1010-13-40 **Marco Fontana**, **Evan Houston** and **Thomas G. Lucas*** (tglucas@email.uncc.edu), Department of Mathematics and Statistics, University of North Carolina Charlotte, Charlotte, NC 28223. *Classifying prime ideals in Prüfer domains.*

For a nonzero prime ideal P of an integral domain R with quotient field K, set $\Theta(P) = K$ if P is in the Jacobson radical of R, otherwise set $\Theta(P) = \cap R_M$ where the M range over the maximal ideals that do not contain P. We consider five basic properties P may or may not have. P could be sharp:= [R_P does not contain $\Theta(P)$]; antesharp:= [each maximal ideal of $(P : P)$ that contains P, contracts to P in R]; divisorial:= [$P = (R : (R : P))$]; branched:= [proper P-primary ideals exist]; idempotent:= [$P = P^2$]. Set $\Lambda(P) = \langle V, W, X, Y, Z\rangle$ with the values of V, W, X, Y, Z reflecting whether P is, respectively, sharp/not sharp, antesharp/not antesharp, divisorial/not divisorial, branched/unbranched, idempotent/not idempotent. If R is a Prüfer domain we show that there are exactly twelve attainable values for $\Lambda(P)$ when P is not maximal, and six values when P is maximal. (Received August 08, 2005)