The Role of Suction in the Performance of Clay Fill

Reed Engineering Group

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Introduction

• Brief History (Studies by Proctor)
• What we will look at:
  – Moisture ~ Density
  – Moisture ~ Suction
  – Moisture ~ Stiffness
• Case History
Proctor studied moisture-density and moisture-penetrometer relationships in the 1930s.
Penetrometer on Steroids
Moisture Density/Volume of Voids (Proctor.)
Similar Results for dry.
Application
Moisture Variation

- Borings in areas not collapsed
- Boring in area of collapse
- Field Density Tests
Conclusions

• Materials compacted to equal % density, dry or wet of optimum have equal ratios.
• A pocket penetrometer used in conjunction with density tests can be used to confirm results.