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# ICART CAPABILITIES

John Senger, P.E.

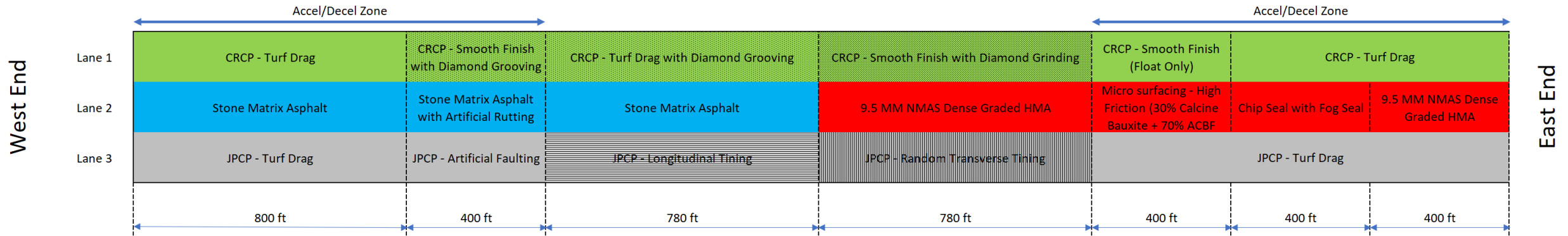




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# AGENDA

- Track Overview
- Inertial Profiler Certification
- Friction Testing and Texture Research
- FWD Correlation and Calibration
- Transverse Profiler
- Data Collection Vehicle / 3D System
- Ground Penetrating Radar (GPR)
- Mobile LiDAR
- Research and Demonstrations
- Questions



## Certification Track

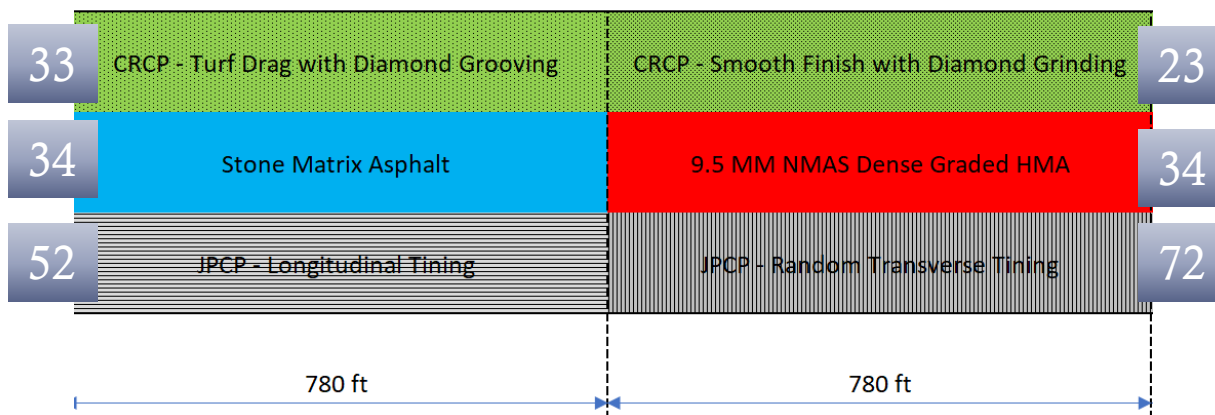
# ICART LAYOUT



INERTIAL PROFILER CERTIFICATION

# AASHTO R56 CERTIFICATION

## 6 Certification Sections



## Standard Requirements

- Five repeat runs at minimum testing speed
- Five repeat runs at maximum operating speed for data collection (should be at least 1.5 times greater than minimum)
- Testing should be triggered automatically to ensure same zero location and for DMI repeatability and accuracy check
- The subject device shall have a cross correlation score at least 0.92 in repeatability and 0.90 in accuracy



FRICTION TESTING AND TEXTURE RESEARCH

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# WIDE VARIETY OF TEXTURES

## Concrete Textures ( $FN_T$ / $FN_S$ )

- Longitudinally Tined (56.3 / 45.6)
- Random Spacing Transverse Tined (53.8 / 31.9)
- Turf drag with Diamond Grooving (54.8 / 49.4)
- Smooth with Diamond Grooving (47.3 / 53.7)
- Diamond Ground (54.5 / 51.7)
- Smooth (Float Only) Finish (44.3 / 22.4)
- Turf Drag (56.2 / 39.9)

## Asphalt Textures

- 12.5 mm Stone Matrix Asphalt (SMA) (41.8 / 36.4)
- 9.5 mm Dense Graded (HMA) (49.1 / 36.4)
- Micro surfacing with Calcined Bauxite (59.5 / 52.12)
- CA 15 Chip Seal with Fog Seal (43.8 / 33.5)

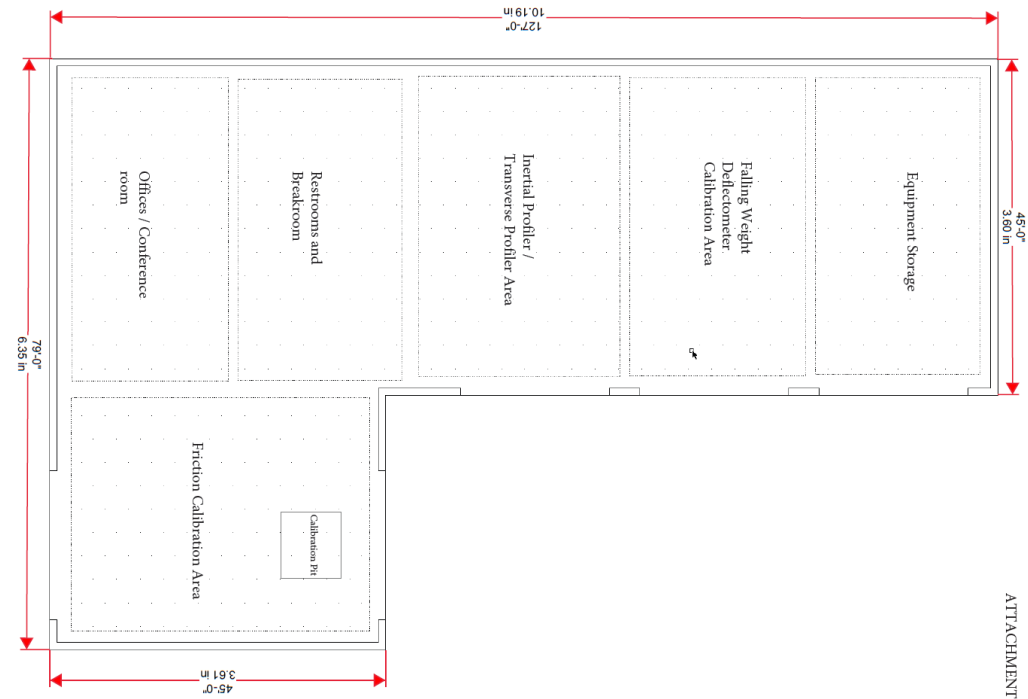
# FWD CORRELATION AND CALIBRATION





## Proposed FWD Calibration Center

Offer facility with FWD calibration capabilities and protected testing site for correlation and seasonal testing.



ATTACHMENT B

# TRANSVERSE PROFILER VERIFICATION



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# FAULTING AND RUTTING

Artificial Faulting Section



Faulted Joint



Artificial Rutting Section





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## Provisional AASHTO Standards

- PP 106-21 Assessment of Static Performance
- PP 107-21 Assessment of Body Motion Cancellation
- PP 108-21 Assessment of Navigation Drift Mitigation
- PP 109-21 Assessment of Highway Performance
- PP 110-21 Assessment of Ground Reference Data

## Expanded Turn Around Area





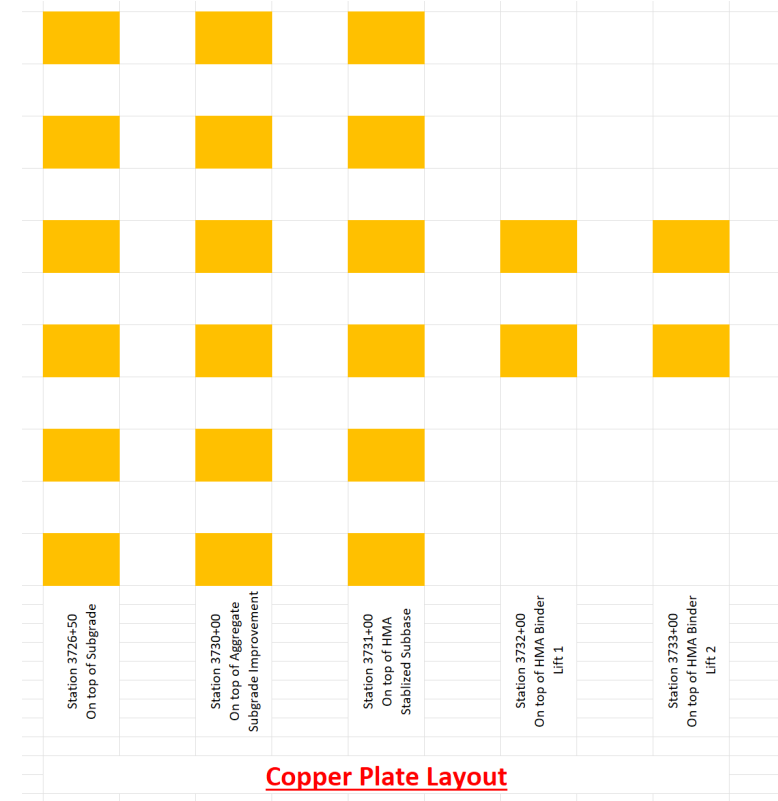
GROUND PENETRATING RADAR (GPR)

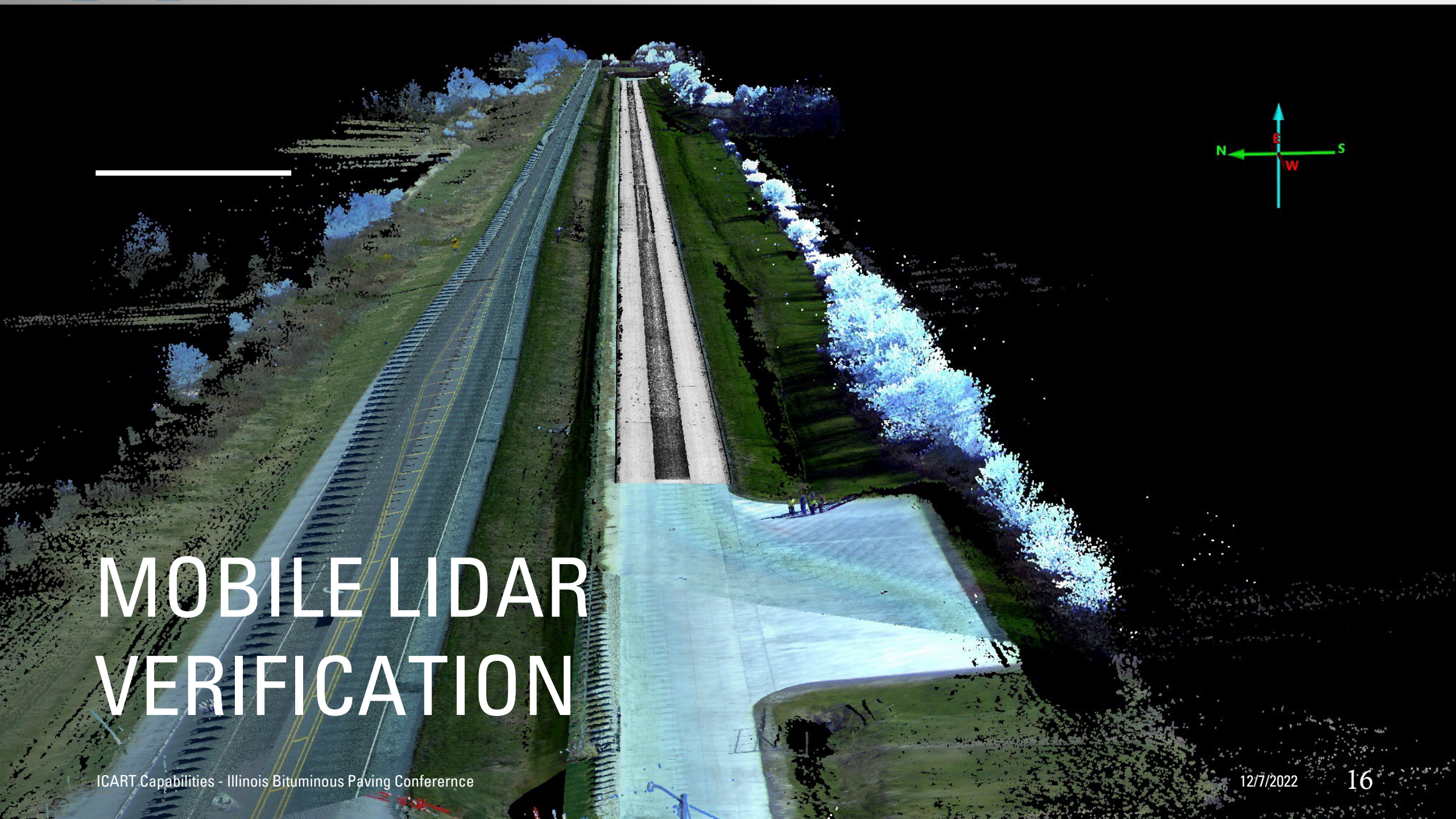
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# GROUND PENETRATING RADAR TESTING

## Instrumentation

- Copper Plates throughout the pavement section
- On site weather monitoring
- Pavement Temperature Probes





# MOBILE LIDAR VERIFICATION



# RESEARCH AND DEMONSTRATIONS



**Illinois Department  
of Transportation**

Welcome to the Illinois Certification and  
Research Track (ICART)



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# RESEARCH AND DEMONSTRATIONS

- 2023 RPUG Conference
- 2023 TPF-5(463) Friction Rodeo
- Potentially Future ASTM Friction Workshop
- NCHRP Studies Regarding Ride Quality
- Pavement Preservation Demonstration and Training
- Inertial Profiler Type Testing
- Longitudinal Profile Reference Device Type Testing
- Mobile Retro reflectivity testing and validation

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The way to get started  
is to quit talking and  
begin doing.

Walt Disney

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# DRAFT ICART FEE SCHEDULE

Traditional Profiler (3 surfaces)	\$	750.00
Zero Speed Profiler (3 surfaces)	\$	1,500.00
FWD	\$	5,000.00
DCV	\$	3,000.00
Transverse Profiler (Rutting & Faulting)	\$	500.00
Skid Correlations	\$	7,000.00
Skid Correlations with Calibrations	\$	10,000.00
GPR Validation	\$	1,500.00
Daily Rental	\$	5,000.00
Half Day Rental	\$	3,000.00

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# SPECIAL THANK YOU TO ALL INVOLVED

LaDonna Rowden

Larry Hilmes

Tiffany Brase

Mike Harrell – ARA

Francis Nelson – Quigg

David Peshkin – AP Tech

Mike Ripka

Mike Boyer

Robert Rescot

Vince Belitsos

Baxmeyer Construction, Inc.

The Kilian Corporation



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IN PARTNERSHIP WITH THE TPF-5 (289-DISTRESS) (354-PROFILE) AND (245-FRICTION) POOLED FUNDS



Illinois Department of Transportation



## SAVE THE DATES:

**MAY 1st - MAY 5th, 2023**



**FEATURING:**  
**ICART Track Tour**  
**& Equipment Demo**

# THANK YOU