Florida Department of TRANSPORTATION

SMO Research IDEA Solicitation

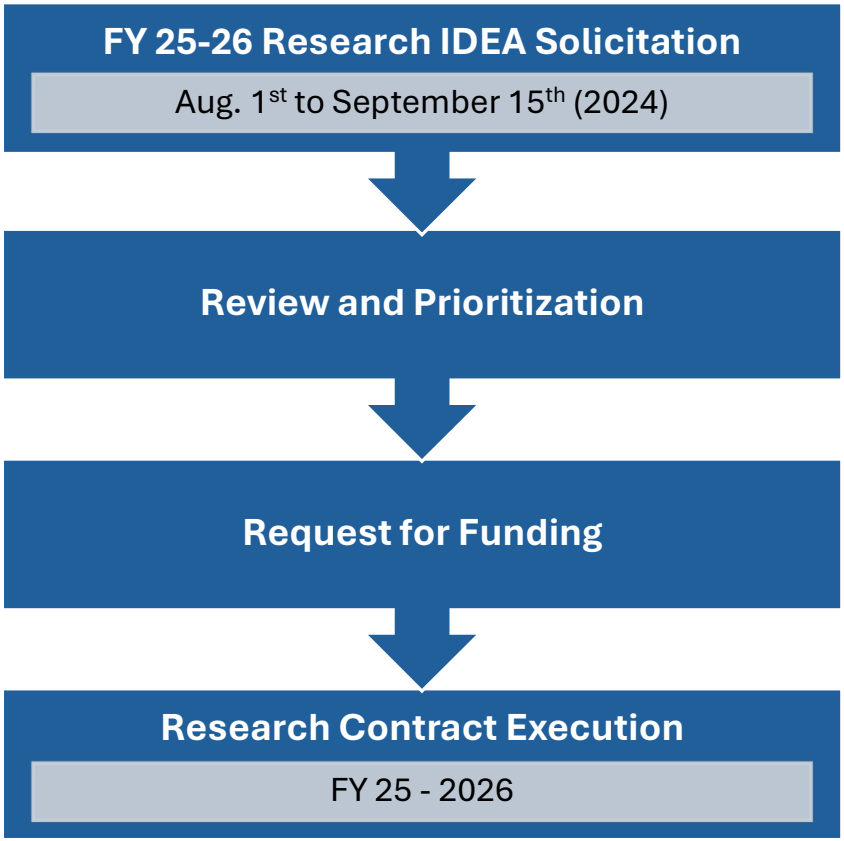
Ohhoon Kwon

Florida Department of Transportation

State Materials Office

SMO Research Idea Solicitation

- **Focus Areas**
  - Pavement System Improvement
    - Pavement Materials
    - Structural Materials
    - Geotechnical Materials
- **Strategic Areas**
  - Safety
  - Technology
  - Resiliency
  - Durability
  - Efficiency



Florida Department of TRANSPORTATION

HVS Research Update

Ohhoon Kwon

Florida Department of Transportation

State Materials Office

1. Rapid Connect Study

- **Rapid Connect**
  - Ultra-durable In-Road Seal
  - Fast and Economical Routing
  - Specialized Milling Machine

CROWN CASTLE

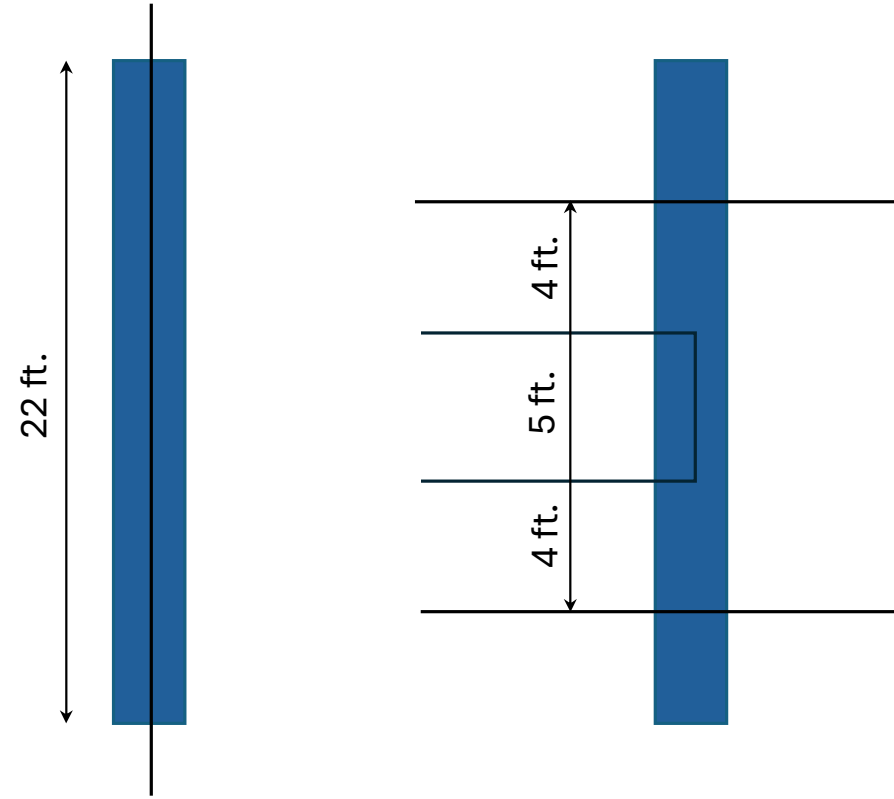
CORNING

1. Rapid Connect Study

- **Objective**
  - Durability of the In-Road Seal
  - Durability of the Fiber-optic Wire Connection
  - Impact of Rapid Connect Routing on Pavement

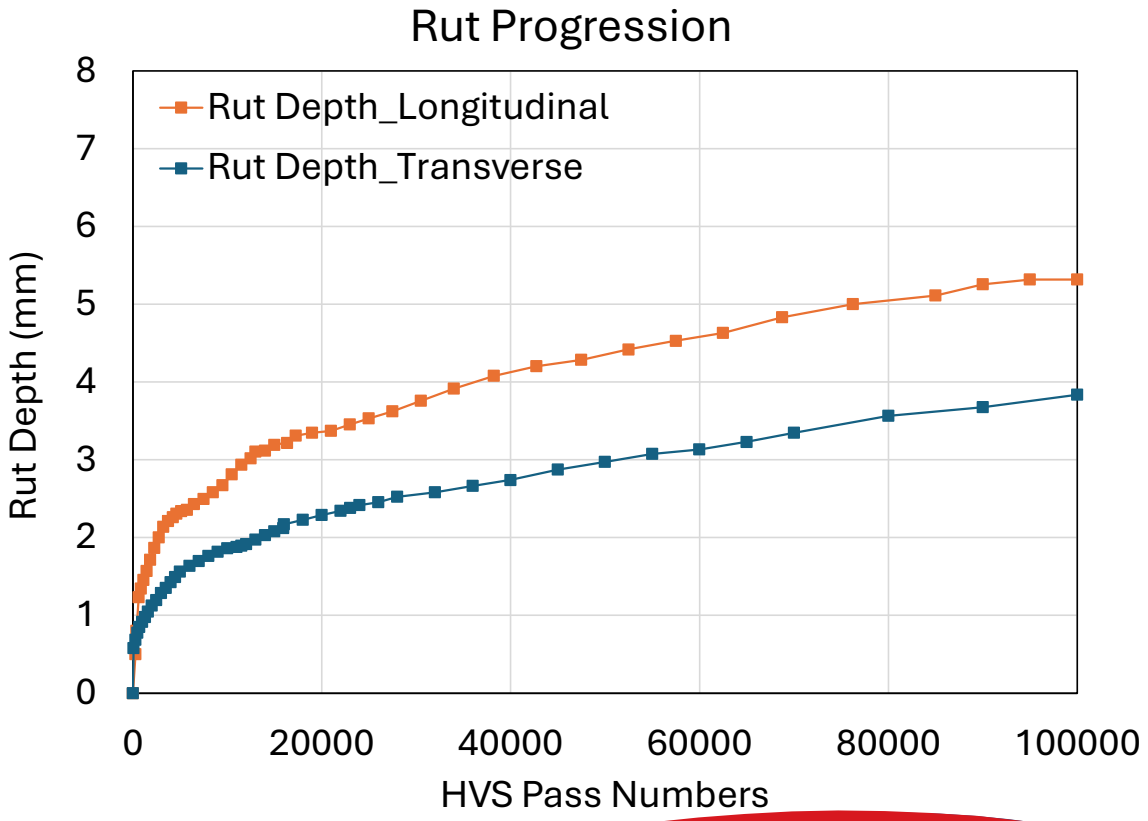
1. Rapid Connect Study

- **Rutting**
  - 100,000 Passes of 9-kip Load
  - Super Single Tire
  - 50°C Test Temperature
  - Uni-directional Passes
- **Cracking**
  - 300,000 Passes of 15-kip Load
  - Dual Tire
  - Ambient Temperature
  - Bi-directional Passes



1. Rapid Connect Study

- Test Results
  - 4 to 5 mm Rutting
  - No Crack @ 2.5 MESALs
  - 100% Connection

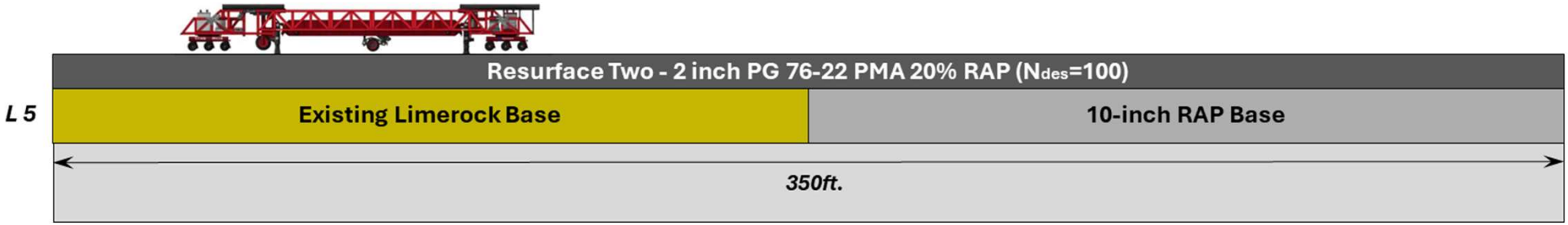


1. Rapid Connect Study

- Test Results

2. RAP Base Study

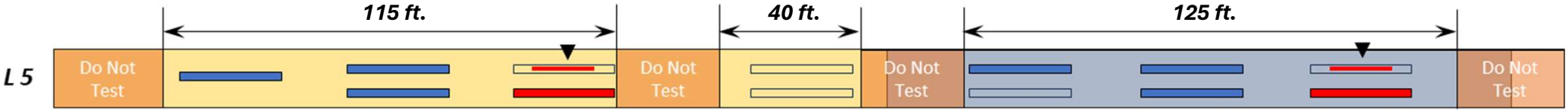
- **Objective**
  - Checking the feasibility of the use of un-stabilized RAP materials as a base



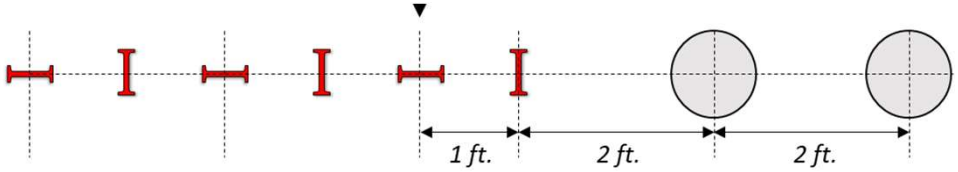
  - SP-12.5, PG 76-22 with 20% RAP (Two - 2inch layers)
  - RAP Materials (Two - 5inch layers)

2. RAP Base Study

- **Rutting**
  - 100,000 Passes of 9-kip Load
  - Super Single Tire
  - 50°C Test Temperature
  - Uni-directional Passes
- **Cracking**
  - 500,000 Passes of 15-kip Load
  - Dual Tire
  - Ambient Temperature
  - Bi-directional Passes

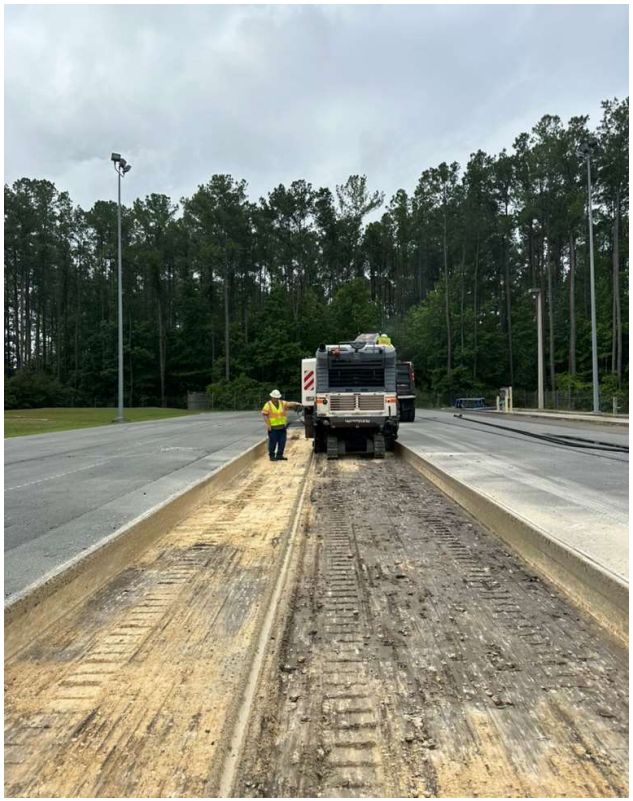


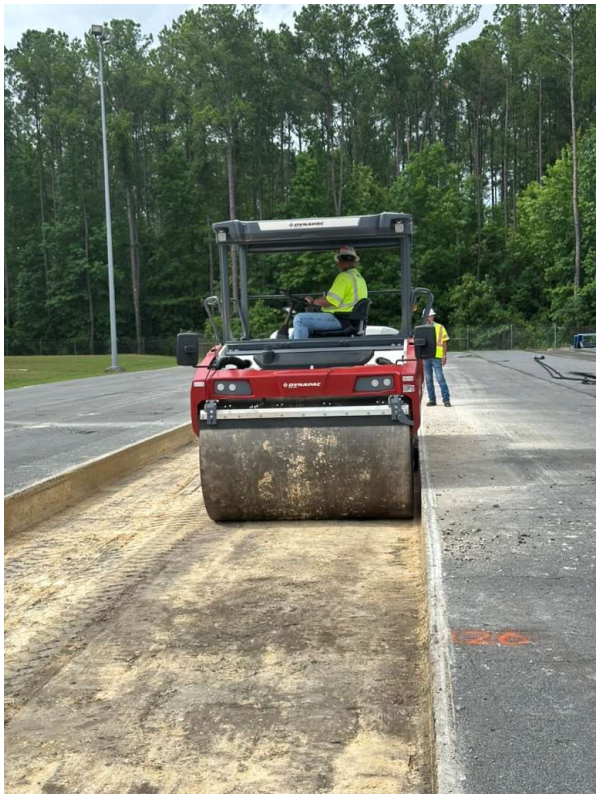
Sensor Type	Sensor Detail	Installed Sensors
Strain Gauge	BDI AST-1000	12
Pressure Cell	GeoKon 3500-	4



2. RAP Base Study

- Construction





2. RAP Base Study

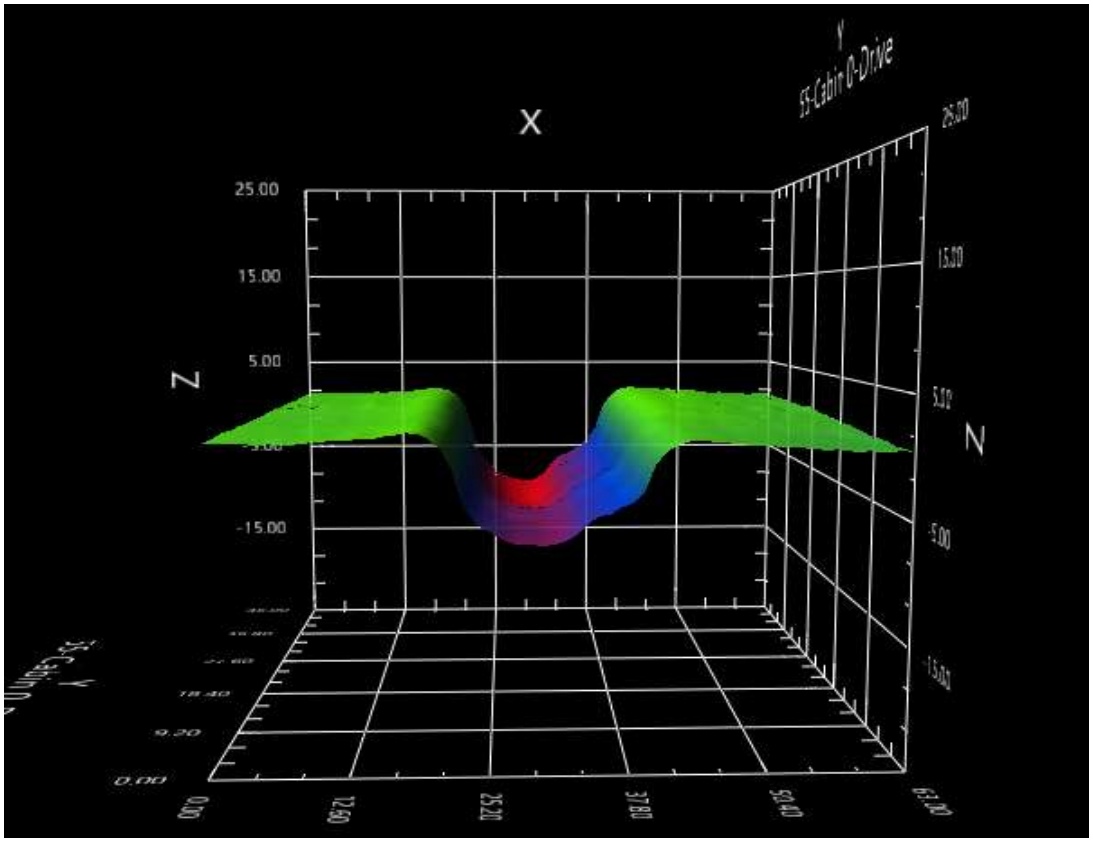
- Construction

2. RAP Base Study

- Construction

2. RAP Base Study

- **RAP Base Density**
  - Bottom Layer: 84.3%
  - Top Layer: 85.5%
- **Preliminary Rut Depth**
  - 9.6mm @ 32K Passes
- **Testing Temperature**
  - 50°C at 2in below surface
  - 48°C to 49°C at 4in below surface

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QUESTIONS
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