

PAIROJ SIRIPANOOSATIEN : BEHAVIOR OF A ROAD EMBANKMENT ON RELIEF
PILE AT THE THONBURI-PAKTHO HIGHWAY (KM. 15+000) : THESIS ADVISOR :
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This thesis involves the analysis of settlement behavior on Thonburi-Paktho KM.15+000. An embankment is strengthened and supported by the relief pile and is placed on top of 0.60 meter thick soil cement. Soil cement is placed on piles measuring 0.22 x 0.22 x 12.00 meter and the spacing between each pile is 2.00 meter. Geotechnical instruments are installed at the site for measuring, settlement and pore pressure.

The characteristics of the settlement components of Thonburi-Paktho highway (KM.15+000) that use relief piles are found to be as follows. The settlements are due to the 0.70 meter sand fill and the embankment load which is transferred to piles and the soil layers between piles. The load transfer to piles is 75 % of total embankment load. The other 25 % of embankment load transfers to soil layers between the piles.

The analysis of piles settlement using Modified Theory of Elasticity Method by Poulos shows that the pile settlement is 8.15 cm., settlement of soil mass between piles due to embankment load estimated using Terzaghi's method is 3.76 cm. The settlement resulting from the 0.7 m. sandfill is 10.92 cm. The total settlement is, therefore, between 15 to 19 cm.

Field data show that 15% of total settlement occur between El.+0.5 to - 4 meter, 70% of total settlement between EL. - 4 to - 11 meter and 15% of total settlement between El. - 11 to - 15.2 meter.