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Evan Houston* (eghousto@email.uncc.edu), Dept. of Mathematics, Charlotte, NC 28223, and
John Taylor, Dept. of Mathematics, Charlotte, NC 28223. *Arithmetic Properties of
Pullbacks*. Preliminary report.

Let D and T be domains, let I be an ideal of T , let $\varphi : T \rightarrow T/I$ be the canonical map, and let $R = \varphi^{-1}(D)$. We attempt to characterize when R has certain arithmetic properties, obtaining reasonably satisfactory results in several cases. For example, extending a result of Mimouni, we show that R is a Prüfer domain if and only if D and T are Prüfer domains, I is a prime ideal of T , and D and T/I have the same quotient fields. Some of our results generalize facts known to hold for the $A + XB[X]$ - and $D + XD_S[X]$ -constructions. (Received September 26, 2005)