A. K. Wheeler* (wheele@umich.edu). Ideals Generated by Principal Minors.

Let $K$ be an algebraically closed field. We study the algebraic sets defined by the vanishing of the size $t$ principal minors of a size $n$ square matrix of indeterminates, and the varieties which are irreducible components of these algebraic sets. In the case where $t = 2$ these are normal complete intersections with coordinate ring isomorphic to a semigroup ring. The general behavior is much more complicated. We give bounds on the height of the defining ideal and show, for example, that for $n \geq 4$ and $t = n - 1$ there are two components, one of codimension 4 and the other of codimension $n$. Thus, when $n = 5$ and $t = 4$, the algebraic set is not a complete intersection. (Received September 16, 2013)