

Micro-Milling & Micro-Surfacing



Bottineau County – CP-0520(001) & CP-0547(002)
Micro-Mill, Crack Clean & Sealing, Pavement Repair, &
Micro-Surface

- Project Length: 10 mi
- 24' Top with 2' Reclaimed Asphalt Shoulders
- Sections varied from 4 ½" to 6 ½" Pavement



Design Considerations

Micro-Milling

- ▶ Eliminate surface irregularities and defects
- ▶ Improve ride
- ▶ +Bonus – fill in shoulders

Micro-Surfacing

- ▶ Type III Aggregate - Improve skid resistance
- ▶ Reduce cost

Resource

- ▶ NDDOT Dickinson District – TRP-SS-049(018)000

Cost Details

- ▶ Total Project Cost = \$679,477.49
- ▶ 411-0150 Micro-Mill = \$8,400/mi
- ▶ 950-9750 Asphalt Conc Crack Clean & Sealing = \$2,600/mi
- ▶ 421-0011 Aggregate for Microsurfacing Type III = \$24,600/mi
- ▶ 421-0020 Asphalt Emulsion for Microsurfacing = \$17,100/mi

Micro-Milling

- ▶ Max depth of 3/8"

Construction

- ▶ Performed by Industrial Builders Inc.
- ▶ 4 days using 7' mill (2 passes/lane)

Best Practices

- ▶ Avoid quarter crown
- ▶ Proper milling speeds



Crack Clean & Sealing

- ▶ Cracks < $\frac{3}{4}$ " to be routed $\frac{3}{4}$ " x $\frac{3}{4}$ "
- ▶ Complete 1 week prior to micro
- ▶ Sealant - Std. Spec. 826.02 A.2

Best Practices

- ▶ Avoid over-filling
- ▶ At least 1 week prior to micro



Micro-Surfacing

- ▶ Double application
- ▶ Type III Aggregate @ 25 lb/sy for scratch & wearing courses
- ▶ CQS-1Hp Emulsion @ 12%



Micro-Surfacing



Construction

- ▶ Performed by Mayo Construction Co.
- ▶ Finished in 7 days

- ▶ Typically 8-10 lane miles/day
- ▶ Centerline Overlap
 - ▶ Offset scratch course 6" from CL



Micro-Surfacing

Unique Situations

- ▶ Navigating curves
 - ▶ Slower speeds
 - ▶ Good communication with truck drivers
- ▶ Unmixed material
 - ▶ Easy to see discoloration
 - ▶ Good bond outside of unmixed area



Finished Product

- ▶ Rides better than before!



- ▶ Pictures taken 3/1/18

Finished Product

- ▶ Little to no snowplow damage
- ▶ Transverse cracks
- ▶ Nice driving surface



Questions?

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