

F/HWD Round-Up 2010



**Federal Aviation
Administration**

Presented to: 2009 FWD USER'S GROUP

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F/HWD Round-Up 2010

- **Introduction**
- **Objectives**
- **Pavement Design**
- **Pavement Instrumentation**



Federal Aviation Administration

Airport Technology R&D Program

- **Research conducted at the FAA William J. Hughes Technical Center, Atlantic City, NJ, USA.**
- **Sponsor: FAA Office of Airport Safety and Standards (AAS100), Washington, DC.**
- **Provide support for development of FAA pavement standards (Advisory Circulars).**



National Airport Pavement Test Facility (NAPTF)

FACTS:

- Fully enclosed facility for accelerated traffic testing of airport pavements.
- Full-scale pavement structures and landing gear loads with programmed wander.
- Opened in 1999.
- Total construction contract was \$21M.
 - \$14M from FAA
 - \$7M from Boeing Co. under FAA/Boeing CRDA.



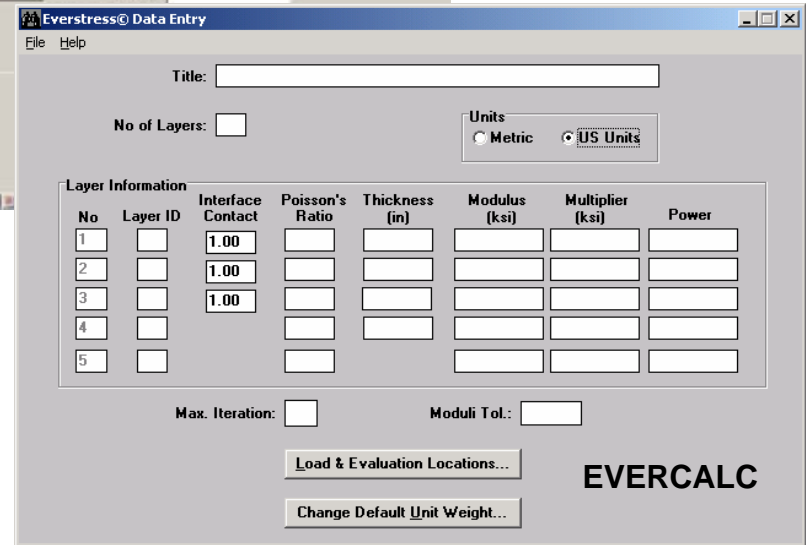
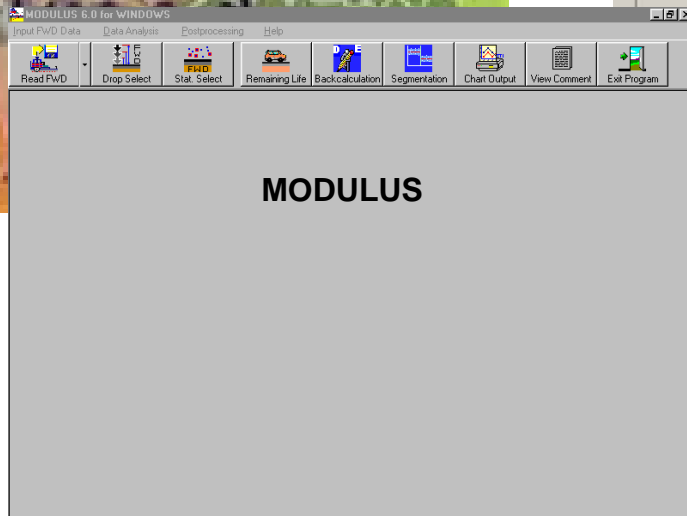
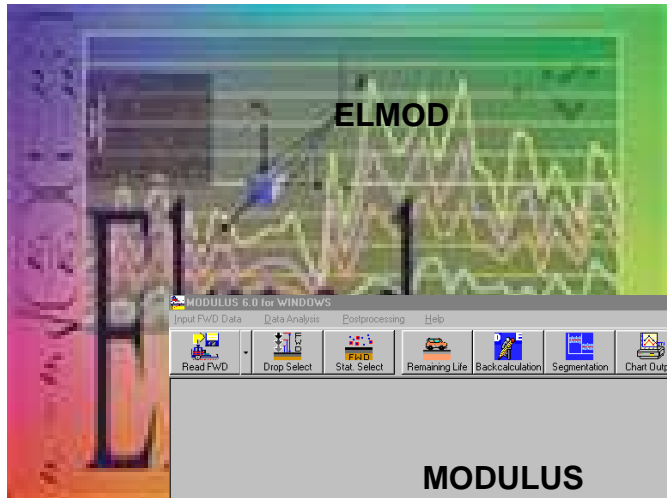
Objectives

- Compare F/HWD with single wheel module



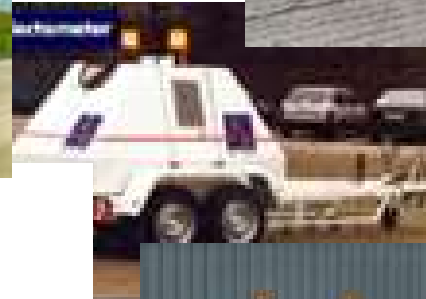
Objectives

- Compare back-calculation programs



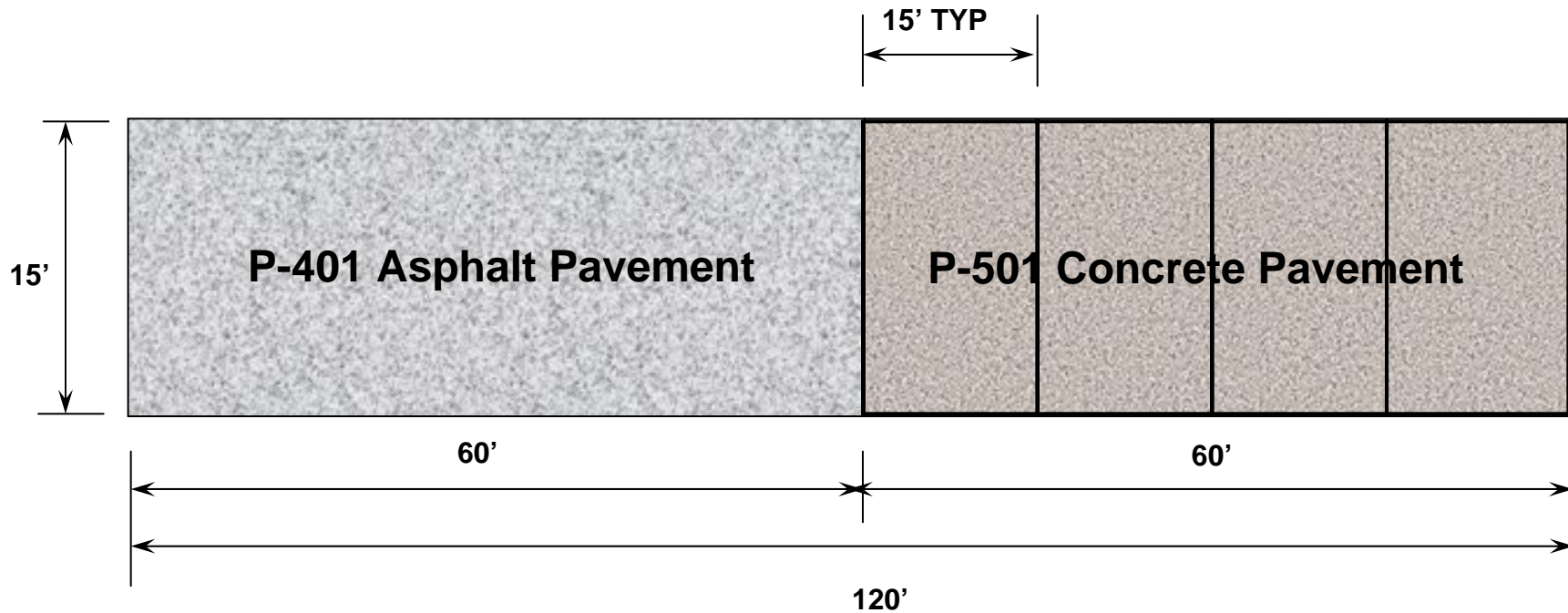
Objectives

- Evaluate specifications & methodologies of existing equipment



Pavement Design

- Pavement Layout



Pavement Design

- **Asphalt Pavement Test Section**



5" P-401 Asphalt Surface Course

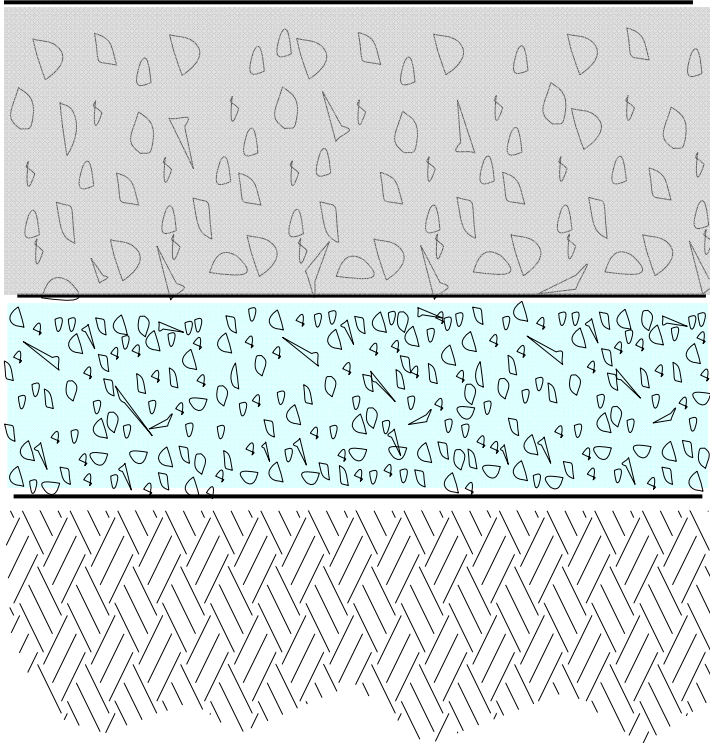
5" P-403 Asphalt Base Course

12" P-154 Subbase Course

Medium Strength Subgrade (CBR 6-8)

Pavement Design

- **Concrete Pavement Test Section**



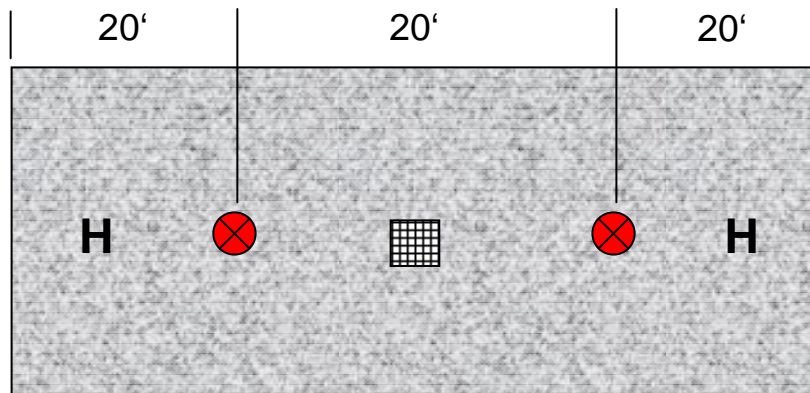
16" P-501 Concrete Pavement

6" P-306 Econocrete Base

Medium Strength Subgrade (CBR 6-8)

Pavement Instrumentation

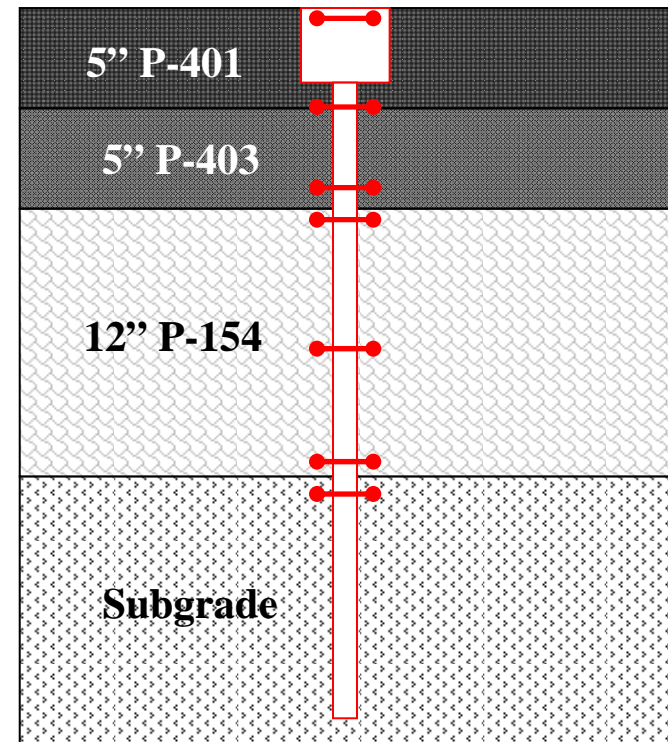
- Asphalt Test Section



(X) Multi-Depth Deflectometer

[Grid] Temperature Sensors

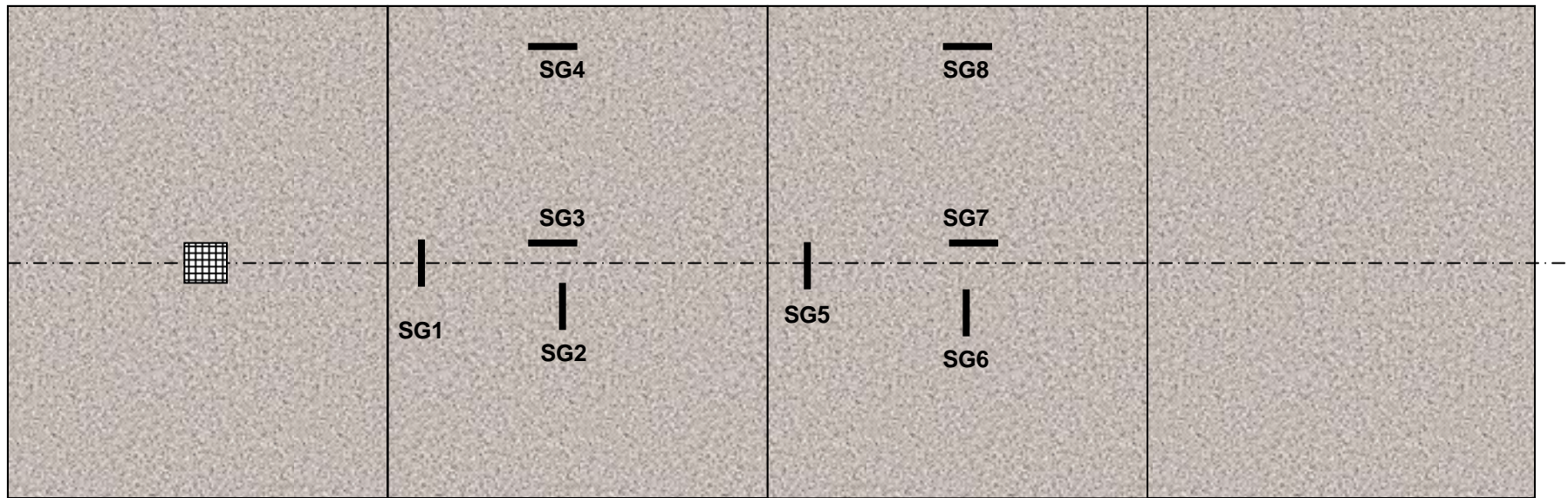
H Strain Gages



Multi-Depth Deflectometer

Pavement Instrumentation

- Concrete Test Section



— Strain Gages (3" from joint/free edge)

 Temperature Sensors

Pavement Instrumentation

- Multi-Depth Deflectometer (MDD)



Pavement Instrumentation

- Temperature Sensors
- Strain Gages



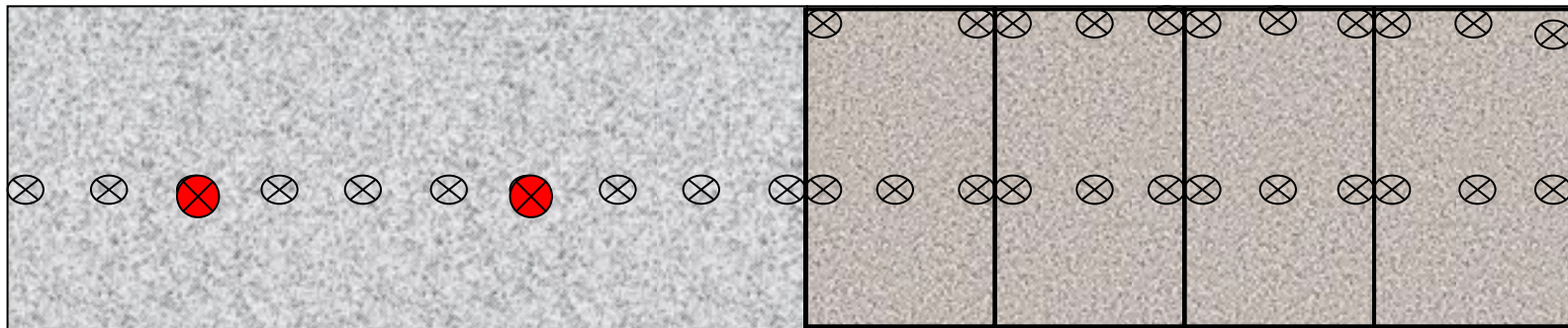
Stack of Thermocouples

Thermistor Sensor

Pavement Testing Locations

- **Centerline of asphalt pavement**
- **On top of MDDs**

⊗ Testing Locations



- **Edge of concrete pavement center/edge**
- **Load transfer on joints center/edge**
- **Center of slabs**

FEDERAL AVIATION ADMINISTRATION



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MAY 2010

NAPTF - Atlantic City, New Jersey

FAA'S F/HWD ROUND-UP 2010

October 4-6, 2009



Federal Aviation
Administration

2010 FAA WORLDWIDE AIRPORT TECHNOLOGY TRANSFER CONFERENCE

"NEXT GENERATION OF AIRPORT TECHNOLOGY"

April 20 - 22, 2010

Atlantic City, New Jersey

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www.airtech.tc.faa.gov

THANK YOU

QUESTIONS

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