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Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

County **MISSOULA**

August 3, 2005

To Whom It May Concern:

Subject: Cooperating Agency Environmental Documentation

As a Cooperating Agency under the provisions of 23 CFR 771.111 the Montana Department of Transportation (MDT) is providing you a copy of this project's environmental documentation.

This environmental documentation complies with the provisions of 23 CFR 771.117(a) and (d) for categorically excluding this proposed project from further National Environmental Policy Act (NEPA) (42 U.S.C. 4321, et seq.) documentation requirements. The attached also complies with the provisions of 75-1-103 and 75-1-201, MCA (see ARM 18.2.237 and 18.2.261, MEPA "Actions that qualify for a Categorical Exclusion" as applicable to the MDT).

If you have any questions concerning the attached environmental documentation please call the MDT Environmental Services Division at (406) 444-7228.

Sincerely,

Jean A. Riley, P.E.
Bureau Chief
Environmental Services Division

S:\ADMIN\48_GEN_CORRESP\MAILINGS\COOP AGENCY LTR.DOC\D-1SLOPEFLATTENINGGUARDRAIL_CN5014

Attachment

Montana Department of Transportation
2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

July 21, 2005

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

Subject: STPHS 0002(656)
D-1 Slope Flattening Guardrail
Control Number: 5014

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

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

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

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

Environmental Services
Phone: (406) 444-7228
Fax: (406) 444-7245

Web Page: www.mdt.state.mt.us
Road Report: (800) 226-7623
TTY: (800) 335-7592

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

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

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

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

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

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

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

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

Keith Meredith, Date: 7/21/05
Keith Meredith
MDT Environmental Services

Concur _____, Date: 7/21/05
Thomas L. Hansen, P.E.
MDT Environmental Services Engineering Section Supv.

Concur _____, Date: 7/26/05
Federal Highway Administration

S:\PROJECTS\MISSOULA\5014\PCE (D) PROGRAMMATIC FHWA.DOC

Attachments

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

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

Preliminary Field Review Report

STPHS 0002(656)
2001-D1-SLOPE FLATTEN/GDRAIL
UPN 5014

A preliminary field review was held on-site November 21, 2002. The following attended the field review:

Bill Squires, Road Design Section - MDT Helena
Dennis Foy, District Engineering Services Supervisor - MDT Missoula
Jeremy Fadness, Road Design Section, MDT Helena
Tom Hanek, Safety Management Section, MDT Helena

1. **Proposed Scope of Work** - We propose to install guardrail or flatten slopes at three locations on N-1, S-206, and S-567, all in the Missoula District. The Safety Management Section identified the locations as accident clusters, and recommended the proposed work as cost-effective countermeasures. The project is needed to provide a safer roadside environment for the traveling public.

   The work will include remove and new guardrail, grading, topsoil and seeding along with proper delineation. There will also be right-of-way acquisition and utility relocation for the locations on S-206 and N-1

   Safety Management computed the following Benefit/Cost (B/C) for each of the three sites:

Site	Correctable Accidents	Const Cost Est.	B/C
N-1	7	$115,100	3.58
S-206	13	$177, 220	7.21
S-567	2	$ 21,360	12.46
	TOTAL	$ 313,680	

   Road Design's more detailed cost estimate is $299,800 (including 15% construction engineering). That figure inflates at 3% annually to $327,600 at a possible letting date in 2006.

2. **Project Location and Limits** – Two of the three locations are in Flathead County. The first location, on N-1 (U.S. 2), begins at Reference Post (RP) 189.1±, about 13.9 kilometers southeast of Essex. It extends easterly 0.800± km to RP 189.4±, and is entirely within the Flathead National Forest.

   The second location in Flathead County is on S-206. It begins at RP 1.8±, just north of Fairview X-Rd, and extends northerly 1.130± km to RP 2.5 ±, just south of the Austin Crossroad Road.

   The third location is in Lincoln County on S-567, about 19.3 km north of Libby. It begins at R.P. 10.8±, and extends northerly 0.650± km to RP 11.2±. The site is entirely within the Kootenai National Forest.

No other locations are being considered. See the attached location map.

3. **Physical Characteristics** –
N-1: This section of N-1 was originally constructed under FHP 13 in 1967, and was most recently overlayed in 1991. The paved width is 9.75 m, with two 3.66 m travel lanes and two 1.22 m shoulders.

This section consists almost entirely of two spiraled curves: a 291.06 m radius curve right extends from RP 189.10± to 189.228±, and a 349.28 m radius curve left extends from RP 189.229± to 189.417.

The area of concern is on the south side of the road, which has intermittent ditch and embankment sections. The ditches are 1 to 3± meters deep, with 2:1± inslopes, a fairly narrow ditch bottom, and 2:1 and flatter backslopes. The embankments are 2 to 3 meters high, and steeper than 3:1.

Roadside obstacles scattered on the inslopes and beyond it include medium sized trees (diameters of 100± to 250± mm) and very large rocks, some easily the size of a compact car.

The left (north) side of the road is adjacent to Bear Creek, and is guardrailed. Some of these features can be seen in the following photo:

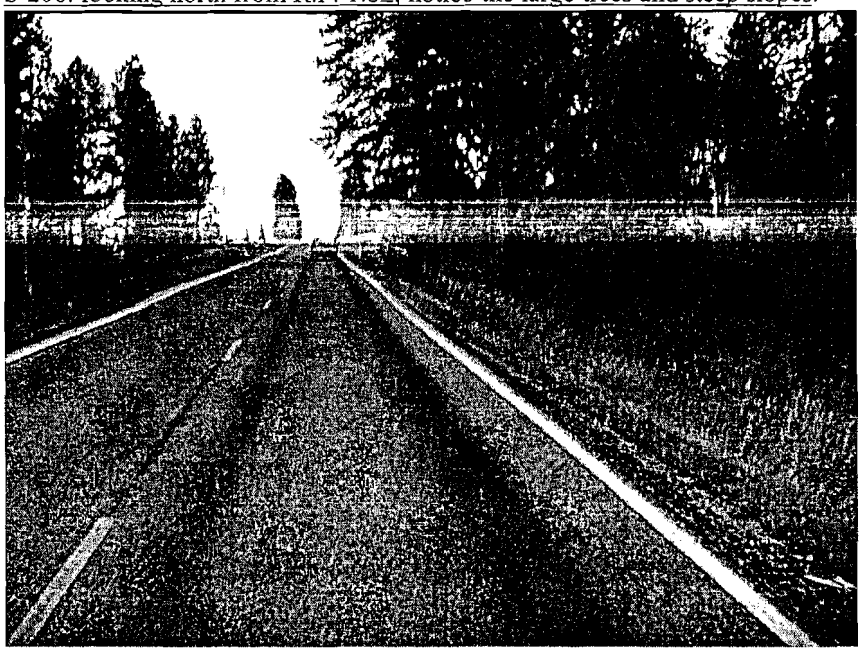
N-1: Looking west toward the beginning of the project, slope of interest is on the left.

S-206: S-206 was originally constructed under NRHP 257-C in 1934. The original construction was a gravel surface and was later paved in 1939 under the same project name. Since then there have been numerous projects along this route, mostly overlays and safety projects. The paved width is currently 7.2± meters. The last project was a signing project; STPHS 206-1(6)0, Safety Improv.- S of Columbia Heights [3120].

S-206 passes through rolling terrain in a rural area. The roadside development includes a few residences scattered among the pastures and farmland. It appears the road was built using the borrow-ditch method with steep inslopes, and a deep ditch that does not necessarily convey drainage. The fill slopes vary from very flat (6:1±) to steep (1½:1±). The back slopes are generally 2:1 or steeper in most locations.

There are also a few short areas with objects, mostly trees, within the clear zone. The most obvious of these areas is between RP 1.8± and 1.9±., where there are large coniferous trees, ranging in diameter from 300 to 450 mm, at the base of a 3.0± m high embankment with 1½:1 slopes. This area is shown below:

S-206: looking north from R.P. 1.8±, notice the large trees and steep slopes.



The inslopes of the approaches are generally fairly high and 1:1 or steeper and are in a deep V ditch section.

S-567: S-567 was originally built as a logging road with a gravel surface. The road was then improved by the Forest Service with bituminous surface treatments, asphalt and chip seals. The 6.10-m road has two travel lanes 3.05 m wide and no shoulders.

The area of concern includes 90 meters of a tangent beginning at RP 10.9± and a 175 meter radius curve that extends from RP 10.96± to 11.02± and is followed by

a 120 meter tangent section. The roadside along the right side has a 1:1± fill slope about 10 meters high covered with large riprap. Pipe Creek flows along the toe of the slope. The location is shown in the following photo:

S-567: Looking north toward the curve at RP 10.93±

The existing guardrail is only on the curve, has blunt end treatments, and is in generally poor condition.

4. **Traffic Data** – The traffic data shown in the table below covers N-1 from R.P. 189.0 to 189.5, S-206 from R.P. 1.8 to 2.5, and S-567 from R.P. 10.8 to R.P. 11.2.

	N-1	S-206	S-567
2002 ADT (Present) =	1,160	4,410	200
2004 ADT (Letting) =	1,230	4,630	210
2024 ADT (Design Year) =	2,180	7,590	280
DHV =	370	1,060	40
T =	8.8%	7.0%	21.5%
ESAL's =	81	211	20
Growth Rate (Annual) =	2.9%	2.5%	1.4%

5. **Accident History** – Safety Management completed an accident analysis for each of the three locations for a ten-year period from 1992 through 2002. The analysis covered sections of S-206 from R.P. 1.8 to 2.5, S-567 from R.P. 1.8 to 11.2 and N-1 from R.P. 189.0 to 189.5. The following table shows the accident rate, severity index, severity rate, and respective statewide averages for the three locations:

Location	Accident Rate	Severity Index	Severity Rate
N-1	5.71	2.08	11.88
Statewide Average	1.33	2.35	3.12
S-206	2.36	4.38	10.34
Statewide Average	1.73	2.43	4.21
S-567	6.79	5.50	37.35
Statewide Average	1.73	2.43	4.21

The N-1 location in Flathead County had the following variations from the average occurrence:

- 84.6% off road/shoulder vs. 32.8% statewide average
- 76.9% daylight vs. 57.9% statewide average
- 61.5% snow/icy road vs. 17.4% statewide average
- 38.5% snow/blowing snow vs. 10.9% statewide average

Seven of the thirteen recorded crashes are considered correctable by the proposed slope flattening and road side object removal. The most common type of crash occurred under snowy or icy pavement conditions; this was followed by a collision with a roadside object and/or overturning. The proposed slope flattening and roadside hazard removal on the south side of N-1 will create a safer, more traversable clear zone than what currently exists.

The S-206 location had the following variations from the average occurrence:

- 66.7% off road/shoulder vs. 49.4% statewide average rural state secondary
- 28.6% icy road vs. 17.1% statewide average rural state secondary
- 19.1% wet road vs. 7.5% statewide average rural state secondary

Fourteen of the twenty-one total crashes on S-206 are considered correctable by the proposed slope flattening and removal of roadside objects. The most common type of crash is loss of vehicle control in wet or icy pavement conditions; this was typically followed by a collision with a roadside object and/or overturning. The proposed work will remove the roadside obstacles and flatten slopes to create a traversable clear zone.

Both of the two recorded crashes on the S-567 location during the ten-year study period are addressable by the proposed guardrail work. Although the number of crashes is low for this section, the severity of the accidents justifies their inclusion into the Safety Engineering Improvement Program. Therefore the recommended replacement of existing guardrail and installation of new at this location is appropriate.

This location is located within the reconstruction project **STPS 567-1(4)7 11km N of Libby – North [4789]**. The reconstruction project is not fundable until late 2006 at the earliest. The proposed guardrail should be installed long enough before the reconstruction project is let to be a cost effective use of safety funds.

6. **Major Design Features** - The intent will be to design the project to comply with the geometric design criteria for the pertinent design elements (i.e. slopes and guardrail), as presented in Figure 12-3 (Rural Principal Arterials) and Figure 12-5 (Rural Collector Roads) of the Road Design Manual, and as presented in the Geometric Design Standards (pages 3 and 9).

However, given the inherent constraints of a safety project, it may not be feasible to meet full standards along the entire length of each location. We will strive to provide a recoverable area within the clear zone, or shield roadside hazards with the appropriate length of guardrail. A metric design is proposed.

We intend to flatten slopes and improve the roadside recovery area at the N-1 and S-206 locations. The work at the S-567 location will be limited to guardrail installation. Road Design will be the lead agent. The design will be assigned to the Helena crew.

a. **Design Speed** – The terrain and functional classification of the individual segments are relevant to design speed. Design speed criteria will be used to determine clear zone widths, appropriate slopes (on Secondary routes), guardrail advancement lengths, and the selection and placement of terminal treatments.

N-1: An 80 km/h design speed is appropriate for a rural principal arterial in mountainous terrain.

S-206: An 80 km/h design speed is appropriate for a rural collector in rolling terrain.

S-567: A 70 km/h design speed is appropriate for a rural collector in mountainous terrain.

b. **Horizontal Alignment** –
N-1: No changes are proposed to the two curves, which have design speeds of 90 km/hr and 95 km/hr, respectively.

S-206: The horizontal alignment is on tangent the full length of the location. No changes are proposed.

S-567: No revisions are proposed to the existing curve, which has a radius less than the 175 m minimum for 70 km/h design. Sight distance is limited along the inside of the curve (west side) by the steep back slope about one meter from the edge of pavement. The curve will be addressed under the reconstruction project **STPS 567-1(4)7, 11 Km N of Libby – North [4789]**.

c. **Vertical Alignment** –
N-1: No changes are proposed to the profile, which is on a 0.26% grade that provides desirable stopping sight distance (SSD) at 110+ km/h.

S-206: The vertical alignment provides desirable SSD at 90 km/h for three of the four curves, and 60 km/h on the fourth curve. The steepest grade within the project limits is 2.82%. No changes are proposed.
S-567: No changes are proposed to the existing profile, which appears to provide desirable SSD at speeds well above 70 km/h, with a grade in the 3% to 4% range.

d. **Typical Sections** – No changes are proposed to the surfacing at any of the three locations. Slope work will generally begin at the hinge point of the surfacing inslope and ditch/fill inslope, and extend outward.

e. **Grading** -
N-1: The review recommends the slope work be limited to the south side of the road from RP 189.10±, the P.C.S. of the 291.06 m curve Right at English Station 445+12.52; to RP 189.42±, the end of the 349.28 m radius curve left at English Station 428+56.72. (stationing increases from east to west on the as-builts). The ditch inslopes and fill slopes along the south are generally steeper than 3:1.

Ideally, we'd like to regrade the ditch sections to the standard 6:1 inslope, with a 3.0 m flat-bottom ditch and appropriate backslope. The material excavated from the existing backslope (2:1± and 6 to 9 meters high) would be available to flatten inslopes and the fill slopes to the east. The wider ditch would have the added benefit of increasing sight distance along the inside of the curve. The backslope is heavily timbered, so the Forest Service may have input on whether clearing is appropriate.

The minimum work envisioned would flatten the inslopes to 4:1 or flatter, maintain ditch drainage and provide the appropriate clear zone which ranges from 5.5 meters (6:1 on tangent) to 11.2 meters for a 4:1 slope on the outside of the 349.28 m curve.

S-206: Generally slopes on both sides of the road will be addressed. We'll strive to flatten inslopes to meet standards (6:1 on fills < 3 m and 4:1 on fills 3 to 6 m high) and flatten ditch inslopes to 6:1, with 3.0 m flat-bottom ditches and backslopes 3:1 or flatter. Backslope excavation will be placed on the inslopes.

If right-of-way or constraints arise, we'll try to at least flatten inslopes to 4:1 or flatter, provide a clear zone, and maintain drainage with a v-ditch whose bottom is outside the clear zone. The clear zone in fill sections ranges from 6.5 m on 6:1 slopes to 8.5 m on 4:1 slopes. Approach slopes will also be flattened to 4:1 or flatter where practical (i.e. drainage can be maintained

The roadside will be cleared of hazards (mostly trees) to the appropriate clear zone or greater if needed for slope work or utility relocation.

S-567: Minimal grading work will be needed. We'll specify 2.4-meter guardrail posts to avoid widening the steep embankment behind the guardrail and above Pipe Creek. The guardrail can probably be designed so that the optional terminal sections are on relatively flat areas.

f. **Geotechnical Considerations** – There do not appear to be any major geotechnical issues. We did not notice any signs of slope instability at the N-1 location, where we'll consider excavation of the 6 to 9 meter high back slopes.

g. **Hydraulics** –
N-1: There are two small streams at either end of the proposed slope flattening areas. These streams flow into Bear Creek via pipes at RP 189.09± and RP 189.47±. The ends of the pipes are 5 to 6 meters from edge of driving lane. We do not propose to lengthen the pipes, but we will request survey information on them.

S-206: There are four cross drains that may have to be extended in slope flattening areas. Due to their age, they should be evaluated for total replacement. It was observed during the field review that many of the pipes are buried and/or in disrepair.

S-567: There will be no hydraulics considerations

h. **Bridges** – There are no bridges within the project limits.

i. **Traffic Engineering** – We recommend the existing signing and delineation be evaluated for upgrading at all three locations, and these items be included in the project where appropriate.

j. **Pedestrian/Bicycle** – It is beyond the scope of work to include specific pedestrian and bicycle features. The flatter slopes and the hazard free roadside will provide a safer environment for bicyclists and pedestrians as well as motorists.

k. **Miscellaneous Features** – Miscellaneous features will include fencing and may include mailboxes and possibly mailbox turnouts on the S-206 location. The guardrail on S-567 will be designed to provide adequate run out length and end treatment to shield the motorist from the roadside hazard.

7. **Design Exceptions** – N/A

8. **Right-of-Way** – There will be right of way involvement on the N-1 and S-206 locations. The existing right of way on the N-1 location is 24.4 m measured from the centerline. The as-built construction plans also show a set-back line 60.96 meters from centerline, with the note "Set-back line for special treatment occupied and used only upon approval of the Regional Forester." Most of the work can be done within the existing right-of-way, but new acquisition will likely be needed if there is extensive backslope excavation along the inside of the curve from RP 189.1± to 189.2±.

The existing right of way on S-206 at the project location varies between 15.2 m to 18.3 m as measured from the centerline. New right-of-way and/or construction permits will likely be required along intermittent segments throughout the

location. The most substantial acquisition may be from R.P. 1.89 to R.P. 1.92, where the fill on both sides of the road is about 3+ meters high.

There will be no right of way involvement on the S-567 location.

9. **Utilities/Railroads** –
N-1: There are two utility markers within the location limits. One indicates an AT&T buried cable. The other marker may indicate a buried power line. There may be conflicts with these facilities. There are no overhead poles.

S-206: There is an overhead power line along the west (left) fence the entire length of the location. The power line poles will probably be in conflict around R.P. 1.9, because of the 3.0± m fill, and at other intermittent segments. There may be buried utilities such as gas, fiber optics and telephone, but none were noticed at the field review.

S-567: There will be no utility involvement.

The survey will locate and identify all utilities.

There will be no railroad involvement at any of the three locations.

10. **Survey** – A survey will be required for the N-1 and S-206 locations. The required data will include alignment, cross sections, utility and drainage topog, sign inventory, and cadastral information.

Survey will not be requested for the S-567 location. Design personnel will collect the required information when they are in the area for other business in the near future. If we later determine survey is needed, the data collected for **STPS 567-1(4)7, 11 Km N of Libby – North [4789]** can probably be used.

The survey request is attached.

11. **Public Involvement** – A Level "A" public involvement plan is appropriate. A news release for the project will be distributed to the various local media.

12. **Environmental Considerations** - No significant environmental impacts or issues were identified. There may be wetland involvement at the N-1 location. A categorical exclusion is proposed for the environmental document.

13. **Traffic Control** – Traffic will be maintained through the project with the appropriate signing, flagging, detours, etc., in accordance with the Manual on Uniform Traffic Control Devices. Local residents will have access to their property at all times.

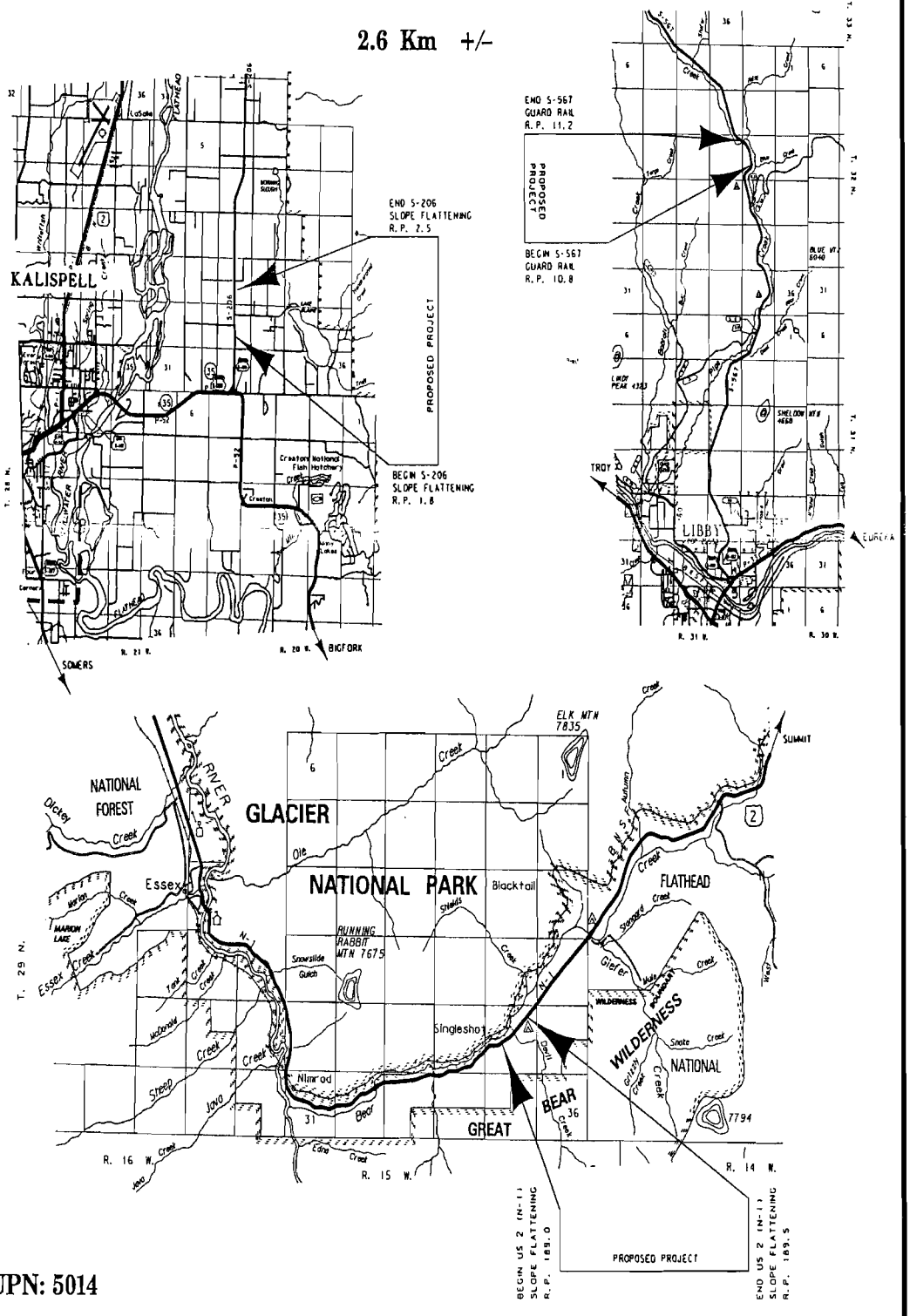
PROJECT STPHS 0002(656)

SLOPE FLATTENING AND GUARD RAIL

2001-D1-SLOPE FLATTEN/GDRAIL

LINCLON & FLATHEAD COUNTY

2.6 Km +/-



UPN: 5014

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