

**Montana Department of Transportation
Research Programs**

**EVALUATION OF CRACK-SEALING MILLED PAVEMENT IN THE EFFORT
TO REDUCE TRANSVERSE CRACKING**

Final Report 2018

Location: Teton County, Interstate 15, Approximately Milepost 312; Northbound Lanes

Project Number: Dutton N & S IM 15-6(35)309

Type of Project: Crack-sealing of Milled AC Pavement

Principal Investigator: Craig Abernathy: Experimental Program Manager

Date Constructed: August 2005

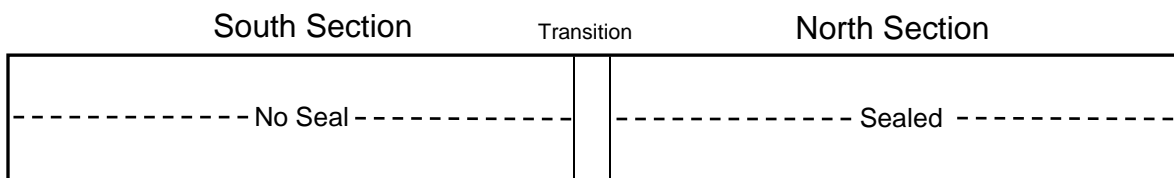
Evaluation Date: March 2018

Objective

To determine if crack sealing milled pavement prior to overlay will deter the migration of transverse cracking, or have an effect on pavement performance, when compared to an adjacent milled pavement that receives no crack sealing treatment.

Experimental Design

Two 1000 ft. sections were delineated during construction in the I-15 northbound lanes at approximately milepost 312. One section (north) received the normal crack seal procedure and the second section (south) received no treatment. A 100 ft. transition zone separates the two sections. An ongoing crack map of the sections is included in this report to compare the progression of cracks to both sites.



Northbound I-15 – MP 312

This project was constructed during the summer of 2005. The project has been chipped sealed prior to the 2007 analysis. The 2010 site inspection did not take place. The following images are sample shots during construction and project performance to date.



Grinding in process



Depth and width of grind



Sealed with Crafc
Hot-applied Modified
Asphalt Sealant



Prior to Construction - 2005

South Section: No Seal - 2006



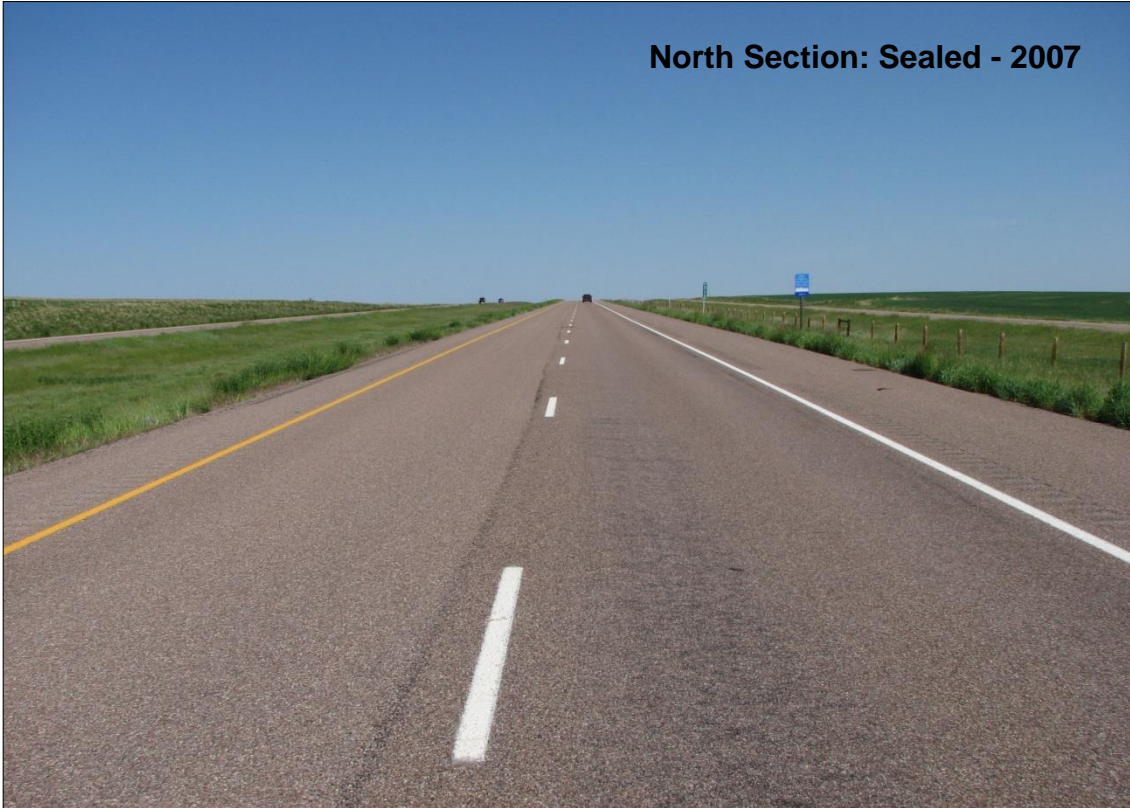
North Section: Sealed - 2006



South Section: No Seal - 2007



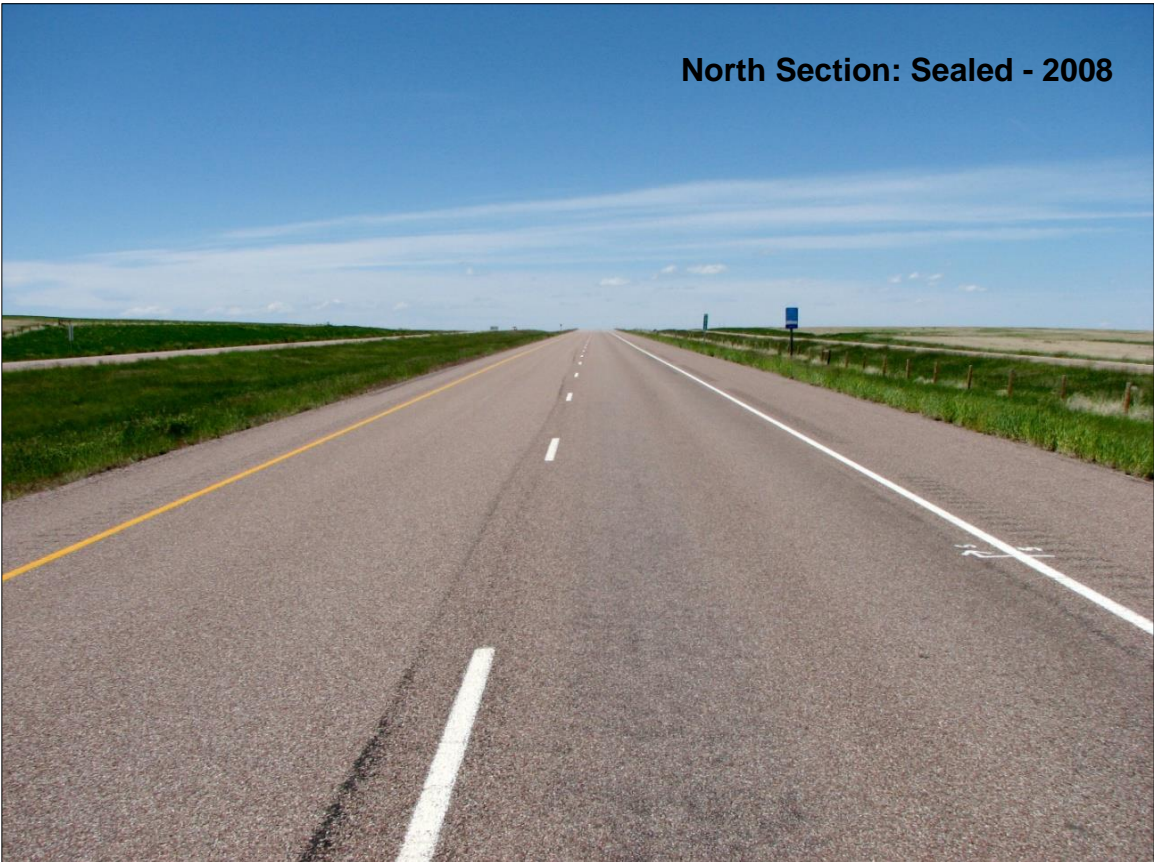
North Section: Sealed - 2007



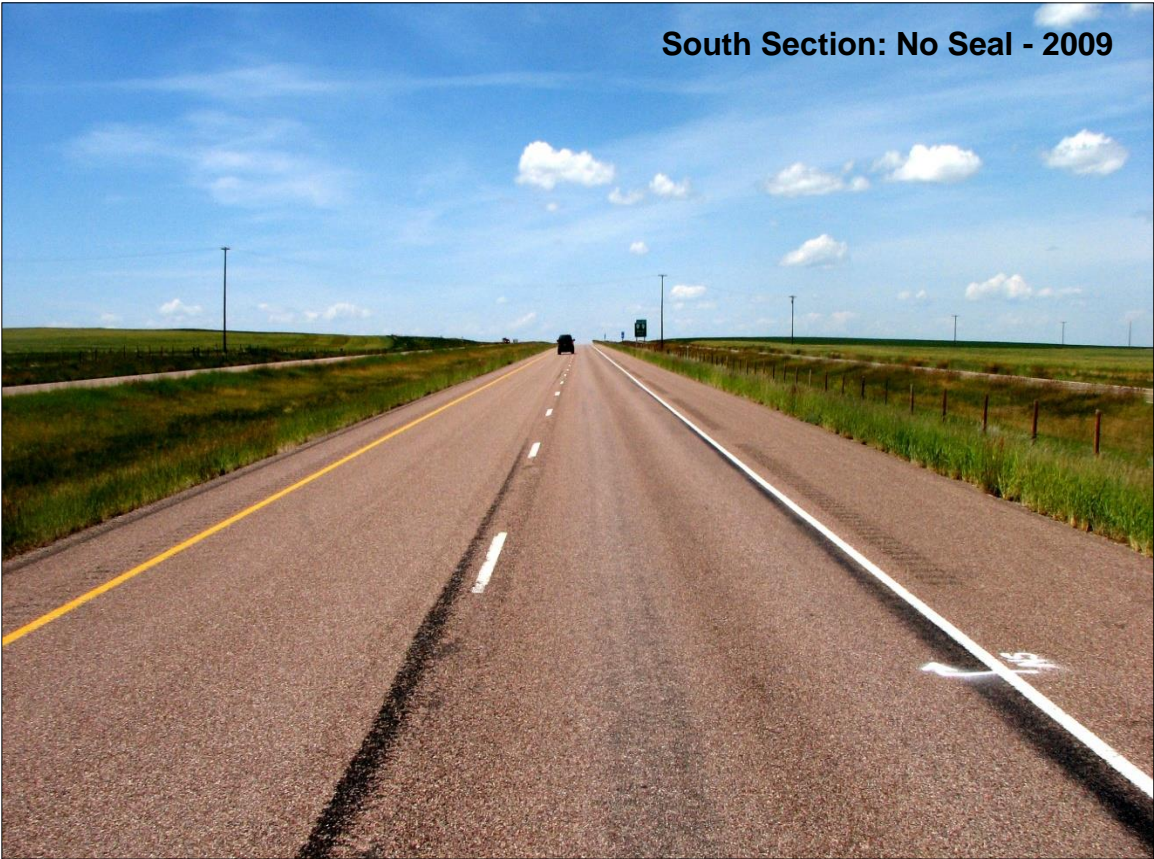
South Section: No Seal - 2008



North Section: Sealed - 2008



South Section: No Seal - 2009



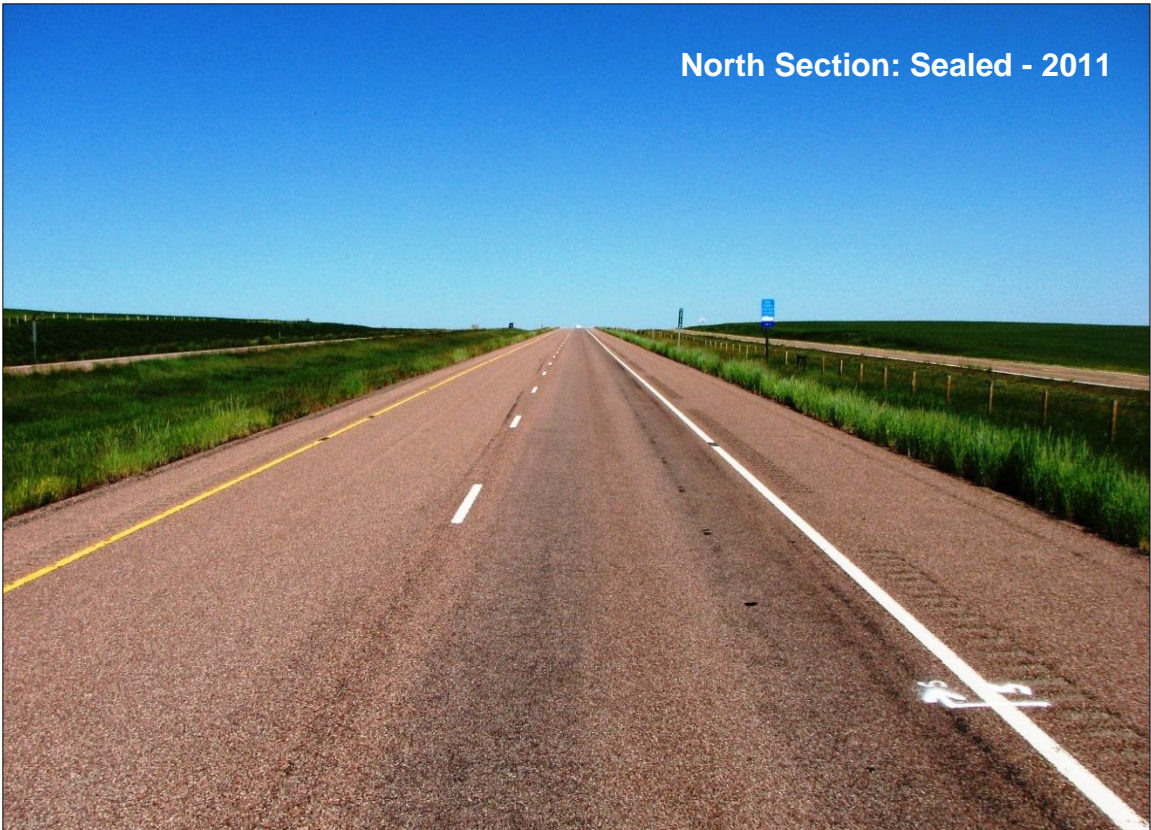
North Section: Sealed - 2009



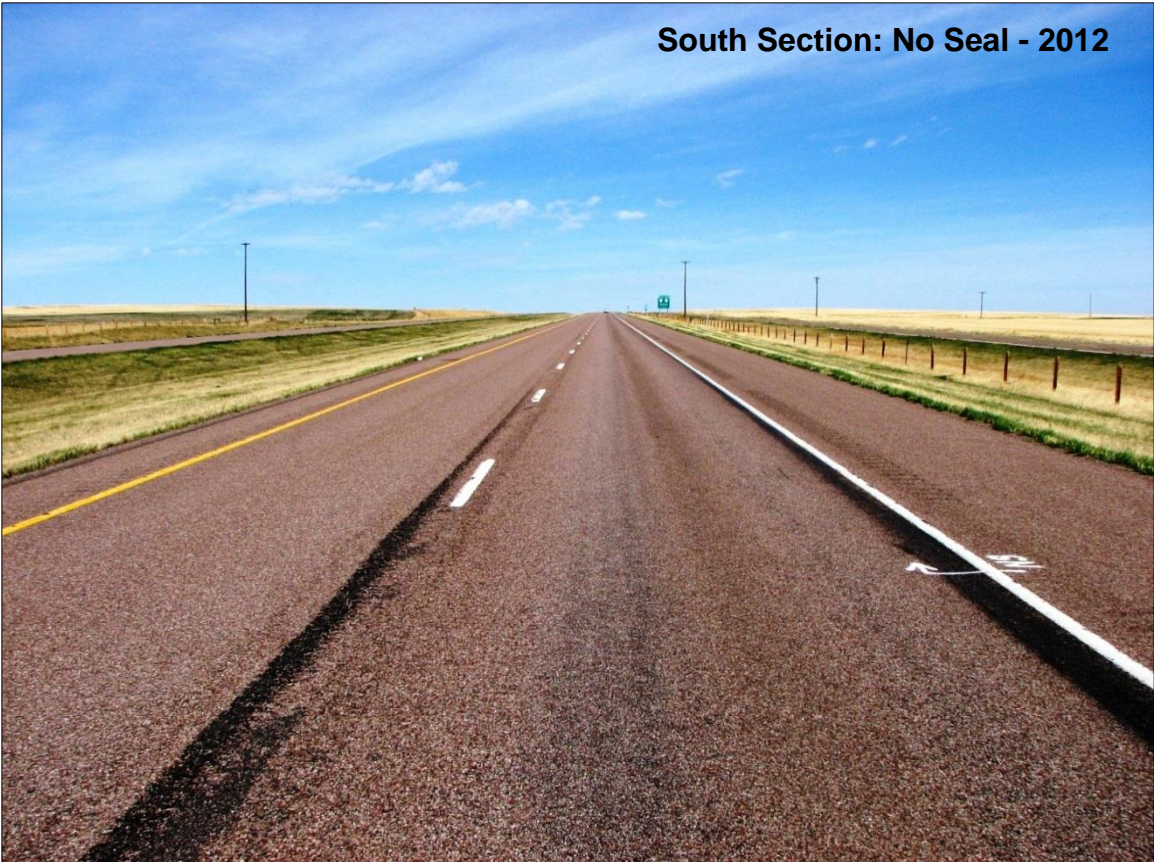
South Section: No Seal - 2011



North Section: Sealed - 2011



South Section: No Seal - 2012



North Section: Sealed - 2012



South Section: No Seal - 2013



North Section: Sealed - 2013

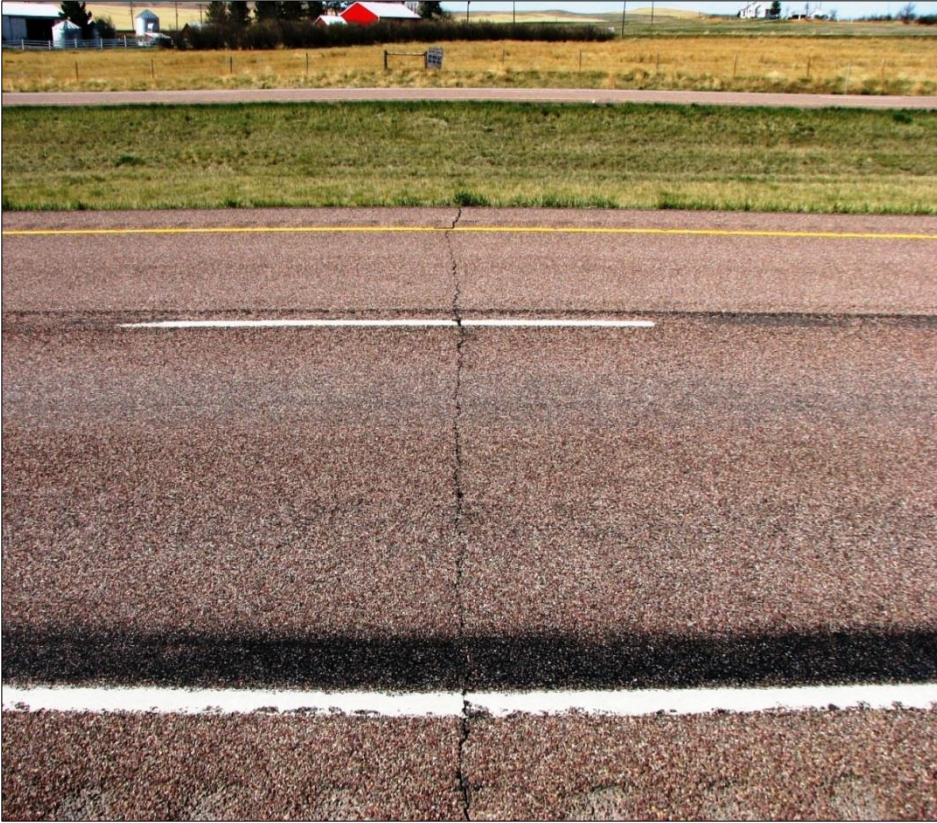




← Example of low-severity cracking on sealed north section (2009)

↓ Example of low-severity cracking on un-sealed south section (2011)





← Example of low-severity cracking on un-sealed south section (2012)



← Example of low-severity cracking on un-sealed south section (2013)

Project Overview - 2014



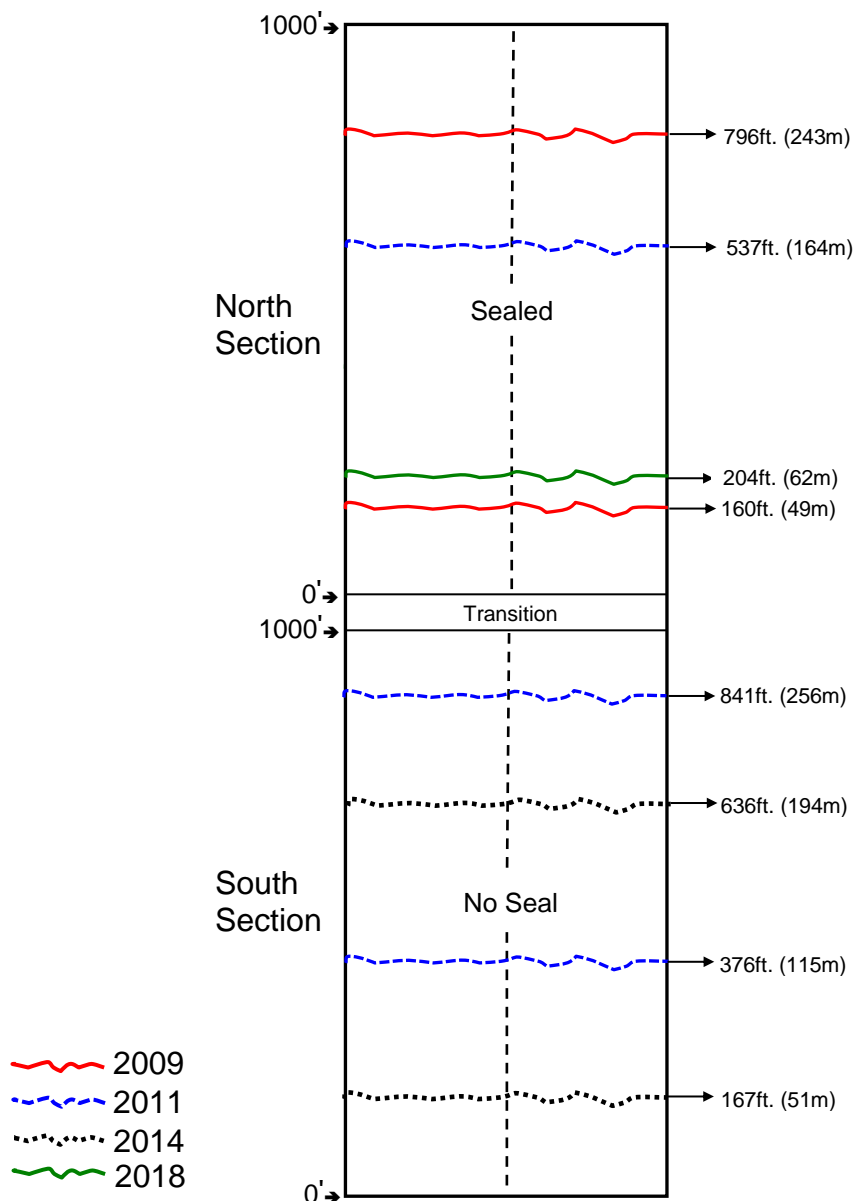
Project Overview - 2015



Documented Cracking – Interstate 15/Northbound lanes: Mile Point 312

The south and north sections were initially chosen due to the homogeneous condition and identical number of cracking on both sites. No transverse cracking occurred from construction date of 2005 to 2008. During the 2009 inspection the sealed north section had developed two low-severity cracks (red lines). The blue lines represent cracking to date (low-severity) documented with the 2011 site inspection; with two additional cracks appearing in the no-seal section between 2013 & 2014. To date all cracks on both sections have been crack sealed at the surface.

One additional low-severity transverse crack was documented in early 2018 in the sealed section of the project. The graph depicts the approximate location and distance from the start of each test section, (crack locations approximate; not to scale). No additional site inspections will occur since the section of interstate is being repaved.



To view this report online and other experimental projects go to:

http://www.mdt.mt.gov/research/projects/crack_sealing.shtml