Abstract. For an integer $w \geq 2$, a radix 2 representation is called a *width-w nonadjacent form* (w-NAF, for short) if each nonzero digit is an odd integer with absolute value less than 2^{w-1}, and of any w consecutive digits, at most one is nonzero. In elliptic curve cryptography, the w-NAF *window method* is used to efficiently compute nP where n is an integer and P is an elliptic curve point. We introduce a new family of radix 2 representations which use the same digits as the w-NAF but have the advantage that they result in a window method which uses less memory. This memory savings results from the fact that these new representations can be deduced using a very simple *left-to-right* algorithm. Further, we show that like the w-NAF, these new representations have a minimal number of nonzero digits.