



Montana Department of Transportation
2701 Prospect Ave.
P.O. Box 201001
Helena, MT 59620-1001

MEMORANDUM

To: Kevin Christensen, PE
Construction Engineer

From: Paul Jagoda, PE
Construction Engineering Services Engineer

Date: 25 July 2011

Subject: Construction Review Report – Great Falls District
NH 60-2(90)82
Jct S-227/228 – Mehmke Hill
Control Number: 6958
Contract Number: 08710

Please find the attached Construction Review Report for the subject project. If you have any questions or require additional information, please contact me or Terry W. Wickman.

PJ/TW/tww

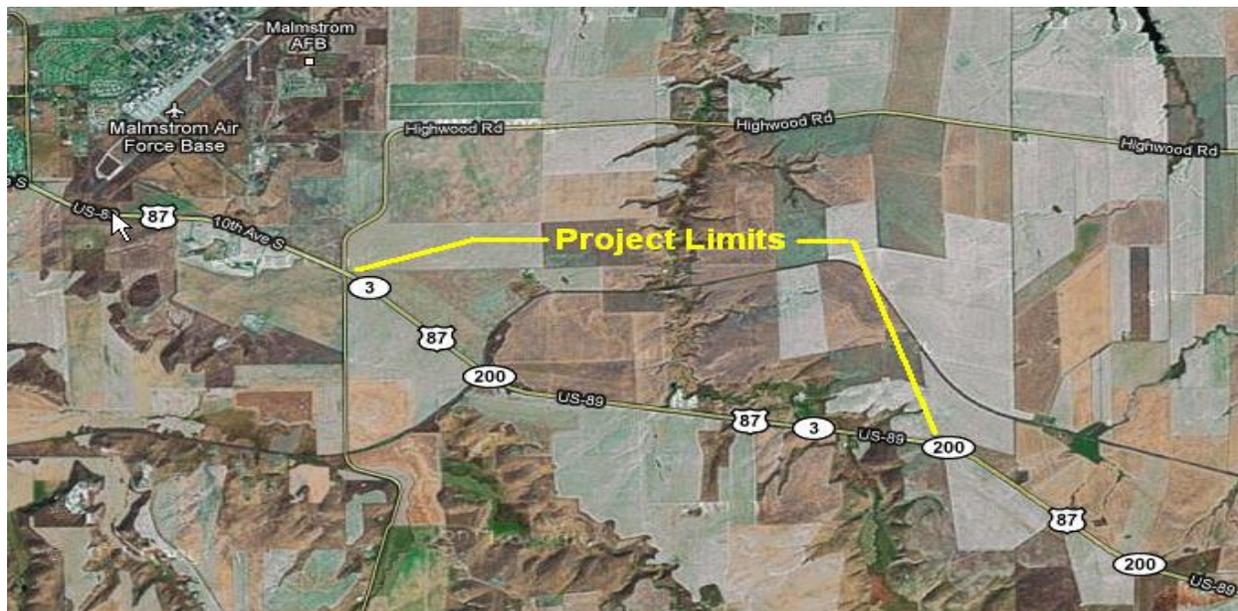
cc: Dwane Kailey, PE	Paul Ferry, PE	Stan Kuntz, DMS
Jim Walther, PE	Tim Conway, PE	Jim Dunbar
Mick Johnson, DA	Tom Martin, PE	Mike Dyrdaahl
Doug Wilmot, PE	Matt Strizich, PE	Helen Varcoe
Bob Vosen, PE	Jeff Jackson, PE	Dave Hand
Harold Woodhouse, EPM	Lesly Tribelhorn, PE	Stephanie Smith, DEO
Michael Kulbacki, PE-FHWA	Lee Grosch, PE	Joe Nye
Alan Woodmansey, PE-FHWA	Tom Atkins	Devin Roberts
Dan Smith, PE-FHWA	Steve Prinzing, PE	Construction Reviewers
Lisa Durbin, PE	Christie McOmber, PE	
Suzy Price	Jeania Cereck	



CONSTRUCTION ENGINEERING SERVICES PROJECT REVIEW REPORT

Project Number:	NH 60-2(90)82	Letting Date:	29 July 2010
Project Description:	S-227/228 – Mehmke Hill	MDT District:	Great Falls
Control Number:	6958	EPM:	Harold Woodhouse
Contract Number:	08710		
Review Date:	29 June 2011		
Reviewed By:	Terry W. Wickman	In Company With:	Mike Livergood, CES 5
Project Description:	Cold in-place recycling, overlay, seal & cover, and guardrail on a section of US 87/MT 200/MT 3 in Cascade County.		
	The project is located east of Great Falls, beginning at RP 81.5 and extends west for 5.8 miles to RP 87.3, near the junction with Secondary Routes S-227/S-228.		
Review Type:	<input type="checkbox"/> Constructability	<input type="checkbox"/> Investigatory	<input checked="" type="checkbox"/> Oversight
	<input type="checkbox"/> Post Construction	<input type="checkbox"/> Subject Specific-	<input type="checkbox"/> Training

CONTRACT INFORMATION	
Contractor:	Riverside Contracting, Inc.
Contract Amount:	\$2,889,084.69
Contract Payments To-Date	\$ 33,676.73 (as of 10 June 2011 [Est. No. 2])
Contract Time/Completion Date:	75 Working Days
Contract Time Used to-Date:	14 Working Days (as of 28 June 2011)
Award Date:	10 August 2010
Notice to Proceed Date:	01 May 2011
Date Work Began:	10 November 2010



Project Location



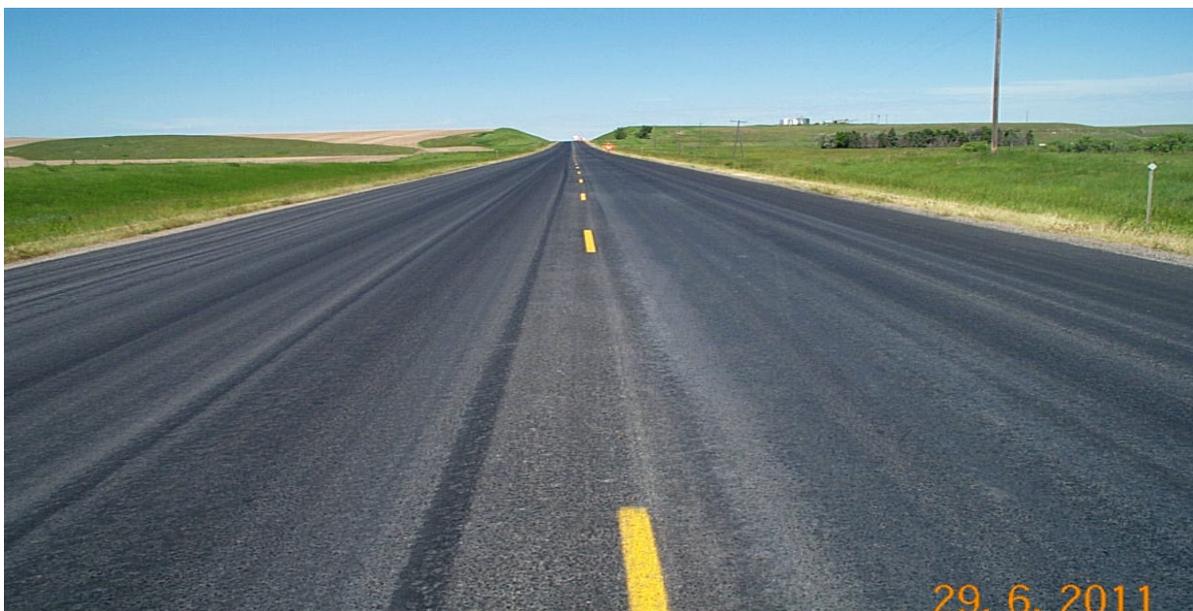
General Information: The Contractor for this project recently completed a similar cold in-place recycling project in Pondera/Liberty Counties known as East of Conrad – East (Project No.: STPS 218-1(10)19/C.N.: 6977). The Contractor is using the same equipment train on this project as they used on the East of Conrad – East project. By comparison, the major difference between the two projects lies in the fact the East of Conrad – East project did not include an overlay over the cold-in-place recycled course, whereas this project does include a 0.15’ plant mix overlay. Both are to receive seal coats.

This Reviewer completed a Construction Review Report for the East of Conrad – East project and is dated 05 July 2011. This report is available for viewing through the following link:

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Phases Inspected: Cold in-place recycling; Traffic Control; Temporary Erosion Control.

Work In Progress: Actual cold in-place recycling work began on 22 June 2011. At the time of this review, cold in-place recycling had been completed full-width of the roadway from the Beginning of the Project @ RP 81.5, extending westerly for about 1.7 miles, to about RP 83.2. This section almost appeared as though it had already received the 0.15” overlay, when in fact it had not. Based on control strip densities, all compaction tests have met specification requirements to date. No evidence of raveling, blow outs, rutting, or pot holes was observed. The section looked and rode very well.



Cold In-Place Recycling Completed Full-Width



On the day of this review, cold- in-place recycling was in progress in the eastbound shoulder and a portion of the driving lane at about RP 84.8 and was proceeding east. As stated above, the 185' (\pm) of the equipment “train” (not including Nurse Truck or paving equipment) is the same as that used on the East of Conrad – East project. Mike Livergood, CES 5, stated that the Contractor has been able to complete about 2.5-lane miles per 11 – 12-hr. shift. During the time I was on the project, the rate of travel for the equipment train was averaging about 30-lin. ft/minute. At these production rates, milling depths (0.20' to 0.25' per the Typical Sections), and quality/integrity of the existing plant mix, the Contractor was replacing the cutting teeth twice per shift.



Mechanically-Coupled Cold In-Place Recycling Equipment “Train” – Approximately 185+ Ft. in Length



Nurse Truck Transferring Loads of Lime Slurry & Emulsified Asphalt to Their Respective Units in “Train”



Water Tender Truck Feeding Milling Machine Followed by Lime Slurry Tanker Trailer



Milling Machine with 12.5-ft. Cutting Head



Vibratory Screen Deck with Crushing Unit to Reduce Oversize Plant Mix Material to Meet 100% Passing 1.25" Screen Requirement



Bypass Chute on Vibratory Screen Deck for Rejecting Oversized Crack Sealant in Stowed Position

This contract contained the same Special Provision as the East of Conrad – East contract regarding removal of any oversized crack sealant. The Provision states that all crack sealant not passing the 1.25” screen is to be removed and wasted as directed by the Project Manager. However, the Special Provision does not address what is to be done with any crack sealant that passes the 1.25” screen and ends up on the roadway – either on the surface, partially embedded, or completely embedded in the newly placed recycled pavement.

It is noted, however, that there has been little to no crack sealant evident on this project to date. As a result, the bypass chute on the vibratory screen deck has not been needed – as seen in the photo immediately above.



Pugmill-Type Unit for Blending Recycled (Milled) Pavement/Lime Slurry/Emulsified Asphalt Followed by Emulsified Asphalt Feed Tank (Pup)



Laydown of Processed & Blended Recycled Plant Mix/Lime Slurry/Emulsified Asphalt



Similar to the East of Conrad – East project, the Contractor requested a change to reduce the overall milling width of the roadway from that shown in the Typical Sections in order to leave an approximately 6 to 12-inch “wedge” of existing plant mix along each edge of the pavement. The rationale being that the “wedge” of material would provide lateral constraint during compaction and reduce/eliminate the possibility of the mix rolling out during compaction and/or breaking away (over time).

The MDT reviewed and approved this proposal, as was the proposal at East of Conrad – East. Change Order No. 2 was issued to reflect this change.



Milling Machine Leaving 6-12- inch “Wedge” of Existing Plant Mix along Edge of Pavement



Paver Placing Recycled/Blended Pavement to Meet Edge of “Wedge”



Breakdown Roller Making Initial Pass Down Center of Lane



Breakdown Roller “Pinching” Mix into Place Against “Wedge”

Traffic Control: Flag stations were in place at each end of the Work Zone, which was set to accommodate the anticipated length for a day’s production run (i.e., 3± miles w/buffer areas). Pilot cars were leading traffic through the length of the single Work Zone. Due to the time of year and the volume of traffic, the queues tended to be fairly long. However, traffic was not being held for more than 10 – 12 minutes while I was on the project.

Erosion Control and Environmental Issues: This project involves work on the PTW surface only. Consequently, the need for any Temporary Erosion Control BMPs beyond the natural vegetative barriers is virtually nonexistent.

Change Orders: Four change orders have been processed to date:

- C.O. No. 1 – Changes the Notice to Proceed date to 10 November 2010 for purposes of extracting samples for the mix design and stockpiling materials, after which contract time would be suspended until the original NTP date of 01 May 2011. A no cost change and no contract time added;
- C.O. No. 2 – Modifies Typical Sections to leave a 6 to 12 “wedge” of plant mix along each edge of existing pavement. A net cost reduction of \$8,452.50;



- **C.O. No. 3** – Changes the Emulsified Asphalt CRS-2P requirements to meet the new specification. A net cost increase of \$5,510.00 with no contract time added;
- **C.O. No. 4** – Changes the time period requirement stipulated in Special Provision No. 22 for placing overlay on recycled pavement from “within one week” to “within 30 calendar days”. Further, the Contractor is required to maintain and repair all areas in the CIPR that ravel, blow out, rut, or any other damage to the CIPR due to the extended overlay time period. The Contractor is responsible for all additional costs of labor, equipment, and materials associated with any repairs to the CIPR including traffic control. A no cost change. No contract time added or suspended due to this change.

Claims: None to date.

EPM Diaries: Did not review.

Questions from Project Staff: None.

Issues Discussed: Mike Livergood, CES 5, noted that because of the multiple passes required to mill the full-width of the roadway in many areas, the Contractor was compensating for any “overlaps” with the milling machine by adjusting the levels of both the lime slurry and emulsified asphalt as needed to account for these “overlaps”.

Issues Discussed and Resolved: None.

Issues Discussed and Follow-Up Needed: None.

Areas of Good Practice/Positive Aspects: Project Inspectors Mike Livergood, CES 5, and Dan Betts, CET 3, were well versed on contract requirements and had a good handle on the operation.

Other Follow-Up Items: None at this time.

-End of Report-