**THEORETICAL ANALYSIS OF SOIL NAILING DESIGN PERFORMANCE AND FUTURE ASPECT**

**ABSTRACT**

Soil stabilization is a general term for any physical, chemical, biological, or combined method of changing a natural soil to meet an engineering purpose. This process includes increasing the weight bearing capabilities and performance of in-situ soil and sand. Soil nailing is a construction technique that can be used as a remedial measure to treat unstable natural soil slopes or as a construction technique that allows the safe over-steepening of new or existing soil slopes. The technique involves the insertion of relatively slender reinforcing elements into the slope – often general purpose reinforcing bars (rebar) although solid or hollow-system bars are also available. Kinetic methods of firing relatively short bars into soil slopes have also been developed. Bars installed using drilling techniques are usually fully grouted and installed at a slight downward inclination. Soil nail components may also be used to stabilize retaining walls or existing fill slopes like embankments and levees and this is normally undertaken as a remedial measure. Since the first application of soil nailing was implemented in 1972 for a railroad widening project in France, soil nailing is now a well-established technique around the world.