Stability analysis of the high poloidal beta scenario on DIII-D towards operation at higher plasma current W.F. Guo, X.Z. Gong, J. Huang, Q.L. Ren, J.P. Qian, S.Y. Ding, C.K. Pan, G.Q. Li, T.Y. Xia, ASIPP, A.M. Garofalo, L. Lao, A. Hyatt, J. Ferron, O. Meneghini, Y.Q. Liu, GA, J. McClenaghan, ORNL, C.T. Holcomb, LLNL — The high poloidal beta scenario with plasma current $I_P \approx 600$ kA and large-radius internal transport barrier (ITB) on DIII-D is subject to $n=1$ MHD kink modes when the current profile becomes very broad at internal inductance values $l_i \approx 0.5-0.6$. It is desirable to extend this scenario to higher plasma current ($\sim 1$ MA) for higher normalized fusion performance. However, higher current at constant normalized beta, $\beta_N \approx 3$, would reduce the poloidal beta, $\beta_P$, below the threshold for ITB sustainment, observed at $\beta_P \approx 1.9$. Thus, to avoid loss of the IT, $\beta_N$ must be increased together with $I_P$ while avoiding the kink instability. MHD analysis is presented that explains possible paths to higher $\beta_N$ stability limit for the kink mode in this scenario. *Work supported by National Magnetic Confinement Fusion Program of China under 2015GB110001 and 2015GB102000 National Natural Science Foundation of China under Grant No. 1147521 and by US DOE under DE-FC02-04ER54698.