AGS (HK)

香港岩土及岩土環境工程專業協會
ASSOCIATION OF GEOTECHNICAL & GEOENVIRONMENTAL SPECIALISTS (HONG KONG)

Website: www.ags-hk.org

GROUND INVESTIGATION GUIDELINES
04.1 – SITE FORMATION

What do we need to know?

General Information Needed

• Purpose of Earthworks (road embankment, platform for structure, landscaping etc.)?	Scheme layout drawings	Sampling Cohesive Soils : U100/U76/Mazier (transported soils or saprolites) Piston (v.soft-soft soils) Granular soils: Bulk samples, SPT split spoon U100/U76 & disturbed samples CBR (subgrade) Rock: Double tube coring to prove rock. Air foam/mud flush (& triple tube drilling) through fault gouge or hydrothermally altered rock. Groundwater
• What properties of placed fill are important (Bearing capacity, shear strength, settlement etc.)? • What properties of the foundation deposits are important (Shear strength, settlement etc.)? • What is fill to be placed on (rock, soil, old fill etc.)	Investigation at borrow area Trial pits Drillholes Investigation at earthworks site Drillholes Trial Pits	
• Geological Model		
• Groundwater profile • Variable groundwater conditions (i.e. tidal, transient, artesian)? • Drainage requirements (surface & sub-surface)	Piezometers • Standpipes • Vibrating wire remote monitoring via dataloggers	
Existing utilities or structures (water/gas mains, tunnels, cables, etc)?	Utilities plans Trial pits / trenches Utilities detection equipment	

Typical Properties to be Determined

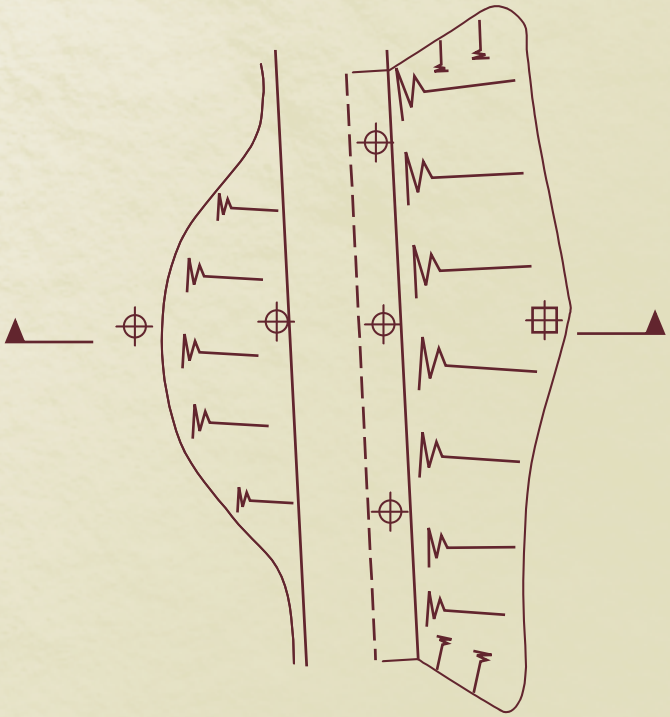
• Properties of fill material • Properties of formation	Compositon of fill (grading, PI, bulk & dry density) Compaction characteristics: optimum moisture content, maximum dry density, undrained shear strength (including sensitivity to changes in w%) Settlement of fill after placement Settlement of foundation Stability of sideslopes (temporary & permanent)	Others: • Chemical properties of fill (including variability) • Redox potential (if required) • Electrical resistivity (if required)

Typical Required Design Parameters

In situ test data: SPT, In situ density, GCO probe, Dynamic probe, CBR, insitu vane, plate bearing test	**Laboratory Tests:** PSD, PI, natural w%, shear box, unconsolidated undrained triaxial, Dry density/w% relationships (heavy or light proctor), CBR, Oedometer Effective stress shear strength Soil resistivity	**Chemical Tests:** Cl, pH, SO_3, redox	**Contamination Tests:** EPD Tech Circular 1-1-92, PROPECC PN3/94, ETWB 34/2002, PNAP 152 & 155

Typical Site Formation (For Road) – General Characteristics

Typical Plan



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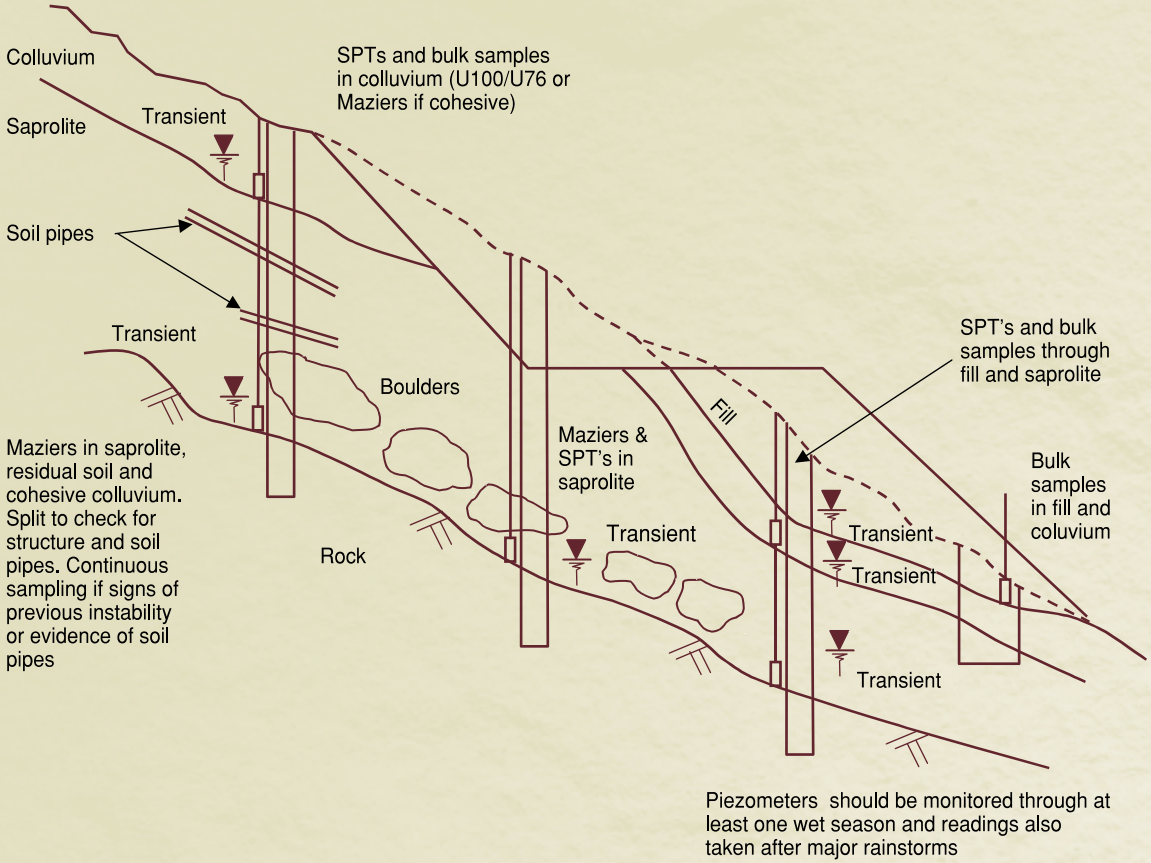
Typical Section



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Legend

Water table | Piezometer | Drillhole | Trial pit