Appomattox Bypass Rubblization and Overlay

Rte 460 East Bound Lanes

12/6/18
Project Overview
Rehabilitation of Jointed Plain Concrete Pavement
Scope of Work

- Rubblize existing concrete pavement structure including the ramps and shoulders
- Full depth removal of material underneath three overpasses to maintain vertical clearance
- Overlay rubblized concrete/stone with base, intermediate and surface courses of asphalt concrete
- Raise grade 8”
Accompanied Items of Work

- Traffic control
- E&S Control
- Pavement markings
- Remove and replace guardrail
- Demolition of pavement
- Remove and replace curb
- Remove and replace signage
- Underdrain work
- Remove and replace drainage structures
- Borrow area
- Seeding
Sequence of Construction
Paving the Way

- Rubblize the passing lane, prep removal sections and lay the base lift the length of the project
- Switch traffic and rubblize the travel lanes, acceleration/deceleration lanes and the ramps. Prep the removal sections
- Pave all layers for the length of the project
- Complete all items of work that are accessible on the right side of the project
- Make the final traffic switch and lay the last two layers of material and complete all remaining items of work
Completing the Work
Traffic Control

• Maintain a safe work zone for both the traveling public and workers

• Navigating traffic through the work zone while limiting impact to the ramps

• Traffic switches, temporary striping and detours
Rubblization

- Utilized Antigo Construction
- Headquartered in Antigo, Wisconsin
• Results
Maintaining Overpass Clearances

- Three overpasses required full depth removal of pre-existing pavement structure
- Transitions were put into place to compensate for final grade
Different Pavement Structure

- 15” Aggregate Base Material
- 7” BM-25.0D+0.8
- 2” IM-19.0D
- 2” SM-12.0D
- UD/Outlet Pipe
- 26” Total
Pave it Black

• Began with 4” layer of BM-25.0D+0.8
• Utilized Shuttle Buggy for all layers
• Paving surface was different than anticipated
Rough Ride

- First lift of BM-25.0+0.8 was too rough
- Decided to not release traffic upon base layer and place IM layer early
Underlying Causes

- Rubblized concrete did not turn out as expected
- Soft sub-grade underneath stone base
- Led to loss of traction and rutting
- Hand work and shuttle buggy became necessities
- Day saved by 1999 ProPave Champion track paver
Placing the IM Early

- Traffic was placed on 4” of BM-25.0D+0.8 and 2” of IM-19.0D

- 14’ width on IM layer
Switching Traffic

- Temporarily striped and seeded left lane
- Shifted barrier wall
- Began work in the right lanes
- Managed traffic through the ramps
Ramp Control

- Could only close two at a time, for a maximum of seven days
- Treated typical section the same as mainline, except for 460 Bus
- Utilized temporary overlay markers to delineate traffic
- Utilized daily closures for subsequent layers
Working from Right to Left

- Installing new asphalt curb and backup material
- Remove and replace guardrail
- Hang permanent signage
- Remove and replace drainage structures
- Permanent pavement line markings had to be placed directly behind paving train
- All other pavement markers could be placed at a later date
Inlay Tape Line Marking
THANK YOU

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