



Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Kevin Christensen, PE
Construction Engineer

From: Paul Jagoda, PE
Construction Engineering Services Engineer

Date: June 12, 2009

Subject: Project Review – Billings District – Garryowens - South

Please find attached a Construction Review Report for the subject project.

If you have any questions or require additional information, please contact me or John “Chugger” Huber.

PJ/JH/jh

cc: Loran Frazier, PE Suzy Price Jim Walther, PE
Stefan Streeter, DA Lisa Durbin, PE Mike Tayler, DCE
Paul Rieger DOE Alan Woodmansey, FHWA Kent Barnes, PE
Timothy Ramaeker, EPM Paul Ferry, PE Bill Henning, Lab Supervisor
Lesly Tribelhorn, PE Matt Strizich, PE Construction Eng. Services
Tim Conway, PE Mike Dyr Dahl

CONSTRUCTION ENGINEERING SERVICES PROJECT REVIEW REPORT	
Project Number: IM 90-9(100)517	MDT District: Billings
Project Description: Garryowen - South	EPM: Timothy Ramaeker
Control Number: 5117	
Letting Date: Dec. 4, 2009	
Review Date: June 3, 2009	
Review Made By: John Huber	In Company With: NA
Project Description: Digouts, cold-in-place recycle, plant mix overlay, seal and cover and bridge approach rail improvements. The project is located on interstate 90 beginning south of Garryowen at RP 516.64 and extends approximately 11.9 km to RP 524.00. This project is located in Big Horn County and entirely within the Crow/Apsaalooke Nation Reservation.	
Review Type: (See attached sheet on review report types)	
<input checked="" type="checkbox"/> Oversight <input type="checkbox"/> Subject Specific- <input type="checkbox"/> Training <input type="checkbox"/> Investigatory <input type="checkbox"/> Constructibility <input type="checkbox"/> Post Construction	

CONTRACT INFORMATION:

Contractor: Riverside Construction

Contract Amount: \$6,064,209.93

Contract Time/Completion Date: 90 working days – time used to date 26 days

Phases Inspected: Digouts & underdrains

Work in Progress: At the time of my review all the underdrains had been installed. This work consisted of providing a subsurface drainage geotextile-wrapped 100 mm Corrugated Perforated Polyethylene Drainage Pipe. This pipe was placed in a 0.75 m trench surrounded by Special Borrow which was encapsulated by geotextile. The digouts locations are spread throughout the project in the driving lane or the outside shoulder of the interstate. These digouts were excavated to a depth of 0.75 m, geotextile place on the bottom and sides of the digout. The digout replacement material was special borrow and millings mixed together installed in lifts and compacted. Density was tested for uniformity

with an average compaction of 135.0 lbs per cubic foot. The EPM informed me that subgrade in the location of the digout was very weak and over optimum moisture. 150 mm of plant mix is placed on top of the special borrow which brings the surface back up to the original plant mix surface. He informed me that the original interstate surfacing was constructed of the subgrade, plant mix base and plant mix surfacing. At the time of my review none of the westbound dig outs had the plant mix placed in them, which in turn caused the driving lane to remain closed. The more desirable method would have been to fill the dig outs with mix as they progressed down the road thus enabling them to open up the driving lane as they go. In visiting with the District they said on future projects they would require this method in the Special Provisions. The existing plant mix surface has a number of very wide cracks, up to 3 inches along the edge line. These cracks were filled with flowable fill which is a mixture of Portland Cement, fly ash, fine aggregate air entraining admixture and water. Foreign material was removed from the cracks by using high pressure water and the flowable fill was placed in the crack. To my knowledge this is a new method to repair wide cracks. The remainder of the project will consist of milling the driving lane, placing cold-in-place mix in its place and doing a plant mix overlay over the entire interstate.

Traffic Control: Traffic controlled by closing lanes.

Erosion Control & Environmental Issues: No BMP's needed.

Change Orders: none to date

Claims: none to date

EPM Diaries: not reviewed

Questions from Project Staff: none

Issues Discussed and Resolved:

- Vertical edge left at dig outs next to driving lane. The District directed the EPM to create a slope. During my review the contractor was using plant mix to make a safety slope.

Issues Discussed and Follow-up needed (note: detail the needed follow-up): none

Areas of Good Practice/Positive Aspects: The EPM was advance to the position of Acting EPM not long ago and is open to suggestions and willing to use the available resources..

Other Follow-up Items: none

See Photo's Below:





**CRACK FILLING
USING FLOWABLE
FILL**



PATCHED DIGOUT



**SPECIAL BORROW WITH
50% MILLINGS**

DRIVING LANE DIGOUT

