



BUKIT GAMBIR INTERCHANGE, PLUS HIGHWAY-JOHOR

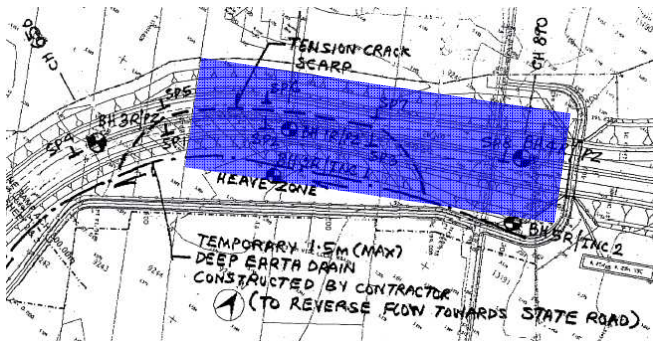
STONE COLUMN – DRY METHOD

Category: Highway
 Client: PLUS
 Engineer: Dr. C. T. Toh Consultant
 Main Contractor: Iswarabina Sdn Bhd.
 Quantity: 2151 nos.



PROJECT DESCRIPTION

Bukit Gambir interchange is a part of PLUS Expressways, it's located between Tangkak and Pagoh. During the construction of embankment on original untreated soil deep seated shear failure was happen that cause of failure to the embankment. To make sure construction of embankment on soft soil layer is safe, the soil characteristic need to be modified.

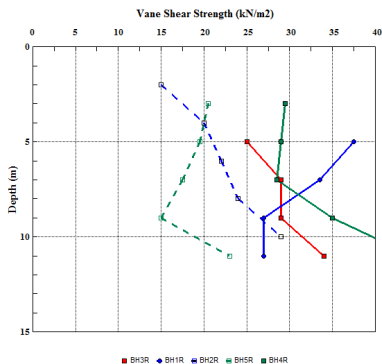


Site Layout Plan

SOIL CONDITION / GEOTECHNICAL PROBLEM

Project soil profile:

The ground condition consist of soft compressible soil layer up to 16m. Recorded undrain shear strength as low as 15 kPa and ground water level at surface level.



Shear strength over depth

SOLUTION

The engineering consultant in this project has study the problem and come out with stone column solution to improve the bearing capacity of the soil. The idea is by installing 1000mm

diameter of stone column (SC) up to maximum depth of 16 m. Menard has awarded the contract to install the 2151 nos. of dry-SC with-in specified time. The project was started in mid February 2012 and completed after 3.5 month.



SC dry method

To access the workmanship of installed dry SC group (plate load test) PLT was conducted. The loading applied to SC is up to 112 tons.



Group PLT conducted under 4 nos. of SC



Bukit Gambir interchange open to traffic

Hence, stone column can provided good bearing capacity and prevent lateral movement.