



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

**Memorandum**

To: Dawn Stratton  
Fiscal Programming Section

From: Heidy Bruner, P.E.  
Engineering Services Supervisor  
Environmental Services

Date: August 4, 2011

Subject: SF 099 W of Troy Jct S-508  
HSIP 1-1(87)4  
Control Number: 7210 000

Environmental Services has determined that this proposed project will not involve unusual circumstances as described under 23 CFR 771.117(b). It therefore qualifies as a Categorical Exclusion under the provisions of 23 CFR 771.117(c), part (8). The project area is in Lincoln County at the junction of US 2 and Secondary 508, approximately 10 miles NW of Troy, MT. The proposed project is to provide roadway safety enhancements by installing flashing beacon, new stop ahead sign and stop bar, and replace an existing chevron barricade with an approved arrow barricade. A more complete scope of work and location map is attached. This proposed action also qualifies as a Categorical Exclusion under the provisions of ARM 18.2.261 (Sections **75-1-103** and **75-1-201, M.C.A.**).

In accordance with the Federal Highway Administration's (FHWA) letter of March 29, 1999, please notify FHWA that the proposed action is being processed in accordance with 23 CFR 771.117(c).

Attachment

cc: Doug Moeller District Administrator- Missoula  
Paul F. Ferry, P.E. Highways Engineer  
Kent M. Barnes, P.E. Bridge Engineer  
Ivan Ulberg Project Design Manager  
Robert Stapley Right-of-Way Bureau Chief  
Walt Scott Utilities Section Supervisor  
Suzy Price, P.E. Contract Plans Supervisor  
Tom Martin, P.E. Environmental Services Bureau Chief  
Susan Kilcrease Missoula Project Development Engineer  
Gene Kaufman, P.E. Operations Engineer-FHWA  
Environmental Quality Council  
File



**Memorandum**

To: Distribution

From: Roy Peterson, PE IBU (for)  
Traffic and Safety Engineer

Date: August 4, 2011

Subject: HSIP 1-1(87)4  
SF 099 W of Troy Jct S-508  
UPN 7210 000  
Work Type 410 – Traffic Signals and Lighting

Attached is the Project Report which was approved on July 19, 2011. We request that those on the distribution review this report and submit your comments within two weeks of the approval date. Due to the limited nature of the project, MDT desires to deliver this safety project in spring / summer 2012; the report will only address necessary features specific to this project.

Your comments and recommendations are also requested if you are not on the direct distribution list. When the environmental documentation is approved, we will finalize design and prepare to let the project to contract. No right-of-way will be required for this project.

**Distribution:**

Doug Moeller, District Administrator	Lynn Zanto, Rail, Transit, & Planning Division Administrator
Tom Martin, Environmental Services Bureau Chief	Jake Goettle, Construction Engineering Services Bureau
Robert Stapley, Right-of-Way Bureau Chief	Jon Swartz, Maintenance Administrator
Paul Ferry, Highways Engineer	

**cc:**

Dawn Stratton, Fiscal Programming Section	Traffic and Safety File
Ivan Ulberg, Project Engineer	Tom Hommel
	Kootenai National Forest
	31374 US Highway 2
	Libby, MT 59923-3022

**e-copies:**

Jim Walther, Engineering, Preconstruction Engineer	Shane Stack, District Preconstruction
Lesly Tribelhorn, Highways Design Engineer	Ed Toavs, District Maintenance Chief
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Pat Basting, District Biologist	Paul Johnson, Project Analysis Bureau
Suzan Kilcrease, District Project Development Engineer	Jean Riley, Planner
Danielle Bolan, Traffic Engineer	Marty Beatty, Engineering Information Services
James Freyholtz, District Traffic Project Engineer	Paul Grant, Public Involvement Officer
Kraig McLeod, Safety Management Engineer	Jim Cornell, Traffic Signing
Allen Levens, Traffic Electrical	Jean Crow, District R/W Supervisor
Alyce Fisher, Fiscal Programming	Wayne Noem, Secondary Roads Engineer

## Project Report

HSIP 1-1(87)4, SF 099 W of Troy Jct S-508

Project Engineer: Ivan B. Ulberg, PE

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### **Introduction**

This project has not been field reviewed. The report is generated from information gathered by the Safety Management Section during their review of the site, reviewing electronic images available on-line, and Department documentation. The site will be reviewed during the design process to confirm all design-critical elements.

### **Proposed Scope of Work**

The proposed project has been nominated to provide roadway safety enhancements through the installation of a red flashing bacon (solar flasher) above the stop sign, new stop ahead sign (none currently exists), addition of a stop bar for S-508 traffic, and replacement of the existing chevron barricade with an approved arrow barricade as per current MUTCD.

### **Purpose and Need**

The majority of crashes within the vicinity of the intersection are single-vehicle, run-offs. The purpose of this project is to provide improved signage to alert drivers as to the termination of Secondary Route 508 at its intersection with US 2.

### **Project Location and Limits**

The project is located in Lincoln County, on N-1 (US 2) at its junction with S-508 (MT 508), approximately 10 miles northwest of Troy. The programmed project limits, are from RP 3.5 to RP 4.0, a length of 0.545 miles. There are no major traffic breaks within these limits. The functional classification of this highway is "rural, principal arterial".

### **Work Zone Safety and Mobility**

At this time, Level 3 construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. Due to the existing level of traffic and relatively low criticality of the intersection, the plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

### **Physical Characteristics**

This section of N-1 runs through rural, rolling terrain. According to the MDT Road Log, this section of roadway was reconstructed in 1959 and improved in 1991, under project F1-1(28)0. Surfacing thickness is reported to be 5.6" of PMS over 4.5" of compacted gravel base. Within the limits, the highway is comprised of two 12' lanes with no shoulders. S-508 is a paved, two lane road with no shoulders. It appears as though there are a series of transverse rumble strips leading up to the intersection.

The vertical alignment consists of a gentle slope at each end of US 2 upon entering and exiting the project limits, with the intersection serving as the low point; MT 508 exhibits the same characteristic. The entirety of the project occurs within a fill section; outside of the sections protected by guardrail, and existing side slopes do not appear to exceed a 4:1 ratio. Two lengths of guardrail, each approximately 500' long and staggered with respect to each other, exist on both sides of US 2, just west of the intersection.

### **Traffic Data**

The traffic data for this location is as follows:

- 2010 (Present) AADT = 1,630
- 2013 (Letting) AADT = 1,680
- 2033 (Design) AADT = 2,200
- DHV = 290
- Truck% = 14.2%
- Equivalent Single Axle Load = 125
- Annual Growth Rate = 1.4%

### Crash Analysis

The original crash analysis used to generate this project was for the time period January 1, 1998 through December 31, 2007. A total of 13 crashes were identified, 8 of which were identified as addressable with the proposed improvements. Of these, five were injury crashes resulting in 11 injuries, 3 were property damage only, and no fatal crashes were reported. A benefit / cost (B/C) ratio of 108.0 was calculated.

An updated crash analysis was performed in this area to confirm that a crash trend is still present. A total of ten crashes occurred on N-1 from RP 3.5 to RP 4.0 between January 1<sup>st</sup>, 2001 and December 31<sup>th</sup>, 2010. The main crash trend identified at this location is run-off-the-road; all but one of the recorded events was single-vehicle. Four (4) of the ten crashes resulted in no injury, one resulted in possible injury, three had non-incapacitating evident injuries, one included an incapacitating injury and one included unknown injuries; there were no fatalities.

### Major Design Features

- a. **Design Speed.** The design speed for this section of roadway based on its functional classification of "rural, principal arterial" in rolling terrain is 60 miles per hour (mph). The posted speed limit is 70 mph with a night-time speed of 65 mph for passenger vehicles; for trucks, the day and night speed limits are 60 mph and 55 mph, respectively.
- b. **Horizontal Alignment.** The horizontal alignment includes one horizontal curve to the right halfway between each end of the project limits. The east end of the curve terminates near the junction with MT 508. No changes will occur to the horizontal alignment.
- c. **Vertical Alignment.** As mentioned above, there are gentle positive slopes, with respect to the direction of travel, at both ends of the project limits. No changes will occur to the vertical alignment.
- d. **Typical Sections and Surfacing.** The existing roadway section will not change. There is no slope work or alignment modification included in the scope of work.
- e. **Geotechnical Considerations.** No geotechnical involvement is anticipated.
- f. **Hydraulics.** No hydraulic-related involvement is anticipated.
- g. **Bridges.** There are no bridges within project limits.
- h. **Traffic.** The traffic section will be responsible for the plans and project delivery.
- i. **Pedestrian/Bicycle/ADA.** There are no pedestrian, bicycle or ADA specific features included in this project.
- j. **Context Sensitive Design Issues.** The entirety of this project is located within the Kootenai National Forest. A copy of this report is being mailed to their office for review and comment.

### Other Projects

No other projects are currently under construction or in design that will affect this project.

### Location Hydraulics Study Report

A Location Hydraulics Study Report is not required for this project.

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Project Engineer: Ivan B. Ulberg, PE

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### Design Exceptions

No design exceptions are anticipated for this project.

### Right-of-Way

No new right of way is anticipated for this project. All work will take place within the existing shoulders.

### Access Control

No changes to access control are proposed.

### Intelligent Transportation Systems (ITS) Features

No ITS features will be used on this project.

### Experimental Features

No experimental features will be used on this project.

### Utilities/Railroads

There are no railroads affected by this project. No utility conflicts are anticipated. A phone pedestal is located in the NE corner adjacent to S-508. A one-call will be required prior to placing any new sign posts.

### Survey

No surveys, such as a soil survey or an S.U.E., are warranted.

### Public Involvement

The project will include a 'Level A' standard of public involvement. This includes a news release explaining the project and a departmental point of contact.

### Environmental Considerations

A 'Categorical Exclusion' is anticipated on this project.

### Traffic Control

The plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). Impacts to traffic will be low, and the majority of the work can be completed from the shoulder of the roadway. All signing and/or flagging operations will be in accordance with the Manual on Uniform Traffic Control Devices.

### Project Management

Ivan Ulberg will be the Project Design Engineer. This project does not require full FHWA oversight.

### Proposed OPX-2 Flowchart

The OPX-2 flowchart will be modified to include the bare minimum needed to get us to a letting. Proposed are the following activities:

- 950 – Program P.E.: 1 day, 4 hours (critical path)
- 400 – Preliminary Field Review: 5 days, 40 hours (critical path)
- 706 – Prepare / Review BRR/BA: 15 days, 20 hours
- 722 – Enviro Doc: 15 days, 20 hours (critical path)
- 902 – Request News Release: 1 day, 4 hours
- 652 – Distribute News Release: 5 days, 8 hours
- 968 – Secure Design Appr: 10 days, 20 hours (critical path)
- 404 – Preliminary Electrical Plans: 10 days, 20 hours (critical path)
- 414 – Prepare Signing & Pavement Markings: 10 days, 40 hours (critical path)
- 988 – Final PIH Inspection: 15 days, 60 hours (critical path)

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445 – Transmit to Contract Plans (electrical): 2 days, 5 hours (critical path)

446 – Transmit to Contract Plans (signing): 2 days, 5 hours (critical path)

The existing OPX-2 flowchart assigned to this project may be used as the template to make these changes.

### Preliminary Cost Estimate

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Signing, Striping	\$2,700		
Solar Flasher	\$4,500		
Traffic Control	\$750		
<b>Subtotal</b>	<b>\$7,950</b>		
Mobilization (10%)	\$800		
<b>Subtotal</b>	<b>\$8,750</b>		
Contingencies (10%)	\$900		
<b>Total CN</b>	<b><u>\$ 9,650</u></b>	<b><u>\$ 1,178</u></b>	<b><u>\$ 11,871</u></b>
<b>CE (10%)</b>	<b><u>\$ 1,000</u></b>	<b><u>\$ 122</u></b>	<b><u>\$ 1,230</u></b>
<b>TOTAL CN+CE</b>	<b><u>\$ 10,650</u></b>	<b><u>\$ 1,300</u></b>	<b><u>\$ 13,101</u></b>

Note: Inflation is calculated in PPMS to the letting date. IDC is calculated at 9.64% as of FY 2012.

### Ready Date

A ready date will be set once the project is sent for overrides. If available, this project's limited scope lends itself for consideration to be installed by MDT Maintenance forces.

### Site Map

