

## INTRODUCTION

The purpose of this manual is to provide correlations between (1) strength properties of soils and soil index properties and (2) strength properties of soils and results of in situ tests. The in situ tests for which correlations are presented are the standard penetration test (SPT), the cone penetration test (CPT), and the field vane shear test (FV). Correlations are provided for the effective angle of internal friction,  $\phi'$ , for both cohesionless and cohesive soils, the undrained shear strength,  $S_u$ , for saturated clays, and the residual angle of internal friction,  $\phi'_r$ , for cohesive soils. In addition, correlations are provided for relative density as determined from in situ tests, and for the relation between SPT and CPT results.

It is important to recognize that while the correlations contained in this report may provide useful first estimates of shear strength and other soil properties, these estimates do not have the same reliability as the results of laboratory tests on undisturbed samples, or tests on specimens compacted to simulate field water content and density conditions.

The correlations represent average behavior for given types of soil and may deviate from the actual behavior for particular soils. Not all factors influencing soil behavior may be recognized or considered in the correlations. Furthermore, variations in procedure among laboratories and

variations among in situ test procedures may lead to variability in the results on which the correlations are based. For these reasons, the correlations in this report should not be used without critical evaluation of their suitability for the intended purpose.