Specification Update

ELI ULMER
ETS – TECHNICAL SERVICES
New Publication with all Supplementals and Additions.

2020
(2021 Construction Season)

Earthwork, Bases & Geotextiles

2021
(2022 Construction Season)

Lights & Signals

2022
(2023 Construction Season)

Concrete Pavement

2023
(2024 Construction Season)

* Hot Mix Asphalt Items are being incorporated as they change.
Section 109
Measurement and Payment

Weighing of Bituminous Material
- Provide a “Legible” shipment manifest

Progressive Payment
- Revised to comply with the North Dakota Century Code
- Allows additional Semi-final estimates

Final Progressive Payment
- Revised for clarity
- Added language to clarify when the final balance is paid
Section 203
Department Optioned Borrow

- Subdivided in sections
- Updated to include language from the Borrow Site form
- Remaining Borrow Royalty Payment (within 30 days of signed pit release)
- NDDOT pays final quantity of borrow when proof of payment is received
Section 420 - SP 1104(14)
Chip Seal Application
Temperature

Begin seal work after May 15 and on or before Sept 1

Apply to dry surface with a minimum pavement temperature of 60 °F (instead of 70 °F)
Section 550
Using Adjacent Concrete as Side Forms

• In place a minimum of 18 hours
• Saw cuts are complete for the full length of the area to be used as a form
• Only foot traffic or light weight power screed are used on the surface
Section 612
Reinforcing Steel

- Use 16 gauge non-corrosive wire ties (instead of 14 gauge)
Section 650
Bridge Deck Overlay
SP 926(14)

Will be included in next years Spec Book

Rewritten to include:

• Deck Concrete (Class AAE-5)
• Overlay Concrete (Low Slump)
• Updated description for surface tolerance
Surface Tolerance

- Check the profile using a 10 foot straightedge oriented in the longitudinal direction and starting at one end of the deck, move the straightedge transversely across the deck to the other edge with constant contact with the deck. Repeat this process in 5 foot intervals from one end of the deck to the other. Check the cross slope using the 10 foot straightedge oriented in the transverse direction and starting at one end of the deck, move the straightedge longitudinally from one end of the deck to the other end with constant contact with the deck. Repeat this process in 5 foot intervals from one side of the deck to the other.
Both directions of travel

Flaggers needed only when an encroachment occurs

Section 760
Rumble Strips

Fog Sealing CL & Traffic Control
Section 894
Digital Printing for Sign Sheeting

- Small change in appearance
Ride Specification

- 550 & 570 Profiling method will be through Special Provision only starting with 2021 projects
- Straight edge method will remain in spec book for New Concrete and CPR projects that don’t have the Special Provision
- When requesting SP, need to discuss if the ride spec will actually work especially for urban projects.
HMA Items

- Coring Location Change
- 3 Inch Lifts
- Density Incentive
- Longitudinal Joint Density
- Percent Within Limits
- New Technology
Coring Locations

2 cores taken in separate locations per subplot (instead of next to each other)

Lift Thickness

Allowing a maximum of 3” (Lifts of 1.5” to 3”)

NORTH Dakota | Transportation
Mat Density Incentive

- Decision made late October 2019
- Will be effective for 2021 Construction Season
- Will be included in the new spec book edition to be published in Spring 2020

- **DRAFT** table for specs >>>>>>>>>>>>

  - Possibly used for ALL FAA grades?

### Lifts of Pavement placed on aggregate base or reclaimed material

<table>
<thead>
<tr>
<th>Percent Payment</th>
<th>Avg. Pavement Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.03</td>
<td>≥92.6%</td>
</tr>
<tr>
<td>1.02</td>
<td>92.1% - 92.5%</td>
</tr>
<tr>
<td>1.00</td>
<td>91.0% - 92.0%</td>
</tr>
<tr>
<td>0.98</td>
<td>90.0% - 90.9%</td>
</tr>
<tr>
<td>0.95</td>
<td>89.5% - 89.9%</td>
</tr>
<tr>
<td>0.91</td>
<td>89.0% - 89.4%</td>
</tr>
<tr>
<td>0.85</td>
<td>88.5% - 88.9%</td>
</tr>
<tr>
<td>0.70</td>
<td>88.0% - 88.4%</td>
</tr>
</tbody>
</table>

### All Other Lifts of Pavement

<table>
<thead>
<tr>
<th>Percent Payment</th>
<th>Avg. Pavement Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.05</td>
<td>≥93.6%</td>
</tr>
<tr>
<td>1.03</td>
<td>93.1% - 93.5%</td>
</tr>
<tr>
<td>1.00</td>
<td>92.0% - 93.0%</td>
</tr>
<tr>
<td>0.98</td>
<td>91.0% - 91.9%</td>
</tr>
<tr>
<td>0.95</td>
<td>90.5% - 90.9%</td>
</tr>
<tr>
<td>0.91</td>
<td>90.0% - 90.4%</td>
</tr>
<tr>
<td>0.85</td>
<td>89.5% - 89.9%</td>
</tr>
<tr>
<td>0.70</td>
<td>89.0% - 89.4%</td>
</tr>
</tbody>
</table>
Longitudinal Joint Density

- Long Term Durability Problem
- Decision Document Signed
  - Decision 1: Require specifications for longitudinal joint construction
  - Decision 2: Require incentive/disincentive payments
Longitudinal Joint Density

SP 968(14) Longitudinal Joint Density in Hot Mix Asphalt Pavements

- Pay Factors

<table>
<thead>
<tr>
<th>Percent Payment</th>
<th>Avg. Pavement Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.03</td>
<td>≥ 91.1%</td>
</tr>
<tr>
<td>1.02</td>
<td>90.6% – 91.0%</td>
</tr>
<tr>
<td>1.00</td>
<td>90.0% - 90.5%</td>
</tr>
<tr>
<td>0.98</td>
<td>89.0% - 89.9%</td>
</tr>
<tr>
<td>0.95</td>
<td>88.5% - 88.9%</td>
</tr>
<tr>
<td>0.91</td>
<td>88.0% - 88.4%</td>
</tr>
<tr>
<td>0.85</td>
<td>87.5% - 87.9%</td>
</tr>
<tr>
<td>0.70</td>
<td>87.0% - 87.4%</td>
</tr>
</tbody>
</table>
Low Longitudinal Joint Density

SUBLOTS WITH AVG DENSITIES BELOW 90.0% NEEDS TO BE SEALED WITH PG ASPHALT CEMENT

SUBLOTS WITH AVG DENSITIES AT OR BELOW 87.0% NEED CORRECTIVE ACTION
Cores taken adjacent to mat density cores.

Entire core taken within 6” of edge of joint
Notched Wedge

• Working on changes to the SP to include notched wedges if the Contractor chooses to use them.

• This would require different coring locations
Percent within Limits SP

- 2 Projects with this SP
- Valley City District       PCN: 21578 SS-2-046(048)030
- Grand Forks District      PCN: 22591 NH-6-001(041)162
New Technology

• Continuing with Intelligent Compaction Projects
• Continuing with Paver Mounted Thermal Profiling
• Researching Rolling Density Profiling System for use as compaction acceptance
Density Profiling System

- National Road Research Alliance – Peer Exchange
- SS-8-018(094)075
HMA Workbook

- Excel workbook that would house everything you need for an HMA job
- Working out the bugs and checking for accuracy
- Possible training in the future
Utility SP

• Start early during the Environmental Phase
• Include everything the Contractor needs to know and what to expect
Thank You

ETS – Technical Services Section
for all of your specification questions

Email
eulmer@nd.gov

Phone
701-328-4432