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**ENVIRONMENTAL**

Janice W. Brown  
 Division Administrator  
 Federal Highway Administration  
 5854 Shepard Way  
 Helena, MT 59601

**Subject: Programmatic Categorical Exclusion (PCE) Concurrence Request  
 RIMROCK ROAD – SHILOH TO 54TH STREET - BILLINGS  
 CM 1034(1)  
 5035**

Dear Janice W. Brown:

This submittal requests approval of the above-mentioned proposed project as a Categorical Exclusion under the provisions of 23 CFR 771.117(d) and the Programmatic Agreement as signed by MDT and FHWA on April 12, 2001. This proposed action also qualifies as a Categorical Exclusion under ARM 18.2.261 (MCA 75-1-103 and MCA 75-1-201).

The following form provides documentation required to demonstrate that all of the conditions are satisfied to qualify for a Programmatic Categorical Exclusion. Copies of the Alignment and Grade Review Report and Project Location Map are attached. In the following form, "N/A" indicates not applicable; "UNK" indicates unknown.

**NOTE: A response in a large 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 23 CFR 771.117(a).	<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 23 CFR 771.117(b).	<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 type="checkbox"/>	<input checked="" 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"/>
2. A high rate of residential growth exists in the area of the proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A high rate of commercial growth exists in the area of the proposed project.	<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"/>

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>UNK</u>
5. Parks, recreational, or other properties acquired/improved under Section 6(f) of the 1965 National Land & Water Conservation Fund Act (16 USC 460L, <i>et seq.</i> ) are 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 Section 6(f) sites would be documented and compensated with the appropriate agencies (MDFWP, local entities, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Sites either on, or eligible for the National Register of Historic Places with concurrence in determination of eligibility or effect under Section 106 of the National Historic Preservation Act (16 USC 470, <i>et seq.</i> ) by the State Historic Preservation Office (SHPO) would be affected by this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Parks, recreation sites, school grounds, wildlife refuges, historic sites, historic bridges, or irrigation that might be considered under Section 4(f) of the 1966 US Department Of Transportation Act (49 USC 303) are on or adjacent to the project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. Nationwide Programmatic Section 4(f) Evaluation forms for those sites are attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. This proposed project requires a full Section 4(f) 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Conditions set forth in Section 10 of the Rivers and Harbors Act (33 USC 403) and/or Section 404 of the Clean Water Act (33 USC 1251-1376) codified at 33 CFR 320-330 would be met.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Impacts in wetlands, including but not limited to those referenced under Executive Order (EO) #11990, and proposed mitigation would be coordinated with the Montana Inter-Agency Wetland Group.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. A 124SPA Stream Protection permit would be obtained from the MDFWP.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. A delineated floodplain exists 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. A 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 that 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"/>

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>UNK</u>
The designated National Wild and/or 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 Section 7 of the Wild and Scenic Rivers Act (16 USC 1271 – 1287), 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 23 CFR 772.5(h), 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. If yes, are there potential noise impacts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A Noise Analysis would be completed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. There would be compliance with the provisions of both 23 CFR 772 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. Substantial changes in access control would be associated with the 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 same.	<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 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 CERCLA or CECRA) 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"/>

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>UNK</u>
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 Stormwater Discharge conditions (ARM 17.30.1101-1117), 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 County Noxious Weed Control Act (7-22-21, MCA), including directions as specified by the county(ies) wherein its intended work would be done would be conducted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J. There are "Prime" or "Prime if Irrigated" Farmlands designated by the Natural Resources Conservation Service on or adjacent to the proposed project area. If the proposed work would affect Important Farmlands, then an AD 1006 Farmland Conversion Impact Rating form would be completed in accordance with the Farmland Protection Policy Act (7 USC 4201, et seq.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
K. Features for the Americans with Disabilities Act (PL 101 336) compliance would be included.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 Clean Air Act's Section 176(c) (42 USC 7521(a), as amended) under the provisions of 40 CFR 81.327 as it is either in a Montana air quality:				
A. "Unclassifiable"/attainment area. This proposed project is not covered under the EPA's September 15, 1997 Final Rule on air quality conformity. and/or	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 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" under 40 CFR 52.1382(c)(3)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Federally listed Threatened or Endangered (T/E) Species:				
A. Recorded occurrences, and/or critical habitat are in the vicinity of the proposed project.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Would this proposed project result in a "jeopardy" opinion (under 50 CFR 402) from the Fish and 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. No significant effects on access to adjacent property or to present traffic patterns would occur.

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). The project also complies with the provisions of Title VI of the Civil Rights Act of 1964 (42 USC 2000d) under FHWA regulations (23 CFR 200).

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

  
\_\_\_\_\_  
Heidi Bruner  
MDT Environmental Services  
Billings District Project Development Engineer

Date: Jan. 19, 2006

  
\_\_\_\_\_  
Concur  
Thomas L. Hansen, P.E.  
MDT Environmental Services  
Engineering Section Supervisor

Date: 1/23/06

  
\_\_\_\_\_  
Concur  
Federal Highway Administration

Date: 25 JAN 06

TLH:hsb:S:\PROJECTS\BILLINGS\5035\5035\_CATEX(D)\_01-11-06\_2.DOC

Attachments

- cc: Suzy Althof MDT Contract Plans Section Supervisor  
Kent Barnes, P.E. MDT Bridge Engineer  
Bruce Barrett MDT Billings District Administrator  
Paul Ferry, P.E. MDT Highway Engineer  
Tom Hansen, P.E. MDT Environmental Services Bureau Engineering Section Supervisor  
John H. Horton MDT Right-of-Way Bureau Chief  
David W. Jensen MDT Fiscal Programming Section Supervisor  
Jean Riley, P.E. MDT Environmental Services Bureau Chief  
FILE MDT Environmental Services  
Montana Legislative Branch Environmental Quality Council (EQC)

**ALTERNATIVE ACCESSIBLE FORMATS OF THIS DOCUMENT WILL BE PROVIDED UPON REQUEST.**



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

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MAY 25 2005

Memorandum

To: Tom S. Martin, P.E., Consultant **ENVIRONMENTAL**

From: Tim J. Conway, P.E., Consultant Plans Engineer *TJC*

Date: May 19, 2005

Subject: CM 1034(1)  
RIMROCK RD-SHILOH TO 54TH-BLGS  
CN: 5035  
Work Type: 130 Reconstruction-with Added Capacity

We request that you approve the attached Alignment Review Report for this project.

Approved  Date 5/20/05  
Tom S. Martin, P.E.,  
Consultant Design Engineer

We are requesting comments from the following individuals, who have also received a copy of the Report. We will assume their concurrences if no comments are received within two weeks of the above approval date.

Circulated on: 26-May-05

TJC:bdn:5035cdespAGR

*Comments on p. 15*  
*Comments on pp. 14-15 JAR*  
*CGH*

Comments?	Y*	N	Initials/Date
Biological Resources	X		PS 6/14/05
Cultural Resources	X		Jan 5/31
Hazardous Waste			✓ (TJC) 6/13

Attachment: Alignment & Grade Report

Return (\*/attached Alignment and Grade Review Report) when "Initials/Date" column completed by June 1<sup>st</sup>.

Send any comments about the attached to: BDN

*Comments given to Blair 6/14/05*

JUN 14 RECD PS

# Alignment and Grade Review Report

CM 1034 (1)  
Rimrock Rd - Shiloh to 54<sup>th</sup> - Billings  
Control No. 5035

Prepared For:

City of Billings  
510 North Broadway, 4<sup>th</sup> Floor  
Billings, MT 59101

Montana Department of  
Transportation  
Helena, MT 59620

Prepared By:

HKM Engineering Inc.  
P.O. Box 31318  
Billings, MT 59107

May 17, 2005

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## **Alignment and Grade Review Report**

The Alignment and Grade Review meeting for the project, *Rimrock Road - Shiloh to 54<sup>th</sup> - Billings*, was held at the HKM Engineering Inc. Billings office beginning at 10:00 a.m. on April 5, 2005. The following project representatives were present:

Gary Neville	MDT District Engineering Services Supervisor – Billings
Dave Leitheiser	MDT Hydraulics Section – Helena
Roy Peterson	MDT Traffic Section – Helena
Nels Wilkins	MDT Consultant Design – Helena
Gerry Brown	MDT Construction Engineering Services - Lewistown
Chris Hertz	City of Billings Public Works - Engineering Division
Terry Smith	City of Billings Public Works - Engineering Division
John Shoff	HKM Engineering Inc. - Billings
Todd Cormier	HKM Engineering Inc. - Billings
Katie Kay	HKM Engineering Inc. - Billings
Wade Irion	HKM Engineering Inc. - Billings
Greg Gabel	HKM Engineering Inc. - Billings

### **Proposed Scope of Work**

The proposed scope of work for this project is to completely reconstruct the roadway to provide for a three-lane roadway section and improved shoulders for the purpose of improving safety and level-of-service. A separate multi-use pedestrian/bike path is also to be included in this project.

The current project consists of two distinct areas and general typical sections:

- Typical 1 - Widen roadway from Shiloh Road to Clear View Drive to a three lane typical, maintaining the existing north-side frontage road and install a detached multi-use pedestrian/bicycle path. Existing right turn bays are not expected to be perpetuated.

- Typical 2 - Widen roadway from Clear View Drive to 54<sup>th</sup> Street West to a three lane rural typical and install a detached multi-use pedestrian/bicycle path. The right turn bay at 54<sup>th</sup> Street West is to be perpetuated.

The design speed for this project is 60 kph as determined by the Montana Department of Transportation, and based on the route's suburban nature and level terrain.

### **Project Location and Limits**

This project is located within the northwest portion of the city of Billings urban area, and is wholly within Yellowstone County, Montana. Within the project area, Rimrock Road is designated as a minor arterial urban route (U-1034) by the Montana Department of Transportation (MDT). The project limits begin just west of the intersection of Shiloh Road (U-1051) with Rimrock Road at approximate reference post (RP) 0.1 and continue west approximately 2.7 km (1.7 miles) to just beyond the intersection of 54<sup>th</sup> Street West and Rimrock Road at approximate RP 1.7. Stationing and reference posts run in a westerly direction from Shiloh Road.

There are no bridge structures located within the project limits. A single crossing of the Cove Ditch occurs near the intersection of Rimrock Road and 54<sup>th</sup> Street West through the use of a steel culvert.

The last major construction project for this section of Rimrock Road occurred in 1955 under State project's S176(1) and S176(2). In 1988, the City of Billings performed a 2-inch engineered overlay of the project area (RP 0.18 to RP 2.5).

Improvements to Shiloh Road from Rimrock Road to Poly Drive (City of Billings W.O. 95-08, SID 1371) are currently under construction, and are expected to be completed in 2005. Improvements include a complete reconstruction of the intersection of Rimrock Road at Shiloh Road, to which this project will connect.

### **Physical Characteristics**

Rimrock Road was initially developed in the 1880's as a section line road serving rural and agricultural homesteads (farm to market). By the 1940's, the road became locally known as Rimrock Road. In the 1950's, Rimrock Road was reconstructed by the Montana Department of Transportation under State project's S176(1) and S176(2), and in 1988, Rimrock Road received an engineered overlay by the City of Billings. Cores taken along the route indicate asphalt thicknesses ranging from 75mm to 250mm.

The horizontal alignment of Rimrock Road is straight, with little or no change since the alignment generally follows the section line. The existing vertical alignment consists of multiple shallow curves which correspond to the topography of the area. The maximum vertical grade along the project is less than 3%. A gravel-surfaced frontage road to serve residential development exists along the north side of Rimrock Road from Shiloh Road to Clear View Drive, or approximately three-fifths of the project length. The existing right of way widths along the project corridor vary from 30.5 meters (100-ft) to 48.8 meters (160-ft).

Currently, the roadway typically consists of two 3.6-meter driving lanes and generally nonexistent shoulders for a typical top width of 7.2 meters. Three right turn bays exist at various locations along the project corridor as developed by adjacent subdivision developments.

A storm drain line from Rim Point Drive to Shiloh Road collects storm water runoff through a series of grates and "bee-hive" drop inlets located at collection basins and v-ditches along the north side of Rimrock Road between Rimrock Road and the frontage road. West of Rim Point Drive, storm water runoff is collected by a roadside ditch on the north side of Rimrock Road and directed towards the Cove Ditch. No storm water runoff is collected along the south side of Rimrock Road as the terrain typically falls away from the roadway. No curb and gutter exists along Rimrock Road through the length of the project area.

Fill slopes range from flat to 3:1 or steeper. Typical fill heights range from less than 0.5 meters to over 3 meters. The existing cut slopes are characterized by inslopes of 4:1 or flatter, a sloped ditch section of variable width, and backfills of 3:1 or steeper. The typical cut depths range from 0.5 meters to 1.5 meters. Generally, there is very little cut within the project limits.

Recent traffic data was provided by the MDT Traffic Data Collection Section of the Rail, Transit and Planning Division in a memorandum dated September 19, 2004, and was collected from recent subdivision traffic impact statements provided by the City of Billings. The traffic data used for this project is detailed herein.

**Table 1. Traffic Data (Montana Department of Transportation)**

<b>2004 ADT =</b>	6410 vpd
<b>2006 ADT =</b>	6870 vpd (letting year)
<b>2026 ADT =</b>	13770 vpd (design year)
<b>DHV =</b>	1510 vph
<b>D =</b>	Not Provided
<b>T =</b>	2.5%
<b>EAL =</b>	83
<b>AGR =</b>	3.5% (per year, straight line growth)
<b>DHV (%) =</b>	11.0% of the AADT

**Table 2. Traffic Data (City of Billings)**

<b>D<sub>1</sub> =</b>	65% / 35% just west of Shiloh
<b>D<sub>2</sub> =</b>	50% / 50% just east of Shiloh
<b>Mean Speed =</b>	37.16 mph, eastbound at 40 <sup>th</sup> St W
<b>85<sup>th</sup> Percentile Speed =</b>	41.00 mph, eastbound at 40 <sup>th</sup> St W
<b>Peak Hour Factor (PHF) =</b>	0.89, just east of Shiloh

Vehicle accident data was requested for Rimrock Road between Shiloh Road and 54th Street West. The data was supplied for the most recent 5-year time period from January 1, 1998 through December 31, 2002 by the Montana Department of Transportation. During this time period, 19 accidents were recorded. The analysis provided by MDT's Safety Management Section indicates that the most common accident type was a collision between moving vehicles usually involving a turning vehicle from the mainline or from adjoining driveways or approaches. This type of collision occurrence happened at a rate of approximately 89.5% versus the statewide city average of 77.4% . These collisions occurred throughout the project limits, and generally were not concentrated at any one point or location. The reconstruction of Rimrock Road to a 3-lane section with a TWLT lane is expected to improve the accident rate along the project corridor by removing left-turning vehicles from the traffic stream.

The highest concentration of vehicle collisions at a specific location during the data period appears at the intersection of Rimrock Road and 54th Street West with 6 occurrences. In August of 2000, a safety project was completed at this intersection through the installation

of an overhead flashing beacon. Since its installation, there was only a single recorded collision within the data time period. The second highest concentration of collisions appears at the intersection of Rimrock Road and Shiloh Road. This intersection is currently being reconstructed and will include a traffic signal and improved geometry.

### **Horizontal Alignment**

The horizontal alignment is straight with no significant changes. No change is proposed to the existing horizontal alignment by this project.

### **Vertical Alignment**

The proposed vertical alignment consists of several minor vertical curves, all of which meet desirable stopping sight distance criteria based on the project's design speed. The maximum grade on the project is 2.552%. Generally, the vertical alignment follows the existing ground profile except where small vertical curves have been introduced to assist with storm water runoff upon the ultimate development of the corridor to a full urban section. Changes to the vertical alignment include:

- Station 18+60 to 20+50 - Introduced sag vertical curve to accommodate future curb and gutter and to minimize right-of-way impacts.
- Station 20+50 to 28+75 - Introduced vertical curves to lower the grade of the roadway to minimize right-of-way impacts.
- Station 30+20 to 32+60 - Introduced vertical curves to accommodate future curb and gutter and to lower the grade of the roadway to minimize right-of-way impacts.
- Station 30+90 - Lowered the grade of the roadway to minimize right-of-way impacts.

### **Typical Sections**

The proposed roadway surfacing section for this reconstruction project is 90-mm of plant mix bituminous surfacing over 410-mm crushed aggregate surfacing for a total surfacing section depth of 500-mm.

The proposed surfacing section for the multi-use pedestrian/bicycle trail is 100-mm of plant mix bituminous surfacing over 150-mm of crushed aggregate surfacing as recommended

by the City of Billings.

The typical sections originally considered for this project are described as follows:

- Typical 1 - A three-lane rural typical with a finished top width of 15.0 meters including: 2 - 3.6 m travel lanes, 1 - 4.2 m two-way left-turn lane, 2 - 1.8 m shoulders. The crown of this typical would break at the WB lane line, 2.1 m north of centerline. A 3.3 m multi-use pedestrian/bicycle path would be installed along the north side of the roadway on the existing frontage road. This typical extends from the beginning of the project (Station 16+10) to the intersection with Clear View Drive (Station 33+00).
- Typical 2 - A three-lane rural typical with a finished top width of 15.0 meters including: 2 - 3.6 m travel lanes, 1 - 4.2 m two-way left-turn lane, 2 - 1.8 m shoulders. The crown of this typical would break at the WB lane line, 2.1 m north of centerline. A 3.3 m multi-use pedestrian/bicycle path would be installed along the north side of the roadway between the road and the right-of-way. This typical starts at the end of the frontage road and the intersection with Clear View Drive (Station 33+00) and continues to the end of the project.

In an effort to reduce project impacts, two alternate typical sections were also developed, and are described as follows:

- Alternate Typical Section 1 - A three-lane typical incorporating curb and gutter along the north EOP with a finished top width of 13.35 meters including: 2 - 3.6 m travel lanes, 1 - 4.2 m two-way left-turn lane, a 1.8 m south shoulder. The crown of this typical would break at the WB lane line, 2.1 m north of centerline. A 3.3 m multi-use pedestrian/bicycle path would be installed along the north side of the roadway *between* Rimrock Road and the existing frontage road. This typical extends from the beginning of the project (Station 16+10) to the intersection with Clear View Drive (Station 33+00).
- Alternate Typical Section 2 - A three-lane rural typical with a finished top width of 15.0 meters including: 2 - 3.6 m travel lanes, 1 - 4.2 m two-way left-turn lane, 2 - 1.8 m shoulders. The crown of this typical would break at the WB lane line, 2.1 m north of centerline. The 1.8 meter shoulders would be used as on-street bicycle lanes including the installation of a 0.3 m (1 foot) rumble strip between the bicycle lane and the driving lane. No multi-use pedestrian/bicycle path would be installed along the project. This typical would start at the beginning of the project (Station 16+10) to and

continue to the end of the project.

Each of the above mentioned typical sections was discussed at the Alignment and Grade Review Meeting. Based on this discussion, it was determined that a new typical section should be reviewed. This new section can be described as a full urban typical including concrete curb and gutter with a finished top width of 14.6 meters including: 2 - 3.6 m travel lanes, 1 - 4.2 m two-way left-turn lane, and 2 - 1.6 m shoulders (to lip). The limits of this typical would be from the project beginning (Station 16+10) to Rim Point Drive (Station 29+15), or the "high-point" of the project. This station range was selected since a storm drain line already exists within this section. Between Rim Point Drive and Clear View Drive, this same section could be utilized with curb and gutter on the north side only, and between Clear View Drive and the project termination, Typical Section 2 could be utilized.

Through further discussion, it was suggested that the widths of this typical could be further reduced in an effort to reduce impacts and project costs. It was suggested that the two-way left turn lane could be reduced from 4.2 meters to 3.9 meters. Additional discussion revolved around the possible reduction of the shoulder width. This proposed reduction was withdrawn as it was determined that the on-street shoulder would probably be used by more experienced bicyclists regardless of the installation of a separate path, and could be used for mail delivery as is done on other recently completed sections of Rimrock Road.

Regarding mail delivery and the inclusion of mail pull-outs along the project, it was determined that the installation of mail pull-outs is not necessary due to the urban/suburban nature of the corridor. Furthermore, by not installing mail pull-outs, roadway impacts and project costs could be minimized. With respect to the shoulders, leaving the shoulder width at 1.6 meters (from lane line to face of curb) would allow for mail delivery without the need for mail pull-outs, which would also be consistent with the other recently improved sections of Rimrock Road.

Based on these discussions, and assuming additional funding can be secured by the City of Billings for these additional improvements, the following typical sections will be utilized for this project:

- **Urban Typical Section (TS #1)** - A three-lane urban typical with a finished surfacing top width of 13.5 meters (14.7 meters back of curb to back of curb) including: 2 - 3.6m travel lanes, 1 - 3.9m two-way left-turn lane, 2 - 1.8m shoulders (to back of curb), and concrete curb and gutter. The crown of this typical would break at the WB lane line, 1.95m north of centerline. A 3.0m multi-use pedestrian/bicycle path would

be installed along the north side of the roadway *between* Rimrock Road and the existing frontage road. No sidewalk will be installed along the south side of the roadway. This typical will extend from the beginning of the project (Station 16+10) to at or near the intersection with Rim Point Drive (Station 29+15).

- **Half Urban Typical Section (TS #2)** - A three-lane urban typical with a finished surfacing top width of 17.7 meters including: 2 - 3.6m travel lanes, 1 - 3.9m two-way left-turn lane, a 1.6m north side shoulders (to lip) with curb and gutter, and a 1.8m south side shoulder without curb and gutter. The crown of this typical would break at the WB lane line, 1.95m north of centerline. A 3.0m multi-use pedestrian/bicycle path would be installed along the north side of the roadway *between* Rimrock Road and the existing frontage road. This typical will extend from at or near the intersection with Rim Point Drive (Station 29+15) to at or near the intersection of Clear View Drive (Station 33+00).
- **Rural Typical Section (TS#3)** - A three-lane rural typical with a finished top width of 14.7 meters including: 2 - 3.6m travel lanes, 1 - 3.9m two-way left-turn lane, 2 - 1.8m shoulders. The crown of this typical would break at the WB lane line, 1.95 m north of centerline. A 3.0m multi-use pedestrian/bicycle path would be installed along the north side of the roadway at the right-of-way, following the existing ground profile as practical. This typical will start at the end of the frontage road and the intersection with Clear View Drive (Station 33+00) and continues to the end of the project.

An existing right-turn bay at the intersection of Rimrock Road and 54<sup>th</sup> Street West will be perpetuated by this project. Existing right-turn bay at Rim Point Drive (WB Rimrock) and at Town Lane (EB Rimrock) are not expected to be perpetuated by this project. The right-turn bay at Rim Point Drive was originally installed to service a religious temple located north of Rimrock Road. The City of Billings will collect traffic volume data at this intersection to verify that this right-turn bay can be removed. It is important to note that the perpetuation of this right-turn bay with the proposed roadway improvements would require the removal of the frontage road along the length of the turn bay, and would introduce driveway approaches within the turn bay itself.

To reduce right-of-way impacts, the side slopes have been modified from standard MDT criteria. The cut and fill slopes to be used with TS#1, TS#2, and TS#3 are detailed herein.

**Table 3. Fill Slopes**

<b>Fill Height</b>	<b>Slope</b>
0 m - 3.0 m	4:1
3.0 m - 6.0 m	4:1
6.0 m - 9.0 m	3:1
Over 9.0 m	2:1

In cut sections, a v-ditch has been incorporated into the design. The v-ditch consists of a 1.5-m inslope at 4:1 and the following back-slopes:

**Table 4. Cut Slopes**

<b>Back-slope Height</b>	<b>Slope</b>
0 m – 1.5 m	4:1
1.5 m – 3.0 m	4:1
3.0 m – 4.5 m	3:1
4.5 m – 6.0 m	2:1
Over 6.0 m	1.5:1

In an effort to further reduce right-of-way impacts and propagate drainage, the surfacing inslope has also been modified to a 4:1 slope from the standard 6:1 slope, continuing the modified 4:1 fill slope mentioned above.

### **Grading**

Due to the nature of the project (reconstruction), and the anticipated lowering of the vertical alignment where possible, this project will have a substantial amount of excess excavation material (+/- 28,390 cubic meters as of this level of design).

The soil characteristics within the project corridor are considered acceptable for the redevelopment of Rimrock Road within the project limits. Eleven borings were taken along the project at various locations indicating typically silty sand on top of sandy clay or sandy clay on top of sandy silt. A more detailed breakdown of the geotechnical conditions along Rimrock Road is contained within the geotechnical report for the project.

## **Hydraulics**

A crossing of the Cove Ditch canal is located within the project limits at Sta. 40+50, and will require the installation of a new culvert. The historical function of this canal is to provide irrigation water to approximately 100 acres of farm land south of Rimrock Road and to carry storm water runoff collected by the roadside ditch underneath and away from Rimrock Road. The existing crossing is a 1.94 m x 1.45 m or 1,700mm equivalent structural steel plate pipe arch (SSPPA) that is 12.6 m long. No change to alignment or capacity is anticipated. The Cove Ditch has been contacted regarding this project and will be provided design information as necessary or as available.

There are two cross drain culverts located along the project. Both are located on the westerly end of the project and both are 600mm RCP (24-inch). There are 10 approach culverts located along the project. All approach culverts are 450mm or smaller except for a 600mm approach culvert located under Westfield Drive.

The drainage area for this project is split at the "high point" located near Rim Point Drive. The eastern portion of the study area is mostly developed and has an existing underground storm drain collection system. The western portion of the project is mostly undeveloped and storm runoff is routed through a series of ditches and culverts, ultimately draining to the Cove Ditch. There currently is no alternate outfall for this portion of the project area. As such, the western portion of the project corridor will be evaluated for the interim condition (before a future storm drain outfall main is constructed) and also for the ultimate future construction of an underground storm drain system.

Based on the proposed urban typical section, the storm drain collection system from Rim Point Drive to Shiloh Road will be completed with the necessary manholes and drop inlets needed to collect storm water runoff. West of Rim Point Drive, storm water runoff will be perpetuated to the Cove Ditch.

Discussions with the City of Billings indicate that there are no flooding problems within this area of Rimrock Road, and that no landowners have reported flooding problems. A review of the existing detention north of Rimrock road confirms that adequate storm water storage is presently available.

## **Bridges**

There are no bridge structures within the project limits.

## **Traffic**

There are no revisions to the vertical or horizontal alignment required to provide proper intersection alignment. Some minor modifications to the vertical alignment are anticipated in an effort to minimize impacts and right-of-way, but are not expected to affect traffic operations along the corridor.

A right turn bay at 54<sup>th</sup> Street West will be perpetuated to handle the high volume WB right turning movement at this intersection. A right turn bay at Rim Point Drive will be reviewed by the City of Billings to determine if existing volumes warrant the continuation of this turn bay.

All traffic signs along the project are expected to be removed and replaced with the reconstruction. The intersection flashing beacon located at 54<sup>th</sup> Street West will be reset as needed to accommodate the proposed improvements.

The current posted speed limit along the corridor is 45 mph, which is expected to be perpetuated. Modification of this posted speed limit will require that a speed study be performed demonstrating that the 85<sup>th</sup> percentile speed has changed due to the reconstruction of Rimrock Road to an urban section.

Street lighting along the project corridor will not be installed as directed by MDT and the City of Billings as there are no raised medians along the project corridor and no accident trends or clusters have been identified that could be corrected through lighting. Existing street lights installed at the Rim Point Drive right turn bay under a private contract may be perpetuated should the right turn bay be perpetuated. A final determination will be provided by the City of Billings.

## **Miscellaneous**

Mailbox turnouts will not be installed along the project corridor as discussed and agreed to during the alignment and grade review meeting. Rumble strips will not be installed due to the urban/suburban nature of the corridor and the numerous approaches and intersections on the project.

It was noted that the section corner located at Rimrock Road and 54<sup>th</sup> Street West may be located incorrectly within the intersection. Right-of-way within this area has been determined based on subdivision plats and found property pins. However, if it is determined that the section corner has been incorrectly set, the property lines adjacent to

this intersection may be off by as much as 1 meter or more. Proposed roadway improvements at this location are not expected to be impacted by this section corner.

The MDT Survey Section will review this intersection and the available information regarding this section corner relative to the section corner location in an effort to resolve the location discrepancy.

### Design Exceptions

The project is programmed as a reconstruction to improve safety and level-of-service through the installation of a two-way left turn lane and improved shoulders. Due to the projects limited budget, the primary focus of the project is to construct these improvements as practical, within the project budget, and within existing right-of-way. As such, certain design exceptions to standard MDT design criteria are necessary. Design exceptions are expected to be documented in a Design Exception Report.

The cut and fill slopes, including the surfacing in-slopes, for this project have been modified to reduce right-of-way requirements. The standard road side ditch was also modified to a V-ditch in an effort to further reduce right-of-way requirements. The modified cut and fill slopes are as follows:

**Table 5. Slope Tables**

Back-slopes			Fill Slopes		
Range	Standard	Modified	Range	Standard	Modified
0 – 1.5 m	5:1	4:1	Surfacing In-slope	6:1	4:1
1.5 m – 3.0 m	4:1	4:1	0 – 3.0 m	6:1	4:1
3.0 m - 4.5 m	3:1	3:1	3.0 m – 6.0 m	4:1	4:1
4.5 m – 6.0 m	2:1	2:1	6.0 m – 9.0 m	3:1	3:1
Over 6.0 m	1.5:1	1.5:1	Over 9.0 m	2:1	2:1

The reduction of 6:1 slopes to 4:1 slopes is considered acceptable as accidents along the route are typically not run-off-the-road accidents, but are generally turning vehicle accidents being corrected by the installation of a TWLT. This will be detailed within the design exception report.

The requirement for mailbox turnouts was reviewed at the alignment and grade review meeting, and was determined to not be necessary due to the urban/suburban nature of the project corridor. Moreover, removal of this requirement will assist in reducing right-of-way

impacts through the corridor. Mailboxes will be placed behind the curb and gutter or behind the shoulder as consistent with other recently reconstructed segments of Rimrock Road.

Standard MDT approach criteria was also reviewed at the alignment and grade review meeting, and was determined that driveway approaches along the project corridor could be constructed to match the existing driveway widths. Standard approach radii and landing criteria will be used initially, and will be reviewed at the Plan-In-Hand meeting on a case by case basis. In areas of curb and gutter, standard driveway approaches will be installed, but only to the width of the existing driveways.

The reduction of the standard MDT left turn lane bay lengths and turn lane tapers will be reviewed by MDT to see if the proposed left turn bay and taper at 54<sup>th</sup> Street West can be reduced in an effort to reduce project costs and the corridor length.

### Right-of-Way

Construction permits may be necessary due to the widening of Rimrock Road. No new right-of-way is anticipated for this project. The existing right-of-way through the corridor varies from 33.5 meters to 48.8 meters.

### Utilities/Railroads

Numerous above ground and below ground utilities exist along the corridor. A Phase I SUE survey has been completed. Natural gas, telephone, fiber optic, CATV, overhead power, water mains, a storm drain line, and a sanitary sewer line are present within the project. A Phase II SUE program will be recommended once a final typical section has been selected and approved, and funding concerns have been addressed. Minor utility relocations may be necessary with the installation of a storm water collection system. No major utility relocations are anticipated.

There is no railroad alignment within the project corridor. The nearest railroad is a Burlington Northern Santa Fe (BNSF) railroad line located several miles to the west of this project.

### Environmental Considerations

A cultural resource inventory was performed on the project corridor and indicated <sup>one</sup> ~~no~~ historical sites and one historical instance. The historical <sup>SITE</sup> instance is identified as the Cove

*what is an historical "instance"?*

Ditch canal, which Rimrock Road crosses just east of 54<sup>th</sup> Street West. The culvert present at this location is considered a part of Rimrock Road and is modern in nature. Construction activities at this location are not expected to affect the integrity, capacity, or eligibility of this canal. ~~Montana SHPO has provided a Determination of Effect on this project, have determined that the proposed project would have no effect to the NRHP eligible Cove Ditch.~~ <sup>THE MDT SUBMITTED</sup> ~~SHPO HAS CONCURRED THAT THE PROJECT WOULD HAVE NO EFFECT TO THE DITCH.~~ <sup>NO</sup>

A traffic noise study was performed for this project. This study determined that one location will meet MDT noise impact criteria of 66 dBA in the design year 2026 for the NO BUILD alternative. As project development continues, a comparison will be made to determine if this impact criterion will also be exceeded at this location for the improved roadway.

The project is located within an area designated non-attainment for CO. However, as the project will not add capacity, no further analysis is considered necessary. This will be addressed in the Initial Site Assessment (ISA) document for this project.

A Biological Resource Report (BRR) including references to noxious weeds, wetlands, and threatened and endangered (T and E) species was determined to not be necessary at the PFR and scoping meeting for this project by MDT and the City of Billings due to the urban/suburban nature of this project as well as the criteria to stay within existing right-of-way. However, MDT Environmental Services Bureau had stated that a BRR performed by a biologist is necessary, including references to noxious weeds, wetlands, and threatened and endangered (T and E) species. MDT Environmental will perform this work for the project. *BRR is done and has been distributed*

A programmatic categorical exclusion is being prepared for this project.

### Traffic Control

Traffic will be maintained through the project's construction with appropriate signing, flagging, etc., in accordance with the Manual on Uniform Traffic Control Devices.

### Public Involvement

A level B public involvement plan was developed for the project. Task items performed to date included the following:

- A news release to the appropriate newspapers, radio stations and television stations

explaining the project and including a department point of contact was distributed in October 2004.

- An informational public meeting was held on November 4, 2004. Generally, the public was favorable towards the reconstruction of Rimrock Road though this corridor.
- Initial contacts with adjacent landowners were made at the public informational meeting. No further contact has been initiated at this time.
- Construction notification and information during construction will be completed.

An additional public informational meeting was not considered necessary during the initial scoping of this project. However, since the typical section has been modified to a full urban section for much of the project, MDT feels that a second public informational meeting may be justified, and will be scheduled after the issues with the budget and design have been resolved by the City of Billings.

### Cost Estimate

The total programmed budget (engineering and construction) of this project was set at \$1,918,223. During the development of the project, it became apparent that the proposed work could not be accomplished within this funding constraint. Several design options were proposed at the alignment and grade review meeting in an attempt to stay within the budget constraint, including reducing the corridor length or removal of the separate multi-use pedestrian/bicycle path. However, it is the position of the City of Billings to recommend development of a separate multi-use path throughout the project and the following typical sections: full urban section from Shiloh Road to Rim Point Drive, a half urban section from Rim Point Drive to Clear View Drive, and a rural section from Clear View Drive to 54<sup>th</sup> Street West. The City of Billings understands that this recommendation will add to the project costs (engineering and construction), and that this increase will be carried by the City of Billings. In an effort to assist the City staff in securing this additional funding, a revised estimate of probable project costs will be developed for the recommended typical sections to be presented to the Billings City Council for their consideration.

The estimated costs for the project based on the *original* typical sections presented at the alignment and grade review meeting are detailed herein. Project costs will be re-evaluated for the new urban typical sections proposed by the City of Billings, as costs are expected to increase. Project costs and additional funding by the City of Billings will determine which

typical sections are carried through to final design.

**Table 6. Estimate of Probable Project Costs**

<b>Description</b>	<b>Estimate of Cost</b>
Earthwork	\$121,777
Construction	\$1,225,500
Bridge	\$0
Utilities	TBD
Traffic Control	\$107,782
Right-of-Way	TBD
Miscellaneous	\$336,819
Construction Engineering	\$107,782
<b>Estimate of Total</b>	<b>\$1,899,660 <sup>1</sup></b>

<sup>1</sup> Note: This estimate is based on typical sections submitted for the alignment and grade submittal, and do not reflect proposed typical section changes as agreed upon at the AG review meeting.

The full estimate for the rural section is included as an attachment to this report. A new estimate will be prepared for the urban section now under consideration by the City of Billings and MDT.

**Ready Date**

The proposed ready date for this project is October 1, 2006.

**Project Progression**

In order for final design of the project to proceed and stay on schedule, it is necessary for the City of Billings to make a decision on the typical sections and project limits based on project costs and the ability of the City to secure additional funding. Updated estimates of project costs will be provided to the City based on the recommended typical sections so that the City may request the additional funding from the Billings City Council.