



National Park Service

ASSESSMENT OF ACTIONS HAVING AN EFFECT ON CULTURAL RESOURCES

A. DESCRIPTION OF UNDERTAKING

1. Park: **Badlands National Park** Park district (optional) **North Unit**

2. Work/Project Description:

a. Project name **Rehabilitate Badlands Loop Road Phases III and IV** Date: **August 22, 2006** park project no(s.) **16593**

b. Describe project and area of potential effects (as defined in 36 CFR 800.2[c]); explain why work/project is needed.

The purpose of this action is to bring the entire Loop Road into compliance with NPS Road Standards, extend the serviceable life of the road, enhance visitor enjoyment of the park, improve drainage, improve safety, and improve the parking lot for the Door and Window Trails.

The preferred alternative presents the NPS proposed action and defines the rationale for the action in terms of resource protection and management, visitor and operational use, costs, and other applicable factors.

The project is located entirely within the boundaries of the North Unit of Badlands National Park (Map 1). The Badlands Loop Road, Route 10 (SH 240) begins at the Northeast Entrance and continues in a southerly direction to a junction with Route 11. From there it continues in a northwesterly direction to the Pinnacles Entrance. The Entrance Road (Highway 377) (SH 377) begins at the intersection with Route 10 and continues in a southerly direction to the Interior Entrance, a distance of 0.7 miles.

This project would rehabilitate surfaces on approximately 14.5 miles of the Badlands Loop Road. An asphalt overlay to remove surface irregularities and improve the structural integrity of the highway would be applied, with full depth reclamation of the existing pavement structure, and pavement markings and signage installed or upgraded as necessary to meet current standards. This project is Phases III and IV of a four-phase initiative to rehabilitate and repair the entire 28-mile Badlands Loop Road. The segments of the Loop Road covered under each phase are as follows:

Phase III

N.E. Entrance to Cedar Pass (3.3 miles)
Cedar Pass Slide to Visitors Center (0.7 miles)
Norbeck Pass Slide Area (0.1 miles)
Interior Road from Park Boundary to Loop Road (0.8 miles)

Phase IV

Bigfoot Pass Slump (0.05 miles)
Bigfoot Pass to Burns Basin (4.4 miles)
Burns Basin to Dillon Pass (4.6 miles)
Dillon Pass Slump (Spot Repair)
Pinnacles Entrance to Pinnacles Overlook (0.5 miles)

The proposed rehabilitation includes the roadway, overlooks, pullouts, and parking areas (Map 2). Most work would

be within the existing road prism although in some areas the road would be widened to 26 feet from 22 feet to provide uniform width with previously rehabilitated road sections and to be consistent with National Park Service Park Road Standards (1984b). Construction activities would be primarily limited to areas previously disturbed by the original construction of the road, overlooks and culverts. The work also includes reconstruction of asphalt curbs and ditches, installation and repair of culverts and inlets/outlets, repair of severely eroded sites, installation of underdrains where needed, and minor widening of the roadway in selected areas to obtain a consistent width. It is possible that the replacement of the culvert pipes in these areas and the rehabilitation of overlooks may involve some ground disturbance beyond the previously disturbed areas. This area is within the 400m survey zone of the Midwest Archeology Center during their 1991 and 1993 surveys along the Badlands Loop Road. Through these surveys, there is minimal impact of road work on archeological resources found during these surveys.

Pavement Repair / Rehabilitation

Pavement repair and rehabilitation would be conducted along 14.5 miles of the Loop Road, the parking area for the Door and Window Trails and twelve overlooks/pullouts. In these areas, the pavement condition is fair to poor because of rutting, shoving, heaving due to swelling soils, and alligator and transverse cracking failures. Excavation of soft or badly deformed areas would be performed in some locations. Pavement rehabilitation would be designed for a 20-year life.

Parking, Pullouts, and Overlooks

Roadside improvements would consist of reconfiguring the parking area for the Door and Window Trails (see Maps and Images P. 7-8) and rehabilitating twelve overlooks or pullouts. Rehabilitation of the overlooks and pullouts would consist of minor drainage improvements, addition of accessible ramps where needed, replacement of timber curbs, paving, and striping. Concrete pads would be added to the Kiosk at the Interior Entrance.

All parking areas or pullouts within the project limits were evaluated by NPS and FHWA staff in 2004 to determine if they would be improved, rehabilitated or eliminated. Table 1 presents the proposals.

TABLE 1: ACTION FOR PULLOUTS/PARKING AREAS	
Pullouts/Parking Areas to Improve/Rehabilitate	Pullouts/Parking Areas to Eliminate
Northeast Segment, Milepost 1.1 – Widen and pave	Northeast Segment, Milepost 1.5 – Obliterate
Northeast Segment, Milepost 2.3 – Widen and pave	Northeast Segment, Milepost 2.9 – Obliterate
Northeast Segment, Milepost 2.4 – Widen and pave	
Northeast Segment, Milepost 3.8 – Widen and pave	
Door and Window Trails	
Cliff Shelf	
Panorama Point	
Prairie Winds	
Burns Basin Overlook	
Homestead Overlook	
Conata Basin	
Pinnacles Overlook	

While there are minor modifications to many of these pullouts, this work stays within the 1993 Archeology survey zone. There were no immediate concerns with these modifications when consulting with the Midwest Archeological Center located in Lincoln, NE (see Maps and Images P. 3-6).

Drainage

All drainage features would be evaluated and replaced or cleaned as needed. Culverts would be designed for the 50-year storm and ditches for the 10-year storm. Several curbs on fill slopes that were originally installed for erosion protection would be removed, as they are no longer necessary since slopes have revegetated. These culverts and drainage areas have been excavated numerous times before and show a minimal threat to any resources within the construction area and again are within the 1993 Archeology survey zone.

Geometry

The route would generally follow the existing vertical and horizontal alignment with one exception. The Interior Entrance Road would be reconstructed near the intersection with the Loop Road to improve sight distance and reduce

the severe grades at the intersection. The current configuration of the Interior Entrance road is wider than necessary and encourages drivers to make wide turns, often turning into the opposing traffic lanes. The roadway template would be narrowed and the vertical curvature improved to allow for better traffic movement and safe operations.

Culvert Replacement at Ancient Hunter's Overlook

The culvert at Ancient Hunter's Overlook is undersized and in poor condition; the outfall is eroded in several places. The road and fill would be excavated and the culvert replaced; overall project length is about 250 feet. Additionally, at the outlet a stilling basin would be constructed to capture outflow. The basin would discharge into a hard surface (riprap or concrete); the eroded outfall gullies would be armored with riprap to correct existing erosion and help prevent future erosion. The current roadbed is visible settling and it is essential that these repairs are made. This is the primary area of concern for archeology during this project with the close proximity of site 39PN9 (see Maps and Images P 9-15).

Staging Areas

The principal staging area in the park would be the north portion of the Norbeck Pass/Fossils trailhead parking area and a portion of the parking area for the Door and Window Trails. Other probable sites are in the nearby towns of Wall or Interior. Heavy equipment may be parked in temporary storage areas at parking lots at Ben Reifel Visitor Center, Norbeck Pass, Bigfoot Pass, and the Pinnacles Overlook. All staging areas would be returned to preconstruction conditions once construction would be complete.

3. Has the area of potential effects been surveyed to identify cultural resources?

☐ No

☒ Yes Source or reference 1991 and 1993 Archeological studies completed by the National Park Service Midwest Archeological Center (MWAC).

☐ Check here if no known cultural resources will be affected. (If this is because area has been disturbed, please explain or attach additional information to show the disturbance was so extensive as to preclude intact cultural deposits.)

4. Potentially Affected Resource(s):

Archeological sites 39JK193 and 39JK195 are near the construction zone but are far enough to present little concern to the park and through consultation with MWAC. Through consultation with MWAC Archeologist, the primary concern is site 39PN9, Ancient Hunters.

5. The proposed action will: (check as many as apply)

☐ Destroy, remove, or alter features/elements from a historic structure

☐ Replace historic features/elements in kind

☐ Add nonhistoric features/elements to a historic structure

☐ Alter or remove features/elements of a historic setting or environment (inc. terrain)

☐ Add nonhistoric features/elements (inc. visual, audible, or atmospheric) to a historic setting or cultural landscape

☐ Disturb, destroy, or make archeological resources inaccessible

☒ Potentially affect presently unidentified cultural resources

☐ Begin or contribute to deterioration of historic features, terrain, setting, landscape elements, or archeological or ethnographic resources

☐ Involve a real property transaction (exchange, sale, or lease of land or structures)

☐ Other (please specify)

**6. Measures to prevent or minimize loss or impairment of historic/prehistoric properties:
(Remember that setting, location, and use may be relevant.)**

- Construction activities will be limited to areas previously disturbed by the original construction.
- Construction activities will be limited to previously surveyed locations. If expansion into locations not previously surveyed, then archeologist must be consulted before work would proceed.
- An archeological monitor would be present during construction in site 39PN9 to identify, document and evaluate any archeological resources that may be discovered during ground disturbing activities.
- If significant archeological resources are discovered, construction would cease until these resources are properly documented and evaluated by MWAC staff in consultation with the South Dakota SHPO.
- If planned construction activities are determined to have the potential to adversely affect these resources, the NPS and FHWA would develop alternatives to avoid those affects.

7. Supporting Study Data:

(Attach if feasible; if action is in a plan, EA or EIS, give name and project or page number.)

- Environmental Assessment **Rehabilitate Badlands Loop Road Phases III and IV**
- 1991 and 1993 Archeology Survey of Badlands Loop Road Corridor
- Scoping report for SD PRA BADL 10(5) Project, Badlands Loop road, July 7, 2004
- 30% submittal project drawings for Badlands Loop Road Rehabilitation, Phases III and IV
- Project Scoping and Development Summary – Storm Drain Repair

8. Attachments: ☒ Maps ☐ Archeological survey, if applicable ☒ Drawings ☐ Specifications
☒ Photographs ☐ Scope of Work ☐ Site plan ☐ List of Materials ☐ Samples
☐ Other _____

Prepared by Michael Hosking **Date** 08/22/2006
Title Cultural Resource Specialist, Minuteman Missile, NHS **Telephone** 605-433-5552

B. REVIEWS BY CULTURAL RESOURCE SPECIALISTS

The park 106 coordinator requested review by the park's cultural resource specialist/advisers as indicated by check-off boxes or as follows:

SPECIALISTS: Your comments here (or attached) show that you have reviewed this proposal for conformity with requirements of Section 106, with the 1995 Servicewide PA (if applicable), and applicable parts of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, the NPS *Management Policies*, and the NPS *Cultural Resource Management Guideline*, and have given your best professional advice about this project and the issues relevant to the Section 106 process, including identification and evaluation of historic properties and further consultation needs.

[] ARCHEOLOGIST

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] CURATOR

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] ANTHROPOLOGIST

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] HISTORIAN

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] HISTORICAL ARCHITECT

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] HISTORICAL LANDSCAPE ARCHITECT

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect
_____ No Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion
Recommendations for conditions or stipulations:

[] OTHER ADVISERS

Name:

Date:

Comments:

Check if project does not involve ground disturbance [] Assessment of Effect: _____ No Effect _____ No

Adverse Effect _____ Adverse Effect _____ Programmatic Exclusion

Recommendations for conditions or stipulations:

C. PARK SECTION 106 COORDINATOR'S REVIEW AND RECOMMENDATIONS

1. Assessment of Effect:

_____ No Historic Properties Affected X No Adverse Effect _____ Adverse Effect

2. Compliance requirements:

[X] A. STANDARD 36 CFR PART 800 CONSULTATION

Further consultation under 36 CFR Part 800 is needed.

[] B. PROGRAMMATIC EXCLUSION UNDER THE 1995 SERVICEWIDE PROGRAMMATIC AGREEMENT (PA)

The above action meets all conditions for a programmatic exclusion under Stipulation IV of the 1995 Servicewide PA for Section 106 compliance.

APPLICABLE EXCLUSION: Exclusion IV.B

(Specify 1-13 or IV.C addition to the list of exclusions.)

[] C. PLAN-RELATED UNDERTAKING

Consultation and review of the proposed undertaking were completed in the context of a plan review process, in accordance with the 1995 Servicewide PA and 36 CFR Part 800.

Specify plan/EA/EIS: _____

[] D. UNDERTAKING RELATED TO ANOTHER AGREEMENT

The proposed undertaking is covered for Section 106 purposes under another document such as a statewide agreement established in accord with 36 CFR 800.7 or counterpart regulations.

Specify: _____

[] E. COMPLIANCE REQUIREMENTS SATISFIED BY USE OF NEPA

Documentation is required for the preparation of an EA/FONSI or an EIS/ROD has been developed and used so as also to meet the requirements of 36 CFR 800.3 through 800.6

[] F. STIPULATIONS/CONDITIONS

Following are listed any stipulations or conditions necessary to ensure that the assessment of effect above is consistent with 36 CFR Part 800 criteria of effect or to avoid or reduce potential adverse effects.

Recommended by Park Section 106 coordinator:

Name Michael Hosking

Title Cultural Resource Specialist, Minuteman Missile NHS

Date _____

D. SUPERINTENDENT'S APPROVAL

The proposed work conforms to the NPS *Management Policies* and *Cultural Resource Management Guideline*, and I have reviewed and approve the recommendations, stipulations, or conditions noted in Section C of this form.

Name/Signature of Superintendent _____

Date _____

SUPPLEMENTAL GUIDANCE

The Section 106 process is described in regulations promulgated by the Advisory Council on Historic Preservation as 36 CFR Part 800. PLEASE SEE ESPECIALLY 36 CFR 800.4-6, 800.8, and 800.9. Additional guidance published by the Advisory Council includes *Section 106, Step by Step* and *Preparing Agreement Documents*. Both of these discuss information and documentation needs involved in Section 106. The following discussion is not a substitute for those documents, but a brief set of reminders.

This form may be used for actions that are undertakings as defined for purposes of Section 106. It is a model that may be altered to suit the needs of a particular park and its advisers. It may or may not be the most effective format for documenting Section 106 compliance, depending on the complexity and planning needs or history of the undertaking. It can be a starting point for the review process within NPS, and it may be used to document programmatic exclusions under the 1995 Servicewide Programmatic Agreement (stipulation IV). For some cases, a memorandum, more detailed report, or NEPA document that includes information meeting documentation requirements in 36 CFR Part 800 may be necessary or preferable.

The form is designed to follow, in a condensed way, the basic questions that should be asked and answered in meeting responsibilities under 36 CFR Part 800. The basic questions are:

A. What is the project and how did the park identify it as an undertaking subject to Section 106?

(As defined in 36 CFR 800.2[o], an undertaking means a project, activity, or program that can result in changes in the character or use of properties listed or eligible for listing in the National Register of Historic Places. If in doubt about whether a project is an undertaking subject to Section 106 review, the park's Section 106 coordinator should consult the state historic preservation officer (SHPO) or others in the park's group of CRM advisers on Section 106.)

B. Does the park know whether the project's "area of potential effects" includes properties in or eligible for the National Register of Historic Places?

(Did the park define the area of potential effects in a comprehensive way? What historic properties will be affected by this undertaking? How did NPS identify those properties; did NPS make a reasonable and good-faith effort to ensure that no places that might be eligible for the National Register have been overlooked? Did NPS have enough information to evaluate the Register eligibility

of properties in the area? Documentation may include descriptions of those properties and of efforts to identify them, such as National Register forms and reports or narratives summarizing the resources and survey efforts.)

C. How will the project affect any such eligible historic properties?

(How did the park and its advisers apply the criteria of effect and adverse effect in 36 CFR 800.9? How did the park get the advice of the SHPO, and of other interested persons, on this point?)

D. Did the park provide opportunities for comment by local governments, Indian tribes, other interested persons and the public that were appropriate to the scale and type of the undertaking and the known or expected public interests?

E. If the undertaking would have adverse effects, how did the park and its advisers consider alternatives that would avoid or mitigate the potential for adverse effects?

Generally, Section 106 consultation results in an agreement document of the types described in the Council's Preparing Agreement Documents. That booklet provides suggestions for writing agreement documents and sample formats, as well as some standard language for conditions and stipulations.

Decisions about which CRM disciplines and technical skills are relevant to the project at hand are important. This form should reflect information showing how the park made decisions about which CRM specialists should participate in and advise on individual projects. It should be used to indicate how CRM specialists have been involved in those decisions. This does not mean, however, that every one of the park's CRM advisers must comment on every undertaking.

ITEM BY ITEM:

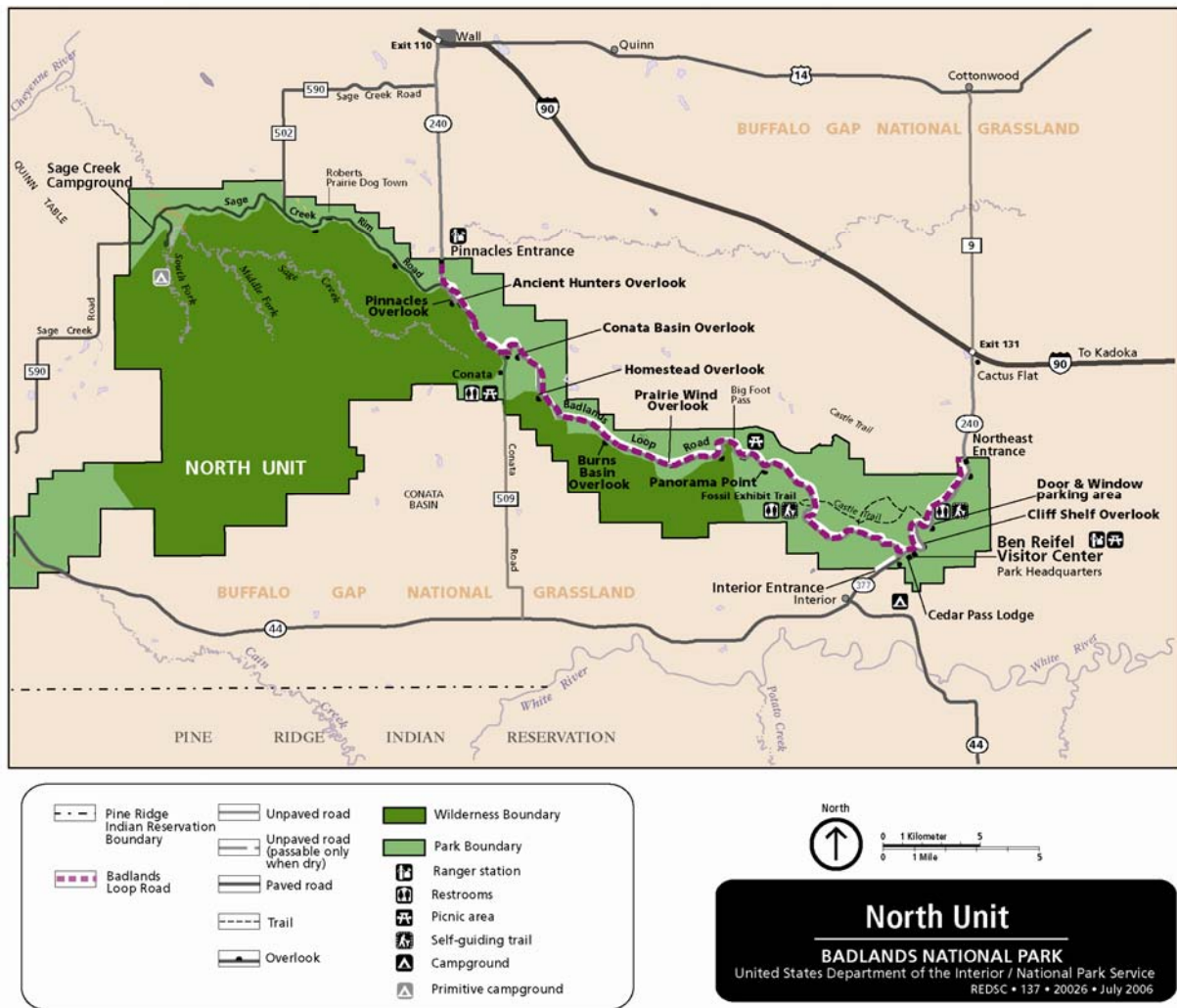
No. 2: "Area of potential effects" is defined in 36 CFR 800.2(c) as "the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties, if any such properties exist."

No. 4: In the first blank, please include applicable park facility or site numbers or IDLCS, IDCLI, ARI, & HABS/HAER numbers. For location, please note UTM coordinates, if available, or township, range, and section if applicable and available. If neither of these is readily available, other location description may be used. In the last blank, specify National Register status of affected resource(s), entering the appropriate number from the list below:

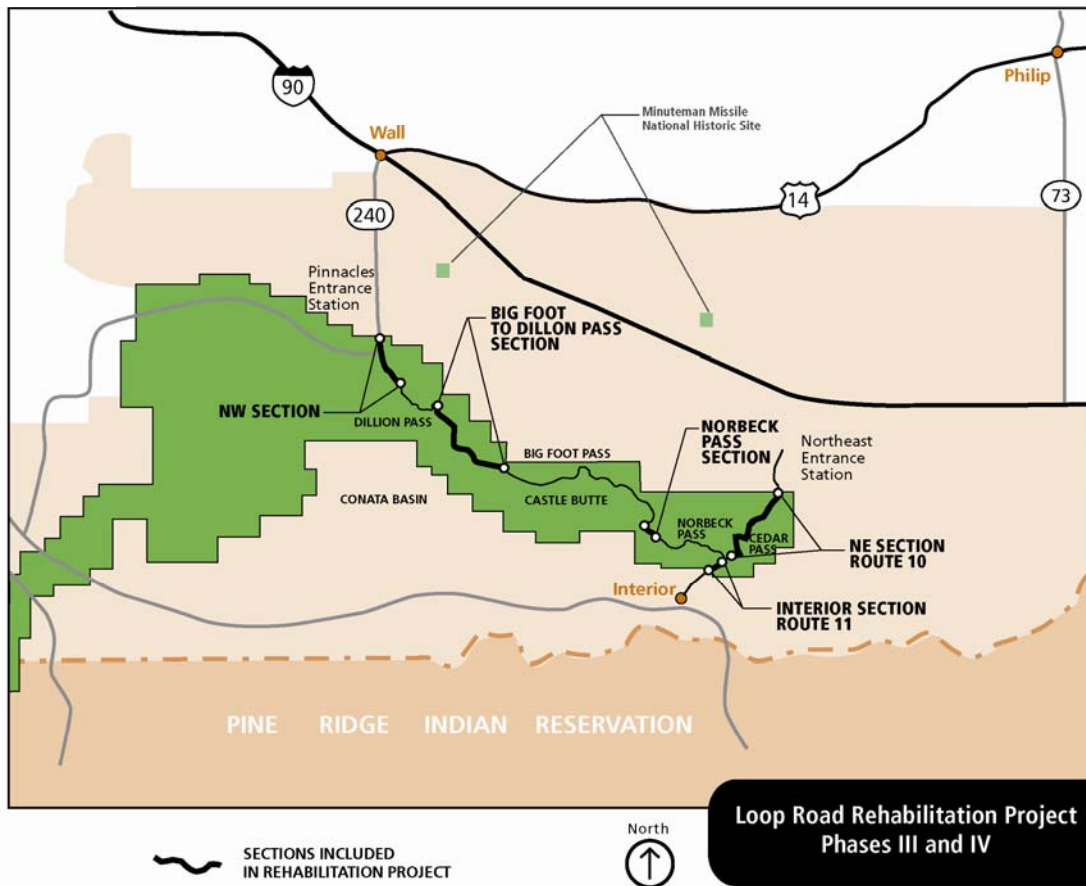
- (1) listed in Register and documented
- (2) listed but not documented
- (3) determined eligible by the Keeper of the Register
- (4) determined ineligible by the Keeper
- (5) found eligible for 106 purposes through consultation with the SHPO
- (6) found not eligible for 106 purposes through consultation with the SHPO
- (7) a designated National Historic Landmark
- (8) within a Register-eligible district? Please name district
- (0) status unknown by person completing Part A of the form

Images and Maps

Map 1

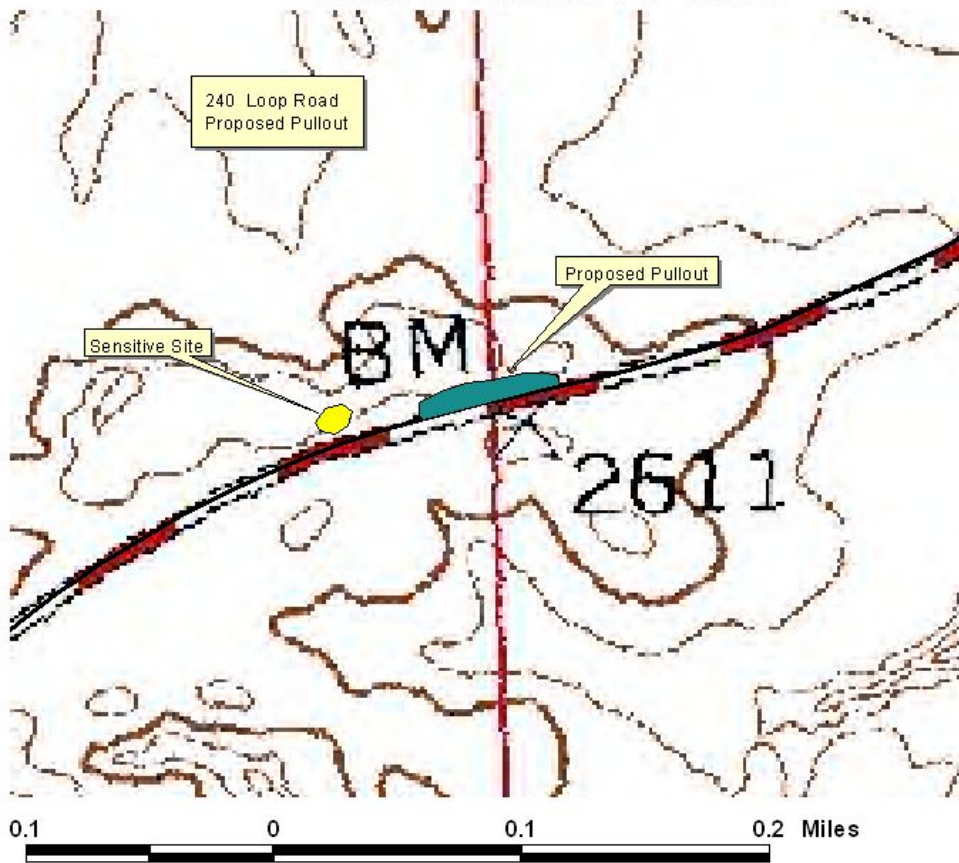


Map 2



Pullout Images

240 Loop Road Proposed Pullout and Sensitive Site



Pullout: Yellow signifies known archeology sites and blue represents construction area. The following photos were taken around the proposed pullout area.

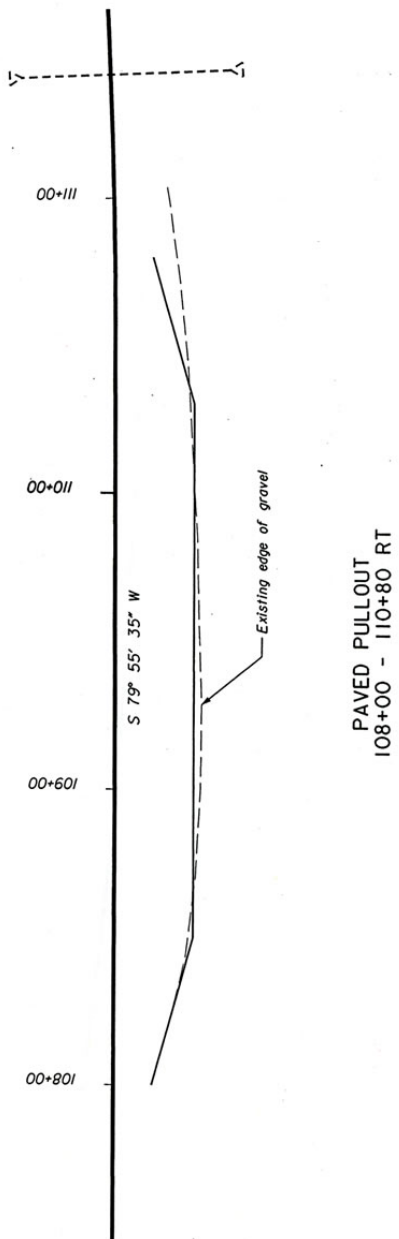
1. Looking east towards the proposed pullout from the east edge of site JK135.

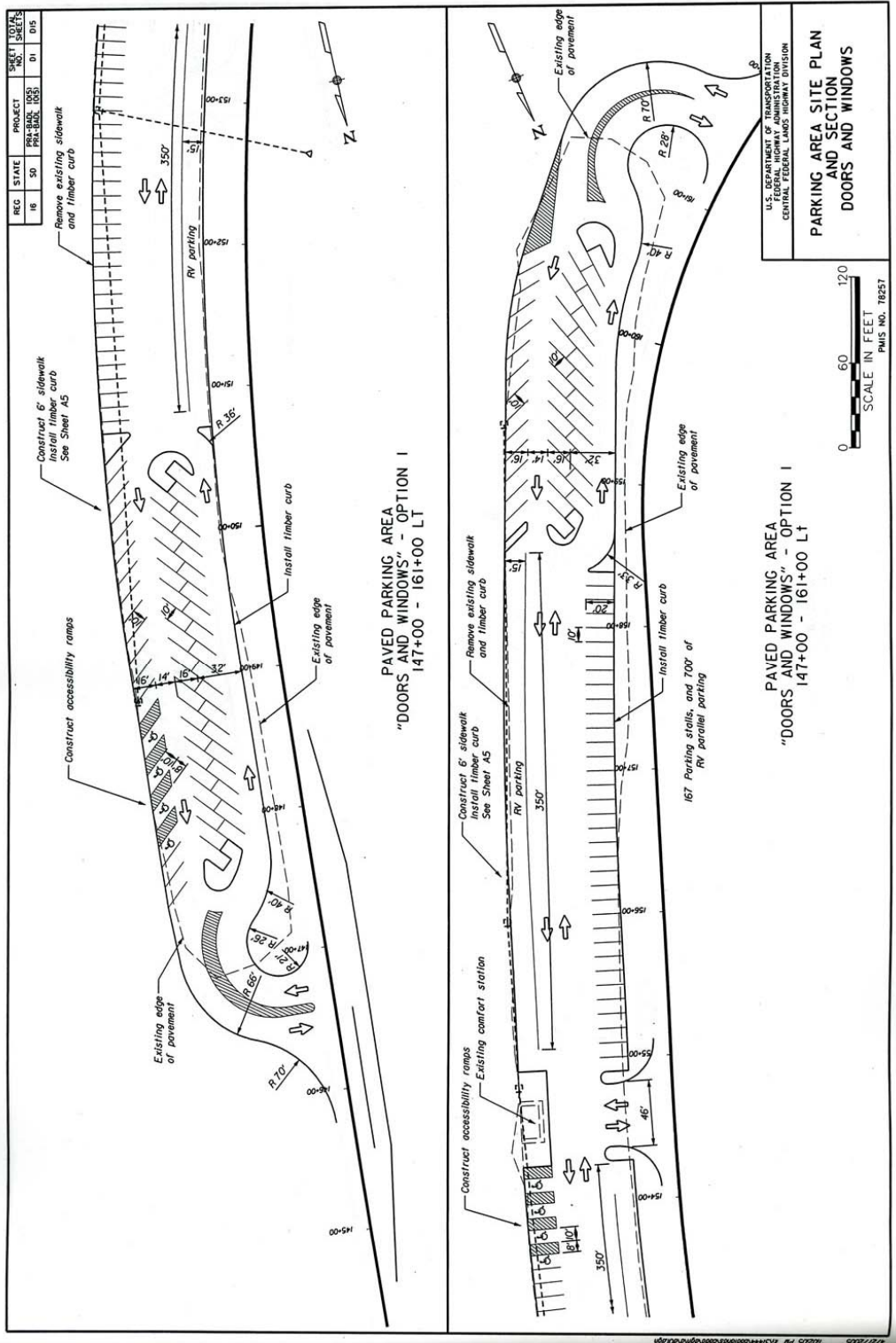


2. Maximum additional cut into hillside adjacent to pullout.

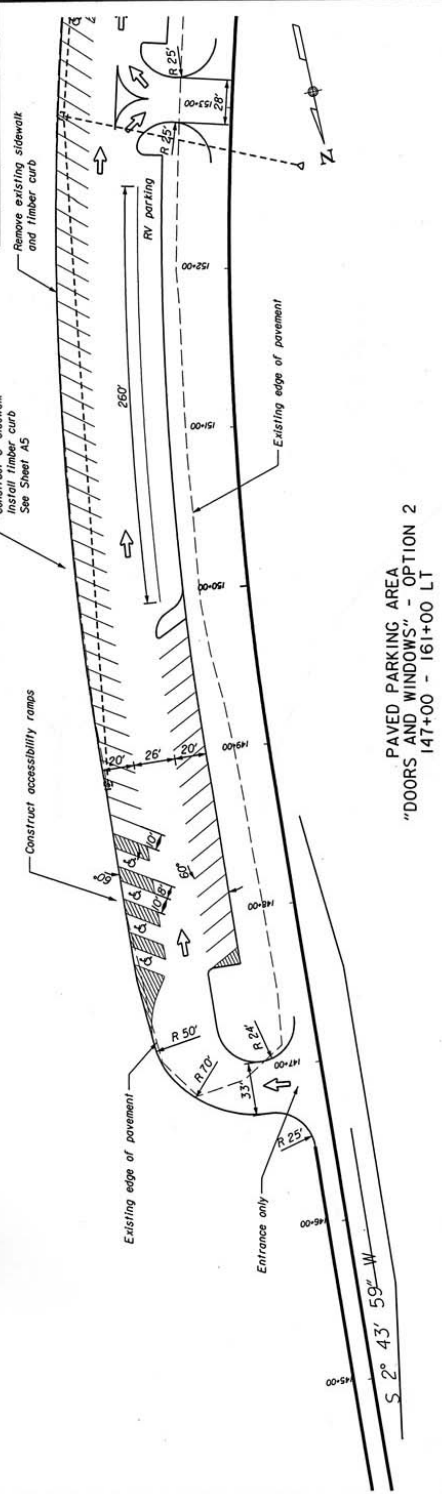


3. Planned footprint of new pullouts

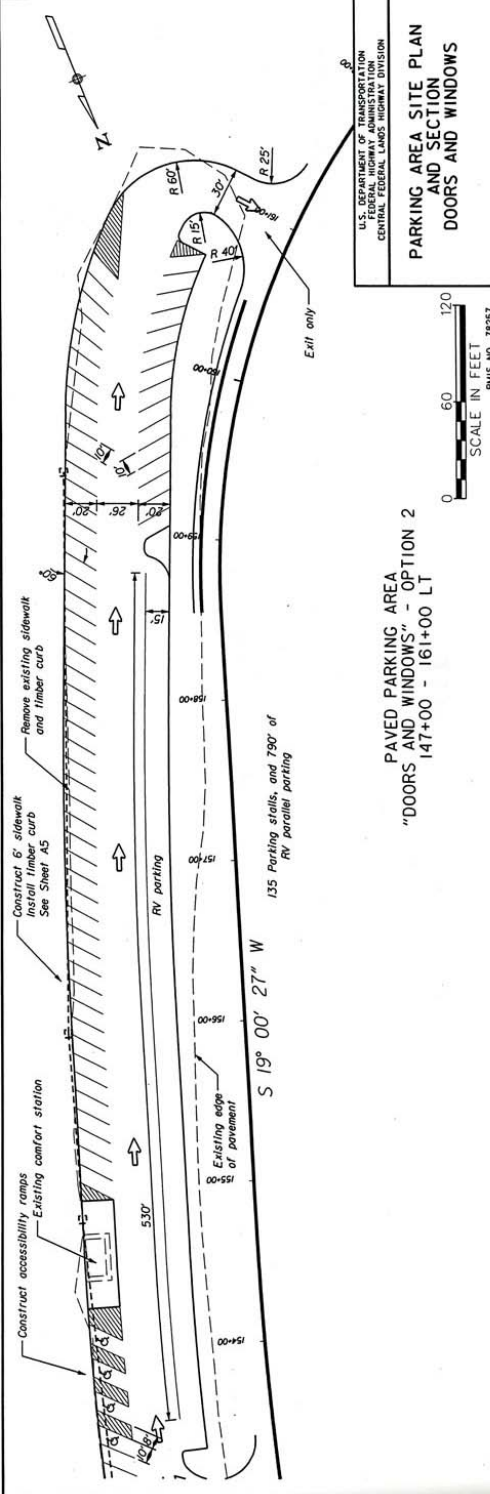




REG.	STATE	PROJECT	SHEET TOTALS
16	SD	PR-1340, US-16 Loop Road	NO. SHEETS 02 015



PAVED PARKING AREA
"DOORS AND WINDOWS" - OPTION 2
147+00 - 161+00 LT



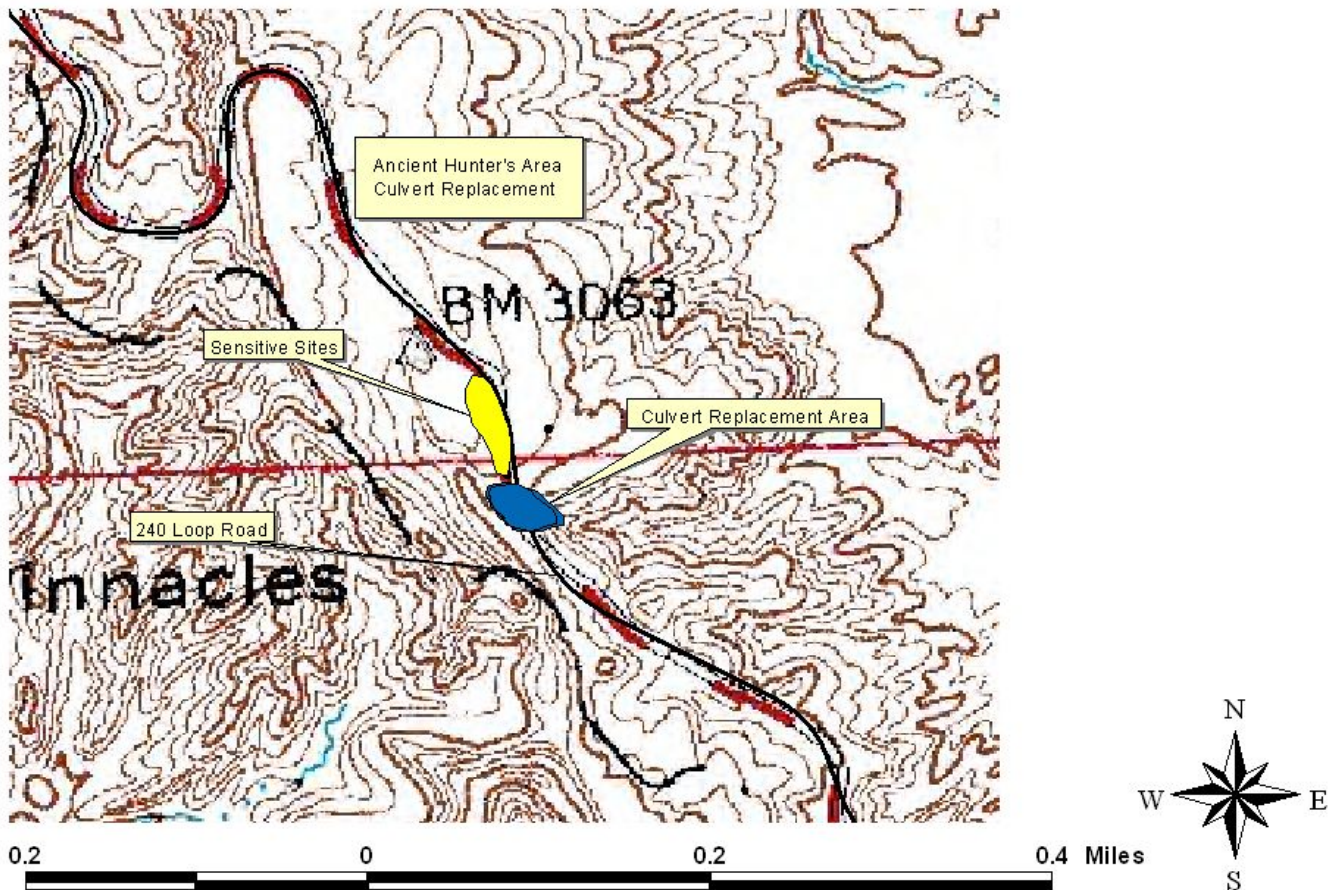
PAVED PARKING AREA
"DOORS AND WINDOWS" - OPTION 2
147+00 - 161+00 LT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

PARKING AREA SITE PLAN
AND SECTION
DOORS AND WINDOWS

SCALE IN FEET
0 60 120
PLAN NO. 78237

Ancient Hunter's Area Proposed Culvert Replacement Badlands National Park



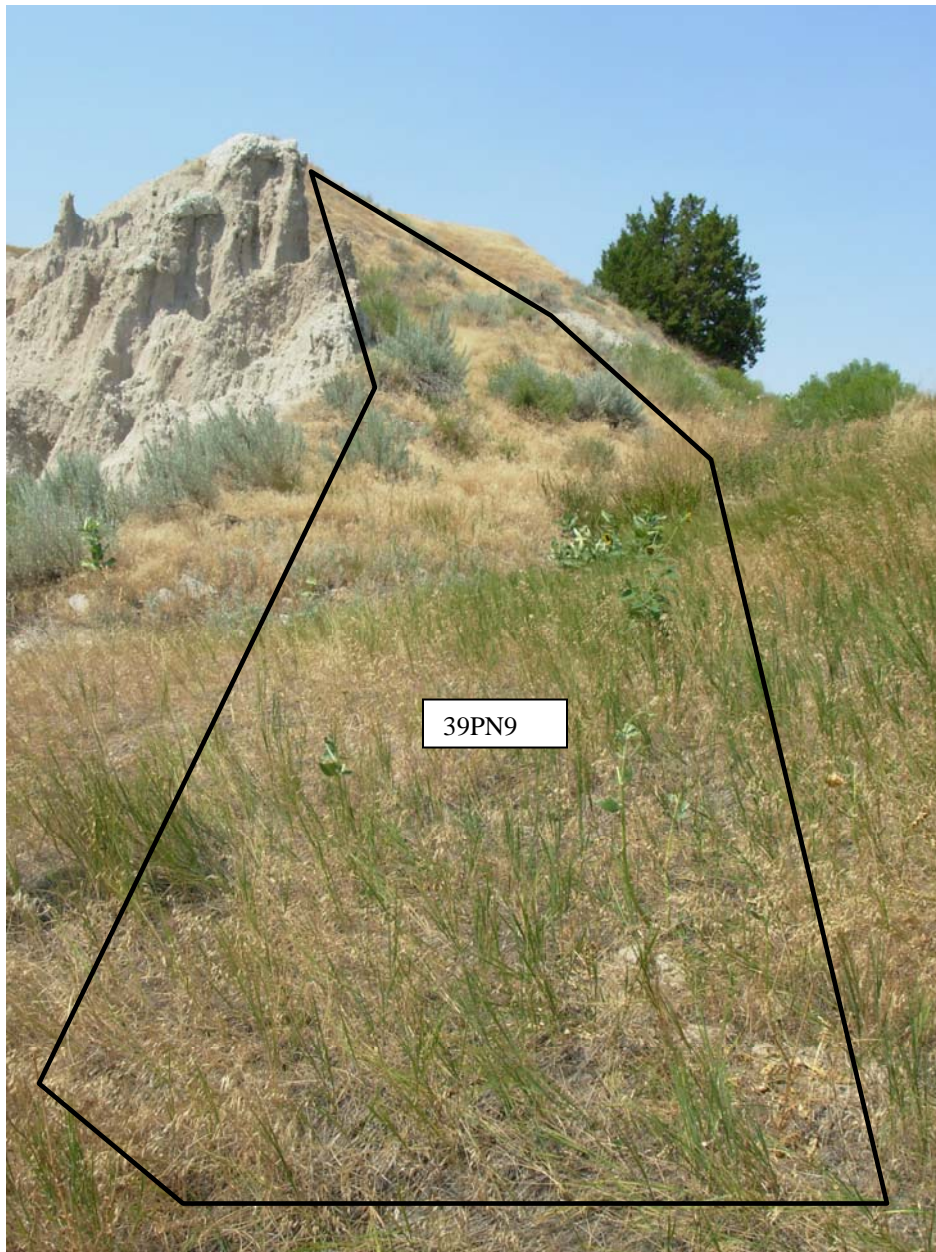
Ancient Hunters: Yellow signifies known archeology sites and blue represents construction area. The following photos were taken around the construction area.

2. Looking SE towards project area



Project Area: Dig out to replace culvert and repave.
Visible sag where pavement is being undercut.

2. Standing on north edge of project area shooting NW towards 39PN9.



3. Photo taken from south side of project area facing north. Where the grouping of staff members are is the location of actual culvert needing replacement.



4. Photo taken from east side of road looking southwest. Badlands immediately past the road is archeology site PN1160, just outside the project area (not shown on map).



5. Photo taken from east side of road shooting northeast towards PN9 on opposite side of road. Where staff member is standing is the north edge of the project area.



6. Photo showing the west face of the project area. This area has been disturbed before to insert initial culvert. Shows the distance of culvert and difficulty of access.

