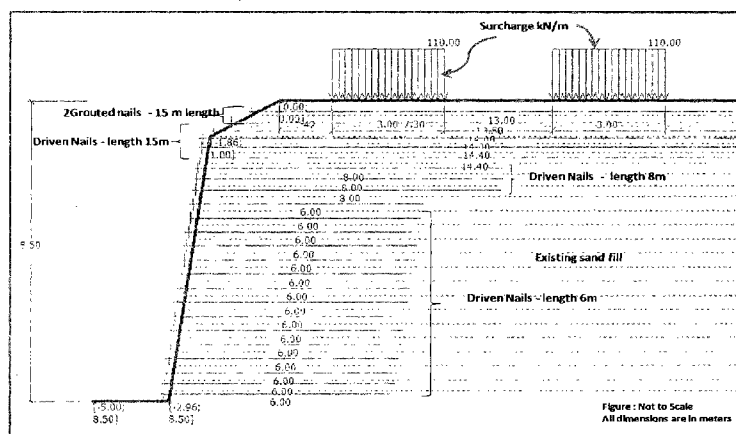


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- (71) Applicant: COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH [IN/IN]; Anusandhan Bhawan, Rafi Marg, New Delhi 110001 (IN).
- (72) Inventors: SINGH, Kanwar; CSIR-Central Road Research Institute, Mathura Road, District - South, New Delhi 110025 (IN). PRASAD, Pulikanti Subramanya; CSIR-Central Road Research Institute, Mathura Road, District - South, New Delhi 110025 (IN). MATHUR, Sudhir; CSIR-Central Road Research Institute, Mathura Road, District - South, New Delhi 110025 (IN). AZAD, Farhat; CSIR-Central Road Research Institute, Mathura Road, District - South, New Delhi 110025 (IN). GANGOPADHYAY, Subhamay; CSIR-Central Road Research Institute, Mathura Road, District - South, New Delhi 110025 (IN).
- (74) Agent: NAIR, Manisha Singh; Lex Orbis, Intellectual Property Practice, 709/710, Tolstoy House, 15 - 17, Tolstoy Marg, New Delhi 110001 (IN).
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[Continued on next page]

(54) Title: STEPWISE REPEATED DE-STABILISATION AND STABILISATION OF HIGHLY COLLAPSIBLE SOIL MASS BY 'SOIL NAILING TECHNIQUE' USED FOR CONSTRUCTION OF RAILWAY/ROAD UNDERPASS



(57) Abstract: The excavations of side vertical walls for building and underpasses must be shored so that the excavations adjacent to the neighbouring properties do not cave in during the constructions. A Soil Nailing system has been used for stabilisation of excavations and natural slopes for the last few decades in India and Abroad. Soil Nailing Technique used steel anchor rods inserted directly into the soil mass as a driven nails and when Nails are placed in pre-drilled holes to form grouted nails. In both the cases, it restrained load and the side deformations. In the present study, an innovative technique of 'Soil Nailing' has been developed for stepwise vertical de-stabilization and stabilisation of compacted collapsible sandy soil for the construction of railway underpasses in live railway loading conditions. This technique is successfully implemented first time in the world for controlled de-stabilisation of vertical cut slope and again stabilisation for creating a space for pushing of box for railway underpasses for the length of 22m and 50m at two sites namely Yamuna Bazzar and Apsara border respectively in Delhi, India. This Soil Nailing Technique of controlled de stabilisation of soil and again stabilisation in steps has proved a superficial method of stabilisation with the other methods for such kind of dynamic loading situations.



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