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The Brazilian Continental Margin (BEM) deep-water regions contain important geological features that need advance in their characterization. Mass-transport deposits (MTD) are important not only by their significance in the sedimentary but also because of their negative impact economically. A slump is a coherent mass of sediment that moves on a concave-up glide plane and undergoes rotational movements causing internal deformation and one of the basic types of MTD. The study area comprises part of the offshore Potiguar Basin in NE Brazil, on the distal eastern portion of the Touros High and Fernando de Noronha Ridge. This portion of the Potiguar Basin comprises a transform rift system that has evolved into a continental passive margin. This basin represents an important location related to the breakup between South America and Africa. The database used in this work included 2D post-stack time-migrated seismic profiles from the Brazilian Agency of Petroleum, Natural Gas, and Biofuels (ANP). The slumps reflectors are identified on the continental shelf profiles in form of present clinoform configuration, medium to high continuity, high amplitudes, and medium to high frequencies, representing a sigmoidal oblique complex prograding reflector. The slump scars at the continental slope indicate that this is a gravitationally unstable area that will eventually collapse, resulting in erosional features on the continental slope and deposition on the continental rise. Our results provide some insights regarding MTD slumps sedimentary evolution in the BEM deep water area as well as their interrelation with other sedimentary deposits.