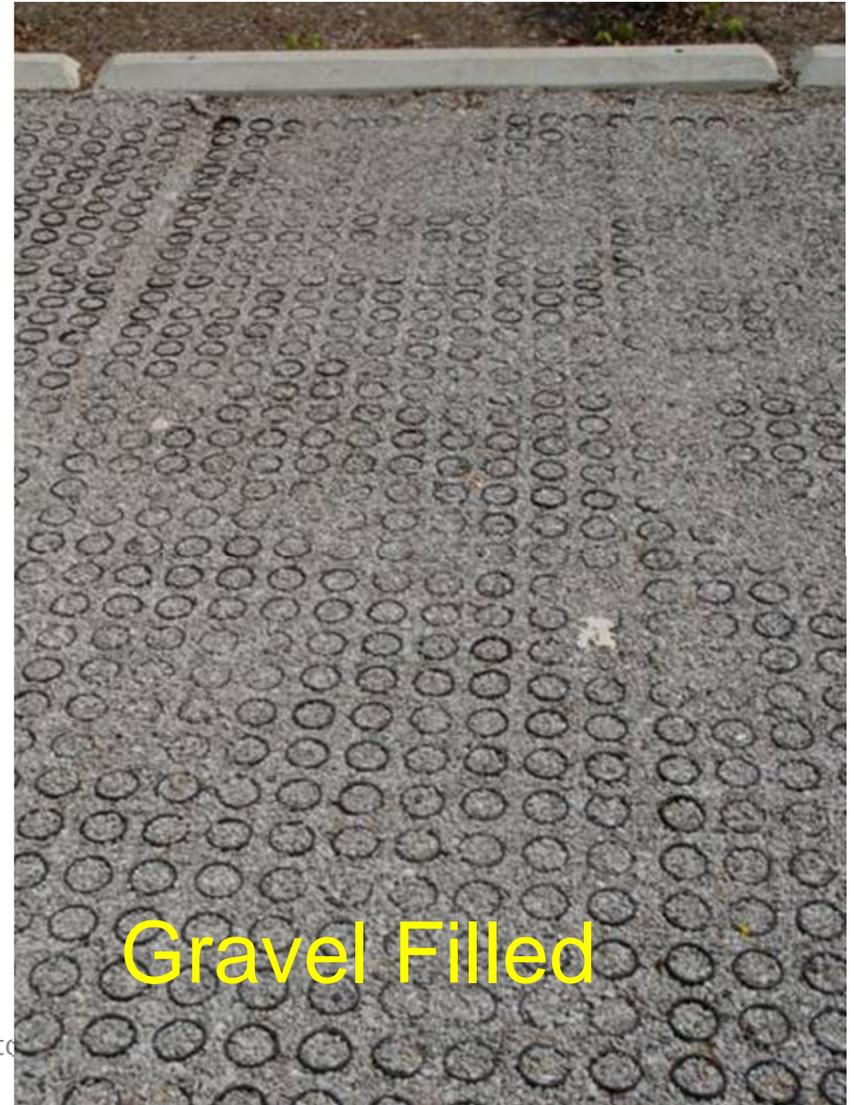


Permeable Concrete Profile



Types of Permeable Pavements

Plastic Reinforcing Grids (PG)



Permeable Pavement - Chicago



“Old School” – New Zealand

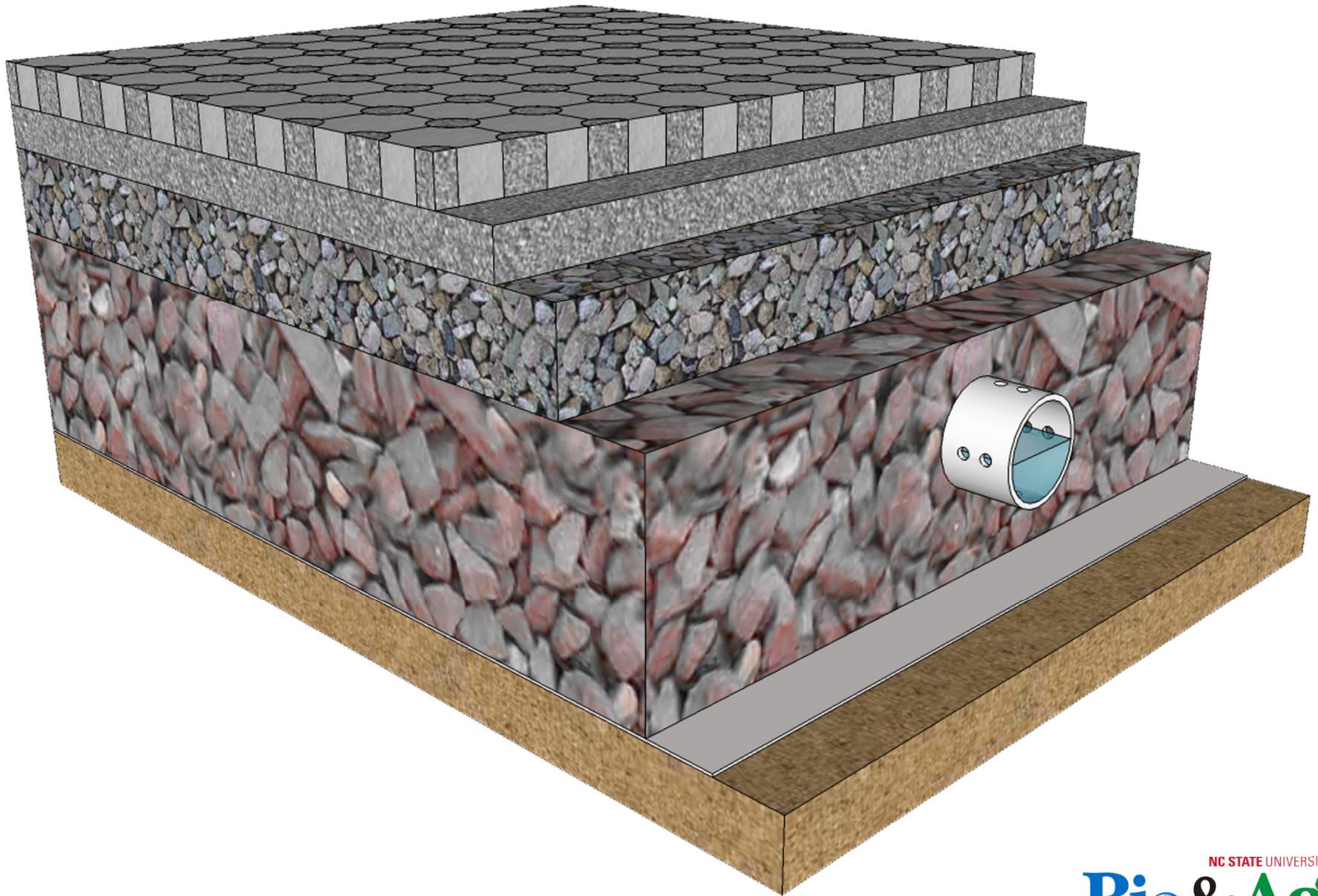


Sacramento, Calif.

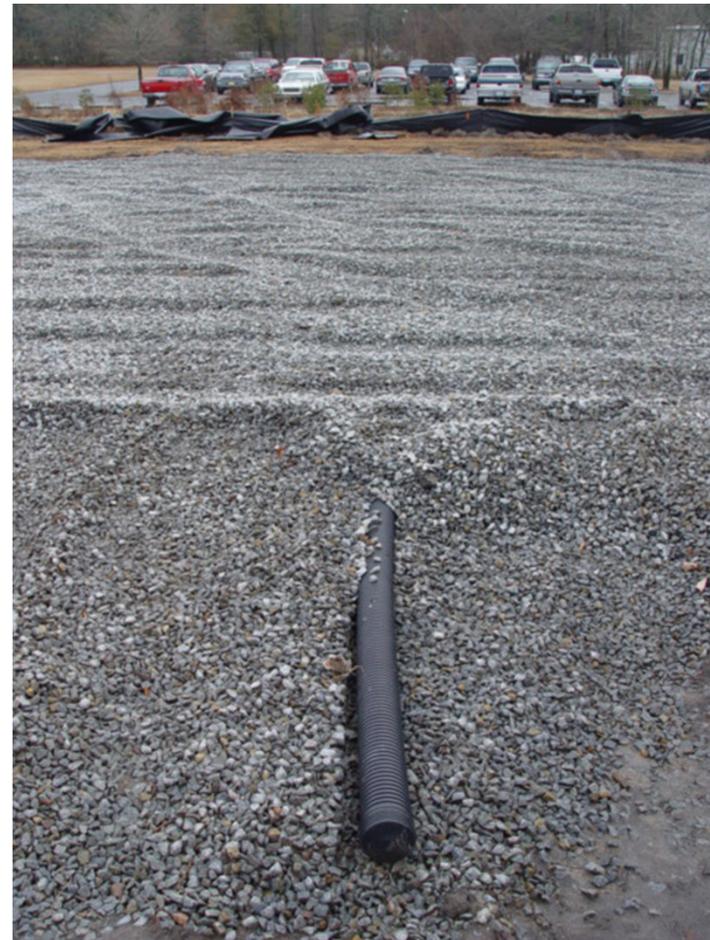


Nashville (NC) Wal-Mart





Basic Design Guidance



Basic Design Guidelines: Vehicle Traffic & Loading

Average Daily
Traffic (ADT) <
100

Max Vehicle
Size of SUV

Heavier Loads
can be
designed for



Basic Design Guidelines: Soils & Water Table

**Optimal Soil Type:
Sand or Loamy Sand,
others poss.**



**Water Table
at least 1m
from Surface**



Basic Design Guidance: Gravel & Fill Media

Washed Aggregate



High Permeability Fill for “Chimneys”



How deep to make gravel layer?

- 2 main functions
 - Support Expected Weight of Vehicles (Structural)
 - Store & Infiltrate a design volume of water (Hydrologic)



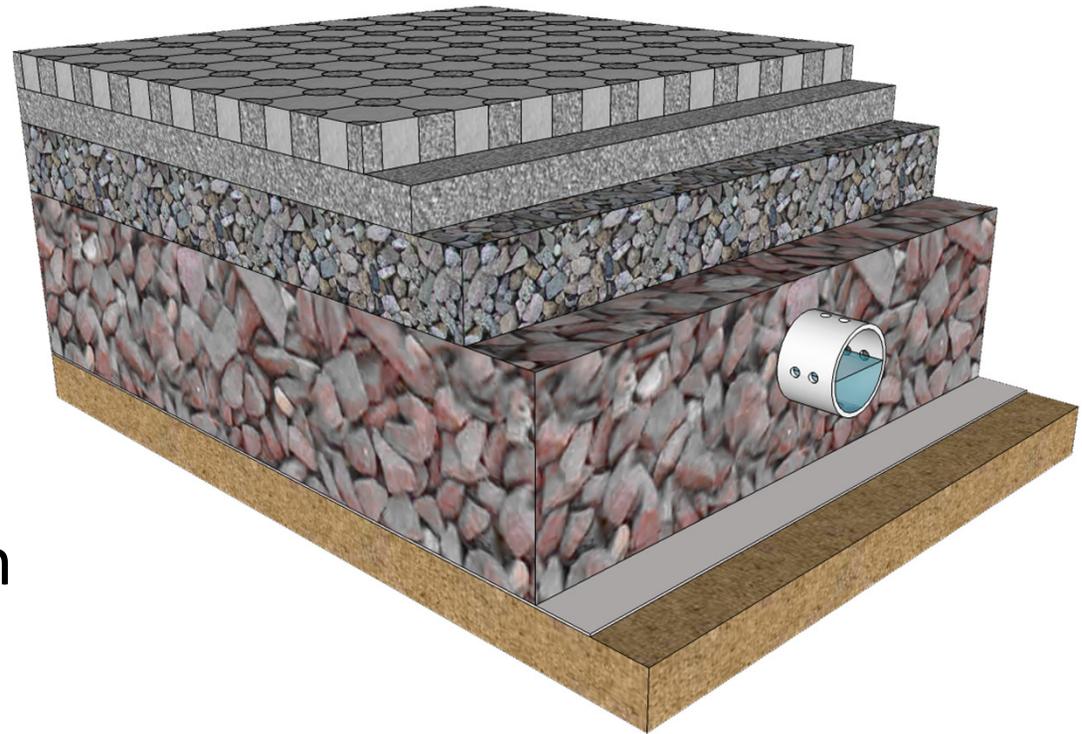
Structural Calculation Based Upon...

- Number of Vehicle Passes
- Weight (Max) of Vehicles
- Structural Support Provided by Underlying Soil
- Environmental Conditions + Presence of H₂O



Factor 2: Design Precip Depth

- 90% Rainfall Volume?
 - ~25 mm
- Pre-Development Infiltration Volume
 - 10-25 mm
- Moderate ARI storm (e.g., 2-, 10-yr)
- Infrequent ARI storm (25-, 50- yr)



Simple Determination for Single Event Capture (Hydrologic Goal)

- Select Design Precip Amt
- Determine Run-on Multiplier
- Know Gravel Void Ratio (typ 0.3-0.35)
- Assign an Infiltration Factor-of-Safety
- 25 mm RF
- 2:1 Run-on (equal parts permeable pavement and impermeable asphalt)
- 0.33 void ratio
- 1.5 F-o-S
- $25 \text{ mm} \times 2 \div 0.33 \times 1.5 = 225 \text{ mm}$ Gravel Depth

Mid-Atlantic US Experience: The Hydrologic Goal is almost always the Controlling Design Element

Clay Soil Applications



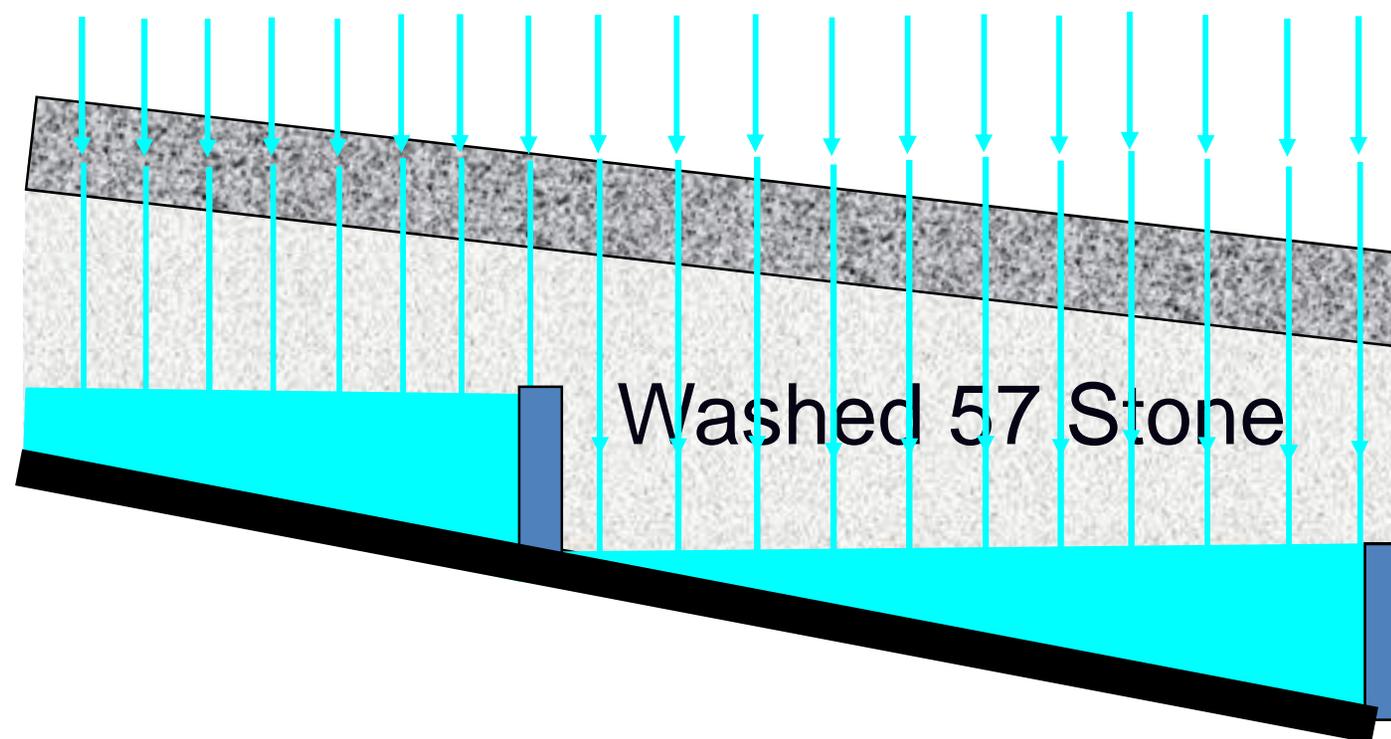
Subdivision
near Cary



Friday Center, Chapel Hill

Clay Soil Applications

Permeable Pavement – Friday Center





Athens, GA Installation



Remember: maybe not in isolation - part of a “treatment train”



Permeable Pavement Problems: Sediment



Unstable →
Watershed

Vacuum Sweeper Results



Snow Concerns

- No Sediment (sand) disposal
- Be careful with snow plow blade height!



Questions

