

EXPERIMENTAL PROJECTS WORK PLAN

The Use of 3D Synthetic Geocomposite for Added Subsurface Drainage Layer in Asphalt Cement (AC) Pavement

Location: Gallatin County/Butte District: State Highway 287 (P-87), R.P. 6.81-6.95

Project Name: Jct. Reynolds Pass - Quake Lake

Project Number: STPP 87-1(11)0

Experimental Project: MT-15-02

Type of Project: Geocomposite Application

Principal Investigator: Craig Abernathy: Experimental Project Manager (ExPM)

Technical Contact: Jennifer Nelson P.E.: Butte District Area Engineer

Description

The project is located on P-87 (US 287) in Madison and Gallatin Counties, from the junction with Montana Highway 28 (P-13) approximately 7.0 miles to the north east toward West Yellowstone. Work to be performed includes cold milling, plant mix surfacing, seal and cover, guardrail installation, digouts, and signing and pavement marking.

The section of highway 287 in question (R.P. 6.81-6.95), as of four years ago had deteriorated to the point a dig out was performed and treated using usual methods of rehabilitation, (geotextile, special borrow, CAC, PMS). The section has failed and the Department has initiated to install a synthetic subsurface drainage layer (SSDL) under the assumption that water retention below the pavement layers was the primary cause of premature deterioration. Adding an SSDL geocomposite may allow underlying moisture adequate drainage to extend the service life of the pavement.

The Department has elected to test the **Tensar RoadDrain 5 (TD-5)** as an experimental feature in this project. The following link directs you to the products information page:

<http://www.tensarcorp.com/Systems-and-Products/Roadrain-roadway-drainage-system>

Experimental Design

The project will involve the installation of the RoaDrain 5 geocomposite on an approximate 700 ft. (0.13 mile) section of roadway. The graded slope will have an 8" perforated underdrain pipe installed to aid in the SSDL system.

At R.P. 6.41 to 6.59 another digout with similar subsurface characteristics will be constructed with conventional practice. This will be added as a performance control to the RoaDrain section.

Evaluation Procedures

Pre-inspection: Document general condition of dedicated section. Generate crack and distress map.

Construction Documentation: The Research Section will document the construction methods, activities and equipment, material placement, weather, and specification conformance etc.

Post Documentation: Will entail semi-annual site visits/inspections of the section for visual documentation for inclusion into the annual and final reports; in addition to include any maintenance activities associated with the surface or base treatment during the analysis timeline.

Evaluation Schedule

Research will monitor and report on performance for a minimum period of five years annually, with every year up to *ten years (informally). This is in accordance with the Department's "Experimental Project Procedures". Delivery of a construction/installation report, interim, annual or semi-annual reports is required as well as a final project report (responsibility of Research). A web page will be dedicated to display all reporting from the project.

2016:	Installation/Construction Report
2017-2020:	Semi-Annual Inspections/ Annual Evaluation Reports
2021:	Final Evaluation/Final Report

*If considered the extra data collection and analysis will add value to the overall results of the project.

Project Location

Gallatin County: State Highway 287 (P-87); Approximate Reference Point 6.81-6.93

