

8 Optical Compensations in Type Design

Thomas Phinney

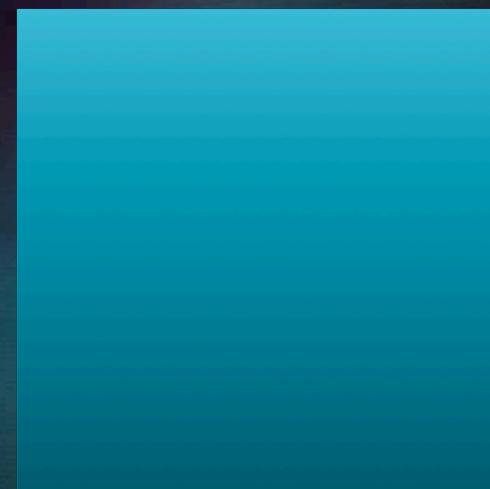
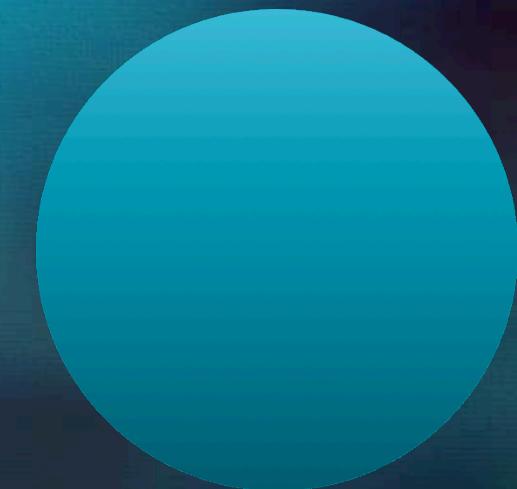
Overview

- Almost always necessary
- Consequences of biology & learning
- Even in seemingly monoline & geometric fonts!

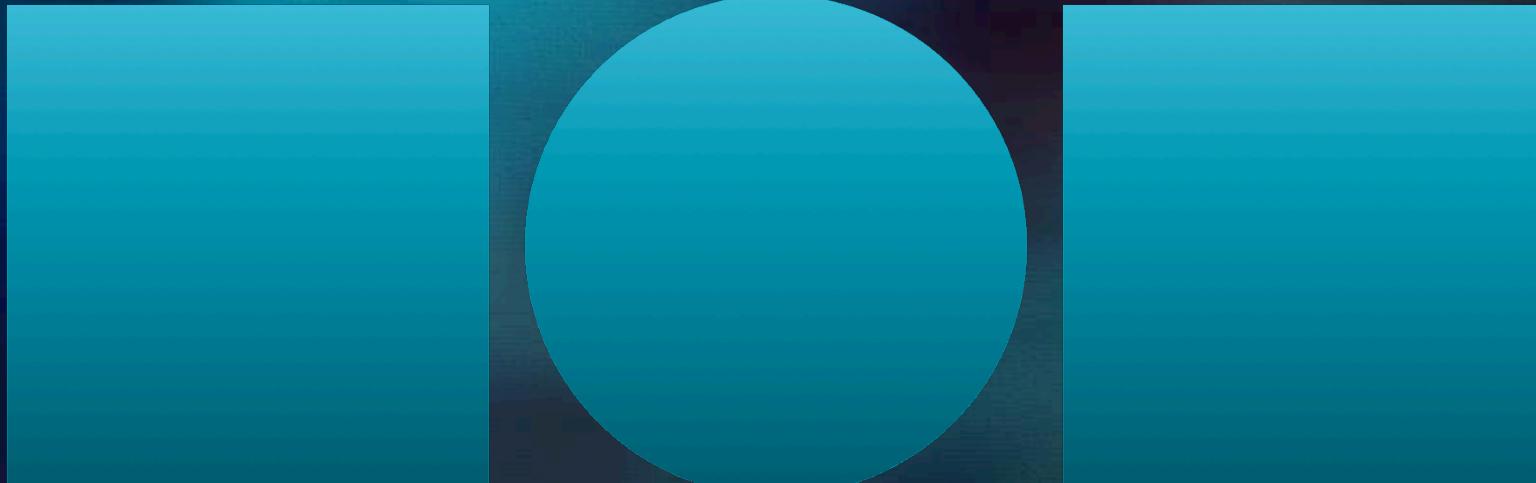
Optical Compensation #1

Overshoot

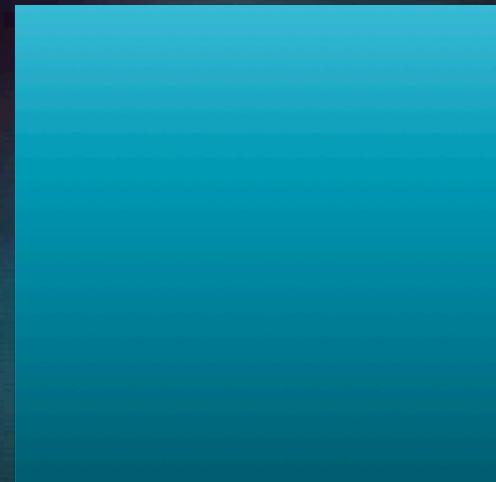
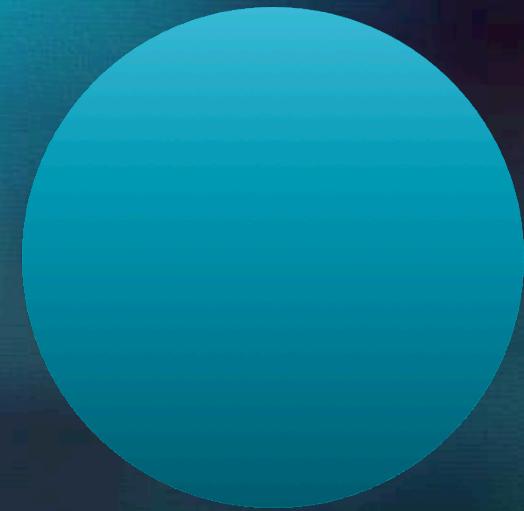
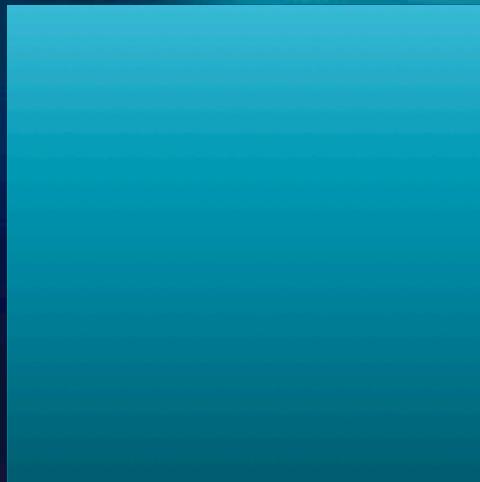
Mathematically correct, not really



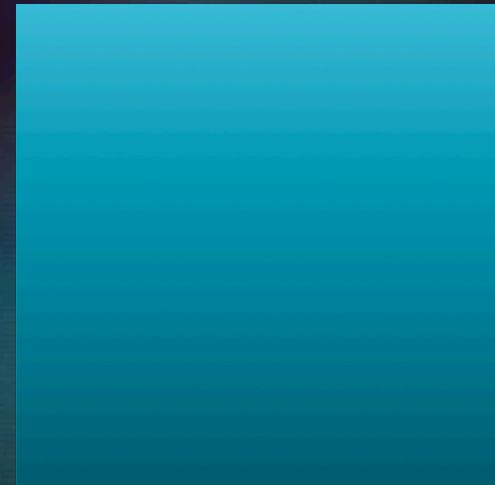
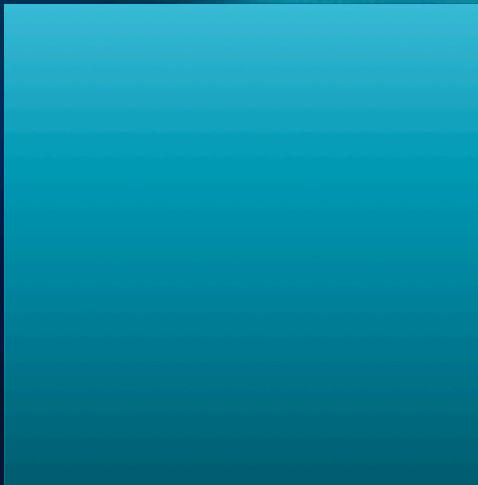
Round overshoot by
1–3% top & bottom



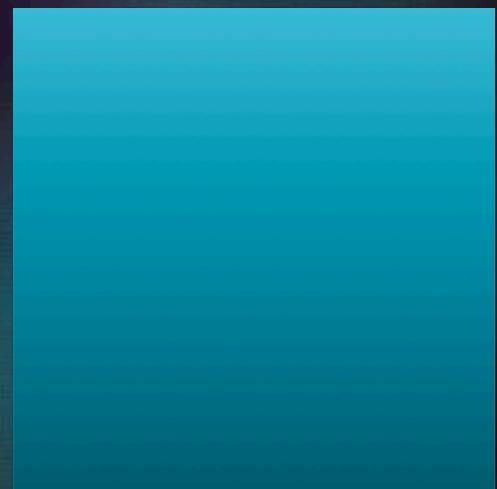
Round overshoot by
1–3% top & bottom



Pointy (some AMN shapes)
Mathematically correct?



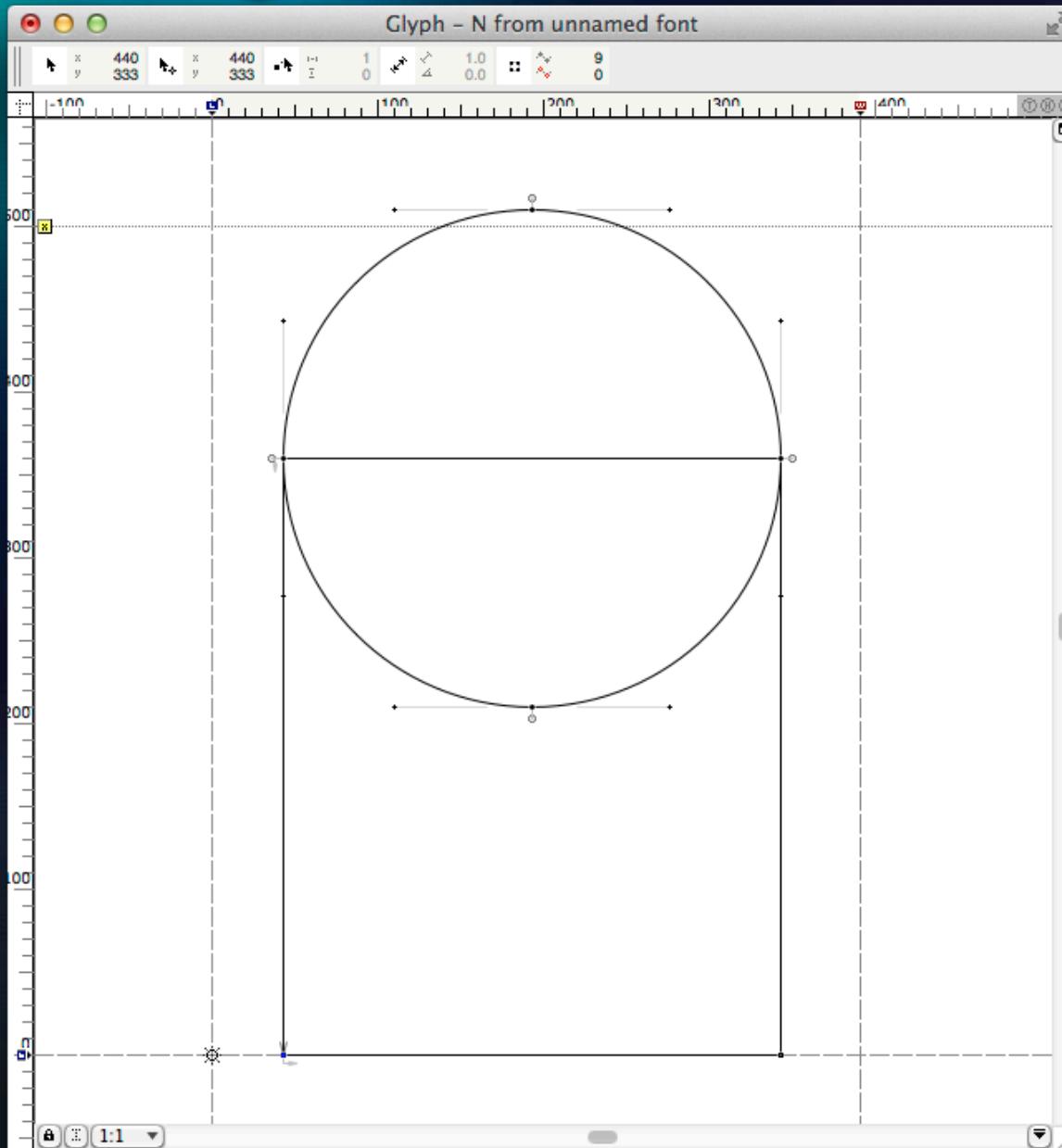
Pointy corrected



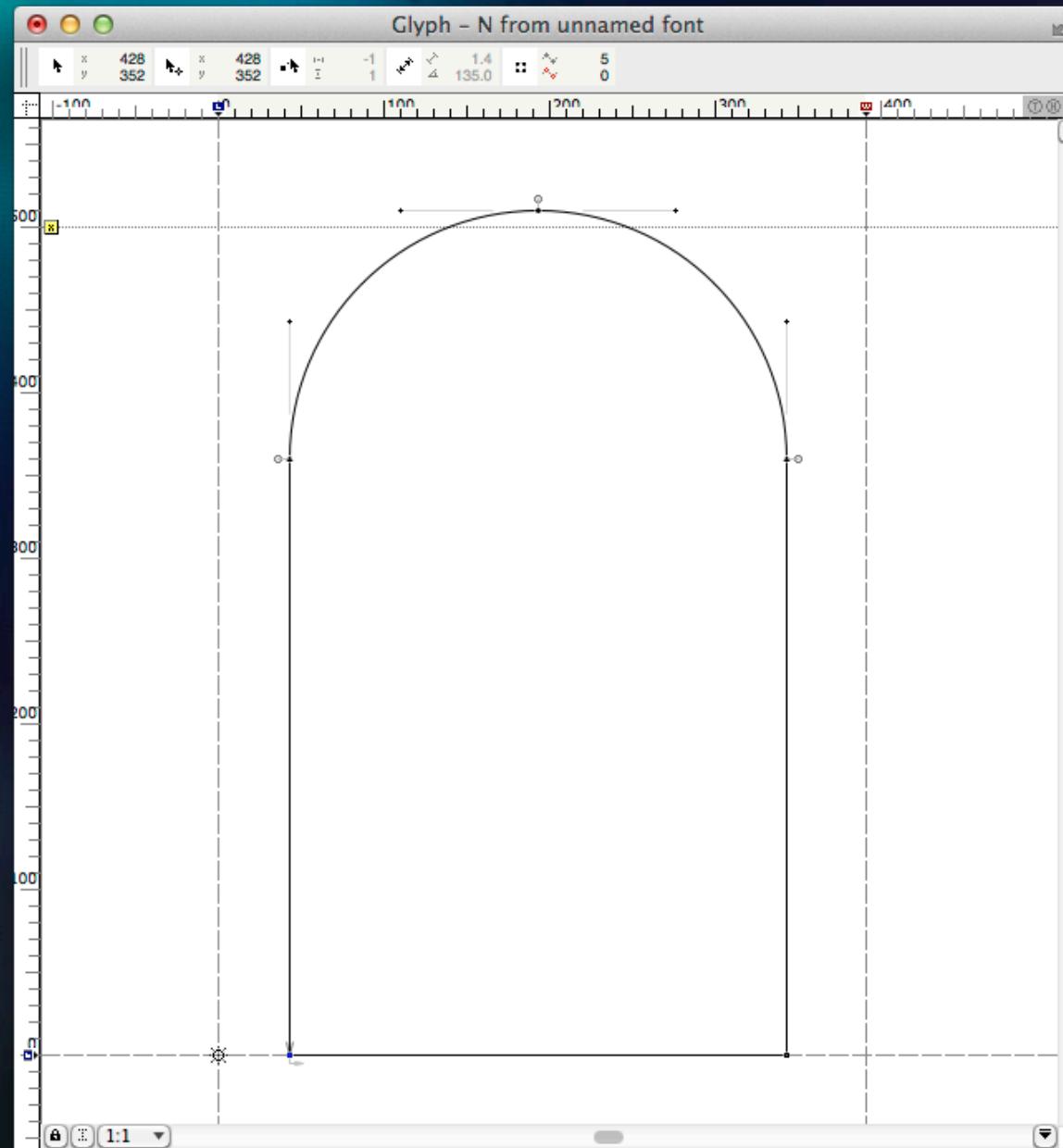
Optical Compensation #2

Straight > Curve

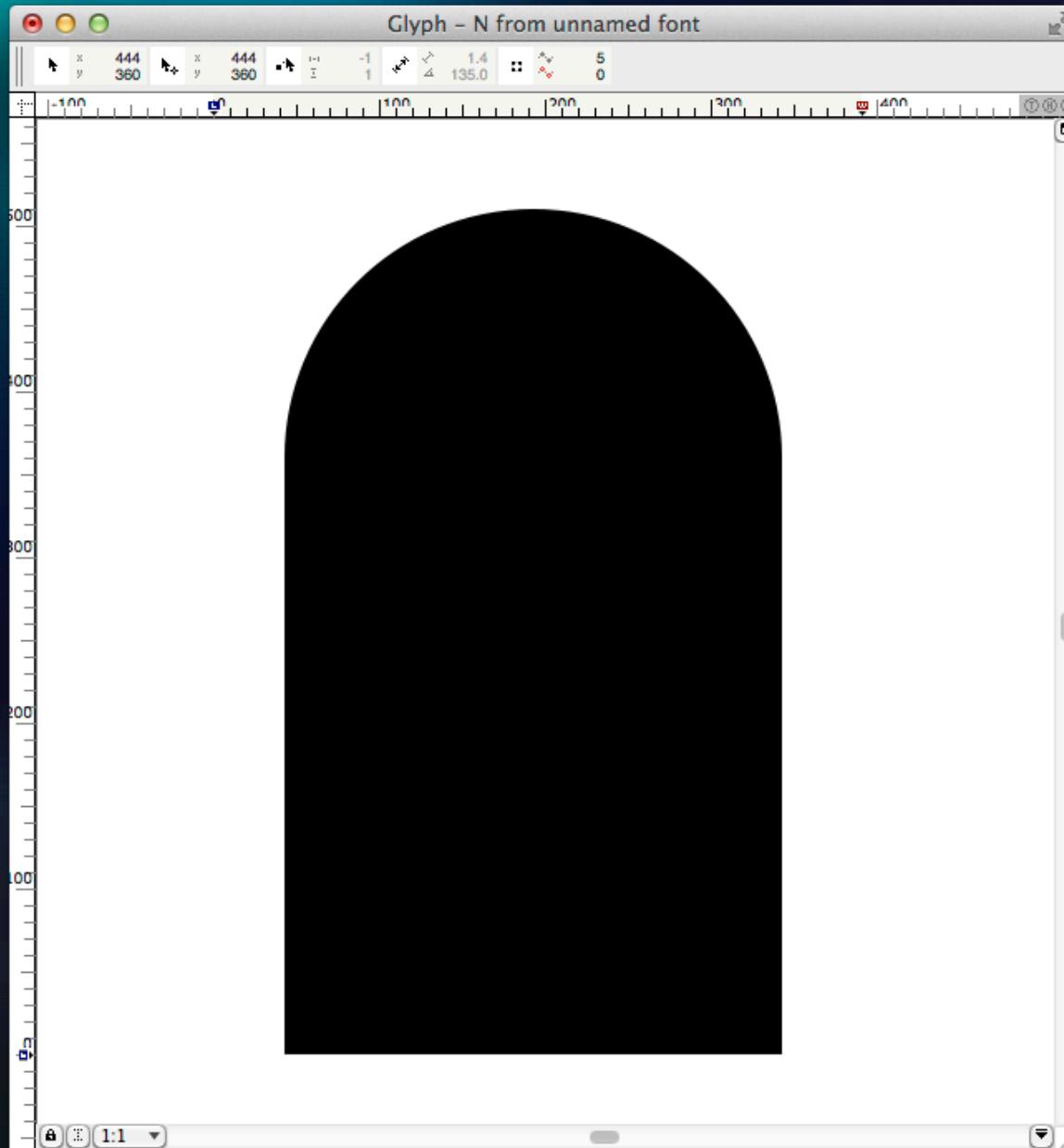
Glue a straight to a curve



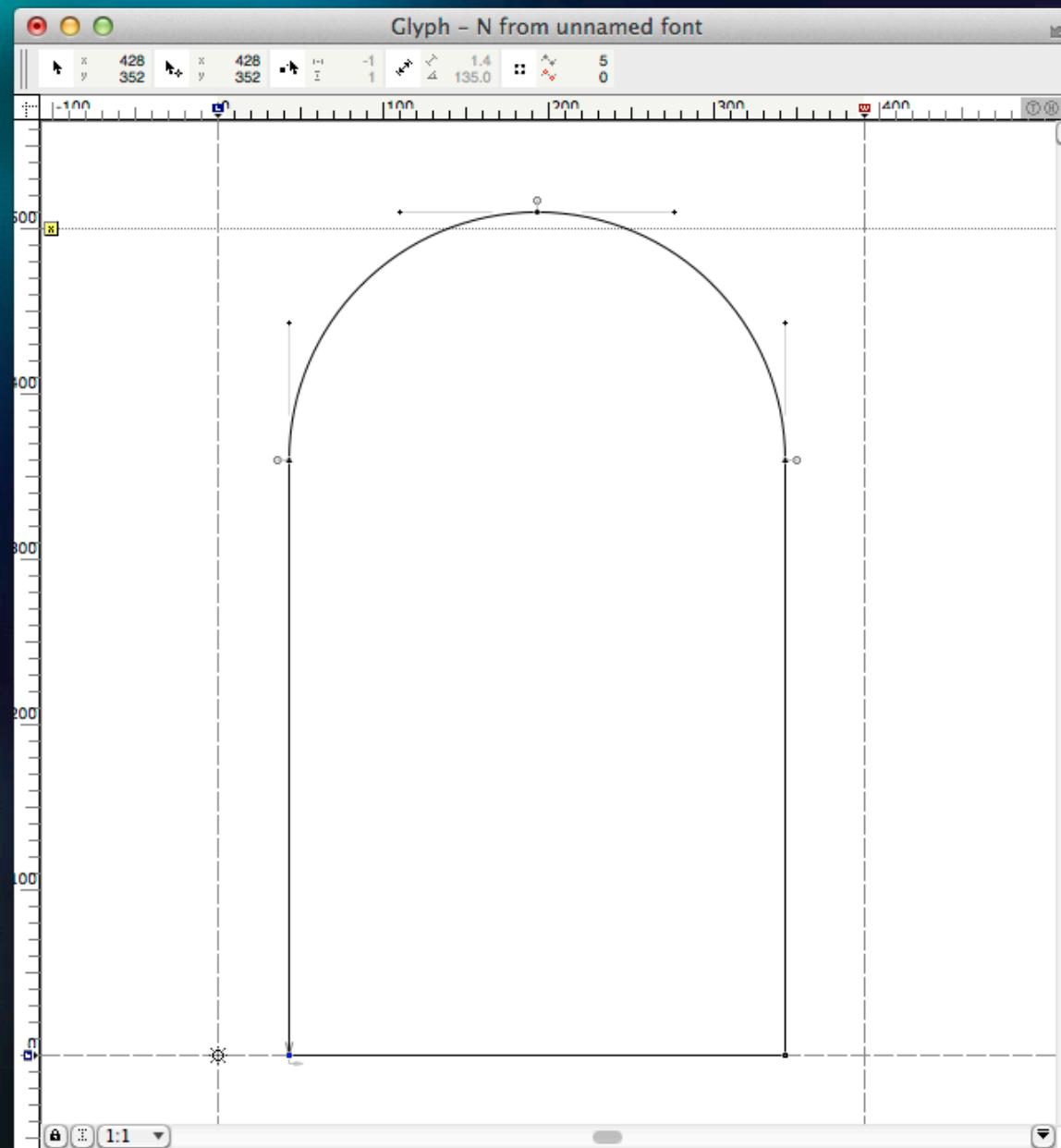
Remove overlap



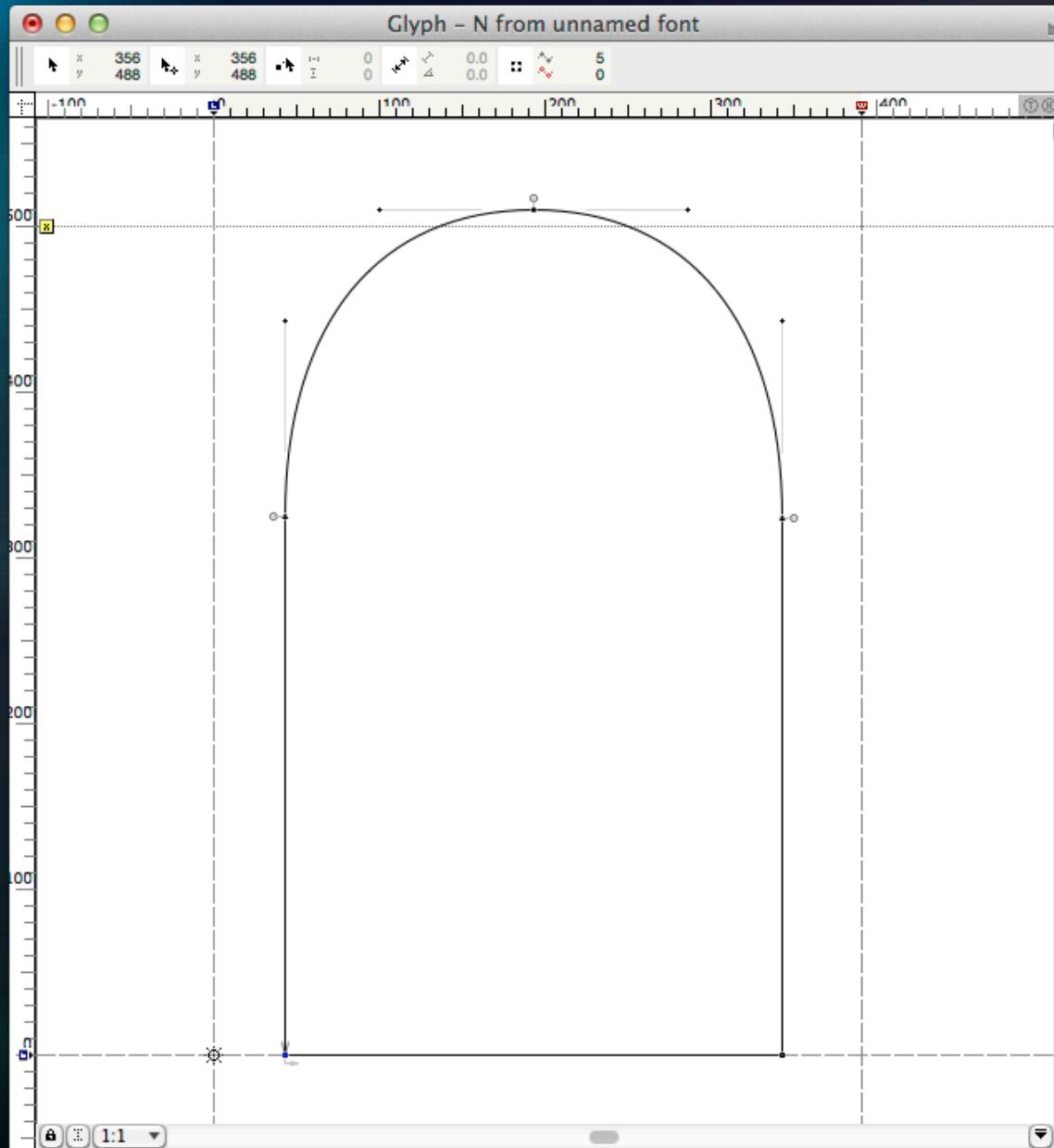
Examine connection: sudden onset



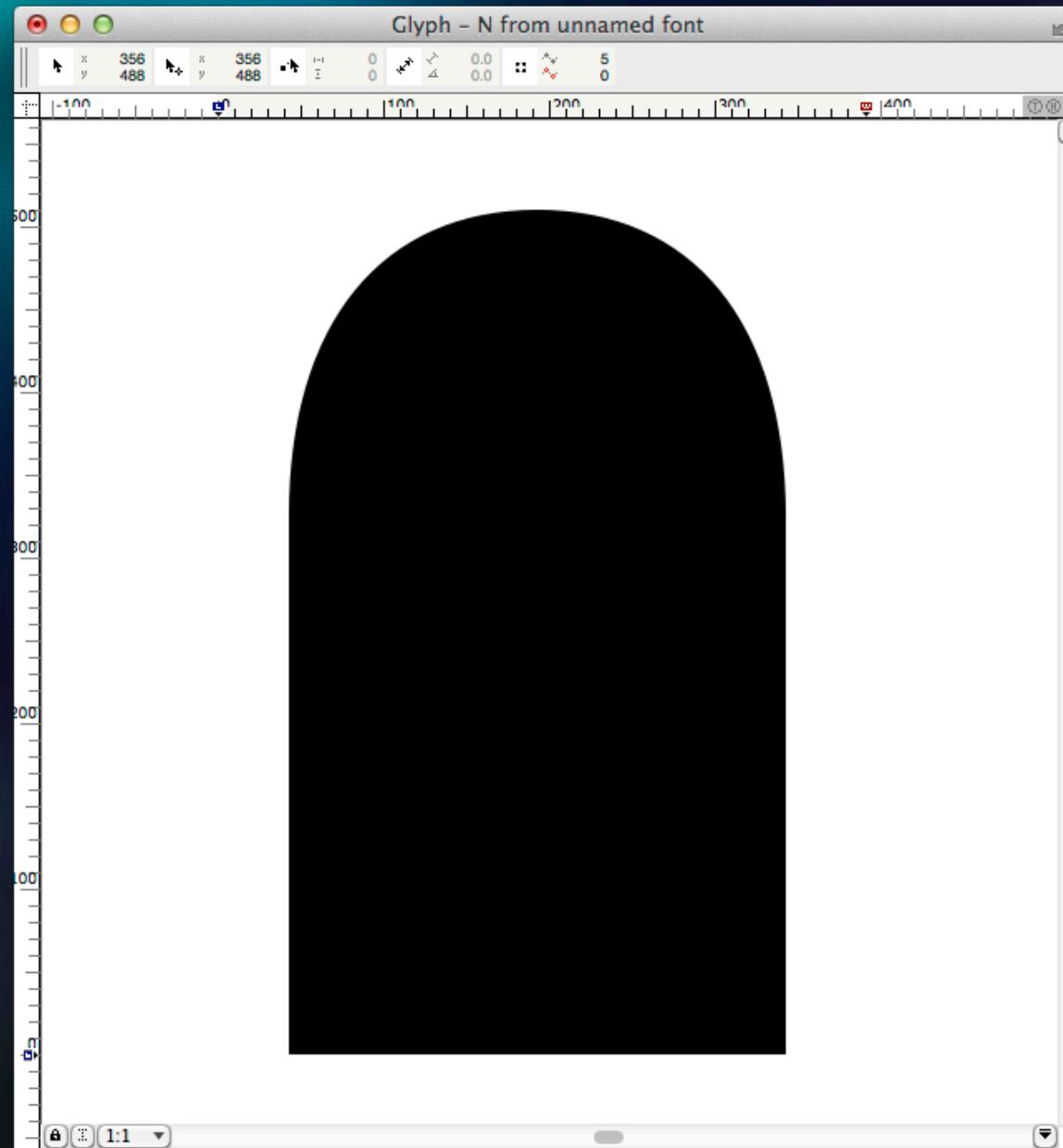
How to fix?



- Keep off-curve handles in place
- Drop on-curve side points 25 fu
- Move top handles out 10 fu

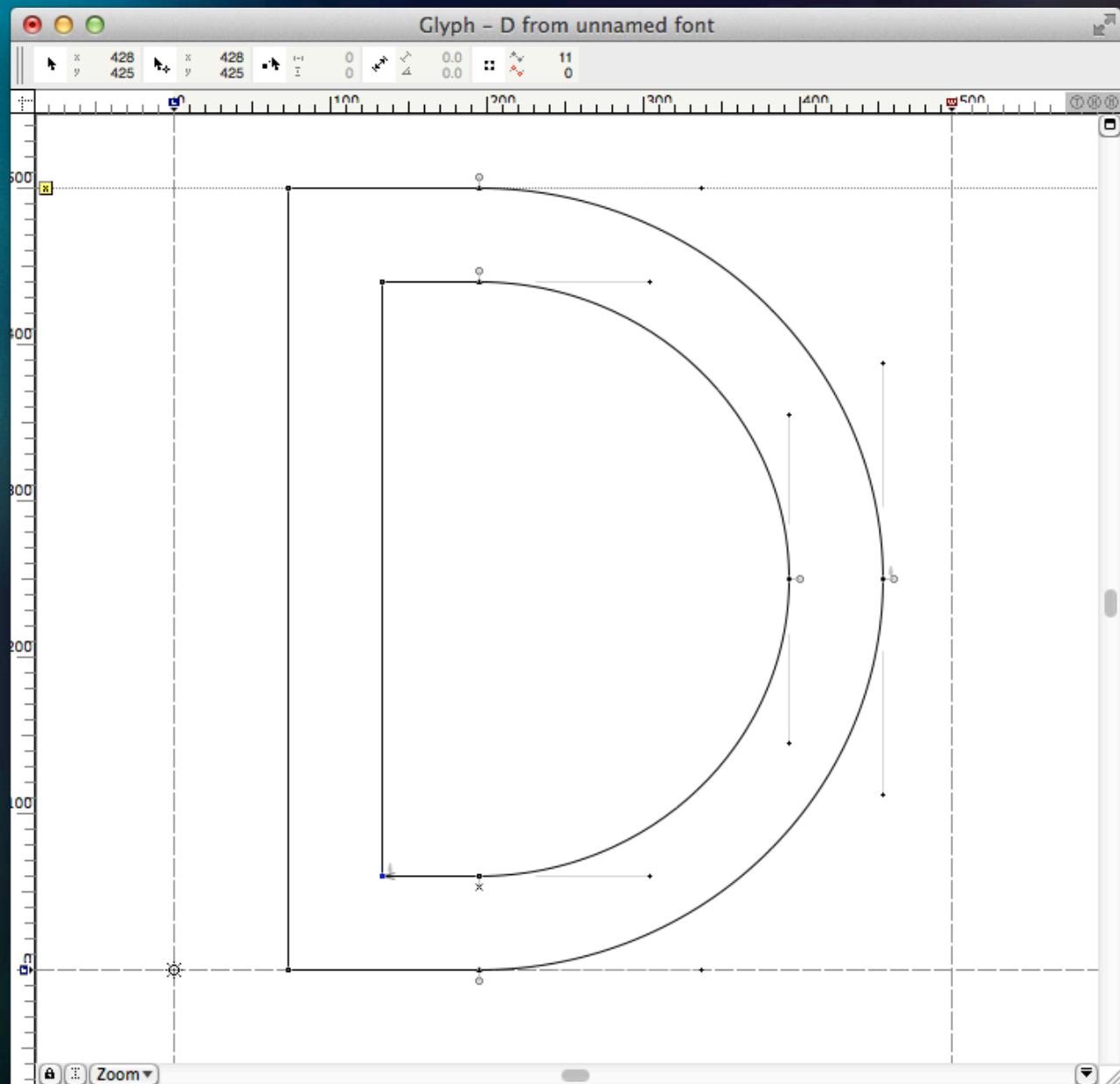


Better



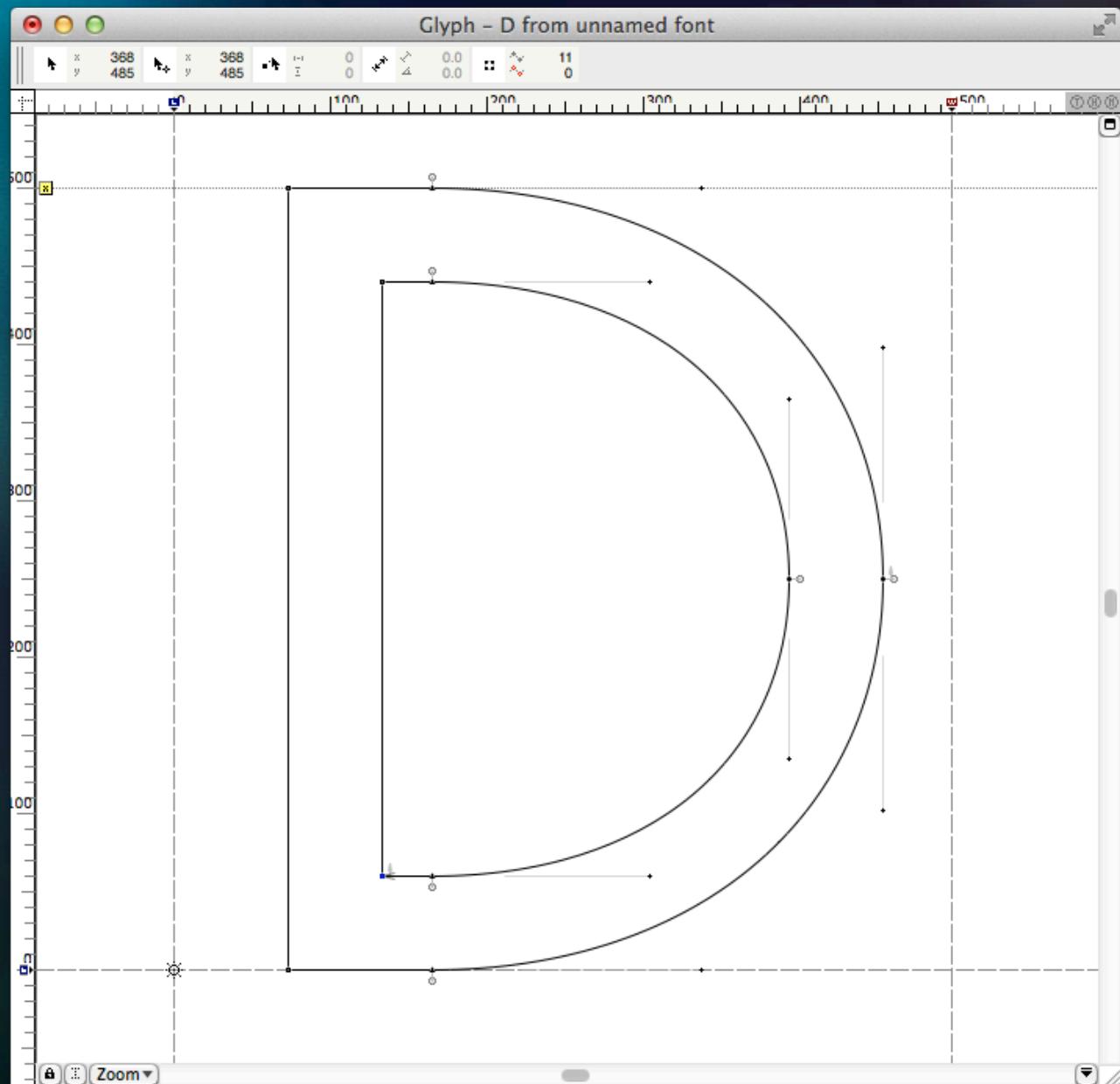
For example, a “D” w/sudden curve

- Bad

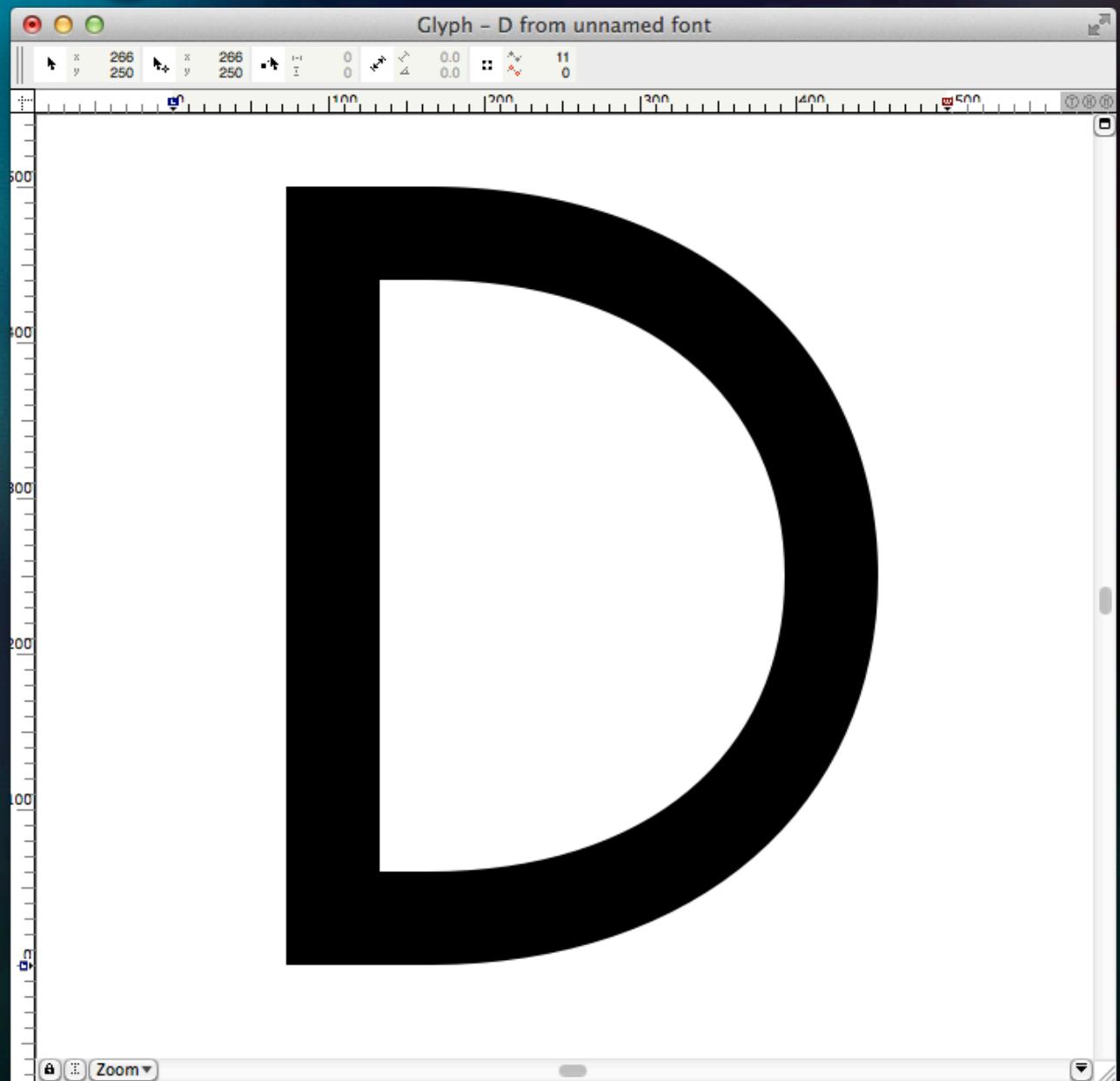


Fixed

- 30 units & 10



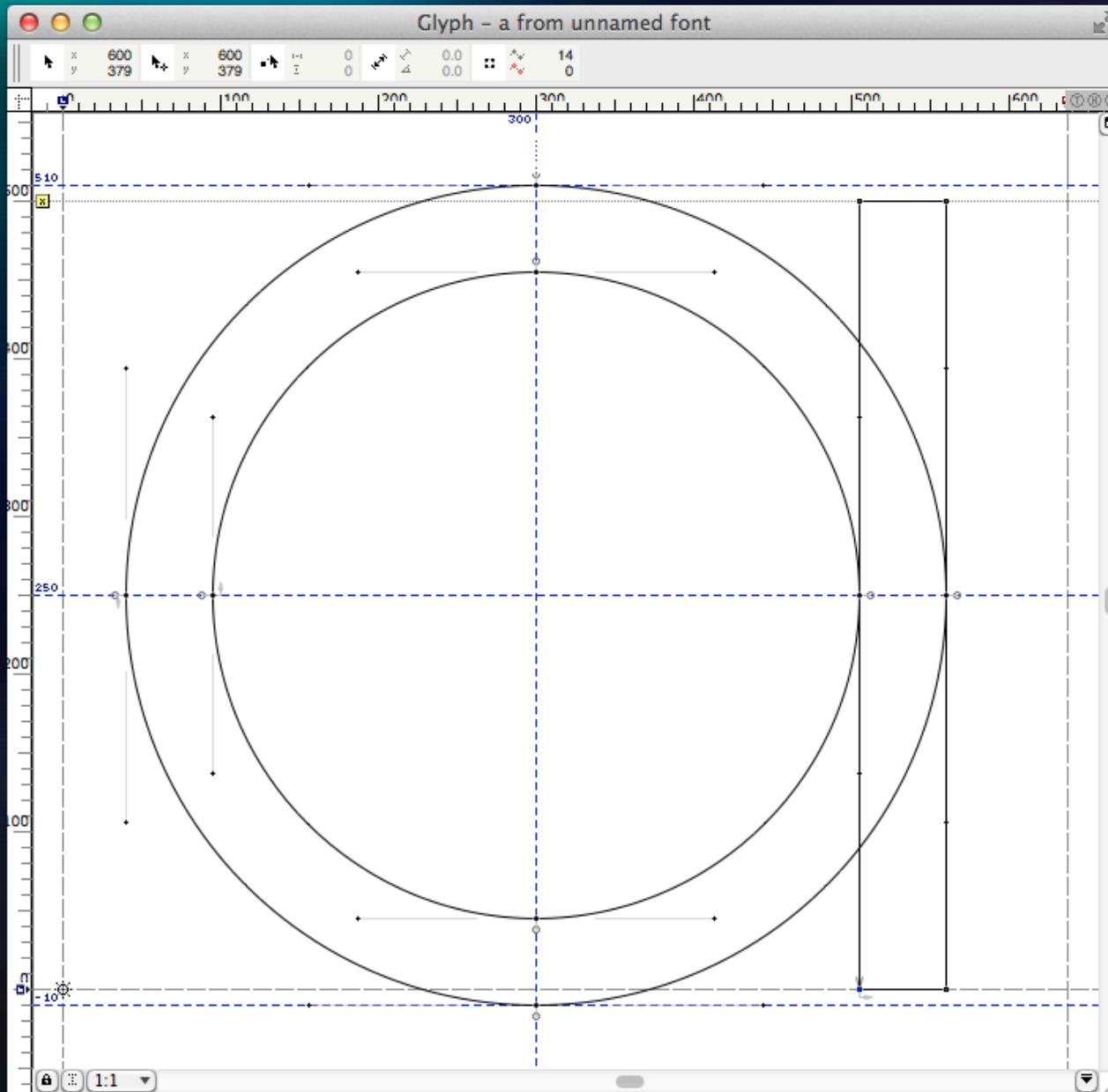
Fixed, showing filled



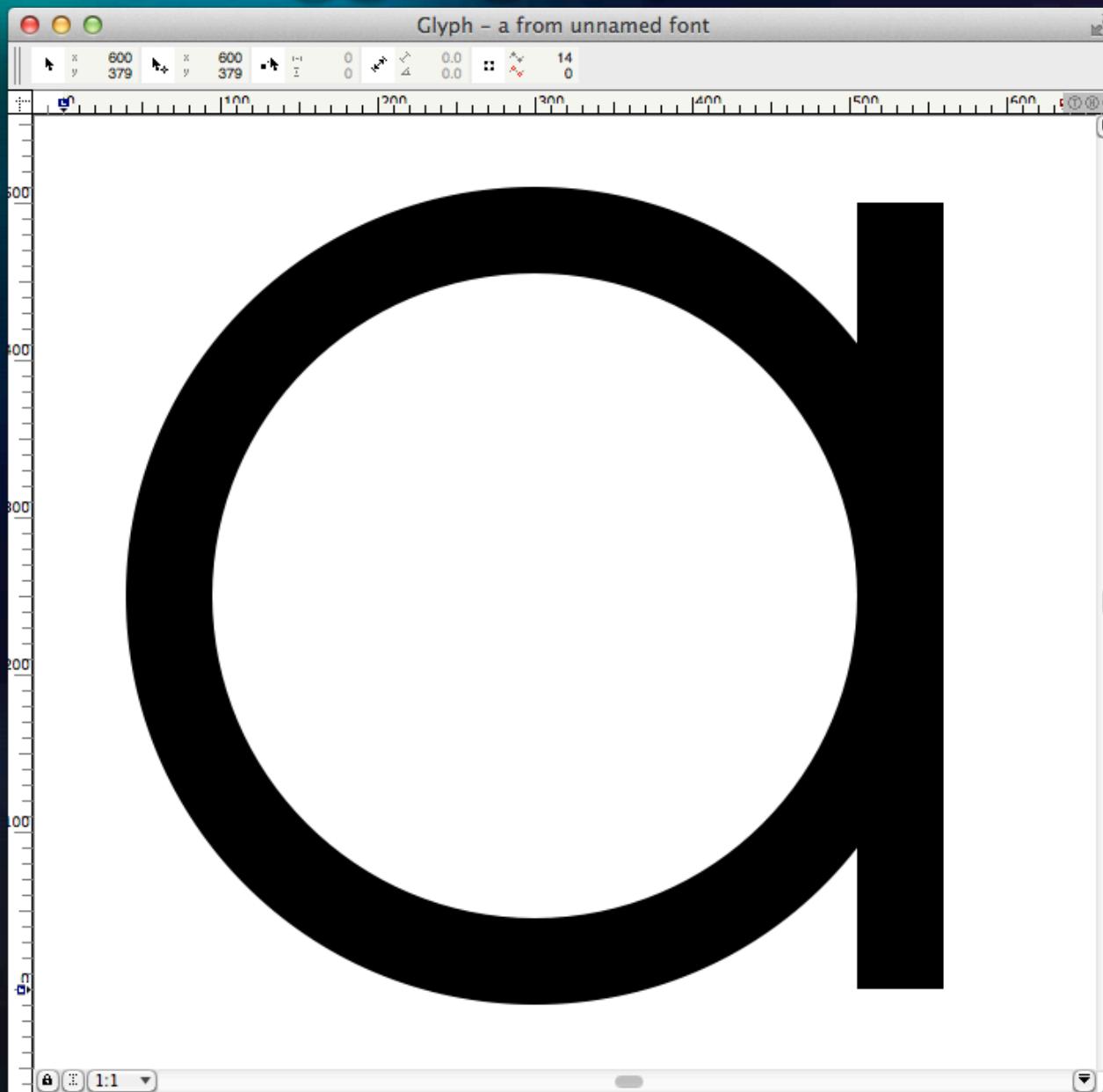
Optical Compensation #3

*Straight
to Round
Intersections*

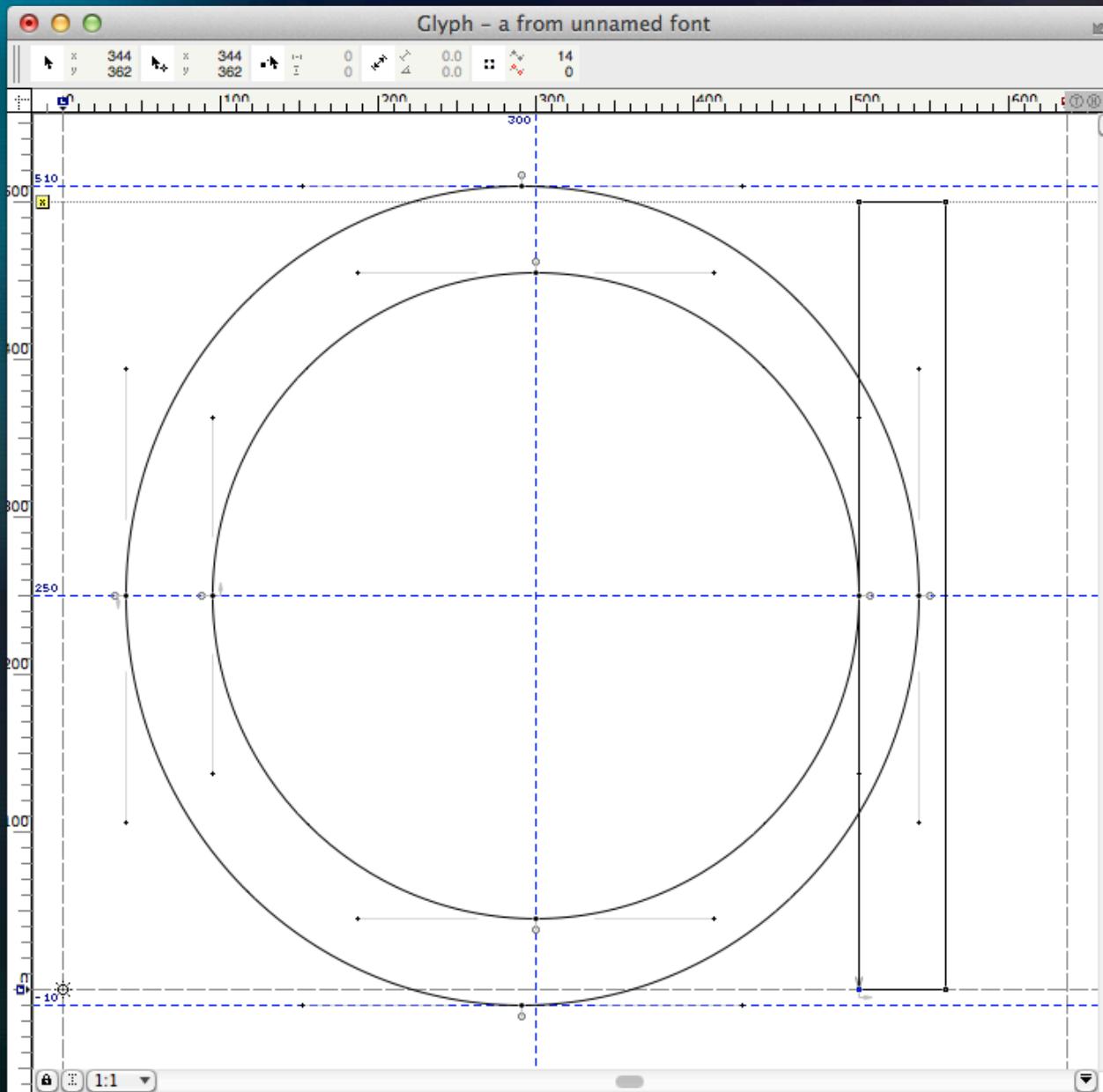
Pure math (with overshoot)



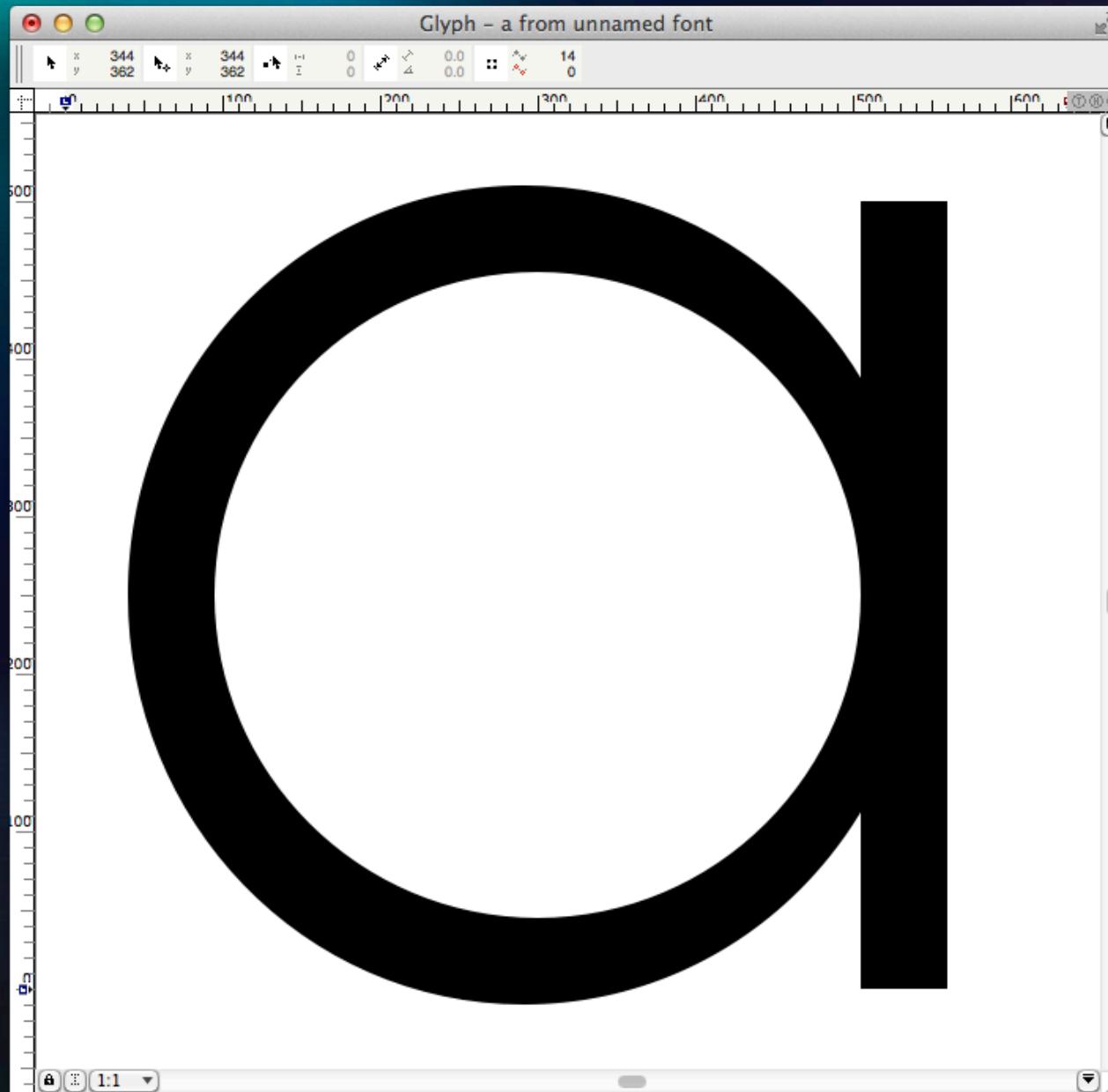
Outline: clogging at join



Outer circle scaled horizontally



Optical effect like an ink trap

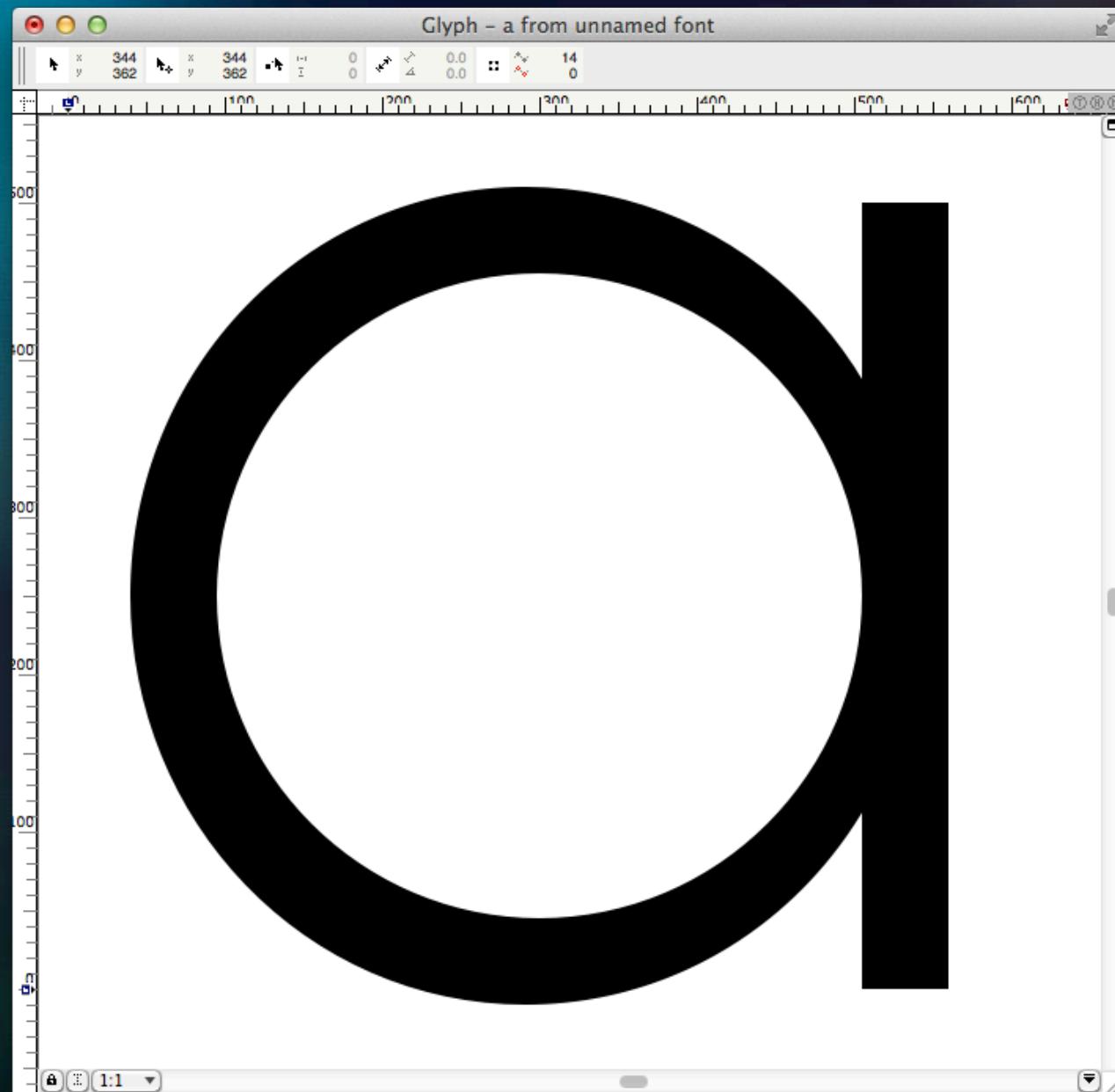


Optical Compensation #4

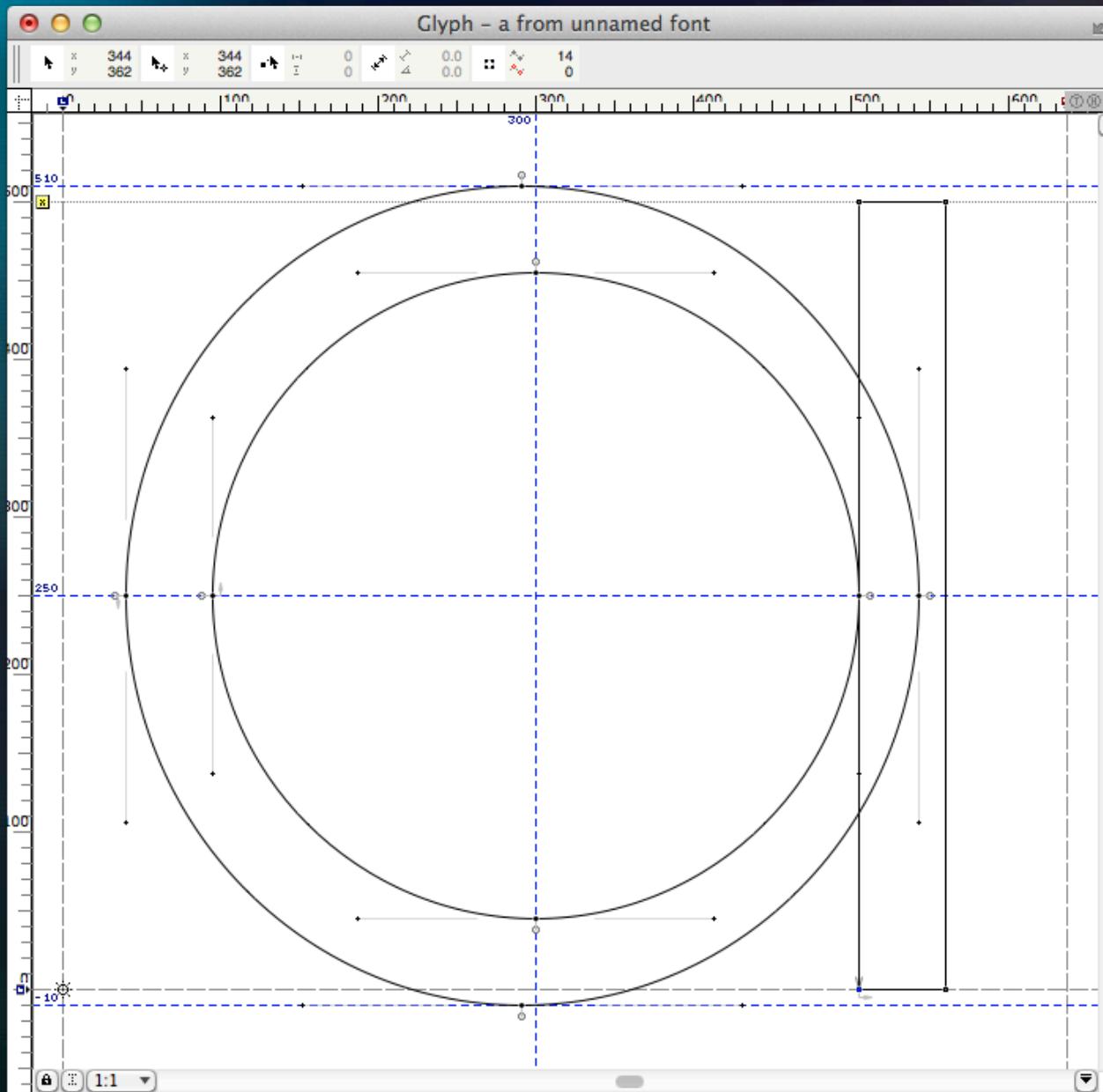
Thickness: Vert vs Horiz

Horiz. looks heavier than vertical

- Even though they are identical (55)

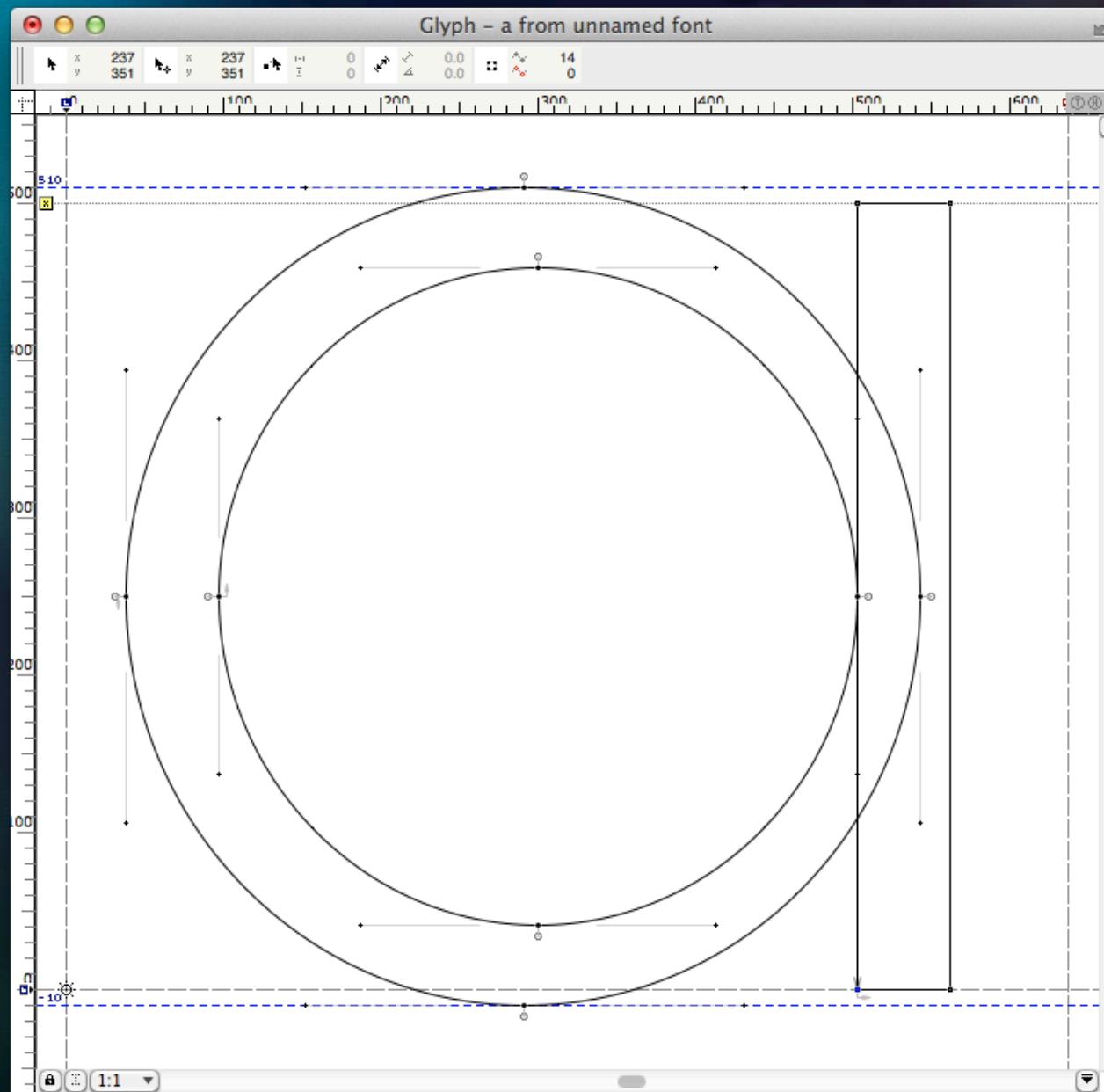


Before vertical/horizontal weight fix

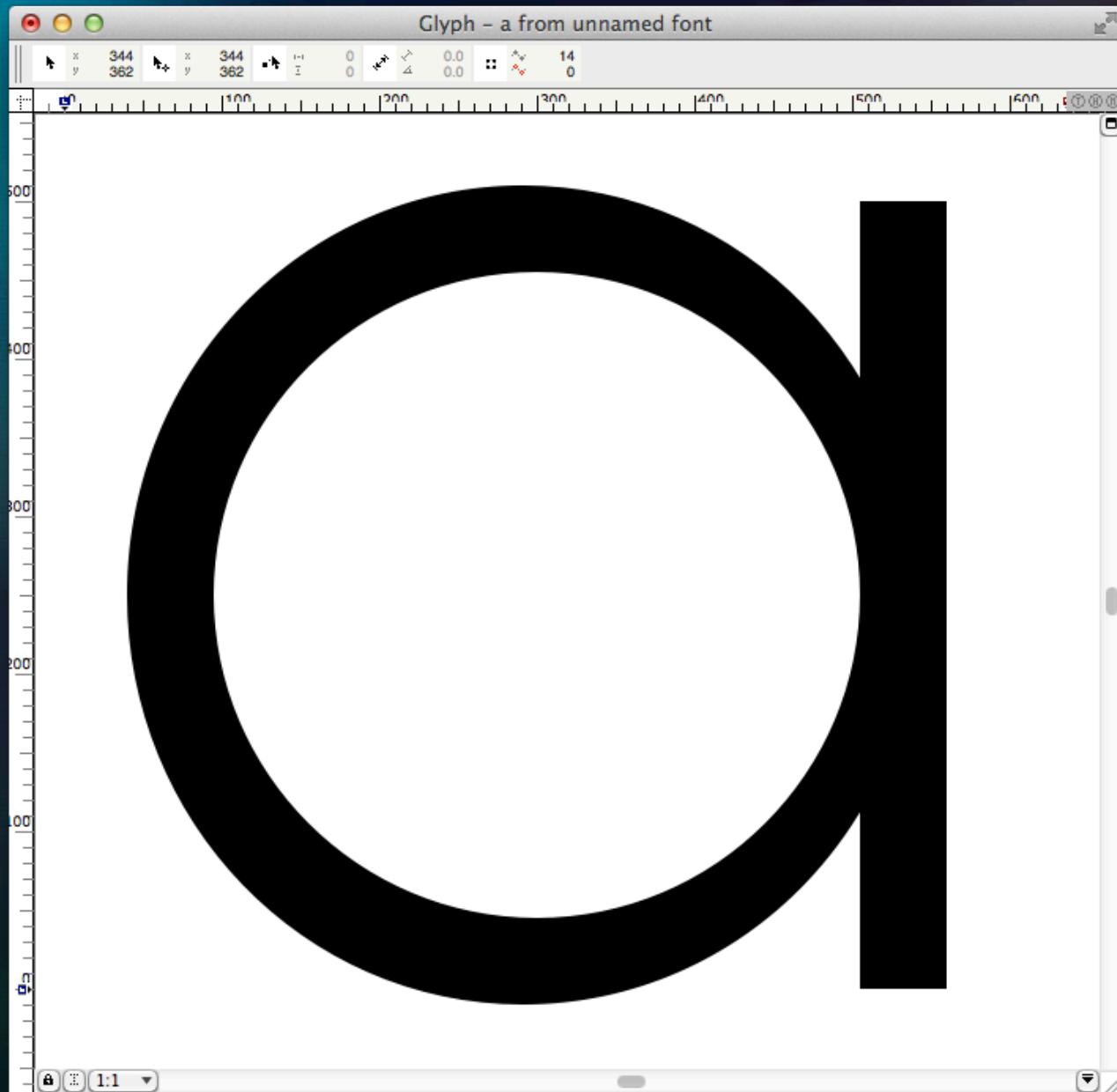


After vertical/horizontal weight fix

- Took 4/55 off horizontal, added 4/55 to vertical

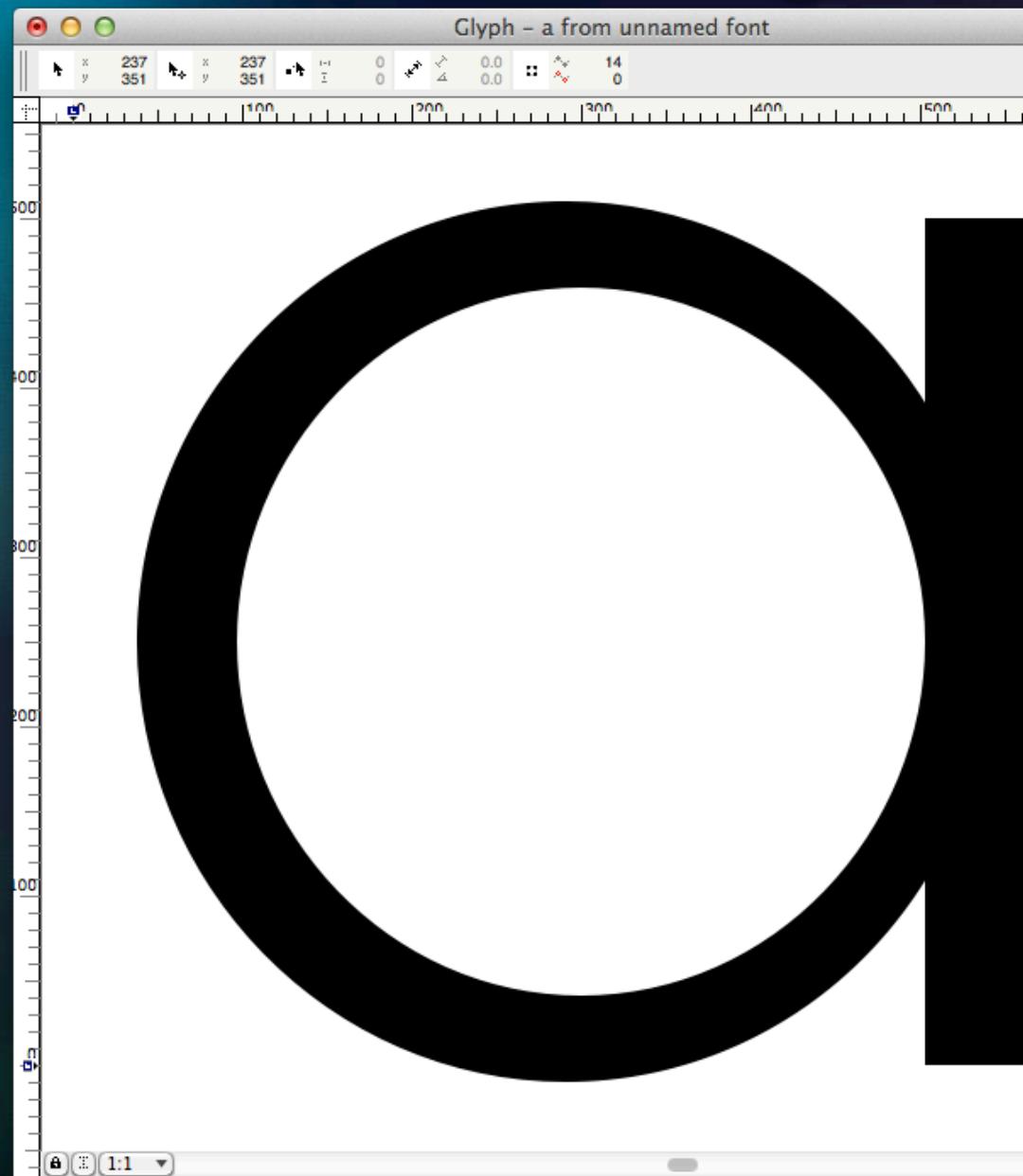


Before vertical/horizontal weight fix

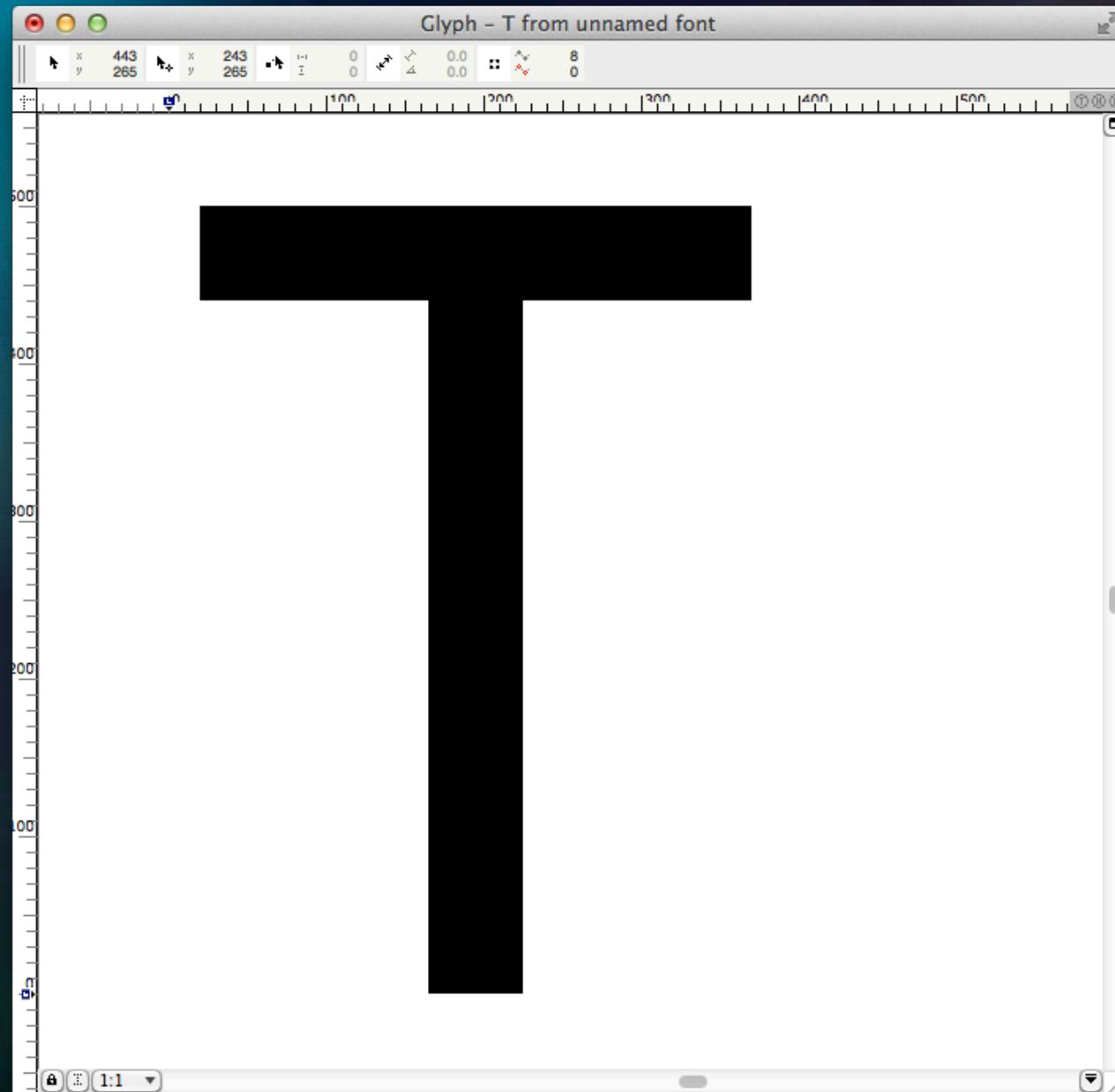


After vertical/horizontal weight fix

- Took 4/55 off horizontal, added 4/55 to vertical

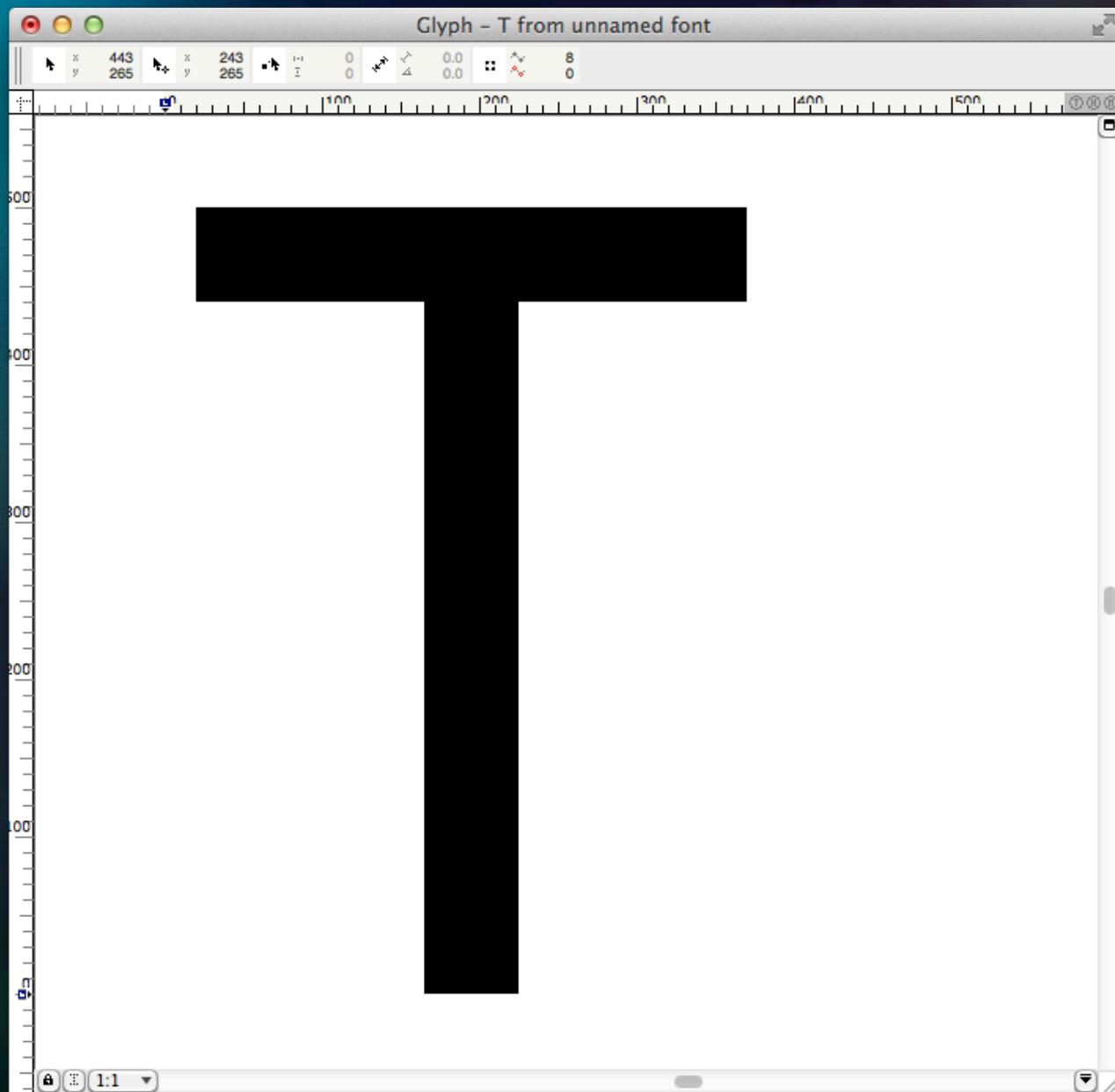


Which stroke is heavier?



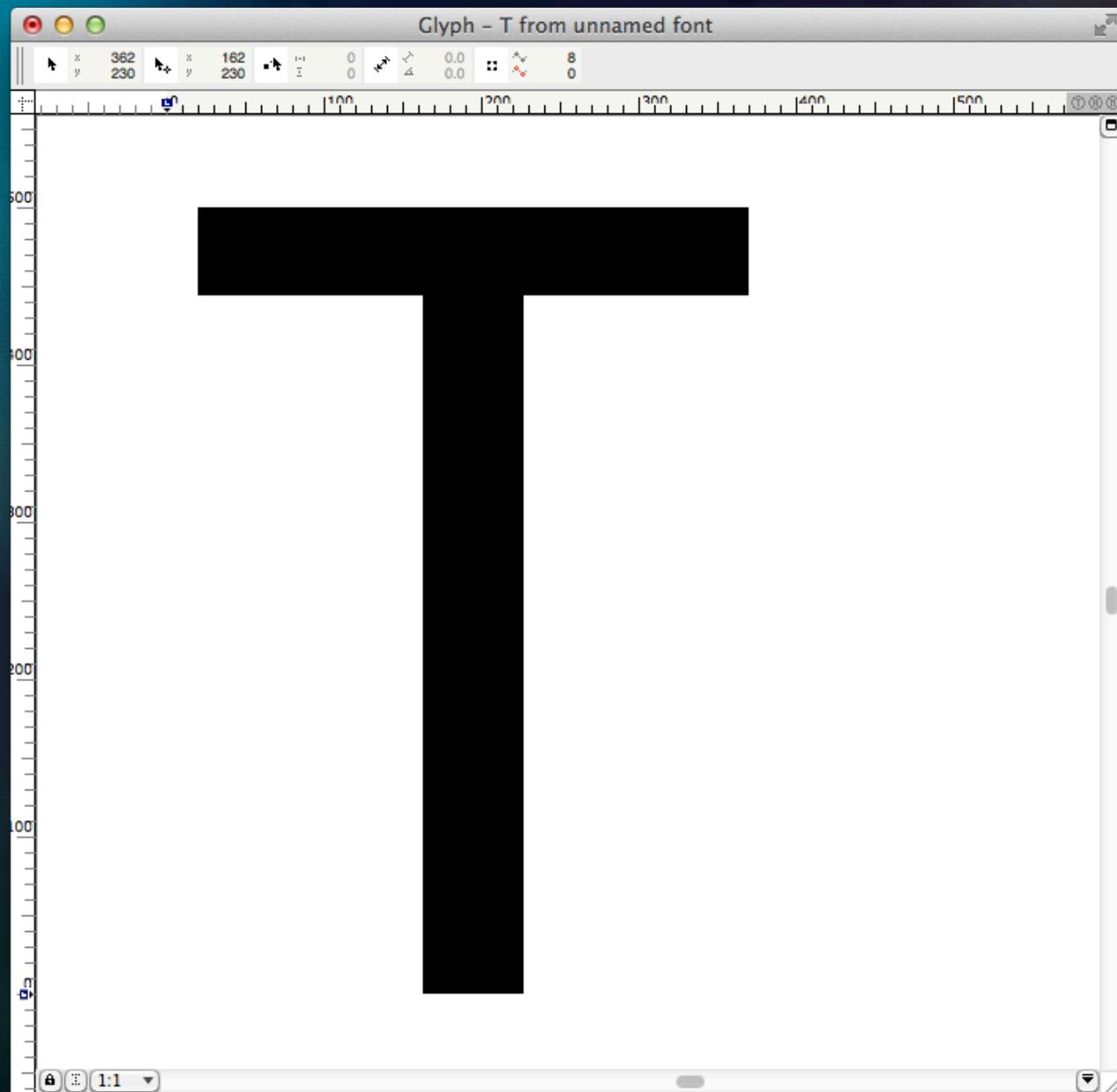
Before vertical/horizontal weight fix

- Strokes equal weight but look unequal

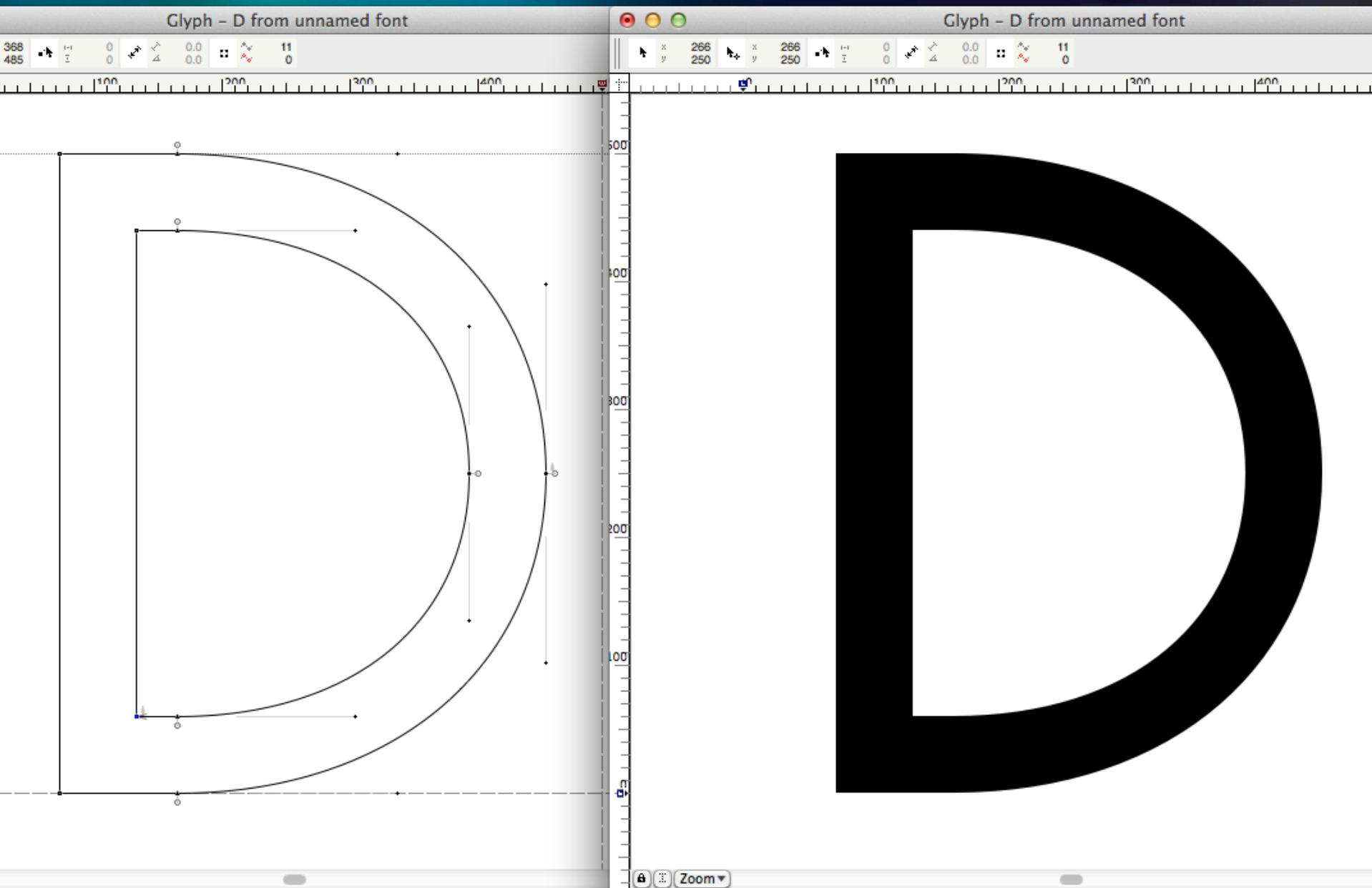


After vertical/horizontal weight fix

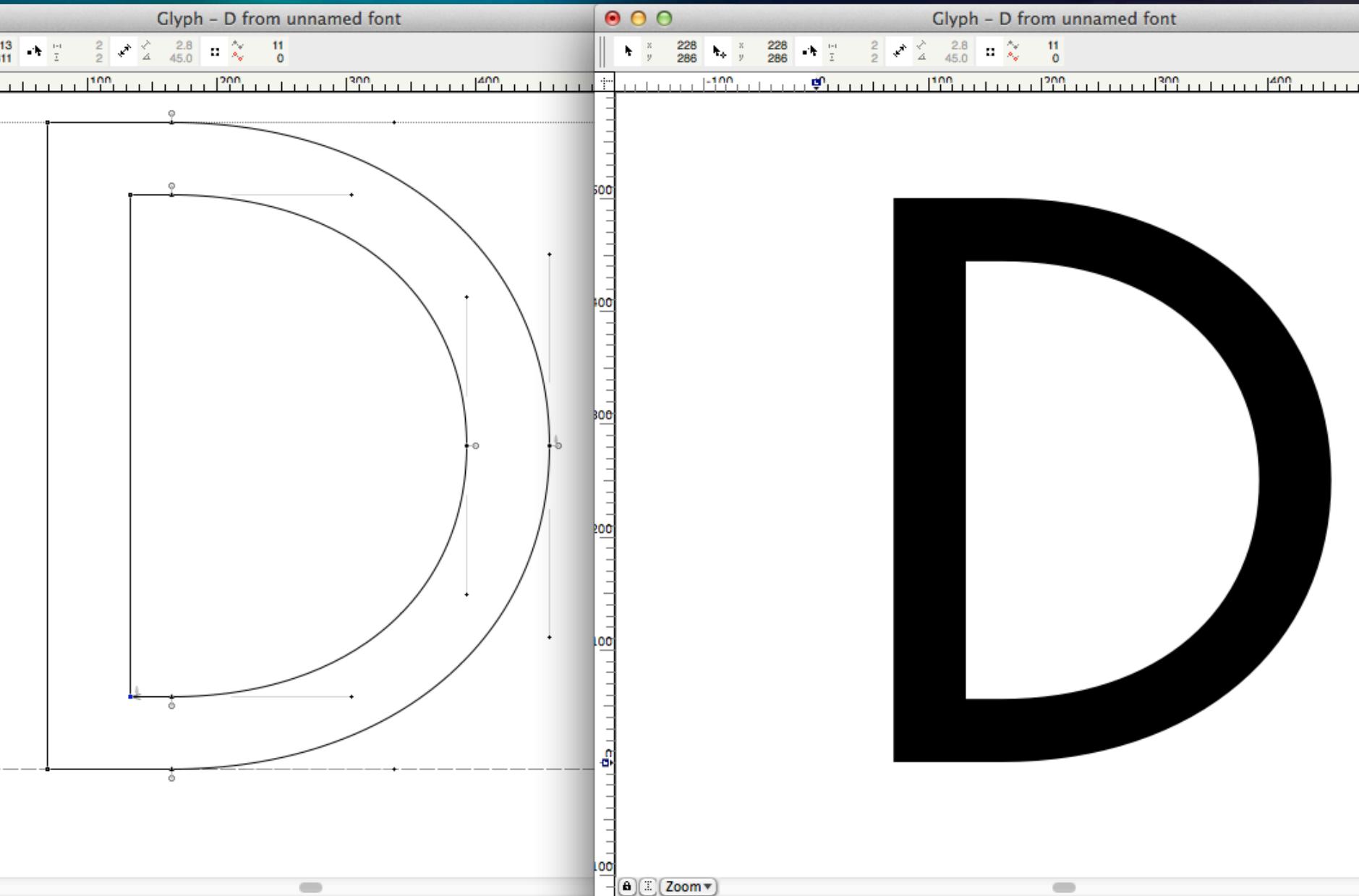
- Took 4/60 off horiz., added 4/60 to vertical



Before vertical/horizontal weight fix



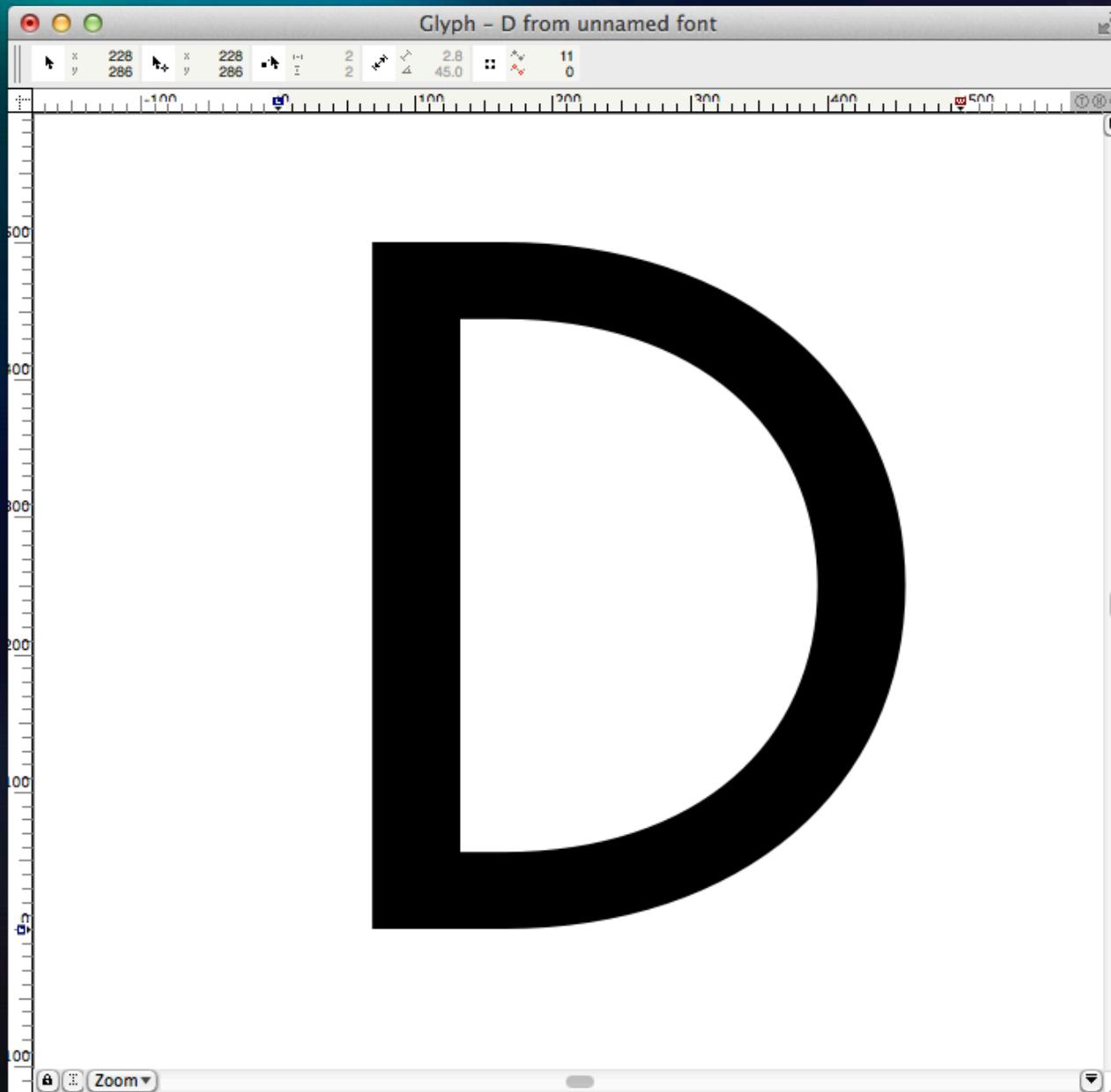
After vertical/horizontal weight fix



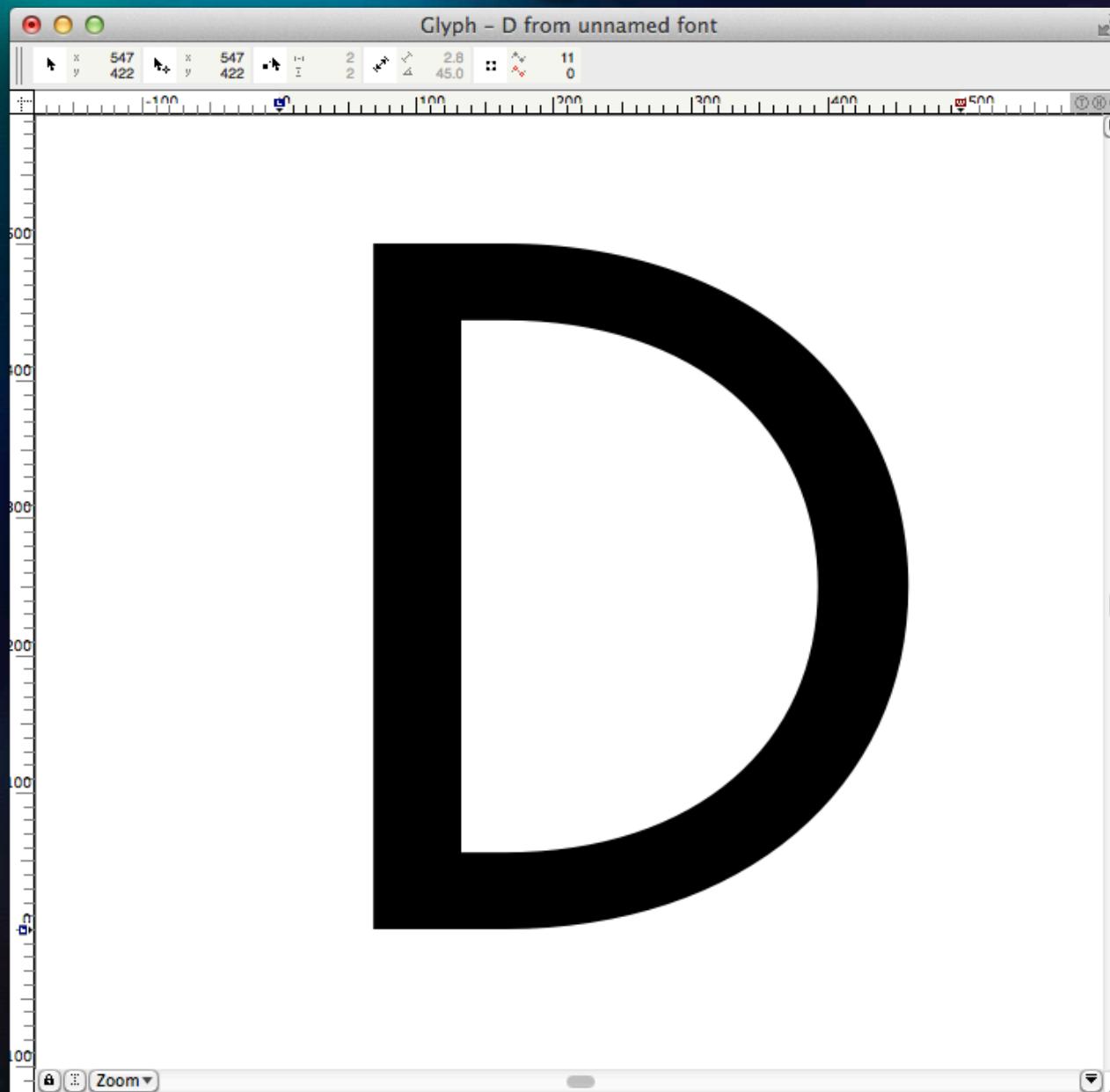
Optical Compensation #5

*Thickness:
Straight vs
Round*

Curve same as round



Curve 62 vs straight 60



Optical Compensation #7

Thickness:
Cap vs
Lowercase

Cap strokes are 4–10% heavier!

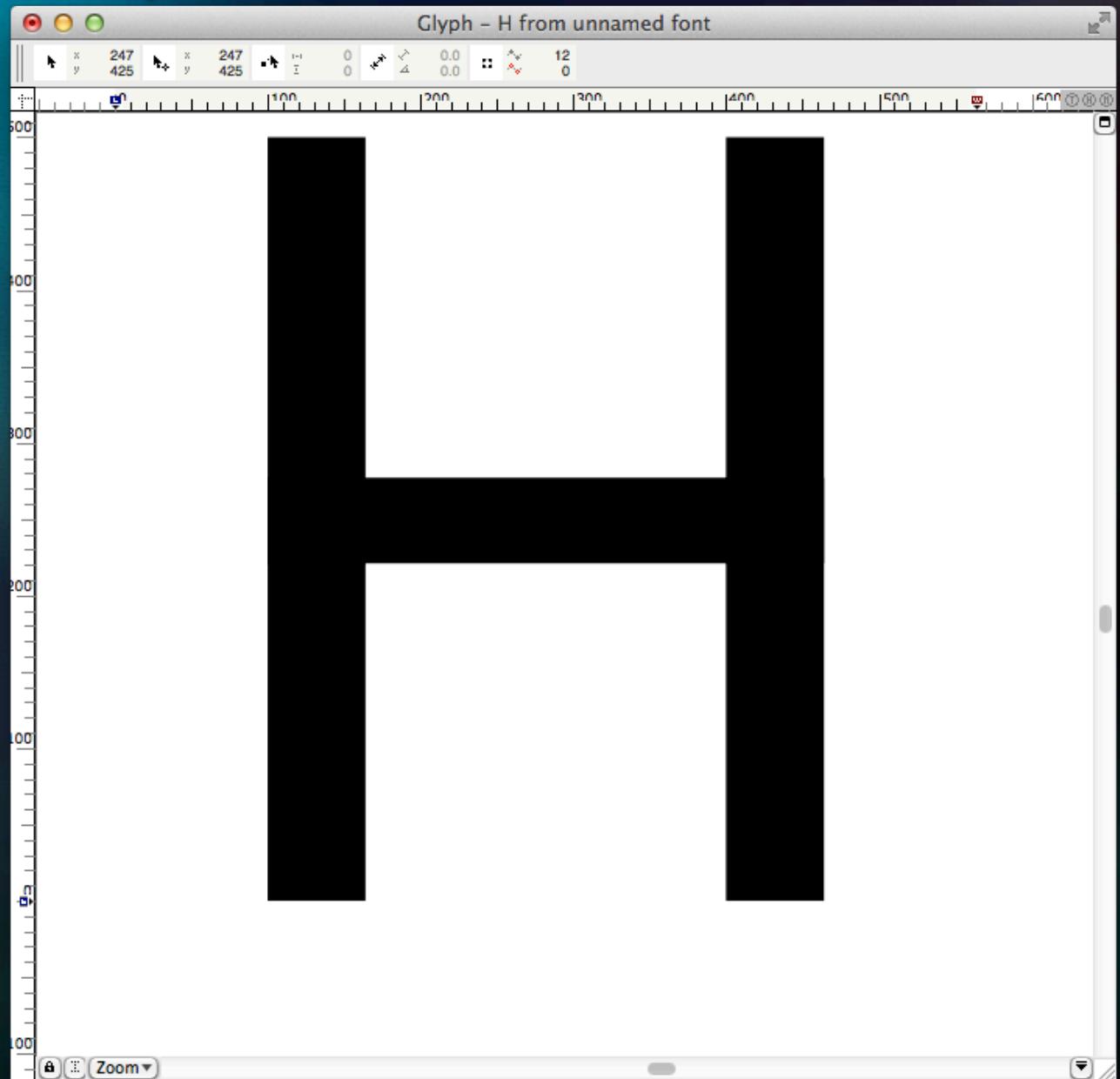
|||| Th Cc

Optical Compensation #8

*Midlines &
Rounds*

Crossbar of cap H

- High or low?



Crossbar of cap H

- Adjusted up 2–3%

