

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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####

Print in Black and White

Lower
Left

M

80

81

Frame Table
Bolt Hole

Rotor
Rib

Rotor
Rib

Rotor
Rib

83

Frame Table
Bolt Hole

79

76

Rotor
Rib

Frame
Sect
14

Frame
Sect
13

Frame
Sect
12

Frame
Sect
11

Frame
Sect
10

Frame
Sect
9

Frame
Sect
8

K

N

70

65

64

54

Frame Table
Bolt Hole

67

62

61

Frame Table
Bolt Hole

Frame Table
Bolt Hole

Frame Table
Bolt Hole

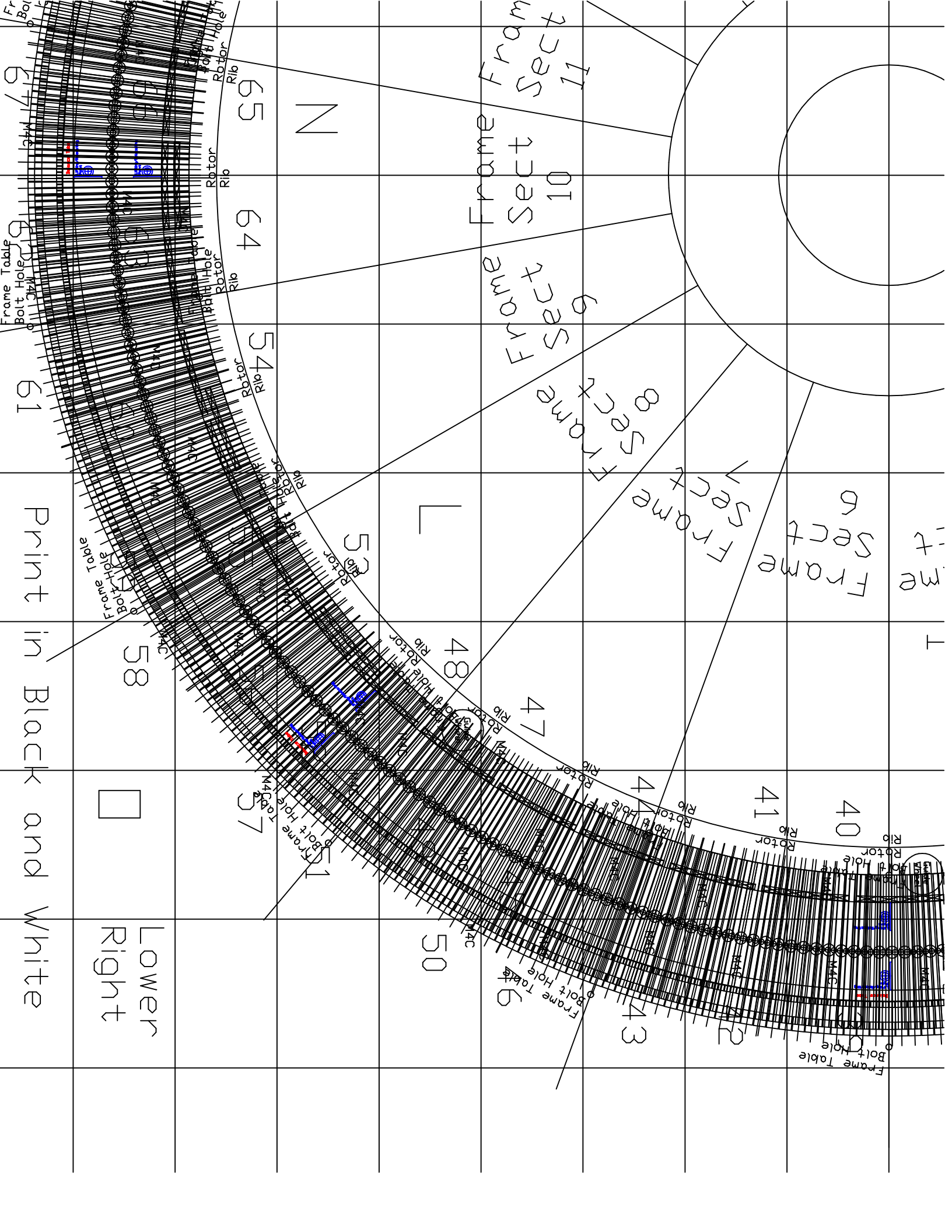
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Bolt Hole

Frame Table
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Frame Table
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Frame Table
Bolt Hole



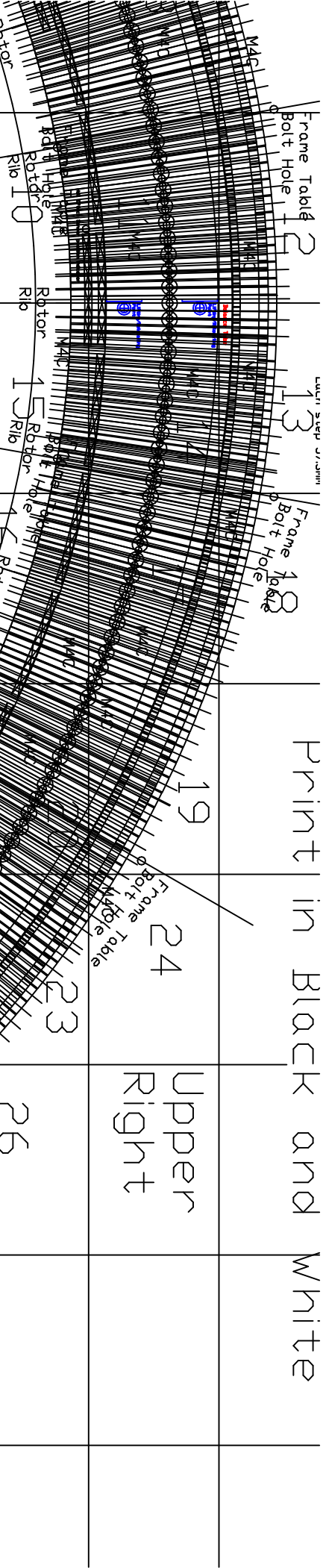
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Frame Table 2
Bolt Hole 1

Frame 18
Bolt Hole

Print in Black and White

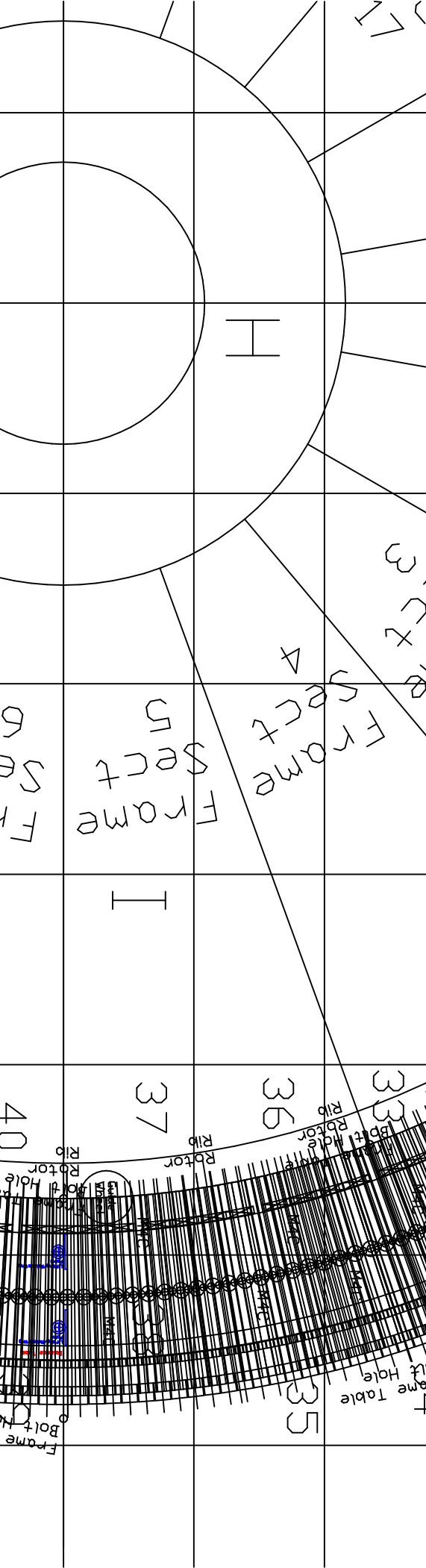
Upper
Right



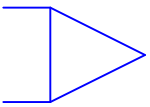
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F

Frame Sect 1
Frame Sect 2
Frame Sect 3
Frame Sect 4
Frame Sect 5
Frame Sect 6



H



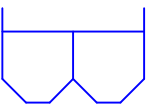
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M4C

Frame Hole
Bolt Table

2

M4C





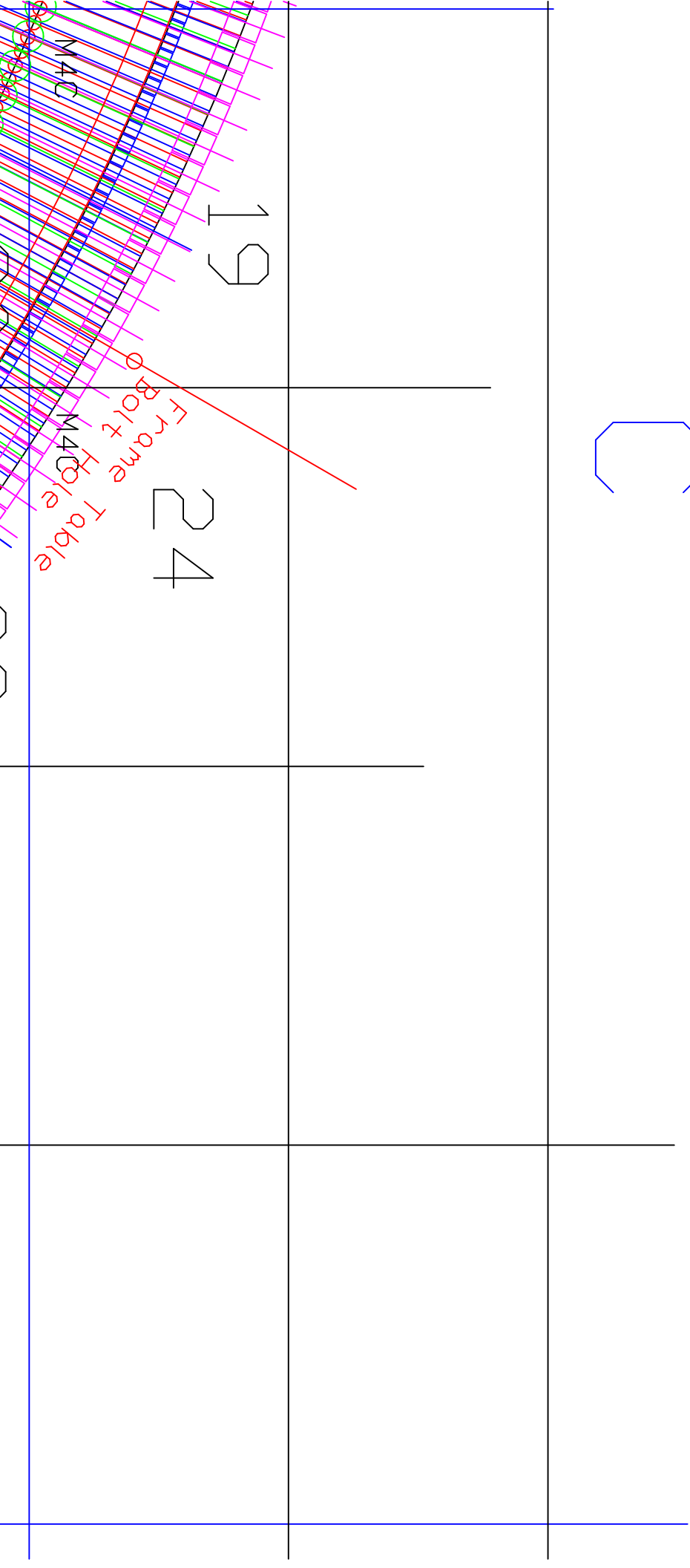
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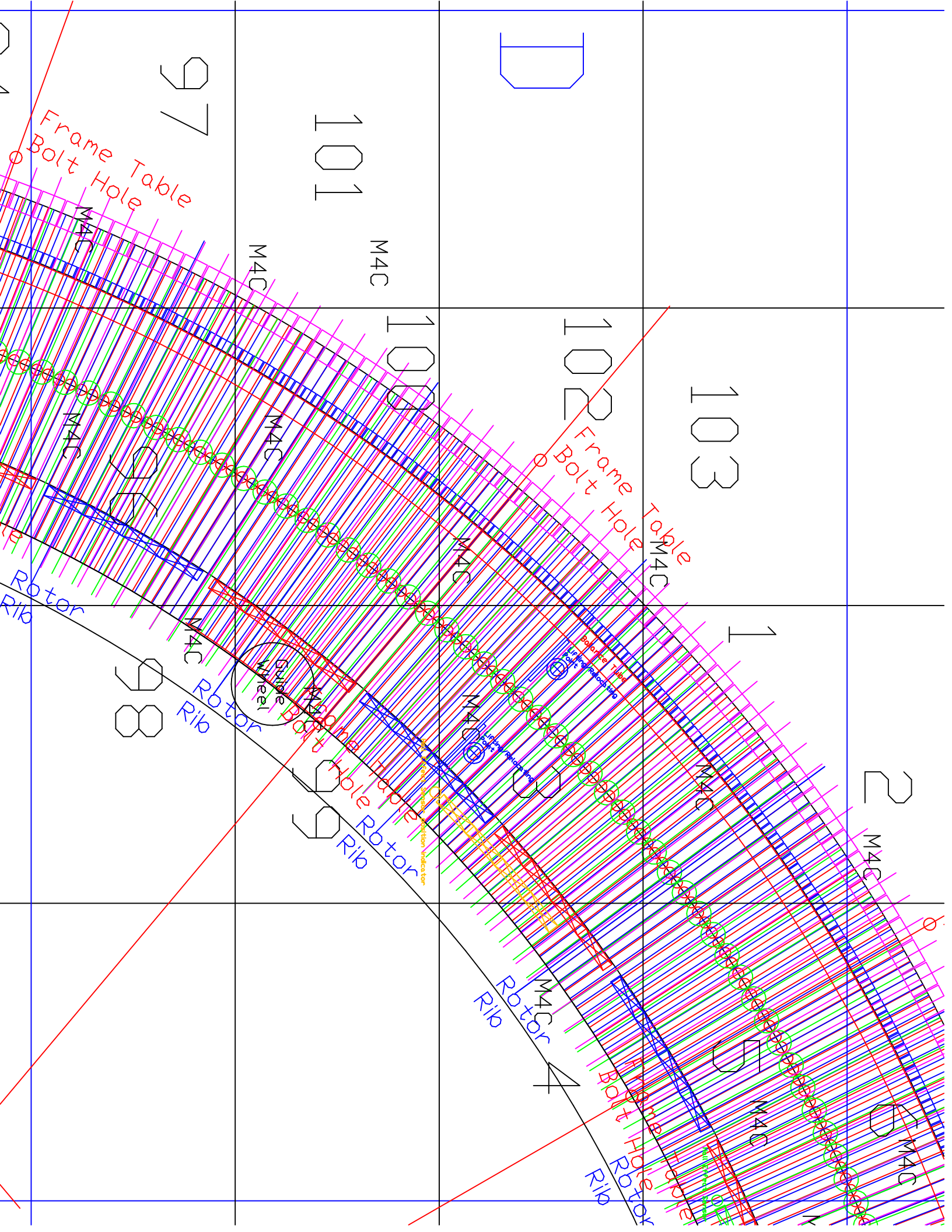
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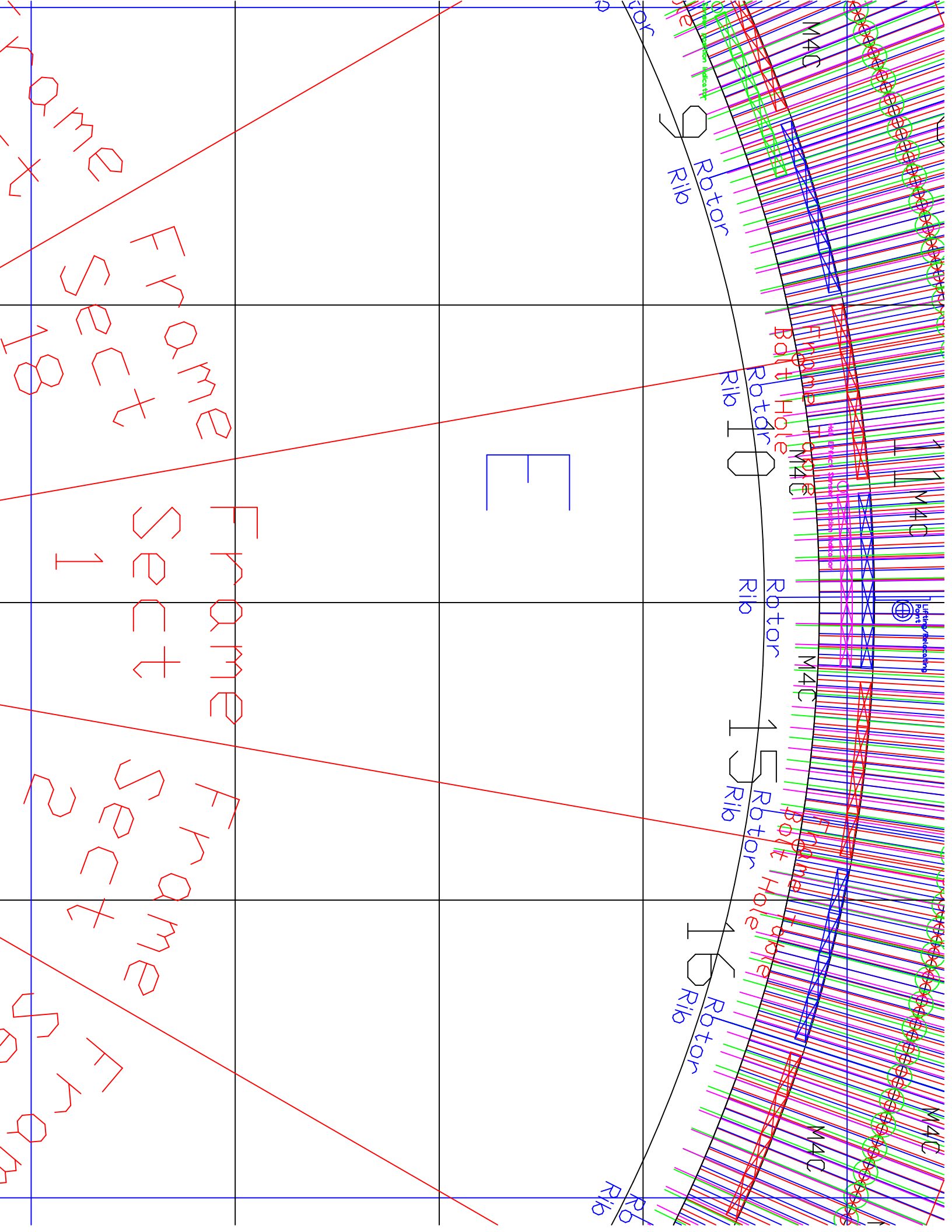
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Bolt Hole

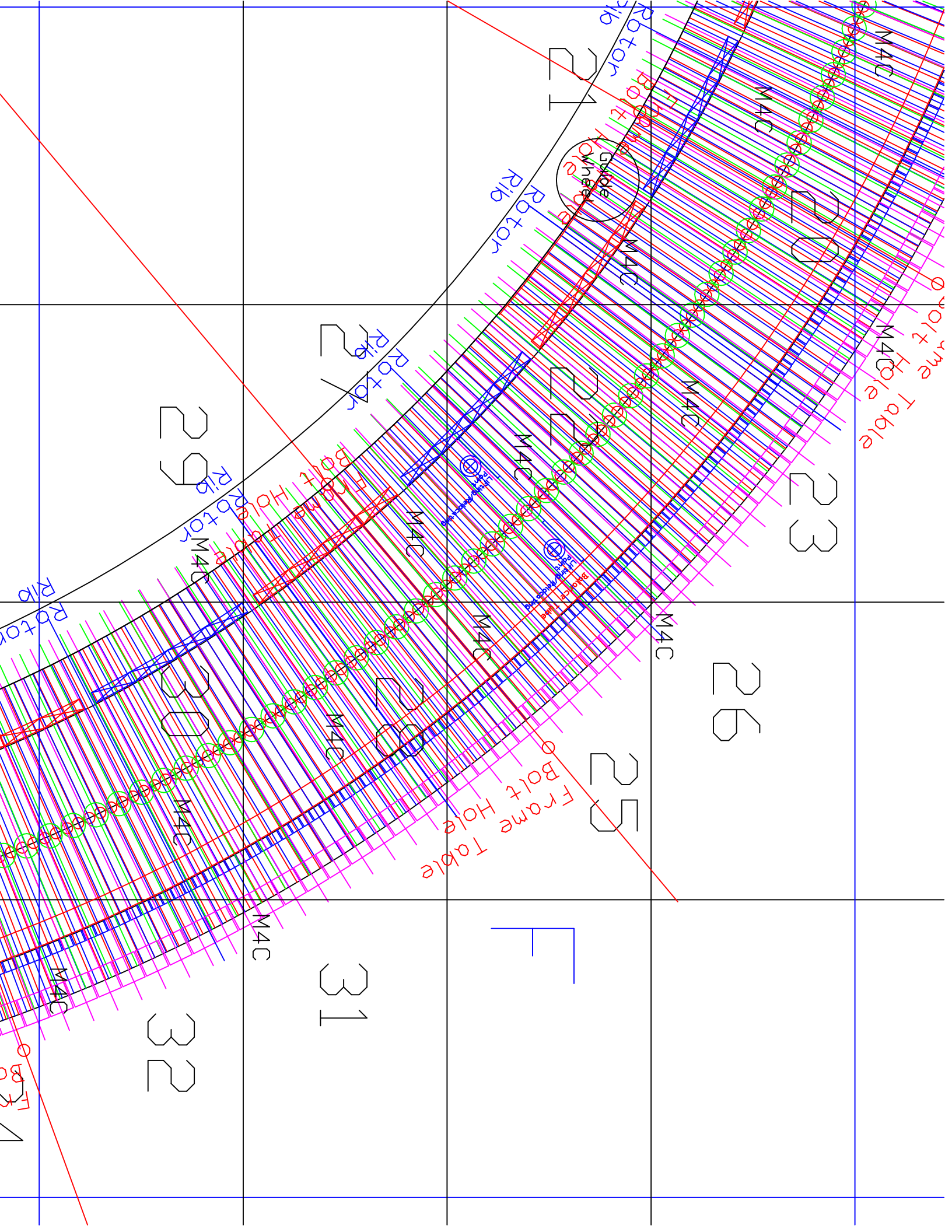
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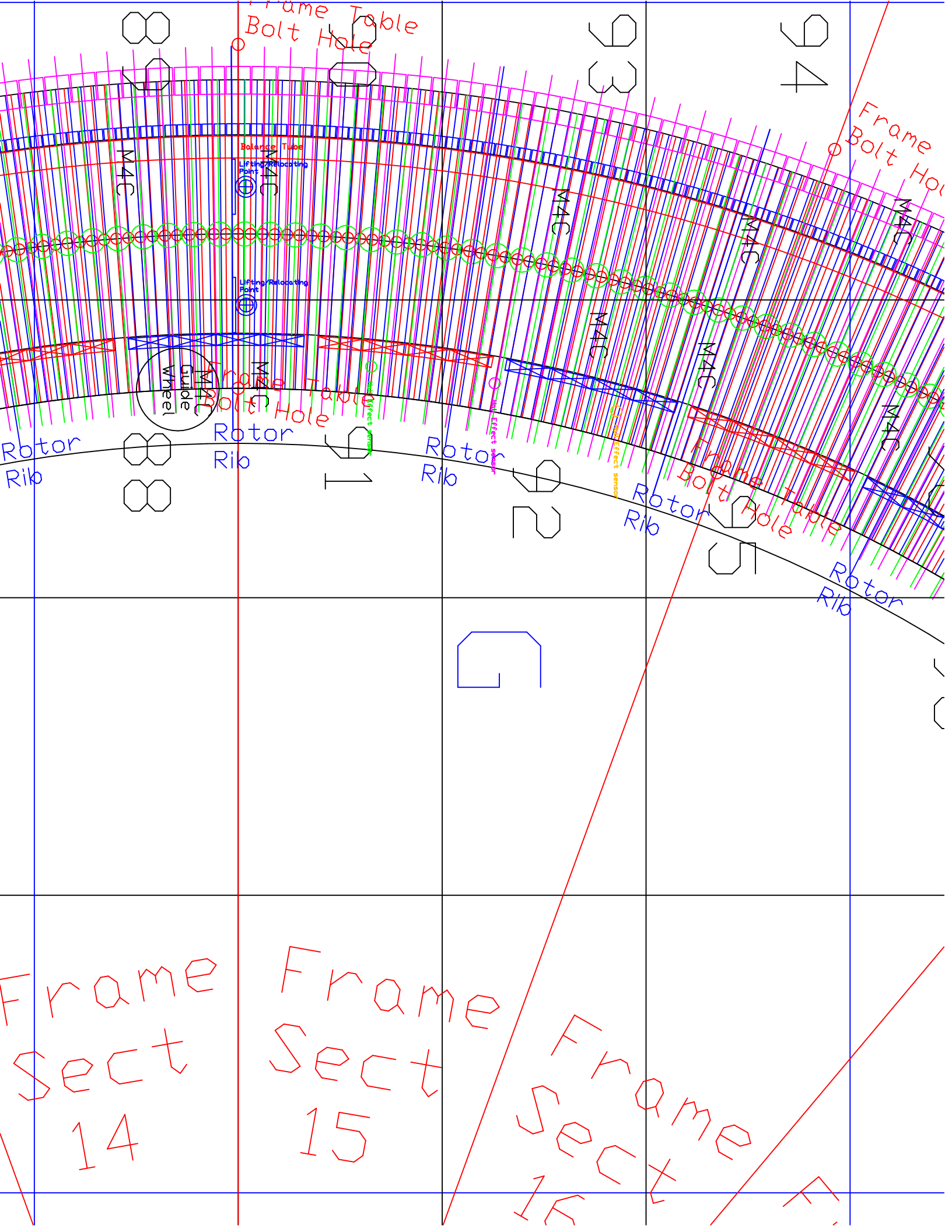
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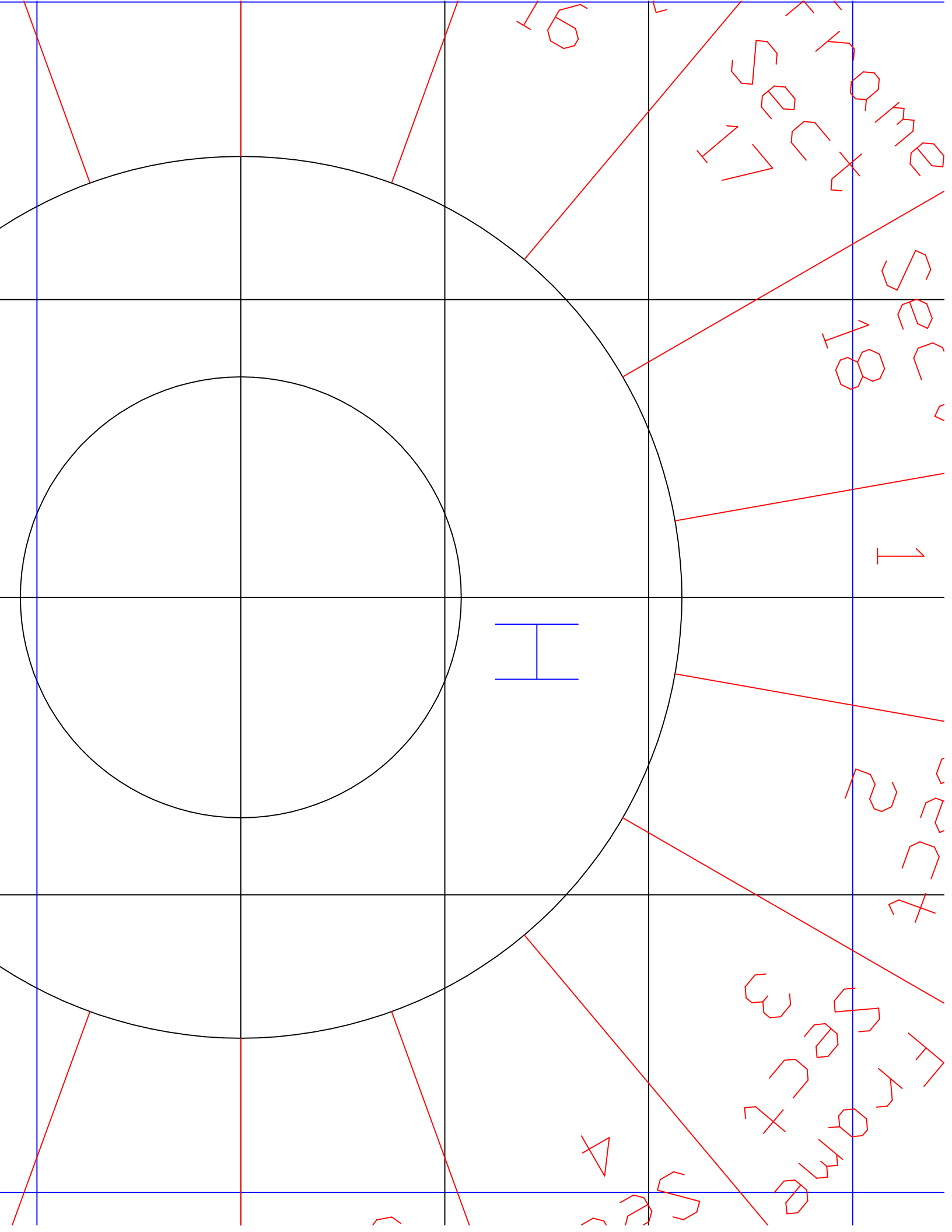


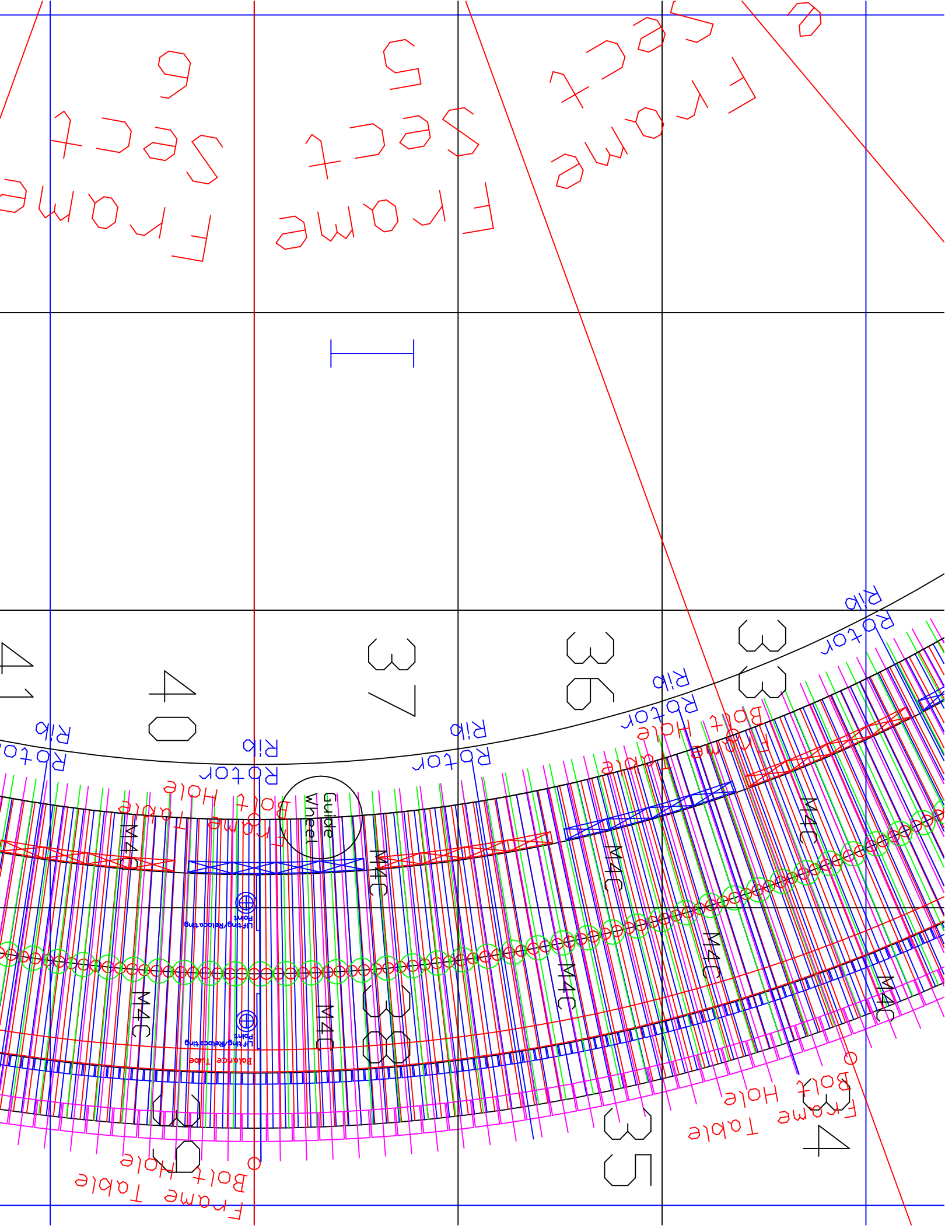


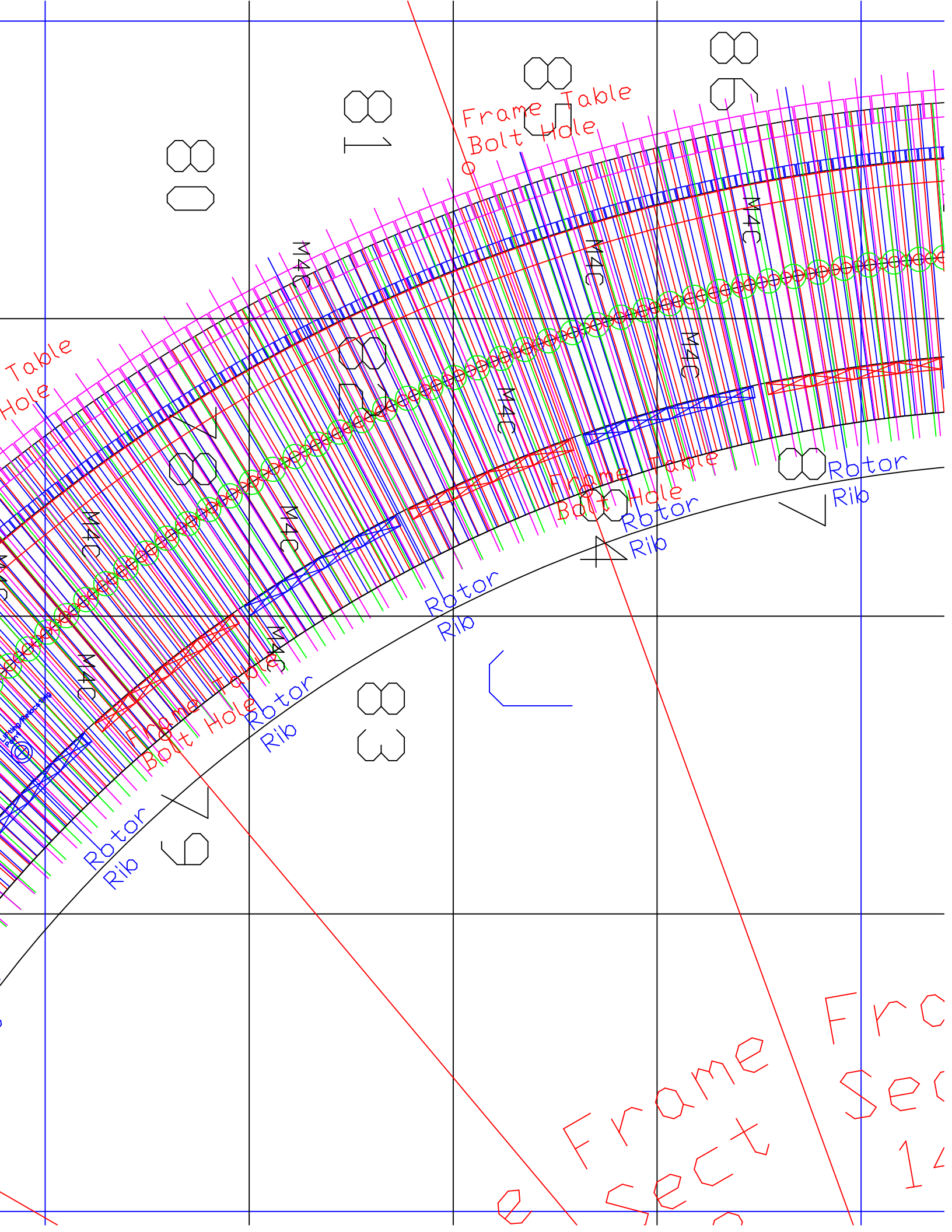














Table

Not some
down

41 Rotor

Rotor

4

Rotor

47

48

Rotor

Rotor

40

Guide
Wheel

45

MAC

50

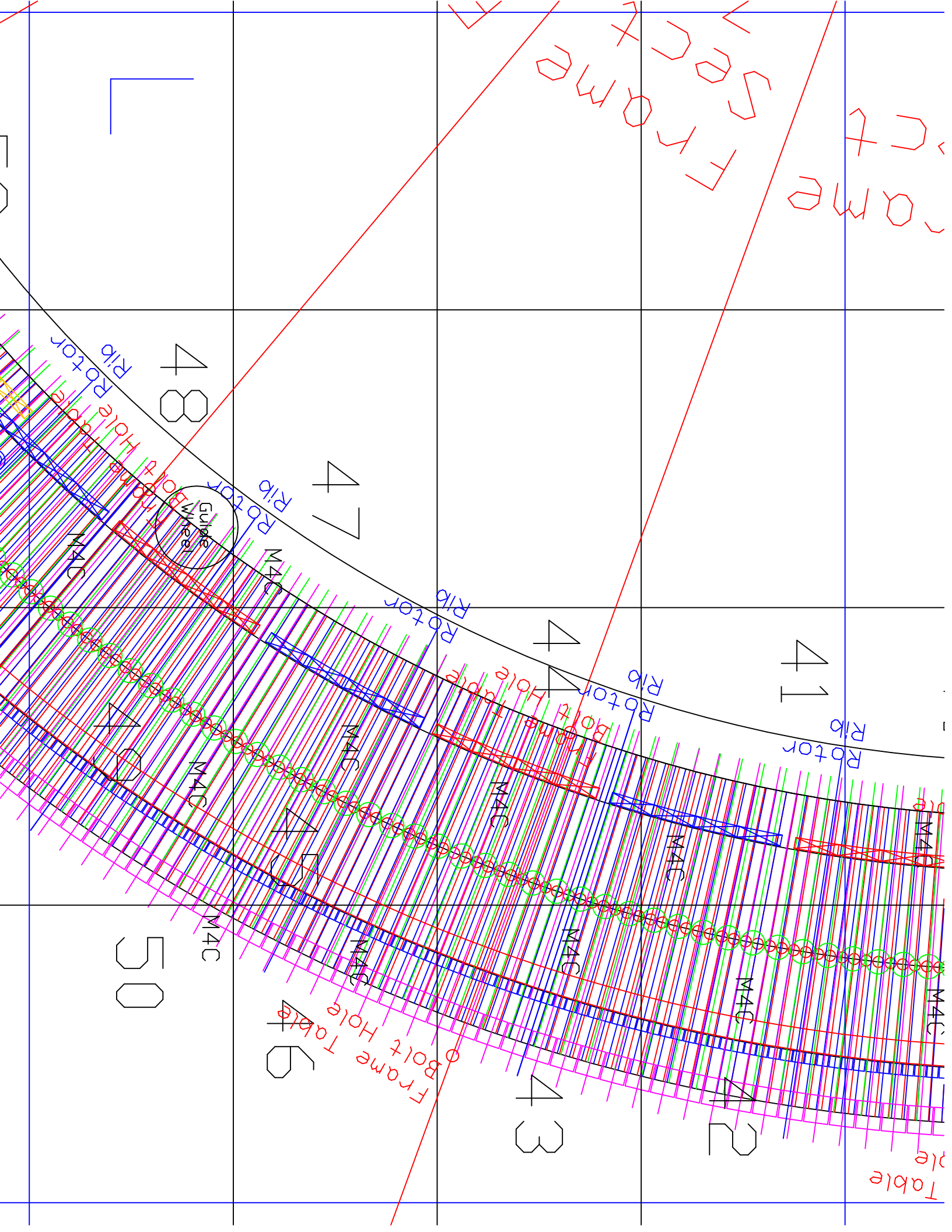
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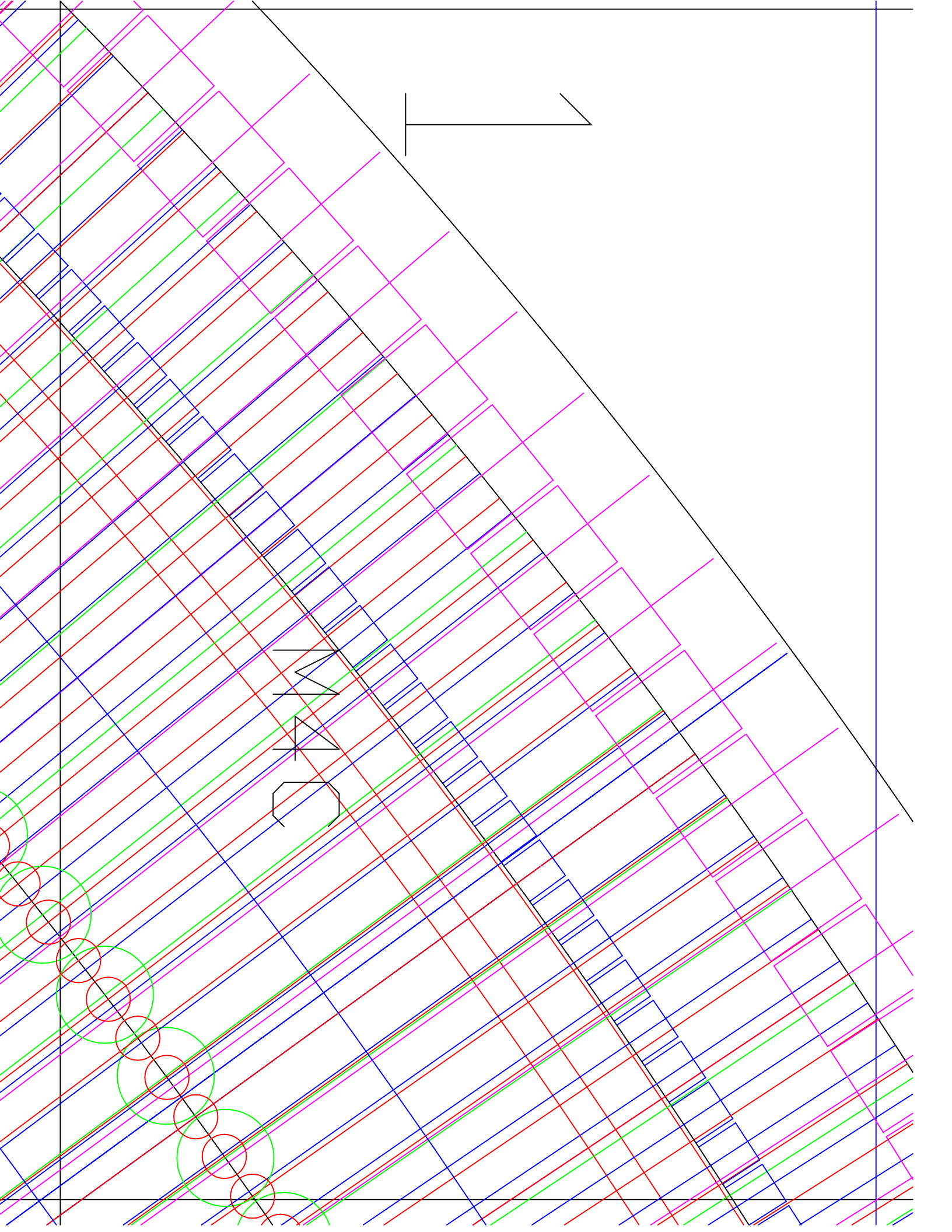
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Bolt Hole

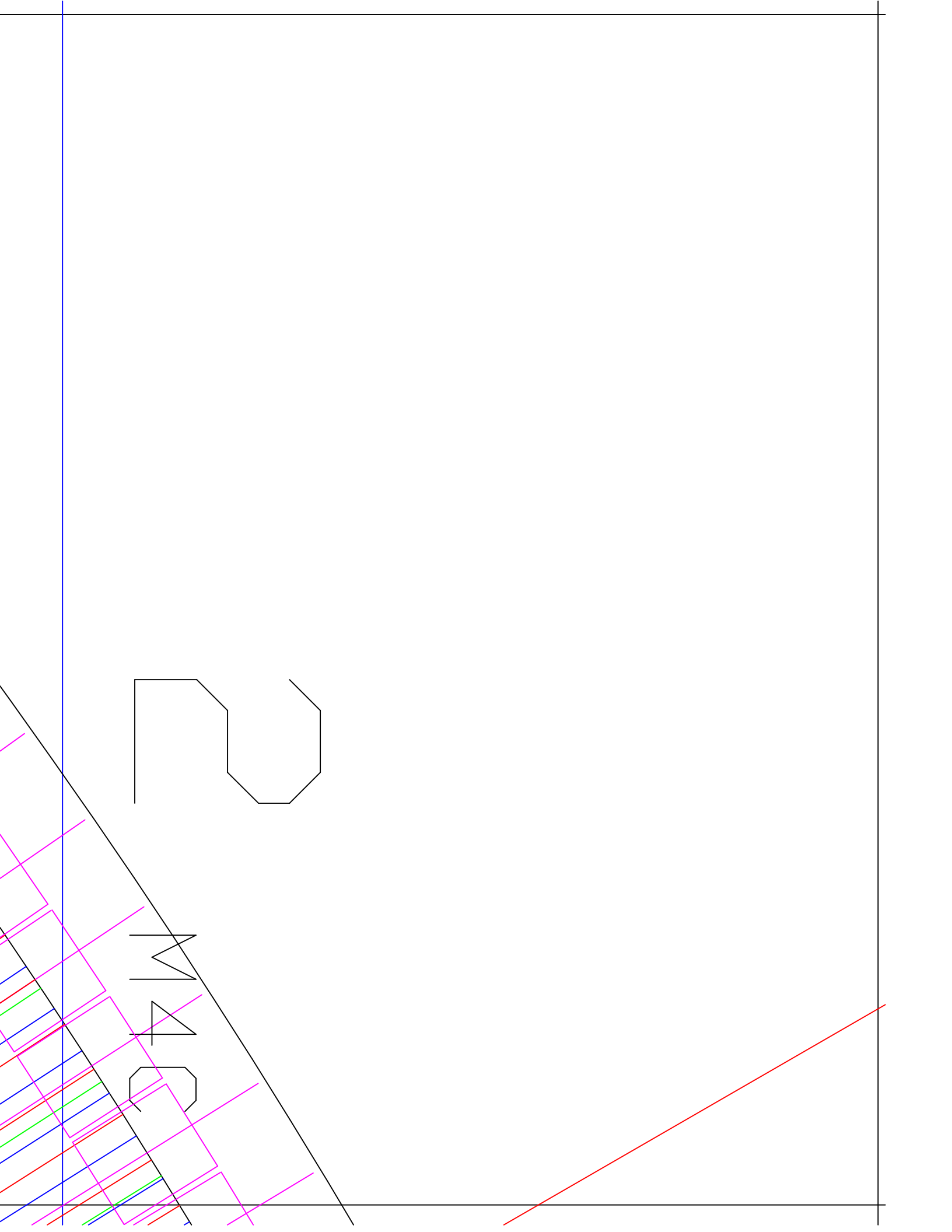
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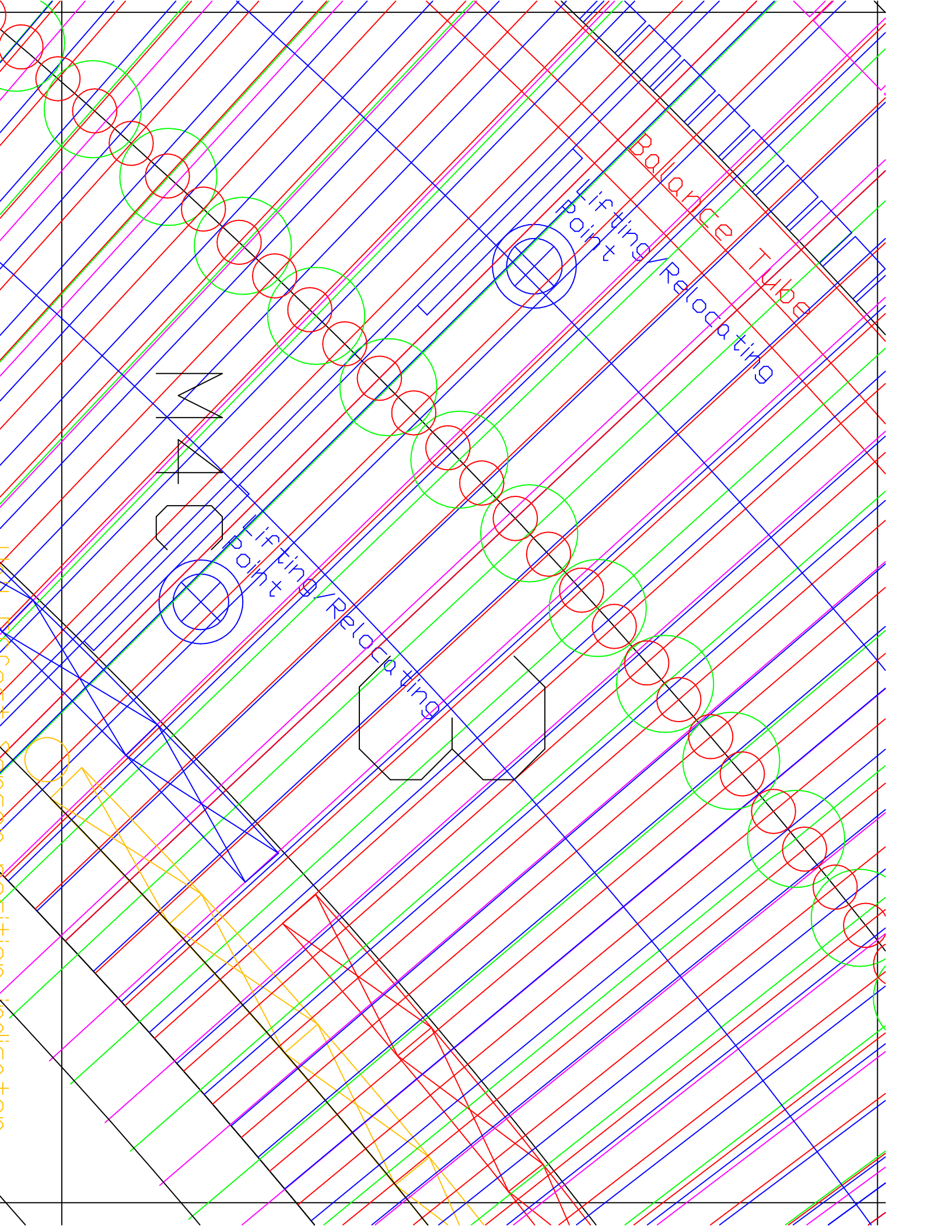
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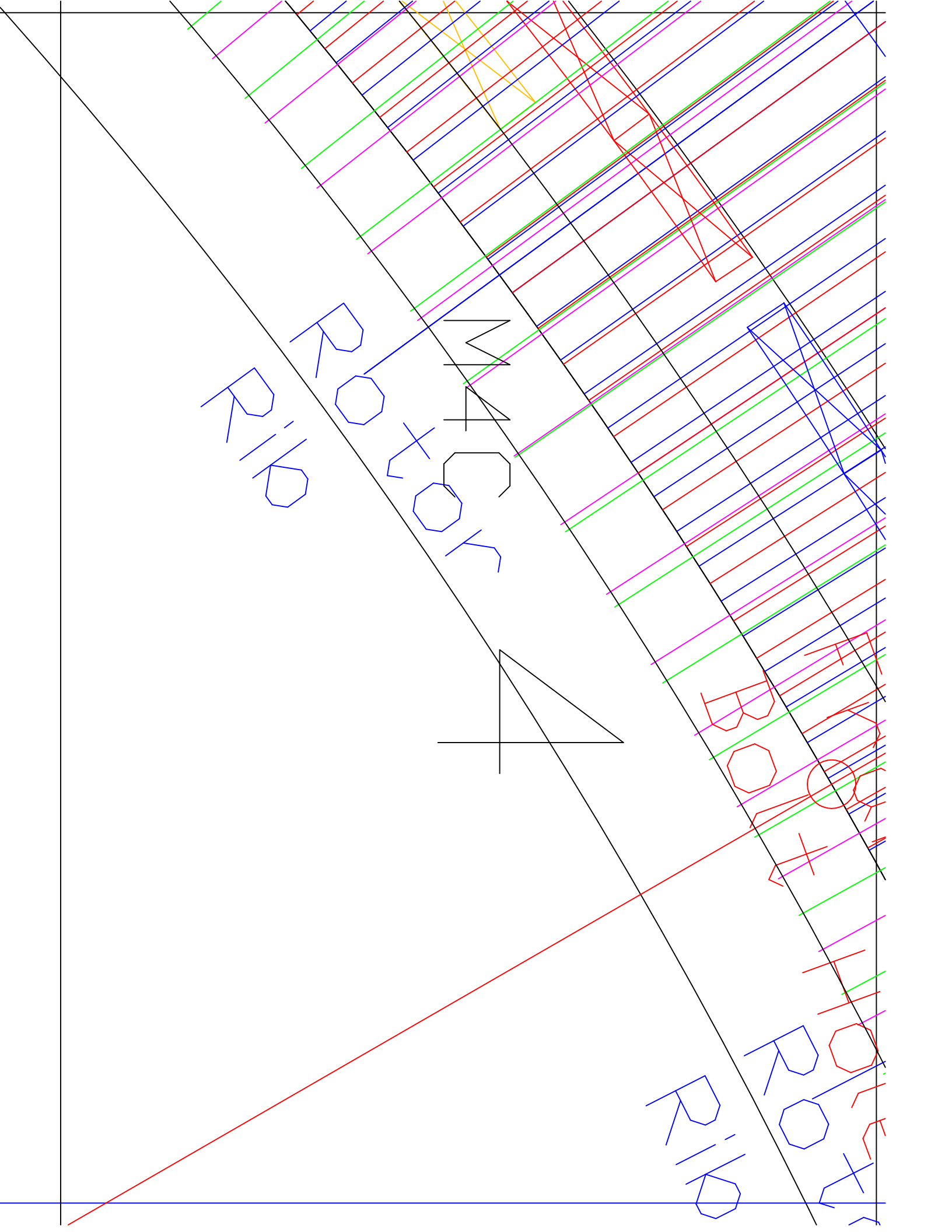
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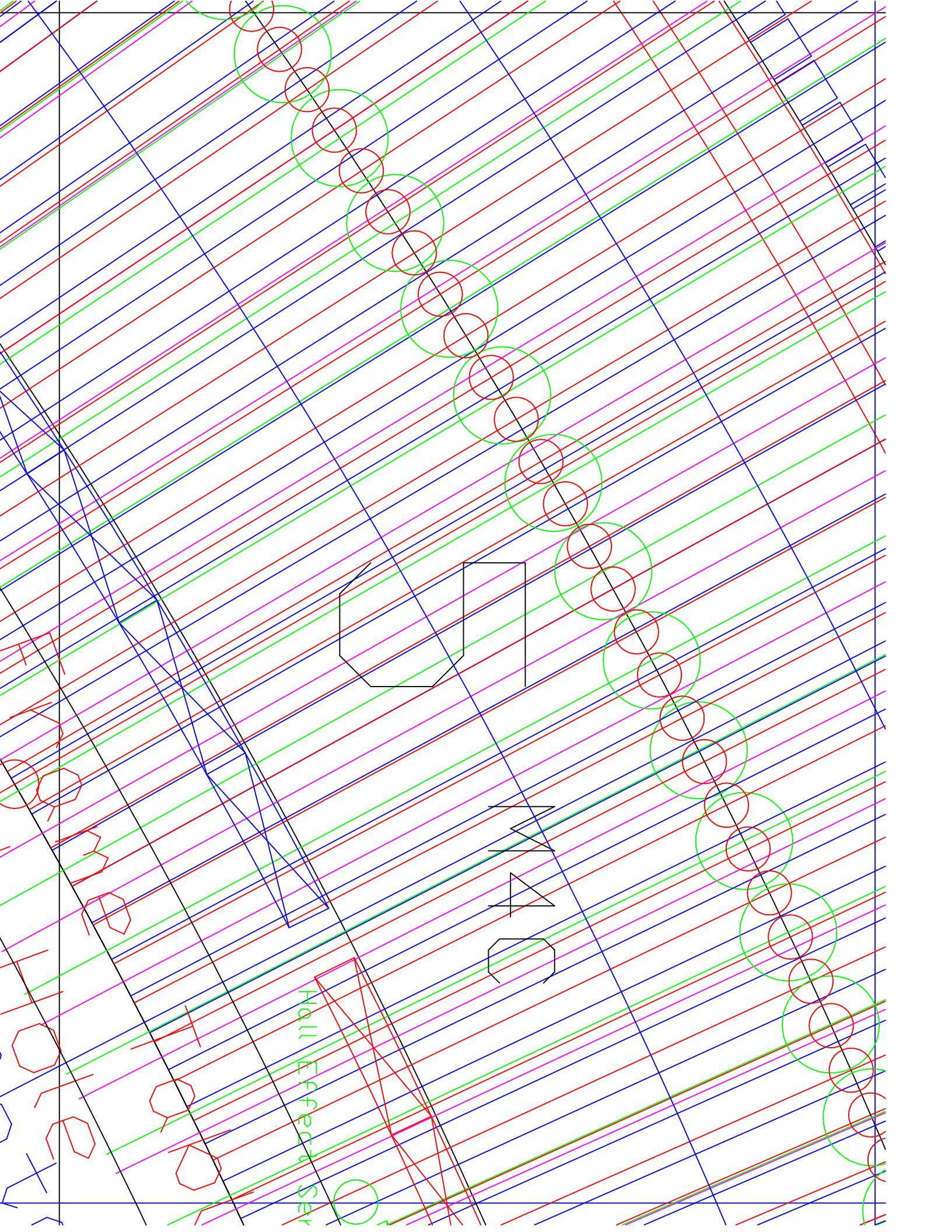


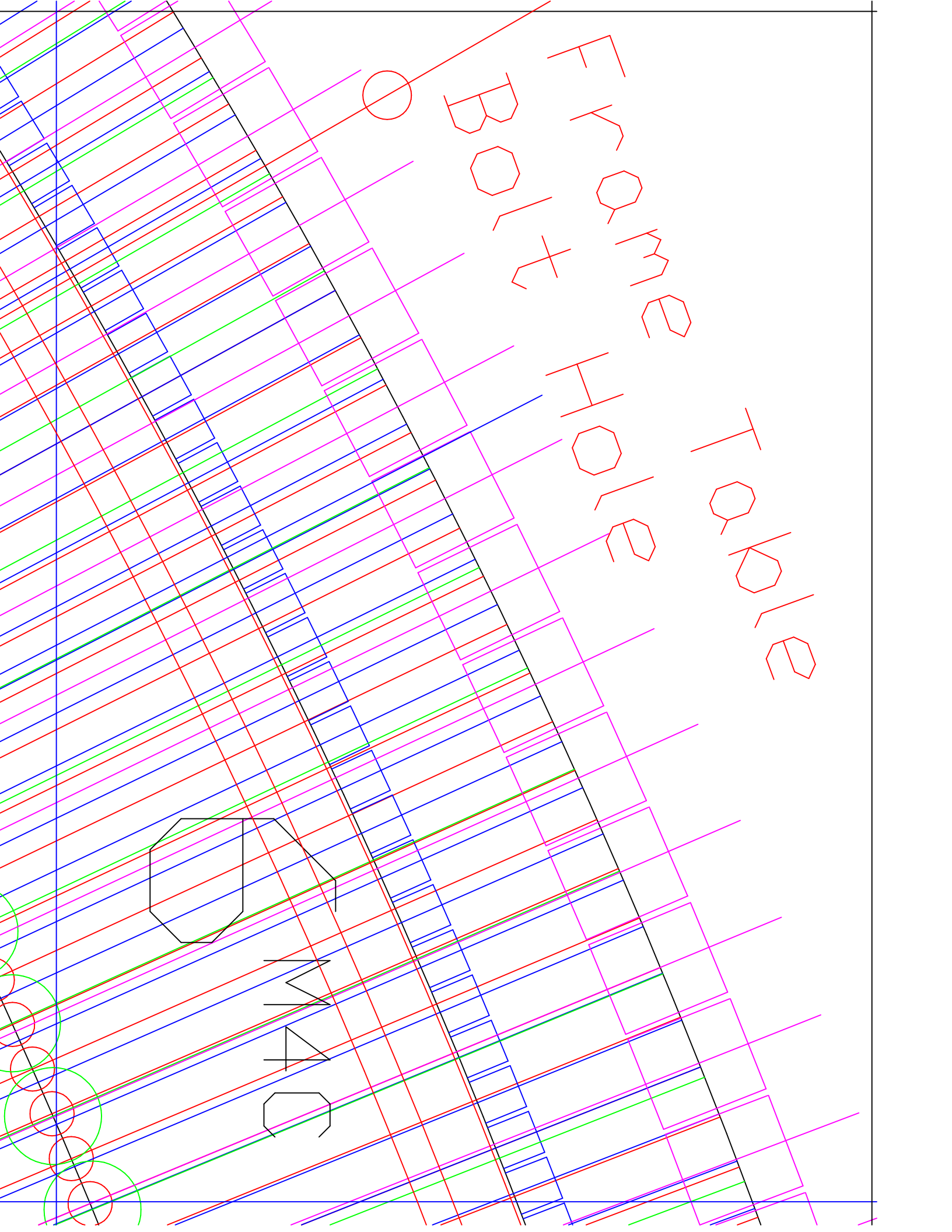


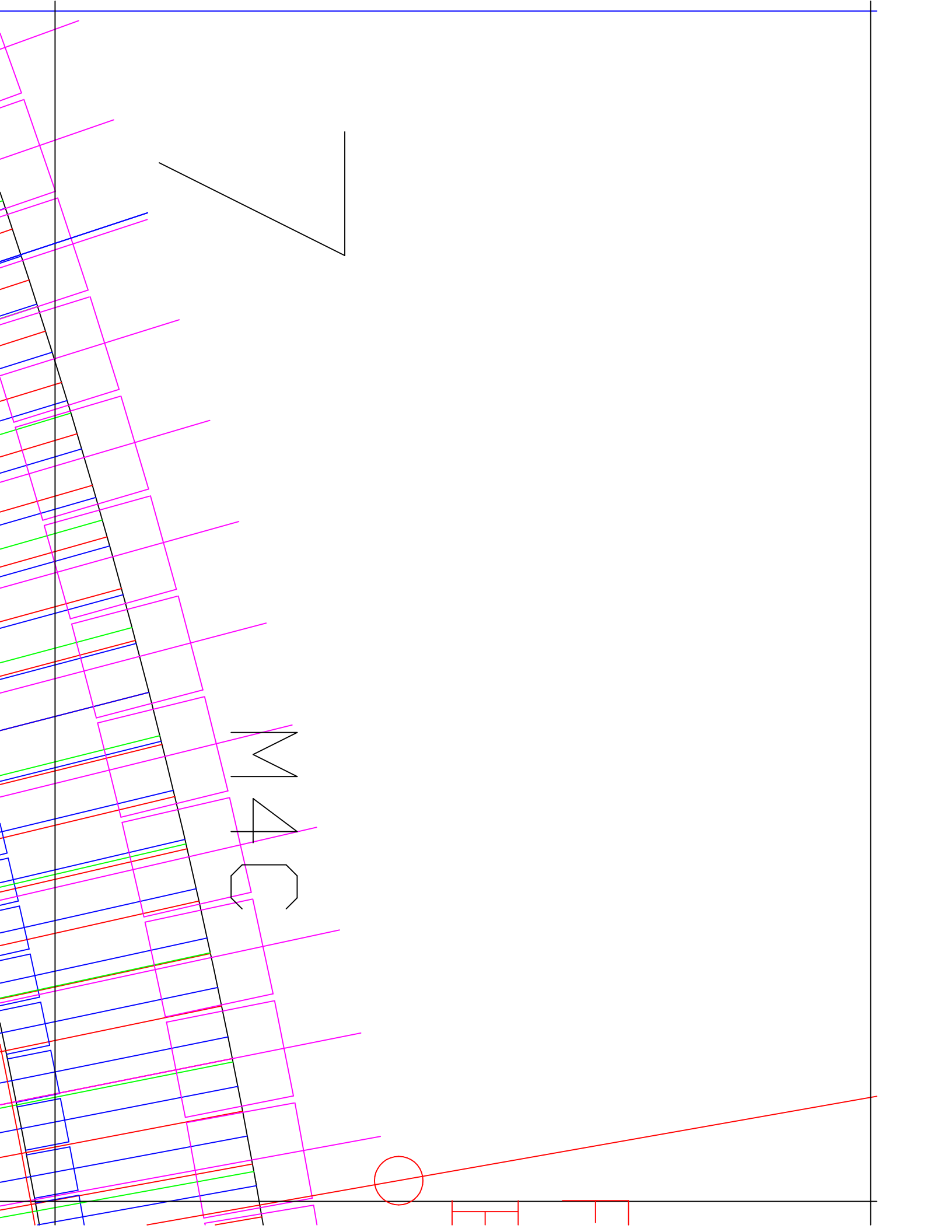


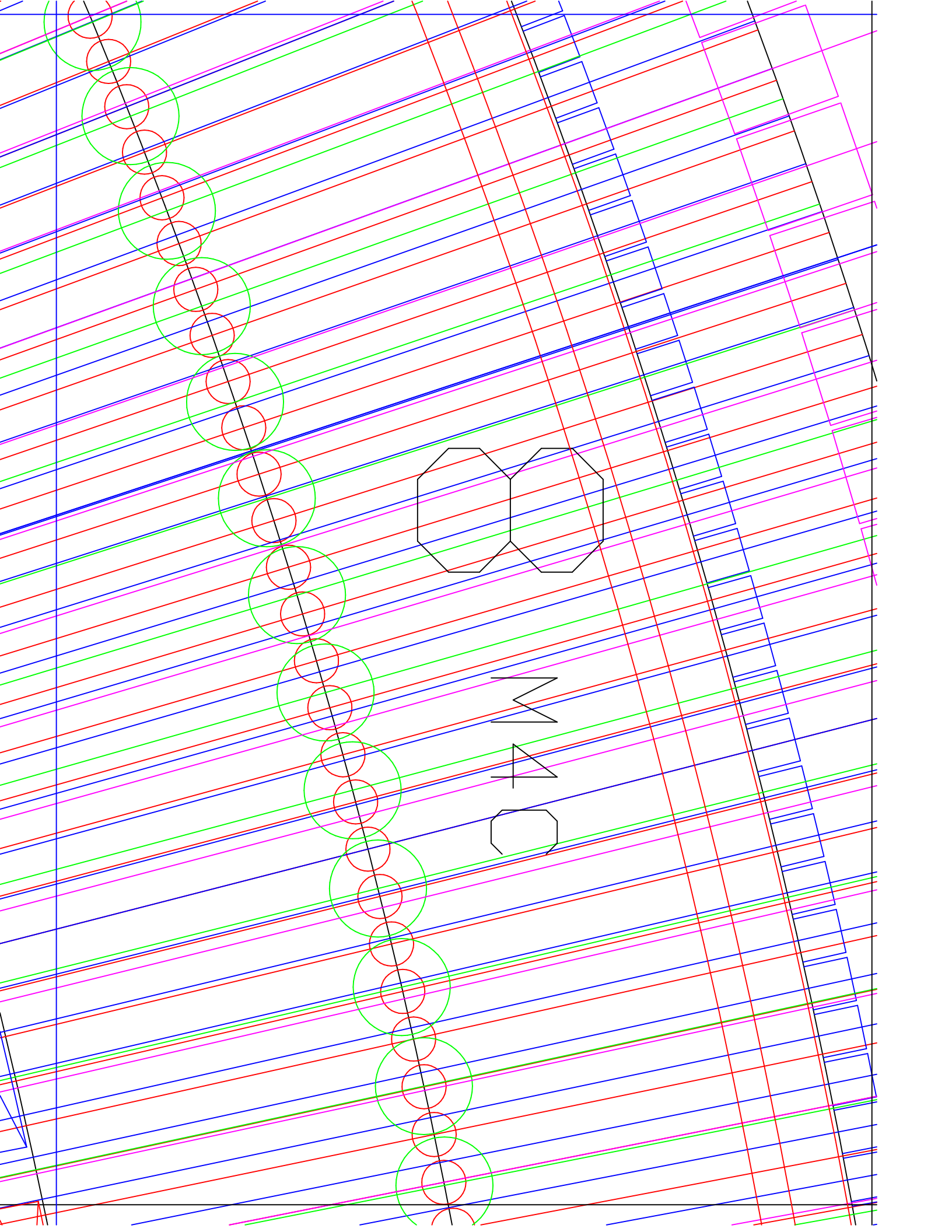






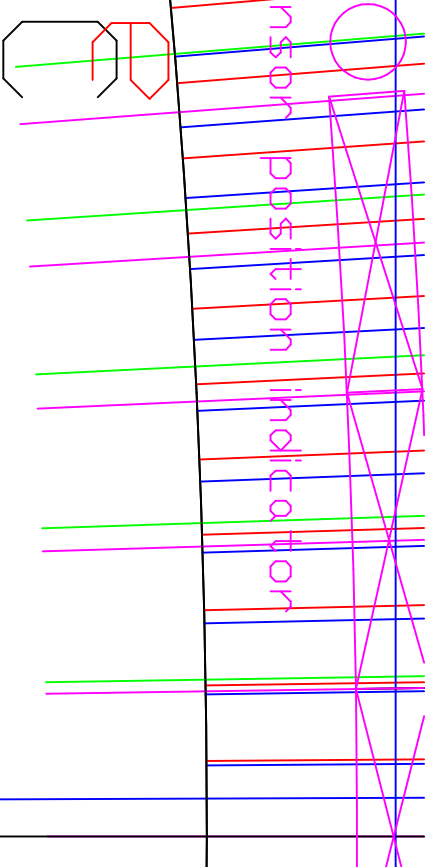








Hall Effect Sensor position indicator



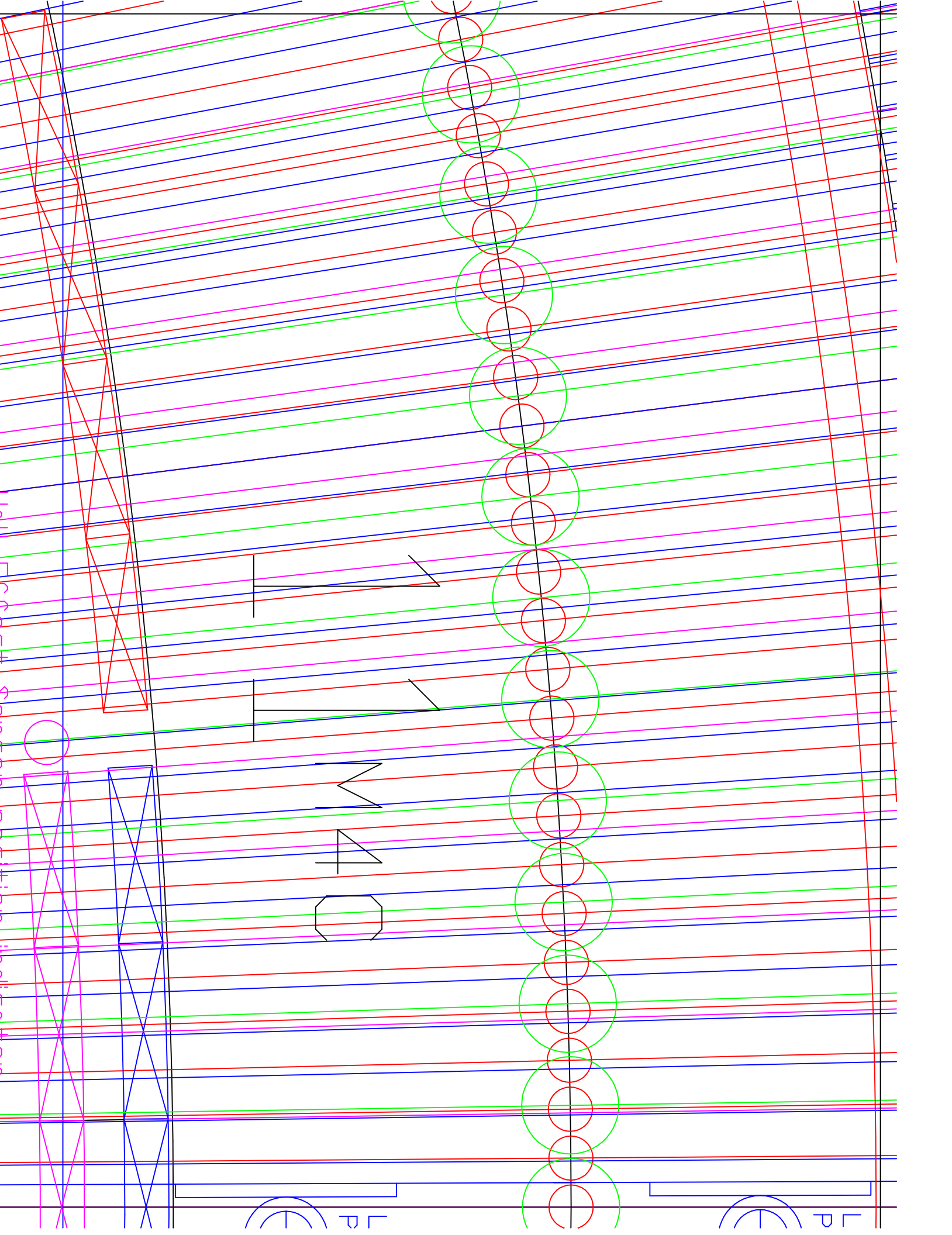
Bottom
Hole
Weld



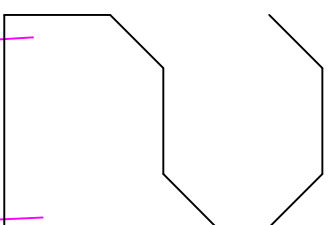
Rock
RIP

RO

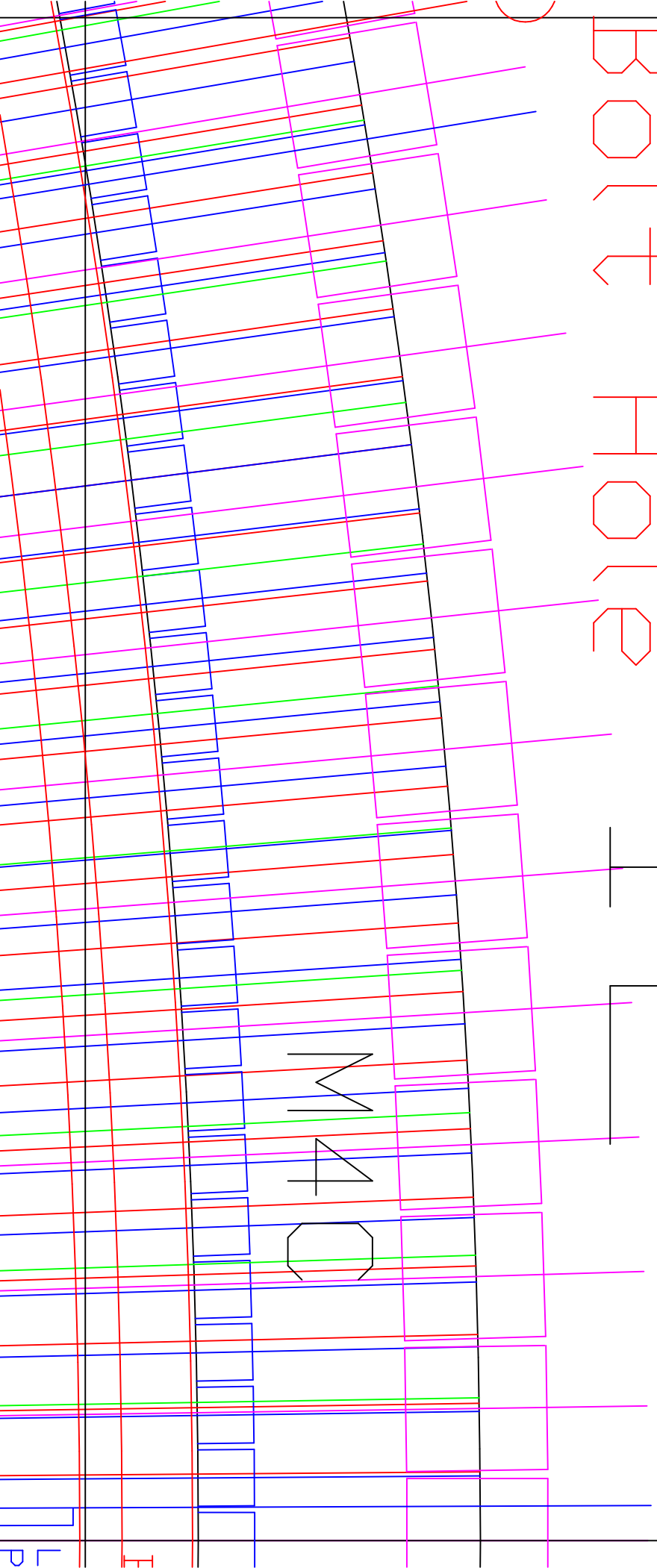
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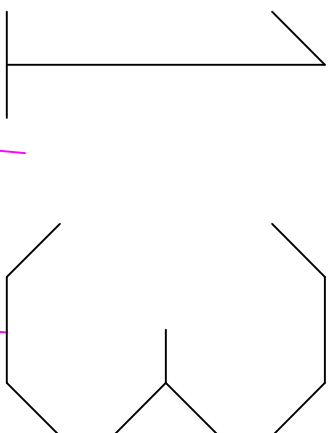
For the
Bottle Hole
Torkle



M4
D



Outer Circumference
Frame sections 18
Each step 57.3mm

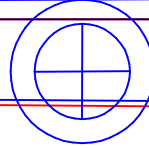


M40

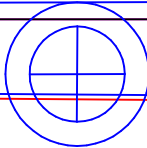
Balance Tube

Lifting/Relocating
Point

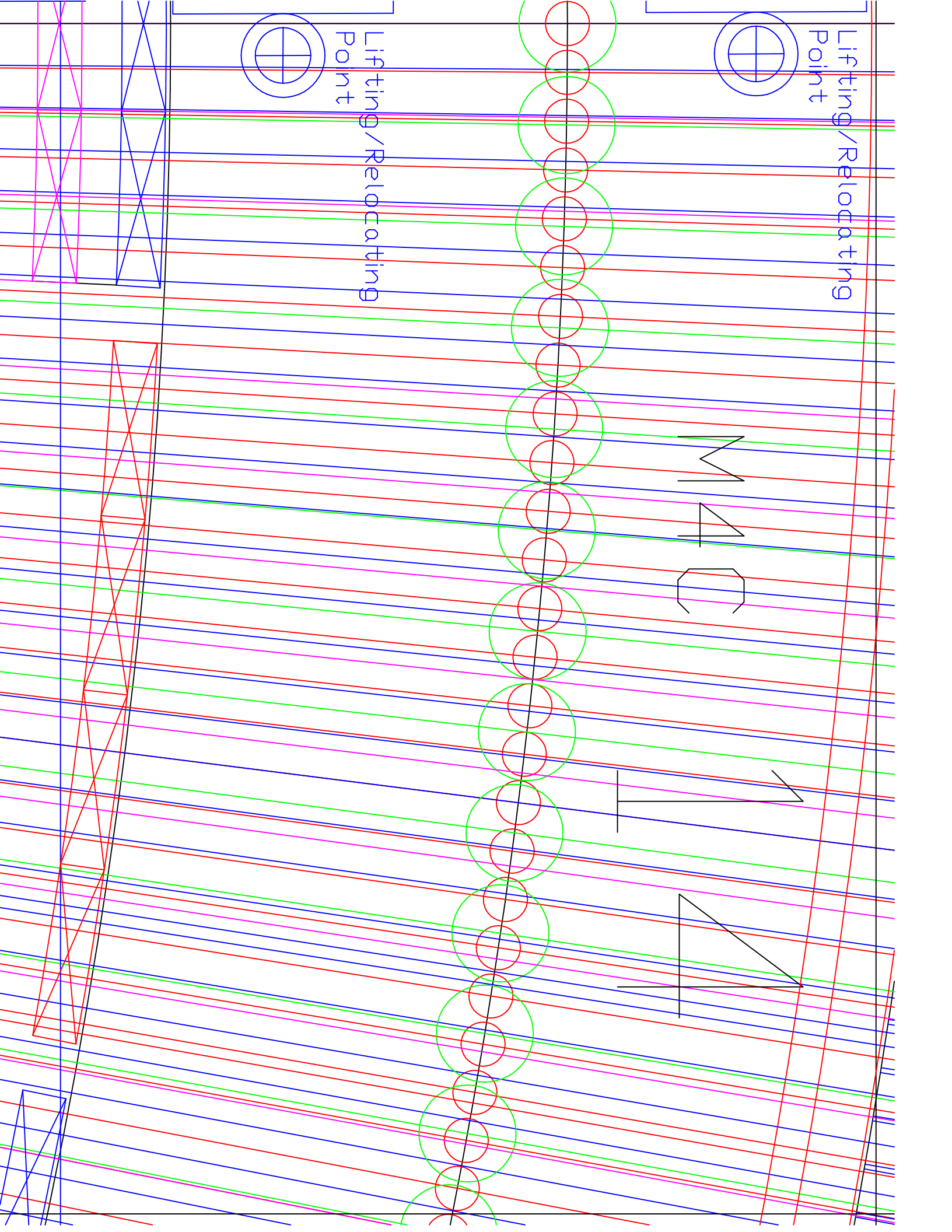
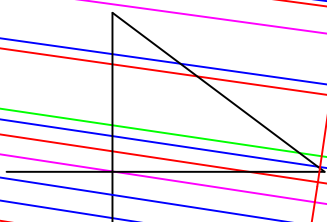
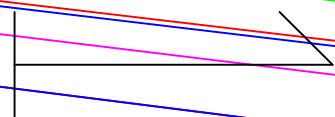
Lifting/Relocating
Point

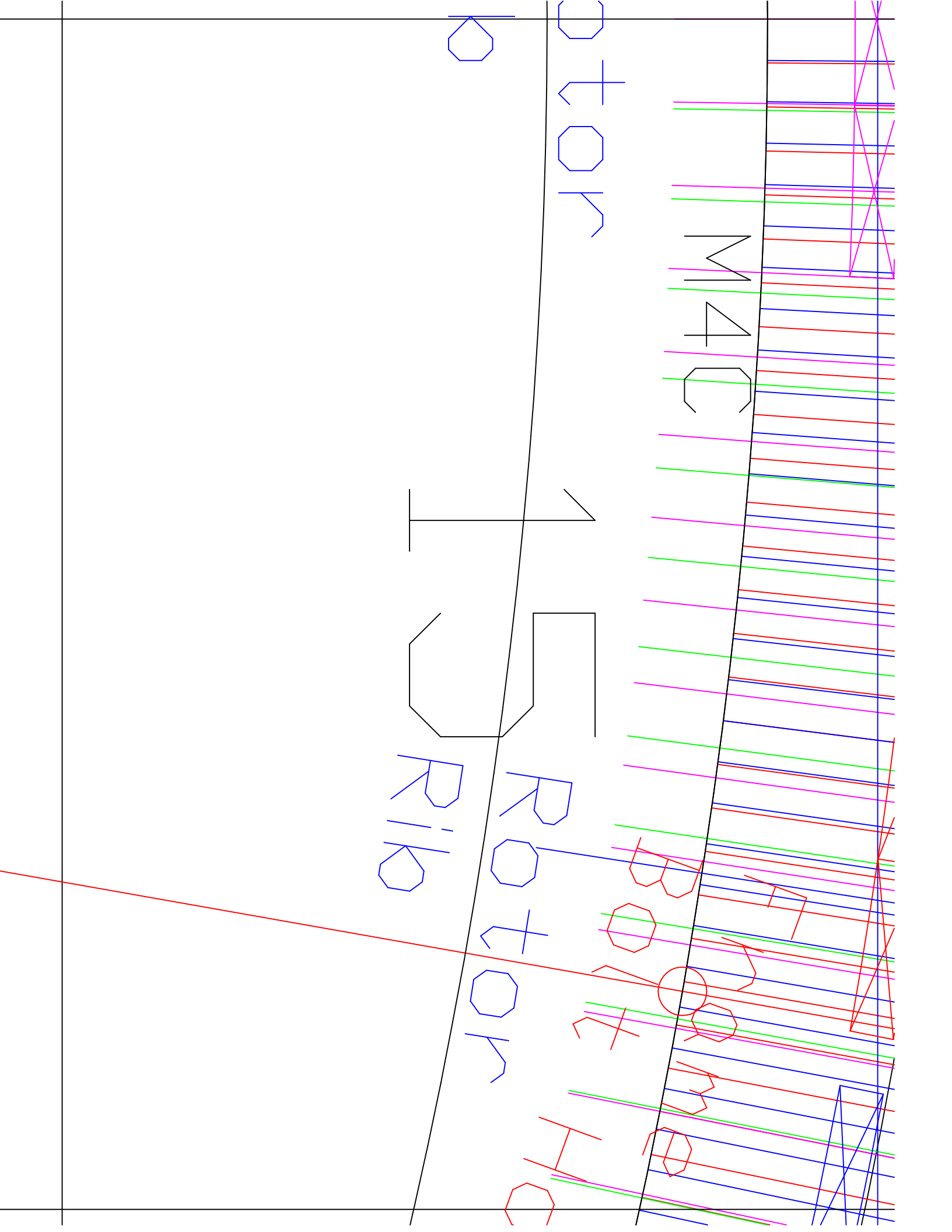


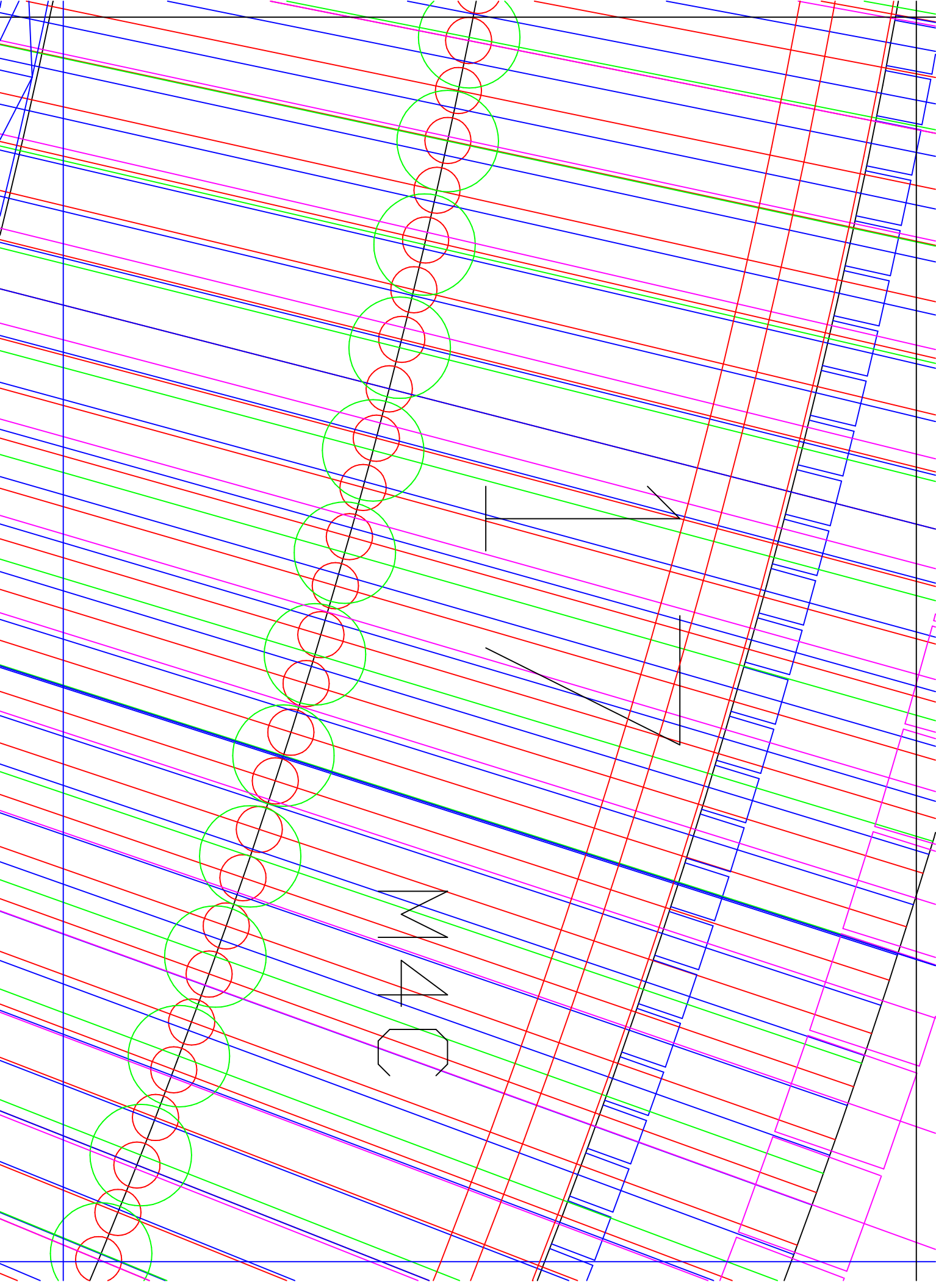
Lifting/Relocating
Point



M4C

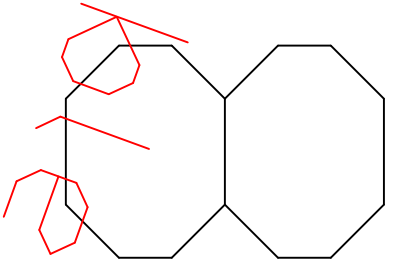




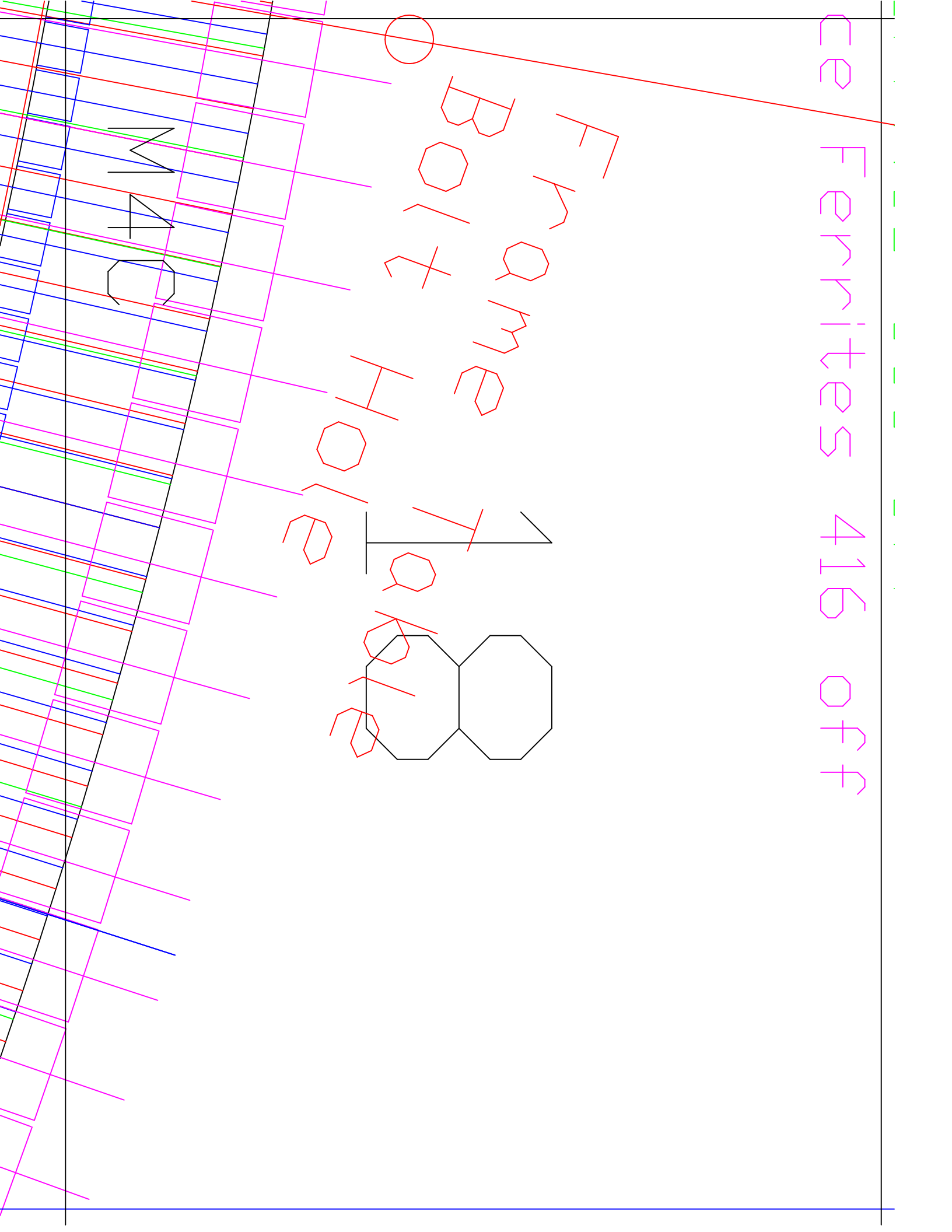


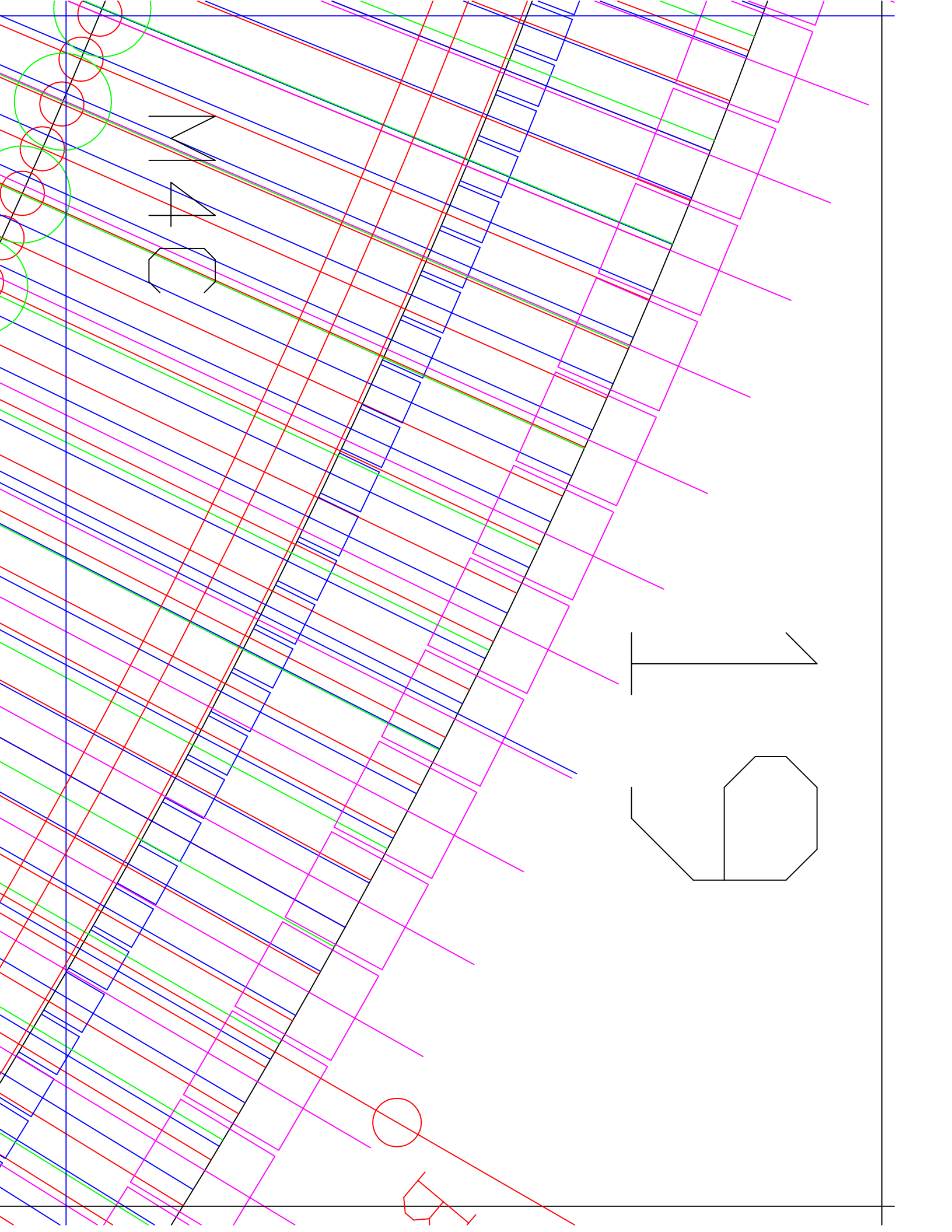
FK
Boit
Hole

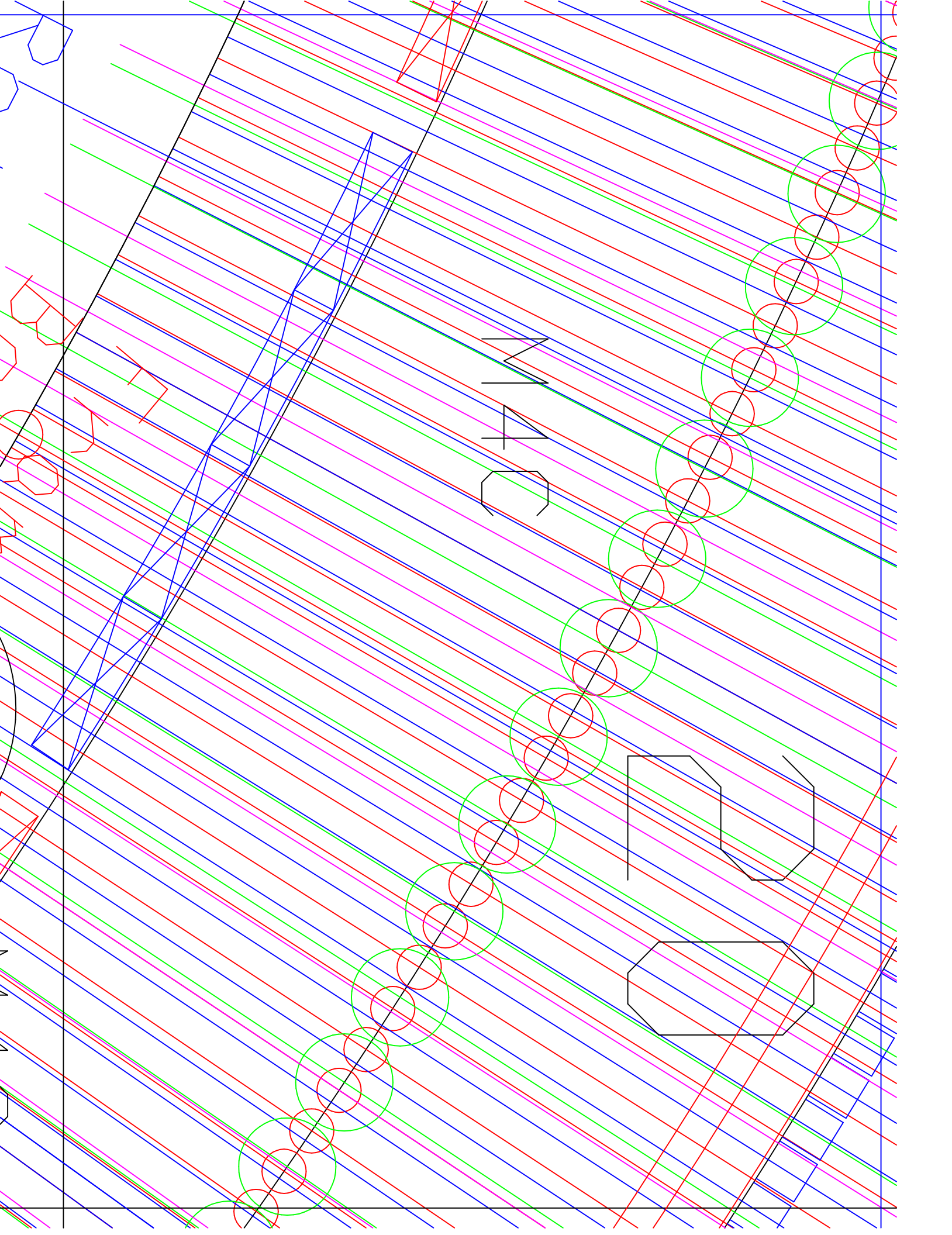
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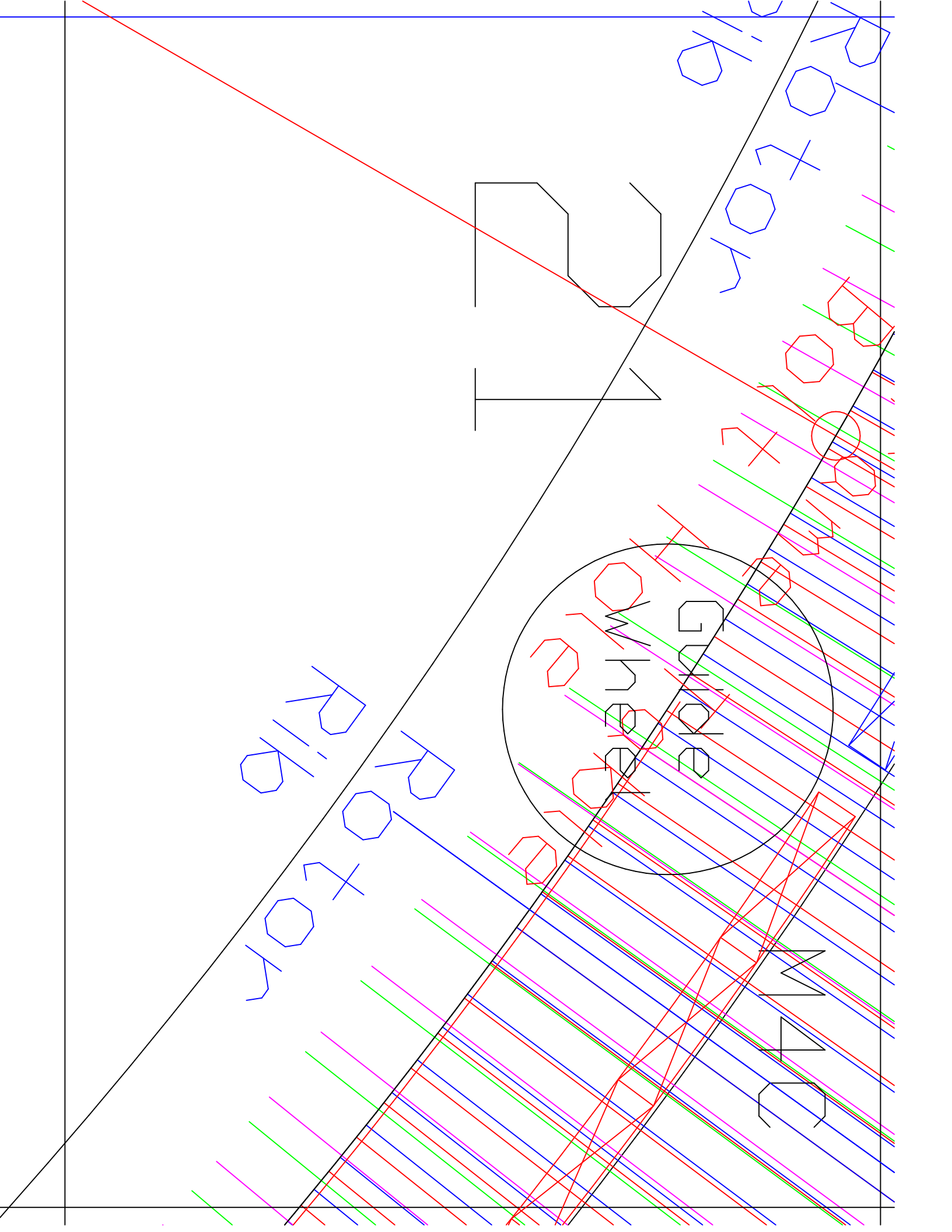


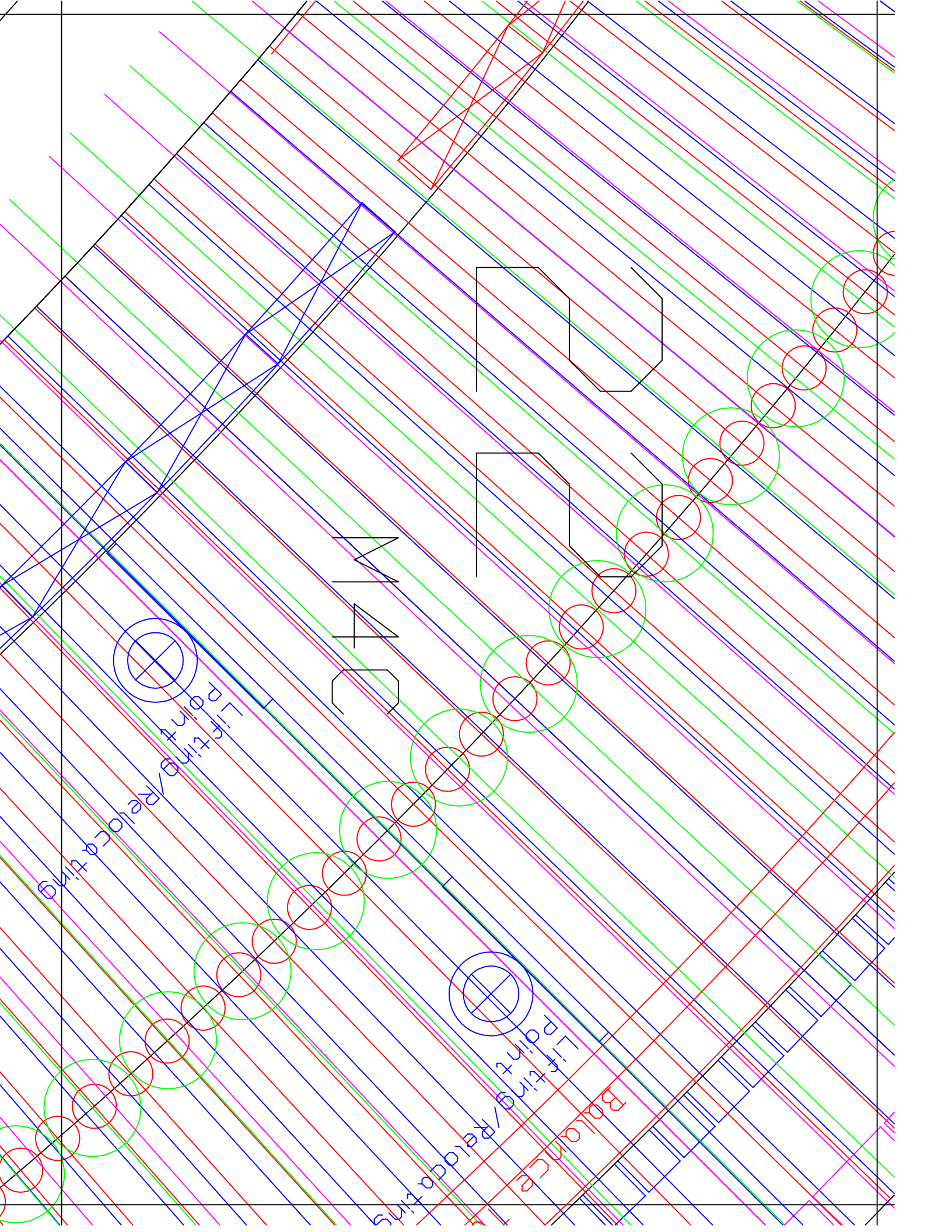
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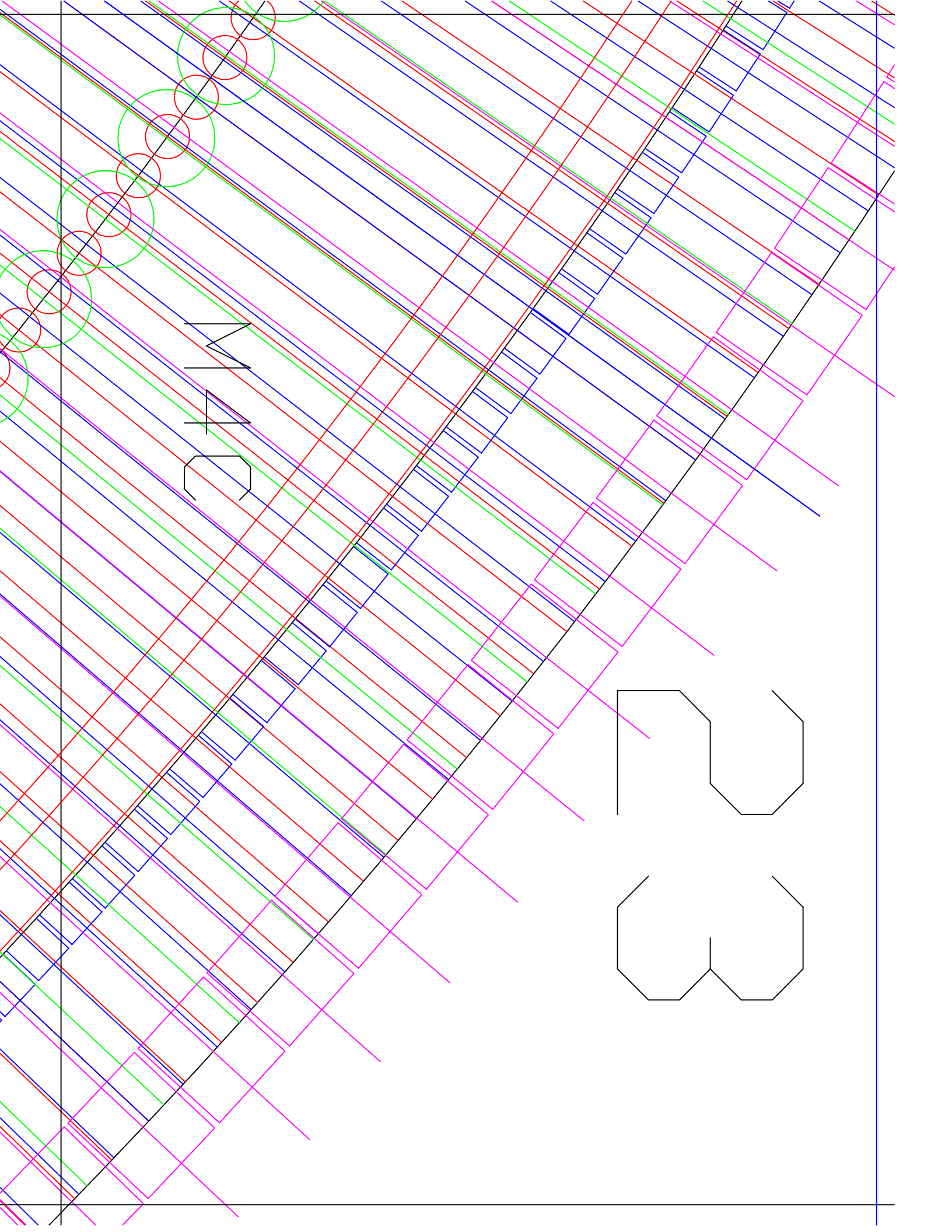


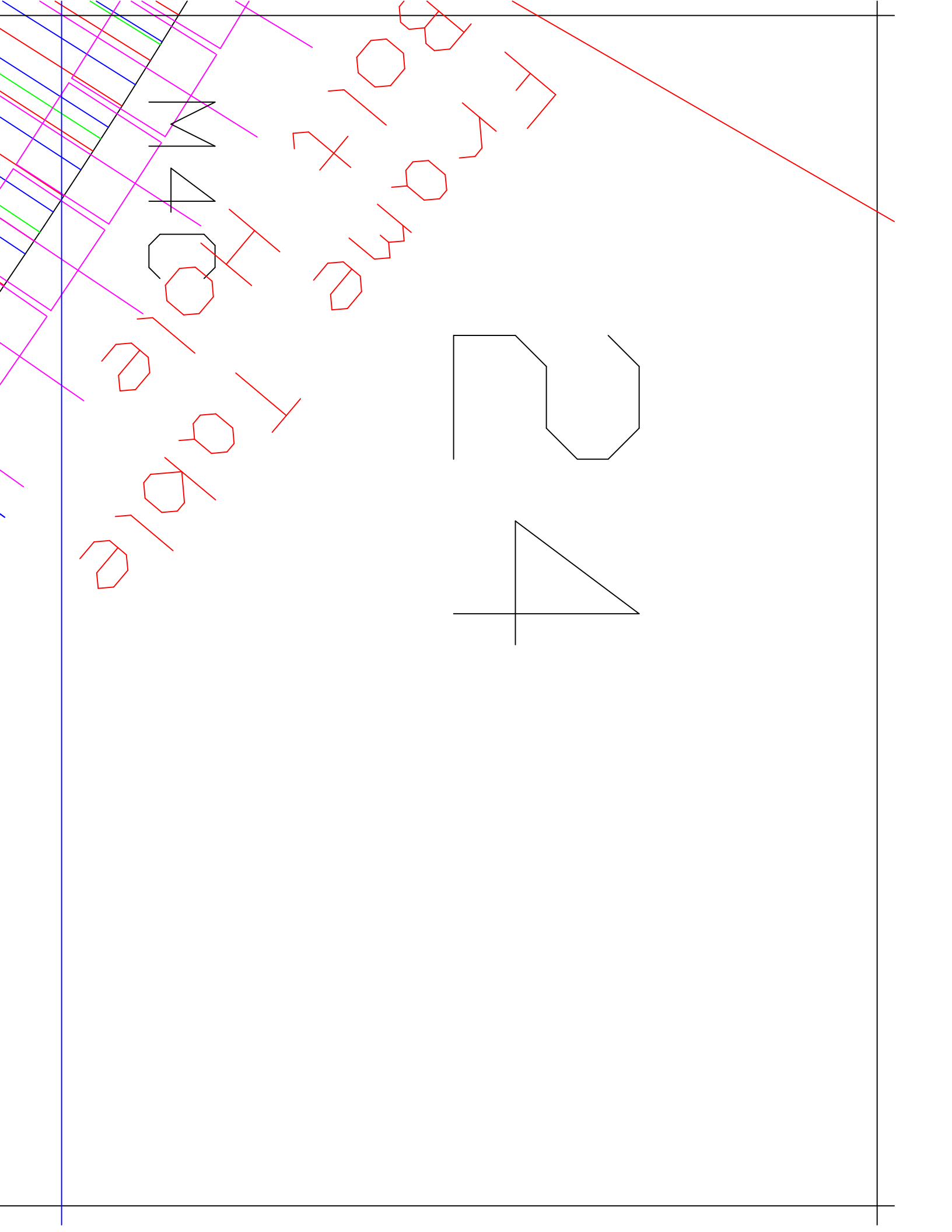


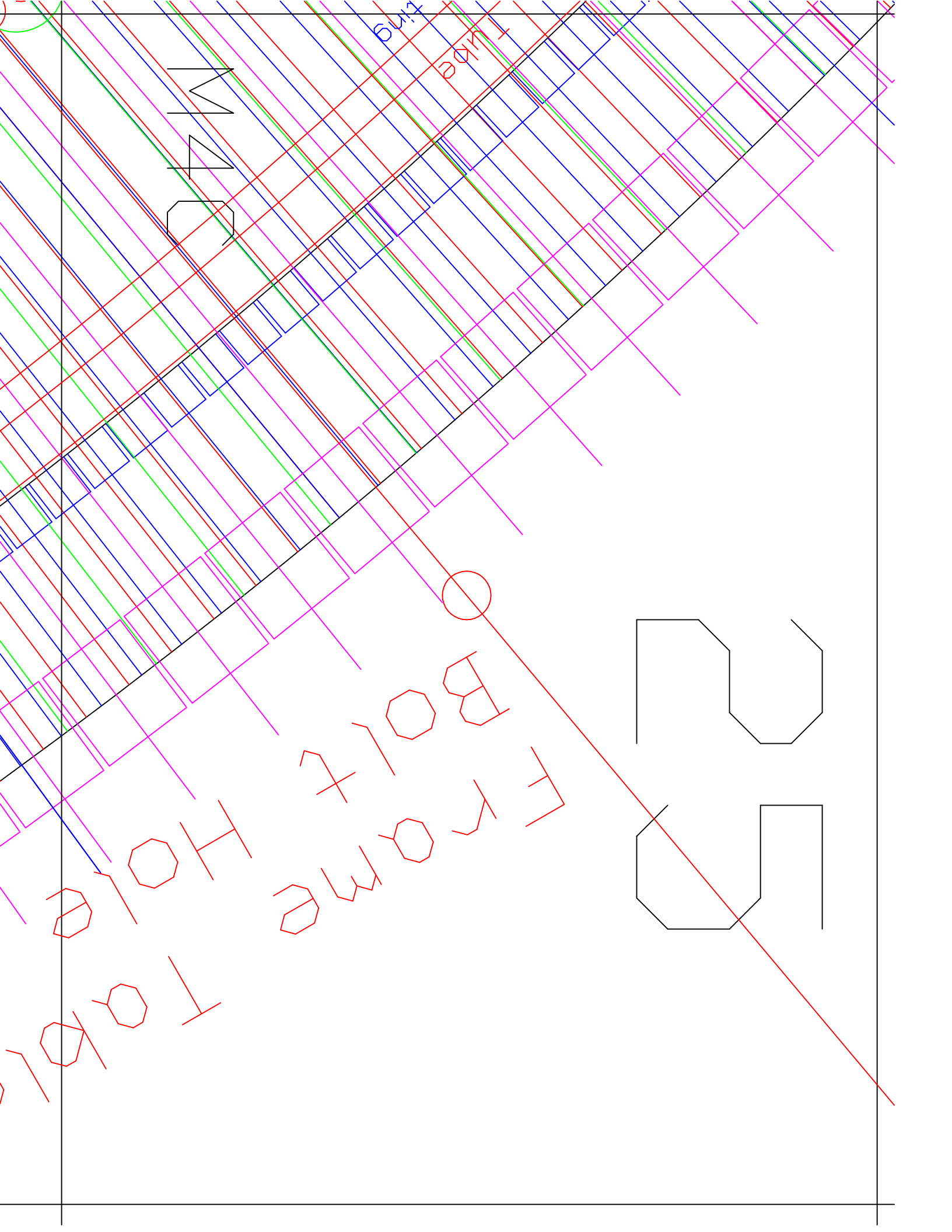


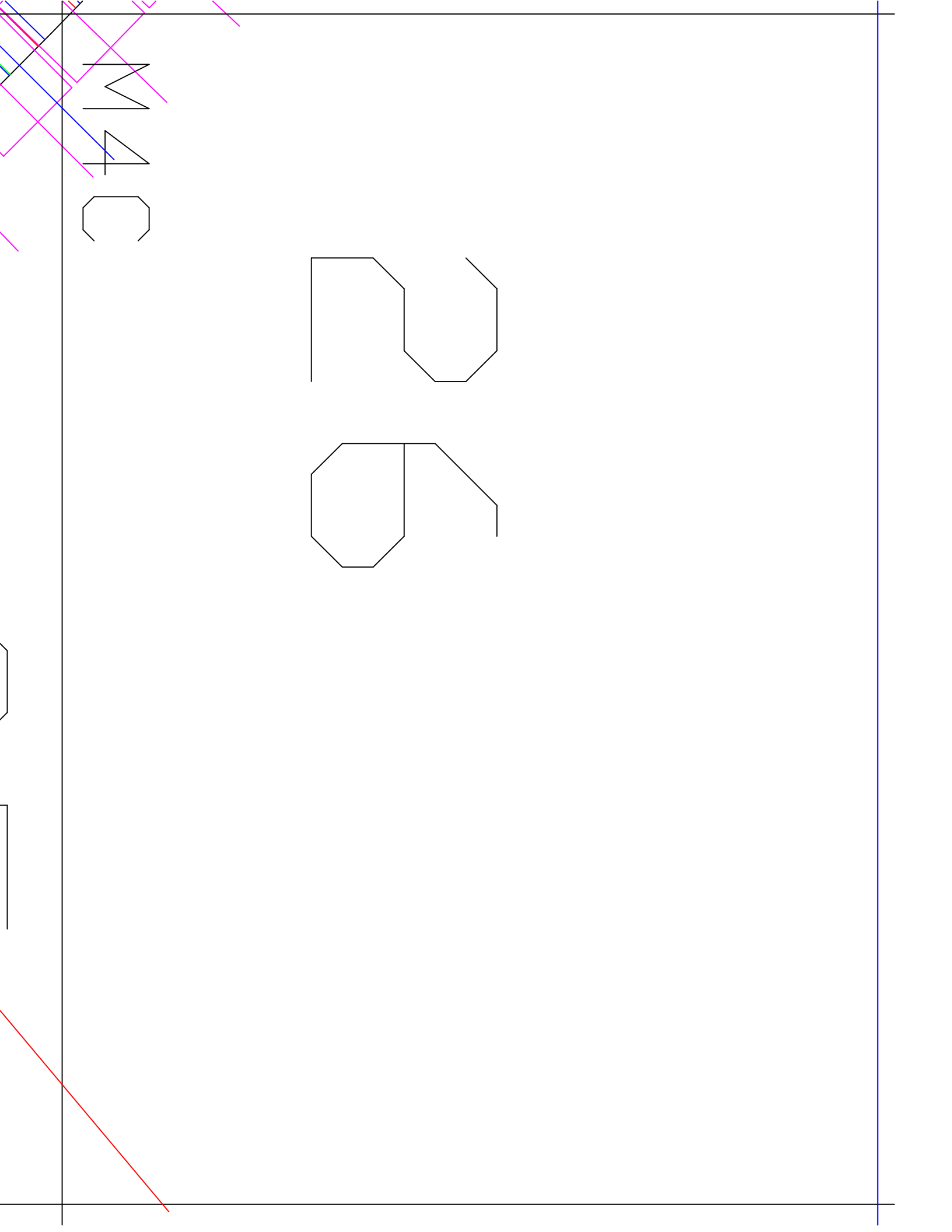


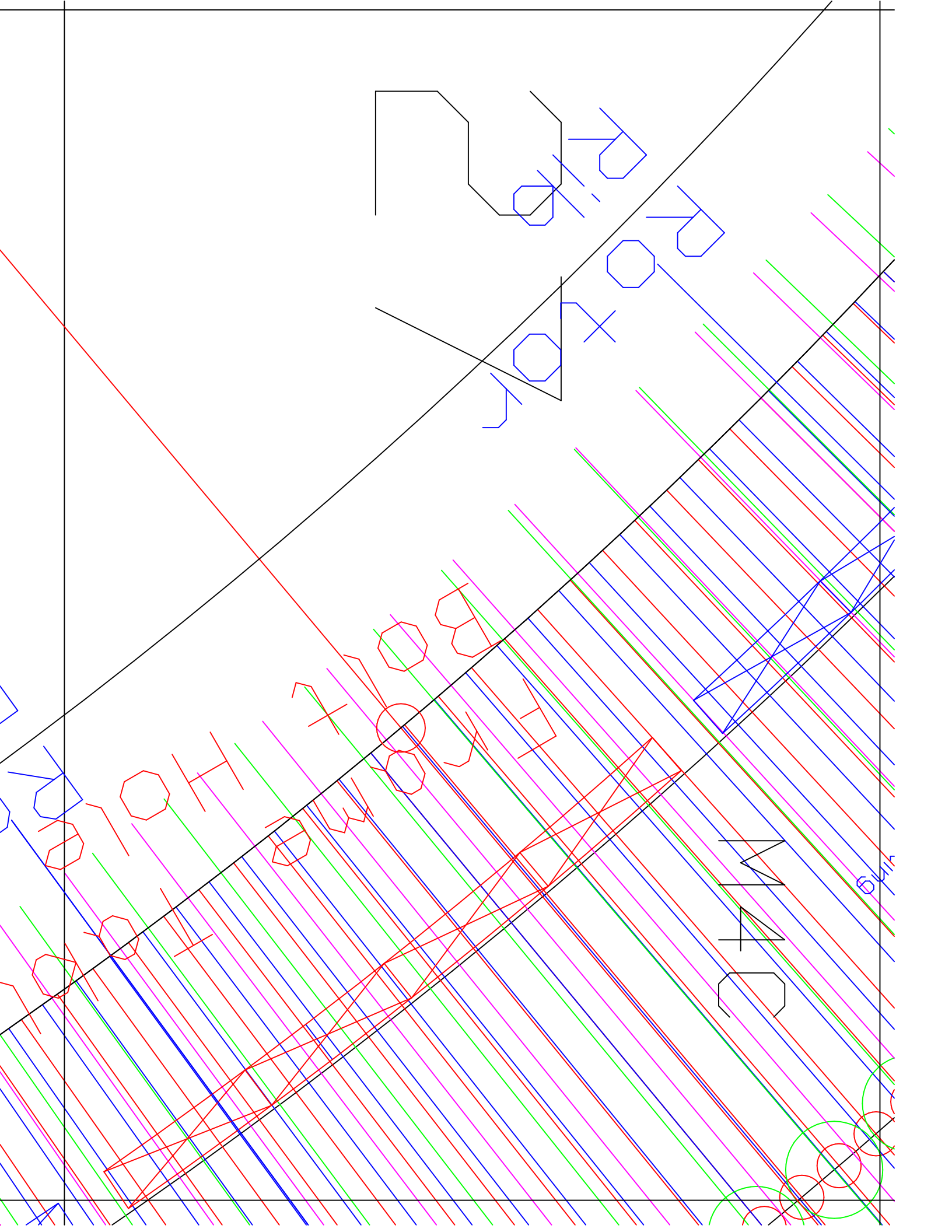


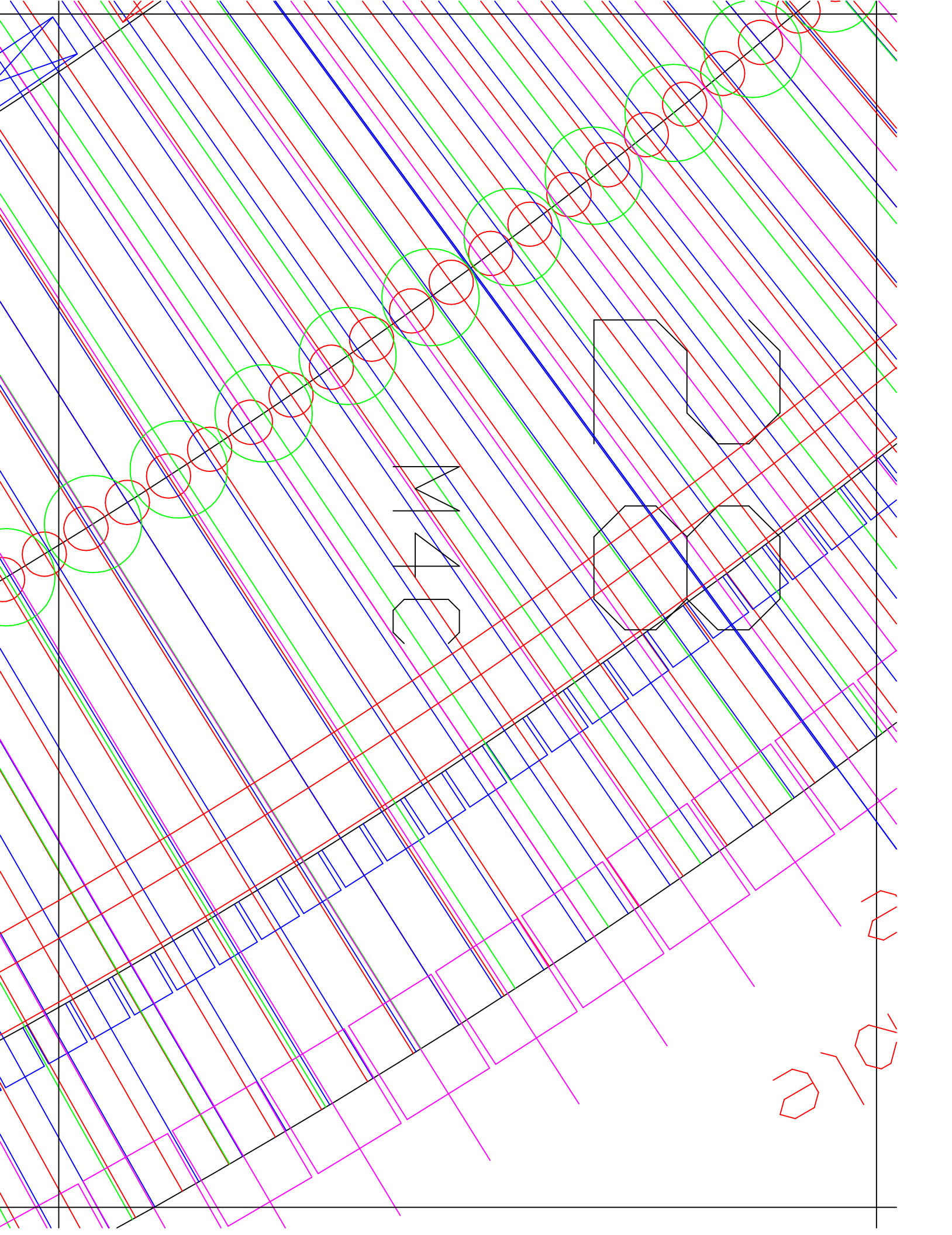


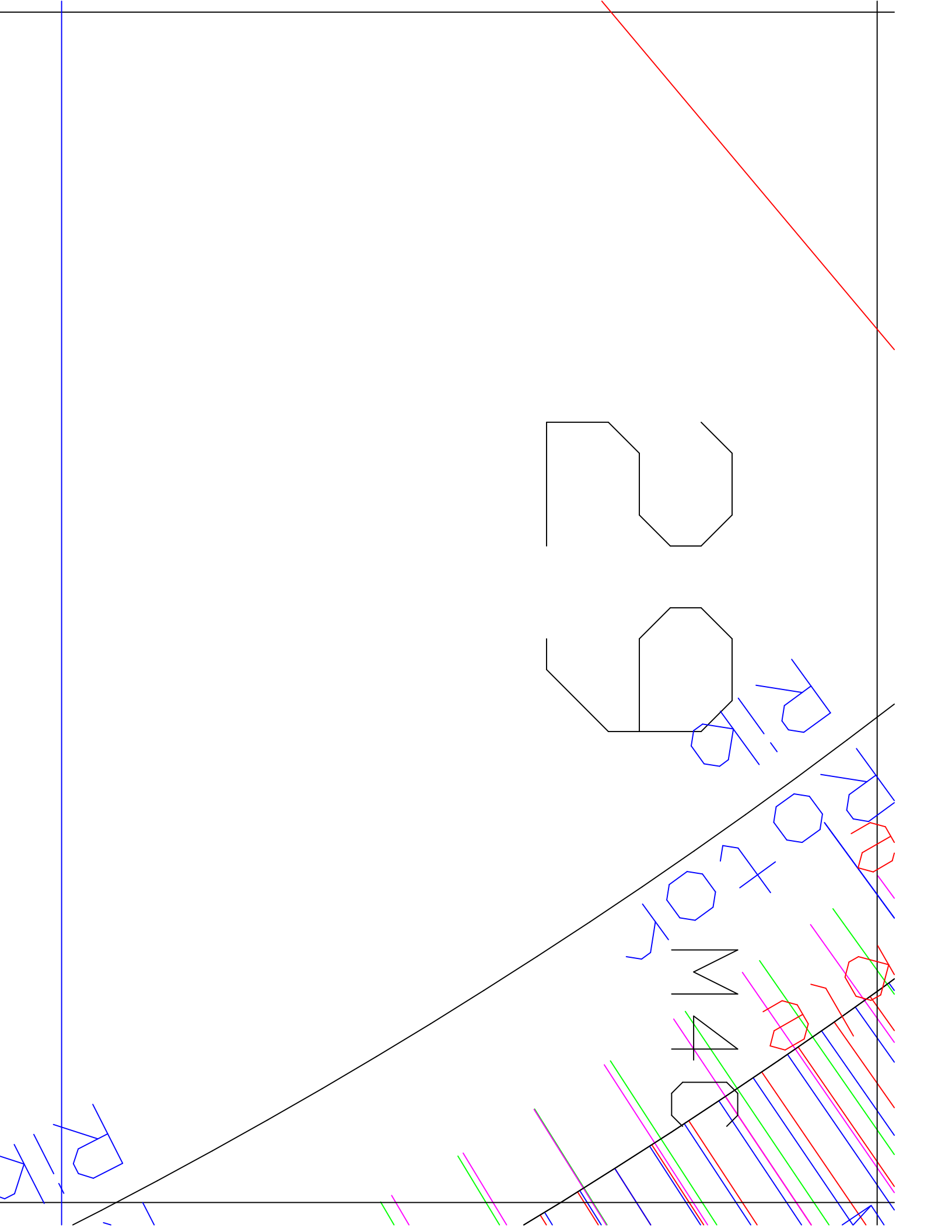


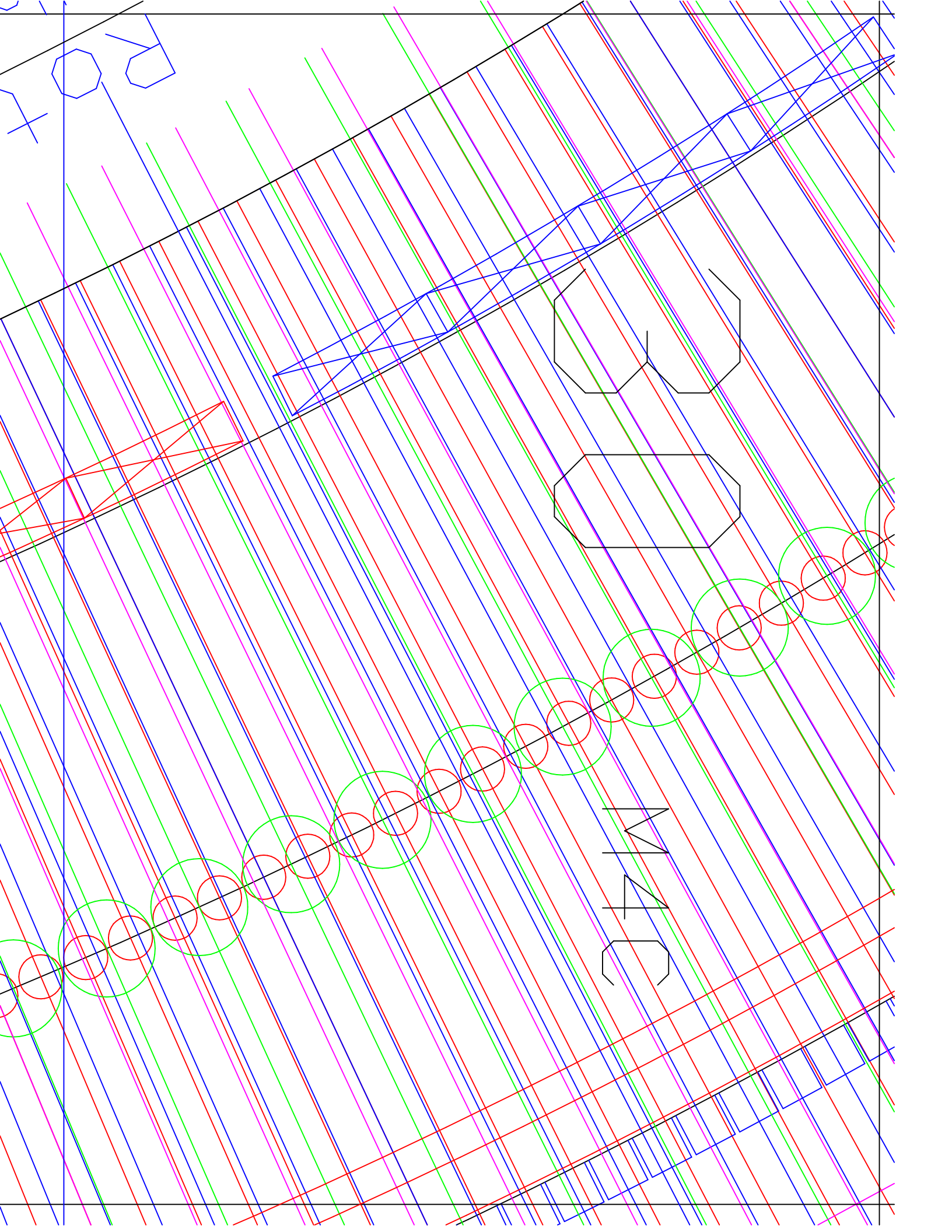


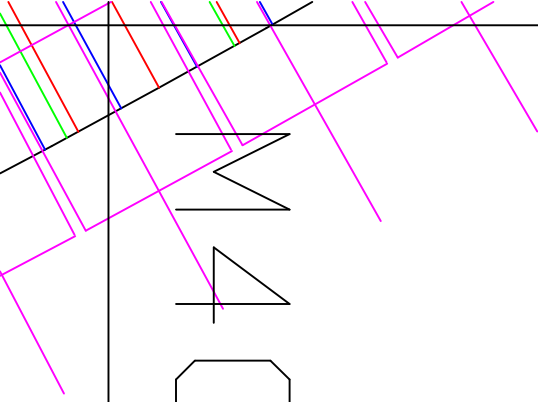




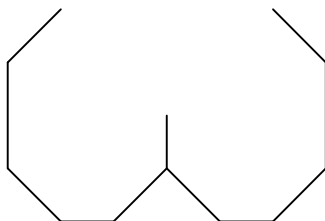


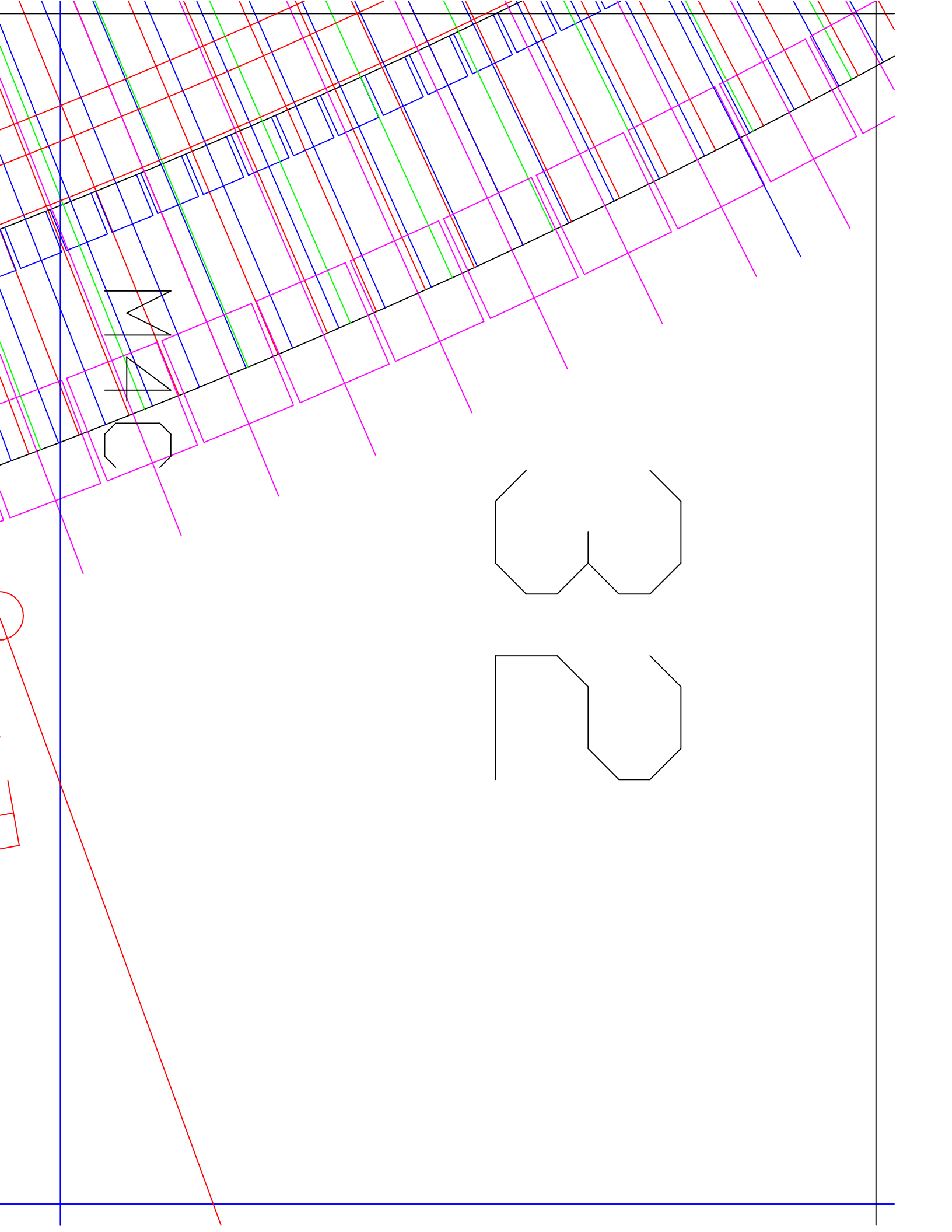


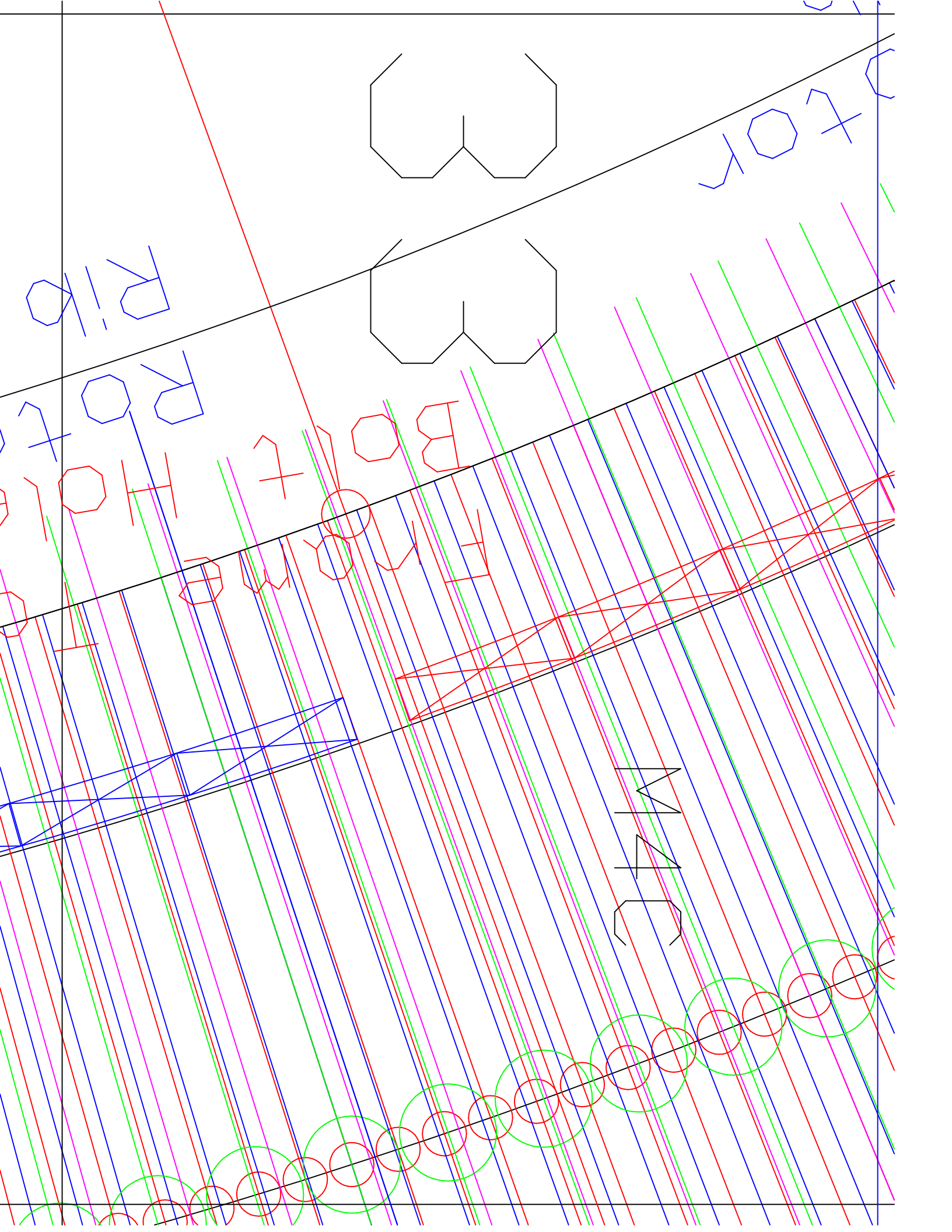


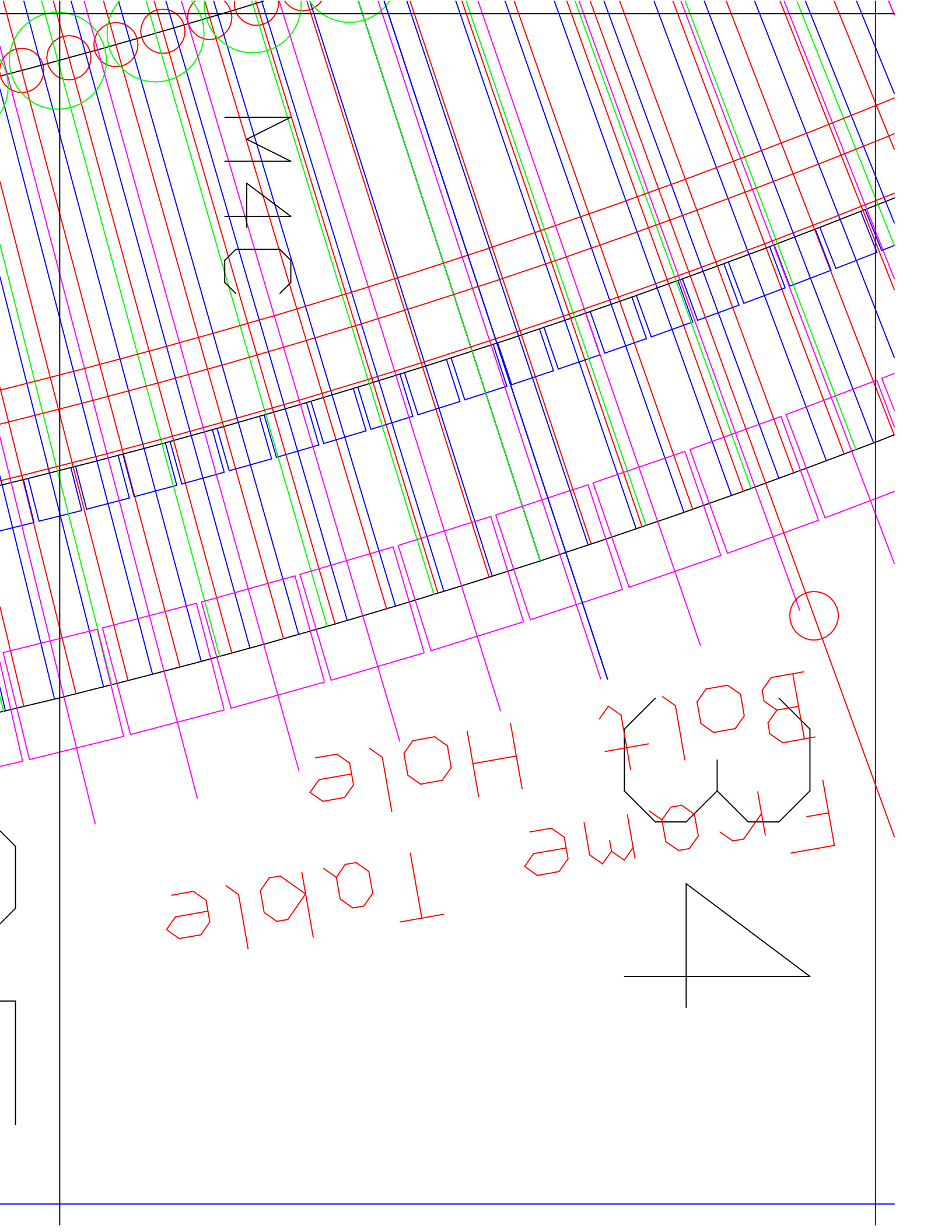


MAN
4
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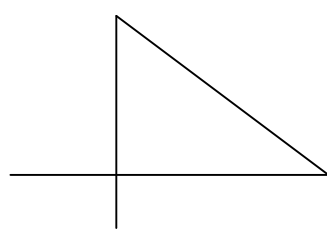


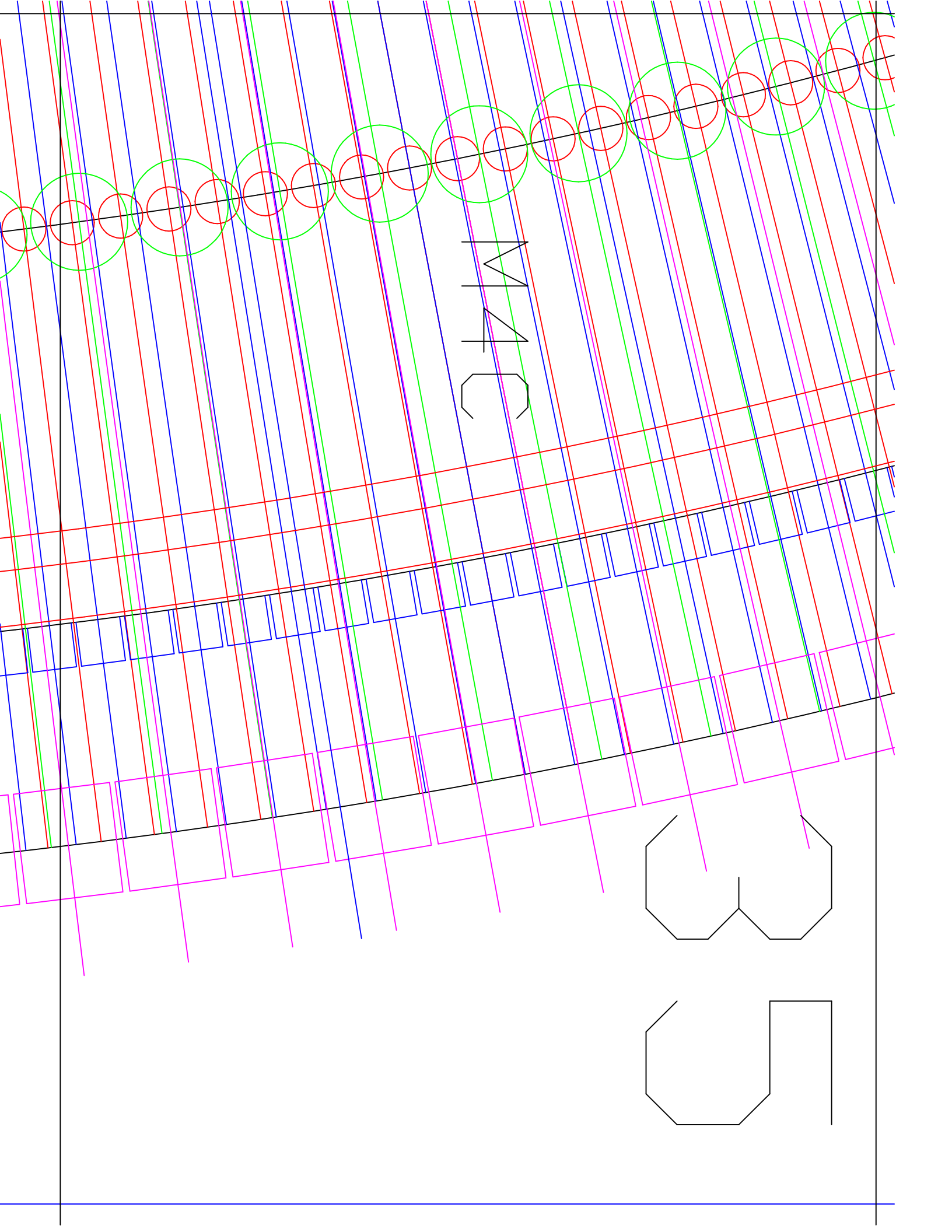


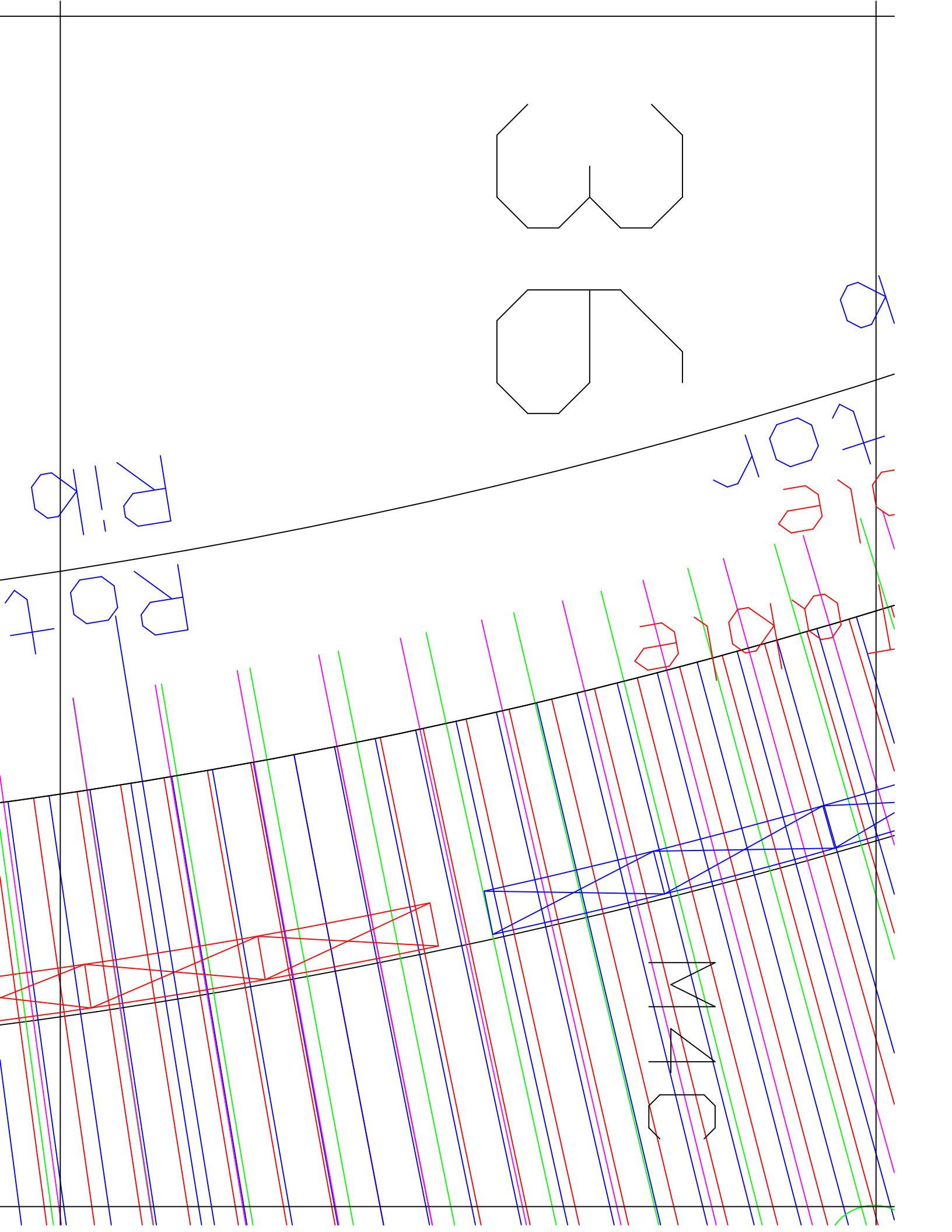


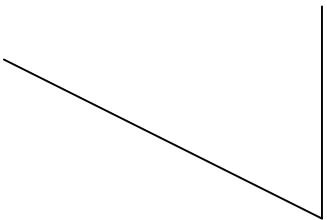
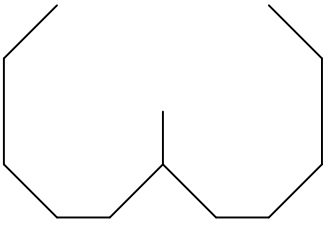
W4

Hole
Tack
Bolt
Frame









for

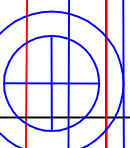
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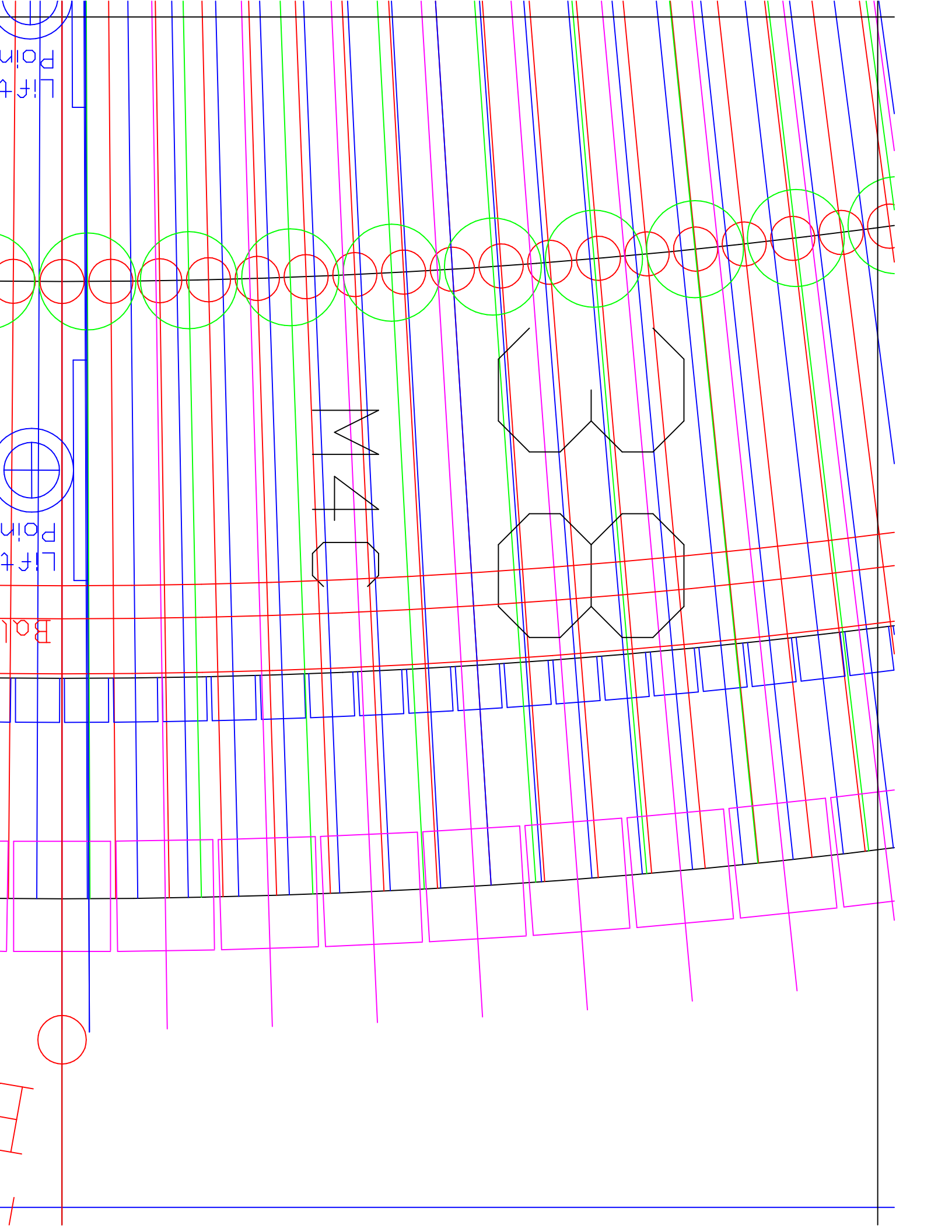
Rib

Guide
Wheel

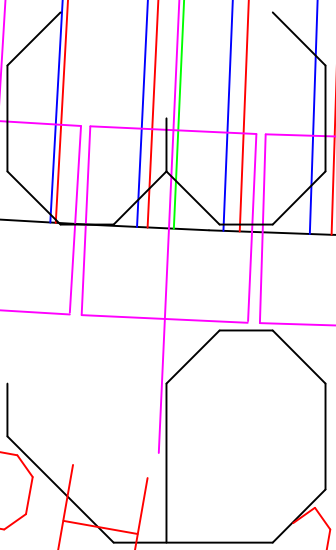
Box

MC



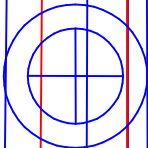


1 Rammer Table Bolt Hole



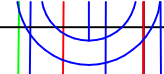
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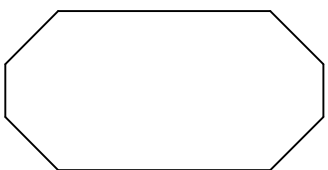
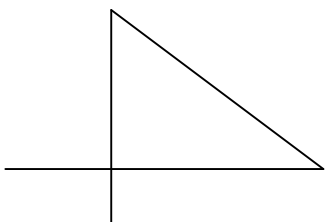
Lifting/Relocating Point



M4C

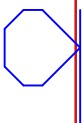
Lifting/Relocating Point





R/d

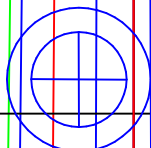
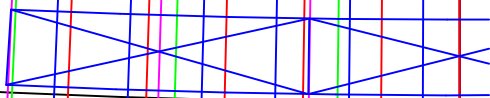
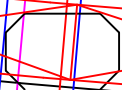
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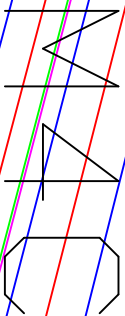
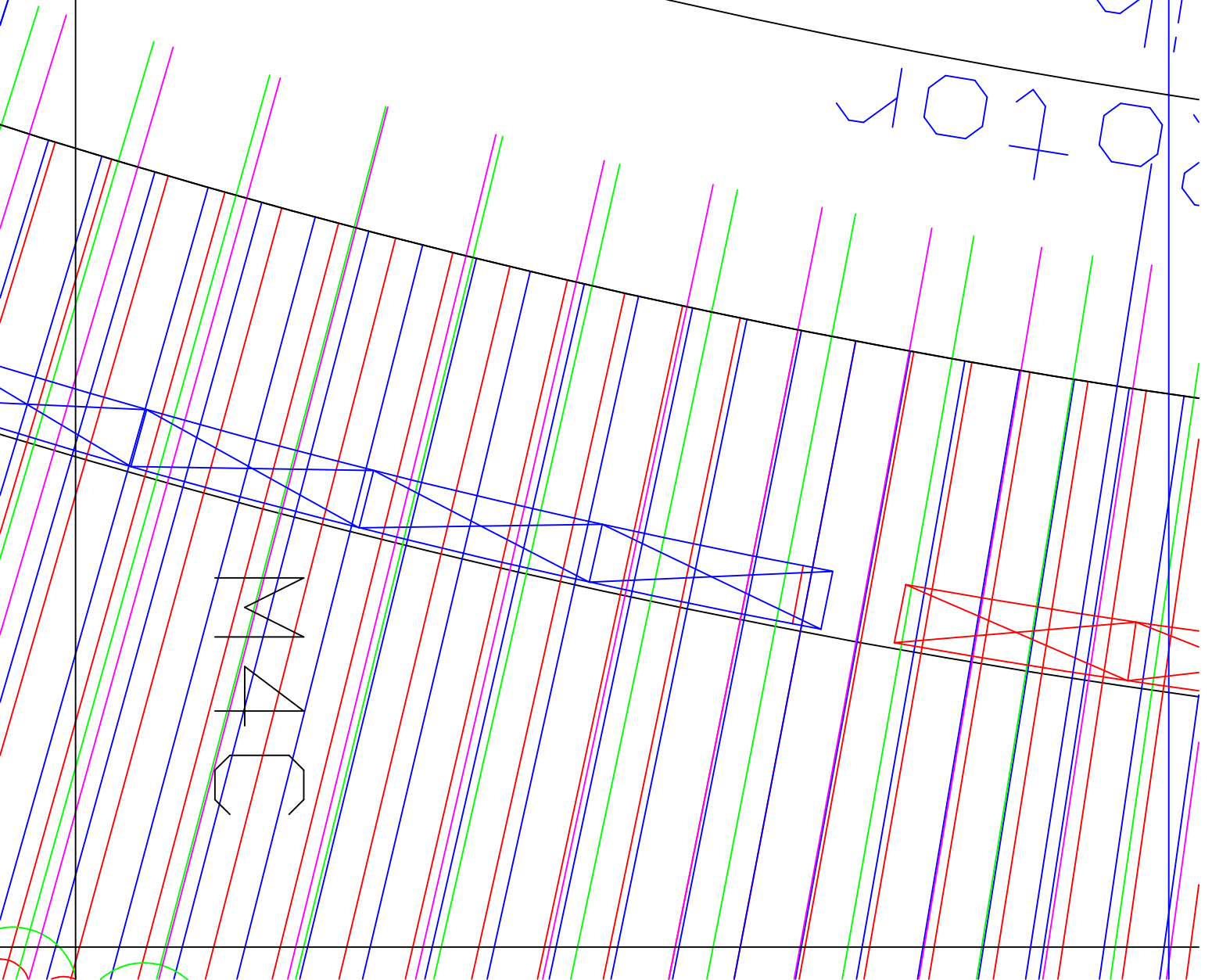
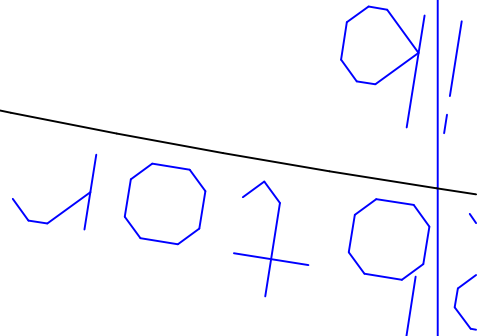
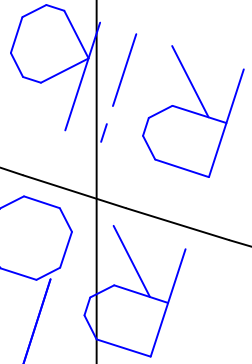
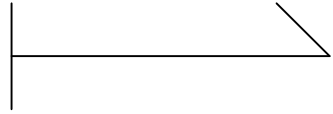
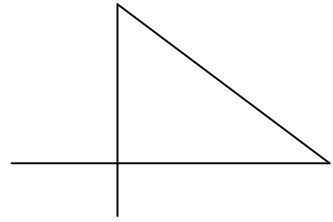


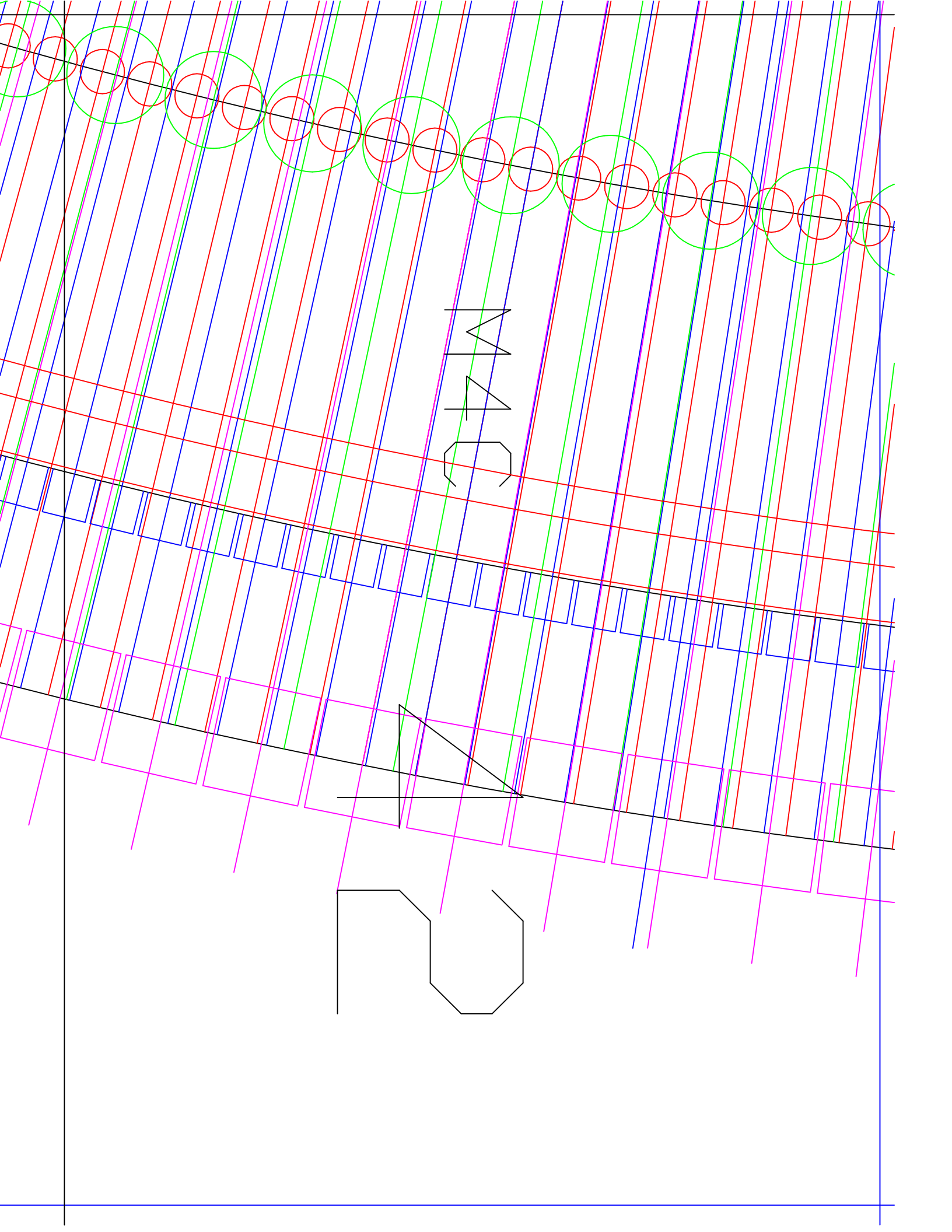
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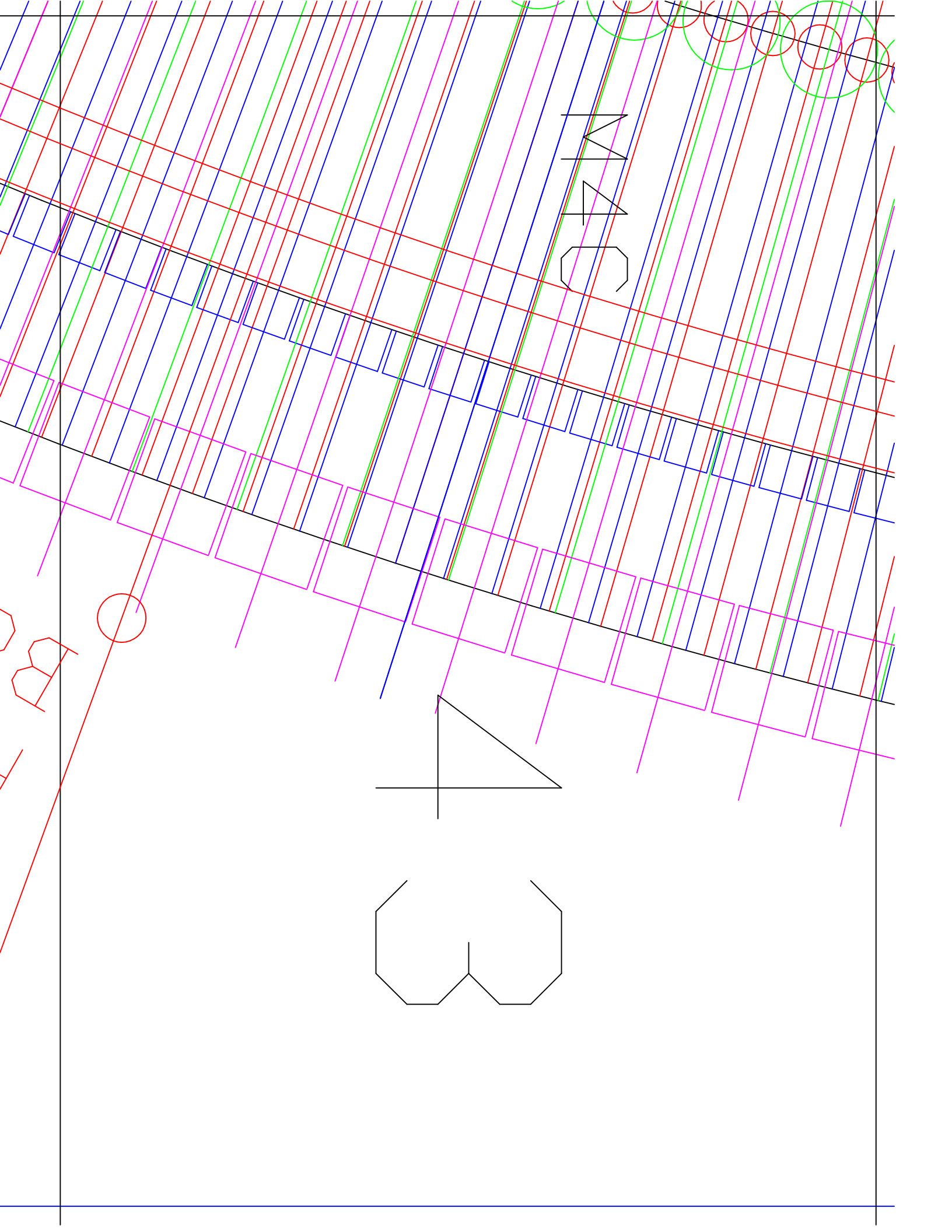
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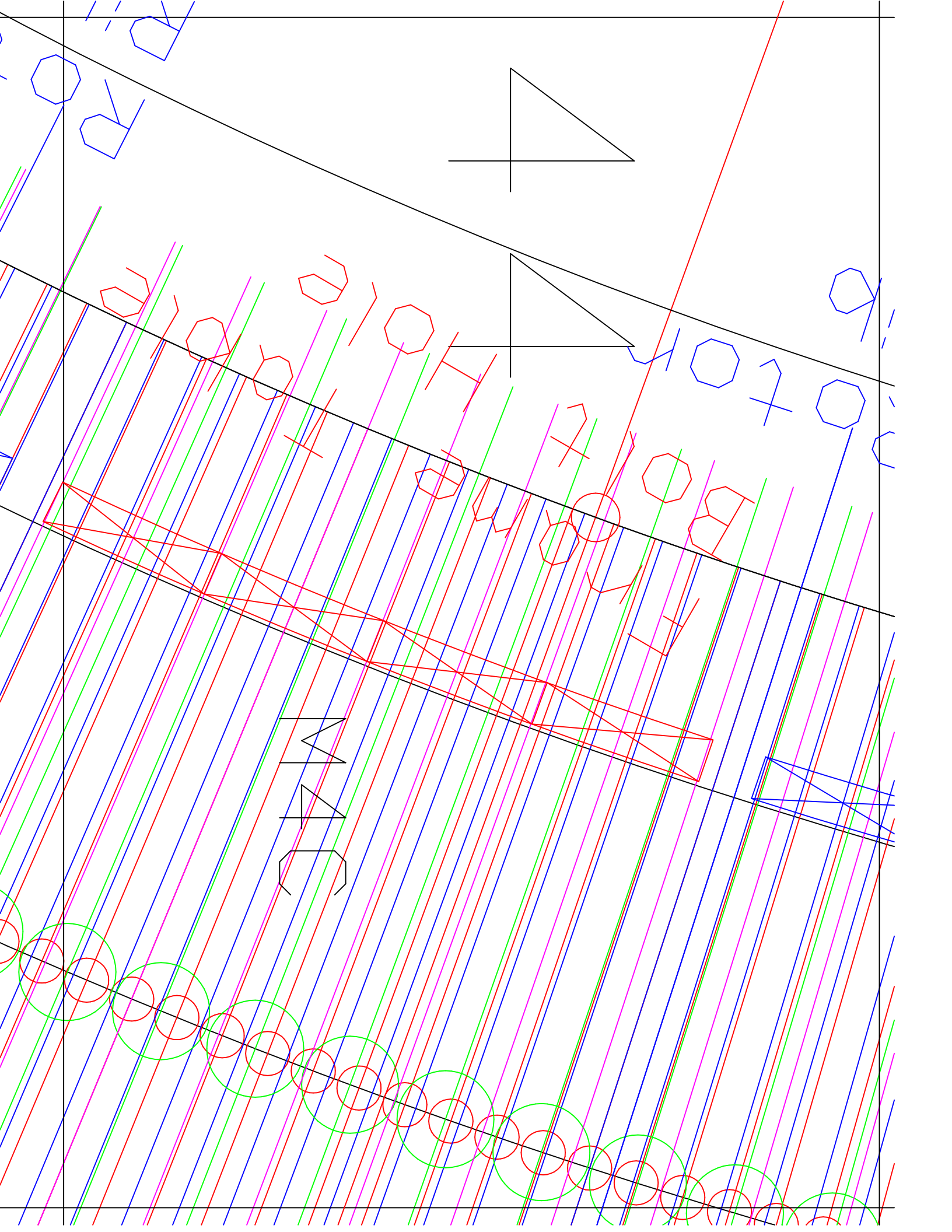
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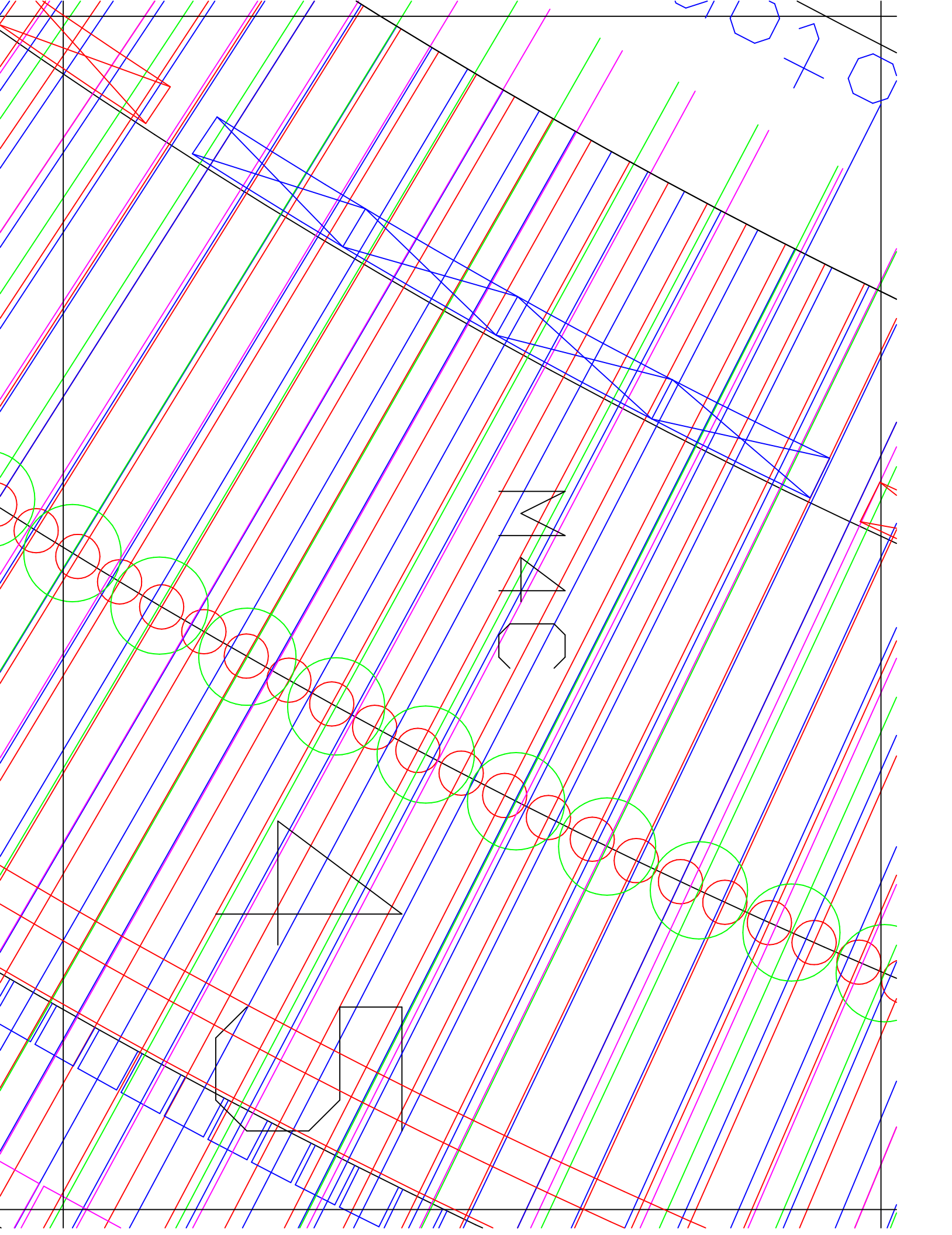


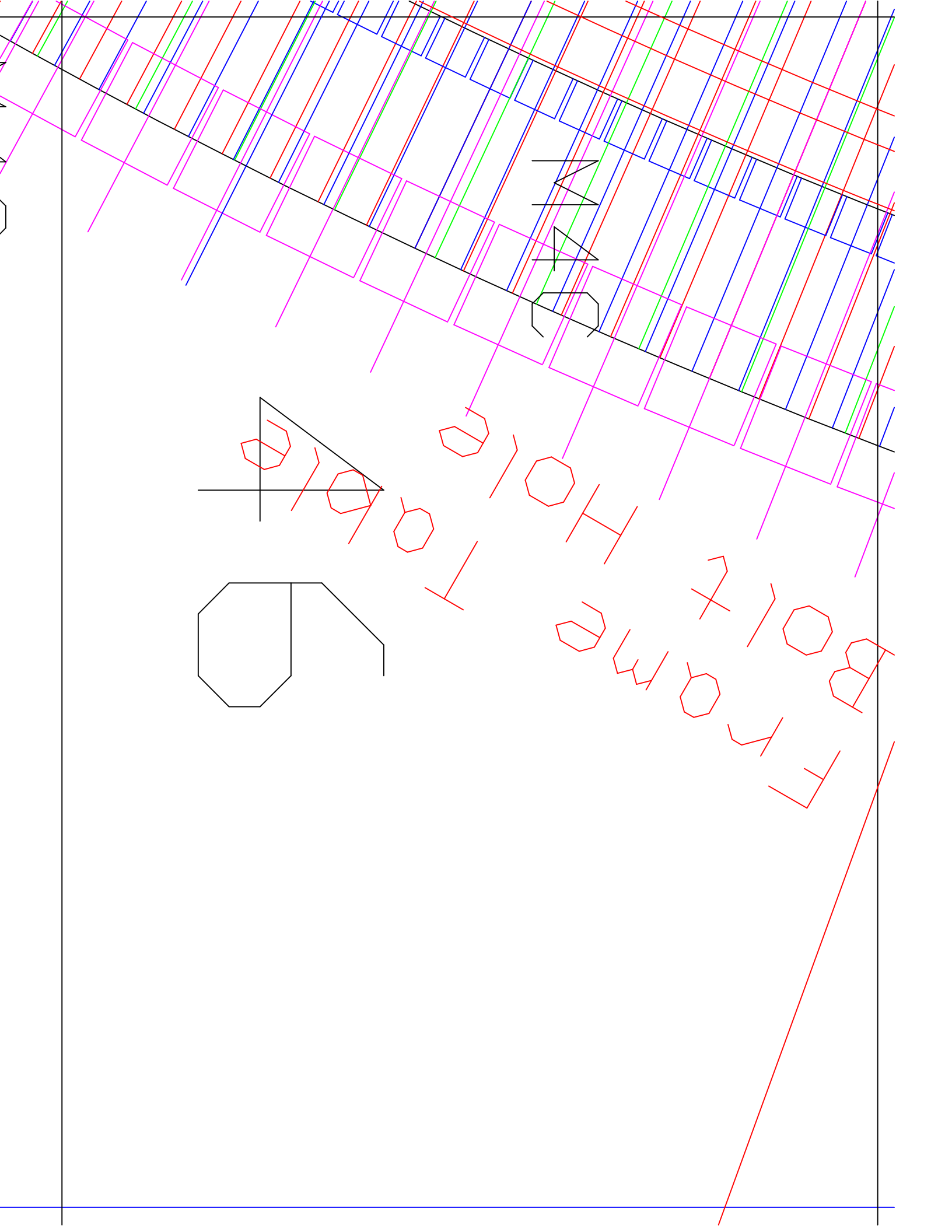


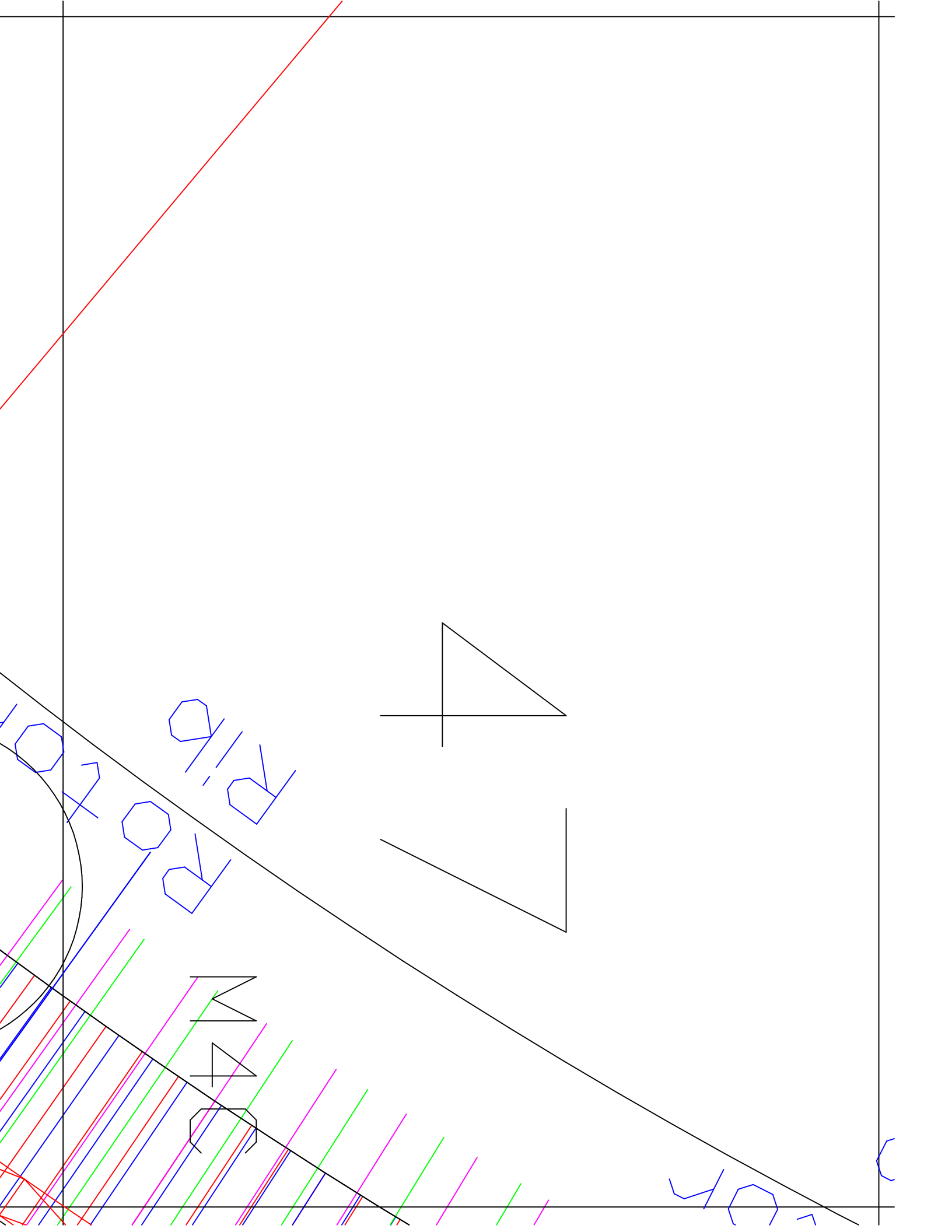


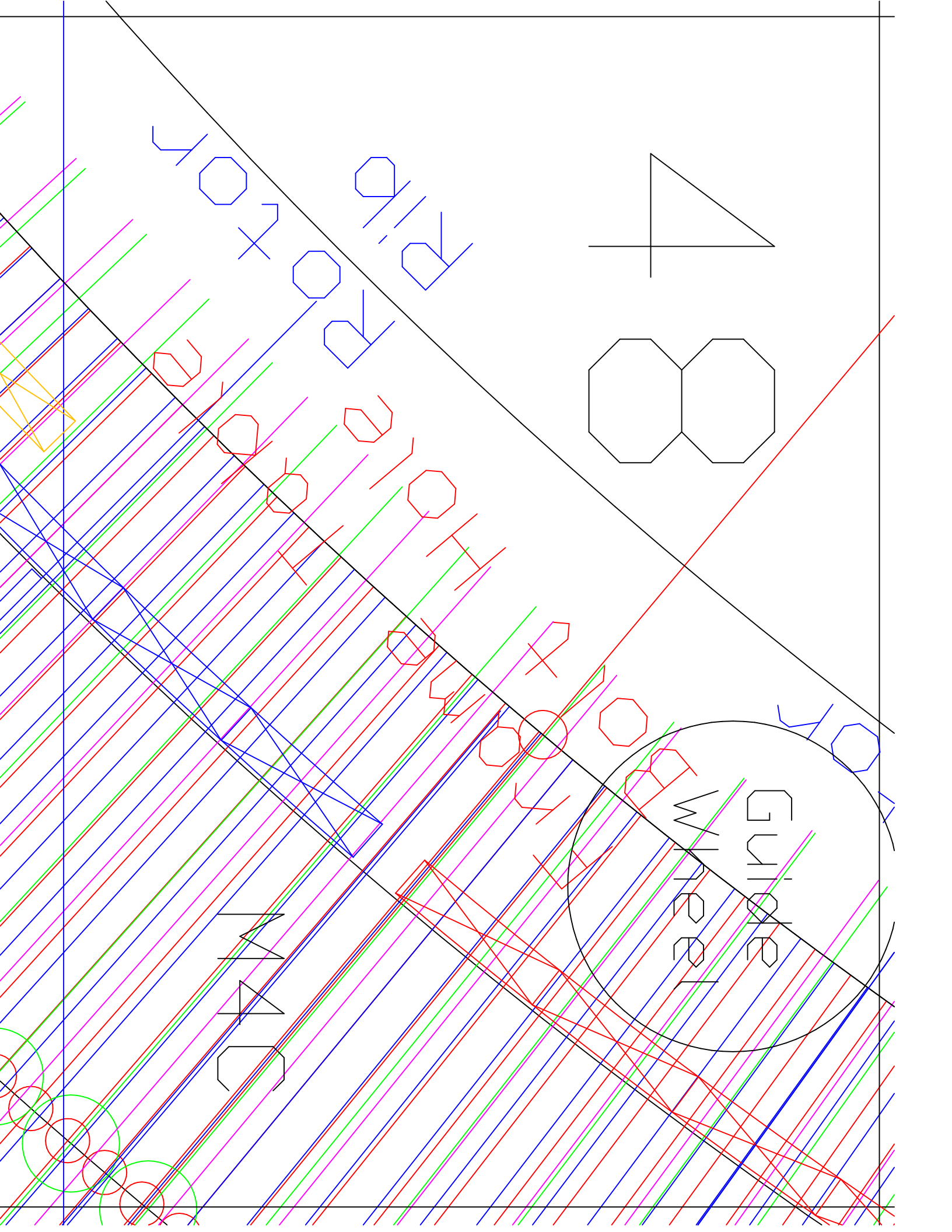


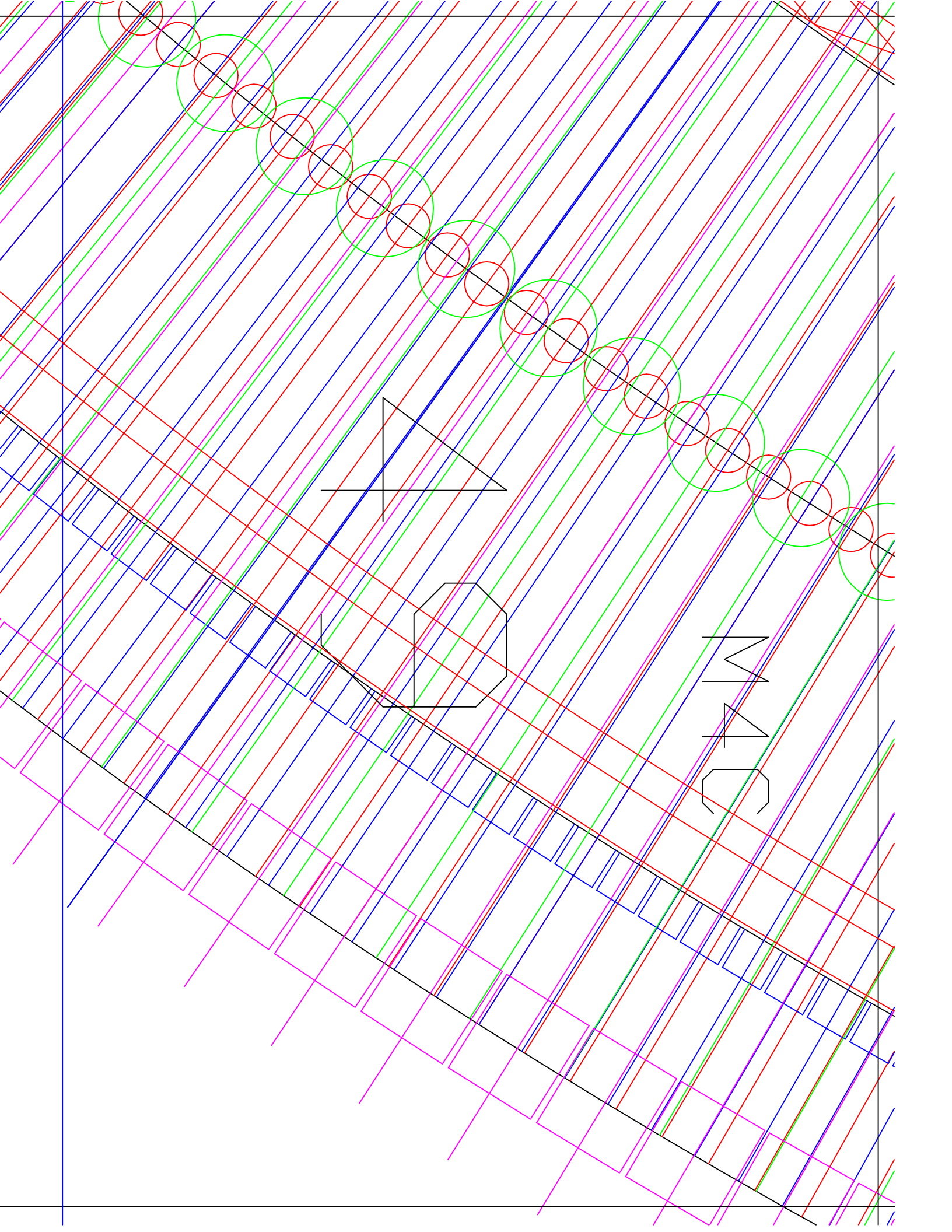




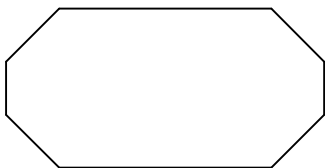
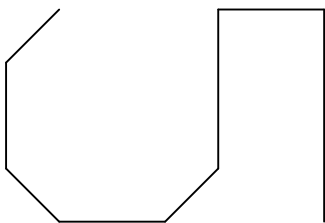


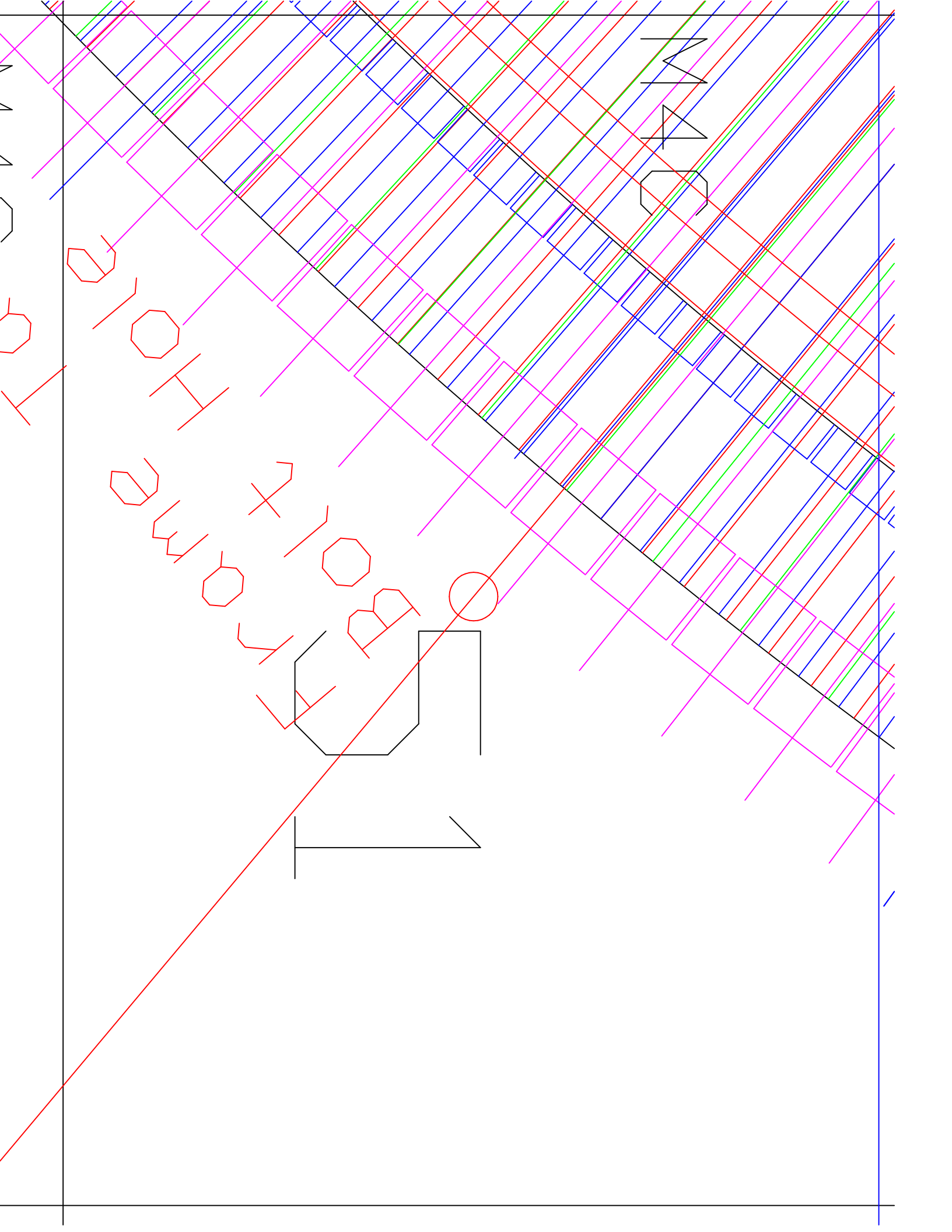


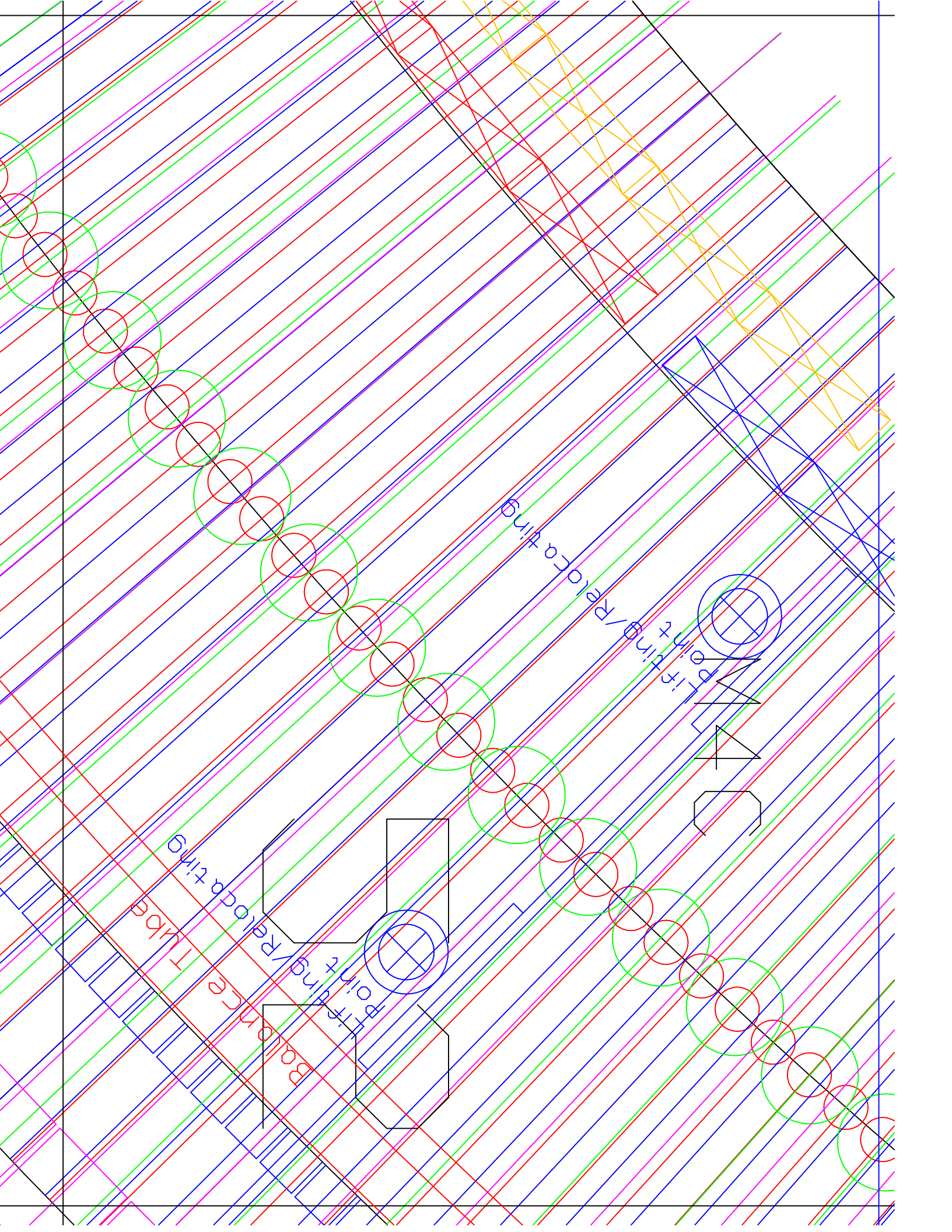


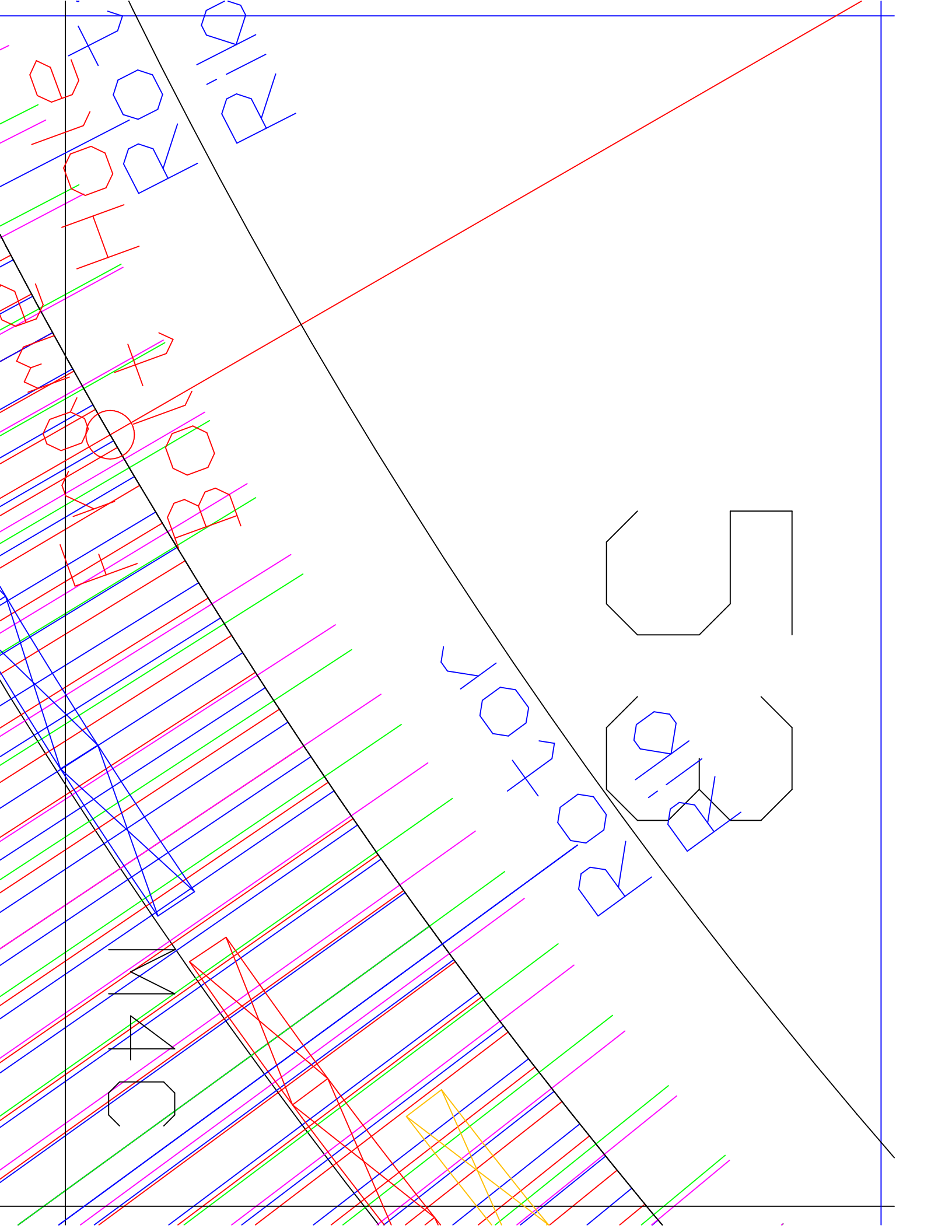


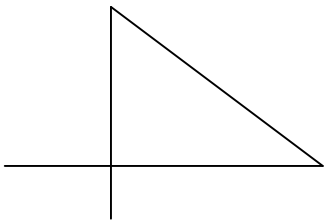
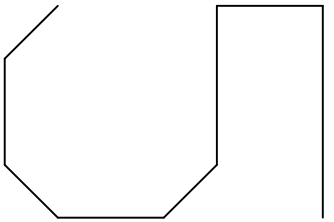
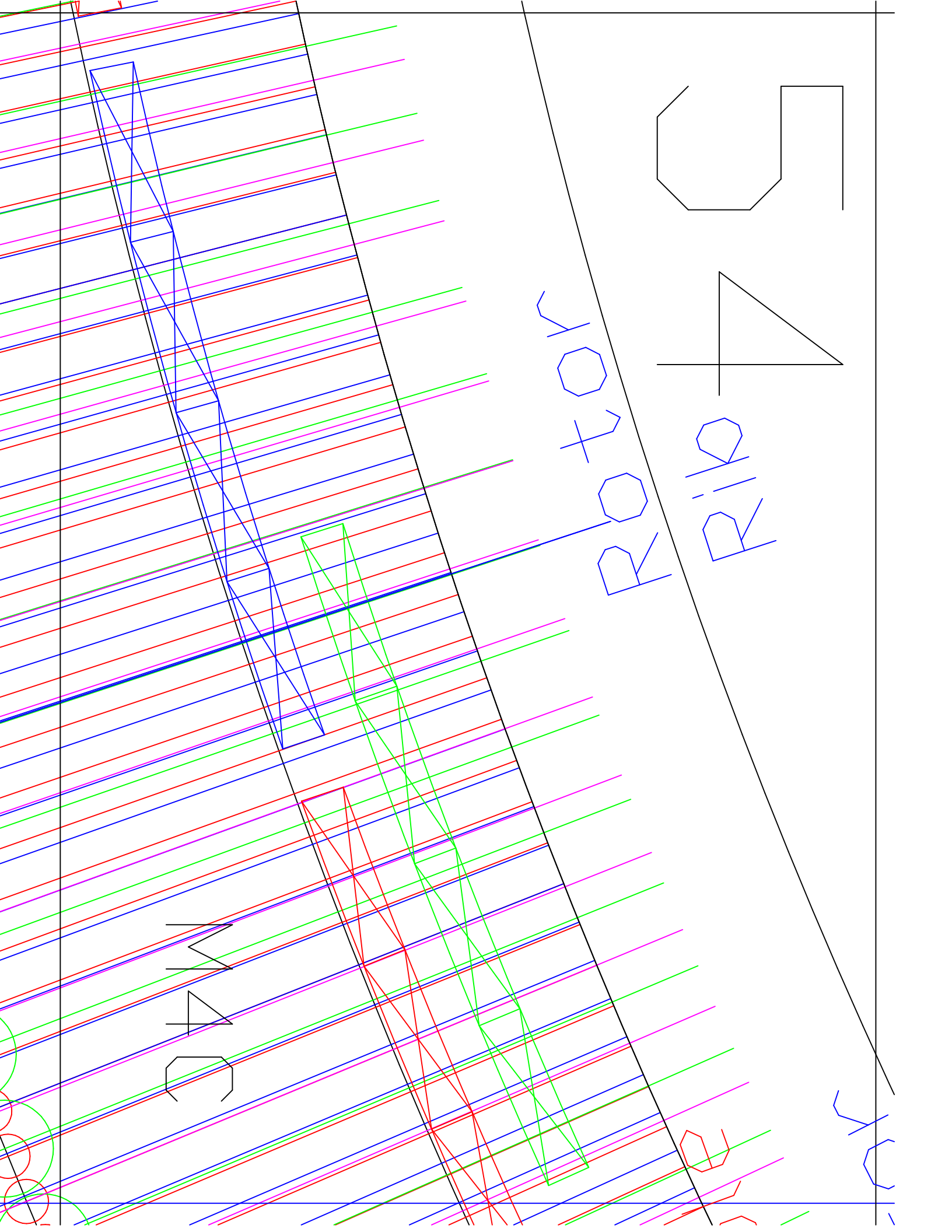
MINC





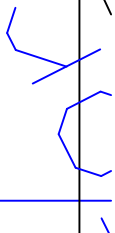
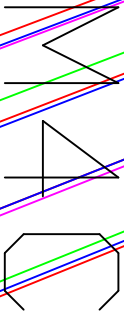


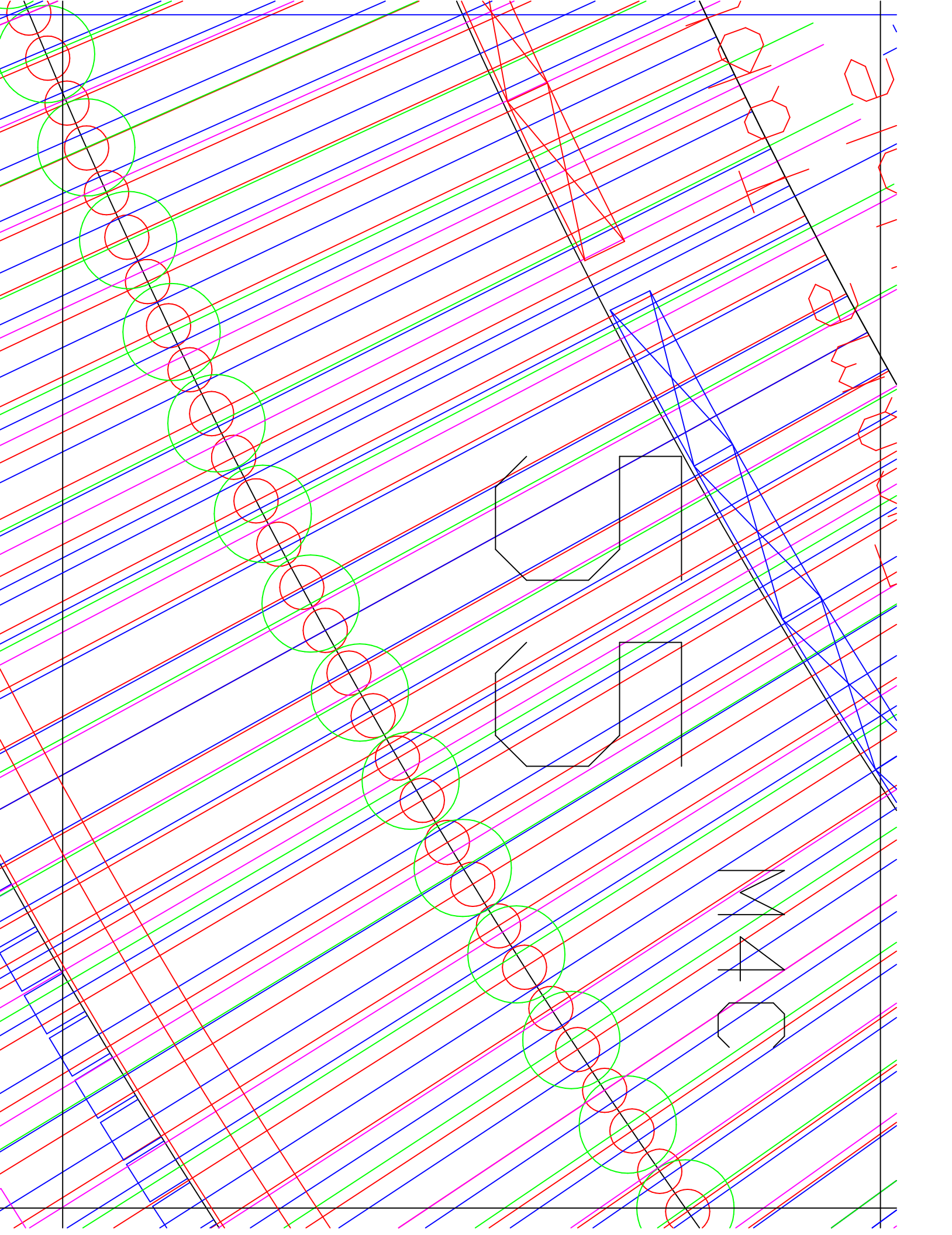


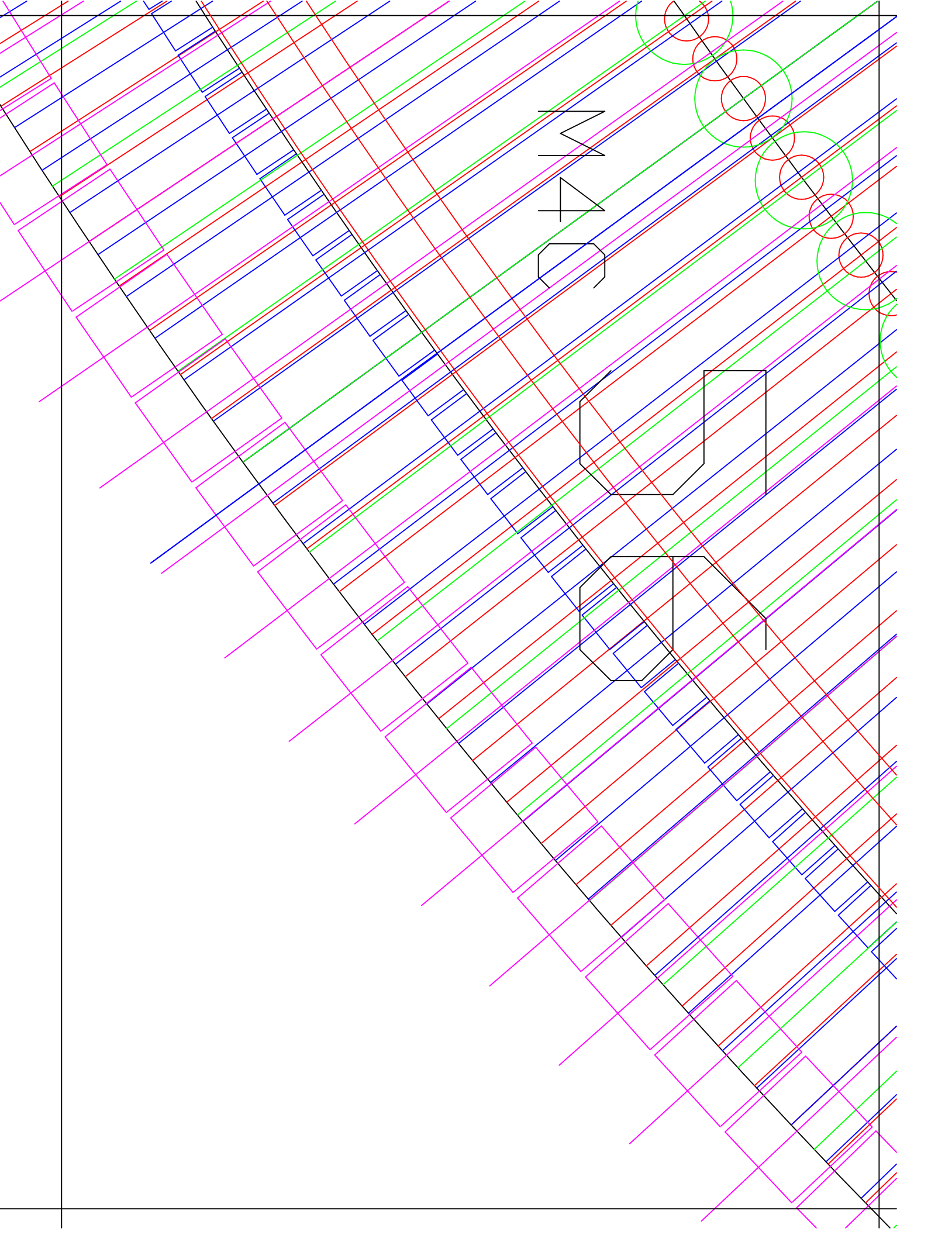


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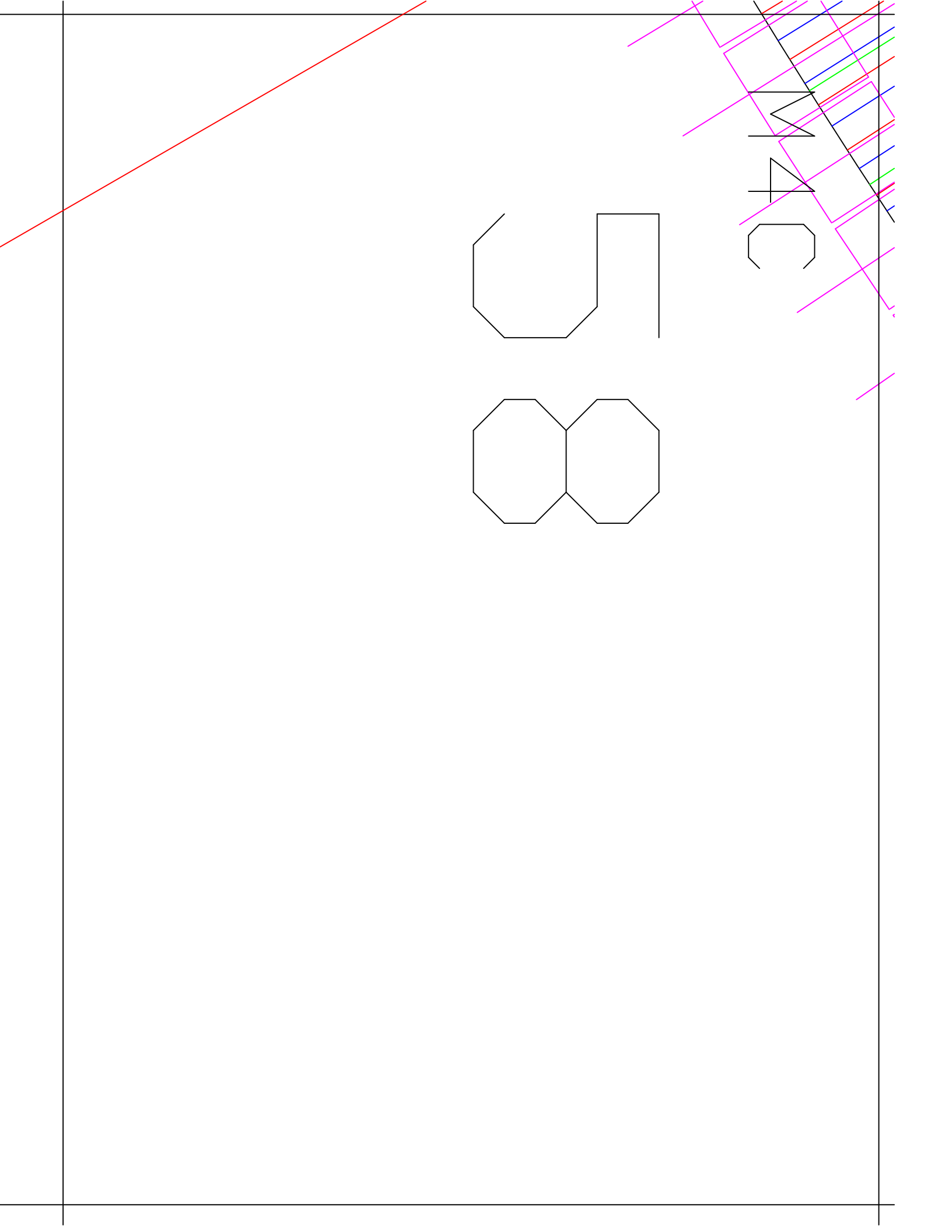


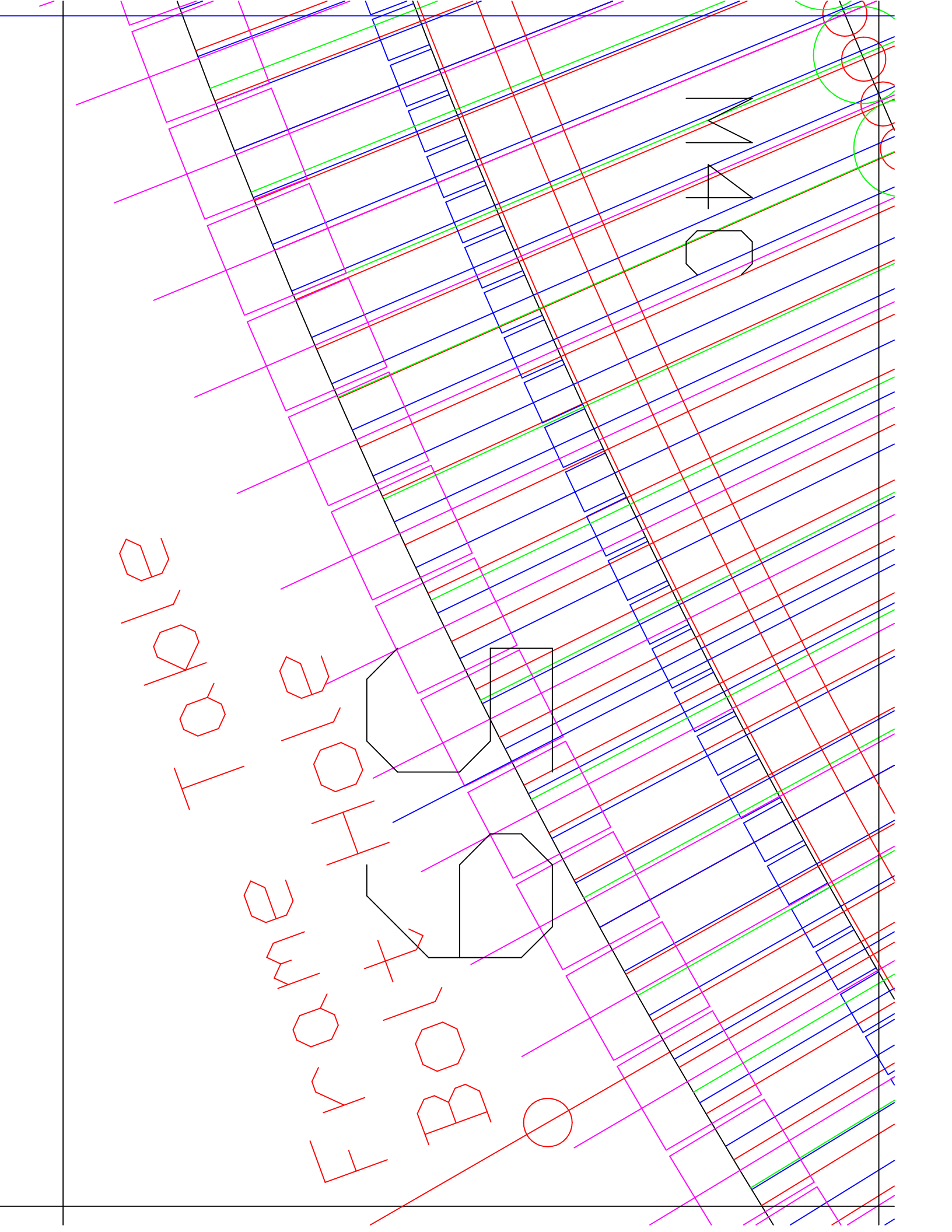
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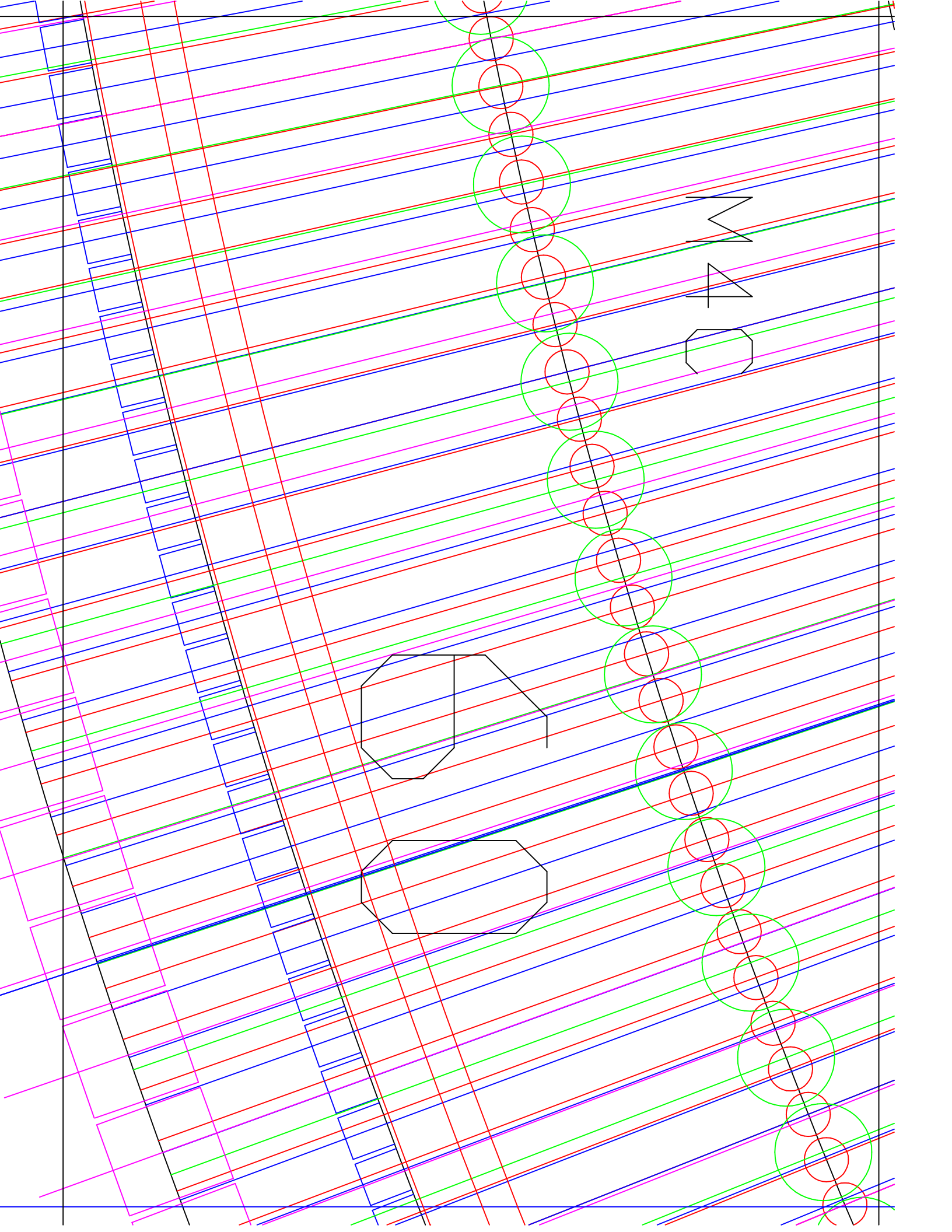
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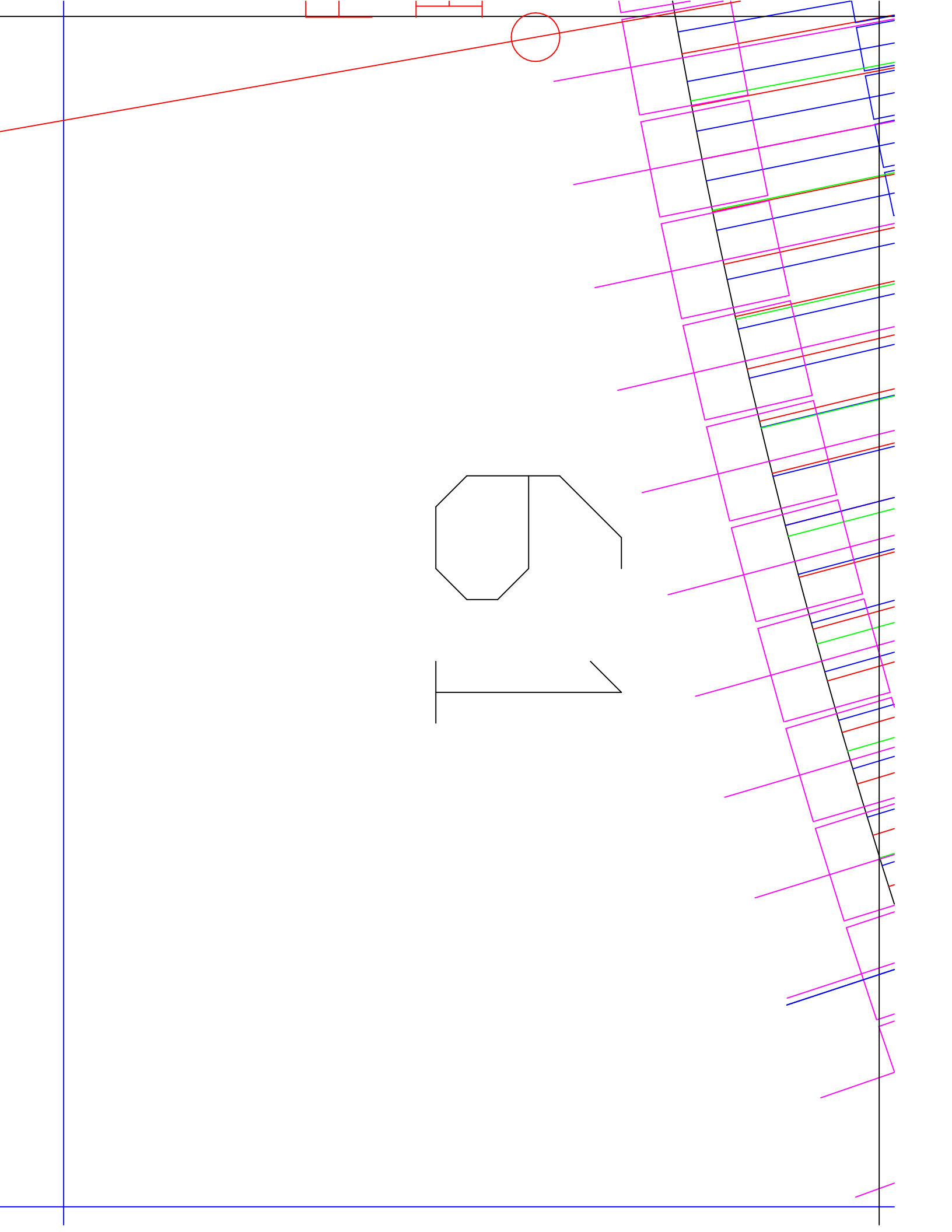
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4
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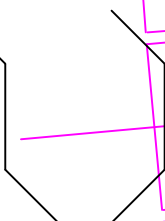
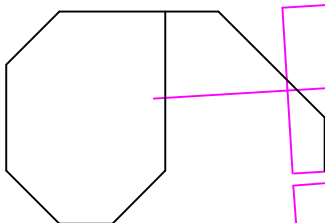






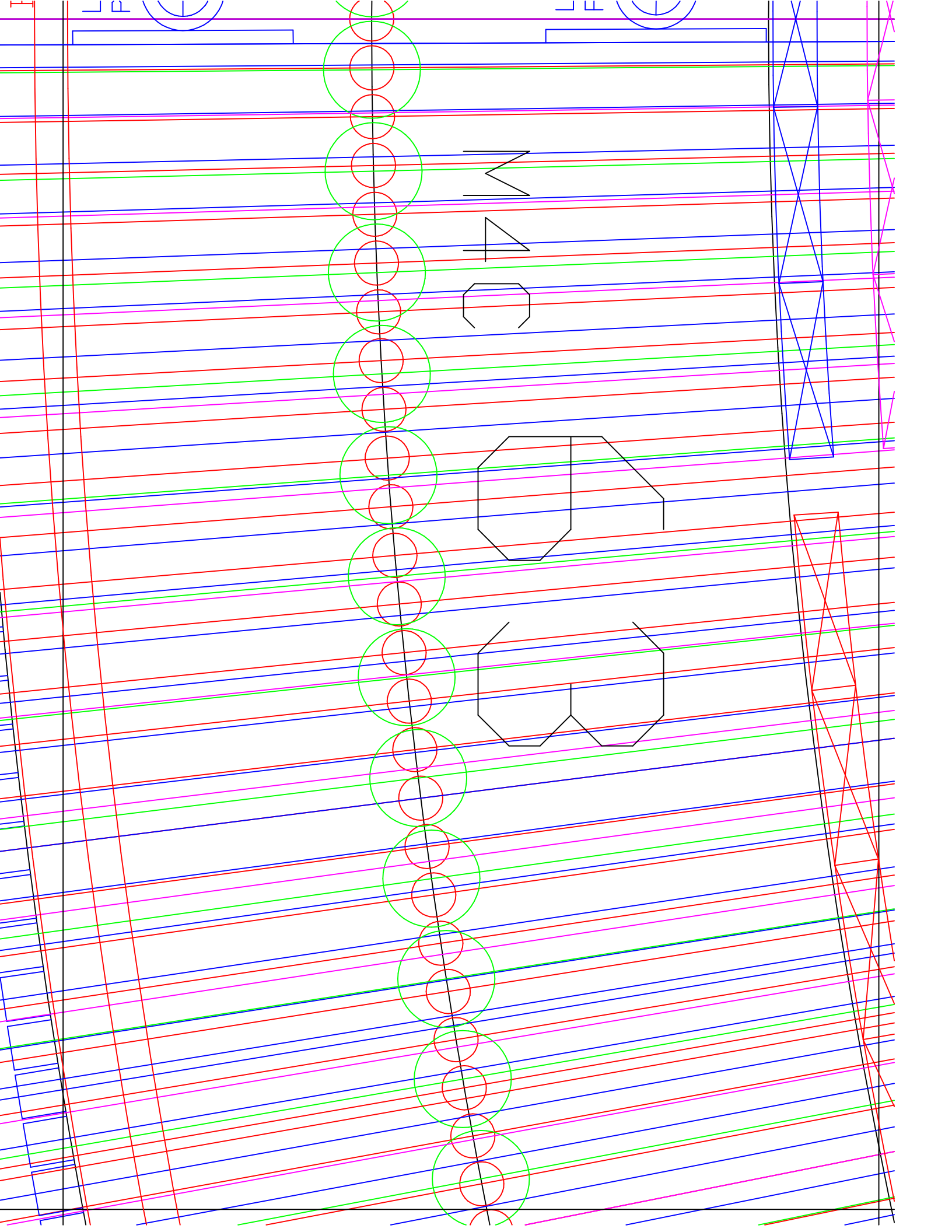


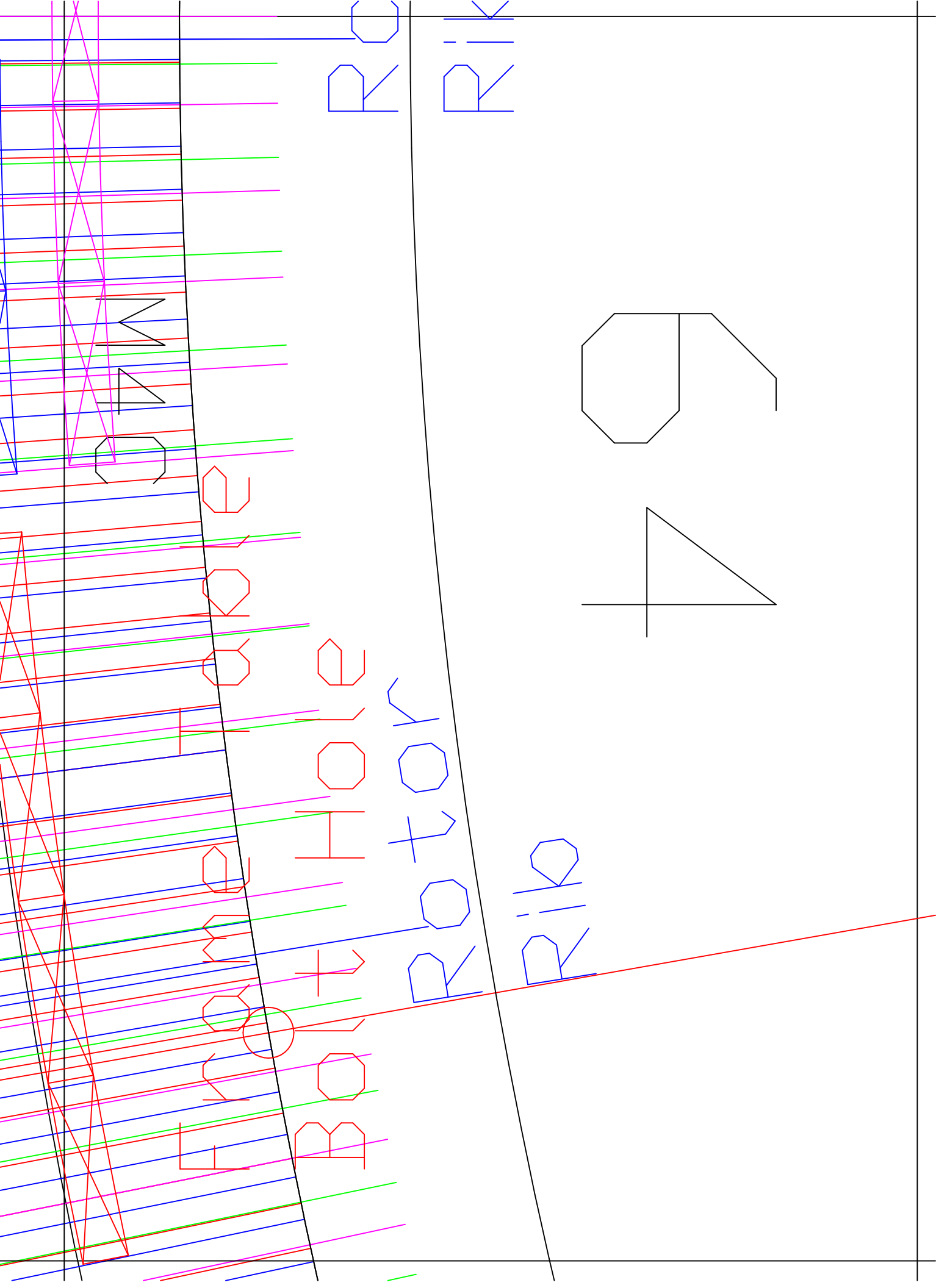
FOR THE
BOLT HOLES

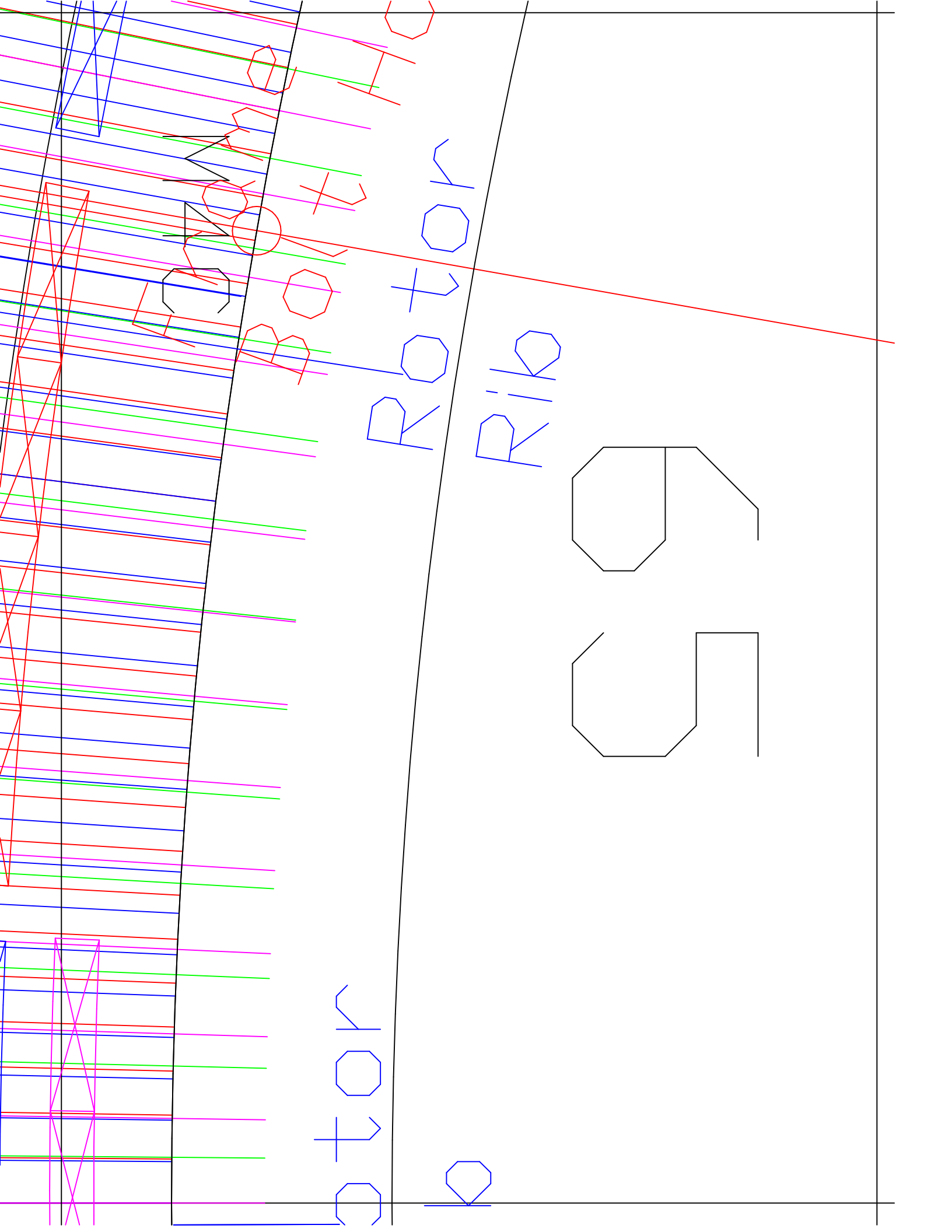


M4C



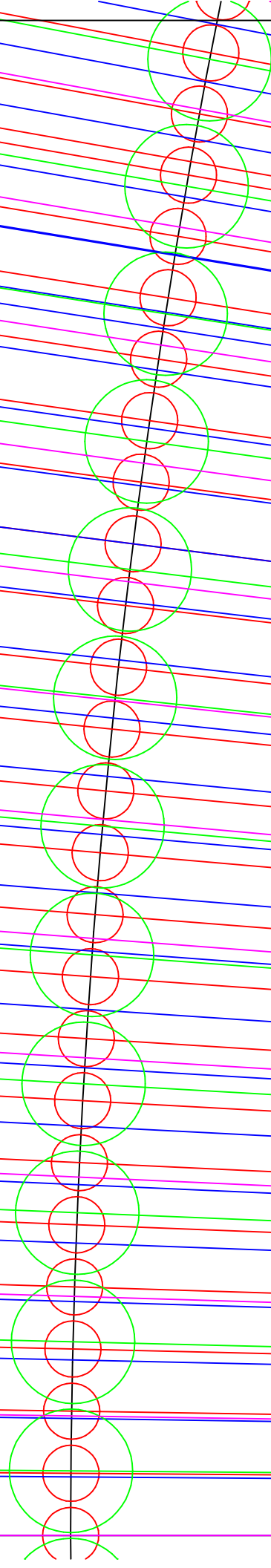
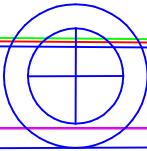




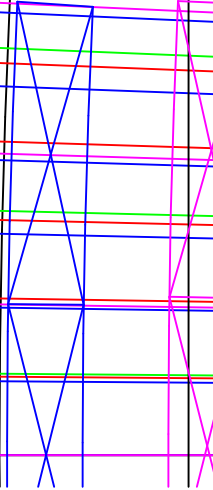
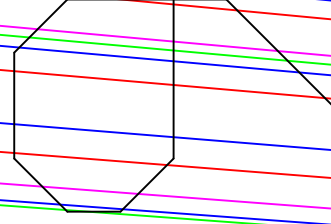
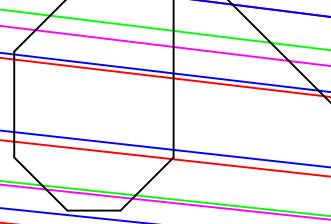
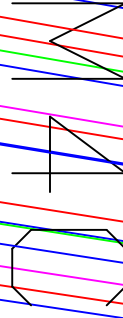
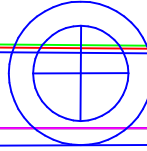


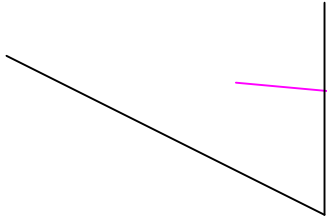
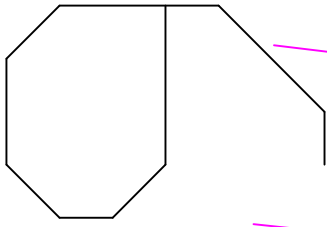
Balance Tube

Lifting/Relocating
Point



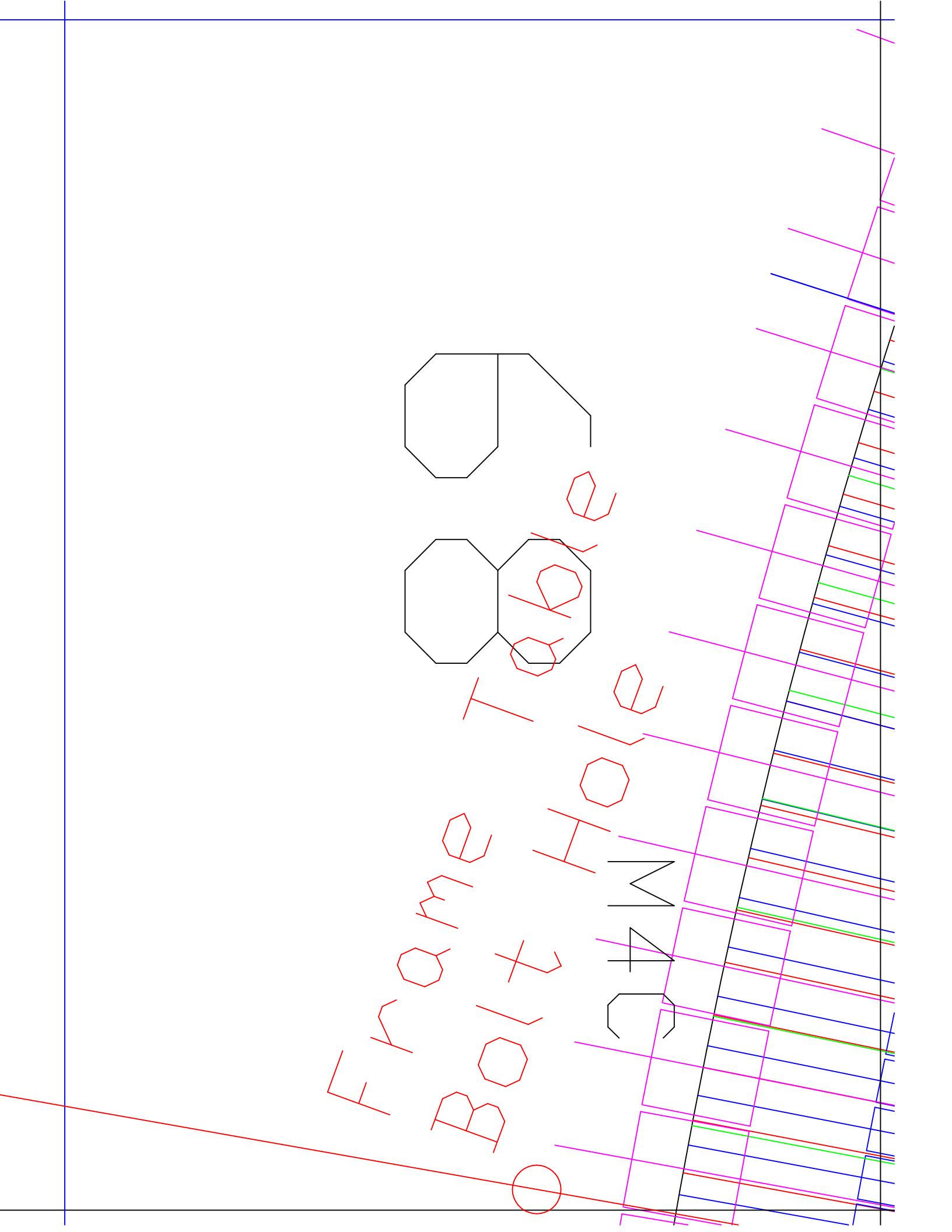
Lifting/Relocating
Point

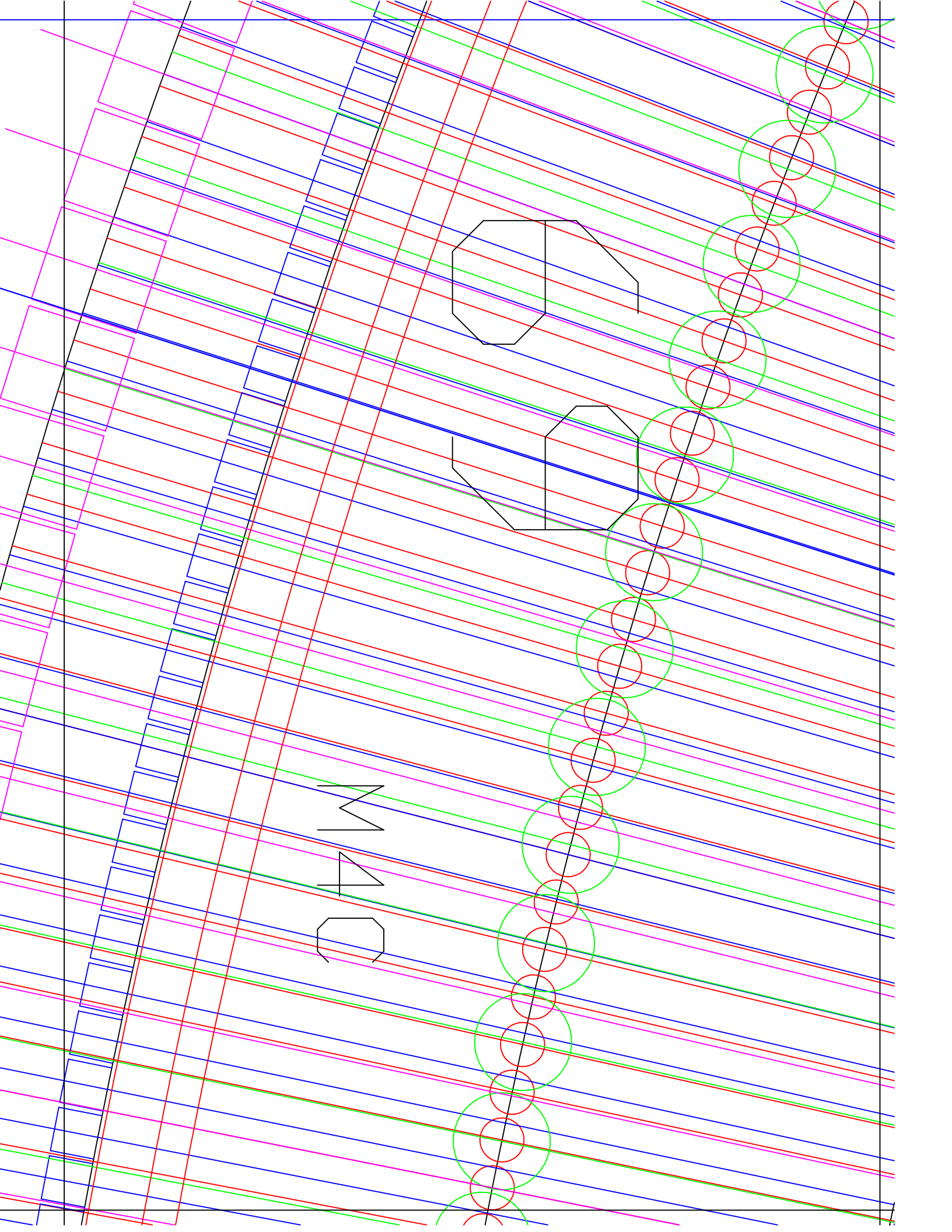


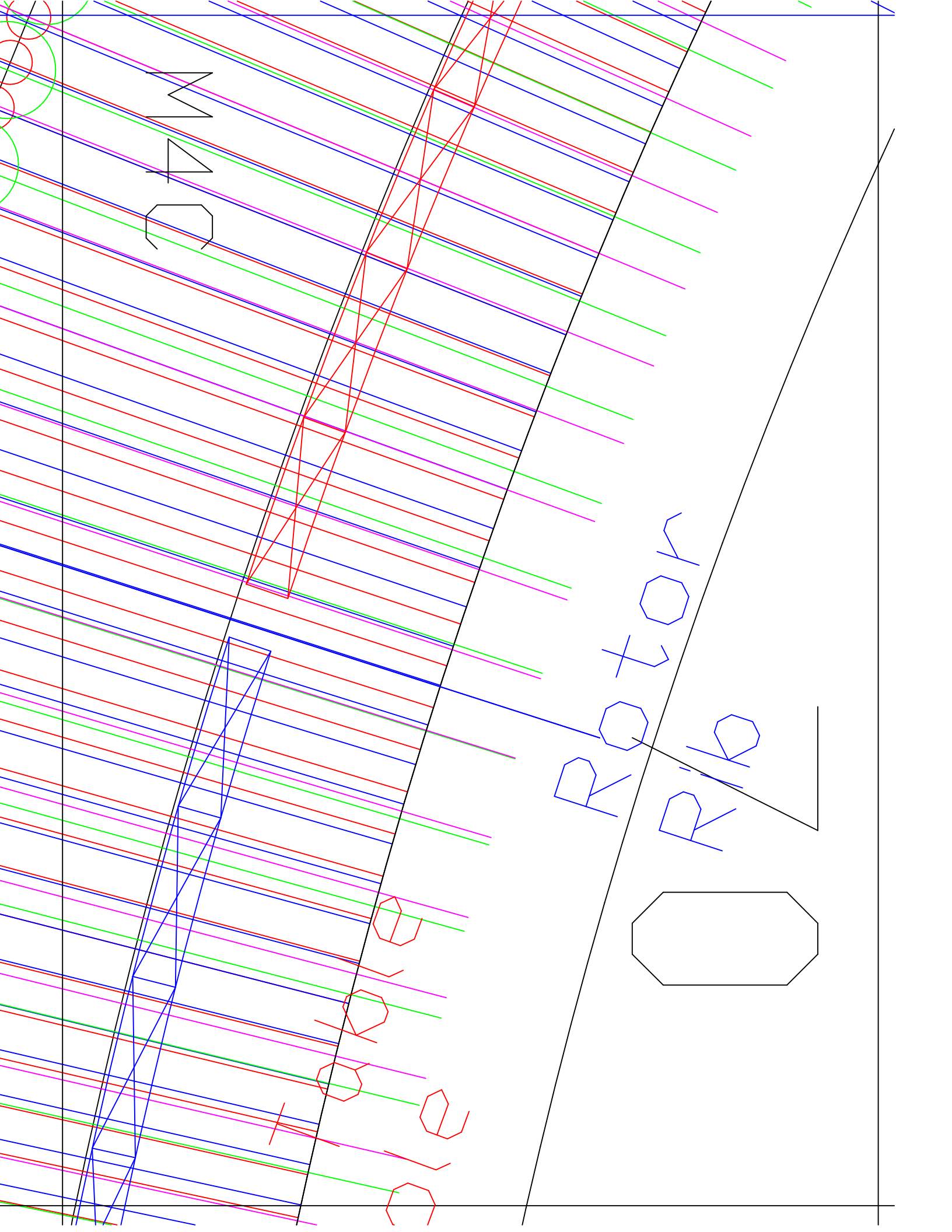


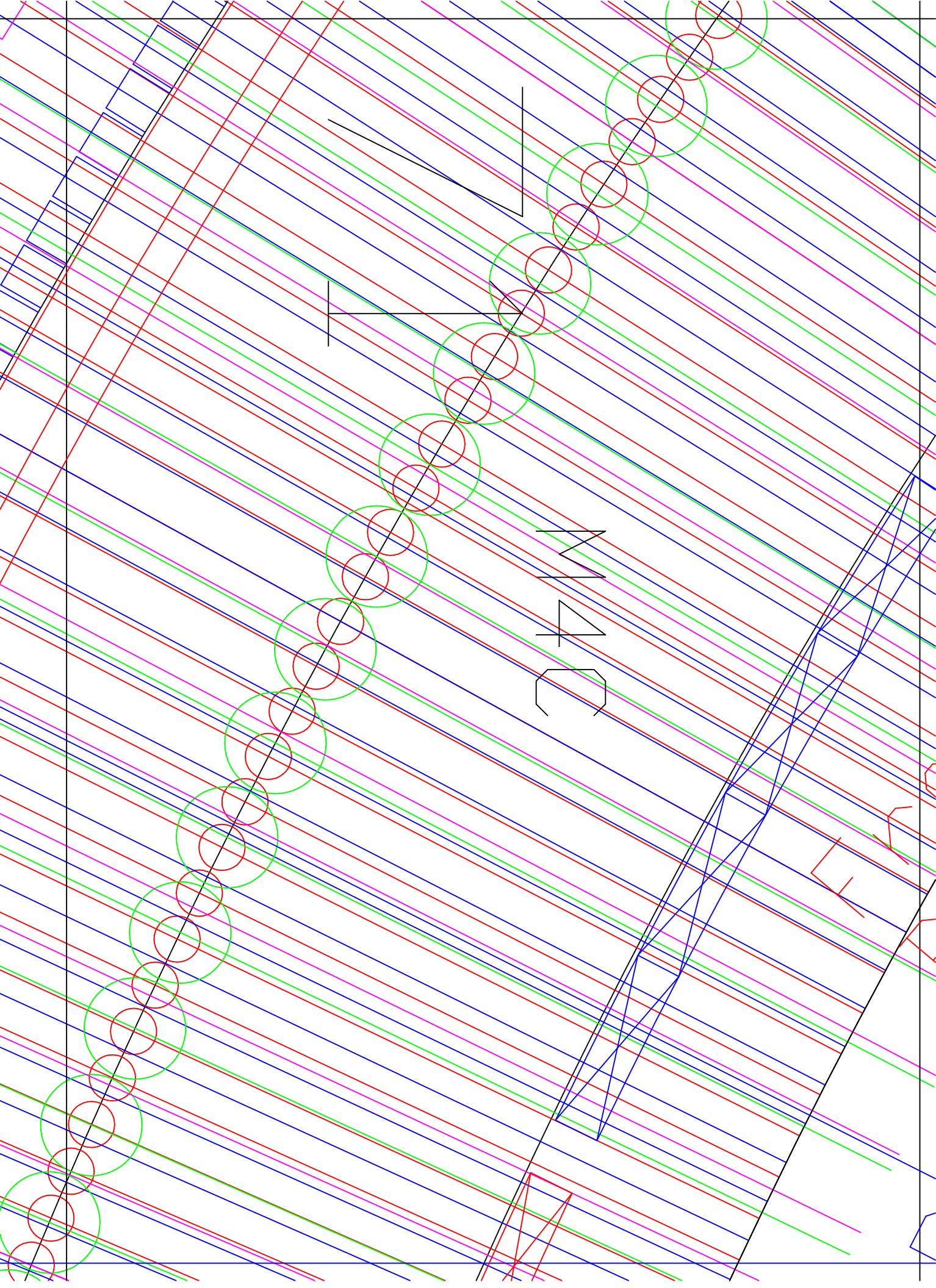
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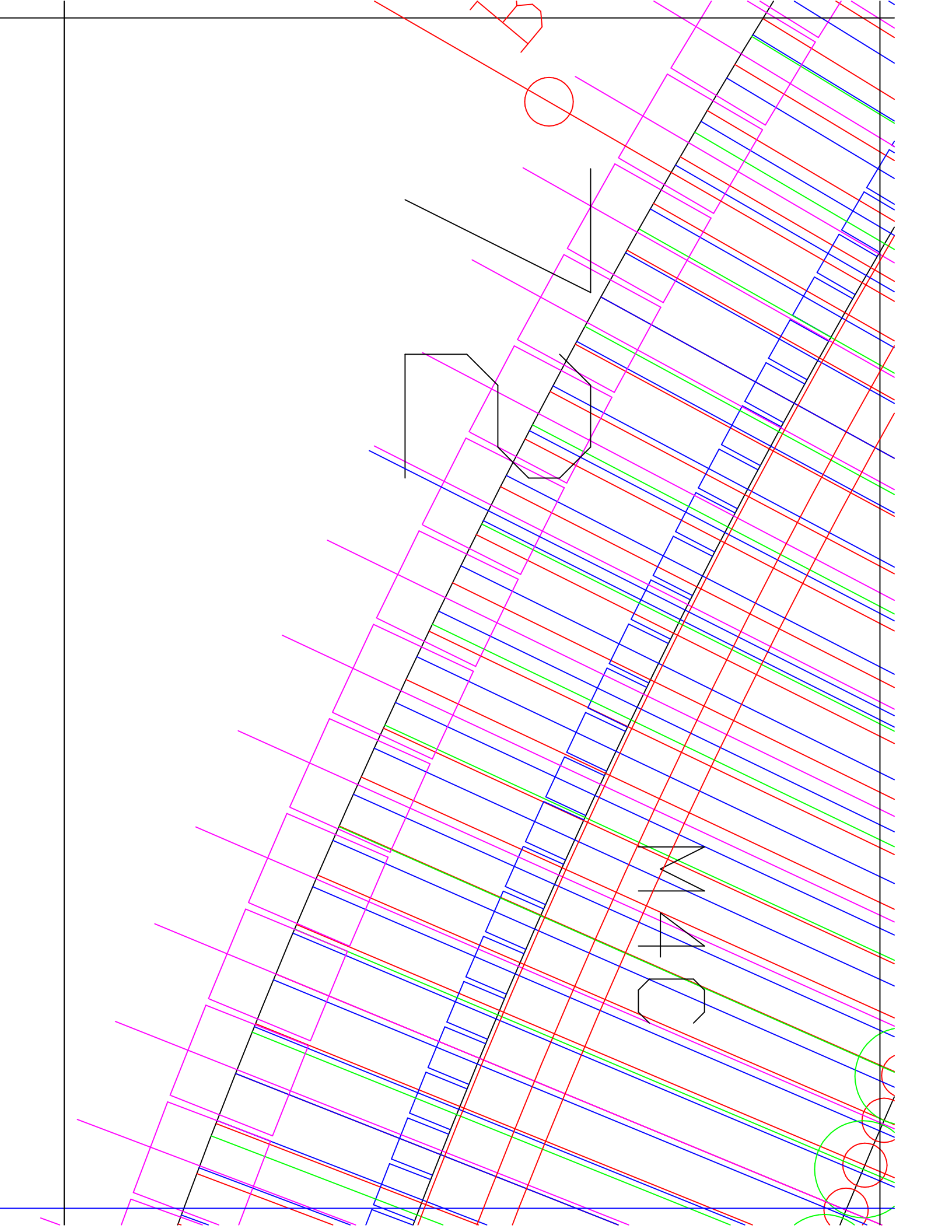
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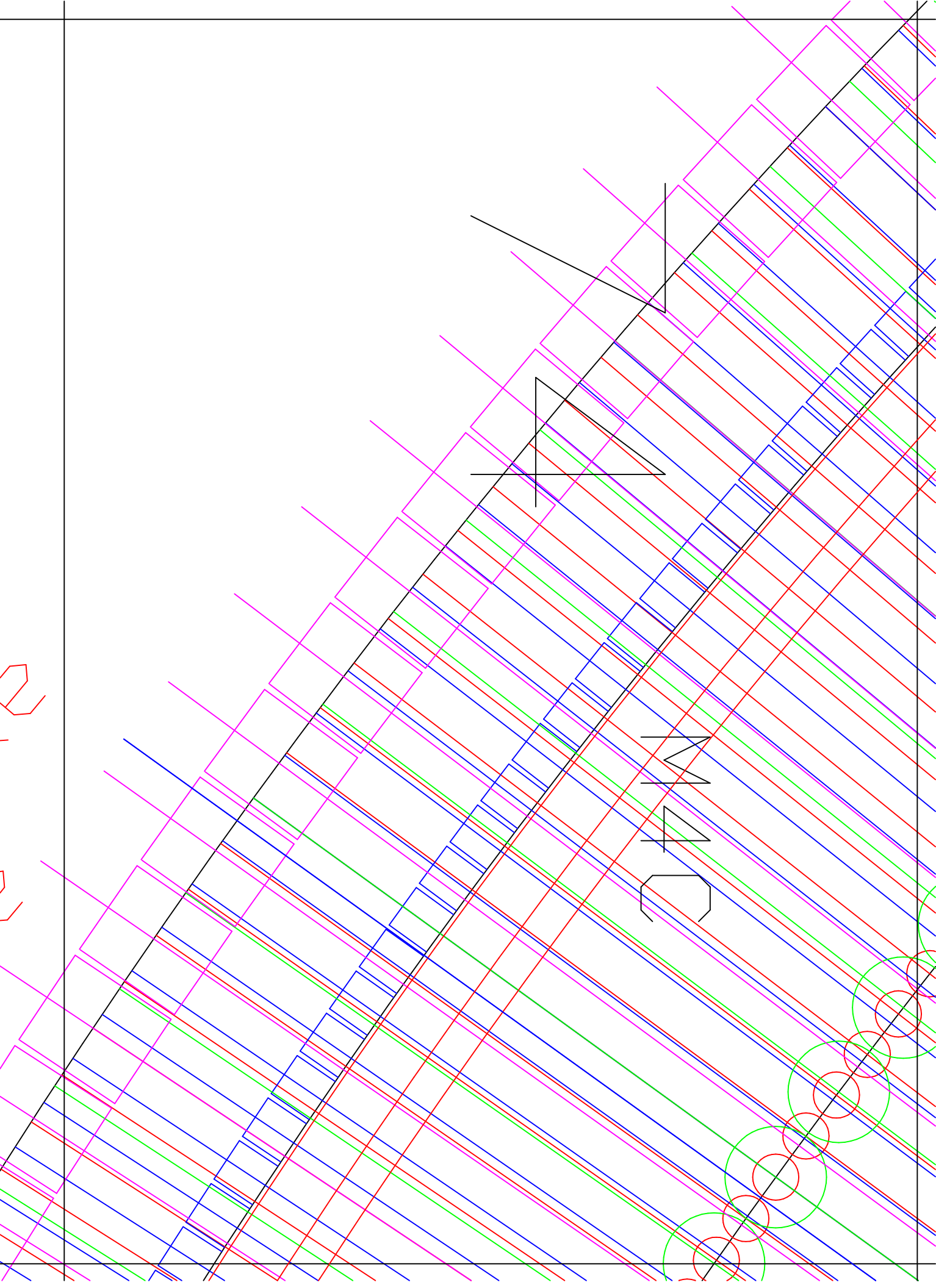


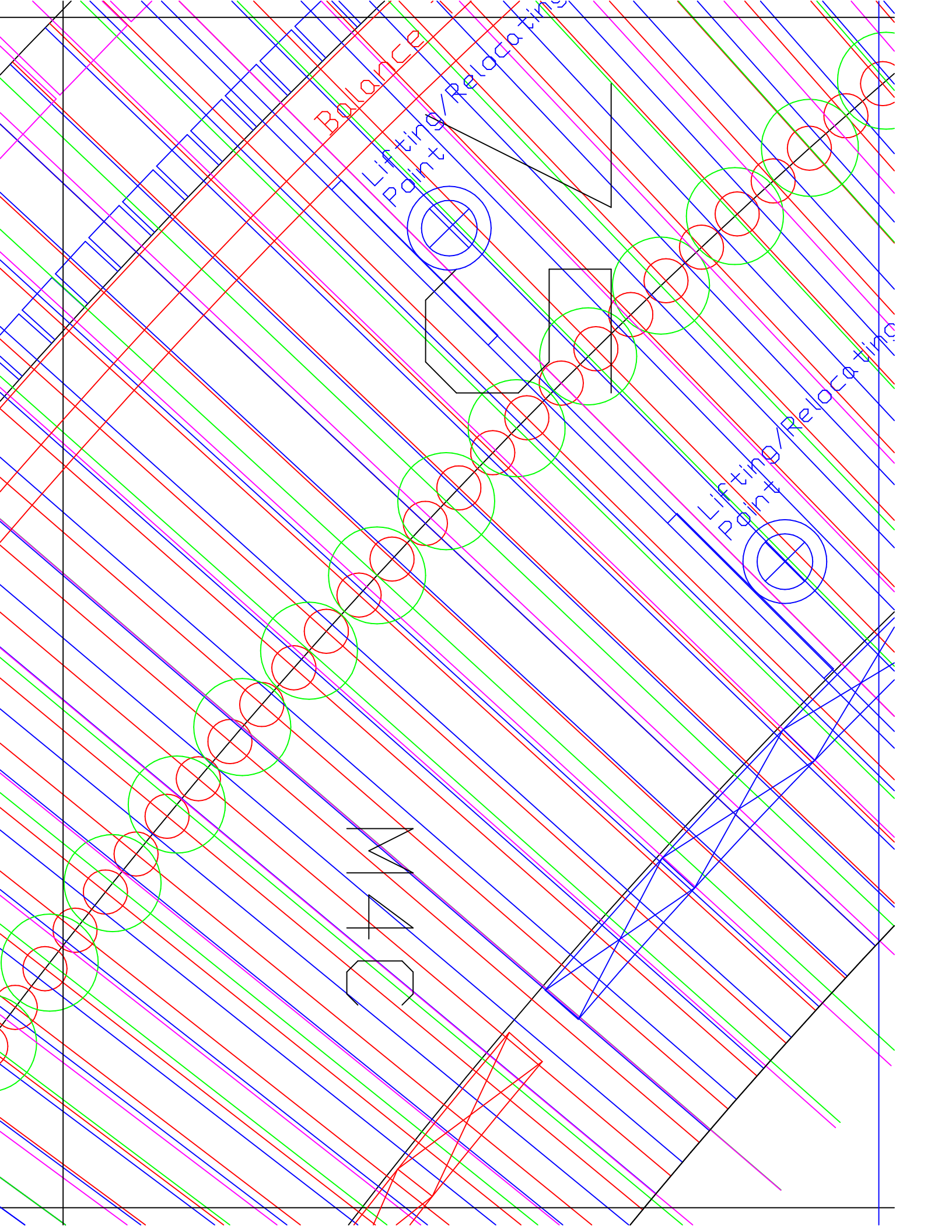


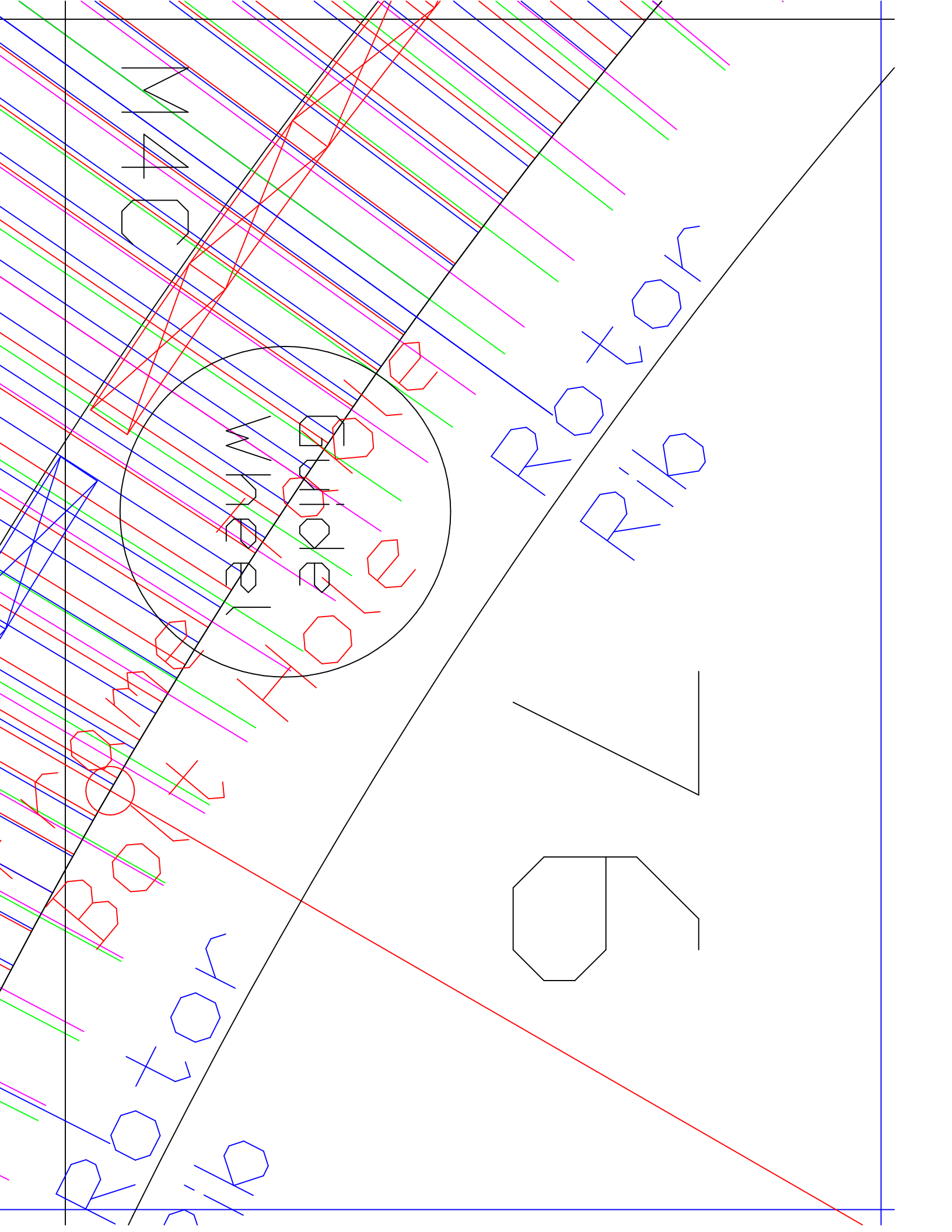




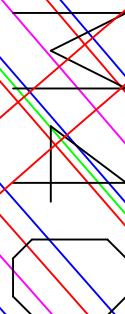




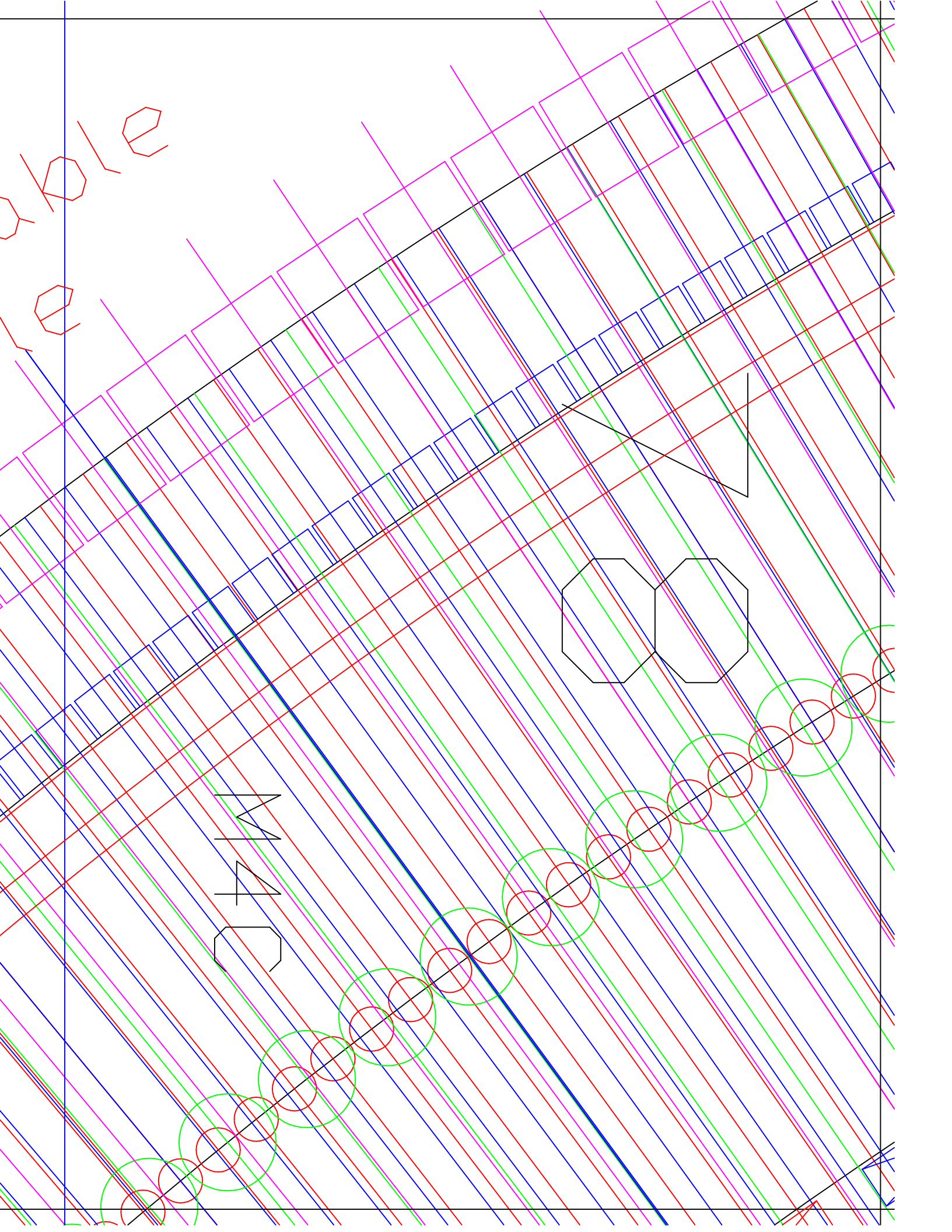


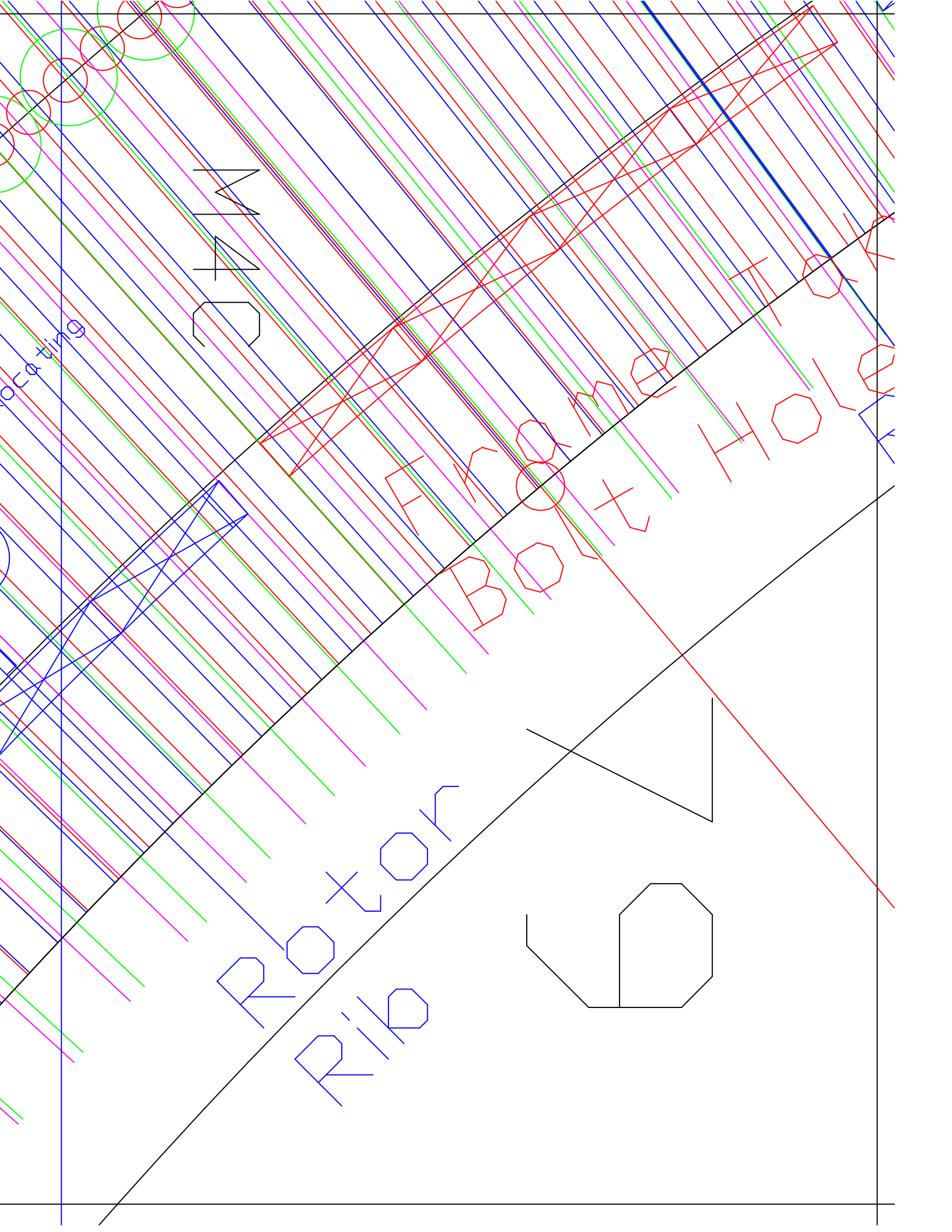


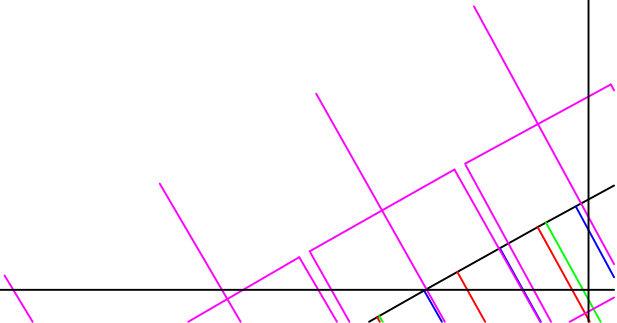
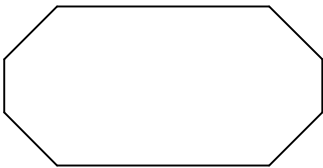
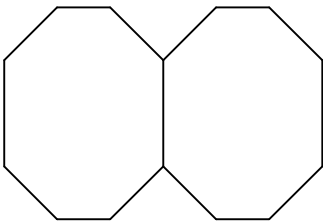
FRONT VIEW
Bolt Hole

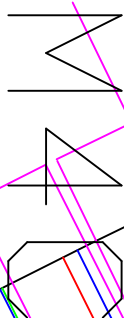
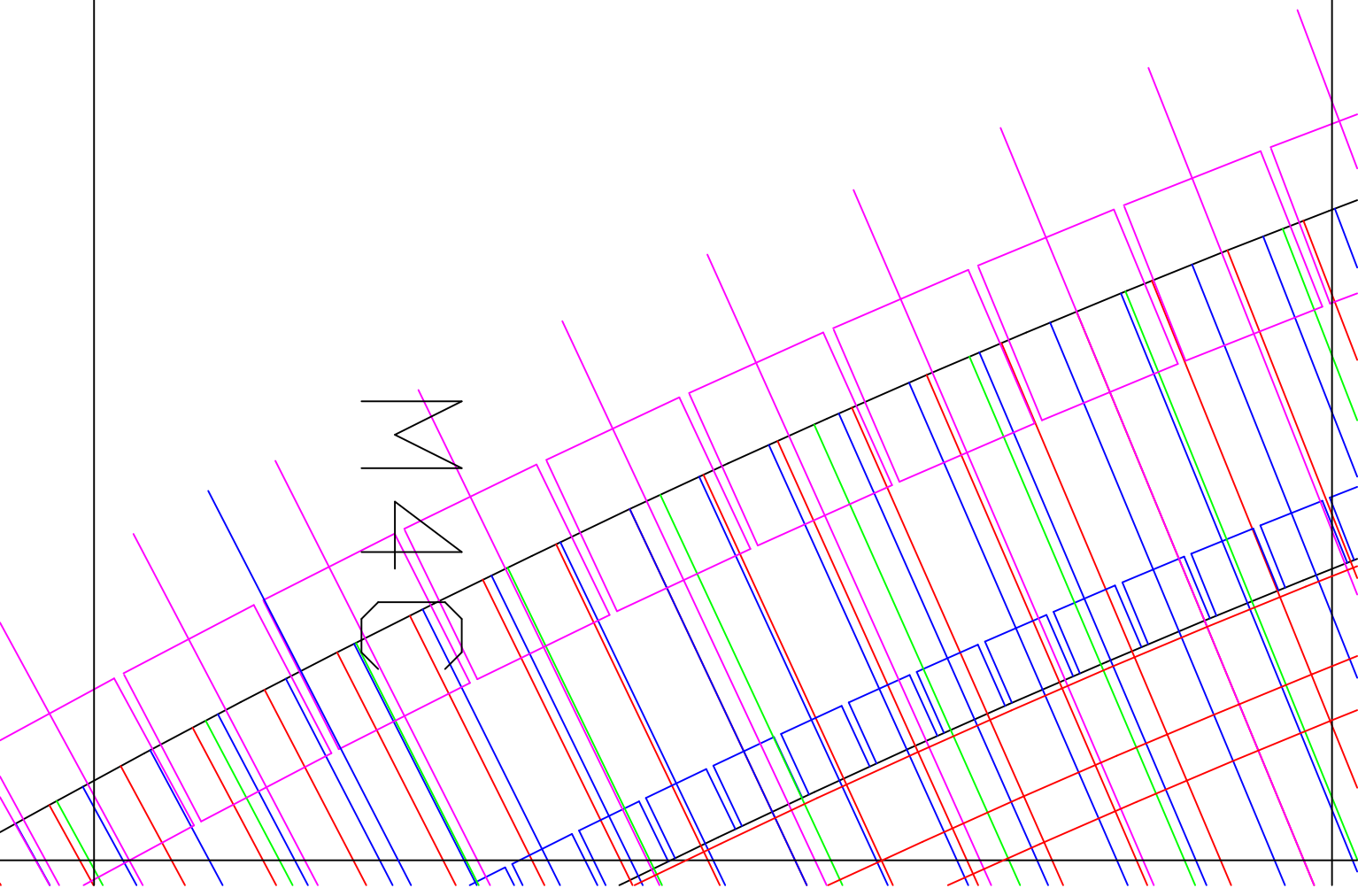
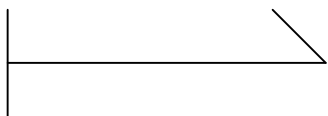
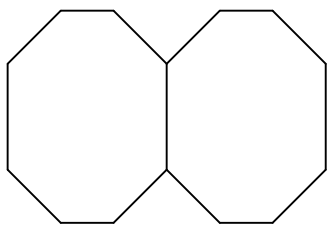


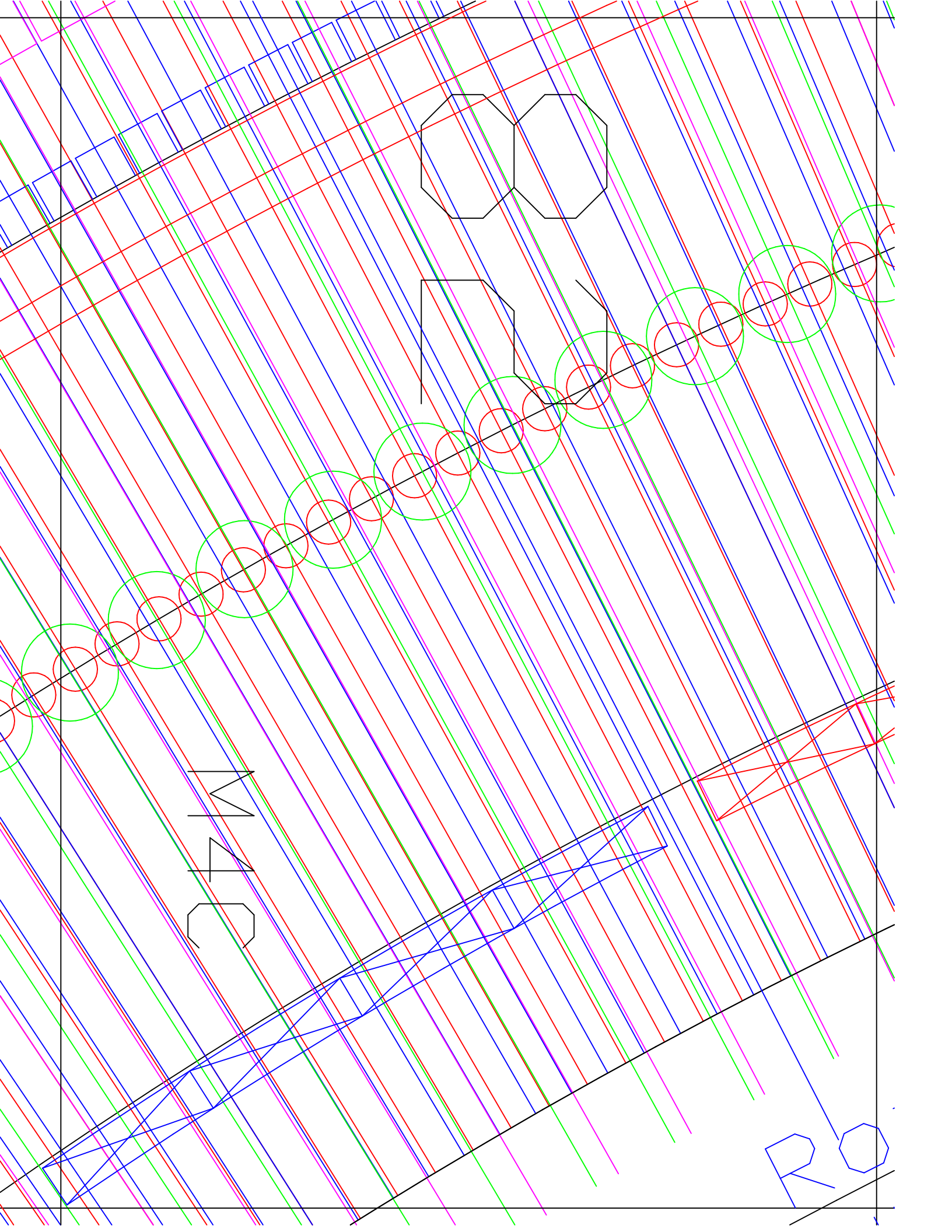
Tube
fitting

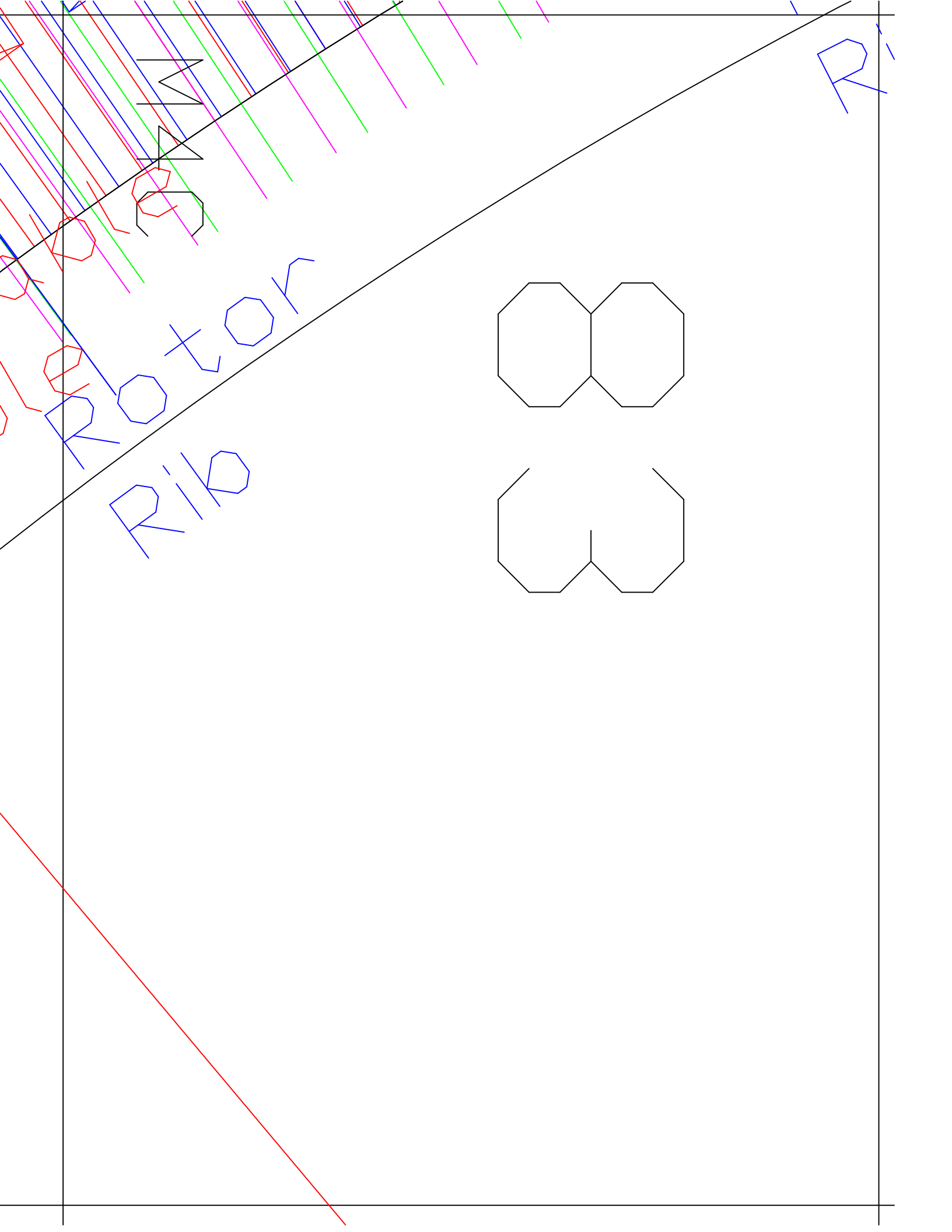


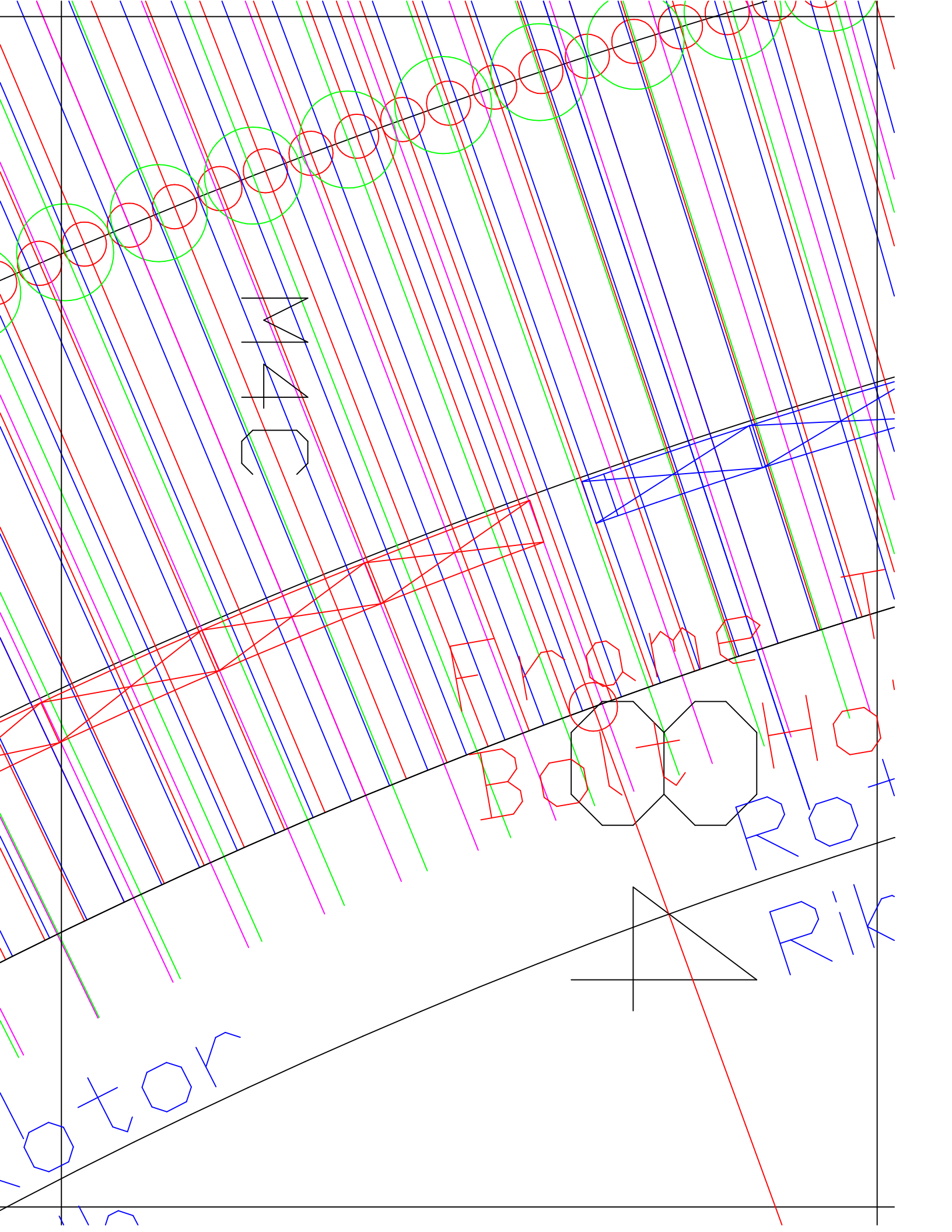


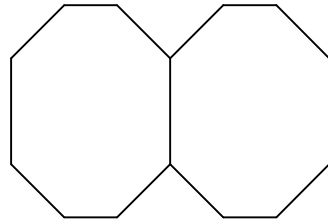




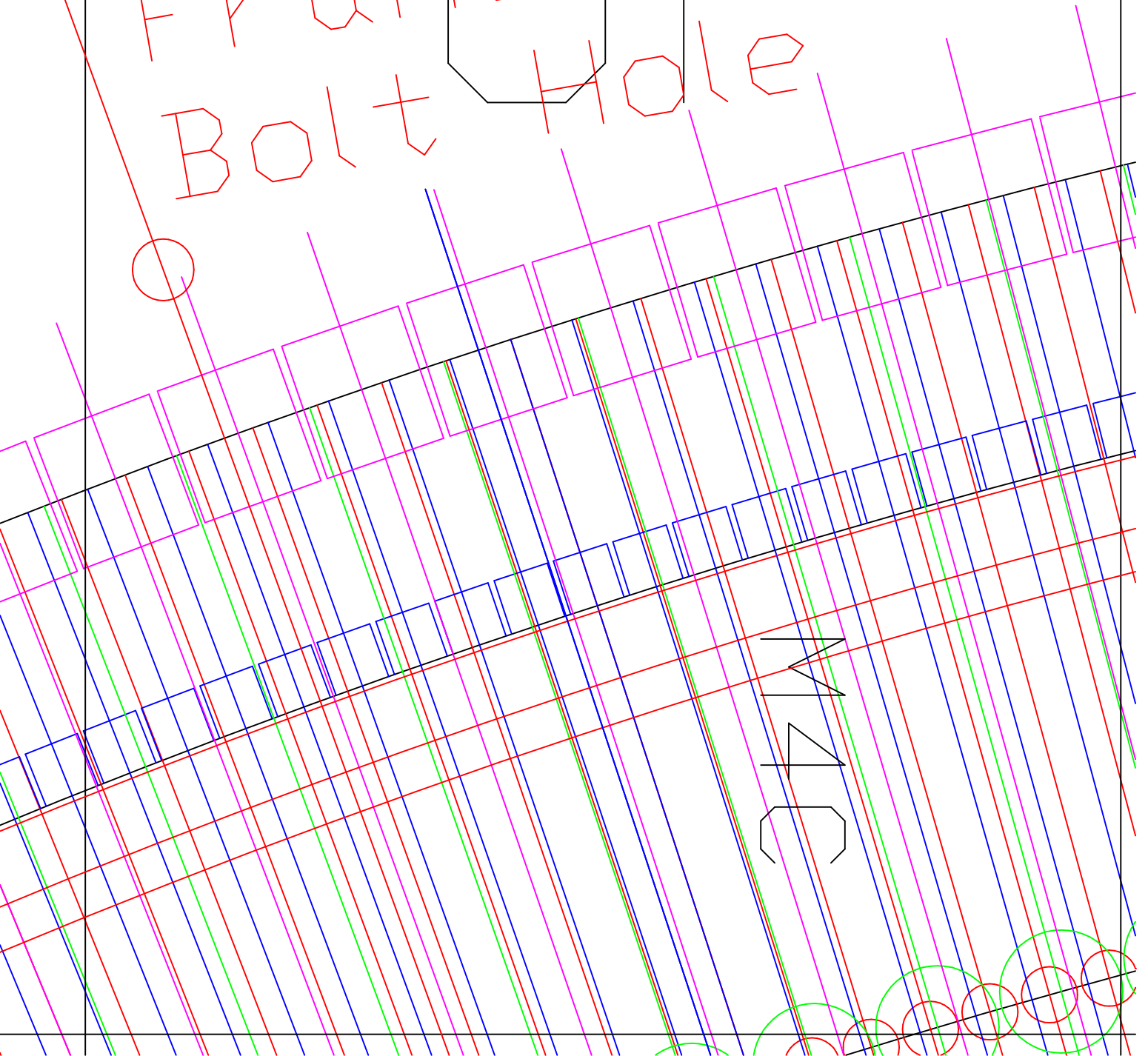




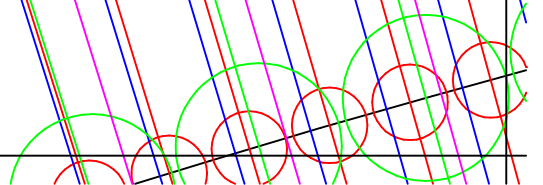


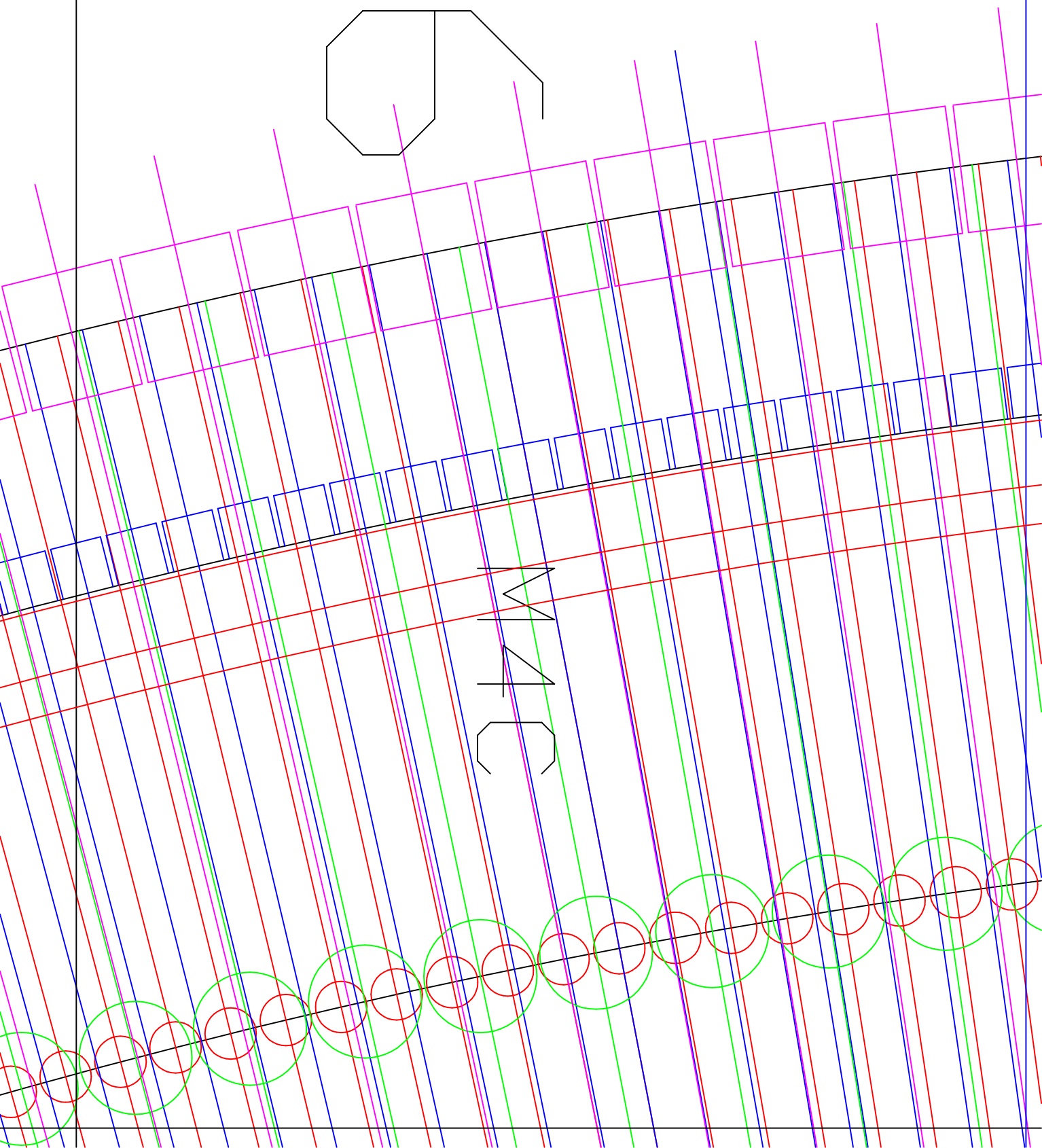
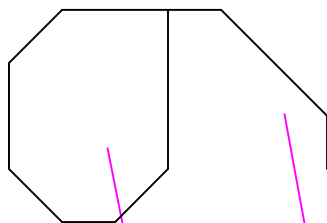
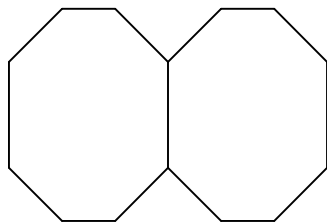


Frame Table
Bolt Hole



MINC





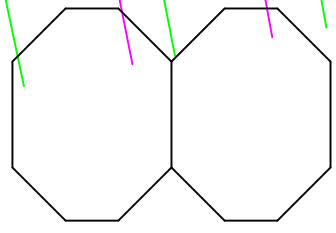
MC

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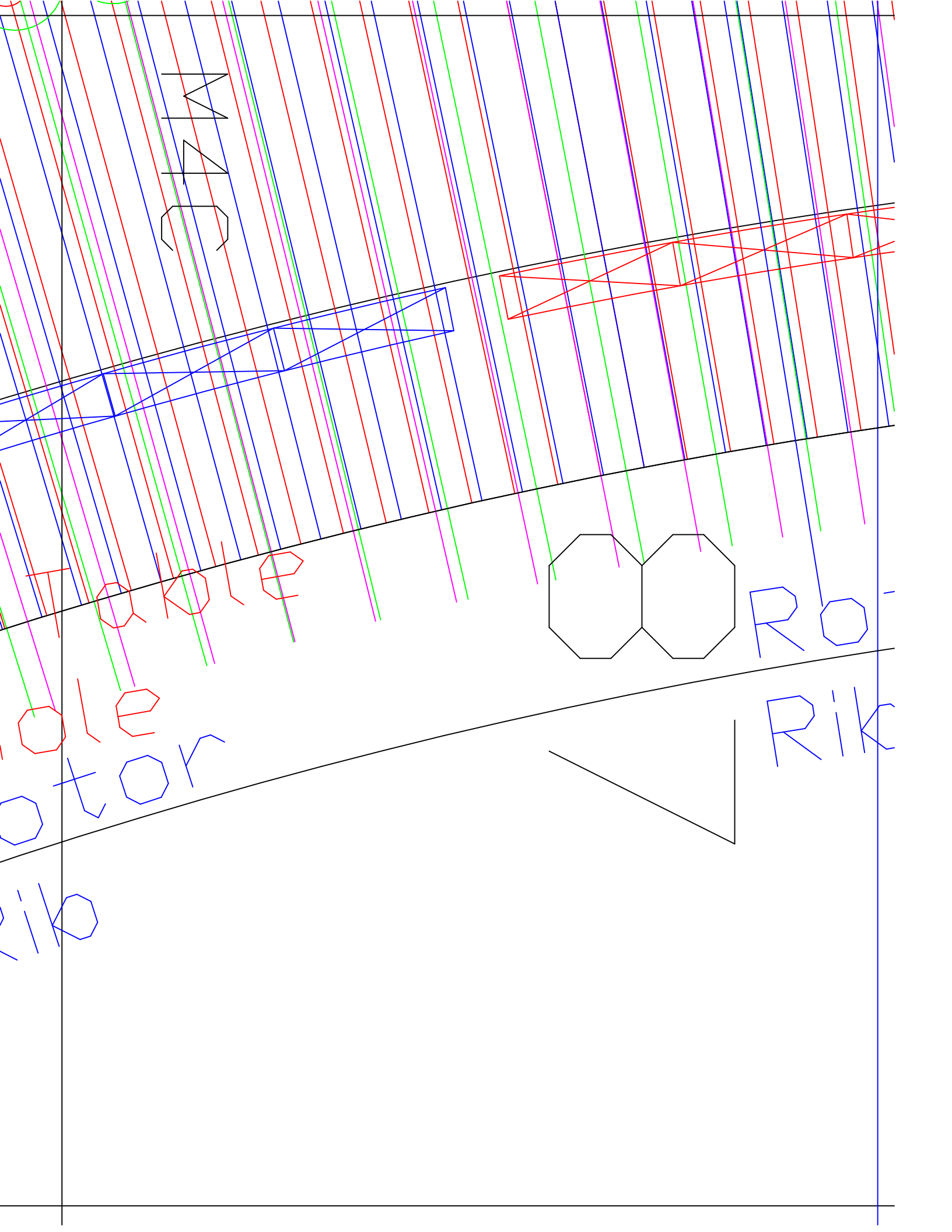
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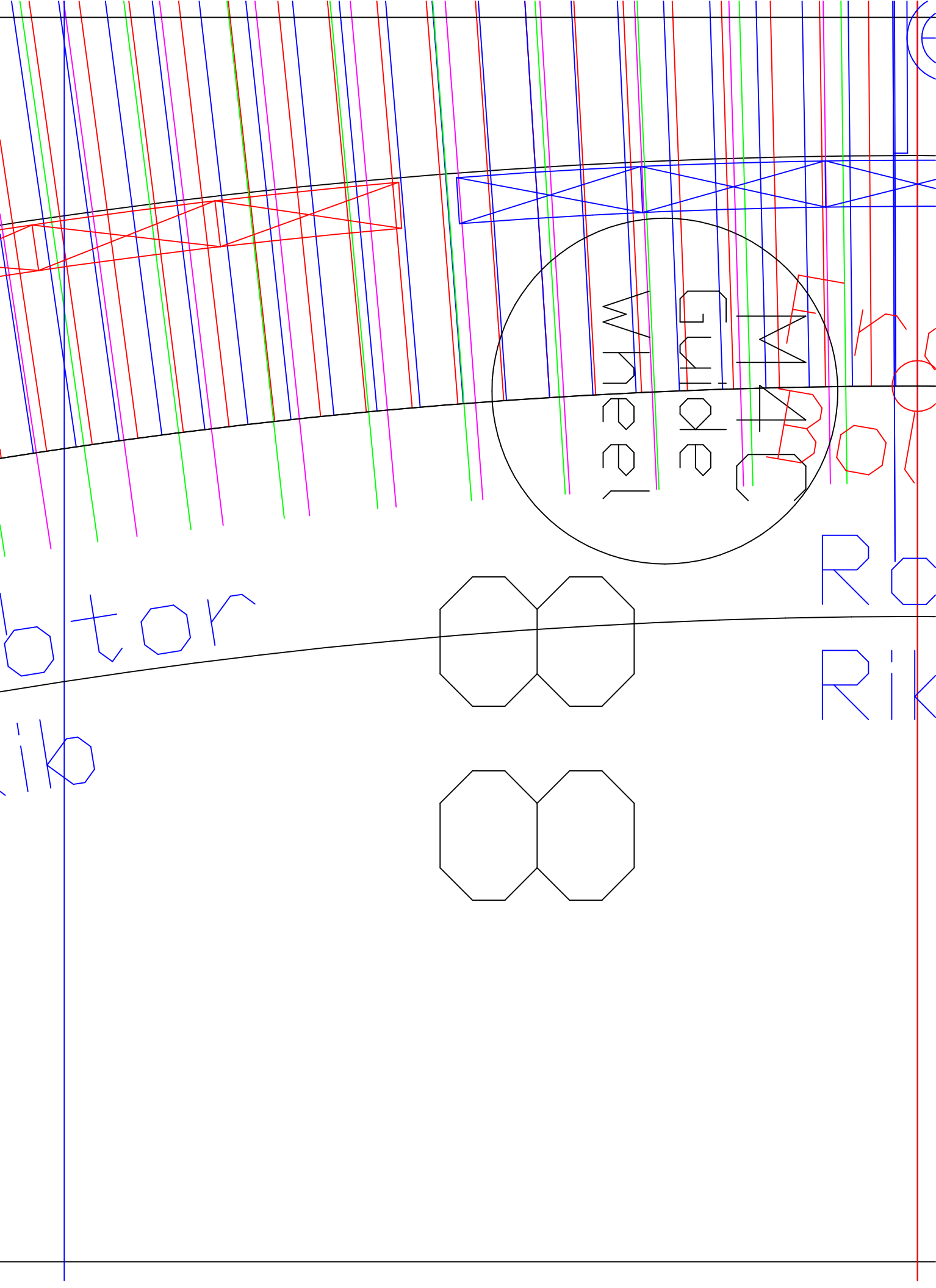
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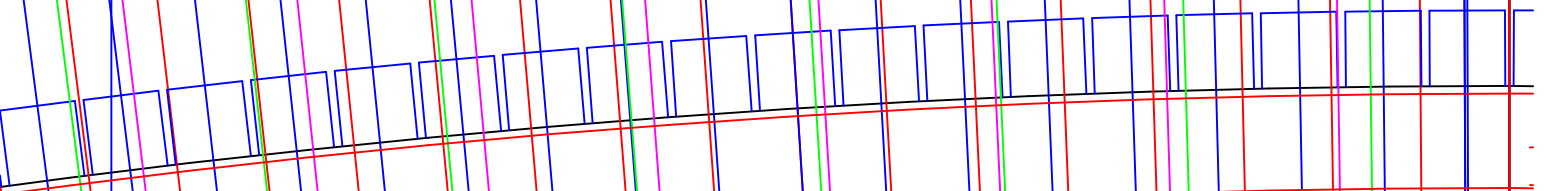
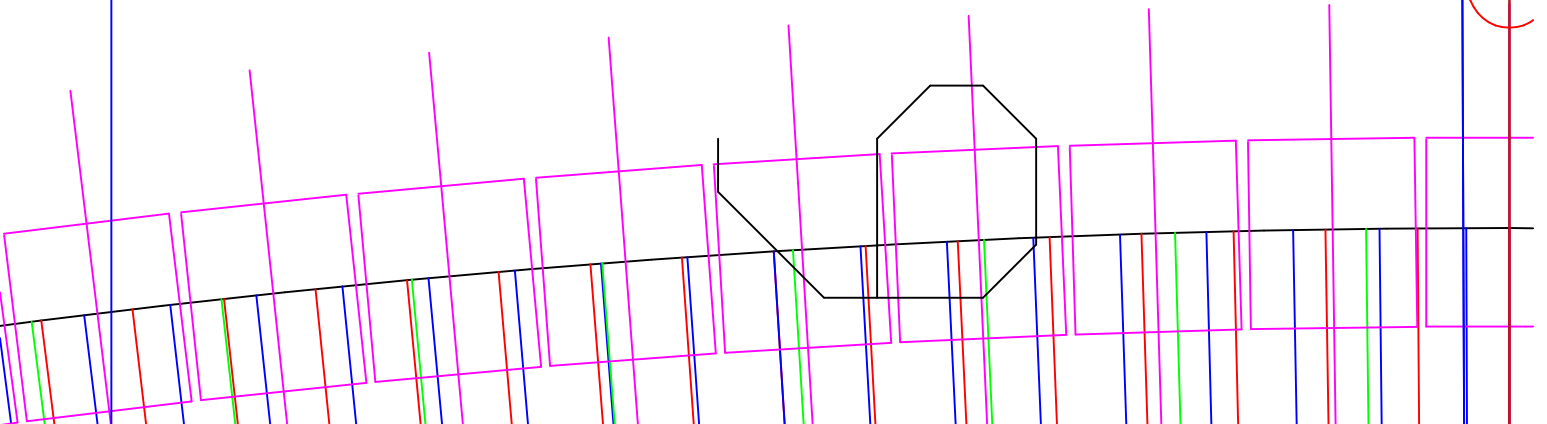
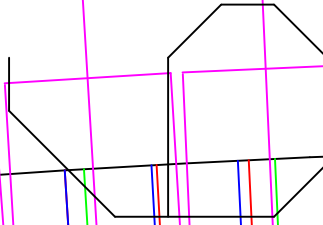
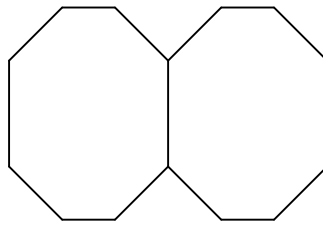


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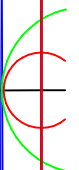
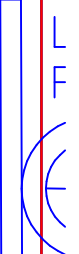
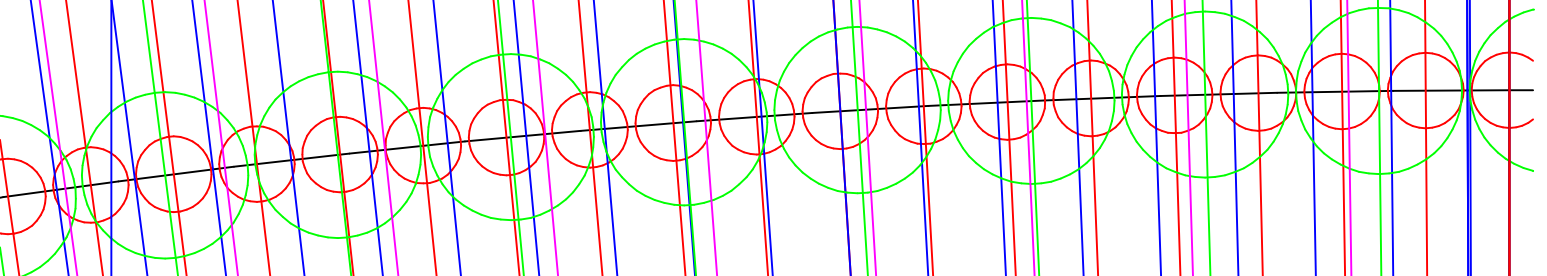
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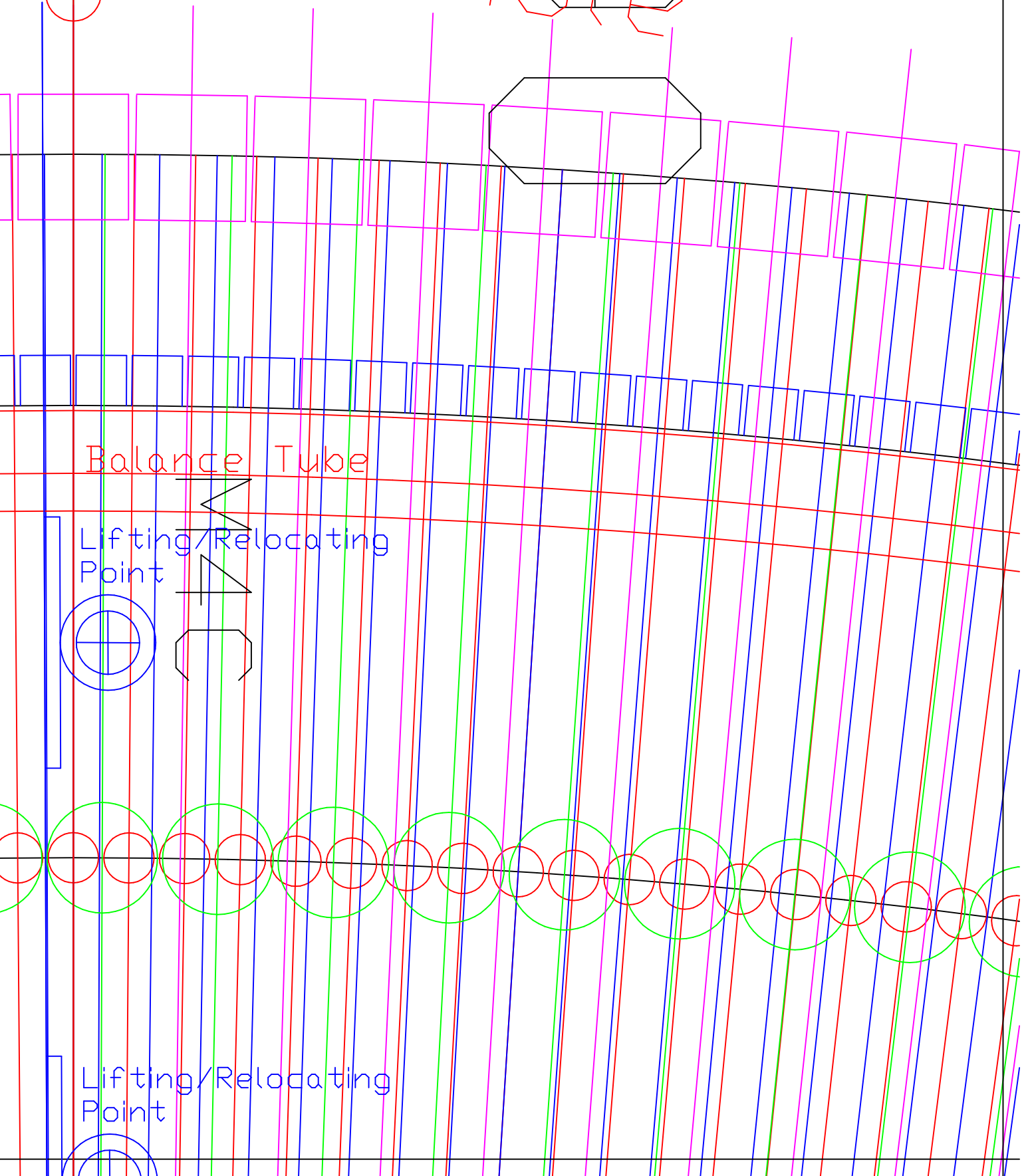


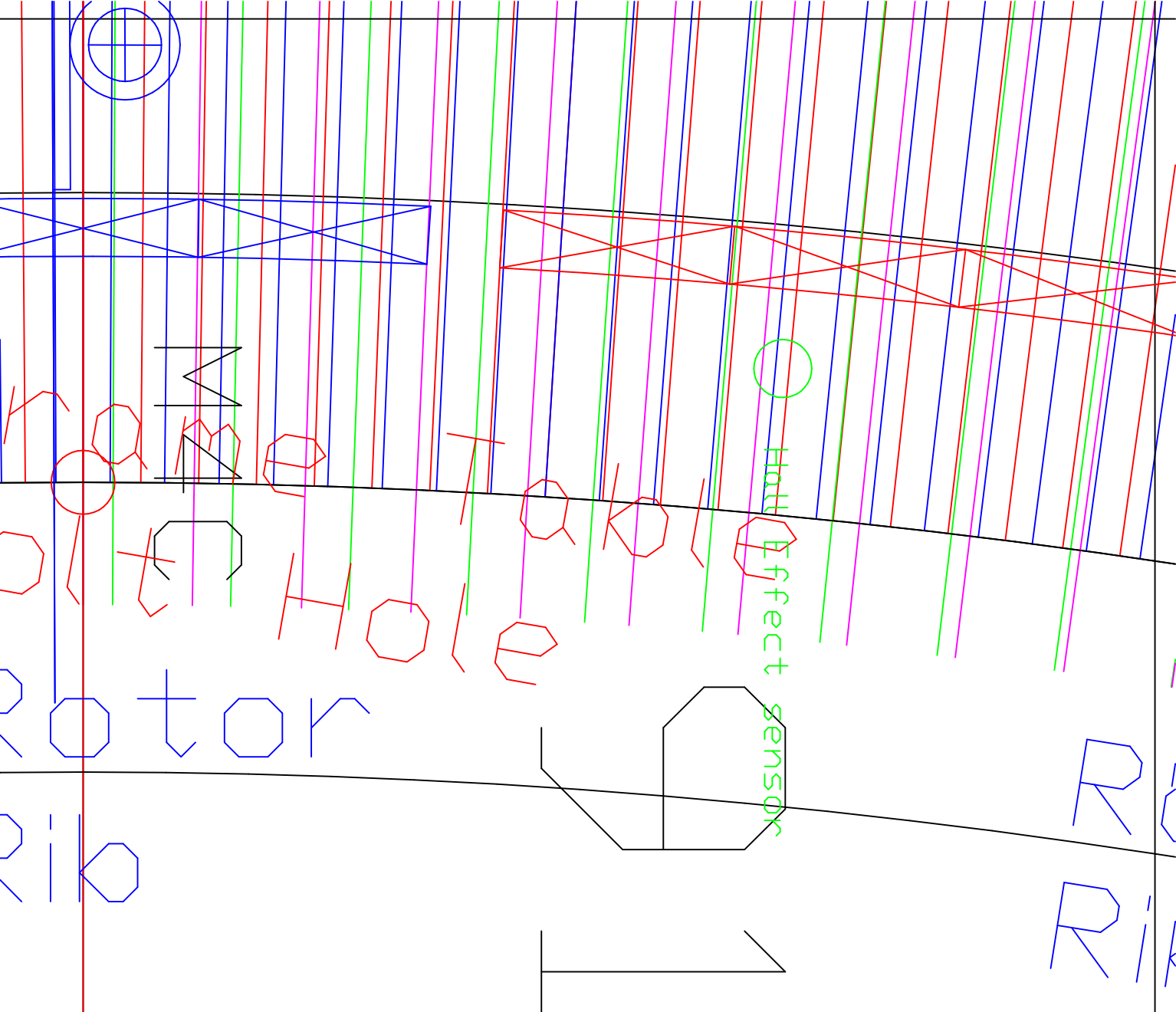


MAC



Frame Table Bolt Hole

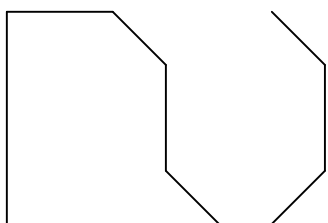
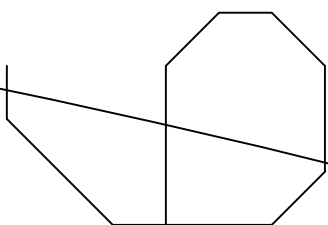


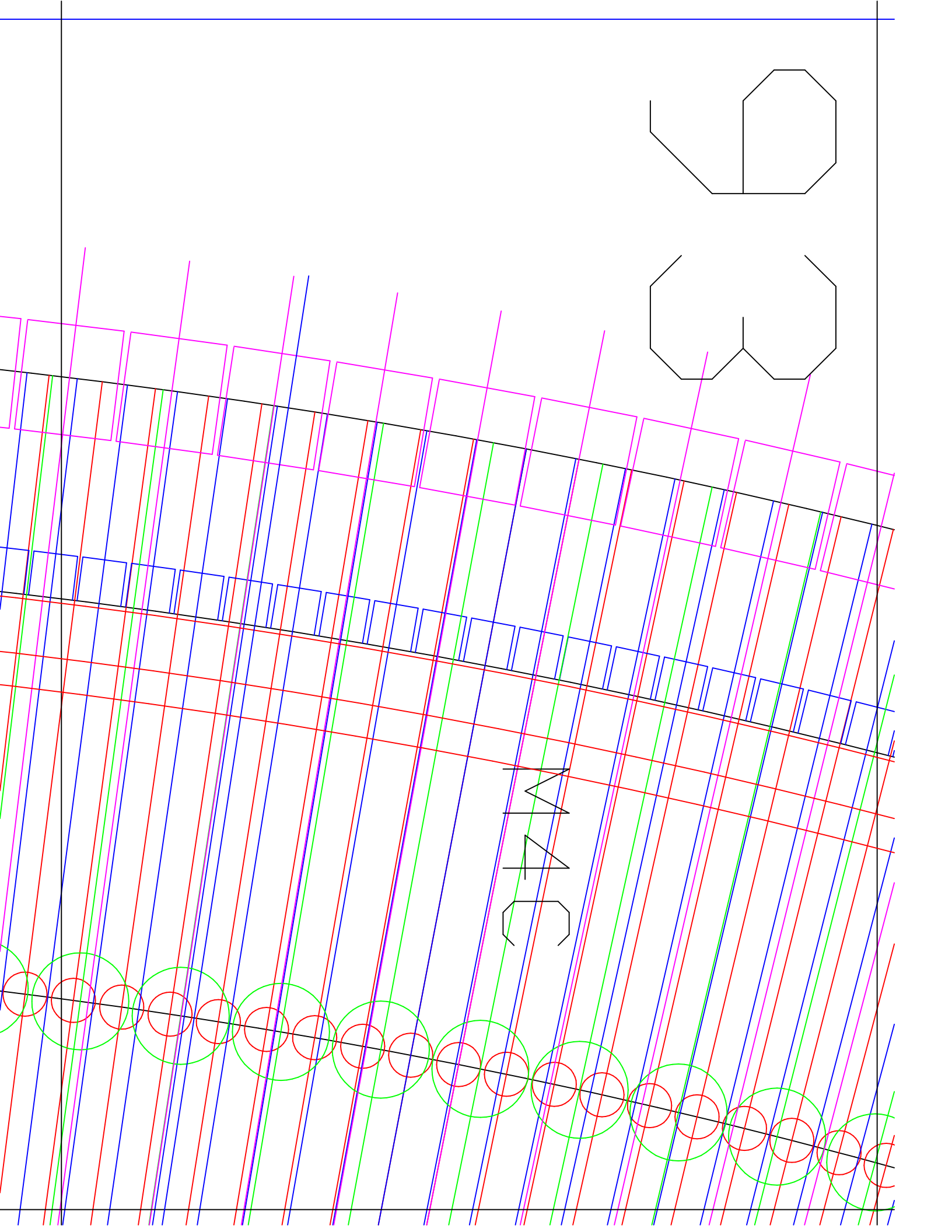


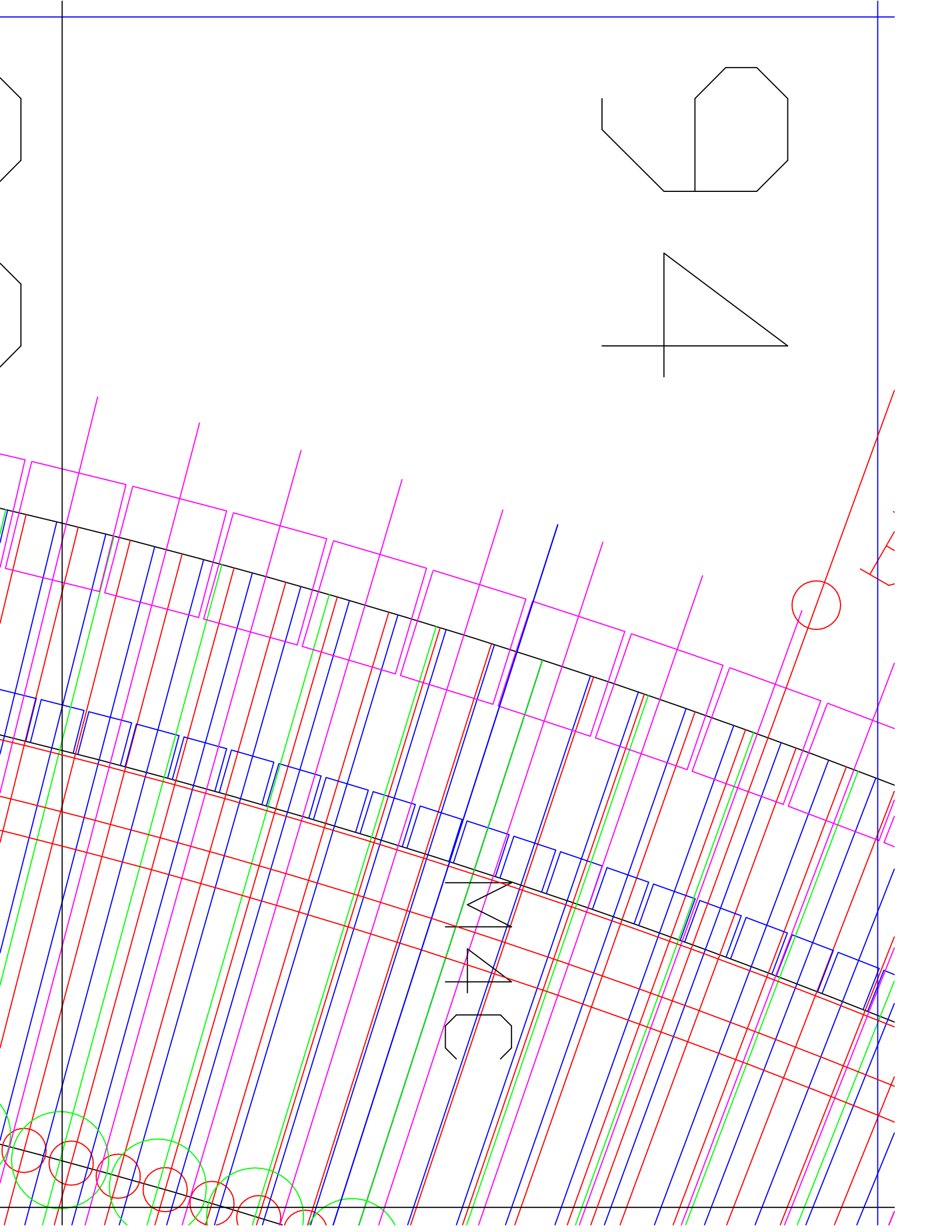
Hall Effect sensor

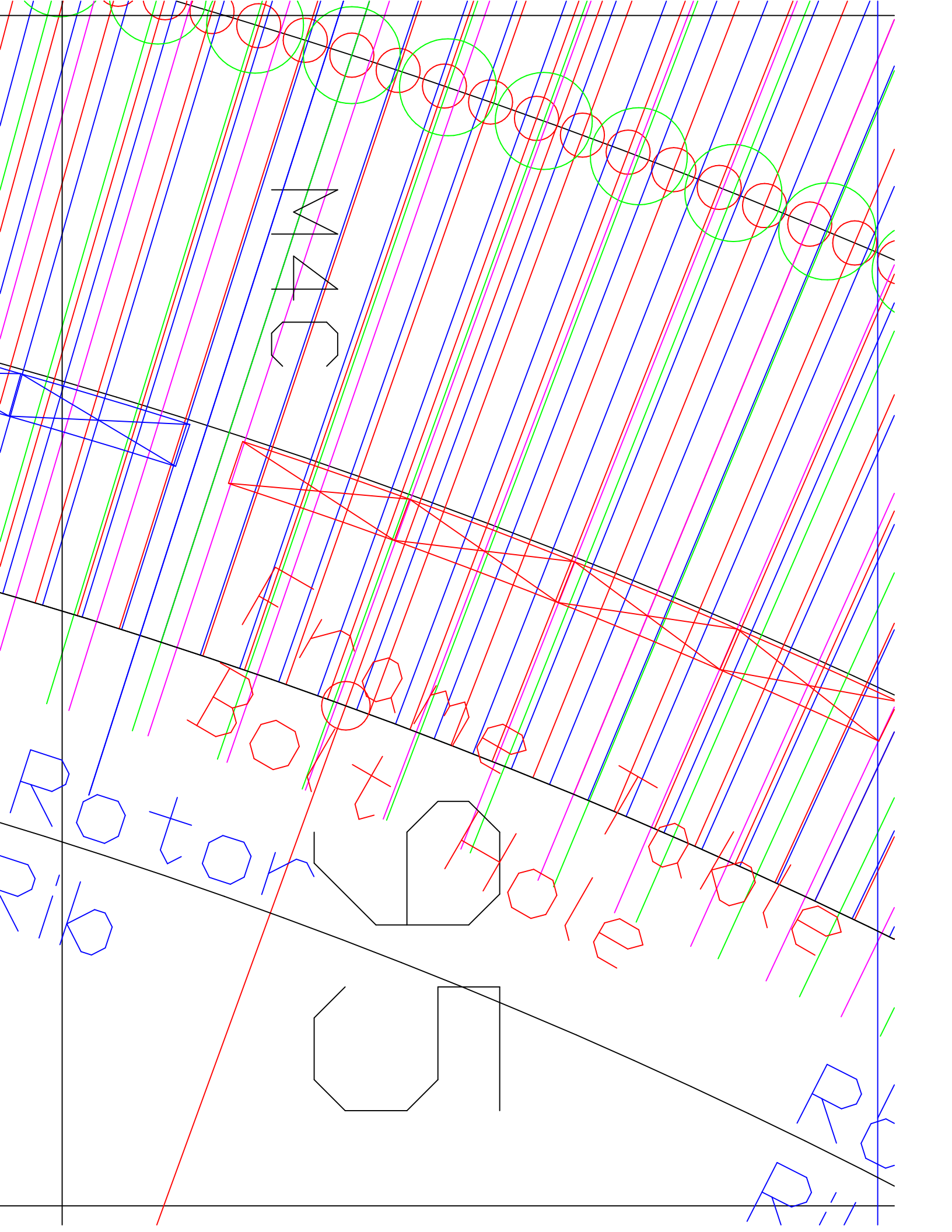
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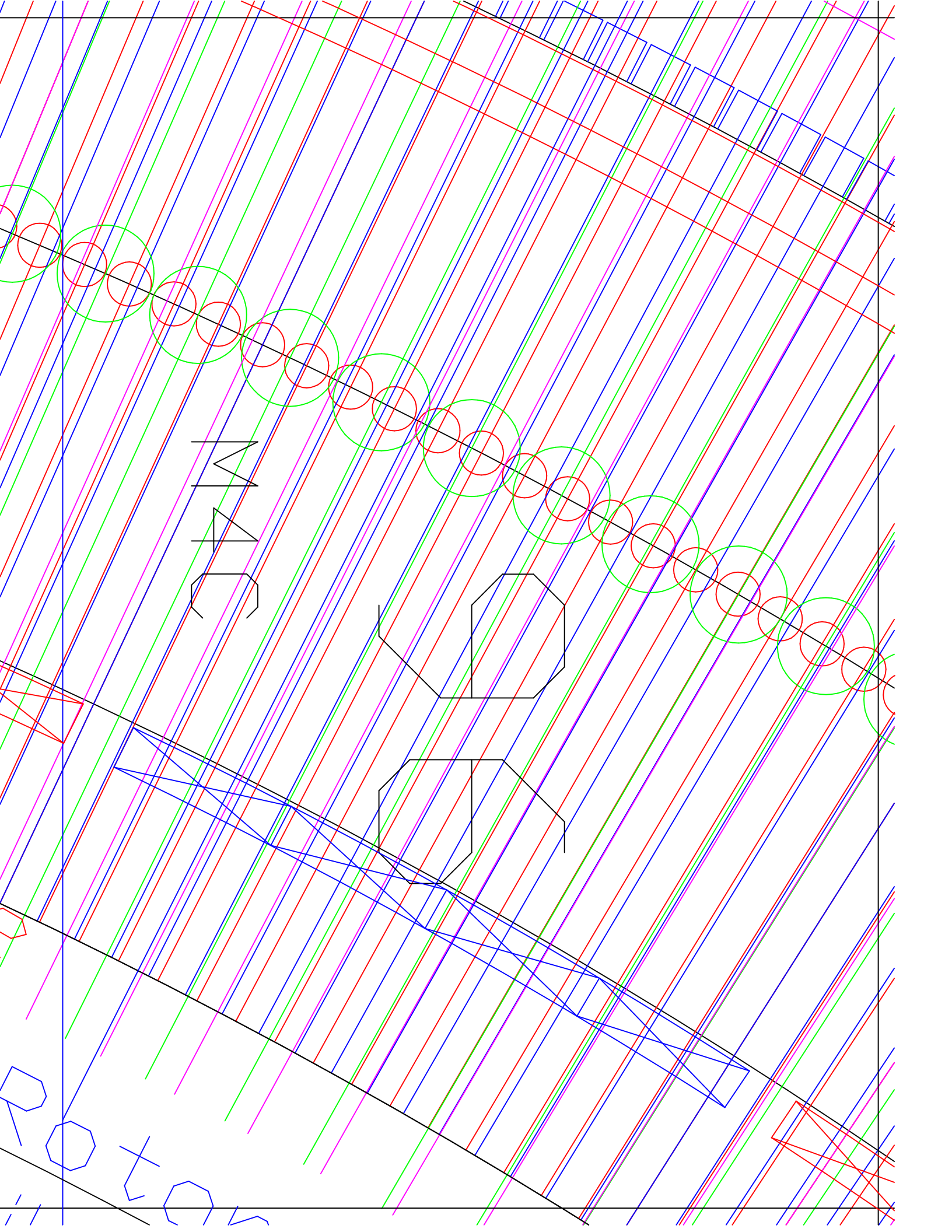
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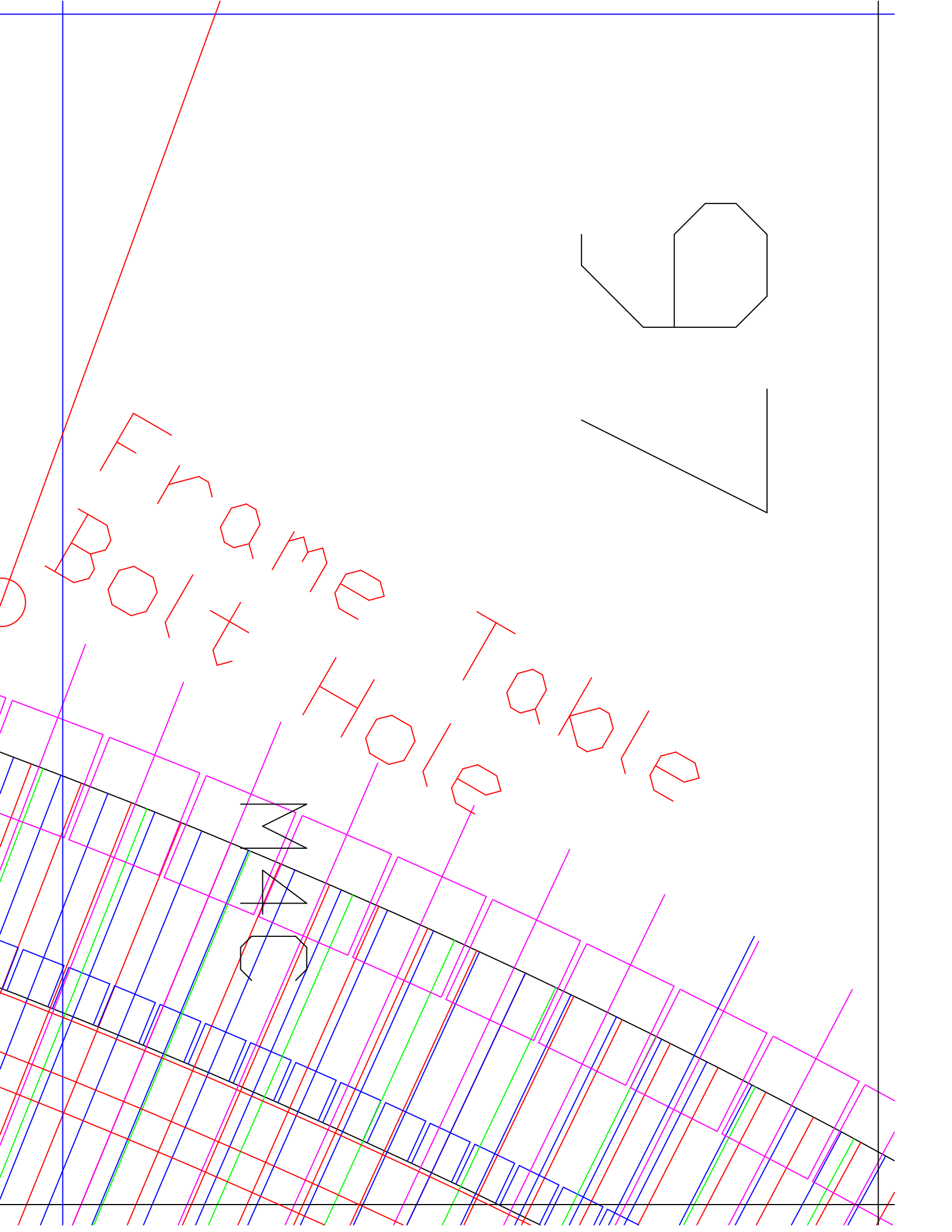




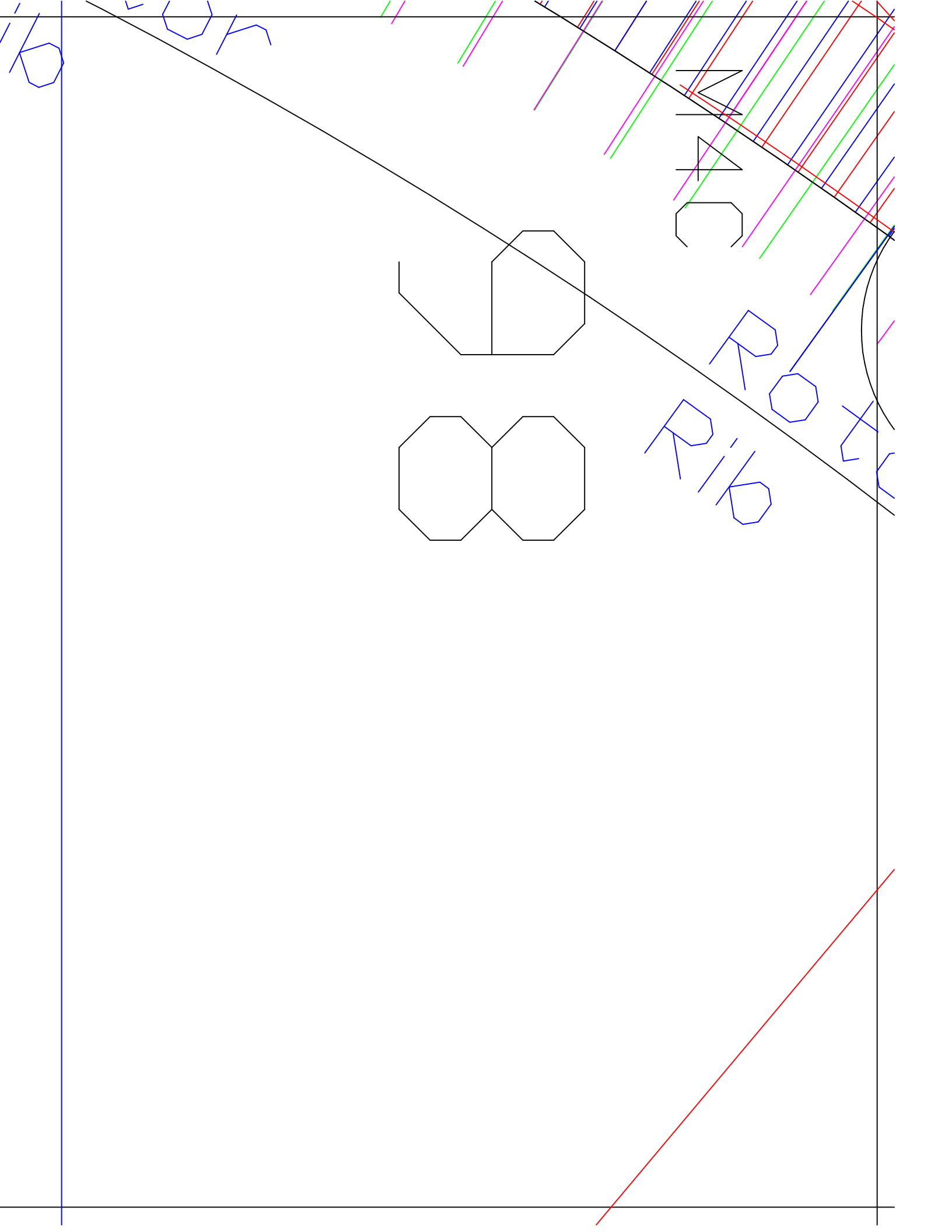


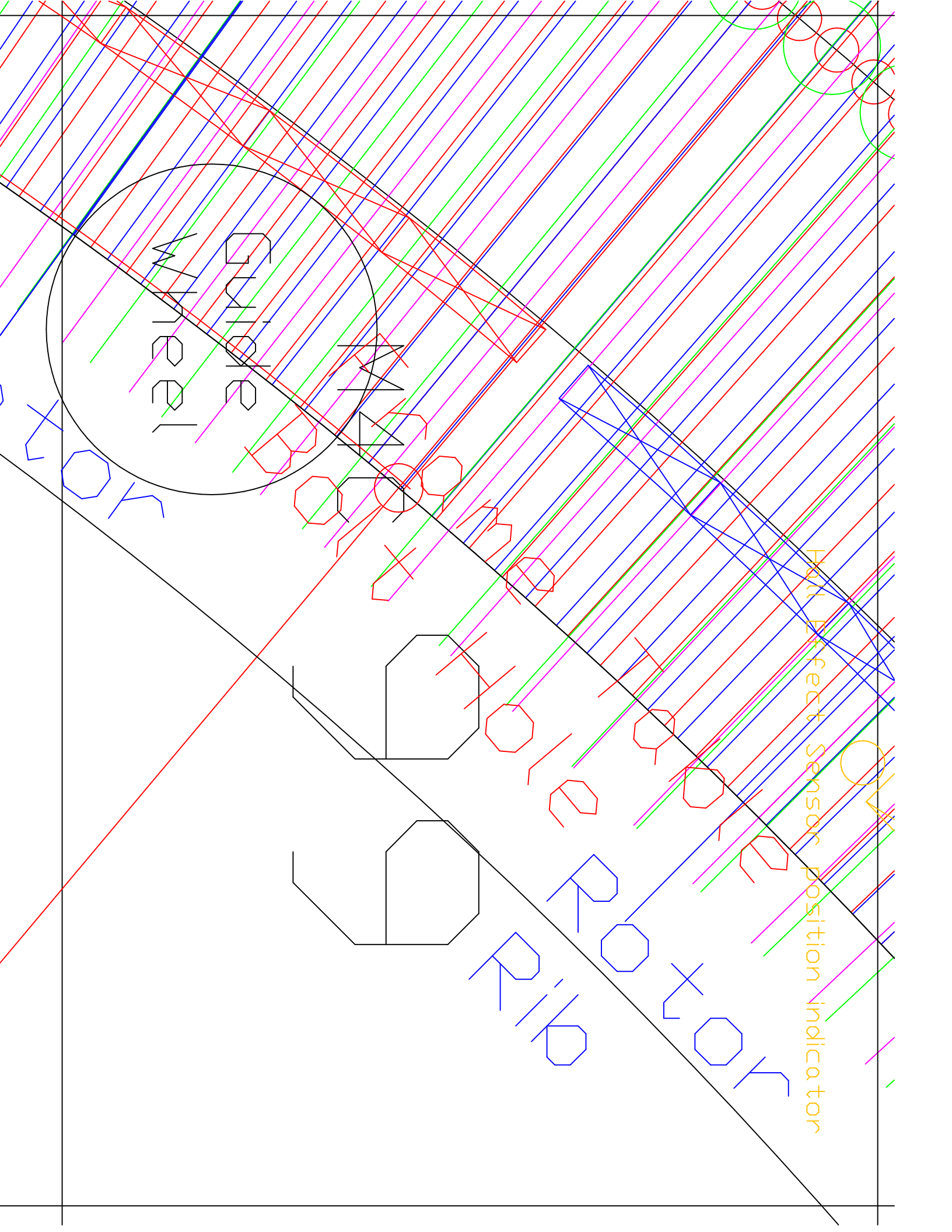


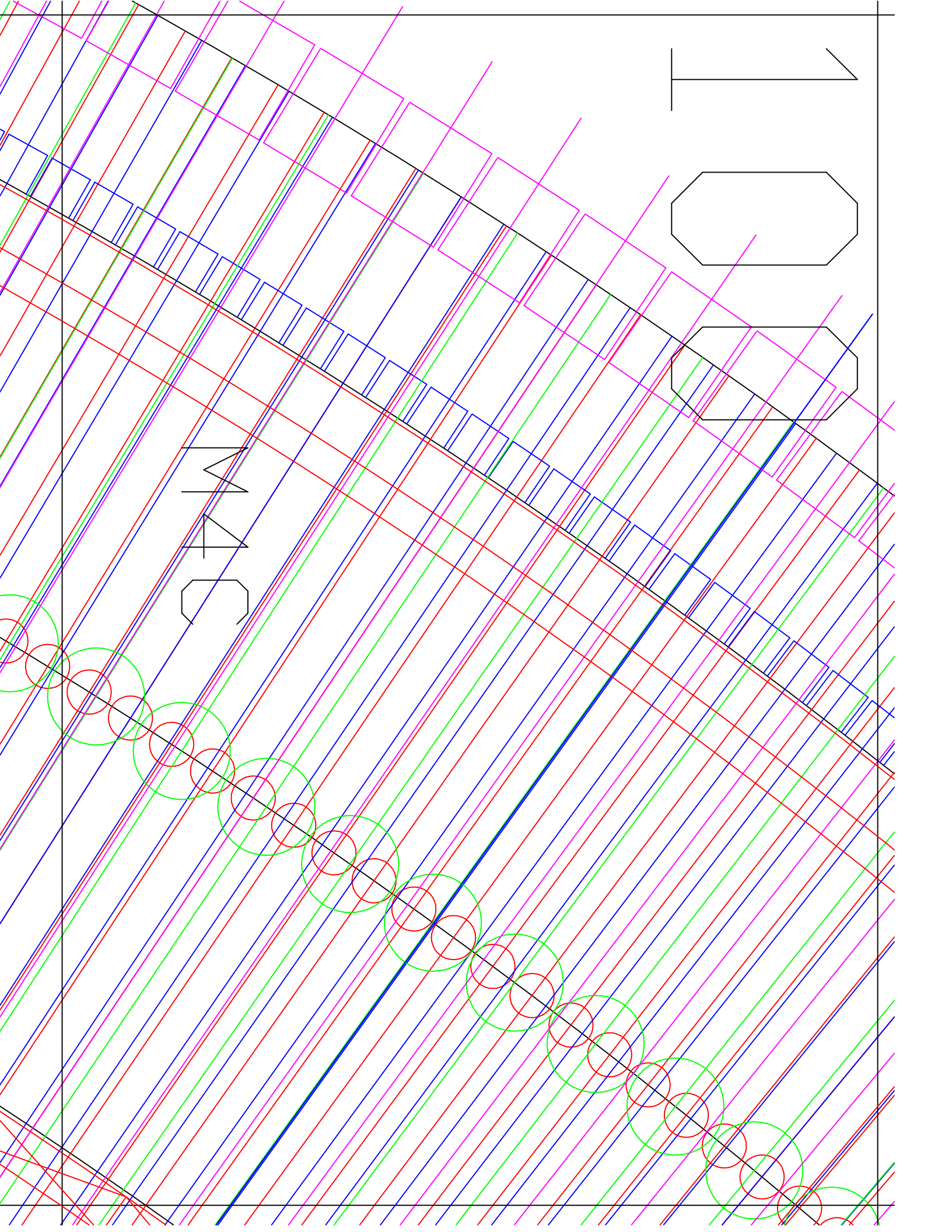


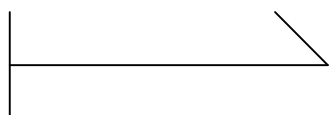
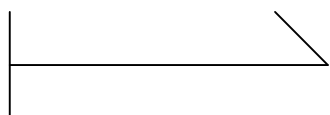


F Kome
Bolt Hole Table









M4C

M4C

