



***Finding of No Significant Impact
on the Environmental Assessment***

***F 7-1(40)9, US HIGHWAY 93
Sula -- North
Ravalli County
(MDT C#1285)***

*Submitted pursuant to
42 U.S.C. 4332(2)(c)*

and

Section 2-3-104, 75-1-201, MCA

by the

***U.S. Department of Transportation
Federal Highway Administration, Region 8***

and the

***State of Montana
Department of Transportation
Highways Division Engineering***

**FINDING OF NO SIGNIFICANT IMPACT
SULA - NORTH F 7-1(40)9**

The Federal Highway Administration has determined that this project will not have a significant impact on the human environment. This "Finding of No Significant Impact" is based on the attached Environmental Assessment and input from distribution of the Environmental Assessment and from the location and design public hearing. This finding has been independently evaluated by the Federal Highway Administration and determined to adequately and accurately discuss the need, environmental issues and impacts of the proposed project, and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The Federal Highway Administration takes full responsibility for the accuracy, scope and content of the attached Environmental Assessment.


Federal Highway Administration
Division Administrator

Date:

1/5/85

**PROJECT NO. F 7-1(40)9, U.S. HIGHWAY 93
Control #1285
Sula - North
in
Ravalli County**

ENVIRONMENTAL ASSESSMENT

This document is prepared in conformance with MEPA requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with NEPA requirements for an Environmental Assessment under 23 CFR 771.119.

Submitted pursuant to 42 U.S.C. 4332(2)(C) by the

U.S. Department of Transportation
Federal Highway Administration

and

State of Montana
Department of Highways

Submitted by:

Montana Department of Transportation
Preconstruction Bureau

Date: _____

Approved
for Distribution:

Federal Highway Administrator

Date: _____

Prepared by



FORSGREN
ASSOCIATES / INC.

West Yellowstone, Montana

**FEDERAL AID PROJECT
SULA - NORTH F 7-1(40)9
FINAL COORDINATION**

Since approval by the Federal Highway Administration of the initial Environmental Assessment for public availability, no changes have occurred at the project site, although one (1) substantial modification has been made to the proposed project as described in this document. The alternate selected by the Montana Highway Commission was Alternate Alignment #3 as described in the Environmental Assessment.

The substantial modification involved an intensive study by various agencies for the past several years which resulted in the decision to fill in the existing channel of the East Fork of the Bitterroot River between Station 797+00 to 804+00 (MP 15.0) with excess material. The river will be rerouted to occupy its original, natural channel that existed at this location prior to the last reconstruction project. Agencies involved with this decision included the Montana Department of Transportation; United States Forest Service; United States Fish & Wildlife; Montana Fish, Wildlife and Parks; and Friends of the Bitterroot. One advantage of this modification is that the existing channel will be used for disposing of excess rock-cut material. The modification will also increase the channel length in this area, thereby providing more habitat for fish. Overall, returning the river to its original prehistoric channel will be a beneficial environmental impact. This concept was included as part of the project after the original Environmental Assessment was signed and approved.

The original Environmental Assessment proposed 12-foot travel lanes with 2-foot shoulders. The intent was to construct the roadway base so that 8-foot shoulders could be easily constructed at a later date. However, since US Highway 93 has recently been designated as a "Highway of National Significance" by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, the decision has been made to construct the 12-foot travel lanes with 8-foot shoulders as part of this project.

The Finding of No Significant Impact (FONSI) for the Environmental Assessment precedes this page. The signed FONSI completes the requirements for developing a final environmental document on this proposed project.

Changes to the initial Environmental Assessment as signed by the Federal Highway Administration on July 25, 1990 are noted in the "Summary of Changes" that follows hereafter. A summary of the location and design public hearing held on July 27, 1991 has been made and is attached. Comments received during review of the draft environmental document are also included in a "Responsiveness Summary" contained within the "Summary of Responses Received on the Draft Environmental Assessment" that is attached. Copies of letters received from agencies and interested individuals are available for review on request to the Montana Department of Transportation.

ONLY PRACTICABLE ALTERNATIVE WETLANDS FINDING
SULA - NORTH F 7-1(40)9
January 6, 1994

- 1) This "Finding" provides documentation that this proposed project will minimize the destruction, loss, or degradation of wetlands. This "Finding" also documents the steps to preserve and enhance the natural and beneficial values of the wetlands affected by this proposed project. With the opportunities to enhance the natural and beneficial values of the wetlands affected by this project, this proposed project's impacts to wetlands will be in compliance with Executive Order 11990.
- 2) Potential alternative(s) for the project are presented in the Alternatives Considered Section of this Environmental Assessment. The "no build" alternative (Alternative #5) and overlay alternative (Alternative #4) have been found to be inadequate to meet the purpose and needs of the project as stated in Section 2.0 of the Environmental Assessment. These alternatives do not correct the poor alignment, substandard safety conditions, and/or traffic flow conditions of the existing highway. Any of these conditions have been determined to be sufficient to warrant correction by this proposed project. Alternatives #1 and #2 have other impacts with regard to cost, extensive rock excavation, relocation, etc., which reduce their practicality. Consequently, Alternative #3 was chosen as the most practicable alternative.
- 3) This proposed project has been determined to include all practicable measures to minimize harm to wetlands. This determination has been made through the mitigation process described in the following summary.
- 4) Based upon the above considerations, it is determined that there is no practicable alternative to the proposed new construction in wetlands and that the proposed project includes all practicable measures to minimize harm to wetlands which may result from such use.

SUMMARY

In accordance with Executive Order 11990, Protection of Wetlands, the proposed highway improvement and its potential impacts to wetlands have been closely evaluated. Alternatives were considered for avoidance of wetlands altogether, but were not selected either for their failure to meet the stated purposes and needs for the facility or because of other impacts such as business disruption and project costs which were considered to be unacceptable.

The project will encroach on 9.5 acres of wetlands. The types, area, and location of the individual wetlands are described in detail in Section 4.10 "Wetlands" and Appendix C of this Environmental Assessment. In general, a majority of the wetlands were of the WT-3 dense shrub type and were of low quality. Most were located in right-of-way or highway ditches with very limited wildlife usage. In order to avoid impacting the wetlands at any extent possible, the proposed roadway was generally shifted away from the creeks, rivers, and most wetlands. Where possible, sideslopes were steepened slightly to avoid impact.

All practicable measures have been taken to avoid and minimize wetland impacts on this project. Since on-site mitigation will cost more than \$3,000 per acre, the mitigation will be satisfied by replacement of wetlands created on the Lee Metcalf Wildlife Refuge near Stevensville, Montana. This agreement is acceptable to the Montana Interagency Wetland Group. The project mitigation

acreage will be subtracted from the Lee Metcalf's Otterpond Wetland Bank in accordance with previous agreements.

Based upon the above considerations, it is determined that there is no practicable alternative to proposed construction in wetlands and that through the enhancement measures to be provided, the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

**SUMMARY OF CHANGES
TO
ENVIRONMENTAL ASSESSMENT
SULA - NORTH F 7-1(40)9**

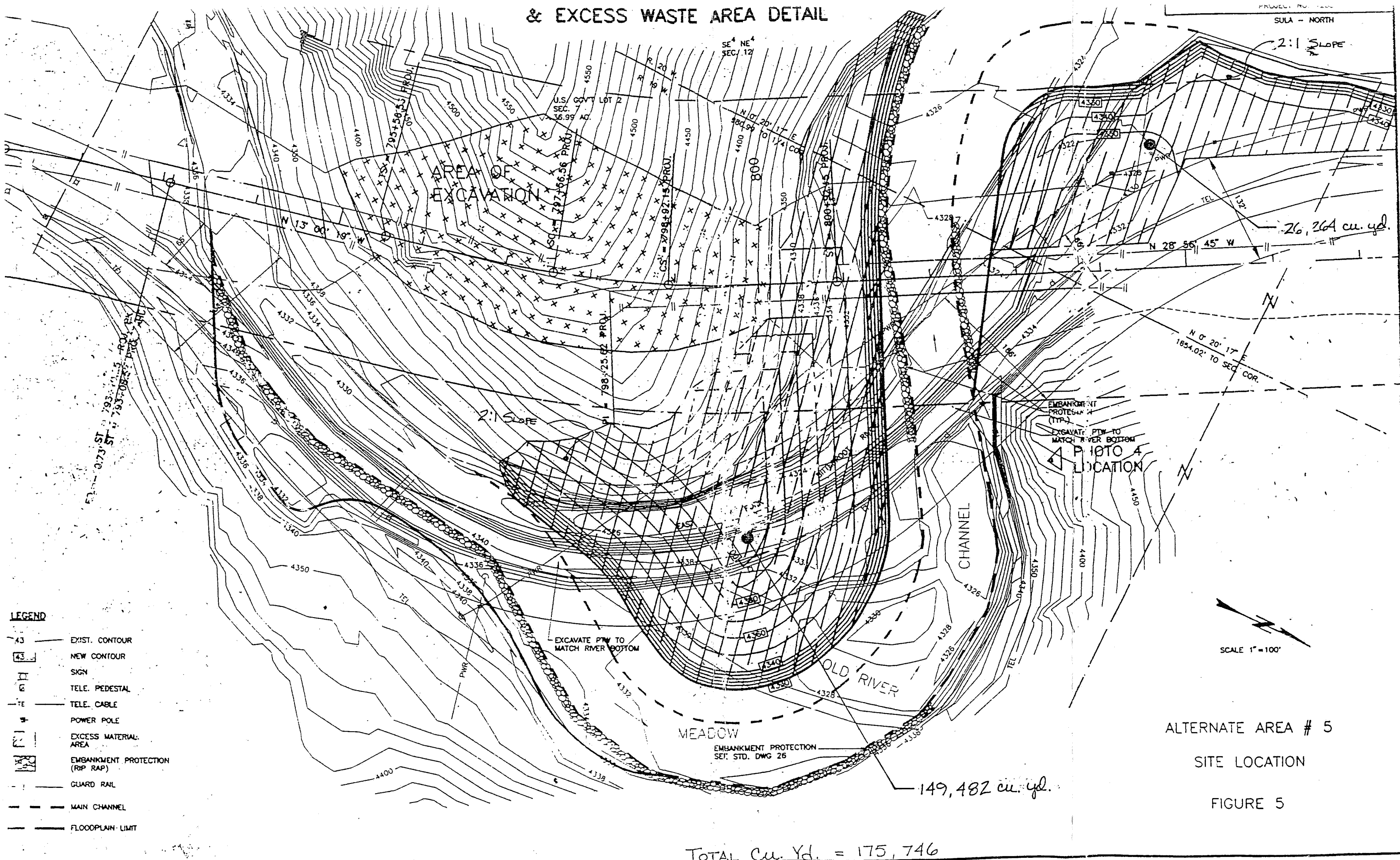
The following changes were made to the initial Environmental Assessment resulting from input received after distribution of the document, the public comment period, and also public input received from the location and design public hearing. These changes result primarily from wording in the original document and supersede and/or clarify original information and statements. Accordingly, all required changes are shown here; wording in the original Environmental Assessment (attached) remains as previously presented.

Page #	Subsection	Clarification/Correction
Cover Sheet	N/A	New approval signatures and dates.
1	1.0 - Description of the proposed action	<p>The third and forth sentences of the second paragraph are replaced with the following: "US Highway 93 has been designated as a "Highway of National Significance" by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Consequently, the project will be designed in accordance with AASHTO guidelines which recommend two (2) 12-foot travel lanes with 8-foot shoulders for a total paved surface of 40-feet."</p> <p>Figure 3 "Typical Section" is revised to reflect the proposed 8-foot shoulder widths.</p>
7	2.0 - Purpose and Need	<p>The first sentence of the first paragraph is replaced with the following: "US Highway 93 has been designated as part of an interim National Highway System (NHS). The final NHS is expected to be approved by Congress prior to September 30, 1995. The Montana Department of Transportation has submitted a proposal to the Federal Highway Administration that will functionally classify US 93 as a principal arterial. This is the first step in permanently placing US 93 on the final NHS."</p>
13	3.0 - Alternatives Considered	<p>The title of the first paragraph is corrected to read: "1. The No Build Alternative (#5)."</p> <p>The first sentence of the second paragraph titled "2. The Preferred Alternative (#3)" is replaced with: "Widen the existing roadway to provide 12-foot travel lanes and 8-foot shoulders (40 feet total surface width)."</p>
14	4.1 - Social and Economic	<p>Clarification is given that the Montana Aeronautics Division has reviewed the project and concurred that it will not have any adverse effects on aeronautical activities in the area.</p>

Page #	Subsection	Clarification/Correction
18	4.7 - Channel Modifications	<p>Replace the second paragraph with the following paragraphs:</p> <p>"The proposed roadway improvements will carry the new roadway further to the west and away from the existing stream channel and thus lessen the impact of the roadway on the stream. As a result of the design study and contact and coordination with the agencies, support did not exist for the channel modification; thus Camp Creek will remain in its existing drainage channel. Modifying the channel would have interfered with existing development, created liability problems, and been very costly.</p> <p>A similar situation exists near milepost 15.0±. At this location, a portion of the East Fork of Bitterroot River was diverted from its original prehistoric channel during the original construction of Highway 93 in order to reduce the length of the bridges required. Some agencies expressed interest in returning the river to its original channel. The agencies included MDT, US Forest Service, US Fish and Wildlife, Montana Fish, Wildlife and Parks, and the Friends of the Bitterroot.</p> <p>As a result of the design study and coordination and contact with the agencies, the channel modification was supported and will be part of the proposed project as shown on the figure on the next page. One advantage of this modification, besides returning the river to its natural original channel, is that the existing channel will be used for disposal of the excess rock cut material. This modification will also increase the length of the channel, thereby providing more habitat for fish in this area. Overall, returning the river to its original channel will be a beneficial environmental impact. This concept was included as part of the proposed project after the original Environmental Assessment was signed and approved.</p> <p>The studies, permits, and evaluation required by FHPM 6-7-3-2 paragraphs 7c through 7e will need to be provided."</p>
19	4.8 - Water Quality	<p>Add this sentence at the end of the second paragraph: "Sediment traps with a scheduled maintenance program to clean the traps periodically may be constructed to help prevent excessive sedimentation from winter sanding operations from entering the stream system."</p>

& EXCESS WASTE AREA DETAIL

PROJECT NO. 1222
SULA - NORTH



Page #	Subsection	Clarification/Correction
24	4.12 Historical/Cultural/- Archaeological Resources	<p>Add the following paragraph at the end of this section: "According to the Montana Fish and Game Compendium of Historical Sites (1975), Lewis and Clark first encountered the Salish Indians in Ross Hole in 1805. The site location was reported to be approximately two (2) miles north of Sula at or near the location of an existing MDT historical marker at milepost 12.7. However, other sources claim that the location of the meeting was in the southwest area of Ross Hole near the East Fork of the Bitterroot River near milepost 11.7.</p> <p>During intensive study and discussion with agencies and landowners, two (2) alternatives were evaluated. One alternative was to perpetuate the existing location of the historical marker and turnout. The other alternative was to move the historical marker and turnout to a new location. Since the exact location of the historical encounter <u>has not</u> been positively identified and moving the marker and turnout would require acquisition of private property, the decision was made to leave the marker and turnout in its present location. New text will be written on the marker, including information about the Lewis and Clark Expedition's activities in the area."</p>
30	4.20 Parks and Recreation	<p>Add the following sentence to the end of the first paragraph: "Review of the proposed project by the Department of Fish, Wildlife, and Parks indicated no 6(f) or 4(f) conversion of use, which would occur as a result of the proposed project."</p>

END OF SUMMARY OF CHANGES

**SULA - NORTH
US HIGHWAY 93 RECONSTRUCTION
F 7-1(40)9**

**SUMMARY OF PUBLIC HEARING
June 27, 1991**

A formal public hearing on the Sula - North project F 7-1(40)9 was held June 27, 1991 in the banquet room of the Rocky Knob Lodge, 5 miles north of Sula, Montana.

This project proposes to reconstruct 7.2 miles of US Highway 93. Thirty-four people attended the meeting. The following is a summary of the information presented and the comments received at the hearing:

HEARING FORMAT

The format of the public hearing was open format. A packet was handed out to each participant containing a cover letter from the Director, an outline of the project proposal, a sketch of the project location, typical sections, the right-of-way and relocation programs, a list of the environmental concerns, reduced copies of the display boards, a pamphlet on funding, and another pamphlet on typical right-of-way questions.

The attendees were greeted at the door, advised of the format, and escorted to the display boards. The publics' general concerns were identified and then discussed with the engineer or the right-of-way representative. Concerns, questions, and opinions either opposing or in favor of the project were solicited.

The public was given three (3) options to submit their input. They could write in using a form supplied in the packet, use their own letter, or give verbal input at an interview at a recording station. Three statements/letters were turned in during the meetings, with seven (7) additional ones being sent in during the comment period.

Mr. Dyer (Forsgren Associates, P.A. - consultant) summarized comments and discussion offered by those whom he visited with during the meeting. No one elected to give verbal testimony.

ORAL INPUT FROM THE HEARING

During the hearing, the public was given the opportunity to comment on the project with either the engineer or the right-of-way representative. Concerns, questions, and opinions were documented and are summarized below.

- 1) In general, most people were favorable toward the project and many voiced verbal support.
- 2) Of the three (3) alternate alignments presented in the vicinity of Eagle Rock, all the input received was favorable toward Alternate Alignment #3, the preferred alternate alignment in the Environmental Assessment. The general consensus was that this alternate alignment provided an adequate highway while minimizing environmental impacts.

- 3) On a related item, many people expressed a desire to not disturb Jim Hell Rock or Eagle Rock if at all possible. It should be noted the present proposed improvements do not significantly impact either of these two (2) local landmarks.
- 4) Traffic control during construction was a concern. Opinions were expressed primarily on the experience of constructing the Conner North-South project recently and its associated effect on traffic and local economy. Most property owners indicated a strong preference for traffic control measures that would accommodate construction but avoid impacts on the local economy during the construction season. For example, preference was expressed toward a one year period of construction rather than spreading out over two seasons. The concept of constructing new bridge structures and being able to avoid construction traffic congestion at the river crossings was preferred over trying to widen existing structures in place.
- 5) One group requested a recreational type pull-out be constructed at milepost 11.7 as the location where Lewis and Clark meet the Indians in this area. Some existing signs commemorating that event near the Sula Store could be moved to this turnout, or perhaps the Department may consider the installation of a historical sign.

However, at the same time another group indicated that such a facility would negatively impact adjacent private property and requested that the highway not have provision for a historical turnout.

- 6) The Lord Ditch, an irrigation ditch at the north end of the project, is still actively used by several parties. Perpetuation of the ditch and its flow characteristics was discussed along with the need to improve the current situation where open channels are subject to beaver dams and culverts have frequently been plugged by beaver related debris.
- 7) The question was raised whether blasting the rock would disturb existing residences and businesses. A response was given that using the best practical construction methods should avoid any negative impacts in this regard.
- 8) A discussion of the access at Medicine Hot Springs Road (County Road) indicated a preference for making the intersection safer, and yet avoiding impacts on adjacent private property.
- 9) The East Fork Road (County Road) eastward from the highway near the Sula Store was also discussed. Local people indicated a high traffic volume on this road and requested that warrants for a turning lane onto the county road from the highway be investigated.
- 10) There were one or two requests for project documentation such as Environmental Assessment, Cultural and Historical Resource Survey, etc. Materials were sent as requested.
- 11) There were several other issues discussed in the individual one-on-one meetings with private property owners. Most of the discussions centered around right-of-way width, access, fences, irrigation facilities, and other details related to specific properties. Appropriate notes were taken to incorporate conclusions and decisions in the final plans.

WRITTEN INPUT FROM THE HEARING

During the hearing, individuals were given the opportunity to give written input by using a pre-made form or their own letter. A brief summary of individual concerns voiced within the nine (9) responses received are as follows:

Item of Concern	# of Times Mentioned
Support for historic signs and turnout at milepost 11.7 to commemorate Lewis and Clark.	3
Support wide roadway and shoulders for safety and bicycle use.	3
Support moving ahead on project as quickly as possible.	2
Support for Alternate Alignment #3.	2
Support for the preservation of Jim Hell Rock and Eagle Rock.	2
Concern about approach locations and property access.	1
Concern about location of fencing.	1
Concern about protecting the streams during construction.	1
Support eliminating as many curves as possible.	1
Support relocation of Lord Ditch to just one side of the roadway.	1
Support new alternate route up Spade Creek.	1
Feel that the road should remain as is for historical, ecological, recreational, safety, and aesthetic reasons.	1
Support turnout for East Fork Road	1

RESPONSIVENESS SUMMARY

Of the input received, some were merely statements for or against certain elements of the proposed project, others concerned questions regarding impact to individual properties, and the remainder gave general input for additional consideration. The following information summarizes important input received and gives response, where appropriate, as to how that input will be handled or what changes may be incorporated in the project as a result of the input received.

- 1) **Lewis and Clark Historical Marker and Turnout:** The exact location of Lewis and Clark's first encounter with the Salish Indians in 1805 generated much discussion among the public and the agencies. An existing MDT historical marker and turnout at milepost 11.7 commemorates the Lewis and Clark expedition. Some felt that the existing location of the historical marker and turnout should be perpetuated, while others felt that historical marker and turnout should be moved to a new location that they felt more accurately described the exact location of the encounter with the Indians. Since the exact location of the historic encounter cannot be positively identified and moving the marker and turnout would require

acquisition of private property and other impacts, the decision was made to leave the marker and turnout in its present location. New text will be written on the marker, including more detailed information about the expeditions.

- 2) **Roadway and Shoulder Widths:** The original Environmental Assessment proposed 12-foot travel lanes with 2-foot shoulders. The intent was to construct the roadway base so that 8-foot shoulders could be easily constructed at a later date. However, since US Highway 93 has recently been designated as a "Highway of National Significance" by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, the decision has been made to construct the 12-foot travel lanes with 8-foot shoulders as part of this project.
- 3) **Get Going on the Project:** Unquestionably, there is much support on the part of the local residents to construct the project as soon as possible, as the improvements of US Highway 93 are severely needed. However, it has been extremely important for the State of Montana and cooperating agencies to ensure that the project was developed in accordance with the national and state environmental protection policies, sound facility planning, and thorough public involvement.

The complexity of several project issues coupled with the necessity to involve several regulatory and review agencies in the review and approval process has required more time than initially anticipated. Nevertheless, having done so the project proposal is thoroughly documented, soundly based, and ready to go to construction free from inadequacies frequently associated with hasty project development.

- 4) **Alternate Alignments:** As a result of public and agency support, Alternate Alignment #3 has been selected as the preferred alignment. This alignment will allow the East Fork of the Bitterroot River to be diverted to its original prehistoric channel. In addition, the existing channel will be used for disposal of the excess rockcut material generated by the project.
- 5) **Jim Hell Rock and Eagle Rock:** Many people expressed a desire for the project not to disturb either of these two (2) local landmarks. Consequently, efforts were made to avoid the landmarks and neither will be impacted by the proposed highway improvements.
- 6) **Concerns Over Impacts to Individual Property:** These items are best addressed on an individual basis between the Project Engineer and the property owner. Further contact will be made, as necessary, prior to completion of the final design in order to discuss these issues with those affected. Although some input may result in minor design changes in a localized area, none of the input received would suggest major changes to the project concept or selection of alternatives.
- 7) **Protection of Streams During Construction:** In order to minimize environmental impacts on streams during construction, a Standard Erosion Control Workplan will be established in accordance with MDT's Best Management Practices. This will ensure that erosion and storm water runoff is properly handled during construction. In addition, the project will be constructed in accordance with the 124 Permit issued by Montana Department of Fish, Wildlife and Parks, the Floodplain Development Permit issued by Montana Department of Natural Resources and Conservation, the 3A Permit issued by Montana Water Quality Bureau, and the Section 404 Permit issued by US Army Corps of Engineers. Once the highway is constructed, sediment traps with a scheduled maintenance program to clean the traps periodically may be constructed to help prevent excessive sedimentation from winter sanding operations from entering the stream system.

- 8) **Lord Ditch:** Since this ditch is still actively used, the public indicated the need to improve the flow characteristics and culvert openings in conjunction with the proposed project. As a result, new 30-inch culverts were included that will be aligned better with the existing ditch channel, thus improving the flow characteristics and culvert openings. Otherwise, the ditch will not be disturbed.
- 9) **East Fork Road Intersection (County Road):** Warrants for a turning lane onto this County road from the Highway were investigated, as requested by the local public. The results of the investigation indicated that a turning lane would not be warranted for this intersection.
- 10) **Medicine Hot Springs Road Intersection (County Road):** The public indicated a need to make this intersection safer, while avoiding impacts to adjacent private property. In response, this County approach road was realigned in order to intersect the Highway at a right angle; thus increasing the safety of the intersection. The realignment was kept as minimal as possible to avoid excessive impacts to the adjacent private property.
- 11) **Construction Timing and Traffic Control:** The public voiced concern about construction related traffic control problems and the duration of the construction period. In order to minimize impacts on the local economy, traffic flow will be maintained through the project area as much as possible. The stream crossings' new bridge structures will be constructed along the existing structures that will be maintained for traffic to use during the construction of the new bridges. Providing that there are no unforeseen delays, the project should be constructed in one (1) year rather than spreading it out over two (2) construction seasons.

**SULA - NORTH
US HIGHWAY 93 RECONSTRUCTION
F 7-1(40)9**

SUMMARY OF RESPONSES RECEIVED ON THE ENVIRONMENTAL ASSESSMENT

An Environmental Assessment (EA) for the subject project was approved for review and distribution on July 25, 1990. Cover letters accompanying the distribution of the EA requested review and comments to be returned to MDT.

The following is a summary of comments received and a presentation of responses to input, where appropriate. This summary of input and responses is in addition to the input and responses as a result of the public hearing.

ORAL INPUT TO THE ENVIRONMENTAL ASSESSMENT

The following summarizes responses for input on the EA which were made via telephone:

Item of Concern	# of Times Mentioned
Support preservation of Jim Hell Rock and Eagle Rock	1
Concern about protecting streams during construction	1
Support relocation of East Fork of the Bitterroot to its original, prehistoric channel	1
Support for fishing access sites	1

WRITTEN INPUT TO THE ENVIRONMENTAL ASSESSMENT

The following summarizes of written responses received from several agencies and some citizens:

Item of Concern	# of Times Mentioned
Support for perpetuating the existing location of the Lewis and Clark historical marker and turnout and revising the text on the marker	2
Support for constructing turnouts to facilitate fishing access	2
Support for improving the campground at milepost 15.6 and construction a scenic pullout	2
Support relocation of the East Fork of the Bitterroot to its original, prehistoric channel	1
Support for perpetuating the existing location of Camp Creek	1

RESPONSIVENESS SUMMARY

Of the input received, some were merely statements for or against certain elements of the proposed project, others concerned questions regarding impact to individual properties, and the remainder gave general input for additional consideration. The following information summarizes important input received and gives response, where appropriate, as to how that input will be handled or what changes may be incorporated in the project as a result of the input received.

- 1) **Concerns Over Impacts to Individual Property:** These items are best addressed on an individual basis between the Project Engineer and the property owner. Further contact will be made, as necessary, prior to completion of the final design in order to discuss these issues with those affected. Although some input may result in minor design changes in a localized area, none of the input received would suggest major changes to the project concept or selection of alternatives.
- 2) **Protection of Streams During Construction:** In order to minimize environmental impacts on streams during construction, a Standard Erosion Control Workplan will be established in accordance with MDT's Best Management Practices. This will ensure that erosion and storm water runoff is properly handled during construction. In addition, the project will be constructed in accordance with the 124 Permit issued by Montana Department of Fish, Wildlife and Parks, the Floodplain Development Permit issued by Montana Department of Natural Resources and Conservation, the 3A Permit issued by Montana Water Quality Bureau, and the Section 404 Permit issued by US Army Corps of Engineers. Once the highway is constructed, sediment traps with a scheduled maintenance program to clean the traps periodically may be constructed to help prevent excessive sedimentation from winter sanding operations from entering the stream system.
- 3) **Alternate Alignments:** As a result of public and agency support, Alternate Alignment #3 has been selected as the preferred alignment. This alignment will allow the East Fork of the Bitterroot River to be diverted to its original prehistoric channel. In addition, the existing channel will be used for disposal of the excess rockcut material generated by the project.
- 4) **Lewis and Clark Historical Marker and Turnout:** The exact location of Lewis and Clark's first encounter with the Salish Indians in 1805 generated much discussion among the public and the agencies. An existing MDT historical marker and turnout at milepost 11.7 commemorates the Lewis and Clark expedition. Some felt that the existing location of the historical marker and turnout should be perpetuated, while others felt that historical marker and turnout should be moved to a new location that they felt more accurately described the exact location of the encounter with the Indians. Since the exact location of the historic encounter cannot be positively identified and moving the marker and turnout would require acquisition of private property and other impacts, the decision was made to leave the marker and turnout in its present location. New text will be written on the marker, including more detailed information about the expeditions.
- 5) **Jim Hell Rock and Eagle Rock:** Many people expressed a desire for the project not to disturb either of these two (2) local landmarks. Consequently, efforts were made to avoid the landmarks and neither will be impacted by the proposed highway improvements.
- 6) **Location of Camp Creek:** Between milepost 9.5 and 11.7, Camp Creek closely parallels Highway 93 on the east side. There has been some discussion among the agencies and land owners about moving Camp Creek to occupy its original prehistoric channel, which is

set back much further from the highway. As a result of the discussion, it was decided to leave Camp Creek in its existing channel. The proposed roadway improvements will carry the new roadway further to the west away from the existing channel, thus lessening the impact of the roadway on the stream. Modifying the channel would have interfered with existing development, created liability problems, and been very costly.

- 7) **Channel Modification of the East Fork of the Bitterroot River:** Between milepost 15.0 to 15.3, Alternate Alignment #3 was selected (see item 3 above). At this location, a portion of the East Fork of the Bitterroot River was diverted from its original prehistoric channel during the original construction of Highway 93 in order to reduce the length of the bridges as required. As a result of studies and coordination and contact with the agencies, it was decided to return the river to its original prehistoric channel as part of the proposed highway improvement project. This modification will also allow the excess rockcut material generated by the project to be disposed of in the existing river channel.
- 8) **Fishing Access Turnouts:** In order to improve access to the river for fishing and other recreation, turnouts will be constructed as part of the proposed project using excess material from the highway construction.
- 9) **Campground Improvements:** Between mileposts 15.5 to 15.7, a Forest Service campground is located on the east side of the Highway. As part of the proposed highway project, a right-hand turning lane will be constructed to improve access to the campground for northbound traffic. Also, the campground road and associated spurs will be paved as part of the proposed highway project.

PROJECT NO. F 7-1(40)9, U.S. HIGHWAY 93
Sula - North
in
Ravalli County

ENVIRONMENTAL ASSESSMENT

This document is prepared in conformance with MEPA requirements and contains the information required for an Environmental Assessment under the provisions of ARM 18.2.237(2) and 18.2.239. It is also prepared in conformance with NEPA requirements for an Environmental Assessment under 23 CFR 771.119.

Submitted pursuant to 42 U.S.C. 4332(2)(C) by the

U.S. Department of Transportation
Federal Highway Administration

and

State of Montana
Department of Highways

Submitted by:

Murd Johnson
Montana Department of Highways
Preconstruction Bureau

Date:

July 12, 1990

Reviewed and Approved
for Distribution:

David C. Miller
Federal Highway Administrator

Date:

7-25-90

Prepared by



West Yellowstone, Montana

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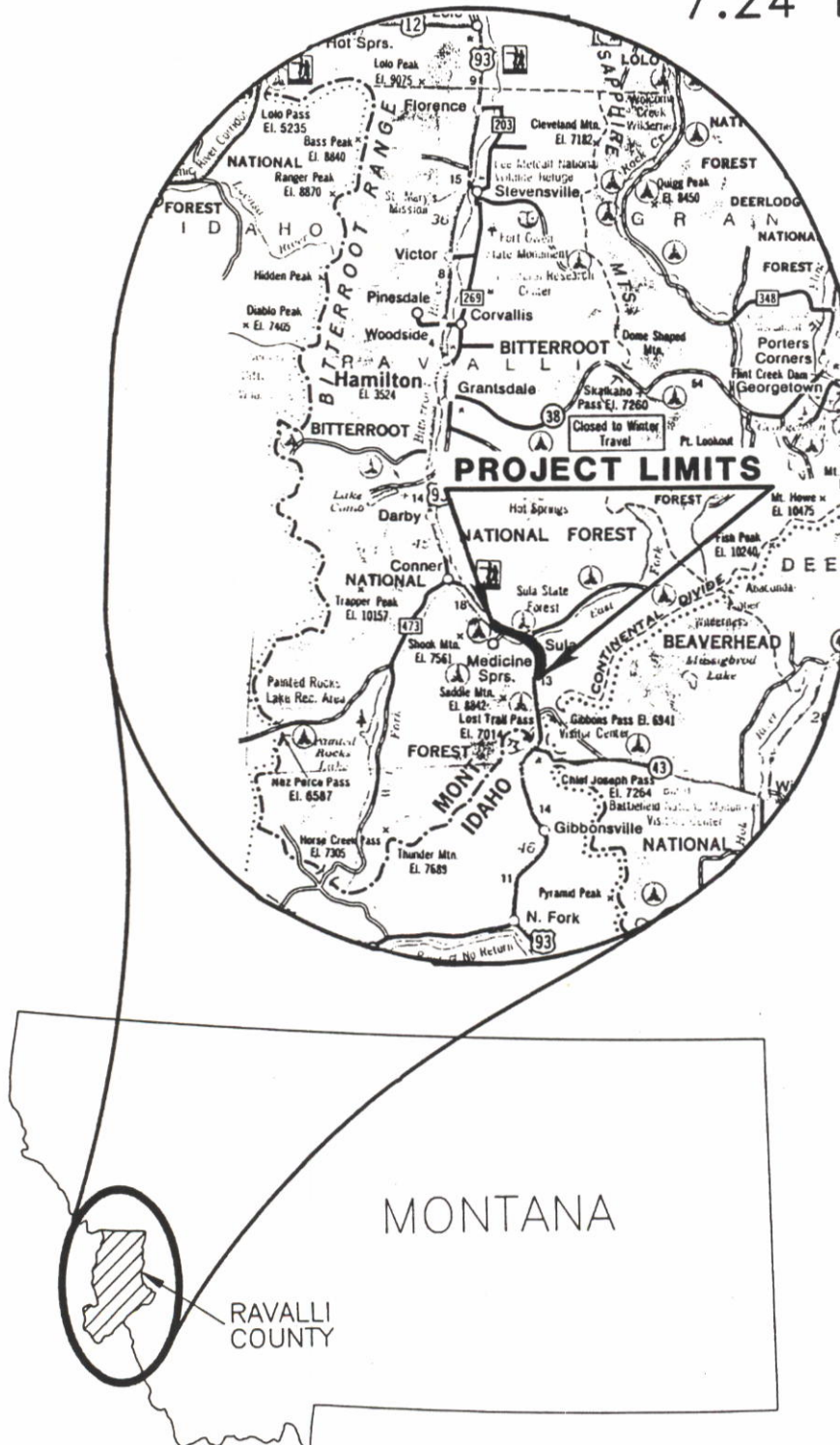
1. DESCRIPTION OF THE PROPOSED ACTION

The proposed action consists of the reconstruction and realignment of a portion of U.S. Highway 93 in Ravalli County, Montana to updated standards of design and safety. The proposed project, known as the Sula-North Project F 7-1(40)9, will begin approximately two (2) miles south of the Forest Service building complex (milepost 9) and extend northerly to the Montana Highway Department maintenance shop access (milepost 16.24). The general project location, vicinity and terminus are shown on Figures 1 and 2 and the translikes (aerial photos) in Appendix D. Figure 5 shows greater detail of the project area and specifically identifies locations referenced in this report. The scope of work for this project is in accordance with the Rural Primary System Level of Development Plan, July 1985, as developed by the Montana Department of Highways.¹

The roadway will be fully reconstructed in accordance with updated Montana Department of Highways (MDOH)² standards to meet a 50 mph design speed consistent with the mountainous terrain at this location. Wherever terrain permits (e.g. on the southern four miles of the project), a 60 mph design speed will be used. The project will include two (2) 12-foot wide traffic lanes with 2-foot shoulders for a total paved surface of 28 feet as shown on the typical section (Figure 3). The roadway will be graded to accommodate a 40-foot wide surface, however, only the 28-foot wide paved typical surface will be constructed initially. Reconstruction will also include bridges, grading, drainage, signing, pavement markings, guard railings, top soiling, seeding, fencing, and necessary utility relocation. The new alignment will follow the existing alignment as closely as possible while flattening substandard horizontal and vertical curves. A horizontal alignment change is proposed between milepost 14.7 and milepost 15.4 to accommodate the design speed curve requirements. Three (3) realignment concepts for this portion were preliminarily reviewed and are shown on Figure 4.

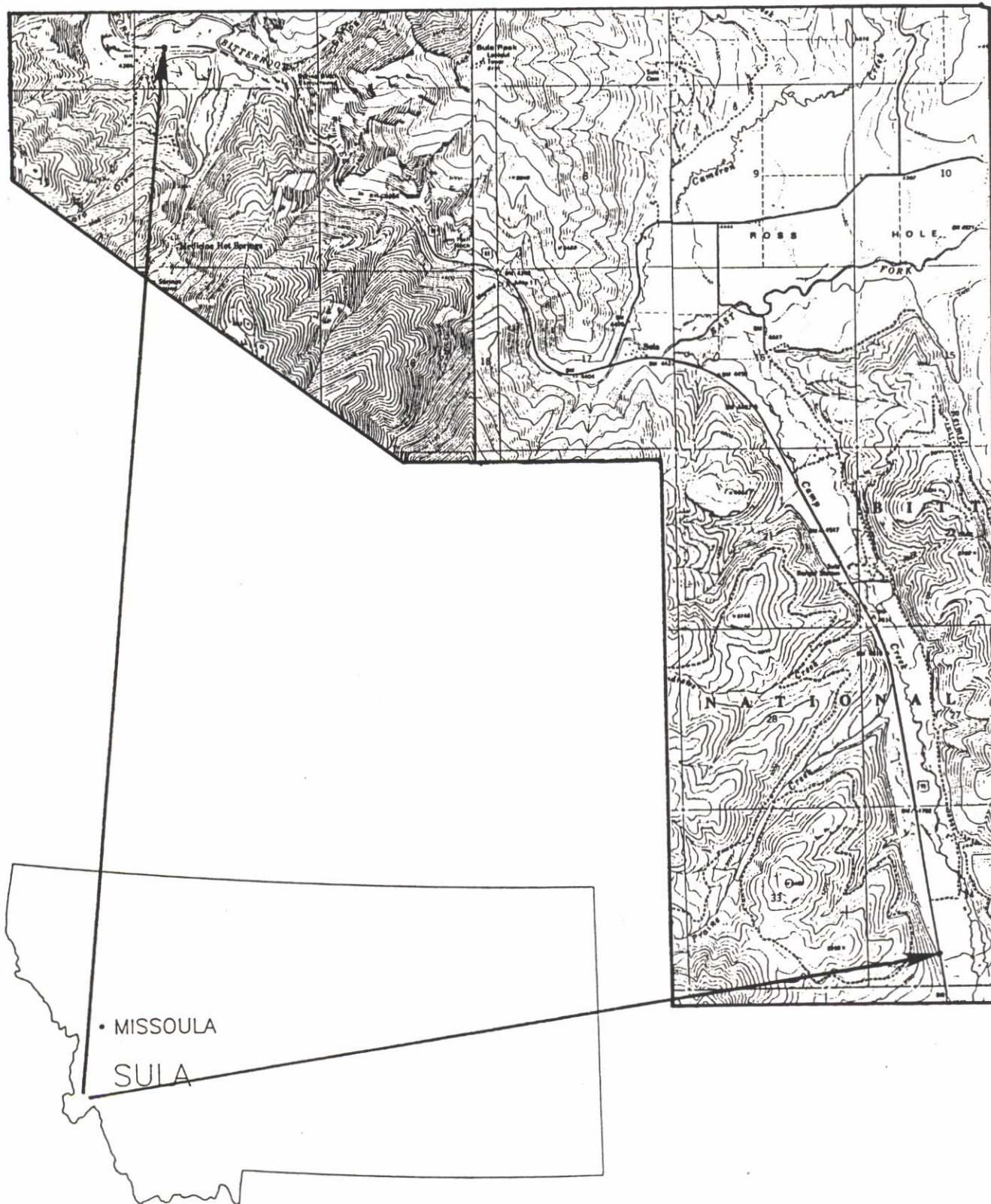
The highway corridor passes through both rolling and steep forested terrain. The south 4 mile section is primarily rolling terrain, while the north 3.24 miles is more restrictive due to mountain terrain. The corridor borders Camp Creek along the southerly portion and the East Fork of the Bitterroot River along the northerly segment. The land adjacent to the corridor is used predominantly for timber production and pasture. The portion that parallels the Bitterroot River

US HIGHWAY 93 RECONSTRUCTION
SULA-NORTH
F.A.P. 7-1 (40) 9
MP 9.0 TO MP 16.24
7.24 MILES



PROJECT LOCATION MAP

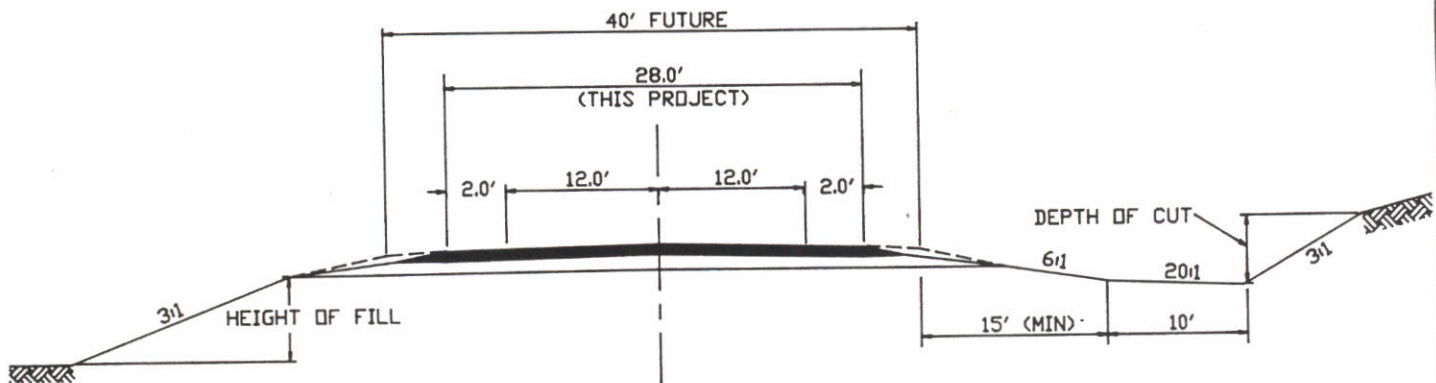
FIGURE 1



VICINITY MAP

FIGURE 2

US HIGHWAY 93 RECONSTRUCTION
SULA-NORTH
F.A.P. 7-1 (40) 9
MP 9.0 TO MP 16.24
7.24 MILES

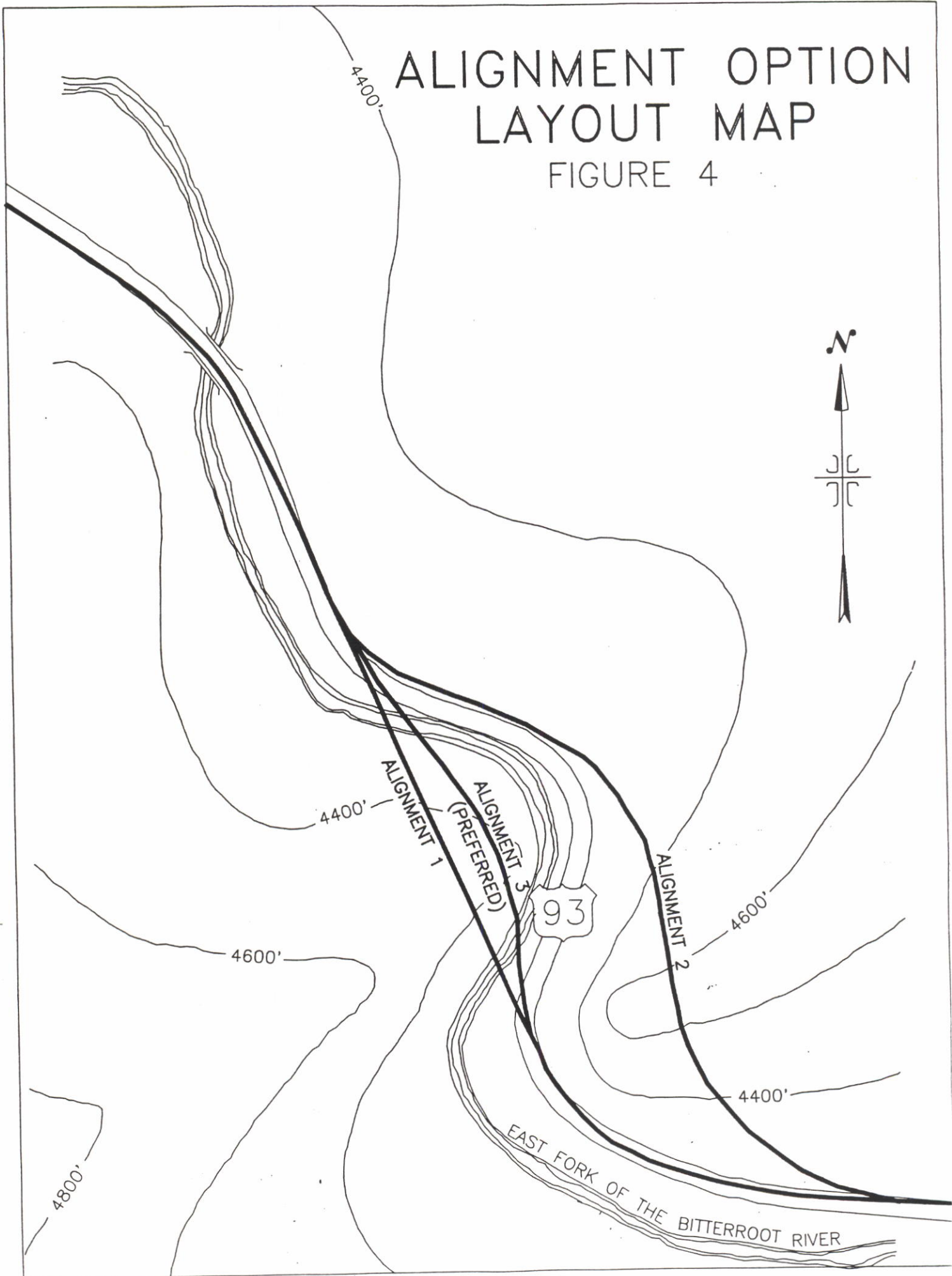


TYPICAL SECTION

FIGURE 3

ALIGNMENT OPTION LAYOUT MAP

FIGURE 4



falls inside of the boundaries of the of the Bitterroot National Forest. Tourism is also an important commercial activity in the area. There are campground accesses along the corridor at Warm Springs Creek and the Forest Service camping facility. A few scattered residences, the Sula Store, and a Forest Service Ranger Station complex are located along the project.

Two (2) bridges exist within the project limits. Both bridges pass over the East Fork of the Bitterroot River, at milepost 12.92 and milepost 15.55. The existing bridge at MP 12.92 is a concrete slab steel girder with concrete piers on timber piling. The bridge accommodates a 24-foot roadway and is positioned at a 30° skew. The bridge at MP 12.92 will be widened sufficiently to accommodate a 40-foot wide roadway. The existing bridge at MP 15.55 accommodates a 24-foot roadway and will be replaced by a new structure also capable of accommodating a 40-foot roadway. No limited access control will be acquired along this project. Existing access will be perpetuated where necessary.

Other related projects in the vicinity of the proposed action include a connection between the Lost Trail project and the southerly end of this project, designated as Lost Trail-Hot Springs project FHP 19-1(3) which is currently being designed by the Federal Highway Administration. From the north end of this project, a segment is being designed by Montana Department of Highways and is designated as Conner-North & South F7-1(41)16.

2. PURPOSE AND NEED

U.S. Highway 93 is a Federal Aid Primary Route. It is part of an extensive system of rural arterial routes important to interstate, statewide, and regional travel. This route is a vital element contributing to the local and regional economy which is heavily oriented toward the timber, mining, and recreational industries. This route connects the communities of Hamilton and Missoula to the north with Salmon, Idaho to the south.

The primary objectives of the proposed action are as follows:

- To improve highway convenience and safety and reduce accidents.
- To provide a modern highway facility compatible with the human and natural environment
- To connect similar projects being proposed to the north and south of this project (See Section 1, "Description of the Proposed Action").

The highway was built as part of the forest highway program under several different projects in the 1930's and 1940's. The river was re-channelled in certain portions to accommodate the highway construction. Resurfacing and maintenance projects have been accomplished since that time, however, the roadway surface remains approximately 26 feet. There are eleven (11) existing horizontal curves along the portion of the highway with curve degrees (D°) ranging from 1° to 12° which are summarized below. Maximum vertical gradient is 3%.

<u>Curve #</u>	<u>D°</u>	<u>Length</u>	<u>Curve #</u>	<u>D°</u>	<u>Length</u>
1	1°00'	1895'	7	10°06'	925'
2	1°36'	4795'	8	12°06'	636'
3	5°00'	1897'	9	8°12'	519'
4	2°45'	2462'	10	5°00'	686'
5	8°18'	513'	11	4°00'	473'
6	4°00'	1375'			

Current MDOH standards allow the following D° maximums at 8% superelevation:

- 7°30' curve maximum for a 50 mph design
- 4°45' curve maximum for a 60 mph design

The substandard alignment is further highlighted by river bends parallel to it and steep canyon walls which reduce sunlight exposure. The highway is constructed between elevations 4900 and 4250 which requires snow removal maintenance during the winter months. These statistics show the requirement for reconstruction in order to obtain the proposed 50 mph design speed characteristics.

An engineering study was conducted by the Montana Department of Highways in 1989 to review accident statistics and identify correctable accident trends. The following variations from average statewide statistics were noted:

<u>Type of Accident</u>	<u>Statewide Average</u>	<u>This Project</u>
Off road	45%	67%
Overturning	23%	37%
Fixed Object	23%	30%
a) Cut Slope	11%	22%
b) Fill Slope	0.6%	9%
c) Rock	2%	10%

It appears the large deviations from statewide averages exhibited on this project are mostly related to the poor geometry and restrictive terrain on the existing highway. Accident clusters from M.P. 14.2 to 14.6, 14.8 to 15.2, and 15.2 to 15.7 (all in the winding canyon portion) also point to the need for an improved facility.

The proposed project will increase roadway width, flatten vertical and horizontal curves, improve sight distance, flatten side slopes, and provide greater recovery area. These improvements will enhance safety and improve driving conditions for the traveling public.

3. ALTERNATIVES CONSIDERED

Preliminary alignments were studied throughout the length of the project and particularly in the canyon portion between milepost 14.7 and milepost 15.4. These preliminary alignments in the canyon were considered for both horizontal and vertical design components. Each was evaluated, refined, or rejected based upon its ability to provide a safe and efficient traffic facility with a minimum impact on adjacent properties, the river, constructibility, right-of-way, and reasonable construction cost. Also evaluated were options to overlay the existing roadway and a "no build" alternative.

The preliminary study indicated that any major deviation from the existing alignment would be impractical in view of existing access, terrain restrictions, and the fact that the existing roadway will provide a good foundation for a significant portion for the new roadway. Three alternative realignments were identified for the steep canyon segment of the project. These are referenced on Figure 4. A brief summary of each alignment and the overlay and "no build" alternatives is presented below.

Alternative #1: This alignment crosses the East Fork of the Bitterroot River at two (2) locations. The total length is approximately 3,311 feet. The upper bridge structure crosses at 12° skew and would be 170 feet long and 30 feet high. The lower bridge structure crosses at 28° skew and would be 170 feet long and 26 feet high. This alignment requires minor work inside river channel associated with the bridge construction. Rock cut excavation maximum depth would be 185 feet to accommodate a uniform vertical grade. An estimated 335,000 cubic yards of material would be removed to construct this portion of the roadway.

Alternative #2: This alignment would not cross the Bitterroot River along this segment. The length of roadway is 3,232 feet and is more curvilinear than either #1 or #3. This option has the greatest amount of excavation which is estimated to be 670,000 cubic yards. Maximum cut depth is 230 feet. The impact of this option is high due to the tremendous rock excavation which would be removed with no effective place to use it.

Alternative #3: This alignment also crosses the river in two (2) locations. The roadway length is approximately 3,279 feet which is 32 feet shorter than #1 due to the slight horizontal curves. River crossing skew angles are slightly worse than #1 assuming no channel realignment. The skew angle on the upstream bridge is 28° with a structure length of 200 feet and a height of 33 feet. The downstream bridge crosses at 30° skew and would be 185 feet long and 26 feet high. This alignment offers a significant savings in excavation due to its horizontal positioning. The maximum depth of cut is 145 feet deep with an estimated 245,000 cubic yards of excavation for this roadway segment.

Alternative #4 - Overlay: This alternative would provide for following the existing horizontal and vertical alignments and widening the roadway to accommodate the proposed lane widths and shoulders. This overlay would create restrictions in lane widths without shoulder widening in many locations. Shoulder widening would require additional fills and would create construction difficulties due to access restrictions along the river. Clear zone and safe maneuvering limits would be severely compromised if steeper side slopes necessitated by the proximity of the river and rock cliffs were constructed. Although this alternate would temporarily improve the riding surface and remove maintenance costs, all of the substandard horizontal alignment problems would remain. For these reasons, this option was not considered further as a practical alternate.

Alternative #5 - "No Build": This alternative would continue the use of the existing roadway in a status quo condition without construction of any needed improvements. The existing horizontal and vertical alignment would remain unchanged and no provisions would be made for widening or surface improvements of the roadway.

Some additional comparative discussion of the alternatives with the regard alignment, cost, grade, aesthetics and environmental impact follows.

Alternative 1 takes a more westerly route, crossing the east fork of the Bitterroot River, cutting through a rock outcropping and crossing the river again just prior to rejoining the original alignment. Alternative 2 turns slightly to the east from the existing alignment and cuts deeply through Eagle rock before rejoining existing alignment on the other side. Alternative 3 is a

modification of Alternative 1 which was proposed to reduce the amount of rock cut and production of excess rock material involved in either Alternative 1 or Alternative 2. All three alternatives are designed to meet or exceed a 50 mph design speed.

A computer analysis of the projected costs for the three alternative alignments between common connection points has been completed for comparison purposes. This analysis reviews the estimated cost of cut and fill, and bridge structures to achieve a relative comparison between the alternatives. Planimetric and cross-sectional information on the alignments is available for additional detailed review. The relative cost comparison between the alternatives for this 0.7 mile section is:

Alternative 1	\$3,850,000
Alternative 2	\$5,570,000
Alternative 3	\$3,130,000

Each alternate has a curve designed for 50 mph design speed which was the controlling point for horizontal alignment. Alternate 1 offers the advantage of eliminating two horizontal curves and therefore considerably straightening the alignment, however, two (2) river crossings are required. Alternate 3 introduces some curvature to reduce required rock cuts and also requires two (2) river crossings. Bridge skew angles are slightly worse than those presented in Alternate 1. Alternate 2 would continue the reverse curve configuration similar to the existing alignment and is more curvilinear than the others. Roadway length is essentially the same for all the alternates.

Vertical grades are much better on Alternates 1 and 3 (1.5% max) versus Alternate 2 (6% max). The steeper grade on Alternate 2 was considered to reduce the tremendous volume of rock cut required going through Eagle rock. Alternate 3 offers the advantage of reduced rock excavation below both Alternates 1 and 2.

Environmentally, alternatives 1-4 will create additional disturbance to the existing canyons. This is primarily associated with cutting through rock ridges necessary to obtain a straighter alignment on Alternates 1-3. Alternates 1 and 3 will include two bridge structures, however, there are already two bridge structures in this 4-mile stretch of roadway, and the bridges can be designed

to aesthetically blend into their setting. The most significant effect of Alternates 1-3 is the generation of rock material from the large rock cuts. This will result in an excess of about 156,000; 475,000; and 143,000 cubic yards of excess material for Alternates 1-3, respectively. While some of this can be used to flatten side slopes in fill areas, or perhaps to improve riprap along the river channel, nevertheless there will still be appreciable volumes of excess rock to be disposed of. The canyon setting of this roadway precludes convenient waste sites, and therefore, it is likely the excess material may need to be hauled elsewhere. Alternate 4 (overlay) could also require fill encroachment on the Bitterroot River.

Aesthetically, Alternate 1 offers the advantages of a flatter grade and straighter alignment, increasing the sight distance, and allowing drivers a better opportunity to view the beauties of the surrounding area. Alternate 3 is similar. Alternate 2, on the other hand, employs steep grades, a deep mountain cut, substantial fills into and out of the cut, and sharp reverse curves requiring the driver's constant attention for safety.

Impacts to fish and game will be basically the same for Alternatives 1-3. These alignments have been designed to keep fill out of the river area, however, Alternates 1 and 3 will have some disturbance of the channel for abutments and piers on each of the two bridges. Alternate 4 may require some encroachment on the river.

Air quality and noise impacts are expected to be about the same for any alternative. Responses from agencies suggest the anticipated impacts are minor and mainly of a short term nature during construction.

After the consideration of the foregoing alternative analysis and comparison, Alternate 3 is proposed as the preferred alternative for its lower cost and lesser impact while providing for a safe, aesthetic and improved facility for the traveling public. A particular advantage of this alternate is the reduction of the tremendous amount of rock cut and excess rock material required to be handled for those alternatives providing for an improved design speed and therefore a safer facility.

Two final alternatives are proposed for consideration:

1. The No-Build Alternative (#4). This alternative would meet none of the objectives described in Section 2, "Purpose and Need". Four of the existing substandard horizontal curves and existing substandard vertical curves would remain. The existing 26-foot wide paved surface would remain and would be inconsistent with the 32-foot wide paved surface (40-foot wide future) planned for projects toward the north. The two existing bridges would remain at the current width restriction with advisory speeds of 30 mph.
2. The Preferred Alternative (#3). Widen the existing roadway to provide 12-foot traffic lanes and 2-foot paved shoulders (28 feet total surface width) with provisions for future shoulders widening to twelve (12) feet (40 feet total surface width). Improve horizontal and vertical alignments to provide for a 60 mph design speed except for the portion between milepost 13 and milepost 15.5 where 50 mph will be the design criteria due to the mountainous terrain. The alignment for this portion of the project is identified as #3 in Figure 4. Three (3) new bridges will be constructed to HS-20 design criteria at a width consistent with the roadway and approach guardrail. One (1) bridge will be widened sufficiently to accommodate a 40-foot wide roadway.

4. AFFECTED ENVIRONMENT AND IMPACTS

The following sections discuss existing conditions and potential impacts of the proposed project. Where appropriate, mitigative measures are discussed.

4.1 SOCIAL AND ECONOMIC

The following is a summary of the population in Ravalli County surrounding the project area by race and/or national origin, based on U.S. Census Data³:

White	21,996
Black	37
American Indian	155
Asian & Pacific Islander	62
Spanish	305
Other	<u>243</u>
Total	22,798

There are no known communities or concentrations of minorities in the project area.

The improvements primarily involve upgrading the existing facility to provide a wider roadway capable of safely handling projected traffic loads and will be constructed near the existing alignment. This will represent a long term economic benefit to the traveling public and area residents. Existing traffic patterns will not be changed significantly. Any effect that does occur will be beneficial as the new highway will provide a more efficient route for school buses, mail carriers, ambulances, and any other public service vehicles which serve the area. Existing approaches and access will be perpetuated where needed. There will be some short term beneficial economic impacts to the local communities during the construction period. There will be minimal strain on available housing. Ravalli County has no comprehensive plan nor planning policy.²¹ Land use patterns are expected to remain unchanged by this proposed action.

No other social or economic impacts have been identified.

4.2 RELOCATION

There are no residences, businesses or other structures which will require relocation. The proposed alignment has been selected to avoid residences and businesses located adjacent to the existing highway. As a result, no relocation of residences or businesses is anticipated. If relocation does become necessary, relocation assistance will be provided in accordance with the State Relocation Assistance Program. Every attempt will be made to relocate people in similar properties in the same environment and nearby area. It is the policy of the Montana Department of Highways that no person shall be displaced by the construction of any federally aided highway project unless and until adequate replacement housing has been provided. All replacement housing offered will be fair housing, open to all persons regardless of race, color, religion, sex or national origin.

No limited access control will be acquired along this project, existing access will be perpetuated where necessary and there will be no significant impact on access to jobs, schools, or social and cultural facilities.

4.3 AIR QUALITY

The State Air Quality Bureau has indicated⁴ that:

"In general, any project which will smooth out the traffic flow and reduce stopping and idling time will also reduce the amount of air pollution emissions from transportation sources. Asphalt plants and gravel crushers are the primary emission sources for highway construction, and they must obtain an air quality permit from our office to operate in the state."

Requirements of the Montana Department of Highways, Standard Specifications⁵, will be followed to help mitigate dust and other air pollution during construction, otherwise no long-term negative impacts on air quality are anticipated. Air quality impacts after construction will consist mainly of exhaust emissions from motor vehicles, which will increase on this route as traffic volumes increase. Traffic volumes will increase regardless

of the new construction. The improved traffic flow provided by this project will tend to offset the potential increase in exhaust emissions which would therefore have a long-term beneficial effect on air quality.

4.4 NOISE

No significant impact on noise levels is expected.

Traffic noise will increase as traffic volumes decrease. Traffic is expected to increase on this roadway whether or not the proposed project is constructed.

A traffic noise assessment has been conducted by Montana Department of Highways for this project.²² Traffic noise levels were calculated for the present year 1989 and the design year 2014 using existing and projected traffic volumes.

The following are Leq(h) dBA levels for the existing conditions and for the design year calculated at varying distances:

<u>Distance from Centerline</u>	<u>Present Year</u>	<u>Design Year</u>
75'	59	63
150'	55	59
300'	50	54
	%T = 10.5	%T = 10.5

Leq(h) calculations indicate that design year noise levels will not increase substantially (less than 10dBA) over existing levels; nor will Design Year exterior noise levels exceed the FHPM 7-7-3 Noise Abatement Criteria of 67 dBA for Category B (schools, residences, churches, public meeting facilities). Overall, traffic noise level increases due to the construction of this project will be insignificant, therefore no noise mitigation measures are planned.

4.5 ENERGY

The proposed facility will include wider horizontal curves and flatter vertical curves. Vehicles will not be required to decelerate then accelerate to negotiate horizontal curves,

and passing will become easier and more efficient. The project is therefore expected to increase vehicle operating efficiency and thereby save fuel and decrease wear.

Energy consumption will occur during construction activities.

4.6 FLOODPLAIN

The project follows a relatively narrow glaciated valley with numerous drainage basins or streams. The project crosses drainages or rivers at the following locations:

<u>Crossing</u>	<u>Milepost</u>
East Fork Bitterroot River	12.9
East Fork Bitterroot River	15.1
East Fork Bitterroot River	15.25
East Fork Bitterroot River	15.4
Warm Springs Creek	15.9

The roadway alignment crosses the areas outlined above at angles between 90° - 60° depending on geometry. Parallel encroachment into rivers or streams is minimal, therefore, impacts from the roadway embankment are expected to be minimal.

The floodplains of Camp Creek, East Fork Bitterroot River, and Warm Springs Creek have not been delineated by FEMA in the Ravalli County Flood Insurance Studies⁶. Ravalli County administers the floodplain regulations, and a floodplain management permit will not be required.

Crossings will be designed in accordance with the requirements of the Hydraulics Manual prepared by Montana Department of Highways⁸. The structures must be appropriately designed for the site hydraulics and to minimize negative impacts from backwaters caused by constricted openings (geometry, drift debris, ice, etc.). Upstream from the bridge at milepost 12.9 are some recreational outbuildings associated with the Sula Store and Campground complex that could be affected by excessive backwater. Otherwise,

there is no development in the river channel area at the other crossing locations listed above.

The Omaha District Corps of Engineers (Helena Office) has jurisdiction over the project area for 404 permit purposes. Any work requiring placement of dredge or fill material in a lake, river, stream, wetland, or other water body, whether permanent or temporary, will require a Corps permit under Section 404 of the Clean Water Act⁹.

No major problems associated with the hydraulics of the five (5) crossings noted above are anticipated. A U.S. Army Corps of Engineers 404 permit would normally be required for work in the stream channel below the ordinary high water mark. It is possible that the work proposed for this project can be done under the Corps of Engineer's Nationwide Permit and using the Montana Department of Highways standard design and construction procedures. A final determination will be made when the completed design is available and will be coordinated with the U.S. Army Corps of Engineers. If necessary, an individual 404 Permit will be obtained.

4.7 CHANNEL MODIFICATIONS

When the existing road was constructed in the 1940's, portions of Camp Creek were rechanneled from milepost 9.5 to 10.5 and also from milepost 11.0 to 11.6 to be adjacent to the newly constructed roadway. It is unclear why the stream was diverted from its natural drainage channel, but recently some property owners have expressed an interest in returning the stream to its previous and natural location.

The proposed roadway improvements would carry the new roadway further to the west and away from the existing stream channel and thus lessen the impact of the roadway on the stream. As a part of the design study, contact will be made with affected property owners and agencies to see if there is support for returning Camp Creek to its original, natural drainage channel. If a consensus is reached this will be included as a part of the proposed highway improvements, otherwise the channel will remain at its present location. If the channel is to be moved, studies and evaluation required by FHPM 6-7-3-2 paragraphs 7c through 7e will need to be provided.

With the exception of the foregoing, only minor channel modifications associated with bridge and culvert approaches will be required as a result of the proposed highway improvements. Mitigative measures will be employed to minimize any environmental impacts resulting from this phase of construction. Best construction practices should be followed in order to limit the sediment entering the channel during construction. This will require using clean fill where stream encroachment is unavoidable. Re-vegetation of areas disturbed during construction should immediately follow the completion of the project. Some impact will be unavoidable as the construction activity of these improvements will require some in-stream channel work including the placement of fill material for the pipes or bridges, riprap slope protection, and the construction of detour structures.

This project will be coordinated with the Montana Department of Fish, Wildlife, and Parks to ensure compliance with the Montana Stream Preservation Act. The Contractor may also need to obtain a permit from the Department of Health and Environmental Sciences for the unavoidable in-stream work.

4.8 WATER QUALITY

The Montana Department of Natural Resources and Conservation will require that the construction contractor obtain a "Beneficial Water Use Permit" before water from any surface water source may be used¹⁰. Also, the Contractor may need to obtain a permit from the Department of Health and Environmental Sciences for protection of streams during construction.

Short-term construction related water quality impacts can be expected, and mitigative measures such as erosion control, settling basins, etc., will be taken to ensure that any impacts will be kept to a minimum.

4.9 IRRIGATION

The general topography of the highway corridor limits the use of overland irrigation systems. There are no organized irrigation districts on record with the U.S. Bureau of Reclamation¹¹. At the southerly end of the project, a ditch was constructed in the 1930's to serve an individual property. This ditch is still active during years when runoff is adequate. This ditch crosses the proposed highway project in two (2) places. In addition, the Lord Ditch begins 500 feet north of the Warm Spring Creek and Bitterroot River confluence. This ditch also serves only an individual property owner and parallels the highway in this location. All crossings will require new culverts sized to deliver the historical flow to the affected property.

4.10. WETLANDS

A wetlands assessment report¹² was performed in accordance with the evaluation process developed by the Montana Department of Highways; the Montana Department of Fish, Wildlife, and Parks; and the Army Corps of Engineers Wetland Manual. Executive Order 11990, "Protection of Wetlands," established a national policy to avoid, to the extent possible, the long and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Since the "no-build" alternative is not considered to be practical due to the need for a new roadway, a wetlands survey was conducted along this highway corridor in order to identify wetlands that might be impacted by the proposed project. Six (6) wetland types were identified in nineteen (19) locations within the project area. Wetland areas delineated by the survey are shown approximately on Figure 5. The complete assessment report identifying the wetland types in each of the 19 areas is provided in Appendix C. The proposed roadway will be shifted generally away from the creeks, rivers, and most wetlands. In some areas, fill slopes may need to be steepened slightly to avoid impact.

The following table represents the total area of each site compared to the disturbed area:

<u>Wetlands Type</u>	<u>Acreage in Study Area</u>	<u>Estimated Acreage to be Disturbed</u>
1	23.1	0.6
2	(555.4)	(ND*)
3	81.4	5.4
4	10.9	0.2
5	78.4	1.5
6	<u>29.9</u>	<u>1.8</u>
TOTAL	223.7	9.5

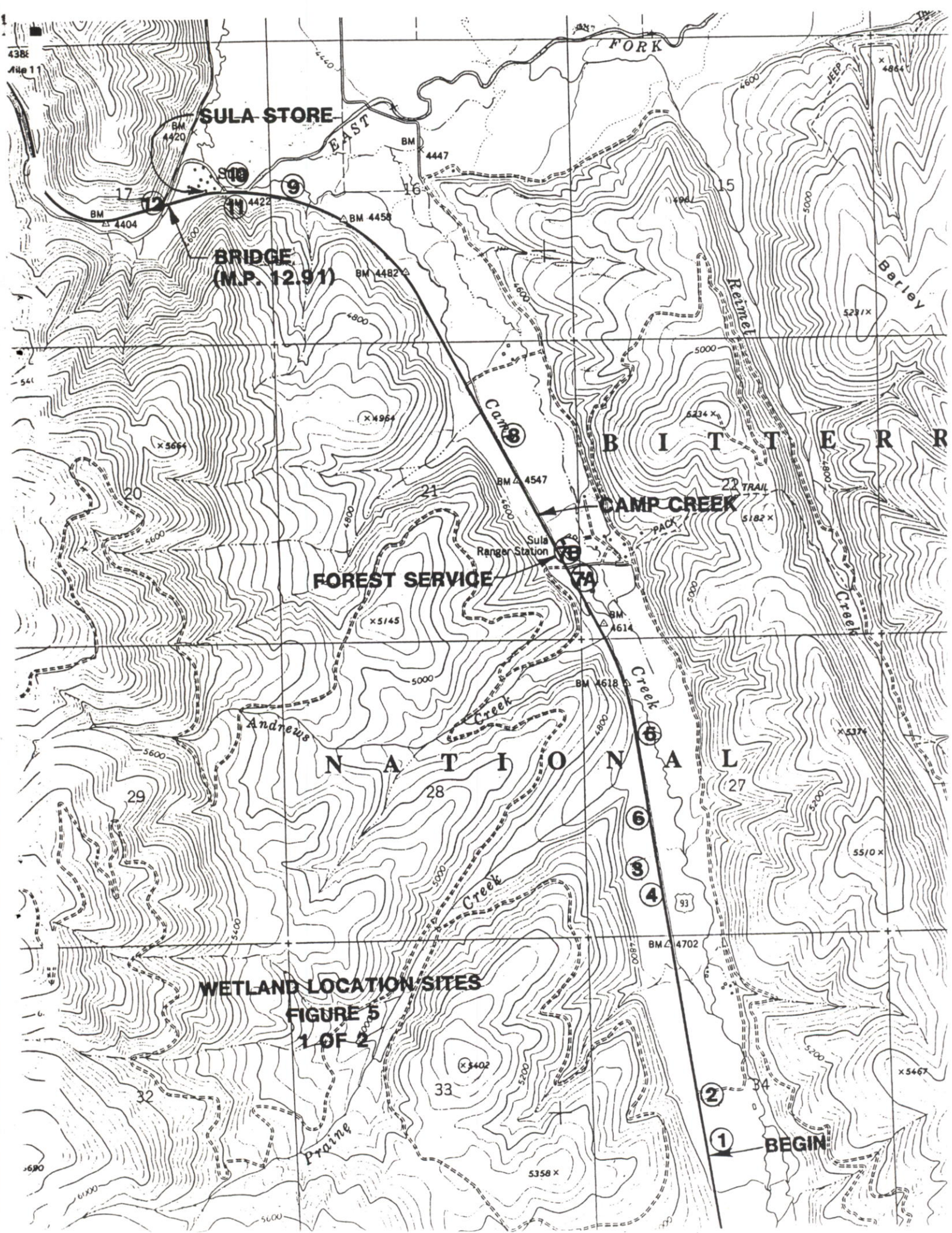
*ND = not determined since WT-2 did not meet wetland assessment criteria and are not considered wetlands.

Some additional disturbance may result if Camp Creek is returned to its original channel (see Article 4.7). However, the long term benefit of removing runoff from the roadway into the stream should outweigh any temporary adverse impacts due to construction.

Removal of riparian vegetation should be kept to the minimum necessary for completion of the project. Stream banks at crossings of perennial drainages such as Camp Creek and the East Fork of the Bitterroot River should be stabilized with mulch or netting and shrub plantings. This process should keep impacts minimal and short-term. The mitigation of unavoidable wetland losses will be accomplished following the guidelines outlined in the Interagency Wetlands Mitigation Procedure contained in the Interagency Memorandum of Understanding.

4.11. LAND USE

Land use in the area is primarily timber production, recreation, and grazing. Some full-time residents exist in addition to a single commercial/retail store. Ravalli county has no comprehensive plan nor planning policy²¹. Land use patterns are expected to remain unchanged by this proposed action.



WETLAND LOCATION SITES
FIGURE 5
1 OF 2

4388
File 11

SULA STORE

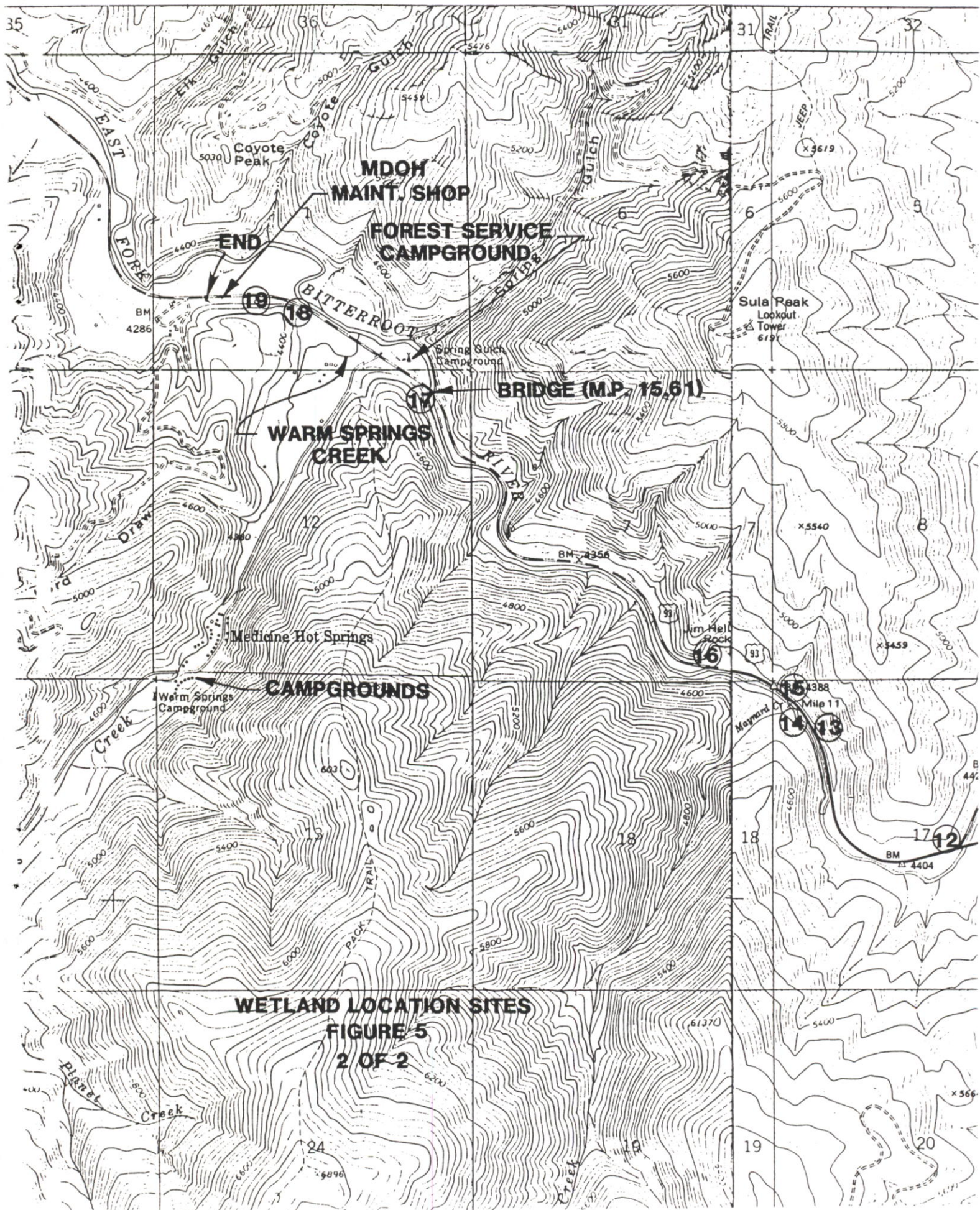
BRIDGE
(M.P. 12.91)

FOREST SERVICE

CAMP CREEK

NATIONAL

BEGIN



4.12. HISTORICAL/CULTURAL/ARCHAEOLOGICAL RESOURCES

A cultural resource inventory report has been performed¹³ and is available for review at the MDOH offices in Helena. This report was conducted in accordance with MDOH policy and consisted of both file/records search and field survey. A search of the statewide archeological site files that are maintained by the Montana State Historic Presentation Office (SHPO) in Helena was completed. The Department of Anthropology at the University of Montana in Missoula and State Archeologist Office were contacted in order to identify sites of concern if any. In addition, the Flathead Culture Committee and local testimony contacts were completed and evaluated for reporting purposes. The following is a brief summary of sites/findings and recommendations/action:

- 24RA6 Prehistoric Occupation Site - Not affected
- 24RA501 Pictograph Panel - Not affected
- 24RA61 Indian Scarred Tree - Not affected
- 24RA273 Lord Irrigation Ditch - Not eligible for historic register
- 24RA292 Sula Store/Campground Facility - Eligible for historic register/not affected
- 24RA293 Homestead Residence - Eligible for historic register/not affected
- 24RA294 Historic Graffiti Pictograph - Eligible for historic register/not affected
- Local residents would like an historical interpretive sign to indicate the point where the Lewis and Clark expedition entered the Sula Basin.

Therefore, no significant cultural, historical, or archaeological resources will be affected by this project.

4.13. FISH, WILDLIFE, AND THREATENED OR ENDANGERED SPECIES

A biological assessment has been completed for this project¹⁴ and is included in Appendix C. The Montana Department of Fish, Wildlife, and Parks (MDFWP) was consulted to determine the nature of fish and wildlife resources in the project area. Some tributaries of the East Fork of the Bitterroot River (including Camp Creek, Sherman Creek,

and Warm Springs Creek) are used successfully by rainbow, west slope cutthroat, and brown trout for spawning. Cutthroat are a MDFWP species of concern. The project area is not highly productive and is not used a great deal by fishermen.

The project area supports populations of mule deer, white-tailed deer, elk, moose, mountain goats, big horn sheep, black bear, and mountain lion. Habitat or seasonal use areas for some of these big game species does exist immediately adjacent to the highway project. Game birds found include ruffed grouse and blue grouse. Water fowl species include mallard; green-winged, blue-winged, and cinnamon teal; American widgeon; and occasionally Canada geese. Fur bearers potentially occurring are beaver, mink, muskrat, fisher, lynx, bobcat, coyote, raccoon, and red fox.

Thirteen (13) species of birds (of concern in Montana) are listed as transients or breeding species which could occur in the project area. These are osprey, Cooper's hawk, northern goshawk, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, upland sandpiper, northern pygmy owl, great gray owl, long-eared owl, Brewer's sparrow, and bobolink. The rock bluff known as Eagle Rock (MP 15 - east side) has historically supported a nesting pair of golden eagles. The preferred alternative #3 would not affect this area.

The project will not affect any known threatened or endangered species.¹⁵

The following items, recommended by the USFWS¹⁵ and the Montana Department of Fish, Wildlife, and Parks¹⁶, have been considered in preliminary design and will be considered during final design:

1. Encroachment into any streams, lakes or intermittent drainages should be kept to an absolute minimum;
2. New drainage structures, if needed, should be designed to assure that they will have no significant affect on adjacent wetlands, fish passage, and surface runoff patterns;

3. Fill placed in gullies, swales, or other "low" areas which function to carry overland flow during storm events should be immediately seeded to reduce erosion;
4. Mitigation of unavoidable wetland losses should be considered as planning progresses; and
5. Road-killed animals should be removed from the traffic lanes and the shoulder of the highway to assure that these attractions do not lure raptors or other scavengers onto the highway.

After review of the area and associated raptor activity, it was decided that raptor proofing will not be required on this project. However, since raptors are known to exist in the area and since this project will include the relocation of power poles, the utility company controlling the power line will be encouraged to "raptor-proof" any power poles of concern that are to be relocated as a result of this project. Power lines of concern are those that carry between 12,000 and 69,000 volts and have a separation of less than 60-inches between conductors. Upon request by the utility company, the MDOH Environmental Section will provide the necessary information and instruction for raptor-proofing the power lines.

4.14. PRIME AND UNIQUE AGRICULTURAL LANDS

There are no farmlands that are prime, unique or of statewide or local importance in the Sula area of Ravalli County. Agricultural activities in the project area include grazing and timber production. As indicated above, the new alignment will closely follow the existing alignment. Additional right-of-way required will include only narrow strips of land adjacent to existing right-of-way.

Right-of-way design and acquisition will consider potential problems if irregular parcels are created. The project has been coordinated with the Soil Conservation Service¹⁷. This

project will not interfere with any irrigation structures other than the crossings discussed in Section 4.9.

4.15. RIGHT-OF-WAY

Existing right-of-way widths vary significantly throughout the project from as little as 80 feet to as much as 166 feet. There are approximately 2 miles of project having from 132 to 166 feet total width, 3 miles having from 100 to 132 feet total width, and the remaining 2 miles having between 80 to 100 feet total width.

The general right-of-way width for this project will be 132 feet, 66 feet each side of centerline. More will be required in some areas due to steep cuts and, where obstructions such as bridges or existing structures occur, less may be acceptable.

It is anticipated that the majority of new right-of-way will be required on the left (west) side of existing roadway only, but some new right-of-way will be required on the right (east) side as the roadway crosses the river (MP 14.7 to MP 15.4). It is anticipated that approximately 50-60 acres of additional right-of-way will be required. There should be no severance created.

4.16. CONSTRUCTION

Construction related activities will result in some short term adverse impacts or increase air pollution which cannot be avoided. These impacts include:

- emissions from asphalt plants and crushers,
- dust from construction equipment activities,
- increased noise levels from construction equipment,
- potential for erosion from fresh cut and fill slopes,
- increase in water turbidity in streams from construction activities, and
- inconvenience to highway users resulting from delays, detours, and temporary surfacing.

The contractor will be required to adhere to all federal, state, and local regulations to minimize any pollution. These impacts will be minimized to the extent practical through proper construction practices. Dust will be controlled by watering and/or other acceptable methods. Temporary erosion control measures should be used where construction activities are immediately adjacent to a river or stream. Construction related erosion will be controlled and slopes will be re-vegetated as soon as possible. Air quality permits will be obtained from the State Air Quality Bureau for asphalt plants and crushers.

Traffic will be maintained through the project during construction - a traffic control plan will be developed to minimize inconvenience to motorists. There are numerous utilities that either cross or run adjacent to the new alignment and will require relocation. Arrangements will be made by the Department of Highways to have all conflicting public utilities moved prior to the start of construction on the project. Although there may be some short-term disruptions in service, all necessary utilities will be perpetuated.

Gravel and borrow sources for base and surfacing aggregates have not yet been defined. Borrow material removal and gravel pits will be subject to applicable rules and regulations of the Montana Open Cut Mining Act - a mine reclamation plan will be required.

4.17. TRAFFIC

The improvements are expected to generate no significant amount of additional traffic beyond the increases that would occur with the "no-build" alternative. The improvements are expected to have a beneficial impact on safety and traffic operations.

Existing and project traffic volumes are summarized as follows¹⁸:

TRAFFIC VOLUMES

1989 ADT	=	900, Present
1994 ADT	=	1,150, Letting Date
2014 ADT	=	1,550, Design Year

DHV	=	210
D	=	55 - 45%
T	=	10.5%
All Trucks	=	45.0%

The "no-build" alternative would do nothing to improve traffic operations.

The following is a summary of the accident and severity rates for the statewide average and for this section of roadway¹⁹.

	<u>Statewide Average</u>	<u>This Project</u>
Accident Rate	1.95	1.88
Severity Rate	1.51	1.43

4.18. PEDESTRIANS AND BICYCLISTS

This route segment is on the transcontinental bicycle path. This project is being designed in accordance with the MDOH Route Segment Plan, which specifies a 28-foot wide pavement. No special facilities are planned for pedestrians and bicyclists. The traffic lanes will be twelve feet (12') wide and two foot (2') shoulders will be added which will be of benefit to pedestrians and bicyclists.

4.19. VISUAL

Since the project involves widening and improving an existing roadway with horizontal or vertical alignment changes, effects on the visual environment are not expected to be significant.

The view of the roadway will improve since the widened roadway will be constructed with clean lines and smooth and rounded cut and fill slopes. Disturbed slopes will be re-vegetated. The construction of the project will not change the view from the roadway.

4.20. PARKS AND RECREATION

Specific designated park facilities do not exist along the proposed project. Recreation facilities such as campgrounds or fishing stream access roads are encountered along the route. The proposed road will continue to serve these facilities. All fish passage and cultural resources are being preserved which are critical to recreation/tourist usage of the area. Preliminary design shows these parks or recreation sites are not impacted, therefore, no negative impacts are identified.

4.21. HAZARDOUS WASTE POTENTIAL

No potential sources of hazardous wastes were identified other than the underground gas tanks at the Sula Store complex. This site has been determined to be within 50 feet of the present traveled way (PTW). The potential exists for these underground tanks to be leaking, however, there are no indications or any other information available. The site is now on private property. The proposed roadway and associated right-of-way expansion is away or opposite from this complex. This property is expected to stay in private ownership, therefore, no hazardous waste impacts are identified. If a leaking tank or piping is discovered during construction, then the Contractor will follow a contingency plan as suggested by the AASHTO Task Force on Hazardous Wastes in their "Hazardous Waste Guidelines for Project Development".

5. COMMENTS AND COORDINATION

Coordination efforts were initiated by the Montana Department of Highways in November 1989, when a Letter of Intent²⁰ was issued by the Department to federal, state and local agencies and affected private organizations. Comments and information were requested which would be relevant to this project. Copies of responses received are included in Appendix B.

A public information meeting was held 4 November 1989 at 7:30 p.m. to discuss the proposal to reconstruct of U.S. 93 through this area.²³ The meeting was well attended and strong public support was received. The minutes of the meeting have been documented and are on file with the Montana Department of Highways.

A formal Location and Design Public Hearing on design issues will be held in the summer of 1990 once the approved environmental assessment and preliminary design information is available.

6. REFERENCES

Copies of all references listed below are available for inspection at the offices of the Montana Department of Highways, 2701 Prospect Avenue, Helena, Montana 59620.

1. Montana Department of Highways, Rural Primary System Level of Development Plan, July 1985.
2. Montana Department of Highways, Design Manual, latest edition.
3. Census and Economic Information Center, Montana Department of Commerce, Census of Population Housing, 1980--Summary File 3A.
4. Warren Norton, Environmental Specialist, Air Quality Bureau, State of Montana Department of Health and Environmental Sciences, letter dated 28 November 1989.
5. Montana Department of Highways, Standard Specifications for Road and Bridge Construction, 1987 Edition.
6. Gavin Anderson, Director, Ravalli County Planning Office, letter dated 7 February 1990.
7. Gavin Anderson, Director, Ravalli County Planning Office, letter dated 7 February 1990.
8. Montana Department of Highways Hydraulics Unit, Hydraulics Manual, 1 September 1975.
9. Frederick C. Weinmann, Chief of Environmental Resources Section, Department of the Army Seattle District Corps of Engineers, letter dated 15 December 1989.
10. Jim Bond, Information Officer/Citizen Participation Advocate, State of Montana Department of Natural Resources and Conservation, letter dated 29 December 1989.
11. Robert G. Barho, Regional Supervisor of Water, Power and Lands, United States Department of the Interior Bureau of Reclamation, Pacific Northwest Region, letter dated 6 December 1989.

12. Lisa Bay Consulting, Wetlands Evaluation for F 7-1(40)9, Sula-North, 7 February 1990.
13. Historical Research Associates, Inc., Cultural Resource Inventory of the Sula-North Project Area F 7-1(40)9, 26 January 1990.
14. Lisa Bay Consulting, Biological Assessment for F 7-1(40)9, Sula-North, 7 February 1990.
15. Kemper McMaster, Field Supervisor, Montana/Wyoming Field Office, United States Department of the Interior Fish and Wildlife Service, letter dated 28 November 1989.
16. Ken Chrest, Stream Protection Coordinator, Fisheries Division, Montana Department of Fish, Wildlife & Parks, letter dated 7 December 1989.
17. Keith M. Robertson, District Conservationist, Hamilton Field Office, United States Department of Agriculture Soil Conservation Service, letter dated 22 January 1990.
18. Traffic Data, Supplied by Montana Department of Highways, Consultant and Safety Design Section.
19. Traffic Accident Analysis, Supplied by Montana Department of Highways, Project Planning Section.
20. Montana Department of Highways, Letter of Intent, 22 November 1989.
21. Gavin Anderson, Director, Ravalli County Planning Office, Letter dated 7 February 1990.
22. Noise Assessment Report, Supplied by Montana Department of Highways, Environmental Section.
23. Montana Department of Highways, Notice of Information Meeting.

APPENDIX A
ENVIRONMENTAL ASSESSMENT DISTRIBUTION LIST

**SULA-NORTH F 7-1(40)7
ENVIRONMENTAL ASSESSMENT DISTRIBUTION LIST**

Honorable Albert Moody
P.O. Box 37
Darby, MT 59829

Bitterroot Valley Chamber of Commerce
105 East Main
Hamilton, MT 59840

Elem. & H.S. Dist. #9
209 School Drive
Darby, MT 59829

U.S. Postmaster
U.S. Post Office
Sula, MT 59829

U.S. Postmaster
U.S. Post Office
Conner, MT 59827

U.S. Postmaster
U.S. Post Office
Darby, MT 59829

Ravalli County Planning Board
P.O. Box 5019
Hamilton, MT 59840

Ravalli County Commissioners
Ravalli County Courthouse
Hamilton, MT 59840

Montana Power Company
40 East Broadway
Butte, MT 59701

U.S. West Communications
Attn: Mgr. Highways
P.O. Box 1716
Helena, MT 59601

Ravalli County Elect. Coop., Inc.
P.O. Box 109
Corvallis, MT 59828

Department of Fish, Wildlife & Parks
Project & Planning Bureau
Parks Division
1420 East 6th Avenue
Helena, MT 59620

Department of Fish, Wildlife & Parks
Stream Protection Act Manager
Fisheries Division
1420 East 6th Avenue
Helena, MT 59620

Department of Natural Resources & Conservation
Office of the Director
1520 East 6th
Helena, MT 59620

Department of State Lands
Office of the Commissioner
1625 - 11th Avenue
Helena, MT 59620

Environmental Quality Council
Office of the Director
Capitol Post Office
P.O. Box 215
Helena, MT 59620

State Clearinghouse
Lieutenant Governor's Office
Capitol Building
Helena, MT 59620

Department of the Army
Omaha Dist. Corps of Eng.
Mr. Richard D. Gordon, Chief
Environmental Analysis Branch
215 North 17th Street
Omaha, ME 68102

Department of the Army
Corps of Engineers
1520 East 6th Avenue
Helena, MT 59620

U.S. Department of Agriculture
U.S. Forest Service, Region 1
Attn: Regional Forester
P.O. Box 7669
Missoula, MT 59801

Forest Service Supervisor
Bitterroot National Forest
316 North 3rd Street
Hamilton, MT 59840

U.S. EPA Montana Office
Attn: EIS Review
301 South Park, Drawer 10096
Helena, MT 59626

Federal Emergency Management Agency
Region VIII
Denver Federal Center
Building 710
Denver, CO 80225

U.S. Department of the Interior
Chief, Environmental Impact Assessment Program
U.S. Geological Survey, MS-760
423 National Center
Reston, VA 22092

U.S. Department of the Interior
Director, Office of Environmental
Project Review
Room 4239, Main Interior Bldg.
18th & C Street N.W.
Washington, DC 20240-0001

U.S. Department of Transportation
Federal Highway Administration
301 South Park, Drawer 10056
Helena, MT 59626

U.S. Fish & Wildlife, Mont. Office
Enhancement Division
Mr. Kemper McMaster, Field Supervisor
Federal Building, 301 South Park
Helena, MT 59626

U.S. Fish & Wildlife Service
1501 - 14th Street West
Suite 230
Billings, MT 59102

U.S. Department of Energy
A.R. Morrell, Environmental Manager
Bonneville Power Administration
P.O. Box 3621 - SJ
Portland, OR 97208

Sula Store and Campgrounds
c/o Doyle and Nance Hobbs
P.O. Box 578
Darby, MT 59829

U.S. Forest Service
Sula Ranger District
Sula, MT 59871

**APPENDIX B
COORDINATION/RESPONSE
LETTERS FROM AGENCIES**



United States Department of the Interior

BUREAU OF RECLAMATION
PACIFIC NORTHWEST REGION
FEDERAL BUILDING & U.S. COURTHOUSE
BOX 043-550 WEST FORT STREET
BOISE, IDAHO 83724-0043

TAKE
PRIDE IN
AMERICA

IN REPLY
REFER TO:
PN 426

DEC 06 1989

Mr. Dave Johnson, P.E.
Chief
Preconstruction Bureau
Montana Department of Highways
2701 Prospect Ave.
Helena MT 59620

RE: F 7-1(40)9
Sula - North, letter of intent (Highway)

Dear Mr. Johnson:

Your November 22, 1989, letter regarding the department's proposal to reconstruct a portion of Highway 93 in Ravalli County requested our comments on the proposal. The Bureau of Reclamation does have a concern for the irrigated lands along the Bitterroot River downstream from the project area. The Bitterroot Irrigation District's water supply is from Como Dam on a tributary of the Bitterroot and does not use River water which could be affected by the construction. Therefore, the proposed project would have no impact on the irrigation project in that area.

Thank you for the opportunity to comment on your proposal.

Sincerely,

Robert A. Backs

Regional Supervisor of
Water, Power and Lands

Date Recd.	Reconstr.	12/8/89	Initial
12/8/89	MAIL ROUTE		
<input checked="" type="checkbox"/>	20 Preconstruction		
<input checked="" type="checkbox"/>	21 Assistant		
<input checked="" type="checkbox"/>	22.1 Ice Mgr		
<input checked="" type="checkbox"/>	22 Road Design		
<input checked="" type="checkbox"/>	23 Environment		
<input checked="" type="checkbox"/>	24 Hydraulics		
<input checked="" type="checkbox"/>	25 Survey & Mapping		
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UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Fish and Wildlife Enhancement
Federal Building, U.S. Courthouse
301 South Park
P.O. Drawer 10023
Helena, Montana 59626

IN REPLY REFER TO:

FWE-61130-Billings

Mr. Dave Johnson, P.E.
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Johnson:

This responds to your November 22, 1989 letter concerning the intention of the Montana Department of Highways to develop a Federal Aid highway project on U.S. 93 in Ravalli County, Montana (Sula-North, F7-1(40)9). The project will start approximately 9 miles north of the Idaho state line and extend northerly for approximately 7.2 miles along U.S. 93. It includes total reconstruction of the existing roadway and drainage facilities and will include a 28-foot wide paved surface with a subgrade width capable of accommodating a future 40-foot wide paved surface.

The information accompanying your November 22 letter indicates that the project may impact the East Fork of the Bitterroot River and smaller drainages in the project area. Every reasonable effort should be made to minimize such stream disturbance and/or encroachment. In this regard, we assume any fishery concerns will be resolved through close coordination with the Montana Department of Fish, Wildlife and Parks in connection with the state permit required under MCA-87-5-501 (Stream Protection Act). We also assume that a wetlands impact assessment will be conducted in accordance with the recently-signed, "Memorandum of Understanding: Management and Mitigation of Highway Construction Impacts to Wetlands in the State of Montana". If any wetland impacts are determined to be unavoidable, they should be mitigated, also in accordance with the Memorandum of Understanding.

Endangered species which may occur in the project area are the bald eagle (Haliaeetus leucocephalus), and the peregrine falcon (Falco peregrinus). Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Federal Highway Administration must determine if the proposed road improvements may affect these species. If it is determined that either of these species may be affected, it will be necessary for the Federal Highway Administration to initiate formal consultation with us. The following information may assist in that determination.

Several bald eagle nesting territories are known to occur some miles to the east and north of the project. However, none of these nesting territories are located close enough to the proposed road improvements to be of direct concern. Bald eagles may also winter, to some extent, in the general vicinity and undoubtedly occur at the immediate project location as seasonal migrants. The peregrine falcon may also occur as a seasonal migrant. While we do not foresee any substantive issues with the proposed project, with regard to the bald eagle and

Date Recd. Preconst. 11/30/89				
Act	Info	MAIL ROUTE	Attach	Initial
		30 Preconst Engr		
		30 Assistant		
		30 Office Mgr		
		32 Road Design		
		33 Environment		
		34 Hydraulics		
		35 Survey & Mapping		
		36 Traffic		
		39 Consultant		
		November 28, 1989		
		File		

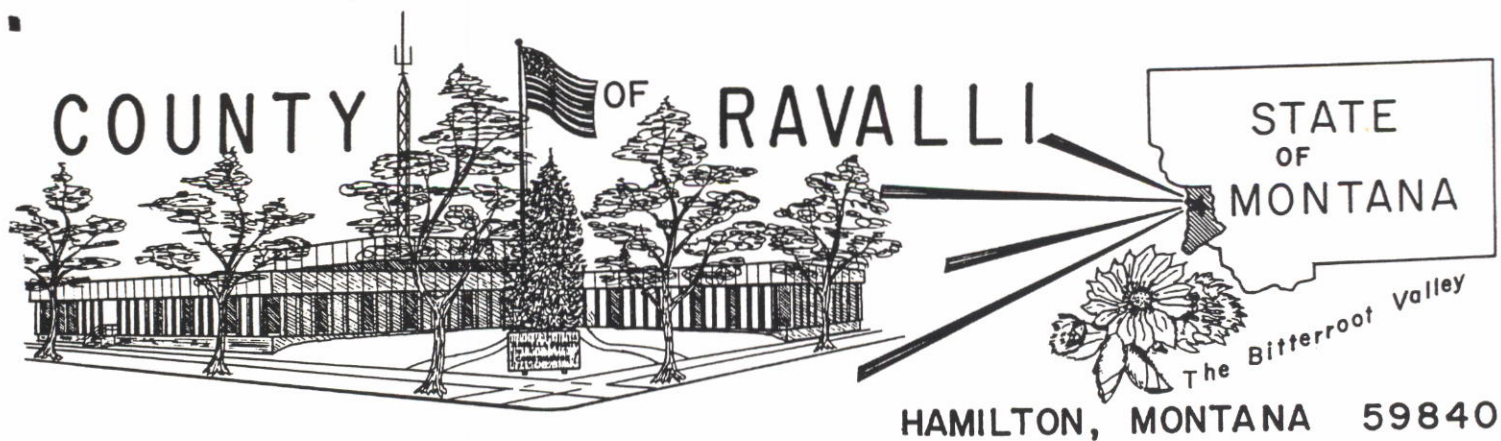
The seal of the State of Montana is a circular emblem. It features a landscape with a river, mountains, and a sun. The text "THE GREAT SEAL OF THE STATE OF MONTANA" is inscribed around the border. At the bottom, there is a banner with the word "LIBERTY" and a small star.

COGSWELL BUILDING

FAX # (406) 444-2606

HELENA, MONTANA 59620

AN EQUAL OPPORTUNITY EMPLOYER



February 7, 1990

Mr. Scott Rhead, P.E.
Project Manager
Forsgren Associates
210 Mallard Drive
Boise, ID 83706

Dear Mr. Rhead:

Thank you for your inquiry regarding the project on Highway 93 in Ravalli County.

Currently there is not a flood insurance study done for the portion of highway referenced in your letter. Neither does the portion of Camp Creek addressed in your correspondence have a designation at this time. I spoke with the Denver FEMA office and they indicate one is not expected in the near future.

You may want to contact the State Water Quality Bureau for their input concerning the effect construction will have on stream quality.

Unfortunately Ravalli County is somewhat behind the times as far as planning policy, or comprehensive planning is concerned. We are attempting to correct that situation. For now that is about all I can do for you.

If you have any questions please call me at 406-303-6203.

Sincerely,

Gavin Anderson, Director
Planning/Sanitarious Office



DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124-2255

REPLY TO
ATTENTION OF

DEC 15 1989

Planning Branch

Dave Johnson, P.E.
Chief, Preconstruction Bureau
State of Montana
Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Johnson:

We have reviewed the letter of intent and scoping notice for
F7-1(40)9 Sula-North.

In general, avoidance of fill and inwater work is desirable,
as is avoidance of removal of riparian vegetation or other stream
cover. Thus, of the two alternative alignments between MP 14.7 and
15.4, the one that does not cross the river is probably better from
a fisheries standpoint. Work will require a Section 404 permit,
and a State water quality certification, pursuant to Section 401 of
the Clean Water Act, if any instream work is planned.

We assume that a State Department of Transportation
archeologist will conduct cultural resources survey of new road
segments.

Thank you for the opportunity to review this statement.

Sincerely,

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		<i>McKee</i>		

Frederick C. Weinmann
Frederick C. Weinmann
Chief, Environmental Resources
Section

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721


HELENA, MONTANA 59620-2301

Dave Johnson, P.E.
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect
Helena, MT 59620

Dear Mr. Johnson:

First, water may be needed for dust control or some other construction-related purpose. If the contractor uses surface water or over 100 gallons per minute of ground water, a temporary water use permit will have to be obtained. For information about application forms and procedures, contact the DNRC Water Rights Field Office, P.O. Box 5004, Missoula, MT 59806 (phone 721-4284).

Thank you for the opportunity to comment.

Sincerely,

Jim Bond

copy: Ron Guse, Water Resources Division
Mike McLane, Missoula Field Office
Intergovernmental Review Clearinghouse

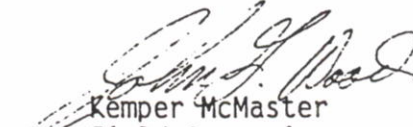
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peregrine falcon, any powerlines in the vicinity, if not properly constructed, could pose electrocution hazards for these species. To conserve these species and other large raptors protected by Federal law, we urge that any powerlines to be modified or reconstructed as a result of the project be raptor-proofed following the criteria and techniques outlined in the Raptor Research Report No. 4, "Suggested Practices for Raptor Protection on Powerlines - The State of the Art in 1981". A copy may be obtained from:

Jim Fitzpatrick, Treasurer
Raptor Research Foundation
Carpenter St. Croix Nature Center
12805 St. Croix Trail
Hastings, Minnesota 55033

We appreciate the opportunity to comment on the proposed project.

Sincerely,


Kemper McMaster
Field Supervisor
FOR Montana/Wyoming Field Office

cc: Roger Scott, Federal Highway Administration (Helena, MT)
✓ Jeff Ryan, Montana Dept. of Highways (Helena, MT)
Jeff Herbert, Montana Dept. of Fish, Wildlife & Parks (Helena, MT)
Ken Chrest, Montana Dept. of Fish, Wildlife & Parks (Helena, MT)
Jack Thomas, Montana Dept. of Health, Water Quality Bureau (Helena, MT)
Steve Potts, Environmental Protection Agency (Helena, MT)
John Peters, Environmental Protection Agency (Denver, CO)
Suboffice Coordinator, USFWS, Fish & Wildlife Enhancement (Billings, MT)

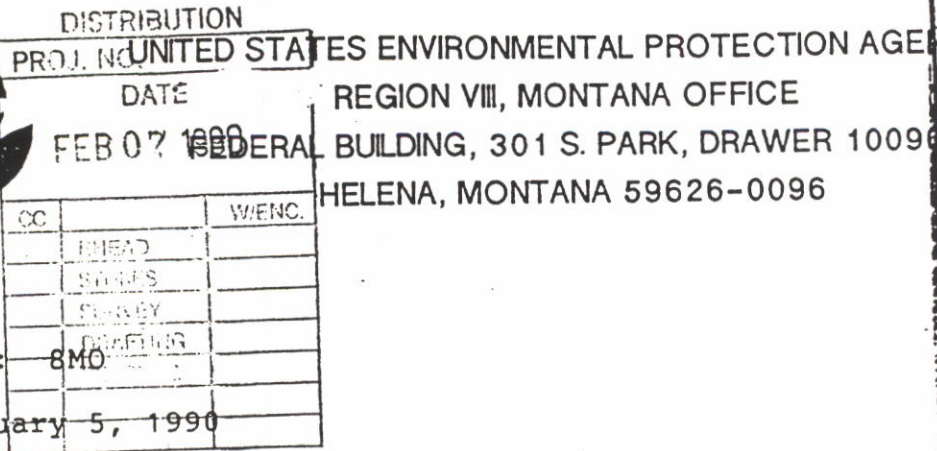
JGW/dc

"Take Pride in America"

RE: E 7-1(40)9
Sula - North

Ken Christ

[illegible]



**APPENDIX C
BIOLOGICAL AND WETLANDS
ASSESSMENT REPORT**

**BIOLOGICAL ASSESSMENT AND
WETLANDS FINDINGS
Sula-North Highway Reconstruction
Project No. F 7-1 (40) 9**

**Prepared for Lisa Bay Consulting and
Forsgren Associates**

February 7, 1990

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Attachments

Attachment A	U.S. Fish and Wildlife Service Letter	Follows Lit. Cited
Attachment B	Wetland Site Field Forms	Follows Attachment A

Maps and Photos

Map Sheets 1-7 (Mylar Overlays, 1 set only)	In Map Pocket
Photos	In Photo Supplement

**Sula-North Highway Reconstruction Project
Biological Assessment and Wetlands Finding**

INTRODUCTION

The Montana Department of Highways (MDOH) has contracted the highway reconstruction project for the Sula-North Project (MDOH project F 7-1 (40) 9). To meet legal requirements, a biological assessment and wetlands finding have been conducted along the project corridor.

The purpose of the biological assessment was to:

1. identify the existing biological resources including vegetation, wildlife, and fisheries
2. determine the impacts of the proposed project on these resources
3. identify mitigation strategies to avoid or minimize any identified impacts

Special attention was given to threatened and endangered (T & E) species that may occur in the vicinity of the project. A formal U.S. Fish and Wildlife Service (USFWS) consultation on T & E species and potential impacts to them was requested. The USFWS letter addressing this issue is included with this report as Attachment A.

The purpose of a wetlands finding is to specifically address the wetlands resources in the project corridor as mandated by Executive Order 11990 and Department of Transportation Order 5660.1A and implemented through MDOH. Wetlands areas are unique ecosystems that provide diverse and specialized habitats for wildlife. They are typically limited in extent but are often extremely important for a variety of plant and animal species. Wetlands are also integral as buffers between terrestrial and aquatic ecosystems.

Please feel free to contact me at 449-5486 if you have any questions. Thank you very much for the opportunity to comment.

Sincerely,

A handwritten signature in cursive script, reading "Richard T. Montgomery". The signature is written in dark ink and is positioned above the printed name.

Richard T. Montgomery
Branch Chief

c.c. Steven Pilcher, WQB
John Peters, EPA 8 WM-SP
Lee Shanklin, 8 MO
John G. Wood, USFWS

UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

1709 N. 1ST STREET
HAMILTON, MT 59840

January 31, 1990

Scott Rhead
Forsgren Associates
210 West Mallard Drive
Suite D
Boise, ID 83706

Dear Scott,

From the maps you recently sent, I have determined that there are not any "prime, statewide, unique or locally important" farmlands in your proposed project area. I am returning the Impact Rating form which states this. I am also returning the aerial photos in case you may need them for other matters.

If you have any question, call me at 406-363-5010.

Sincerely,



Keith M. Robertson
District Conservationist
Hamilton Field Office

7

United States
Department of
Agriculture

Soil
Conservation
Service

Federal Building, Room 443
10 East Babcock Street
Bozeman, Montana 59715

November 30, 1989

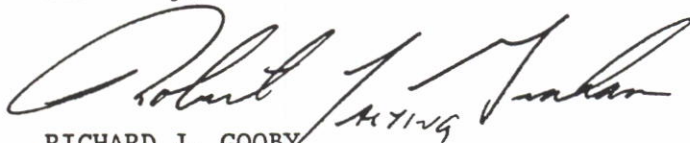
Mr. Dave Johnson
Preconstruction Bureau
Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Johnson:

SUBJECT: F7-1(40)9, Sula--North, Letter of Intent

We have reviewed the above proposed works of improvement and have no comments to offer.

Sincerely,


RICHARD J. GOOBY
State Conservationist

cc:
Ronald Batchelor, State Biologist

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<input checked="" type="checkbox"/>	30 Assistant		
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<input checked="" type="checkbox"/>	39 Consultant		
<input checked="" type="checkbox"/>	W. Weaver		
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ENGINEERING STUDY

LOCATION: SULA - N. E. S.

ROUTE & MP: FAIP - 7 M.P. 8.25 - 16.24

STATEWIDE AVERAGE <u>PRIMARY</u>	STUDY AREA
ACCIDENT RATE: <u>1.95</u>	<u>1.88</u>
HIGH AVERAGE: <u>3.54</u>	<u> </u>
SEVERITY RATE: <u>1.51</u>	<u>1.434</u>
HIGH AVERAGE: <u>1.76</u>	<u> </u>

I. VARIATIONS FROM AVERAGE OCCURRENCE:

- 67 % OFF ROAD ACCIDENTS VS. 45 % STATEWIDE AVERAGE.
- 37 % OVERTURNING ACCIDENTS VS. 23 % STATEWIDE AVERAGE
- 30 % FIXED OBJECT ACCIDENTS VS. 23 % STATEWIDE AVERAGE
 - A) 22 % CUT SLOPE ACCIDENTS VS. 11 % STWD. AVG.
 - B) 9 % FILL SLOPE ACCIDENTS VS. 0.6 % STWD. AVG.
 - C) 10 % ROCK ACCIDENTS VS. 2 % STWD. AVG.

II. HES CLUSTERS OR PROJECTS:

- P-7 M.P. 14.8 - 15.2
1982 ACCIDENT CLUSTER LIST, CHEVRON SIGNING, COMPLETED
11/10/84 UNDER HES 4/4/(14).
- P-7 M.P. 14.2 - 14.6
1982 ACCIDENT CLUSTER, FIELD REVIEWED, NO RECOMMENDATION
- P-7 M.P. 15.2 - 15.7
1980 ACCIDENT CLUSTER, FIELD REVIEWED, NO RECOMMENDATION

III. REMARKS: NONE

Date Recd. Preconst.		11/15/89	
Act	Info	Attach	Initial
	✓ 30 Preconst Engr		✓
	✓ 30 Assistant		✓
	30 Office Mgr		
	✓ 32 Road Design		✓
	32 Environment		
	34 Hydraulics		
	35 Survey & Mapping		
	36 Traffic		
	✓ 37 Consultant		✓



The Big Sky Country

MONTANA HOUSE OF REPRESENTATIVES

REPRESENTATIVE BERNIE SWIFT

HOUSE DISTRICT 64

HELENA ADDRESS:
CAPITOL STATION
HELENA, MONTANA 59620

HOME ADDRESS:
SE 206 ROSE LANE
HAMILTON, MONTANA 59840

COMMITTEES:
APPROPRIATIONS
HOUSE, SENATE JOINT
APPROPRIATIONS
SUBCOMMITTEE FOR
NATURAL RESOURCES AND
BUSINESS REGULATION

*John Weaver, District Engineer
Wt. of Highways District Office
2100 W. Broadway
Missoula, Mt. 59802*

*Hamilton, Mt.
November 5, 1989*

Re: F7-1(40441) Soda Conner

Dear Mr. Weaver:

Thank you for the notice of your meeting on Tuesday, November 14, at the Conner Wesleyan Church. I am sorry not to be able to attend, but have such other commitments on that date.

Like many others, I do have concerns relative to impacts to the River, the environmental concerns in general, the Archaeological and historical matters and of course, cost of the Project. In view of the foregoing, I would suggest we not decide to re-locate the highway on the West side of the River to avoid impact to the "Medicine Tree" site. Due to the decadent condition, age of the tree and question of whether this is really the tree connected with religious activities, I recommend area to the East of the roadway be secured for a pull out along with construction of a suitable monument for continuation and recognition of the activity. Another historical matter is that of relocating the Ross-Native American meeting sign now above

the Lula Store, to a site a mile and one tenth to the south of the East Fork Road - Highway 93 junction. As you will recall, myself, John McClintic and John Austin have discussed this with you folks and the Historical Society members (State etc). If you have questions about this matter, please contact Mr. McClintic and/or Mr. Austin during my absence. They plan to be at the meeting.

It goes without saying, that every effort should be made to hold the cost of the reconstruction within reasonable levels. I am confident you will strive to do this and that proper attention will be given to environmental concerns. If I may be so bold, I believe I can safely say that folks of the County, and for that matter the state, are highly pleased that we are finally seeing Highway 93 upgraded. It has been a long time coming and will, without question, have a positive impact on our local and state economy.

Thanks again for notifying me of the meeting and don't hesitate to contact me if you have questions about the suggested historical relocations. Above all, please excuse this long hand note as my typing ability is not the best!

Sincerely,

Bernie Swift

cc: John McClintic
Lula, ME 59871

The seal of the State of Montana is a circular emblem. The outer ring contains the text "THE GREAT SEAL OF THE STATE OF MONTANA" at the top and "1889" at the bottom. The inner circle depicts a landscape with a river, mountains, and a bison. A banner across the river reads "GREAT PLAINS".

1424 9TH AVENUE

(406) 444-3423

HELENA, MONTANA 59620-0537

December 5, 1989

TO: Dave Johnson, P.E., Chief, Preconstruction Bureau
Montana Department of Highways

FROM: *EC* John Craig, Chief, Intermodal Commodities Bureau

RE: SULA - NORTH HIGHWAY PROJECT

Please advise if you should require our additional involvement.

[illegible]

Attachment

DEPARTMENT OF COMMERCE
TRANSPORTATION DIVISION



STAN STEPHENS, GOVERNOR

1424 9TH AVENUE

STATE OF MONTANA

(406) 444-3423

HELENA, MONTANA 59620-0537

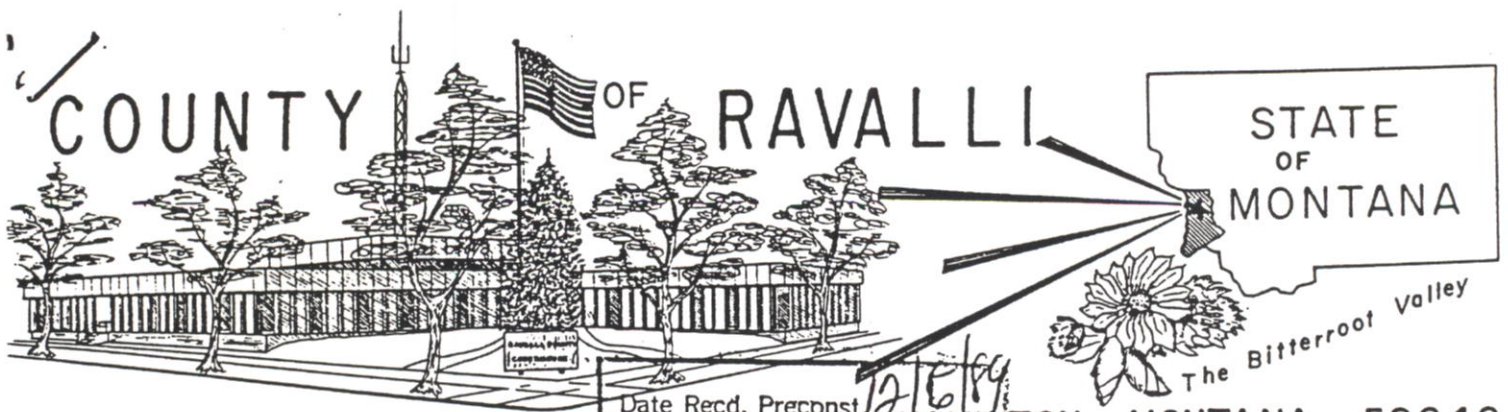
December 5, 1989

MEMORANDUM

TO: John Craig, Chief, Intermodal Commodities Bureau
FROM: Dick Ross, Intermodal Commodities Bureau *Dick*
RE: SULA NORTH HIGHWAY PROJECT

The proposed project will, for the most part, follow the present alignment. Plans are to upgrade the existing roadway to a 28-foot paved surface. The project is entirely south of Darby and should not have an adverse effect on any railroad operations.

/sc



Department of Highways
Preconstruction Bureau
Dave Johnson, Chief
2701 Prospect Avenue
Helena, Montana 59620

RE: F 7-1 (40) 9
Sula, North

Dear Dave,

Thank you for your letter and maps regarding this much needed improvement to U.S. Highway 93.

Along this 7.2 miles of U.S. 93 there are only three intersections with County Roads. Edwards Lane intersects your project immediately south of the Sula Ranger Station at approximately MP 10.9. The East Fork Highway State Route N° 472 is also County Road N° 101 and is located north of the Bridge at approximately MP 12.9. Medicine Springs Rd. is located at approximately MP 15.6. All three roads are forest access as well as residential access. The East Fork Highway and Warm Springs Rd. have poor alignment with the existing U.S. 93. We believe these intersections deserve special consideration to insure proper alignment, sight distance and landing. The East Fork Highway may warrant a left turn lane. If it does not meet the warrants at this time, it will in the near future. The East Fork area is growing rapidly.

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			30 Office Mgr	
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			33 Environment	
			34 H, d, aulics	
			35 Survey & Mapping	
			36 Traffic	
			39 Consultant	
			<i>W. Weaver</i>	

12/6/89
HAMILTON, MONTANA 59840

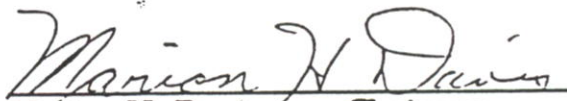
December 1, 1989


Alternate N° 1 is obviously the best alignment but may be cost prohibitive due to structure cost. We have every confidence in your ability to arrive at the best solution and will support which ever route you determine proper.

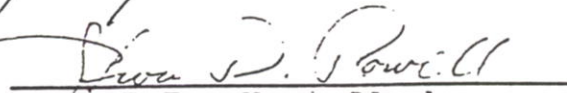
We support this project and will be pleased to cooperate in any way we can.

Sincerely,

Board of Commissioners
Ravalli County Montana


Marion H. Davis, Chairman


Jerry L. Allen, Member


Steven D. Powell, Member

OFFICE OF THE GOVERNOR
BUDGET AND PROGRAM PLANNING



STAN STEPHENS, GOVERNOR

STATE CAPITOL

STATE OF MONTANA

(406) 444-3616

HELENA, MONTANA 59620

November 27, 1989

Mr. David S. Johnson, Chief
Preconstruction Bureau
Montana Dept. of Highways
2701 Prospect Avenue
Helena, Montana 59620

RE: Federal Aid Highway Project - Sula - North
Montana State IGR Clearinghouse SAI No. MT891127-283-X

Dear Mr. Johnson:

The above-captioned has been received. In order to provide notification to parties that may be interested in review and/or comment, it will be listed in the next Intergovernmental Review Bulletin issued from this office.

Any inquiries or comments regarding the report will be directed to you. Please provide copies of any comments received to the Clearinghouse for our files.

The Clearinghouse intends to take no further action on this proposal.

Sincerely,

A handwritten signature in cursive script, reading "Debbie Davis".

DEBBIE DAVIS
Clearinghouse Manager

Enclosure

Date Recd.	Preconst	11/28/89
Act	Info	MAIL ROUTE
		30 Preconst Engr
		30 Assistant
		30 Office Mgr
		32 Road Design
		33 Environment
		34 Hydraulics
		35 Survey & Mapping
		36 Traffic
		37 Consultant
		File

AN EQUAL OPPORTUNITY EMPLOYER

**APPENDIX D
PROJECT TRANSLITES
(AERIAL PHOTOS)**

Impacts to wetlands and mitigation methods to minimize those impacts are addressed in this document.

The project (Figure 1) begins at milepost 8.25, about 4 miles south of Sula and extends north or north-westerly about 8 miles along U.S. Highway 93 to the State Highway Maintenance building at milepost 16.24. The project consists of a total reconstruction of the existing road. The new alignment will closely follow the present one over most of the roadway south of Sula. From Sula, to about 4 miles northwest, the project will require several major alignment changes, including new bridges and/or major earth moving efforts.

The project area was visited by OEA Research biologists on November 16 and 17, 1989, following an earlier general reconnaissance performed by MDOH biologists.

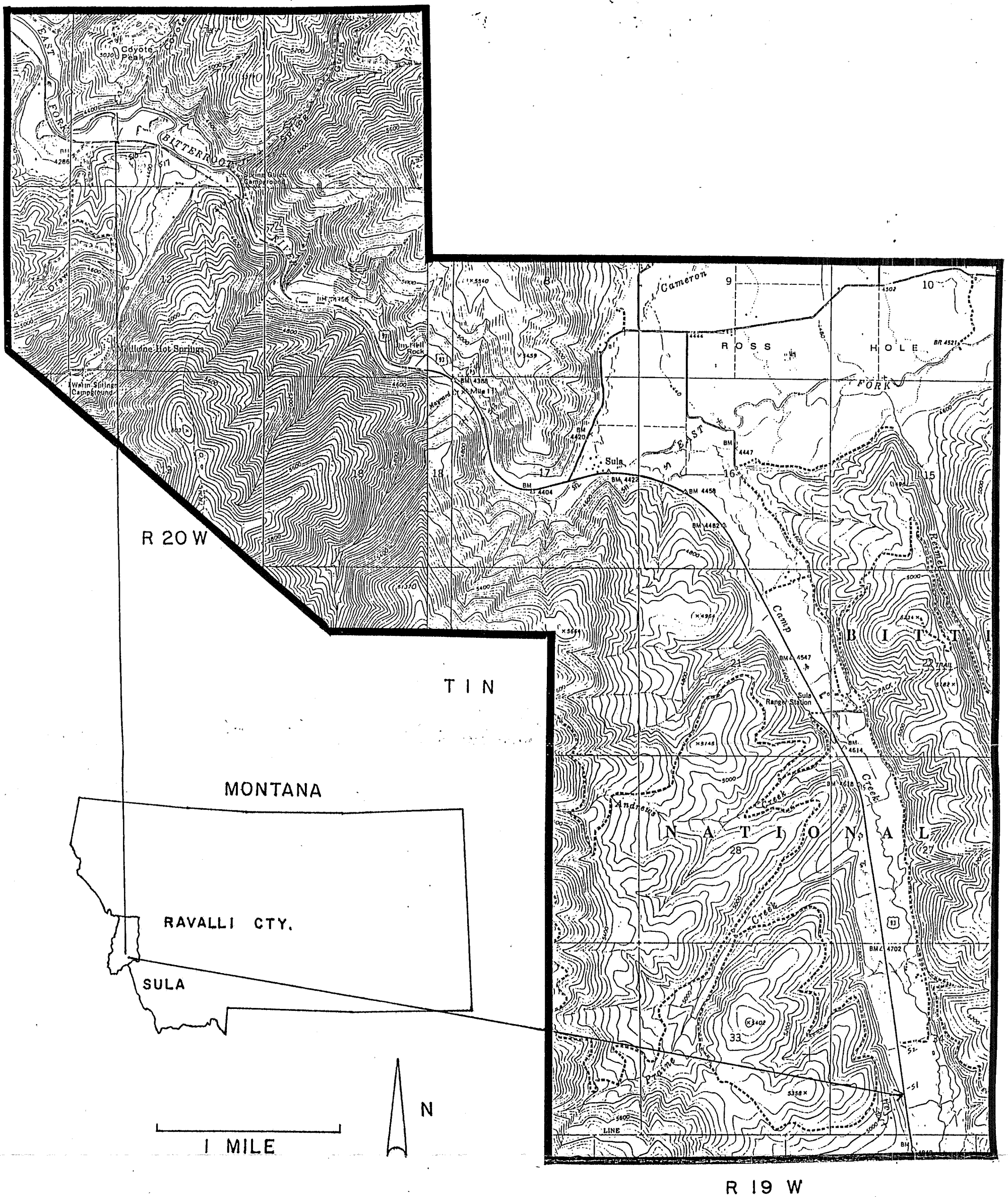


Figure 1. Project Location Map for Sula-North Highway Reconstruction F 7-1 (40) 9

BIOLOGICAL ASSESSMENT

A. VEGETATION

I. Methods

The project area was mapped on a preliminary basis using a composite aerial photo at a scale of 1 inch = 100 feet. This mapping was refined during the site visit by first driving through the project area. Representative community types were selected and traversed on foot to confirm the mapping and to identify dominant species. Special attention was given to wetlands, the results of which are given in the Wetlands Finding section of this document.

A variety of source materials were consulted to aid descriptions and analyses. Chief among these were the Soil Survey of the Bitterroot Valley Area (USDA-SCS 1959) and Forest Habitat Types of Montana (Pfister et al. 1977).

For the purposes of the vegetation inventory, a 1000 foot study corridor including the current highway right-of-way, was used. For the purposes of determining impacts of the proposed project, the MDOH preferred right-of-way of 160 feet was used. When construction plans are finalized, this impact area will be adjusted as necessary and any changes will be incorporated into the final biological assessment report.

II. Existing Environment

The vegetation in the vicinity of the project reflects the moist montane climate typical west of the continental divide in the Rocky Mountains. The steep canyon, with soils derived from the granitic Idaho Batholith and associated volcanics, and the narrow mountain valleys, with soils derived from alluvium, also affect the kinds of native vegetation present. The predominant cover type is coniferous forest. However, significant portions of

the Camp Creek Valley have been converted to irrigated hayland and pastureland. Gentler side slopes in the Camp Creek Valley are occupied by ponderosa pine (Pinus ponderosa) and Douglas-fir (Pseudotsuga menziesii) intermingled with grassland parks. Years of livestock grazing here and on the valley bottom have also had a significant impact on the species composition.

A smaller percentage of the landscape is covered by wetlands. Naturally occurring wetlands include seeps, areas with seasonally high water tables, and stream riparian areas found along the several creeks and draws that dissect the landscape. Artificially-created wetlands have been caused by rural development and by the highway right-of-way. The original highway cut off several river bends on the East Fork of the Bitterroot, creating "oxbows," several of which have direct connections to the river.

Nine community types were identified. Six were determined to be wetlands and are discussed in detail in the Wetlands Finding portion of this report. Map overlays (1 set in original copy) show the vegetation mapped along the project corridor for all community types.

Dry Forest Types

This community type is composed mainly of two habitat types as defined by Pfister et al. (1977). The driest sites are occupied by the ponderosa pine (Pinus ponderosa)/ bluebunch wheatgrass (Agropyron spicatum) habitat type. These stands are very open and park-like and occur on the steeper south to southwest-facing slopes. Ponderosa pine comprises the overstory and bluebunch wheatgrass dominates the understory.

The Douglas-fir/Idaho fescue (Festuca idahoensis) habitat type occupies

somewhat moister sites and is transitional to the Douglas-fir/snowberry type described below. Idaho fescue and bluebunch wheatgrass are the dominant understory species.

These types provide excellent winter range for big game.

Moist Forest Types

The Douglas-fir/twinflower (Linnea borealis) habitat type occupies the cooler sites along the river and steeper north or east-facing aspects. The overstory is dominated by Douglas-fir. Large ponderosa pines are sparsely scattered throughout. The understory is generally low-growing. Twinflower is the dominant cover. Pinegrass (Calamagrostis rubecens) and elk sedge (Carex geyerii) also typically have high canopy coverages.

The Douglas-fir/snowberry (Symphoricarpus albus) habitat type occupies the midslopes of east to southwest-facing slopes. Douglas-fir and ponderosa pine comprise the overstory canopy. The understory is shrubby but not dense. Snowberry is the dominant shrub. Wood's rose (Rosa woodsii) is often present. Dominant graminoid species include bluebunch wheatgrass and Idaho fescue.

Some inclusions of the subalpine fir (Abies lasiocarpa)/twinflower habitat type may be found in the steepest draws along the south side of the East Fork of the Bitterroot.

Spotted knapweed (Centaurea maculosa), a noxious weed, has become well established in these types especially in the southern portion of the study area.

Shrub Types

Shrub dominated types are of limited extent and occupy the rocky knobs and shoulders just above the East Fork of the Bitterroot. These sites are the driest sites in the study area. The mountain-mahogany (Cercocarpus ledifolius)/bluebunch wheatgrass habitat type described by Mueggler and Stewart (1980) is the predominant shrub type in the study area. Mountain-mahogany forms fairly dense stands. Exposed rock is abundant. Bluebunch wheatgrass is the dominant graminoid. The bitterbrush (Purshia tridentata)/bluebunch wheatgrass habitat type may occur in minor amounts within the study corridor above the mountain-mahogany type.

III. Threatened and Endangered Species

No threatened or endangered or proposed threatened and endangered plant species as listed with the Fish and Wildlife Service (FWS) are located in Montana (Shelly 1990). The Montana Natural Heritage Program (MNHP) (Shelly 1990) and the U.S. Forest Service (McBride 1990) have noted three species of special concern that may occur in the study corridor.

Lemhi beardtongue (Penstemon lemhiensis (Keck) Keck and Cronq.) is a regional endemic that may be threatened. It occurs on low elevation, dry sites. Searches were conducted by the MNHP in 1989 in ponderosa pine/bitterbrush and bitterbrush/bluebunch wheatgrass habitat types in the vicinity of the study area. No populations were located in the corridor in 1989. However, because of vegetative and reproductive strategies noted in several monitored populations in Ravalli County, MNHP and Forest Service botanists have suggested that populations of Lemhi beardtongue, a perennial, may occur on a specific site but only be evident in some years.

Northern Golden-carpet (Chrysosplenium tetrandrum (Lund) Fries) has a

state rank of S1, that is critically imperiled in Montana because of extreme rarity or because of some factor of its biology making it especially vulnerable to extirpation from the state. It occurs in cool, moist habitats with high water tables and is often associated with alder and thick moss beds or other thick, moist organic materials. Populations have been located in the Maynard Creek, Warm Springs Creek, and Laird Creek drainages but at elevations between 5,000 and 6,000 feet, which are higher than those in the study corridor.

Dwarf onion (Allium parvum Kell.), ranked S1 by the MNHP and as a watch species by the Forest Service, has been noted south of the Spring Gulch campground at 4,400 feet and near Jim Hell Rock (Shelly 1990). It occurs in habitats similar to those inhabited by Lemhi beardtongue.

It is not likely that the proposed reconstruction disturbances will encroach on habitats of any of the species mentioned above except for the route proposed for Alternative 2. If this alternative is selected, we recommend that a search for populations of dwarf onion and Lemhi beardtongue be conducted along this route during preliminary staking. The second or third week of June would be an optimal time to observe both species (Shelly 1990).

IV. Potential Impacts to Botanical Resources

Reconstruction of the highway, which includes widening the road prism, will result in the irretrievable loss of some vegetation. With effective reclamation efforts, this loss will have a short-term negative impact.

V. Mitigation

Vegetation disturbances will be temporary and most likely confined to two seasons. Most losses can be reestablished during reclamation. Special

consideration should be given to the selected species mix because the native soils differ along the corridor. Salvaging and stockpiling the surface 12 inches of soil and respreading it at the time of revegetation should be considered to maximize reclamation success. Because portions of the corridor are underlain by soils derived from granitics, reclamation problems related to increased erosion potential, crusting, and very low water-holding capacity need to be considered.

Care should be taken to prevent further invasion by noxious weeds such as Canada thistle (Cirsium arvense) and spotted knapweed. Utilization of best construction practices should minimize destruction of existing vegetation and concomitant revegetation problems.

B. FISHERIES

I. Methods

The proposed Sula-North project area on U.S. Highway 93 was visited on November 16 and 17, 1989. At this time, the stream reaches and associated riparian vegetation that could be affected by the construction project were evaluated with regard to fisheries habitat.

The MDFWP data base was searched to obtain existing information of fisheries resources in the affected stream reaches of Camp Creek and the East Fork of the Bitterroot River, and their associated tributaries. Montana Department of Fish, Wildlife, and Parks' fisheries biologist, Chris Clancy, was contacted for additional information.

The information obtained during the field reconnaissance and from the MDFWP is reviewed below. Mitigation measures, based upon a review of the pertinent literature and previous experience with similar projects, are

presented.

II. Existing Fishery

The Montana Department of Fish, Wildlife, and Parks (MDFWP) stream data base was consulted to determine the nature of the existing fishery resource in the Camp Creek and East Fork Bitterroot River drainages. A relatively small amount of data exists for these drainages and associated tributaries within the study area boundaries (Clancy personal communication). The MDFWP evaluates streams based on a variety of parameters including water quality, quality of spawning and rearing habitat, fish abundance, fish size, species of fish, use by recreationists, and esthetics. According to Clancy (personal communication), some tributaries of the East Fork Bitterroot River in the project area (including Camp Creek, Sherman Creek and Warm Springs Creek) are used successfully by rainbow, westslope cutthroat and brook trout for spawning. Cutthroat are a MDFWP species of concern in Montana. Impairment or destruction of habitat supporting westslope cutthroat trout (or any trout species) should be avoided. The project area is apparently not highly productive and is not used a great deal by fisherman, although esthetically, it rates highly.

At least one of the oxbows created by channel cut-offs during original highway construction supports brook trout. Several adult brook trout were observed during the field reconnaissance in the oxbow pictured in Photo 16. They were in spawning color at the time. Fish reach this oxbow through a culvert, which was partially submerged in the East Fork at the time of the field reconnaissance.

III. Species of Special Concern in Montana

Species which are considered to be of special interest or concern in Montana are those that are limited in numbers and for which there is limited habitat, and for which elimination from Montana could be a significant loss to the gene pool of the species (MDFWP 1986). In the project area, only the cutthroat trout is listed (Flath 1984). This fish is known to spawn in the East Fork and some of its tributaries (Clancy 1990).

IV. Potential Impacts to Fishery Resources

The fishery resources in the project area are moderate to good, and include limited spawning and rearing habitat for brook, cutthroat and rainbow trout (Clancy, personal communication). The significant impacts to fishery resources that could result from this project are associated with construction and reclamation practices. The introduction of sediment to the streams during and following construction are the principal concerns. The introduction of sediment to stream and river systems can raise water temperatures as well as suffocate fish eggs and aquatic insects which are the mainstay of the fishes' diet. Construction of bridges and installation of culverts at crossings of smaller streams, and encroachment upon waterways with fill material are potentially major causes of sedimentation. Removal of riparian vegetation and concomitant exposure of soils during construction may create additional sources of sediments.

V. Mitigation

Best construction practices should be followed in order to limit the sediment entering the stream during construction. Revegetation of areas disturbed during construction should immediately follow the completion of the project. This will limit the introduction of sediment and inhibit the invasion of these disturbed areas by noxious weedy species.

1

The proposed improvements will provide for proper fish passage at all stream crossings, protection from encroachment by fill slopes (and if encroachment is unavoidable, use of clean fill), preparation and implementation of an adequate erosion control plan, and measures to protect existing riparian habitat where removal of vegetation is not necessary.

C. WILDLIFE

I. Methods

Wildlife and wildlife habitat use data were collected from consultation with state and federal agency personnel, from observations made during a field reconnaissance to the property in November, 1989, and from a review of the applicable published and unpublished literature.

Determination of potential impacts and mitigation strategies was based upon a review of the literature and previous experience with this type of project development.

II. Existing Wildlife

At the time of the field reconnaissance, the only wildlife species present on the study section of Highway 93 were a few passerine bird species, mallard ducks and Canada geese. The two waterfowl species were observed in the East Fork near the confluence with Camp Creek.

Big game species known to occur, or possibly occurring (based on availability of habitat), in a 20-mile radius of the Sula-North project include mule and white-tailed deer, elk, moose, mountain goats, big-horn sheep, black bear and mountain lion. All but the mountain goats could be seen in the immediate vicinity of the project. Critical habitat or important seasonal use

areas for some big game species does exist immediately adjacent to the highway project. The steep, open, south and west-facing mountain mahogany/bitterbrush/bunchgrass slopes along the East Fork of the Bitterroot from the Sula Store north provide excellent winter range for deer and big horn sheep. The open south and west-facing ponderosa pine/bunchgrass slopes on the east side of Camp Creek also provide excellent elk and mule deer winter range. There is also some winter use of the Camp Creek bottomland by white-tailed deer, and some early spring "green-up" period use of bottomlands by elk in the vicinity of Praine Creek and Andrews Creek (Firebaugh 1990).

Game birds found in the area include ruffed, spruce, and blue grouse. Ruffed grouse are found in the moist, fairly dense deciduous riparian cover and adjacent hillsides. Spruce and blue grouse are associated with the denser coniferous forests of the mountainous areas.

Waterfowl may nest near Camp Creek when there is enough residual vegetation (which was not available at the time of the field reconnaissance). Most of the pasture and hayland areas near the creek are grazed or mowed, leaving little cover for nesting birds. Camp Creek, the East Fork of the Bitterroot, and lower portions of Warm Springs Creek may also provide resting and escape areas for a variety of waterfowl species including mallard, green-winged, blue-winged, and cinnamon teal, American wigeon, and occasionally, Canada geese.

Furbearers occurring or potentially occurring in the area include beaver, mink, muskrat, fisher, lynx, and bobcat. Coyote, raccoon, and occasionally red fox are found in the vicinity of the project.

Many species of nongame birds, mammals, amphibians, and reptiles occur on

or near the project area. Thompson (1982) lists species of mammal, reptile, and amphibian occurring in Montana latilong (a block of land one degree latitude by one degree longitude) number 36, in which falls the Sula-north project.

Skarr et al. (1985) lists 150 bird species known to occur within latilong 36. Of these, 129 are likely to breed and 17 are likely to winter within the latilong. Because of the large size of a latilong (about 3,000 square miles) a tremendous variety of habitats is included. Obviously, not all these habitats occur in the project area, and consequently, not all these wildlife species are expected to occur there.

Flath (1984) lists wildlife species (by county for mammals, reptiles, and amphibians; by latilong for birds) considered to be of special interest or concern based on limited species numbers and/or habitat in Montana, and for which elimination from Montana could be a significant loss to the gene pool of the species (MDFWP 1986). This designation does not have any legal implications but does indicate MDFWP concern for the species. In Ravalli County (in which the project lies), 8 species of mammal, no reptile, and one amphibian species are included on the lists. The mammal species are fringed myotis, California myotis, long-eared myotis, hoary marmot, fisher, spotted skunk, lynx, and wolverine. Of these, the myotis bats, fisher, skunk, and lynx could possibly be found near the project area. The only amphibian species of concern listed in Ravalli County is the tailed frog. In latilong 36, only 13 species of bird (of concern in Montana) are listed as transients or breeding species. These are the osprey, Cooper's hawk, northern goshawk, ferruginous hawk, golden eagle, peregrine falcon, prairie falcon, upland sandpiper, northern pygmy owl, great gray owl, long-eared owl, Brewer's sparrow, and bobolink. A note to this list in Flath (1984) suggests that the present nongame bird inventory in latilong 36 is considered substandard.

The rocky bluff in the NW1/4, SW 1/4 of Section 7, T1N, R19W, known as Eagle Rock has historically supported a nesting pair of golden eagles (Firebaugh 1990). Highway reconstruction Alternative 2 would cut through Eagle Rock to within less than 1/8 mile of the eyrie.

III. Threatened and Endangered Species

Montana has 8 animals classified as either endangered or threatened. The endangered species are the peregrine falcon, whooping crane, Rocky Mountain gray wolf, black-footed ferret, bald eagle, and the interior population of the least tern. The continental U.S. population of grizzly bear and the northern Great Plains population of the piping plover are classified as threatened (Aderhold 1988).

Peregrine falcons are known to migrate through the Bitterroot Valley, but are not known to nest in the vicinity of the project area (Sumner 1989) (letter from USFWS, Attachment A). Bald eagles are occasionally seen along rivers and highways in the study area and winter along the main Bitterroot River, but are not presently known to nest in this part of central Montana (Flath 1989). Whooping cranes, least terns and piping plovers are not known to have been observed near the project area. The range of black-footed ferrets has never been near the project area. There have been no confirmed sightings of wolves near the project area, but numerous reports have been collected over the years for the Sapphire Mountains and the Bitterroot Mountains. There is presently no reason to suspect that there are any wolves near the project. Grizzly bears roamed the project area many years ago, but do not exist near there presently.

Although golden eagles are not given protection under the federal list of Threatened or Endangered Species, they are given protection under the Bald

Eagle Act. This act protects nesting birds from disruption or displacement.

IV. Potential Impacts to Wildlife Resources

Impacts to the wildlife resource in the vicinity of the Sula-North project would be associated with construction and reclamation. Most impacts would be short-term and would involve an irretrievable loss of a limited amount of habitat to the wildlife resource. There would be limited loss of habitat for bird and small mammal species, muskrats and beaver which utilize riparian and roadside vegetation. There may also be limited loss of individuals of some small mammal, reptile, amphibian, and bird species associated with habitat removal. These losses should not have any long-term effects on local populations. Within a short time after successful reclamation, the affected populations should re-establish to pre-construction levels.

Displacement of big game, upland bird, waterfowl, furbearers, and non-game species will be caused by noise and activity related to construction. This impact should be short-term and should affect these species for essentially only the period during which these activities are taking place. If Alternative 2 is selected, there will be some irretrievable loss of wintering habitat to big game and, potentially, the loss of a pair of nesting golden eagles (Firebaugh 1990).

Because powerlines paralleling the highway will be moved during construction and relocated, it is possible that reconstruction of the line could have a negative impact on raptors using the line or poles for hunting, resting, or nesting.

V. Mitigation

Impacts to the wildlife resource may effectively be mitigated by observing best construction practices. Damage to the vegetation must be limited to

those areas which absolutely must be affected in order to complete the project. Timing of the project should not coincide with the late fall through early spring period during which natural stress on wildlife species is already high.

Revegetation of the construction site should begin immediately upon completion of the construction project and should as closely as possible re-establish the pre-construction habitats.

The powerline relocation will create no problems to raptors if it is constructed and raptor-proofed according to Raptor Research Report No. 4 (Raptor Research Foundation 1981).

It is possible that the nesting pair of golden eagles could be successfully relocated to a reconstructed nest somewhere in the general vicinity and within their existing hunting territory, thus representing no net loss to the population in the area (McEneaney 1990). There has been success with this technique in southeast Montana and northeast Wyoming where coal strip mining would have displaced nesting golden eagles.

Road-killed animals should be removed from the traffic lanes and the shoulder of the highway to assure that these attractions do not lure raptors or other scavengers onto the highway.

WETLANDS FINDING

I. DESCRIPTION OF WETLAND RESOURCES

A. Methods

During the site visit in November, 1989, each area that appeared to be a wetland based on topographic position, vegetation, or presence of water was evaluated for site characteristics, species composition, and wetland functional value. Photos were taken of each site and can be found at the end of the document. Field forms developed by MDOH were completed and are presented in Attachment B.

Wetlands were delineated on the photographic base maps (1 inch = 100 feet). Final mapping was completed on translights at a scale of 1 inch = 500 feet. One set of overlays are included with the original report. All community types identified for the wetlands finding and biological assessment are shown. Wetland types are designated by numbers, upland (non-wetland) types are designated by upper case letters, and specific site locations are designated by a circled number.

Field data were reassessed in light of soils information from the Bitterroot Valley Area Soil Survey Report (1959) and from the U.S. Forest Service (McBride 1990). The surveys identify soils that are subjected to flooding, have high water tables or have other soil characteristics that indicate hydrologic regimes typical of wetlands. Also, the U.S. Fish and Wildlife Service list which indicates the wetland habit of many species in Montana (Reed 1986) was consulted. An estimate of wetland acreages that would potentially be directly affected by the reconstruction project were calculated.

Scientific nomenclature for plant species follows Hitchcock and Cronquist

(1973).

B. Existing Wetlands

Six wetland types were identified in nineteen locations within the project area. Please refer to map overlays with the original report.

Wetland Type 1 - Cattail/Willow/Ponds

Wetland type 1 is classified as ID and IIB hydrologic and vegetative types. IIB sites have seasonal or permanent high water tables, but do not have permanent standing water nor are they adjacent to streams. The dominant species is willow (Salix spp.), red-osier dogwood (Cornus stolonifera), and alder (Alnus sinuata). Intimately associated with this type are ID sites which have permanent standing water. Dominant plants which fringe the ponds, include herbaceous species, such as cattail (Typha latifolia) and horsetail (Equisetum spp.), and riparian grasses such as reed canarygrass (Phalaris arundinacea), and sedges (Carex spp.). Weedy species, such as Canada thistle (Cirsium arvense) and spotted knapweed (Centaurea maculosa), occur with varying frequency.

Wetland Type 2 - Subirrigated Meadow

Wetland type 2 is classified as a type IIA. These sites have seasonal or permanent high water tables fed by the alluvial aquifer and extended by a flood irrigation ditch system. These sites have been cleared and used as hayland and pastureland for many years. A variety of riparian grasses and introduced forage species occur on these sites. Dominant species include Kentucky bluegrass (Poa pratensis), timothy (Phleum pratense), sedges (Carex spp.), bromes (Bromus spp.). Scattered willows also occur. It is probable that wetland species, as defined by Reed (1986), do not comprise more than 50% coverage. Therefore, these sites may fail to meet one of three major criteria needed to define a wetland according to agency guidelines and so they are not considered in the assessment. However, because of the probable historical presence of wetlands species on these sites, WT-2 is mentioned throughout the report.

Wetland Type 3 - Dense Shrub

Wetland type 3 is classified as a IIB hydrologic type. These sites have seasonal

or permanent high water tables, but do not have permanent standing water. Shrubs form a moderately heavy to dense cover three to five feet tall. Species include willows, red-osier dogwood, and alder. Some grasses and forbs occur in the understory including horsetail, reed canary grass and Kentucky bluegrass. Spotted knapweed is usually present as well.

Wetland Type 4 - Riparian Grasses and Forbs

Wetland type 4 is classified as a IIIA hydrologic type. These sites are adjacent to flowing water. Within the study area, most of these sites classified as WT-4 occur on the highway ROW which doubles as streambank. Grasses and forbs dominate the vegetation. Reed canarygrass, smooth brome, sedges, and timothy are typical graminoids. Forbs species are diverse. Spotted knapweed is typically present and often dominates.

Wetland Type 5 - Riparian Shrub

Wetland type 5 is classified as a IIIB hydrologic type, which are adjacent to flowing water and dominated by shrubby vegetation. As with the WT-3, willow, alder, and red-osier dogwood are the dominant species. Quaking aspen (Populus tremuloides) sprouts are present in some areas.

Wetland Type 6 - Riparian Forest

Wetland type 6 is classified as a IIIC hydrologic type. Douglas-fir and/or ponderosa pine dominate the overstory. Aspen and cottonwood are present as well. In some portions of the study area, cottonwood (Populus trichocarpa) and aspen dominate. The understory is composed of shrubs such as willow, red-osier dogwood, alder, and rose. A mix of riparian and non-riparian graminoids are also present.

III. Narrative Descriptions

Each wetland site is briefly described below. They are numbered sequentially starting at the south end of the project. Photos for each site are in the supplement at the end of the document. Site numbers are shown in

each photo. Table 1 summarizes the functional values determined for each site and recorded on Wetland Site Evaluation Forms. Table 2 lists the number of acres of each wetlands type that would be affected by the project.

Wildlife habitat values are determined by evaluating the utilization by waterfowl/wildlife for nesting, rearing, feeding or protective cover in light of the following criteria (MDOH/MDFWP 1989):

Rank	Criteria
3	Use by the wildlife group is <u>significant</u> in that loss or reduction of the wildlife use would have an adverse effect on the population of the species or wildlife in the general area (township).
2	Use by the wildlife group is <u>evident</u> or probable and loss or reduction of the wildlife use may have an adverse effect on the local wildlife population (surrounding sections).
1	Use by wildlife group is <u>low</u> or incidental in that loss or reduction of the wildlife use would have negligible effect on the local wildlife population.
0	Use by wildlife group is nonexistent at any time during any year.

Evaluation of fisheries utilization follows a parallel ranking system with respect to aquatic habitat.

The overall wetlands functional value is based on the integration of judgements about flood storage potential, food chain support potential, degree of habitat interspersion, wildlife/fisheries utilization, and recreational use potential.

Site 1 is located about 300 feet south of MP 9. The site is delineated as WT-5. This wetland was created in the ROW ditch and is maintained by low

flow from a nearby seep. The site has low wildlife and no fisheries values. The overall functional wetlands value is very low.

Site 2 is located between MP 9 and 12.5. The site is classified as WT-2. The site has low to moderate wildlife values. These meadows are heavily grazed by livestock and are maintained as haylands, reducing potential cover and nesting habitat. The overall functional wetlands value is moderate.

Sites 3 and 4 are located from MP 10 to about 1000 feet north and on the west side of the highway. The site is classified as WT-1. This wetland was created by intermittent flows blocked by a dirt access road which has no culvert relief through the access road or the adjacent highway. The site is dominated by a mix of moderately tall shrubs. Beaver have built a series of crescent shaped ponds at the lower two-thirds of the wetland. The site has low wildlife values. The overall functional wetlands value is moderate.

Site 5 is located at about MP 10.5. The site is classified as WT-5. This site is at the confluence of the unnamed 'east' and 'west' forks of Camp Creek just below Praine Creek. The Highway ROW ditch has captured and confined the creek. The site has low wildlife values. The overall functional wetlands value is low.

Site 6 is located 2000-2500 feet north of MP 10. The site is classified as WT-3. It is created by the floodplain of Praine Creek but upstream diversions appear to limit the amount of surface flow reaching this area. The site is dominated by a moderately dense stand of willow and alder. The site has low wildlife values. The overall functional wetlands value is very low.

Site 7a is located downstream on Camp Creek from the bridge crossing to the Sula Ranger District. The site is classified as WT-4. The streamside vegetation is comprised of introduced grasses with stands of mixed shrubs directly behind. This area shows evidence of healing from past heavy livestock trampling. The Forest Service has fenced off this reach from horse use and it appears that the streambanks are restabilizing. The site has low wildlife and fisheries values. The overall functional wetlands value is very low.

Site 7b is located upstream on Camp Creek from the bridge crossing to the Sula Ranger District. The site is classified as WT-5. The riparian area is composed of introduced grasses and weedy species such as Canada thistle. This area and the adjacent subirrigated meadows have been severely overgrazed. The streambanks have been trampled and sediment delivery to Camp Creek appears to be high. The site has very low wildlife and fisheries values. The overall functional wetlands value is very low. The contrast

Table 1. Functional Values Summary for Wetland Sites

Parameter	Functional Rating								
	Site 1	2	3,4	5	6	7a	7b	8	9
Relative Occurrence	2	2	1	2	1	2	2	2	1
Habitat Interspersion	1	1	2	1	1	2	1	2	3
Cover:Water Ratio	NA*	NA	3	NA	0.5	NA	NA	NA	1.5
Inundation Frequency	NA*	NA	3	NA	1	NA	NA	NA	2
Sediment Control/Loading Rating	NA*	NA	2	NA	1	NA	NA	NA	2
Water Flow Rating Criteria	NA*	NA	2	NA	1	NA	NA	NA	1
Nutrient Retention Capabilities	2.5	NA	3	NA	1	NA	NA	NA	2.5
Relative Flood Storage Control	NA	NA	2	NA	1	NA	NA	NA	2
Food Chain Support Potential	2	2	3	2	2	2	1	1	3
Wildlife Habitat Value									
Waterfowl	1	1	1	1	1	1	1	1	1
Upland Game Birds	1	1	1	1	1	1	1	1	1
Song Birds	1	1	1	1	1	1	1	1	1
Raptors and Other Birds	1	1	1	1	1	1	1	1	1
Furbearers	1	1	1	1	1	1	1	1	1
Small Mammals	1	1	1	1	1	1	1	1	1
Ungulates	1	1	1	1	1	1	1	1	1
Large Predators	1	1	1	1	1	1	1	1	1
Threatened and Endangered	1	1	1	1	1	1	1	1	1
Fisheries Utilization									
Montana Fishes of Special Concern	NA	1	1	1	NA	1	1	1	1
Trout	NA	1	1	1	NA	1	1	1	1
Other Salmonids	NA	1	1	1	NA	1	1	1	1
Non-Salmonid Game Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Game or Rough Fish	NA	NA	NA	NA	NA	NA	NA	NA	NA
Recreation Use Potential	1	1	1	1	1	1	1	1	1

* NA = not applicable

Table 1. Functional Values Summary for Wetland Sites (Cont'd)

	Functional Rating										
Parameter	Site	10	11	12	13	14	15	16	17	18	19
Relative Occurrence		2	1	2	2	2.5	2	2	2	1	3
Habitat Interspersion		1	3	2	2	2	1	2	NA	3	2
Cover:Water Ratio		NA	2	NA	1	NA	0.5	1	NA	3	NA
Inundation Frequency		NA	3	NA	3	NA	3	3	NA	2	NA
Sediment Control/Loading Rating		NA	2	NA	1	NA	1	1	NA	2	NA
Water Flow Rating Criteria		NA	1	NA	NA	NA	NA	NA	NA	1	NA
Nutrient Retention Capabilities		NA	2.5	NA	1	NA	1	1	NA	1	NA
Relative Flood Storage Control		NA	1	NA	1	NA	1	1	NA	1	NA
Food Chain Support Potential		1	3	2	2	NA	1	2	NA	2	2
Wildlife Habitat Value											
Waterfowl		1	1	1	1	1	1	1	1	1	1
Upland Game Birds		1	1	1	1	1	1	1	1	1	1
Song Birds		1	1	1	1	1	1	1	1	1	1
Raptors and Other Birds		1	1	1	1	1	1	1	1	1	1
Furbearers		1	1	1	1	1	1	1	1	1	1
Small Mammals		1	1	1	1	1	1	1	1	1	1
Ungulates		1	1	1	1	1	1	1	1	1	1
Large Predators		1	1	1	1	1	1	1	1	1	1
Threatened and Endangered		1	1	1	1	1	1	1	1	1	1
Fisheries Utilization											
Montana Fishes of Special Concern		1	0	1	1	1	1	1	1	1	1
Trout		1	0	1	1	1	1	1	1	1	1
Other Salmonids		1	0	1	1	1	1	1	1	1	1
Non-Salmonid Game Fish		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Game or Rough Fish		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Recreation Use Potential		1	1	2	1	3	1	1	1	1	2

* NA = not applicable

Table 2. Wetlands Acreages Affected by Project

Wetlands Type	Acreage in Study Area	Estimated Acreage to be Disturbed
1	23.1	0.6
2	555.4	ND*
3	81.4	5.4
4	10.9	0.2
5	78.4	1.5
6	29.9	1.8
Total	223.7	9.5

* ND = not determined since WT-2 did not meet wetland assessment criteria

between this reach of Camp Creek compared to the healing reach below is dramatic.

Site 8 is located near MP 11.5. The site is classified as WT-4 and WT-5. The site has low wildlife values. The overall functional wetlands value is very low.

Site 9 is located between MP 12.25 to 12.5. The upper portions of this wetland have been cleared and managed as hayland. The site is classified as WT-3. The site has low wildlife values. The overall functional wetlands value is low to moderate.

Site 10 is located near MP 12.75. The site is classified as WT-4. At this site the ROW is also the streambank of the East Fork of the Bitterroot. Reed canarygrass and spotted knapweed dominate. The site has very low wildlife values. The overall functional wetlands value is very low.

Site 11 is located near MP 12.75. It is an old oxbow or a meander bend cut-off by the ROW. The site is classified as WT-1 and WT-3. The site has low wildlife values. The overall functional wetlands value is low to moderate.

Site 12 is located about 400 feet east of MP 14 at the bridge crossing just downstream of the Sula store. The site is classified as WT-5 and WT-6. The site has low wildlife values. The overall functional wetlands value is very low.

Site 13 is located near MP 13.75. It is located at an old meander bend

cut-off by the current ROW. The site is classified as WT-1 and WT-3. An overflow culvert connects this area with the East Fork. The site has low wildlife values. The overall functional wetlands value is low to moderate.

Site 14 is located near MP 13.75. The site is classified as WT-4 and WT-5. Spotted knapweed is a dominant species on this site. The site has low wildlife values. The overall functional wetlands value is very low.

Site 15 is located about 150 feet west of MP 14. This site is another oxbow which was cut-off by the current ROW. The site is classified as WT-1. Small amounts of WT-5 and W-6 are also present. Brook trout were observed here. An overflow culvert provides access to the East Fork. The site has low wildlife values. The overall functional wetlands value is low.

Site 16 is located about 500 feet west of MP 14 just east of Jim Hell Rock. The site is classified as WT-1, WT-3 and WT-6. The site has low wildlife values. The overall functional wetlands value is low to moderate.

Site 17 is located about 500 feet east of MP 16 where Warm Springs Cr. joins the East Fork via a culvert. The site is classified as WT-5. The site has low wildlife values. The overall functional wetlands value is low.

Site 18 is located just east of MP 16. This site is a wetlands created by a diversion ditch from Warm Springs Cr. The site is classified as WT-3. The site has low wildlife values. The overall functional wetlands value is low to moderate.

Site 19 is located near MP 15.5 at the bridge crossing of the East Fork near Spring Gulch campground. The site is classified as WT-5. The site has low wildlife values. The overall functional wetlands value is very low.

III. Potential Impacts to Wetlands

Impacts to wetlands will include removal of riparian vegetation (shrubs, sedges, grasses and emergent herbaceous vegetation) and the filling of draws and depressions that support wetlands.

Potential impacts include sedimentation of waterways and wetlands, petrochemical spills associated with the construction, and alteration of subsurface and surface water flows. Where perennial flows exist, changes in

drainage such as increasing flows could alter wetland habitat upstream and flush high levels of nutrients into the downstream system.

In the canyon of the East Fork, moderate to steep slopes are underlain by soils derived from weathered granitics and volcanics, which, when disturbed may be very erodible. The potential is high for significant sedimentation to the East Fork due to exposed soils from blasting or excavation along the canyon.

The potential for spreading noxious weeds (spotted knapweed and Canada thistle, for example) and other weedy species is high since robust weed populations already exist within and adjacent to the highway right-of-way.

Impacts to wetlands from the proposed highway reconstruction will probably be minimal and short-term.

Past and current impacts from the highway, include significant sedimentation due to road sands that are inadvertently plowed into the East Fork during the snow season (Gordon 1989).

IV. Mitigation

Engineering plans have been created to minimize the areas of impact to the identified wetland habitats.

Removal of riparian vegetation will be kept to the minimum necessary for completion of the project. Streambanks at crossings of perennial drainages, such as Camp Creek and the East Fork of the Bitterroot will be stabilized with mulch or netting and shrub plantings. All exposed areas will be revegetated according to MDOH guidelines.

Spotted knapweed and Canada thistle are listed as noxious weeds in Montana. Canada thistle is most prevalent in wetland type 2- subirrigated meadow and haylands. The knapweed occurs throughout the study area. The opportunity exists to establish a vegetative cover that restricts the reentry of weedy species and that would actually improve these habitats for wildlife. Because of the extensive acreage of wetland habitat in the right-of-way, broad herbicide use is not recommended as a weed control measure. A vigorous stand of vegetation is one of the best defenses against weed invasion. Spot spraying may be useful after vegetation has become established. However, because of groundwater considerations and the sensitivity of broadleaf plants to herbicides, a diligent hand pulling program may be more appropriate.

The soils at these sites vary from clayey to mucky to sandy or gravelly. They also vary with depth depending on alluvial characteristics. Plantings of species, which are tolerant to these conditions, are recommended.

Sedimentation caused during construction will be limited by using MDOH construction practices for sediment basins and by temporarily stabilizing all exposed soil until revegetation is successful.

Sedimentation caused by road sands may be eliminated by preconstruction planning. ROW slopes can be designed with less steep slopes to ensure good vegetation recovery. Combined with selecting a tall and vigorous species mix, the ROW would trap road sands. Small detention or stilling basins could be constructed in borrow pit areas to allow sediment to settle-out. Also, potential sedimentation to Camp Creek could be avoided by relocating Camp Creek into its original channel, which is well away from the proposed ROW.

Best construction practices will be used to ensure there are no spills of

petroleum or other chemicals products.

The current highway ROW has affected portions of the Camp Creek channel and the general hydrologic functioning of the Camp Creek drainage and its associated tributaries entering from the west. An opportunity exists to reconstruct portions of Camp Creek to a well-functioning aquatic system that would not be affected by the new roadway.

- Pfister, et al. 1977. Forest Habitat Types of Montana. USDA-FS Intermountain Forest and Range Exp. Sta. GTR-INT-34, Ogden, Utah. 225 pp.
- Raptor Research Foundation. 1981. Raptor Research Report No. 4 - Suggested practices for raptor protection on powerlines - the state of the art in 1981. Raptor Research Foundation, 12805 St. Croix Trail, Hastings, Minn., 55033.
- Reed, P. B., Jr. 1986. 1986 Wetland Plant List: Montana. National Wetlands Inventory. U.S. Fish and Wildlife Service. St. Petersburg, FL. Looseleaf draft. 26 pp.
- Shelley, S. 1990. Plant Ecologist for Montana Natural Heritage Program. Personal communication.
- Skarr, P., D. Skarr, D. Flath, and L. Thompson. 1985. Montana bird distribution. Monogr. No. 3, Mont. Aca. of Sci. Suppl. to Proceedings Vol. 44. 69 pp.
- Sumner, J. 1988. Wildlife Biologist with Wildlife/Wildlands Institute, Missoula, Montana. Personal communication.
- Thompson, L. 1982. Distribution of Montana amphibians, reptiles, and mammals. Mt. Audubon Council, Helena. 24 pp.
- USDA - Soil Conservation Service. 1959. Soil Survey of the Bitterroot valley. USGPO.

Photographs of each wetland site inventoried are included in the original report which is available upon request at the Montana Department of Highways office in Helena.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Fish and Wildlife Enhancement
Federal Building, U.S. Courthouse
301 South Park
P.O. Drawer 10023
Helena, Montana 59626

IN REPLY REFER TO:

FWF-61130-Billings

Mr. Dave Johnson, P.E.
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Johnson:

This responds to your November 22, 1989 letter concerning the intention of the Montana Department of Highways to develop a Federal Aid highway project on U.S. 93 in Ravalli County, Montana (Sula-North, F7-1(40)9). The project will start approximately 9 miles north of the Idaho state line and extend northerly for approximately 7.2 miles along U.S. 93. It includes total reconstruction of the existing roadway and drainage facilities and will include a 28-foot wide paved surface with a subgrade width capable of accommodating a future 40-foot wide paved surface.

The information accompanying your November 22 letter indicates that the project may impact the East Fork of the Bitterroot River and smaller drainages in the project area. Every reasonable effort should be made to minimize such stream disturbance and/or encroachment. In this regard, we assume any fishery concerns will be resolved through close coordination with the Montana Department of Fish, Wildlife and Parks in connection with the state permit required under MCA-87-5-501 (Stream Protection Act). We also assume that a wetlands impact assessment will be conducted in accordance with the recently-signed, "Memorandum of Understanding: Management and Mitigation of Highway Construction Impacts to Wetlands in the State of Montana". If any wetland impacts are determined to be unavoidable, they should be mitigated, also in accordance with the Memorandum of Understanding.

Endangered species which may occur in the project area are the bald eagle (Haliaeetus leucocephalus), and the peregrine falcon (Falco peregrinus). Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Federal Highway Administration must determine if the proposed road improvements may affect these species. If it is determined that either of these species may be affected, it will be necessary for the Federal Highway Administration to initiate formal consultation with us. The following information may assist in that determination.

Several bald eagle nesting territories are known to occur some miles to the east and north of the project. However, none of these nesting territories are located close enough to the proposed road improvements to be of direct concern. Bald eagles may also winter, to some extent, in the general vicinity and undoubtedly occur at the immediate project location as seasonal migrants. The peregrine falcon may also occur as a seasonal migrant. While we do not foresee any substantive issues with the proposed project, with regard to the bald eagle and

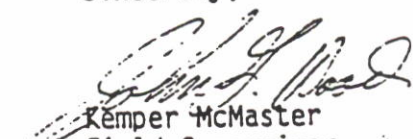
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	<input checked="" type="checkbox"/> 30 Assistant		
	30 Office Mgr		
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	<input checked="" type="checkbox"/> 33 Environment		
	<input checked="" type="checkbox"/> 34 Hydraulics		
	35 Survey & Mapping		
	36 Traffic		
	<input checked="" type="checkbox"/> 39 Consultant		
	<i>[Signature]</i>		
	November 28, 1989		
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	<input checked="" type="checkbox"/> File		

peregrine falcon, any powerlines in the vicinity, if not properly constructed, could pose electrocution hazards for these species. To conserve these species and other large raptors protected by Federal law, we urge that any powerlines to be modified or reconstructed as a result of the project be raptor-proofed following the criteria and techniques outlined in the Raptor Research Report No. 4, "Suggested Practices for Raptor Protection on Powerlines - The State of the Art in 1981". A copy may be obtained from:

Jim Fitzpatrick, Treasurer
Raptor Research Foundation
Carpenter St. Croix Nature Center
12805 St. Croix Trail
Hastings, Minnesota 55033

We appreciate the opportunity to comment on the proposed project.

Sincerely,

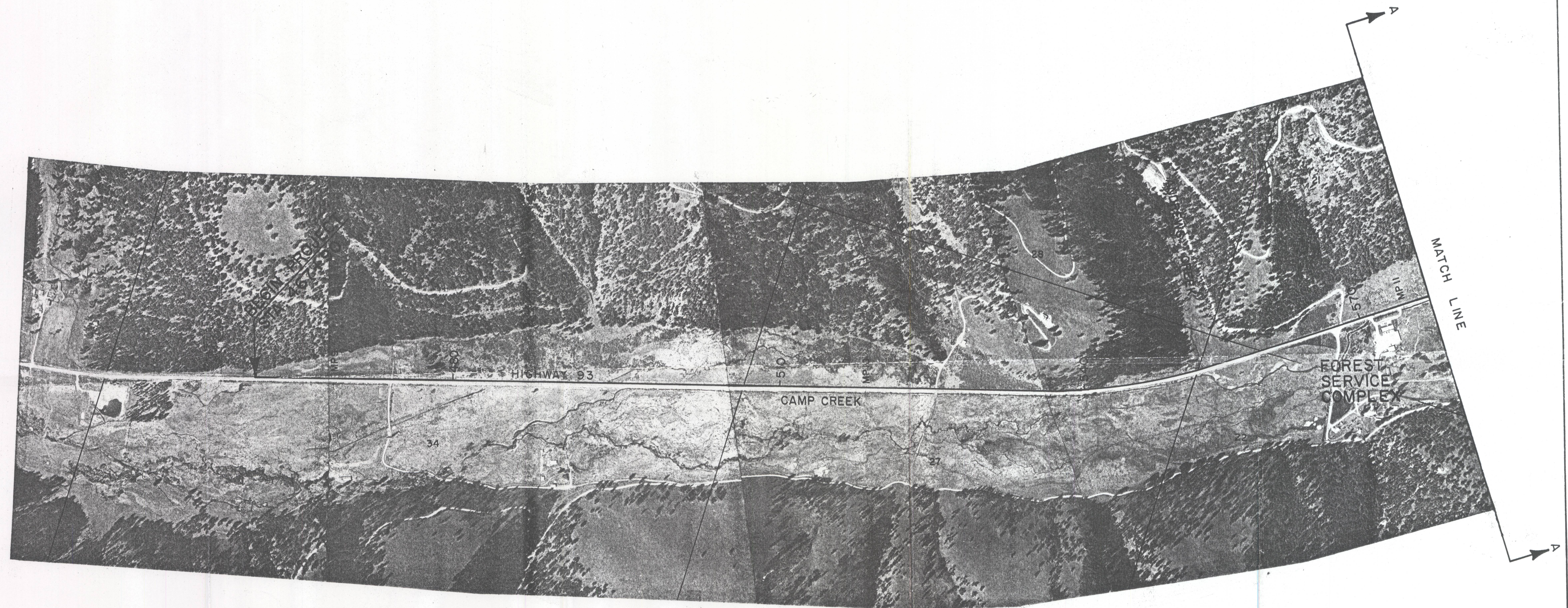

Kemper McMaster
Field Supervisor
For Montana/Wyoming Field Office

cc: Roger Scott, Federal Highway Administration (Helena, MT)
✓ Jeff Ryan, Montana Dept. of Highways (Helena, MT)
Jeff Herbert, Montana Dept. of Fish, Wildlife & Parks (Helena, MT)
Ken Chrest, Montana Dept. of Fish, Wildlife & Parks (Helena, MT)
Jack Thomas, Montana Dept. of Health, Water Quality Bureau (Helena, MT)
Steve Potts, Environmental Protection Agency (Helena, MT)
John Peters, Environmental Protection Agency (Denver, CO)
Suboffice Coordinator, USFWS, Fish & Wildlife Enhancement (Billings, MT)

JGW/dc

STATE	PROJECT NO.	SHEET NO.
MONTANA	F 7-1()9	1 OF 3

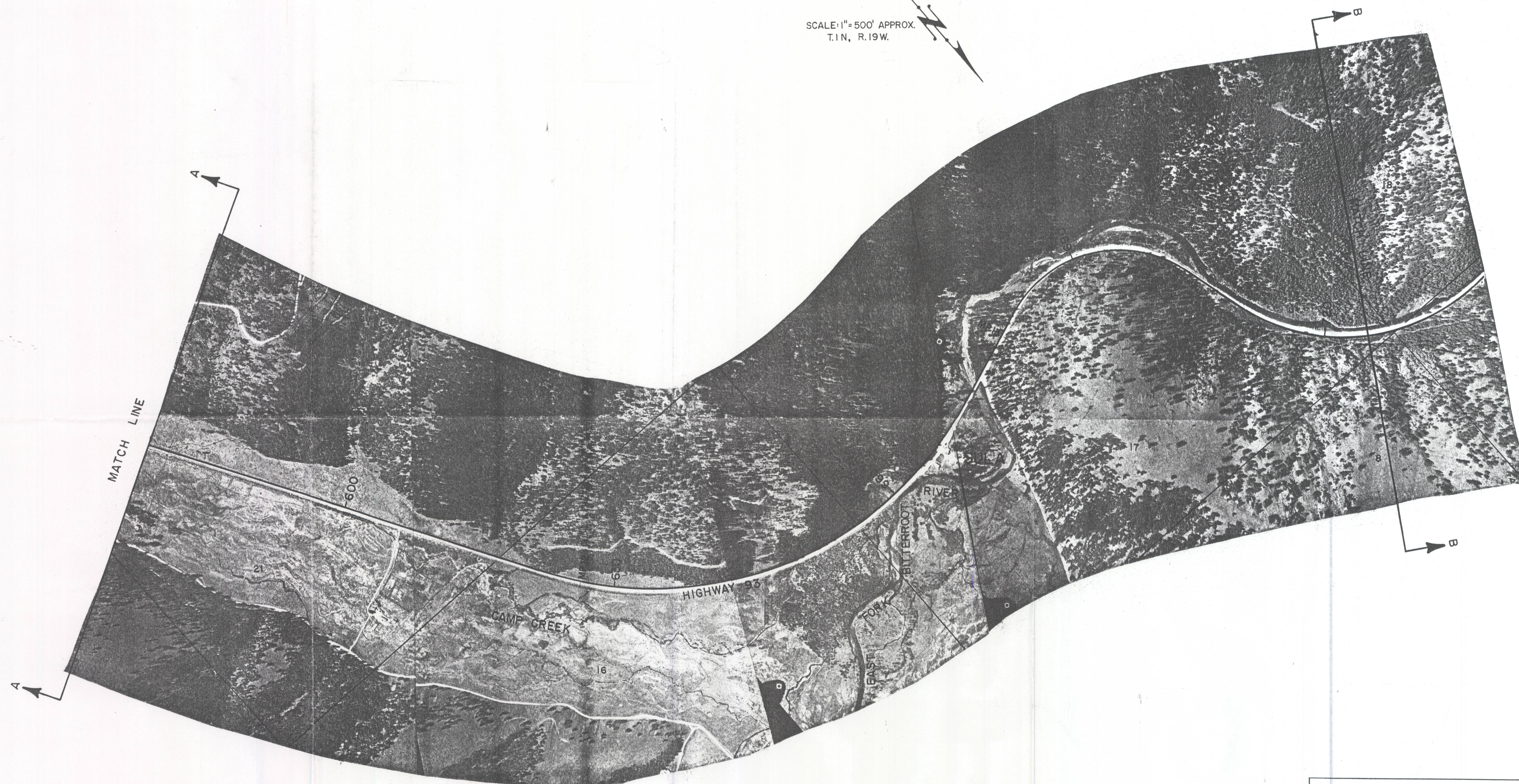
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T.1N., R.19W.



F 7-1()9
SULA-NORTH
RAVALLI COUNTY
7.2 ± MILES
SCALE: 1" = 500' APPROX.
DATE OF PHOTO 4-19-89

STATE	PROJECT NO.	SHEET NO.
MONTANA	F 7-1()9	2 OF 3

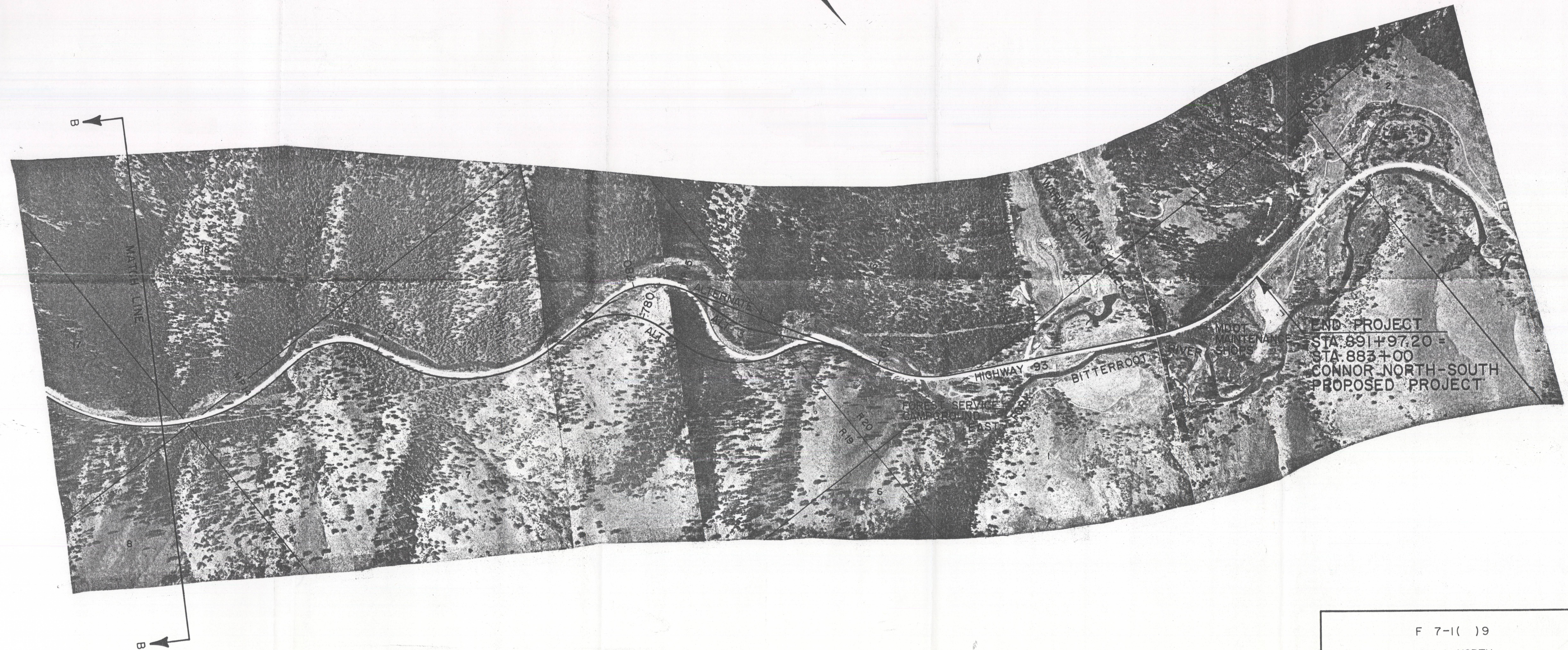
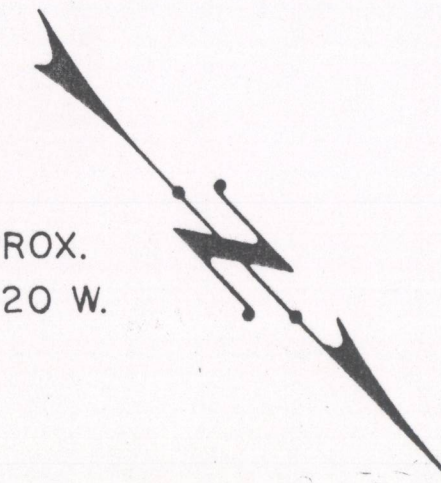
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T.1N, R.19W.



F 7-1()9
SULA-NORTH
RAVALLI COUNTY
7.2± MILES
SCALE: 1"=500' APPROX.
DATE OF PHOTO 4-19-89

STATE	PROJECT NO.	SHEET NO.
MONTANA	F 7-1()9	3 OF 3

SCALE: 1"=500' APPROX.
T. 1 N., R. 19 & 20 W.



END PROJECT
STA. 891+97.20 =
STA. 883+00
CONCOR NORTH-SOUTH
PROPOSED PROJECT

F 7-1()9
SULA-NORTH
RAVALLI COUNTY
7.2± MILES
SCALE: 1" = 500' APPROX.
DATE OF PHOTOS 4-19-89