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 $\frac{3}{4}'' \times \frac{3}{4}''$
- 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

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

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

- Eric Larson, EIT
- Wold Engineering, P.C.
- Eric_Larson@woldengr.com