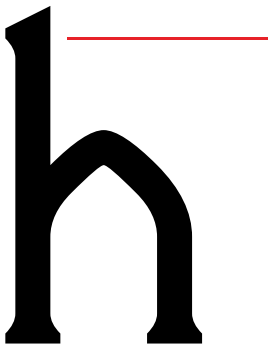
Chapter 4

Now that the letter h has been produced, it is possible to produce designs for a few other characters by adapting copies of the design for h. The next stage in the production of this font is now to use FFAE0004.TTF "Font for an exhibition 0004" as the working font.

The first additional letter is a small n.

This is produced by copying the design for a small h and then moving the five points which produce the ascender and its serif each down by 512 font units in the y direction.



Five points in this region are each moved downwards by 512 font units in order to produce a design for a small n.

The points are as follows.

88, 1368 on the curve moves to 88, 856.

88, 1416 off the curve moves to 88, 904.

40, 1464 on the curve moves to 40, 952.

40, 1512 on the curve moves to 40, 1000.

256, 1620 on the curve moves to 256, 1108.

The reason that the downwards movement is by 512 font units is that the serif structure in the letter h is relative to a vertical height of 1536 font units. The serif structure in the letter n is to be relative to a vertical height of 1024 font units and 1536 - 1024 is 512. The 1024 is from the height of the small letter o. The 1536 is from the original height of the basic design for the letter h. That height is, as it happens, the same height as capital letters in this font.

A small letter l can be produced from a copy of the design for h by deleting some of the points and by making the body narrower. The width is set to 344 font units. This is because 344 is 256 + 88

and that makes the design have the same width beyond the rightmost vertical as does the letter h.

A small letter i can be produced from a copy of the design for a small letter l by moving the five points at the top of the ascender in the same manner as when points were moved when producing the design for a small letter n, using the same data values. I have decided that the small l in this font is not to have a dot. In practice, I produce the glyph by using a copy of the design for n, deleting many of the points, then pasting that contour onto a copy of the design for a small letter l and then merging the contours and deleting the points which are not needed.

Another character which can be produced is a small letter b, by using copies of both h and o.

The technique is first to make a copy of the design for h and remove those points which are not needed in the design for a b. Those are the eight points at the base of the rightmost vertical. A copy of the design for o is then made. That design has two contours and the final design for the b needs two contours: the design for an h has only one contour. Working with the outer contour of the copy of the design for o, the seven points which are already duplicated in the design for h are deleted. The remaining contour design is now pasted onto the copy of the h. The contours are then merged, by locating the point at 936, 512 on the copy of the h, inserting a new point and then dragging that point onto the point 936, 336 of the contour just pasted, which is an off curve point, and completing the merge. The point then needs to be reset to be off the curve.

The point at 256, 168 is located, a new point is inserted and that new point is moved onto the point at 256, 144. The system offers that the contour be split and that is accepted. This is because the two points 256, 168 and 256, 144 were on the same contour.

The two points resulting from the split are moved apart and the one which follows on from the outer curve of the letter b and proceeds down to the serif at the base of the vertical is then relocated back at 256, 144. There are now two contours. The smaller contour is deleted. A copy of the inner contour from the letter o of the font is pasted into place. The design for the letter b is now complete. It is mapped into the font at character 98.

The next character which is to be produced is a small letter p. This is started from a copy of a b and then the ascender and its serif are replaced with a copy of the serif from a small n. The descender and its serif need to be produced. Firstly, the serifs at the base are removed and a basic descender down to -512 font units is added. One way to have produced the structure at the base of the descender would have been to have moved each of the eight points of the serif structure at the base of the b down by 512 font units vertically. However, I am designing a distinctive lower serif structure for this font.

At present the base of the descender has the following points in clockwise order on the contour.

256, -512 on the curve.

88, -512 on the curve.

The descender has a width of 168 font units.

A start is made by moving the points to the following.

304, -404 on the curve, being 256 + 48, -512 + 168/2 + 48/2.

40, -536 on the curve, being 40, -512 - ((88 - 40)/2).

Now six points are added so that both sides of the descender have a serif.

The points are then as follows.

256, -260 on the curve, being 256, -404 + 3 x 48.

256, -308 off the curve, being 256, -404 + 2 x 48.

304, -356 on the curve, being 304, -404 + 48.

304, -404 on the curve, being 256 + 48, -512 + 168/2 + 48/2.

40, -536 on the curve, being 40, -512 - ((88 - 40)/2).

40, -488 on the curve, being 40, -536 + 48.

88, -440 off the curve, being 88, -536 + 2 x 48.

88, -392 on the curve, being 88, -536 + 3 x 48.

Having produced a small letter p, production of a small letter q is attempted.

The q is produced by starting with copies of a small letter o and a small letter p. In the copy of the letter p the loop is deleted so as to leave just the vertical and the descender. The vertical and the descender from the copy of the p are shifted to the right so that the main width of the descender is between 768 and 936 font units horizontally. The contour is then copied and pasted onto the

copy of the o, which has had the point at 768, 856 moved to the left a little and which has had the points at 936, 688 and 936, 512 and 936, 336 deleted. The contours are then merged by moving the point from the copy of the o which was moved a little to the left moved onto the point at 768, 856 of the just pasted contour.

This produces a q of which the lower descender is fine, yet for which the upper descender needs changing. The problem is that the top of the q is serifed only on the left and I would like it serifed only on the right.

So, firstly the excess points are removed, namely the off curve point at 768, 904 and the on curve point at 720, 952. The on curve point at 720, 1000 is moved to be at 768, 1024.

The serif on the right side of the top of the letter is constructed in the following manner.

984, 1132 on the curve, being the point at 936, 1108 moved to 936 + 48, 1108 + 48/2.

984, 1084 on the curve, being 984, 1132 - 48.

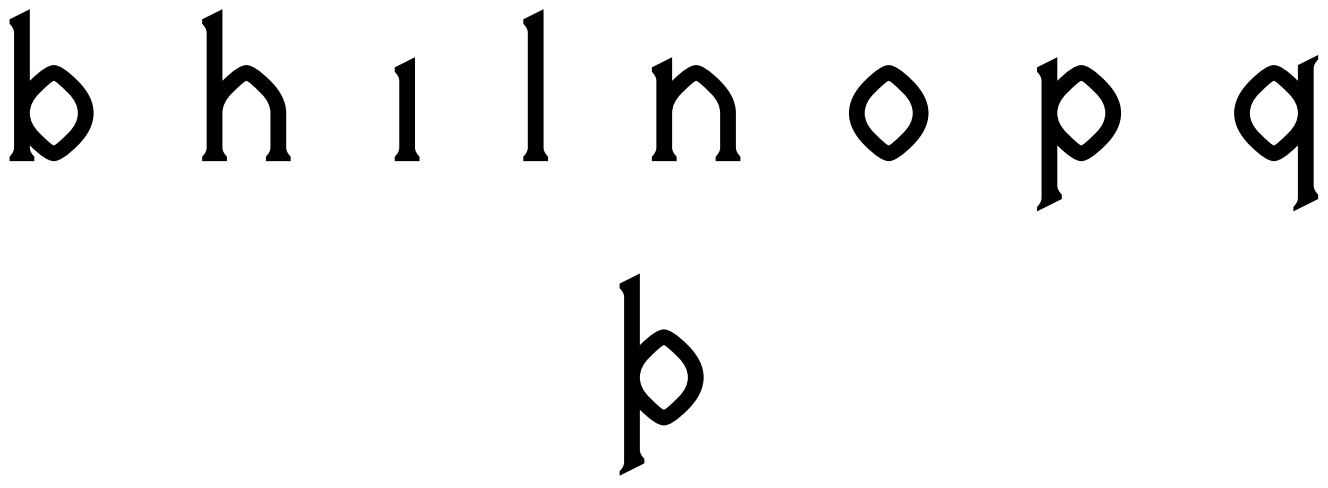
936, 1036 off the curve, being 936, 1132 - 2 x 48.

936, 988 on the curve, being 936, 1132 - 3 x 48.

This completes the production of the small letter q.

I like to include the characters needed for Old English in fonts. One of those letters is a small letter thorn. It is convenient to produce it now, from a copy of a small letter p and a copy of a small letter l. All but one of the lower points of the copy of the small letter l are deleted, the point at 40, 0 not being able to be deleted as it is at the start of the contour. It is, however, moved to just below the points remaining. The contour remaining is then pasted onto the copy of the small letter p and the two contours of the outside of the letter are merged and the excess points deleted. The completed design is mapped as character 254.

The characters thus far produced for the font are shown.



b h ı l

n o p

q þ