

# Bumblebee DLG Construction Notes and Material List

by Geode Rev. 1.0 2/17/2007

## **Material List (All balsa used are contest grade except otherwise specified)**

### **Wing**

- |                  |   |
|------------------|---|
| 1. Wing rib      | 3/32 contest grade balsa. Harder balsa for last three tip ribs.                       |
| 2. Root rib      | 3/8 balsa (or laminated 1/8 balsa) + 2 oz FG (fiber glass) at wing joint              |
| 3. Tip block     | 3/8 balsa (or laminated 1/8 balsa) + 0.75 oz FG enhancement                           |
| 4. Spar          | 3/8 balsa (or laminated 1/8 balsa) + 1.5/1.0 mm CF (carbon fiber) rods for top/bottom |
| 5. Leading edge  | 1.5 mm CF rod   |
| 6. Trailing edge | 1.0 mm CF rod   |

### **Tail Feather**

- |              |                                  |
|--------------|----------------------------------|
| 1. Rudder*   | 1/8 balsa                        |
| 2. Elevator* | 1/8 balsa                        |
| 3. Tailboom  | Same 60 in DLG or Apogee HLG/DLG |

\* Tail feathers as shown in the plan require CF caps for proper bending and torsional strength. Use solid balsa with less lightening holes.

### **Temporary Nosecone**

- |              |   |
|--------------|---|
| 1. Nosecone  | Packing tape + 1/32 balsa + packing tape sandwich |
| 2. Noseblock | EPP or other materials of your preference         |

### **Covering Material**

1. Nelson Lite or other light weight covering materials
2. Optional printed tissue (5g penalty)

### **Electronics**

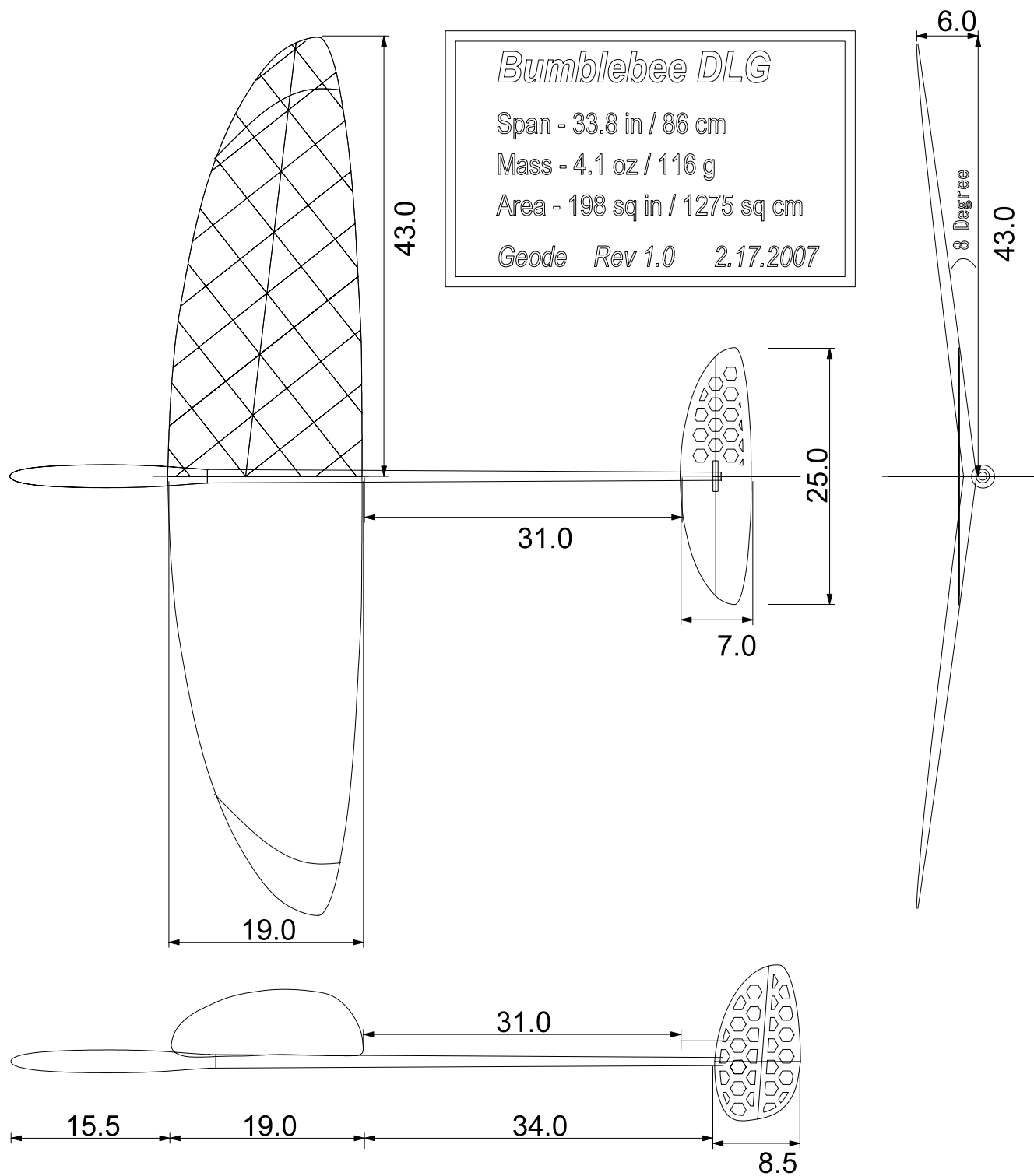
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|-------------|--|
| 1. Receiver | 4-ch light weight receiver   |
| 2. Servo    | 5g servo (Dymond D4.7 recommended)   |
| 3. Battery  | 4-cell 180 mAh pack (3-cell 180mAh or 4-cell 100 mAh pack for light weight tail feathgers) |

### **Construction Notes**

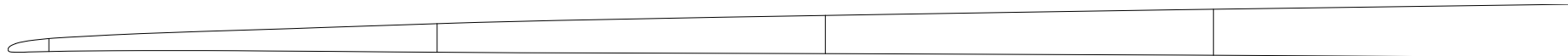
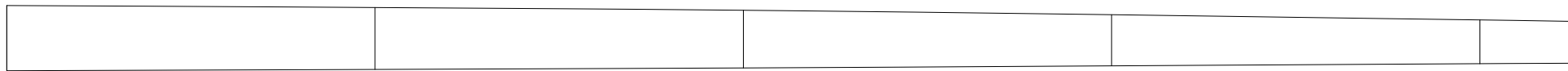
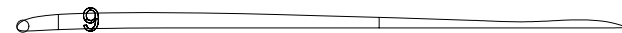
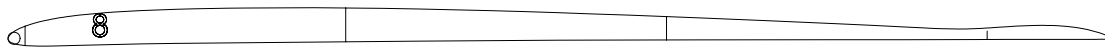
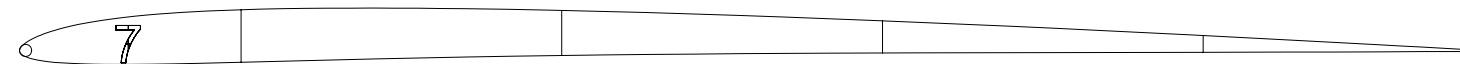
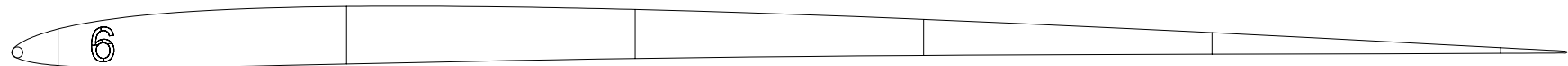
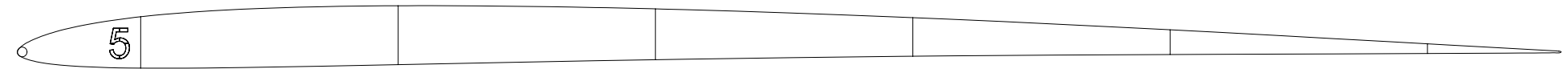
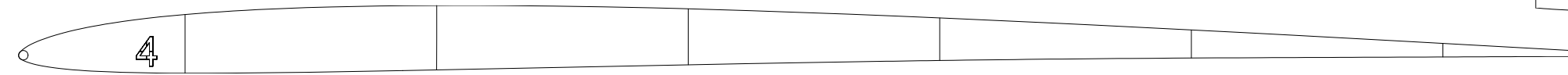
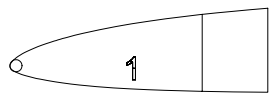
1. Bumblebee build thread - <http://www.rcgroups.com/forums/showthread.php?t=634100>
2. Spar installation – see Phil Barnes' thread on spar installation  
<http://www.rcgroups.com/forums/showpost.php?p=5495990&postcount=17>
3. Wing mount – see Taboo's wing mount method <http://www.olgol.com/TabooGT/build5.html>

### **Areas for improvements and known issues**

1. Increase the thickness of trailing edge for wing ribs to ease handling of hand-cut ribs. Sand to airfoil shape after assembly.
2. Laminated tail feathers provide accurate reproduction of airfoil shapes at a expense of 3g extra weight. This translates into a 12g increase of nose weight. Use light weight tail feather instead.
3. Wing ribs near trailing edge have some artifacts due to software bugs.



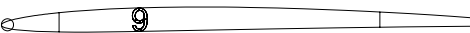
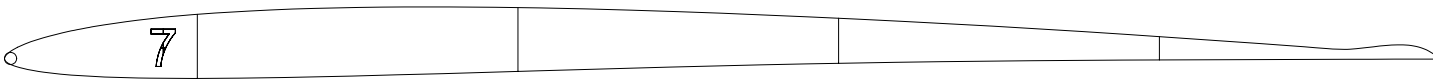
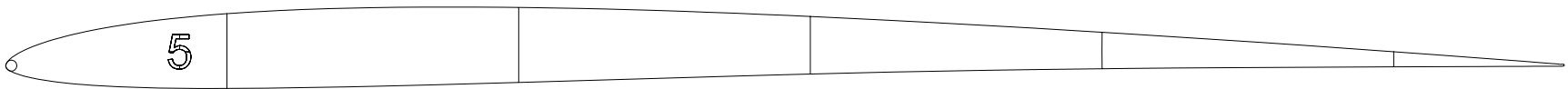
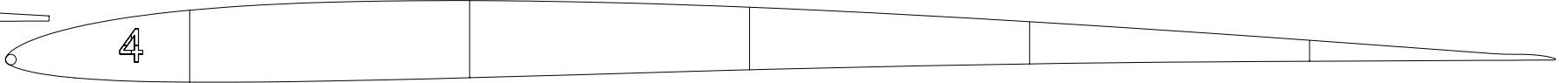
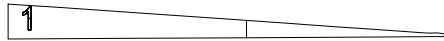
# 45 Degree Ribs



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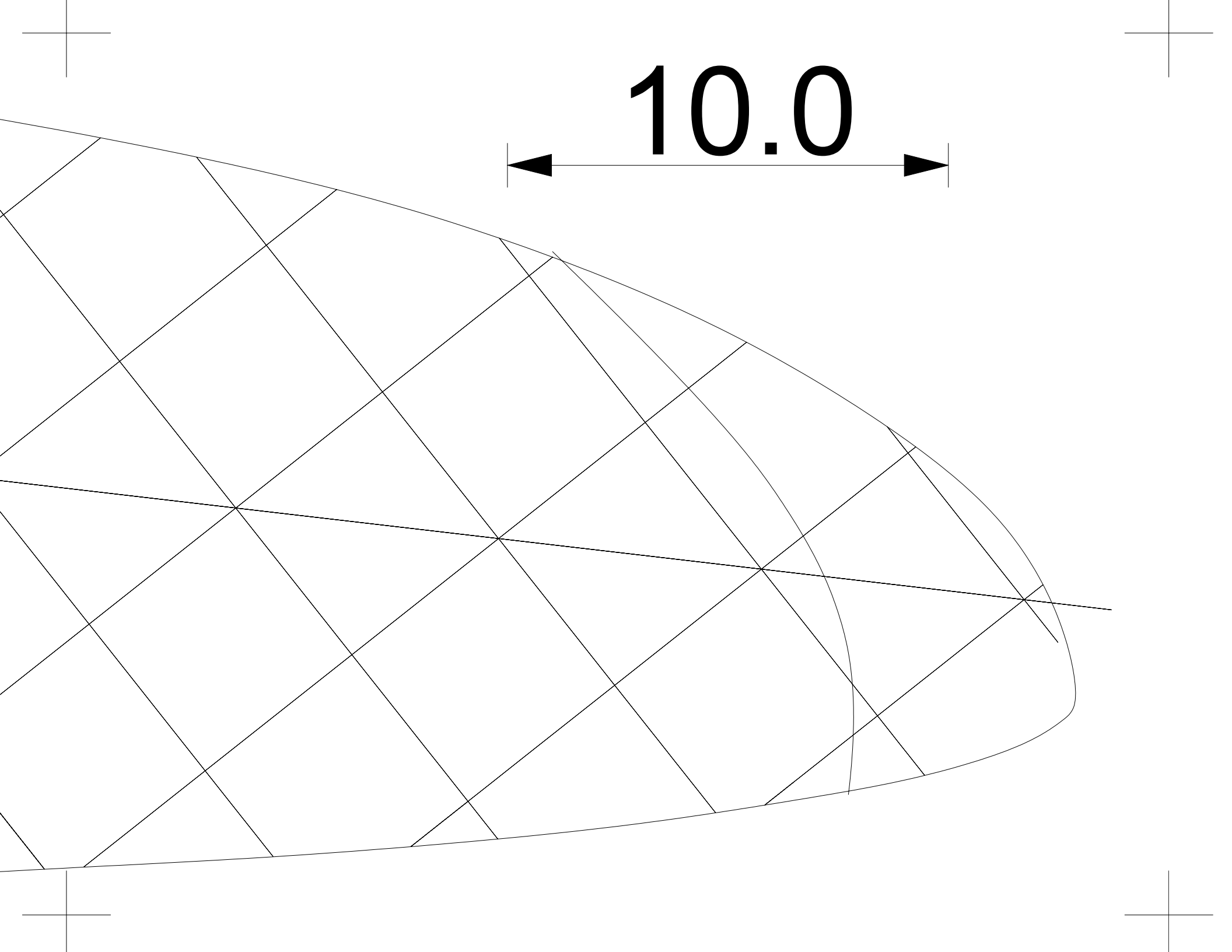
# -45 Degree Ribs



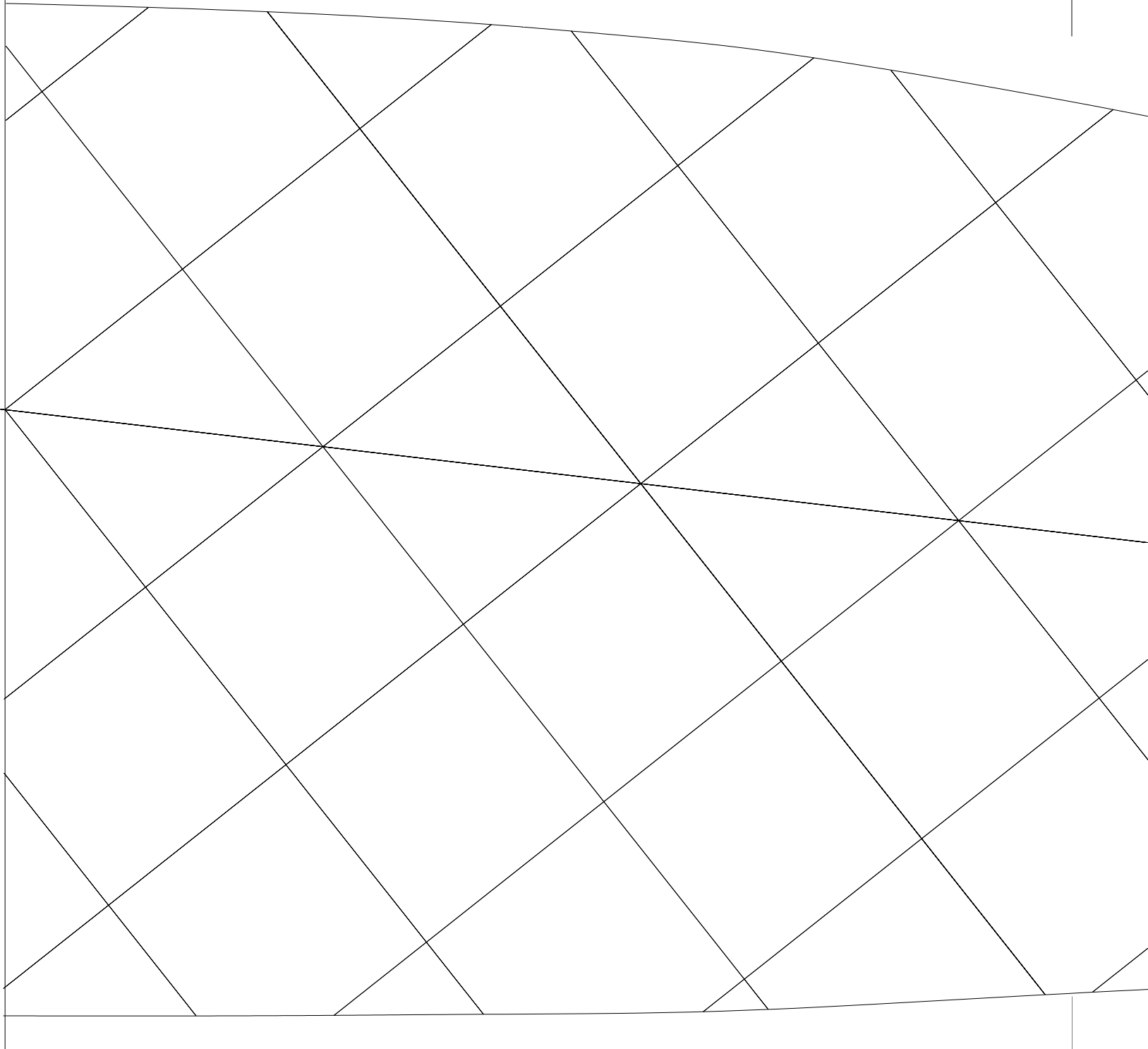
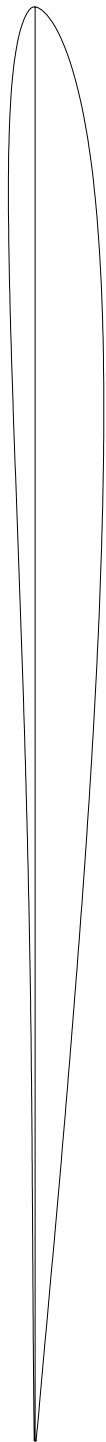
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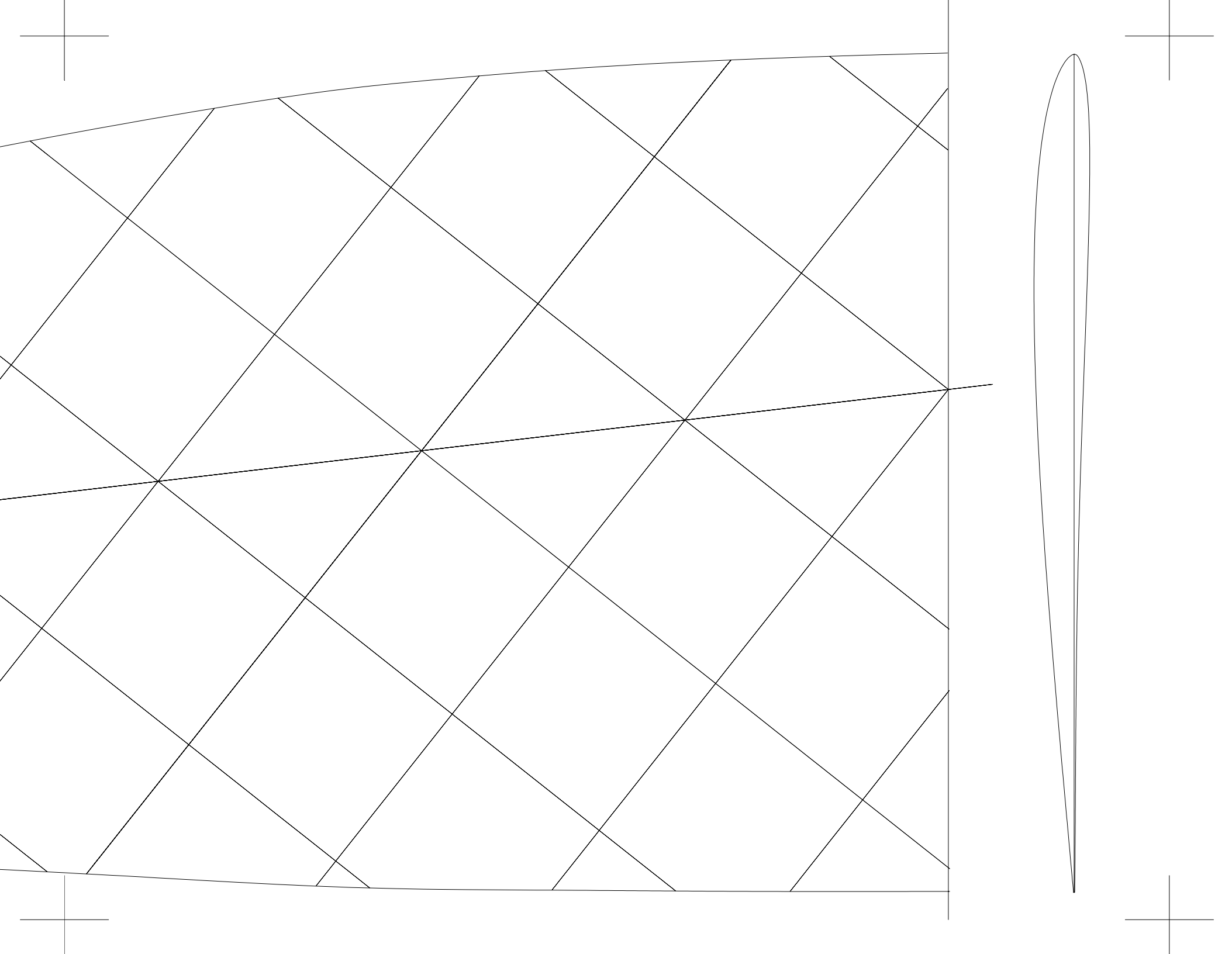


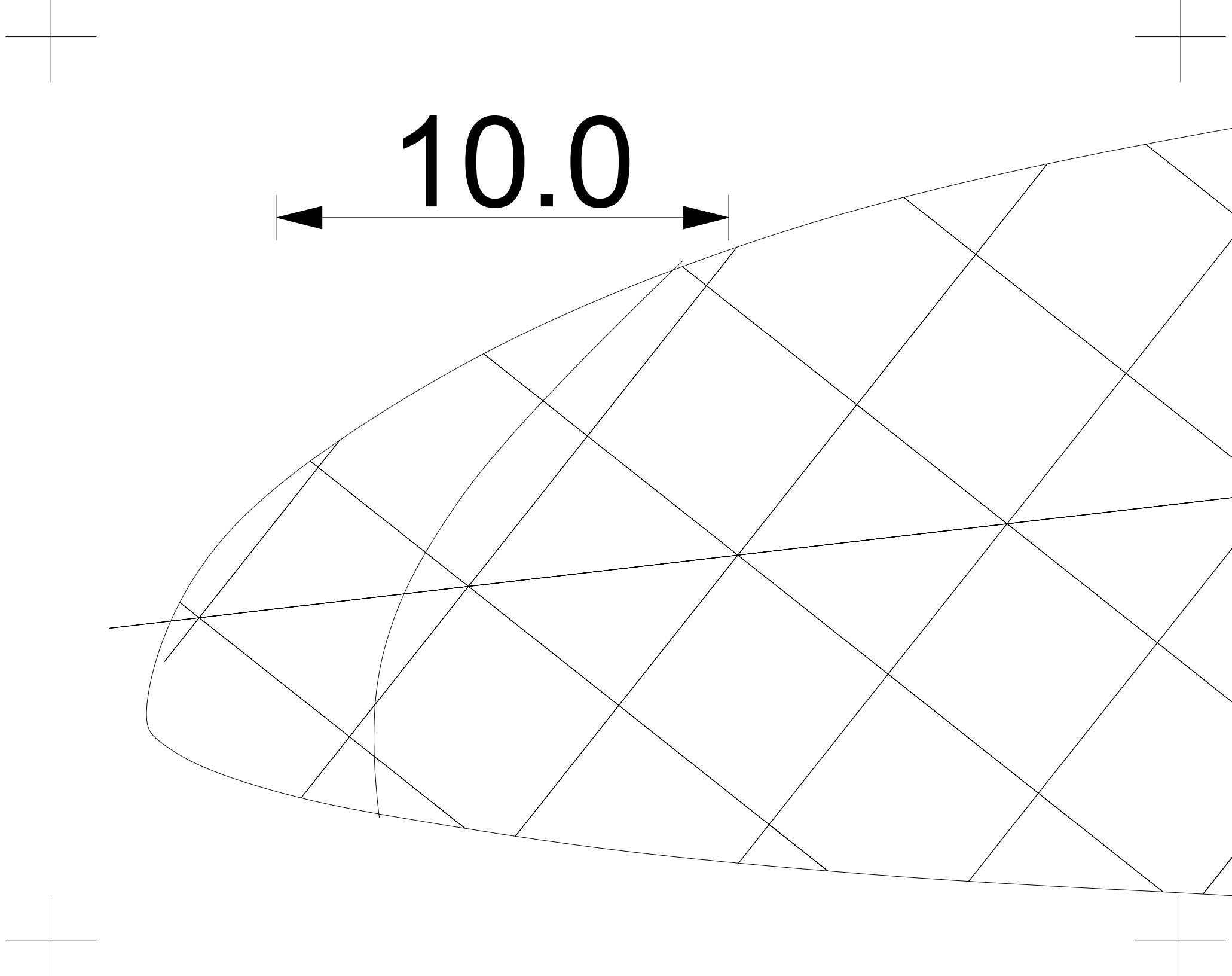
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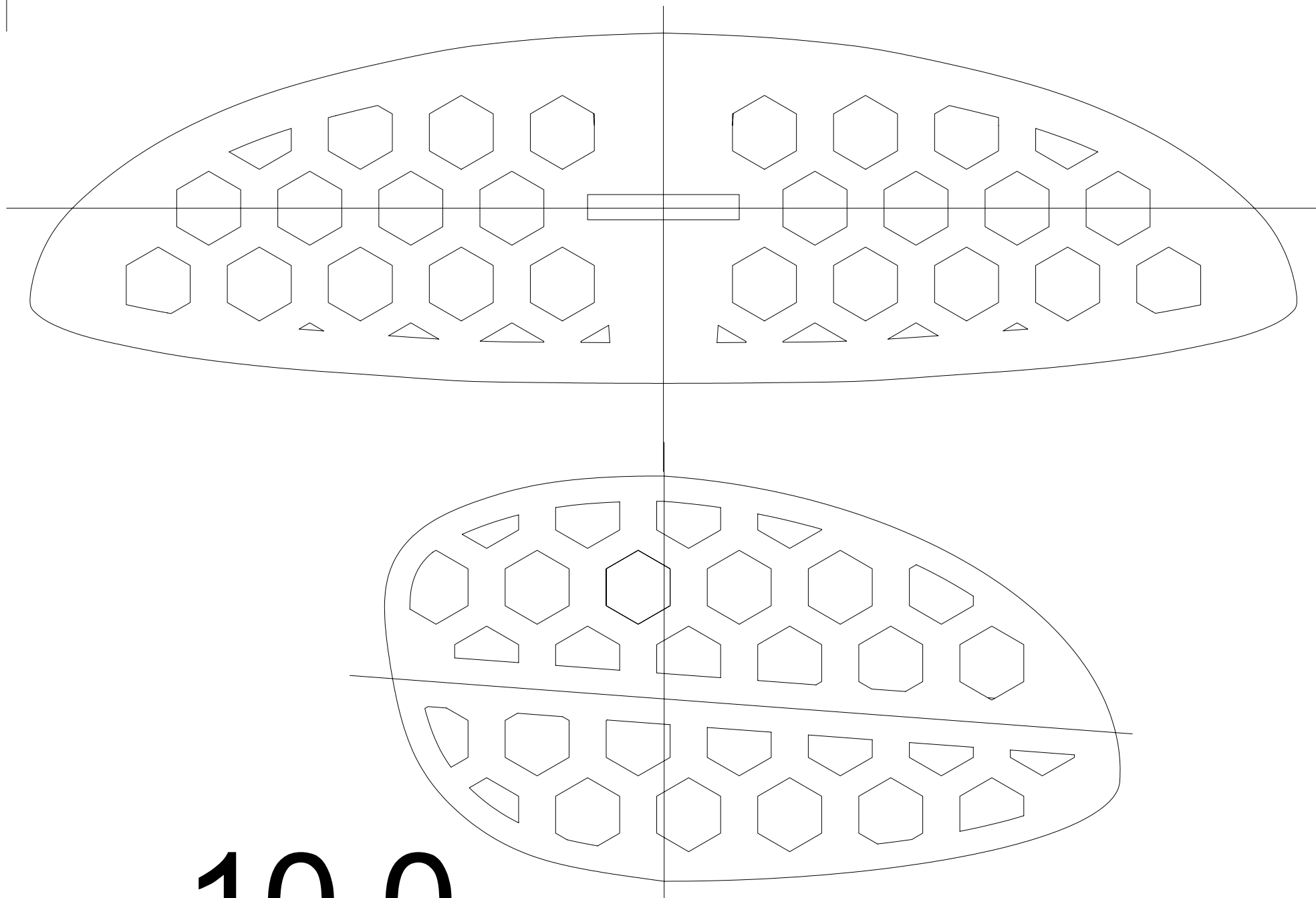
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