PIATT COUNTY MONTICELLO ROAD COUNTY HIGHWAY 4 WHITETOPPING RUBBLIZATION

THOSE INVOLVED

- Agency: Piatt County
- Contractor: Open Road Paving Company, LLC
- Sub-Contractor: Antigo Construction Inc.
- Lead Consultant: Fehr-Grahm & Associates
- Consultant: Engineering and Research International, Inc.

PROJECT SCOPE

- Original project was to add 4 foot safety shoulders
- New drainage structures and upgrade ditches
- Existing 5 miles of 5 inch PCC Pavement Whitetopping placed in 2000 showing signs of distress







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- New drainage structures and upgrade ditches
- Existing 5 miles of 5 inch PCC Pavement Whitetopping placed in 2000 showing signs of distress
- Decision was made to address failing PCC Pavement







 Remove existing PCC Pavement and place new HMA directly over existing HMA Pavement

- Remove existing PCC Pavement and place new HMA directly over existing HMA Pavement
- Remove existing PCC Pavement and existing HMA Pavement and place new PCC Pavement over Base Course (Rigid Pavement Design)

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- Remove existing PCC Pavement and existing HMA Pavement and place new PCC Pavement over Base Course (Rigid Pavement Design)
- Remove existing PCC Pavement and place new PCC Pavement over existing HMA Pavement (Whitetopping Pavement Design)
- Rubblize existing PCC Pavement and place new HMA over rubblized PCC Pavement

REMOVE PCC 7.75" HMA

REMOVE PCC	REMOVE PCC & HMA
7.75" HMA	7.25" PCC (Rigid)

REMOVE PCC	REMOVE PCC & HMA	REMOVE PCC
7.75" HMA	7.25" PCC (Rigid)	9.00" PCC (Whitetopping)

REMOVE PCC	REMOVE PCC & HMA	REMOVE PCC	RUBBLIZE PCC
7.75" HMA	7.25" PCC (Rigid)	9.00" PCC (Whitetopping)	4.75" HMA







PROPOSED CROSS SECTION



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HMA LEVEL BINDER

- 2.5" TO 3.5" thick depending on location
- To be placed full width in two separate but equal lifts
- IL 9.5 Fine Graded level binder
- PG 64-22
- N50
- Concerns over first lift thickness and eventual ride quality

PROPOSED CROSS SECTION



HMA BINDER

- Single lift of Fine Graded Binder
- 2.75" Thick placed full width
- PG 58-28
- N50

PROPOSED CROSS SECTION



HMA LEVEL BINDER

- 0.75" HMA Level Binder
- Placed full width
- IL 9.5 Fine Graded level binder
- PG 64-22
- N50

FINAL CROSS SECTION



HMA SURFACE

- 1.5" HMA Surface
- Placed full width
- IL 9.5
- PG 64-22
- N50

RUBBLIZING EQUIPMENT

- Multi-head Breaker (MHB)
- Z-Pattern Steel Grid Roller
- Vibratory Steel Wheel Roller
- Pneumatic Tired Roller

MULTI-HEAD BREAKER

- Self-contained, self-propelled MHB
- Hammer heads shall be mounted laterally in a single row or in pairs with half the hammers in a forward row and the remainder diagonally offset in a rear row
- Hammer drop height shall have the ability to be independently controlled











Z-PATTERN STEEL GRID ROLLER

- Self-contained, self-propelled vibratory steel wheel roller with a Z-pattern grid cladding mounted transversely to the surface of the drum
- Minimum gross weight of 10 tons







VIBRATORY STEEL WHEEL ROLLER

• Minimum gross weight of 10 tons

PNEUMATIC TIRED ROLLER

 Roller shall develop a compression of not less than 300 lb/in nor more than 500 lb/in of width of the tire tread in surface contact

RUBBLIZING SPECIFICATIONS

- Upper half of the pavement shall be broken such that 75% of the pieces are a maximum of 3"
- Lower half of the pavement shall be broken such that 75% of the pieces are a maximum of 9"

COMPACTION REQUIREMENTS

- Minimum of four passes with Z-pattern roller
- Minimum of four passes with a vibratory roller
- Minimum of two passes with a pneumatic-tired roller
- Minimum of two passes with a vibratory roller immediately prior to overlay













AWARDED COST

- Total awarded bid \$4,853,677.40
- Concrete Rubblization bid \$84,489.75 (62,585 SQ YD @\$1.35)



SS-1H at 0.30 GAL/SQYD









QUESTIONS?