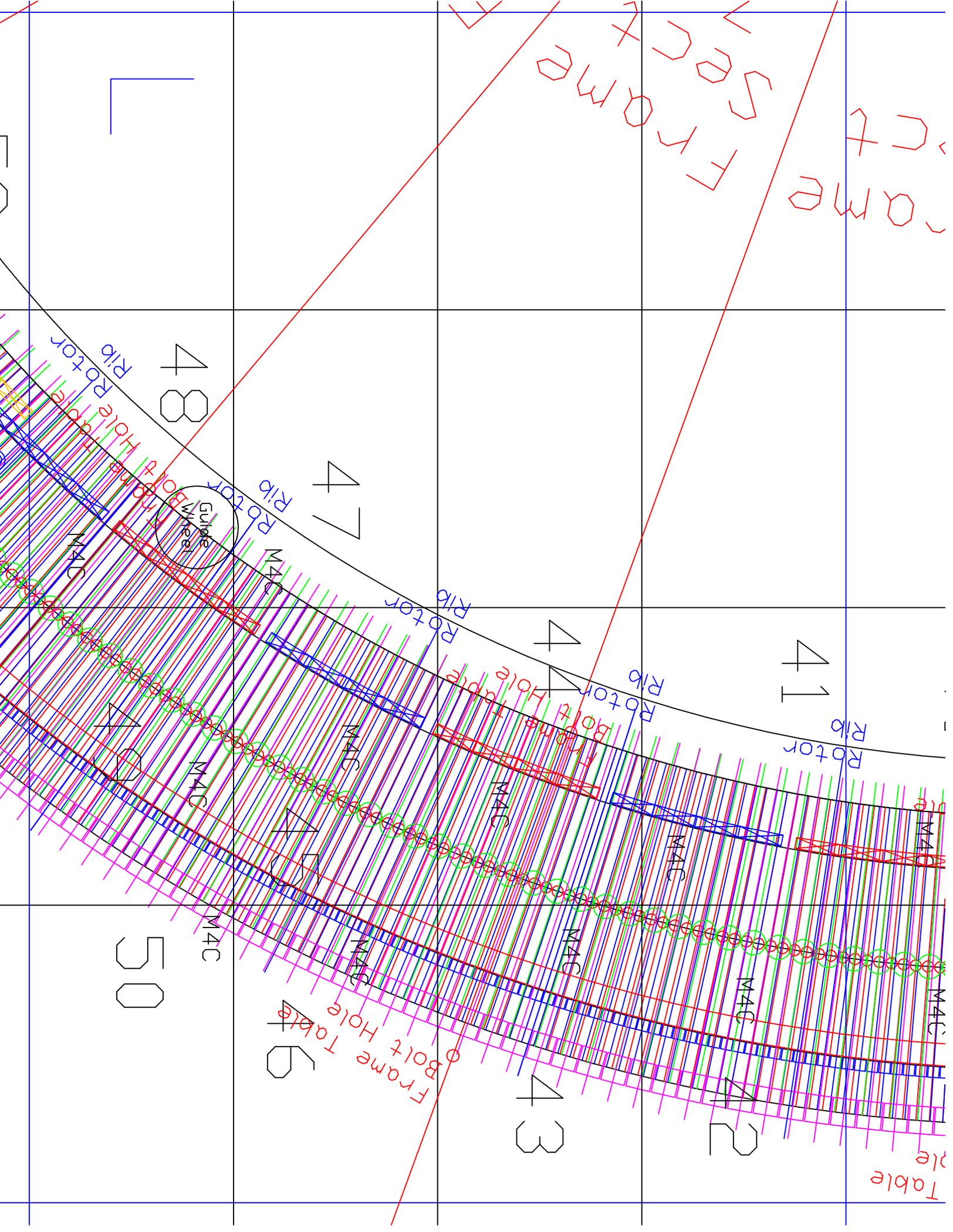
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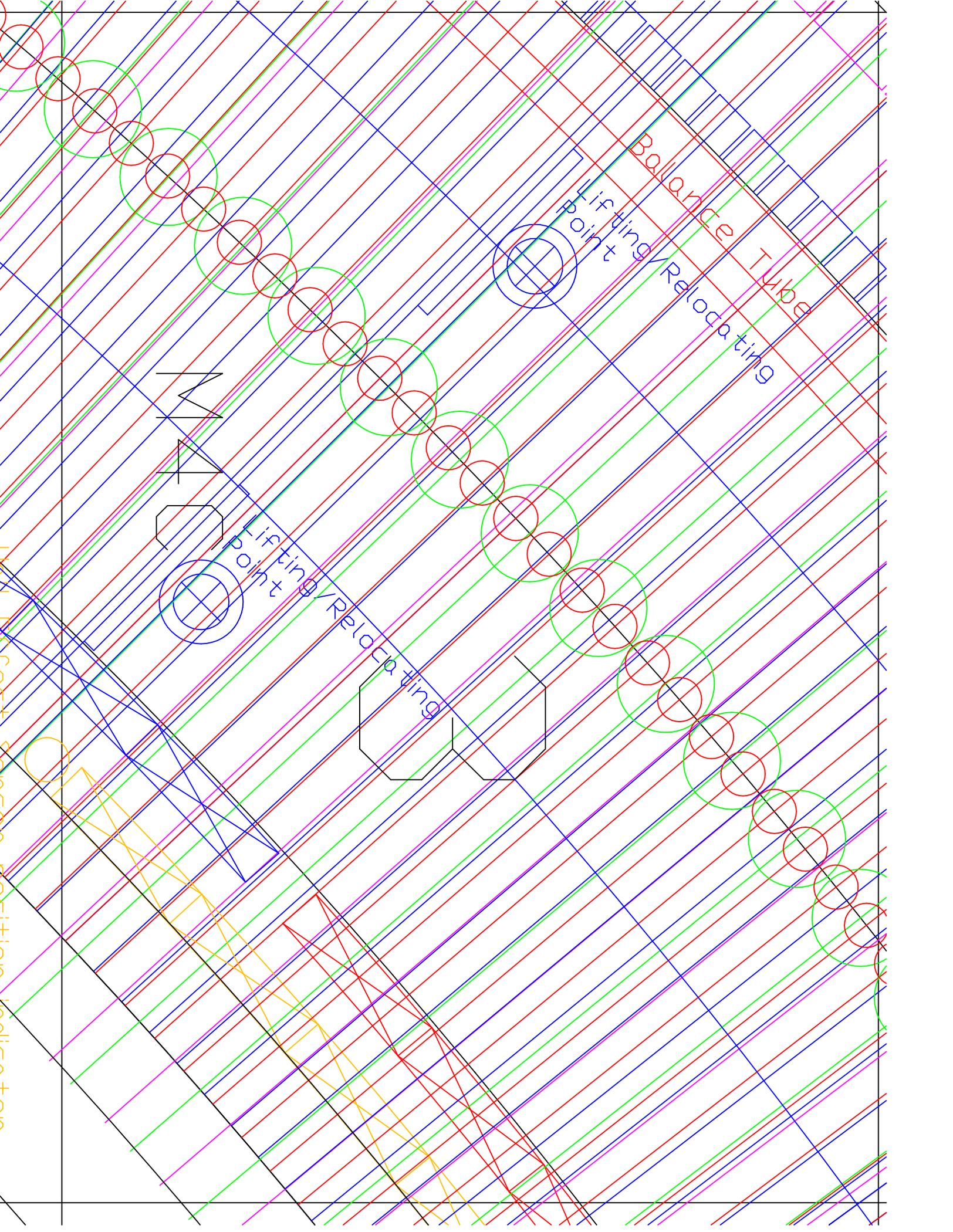
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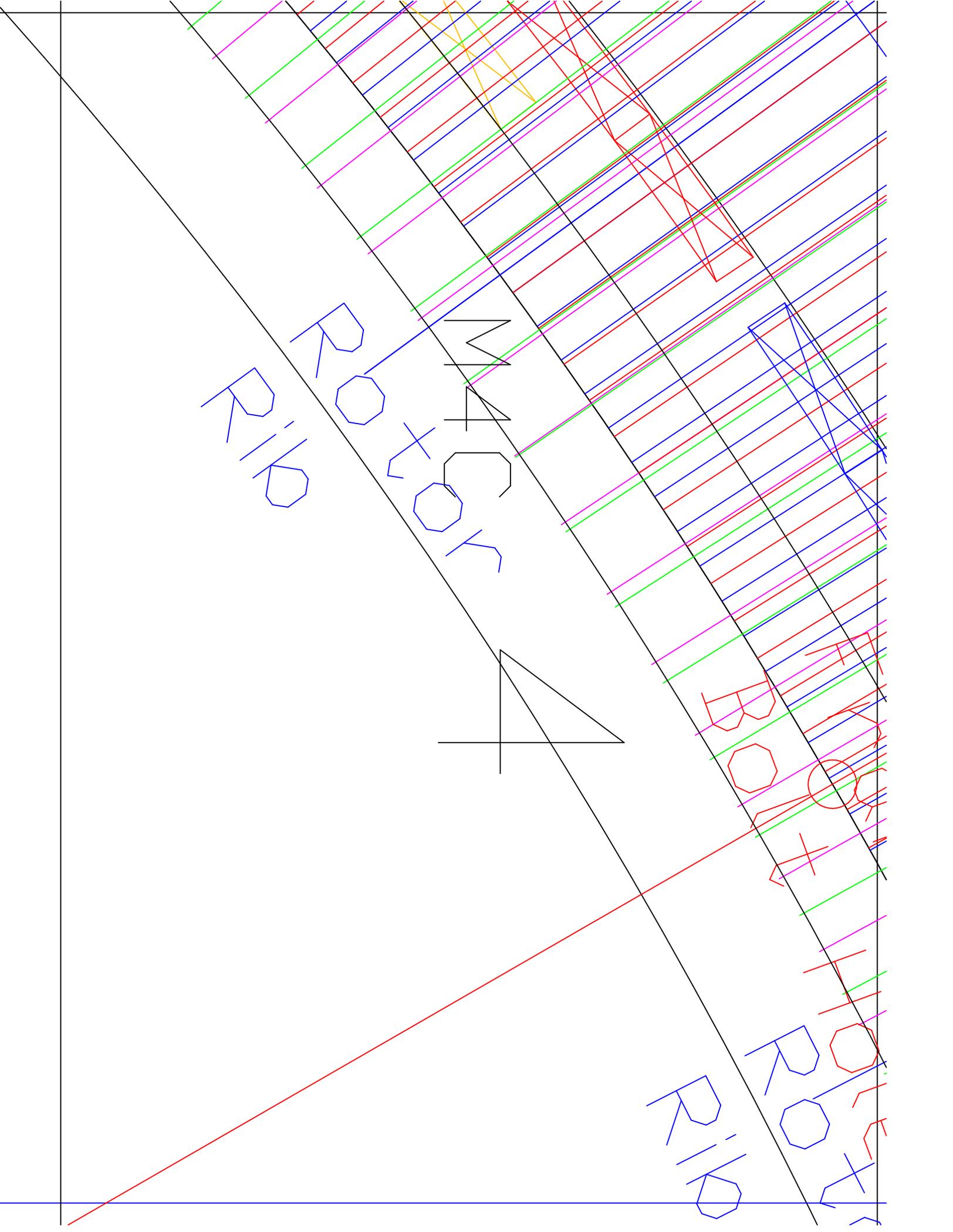
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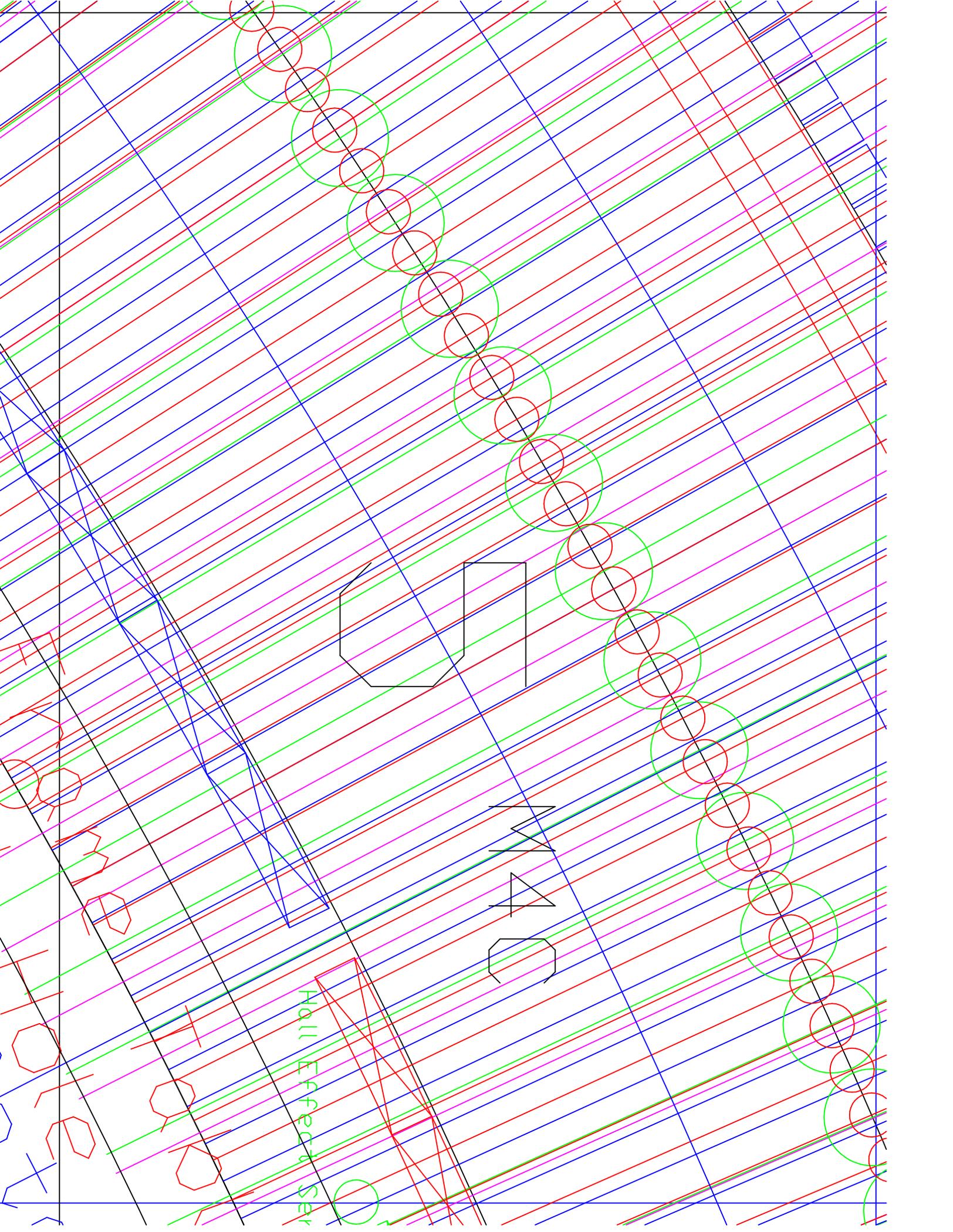






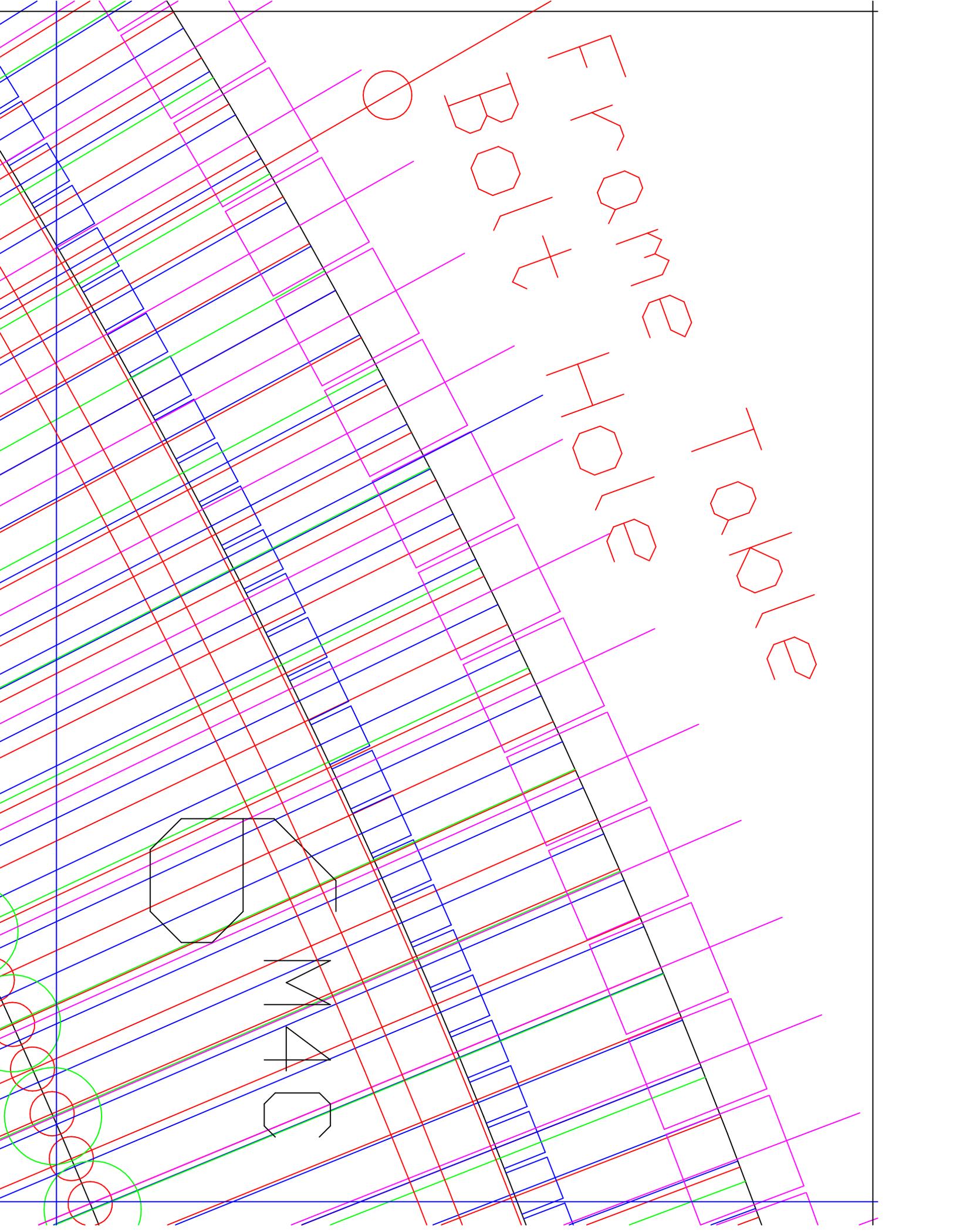




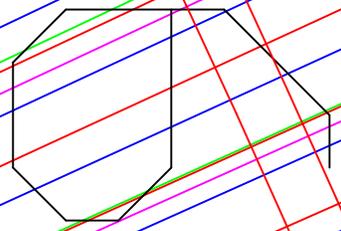


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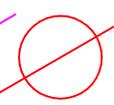
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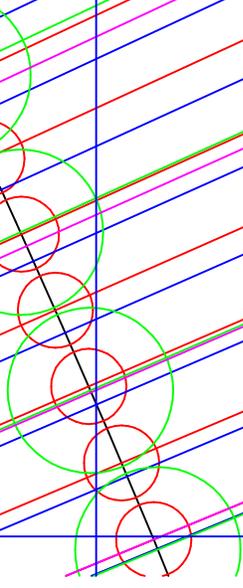
BOLT HOLE TORULE



DIN 913



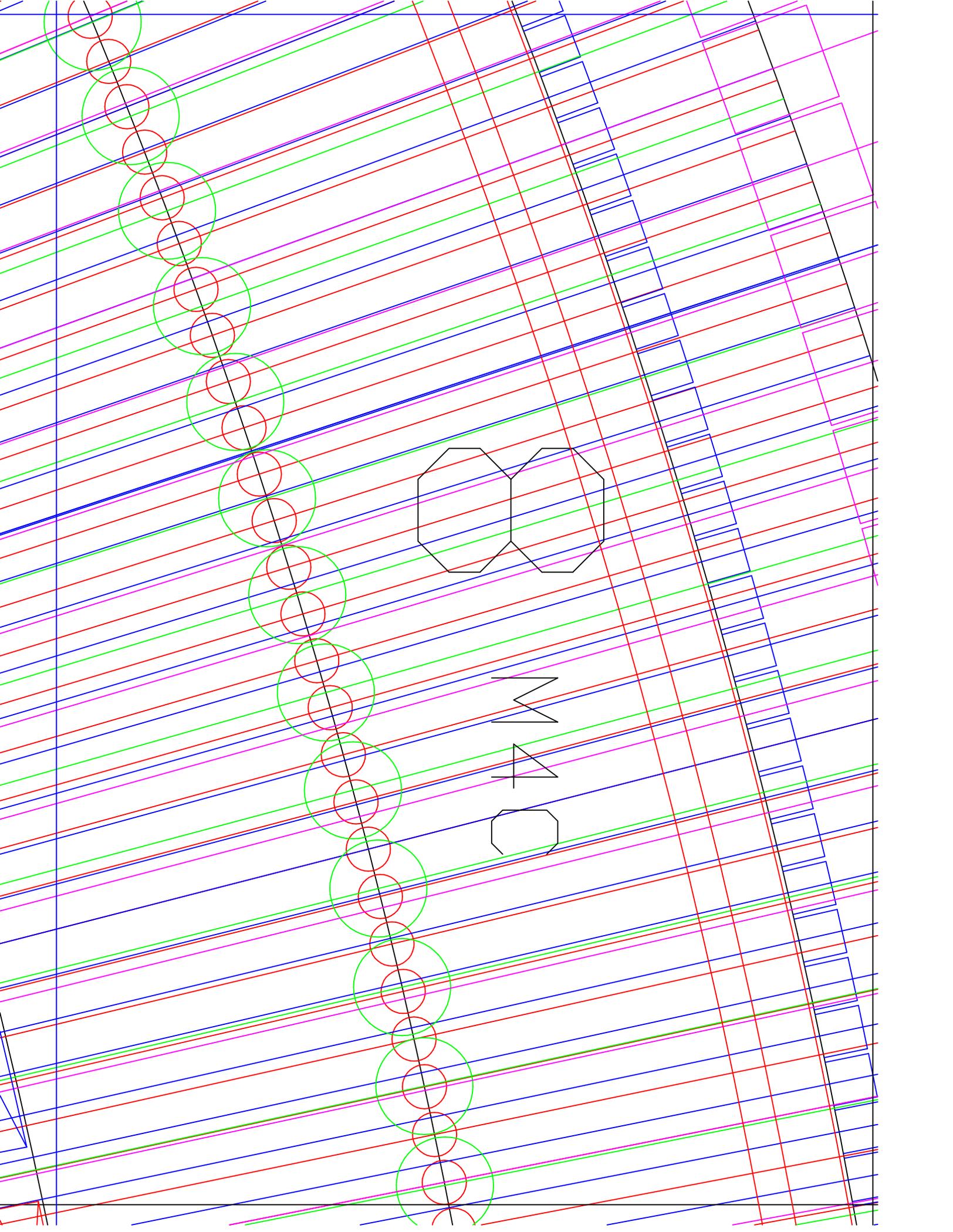
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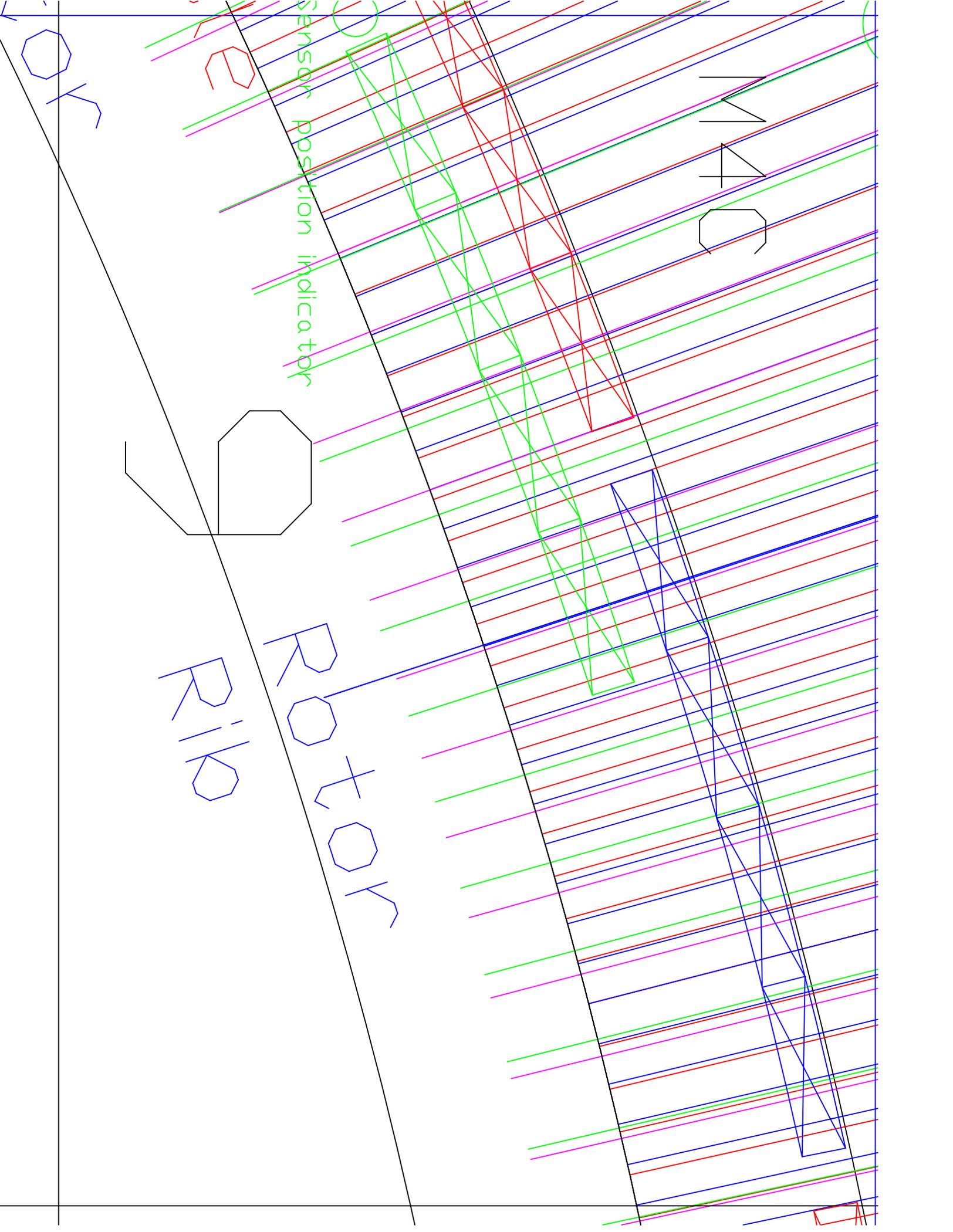




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Sensor position indicator

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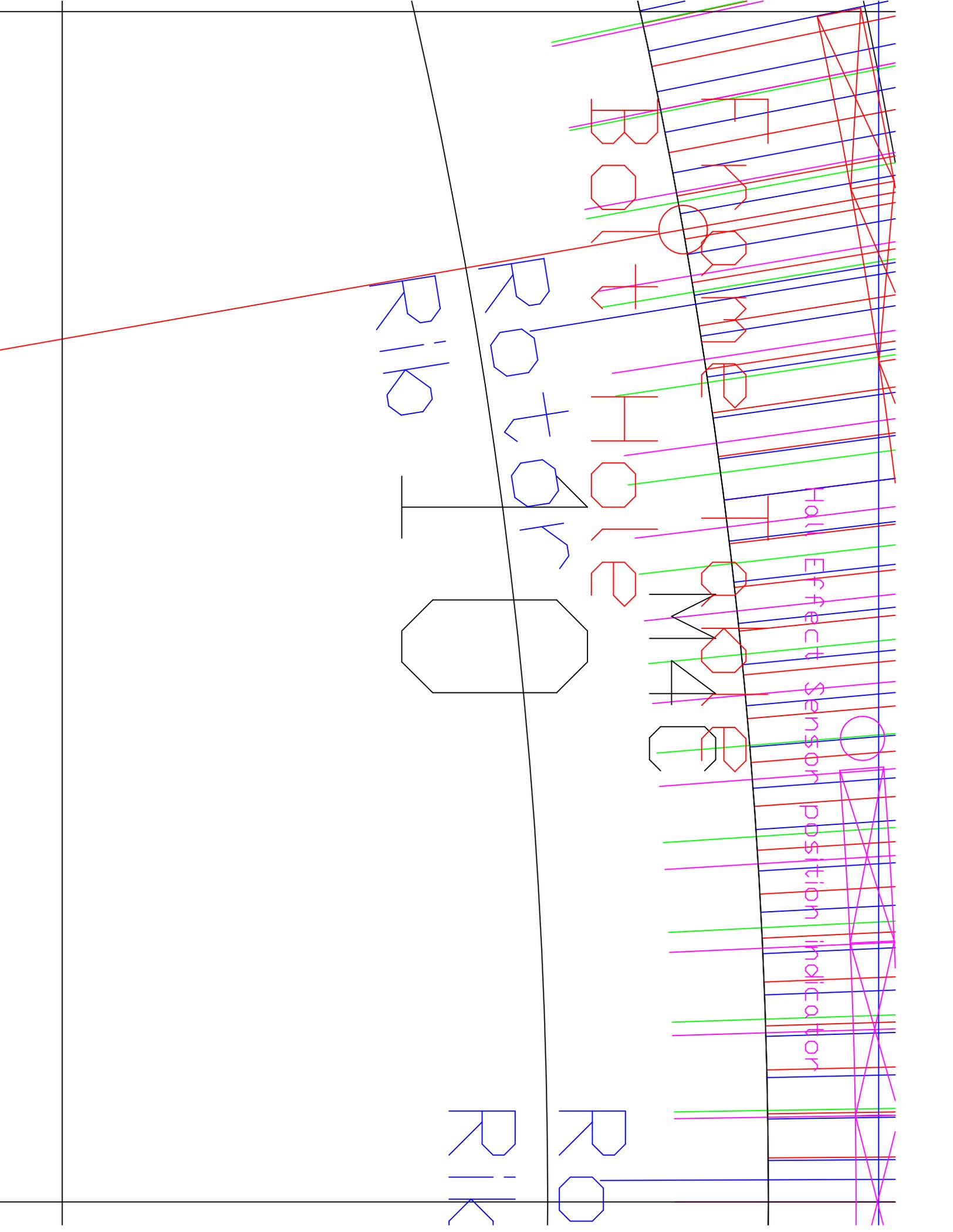
Hall Effect Sensor position indicator

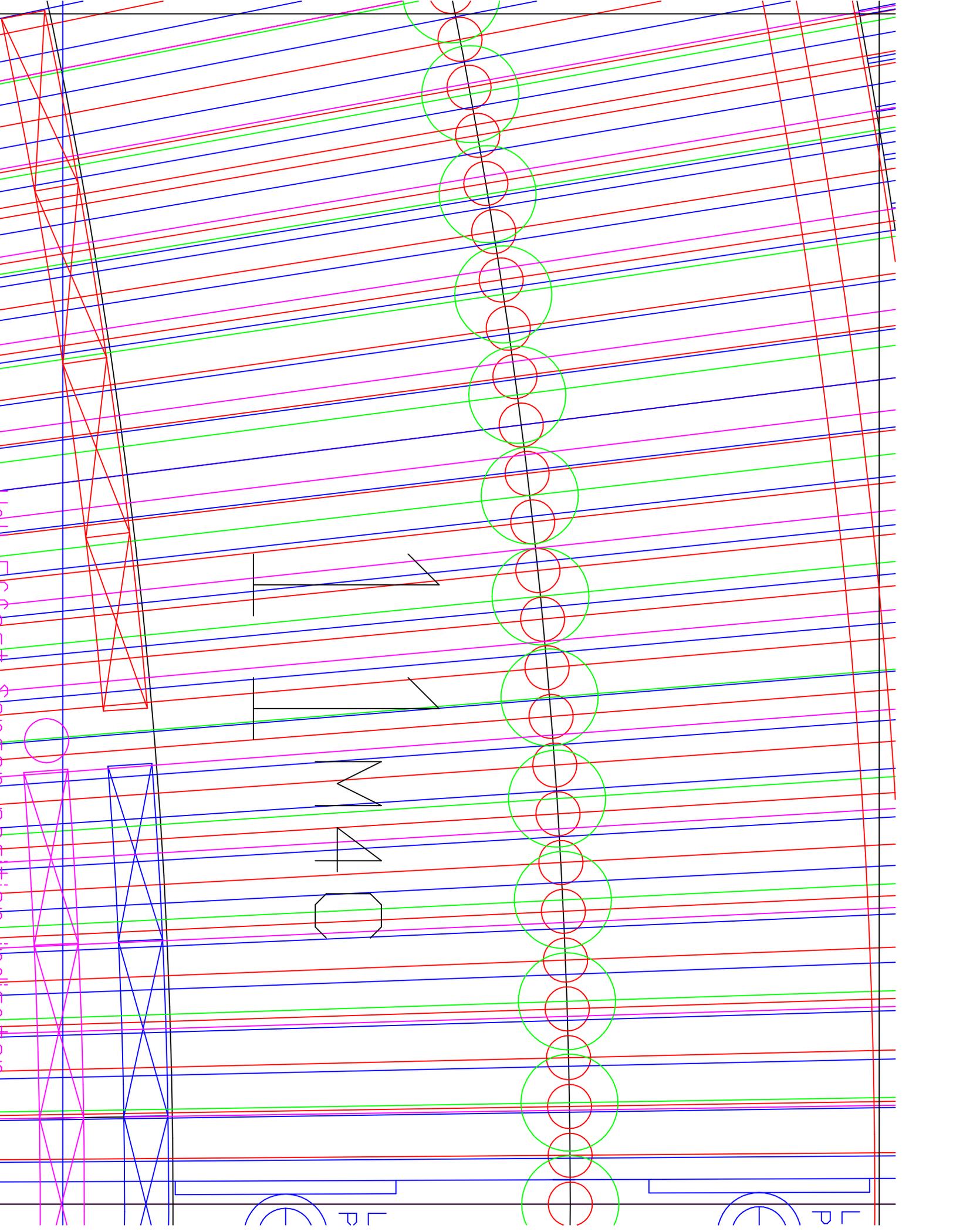
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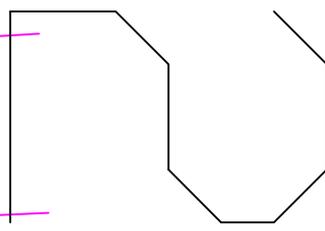
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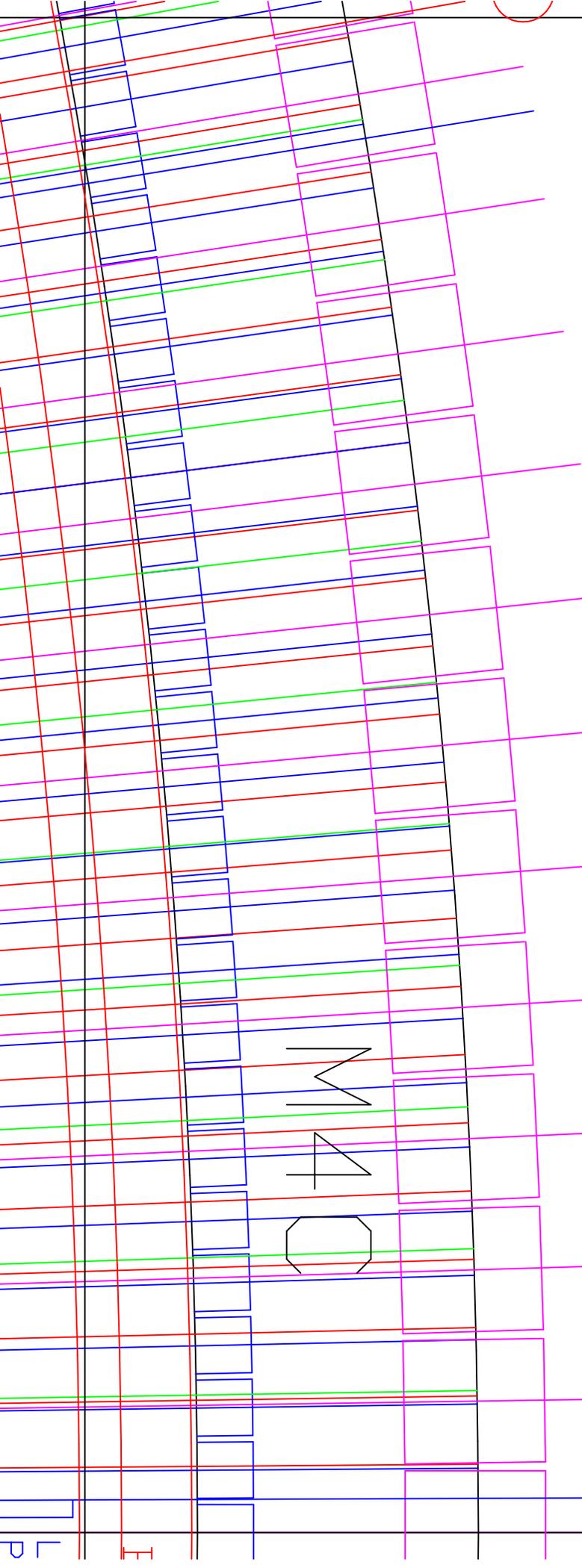




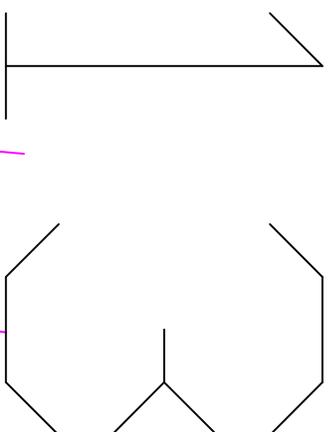
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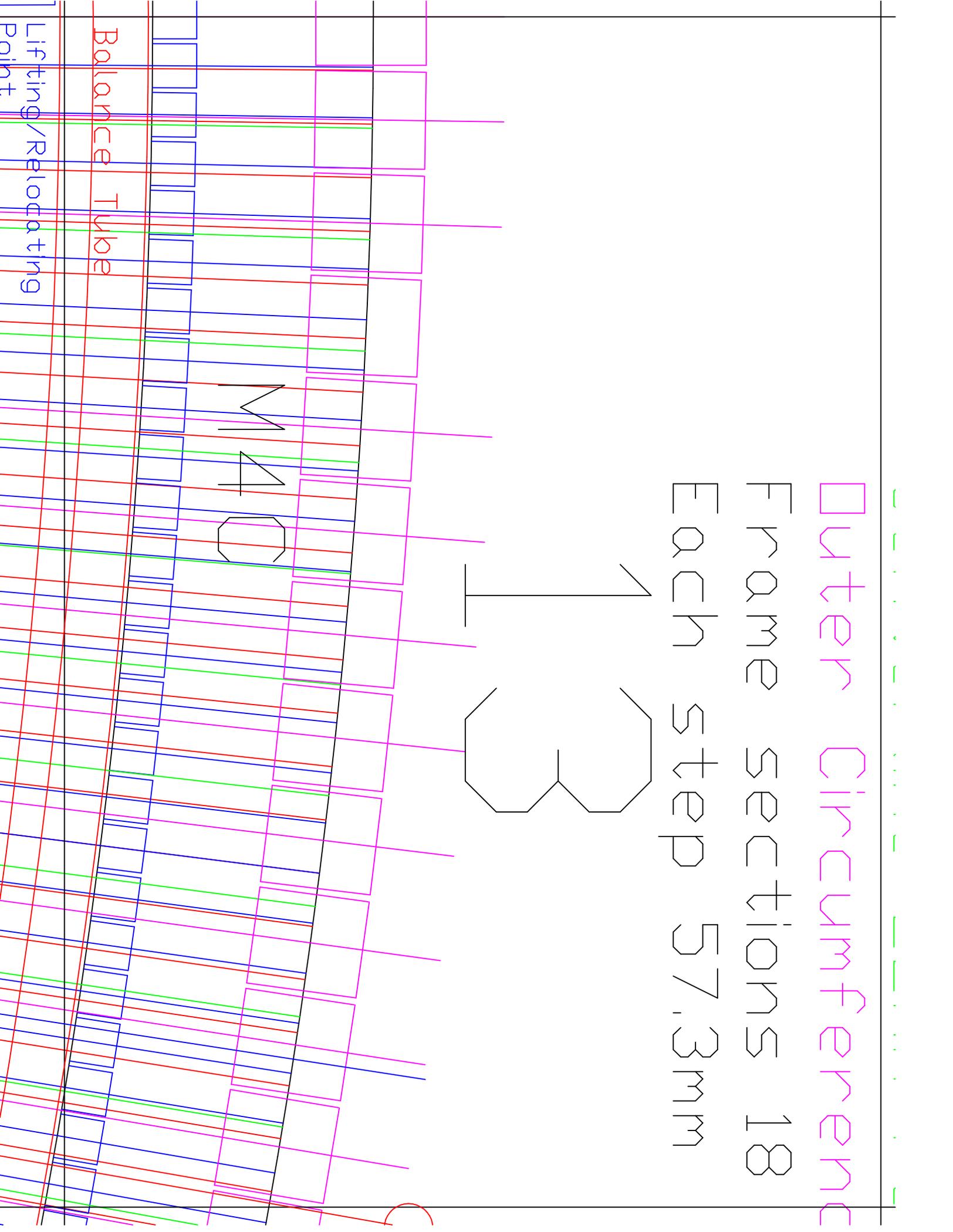
Outer Circumference
Frame sections 18
Each step 57.3mm



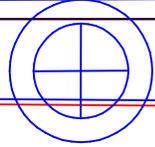
M40

Balance Tube

Lifting/Relocating Point



Lifting/Relocating
Point

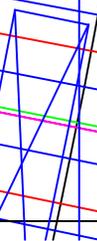
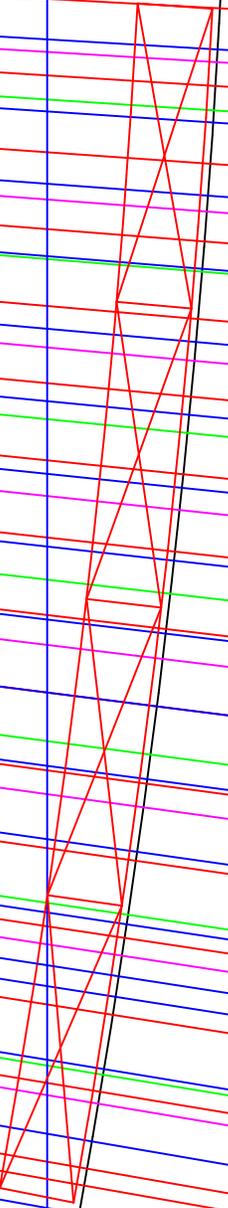
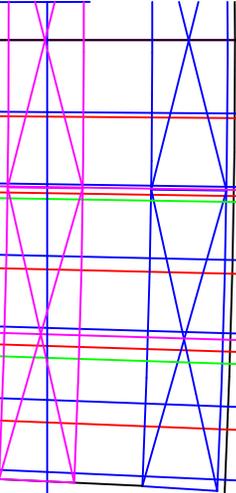
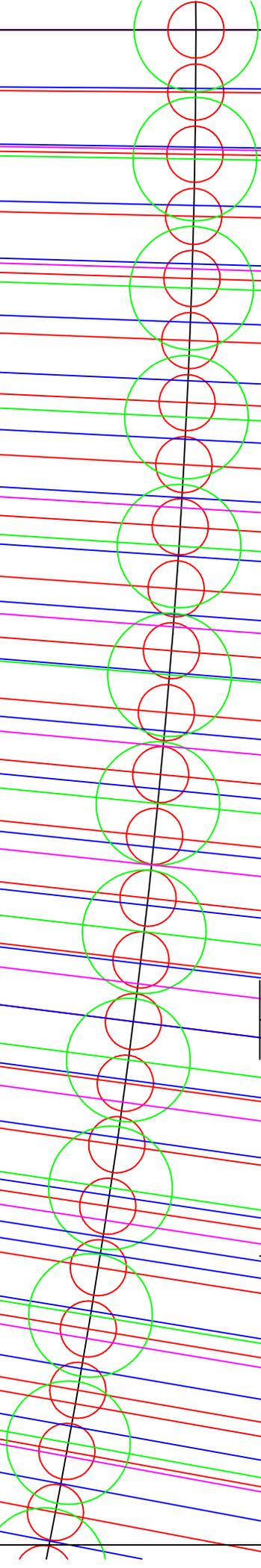
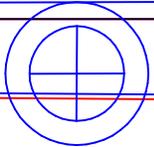


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Lifting/Relocating
Point



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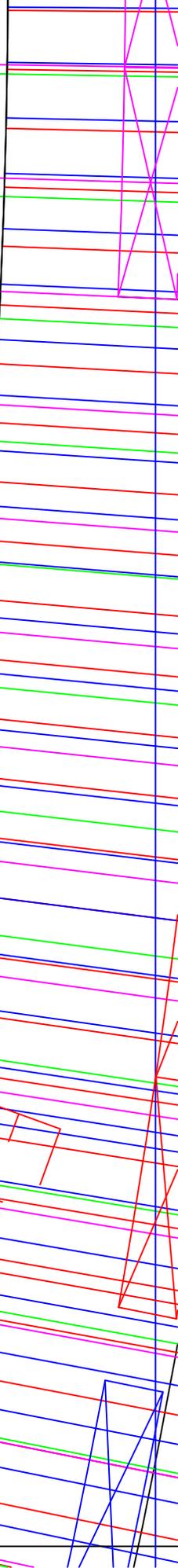
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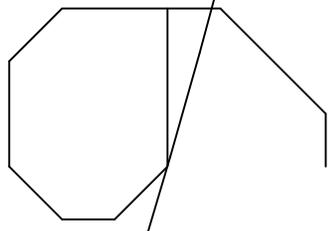
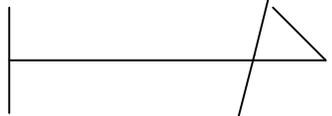
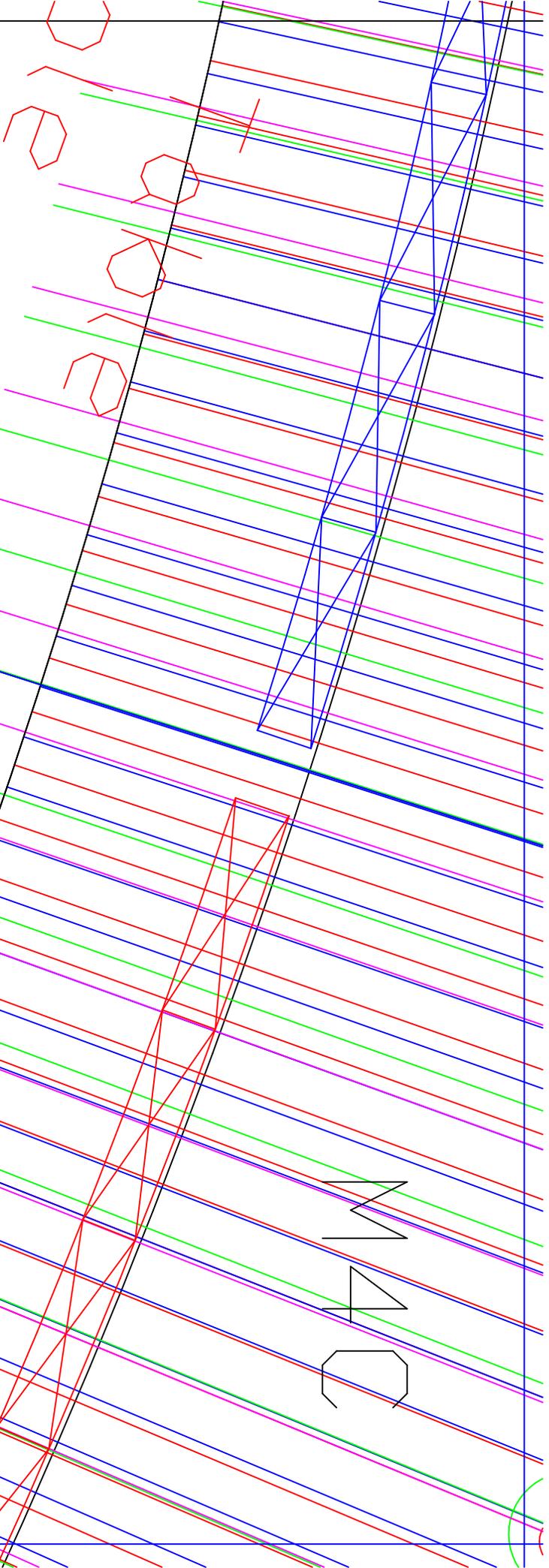
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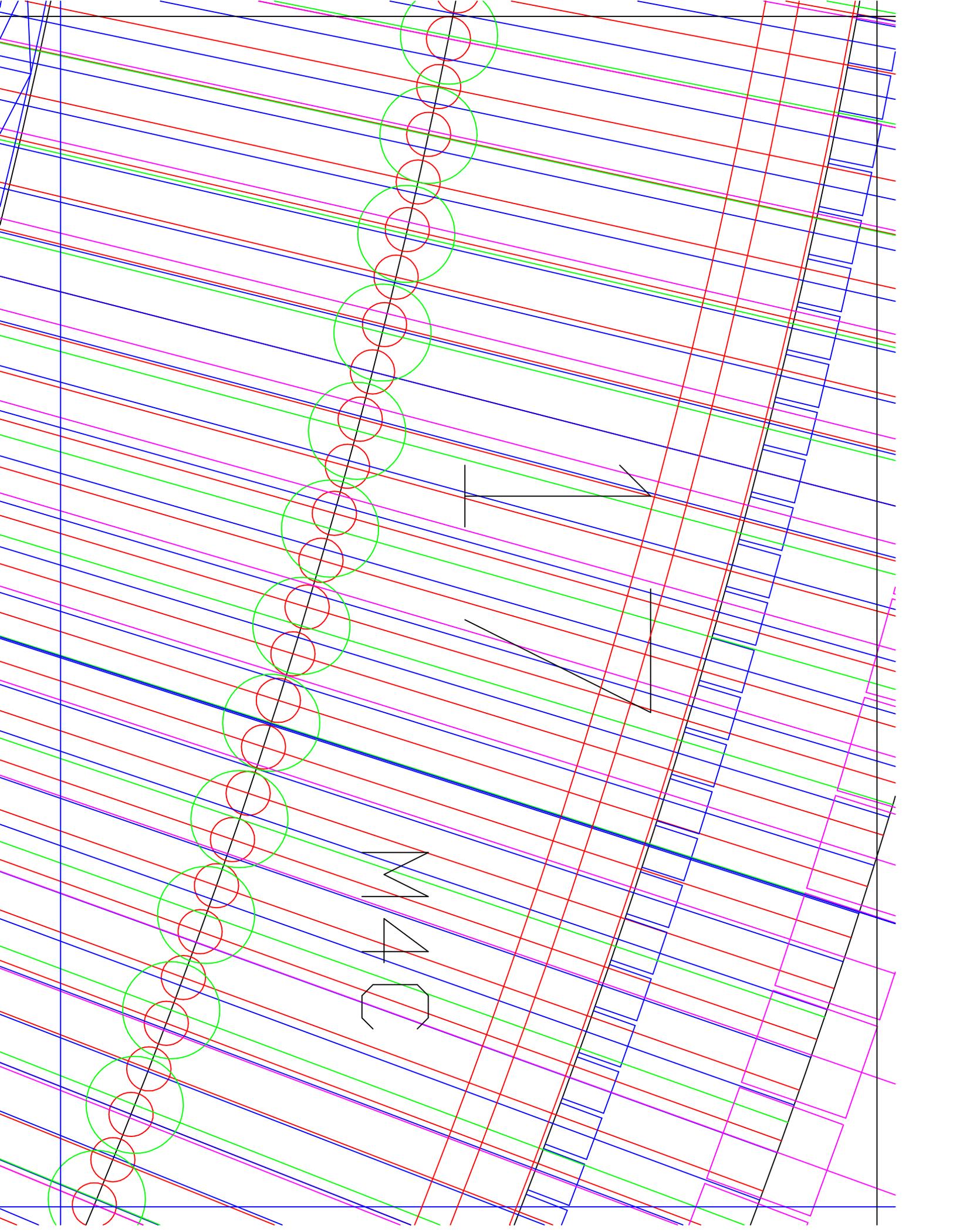
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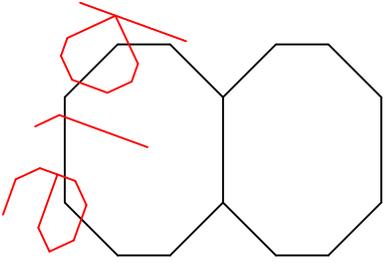




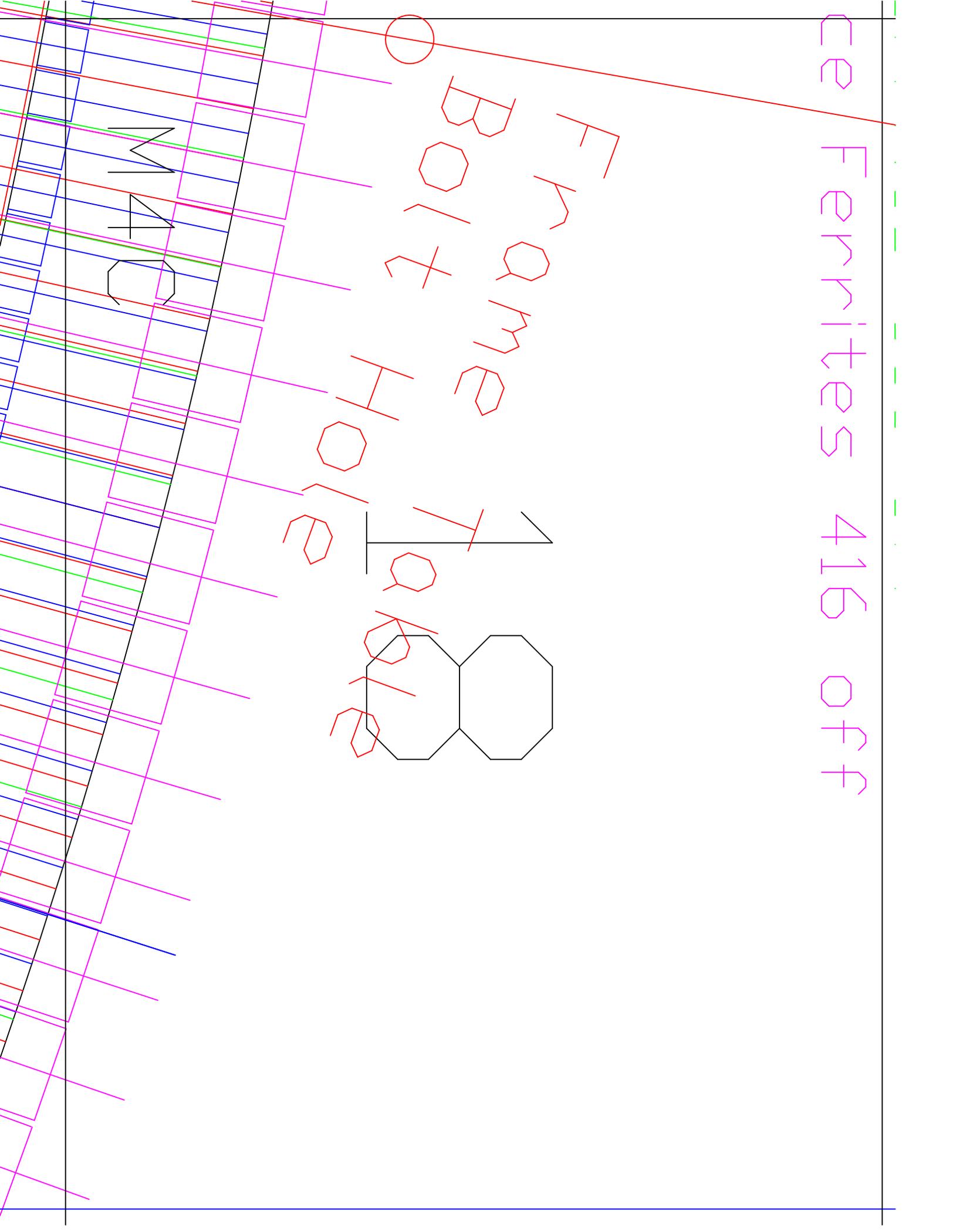
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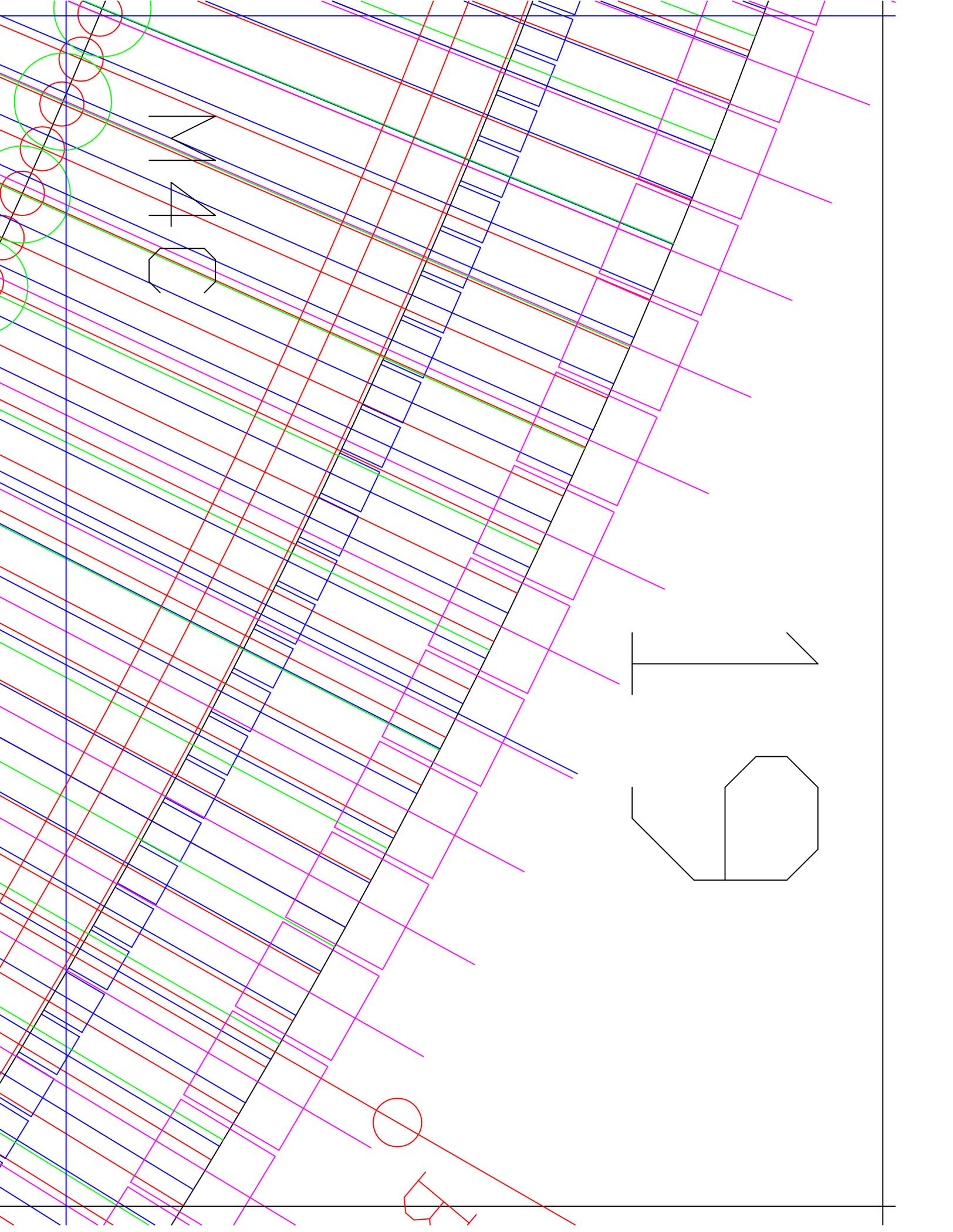
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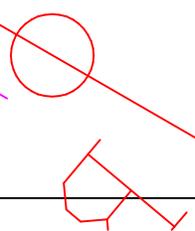
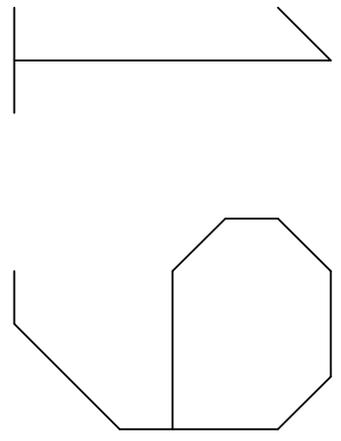


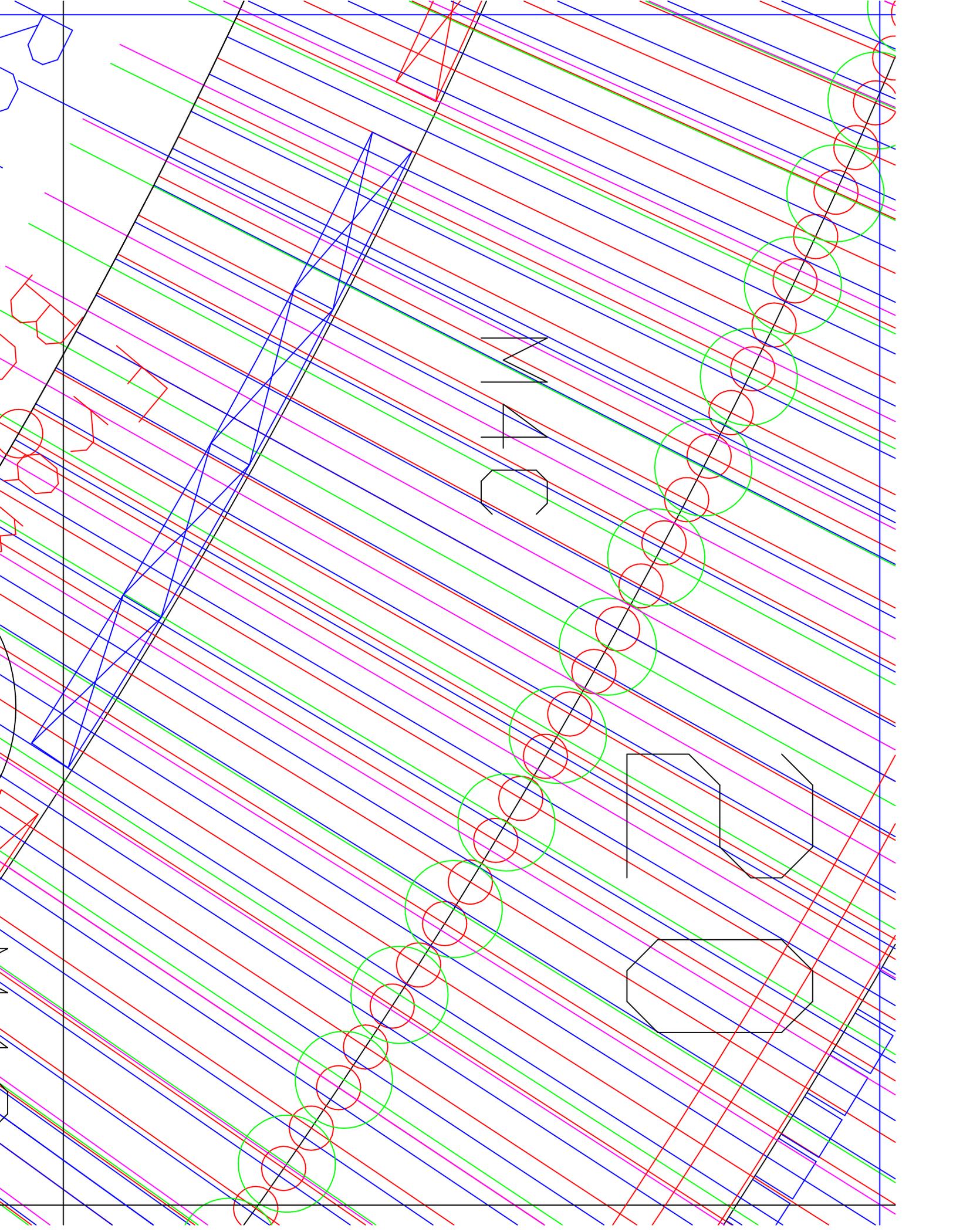
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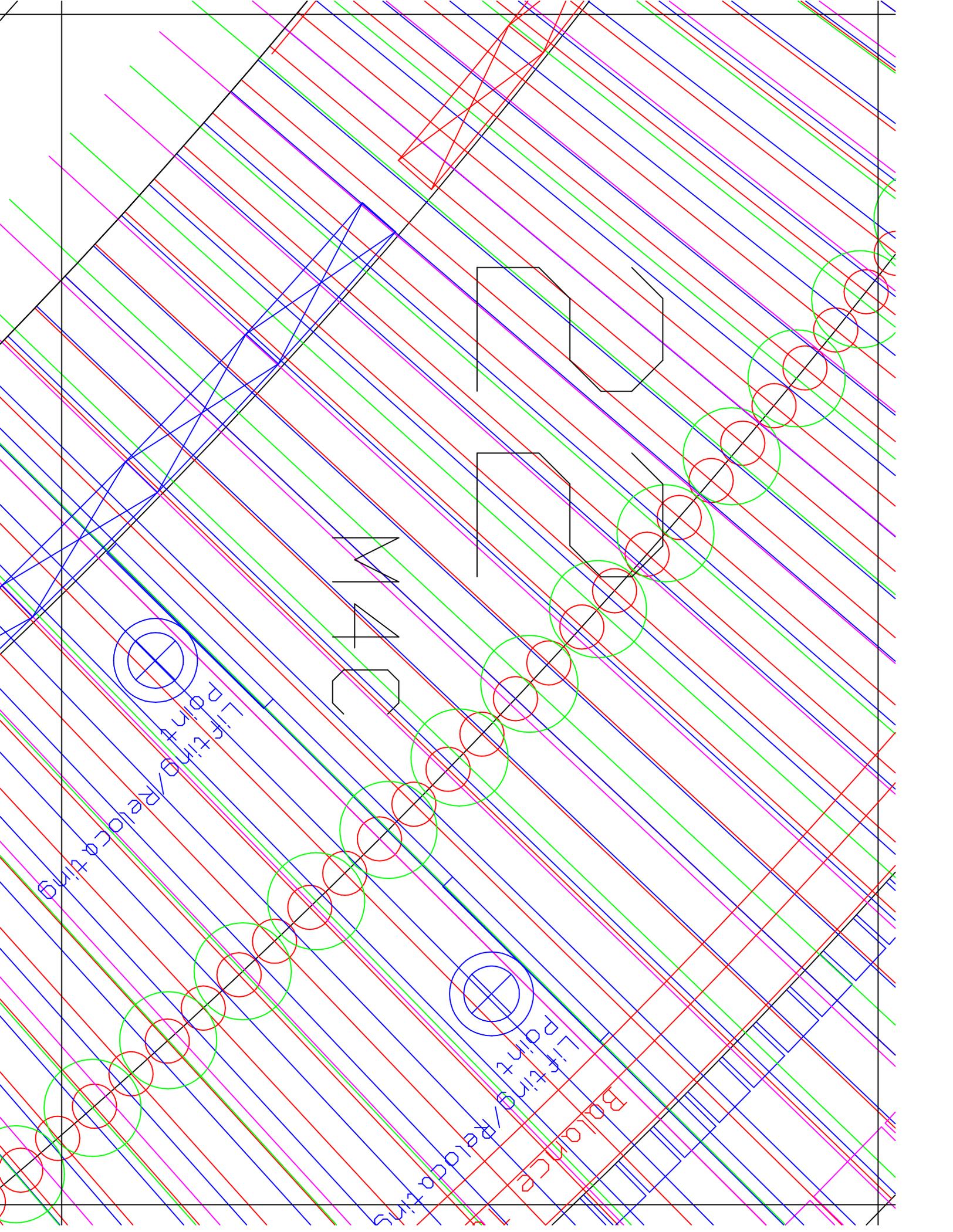




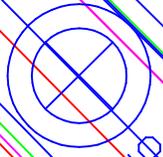
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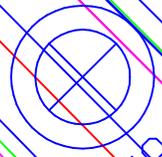




MIND



Lift ting / Reido tins
point 0

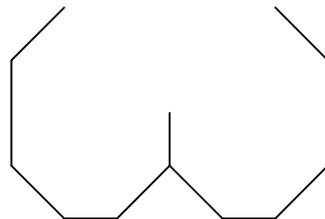
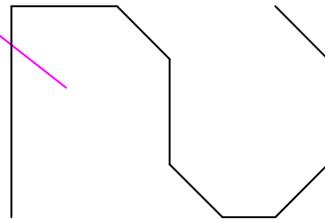
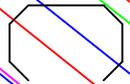
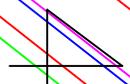
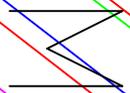
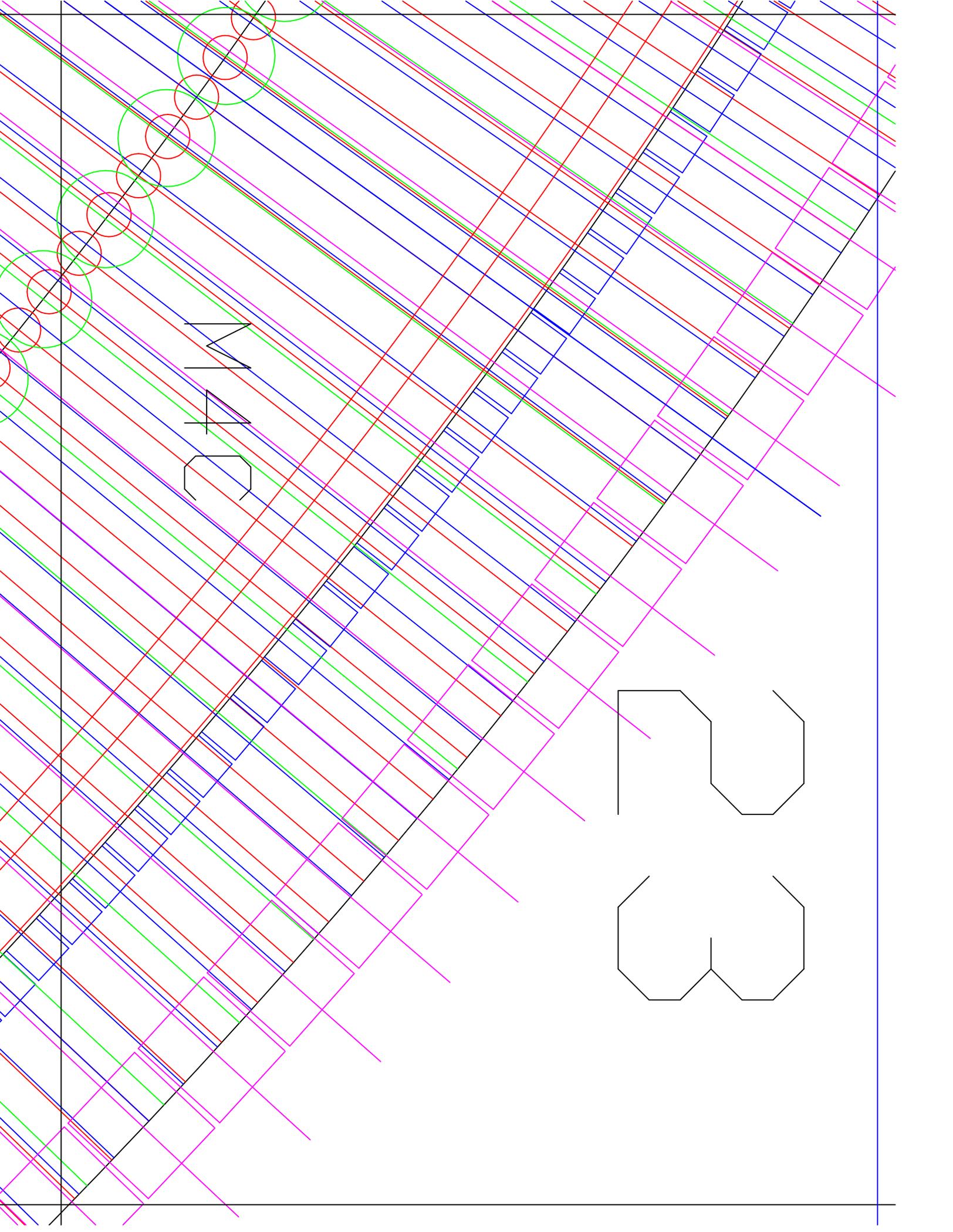


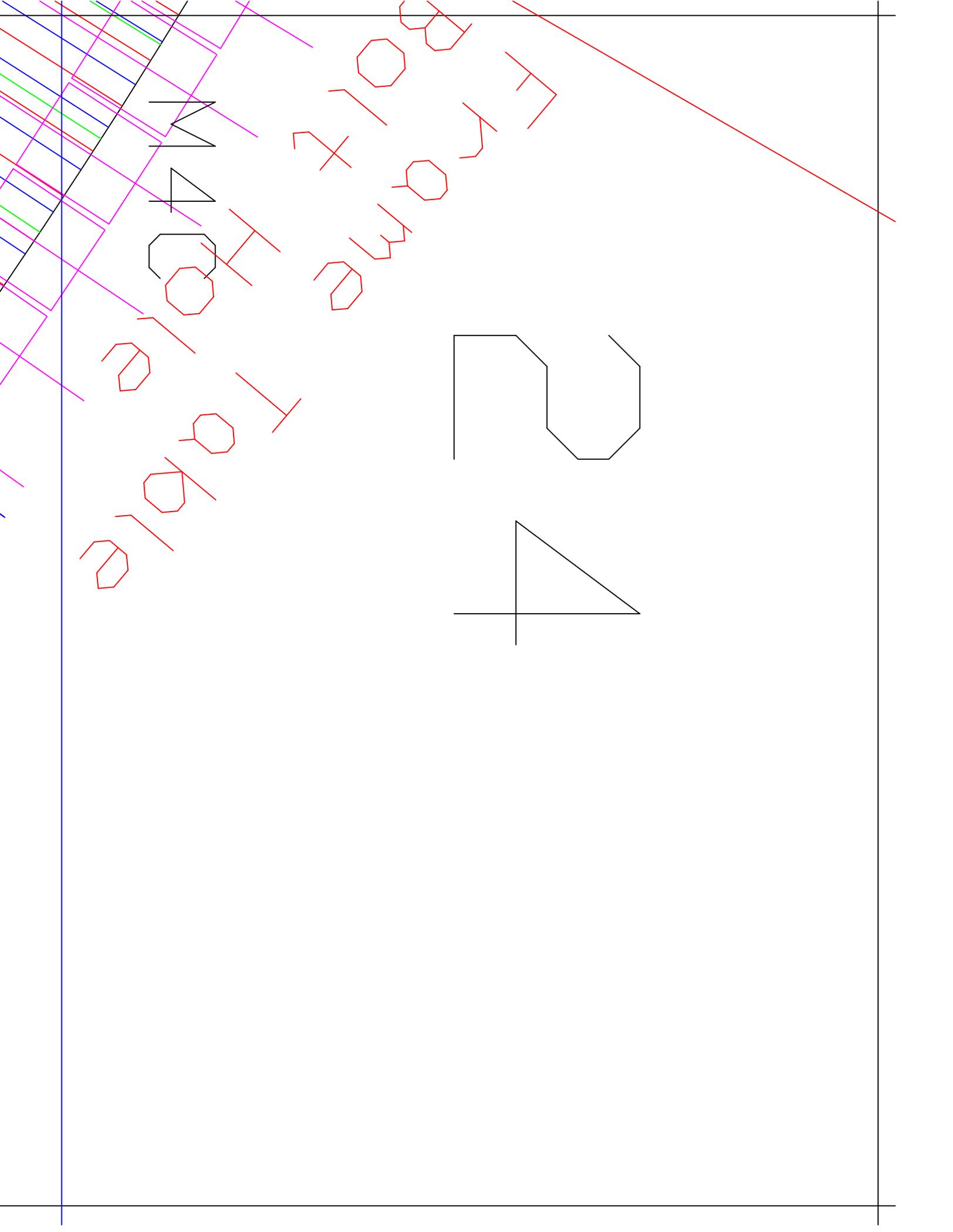
Lift ting / Reido tins
point 9

Balance

Lift ting

Lift ting





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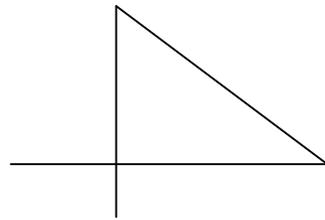
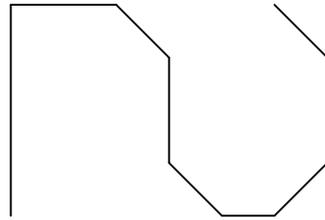
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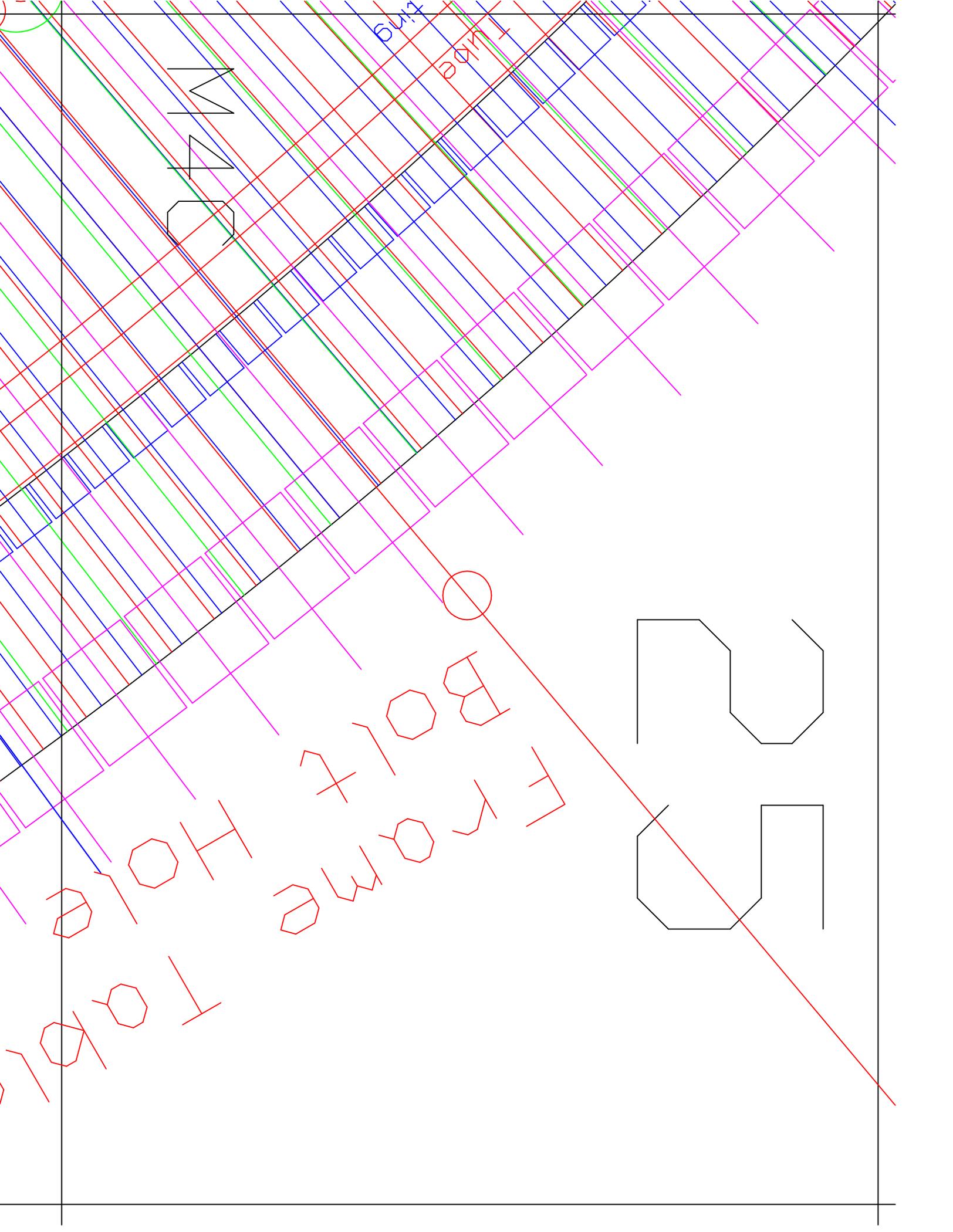
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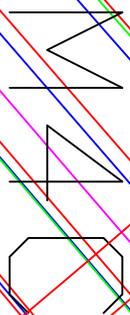
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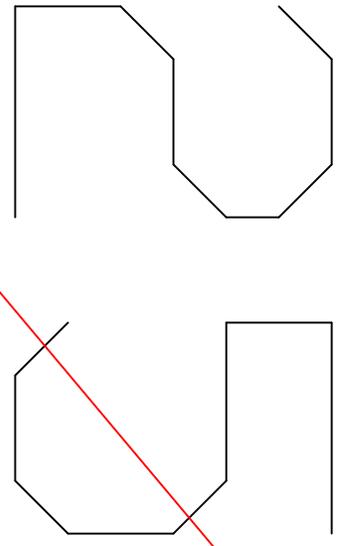




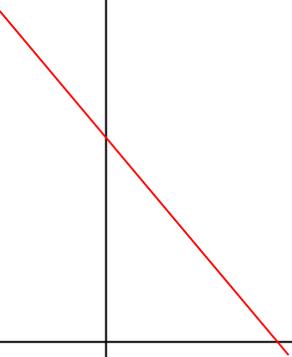
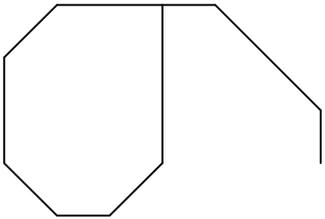
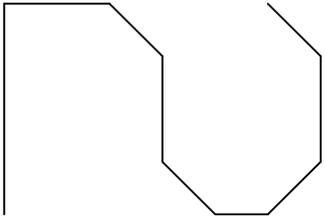
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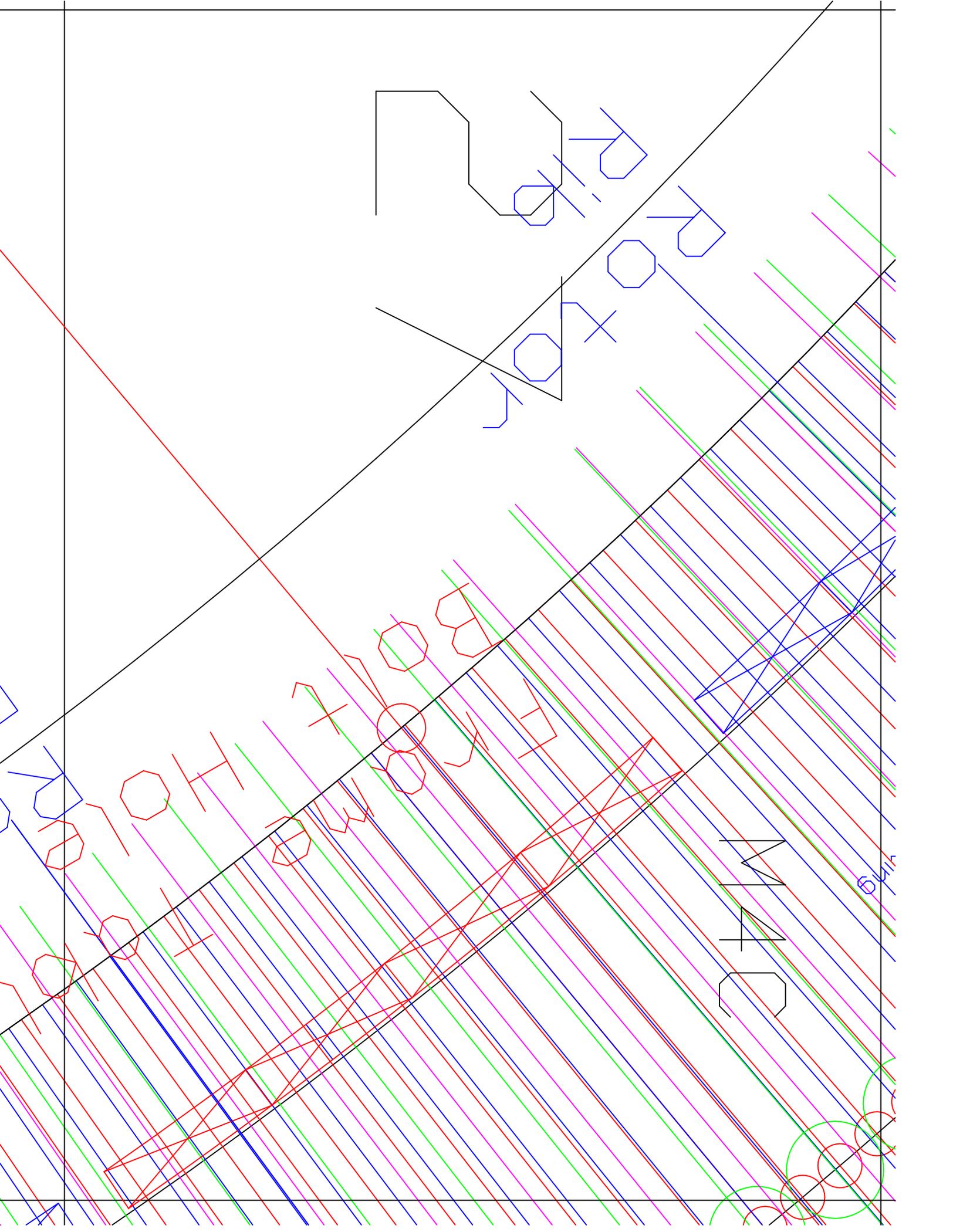


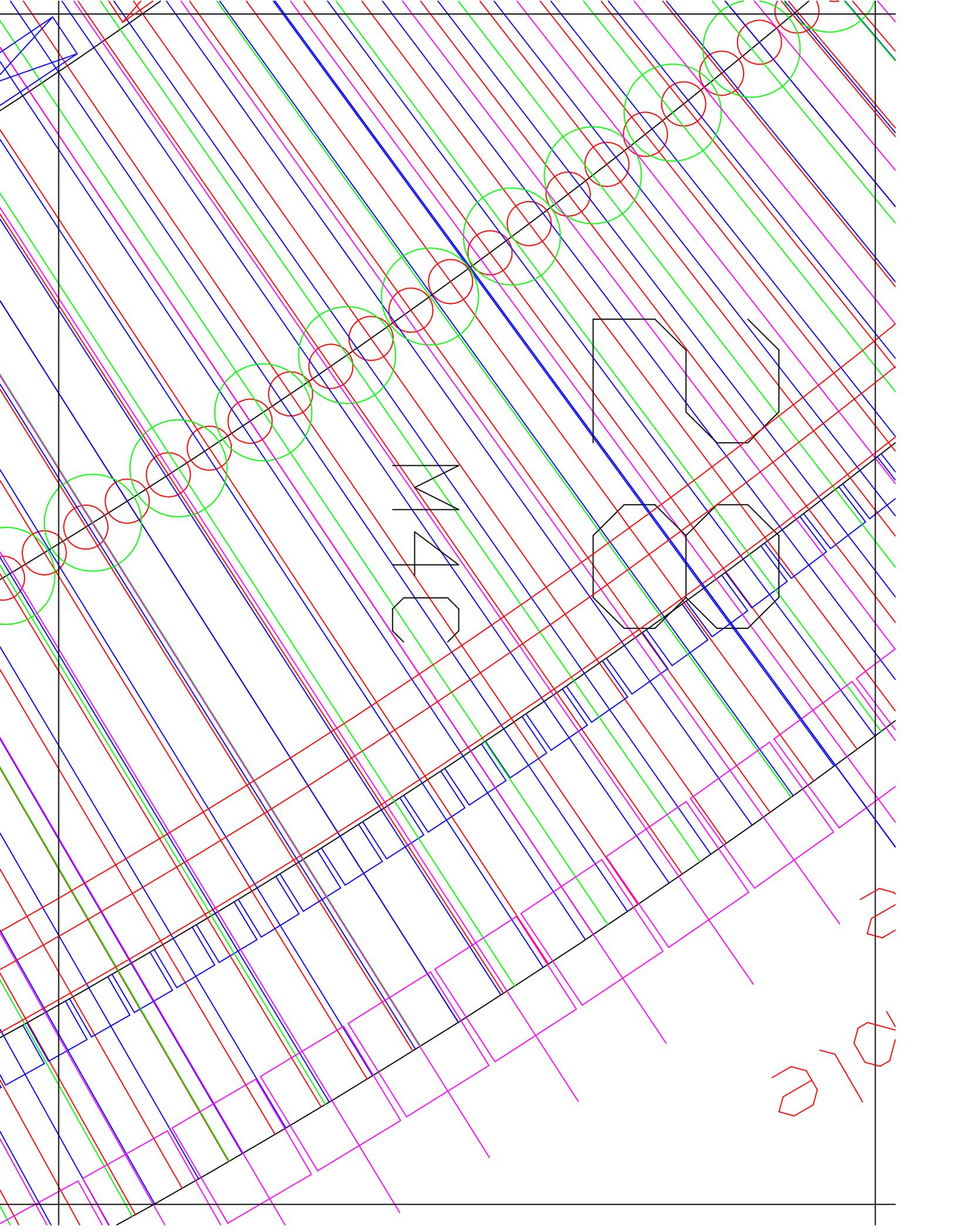
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THE FORTH

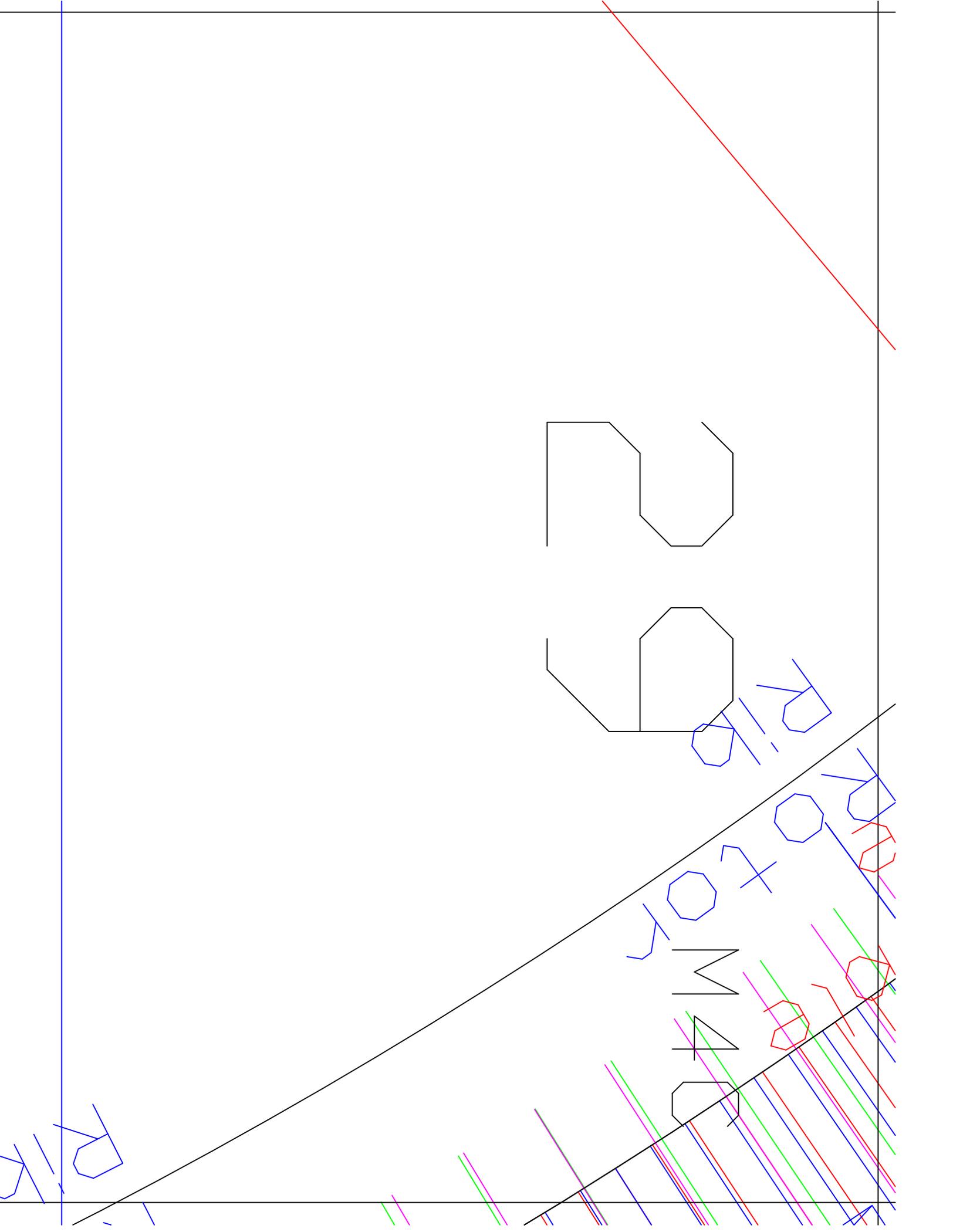


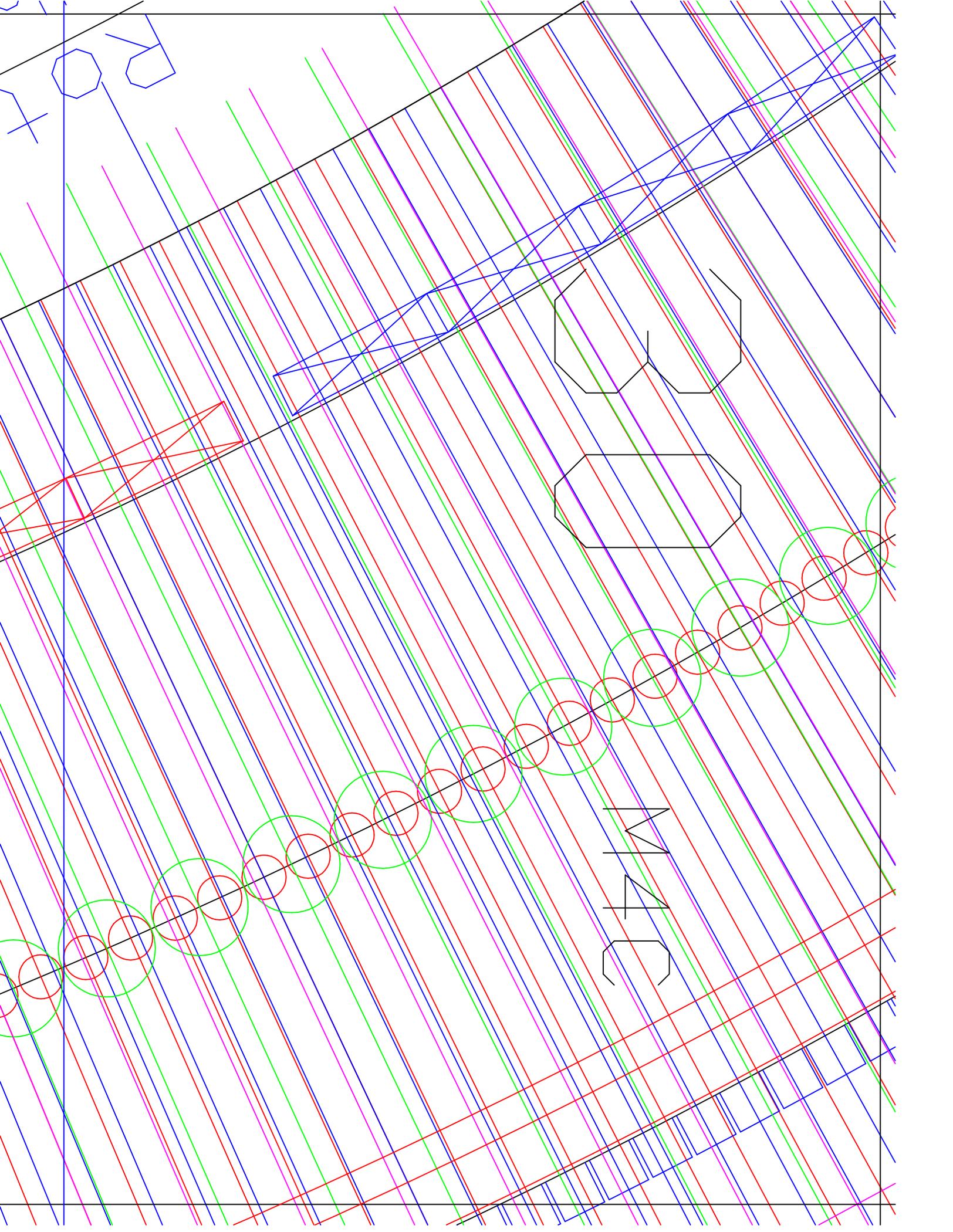
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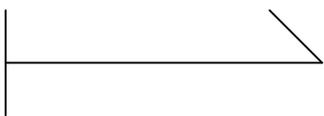
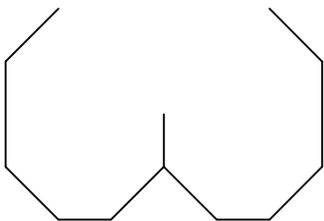


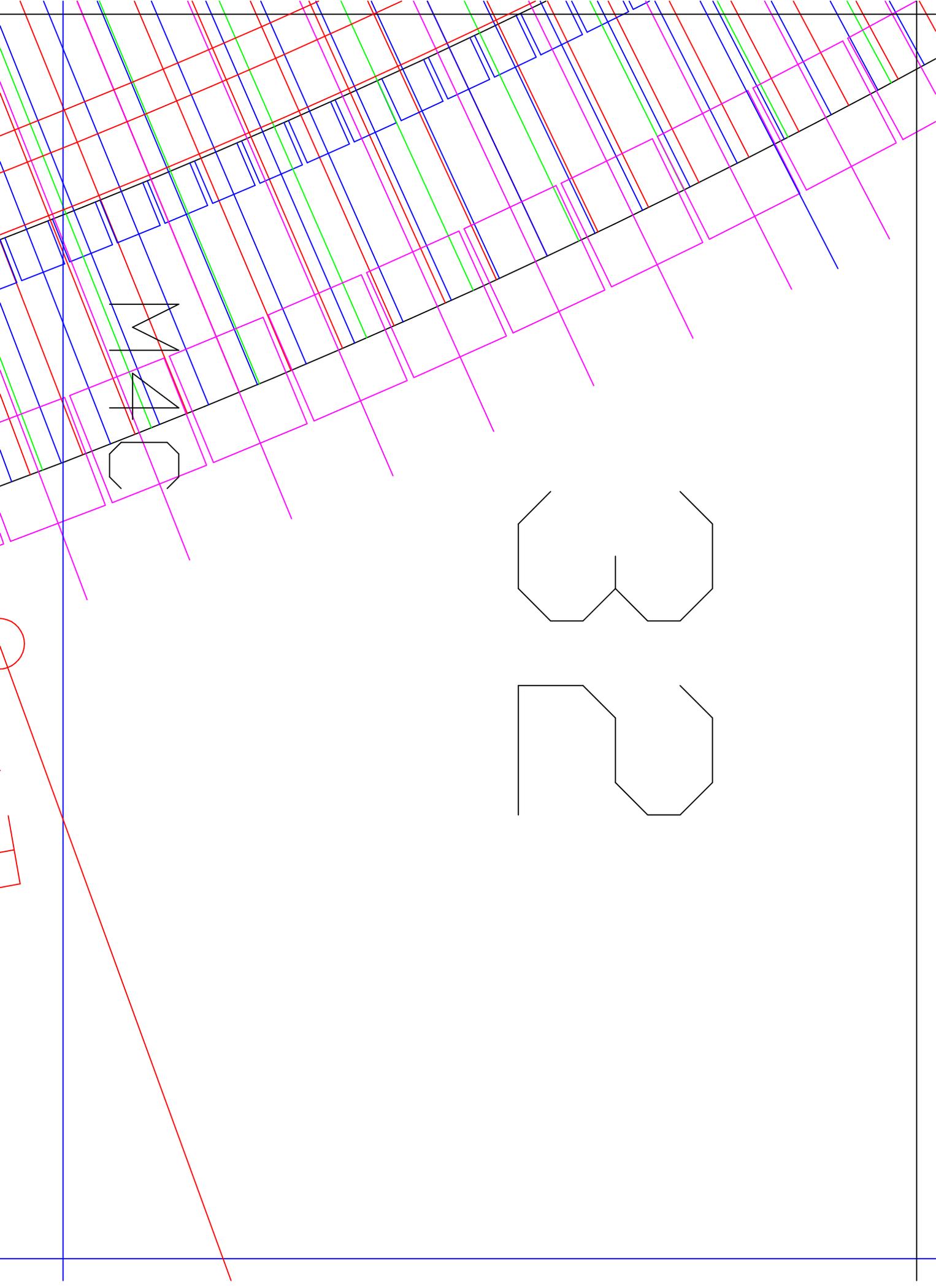


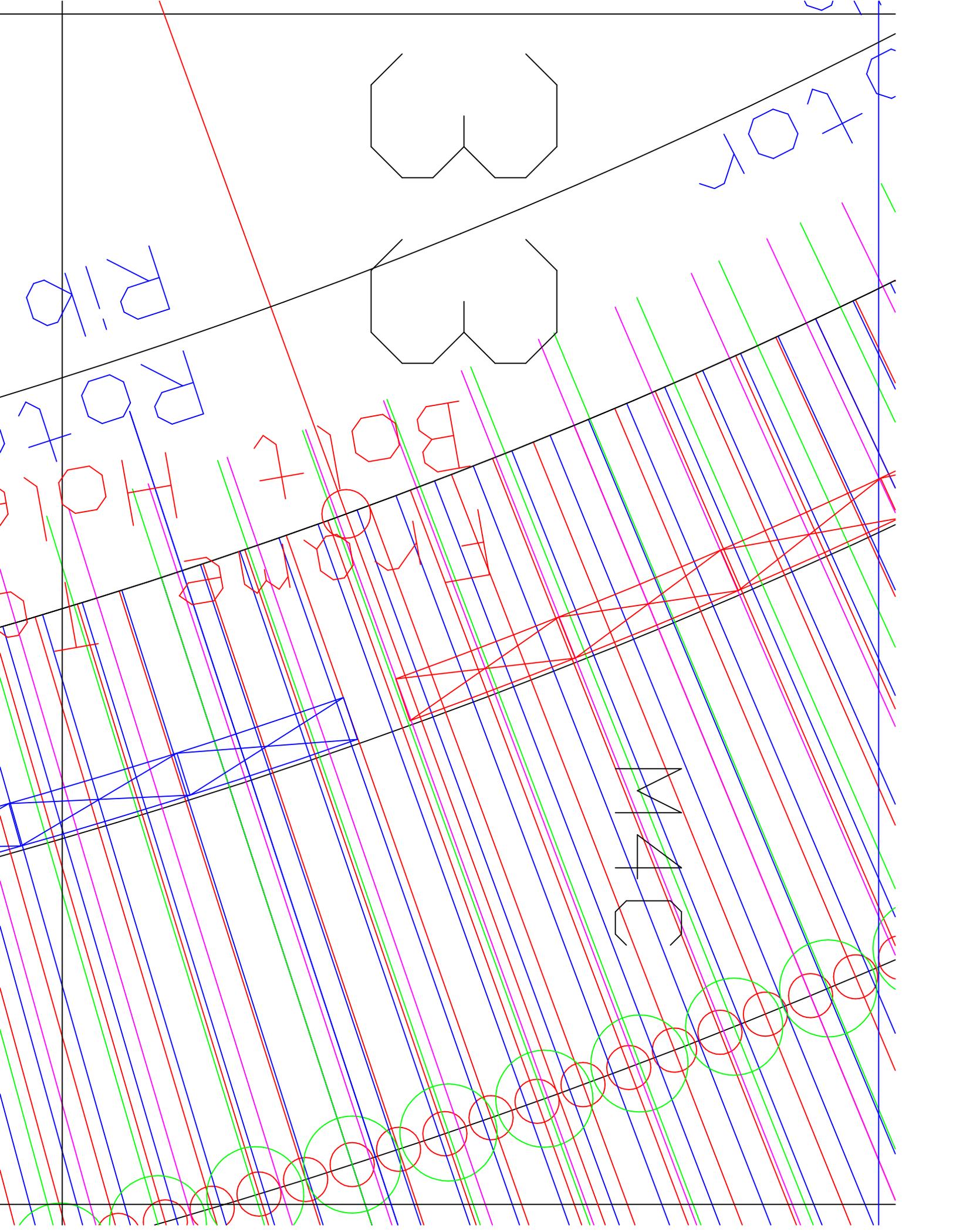


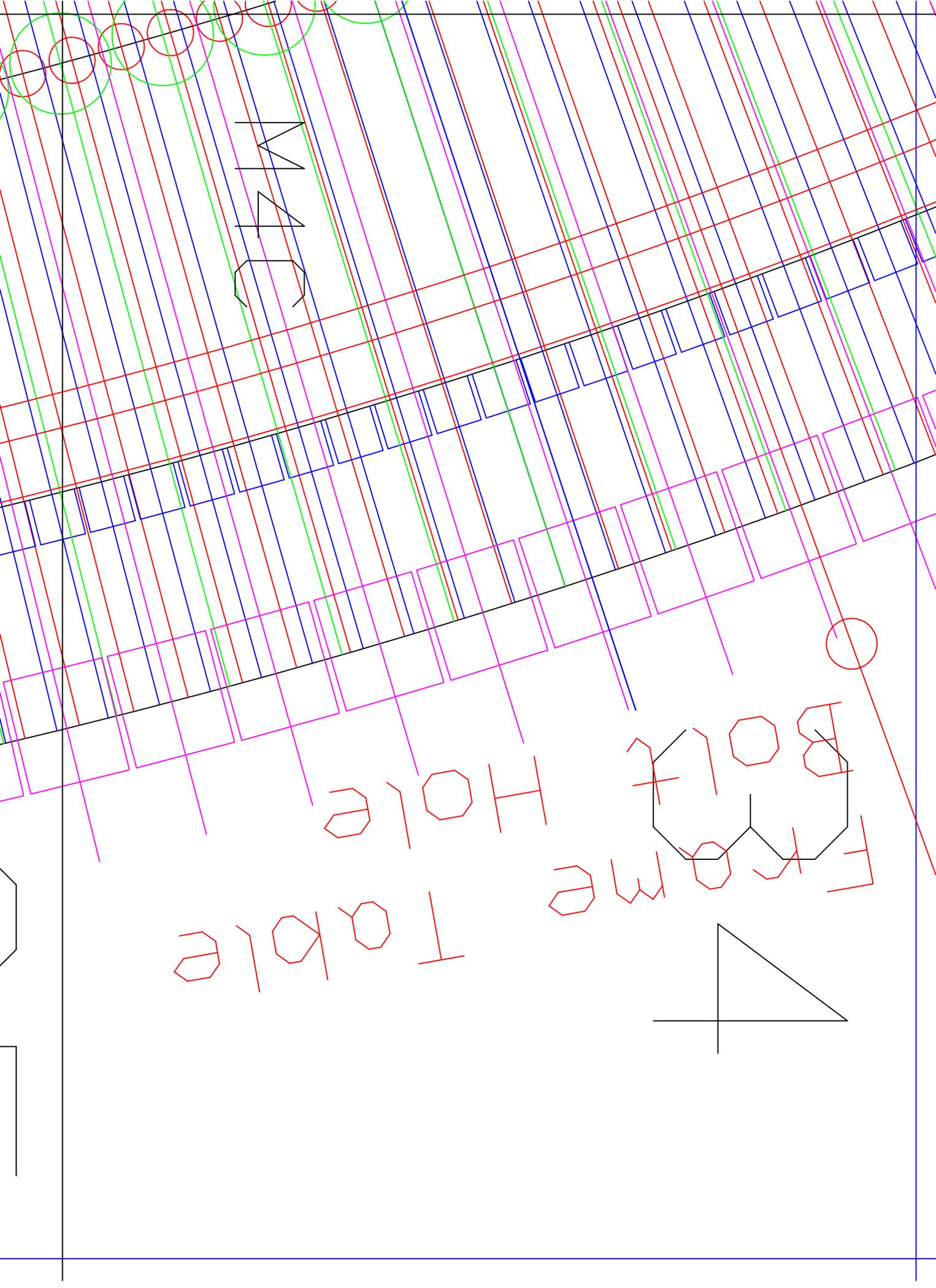


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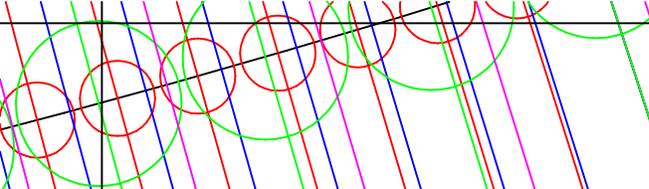
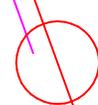
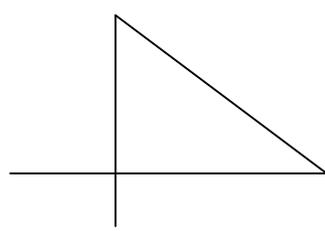


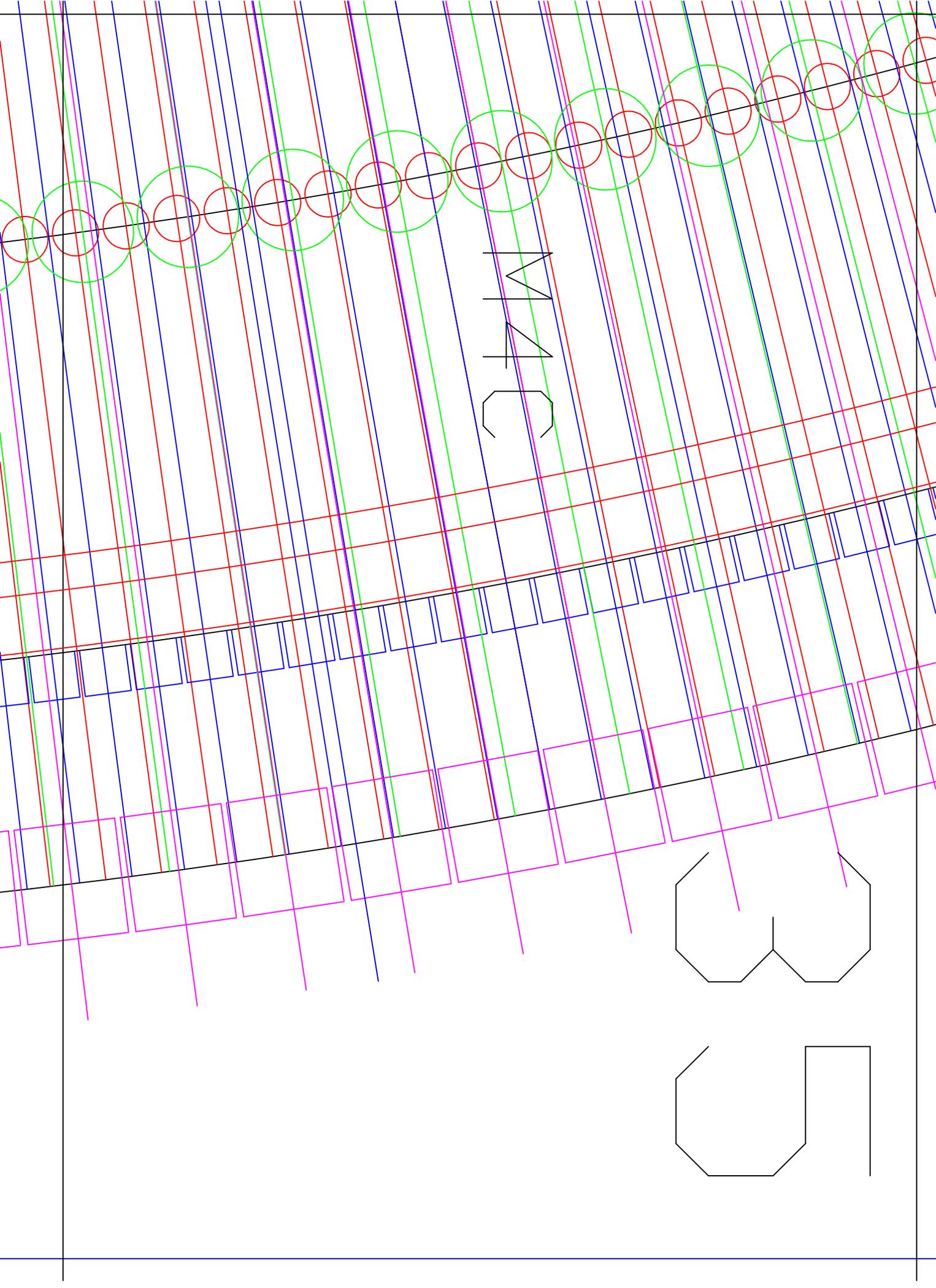




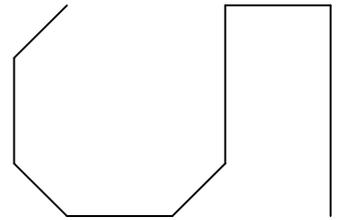
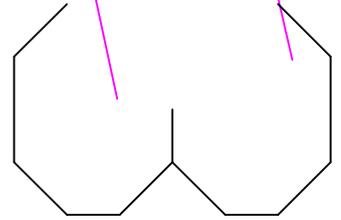
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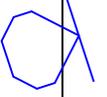
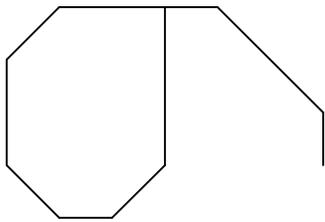
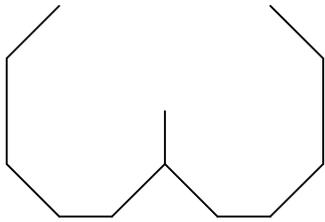
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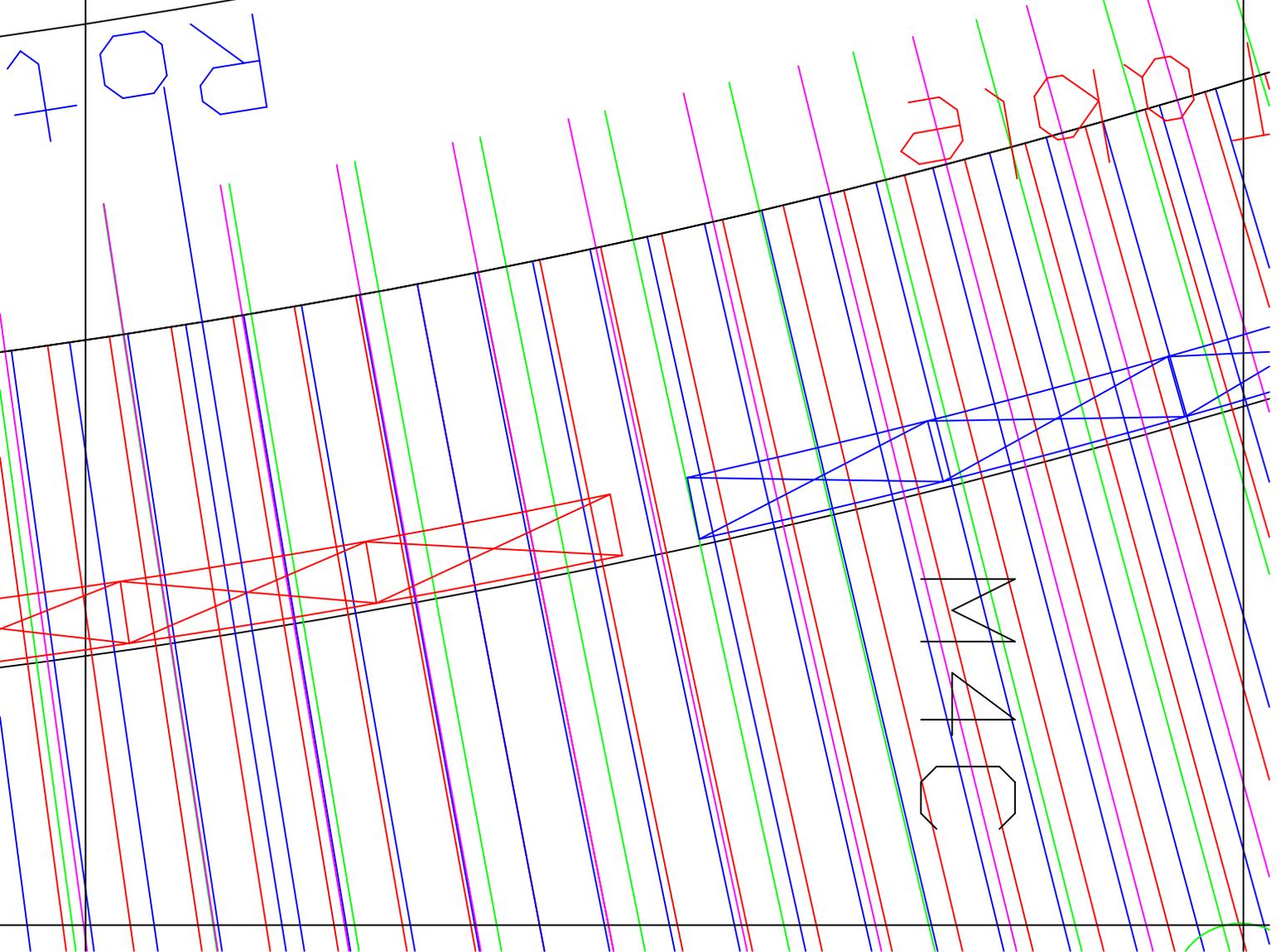


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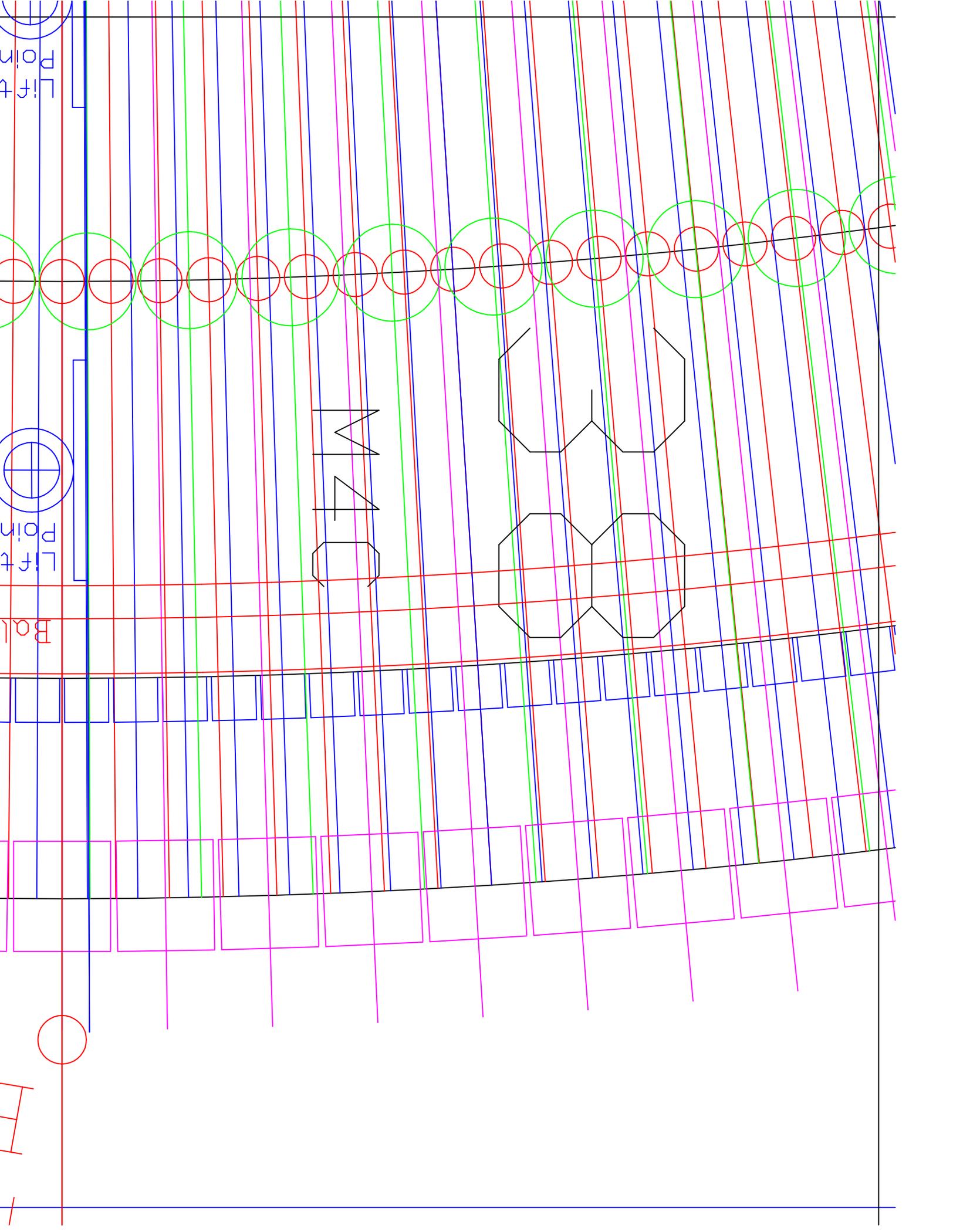
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MMO



Lift Point

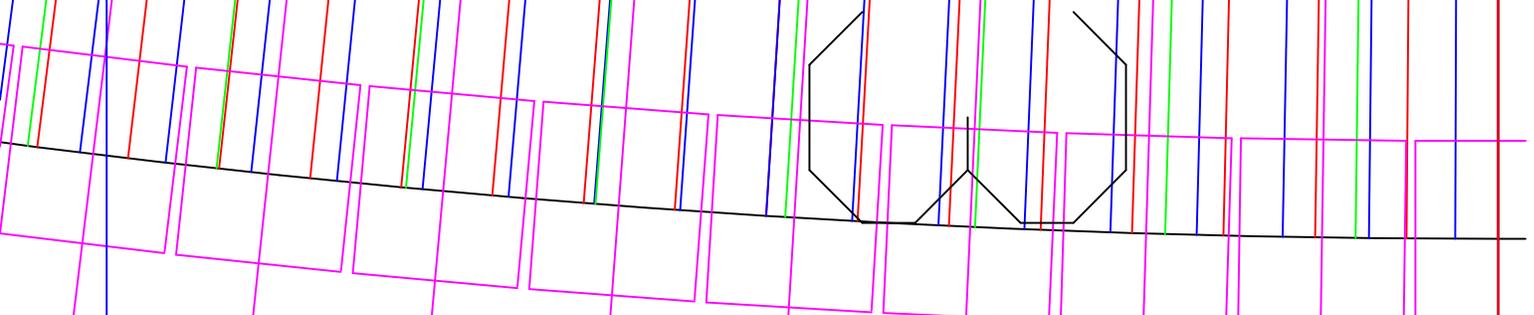
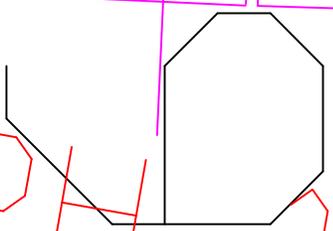
Lift Point

Ball

M40

TH

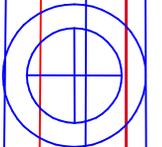
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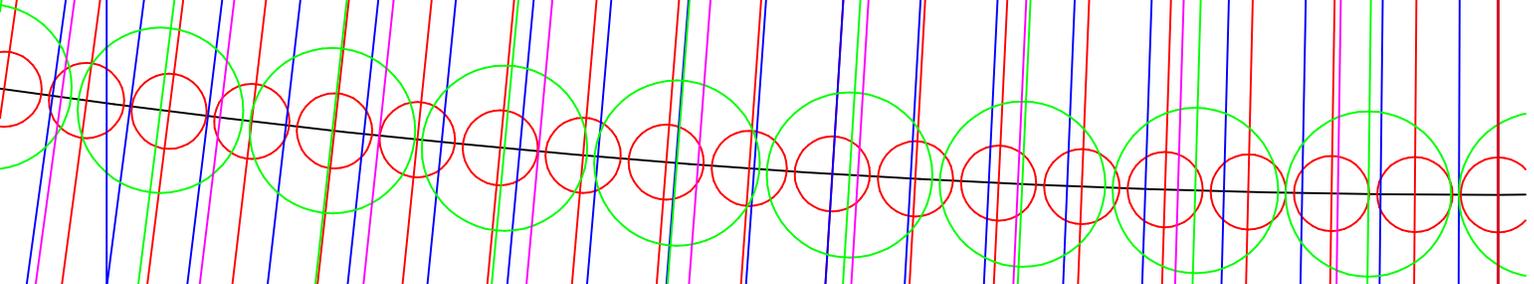
Balance Tube

Lifting/Relocating

Point

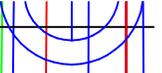


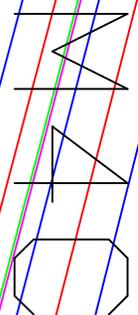
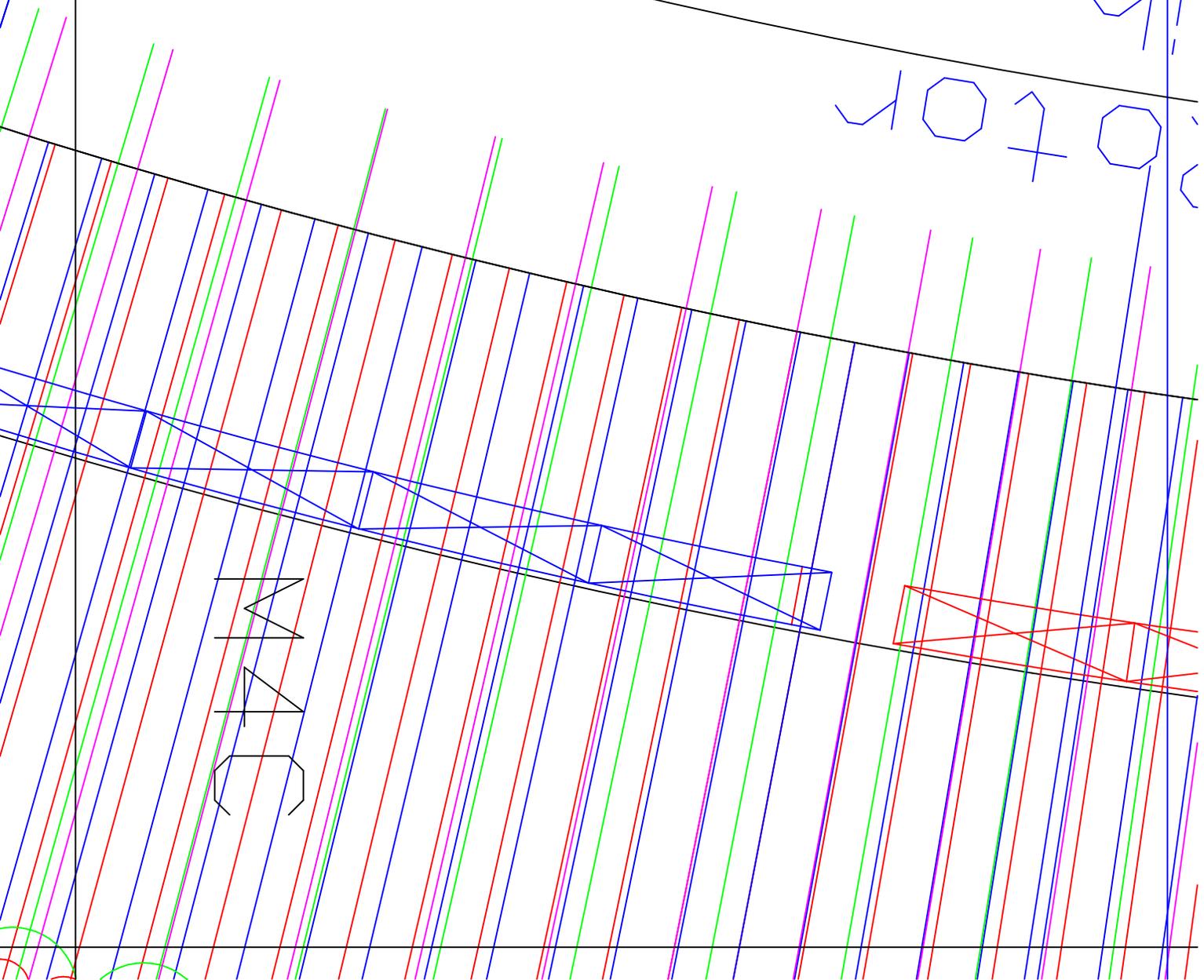
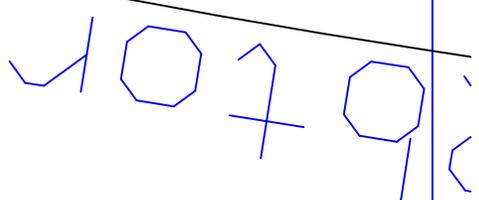
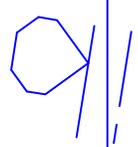
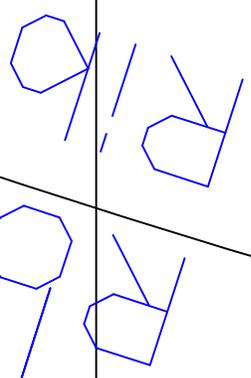
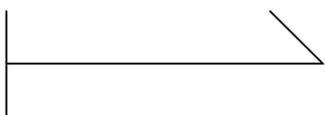
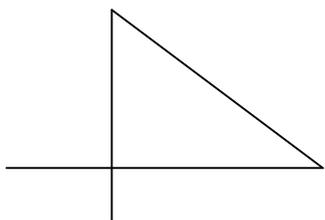
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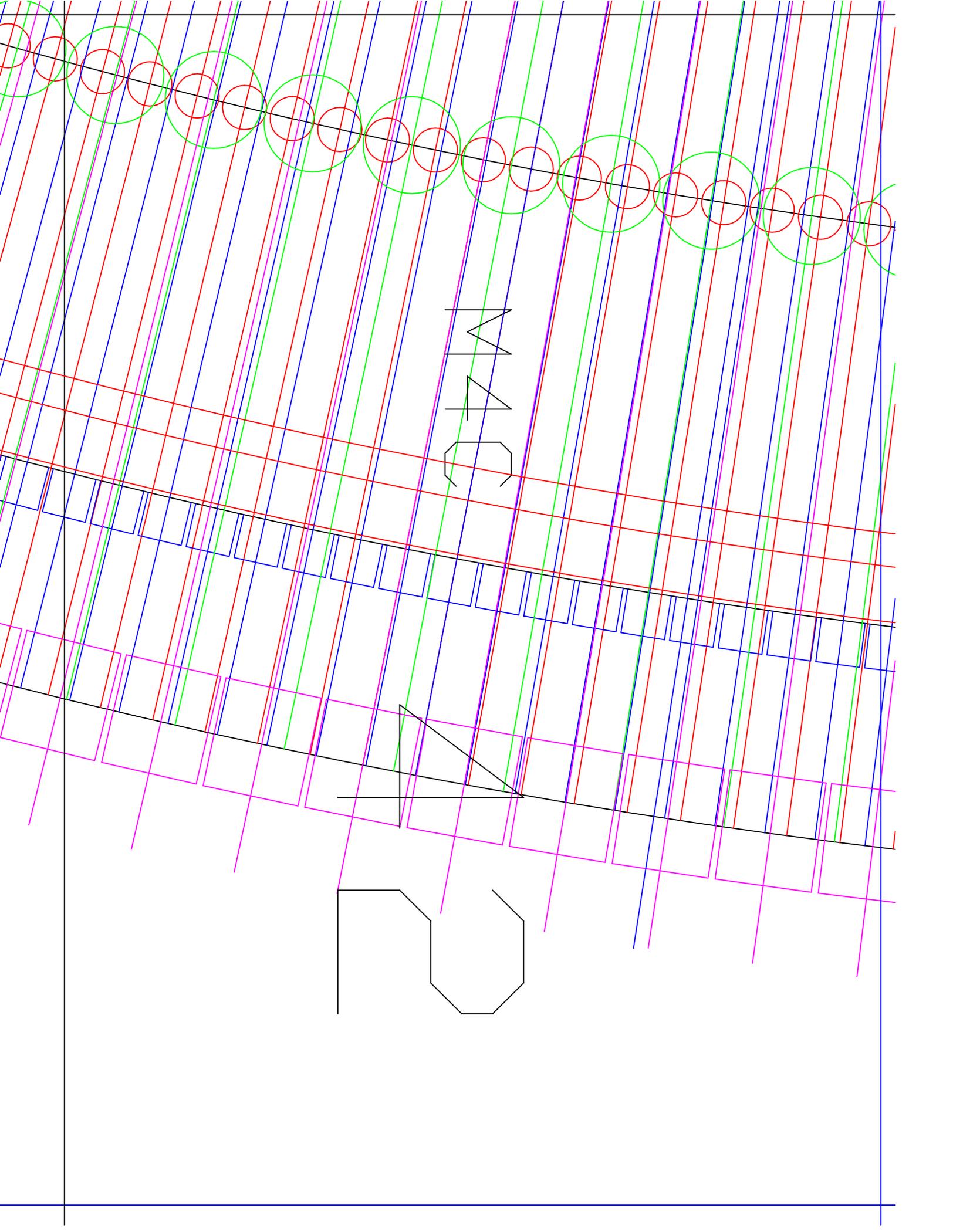


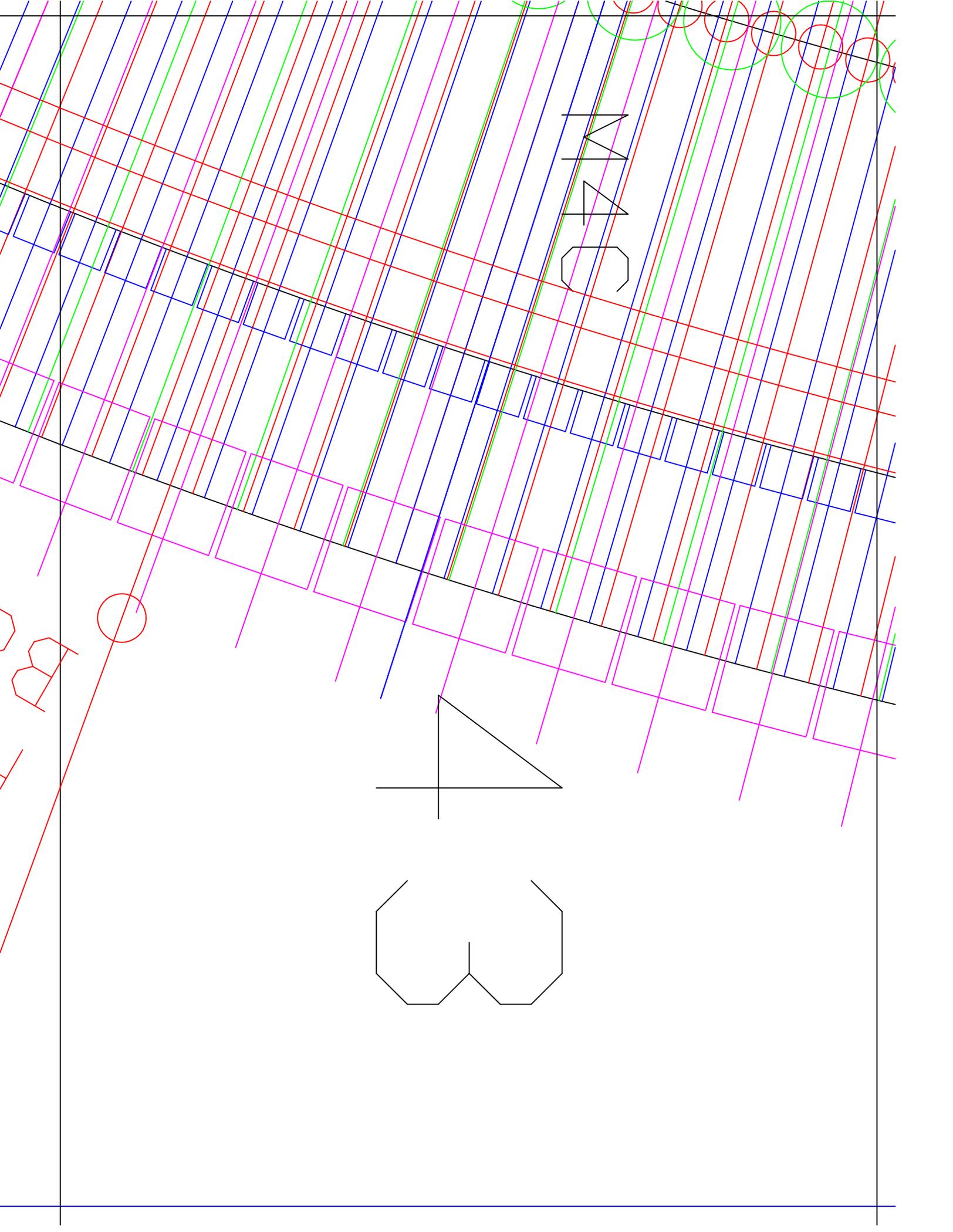
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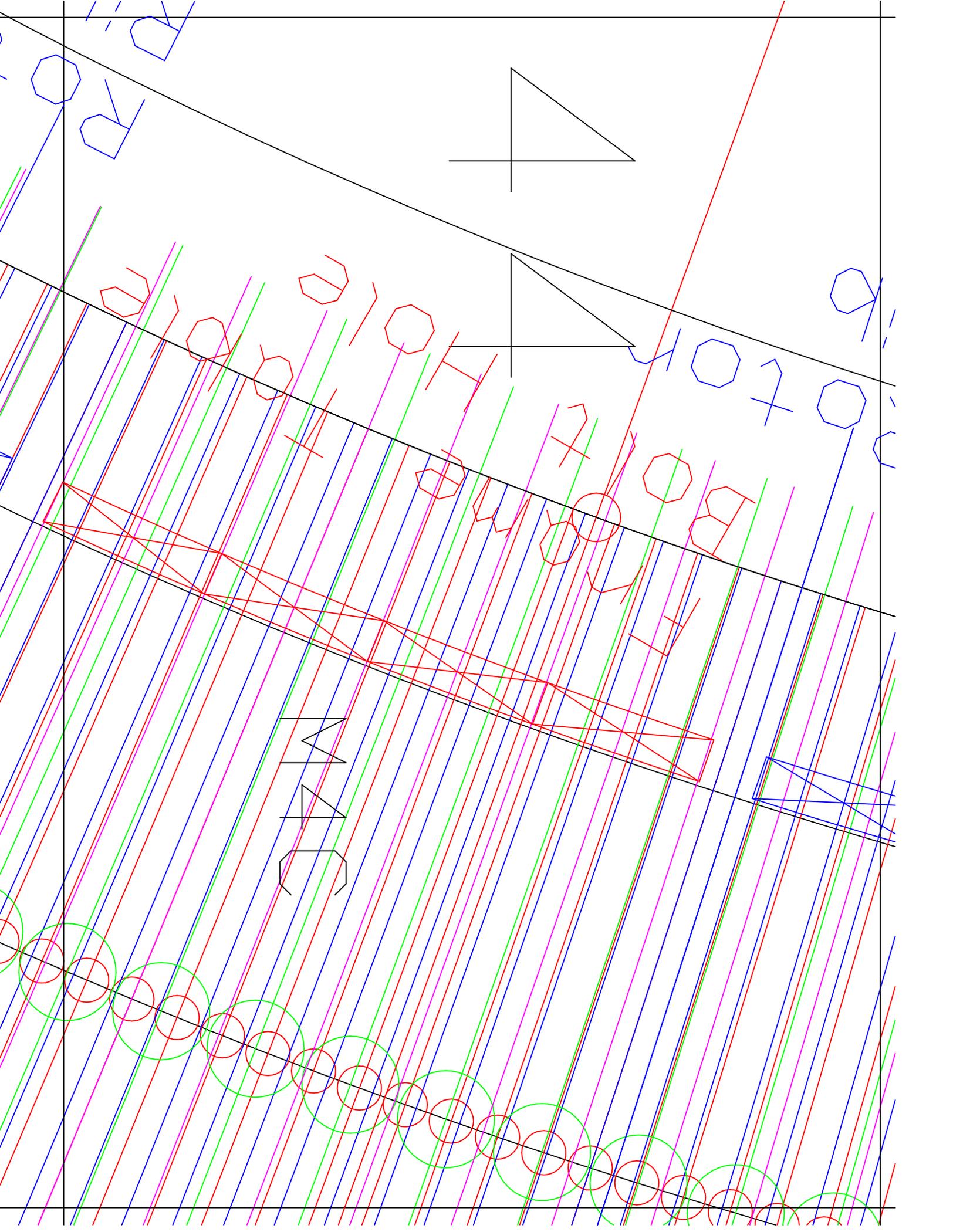
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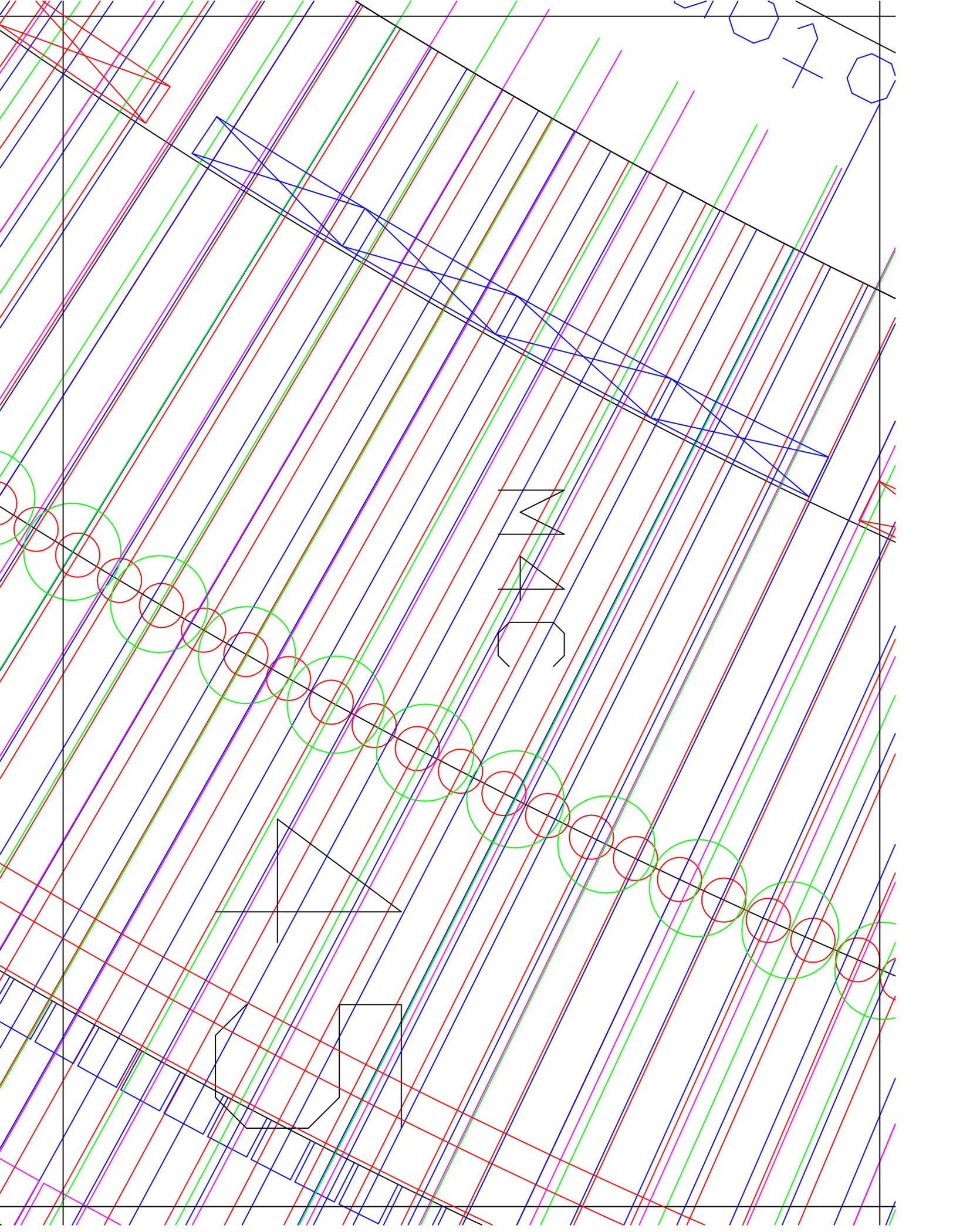


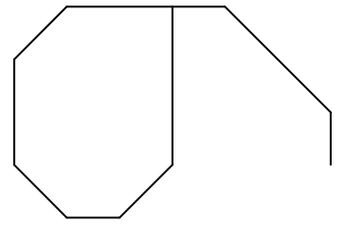
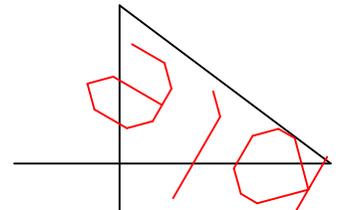
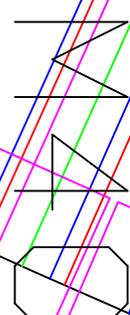
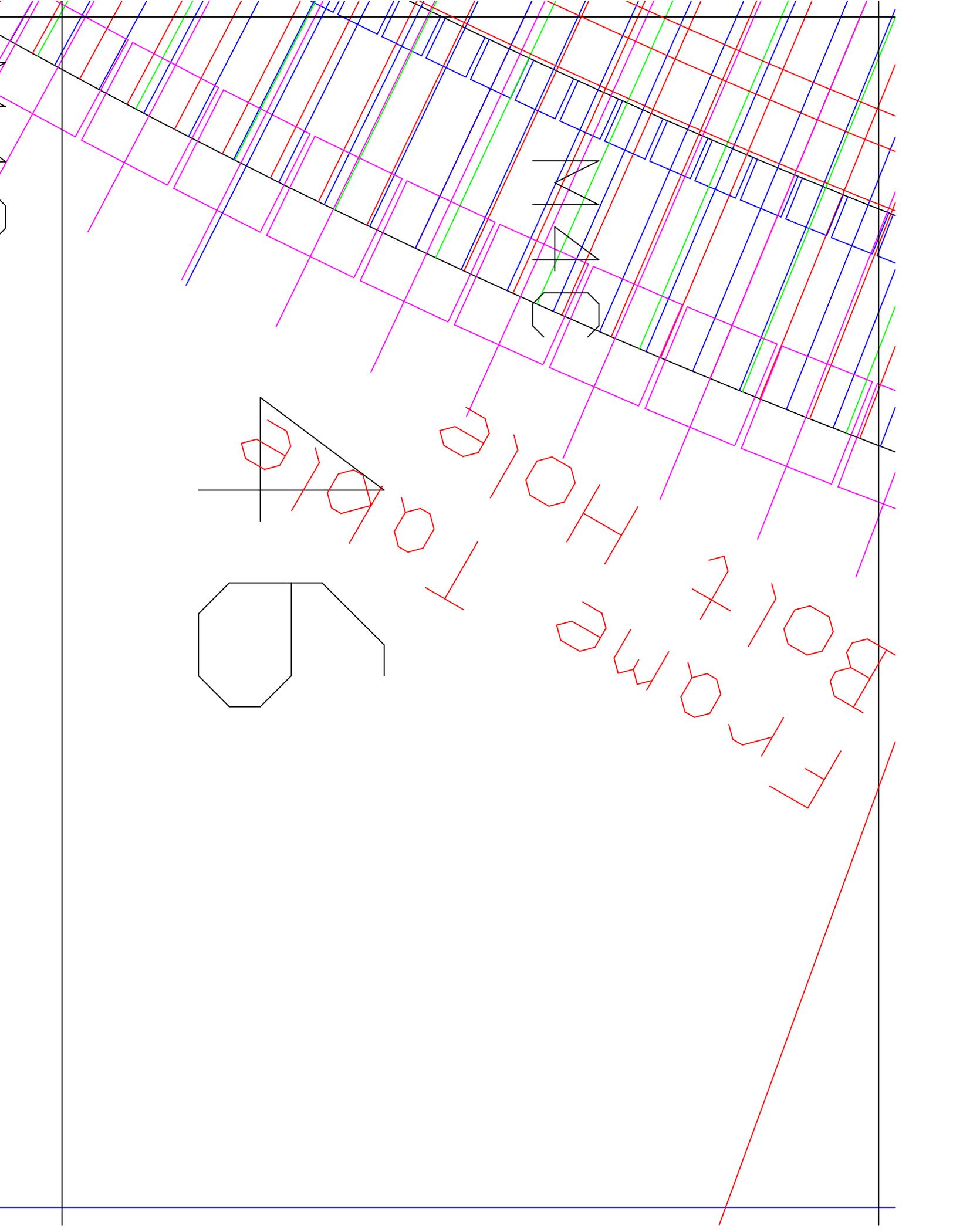




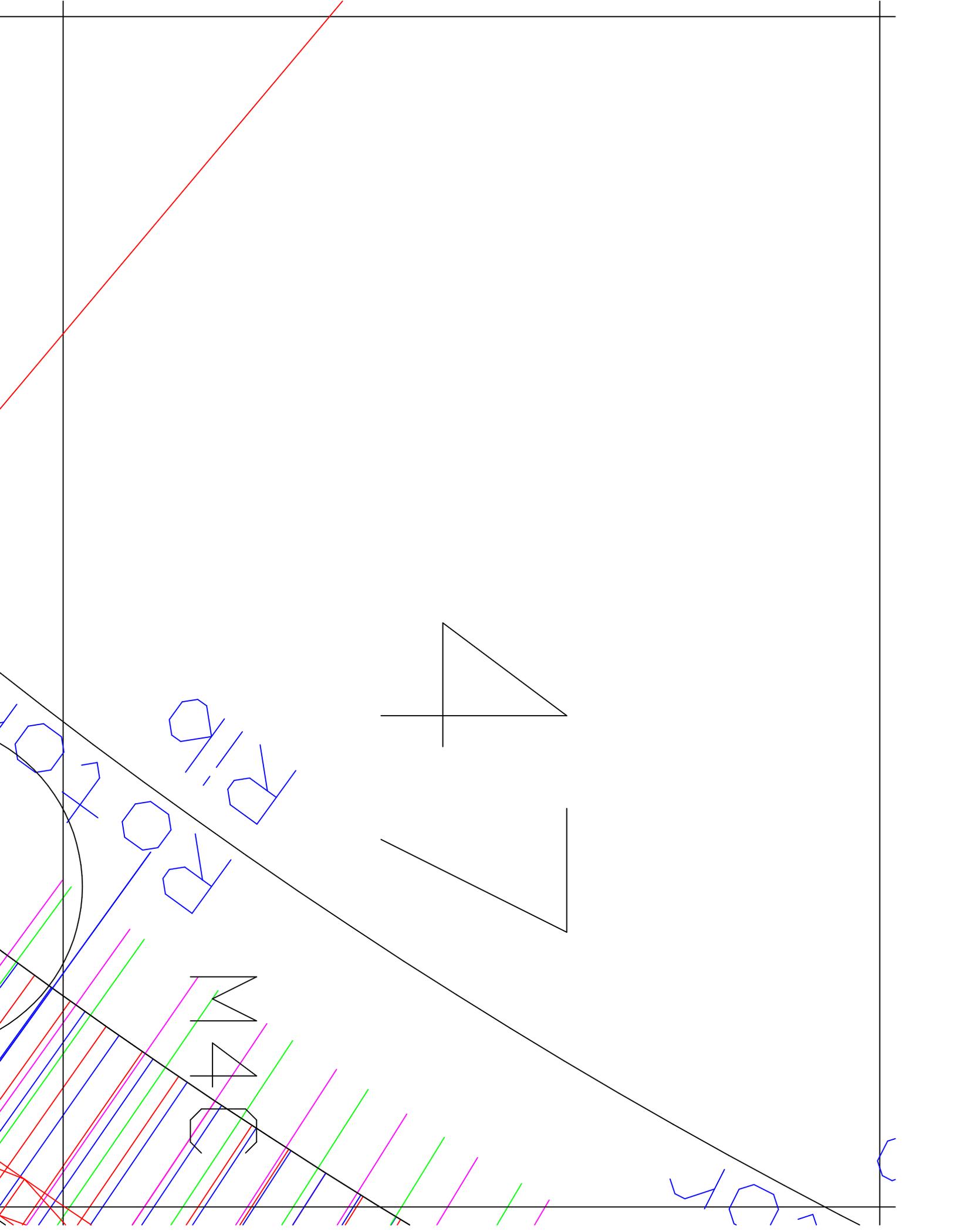


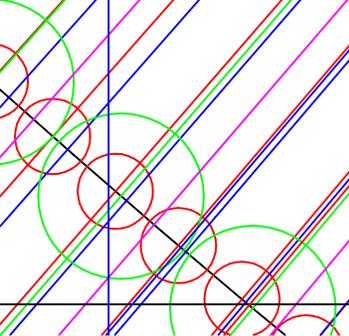
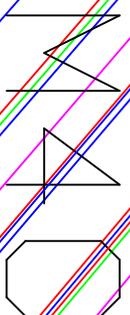
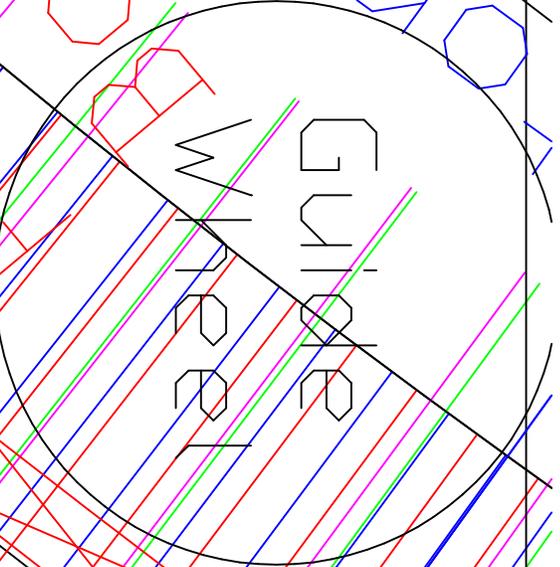
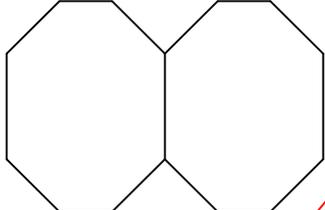
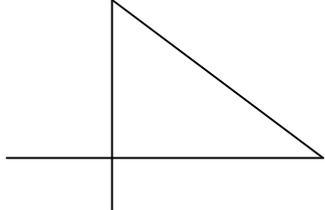
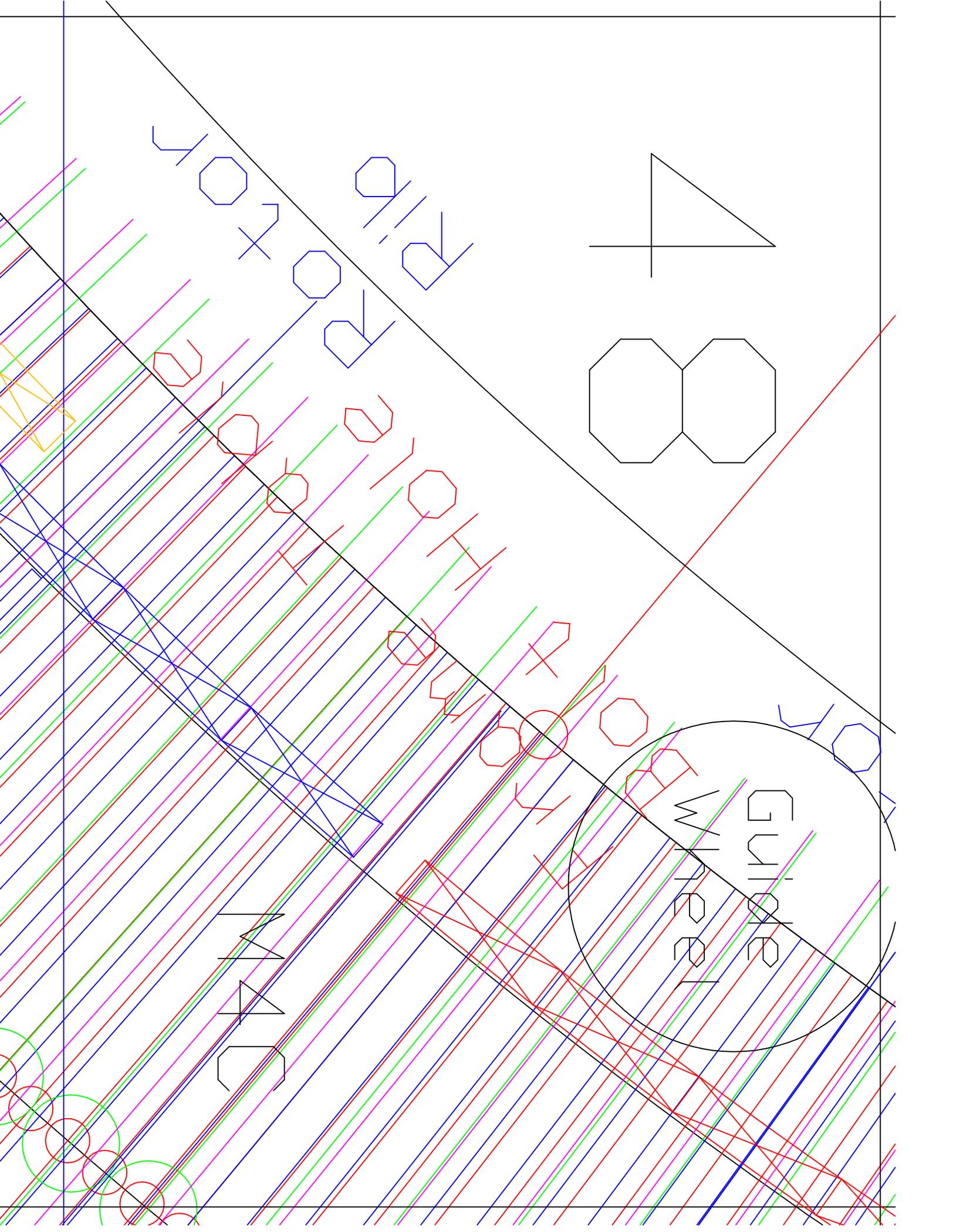


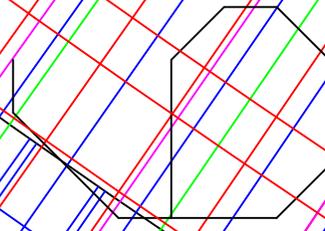
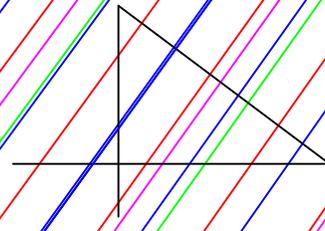
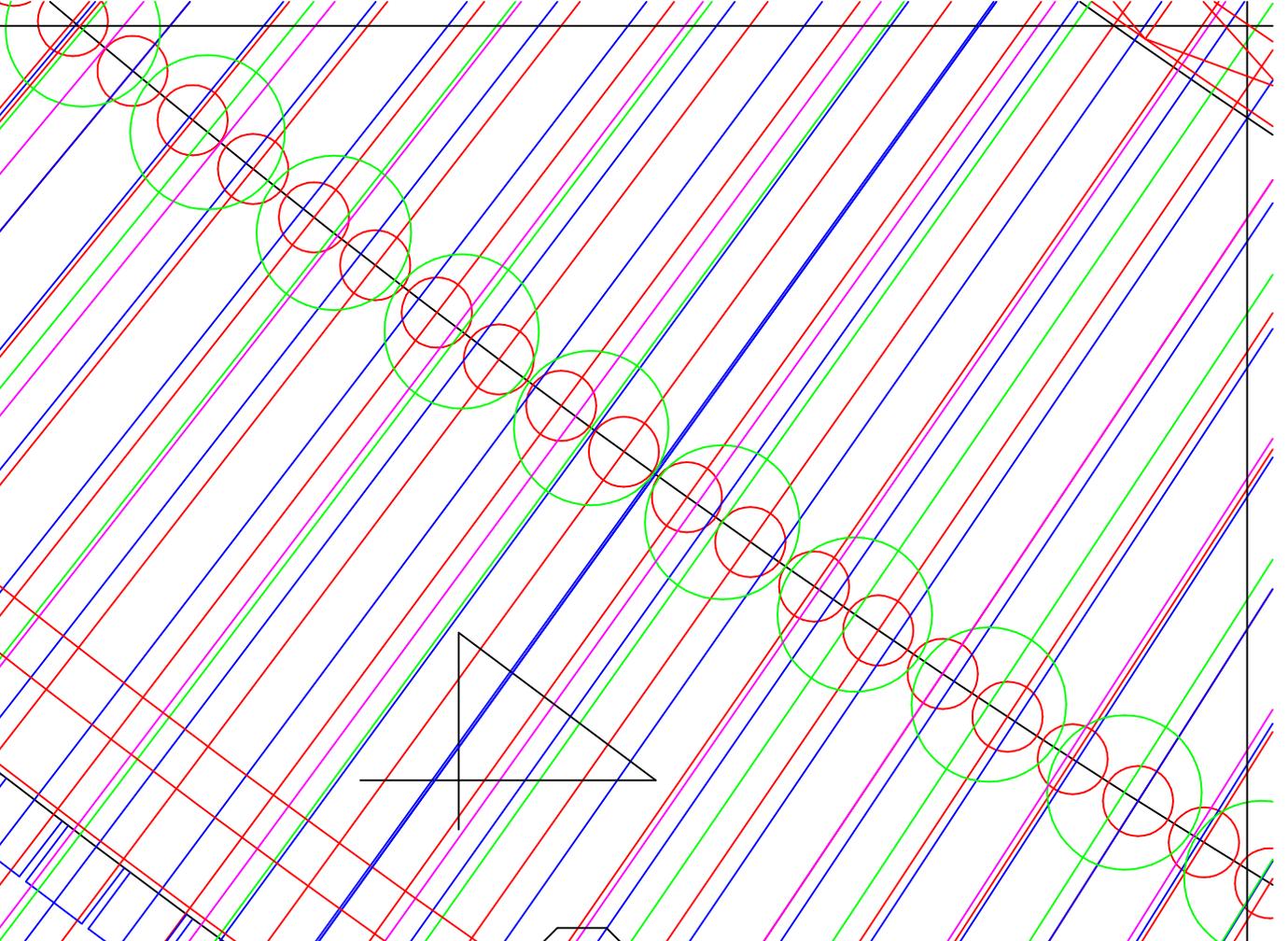
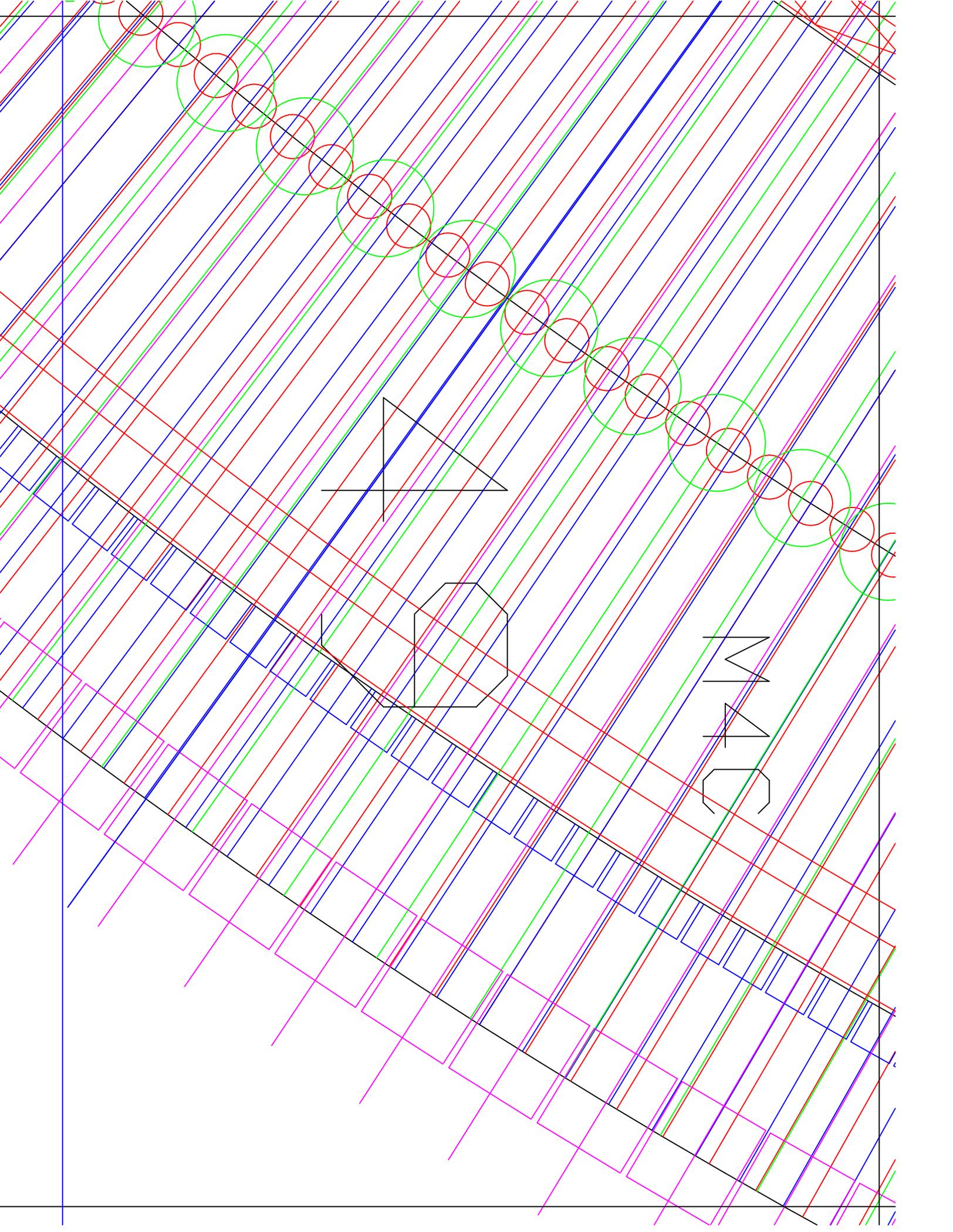




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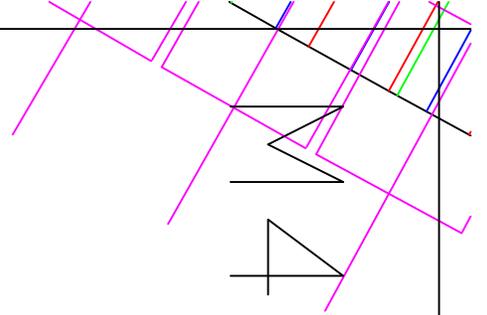
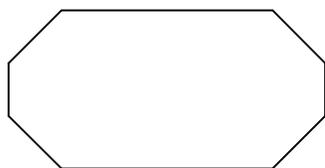
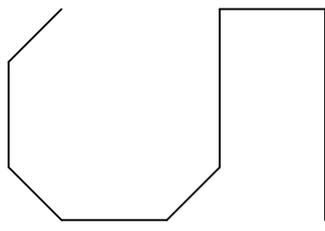


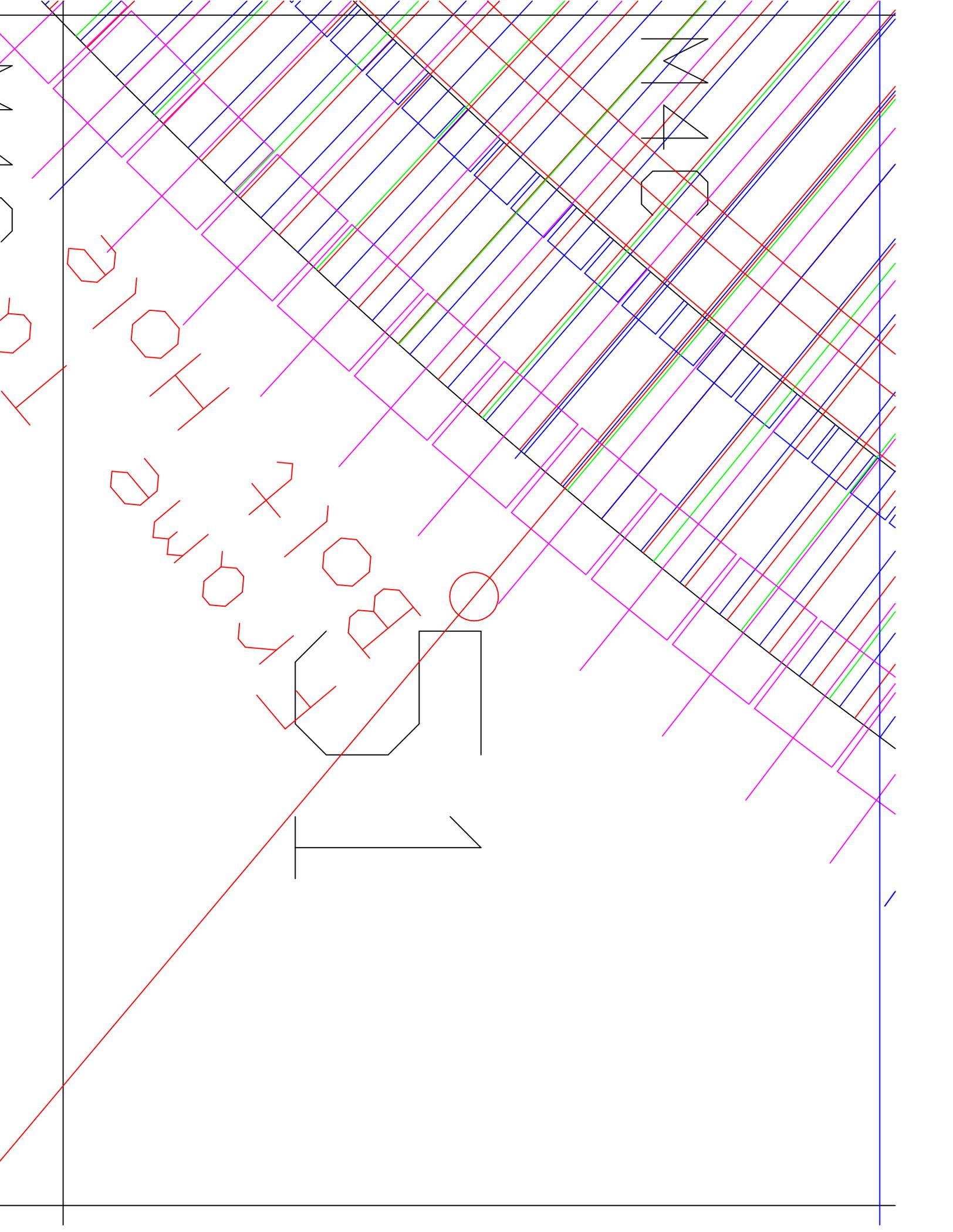


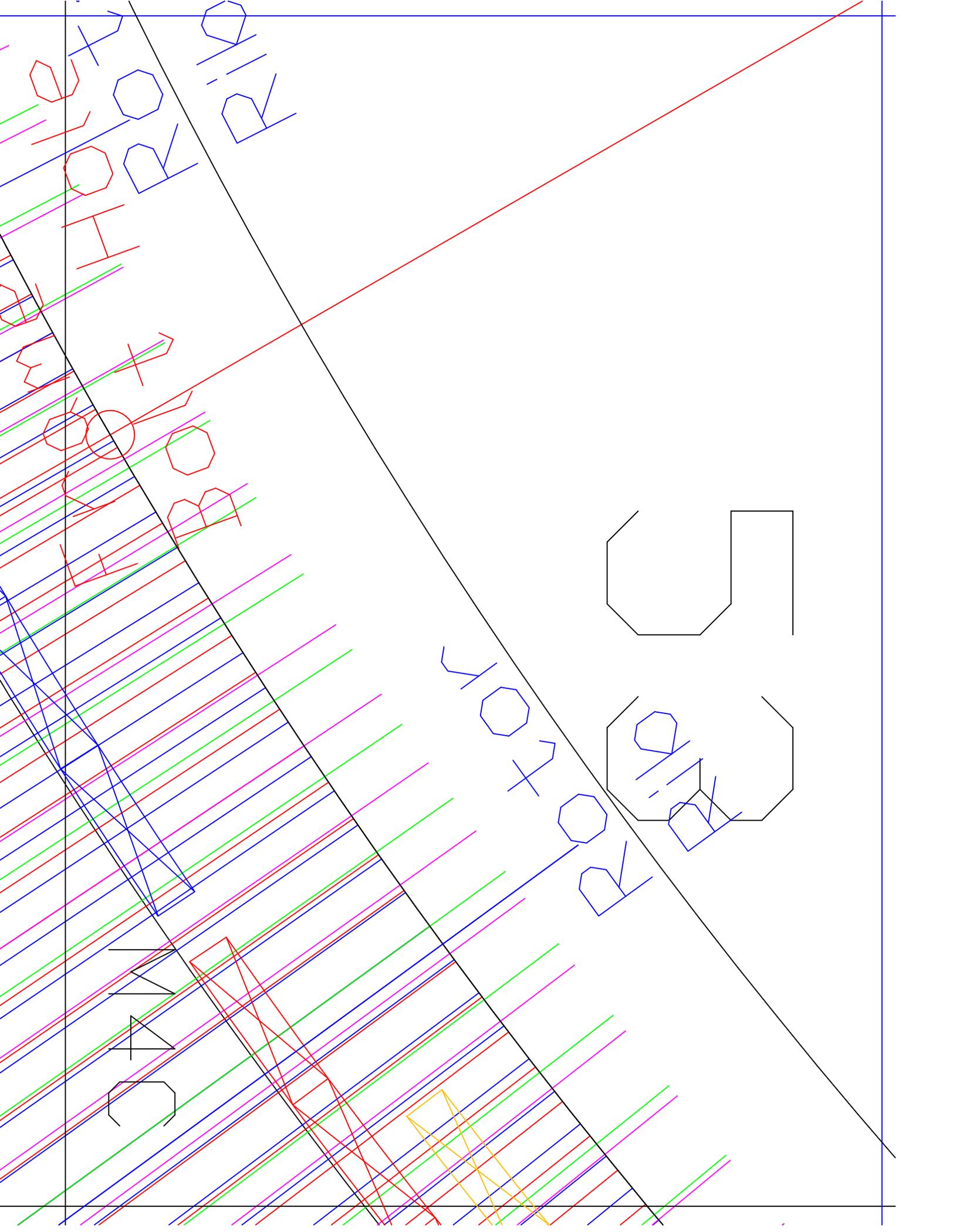


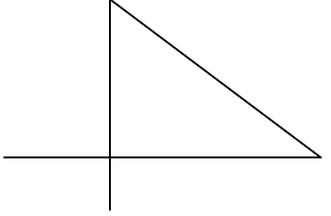
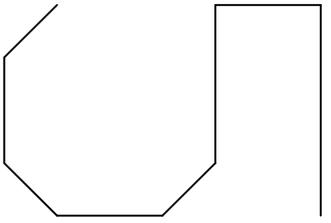
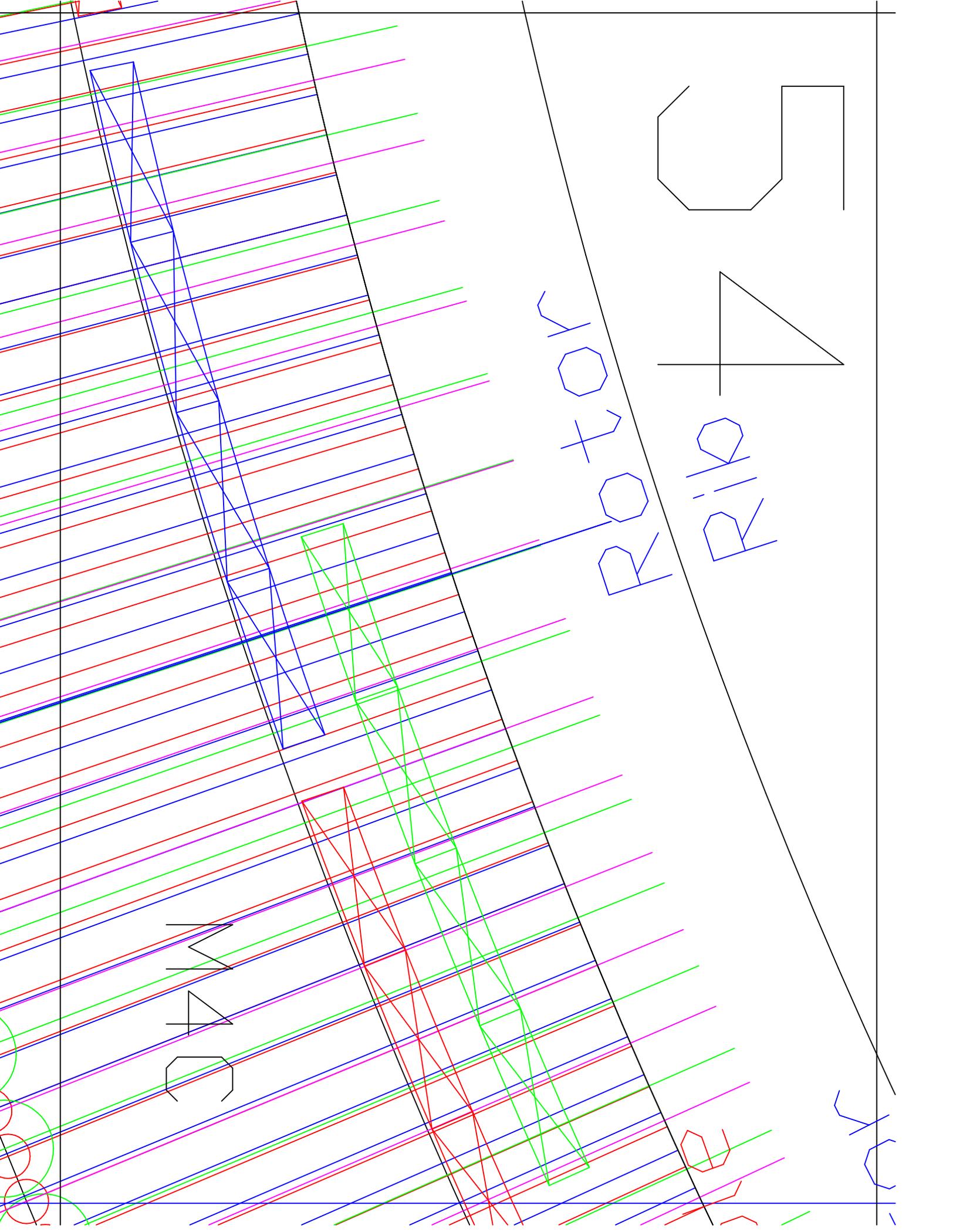
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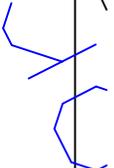
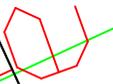
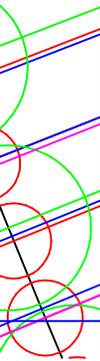


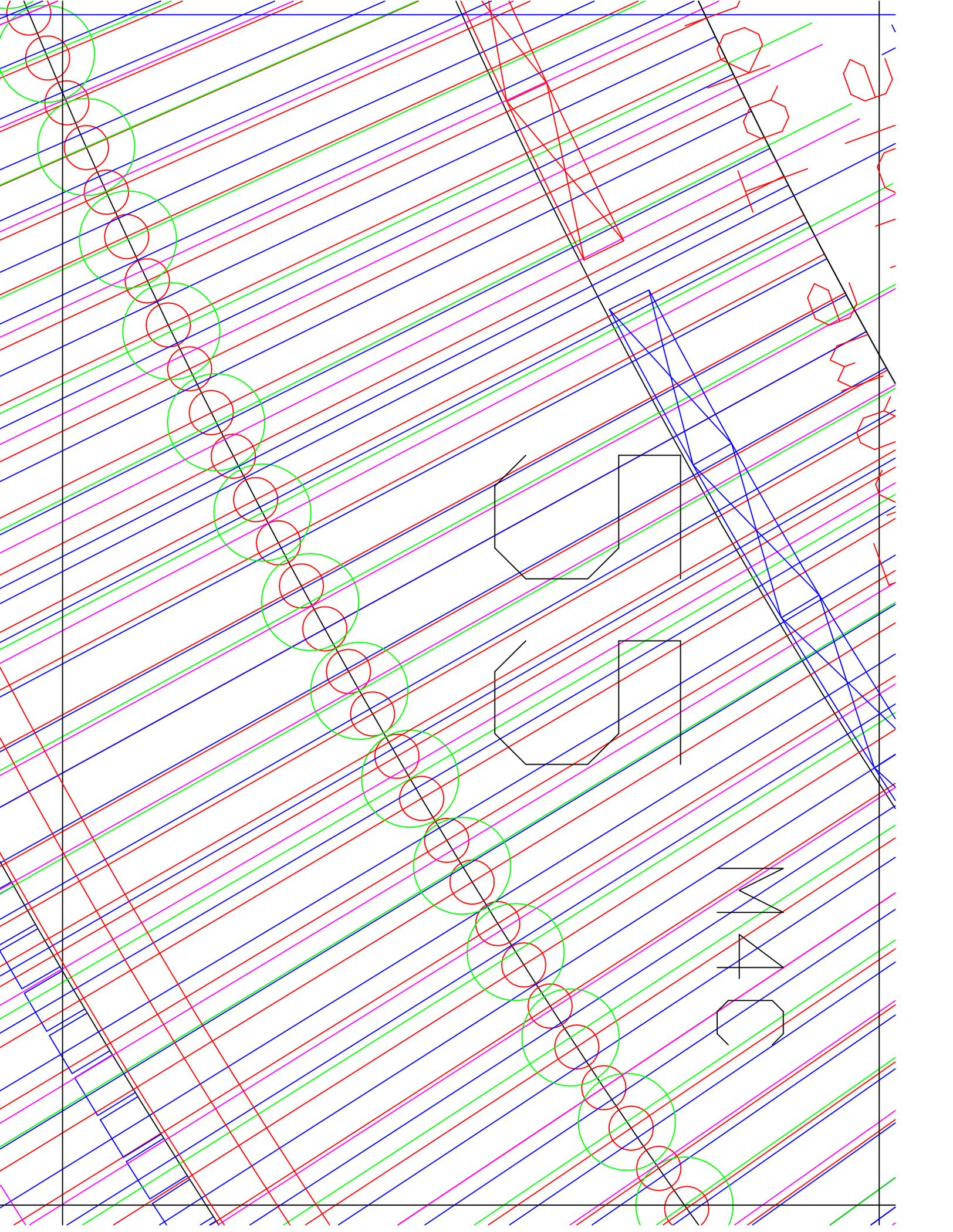


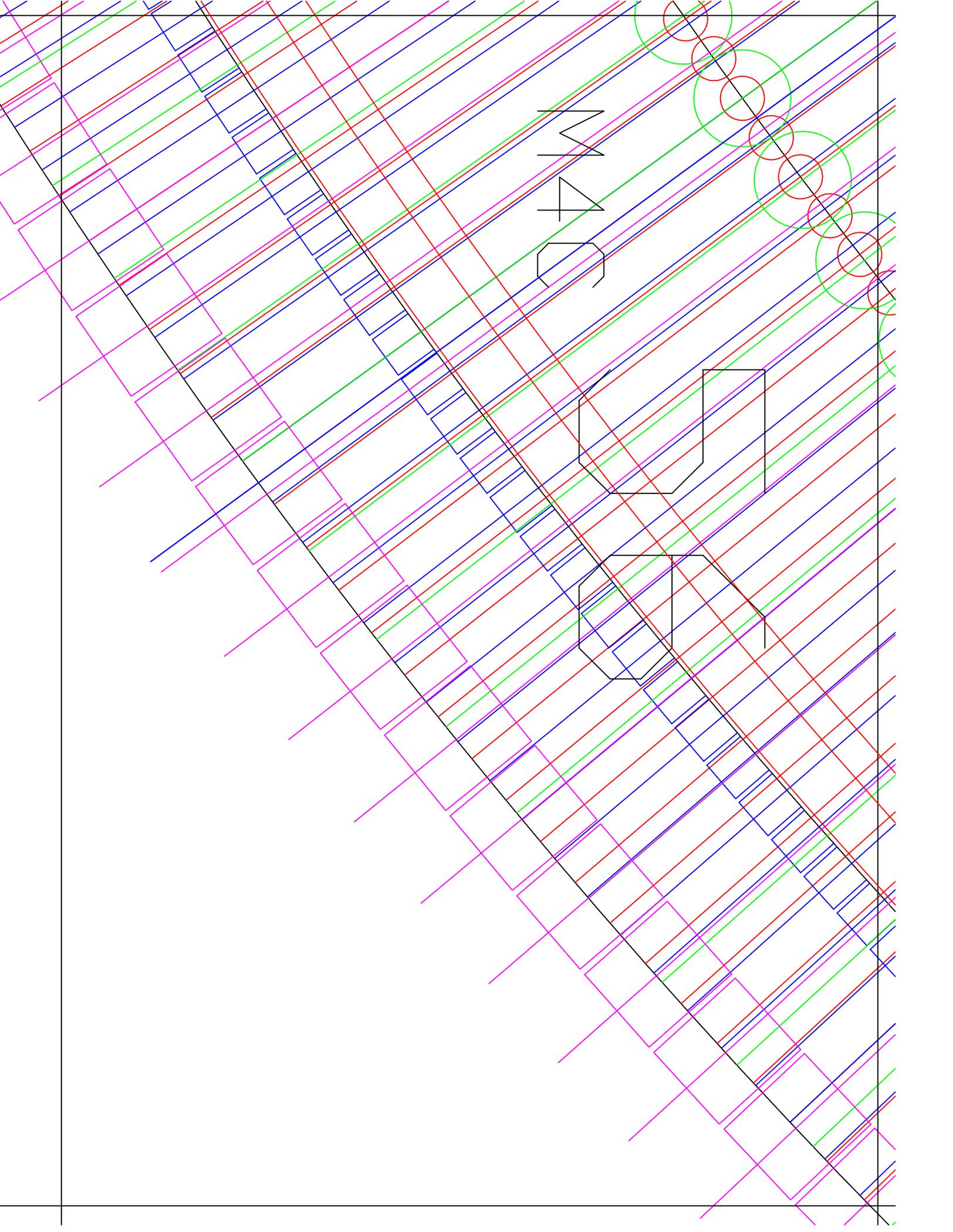
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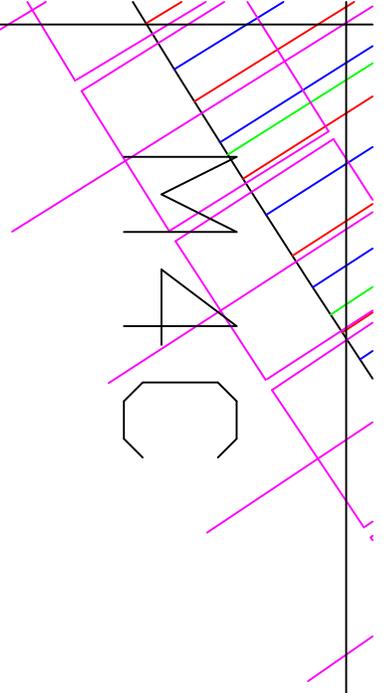
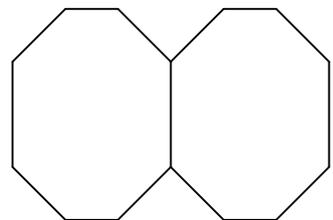
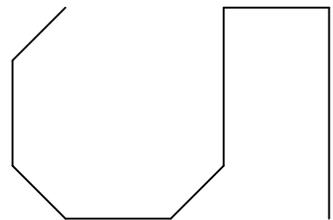
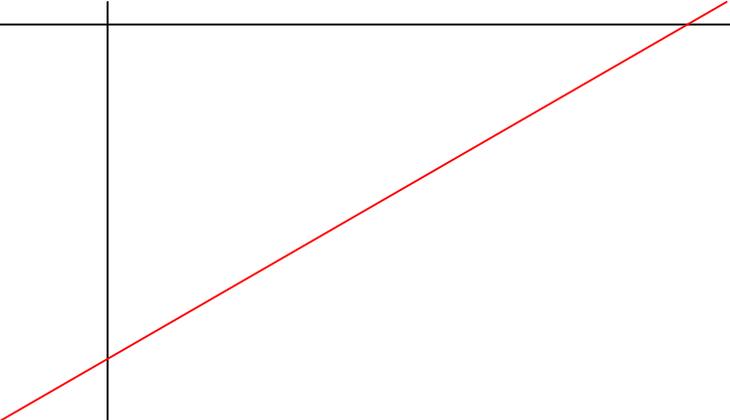
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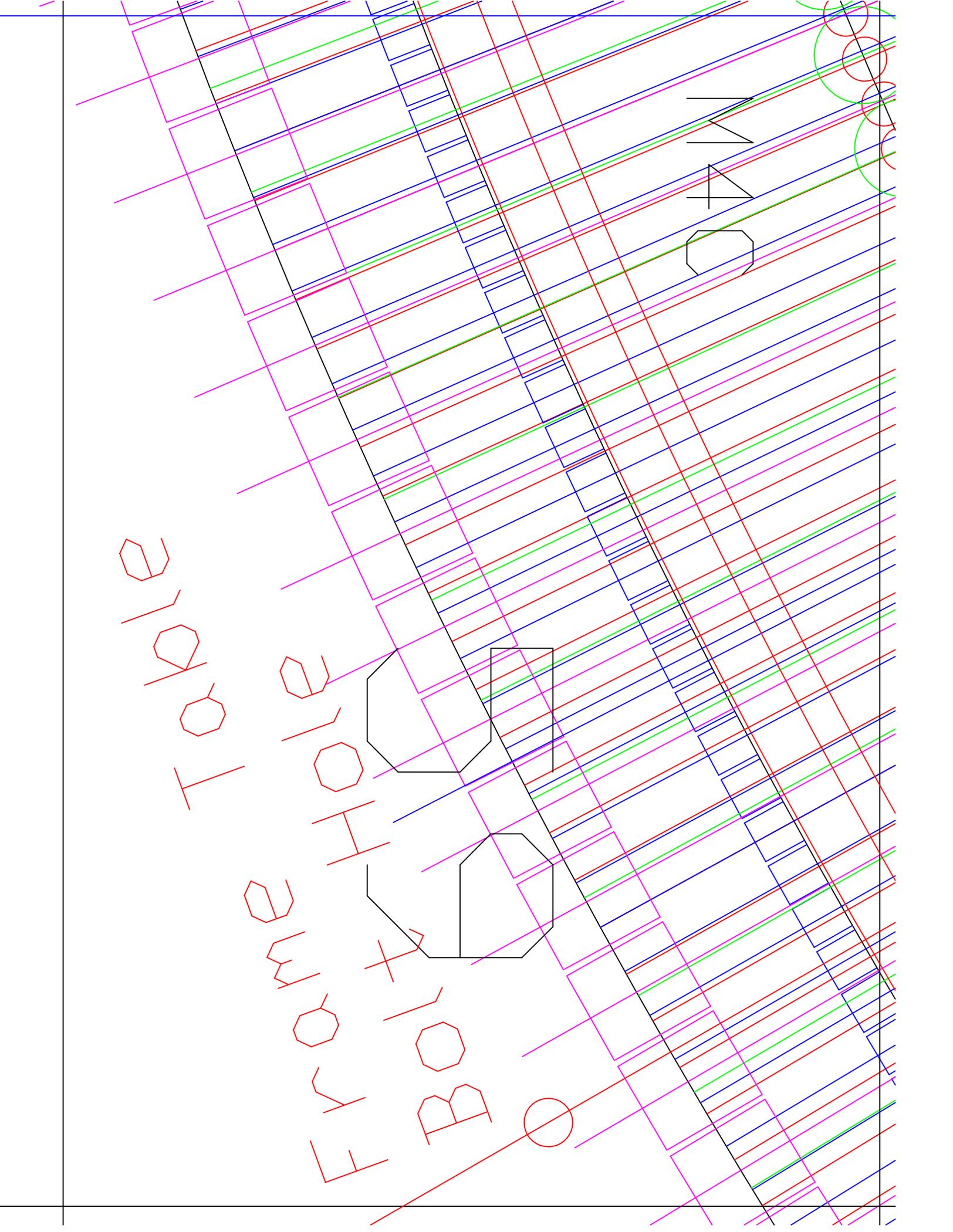
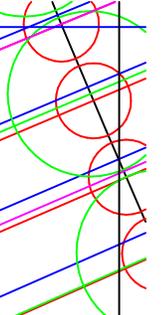
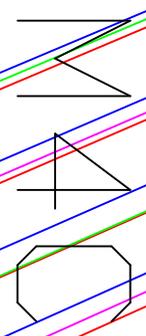
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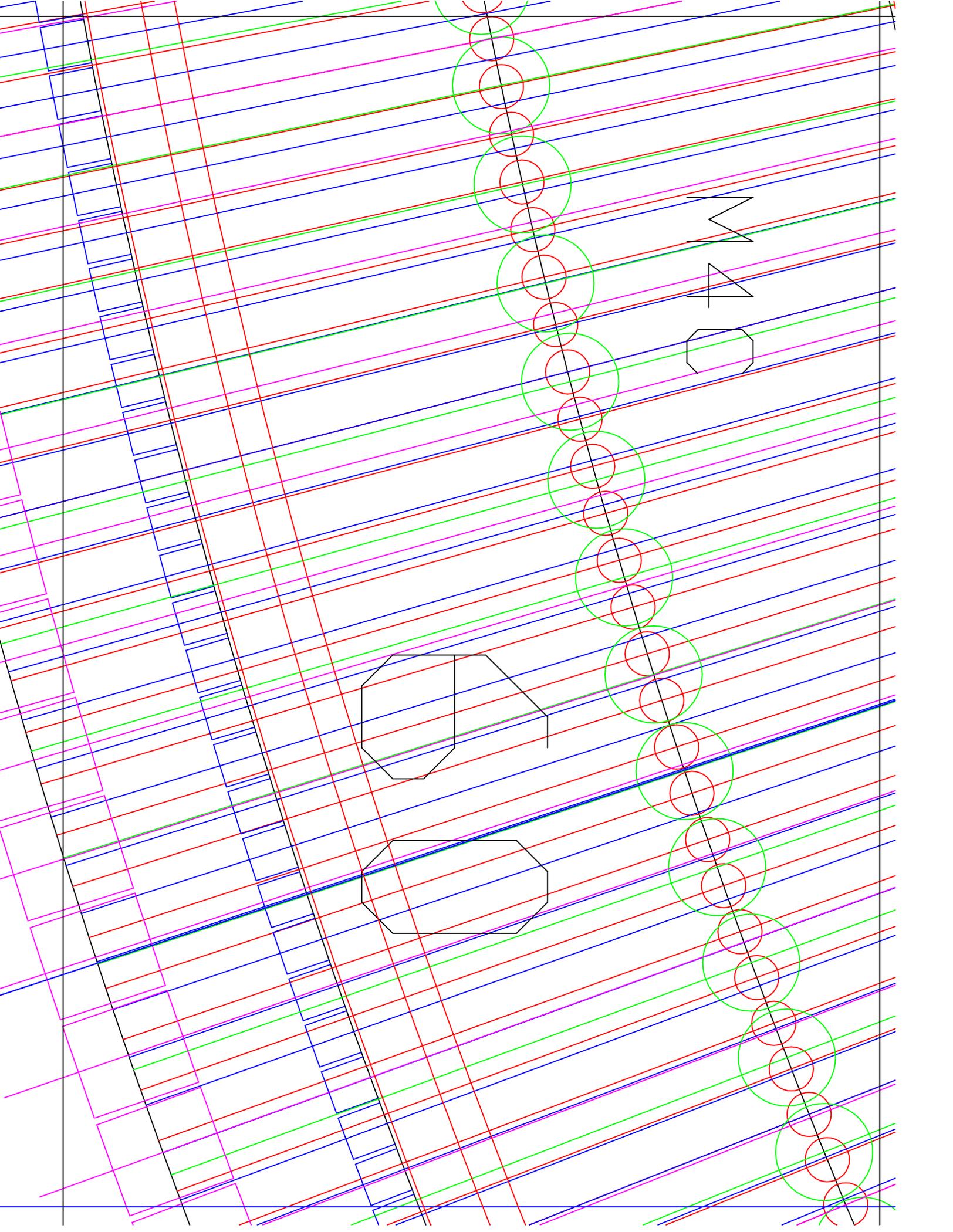
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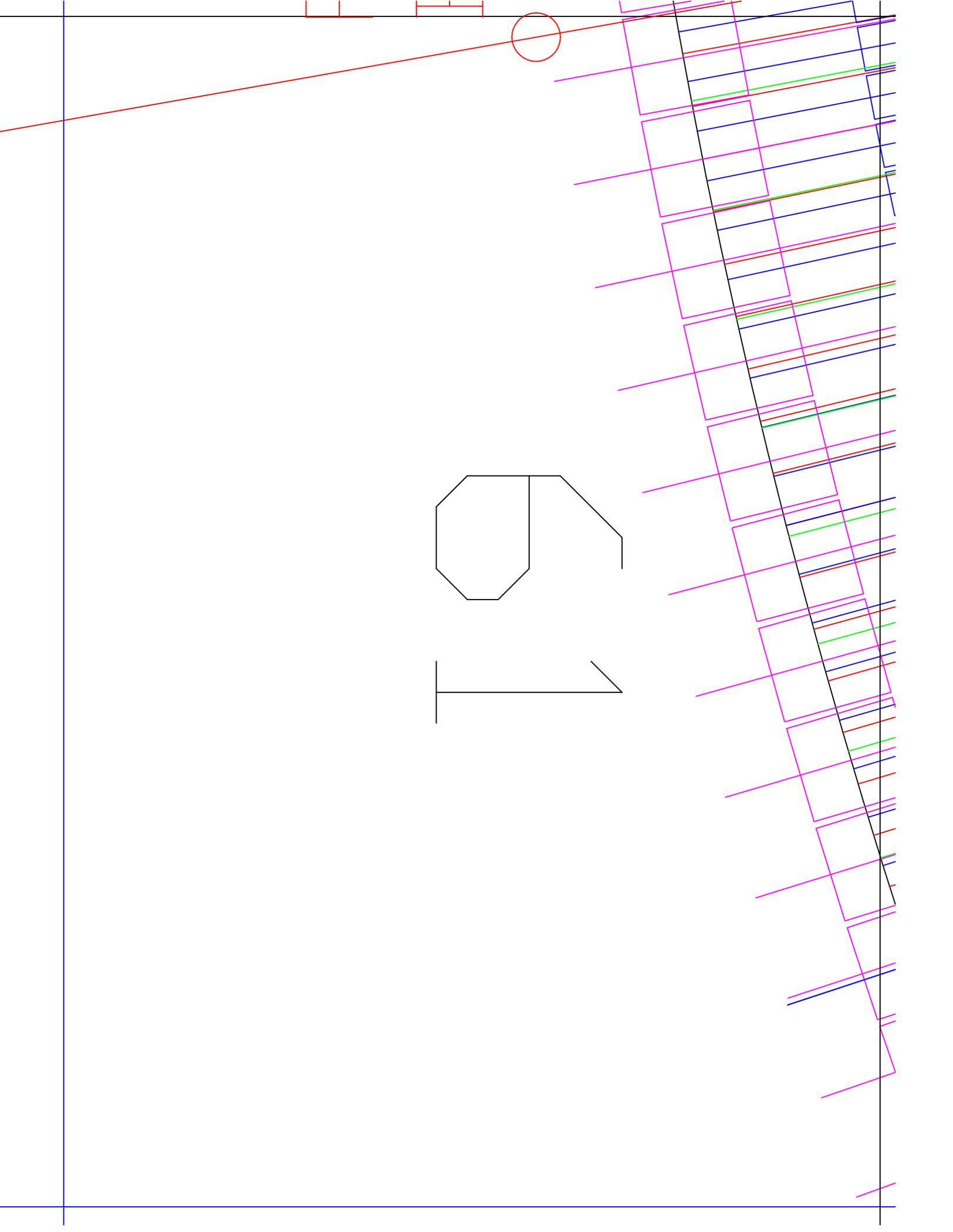


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TOPOLE
HOLE
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HOLE
FV
HOLE
AB

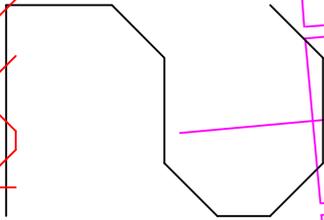
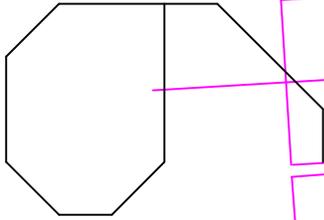




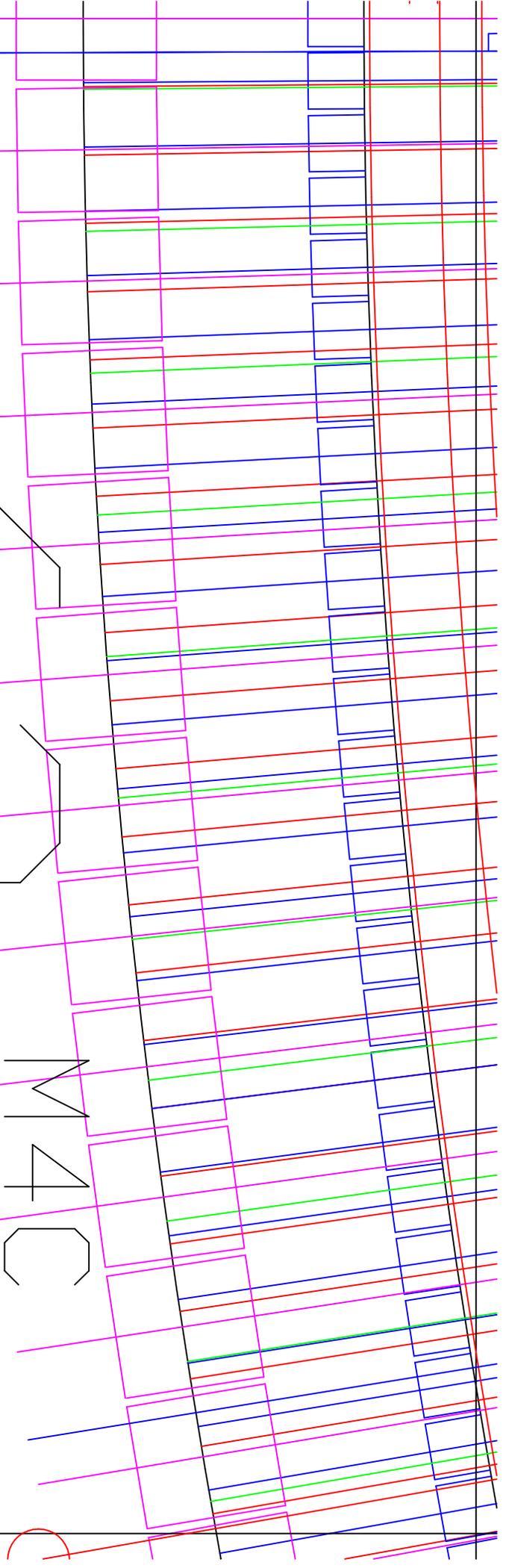


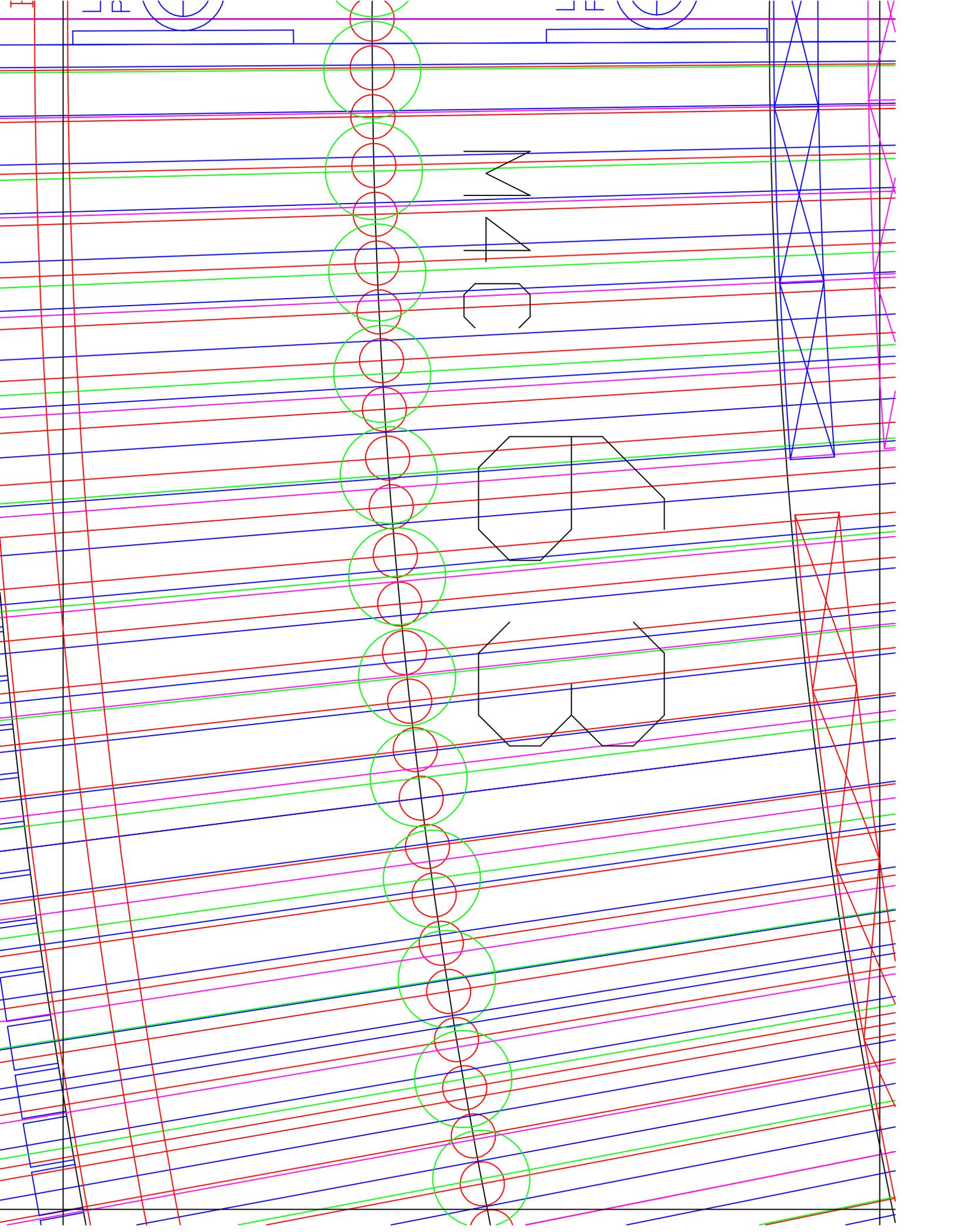
FOR THE

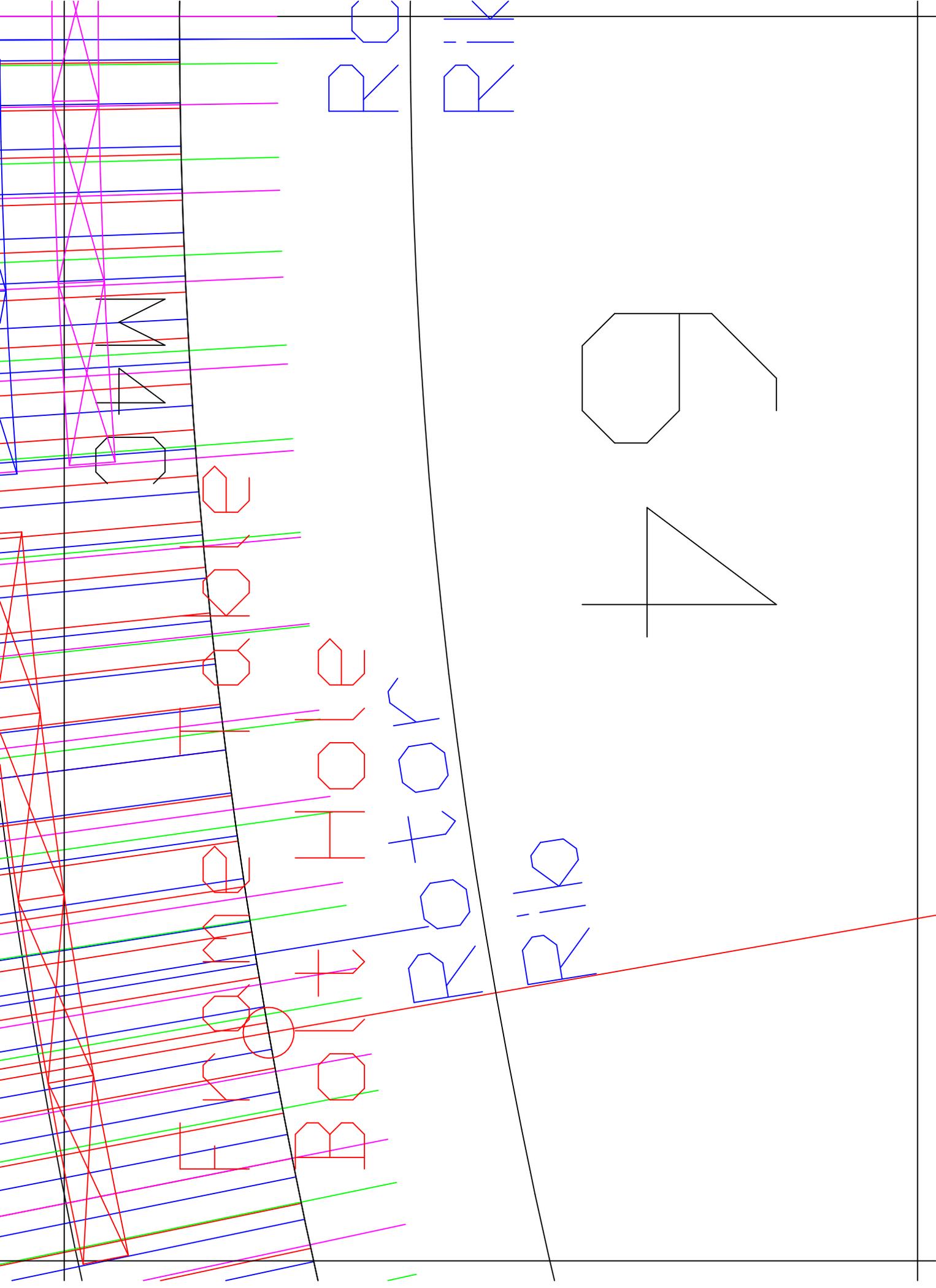
BOB



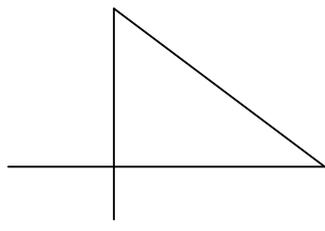
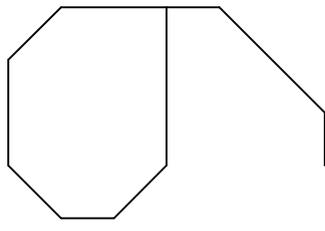
M4C



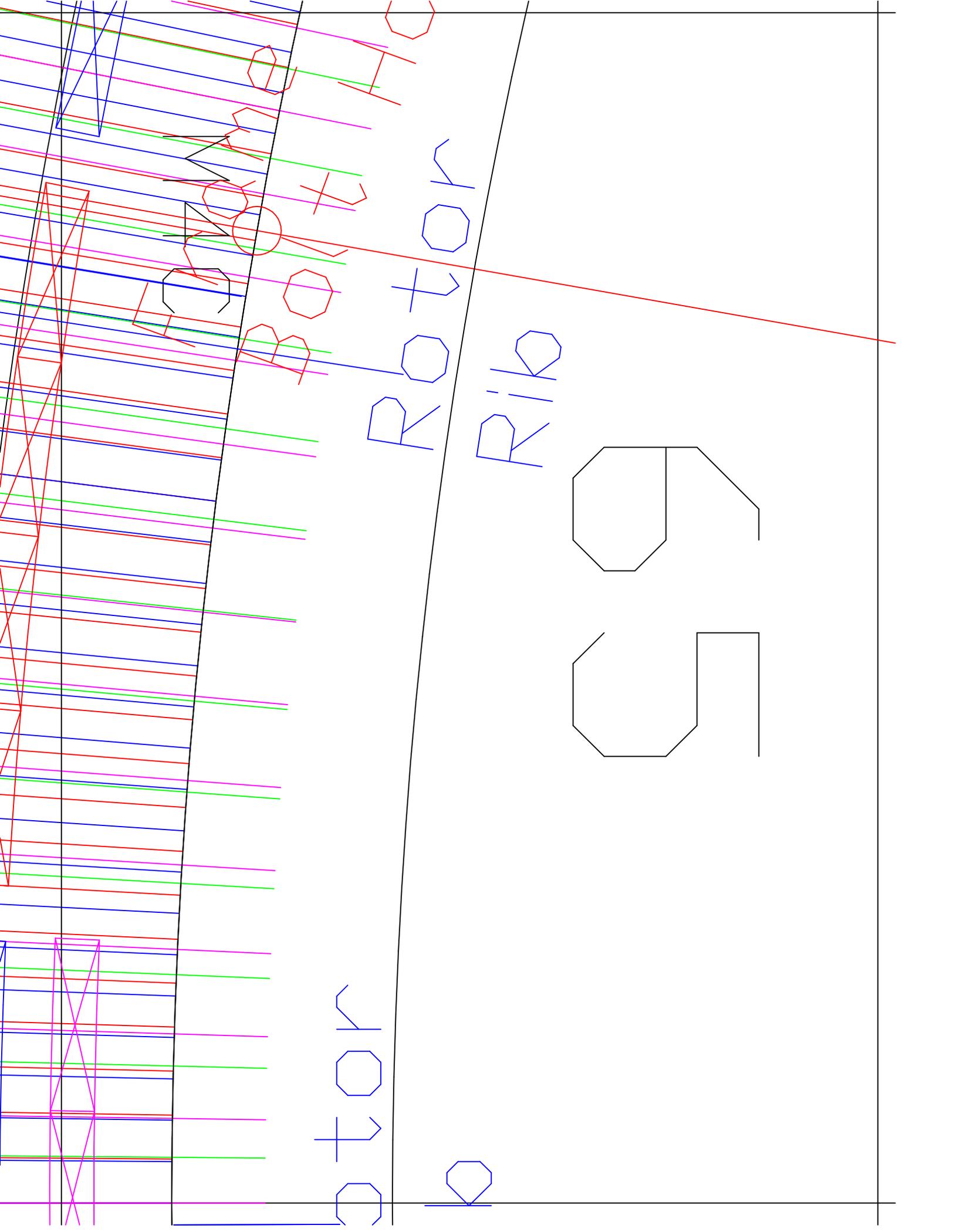




Technical drawing elements in blue, including octagonal shapes and lines.

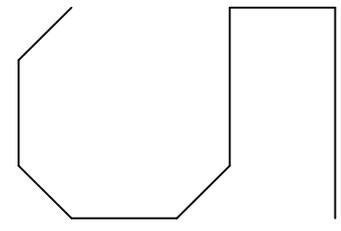
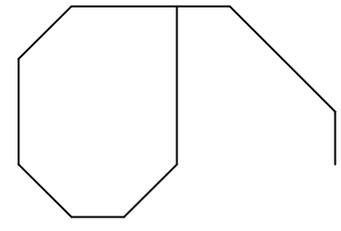


Technical drawing elements in red and blue, including octagonal shapes and lines.



ROTOR

RIR



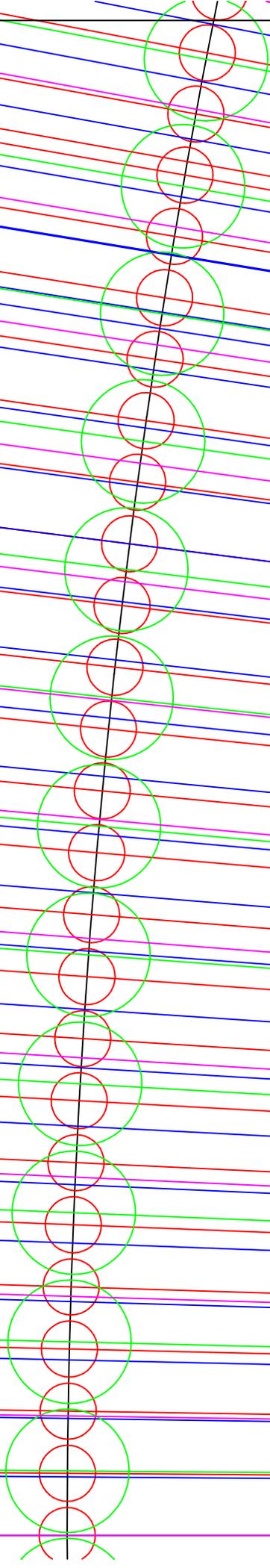
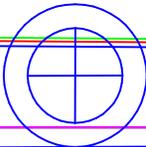
ROT



Balance Tube

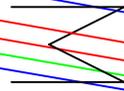
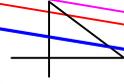
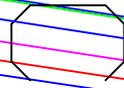
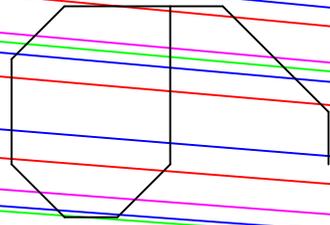
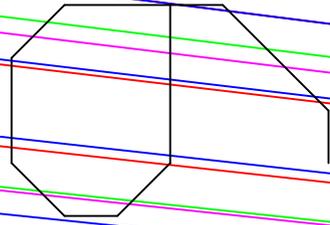
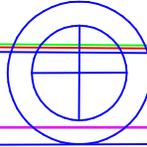
Lifting/Relocating

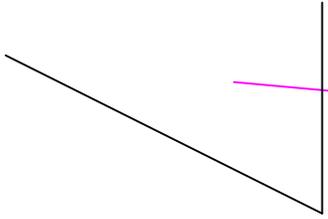
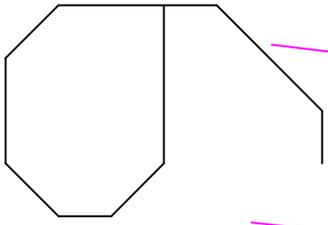
Point



Lifting/Relocating

Point

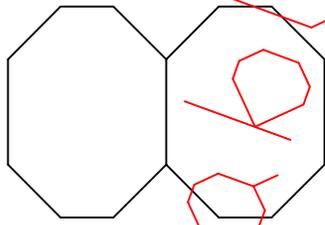
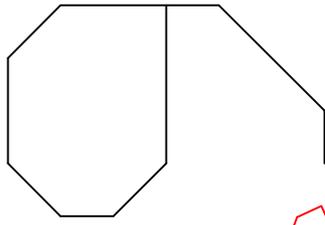




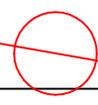
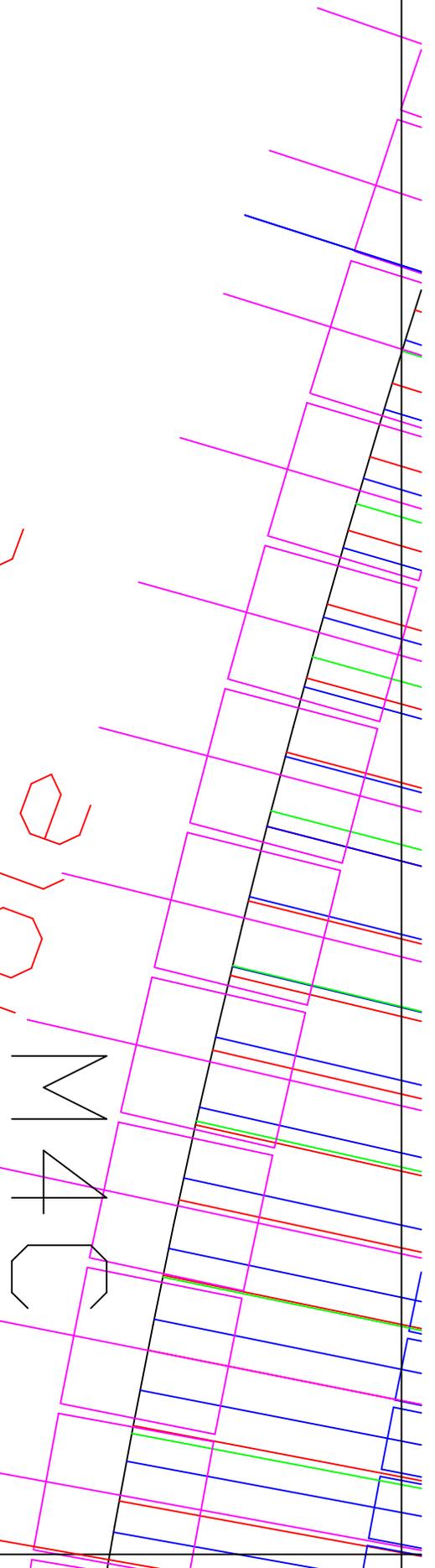
STW

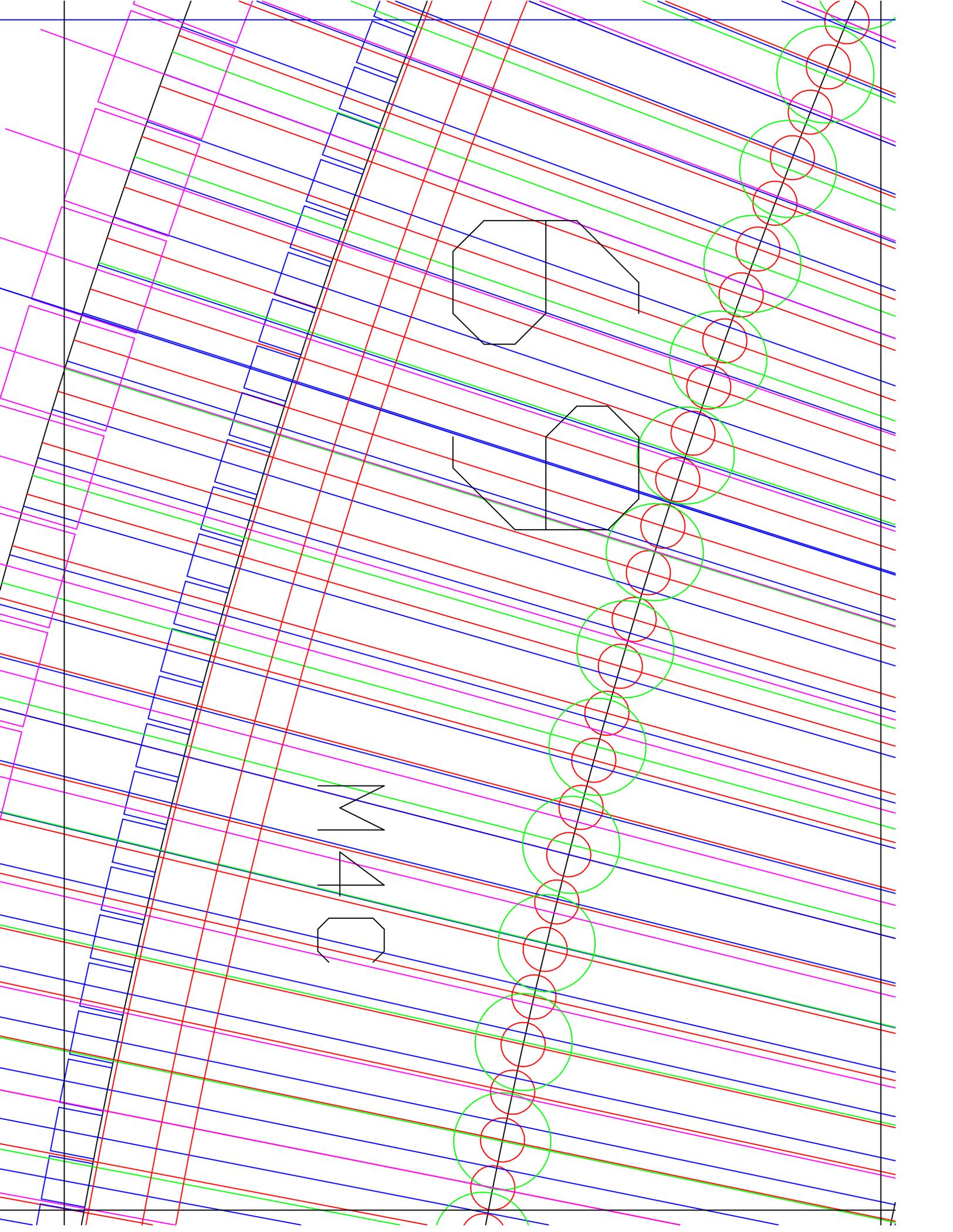
Balance Tube





FRAME TILES
BOLT HOLES
C+M





MAD

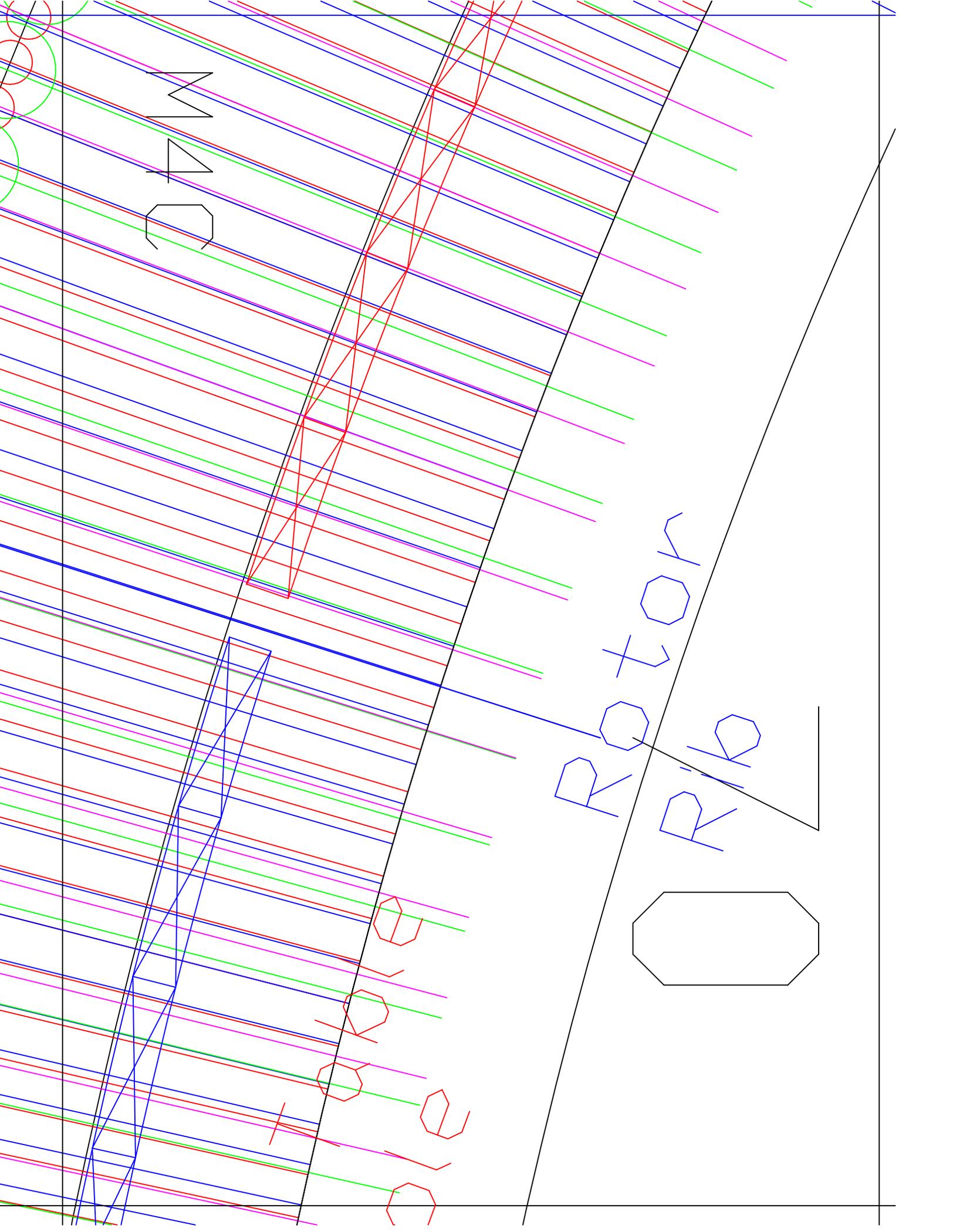
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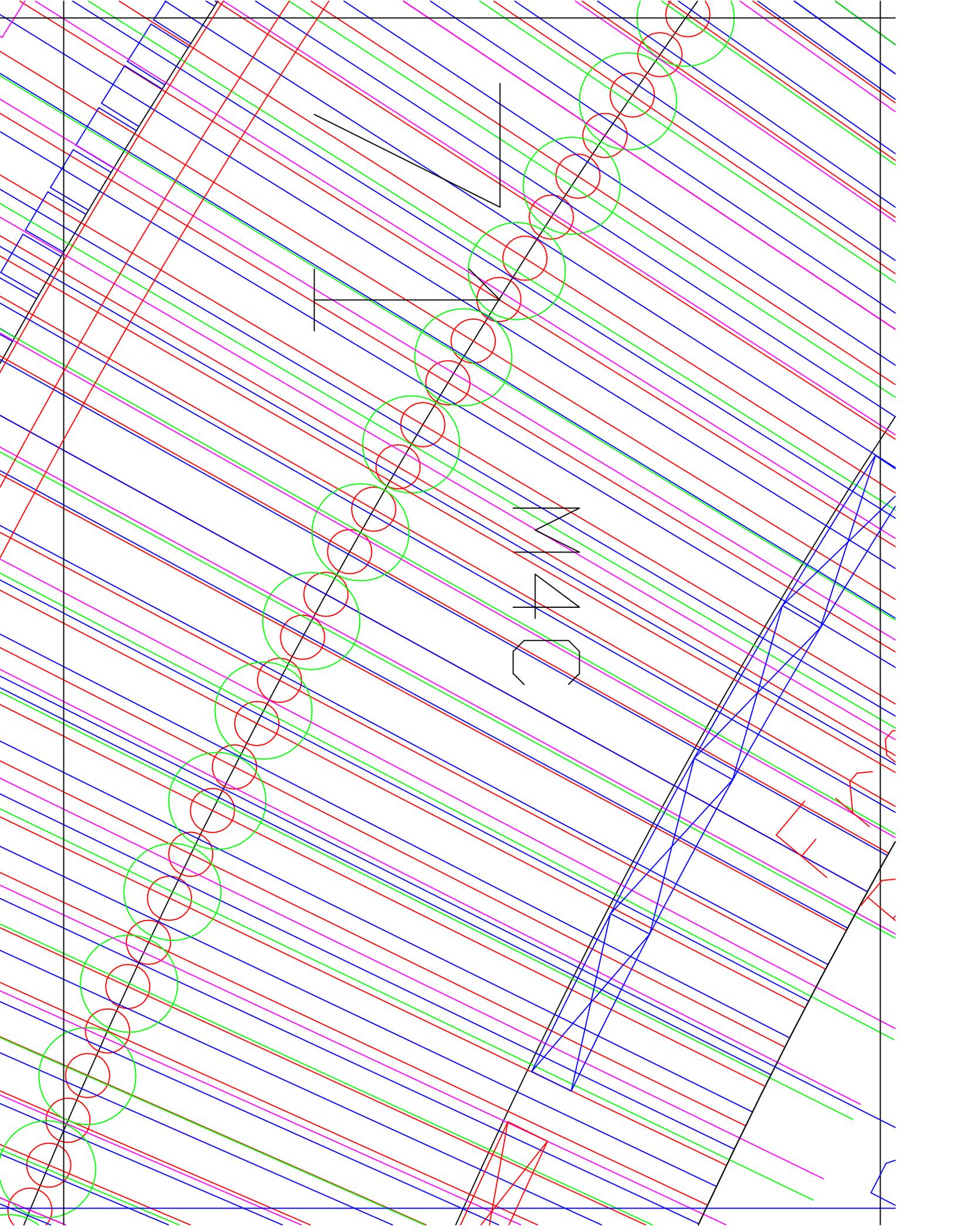
PROTOR

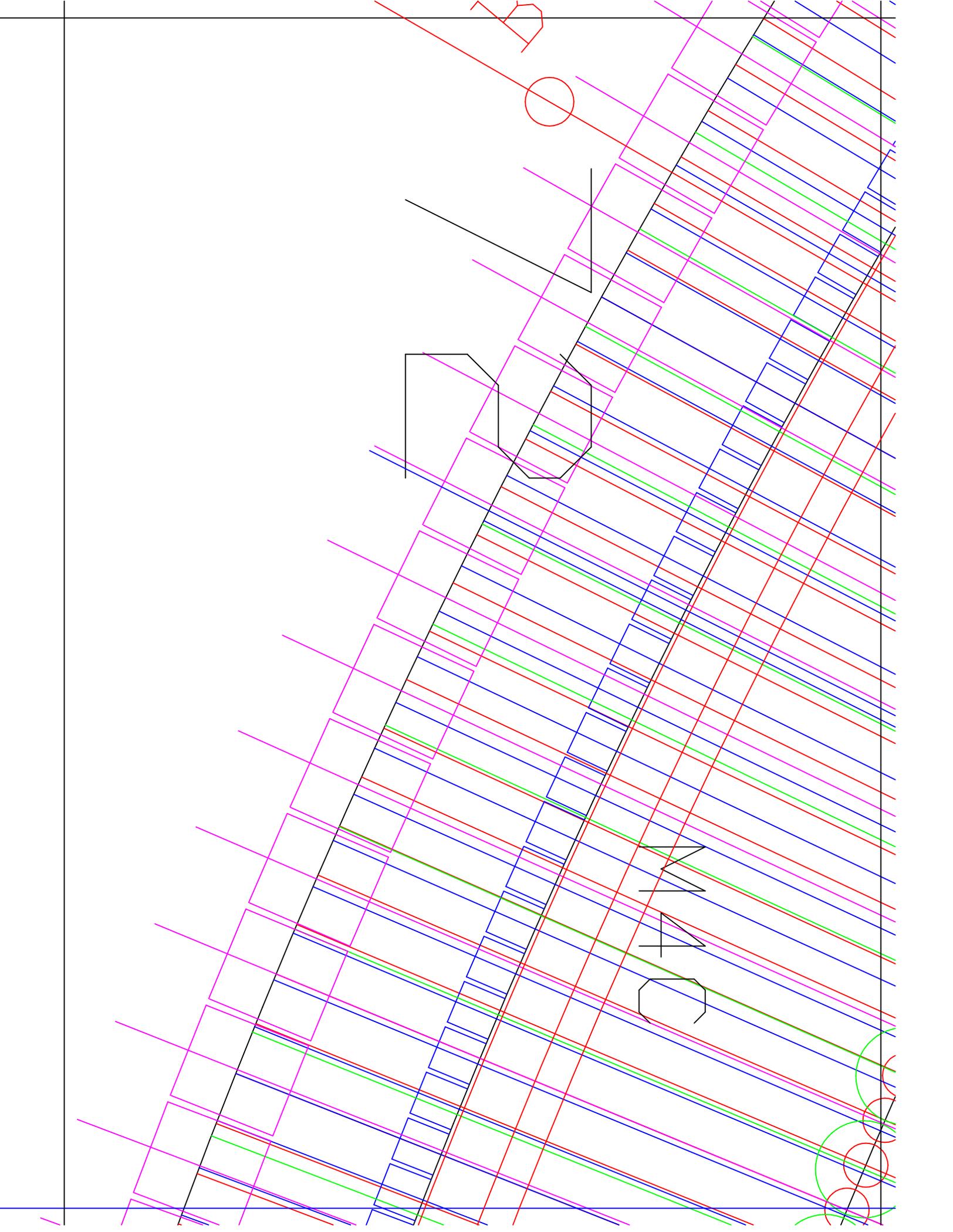
R/R



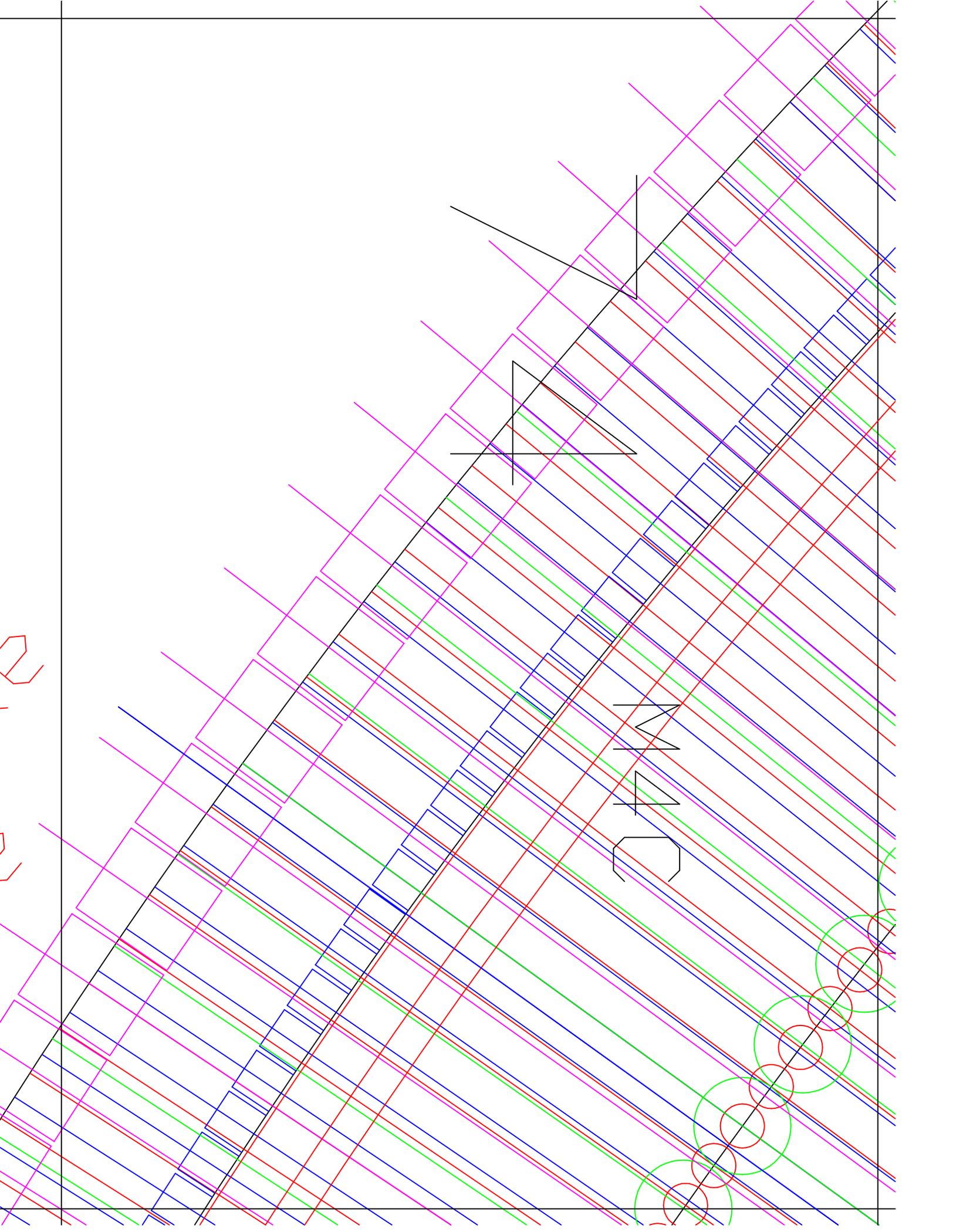
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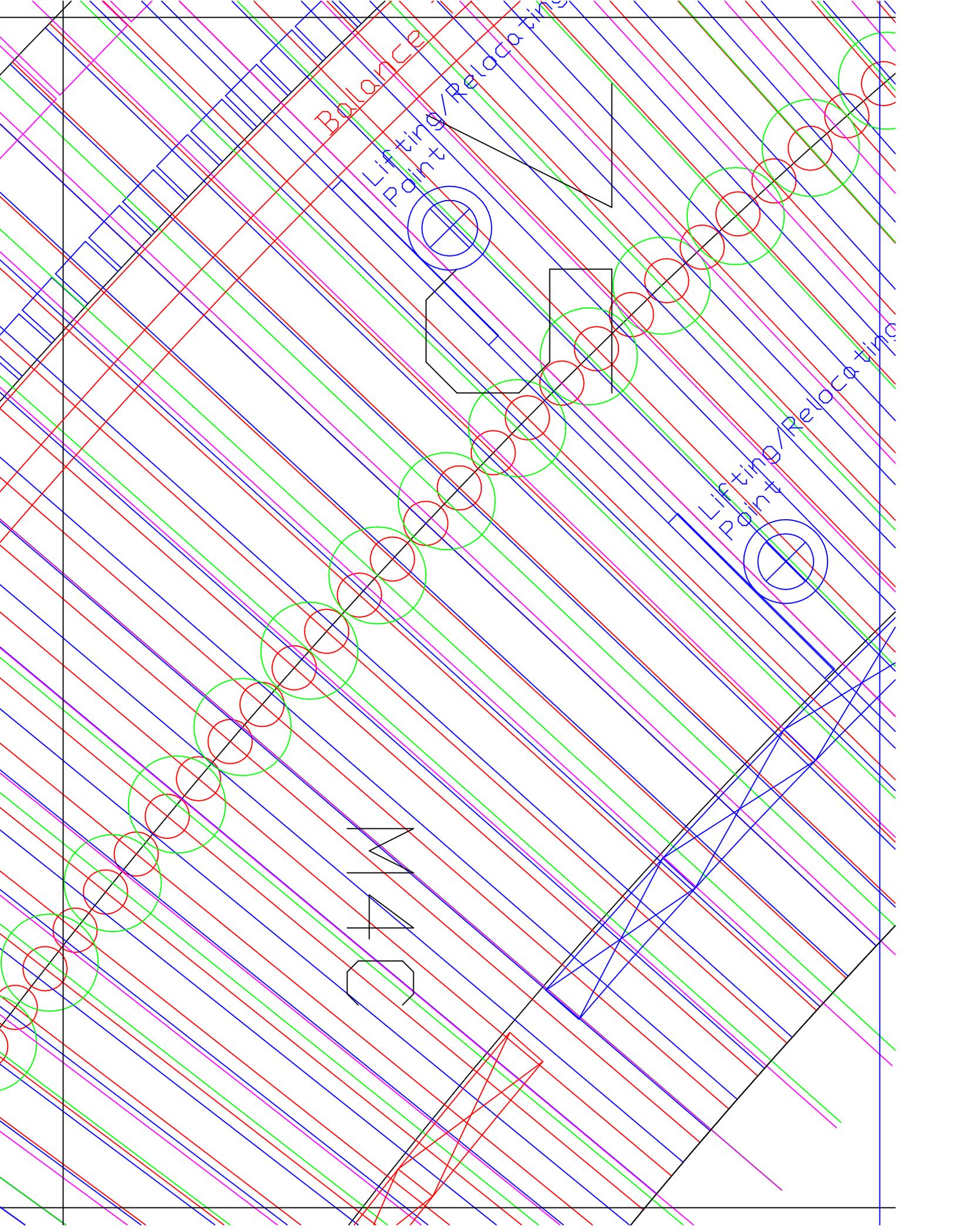






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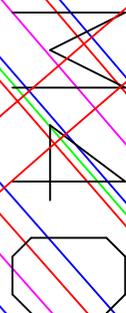


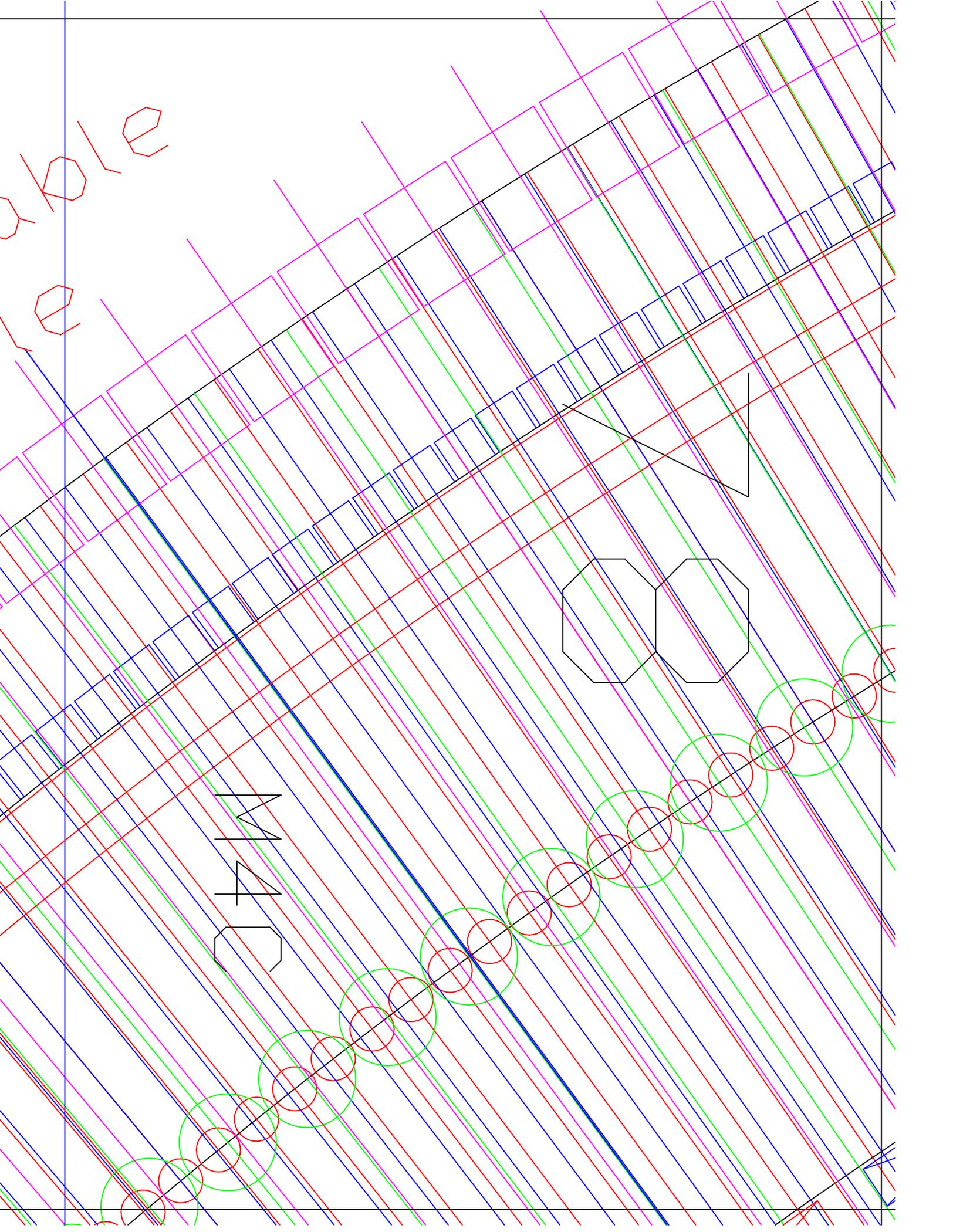


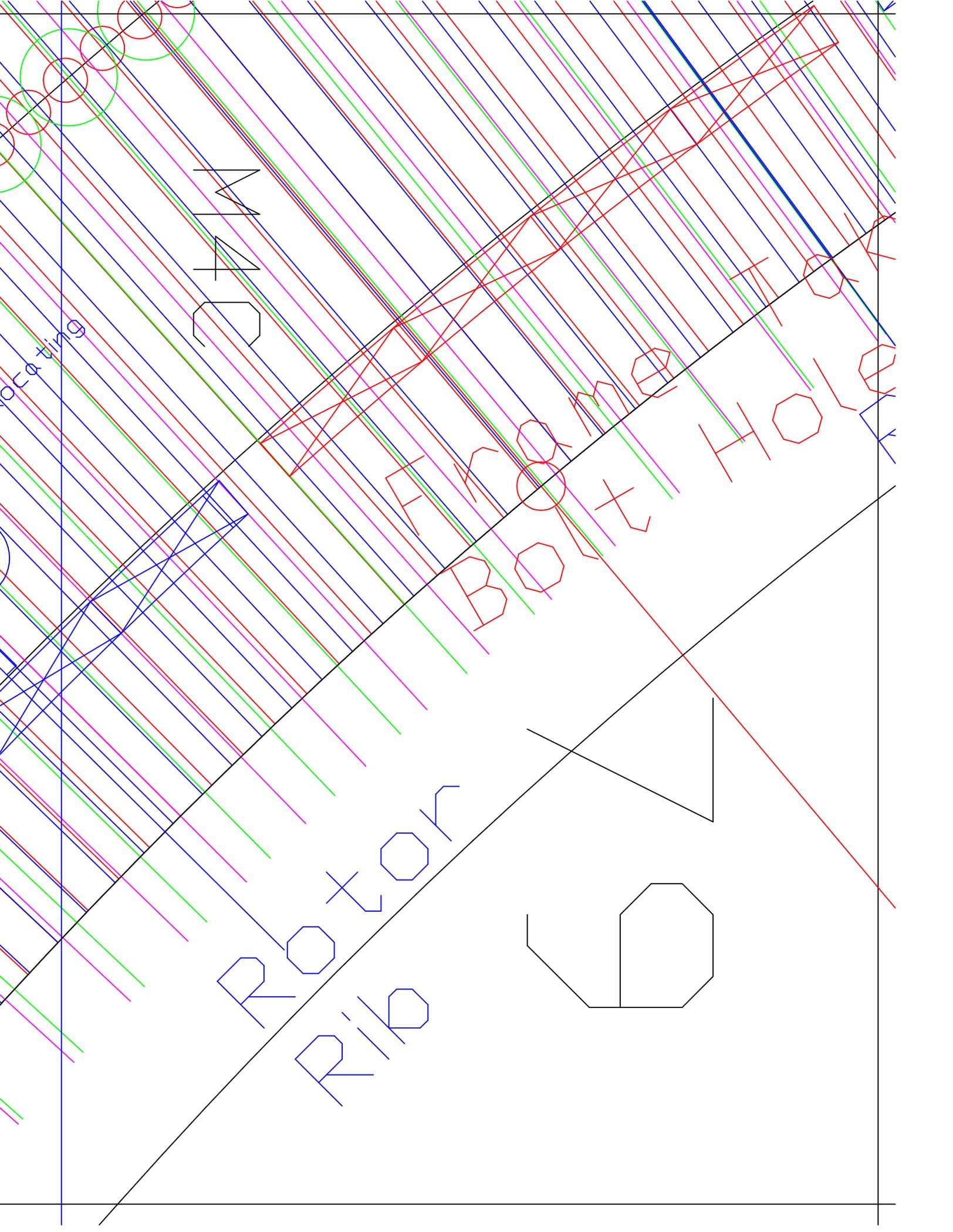
FKOME TOK
BOLT HOLES

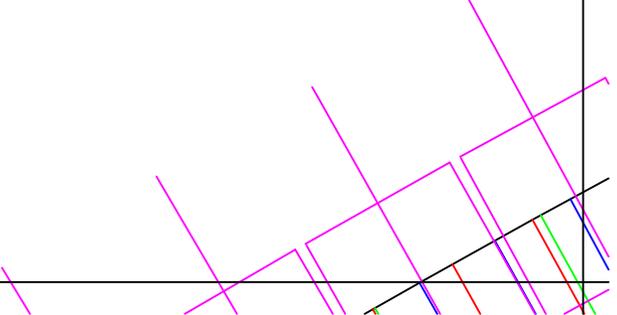
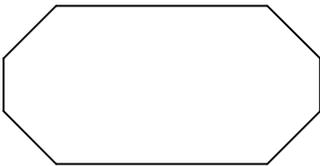
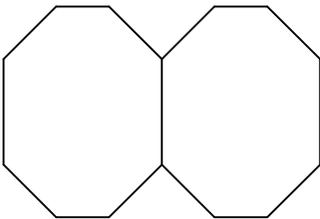


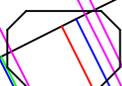
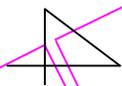
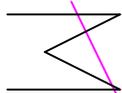
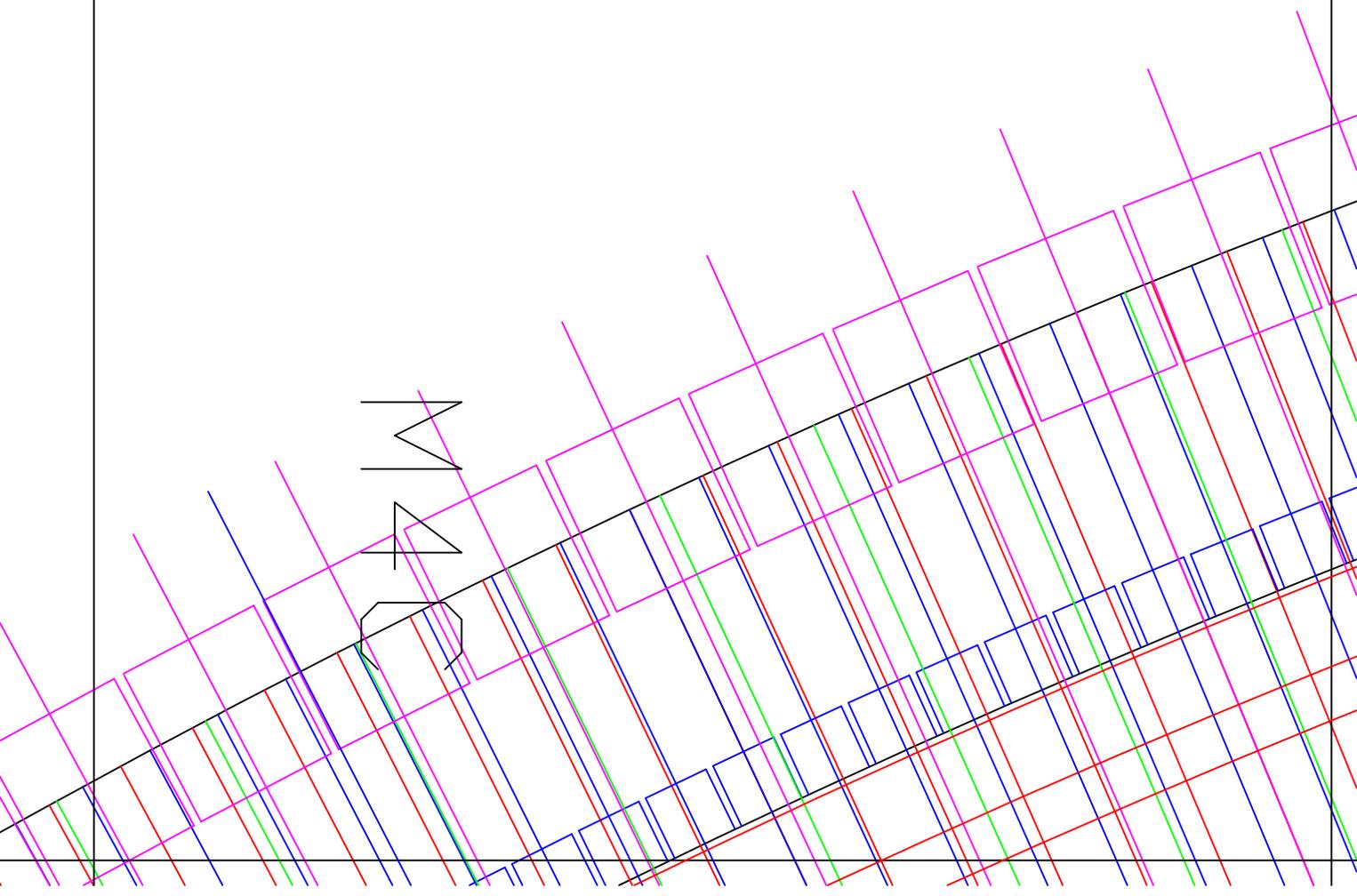
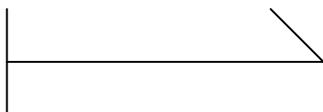
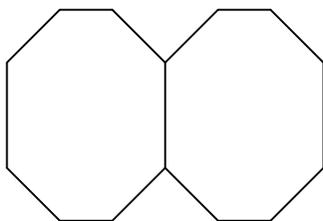
Type
Drawing

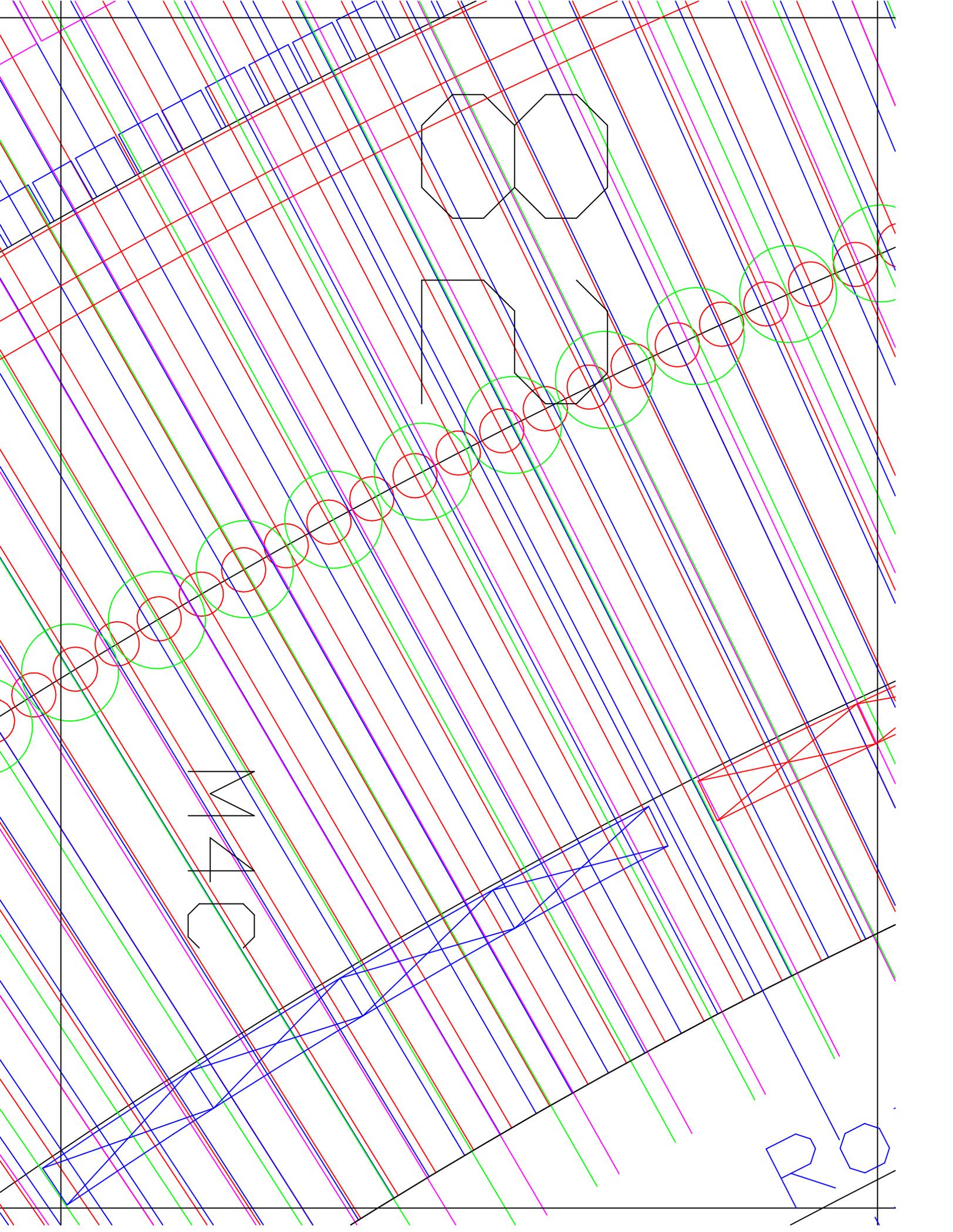






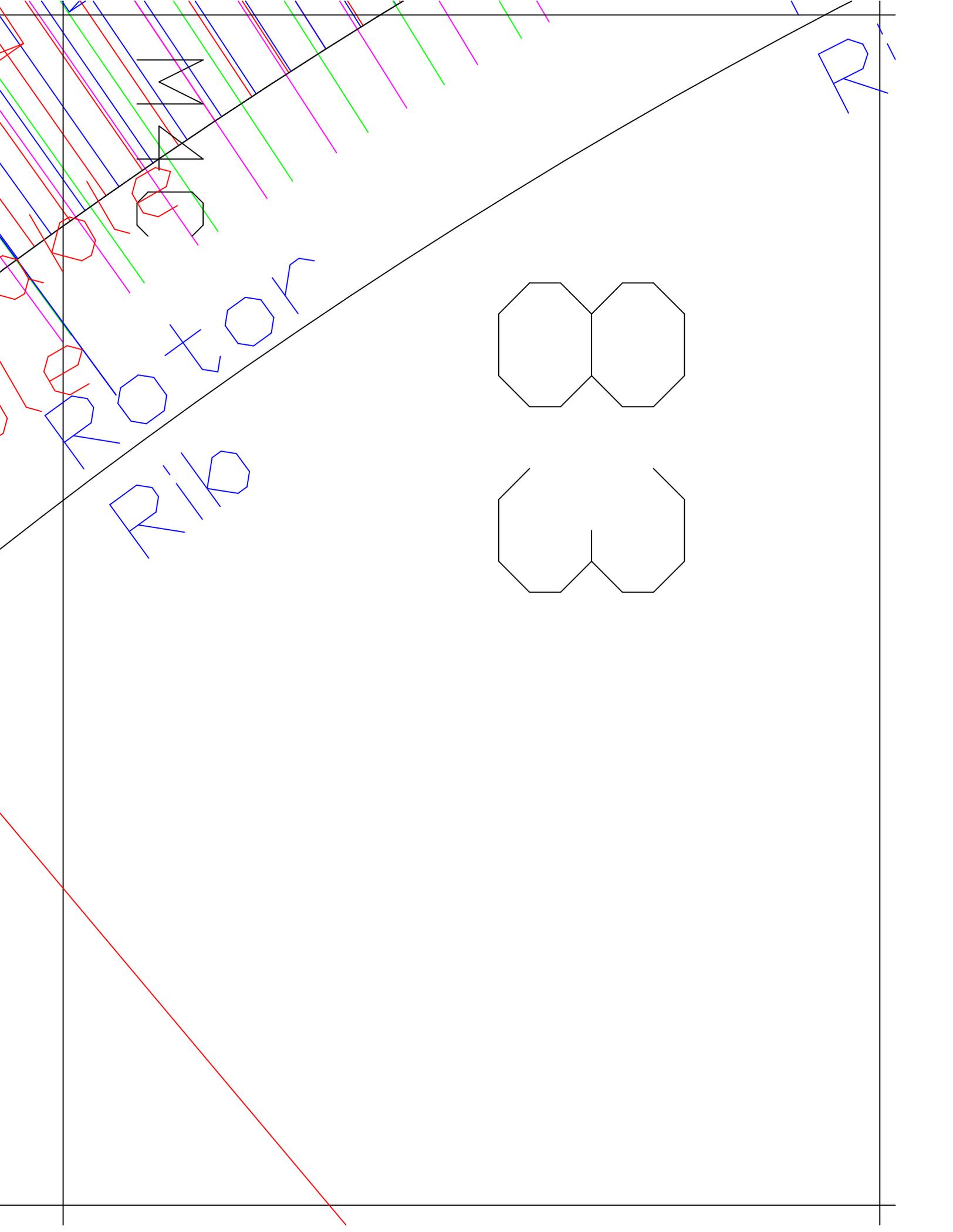






MIN
TA
O

RO

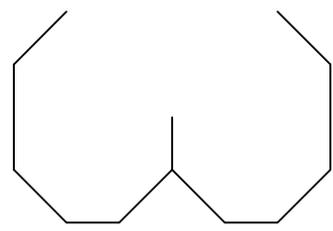
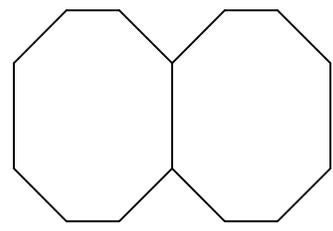


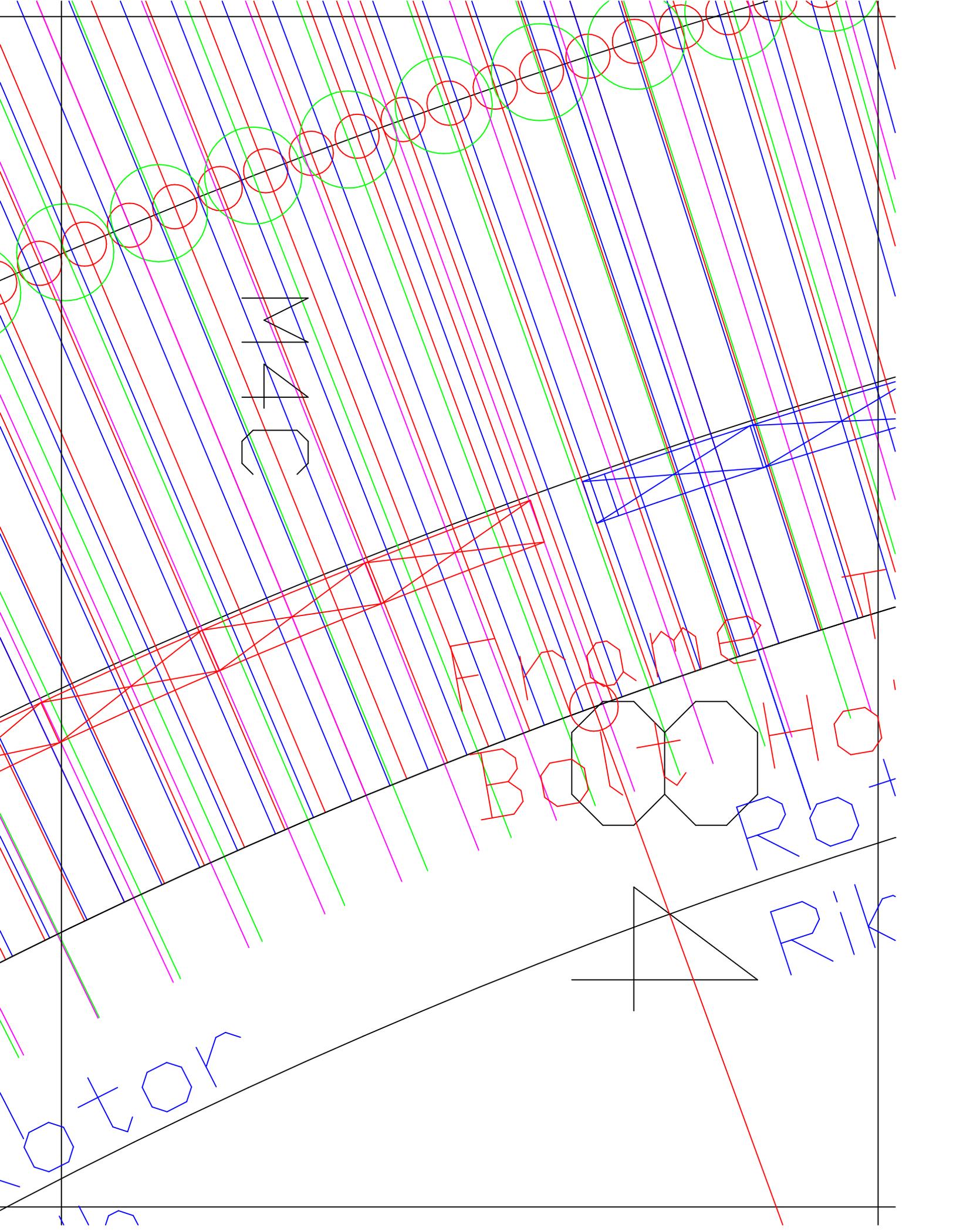
Z

Z

R

KROTON



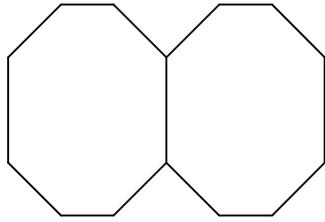


M
N

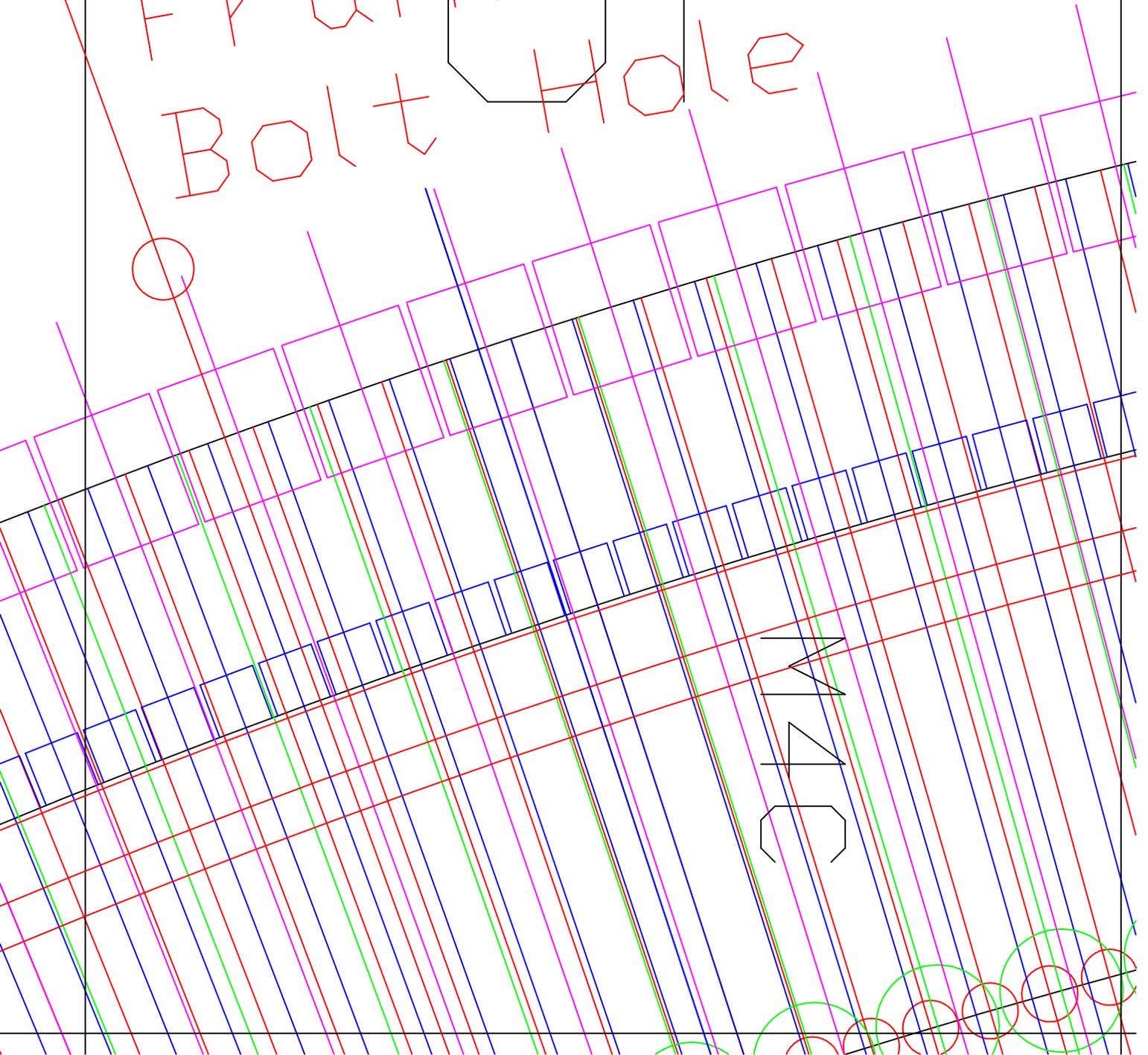
BOOTH
ROTH

Rik

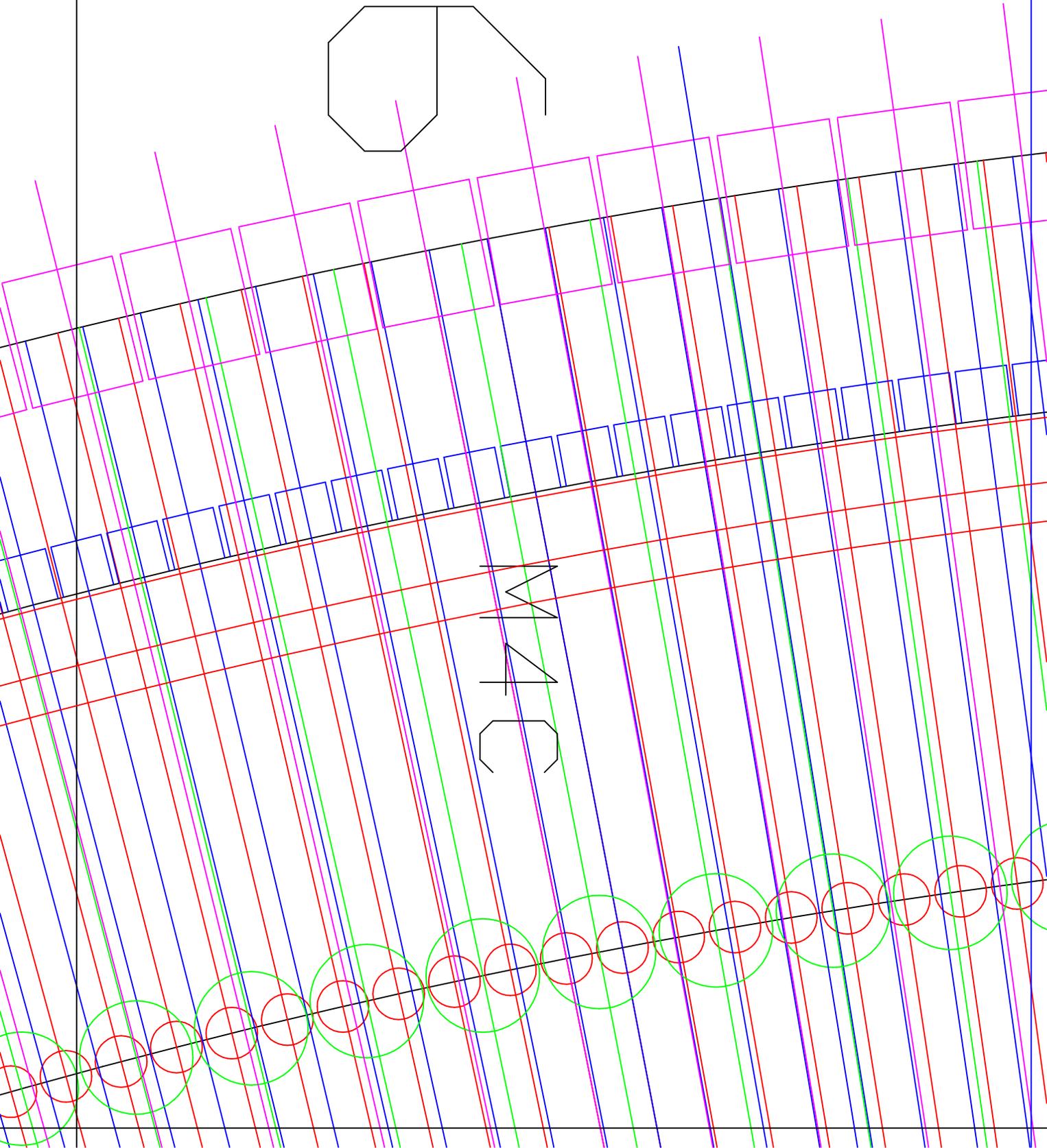
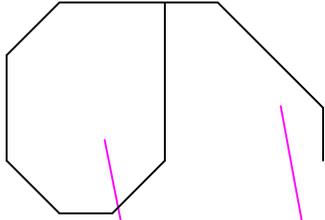
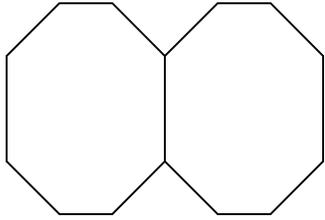
OTOR



Frame Table
Bolt Hole



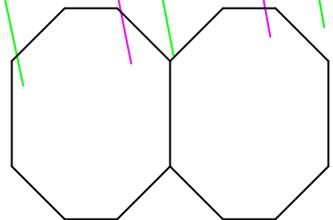
MINI
C



MNC

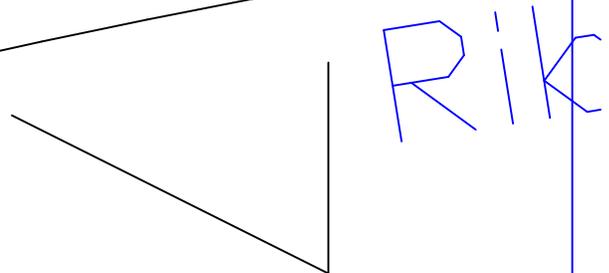
WZC

Motor



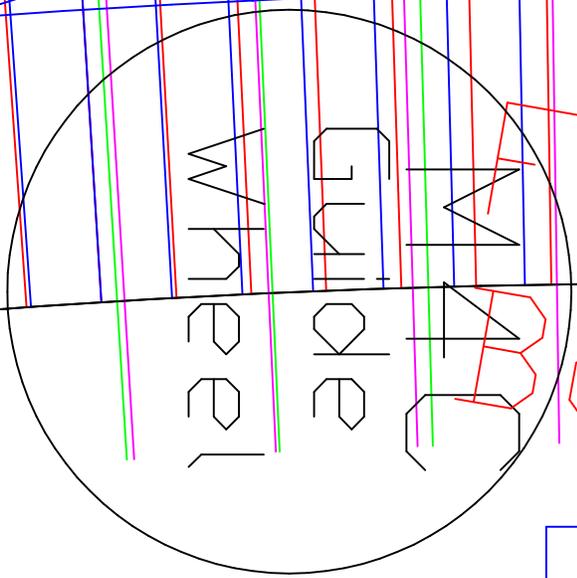
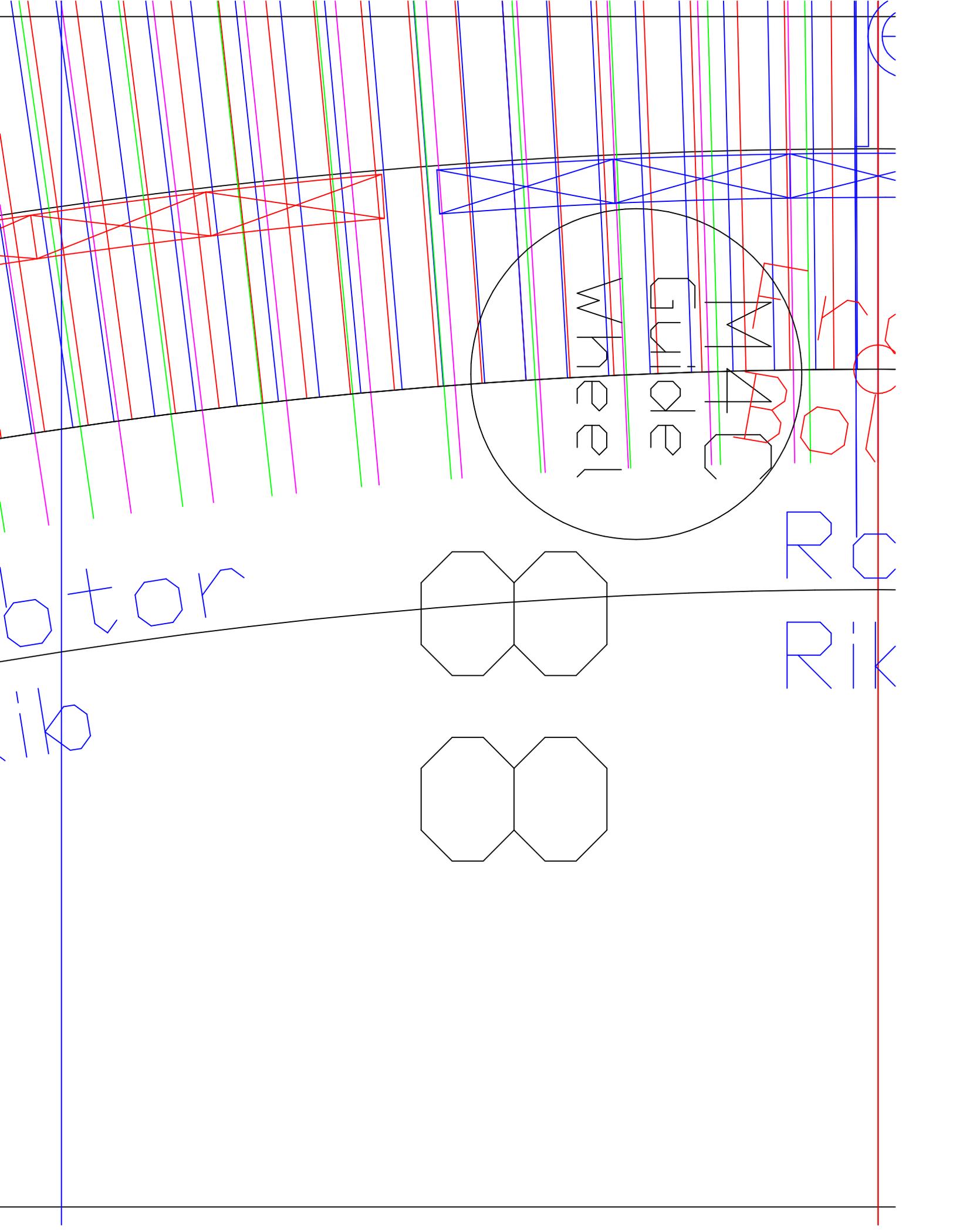
Ro-

Motor



Rik

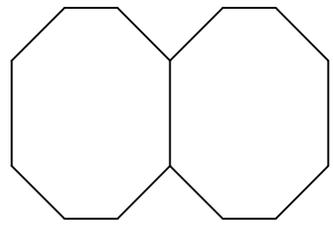
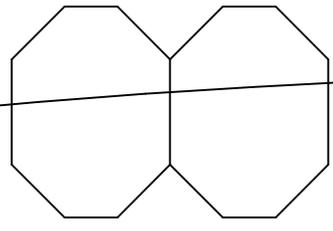
Rik



ROCK

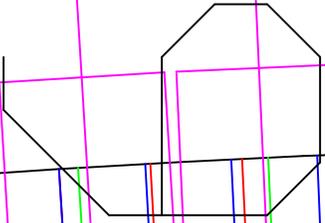
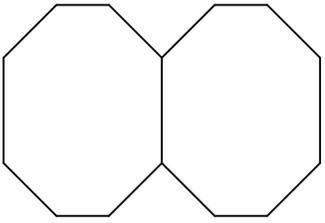
RC

RIK

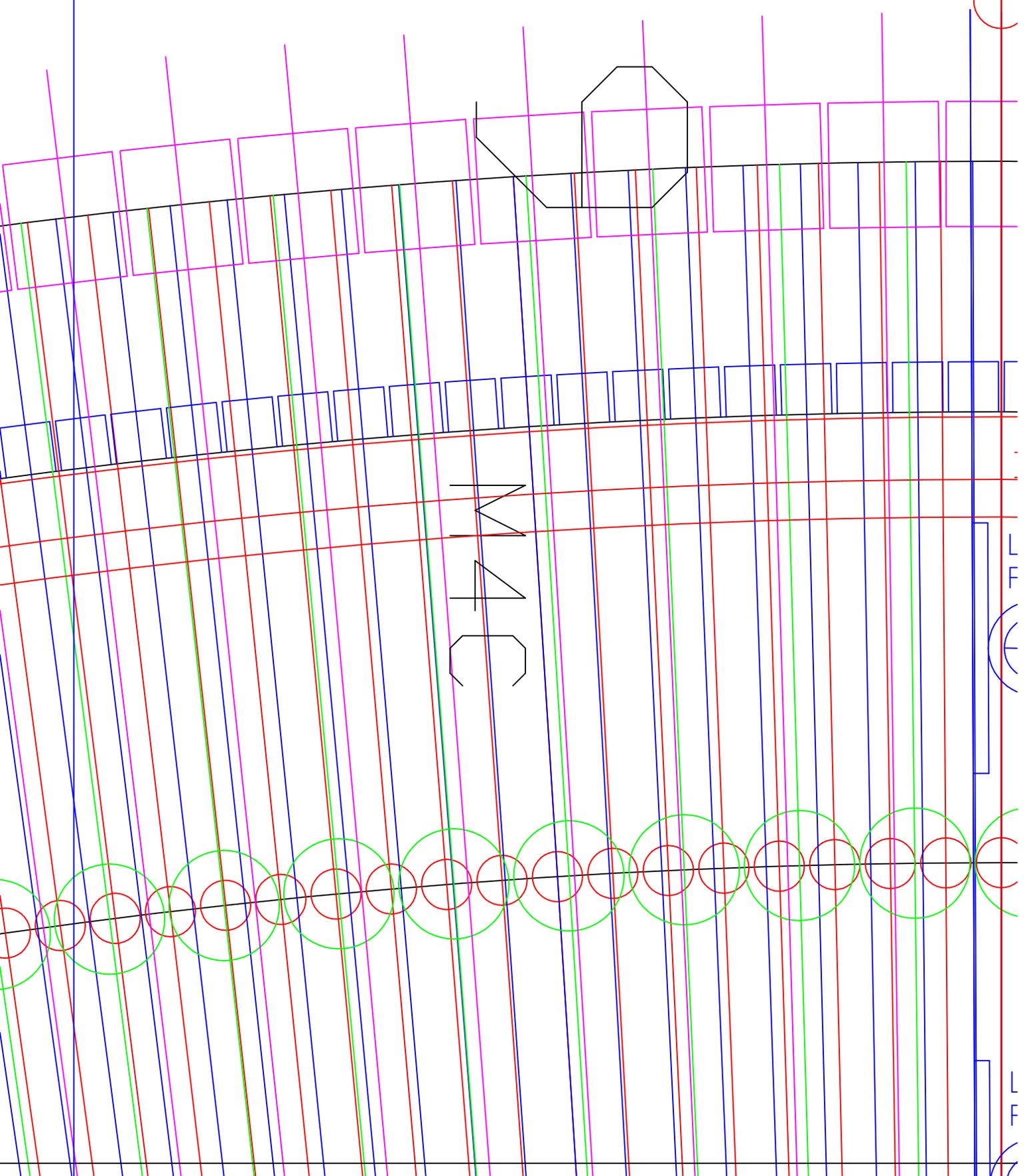


Motor

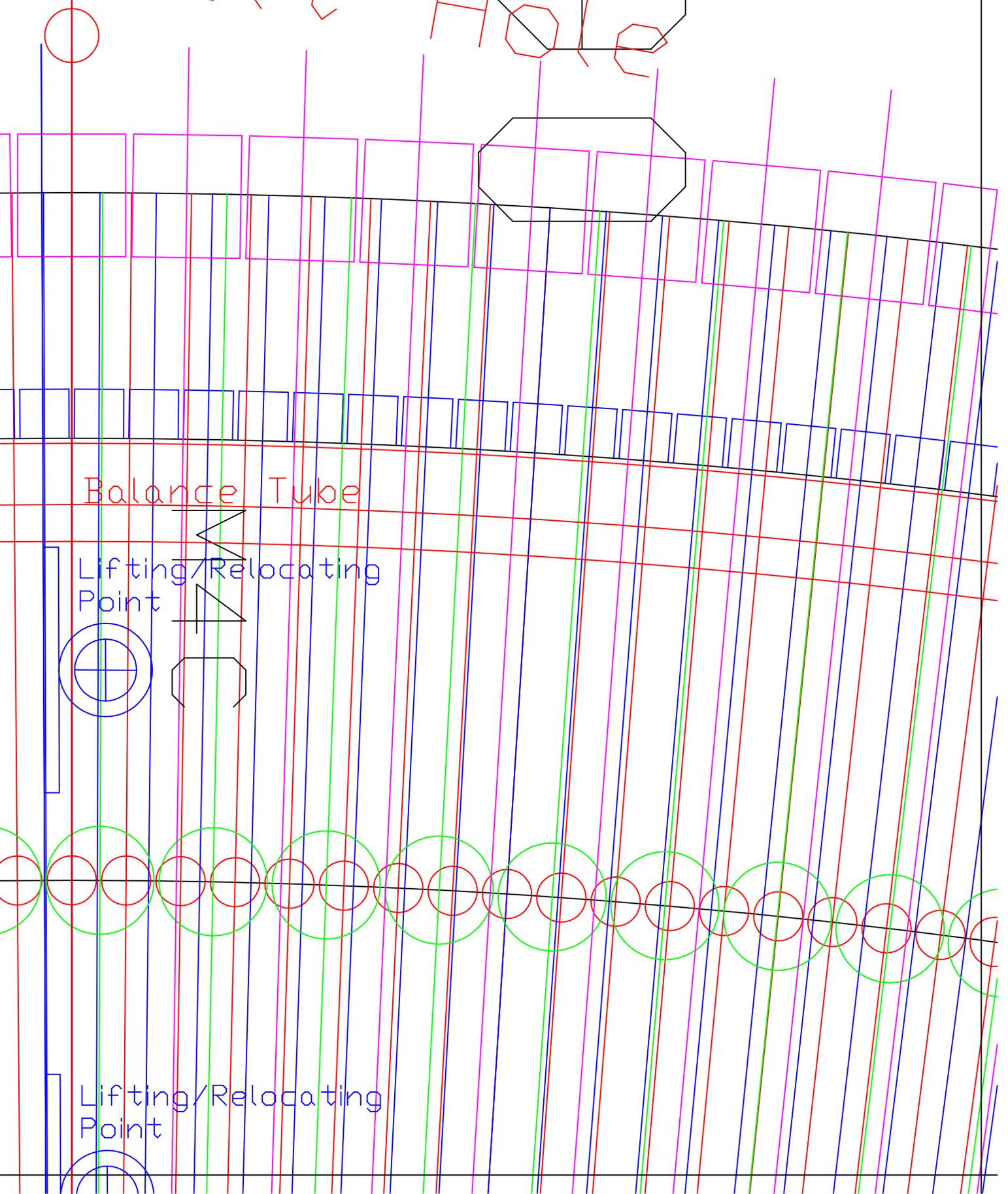
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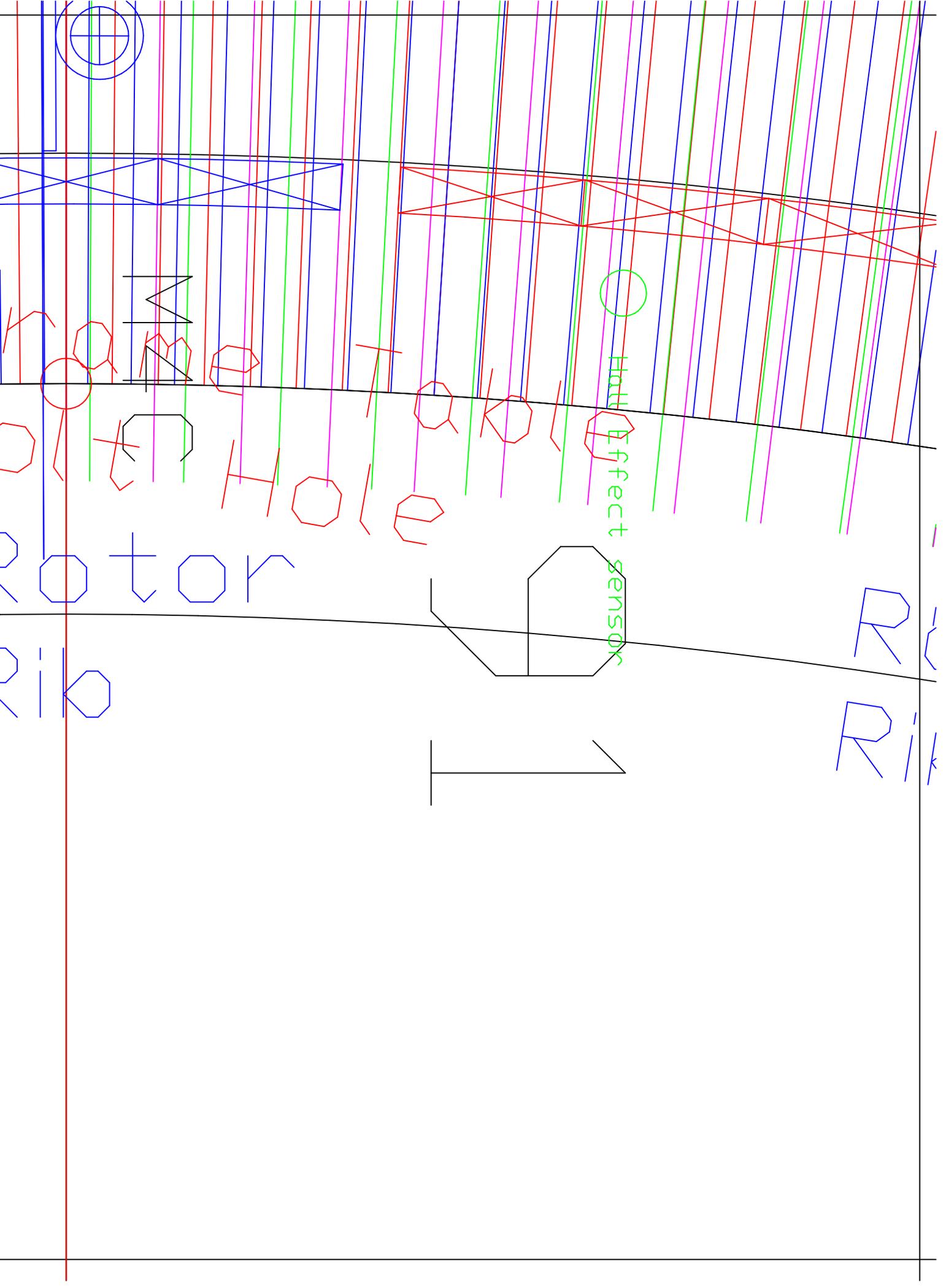


M
A
C



1. Name Bolt Hole Table





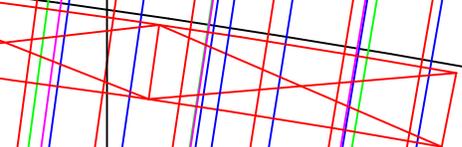
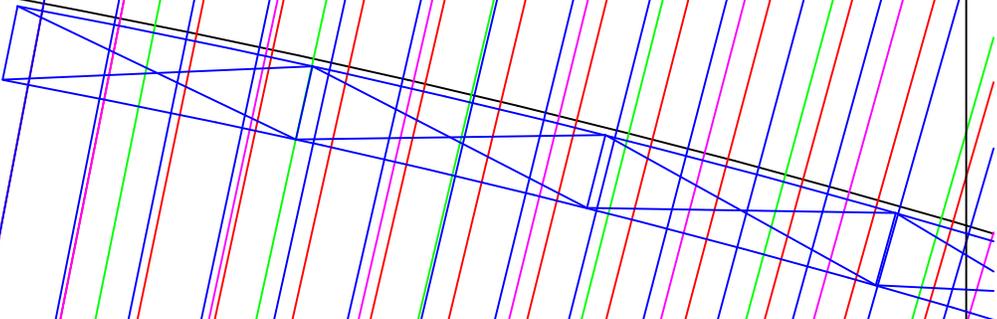
MVC



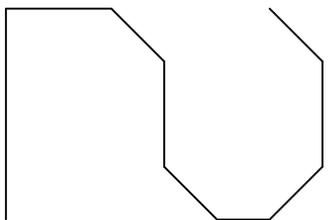
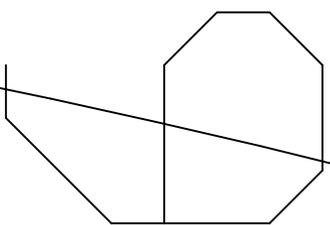
Hall Effect sensor



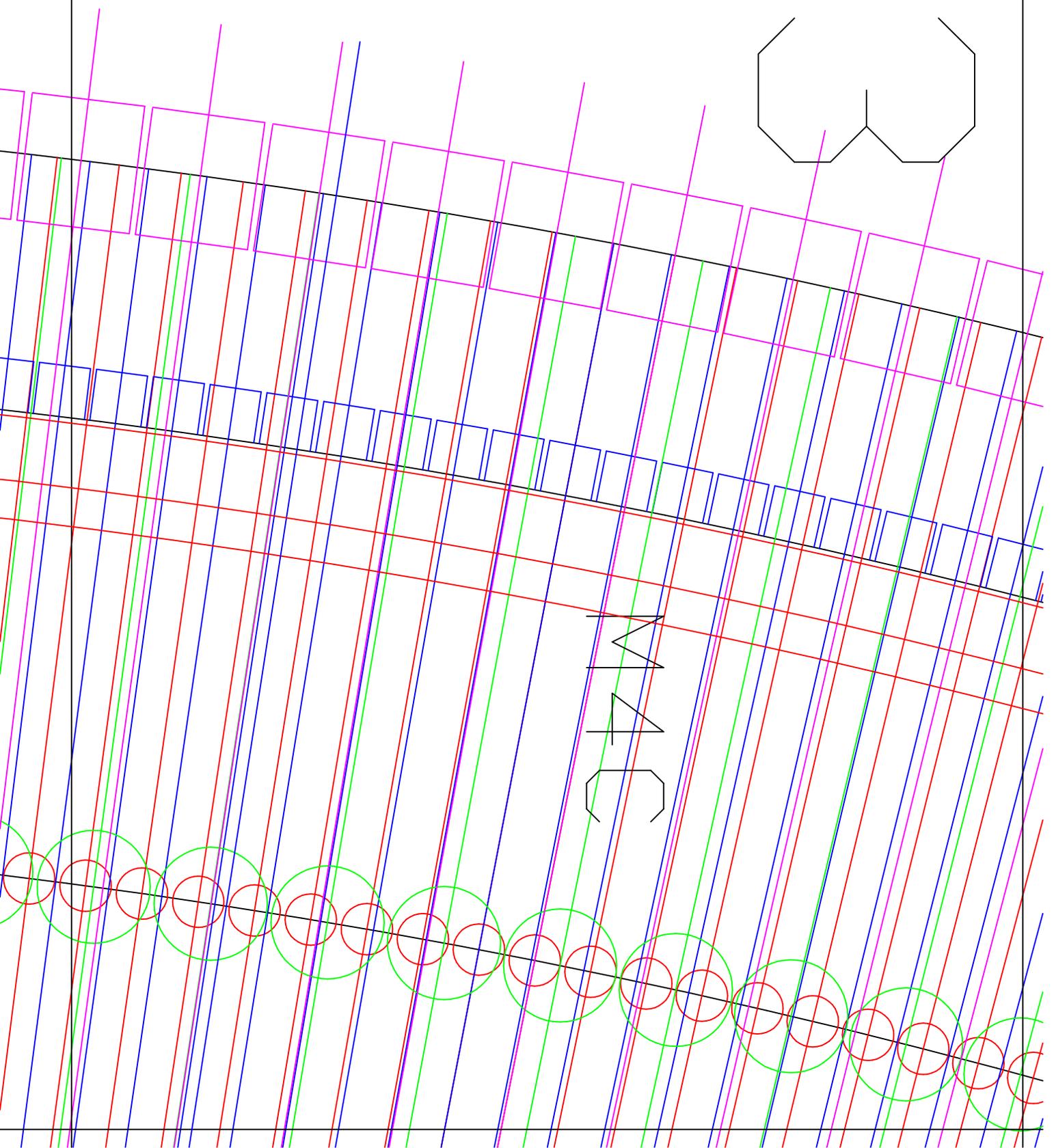
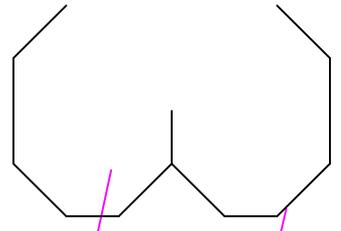
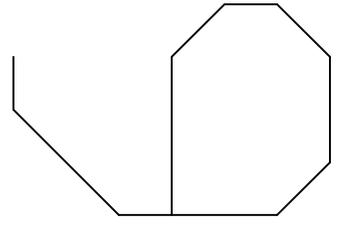
Hall Effect sensor



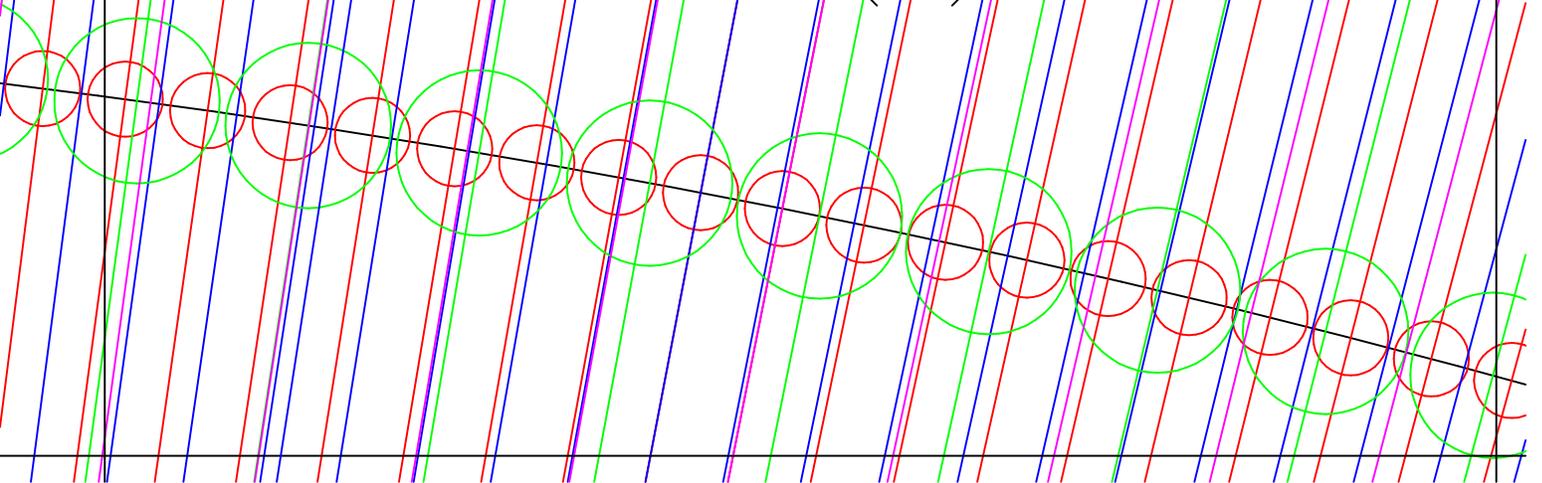
Robot

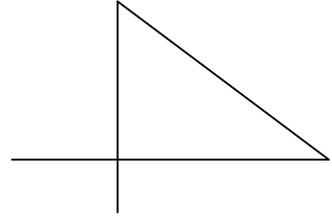
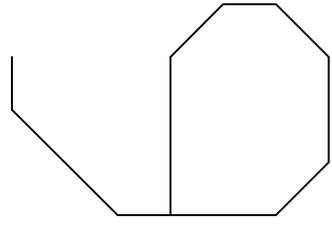
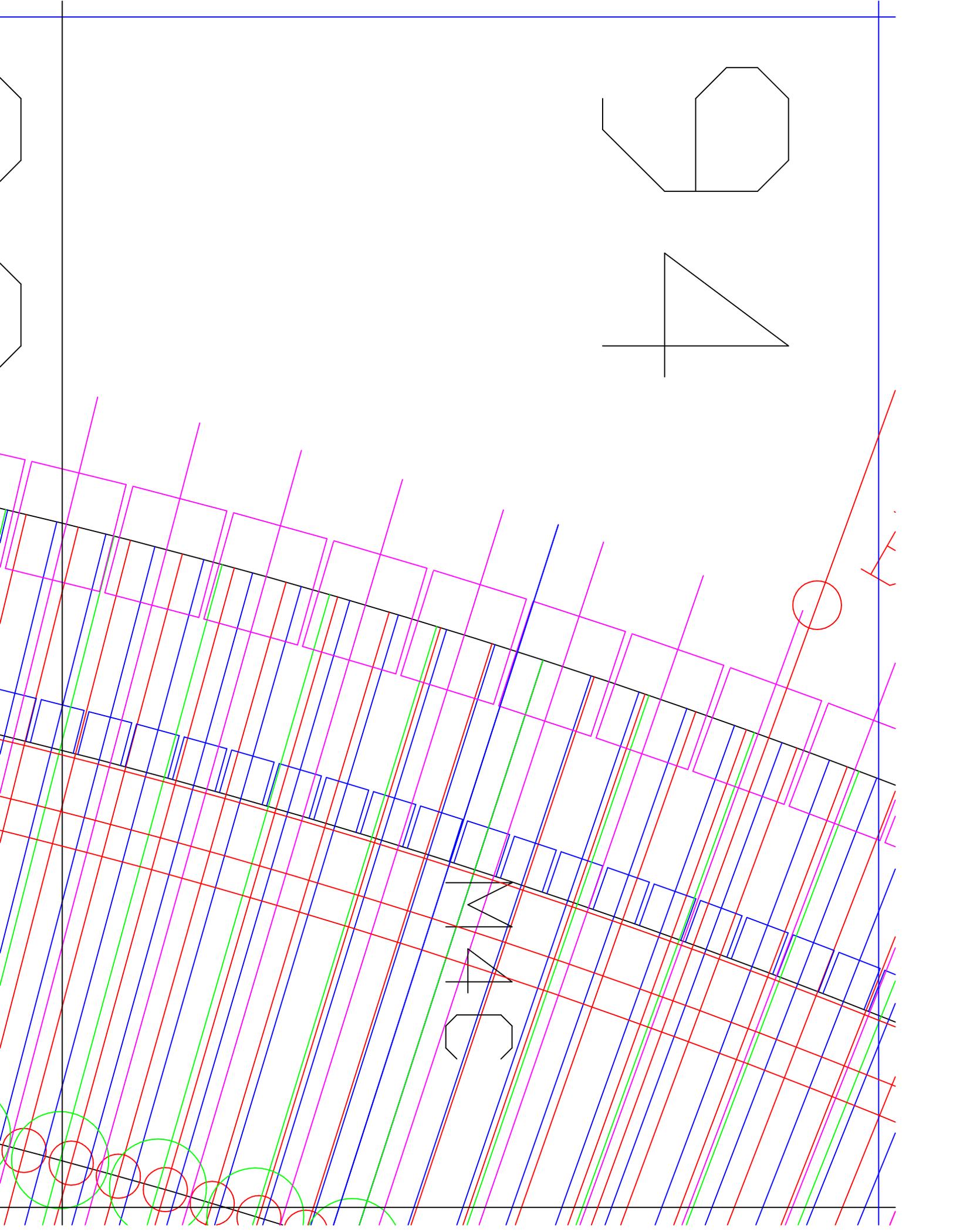


Rik

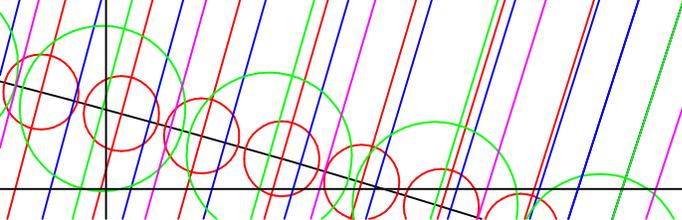
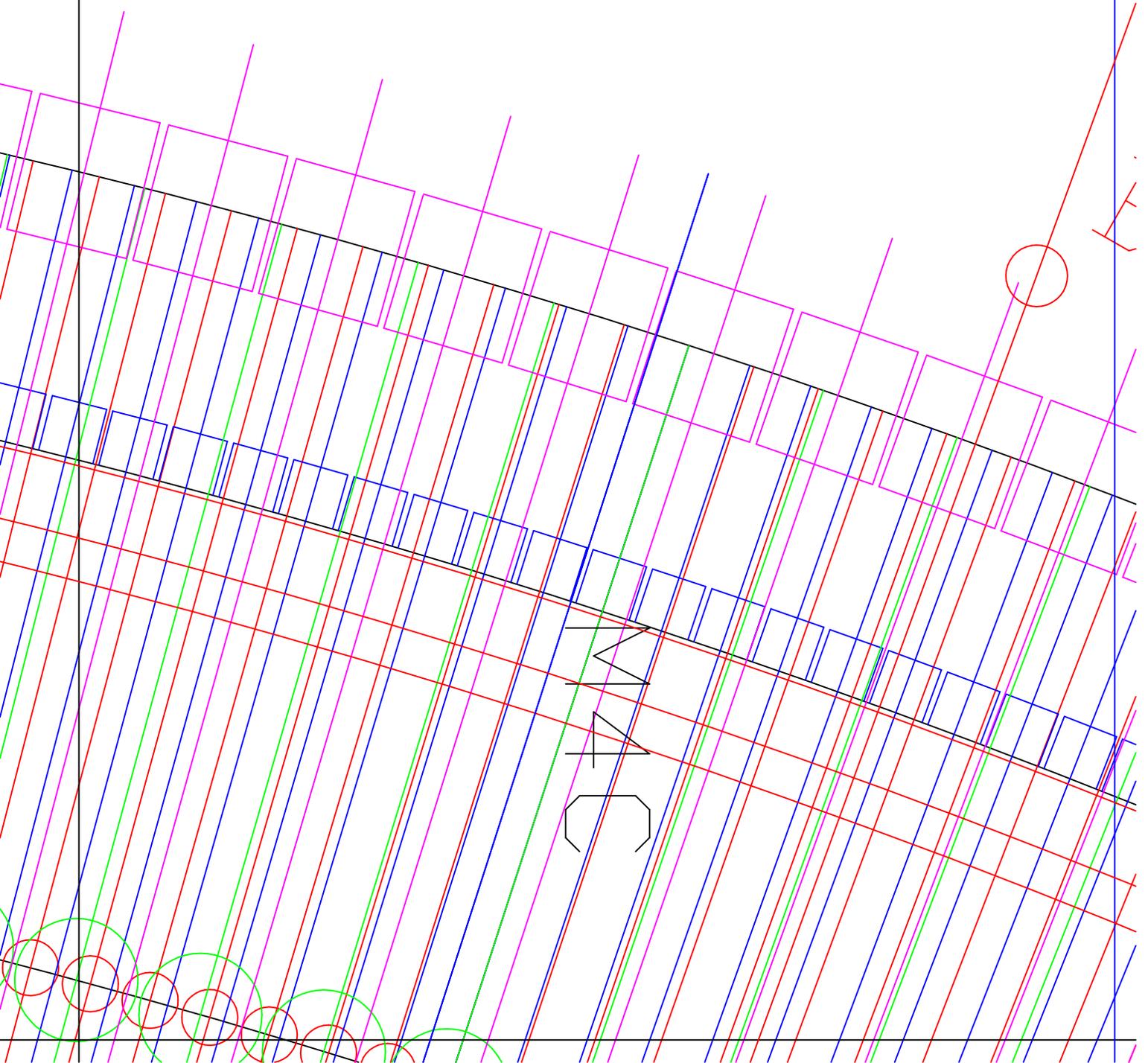


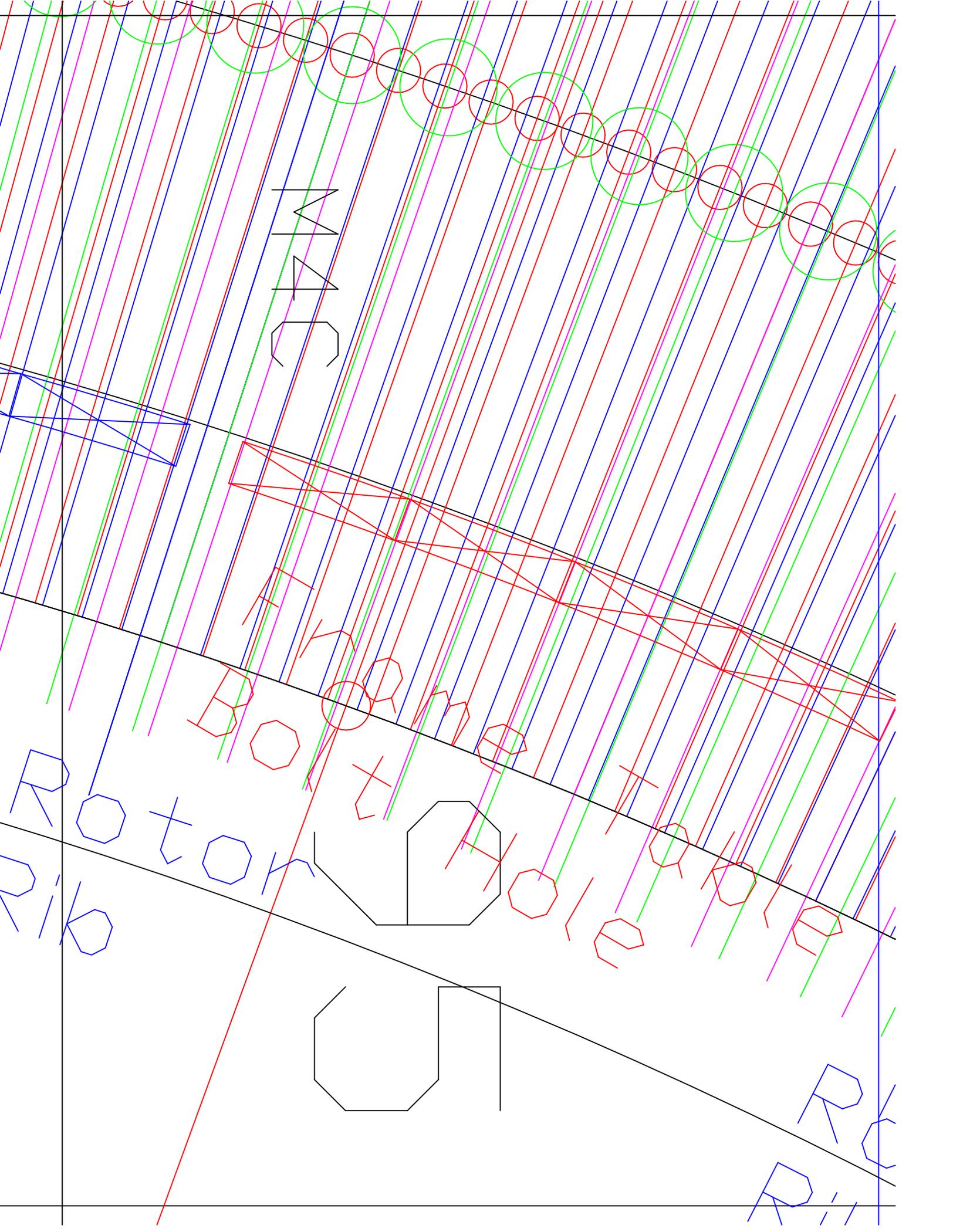
MAC





M
A
C





M
H
C

RIB

HOL

HOL

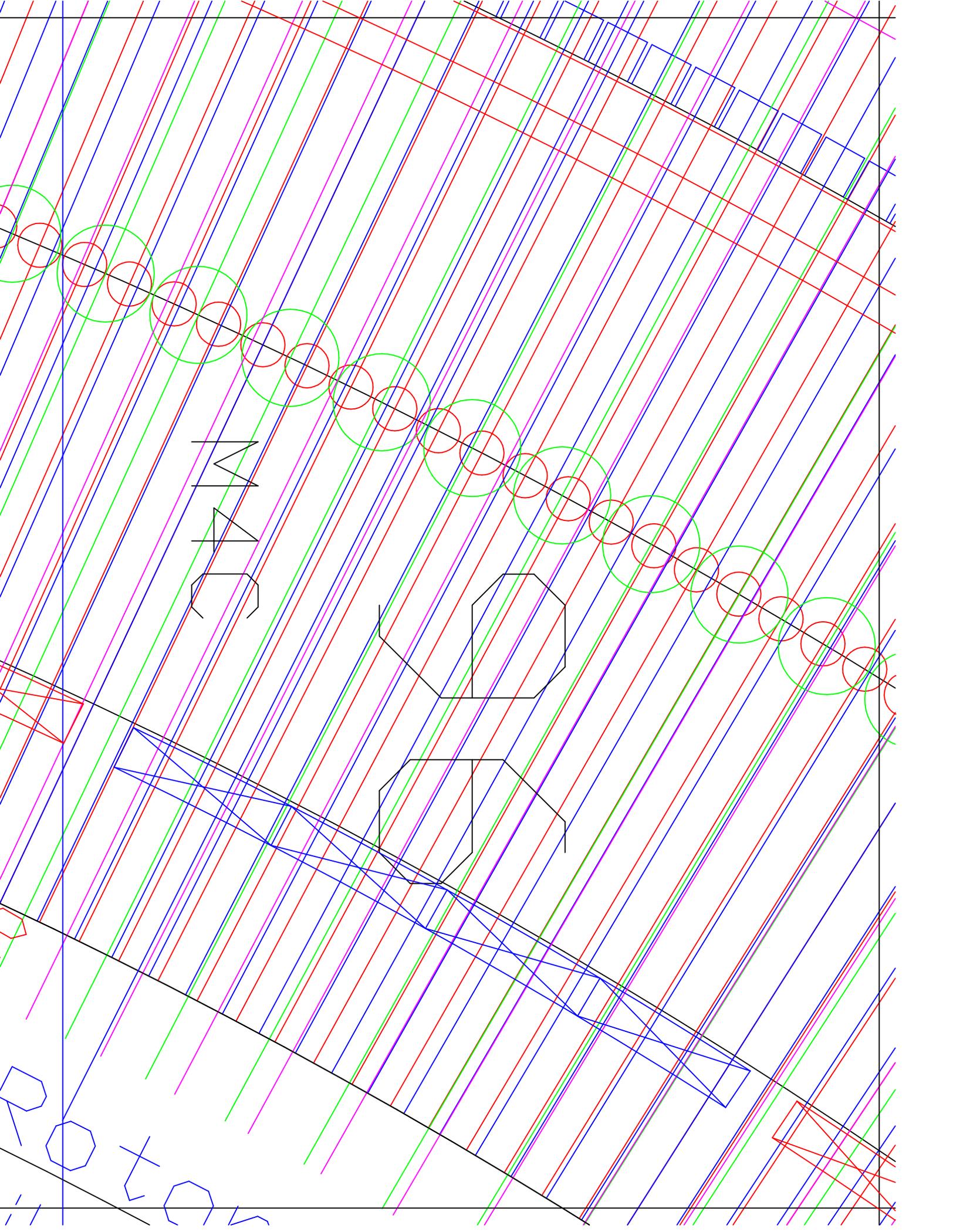
HOL

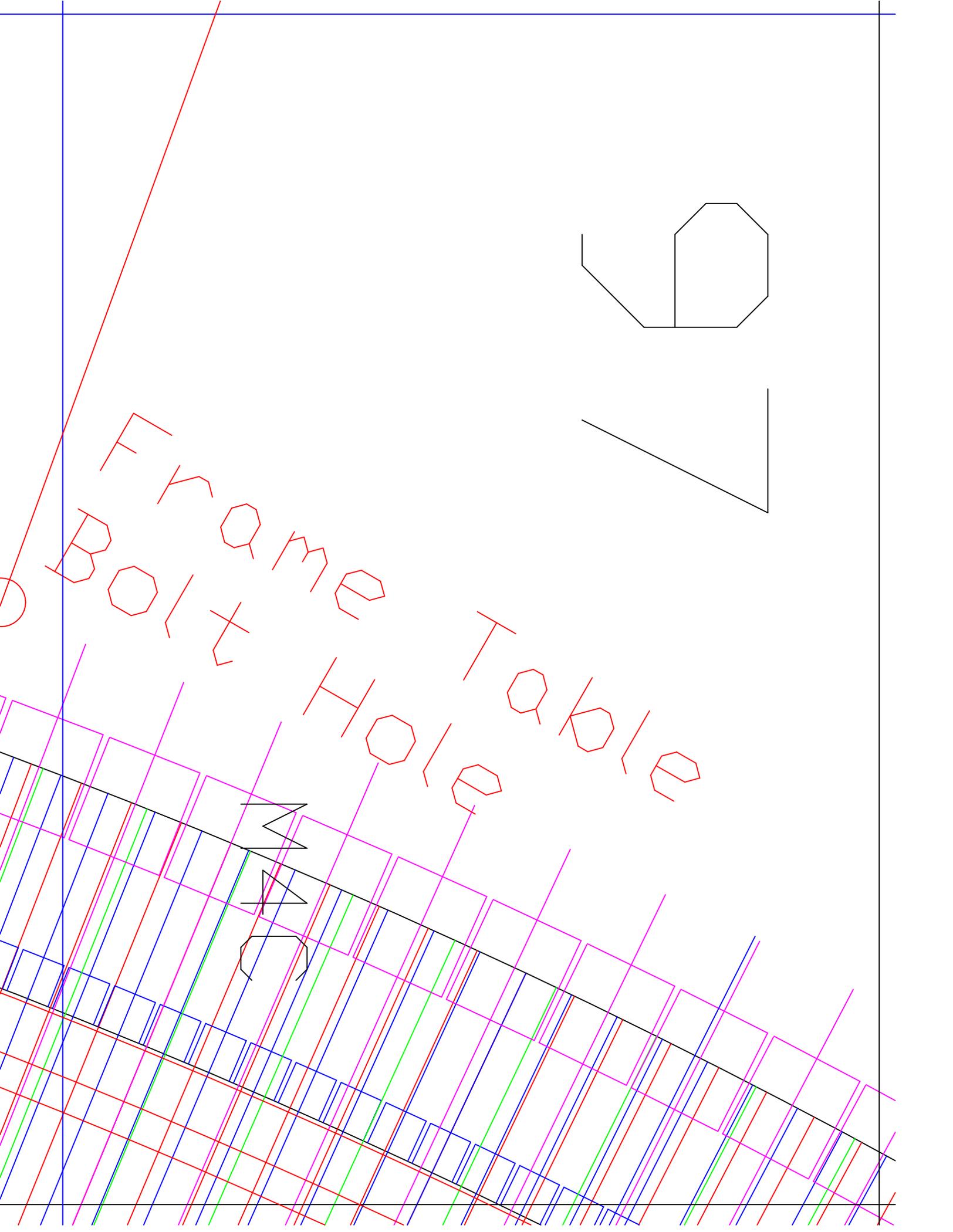
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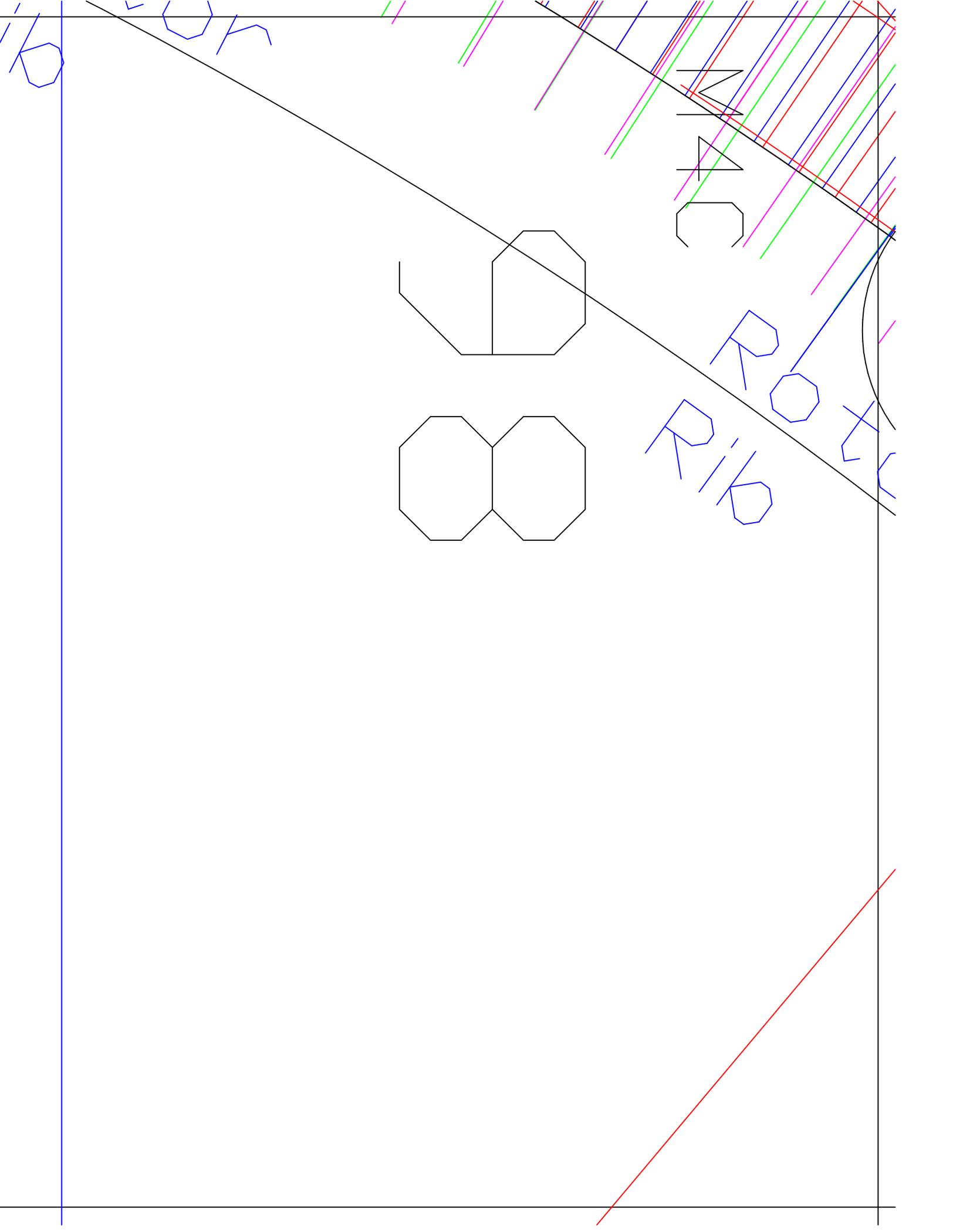
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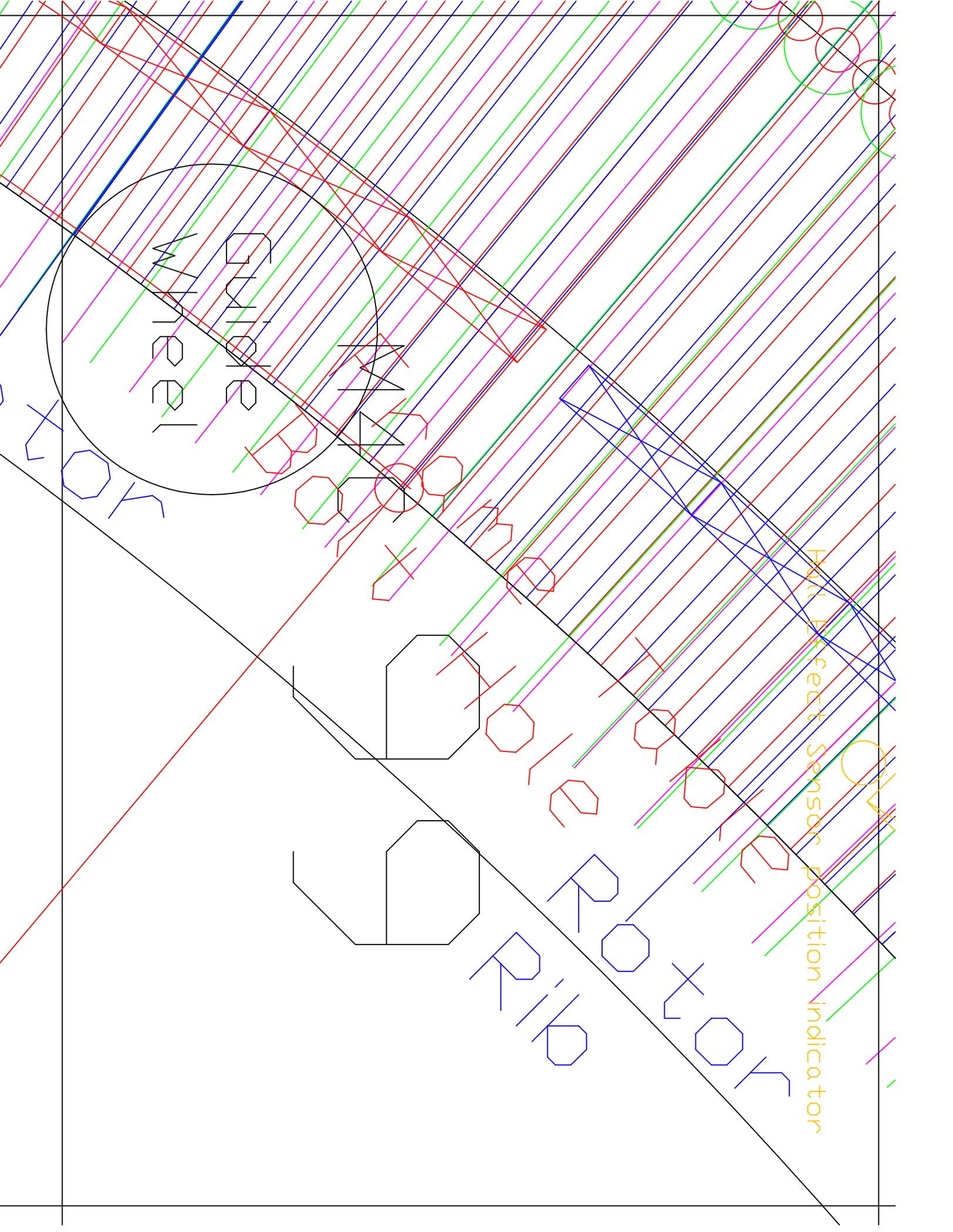
RIB

RIB









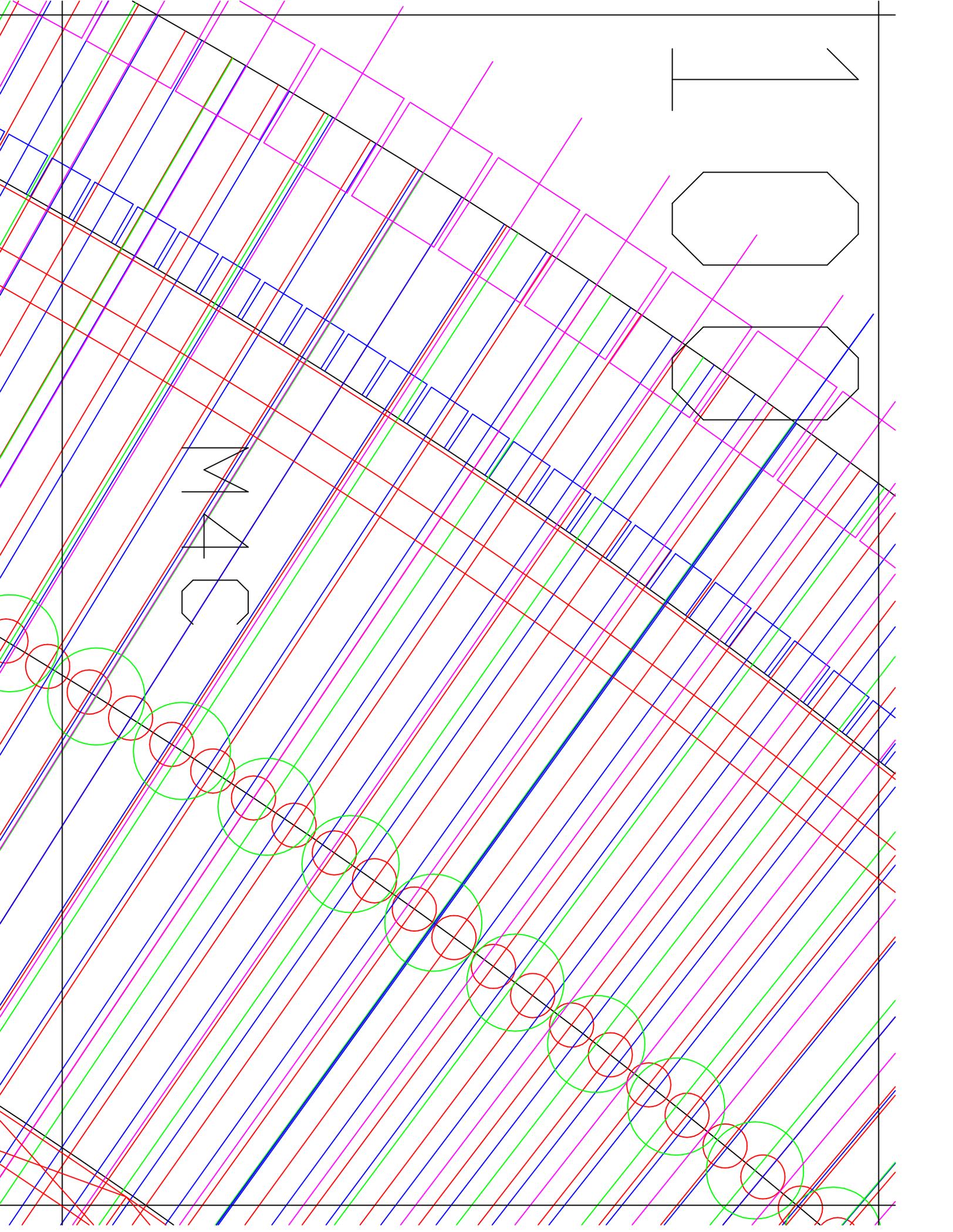
Gunnery Wheel

START

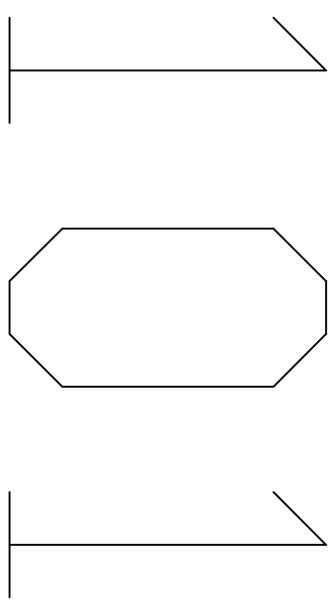
Hall Effect Sensor position indicator

FINISH

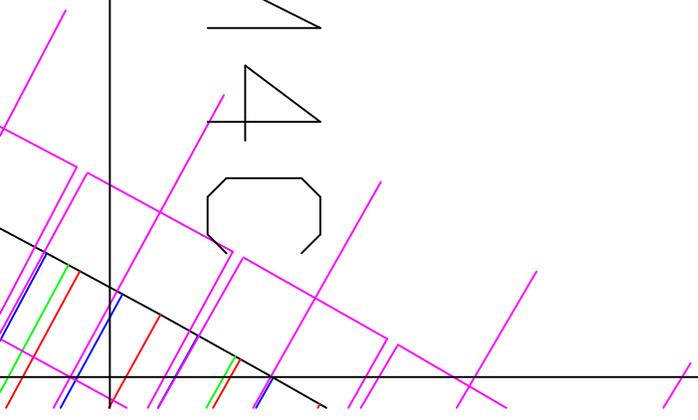
ROOMS

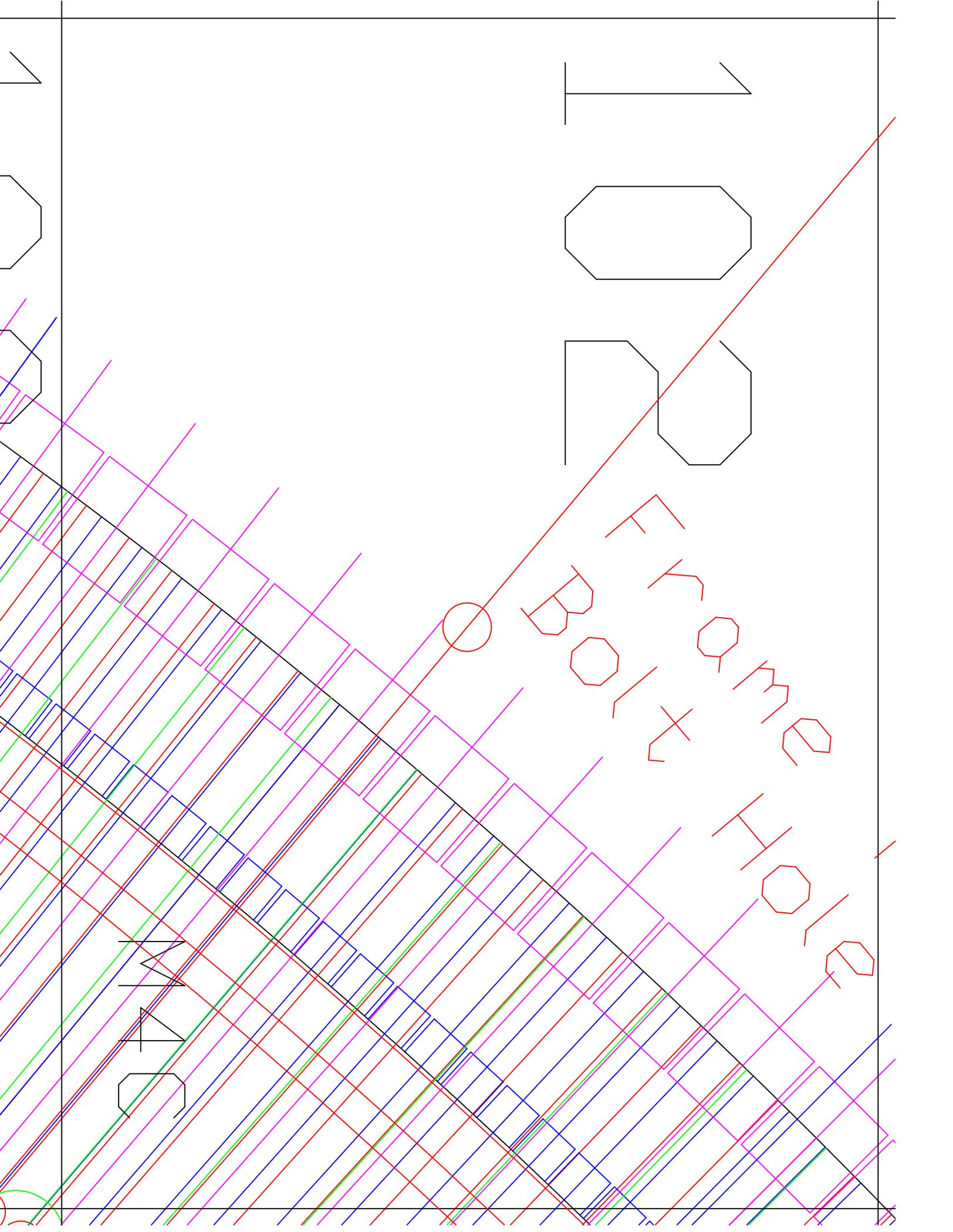


M4C



M4C





1

0

3

T

0

0

M

0

0

4

0

0

0

0

0

0

0

0

