

No. RW/NH-34014/3/87-S&amp;R

Dated the 17th March, 1992.

To

All Chief Engineers of State PWDs/UTs. dealing with roads, Director General (Border Roads), Director General (Works), C.P.W.D.

Subject: Ministry's Research Scheme R: 30 - Preparation of State of the Art Report on Reinforced Soil Structure applicable to Road Design and Construction.

Soil is used by the highway engineer principally in two ways viz, as construction material for embankment, filling behind abutment etc., and as foundation material to support embankment, pavement, bridges etc. The design and construction of embankment pose little problem when underlaying foundation consists of a good load bearing soil stratum of reasonable thickness. Soft soil conditions, however, give rise to several complexities in the situation both for the designer as well as the construction engineer. Marine clays of India are generally very soft and are notorious for their low undrained strength. In tackling the problems of embankment construction on such soil or in other situations where adequate land width is not available for construction of a conventional embankment, improvement of the soil by reinforcement is a convenient option available to the highway engineer.

2. The technique of reinforcing soil with provision of metallic or non-metallic elements like roads, flats, strips etc. have now been used for quite some time in developed countries. In the recent year relatively new materials like wire nettings, welded wire meshes, woven or non-woven synthetic fabrics are more and more being put to use.

3. The use of the technique of reinforcing earth has not yet become common in India. Realising the potentialities of this technique, this Ministry had earlier circulated a detailed note on the subject with its letter No. RW/NH-34012/3/87-Res. Std. Dated 28/29th December, 1987. As a follow up to the same, the Ministry had also sponsored a research scheme R-30 for preparation of State of the Art report on the subject. The Department of Civil Engineering, Regional Engineering College, Warangal, has prepared the State-of-Art Report and a copy of the same is enclosed herewith for your information, guidance and use.

The report contains many useful information about the technique deals with theory and design of reinforced earth walls, contains details of laboratory and model studies, construction materials and methods, case studies and solved examples of design.

4. It is hoped that State PWDs will find the report useful and they will now be in a position to identify suitable locations for application of the technique gainfully. As has been indicated earlier also the Ministry will welcome such proposals where the same are considered appropriate and useful.