



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

August 8, 2005

ENVIRONMENTAL QUALITY COUNCIL
Legislative Environmental Policy Office
P.O. Box 201704
Helena, MT 59620-1704

Subject: **BR 9044(17)**
SAND CR-7 KM E OF CARTERSVILLE
(PPMS-OPX2 Control #4692)

Attached is one (1) copy of the Programmatic Categorical Exclusion request for this proposed project as approved by the U.S. DEPARTMENT OF TRANSPORTATION's Federal Highway Administration (FHWA) on June 6, 2005.

The attached also complies-with the *Montana Environmental Policy Act (75-1-103 & 75-1-201, M.C.A.)* provisions under ARM 18.2.261, "Actions that qualify for a Categorical Exclusion" as applicable to the MONTANA DEPARTMENT OF TRANSPORTATION (MDT).

Thomas L. Hansen, P.E.
Engineering Section Supervisor
MDT Environmental Services Bureau

RECEIVED

AUG 09 2005

LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

JAR:TLH:asj: [W] [S:\PROJECTS\GLENDDIVE\4692\EQC_DST.DOC]

Attachment

copy: project main/"white label" file

4/28/05

RECEIVED

JUN - 7 2005

ENVIRONMENTAL

May 23, 2005

Janice W. Brown
Division Administrator
Federal Highway Administration
2880 Skyway Drive
Helena, MT 59602-1230

MASTER FILE
COPY

Subject: BR 9044(17)
Sand Crk. - 7 km E of Cartersville
Control Number: 4692

This is to request approval of this proposed project as a Categorical Exclusion (CE) under the provisions of 23 CFR 771.117(d), and the Programmatic Agreement as signed by the MONTANA DEPARTMENT OF TRANSPORTATION (MDT) and the FHWA on April 12, 2001. Copies of its Preliminary Field Review Report (PFR) and Project Location Map are attached. This proposed action also qualifies as a CE under ARM 18.2.261 (Sections **75-1-103** and **75-1-201, MCA**).

The following form provides the documentation required to demonstrate that all of the conditions are satisfied to qualify for a Programmatic Categorical Exclusion Approval (PCE) as initially agreed by the (former) MONTANA DEPARTMENT OF HIGHWAYS (MDOH) and the FHWA on December 6, 1989. (Note: An "X" in the "N/A" column is "Not Applicable" to, while one in the "UNK" column is "Unknown" at the present time for this proposed project.)

NOTE: A response in a box will require additional documentation for a Categorical Exclusion request in accordance with 23 CFR 771.117(d).

		<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
1.	This proposed project would have (a) significant environmental impact(s) as defined under <u>23 CFR 771.117(a)</u> .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	This proposed project involves (an) unusual circumstance(s) as described under <u>23 CFR 771.117(b)</u> .	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	This proposed project involves one (or more) of the following situations where:				
A.	Right-of-Way, easements, and/or construction permits would be required.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	The context or degree of the Right-of-Way action would have (a) substantial social, economic, or environmental effect(s).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		YES	NO	N/A	UNK
2.	There is a high rate of residential growth in this proposed project's area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	There is a high rate of commercial growth in this proposed project's area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Work would be on and/or within approximately 1.6 kilometers (1± mile) of an Indian Reservation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	There are parks, recreational, or other properties acquired/improved under <i>Section 6(f)</i> of the <i>1965 National Land & Water Conservation Fund Act (16 USC 460L, et seq.)</i> on or adjacent to proposed the project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The use of such <i>Section 6(f)</i> sites would be documented and compensated with the appropriate agencies. (e.g.: MDFWP, local entities, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6.	Are there any sites either on, or eligible for the National Register of Historic Places with concurrence in determination of eligibility or effect under <i>Section 106</i> of the <i>National Historic Preservation Act (16 USC 470, et seq.)</i> by the State Historic Preservation Office (SHPO), which this would affect proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	There are parks, recreation sites, school grounds, wildlife refuges, historic sites, historic bridges, or irrigation that might be considered under <i>Section 4(f)</i> of the <i>1966 US DEPARTMENT OF TRANSPORTATION Act (49 USC 303)</i> on or adjacent to the project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a.	"Nationwide" Programmatic <i>Section 4(f)</i> Evaluation forms for these sites are attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	This proposed project requires a full (i.e.: DRAFT & FINAL) <i>Section 4(f)</i> Evaluation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B.	The activity would involve work in a streambed, wetland, and/or other water body(ies) considered as "waters of the United States" or similar (e.g.: "state waters").	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	Conditions set forth in <i>Section 10</i> of the <i>Rivers and Harbors Act (33 USC 403)</i> and/or <i>Section 404</i> under <u>33 CFR Parts 320-330</u> of the <i>Clean Water Act (33 USC 1251-1376)</i> would be met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
2.	Impacts in wetlands, including but not limited to those referenced under Executive Order (EO) #11990, and their proposed mitigation would be coordinated with the Montana Inter-Agency Wetland Group.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	A 124SPA Stream Protection permit would be obtained from the MDFWP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	There is a delineated floodplain in the proposed project area under FEMA's Floodplain Management criteria.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The water surface at the 100-year flood limit elevation would exceed floodplain management criteria due to an encroachment by the proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5.	Tribal Water Permit would be required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Work would be required in, across, and/or adjacent to a river, which is a component of, or proposed for inclusion in Montana's Wild and/or Scenic Rivers system as published by the US Department of Agriculture, or the US Department of the Interior.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	The designated National Wild & Scenic River systems in Montana are:				
a.	Middle Fork of the Flathead River (headwaters to South Fork confluence).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b.	North Fork of the Flathead River (Canadian Border to Middle Fork confluence).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c.	South Fork of the Flathead River (headwaters to Hungry Horse Reservoir).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d.	Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	In accordance with <i>Section 7</i> of the <i>Wild and Scenic Rivers Act (16 USC 1271 – 1287)</i> , this work would be coordinated and documented with either the Flathead National Forest (Flathead River), or US Bureau of Land Management (Missouri River).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	This is a "Type I" action as defined under <i>23 CFR 772.5(h)</i> , which typically consists of highway construction on a new location or the physical alteration of an existing route which substantially changes its horizontal or vertical alignments or increases the number of through-traffic lanes.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.	If yes, are there potential noise impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

		YES	NO	N/A	UNK
2.	A Noise Analysis would be completed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.	There would be compliance with the provisions of both <u>23 CFR 772</u> for FHWA's Noise Impact analyses and MDT's Noise Policy.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D.	There would be substantial changes in access control involved with this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If yes, would they result in extensive economic and/or social impacts on the affected locations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E.	The use of a temporary road, detour, or ramp closure having the following conditions when the action(s) associated with such facilities:				
1.	Provisions would be made for access by local traffic, and be posted for it.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Adverse effects to through-traffic dependant businesses would be avoided or minimized.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Interference to local events(e.g.: festivals) would be minimized to all possible extent.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Substantial controversy associated with this pending action would be avoided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F.	Hazardous wastes /substances, as defined by the US Environmental Protection Agency (EPA) and/or the Montana Department of Environmental Quality (MDEQ), and/or (a) listed "Superfund" (under <i>CERCLA</i> or <i>CECRA</i>) site(s) are currently on and/or adjacent to this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	All reasonable measures would be taken to avoid and/or minimize substantial impacts from same.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G.	The Montana Pollutant Discharge Elimination System's conditions (<u>ARM 16.20.1314</u>), including temporary erosion control features for construction would be met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H.	Permanent desirable vegetation with an approved seeding mixture would be established on exposed areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I.	Documentation of an "invasive species" review to comply with both EO #13112 and the <i>County Noxious Weed Control Act</i> (7-22-21, MCA), including directions as specified by the county (ies) wherein its intended work would be done.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
J.	There are "Prime" or "Prime if Irrigated" Farmlands designated by the Natural Resources Conservation Service on or adjacent to the proposed project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If the proposed work would affect Important Farmlands, then an AD-1006 Farmland Conversion Impact Rating form would be completed in accordance with the <i>Farmland Protection Policy Act (7 USC 4201, et seq.)</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
K.	Features for the <i>Americans with Disabilities Act</i> (PL 101-336) compliance would be included.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L.	A written Public Involvement Plan would be completed in accordance with MDT's Public Involvement Handbook.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	This proposed project complies with the <i>Clean Air Act's Section 176(c) (42 USC 7521(a)</i> , as amended) under the provisions of <u>40 CFR 81.327</u> as it's either in a Montana air quality:				
A.	"Unclassifiable"/attainment area. This proposed project is <u>not</u> covered under the EPA's September 15, 1997 Final Rule on air quality conformity.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	and/or				
B.	"Nonattainment" area. However, this type of proposed project is either exempted from the conformity determination requirements (under EPA's September 15, 1997 Final Rule), or a conformity determination would be documented in coordination with the responsible agencies: (Metropolitan Planning Organizations, MDEQ's Air Quality Division, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C.	Is this proposed project in a "Class I Air Shed" (Indian Reservations) under <u>40 CFR 52.1382(c)(3)</u> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Federally listed Threatened or Endangered (T/E) Species:				
A.	There are recorded occurrences, and/or critical habitat in this proposed project's vicinity.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B.	Would this proposed project result in a "jeopardy" opinion (under <u>50 CFR 402</u>) from the Fish & Wildlife Service on any Federally listed T/E Species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The proposed project would not induce significant land use changes, nor promote unplanned growth. There would be no significant effects on access to adjacent property, nor to present traffic patterns.

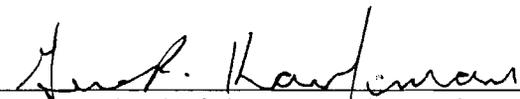
This proposed project would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations (EO #12898). It also complies with the

provisions of *Title VI* of the *Civil Rights Act* of 1964 (**42 USC 2000d**) under the FHWA's regulations (23 CFR 200).

In accordance with the provisions of 23 CFR 771.117(a), this pending action would not cause any significant individual, secondary, or cumulative environmental impacts. Therefore, the FHWA's concurrence is requested that this proposed project is properly classified as a Categorical Exclusion.


_____, Date: 5/27/05
Thomas L. Hansen, P.E.
MDT Environmental Services
Glendive District

Concur 
_____, Date: 5-31-05
Jean A. Riley, P.E. Bureau Chief
MDT Environmental Services

Concur 
_____, Date: 6/6/05
Federal Highway Administration

TLH:kem:S:\PROJECTS\GLENDDIVE\4692\PCE (D) PROGRAMMATIC FHWA.DOC

Attachments

- cc: Ray Mengel ----- Glendive District Administrator
- Kent Barnes, P.E. ---- Bridge Engineer
- Paul Ferry, P.E. ----- Highway Engineer
- John H. Horton ----- Right-of-Way Bureau Chief
- Suzy Althof ----- Contract Plans Section Supervisor
- David W. Jensen ----- Fiscal Programming Section Supervisor
- Jean Riley, P.E. ----- Environmental Services Bureau Chief

Montana Department of Transportation
Helena, MT 59620-1001

Memorandum

To: Joseph P. Kolman, P.E.
Bridge Engineer

Thru: William S. Fullerton, P.E. *Wf*
Bridge Design Engineer

From: Mark J. Studt, P.E. *MJS*
Structural Engineer

Date: January 25, 2002

Project: BR 9044(17)
Sand Creek – 7 km East of Cartersville
Control No. 4692
Project Work Type – 221

Subject: Preliminary Field Review Report

Please approve the **Preliminary Field Review Report** for the subject project.

Approved

Joseph P. Kolman

Joseph P. Kolman, P.E.

Date

1/25/02

We are requesting comments from the following individuals, who have also received a copy of the Report. **We will assume concurrences if no comments are received by (February 11, 2002).**

MJS:4692PFR.doc

Distribution: (all with attachment)

J. H. Horton
K.M. Barnes
C. S. Peil
P. Saindon
W.L. McChesney
S. Sternberg
R. E. Williams
J. A. Walther
R. D. Morgan
M.A. Goodman

G. Larson
B.A. Larsen
D. W. Jensen
M.A. Wissinger
~~B. F. Juvan~~
W. Scott
J. J. Moran
D. Grenfell – FHWA
Rosebud County Commissioners
File

Preliminary Field Review Report

**BR 9044(17)
Sand Creek – 7 km East of Cartersville
Control No. 4692
Project Work Type - 221**

The preliminary field review for the subject project was conducted on June 6, 2001 with the following people in attendance.

R. E. Mengel	Engineering Services Supervisor	Glendive
J. Tompkins	Surfacing Design Supervisor	Helena
M. Studt	Bridge Bureau	Helena
L. Sickerson	Environmental Services	Helena
G. Michel	Hydraulics Section	Helena
P. R. Ferry	Road Design Section	Helena
Joanne Stahl	Rosebud County Commissioners	
Wayne Buck	Rosebud County Road Foreman	
Virgil Satterthwait	Rosebud County Bridge Foreman	

Project Intent

The intent of the project is to replace the existing bridge over Sand Creek with a new bridge. We anticipate that the new bridge will be constructed on the existing alignment. The project will include enough approach work to tie to the existing roadway and should be limited to about 250 m on each end of the bridge. The roadway design features will meet the current criteria for low-volume off-system roads.

Location and Route Description

The existing bridge over Sand Creek is located on an off-system county road approximately 7 km northeast of Rosebud in Rosebud County (T 6 N, R 43 E, SEC 5). The terrain adjacent to the project is level and is used primarily for irrigated and dry land farming. The off-system road provides local access to communities and the greater transportation network. It is also a school bus route. We do not believe that the proposed project will alter existing traffic volumes or characteristics. We also do not anticipate that the use of the land adjacent to the project will change in the foreseeable future.

Purpose and Need

We intend to construct the new bridge on the existing alignment. The use of an offset alignment would have greater impacts to the Sand Creek channel and cultivated land adjacent to the project. Offset alignments would also require the introduction of an additional horizontal curve. The use of a significantly different alignment would require substantially more road construction and would have greater right-of-way and environmental impacts.

The no-build alternative is not feasible, because of the structural deficiency of the existing bridge. If the bridge is not replaced, it will reduce the effectiveness of the route as a transportation facility, as well as potentially creating safety problems.

Existing Road Conditions

The project was constructed under the following single project as a part of a Secondary Highway project S-259(2)1.

Bridge End Stations (English)
324+30.0

324+68.0

The project length will depend on the required hydraulic opening and configuration of the new bridge.

The roadway was constructed to an 8.53 m finished top width. The surfacing consisted of 61 mm of plant mix atop a 472 mm gravel base. The surfacing was placed on 5:1 inslopes.

The bridge is located on simple horizontal curve having a radius of 1164.2 m. The bridge is located on a 0.006% vertical tangent. A sag vertical curve that provides the desirable stopping sight distance (SSD) for a 100 km/h design speed is located approximately 125 m east of the bridge.

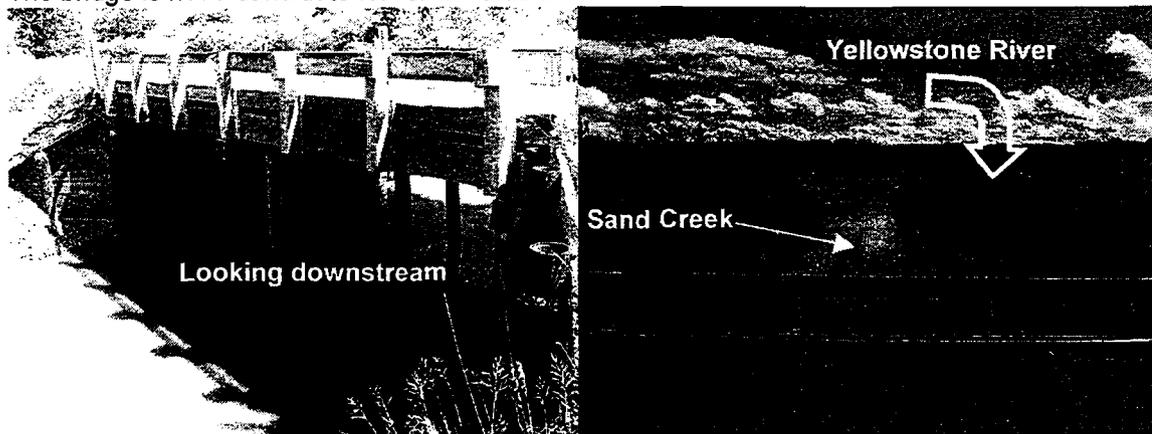
The cut and fill slopes meet the criteria for off-system rural roads. The fills are generally less than 1 m high. The cuts are minimal throughout the potential project limits.

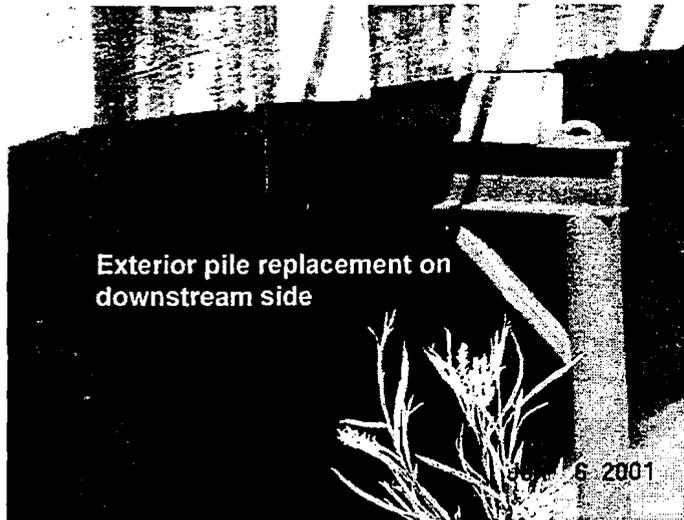
Existing Bridge Condition

**Sand Creek
7 km East of Cartersville
L 44201004+07001**

Year Built	1963
As-Built Station	324+49
Drawing No.	5235
Length (m)	11.89
Number of Spans	2
Span Lengths (m)	5.79/5.79
Width, rail to rail (m)	8.53
Superstructure Type (each span)	Timber / Timber
Substructure Type	Timber cap and piles
Bridge Rail Type	Wood Fence
Deck Type	Timber with asphalt topping
Sufficiency Rating	39.6
Structure Status	Structurally Deficient
Posting (mton)	21.7 Inventory

The bridge is not a candidate for rehabilitation.





Existing Sand Creek Bridge
(Date of Photo 6-6-01)

Traffic Data

The traffic data for the project is as follows:

2002 ADT = 200
2005 ADT = 210
2025 ADT = 260
DHV = 40
D = 55-45 %
T = 6.5 %
EAL = 5 (Daily)
AGR = 1 %

There were no reported accidents at this location (SEC 5, T 6 N, R 43 E) between October 1, 1991 through September 31, 2001.

Design Criteria

Design Speed

The design speed for low volume off-system gravel roads is 70 km/h. We anticipate that all design features will meet the criteria for a 70 km/h design speed. There is no posted speed limit in the vicinity of the project.

Drainage

The drainage area for Sand Creek at this crossing is 287.5 square kilometers. The channel is deeply incised and well defined. Water overtopped the road in 1986 and washed out the western approach. The flooding also cut off a meander loop of the creek reducing the channel length approximately 600 m. The bridge is now located 100 m upstream of its confluence with the Yellowstone River. Water surface elevations at the crossing may be affected by flooding and ice jams in the Yellowstone River.

County officials have indicated that heavy debris occurs at the existing crossing during spring

runoff. Consequently, we recommend that the bridge span the low water channel. The creek's banks are fairly well vegetated to the low-water channel. The channel appears stable although the reduction in channel length caused by the flood may have some long-term effect on the stability of the channel banks.

We will investigate the possibility of closing the road. Rather than providing a temporary detour. This is discussed in more detail in the "Detour" section of this report. If a detour is needed, the required waterway opening will be determined by the Hydraulics Section.

The crossing is located in a delineated floodplain and a floodplain permit will be required.

An irrigation wastewater ditch is located in the NW quadrant. It will not be affected by the construction. A temporary detour could potentially impact the ditch. The project should not affect any other drainages or irrigation facilities.

Horizontal Alignment

We recommend that the new bridge be constructed on the existing horizontal alignment. Although the existing crossing is on a horizontal curve, its proximity to the Yellowstone River makes it unfeasible to locate the new bridge downstream from the existing bridge. Locating the crossing upstream would result in impacts to an irrigation wastewater ditch and cultivated land. The creek channel also bends to the right and parallels the roadway. The roadway template could encroach on the channel if the new crossing was located upstream. Both upstream and downstream locations would require more road construction.

Vertical Alignment

A grade raise will be necessary since the depth of the new bridge's superstructure will be greater than the superstructure depth of the existing bridge. We propose that the new alignment provide the desirable SSD for a 90 km/h design speed. We recommend that the greater design speed be used, because the roadway adjacent to the project provides the SSD for higher design speeds. The perpetuation of an overtopping elevation is not a consideration at this site.

Surfacing and Typical Section

We request that the Surfacing Design Section provide a recommendation for the new plant mix surfacing based on a specific structural loading and R-value. The surfacing will utilize 4:1 surfacing inslopes.

The new bridge will provide an 8.4 m roadway width. Since the existing roadway width is 8.53 m, we recommend that the approaches also be constructed to an 8.4 m top throughout the project length.

If the actual PTW width is less than 8.4 m, we recommend that the new roadway maintain an 8.4 m width at least through the limits of the horizontal curve.

New Bridge

The new bridge will provide an 8.4 m width from face of rail to face of rail. Standard T-101 bridge rail will be used. We anticipate a single span structure using prestressed concrete beams. The substructure will most likely have semi-integral abutments.

Grading

The grading on the project should be accomplished using Embankment-in-Place. We anticipate that the grading will involve less than 20 000 cubic meters of material. Since a grade raise will be necessary for the new structure, off-site borrow will be needed to construct the approaches. Some of the material from the temporary detour may be used to construct the standard fill slopes.

Detour

We recommend that the road be closed during construction of the new bridge. Traffic would be detoured on an alternate route located north of the project. The alternate route has a total length of 5.5 km and would add approximately 1 km to the trip length. The bridge on the alternate route was constructed in 1987. It has a Sufficiency Rating of 89 and no load restrictions.

We discussed closing the road with Joanne Stahl and she will present it to the County Commission.

If the County allows us to close the road, we will upgrade the surfacing on the alternate route. This will involve some reshaping of the road surface and the placement of additional gravel. We believe the improvements to the alternate route are much less costly than constructing a detour.

If road is closed the County would like it open by September. They would like to have traffic back on the original route, because of the increased traffic due to harvest and cattle sales.

If a detour is needed it should be located on the downstream (south) side. The south side would not impact the irrigation wastewater ditch or the Sand Creek channel. However, it also is close to the Yellowstone River, which may restrict the amount of offset that can be used.

A bridge would be required for the detour structure. The detour design speed would have to be evaluated. The detour should have a gravel surface.

Geotechnical Consideration

No geotechnical problems were noted at the time of the review. A subsurface investigation will be needed for the design of the bridge foundation.

Traffic & Geometric Considerations

The project has no unique traffic problems and requires no special geometric features. New signing will be provided. The existing signs will be salvaged to Rosebud County. Pavement markings will be needed.

Exceptions to Standards

We may request an exception for the use of a reduced length of guardrail. Since this is off system, any request for exceptions will be included in the Scope of Work Report. We do not anticipate the need for any other exceptions to the design criteria.

Miscellaneous

We recommend that the guardrail on the project be limited to bridge approach sections with optional terminal end treatments with the exception of the rail in the NW quadrant. This segment of approach rail will require an intersecting roadway transition. This option will be evaluated after we have a preliminary alignment and grade.

There are no mailboxes within the project limits.

We will attempt to relocate the field approach located in the SW quadrant. The approach in the NW quadrant cannot be relocated because of the wastewater ditch.

Right-of-Way & Utilities

The existing right-of-way widths are 9.14 m on the north and 15.24 m on the south side of the roadway.

The acquisition of new right-of-way will be necessary, because of the increased elevation of the new structure. A temporary construction permit will be necessary if a detour is used.

An overhead power line is located very close to the north side of the PTW. This line will be impacted by construction. A buried telephone line on the south is attached to the bridge and will have to be relocated. The project should have no other utility involvement.

An old railroad bed is located south of the PTW. The work may affect this bed so we will need to determine if the property is still owned by the railroad.

Environmental Considerations

The proposed scope of work, replacing the existing bridge, constitutes modernization of the transportation facility. In addition, the initial review did not identify any significant environmental effects, issues or cumulative effects of the proposed work. Therefore, we anticipate that a Categorical Exclusion will provide a sufficient level of documentation for the proposed project in accordance with the guidelines of 23 CFR 771.117. However, the level of documentation may be revised pending information obtained from on-site reviews during the early stages of the project's development.

No significant environmental effects or issues were identified. The project should have no 4(f) or 6(f) involvement. It should not affect any hazardous waste sites. The project's effect on any threatened or endangered species will be evaluated.

We anticipate that riprap will be placed at the bridge ends to protect them from scour. The riprap will be keyed into the channel bottom. The placement of riprap should have a minimal effect on the riparian fringe as the existing bridge also has riprap at the end bents.

Check old railroad bed for historical significance.

If a detour is needed, it will have minor temporary impacts.

Although the impacts should be minimal, a cultural resource survey should be conducted.

Field Survey

We recommend that an aerial survey should be performed for this project. Additional survey will be needed to locate channel elevations below the water surface. Refer to the Location Hydraulic Study Report for the hydraulic survey requirements.

A section corner survey will be necessary, since we anticipate the need for R/W acquisition. A soils survey will be needed since the surfacing will be designed for specific structural values.

Traffic Control

As noted above, we anticipate that we will be able to close the road during construction and route traffic onto a detour. If a temporary detour needs to be constructed, it will be designed to the parameters outlined in the "Detour" section of this report.

Salvage

Salvage all usable timber stringers and decking from the existing bridge for Rosebud County.

Public Involvement

A draft news release will be submitted. If a detour is used, the project will have a limited effect on the area residents, and a public informational meeting should not be needed. If the road can be closed, a public meeting may be needed. We will coordinate with Rosebud County during the development of the project.

No groups having unique needs or specific concerns have been identified.

Cost Estimate

The preliminary cost estimate for this project is given below.

Bridge Work	\$147,000.
Road Work	325,000*.
Remove Structure	<u>4,000.</u>
Subtotal	\$476,000.
Inflation (3 years at 3%)	43,000.
Construction Engineering (15%)	78,000.
Contingencies (10%)	<u>60,000.</u>
Total	\$657,000.

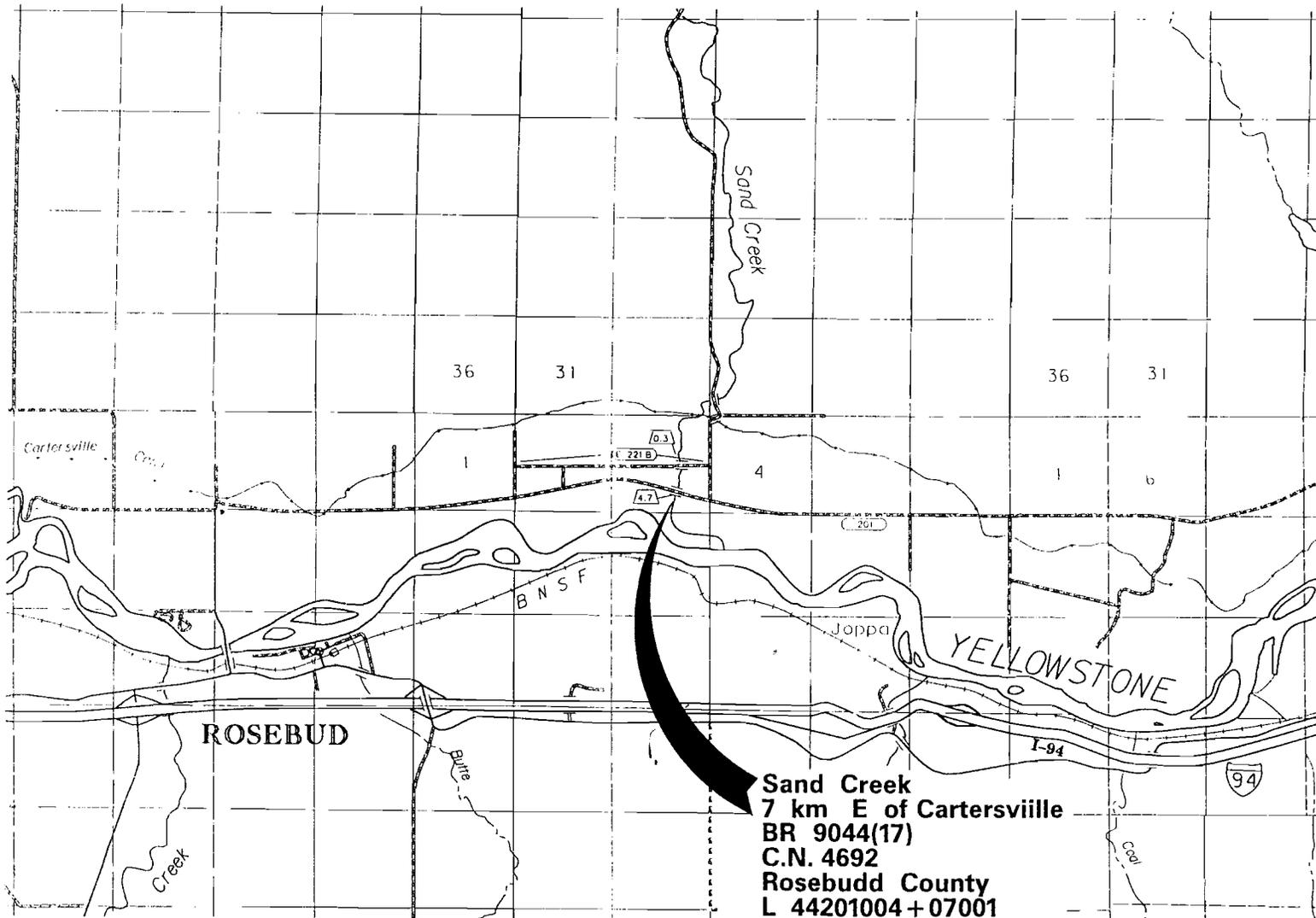
The estimate is based on a lump sum estimate for road work and a 25 m long, 8.4 m wide bridge at \$700 per square meter. The estimated cost of the roadway items includes detour and mobilization. No allowance was included for right of way and utilities.

*The estimated cost of the roadway items is \$325,000 including the additional gravel placed on the county detour and all mobilization.

Project Management

The Bridge Bureau will manage this project.

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← TO FORSYTH

ROSEBUD

**Sand Creek
7 km E of Cartersville
BR 9044(17)
C.N. 4692
Rosebudd County
L 44201004+07001**

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→ TO MILES CITY