

Porous Pavement – SR 234 Park and Ride Lot

Fall Asphalt Conference Richmond, VA

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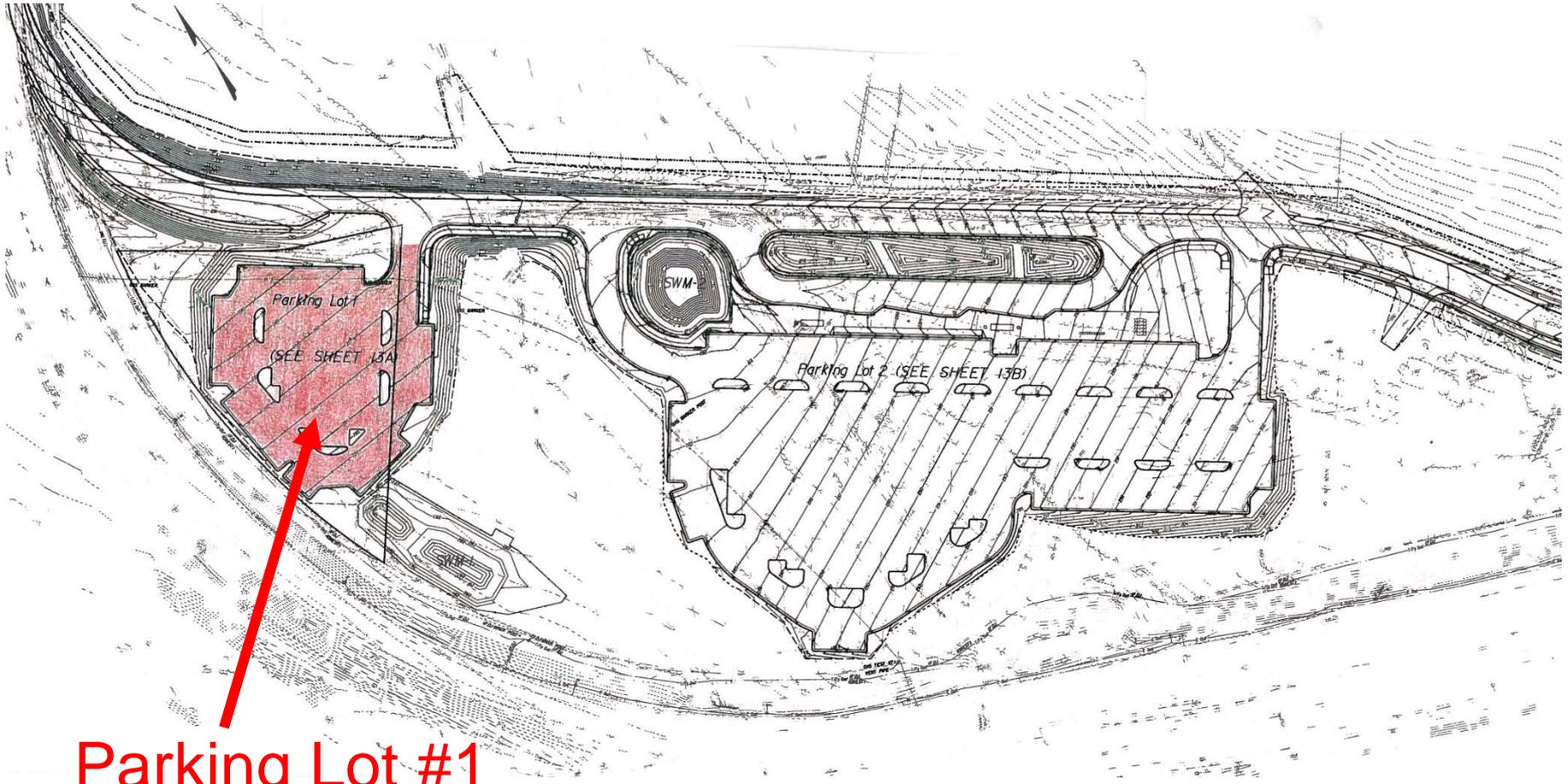
Virginia Center for Transportation
Innovation and Research (VCTIR)

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Pilot Project



Parking Lot Layout

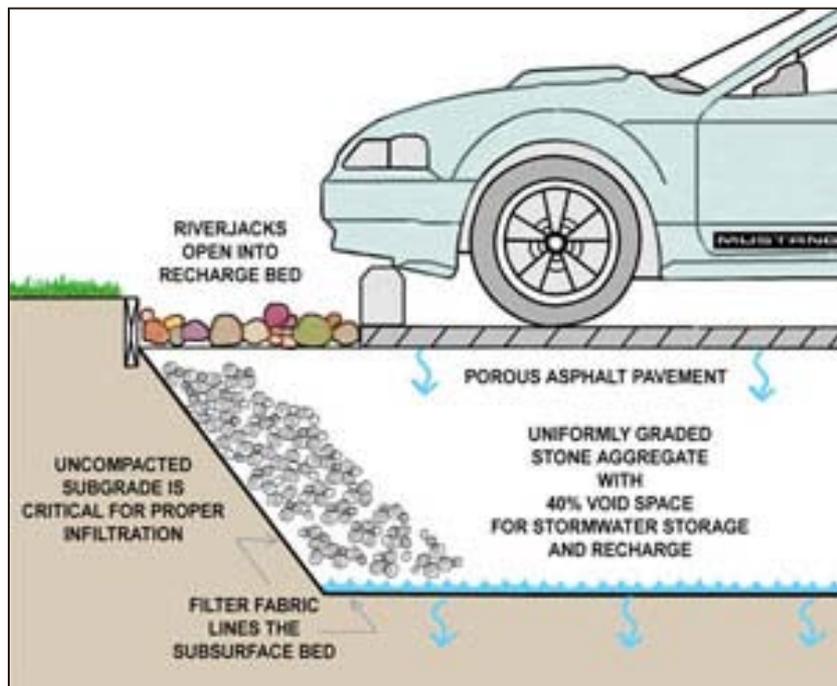


Parking Lot #1

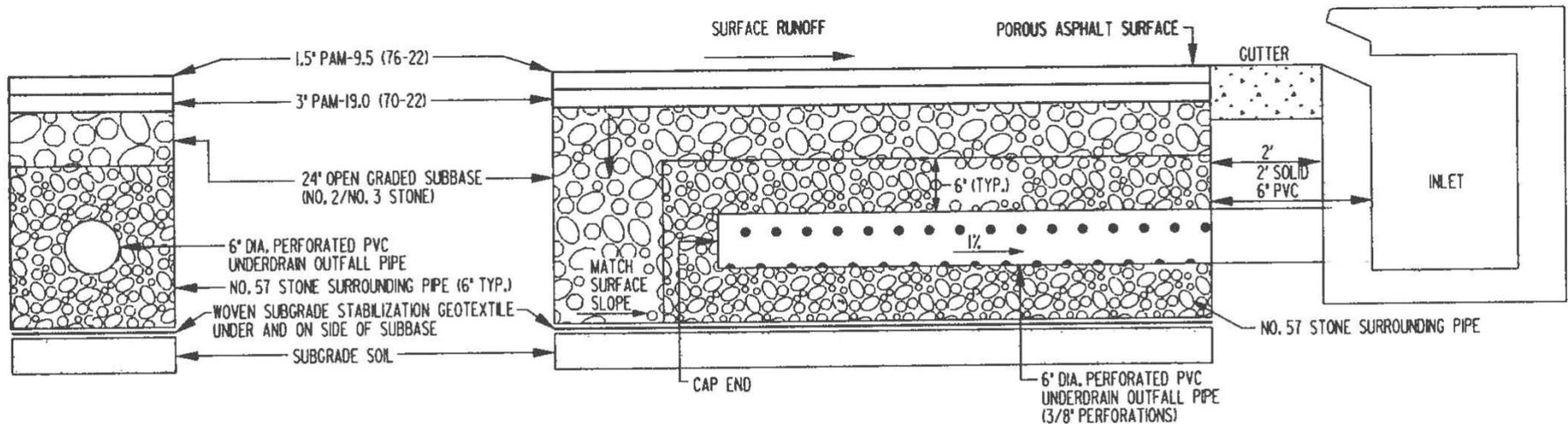
Permeable Pavement

Porous Asphalt

- Highly permeable asphalt layers
- Large reservoir of #2/#3 aggregate
- Water infiltrates into soil
- Water slowly discharges to storm drainage system

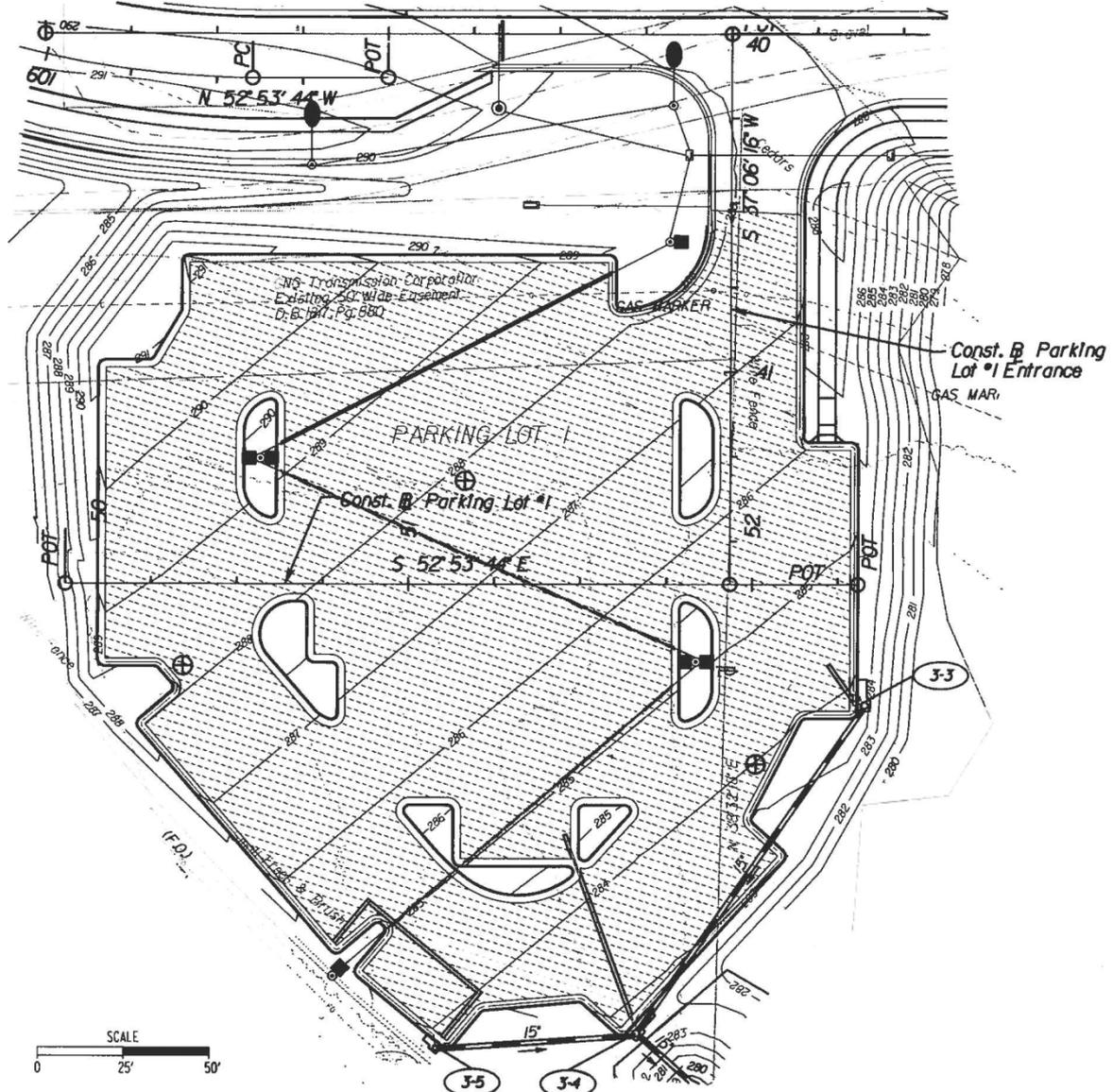


Typical Section



POROUS ASPHALT TYPICAL SECTION
N.T.S.

Parking Lot Layout



Pilot Project Objectives

Design Considerations

- Soil types/infiltration rates
- Depth of aggregate reservoir
- Thickness of porous asphalt layers

Cost

- Right-of-Way
- SWM facilities
- Construction costs
- Life cycle



Pilot Project Objectives

Material Properties

- Permeability of mixes
- Compaction in the field
- Field tests for permeability



Constructability

- Base aggregate type
- Installation of electrical conduit
- Concrete curb and planter islands
- Sequence of construction
- Type/thickness of pavement markings



Pilot Project Objectives

Maintenance

- Snow and ice treatment
- Removal of sand/salt/leaves, etc.
- Special vacuum trucks for cleaning/grit removal
- Disposal of debris in a sanitary landfill
- Future mill/overlay ?



Permeable Pavement Construction

Subgrade



Permeable Pavement Construction

Base Aggregate Course



Permeable Pavement Construction

Base Aggregate Course



Permeable Pavement Construction

Monitoring Well



Permeable Pavement Construction

PAM-19.0 Placement



Permeable Pavement Construction

PAM-19.0 Placement



Permeable Pavement Construction

PAM-19.0 Placement



Permeable Pavement Construction

PAM-19.0 Placement



Permeable Pavement Construction

PAM-9.5 Placement



Permeable Pavement Construction

PAM-9.5 Placement



Permeable Pavement Construction

PAM-9.5 Placement



Research Study

Get VDOT-specific information on:

- Long-term hydraulic performance
- Maintenance requirements (associated costs)
- Acceptable rehabilitation methods
- Costs (as compared to more traditional stormwater BMPs)

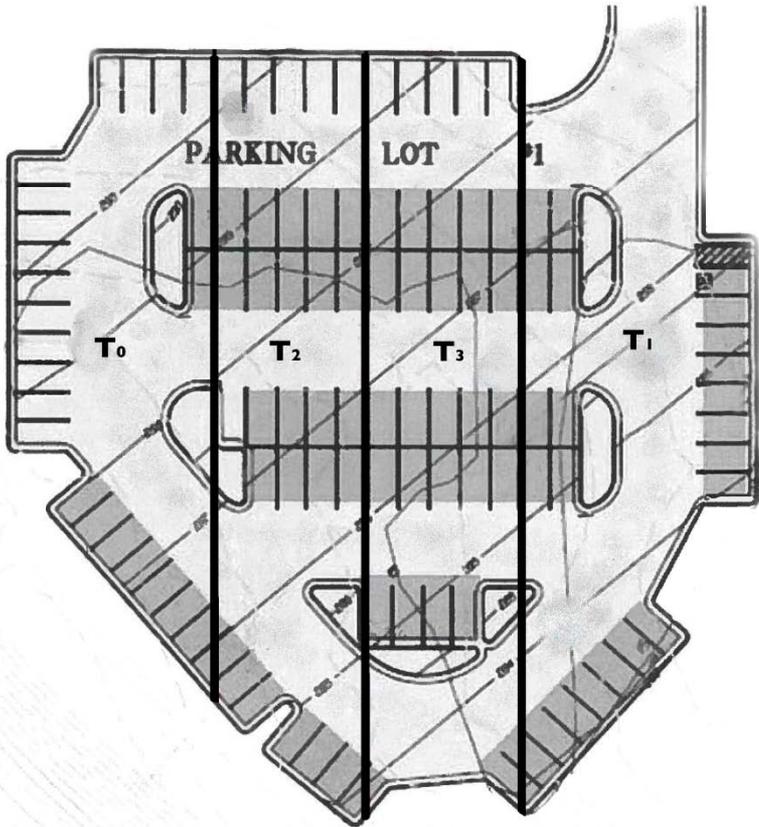


Methods

Different maintenance treatments:

1. Vacuum Type 1 (6 months)
 2. Vacuum Type 2 (6 months)
 3. Vacuum Type 1 (12 months)
 4. Control
- * Additional methods if necessary

Measure permeability over time



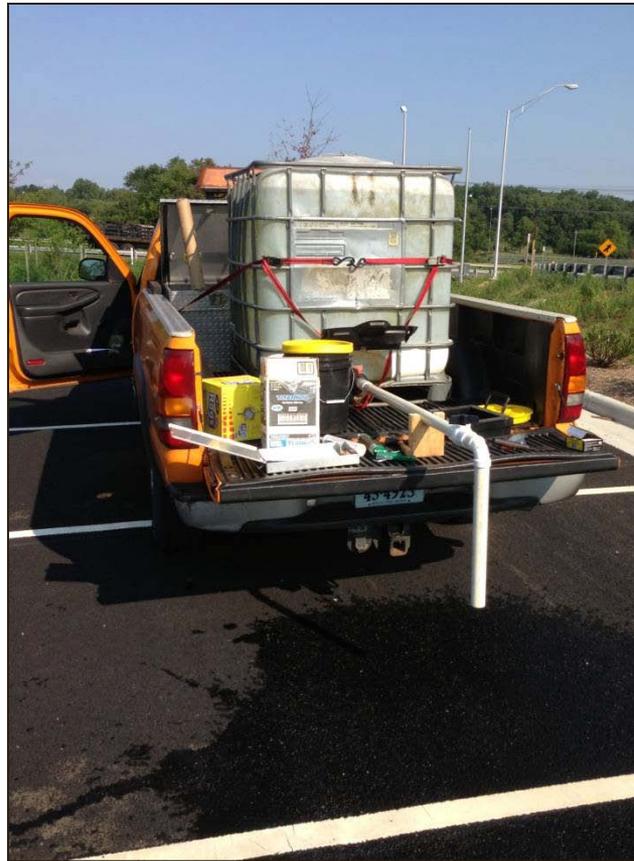
Permeability Measurements Laboratory



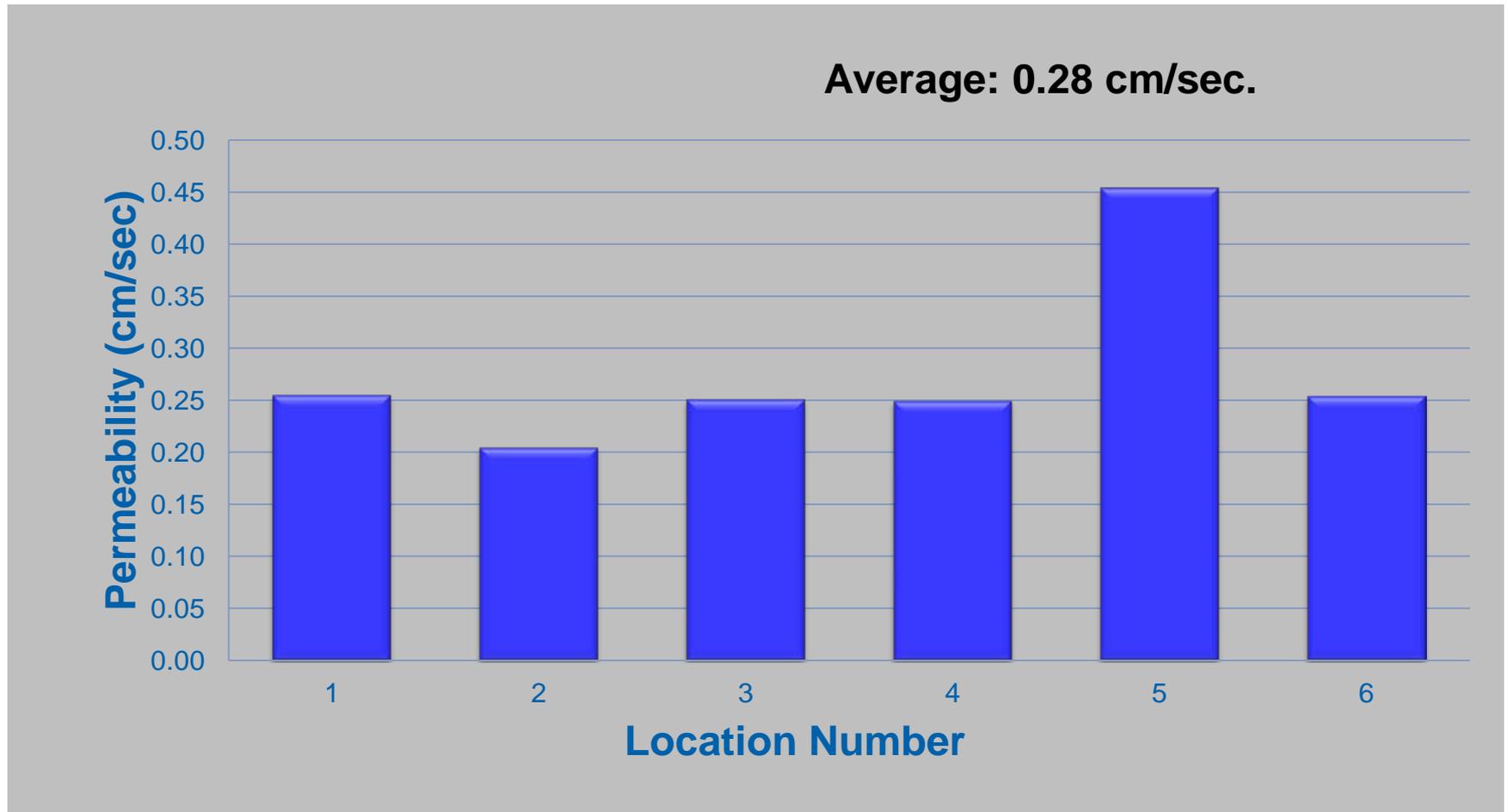
Permeability Measurements Field



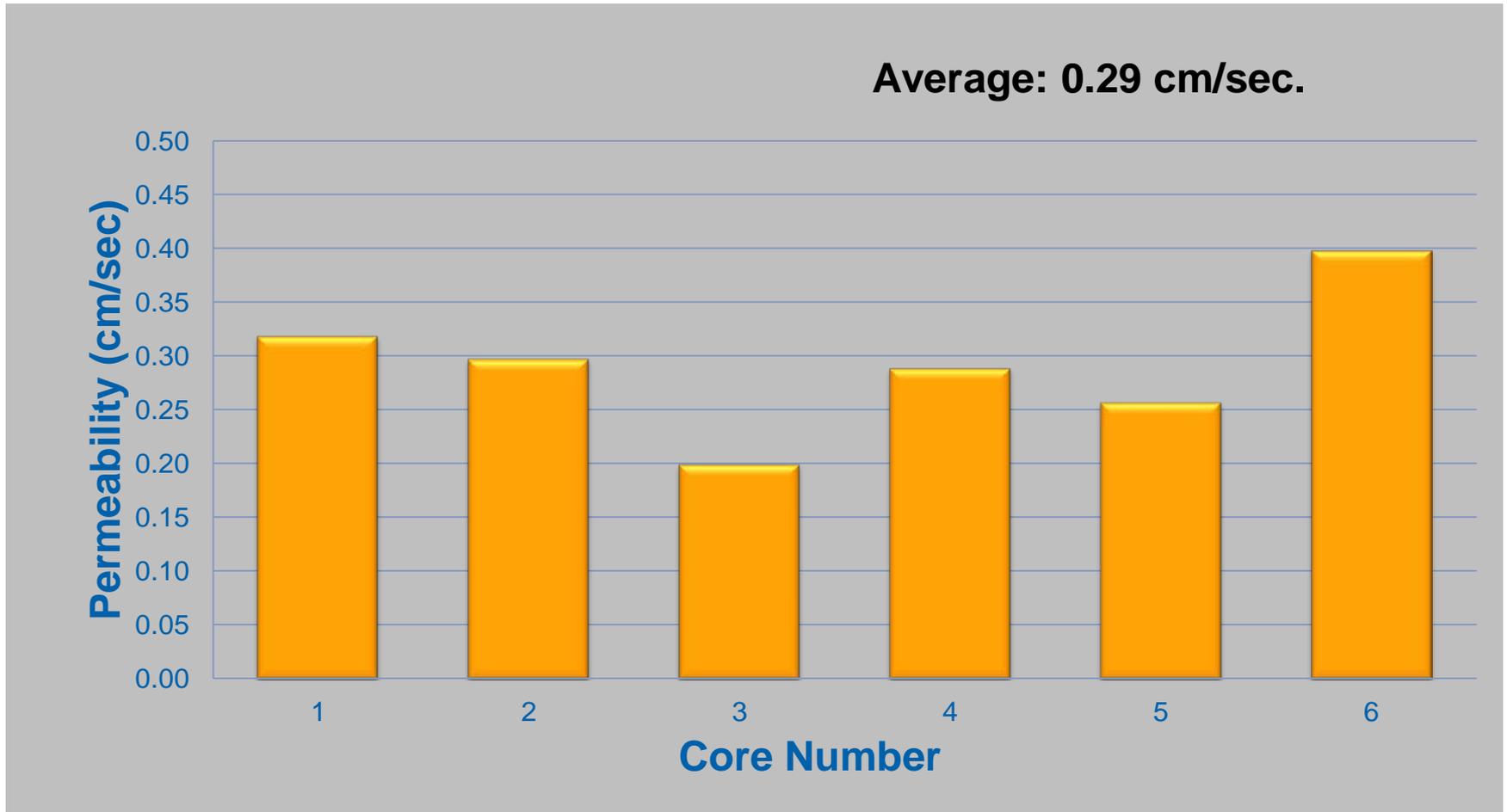
Permeability Measurements Field (Supplemental)



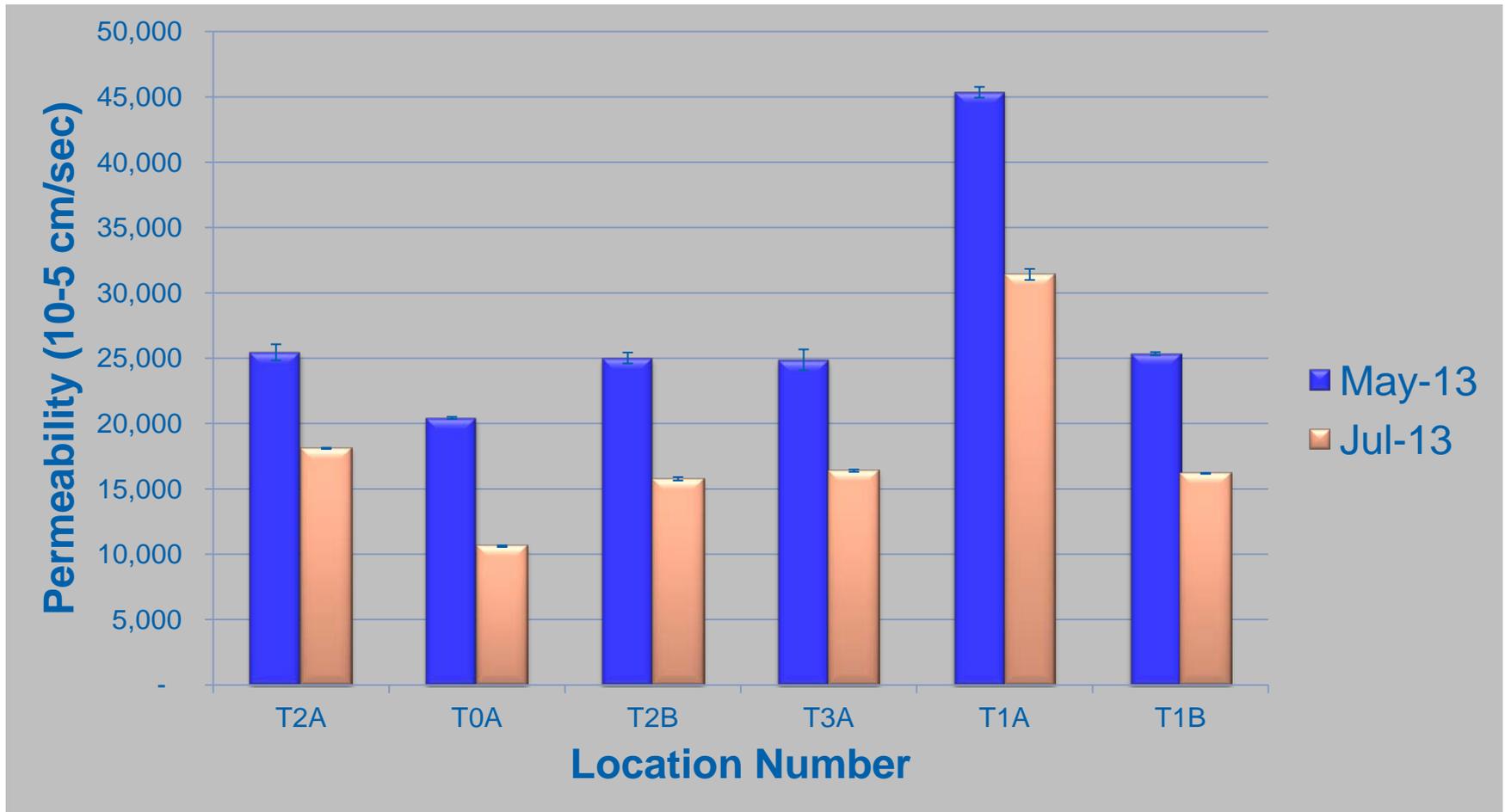
Permeability Values: Field



Permeability Values: Laboratory



Changes in Permeability



Finished Pavement





Questions ?