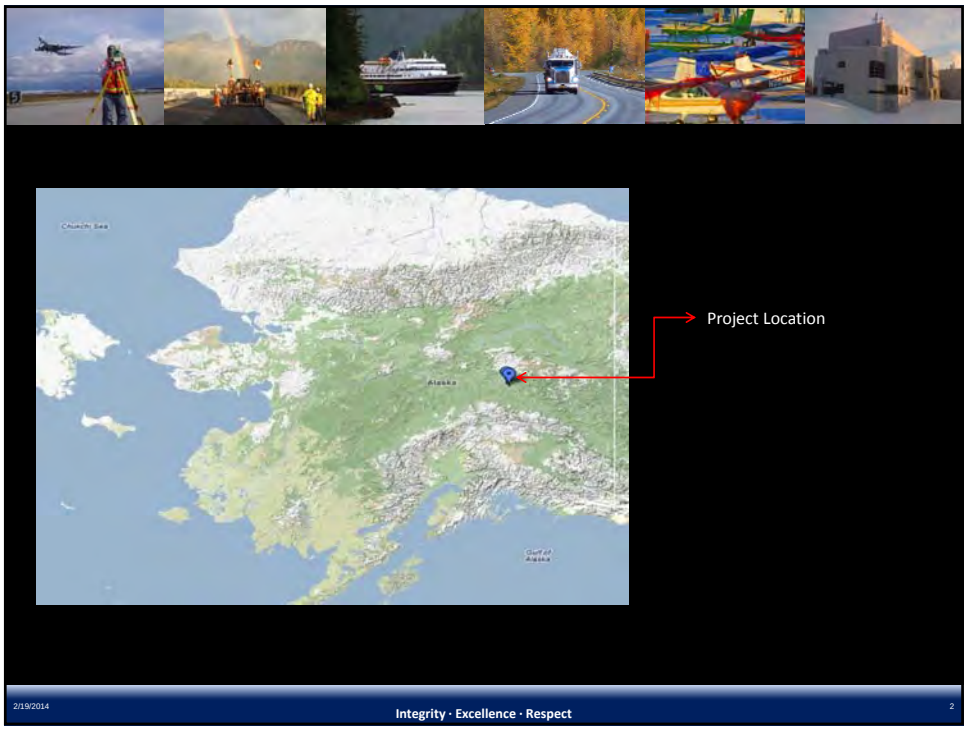
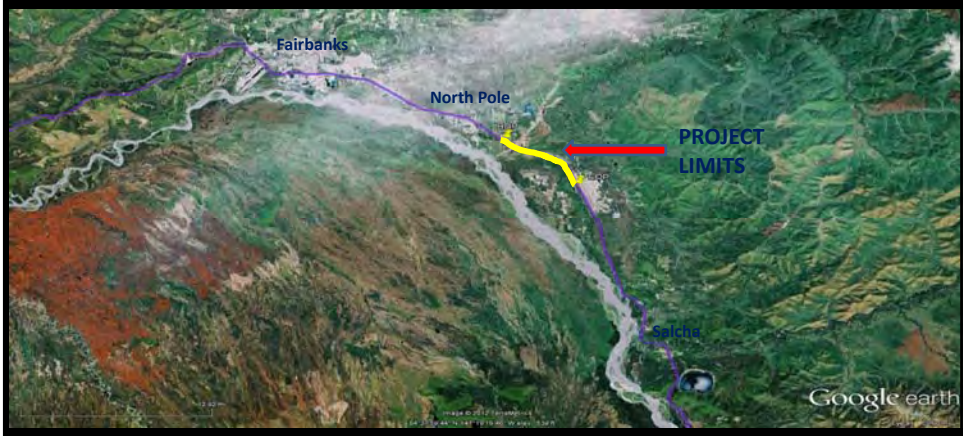
N915NG


Project Location
2/19/2014
Integrity · Excellence · Respect
2

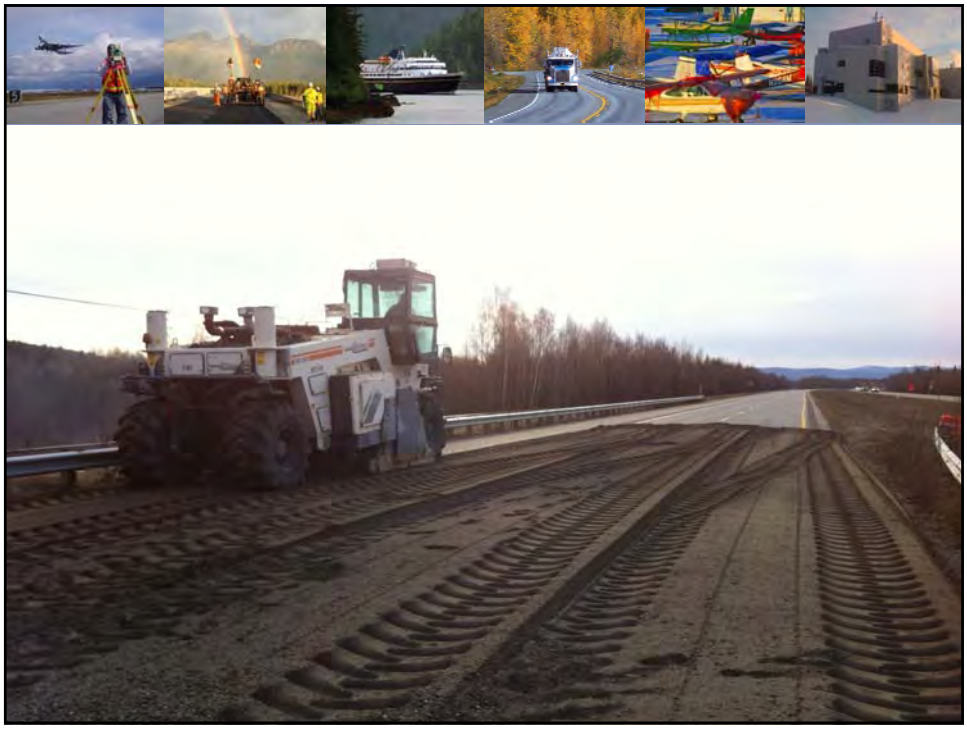


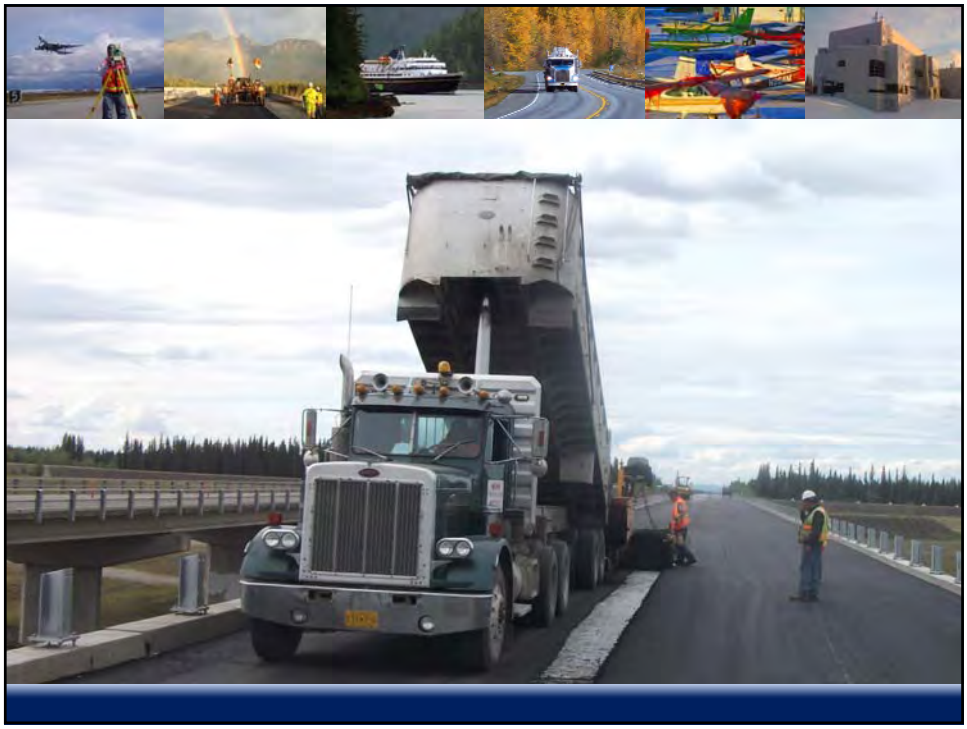
Richardson Highway MP 340-346 Resurfacing

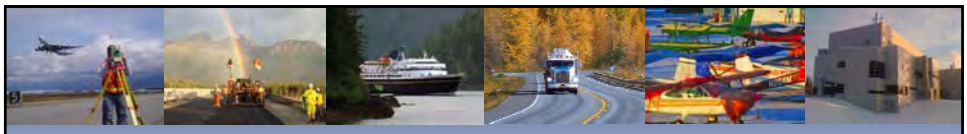
- Location: Moose Creek, Alaska
- Length: 6 miles
- Contractor: Great Northwest, Inc.
- Typical pavement widths
  - 38’ (10’ RT shldr, 2 X 12’ lanes, 4’ LT shldr)
  - 62’ (10’ RT shldr, 4 X 12’ lanes, 4’ LT shldr) where accel/decel lanes were present
- Just under 2,500,000 square feet of pavement

Project Intent

- Resurface Richardson Highway from MP 340 to 346
- Originally intended as a SAMI experimental feature
  - Overlay project as advertised
  - Changed to “mill and fill” by addendum
  - Existing asphalt 2” +/-
  - Moderate rutting
  - Severe orthogonal cracking and alligator cracking



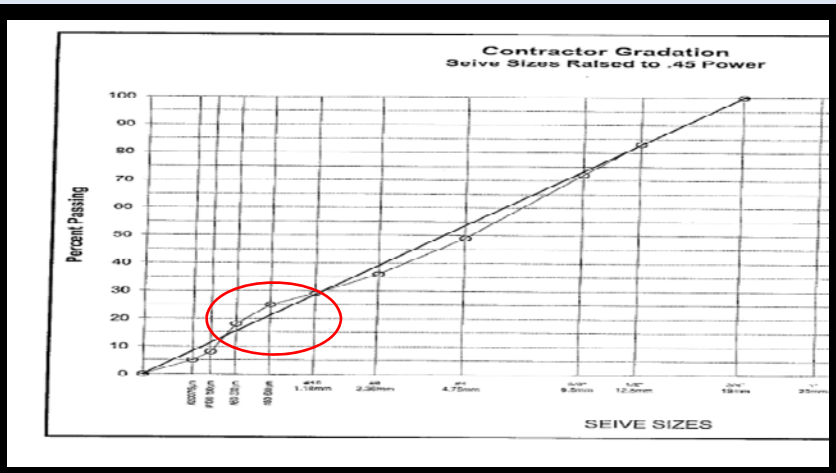




Pavement Information

- Single lift
- 2” thickness
- Type 2, Class B
  - Optimum Oil 5.0%, PG 52-28
  - Stability – 2198
  - Flow – 8.7
  - VMA – 14.0
  - Unit Wt. – 149.5
- 80% Single Face Fracture

Gradation



Project Amount

Engineer's Estimate: $7,622,149

Bid Amount: $7,389,043

Final Amount: $7,173,380

Experimental Feature – Pre-cracking

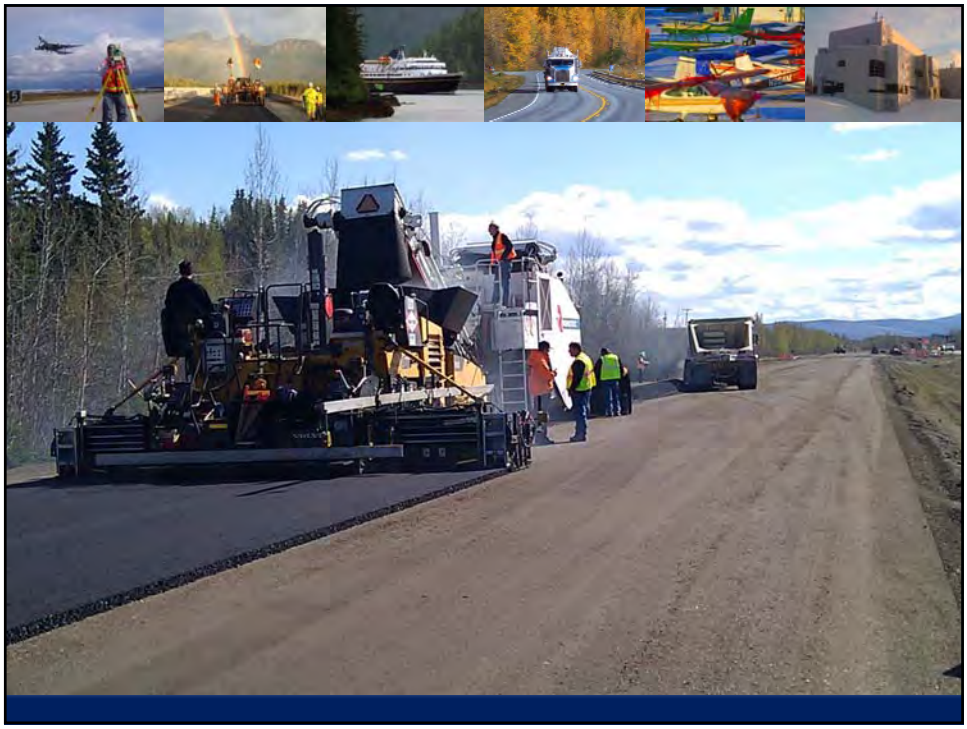
- T2/AUTC research project
- 4 segments, ¼ mile each
  - Control
  - 25’ spacing
  - 40’ spacing
  - Placed over existing major cracks
- 1/8” wet saw cut depths to ½”, 1”, and 1 ½”

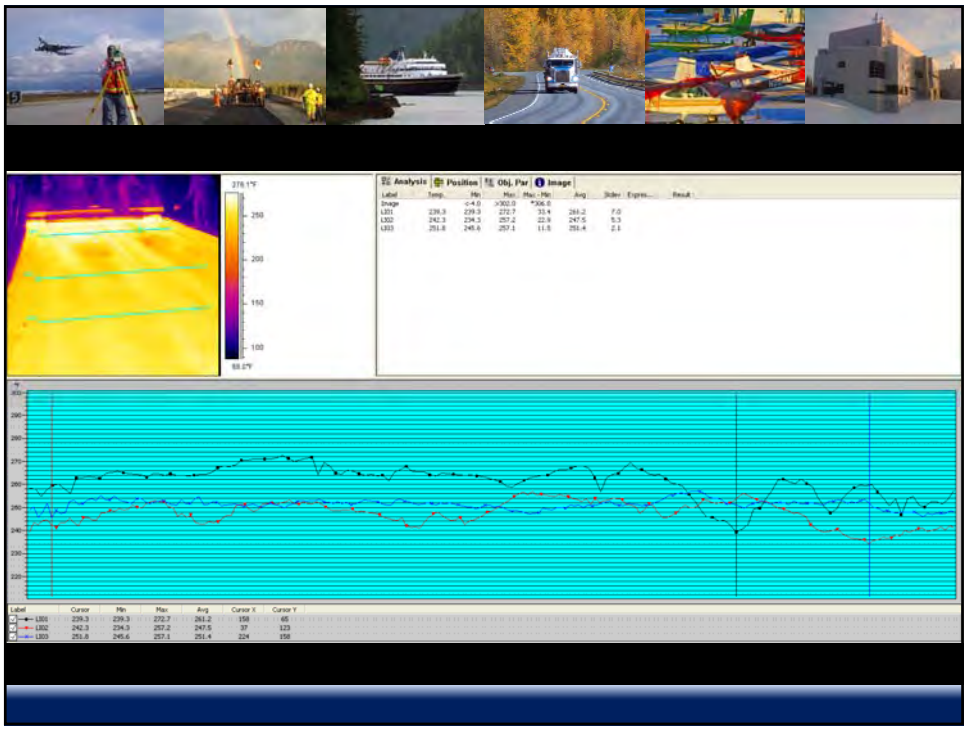
Experimental Feature – Pre-cracking

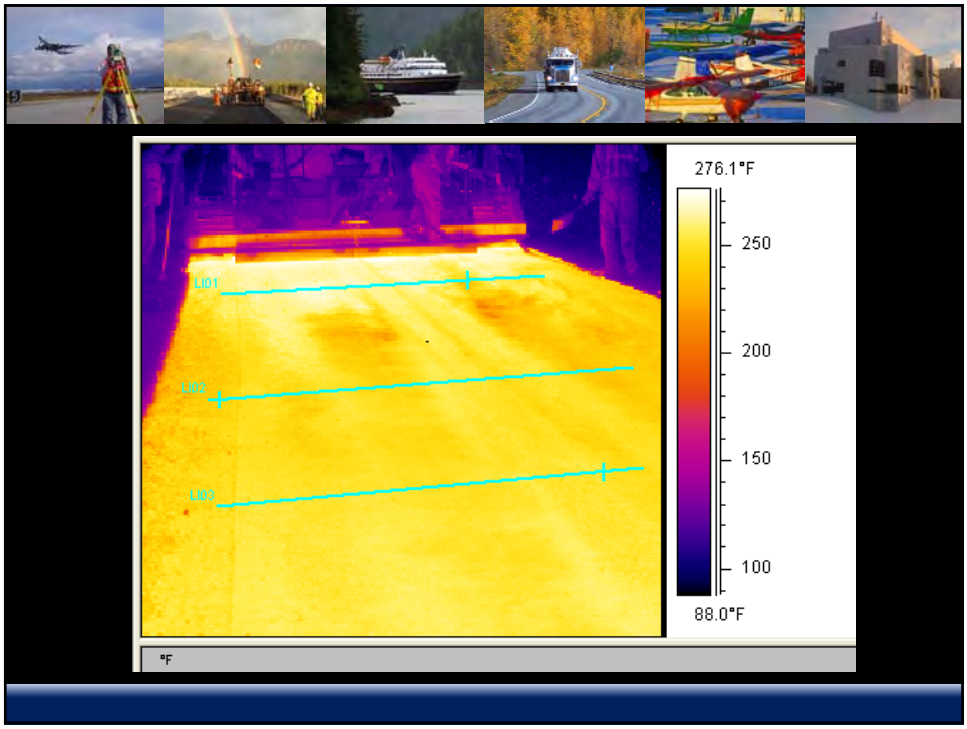
- Segment 1
  - Control (no cuts)
  - 34 natural cracks
- Segment 2
  - 25’ spacing
  - 50 saw cuts
  - 17 natural cracks
- Segment 3
  - 40’ spacing
  - 36 saw cuts
  - 18 natural cracks
- Segment 4
  - Placed over existing cracks
  - 26 saw cuts
  - 7 natural cracks

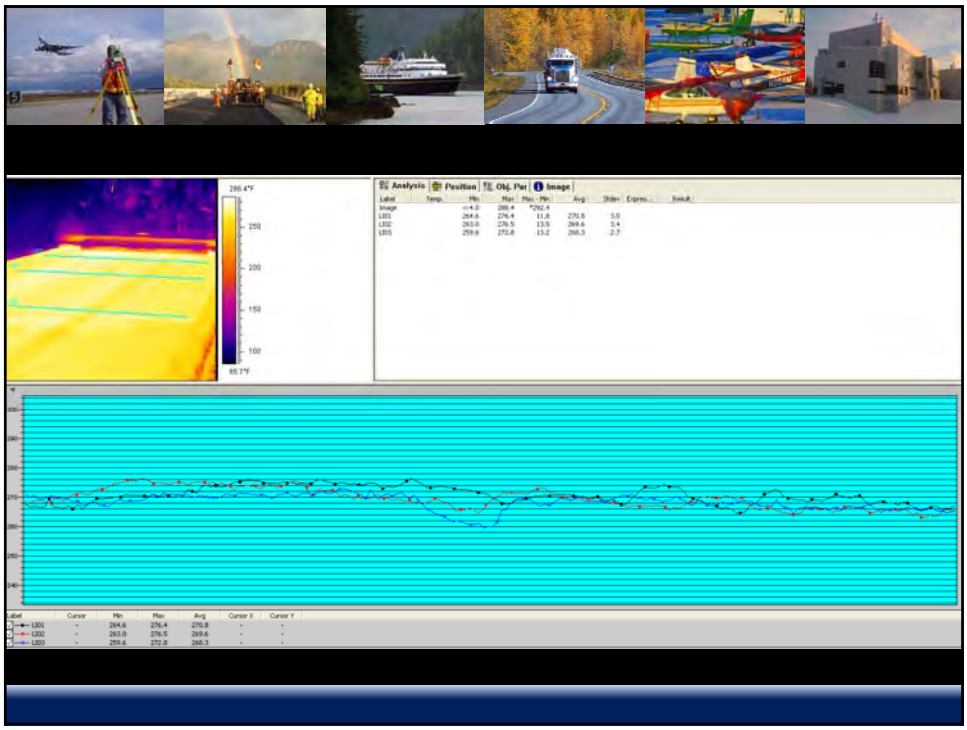
Material Transfer Device

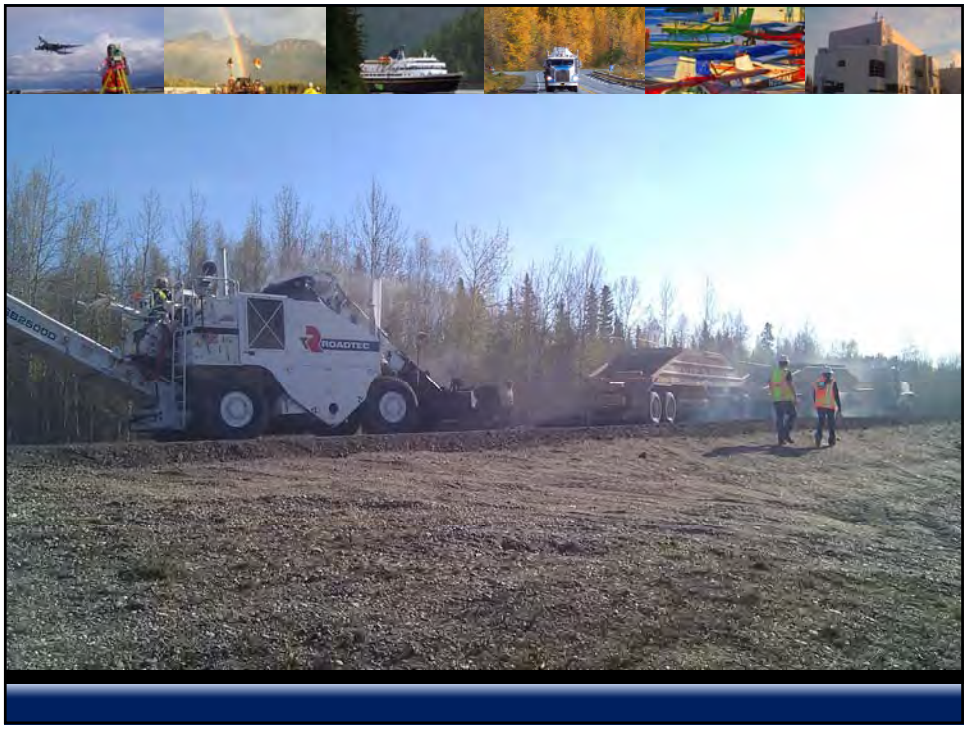
- Material Transfer Device
- Pluses
  - More versatile pickup machine
    - Yield is not as critical
    - Can pickup windrows and transport to paving machine
  - Mixing benefits
  - Reduces hopper segregation
- Minuses
  - Requires another operator
  - Higher operating and maintenance costs than pickup machine
  - Requires a hopper insert
  - Big machine

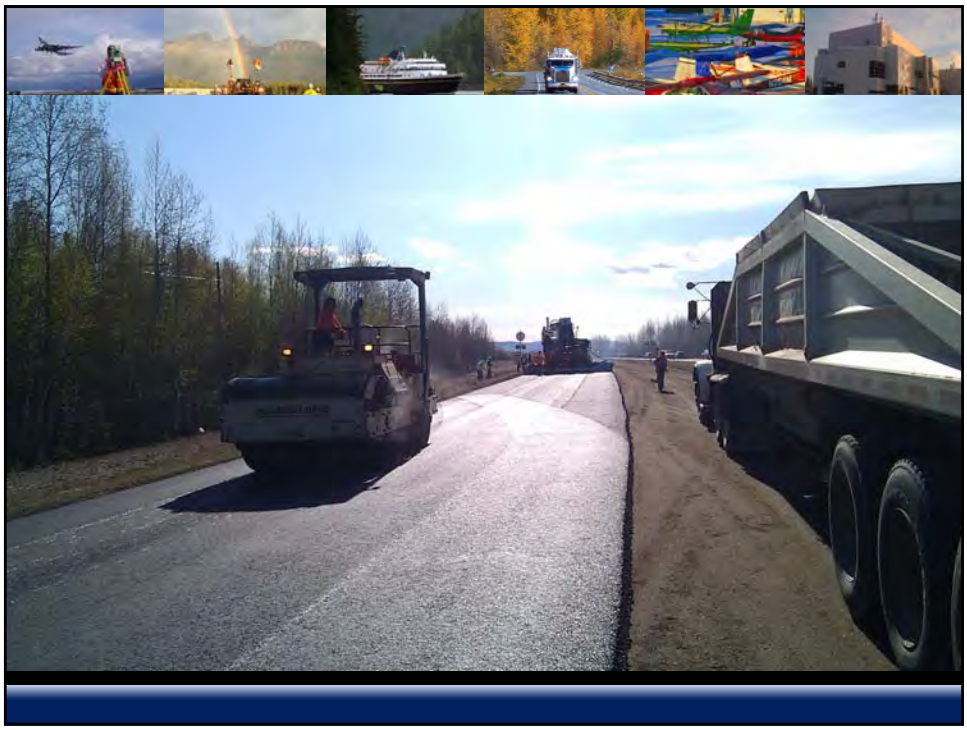


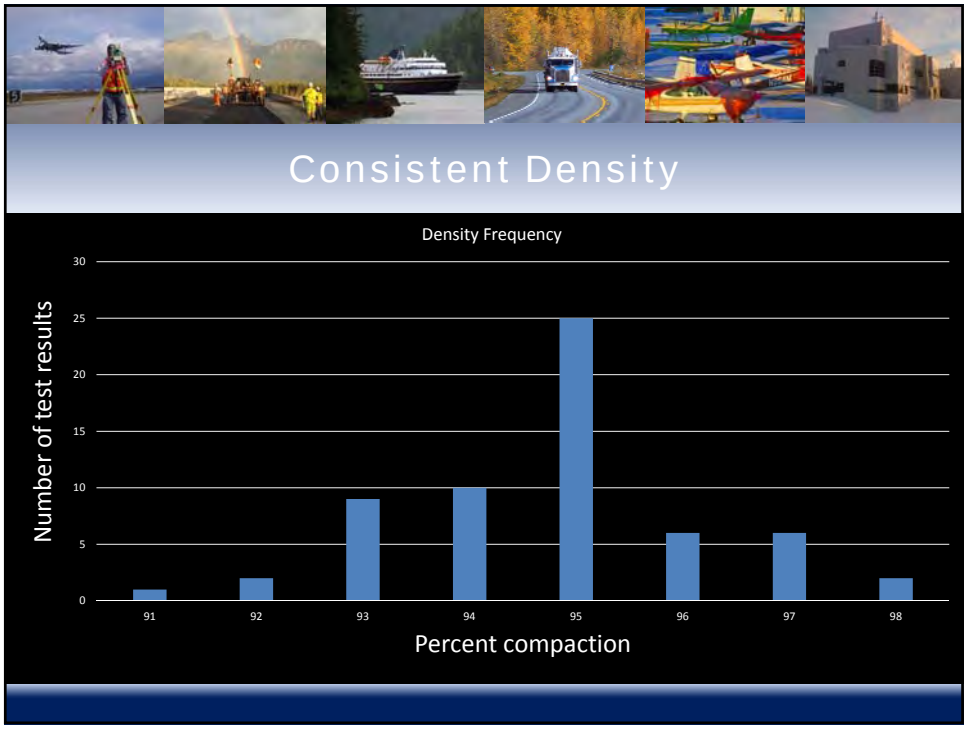

Analysis
Position
Obj. Par
Image


276.1°F
250
200
150
100
88.0°F
L101
L102
L103
°F




ROADTEC



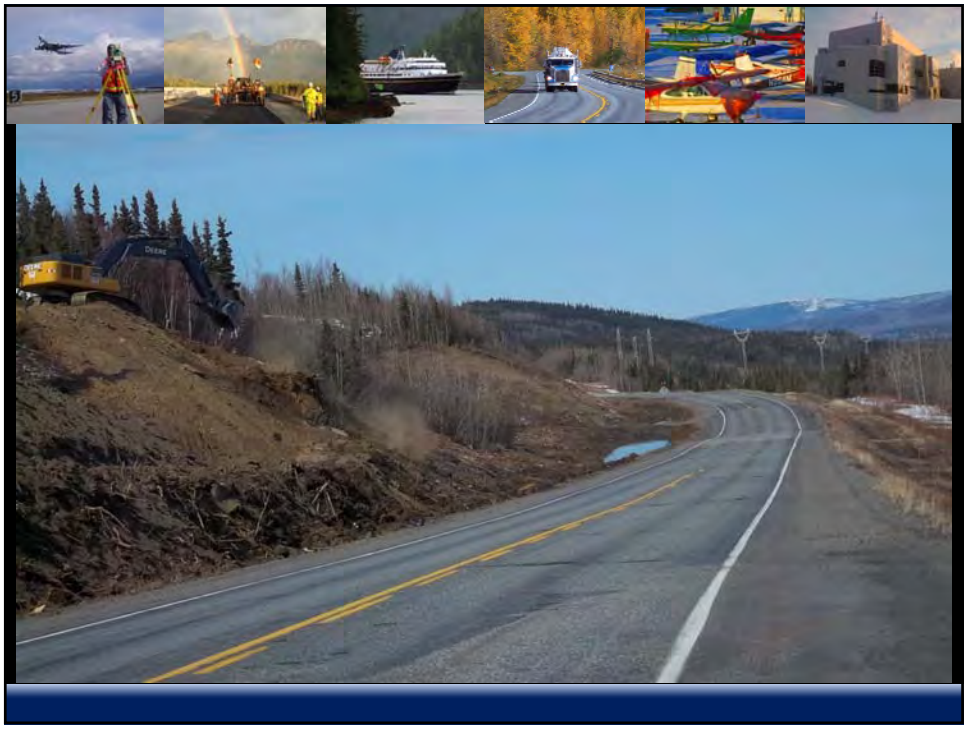

Consistent Density
Density Frequency
Number of test results
30
25
20
15
10
5
0
91
92
93
94
95
96
97
98
Percent compaction

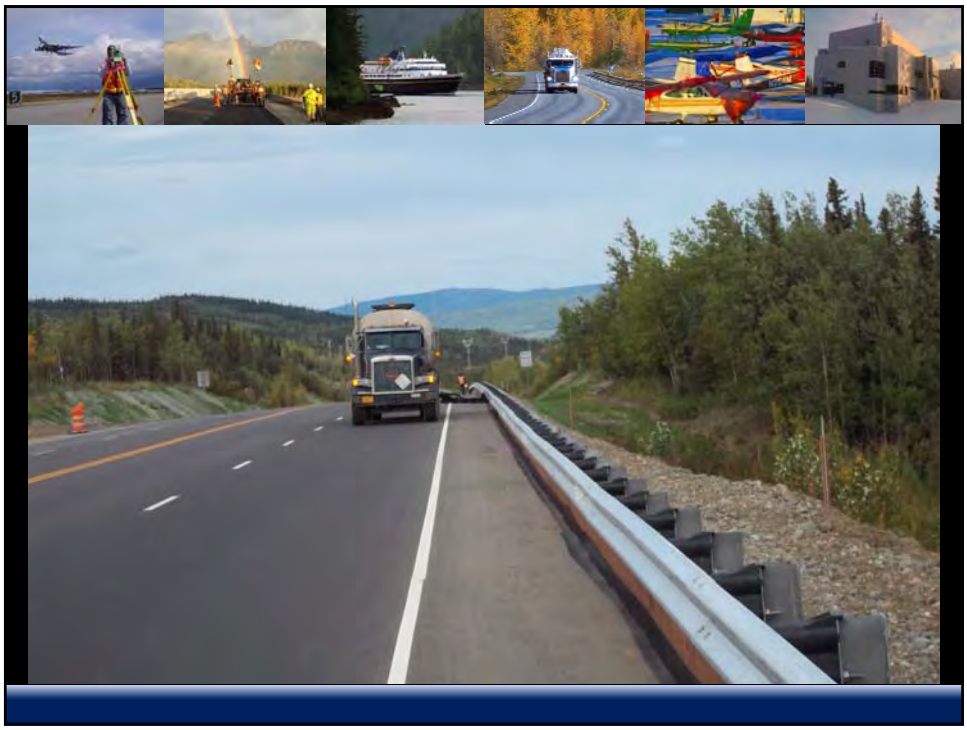
ROADTEC

Parks 252-263

Parks 252-263

- North of Healy
- Great Northwest, Inc
- 11 miles paving
- Added 3 passing zones
- Width between 40’ – 56’
- 3” ATB with 2.5” HMA
  - 45,000 tons ATB
  - 38,000 tons HMA



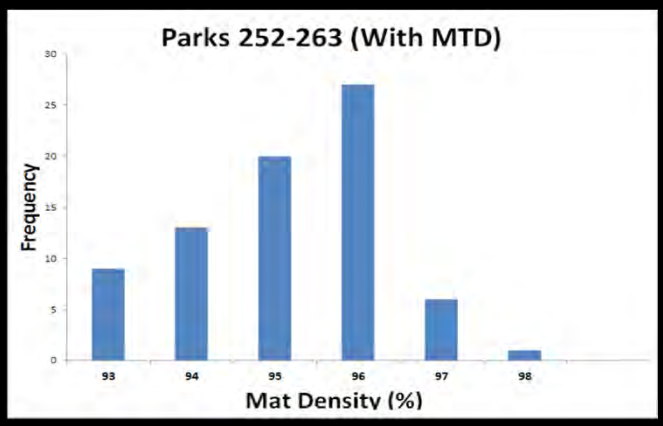


Type 2, Class B Mix Design

- PG 52-28 @ 5.8% Target AC Content
- 28% Crushed Course Aggregate
- 72% Crushed Fine Aggregate
- Mixing Temp (F): 281-294
- Compacting Temp (F): 264-271
- % Voids 4.2

MTV Benefits

- Remixing
- Reduces occurrence of “wing dumps”
- Less start and stop
- Reduces thermal segregation



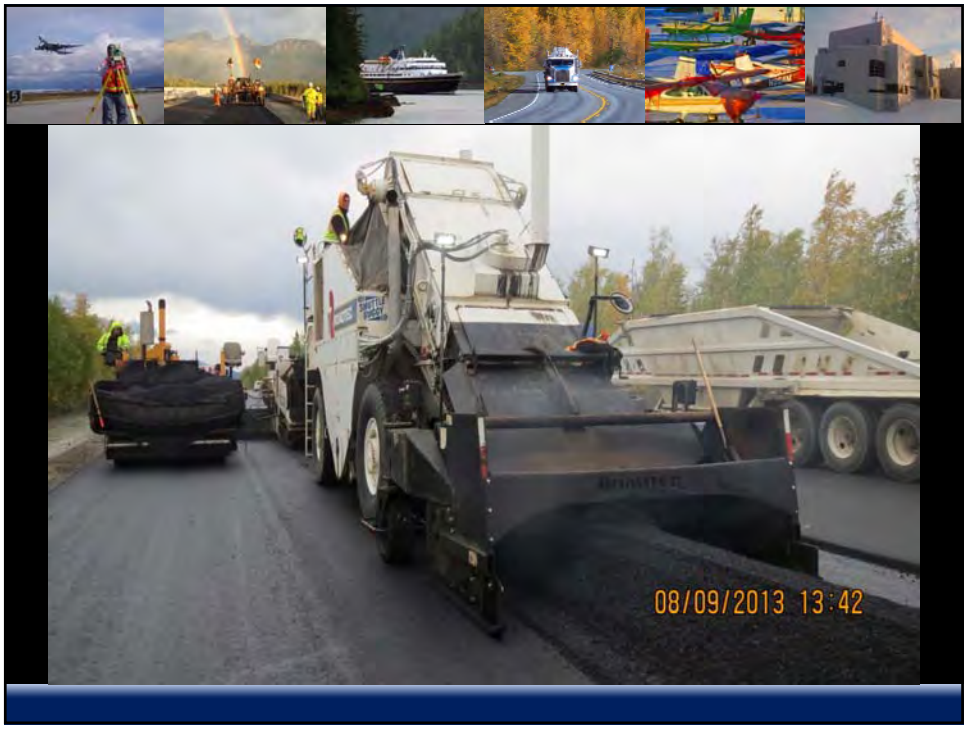
- Smoothness bonus maxed out.
  - 1.27 inches/mile for 26.7 lane miles
- QLA summary:
  - Consistent Mat Density

Each Lot Represents 5000 Tons of HAP

Lot #	Average Mat Density	Density Pay Factor	Composite Pay Factor
1	94.7%	1.04	1.04
2	95.0%	1.05	1.05
3	95.8%	1.04	1.04
4	94.6%	1.05	1.05
5	95.2%	1.05	1.04
6	95.2%	1.05	1.04
7	95.3%	1.05	1.03
8	94.9%	1.05	1.04

ROADTEC
RP 185
SLIDE
AREA
SPEED
LIMIT
45
08/25/2013 16:38

ROADTEC
08/09/2013 13:43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SB2500D
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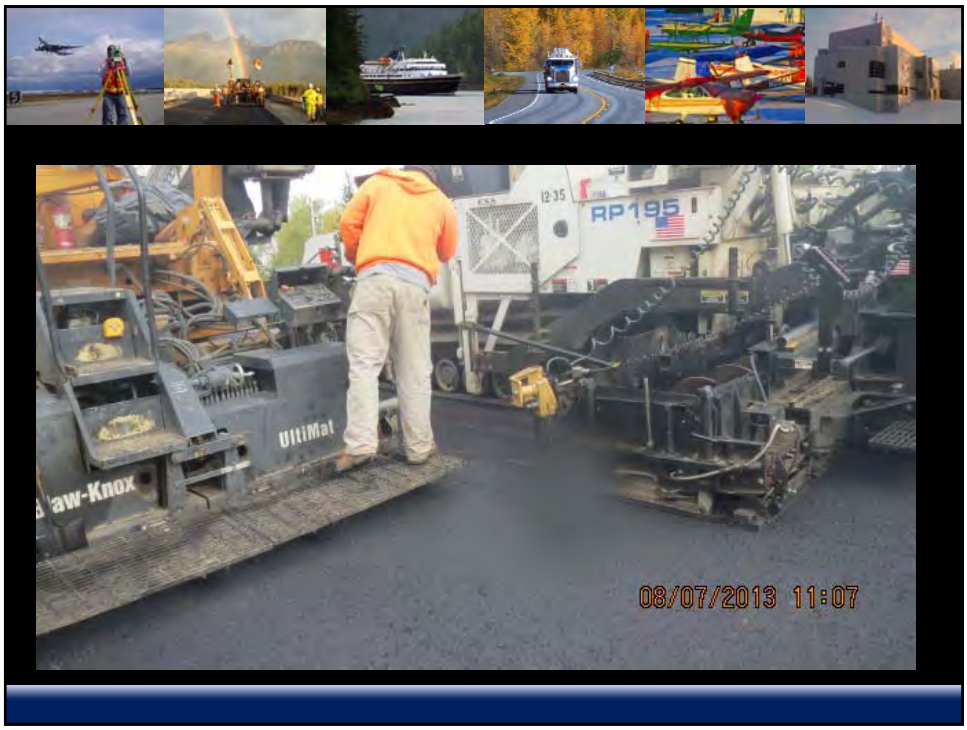
ROADTEC
SB2500D
12-34
08/07/2013 11:03


RP195
12-35
UltiMat
aw-Knox
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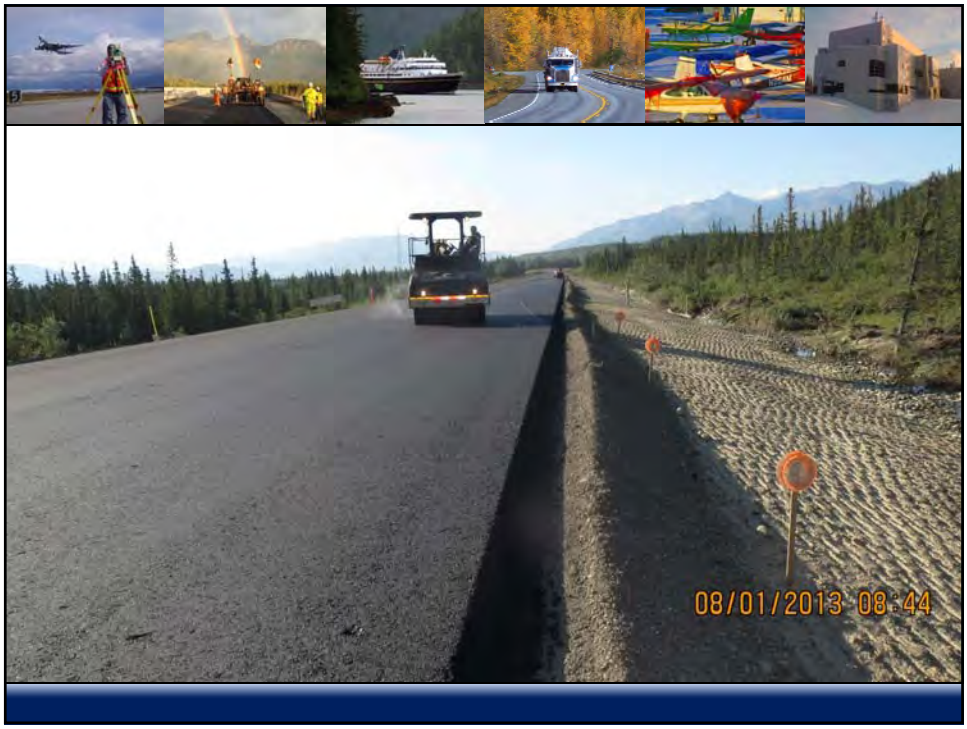
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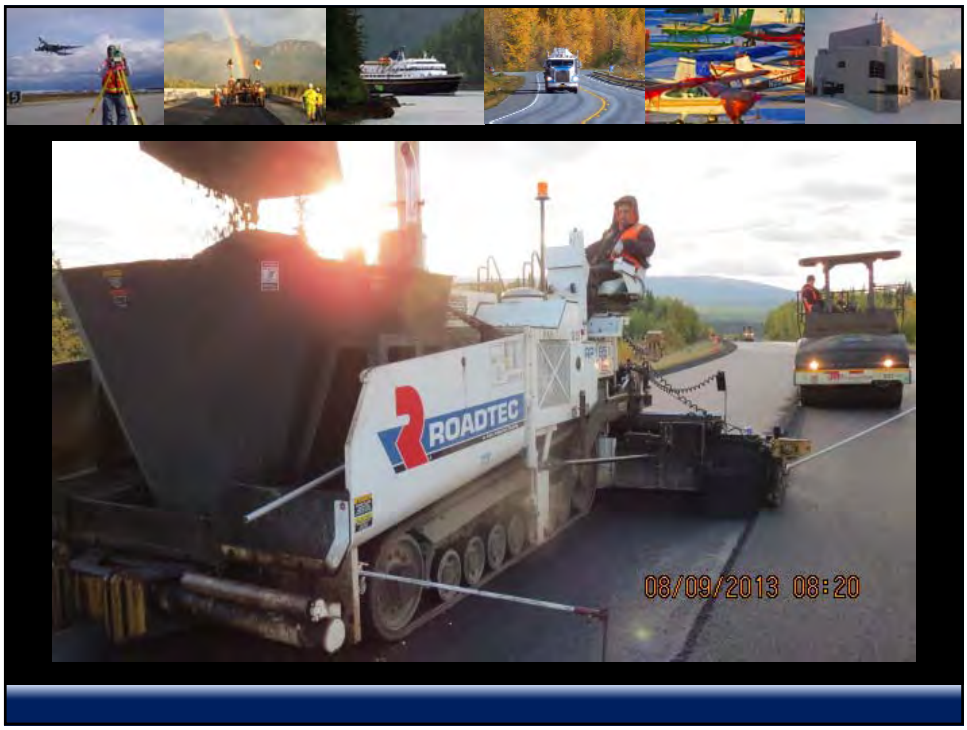
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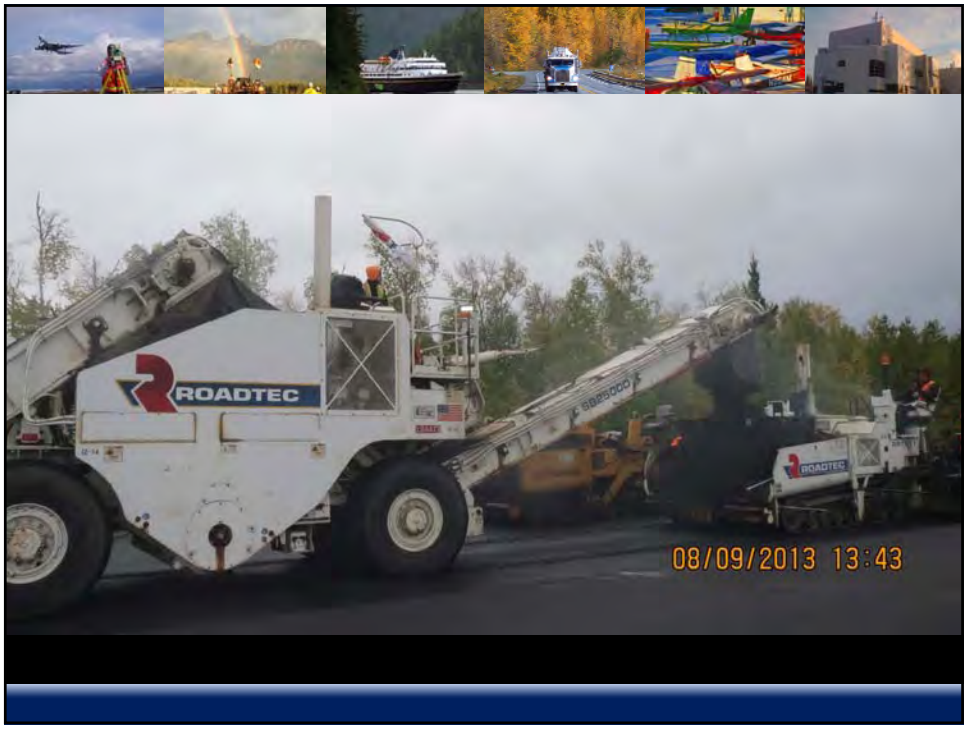
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ROADTEC
CARLSON
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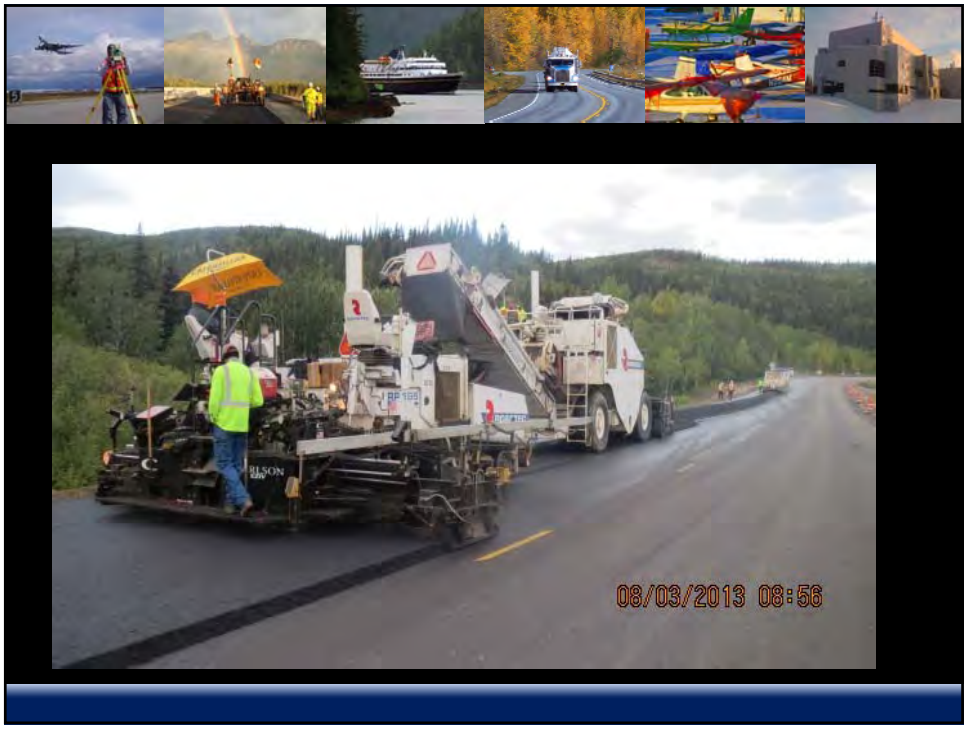
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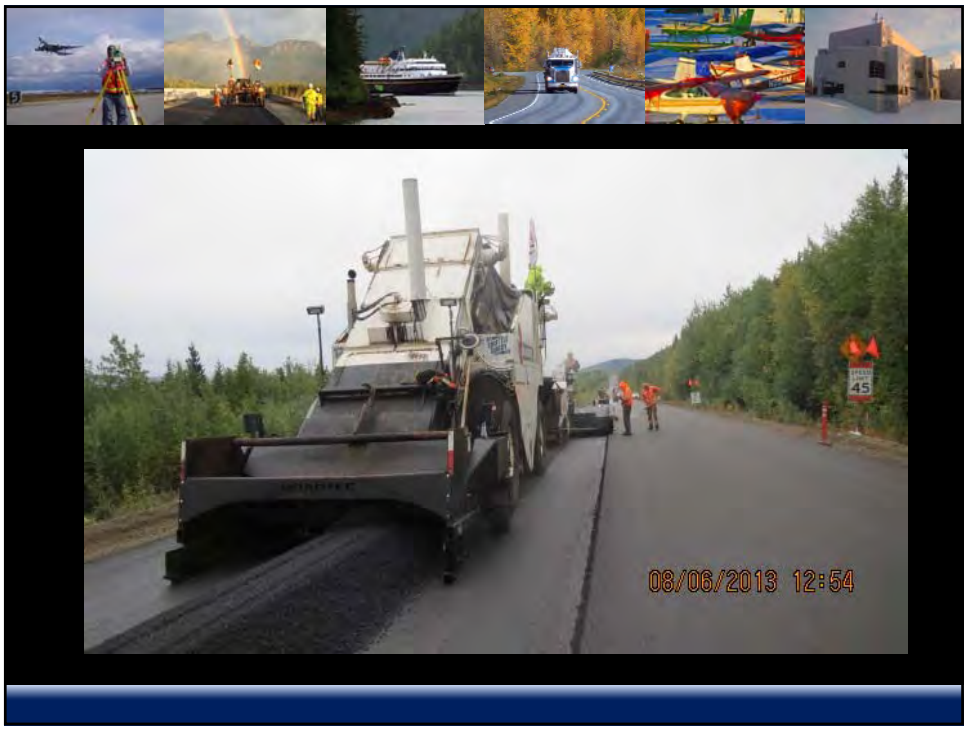
08/06/2013 12:54

Additional Thoughts

General practices still as important

- Mix Production QA/QC
- Proficient Laydown Personnel
- Effective Established Roller Pattern

Great Northwest Inc.