Montana Department of Transportation
Research Programs
December 2010

EXPERIMENTAL PROJECTS PROGRAM

EVALUATION OF STAY-TUFF WOVEN FENCE

Location:	Interstate I-15 (C000015P), Lewis & Clark County, Great Falls District; Approximate MP 230
Project Name:	I-15 Augusta Interchange to Craig (UPN 6531001)
Project Number:	IM 15-4(129)229
Type of Project:	Interstate Fencing
Project Manager:	Craig Abernathy, Experimental Project Manager

Objective

Determine the effectiveness and durability of the Stay-Tuff woven fence. The product uses a hinge-joint knot resulting in solid vertical (stay) wires and improved fence flexibility and strength. Additionally, the product uses heavier gauge top and bottom horizontal (line) wires to reduce the potential of the fence sagging. The Department would like to determine if this can be a viable alternate to interstate fence specifications types (CM & CW).

Experimental Design

Experimental trial incorporating Stay-Tuff fixed-knot, 12.0 gauge top and bottom line wires, 12.5 gauge internal line wires and all stay wires, high tensile strength (190,000 psi), class 3 galvanized, woven fencing on interstate project.

The following is the proposed layout of the fencing plan:

- Station 685+50 to 725+50 (approximately 1219m/4000ft.) – require Stay-Tuff fencing on the south side of the project.
- Station 685+50 to 725+50 – require Interstate Type CW fencing (**control**) on the north side of the project.

Following are the design requirements associated with the Stay-Tuff product.

- Maximum Post Spacing of 25' (terrain dependent) as compared to the MDT specs of 16'-6".

- Maximum Panel Spacing of 1,320' (panels required for angle breaks may require more) as compared to the MDT specs of maximum distances of 660' for double panels and 330' for single panels.

- Fence will be a 42" high woven wire consisting of 8 line (horizontal) wires and 6" spacing between stay (vertical) wires. One line of barb-wire will be placed above the woven wire at a height of 48".

- Deadman quantities will be documented and compared to the CW control.

Evaluation Procedures

Research will document the installation for best practice and any constructions concerns germane to the performance of the product. Annual inspections will report on fence integrity and any other measurable outcomes. Additional site inspections may supplement the annual visits based on need. District Maintenance will be asked to report on level of upkeep required. Initial cost of experimental feature comparative to the cost of the standard unit will be reported however it may not reflect an actual comparable cost that may be inflated due to contractor's unfamiliarity of the product,

Evaluation Schedule

Research will monitor 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.

2011:	Installation/Construction Report
2012-2016:	Annual Inspection/Evaluation Reports
2017:	Final Evaluation/Final Report
*2018-2023:	Annual Evaluation/Annual Reports (Informal-if required)