



Environmental Services
MONTANA DEPARTMENT OF TRANSPORTATION
Helena, Montana 59620

Memorandum

To: Lisa Hurley
Fiscal Programming Section Supervisor

From: Heidi Bruner, P.E.
Environmental Engineering Section Supervisor

Date: August 12, 2015

Subject: Categorical Exclusion (c)(23)
4M SE Ovando – BR Deck
NHPB 24-2(25)49
Control Number: 8089000

Environmental Services Bureau has reviewed the proposed project and concluded that it will not involve unusual circumstances as described under 23 CFR 771.117(b). As a result, the project qualifies as a Categorical Exclusion under the provisions of 23 CFR 771.117(c), part (23), which describes Federally-funded projects that receive less than \$5,000,000 of Federal funds. The proposed action also qualifies as a Categorical Exclusion under the provisions of ARM 18.2.261 (Sections 75-1-103 and 75-1-201, MCA).

The project is located on N-24 (MT 200) in Powell County approximately 4 miles southeast of Ovando at RP 49.66. The proposed project involves rehabilitating the bridge deck in order to extend the service life of the structure. No additional right of way will be required. The total estimated cost of the project at this time including CN + CE w/INF + IDC = \$1,622,815.

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

e-copies: Ed Toavs, Missoula District Administrator
Chris Hardan, P.E., Missoula Bridge Area Engineer
Kent Barnes, P.E., Bridge Engineer
Robert Stapley, Right-of-Way Bureau Chief
Suzy Price, Contract Plans Bureau Chief
Tom Martin, P.E., Environmental Services Bureau Chief
Susan Kilcrease, Environmental Services Project Development Engineer
Gene Kaufman, P.E., FHWA Operations Engineer
Tom Erving, Fiscal Programming
Montana Legislative Branch Environmental Quality Council

copy: Environmental Services Bureau File



Memorandum

To: Kent Barnes, P.E.
Bridge Engineer
From: Chris Hardan, P.E. CWH
Bridge Area Engineer, Missoula District
Date: December 10, 2014
Subject: NHPB 24-2(25)49
4M SE Ovando-BR Deck
UPN 8089000
232-Minor Bridge Rehabilitation

Please approve the attached Preliminary Field Review Report.

Approved signed by Kent Barnes Date December 10, 2014
Kent Barnes, P.E., Bridge Engineer

We are requesting comments from those on the distribution list. We will assume their concurrence if we receive no comments within two weeks of the approval date.

Distribution:

- Ed Toavs, Missoula District Administrator
Kent Barnes, Bridge Engineer
Paul Ferry, Highways Engineer
Roy Peterson, Traffic and Safety Engineer
Robert Stapley, Right-of-Way Bureau Chief
Tom Martin, Environmental Services Bureau Chief
Lynn Zanto, Rail, Transit, & Planning Division Administrator
Jake Goettle, Construction Engineering Services Bureau
Matt Strizich, Materials Engineer
Jon Swartz, Maintenance Division Administrator

cc:

- Chris Hardan, Project Design Manager, Missoula District
Bridge File
Powell County Commissioners
Dawn Stratton, Fiscal Programming Section
Damian Krings, Road Design Engineer

e-copies:

- Jim Walther, Engineering, Preconstruction Engineer
Lesly Tribelhorn, Highways Design Engineer
Mark Goodman, Hydraulics Engineer
KC Yahvah, District Hydraulics Engineer
Bill Semmens, Env. Resources Section Supervisor
Joe Weigand, District Biologist
Susan Kilcrease, District Project Development Engineer
Danielle Bolan, Traffic Operations Engineer
Ivan Ulberg, Traffic Design Engineer
Gabe Priebe, District Traffic Project Engineer
Kraig McLeod, Safety Engineer
Bill Squires, Missoula District Road Design
Michael Grover, Engineering Cost Analyst
Matt Wagner, Engineering Division Accountant
Paul Grant, Public Involvement Officer
Sue Sillick, Research Section Supervisor
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Alyce Fisher, Fiscal Programming Section
Robert Vosen, Missoula District Construction Engineer
Dean Jones, Operations Engineer
Becky Duke, Traffic Data Collection Sec. Super. (WIM)
Jake Goettle, Construction Bureau - VA Engineer
Shane Stack, District Preconstruction
Ben Nunnallee, District Projects Engineer
Mike Dodge, District Materials Lab
Steve Felix, District Maintenance Chief
Maureen Walsh, District Right of Way Supervisor
Phillip Inman, Utilities Engineering Manager
David Hoerning, R/W Engineering Manager
Greg Pizzini, Acquisition Manager
Joe Zody, R/W Access Management Section Manager
Matt Strizich, Materials Engineer
Jim Davies, Pavement Analysis Engineer
Jeff Jackson, Geotechnical Engineer
Bret Boundy, District Geotechnical Manager
Bryce Larsen, Supervisor, Photogrammetry & Survey
Paul Johnson, Project Analysis Bureau
Jean Riley, Planner
Dawn Stratton, Fiscal Programming Section
Michael Murphy, Eng. Manager, Bridge Management System
Duane Williams, Motor Carrier Services Division Administrator
Doug McBroom, Maintenance Division Operations Mgr (RWIS)

Preliminary Field Review Report

NHPB 24-2(25)49

Project Manager: Chris Hardan, P.E.

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Introduction

An on-site field review for this project was held on August 20, 2013. The following personnel participated:

Chris Hardan	Bridge Area Engineer-Missoula District	Helena
Bill Squires	Project Design Engineer-Missoula District	Helena
Lotse Townsend	Design Supervisor-Missoula District	Helena
Ben Nunnallee	District Projects Engineer- Missoula District	Missoula
Lenci Kappes	Bridge Engineer-Missoula District	Helena

Proposed Scope of Work

The proposed project has been nominated to rehabilitate the bridge deck in order to extend the service life of the structure. The proposed rehabilitation work includes milling of the existing deck and placement of a modified concrete overlay. The guard angles will be removed and the bridge approach guardrail will be updated.

Purpose and Need

This bridge has been identified by the Bridge Management Section (BMS) as a candidate for rehabilitation. Deck Rehabilitation has been determined as a cost-effective approach for extending the service life of not only the deck, but the overall structure as well. This project fits the Bridge Program objective under MAP-21 for bridge deck preservation.

Project Location and Limits

The project is located on N-24 (MT-200) in Powell County approximately 4 miles southeast of Ovando at Reference Post 49.66. The project limits will extend approximately 200-ft from each bridge end. The bridge is located in Township 14 N, Range 11 W, Section 6.

The route is classified as a Principal Arterial-Non Interstate. The bridge crosses the North Fork of the Blackfoot River and the NBI structure number is P00024049+06571.

Work Zone Safety and Mobility

At this time, Level 2 construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. The plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). A limited Transportation Operations (TO) component and a limited Public Information (PI) component to address lane closures and wide load detours will also be included in the plan package. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

The bridge was built in 1956 with the as-built project F 267(9) and widened in 1985 with the as-built project BHF 24-2(1)49. The bridge width is 39'-4" from face of barrier to face of barrier with two 12' travel lanes and two 7'-8" shoulders.

The bridge is within the limits of EACF 24-2(8)43, Ovando-East, the last major road improvement project along this segment. Ovando-East extended from RP 43.4 to 55.7, and generally included pulverizing the existing 24' paved top, widening with 2.0' of Special Borrow, and surfacing with 0.30' of pulverized mat/crushed based, 0.20' of crushed top surfacing, and 0.25' of plant mix placed 32' wide. Shoulders were widened to 8' adjacent to guardrail and at the bridge ends.

The 25' segments adjacent to the bridge ends were not pulverized, but featured 0.30' of crushed base course, 0.20' of crushed top course, and 0.40' of plant mix placed 40' wide. The 40' tops were transitioned to 32' tops on tapers 75' long.

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A 0.20' plant mix overlay was placed in 2006 under NH 24-2(20)43, Ovando-East. The bridge ends were milled and filled for 130' (including taper) to match the bridge deck. Other work included upgrading the terminal end sections at all four runs of guardrail attached to the bridge. The plant mix is showing signs of distress at the bridge ends.

The Ovando-East project had a 55 mph design speed, which was determined to be appropriate, given the rolling terrain. The terrain of the roadway from 0.7 miles west of the bridge to 2.1 miles east of the bridge is generally level. From the as-built plans the stream banks are at a slope of 1½:1 from the subgrade-shoulder (26' from centerline) to the river bank.

The horizontal alignment is on a tangent from 0.72 miles west of the bridge to 0.14 miles east of it.

The profile features a vertical P.I. 686± feet west of the bridge that connects the -0.015% grade back to a -0.189% grade ahead that ends at the west bridge end. The bridge itself is on a 0.00% grade. A 1000-ft. sag vertical curve begins at the east bridge end and connects the +0.010% grade adjacent to the bridge end to a +1.132% grade ahead.

Bridge Information for P00024049+06571	
Year Built	1956
Year Reconstructed	1985-Widened to 39'-4"
Total Length (feet)	182'-0"
Width (curb to curb) (feet)	39'-4"
Number of Spans	3 main spans; two cantilever approach spans
Bridge Rail Type	Concrete Barrier
Superstructure Type	Continuous Concrete Tee-beam
Deck Joint Characteristics	N/A
Drawing Number	3781/13462
Sufficiency Rating	66
Deck Rating	4-Poor
Deck Health Index	25

Traffic Data

Based on the limited scope of work anticipated for the project, a traffic data analysis study has not been requested at this time. The Traffic by Sections Report shows the MT-200 AADT within the project limits as 2,150 based on 2012 traffic data. For clear zone determination, we estimate the design year ADT will be in the 1500-6000 range.

Crash Analysis

Based on the limited scope of work anticipated for this project, a crash analysis study has not been requested at this time.

Major Design Features

- a. **Design Speed.** Due to the nature of this project, the design speed will not be a major design criterion. However, it will be necessary for determining clear zone distances and in the design of guardrail lengths. We propose to use 60 mph design speed criteria for these design elements, which is consistent with the generally rolling terrain along the route and is appropriate for a Principal Arterial-Non Interstate in rolling terrain.
- b. **Horizontal Alignment.** The existing horizontal alignment will be maintained.
- c. **Vertical Alignment.** The vertical alignment may need to be raised to match the elevation of the bridge ends. The approaches will be milled and tapered as necessary to match the new

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elevations.

- d. **Typical Sections and Surfacing.** The existing roadway widths will be maintained. A soil survey will be requested at the bridge ends to obtain preliminary soil information and to determine if further subsurface investigation is needed. The results of this investigation will determine the treatment selected for the bridge ends. Potential treatments may include a mill/fill tapering to the finished bridge deck; removal and placement of 0.5' of commercial mix, or a complete 30-year bridge end treatment.

We tentatively propose to chip seal the new pavement. However, we will consider omitting the chip seal if there is a pavement preservation project scheduled within a reasonable time period after completion of the bridge project.

- e. **Geotechnical Considerations.** No significant geotechnical investigation is anticipated. If after the soil survey it is determined that additional geotechnical investigation is needed the Geotechnical Section will be contacted.
- f. **Hydraulics.** The Hydraulics Section will evaluate the bridge deck for runoff.
- g. **Bridges.** The proposed work for this bridge is milling of the top section of the bridge deck to remove the unsound concrete and then placement of a modified concrete overlay. New approach rail attaching to the existing concrete barrier rail is also proposed. No work to the bearings and substructure is anticipated at this time.
- h. **Traffic.** The existing geometric traffic conditions will be maintained. The modified concrete overlay and new pavement on the bridge approaches will require new striping. Signs were upgraded with the 2006 overlay project. It appears there is one sign eastbound and two signs westbound that should be considered for upgrade. Signing work could likely be handled with special provisions in lieu of plans.
- i. **Pedestrian/Bicycle/ADA.** There are no existing features dedicated for pedestrian, ADA, and/or bicyclist use, and none are proposed.
- j. **Miscellaneous Features.** All substandard bridge approach sections will be modified as necessary. The existing concrete barrier may require end modifications to accept the new approach sections.

The proposed grade raise on the deck and bridge approaches may render the existing guardrail heights too low. If so, we will opt to remove and replace all rail attached to the bridge on three of the bridge corners: eastbound approach (200 feet); eastbound departure (225 feet); and westbound departure (100 feet). The westbound approach has 675 feet of attached guardrail, so we would opt to remove and replace only the 200± of guardrail feet within the mill/fill segment.

- k. **Context Sensitive Design Issues.** There is Fish, Wildlife, and Parks fishing access gate on the southwest corner of the bridge. Access to the gate may be hindered during construction, but there should be no long-term effects due to the project.

Other Projects

There are no other projects in the vicinity currently under construction or in design that will affect this project. This project may be tied for construction with a nearby project depending on project schedules.

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Location Hydraulics Study Report

Based on the limited scope of work for this project, a Locations Hydraulic Study Report will not be required. The Hydraulic section will evaluate the bridge deck for runoff.

Design Exceptions

No design exceptions are anticipated at this time.

Right-of-Way

The proposed work is within the existing right-of-way limits. No new right-of-way acquisitions or construction permits are anticipated at this time.

Access Control

There will be no changes to access control on this project.

Utilities/Railroads

During the field review no utilities were observed to be attached to the bridge. Overhead power lines were observed north of the bridge and additional overhead utilities were observed south of the bridge. A utility survey by department forces will be requested.

No railroads will be affected by this project.

Maintenance Items

No maintenance items are anticipated for this project.

Intelligent Transportation Systems (ITS) Features

No ITS features are proposed for this project.

Experimental Features

There are no experimental features proposed for this project.

Survey

A survey request will be submitted in conjunction with the PFR.

Public Involvement

Level A public involvement is being proposed with a news release explaining the project including a department point of contact.

Environmental Considerations

A Categorical Exclusion is anticipated for this project. Generally, the proposed project is not anticipated to adversely affect biological resources in the vicinity of the structures. No direct wetland impacts are anticipated at this time. As no impacts to the bed and bank of any stream are anticipated, a SPA 124 will not be required for the proposed work.

Energy Savings/Eco-Friendly Considerations

A modified concrete overlay was selected instead of a deck replacement to reduce the amount of material used.

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Traffic Control

The work on the bridge will be completed in two phases. Traffic will be maintained with single lane closures and/or shifting of lanes to the shoulder during each phase. Temporary rail with approved end sections may be needed for temporary two way traffic.

A Transportation Management Plan (TMP) consisting of a Traffic Control Plan (TCP), a limited Transportation Operations (TO) component and a limited Public Information (PI) component is appropriate for this project.

Project Management

The Bridge Bureau will manage the preconstruction phase of this project. Chris Hardan is the Design Project Manager.

Preliminary Cost Estimate

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Road Work	\$257,000		
Structure Rehab	\$567,000		
Traffic Control	\$80,000		
Subtotal	\$903,500		
Mobilization (18%)	\$162,600		
Subtotal	\$1,066,100		
Contingencies (10%)	\$106,610		
Total CN	<u>\$1,172,700</u>	<u>\$179,131</u>	<u>\$ 1,475,253</u>
CE (10%)	<u>\$117,300</u>	<u>\$17,917</u>	<u>\$ 147,562</u>
TOTAL CN+CE	<u>\$1,290,000</u>	<u>\$ 197,048</u>	<u>\$ 1,622,815</u>

Note: Inflation is calculated in PPMS to the letting date. If there is no letting date, the project is assumed to be inside the current TCP and is given a maximum of 5 years until letting. IDC is calculated at 9.13% for FY 2015.

Preliminary Engineering

It is not anticipated the project will require a significant addition or reduction to the nominated PE amount.

Project and Risk Management

Chris Hardan will be the Project Design Manager. This project is not a PoDI project by FWHA.

It is expected the overall level of risk is low to project costs and schedule. Additional deck repair found during construction poses the greatest risk to the project cost. Bridge deck inspection reports will be used to more accurately estimate repair quantities to help mitigate the risk.

Ready Date

A ready date will be established once the override process is complete in OPX2.

Site Map

The project site map is attached.

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4M SE OVANDO - BR DECK UPN #8089

