



2024 Nebraska DOT Asphalt Paving Workshop

WORK ZONE SAFETY



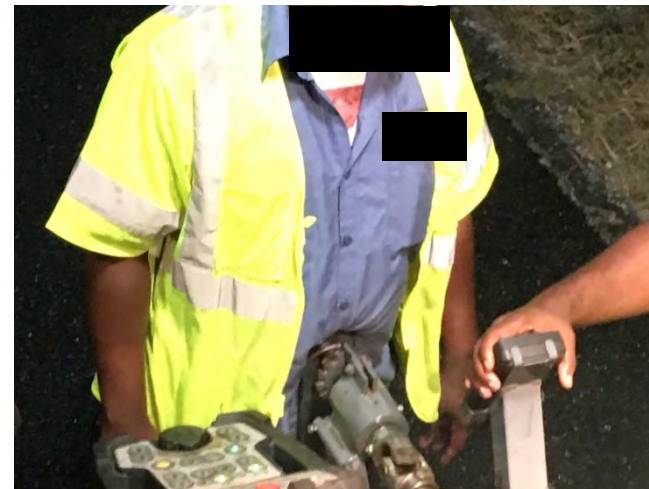
Should we consider allowing drums with less sheeting to save money?

What do you think?

WORK ZONE SAFETY



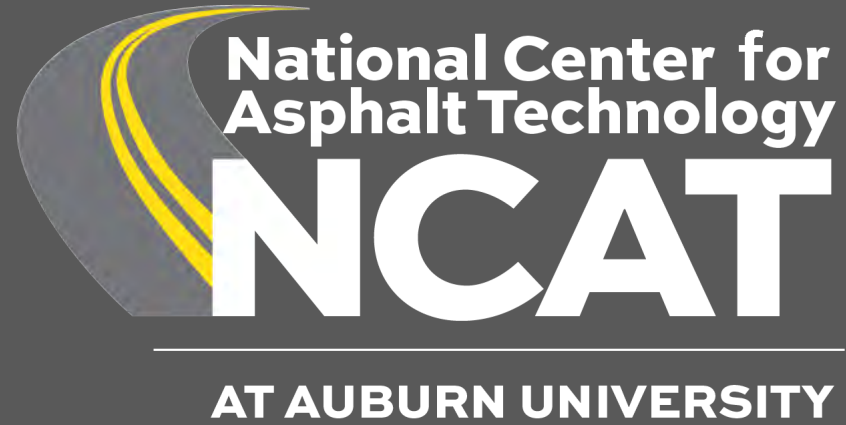
WORK ZONE SAFETY



WORK ZONE SAFETY



Zip up, button up, velcro up.....
and be as visible as possible!



Truck Blind Spot Demo

ARTBA Blind Spot Demo

AVOIDING BLIND SPOTS

JUST IN TIME

SAFETY TRAINING FOR PROJECT PROFESSIONALS

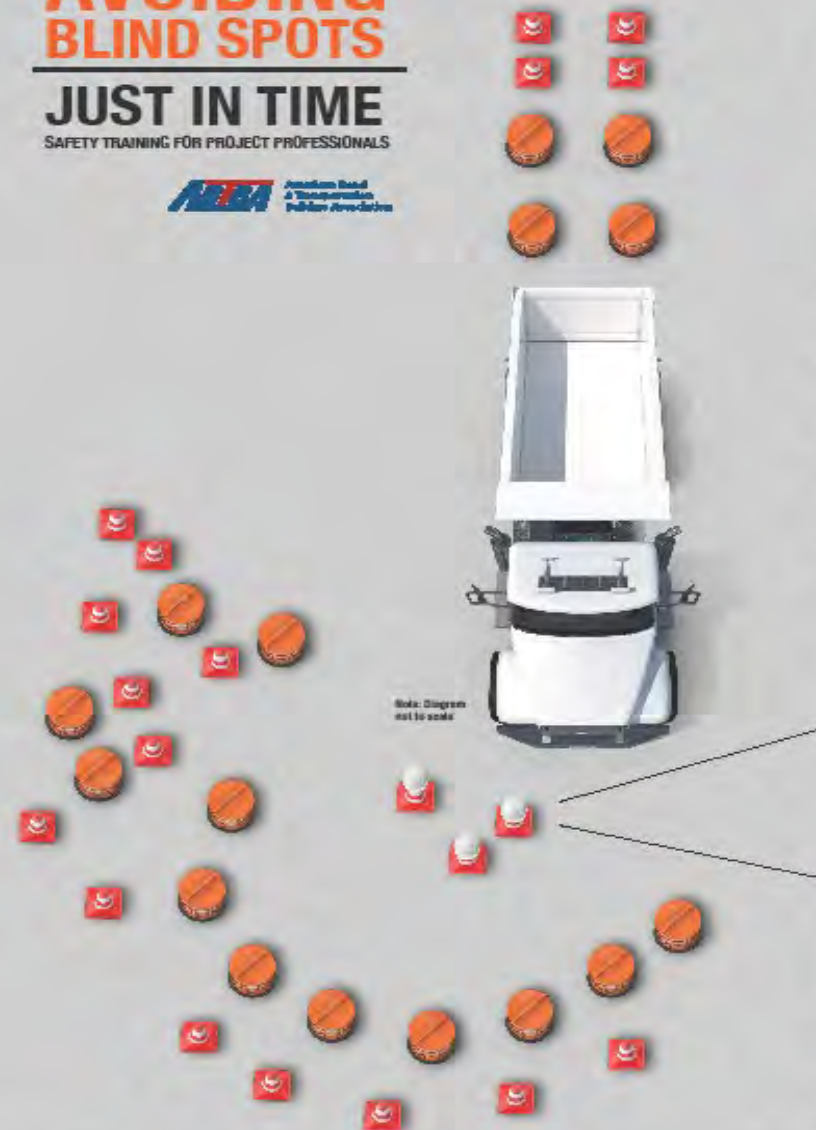


Fig. 1. To demonstrate Blind Spots in a safe and hands-on environment, locate a flat, level area with clear visibility approximately 150' in diameter.

- Park the construction equipment (in this example, a large dump truck), secure the parking brakes, turn off the engine and chock the wheels.

- Use 12 or more cones and barrels. In this example, 17 barrels and 20 cones were used. With an operator sitting in the front seat, place the barrels and cones in approximately the same pattern shown on this guide. Communicate with the operator to ensure that when the cones and barrels are in their final position, they cannot be seen from the operator location in the cab.

- Three hard hats are placed on three five foot poles/pipes sitting in cones to show three five foot workers standing in front of the truck. (see Fig. 2 below)

- When setup is complete, allow workers/class participants to take turns sitting in the cab. Ask them to discuss what they are observing before, during and after the demonstration.



6' tall worker

5' tall workers

View from the ground





View from the driver's seat



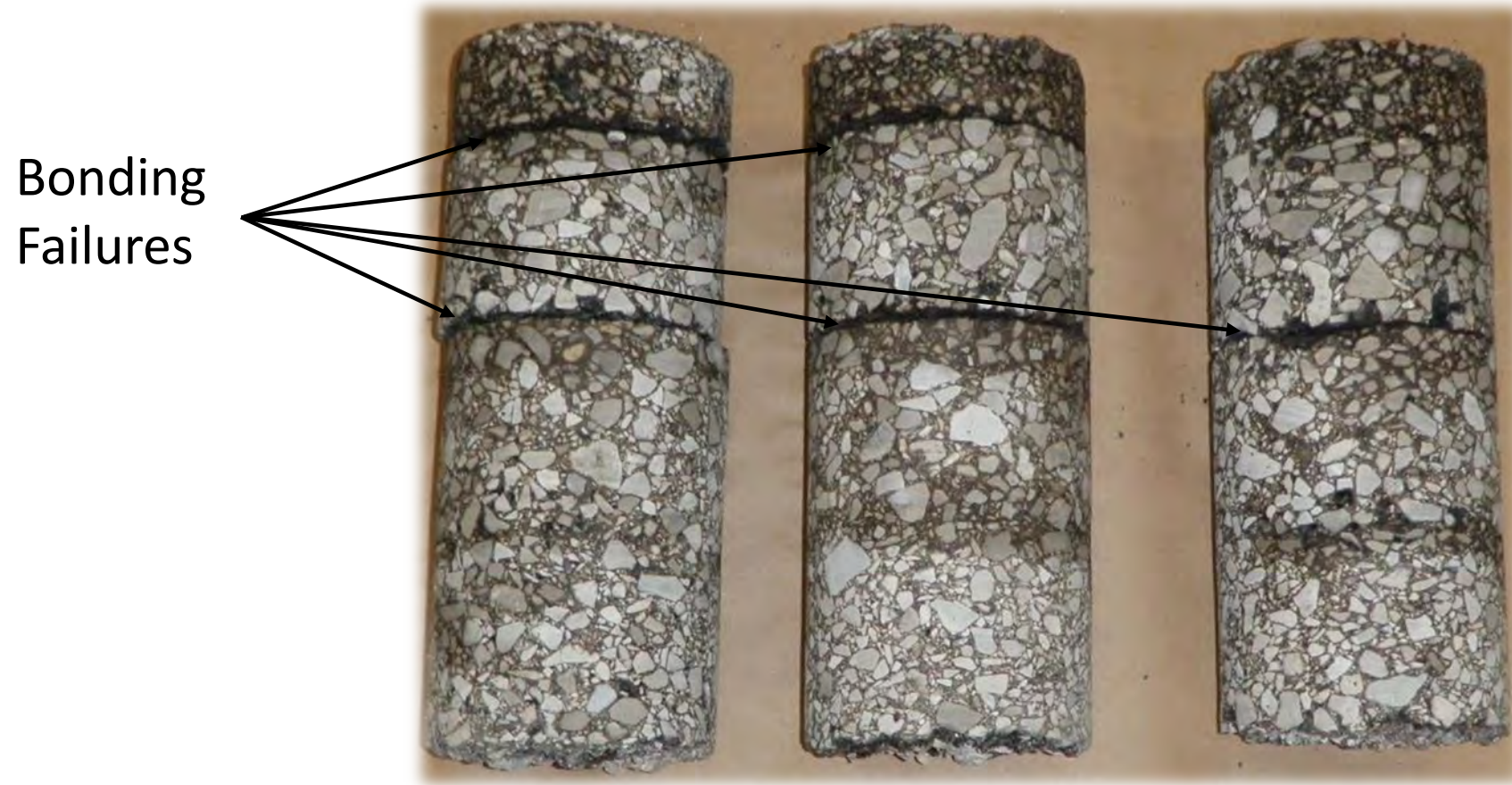
View from the driver's seat

8 – 10 years (est.) Interstate Pavement



Courtesy of MODOT

Cores Showing Debonding



Courtesy of MODOT

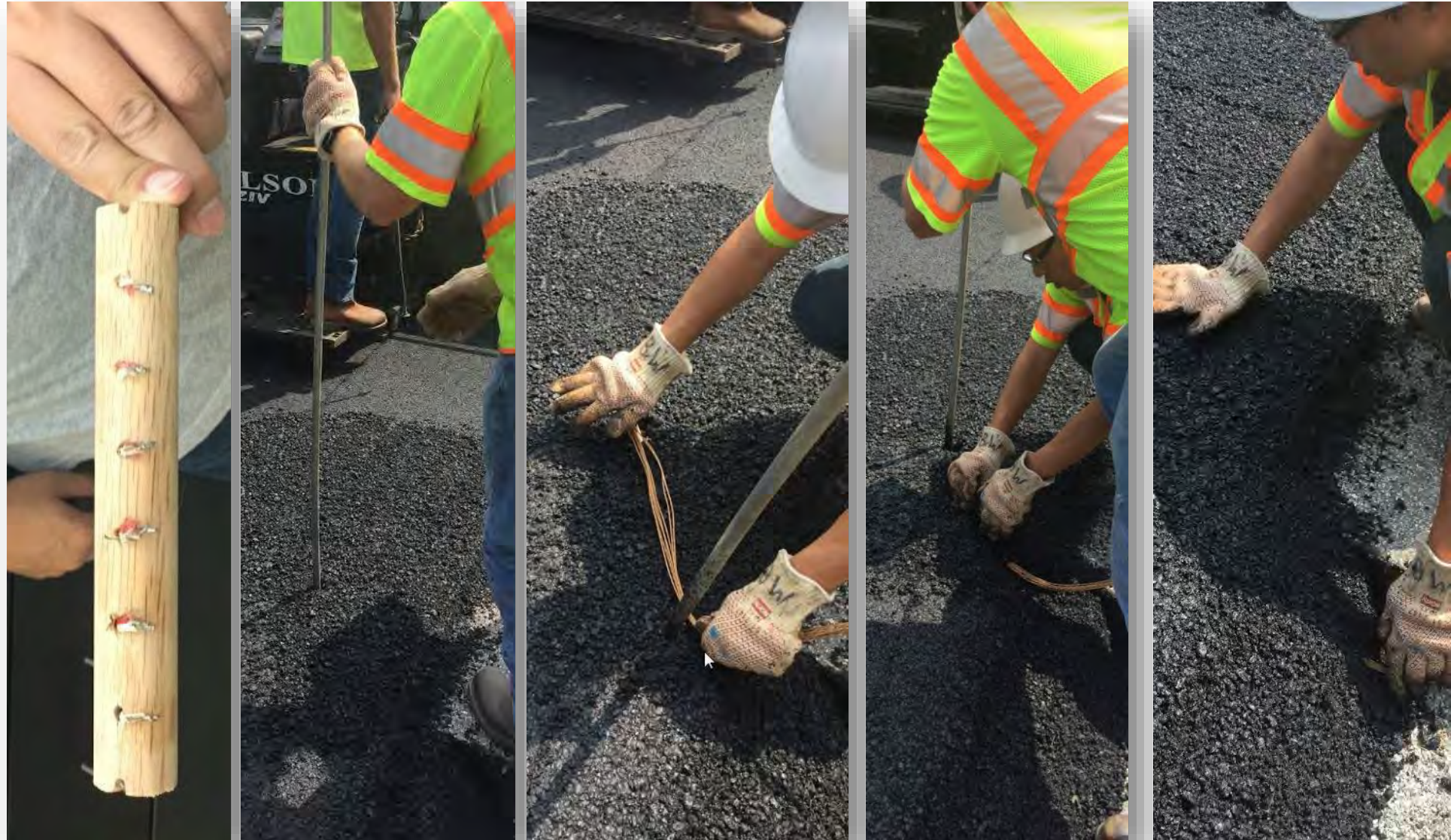
2018 NCAT Pavement Test Track



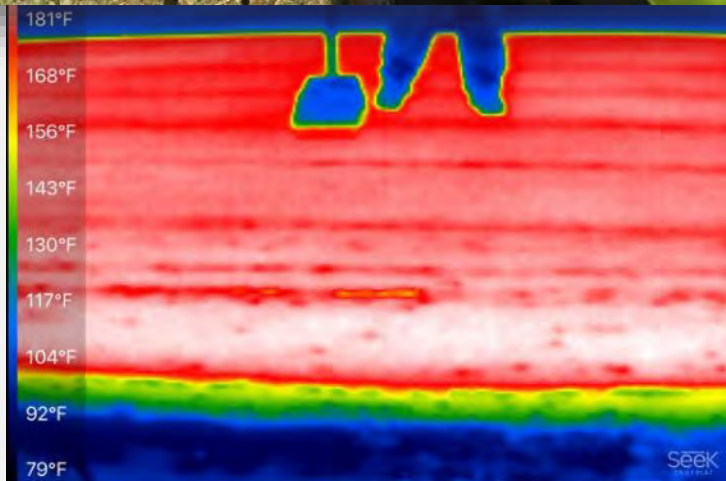
2018 NCAT Pavement Test Track



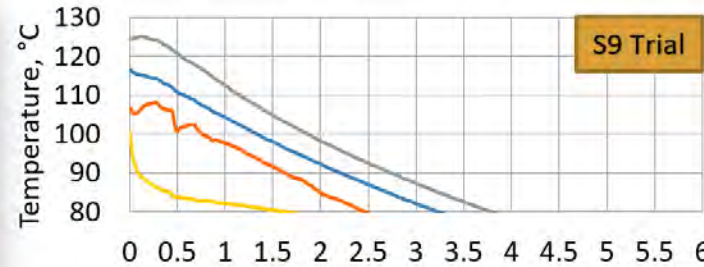
Multi Depth Temperature Instrumentation



Monitoring Temperatures

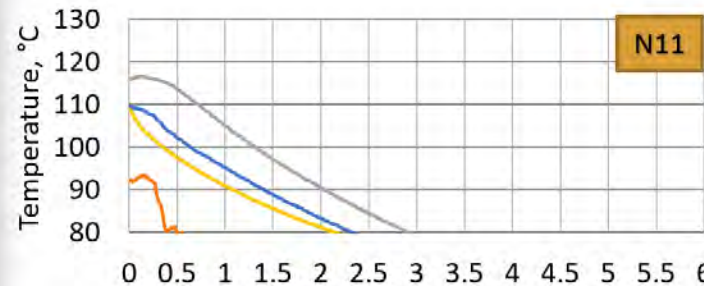


Surface Temperature Caution



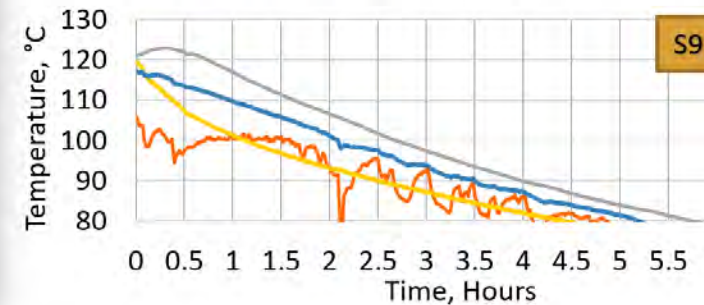
— T1
— T5
— T8
— Taverage

8/22/2018
3:02 PM
Tair = 86F



— T1
— T5
— T8
— Taverage

8/23/2018
6:01 PM
Tair = 79F



— T1
— T5
— T8
— Taverage

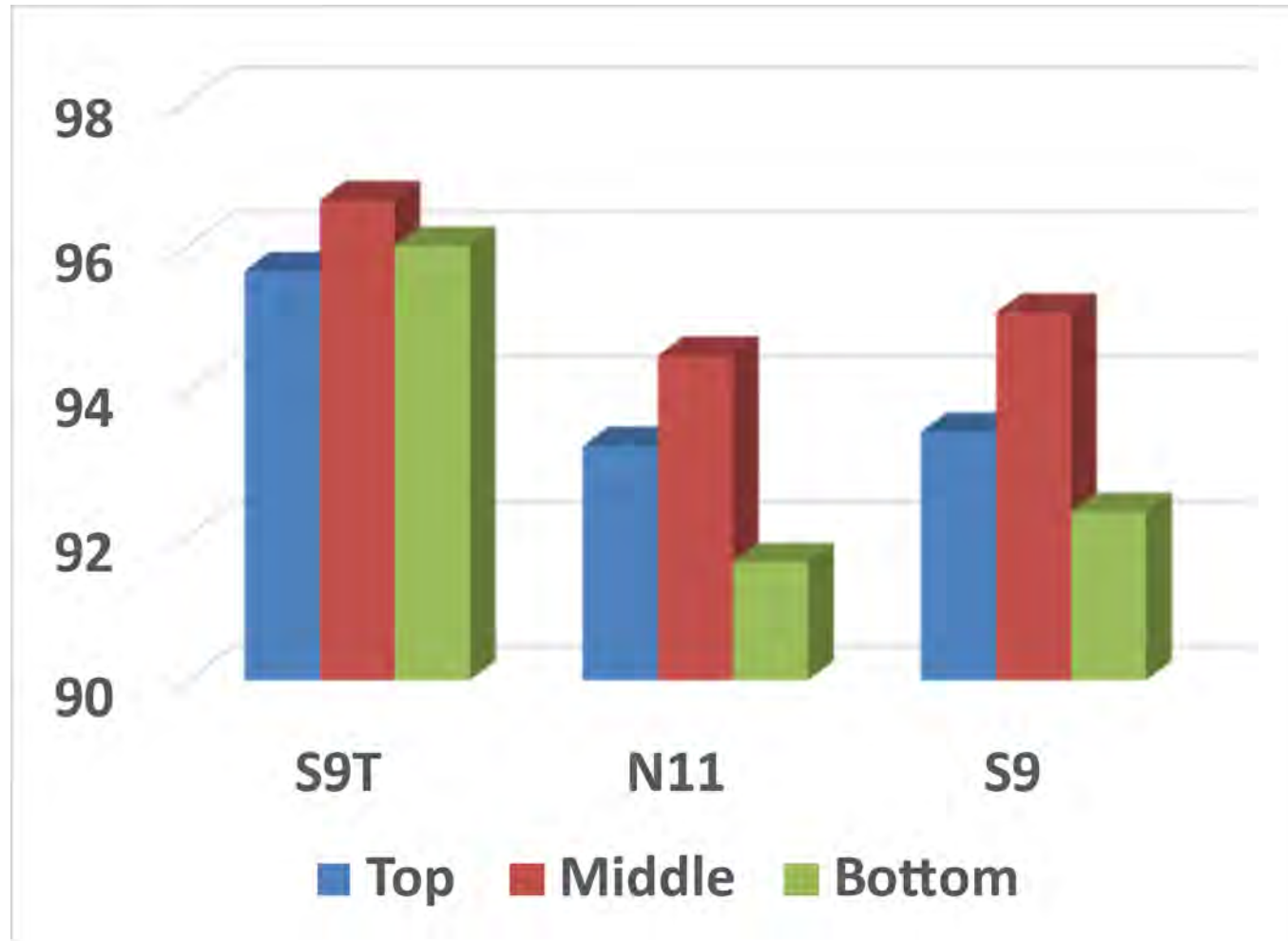
8/24/2018
10:28 AM
Tair = 86F

2018 NCAT Pavement Test Track



- S9 Full depth rapid rebuild
- Approximately 8" in a single pass
- Trial, N10-N11 as practice runs
- Thinlays compared to grinding.

Density of Core Slices



2021 NCAT Pavement Test Track



Highly-Modified Asphalt Mixtures in Utah



I-80 East Bound Port of Entry Ramp
June 3, 2021


Test Strip Construction

- At Staker-Parson's Beck Street Facility
- Aggregate base vs. Portland cement concrete
- Virtually no haul vs. 2+ hours



Test Strip Construction





Staker Plant Test Strip

June 2, 2021

Test Strip Construction



Test Strip Construction



Test Strip Lessons Learned

- Density of 97% or more was easily achieved
- Regular rolling equipment and procedures followed
- Feeding while placing such a large volume of mix was achieved
- Mix was stable even with roller overhang
- No significant issues encountered

Initial Installation I-80 Port of Entry



Eastern Section Off the Scale



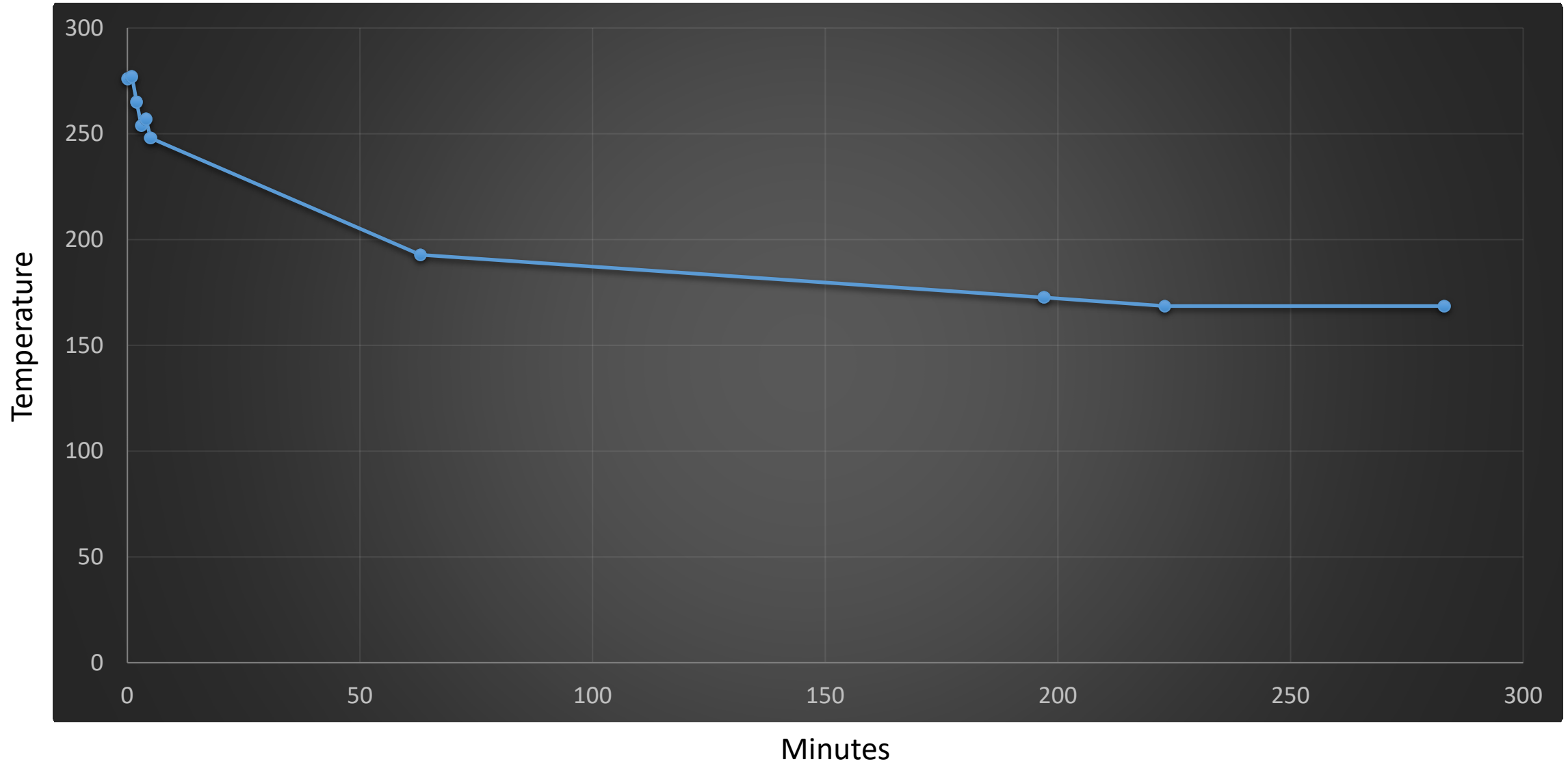
Paving Operations



Paving Operations



Time vs. Temperature



Density Results

Core	Total Thickness	Top Half Density	Bottom Half Density
1	6.27 inches	97.9%	98.0%
2	6.27 inches	97.8%	94.4%
3	6.1 Inches	97.2%	92.8%
4	6.1 Inches	97.3%	97.6%

I-80
POE Test
Section

5 months
Later



UTAH
LTDOT
 *Keeping Utah Moving*

October 4, 2023

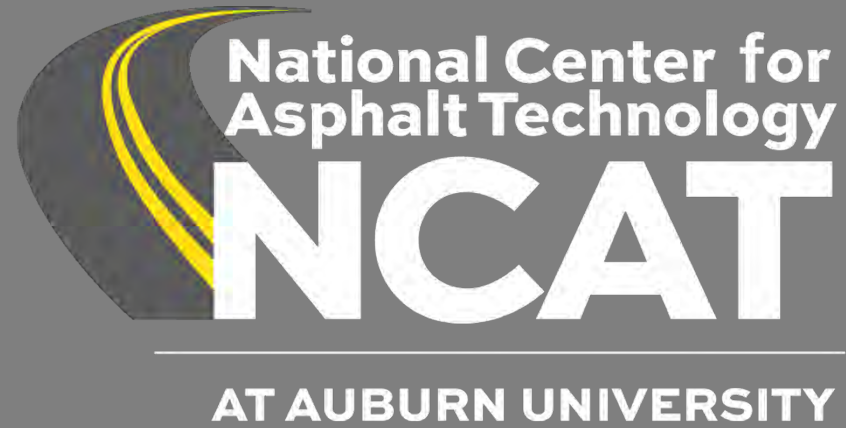


Lessons Learned – Post Traffic Performance

- Highly modified Thick Lift asphalt can be successfully constructed even with a 2+ hour haul
- High densities were easily achieved
- Exceptional early performance
 - Over **4 million** commercial trucks
 - **No discernable movement**
 - **No cracking**
 - **ZERO distress**



Courtesy of UDOT



2024 Nebraska DOT Asphalt Paving Workshop

Composite Pavement Option



1



The





Reflective Crack

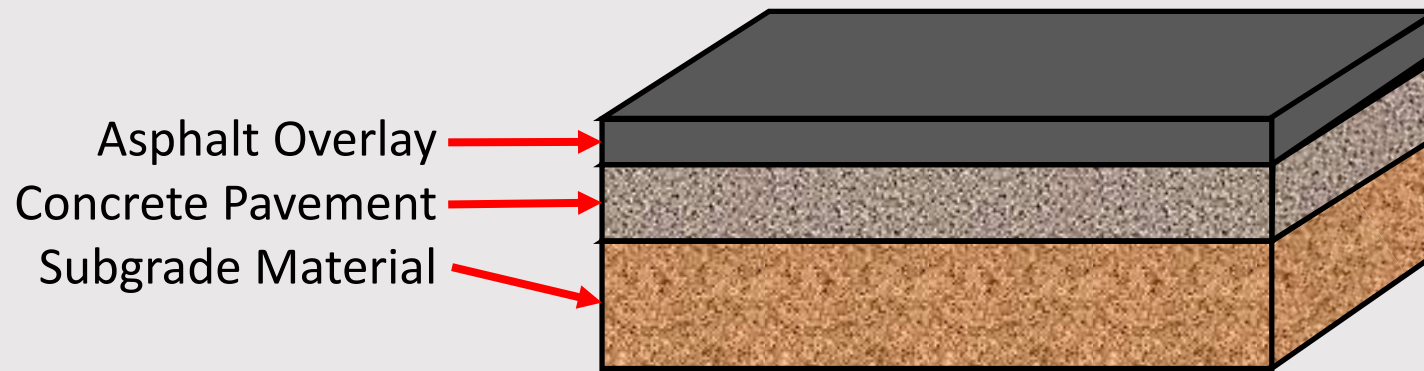
Asphalt Overlay

PCC Pavement

Slab Joint



Composite Pavement



What did we learn...?

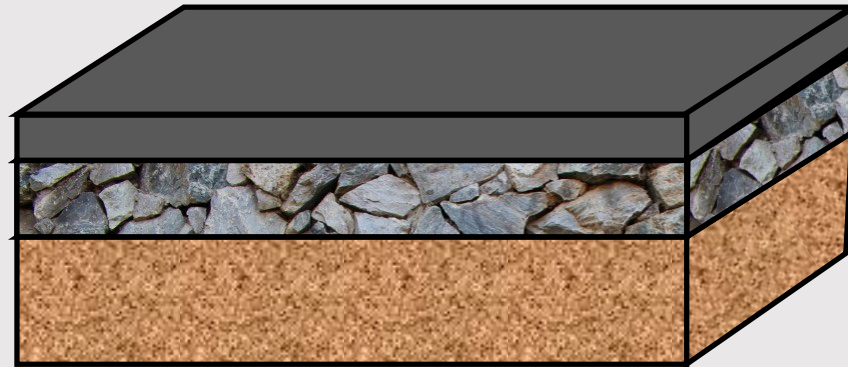


RUBBLIZATION

2018 Reconstruction Projects

1. Current Projects

1. Remove asphalt
2. Rubbilize Concrete
3. Overlay















QUESTIONS ?

How do I communicate with NCAT?

- Contact Tom or Travis
 - travis.walbeck@auburn.edu
 - (334) 740-9176 cell / text
 - Tom.Harman@Auburn.edu
 - (410) 215-2762



NCAT Webpage

<http://NCAT.us>

The screenshot shows the NCAT website homepage. At the top left is the NCAT logo with the text "National Center for Asphalt Technology" and "AT AUBURN UNIVERSITY". To the right of the logo are navigation links: "About NCAT", "Test Track", "Pavement Preservation", "Education & Training", and "Our Research". There is also a search icon and a shopping cart icon. Below the navigation is a large banner image showing several people in high-visibility vests standing on a test track. Below the banner is the text "NCAT 2024 Test Track Conference". Below the banner are four columns of content: "Publications" (with a "View details" button), "Education and Training" (with a "View details" button), "Facilities" (with a "View details" button), and "Our Team" (with a "View details" button"). At the bottom of the page is a yellow banner with the text: "NCAT's mission is to provide innovative, relevant and implementable research, technology development and education that advances safe, durable and sustainable asphalt pavements."